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NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 1901857

Marine Corps Air Station Yuma
Yuma, Arizona

November 2019

APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED

August 22, 2019

Vista Work Order No. 1901857

Ms. Lisa Bienkowski
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

Dear Ms. Bienkowski,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on June 28, 2019 under your Project Name '4663.3803'.

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

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

Sincerely,

Martha Maier
Laboratory Director

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

Vista Work Order No. 1901857
Case Narrative

Sample Condition on Receipt:

Seven aqueous samples and five solid 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. This report was amended to document that the recovery of EtFOSAA in the soil OPR was outside of the acceptance criteria.

Analytical Notes:

PFAS Isotope Dilution Method

The aqueous samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. This method is listed on Vista's NELAP certificate as Modified EPA Method 537. The results for PFHxS, PFOA, PFOS, MeFOSAA, and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Samples "SAOA-B05-GW", "SAOA-B09-GW", and "SAOA-B11-GW" contained particulate and were centrifuged prior to extraction.

Holding Times

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

Quality Control

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

A Method Blank and Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 of the LOQ concentrations. The LCS/LCSD recoveries were within the acceptance criteria.

The extract of sample "SAOA-B05-GW" was re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria. The results were similar in the second injection. The results from the original injections have been reported.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

VAL-PFAS Method

The solid samples were extracted and analyzed for a selected list of PFAS using VAL Method PFAS. The results for PFHxS, PFOA, PFOS, MeFOSAA, and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

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 recovery of EtFOSAA was greater than 130% in the OPR. This analyte was not detected in the samples. All other analyte recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1901857-01	SAOA-B05-GW	PFAS Isotope Dilution Method	13C2-PFUnA	H	43.1
1901857-01	SAOA-B05-GW	PFAS Isotope Dilution Method	d5-EtFOSAA	H	49.4
1901857-01	SAOA-B05-GW	PFAS Isotope Dilution Method	13C2-PFDoA	H	35.9
1901857-01	SAOA-B05-GW	PFAS Isotope Dilution Method	13C2-PFTeDA	H	17.0
1901857-09	SAOA-B11-GW	PFAS Isotope Dilution Method	13C2-PFTeDA	H	47.2
B9G0050-BLK1	B9G0050-BLK1	PFAS Isotope Dilution Method	13C2-PFTeDA	H	39.8
B9G0050-BS1	B9G0050-BS1	PFAS Isotope Dilution Method	13C2-PFDoA	H	46.4
B9G0050-BS1	B9G0050-BS1	PFAS Isotope Dilution Method	13C2-PFTeDA	H	37.9
B9G0050-BSD1	B9G0050-BSD1	PFAS Isotope Dilution Method	13C2-PFTeDA	H	41.7
B9G0116-BLK1	B9G0116-BLK1	PFAS Isotope Dilution Method	d5-EtFOSAA	H	47.3
B9G0116-BS1	B9G0116-BS1	PFAS Isotope Dilution Method	d5-EtFOSAA	H	45.5

H = Recovery was outside laboratory acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1901857-01	SAOA-B05-GW	26-Jun-19 08:40	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1901857-02	SAOA-B09-SO-1-1.5	26-Jun-19 10:55	28-Jun-19 09:07	HDPE Jar, 6 oz
1901857-03	SAOA-B09-SO-20-20.5	26-Jun-19 11:40	28-Jun-19 09:07	HDPE Jar, 6 oz
1901857-04	SAOA-B09-GW	26-Jun-19 15:15	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1901857-05	FRB-06262019	26-Jun-19 17:35	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1901857-06	EB-06262019	26-Jun-19 17:45	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1901857-07	SAOA-B11-SO-1-1.5	27-Jun-19 08:25	28-Jun-19 09:07	HDPE Jar, 6 oz
1901857-08	SAOA-B11-SO-20-20.5	27-Jun-19 09:25	28-Jun-19 09:07	HDPE Jar, 6 oz
1901857-09	SAOA-B11-GW	27-Jun-19 11:05	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1901857-10	SAOA-B08-SO-1-1.5	27-Jun-19 14:40	28-Jun-19 09:07	HDPE Jar, 6 oz
1901857-11	EB-06272019	27-Jun-19 15:00	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1901857-12	FRB-06272019	27-Jun-19 15:05	28-Jun-19 09:07	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Matrix: Aqueous

Laboratory Data

Lab Sample: B9G0050-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFHxA	307-24-4	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFHpA	375-85-9	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFHxS	355-46-4	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFOA	335-67-1	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFNA	375-95-1	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFOS	1763-23-1	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFDA	335-76-2	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
MeFOSAA	2355-31-9	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
EtFOSAA	2991-50-6	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFUnA	2058-94-8	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFDoA	307-55-1	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFTrDA	72629-94-8	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
PFTeDA	376-06-7	ND	0.00137	0.00200	0.00400	U	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C2-PFHxA	IS	96.7	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C4-PFHpA	IS	89.2	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C3-PFHxS	IS	104	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C2-PFOA	IS	89.4	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C5-PFNA	IS	76.1	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C8-PFOS	IS	86.9	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C2-PFDA	IS	70.3	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
d3-MeFOSAA	IS	65.7	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
d5-EtFOSAA	IS	66.4	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C2-PFUnA	IS	68.4	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C2-PFDoA	IS	56.2	50 - 150		B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1
13C2-PFTeDA	IS	39.8	50 - 150	H	B9G0050	04-Jul-19	0.250 L	08-Jul-19 16:30	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: LCSD **PFAS Isotope Dilution Method**

Name:	Tetra Tech EC, Inc.	Lab Sample:	B9G0050-BS1/B9G0050-BSD1
Project:	4663.3803	QC Batch:	B9G0050
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	04-Jul-19
		Column:	BEH C18

Analyte	CAS Number	LCS (ug/L)	LCS Spike Amt	LCS % Rec	LCS Quals	LCSD (ug/L)	LCSD Spike Amt	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	375-73-5	0.0443	0.0400	111		0.0455	0.0400	114	2.83		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFHxA	307-24-4	0.0455	0.0400	114		0.0438	0.0400	110	3.68		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFHpA	375-85-9	0.0406	0.0400	102		0.0435	0.0400	109	6.95		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFHxS	355-46-4	0.0510	0.0400	127		0.0466	0.0400	116	8.95		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFOA	335-67-1	0.0418	0.0400	104		0.0425	0.0400	106	1.84		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFNA	375-95-1	0.0417	0.0400	104		0.0428	0.0400	107	2.76		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFOS	1763-23-1	0.0378	0.0400	94.4		0.0434	0.0400	109	13.9		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFDA	335-76-2	0.0442	0.0400	110		0.0449	0.0400	112	1.48		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
MeFOSAA	2355-31-9	0.0415	0.0400	104		0.0423	0.0400	106	1.91		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
EtFOSAA	2991-50-6	0.0417	0.0400	104		0.0429	0.0400	107	2.89		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFUnA	2058-94-8	0.0437	0.0400	109		0.0466	0.0400	117	6.44		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFDoA	307-55-1	0.0440	0.0400	110		0.0446	0.0400	111	1.28		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFTrDA	72629-94-8	0.0376	0.0400	94.1		0.0376	0.0400	93.9	0.216		60-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1
PFTeDA	376-06-7	0.0443	0.0400	111		0.0421	0.0400	105	5.13		70-130	30	08-Jul-19 16:09	1	08-Jul-19 16:20	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C3-PFBS	IS	112		103		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C2-PFHxA	IS	92.0		95.7		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C4-PFHpA	IS	101		92.8		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C3-PFHxS	IS	93.7		93.7		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C2-PFOA	IS	88.1		92.9		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C5-PFNA	IS	73.3		79.6		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C8-PFOS	IS	75.4		82.0		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C2-PFDA	IS	69.5		74.9		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
d3-MeFOSAA	IS	64.0		67.1		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
d5-EtFOSAA	IS	62.7		67.2		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C2-PFUnA	IS	57.7		60.8		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C2-PFDoA	IS	46.4	H	51.6		50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1
13C2-PFTeDA	IS	37.9	H	41.7	H	50-150	08-Jul-19 16:09	1	08-Jul-19 16:20	1

Sample ID: SAOA-B05-GW

PFAS Isotope Dilution Method

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Aqueous
Date Collected: 26-Jun-19 08:40

Laboratory Data

Lab Sample: 1901857-01
Date Received: 28-Jun-19 09:07

Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0428	0.00177	0.00258	0.00516		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFHxA	307-24-4	0.451	0.00177	0.00258	0.00516		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFHpA	375-85-9	0.0850	0.00177	0.00258	0.00516		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFHxS	355-46-4	0.0810	0.00177	0.00258	0.00516		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFOA	335-67-1	0.0378	0.00177	0.00258	0.00516		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFNA	375-95-1	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFOS	1763-23-1	0.0145	0.00177	0.00258	0.00516		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFDA	335-76-2	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
MeFOSAA	2355-31-9	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
EtFOSAA	2991-50-6	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFUnA	2058-94-8	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFDoA	307-55-1	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFTrDA	72629-94-8	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
PFTeDA	376-06-7	ND	0.00177	0.00258	0.00516	U	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	69.6	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C2-PFHxA	IS	62.5	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C4-PFHpA	IS	78.3	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C3-PFHxS	IS	70.1	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C2-PFOA	IS	63.5	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C5-PFNA	IS	61.2	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C8-PFOS	IS	61.1	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C2-PFDA	IS	51.5	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
d3-MeFOSAA	IS	51.8	50 - 150		B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
d5-EtFOSAA	IS	49.4	50 - 150	H	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C2-PFUnA	IS	43.1	50 - 150	H	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C2-PFDoA	IS	35.9	50 - 150	H	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1
13C2-PFTeDA	IS	17.0	50 - 150	H	B9G0050	04-Jul-19	0.194 L	08-Jul-19 16:41	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: SAOA-B09-GW **PFAS Isotope Dilution Method**

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Aqueous
Date Collected: 26-Jun-19 15:15

Laboratory Data

Lab Sample: 1901857-04
Date Received: 28-Jun-19 09:07

Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFHxA	307-24-4	0.00441	0.00291	0.00424	0.00851	J	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFHpA	375-85-9	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFHxS	355-46-4	0.0154	0.00291	0.00424	0.00851		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFOA	335-67-1	0.00601	0.00291	0.00424	0.00851	J	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFNA	375-95-1	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFOS	1763-23-1	0.0108	0.00291	0.00424	0.00851	Q	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFDA	335-76-2	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
MeFOSAA	2355-31-9	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
EtFOSAA	2991-50-6	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFUnA	2058-94-8	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFDoA	307-55-1	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFTrDA	72629-94-8	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
PFTeDA	376-06-7	ND	0.00291	0.00424	0.00851	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	100	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C2-PFHxA	IS	91.4	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C4-PFHpA	IS	97.8	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C3-PFHxS	IS	95.7	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C2-PFOA	IS	92.8	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C5-PFNA	IS	86.1	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C8-PFOS	IS	95.7	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C2-PFDA	IS	76.4	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
d3-MeFOSAA	IS	76.9	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
d5-EtFOSAA	IS	66.4	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C2-PFUnA	IS	68.6	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C2-PFDoA	IS	65.4	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1
13C2-PFTeDA	IS	51.8	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 16:51	1

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

Results reported to the DL.

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

Sample ID: FRB-06262019 **PFAS Isotope Dilution Method**

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Aqueous
Date Collected: 26-Jun-19 17:35

Laboratory Data

Lab Sample: 1901857-05
Date Received: 28-Jun-19 09:07

Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFHxA	307-24-4	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFHpA	375-85-9	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFHxS	355-46-4	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFOA	335-67-1	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFNA	375-95-1	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFOS	1763-23-1	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFDA	335-76-2	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
MeFOSAA	2355-31-9	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
EtFOSAA	2991-50-6	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFUnA	2058-94-8	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFDoA	307-55-1	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFTrDA	72629-94-8	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
PFTeDA	376-06-7	ND	0.00285	0.00417	0.00832	U	B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C2-PFHxA	IS	95.8	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C4-PFHpA	IS	103	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C3-PFHxS	IS	87.6	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C2-PFOA	IS	97.5	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C5-PFNA	IS	81.1	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C8-PFOS	IS	96.2	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C2-PFDA	IS	70.3	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
d3-MeFOSAA	IS	65.0	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
d5-EtFOSAA	IS	68.8	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C2-PFUnA	IS	58.3	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C2-PFDoA	IS	59.6	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1
13C2-PFTeDA	IS	80.8	50 - 150		B9G0050	04-Jul-19	0.120 L	08-Jul-19 17:02	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: EB-06262019

PFAS Isotope Dilution Method

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Aqueous
Date Collected: 26-Jun-19 17:45

Laboratory Data

Lab Sample: 1901857-06
Date Received: 28-Jun-19 09:07

Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFHxA	307-24-4	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFHpA	375-85-9	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFHxS	355-46-4	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFOA	335-67-1	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFNA	375-95-1	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFOS	1763-23-1	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFDA	335-76-2	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
MeFOSAA	2355-31-9	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
EtFOSAA	2991-50-6	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFUnA	2058-94-8	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFDoA	307-55-1	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFTrDA	72629-94-8	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
PFTeDA	376-06-7	ND	0.00290	0.00424	0.00846	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	107	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C2-PFHxA	IS	94.9	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C4-PFHpA	IS	99.6	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C3-PFHxS	IS	95.0	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C2-PFOA	IS	96.9	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C5-PFNA	IS	85.7	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C8-PFOS	IS	96.1	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C2-PFDA	IS	75.2	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
d3-MeFOSAA	IS	52.3	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
d5-EtFOSAA	IS	54.1	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C2-PFUnA	IS	57.8	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C2-PFDoA	IS	51.7	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1
13C2-PFTeDA	IS	68.3	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:12	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: SAOA-B11-GW **PFAS Isotope Dilution Method**

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Aqueous
Date Collected: 27-Jun-19 11:05

Laboratory Data

Lab Sample: 1901857-09
Date Received: 28-Jun-19 09:07

Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00465	0.00277	0.00403	0.00809	J	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFHxA	307-24-4	0.00695	0.00277	0.00403	0.00809	J	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFHpA	375-85-9	0.00412	0.00277	0.00403	0.00809	J	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFHxS	355-46-4	0.0501	0.00277	0.00403	0.00809		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFOA	335-67-1	0.0612	0.00277	0.00403	0.00809		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFNA	375-95-1	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFOS	1763-23-1	0.00941	0.00277	0.00403	0.00809		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFDA	335-76-2	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
MeFOSAA	2355-31-9	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
EtFOSAA	2991-50-6	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFUnA	2058-94-8	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFDoA	307-55-1	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFTrDA	72629-94-8	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
PFTeDA	376-06-7	ND	0.00277	0.00403	0.00809	U	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	90.0	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C2-PFHxA	IS	94.7	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C4-PFHpA	IS	93.0	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C3-PFHxS	IS	84.9	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C2-PFOA	IS	91.9	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C5-PFNA	IS	84.6	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C8-PFOS	IS	90.9	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C2-PFDA	IS	71.0	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
d3-MeFOSAA	IS	67.0	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
d5-EtFOSAA	IS	61.7	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C2-PFUnA	IS	65.4	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C2-PFDoA	IS	62.9	50 - 150		B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1
13C2-PFTeDA	IS	47.2	50 - 150	H	B9G0050	04-Jul-19	0.124 L	08-Jul-19 17:23	1

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

Results reported to the DL.

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

Sample ID: EB-06272019

PFAS Isotope Dilution Method

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Aqueous
Date Collected: 27-Jun-19 15:00

Laboratory Data

Lab Sample: 1901857-11
Date Received: 28-Jun-19 09:07

Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFHxA	307-24-4	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFHpA	375-85-9	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFHxS	355-46-4	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFOA	335-67-1	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFNA	375-95-1	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFOS	1763-23-1	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFDA	335-76-2	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
MeFOSAA	2355-31-9	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
EtFOSAA	2991-50-6	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFUnA	2058-94-8	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFDoA	307-55-1	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFTrDA	72629-94-8	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
PFTeDA	376-06-7	ND	0.00292	0.00427	0.00852	U	B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	110	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C2-PFHxA	IS	94.2	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C4-PFHpA	IS	98.7	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C3-PFHxS	IS	93.3	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C2-PFOA	IS	95.1	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C5-PFNA	IS	87.3	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C8-PFOS	IS	91.5	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C2-PFDA	IS	77.4	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
d3-MeFOSAA	IS	61.4	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
d5-EtFOSAA	IS	74.8	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C2-PFUnA	IS	60.6	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C2-PFDoA	IS	62.0	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1
13C2-PFTeDA	IS	81.4	50 - 150		B9G0050	04-Jul-19	0.117 L	08-Jul-19 17:34	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

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

Sample ID: FRB-06272019 **PFAS Isotope Dilution Method**

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ
Matrix: Aqueous
Date Collected: 27-Jun-19 15:05

Laboratory Data

Lab Sample: 1901857-12
Date Received: 28-Jun-19 09:07
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFHxA	307-24-4	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFHpA	375-85-9	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFHxS	355-46-4	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFOA	335-67-1	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFNA	375-95-1	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFOS	1763-23-1	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFDA	335-76-2	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
MeFOSAA	2355-31-9	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
EtFOSAA	2991-50-6	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFUnA	2058-94-8	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFDoA	307-55-1	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFTrDA	72629-94-8	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
PFTeDA	376-06-7	ND	0.00291	0.00424	0.00850	U	B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C2-PFHxA	IS	99.2	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C4-PFHpA	IS	98.2	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C3-PFHxS	IS	95.9	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C2-PFOA	IS	101	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C5-PFNA	IS	85.6	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C8-PFOS	IS	95.1	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C2-PFDA	IS	70.0	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
d3-MeFOSAA	IS	54.4	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
d5-EtFOSAA	IS	54.5	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C2-PFUnA	IS	56.3	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C2-PFDoA	IS	54.5	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1
13C2-PFTeDA	IS	67.5	50 - 150		B9G0050	04-Jul-19	0.118 L	08-Jul-19 17:44	1

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

Results reported to the DL.

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

Sample ID: Method Blank

VAL - PFAS

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Matrix: Solid

Laboratory Data

Lab Sample: B9G0116-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ug/kg)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFHxA	307-24-4	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFHpA	375-85-9	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFHxS	355-46-4	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFOA	335-67-1	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFNA	375-95-1	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFOS	1763-23-1	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFDA	335-76-2	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
MeFOSAA	2355-31-9	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
EtFOSAA	2991-50-6	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFUnA	2058-94-8	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFDoA	307-55-1	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFTrDA	72629-94-8	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
PFTeDA	376-06-7	ND	0.845	1.00	2.00	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	92.1	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C2-PFHxA	IS	92.8	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C4-PFHpA	IS	92.2	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C3-PFHxS	IS	89.0	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C2-PFOA	IS	81.4	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C5-PFNA	IS	81.9	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C8-PFOS	IS	76.8	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C2-PFDA	IS	65.9	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
d3-MeFOSAA	IS	55.4	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
d5-EtFOSAA	IS	47.3	50 - 150	H	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C2-PFUnA	IS	56.8	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C2-PFDoA	IS	55.4	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1
13C2-PFTeDA	IS	67.3	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:45	1

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

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: OPR **VAL - PFAS**

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Matrix: Solid

Laboratory Data

Lab Sample: B9G0116-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ug/kg	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	10.4	10.0	104	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFHxA	307-24-4	11.4	10.0	114	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFHpA	375-85-9	10.8	10.0	108	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFHxS	355-46-4	10.3	10.0	103	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFOA	335-67-1	10.8	10.0	108	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFNA	375-95-1	11.1	10.0	111	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFOS	1763-23-1	10.5	10.0	105	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFDA	335-76-2	11.5	10.0	115	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
MeFOSAA	2355-31-9	9.66	10.0	96.6	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
EtFOSAA	2991-50-6	13.4	10.0	134	70 - 130	H	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFUnA	2058-94-8	11.7	10.0	117	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFDoA	307-55-1	11.5	10.0	115	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFTrDA	72629-94-8	12.3	10.0	123	60 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
PFTeDA	376-06-7	11.6	10.0	116	70 - 130		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.4	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C2-PFHxA	IS	90.3	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C4-PFHpA	IS	90.3	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C3-PFHxS	IS	99.5	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C2-PFOA	IS	89.8	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C5-PFNA	IS	80.3	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C8-PFOS	IS	82.0	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C2-PFDA	IS	67.0	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
d3-MeFOSAA	IS	54.5	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
d5-EtFOSAA	IS	45.5	50- 150	H	B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C2-PFUnA	IS	56.4	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C2-PFDoA	IS	54.8	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1
13C2-PFTeDA	IS	67.8	50- 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 21:13	1

Sample ID: SAOA-B09-SO-1-1.5

VAL - PFAS

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Soil
Date Collected: 26-Jun-19 10:55

Laboratory Data

Lab Sample: 1901857-02
Date Received: 28-Jun-19 09:07
% Solids: 99.5

Column: BEH C18

Analyte	CAS Number	Conc. (ug/kg)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFHxA	307-24-4	0.973	0.841	0.995	1.99	J	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFHpA	375-85-9	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFHxS	355-46-4	1.25	0.841	0.995	1.99	J	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFOA	335-67-1	1.01	0.841	0.995	1.99	J	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFNA	375-95-1	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFOS	1763-23-1	16.0	0.841	0.995	1.99		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFDA	335-76-2	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
MeFOSAA	2355-31-9	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
EtFOSAA	2991-50-6	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFUnA	2058-94-8	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFDoA	307-55-1	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFTrDA	72629-94-8	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
PFTeDA	376-06-7	ND	0.841	0.995	1.99	U	B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C2-PFHxA	IS	86.0	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C4-PFHpA	IS	89.6	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C3-PFHxS	IS	106	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C2-PFOA	IS	85.6	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C5-PFNA	IS	75.7	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C8-PFOS	IS	88.2	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C2-PFDA	IS	67.2	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
d3-MeFOSAA	IS	80.1	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
d5-EtFOSAA	IS	80.1	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C2-PFUnA	IS	70.2	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C2-PFDoA	IS	74.8	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1
13C2-PFTeDA	IS	82.8	50 - 150		B9G0116	10-Jul-19	1.01 g	12-Jul-19 21:56	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SAOA-B09-SO-20-20.5

VAL - PFAS

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Soil
Date Collected: 26-Jun-19 11:40

Laboratory Data

Lab Sample: 1901857-03
Date Received: 28-Jun-19 09:07
% Solids: 98.4

Column: BEH C18

Analyte	CAS Number	Conc. (ug/kg)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFHxA	307-24-4	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFHpA	375-85-9	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFHxS	355-46-4	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFOA	335-67-1	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFNA	375-95-1	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFOS	1763-23-1	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFDA	335-76-2	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
MeFOSAA	2355-31-9	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
EtFOSAA	2991-50-6	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFUnA	2058-94-8	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFDoA	307-55-1	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFTrDA	72629-94-8	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
PFTeDA	376-06-7	ND	0.834	0.987	1.97	U	B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.8	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C2-PFHxA	IS	84.6	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C4-PFHpA	IS	89.1	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C3-PFHxS	IS	91.8	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C2-PFOA	IS	79.6	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C5-PFNA	IS	71.4	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C8-PFOS	IS	84.2	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C2-PFDA	IS	62.3	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
d3-MeFOSAA	IS	56.8	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
d5-EtFOSAA	IS	59.4	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C2-PFUnA	IS	55.3	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C2-PFDoA	IS	54.4	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1
13C2-PFTeDA	IS	66.7	50 - 150		B9G0116	10-Jul-19	1.03 g	12-Jul-19 22:06	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SAOA-B11-SO-1-1.5

VAL - PFAS

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Soil
Date Collected: 27-Jun-19 08:25

Laboratory Data

Lab Sample: 1901857-07
Date Received: 28-Jun-19 09:07
% Solids: 99.7

Column: BEH C18

Analyte	CAS Number	Conc. (ug/kg)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFHxA	307-24-4	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFHpA	375-85-9	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFHxS	355-46-4	1.41	0.847	1.00	2.01	J	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFOA	335-67-1	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFNA	375-95-1	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFOS	1763-23-1	6.92	0.847	1.00	2.01		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFDA	335-76-2	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
MeFOSAA	2355-31-9	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
EtFOSAA	2991-50-6	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFUnA	2058-94-8	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFDoA	307-55-1	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFTrDA	72629-94-8	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
PFTeDA	376-06-7	ND	0.847	1.00	2.01	U	B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	92.7	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C2-PFHxA	IS	91.6	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C4-PFHpA	IS	93.0	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C3-PFHxS	IS	87.1	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C2-PFOA	IS	88.1	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C5-PFNA	IS	76.7	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C8-PFOS	IS	88.6	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C2-PFDA	IS	63.9	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
d3-MeFOSAA	IS	70.0	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
d5-EtFOSAA	IS	66.4	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C2-PFUnA	IS	70.7	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C2-PFDoA	IS	69.1	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1
13C2-PFTeDA	IS	72.2	50 - 150		B9G0116	10-Jul-19	1.00 g	12-Jul-19 22:17	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SAOA-B11-SO-20-20.5

VAL - PFAS

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Soil
Date Collected: 27-Jun-19 09:25

Laboratory Data

Lab Sample: 1901857-08
Date Received: 28-Jun-19 09:07
% Solids: 98.2

Column: BEH C18

Analyte	CAS Number	Conc. (ug/kg)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFHxA	307-24-4	4.55	0.819	0.970	1.94		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFHpA	375-85-9	2.05	0.819	0.970	1.94		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFHxS	355-46-4	9.60	0.819	0.970	1.94		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFOA	335-67-1	3.08	0.819	0.970	1.94		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFNA	375-95-1	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFOS	1763-23-1	2.80	0.819	0.970	1.94		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFDA	335-76-2	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
MeFOSAA	2355-31-9	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
EtFOSAA	2991-50-6	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFUnA	2058-94-8	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFDoA	307-55-1	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFTrDA	72629-94-8	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
PFTeDA	376-06-7	ND	0.819	0.970	1.94	U	B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.0	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C2-PFHxA	IS	90.9	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C4-PFHpA	IS	93.1	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C3-PFHxS	IS	96.6	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C2-PFOA	IS	84.3	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C5-PFNA	IS	74.5	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C8-PFOS	IS	78.4	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C2-PFDA	IS	61.4	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
d3-MeFOSAA	IS	64.7	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
d5-EtFOSAA	IS	58.7	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C2-PFUnA	IS	56.8	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C2-PFDoA	IS	59.1	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1
13C2-PFTeDA	IS	74.2	50 - 150		B9G0116	10-Jul-19	1.05 g	12-Jul-19 22:28	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SAOA-B08-SO-1-1.5

VAL - PFAS

Client Data

Name: Tetra Tech EC, Inc.
Project: 4663.3803
Location: YUMA, AZ

Matrix: Soil
Date Collected: 27-Jun-19 14:40

Laboratory Data

Lab Sample: 1901857-10
Date Received: 28-Jun-19 09:07
% Solids: 98.4

Column: BEH C18

Analyte	CAS Number	Conc. (ug/kg)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.810	0.958	1.92	U	B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFHxA	307-24-4	9.94	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFHpA	375-85-9	3.52	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFHxS	355-46-4	0.955	0.810	0.958	1.92	J, Q	B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFOA	335-67-1	10.9	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFNA	375-95-1	6.22	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFOS	1763-23-1	19.9	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFDA	335-76-2	7.29	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
MeFOSAA	2355-31-9	ND	0.810	0.958	1.92	U	B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
EtFOSAA	2991-50-6	ND	0.810	0.958	1.92	U	B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFUnA	2058-94-8	1.97	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFDoA	307-55-1	1.94	0.810	0.958	1.92		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFTrDA	72629-94-8	ND	0.810	0.958	1.92	U	B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
PFTeDA	376-06-7	ND	0.810	0.958	1.92	U	B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	99.5	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C2-PFHxA	IS	89.4	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C4-PFHpA	IS	95.3	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C3-PFHxS	IS	94.8	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C2-PFOA	IS	86.9	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C5-PFNA	IS	78.6	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C8-PFOS	IS	83.3	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C2-PFDA	IS	69.0	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
d3-MeFOSAA	IS	59.5	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
d5-EtFOSAA	IS	63.4	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C2-PFUnA	IS	63.6	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C2-PFDoA	IS	69.1	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1
13C2-PFTeDA	IS	69.6	50 - 150		B9G0116	10-Jul-19	1.06 g	12-Jul-19 22:38	1

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901857 Temp: 0.1 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: 4663.3803 PO#: 1164824 Sampler: McKinstry (name)

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

Invoice to: Name: Accts Payable | Company: Tetra Tech EC, Inc. | Address: 1230 Columbia St. Suite 750 | City: San Diego | State: CA | Ph#: 619-234-8696 | Fax#:

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Jeremy McKinstry	6/27/19	1645	FEDEX	6/27/19	1645
Fed EX	06/28/19	0907	Ashley Mason	06/28/19	0907

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

ATTN: SAMPLE RECEIVING

Method of Shipment: FED EX

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s): Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 26	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
SAOA-B05-GW	6/26/19	0840	YUMA, AZ	2	P	AQ			X						
SAOA-B09-SO-1-1.5	6/26/19	1055	Yuma, AZ	1	P	SO			X						
SAOA-B09-SO-20-20.5	6/26/19	1140	Yuma, AZ	1	P	SO			X						
SAOA-B09-GW	6/26/19	1515	Yuma, AZ	2	P	AQ			X						
FRB-06262019	6/26/19	1735	Yuma, AZ	2	P	AQ			X						
EB-06262019	6/26/19	1745	Yuma, AZ	2	P	AQ			X						
SAOA-B11-SO-1-1.5	6/27/19	0825	Yuma, AZ	1	P	SO			X						
SAOA-B11-SO-20-20.5	6/27/19	0925	Yuma, AZ	1	P	SO			X						
SAOA-B11-GW	6/27/19	1105	Yuma, AZ	2	P	AQ			X						
~~SAOA-B11-GW-D~~	~~6/27/19~~	~~1110~~	~~Yuma, AZ~~	~~2~~	~~P~~	~~AQ~~			~~X~~		JM 6/27/19				

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Lisa Bienkowski
Company: Tetra Tech EC, Inc.
Address: 17885 Von Karman Avenue, Suite 500
City: Irvine State: CA Zip: 92614
Phone: 949-809-5028 Fax:
Email: lisa.bienkowski@tetratech.com

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

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

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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901857 Temp: 0.1 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: 4663.3803 PO#: 1164824 Sampler: McKinstry (name)

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

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Accts Payable	Tetra Tech EC, Inc.	1230 Columbia St. Suite 750	San Diego	CA	619-234-8696	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Jeremy McKinstry	6/27/19	1645	FEDEX	6/27/19	1645
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
FedEx	06/28/19	0907	Ashley Mason	06/28/19	0907

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

ATTN: SAMPLE RECEIVING

Method of Shipment: FED EX

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 26	Other: Please List Below	EPA Method 537(DW only): PFOA/PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
SAOA-B08-S0-1-1.5	6/27/19	1440	YUMA, AZ	1	P	SO			X						
EB-06272019	6/27/19	1500	Yuma, AZ	2	P	AQ			X						
FRB-06272019	6/27/19	1505	Yuma, AZ	2	P	AQ			X						
					P										
					P										
					P										

NFA 6/27/19

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Lisa Bienkowski
Company: Tetra Tech EC, Inc.
Address: 17885 Von Karman Avenue, Suite 500
City: Irvine State: CA Zip: 92614
Phone: 949-809-5028 Fax:
Email: lisa.bienkowski@tetratech.com

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

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

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

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1901857 TAT 14 days

Samples Arrival:	**Date/Time** 6/28/19 0907	**Initials:** aji	**Location:** WR-2 **Shelf/Rack:** N/A
Logged In:	**Date/Time** 06/29/19 1228	**Initials:** JBB	**Location:** R13 / WR-2 **Shelf/Rack:** 4Z (JBB 6/29/19) / B5

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

Temp °C: 0.1	(uncorrected)	**Probe used: Y / (N)**	**Thermometer ID:** IR-3
Temp °C: 0.1	(corrected)		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 7881 6187 1945	✓		
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 Other	Yes	No	(NA)

Shipping Container	(Vista)	Client	(Retain)	Return	Dispose

Comments:


ORIGIN ID:YUMA (619) 200-6897
TETRIA TECH
JEREMY MCKINSTRY
1230 COLUMBIA ST STE 750
106.4663.3803.1400.0100
SAN DIEGO, CA 92101
UNITED STATES US

SHIP DATE: 27JUN19
ACTWGT: 40.90 LB
CAD: 006995179/SSFE2002
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO VISTA ANALYTICAL LABRATORY
ATTN SAMPLE RECVING
1104 WINDFIELD WAY

EL DORADO HILLS CA 95762
(916) 673-1520

INV:
PO:
REF:
DEPT:

FedEx Express

TRK# 0201 7881 6187 1945

FRI - 28 JUN 10:30A
PRIORITY OVERNIGHT

WD MHRA

95762
CA-US SMF

Correspondence

Martha Maier

From: Jade White-Dobbs
Sent: Tuesday, July 2, 2019 9:46 AM
To: Bienkowski, Lisa
Cc: Martha Maier
Subject: 1901857 / 4663.3803 Acknowledgment Letter
Attachments: WO# 1901857_Acklet.pdf

Ms. Bienkowski,

Attached is the sample acknowledgement letter for workorder 1901857. These samples will be analyzed for the list of 14 analytes using PFAS Isotope Dilution Method. Please contact us if you would like any changes.

Thank you!

Jade White

Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
Phone: (916) 673-1520
www.vista-analytical.com

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We value your feedback. Please click the following link to provide us with information about your experience with Vista: http://www.vista-analytical.com/documents/CustomerSatisfactionSurvey_000.pdf

Please consider the environment before printing this e-mail.

Jade White-Dobbs

From: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Sent: Wednesday, August 21, 2019 12:57 PM
To: Jade White-Dobbs; projectmanagement@vista-analytical.com
Subject: PLEASE READ: Tetra Tech - Yuma PFAS
Attachments: ST190710M3-13.pdf; ST190710M3-14.pdf; ST190702M2-3.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Jade,

Before you submit me these revised Level IVs to include that info, could you also take a look at each of the case narratives for all 8 SDGs for this project (see SDG list below) and see if they are correct as follows:

- Example on 1901705, the case narrative under PFAS Isotope Dilution Method states that OPR is acceptable within limits. But on page 23 of 1025, the OPR clearly is out for PFTrDA. I saw this in other packages as well for the water and soil analysis whether you reference OPR or LCS/LCSD. So please have someone carefully check these case narratives for each of the 8 SDGs to make sure they contain accurate information for OPR or LCS/LCSD being out. If any of those case narratives need revising please do so and THEN post all packages that need revising of case narrative or including attached.

Please email me when you know which SDGs will have revised Level IV reports so I know what to expect. If you can complete by COB tomorrow with sending me all the revised Level IVs, that would be great.

SDGs
1901705
1901766
1901857
1901920
1901922
1902014
1902097
1902189

Regards,
Lisa Bienkowski
Program Chemist
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Office: 949-809-5028
Cell: 949-923-7842

From: Jade White-Dobbs <jdobbs@vista-analytical.com>
Sent: Wednesday, August 21, 2019 9:38 AM
To: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>; projectmanagement@vista-analytical.com
Subject: RE: Tetra Tech - Yuma PFAS

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Lisa,

Understood, we will get these out to you this afternoon – I will be in touch if anything changes.

Best,

Jade White
Project Management

Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
Phone: (916) 673-1520
www.vista-analytical.com

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From: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Sent: Wednesday, August 21, 2019 8:30 AM
To: projectmanagement@vista-analytical.com
Subject: FW: Tetra Tech - Yuma PFAS

Vista,

I need to get a revised Level IV report for this per email below and attached. Please post today.

Regards,
Lisa Bienkowski
Program Chemist
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Office: 949-809-5028
Cell: 949-923-7842

From: Christina Rink <crink@lab-data.com>
Sent: Monday, August 19, 2019 1:05 PM

To: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Cc: Martha Maier <mmaier@vista-analytical.com>; projectmanagement@vista-analytical.com; Anne Wilhoit <awilhoit@vista-analytical.com>; Brianna Davis <bdavis@vista-analytical.com>
Subject: RE: Tetra Tech - Yuma PFAS

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Hi all,
The revision is complete. Can you please send Lisa a revised data package with the correct ICALS?

Thanks,
Christina

Christina Rink-Ashdown
Inorganic Chemist/Project Manager

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From: Bienkowski, Lisa [mailto:Lisa.Bienkowski@tetratech.com]
Sent: Monday, August 19, 2019 9:41 AM
To: Christina Rink
Cc: Martha Maier; projectmanagement@vista-analytical.com; Anne Wilhoit; Brianna Davis
Subject: RE: Tetra Tech - Yuma PFAS

Christina,

When you respond end of today if Vista has sent everything you need, please also indicate if Vista should revise the Level IV data packages for me to include the attached.

Regards,
Lisa Bienkowski
Program Chemist
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Office: 949-809-5028
Cell: 949-923-7842

From: Christina Rink <crink@lab-data.com>
Sent: Monday, August 19, 2019 8:45 AM
To: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Cc: Martha Maier <mmaier@vista-analytical.com>; projectmanagement@vista-analytical.com; Anne Wilhoit <awilhoit@vista-analytical.com>; Brianna Davis <bdavis@vista-analytical.com>
Subject: RE: Tetra Tech - Yuma PFAS

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I'll have the validator review this morning and I'll get back to everyone with a response by the end of the day.

Thanks,

Christina

Christina Rink-Ashdown
Inorganic Chemist/Project Manager

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From: Bienkowski, Lisa [mailto:Lisa.Bienkowski@tetratech.com]
Sent: Monday, August 19, 2019 8:43 AM
To: Christina Rink
Cc: Martha Maier; projectmanagement@vista-analytical.com; Anne Wilhoit; Brianna Davis
Subject: RE: Tetra Tech - Yuma PFAS

Christina,

Please let Brianna know if this covers everything for your validation purposes.

Regards,
Lisa Bienkowski
Program Chemist
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Office: 949-809-5028
Cell: 949-923-7842

From: Brianna Davis <bdavis@vista-analytical.com>
Sent: Monday, August 19, 2019 8:41 AM
To: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Cc: Martha Maier <mmaier@vista-analytical.com>; projectmanagement@vista-analytical.com; Anne Wilhoit <awilhoit@vista-analytical.com>; crink@lab-data.com
Subject: RE: Tetra Tech - Yuma PFAS

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Hi Lisa,

2. We do not report the ICV if the ISC was used from within a curve. The client is typically provided with the CCAL and the CRV info that was used for the samples. The ICV is located towards the end of the CCal, It is scanned in with the curve so it is not saved as a separate file.

3. You are correct, a note was not added that “CRV not used” from the 190710M3 run. This was corrected and is attached to my previous email. The sample files have been verified that the CRV from 190710M2 was used.

For your other concerns, the run long is noted with “CRV not used”, therefore the ICAL is not reflected on the run log. The correct ICAL is included in the reports.

Please let us know if you have anymore questions, thank you.

Kind Regards,

Brianna Davis
Quality Assurance Manager

Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
Phone: (916) 673-1520
www.vista-analytical.com

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From: Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Sent: Friday, August 16, 2019 10:42 AM
To: Brianna Davis <bdavis@vista-analytical.com>; crink@lab-data.com
Cc: projectmanagement@vista-analytical.com; Anne Wilhoit <awilhoit@vista-analytical.com>
Subject: RE: Tetra Tech - Yuma PFAS

Thanks Brianna.

LDC also had the following questions from another email. Not sure if you are working on, so wanted to put here again so you can respond:

Lab: Vista
PFAS (537M) = ICAL dates and file IDs are a bit confusing.

SDG# 1901705

1. ICAL and ICV summaries and raw data provided (190701M1-CRV) do not match the ICAL indicated on the run log on page 256 of 1025. Please provide the correct ICAL and ICV.

SDG# 1901766

2. ICAL and ICV summaries and raw data provided (190701M1-CRV) do not match the ICAL indicated on the run log on page 222 of 965. Please provide the correct ICAL and ICV.
3. ICAL and ICV summaries and raw data provided (190710M2-CRV) do not match the ICAL indicated on the run log on page 269 of 965. Please provide the correct ICAL and ICV.

SDG# 1901857

4. ICAL file IDs have M2 (190707M2-CRV) but the file IDs end in M3 for results in this SDG. Please confirm the correct ICAL was submitted.

SDG# 1901920, 1901922

1. ICAL file IDs have M2 (190710M2-CRV) but the file IDs end in M3 for results in this SDG. Please confirm the correct ICAL was submitted.

Regards,
Lisa Bienkowski
Program Chemist
Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Office: 949-809-5028
Cell: 949-923-7842

From: Brianna Davis <bdavis@vista-analytical.com>
Sent: Friday, August 16, 2019 10:39 AM

To: crink@lab-data.com; Bienkowski, Lisa <Lisa.Bienkowski@tetratech.com>
Cc: projectmanagement@vista-analytical.com; Anne Wilhoit <awilhoit@vista-analytical.com>
Subject: RE: Tetra Tech - Yuma PFAS

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Hi Christina,

The vendor used for second source for the 537M ICV has some concentrations that are not exactly 10, please see below;

The actual conc are:
PFOS 9.24
PFHxS 9.12
PFHpS 9.52
PFBS 8.84
8:2 FTS 9.6
6:2 FTS 9.52
PFDS 9.64

I've attached the requested ICV files, please let us know if you have any further questions.

Kind Regards,
Brianna Davis
Quality Assurance Manager

Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
Phone: (916) 673-1520
www.vista-analytical.com

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From: Christina Rink <crink@lab-data.com>
Sent: Wednesday, August 14, 2019 3:17 PM
To: Jade White-Dobbs <jdobbs@vista-analytical.com>
Cc: 'Bienkowski, Lisa' <Lisa.Bienkowski@tetratech.com>
Subject: Tetra Tech - Yuma PFAS

Hi Jade,
Please see the validator's questions below.

PFAS (537M)
SDG#1901857, 1901705, 1901766, 1901920, 1901922

1. Could not match the %Recoveries reported for ICVs for PFOS, PFBS and PFHxS using 10ng/L as the actual concentration of the standard. Please verify and provide concentrations of the standards.

SDG# 1901705

2. Missing ICV file 190702M2_13 summary and raw data. Please provide.

SDG# 1901766

3. Missing ICV files 190702M2_13 and 190710M3_14 summaries and raw data. Please provide.

Thanks,
Christina

Christina Rink-Ashdown
Inorganic Chemist/Project Manager
Laboratory Data Consultants, Inc.
Data Validation, ADR, Custom Software, and Database Management
Main Office:
2701 Loker Ave. West Suite 220
Carlsbad, CA 92010
ph. 760-827-1100, extension 161
LDC hours M-Th 7am-5pm, F 7am-2pm
My Schedule: M-Th 7am-3:30pm, F 7am-2pm

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EXTRACTION INFORMATION

PRIORITY

Process Sheet

Workorder: 1901857

Prep Expiration: 2019-07-10

Client: Tetra Tech EC, Inc.

Workorder Due: 15-Jul-19 00:00

TAT: 17

Method: **537M PFAS DOD (LOQ as mRL)**

Matrix: **Aqueous**

Prep Batch: B9G0050

Prep Data Entered: HR 07/07/19 (Date and Initials)

Version: 537 (14 Analyte) - DoD Limits

DoD: DoD QSM 5.1

Initial Sequence: S9G0013

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1901857-01	A	☑	☑	SAOA-B05-GW		WR-2 B-5	HDPE Bottle, 125 mL
1901857-04		☑	☑	SAOA-B09-GW		WR-2 B-5	HDPE Bottle, 125 mL
1901857-05		☑	☑	FRB-06262019		WR-2 B-5	HDPE Bottle, 125 mL
1901857-06		☑	☑	EB-06262019		WR-2 B-5	HDPE Bottle, 125 mL
1901857-09		☑	☑	SAOA-B11-GW		WR-2 B-5	HDPE Bottle, 125 mL
1901857-11		☑	☑	EB-06272019		WR-2 B-5	HDPE Bottle, 125 mL
1901857-12		☑	☑	FRB-06272019		WR-2 B-5	HDPE Bottle, 125 mL

WO Comments: **Internal COC**

Pre-Prep Check Out: SAE 07/03/19

Pre-Prep Check In: SAE 07/03/19

Prep Check Out: HR 07/04/19

Prep Check In: N/A

Prep Reconciled Initals/Date: SAE 07/03/19

Spike Reconciled Initals/Date: HR 07/04/19

VialBoxID: Pickle Pick

Matrix: Aqueous

Method: 537M PFAS DOD (LOQ as mRL)

PREPARATION BENCH SHEET

B9G0050

Chemist: HR

Prep Date: 07/04/19

Prep Time: 07:28

Prepared using: ☐ Sonication Shaker ☐ SPE Extraction ☒ Centrifuge ID: C3

Date/Initals: SAF 07/03/19 BalanceID: HRMS-9

Cen	VISTA Sample ID	pH Before	pH After	Chlorine (Cl)	Drops HCl Added	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE	ENVI-Carb	RS CHEM/WIT DATE
☒	B9G0050-BLK1	5	2	0	1	NA	NA	(0.250)	HR OPV 07/04/19	OPV 07/04/19	OPV 07/04/19	OPV MJ 07/04/19
☒	B9G0050-BS1	5	2	0	1	↓	↓	(0.250)	↓	↓	↓	↓
☒	B9G0050-BSD1	5	2	0	1	↓	↓	(0.250)	↓	↓	↓	↓
☒	1901857-01 (A)(3)	8	2	0	1	220.62	26.83	0.19379	↓	↓	↓	↓
☒	1901857-04 (3)	8	2	0	2	144.38	26.84	0.11754	↓	↓	↓	↓
☐	1901857-05	4	2	0	2	140.90	26.71	0.12019	↓	↓	↓	↓
☐	1901857-06	5	2	0	2	144.88	26.74	0.11814	↓	↓	↓	↓
☒	1901857-09 (3)(6)	7	2	0	2	150.44	26.78	0.123606	↓	↓	↓	↓
☐	1901857-11	5	2	0	2	144.24	26.87	0.11737	↓	↓	↓	↓
☐	1901857-12	5	2	0	2	144.43	26.72	0.11771	↓	↓	↓	↓
☐	1901859-05	5	2	0	3	283.02	27.51	0.25551	↓	↓	↓	↓
☐	1901860-11	5	2	0	3	260.05	25.90	0.23415	↓	↓	↓	↓

IS: 19E2201, 10mL, (V5)

IS SUP: N/A

NS: 19E2204, 10mL, (V3)

NS SUP: N/A

RS: 19E2202, 10mL, (V5) OPV 07/04/19

SPE Chem: Strata-X AW 33µm 200mg/6mL

SPE Lot#: S18-006878

ENVI-Carb Lot#: 1115550

Ele SOLV: MeOH/0.5%NH4OH in MeOH

Final Volume(s) 1 mL

Notes: (A) Low volume after centrifuging. Bottle and Sample wt. 70.79 g OPV 07/04/19

(3) OPV 07/04/19

(6) OPV 07/04/19

Comments: Assume 1 g = 1 mL

Cen = Centrifuged

1 = Sample centrifuged twice
2 = Sample deeply colored after centrifuge
3 = Cartridge sorbent discolored after SPE
4 = Sample clogged cartridge, additional cartridge(s) used
5 = Sample recombined at final volume
6 = Sample took longer to SPE, required stronger vacuum
7 = Required Nitrogen line to finish SPE
8 = Required Nitrogen line to finish elution
9 = Sample arrived with low volume
10 = Trizma added to QC (5g/L)

Matrix: Aqueous

Method: 537M PFAS DOD (LOQ as mRL)

Vista Internal Chain-of-Custody

B9G0050

Vista Analytical Laboratory

	Location		L2	~~WR-2~~ *	L2	R12	L2	R12	L4		
	Reason		Prep	R9	** ~~HR~~ R4	R9	R6	R9	R8		
	Initials		SAE	SAE	~~HR~~	OPV	HR	OPV	CGH		
	Date/Time		07/03/19 13:11	07/03/19 13:42	07/04/19 06:12	07/08/19 15:14	07/08/19 05:49	07/08/19 13:32	07/08/19 1546		
Initial Storage	LabNumber	Cont									
WR-2 B-5	1901857-01	A	O	O	O	E	E	E	E		
WR-2 B-5	1901857-04	T	T	T	T	T	T	T	T		
WR-2 B-5	1901857-05										
WR-2 B-5	1901857-06										
WR-2 B-5	1901857-09										
WR-2 B-5	1901857-11										
WR-2 B-5	1901857-12										
R-13 A-2	1901859-05										
R-13 A-2	1901860-11	↓	↓	↓	↓	↓	↓	↓	↓		

Location Key:
L1 = Prep Lab 1
L2 = Prep Lab 2
L3 = HRMS Diox
L4 = Instrument
Other = _____

Reason Key:
R1 = Percent Solids
R2 = Eluate Preservation
R3 = Sub-Sample
R4 = Extraction
R6 = Concentration
R7 = Filtering
R8 = Analysis
R9 = Storage
Other = _____

Type Key:
O = Original Sample
E = Extract of Sample

* R-13 SAE 07/03/19
** HR 07/03/19

Batch: B9G0050

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1901857-01	0.19379	N/A	N/A	1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901857-04	0.11754			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901857-05	0.12019			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901857-06	0.11814			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901857-09	0.12366			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901857-11	0.11737			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901857-12	0.11771			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901859-05	0.25551			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
1901860-11	0.23415			1000	04-Jul-19 07:28	HNR			Aqueous	537M PFAS DOD (LOQ as
B9G0050-BLK1	0.25			1000	04-Jul-19 07:28	HNR				QC
B9G0050-BS1	0.25			1000	04-Jul-19 07:28	HNR	19E2204	10		QC
B9G0050-BSD1	0.25			1000	04-Jul-19 07:28	HNR	19E2204	10		QC

All bolded data on report verified against written benchsheet by (initial/date) HP 07/07/19

PRIORITY

Process Sheet

Workorder: 1901857

Prep Expiration: 2019-08-25

Client: Tetra Tech EC, Inc.

Workorder Due: 15-Jul-19 00:00

TAT: 17

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

Matrix: **Solid**

Prep Batch: B9G0116

Also run: **Percent Solids**

Version: 537 (14 Analyte) - DoD Limits

DoD: DoD QSM 5.1

Prep Data Entered: AE 07/12/19
Date and Initials

Initial Sequence: S9G0029

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1901857-02	A	☑	☑	SAOA-B09-SO-1-1.5		WR-2 B-5	HDPE Jar, 6 oz
1901857-03		☑	☑	SAOA-B09-SO-20-20.5		WR-2 B-5	HDPE Jar, 6 oz
1901857-07		☑	☑	SAOA-B11-SO-1-1.5		WR-2 B-5	HDPE Jar, 6 oz
1901857-08		☑	☑	SAOA-B11-SO-20-20.5		WR-2 B-5	HDPE Jar, 6 oz
1901857-10		☑	☑	SAOA-B08-SO-1-1.5		WR-2 B-5	HDPE Jar, 6 oz

WO Comments: **Internal COC**

Pre-Prep Check Out: SAE 07/03/19

Pre-Prep Check In: SAE 07/03/19

Prep Check Out: HR 07/10/19

Prep Check In: N/A

Prep Reconciled Initals/Date: SAE 07/03/19

Spike Reconciled Initals/Date: HR 07/10/19

VialBoxID: Smile

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

PREPARATION BENCH SHEET

B9G0116

Chemist: AE

Prep Date: 07/10/19

Prep Time: 15:58

Prepared using: ☒ Sonication ☒ Shaker ☒ SPE Extraction ☒ Centrifuge ID: C4

Initial/Date: HR 07/10/19

BalanceID: HRMS - 9

Cen	VISTA Sample ID	Sample Amt. (g)	IS/NS CHEM/WIT DATE	Pre-Ext	Extraction	SPE	ENVI-Carb	RS CHEM/WIT DATE
☐	B9G0116-BLK1	(1.00)	AE HR 07/10/19	AE 07/10/19	AE 07/11/19	AE 07/11/19	AE 07/11/19	AE HR 07/11/19
☐	B9G0116-BS1	(1.00)						
☐	B9G0116-MS1 ⑤ 1901920-18	1.01						
☐	B9G0116-MSD1 ⑤ 1901920-18	1.03						
☐	1901857-02	1.01						
☐	1901857-03 ⑤②③	1.03						
☐	1901857-07	1.00						
☐	1901857-08 ②	1.05						
☐	1901857-10	1.06						
☐	1901920-01 ②	1.01						
☐	1901920-07	1.03						
☐	1901920-08 ②	1.01						
☐	1901920-09 ②	1.06						
☐	1901920-10 ②	1.06						
☐	1901920-13	1.05						

IS: IAE2201, 10 µL (V4)

IS SUP: NA

NS: IAE2204, 10 µL (V3)

NS SUP: NA

RS: IAE2202, 10 µL (V4)

SPE Chem: Strata X-AW 33µm 200mg/6mL

SPE Lot#: 518-006831

Extraction Solvent: 1:1 MeOH:ACN

ENVI-Carb Lot#: 11155501

Ele SOLV: MeOH/0.5%NH4OH in MeOH

Final Volume(s) 1 mL

Notes:
⑤ 07/11/19 AE
② 07/11/19 AE
③ ONL 07/11/19

nts: Assume 1 g = 1 mL

1 = Sample deeply colored
2 = Cartridge sorbent discolored after SPE
3 = Sample clogged cartridge, additional cartridge(s) used
4 = Sample recombined at final volume
5 = Sample took longer to SPE, required stronger vacuum
6 = Required Nitrogen line to finish SPE
7 = Required Nitrogen line to finish elution

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

PREPARATION BENCH SHEET

B9G0116

Chemist: AE

Prep Date: 07/10/19

Prep Time: 15:58

Prepared using: ☒ Sonication ☒ Shaker ☒ SPE Extraction ☒ Centrifuge ID: C4

Initial/Date: HR 07/10/19

BalanceID: HRMS-9

Cen	VISTA Sample ID	Sample Amt. (g)	IS/NS CHEM/WIT DATE	Pre-Ext	Extraction	SPE	ENVI-Carb	RS CHEM/WIT DATE
☐	1901920-15	1.04	AE HR 07/10/19	AE 07/10/19	AE 07/11/19	AE 07/11/19	AE 07/11/19	AE HR 07/11/19
☐	1901920-18 ⑤②	1.03	↓	↓	↓	↓	↓	↓
☐	1901920-19 ②	1.02	↓	↓	↓	↓	↓	↓

IS: 19E2201, 10 mL (V4)

IS SUP: NA

NS: 19E2204, 10 mL (V3)

NS SUP: NA

RS: 19E2202, 10 mL (V4)

SPE Chem: Strata X-AW 33µm 200mg/6mL

SPE Lot#: S18-U06831

Extraction Solvent: 1:1 MeOH:ACN

ENVI-Carb Lot#: 1115501

Ele SOLV: MeOH/0.5%NH4OH in MeOH

Final Volume(s) 1 mL

Notes:
⑤ 07/11/19 AE
② 07/11/19 AE

Comments: Assume 1 g = 1 mL

1 = Sample deeply colored
2 = Cartridge sorbent discolored after SPE
3 = Sample clogged cartridge, additional cartridge(s) used
4 = Sample recombined at final volume
5 = Sample took longer to SPE, required stronger vacuum
6 = Required Nitrogen line to finish SPE
7 = Required Nitrogen line to finish elution

Matrix: Solid

Method: VAL - PFAS DoD (LOQ as RL)

Vista Internal Chain-of-Custody

B9G0116

Vista Analytical Laboratory

	Location		L2	R12	L2	R12	L2	R12	L4		
	Reason		Pre-extraction	R9	R4	R2	R6	R9	R8		
	Initials		HP	QE	QE	HR	ONL	QE	CLH		
	Date/Time		07/10/19 14:58	07/16/19 16:47	07/11/19 07:08	07/11/19 15:03	07/12/19 06:12	07/12/19 14:56	07/12/19 1753		
Initial Storage	LabNumber	Cont									
WR-2 B-5	1901857-02	A	O	E	E	E	E	E	E		
WR-2 B-5	1901857-03	T	T	T	T	T	T	T	T		
WR-2 B-5	1901857-07										
WR-2 B-5	1901857-08										
WR-2 B-5	1901857-10										
WR-2 A-5	1901920-01										
WR-2 A-5	1901920-07										
WR-2 A-5	1901920-08										
WR-2 A-5	1901920-09										
WR-2 A-5	1901920-10										
WR-2 A-5	1901920-13										
WR-2 A-5	1901920-15	↓									
WR-2 A-5	1901920-18	A,B,C									
WR-2 A-5	1901920-19	A	↓	↓	↓	↓	↓	↓	↓		

Location Key:
L1 = Prep Lab 1
L2 = Prep Lab 2
L3 = HRMS Diox
L4 = Instrument
Other = _____

Reason Key:
R1 = Percent Solids
R2 = Eluate Preservation
R3 = Sub-Sample
R4 = Extraction
R6 = Concentration
R7 = Filtering
R8 = Analysis
R9 = Storage
Other = _____

Type Key:
O = Original Sample
E = Extract of Sample

Solids estimate

Batch: B9G0041

Lab ID	Analysis	% Solids	Entered	Target weight	Weigh this much
1901857-02	Percent Solids	99.47		1.00	1.01
1901857-03	Percent Solids	98.39		1.00	1.02
1901857-07	Percent Solids	99.75		1.00	1.00
1901857-08	Percent Solids	98.21		1.00	1.02
1901857-10	Percent Solids	98.45		1.00	1.02

Percent Moisture/ Percent Solids

D2216-90 BATCH ID B9G0041

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

Analyte: **Units:** %

Dried at 110°C+/-5°C

Oven ID: *01* 02

Data Entry Verified by: (Initial and Date) SAE 07/08/19

Inst HRMS-9

Date/Time IN:	Date/Time OUT
7/3/19 12:22	7/8/19 9:00

	B	C	D	E	F	G	H	I	K	L	M	N	O	P
				Intial and Date:	SAE 07/3/19	SAE 07/08/19			SAE 07/03/19					SAE 07/03/19
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	Visual Inspection	Cl-	pH Before	pH After	Acid Added	Sample Homogenized*
	1901857-02	A	Sample	1.2800 ✓	5.0700 ✓	5.0500 ✓	3.7700	99.47	Rocky sand	NA	NA	NA	NA	x
	1901857-03	A	Sample	1.3000 ✓	5.0300 ✓	4.9700 ✓	3.6700	98.39	fine sand	NA	NA	NA	NA	x
	1901857-07	A	Sample	1.3100 ✓	5.2400 ✓	5.2300 ✓	3.9200	99.75	Rocky sand	NA	NA	NA	NA	x
	1901857-08	A	Sample	1.3200 ✓	5.2200 ✓	5.1500 ✓	3.8300	98.21	fine sand	NA	NA	NA	NA	x
	1901857-10	A	Sample	1.3000 ✓	5.1700 ✓	5.1100 ✓	3.8100	98.45	fine sand	NA	NA	NA	NA	x

*Sample homogenized in sample container unless otherwise noted.

Percent Moisture/ Percent Solids

D2216-90 BATCH ID B9G0041

Analyst: SAE
Analyte:
Oven ID: (01) 02

Test Code: %Moist/%Solids
Units: %

Dried at 110°C+/-5°C

Data Entry Verified by:
(Initial and Date)_____

Inst HRMS-9

Date/Time IN: 07/03/19 12:22 Date/Time OUT 07/08/19 9:00

	B	C	D	E	F	G	H	I	K	L	M	N	O	P
				Intial and Date:	SAE 07/03/19	SAE 07/08/19			SAE 07/03/19					SAE 07/03/19
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	Visual Inspection	Cl-	pH Before	pH After	Acid Added	Sample Homogenized*
	1901857-02	A	Sample	1.28	5.07	5.05			Fine rocky sand					✓
	1901857-03	↓	Sample	1.30	5.03	4.97			Powder like sand					✓
	1901857-07		Sample	1.31	5.24	5.23			Fine rocky sand					✓
	1901857-08		Sample	1.32	5.22	5.15			Powder like sand					✓
	1901857-10		Sample	1.30	5.17	5.11			Fine sand					✓

SAE 07/08/19

SAE 07/08/19

*Sample homogenized in sample container unless otherwise noted.

Matrix: Solid

Method: Percent Solids

Vista Internal Chain-of-Custody

B9G0041

Vista Analytical Laboratory

	Location		L2	O - 1							
	Reason		R1	R1							
	Initials		SAE	SAE							
	Date/Time		07/03/19 11:23	07/03/19 12:22							
Initial Storage	LabNumber	Cont									
WR-2 B-5	1901857-02	A	O	O							
WR-2 B-5	1901857-03	"	"	"							
WR-2 B-5	1901857-07	"	"	"							
WR-2 B-5	1901857-08	"	"	"							
WR-2 B-5	1901857-10	"	"	"							

Location Key:
L1 = Prep Lab 1
L2 = Prep Lab 2
L3 = HRMS Diox
L4 = Instrument
Other = _____

Reason Key:
R1 = Percent Solids
R2 = Eluate Preservation
R3 = Sub-Sample
R4 = Extraction
R6 = Concentration
R7 = Filtering
R8 = Analysis
R9 = Storage
Other = _____

Type Key:
O = Original Sample
E = Extract of Sample

Batch: B9G0116

Matrix: Solid

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1901857-02	1.01	99.4723	1.0047	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901857-03	1.03	98.39141	1.0134	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901857-07	1	99.74555	0.9975	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901857-08	1.05	98.20514	1.0312	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901857-10	1.06	98.44962	1.0436	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-01	1.01	99.05437	1.0004	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-07	1.03	98.51852	1.0147	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-08	1.01	98.77451	0.9976	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-09	1.06	99.28909	1.0525	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-10	1.06	98.85584	1.0479	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-13	1.05	99.12281	1.0408	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-15	1.04	98.55421	1.0250	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-18	1.03	99.75845	1.0275	1000	10-Jul-19 15:58	AME			Soil	VAL - PFAS DoD (LOQ as
1901920-19	1.02	98.31731	1.0028	1000	10-Jul-19 15:58	AME			soil	VAL - PFAS DoD (LOQ as
B9G0116-BLK1	1			1000	10-Jul-19 15:58	AME				QC
B9G0116-BS1	1			1000	10-Jul-19 15:58	AME	19E2204	10		QC
B9G0116-MS1	1.01			1000	10-Jul-19 15:58	AME	19E2204	10		QC
B9G0116-MSD1	1.03			1000	10-Jul-19 15:58	AME	19E2204	10		QC

All bolded data on report verified against written benchsheet by (initial/date) AE 07/12/19

Printed: 7/12/2019 11:32:38AM

Sample Data – PFAS Isotope Dilution Method

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-6.qld

Last Altered: Monday, July 15, 2019 08:27:10 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:28:04 Pacific Daylight Time

Name: 190708M3_6, Date: 08-Jul-2019, Time: 16:30:39, ID: B9G0050-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		1.20e3	0.250		2.48						
2	7	PFHxA	313.0 > 269.0		6.91e3	0.250		2.98						
3	11	PFHpA	363.0 > 318.9		8.53e3	0.250		3.60						
4	13	L-PFHxS	398.9 > 79.6	9.46e-1	2.47e3	0.250		3.76	3.75	0.00479	0.2304		0.881	YES
5	80	Total PFHxS	398.9 > 79.6	9.46e-1	2.47e3	0.250		3.83		0.00479	0.2304			
6	49	13C3-PFBS	302.0 > 98.8	1.20e3	1.06e3	0.250	1.019	2.48	2.48	14.1	55.3131	110.6		
7	52	13C2-PFHxA	315.0 > 270.0	6.91e3	1.79e4	0.250	0.999	2.98	2.98	4.83	19.3400	96.7		
8	53	13C4-PFHpA	367.2 > 321.8	8.53e3	1.79e4	0.250	0.535	3.61	3.60	5.96	44.5927	89.2		
9	54	13C3-PFHxS	401.8 > 79.9	2.47e3	1.06e3	0.250	2.224	3.76	3.76	29.0	52.1783	104.4		
10	54	13C3-PFHxS	401.8 > 79.9	2.47e3	1.06e3	0.250	2.224	3.76	3.76	29.0	52.1783	104.4		
11	-1													
12	16	L-PFOA	412.8 > 368.9		1.40e4	0.250		4.13						
13	81	Total PFOA	412.8 > 368.9	0.00e0	1.40e4	0.250		4.21		0.000				
14	21	PFNA	463.0 > 418.8		1.27e4	0.250		4.57						
15	23	L-PFOS	498.9 > 79.9		2.63e3	0.250		4.66						
16	82	Total PFOS	498.9 > 79.9	0.00e0	2.63e3	0.250		4.74		0.000				
17	58	13C2-PFOA	414.9 > 369.7	1.40e4	2.11e4	0.250	0.741	4.13	4.13	8.28	44.6923	89.4		
18	58	13C2-PFOA	414.9 > 369.7	1.40e4	2.11e4	0.250	0.741	4.13	4.13	8.28	44.6923	89.4		
19	56	13C5-PFNA	468.2 > 422.9	1.27e4	1.67e4	0.250	0.996	4.57	4.57	9.48	38.0688	76.1		
20	59	13C8-PFOS	507.0 > 79.9	2.63e3	3.00e3	0.250	1.011	4.66	4.66	11.0	43.4296	86.9		
21	59	13C8-PFOS	507.0 > 79.9	2.63e3	3.00e3	0.250	1.011	4.66	4.66	11.0	43.4296	86.9		
22	-1													
23	26	PFDA	513 > 468.8		1.13e4	0.250		4.95						
24	29	L-MeFOSAA	570 > 419		2.30e3	0.250		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.30e3	0.250		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.62e4	0.250		5.28						
27	37	PFDoA	612.9 > 569.0		1.31e4	0.250		5.56						
28	60	13C2-PFDA	515.1 > 469.9	1.13e4	2.03e4	0.250	0.793	4.95	4.95	6.97	35.1607	70.3		
29	62	d3-N-MeFOSAA	573.3 > 419	2.30e3	2.21e4	0.250	0.158	5.10	5.10	1.30	32.8363	65.7		
30	62	d3-N-MeFOSAA	573.3 > 419	2.30e3	2.21e4	0.250	0.158	5.10	5.10	1.30	32.8363	65.7		
31	63	13C2-PFUdA	565 > 519.8	1.62e4	2.21e4	0.250	1.071	5.28	5.28	9.15	34.1929	68.4		
32	65	13C2-PFDoA	614.7 > 569.7	1.31e4	2.03e4	0.250	1.151	5.56	5.56	8.09	28.1214	56.2		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.57e3	0.250		5.25						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.57e3	0.250		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.31e4	0.250		5.81						

NY 7/15/2019

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-6.qld

Last Altered: Monday, July 15, 2019 08:27:10 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:28:04 Pacific Daylight Time

Name: 190708M3_6, Date: 08-Jul-2019, Time: 16:30:39, ID: B9G0050-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		6.23e3	0.250		6.04						
38	85	TDCA	498.3>106.9			0.250		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.57e3	2.21e4	0.250	0.175	5.26	5.25	1.45	33.2193	66.4		
40	64	d5-N-EtFOSAA	589.3 > 419	2.57e3	2.21e4	0.250	0.175	5.26	5.25	1.45	33.2193	66.4		
41	65	13C2-PFDoA	614.7 > 569.7	1.31e4	2.03e4	0.250	1.151	5.56	5.56	8.09	28.1214	56.2		
42	67	13C2-PFTeDA	715.1 > 669.7	6.23e3	2.21e4	0.250	0.708	6.04	6.04	3.52	19.9025	39.8		
43	59	13C8-PFOS	507.0 > 79.9	2.63e3	3.00e3	0.250	1.011	4.66	4.66	11.0	43.4296	86.9		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.79e4	1.79e4	0.250	1.000	2.98	2.98	12.5	50.0000	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.11e4	2.11e4	0.250	1.000	4.13	4.13	12.5	50.0000	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.06e3	1.06e3	0.250	1.000	3.76	3.76	12.5	50.0000	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.67e4	1.67e4	0.250	1.000	4.57	4.57	12.5	50.0000	100.0		
49	77	13C4-PFOS	503 > 79.9	3.00e3	3.00e3	0.250	1.000	4.66	4.66	12.5	50.0000	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.03e4	2.03e4	0.250	1.000	4.95	4.95	12.5	50.0000	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.21e4	2.21e4	0.250	1.000	5.28	5.28	12.5	50.0000	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

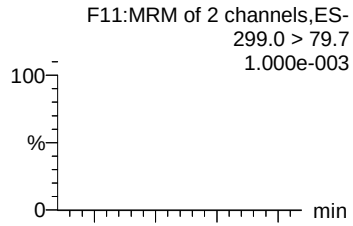
Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-6.qld

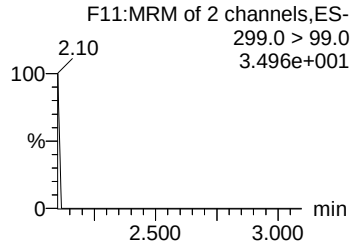
Last Altered: Monday, July 15, 2019 08:27:10 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:28:04 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070819M3.mdb 09 Jul 2019 07:35:03
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

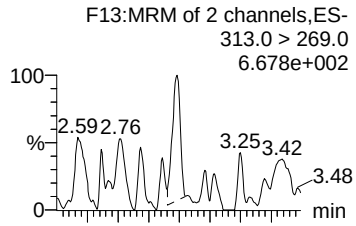
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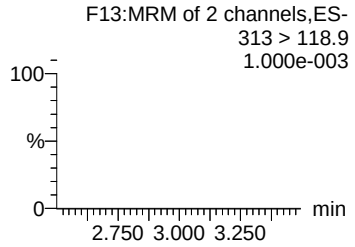
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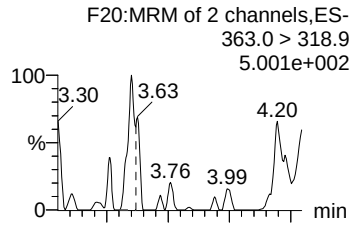


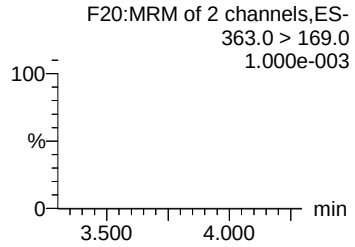
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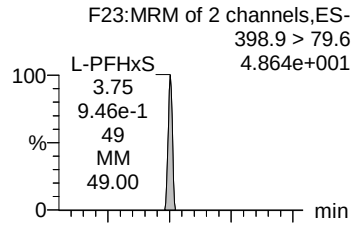


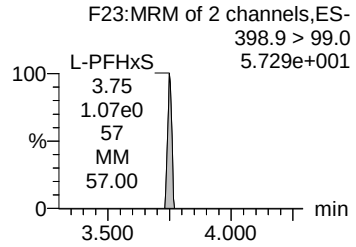
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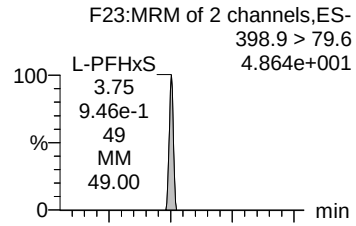


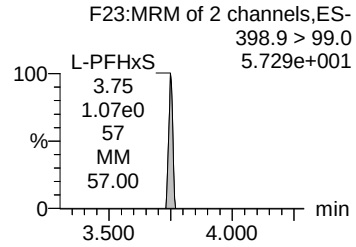
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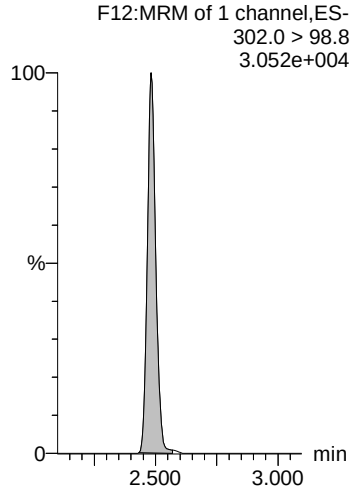


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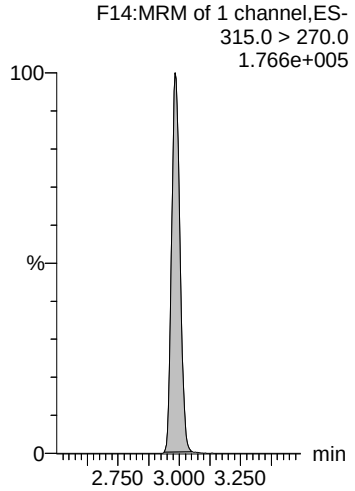




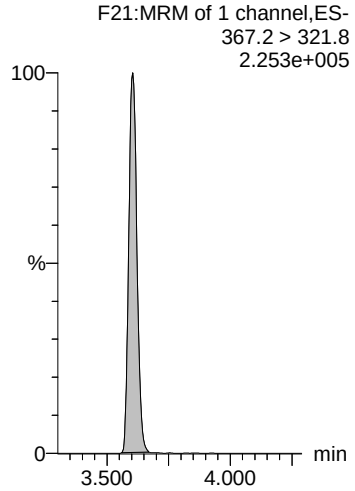
13C3-PFBS



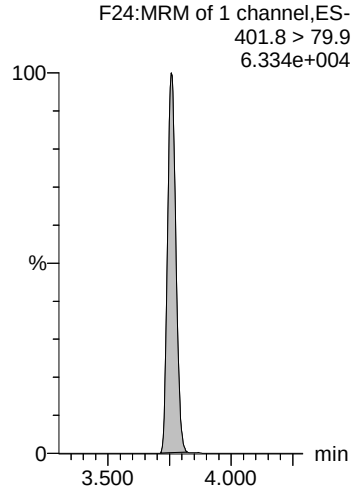
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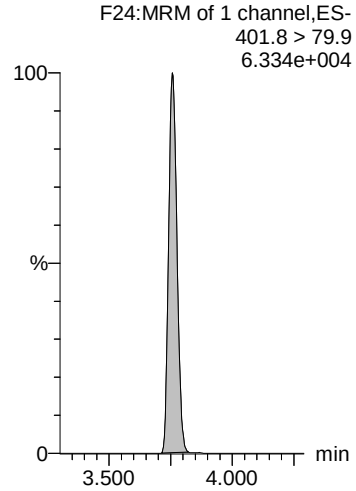
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13C3-PFHxS



13C3-PFHxS



NY 7/15/2019

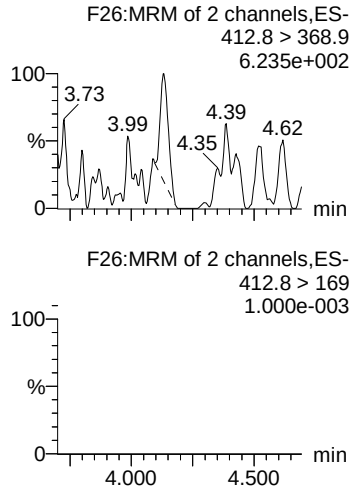
Review: AMR 7/15/2019

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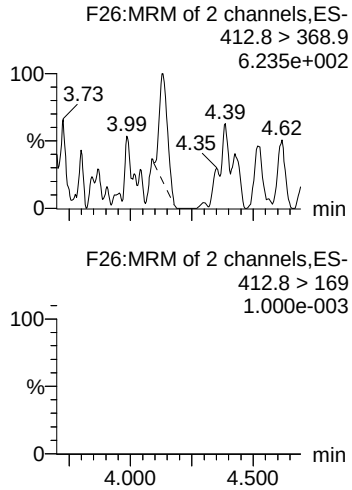
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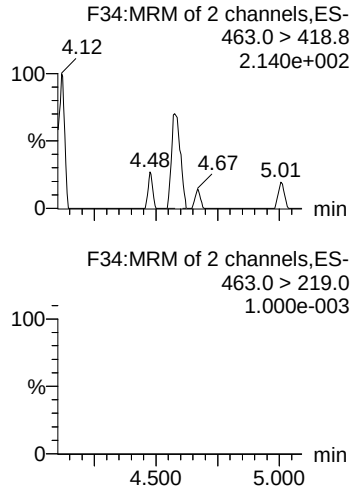
L-PFOA



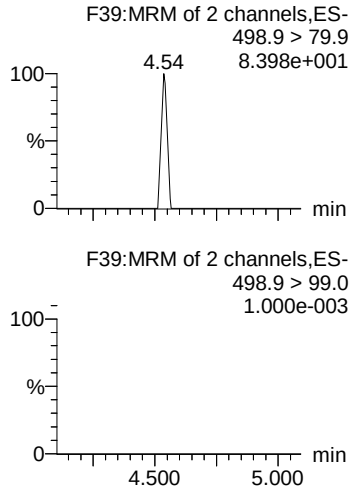
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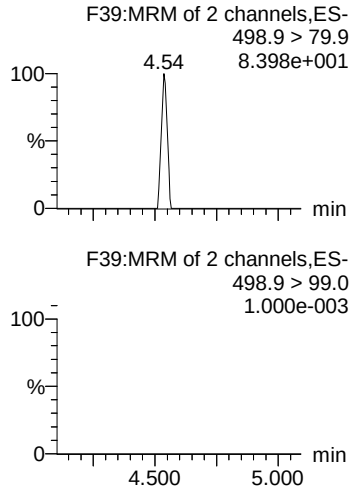
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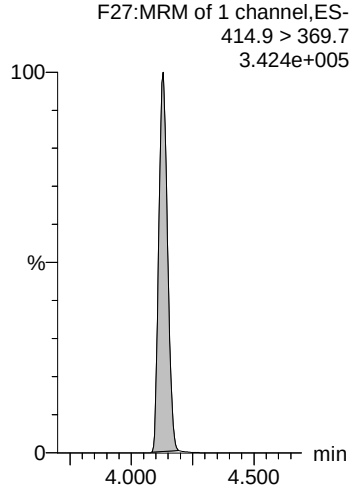
L-PFOS



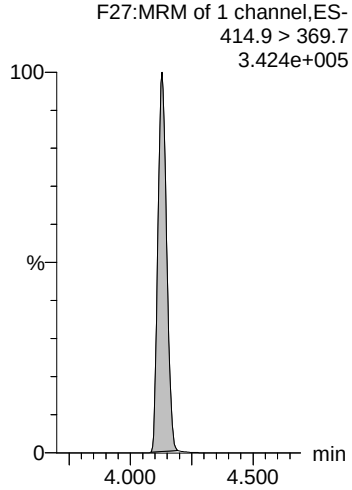
Total PFOS



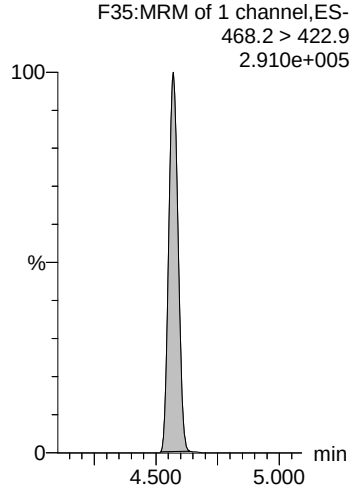
13C2-PFOA



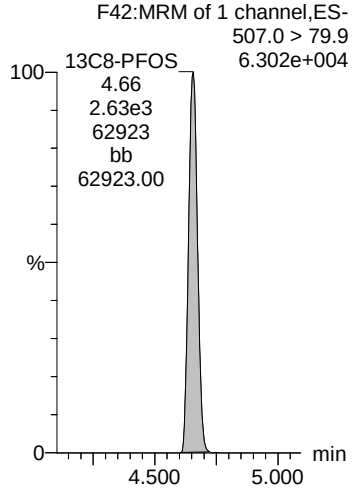
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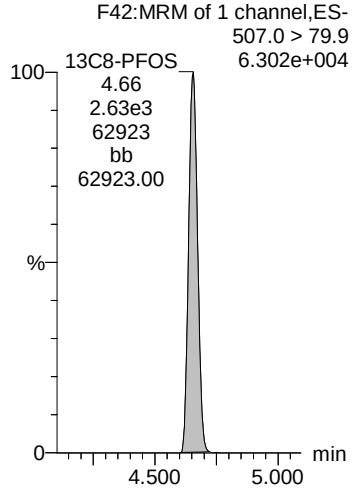
13C5-PFNA



13C8-PFOS



13C8-PFOS



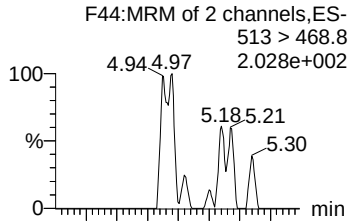
NY 7/15/2019

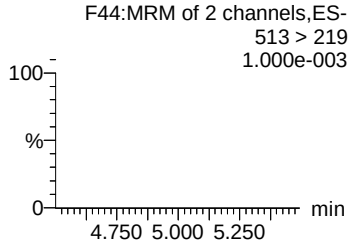
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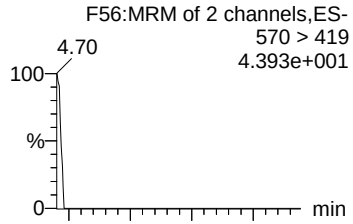
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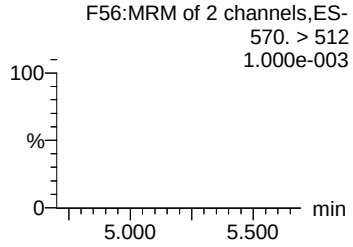
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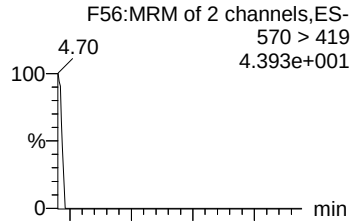


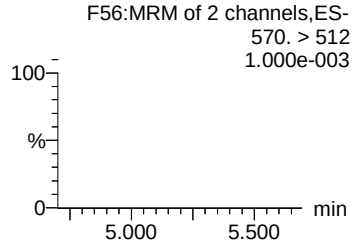
L-MeFOSAA



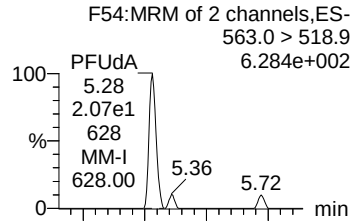


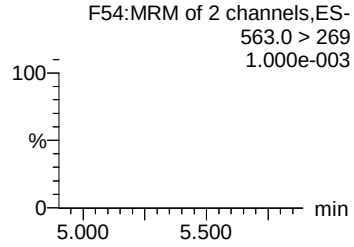
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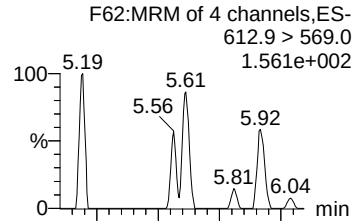


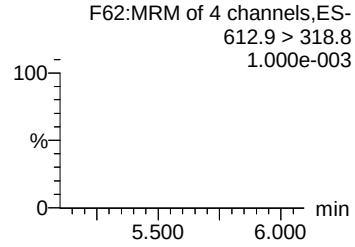
PFUdA



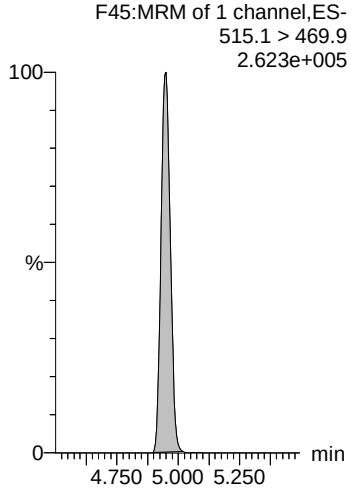


PFDoA

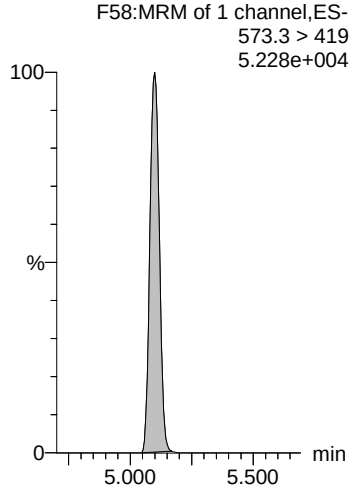




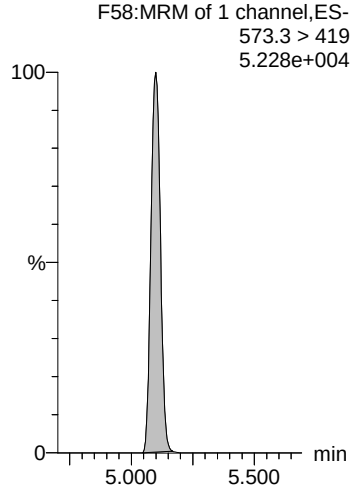
13C2-PFDA



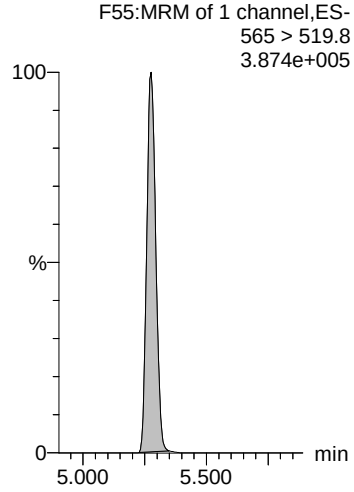
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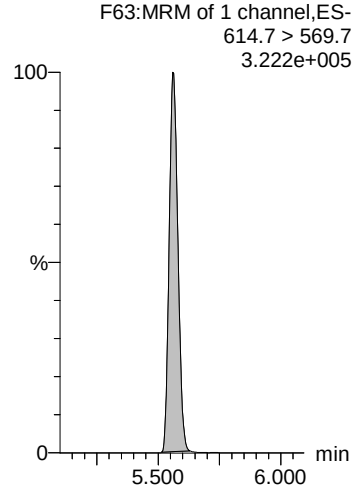
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13C2-PFUdA



13C2-PFDoA



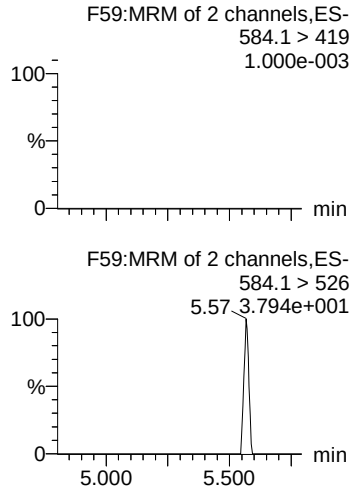
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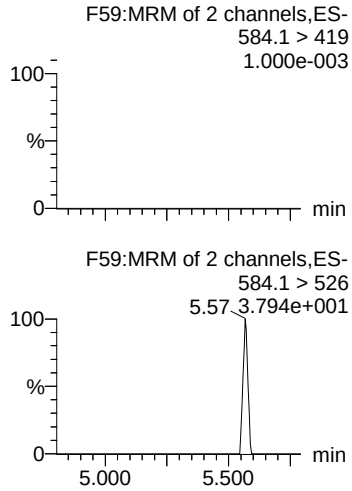
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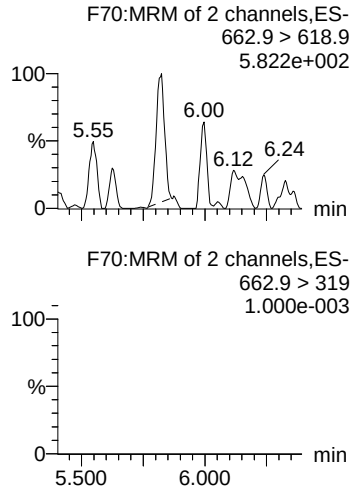
L-EtFOSAA



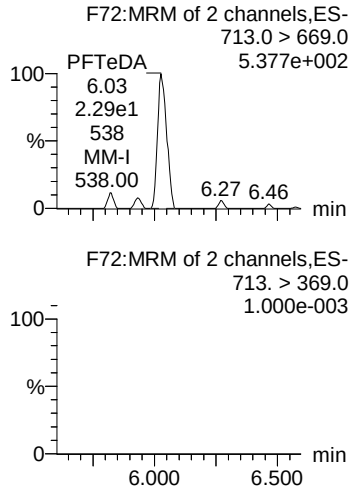
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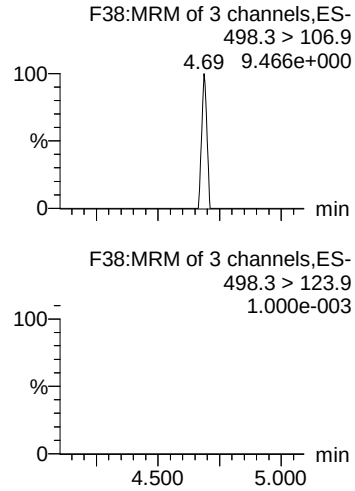
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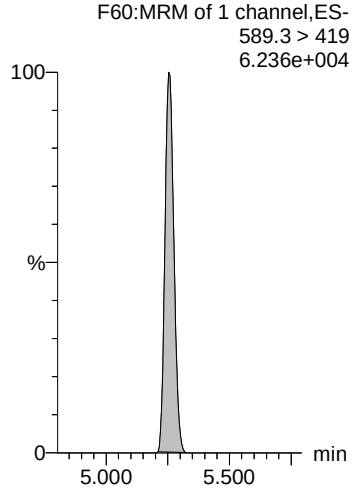
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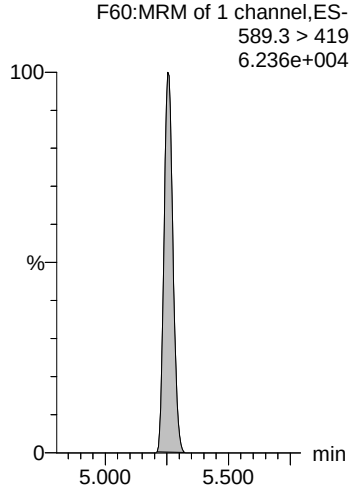
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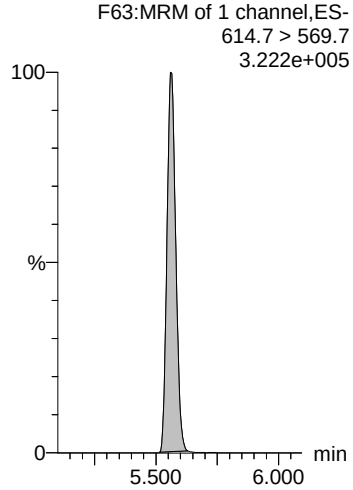
d5-N-EtFOSAA



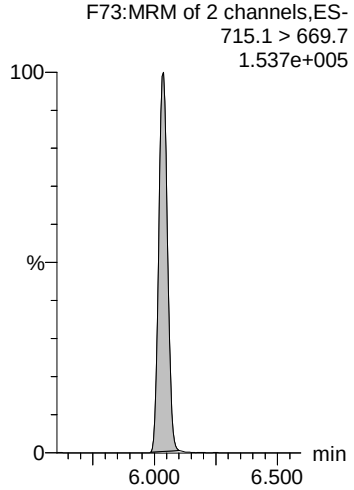
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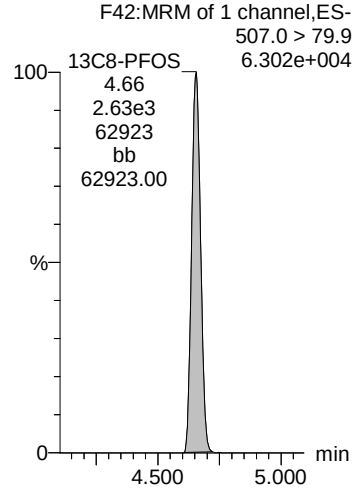
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



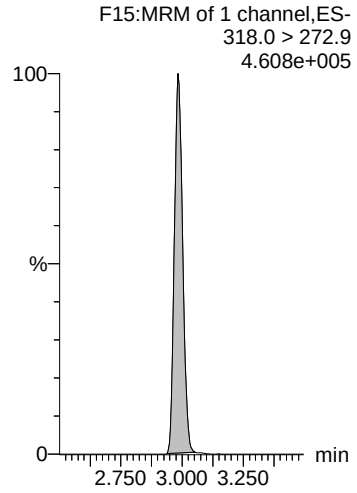
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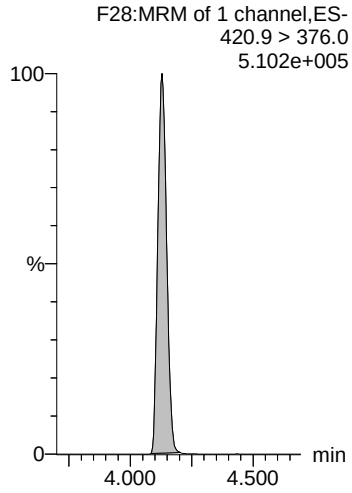
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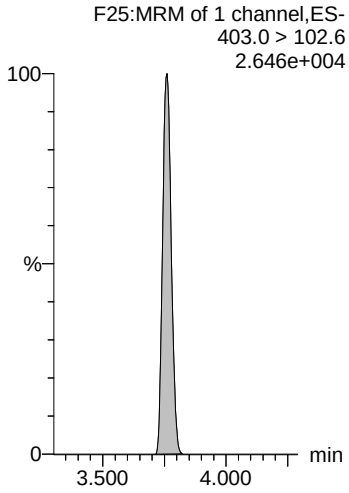
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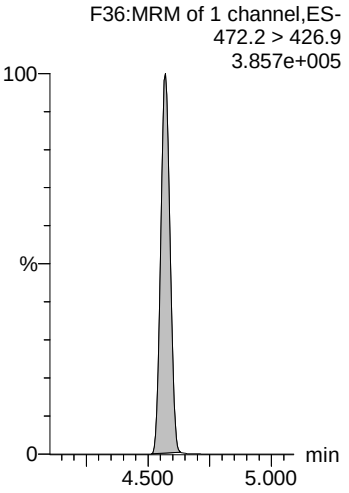
13C8-PFOA



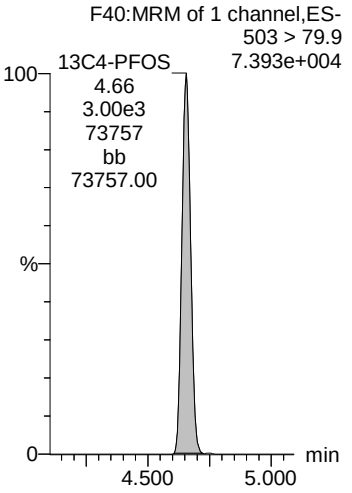
18O2-PFHxS



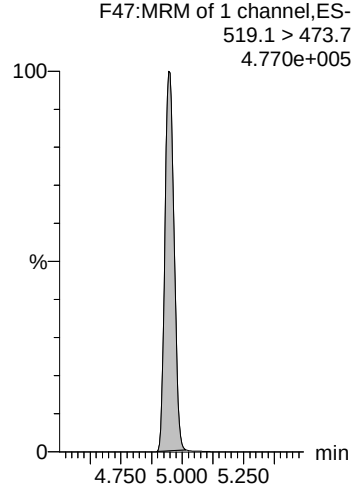
13C9-PFNA



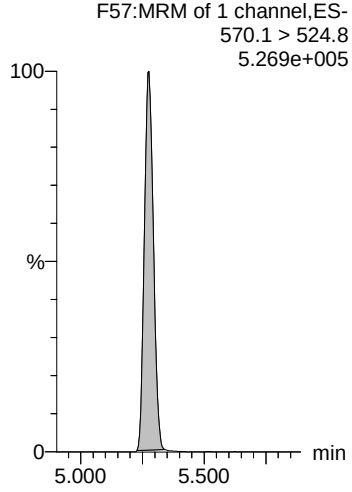
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-4.qld

Last Altered: Monday, July 15, 2019 08:02:07 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:16:39 Pacific Daylight Time

Name: 190708M3_4, Date: 08-Jul-2019, Time: 16:09:25, ID: B9G0050-BS1 OPR 0.25, Description: OPR

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	1.93e3	1.04e3	0.250		2.48	2.48	23.1	44.2603	110.7	2.645	NO
2	7	PFHxA	313.0 > 269.0	1.06e4	5.30e3	0.250		2.98	2.98	9.99	45.4802	113.7	16.502	NO
3	11	PFHpA	363.0 > 318.9	8.10e3	7.75e3	0.250		3.60	3.60	13.1	40.6203	101.6	11.848	NO
4	13	L-PFHxS	398.9 > 79.6	1.71e3	1.90e3	0.250		3.76	3.76	11.2	50.9626	127.4	2.100	NO
5	80	Total PFHxS	398.9 > 79.6	1.71e3	1.90e3	0.250		3.83		11.2	50.9626			
6	49	13C3-PFBS	302.0 > 98.8	1.04e3	9.13e2	0.250	1.019	2.48	2.48	14.3	56.0999	112.2		
7	52	13C2-PFHxA	315.0 > 270.0	5.30e3	1.44e4	0.250	0.999	2.98	2.98	4.59	18.3991	92.0		
8	53	13C4-PFHpA	367.2 > 321.8	7.75e3	1.44e4	0.250	0.535	3.61	3.60	6.71	50.2292	100.5		
9	54	13C3-PFHxS	401.8 > 79.9	1.90e3	9.13e2	0.250	2.224	3.76	3.76	26.1	46.8692	93.7		
10	54	13C3-PFHxS	401.8 > 79.9	1.90e3	9.13e2	0.250	2.224	3.76	3.76	26.1	46.8692	93.7		
11	-1													
12	16	L-PFOA	412.8 > 368.9	1.47e4	1.22e4	0.250		4.13	4.13	15.0	41.7703	104.4	3.451	NO
13	81	Total PFOA	412.8 > 368.9	1.47e4	1.22e4	0.250		4.21		15.0	41.7703			
14	21	PFNA	463.0 > 418.8	1.12e4	1.10e4	0.250		4.57	4.57	12.8	41.6654	104.2	4.397	NO
15	23	L-PFOS	498.9 > 79.9	1.64e3	1.91e3	0.250		4.66	4.66	10.7	37.7766	94.4	2.033	NO
16	82	Total PFOS	498.9 > 79.9	1.64e3	1.91e3	0.250		4.74		10.7	37.7766			
17	58	13C2-PFOA	414.9 > 369.7	1.22e4	1.87e4	0.250	0.741	4.13	4.13	8.16	44.0370	88.1		
18	58	13C2-PFOA	414.9 > 369.7	1.22e4	1.87e4	0.250	0.741	4.13	4.13	8.16	44.0370	88.1		
19	56	13C5-PFNA	468.2 > 422.9	1.10e4	1.50e4	0.250	0.996	4.57	4.57	9.13	36.6743	73.3		
20	59	13C8-PFOS	507.0 > 79.9	1.91e3	2.51e3	0.250	1.011	4.66	4.66	9.53	37.7246	75.4		
21	59	13C8-PFOS	507.0 > 79.9	1.91e3	2.51e3	0.250	1.011	4.66	4.66	9.53	37.7246	75.4		
22	-1													
23	26	PFDA	513 > 468.8	1.19e4	9.26e3	0.250		4.95	4.95	16.0	44.1898	110.5	6.411	NO
24	29	L-MeFOSAA	570 > 419	4.36e3	1.96e3	0.250		5.10	5.10	27.8	41.4700	103.7	2.737	NO
25	83	Total N-MeFOSAA	570. > 419	4.36e3	1.96e3	0.250		5.19		27.8	41.4700			
26	33	PFUdA	563.0 > 518.9	9.72e3	1.20e4	0.250		5.28	5.28	10.2	43.7098	109.3	10.255	NO
27	37	PFDoA	612.9 > 569.0	7.94e3	8.98e3	0.250		5.56	5.56	11.1	44.0176	110.0	8.358	NO
28	60	13C2-PFDA	515.1 > 469.9	9.26e3	1.68e4	0.250	0.793	4.95	4.95	6.89	34.7497	69.5		
29	62	d3-N-MeFOSAA	573.3 > 419	1.96e3	1.94e4	0.250	0.158	5.10	5.10	1.27	31.9933	64.0		
30	62	d3-N-MeFOSAA	573.3 > 419	1.96e3	1.94e4	0.250	0.158	5.10	5.10	1.27	31.9933	64.0		
31	63	13C2-PFUdA	565 > 519.8	1.20e4	1.94e4	0.250	1.071	5.28	5.28	7.73	28.8618	57.7		
32	65	13C2-PFDoA	614.7 > 569.7	8.98e3	1.68e4	0.250	1.151	5.56	5.56	6.68	23.2087	46.4		
33	-1													
34	31	L-EtFOSAA	584.1 > 419	3.00e3	2.13e3	0.250		5.26	5.26	17.6	41.6971	104.2	1.307	NO
35	84	Total N-EtFOSAA	584.1 > 419	3.00e3	2.13e3	0.250		5.33		17.6	41.6971			
36	39	PFTrDA	662.9 > 618.9	7.40e3	8.98e3	0.250		5.81	5.81	10.3	37.6445	94.1	20.503	NO

NY 7/15/2019

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-4.qld

Last Altered: Monday, July 15, 2019 08:02:07 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:16:39 Pacific Daylight Time

Name: 190708M3_4, Date: 08-Jul-2019, Time: 16:09:25, ID: B9G0050-BS1 OPR 0.25, Description: OPR

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	6.44e3	5.19e3	0.250		6.04	6.04	15.5	44.3256	110.8	14.993	NO
38	85	TDCA	498.3>106.9			0.250		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.13e3	1.94e4	0.250	0.175	5.26	5.26	1.37	31.3496	62.7		
40	64	d5-N-EtFOSAA	589.3 > 419	2.13e3	1.94e4	0.250	0.175	5.26	5.26	1.37	31.3496	62.7		
41	65	13C2-PFDoA	614.7 > 569.7	8.98e3	1.68e4	0.250	1.151	5.56	5.56	6.68	23.2087	46.4		
42	67	13C2-PFTeDA	715.1 > 669.7	5.19e3	1.94e4	0.250	0.708	6.04	6.04	3.35	18.9323	37.9		
43	59	13C8-PFOS	507.0 > 79.9	1.91e3	2.51e3	0.250	1.011	4.66	4.66	9.53	37.7246	75.4		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.44e4	1.44e4	0.250	1.000	2.98	2.98	12.5	50.0000	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.87e4	1.87e4	0.250	1.000	4.13	4.13	12.5	50.0000	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	9.13e2	9.13e2	0.250	1.000	3.76	3.76	12.5	50.0000	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.50e4	1.50e4	0.250	1.000	4.57	4.57	12.5	50.0000	100.0		
49	77	13C4-PFOS	503 > 79.9	2.51e3	2.51e3	0.250	1.000	4.66	4.66	12.5	50.0000	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.68e4	1.68e4	0.250	1.000	4.95	4.95	12.5	50.0000	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.94e4	1.94e4	0.250	1.000	5.28	5.28	12.5	50.0000	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

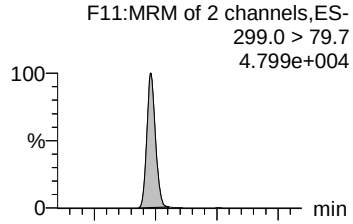
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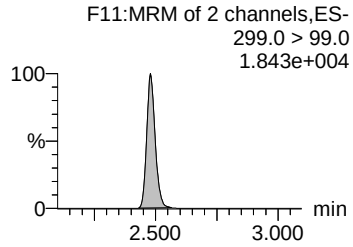
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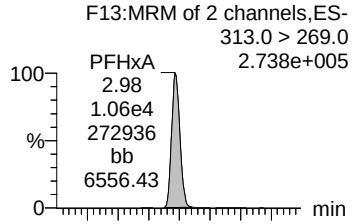
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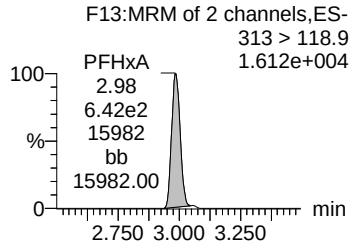
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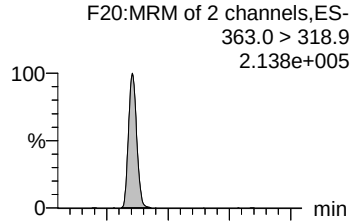


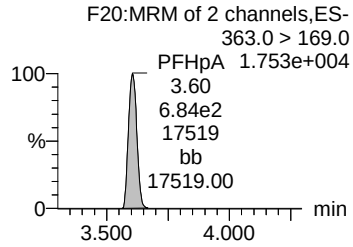
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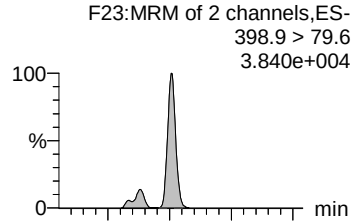


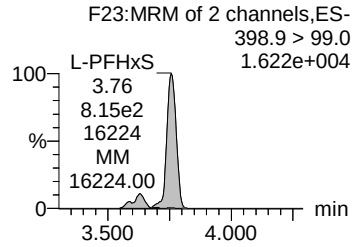
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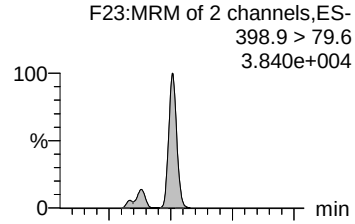


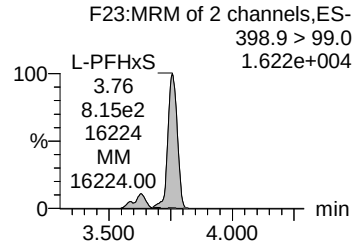
L-PFHxS



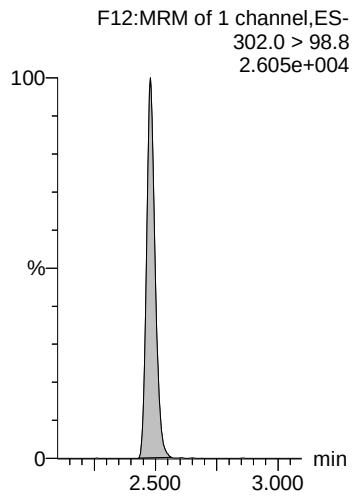


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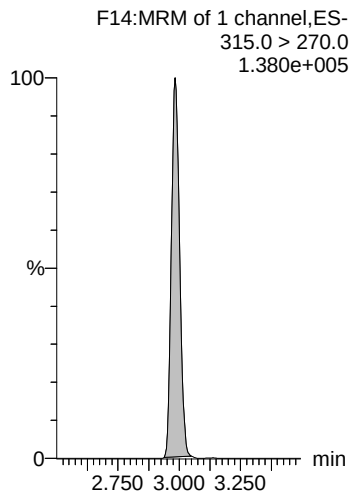




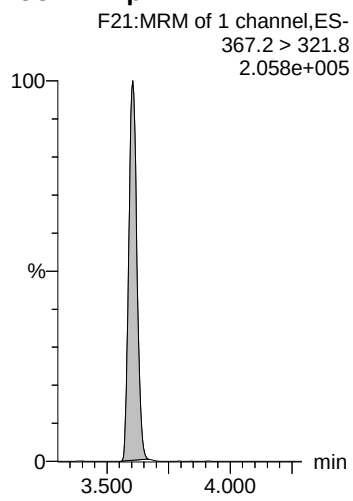
13C3-PFBS



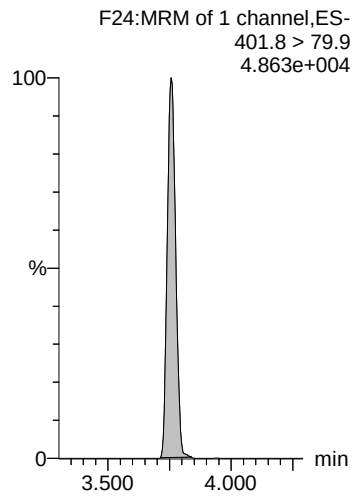
13C2-PFHxA



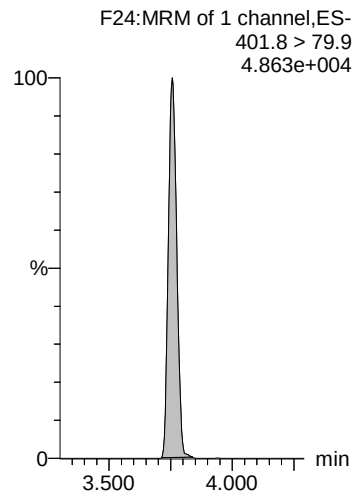
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



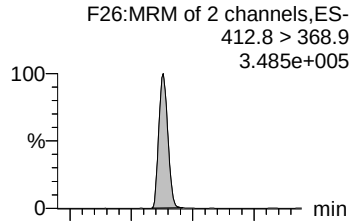
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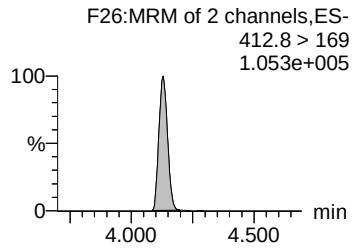
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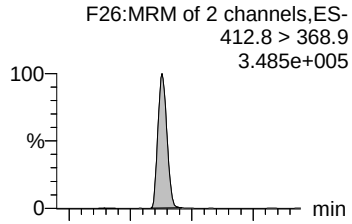
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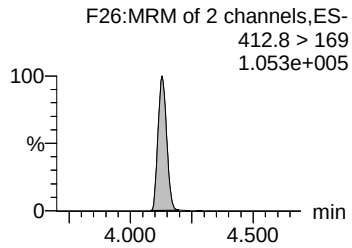
L-PFOA



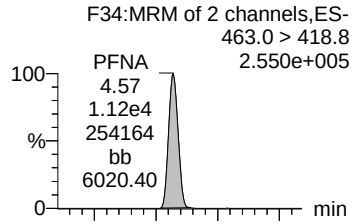


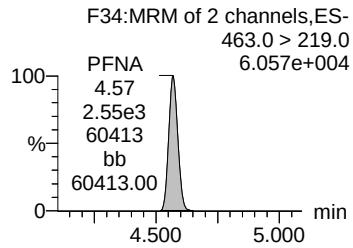
Total PFOA



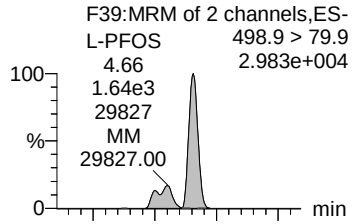


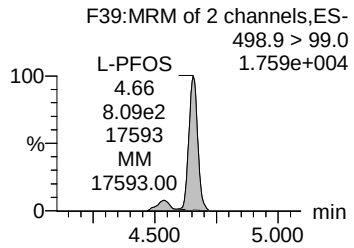
PFNA



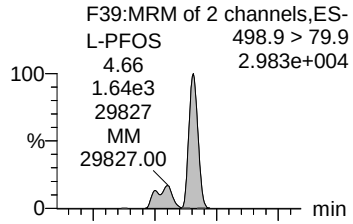


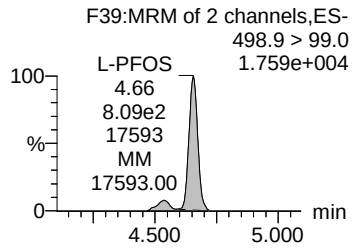
L-PFOS



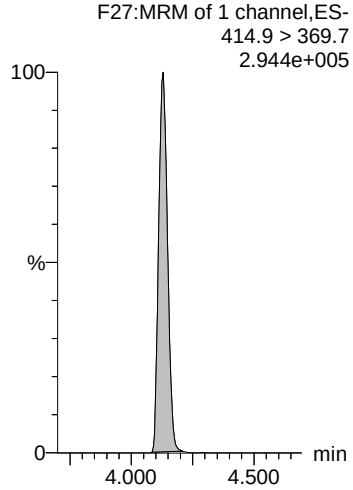


Total PFOS

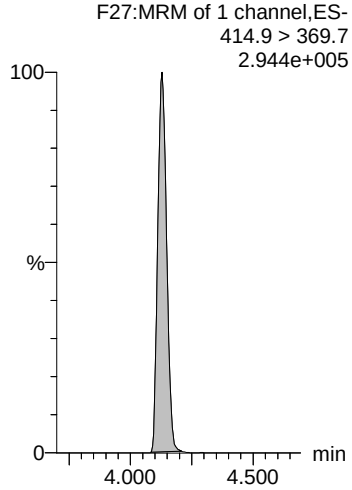




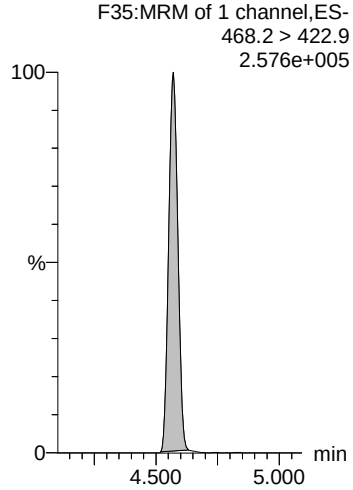
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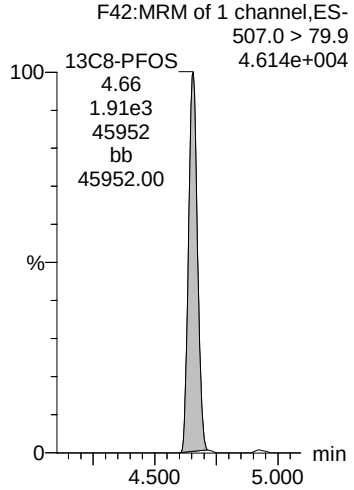
13C2-PFOA



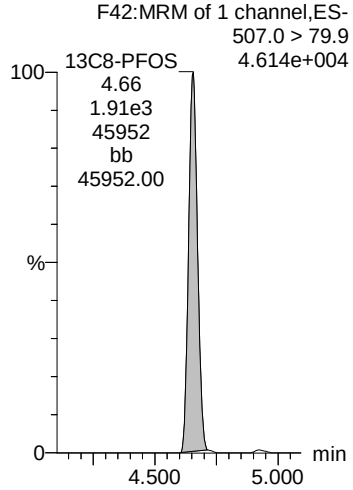
13C5-PFNA



13C8-PFOS



13C8-PFOS



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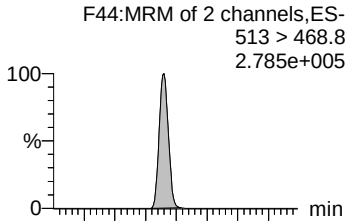
Review: AMR 7/15/2019

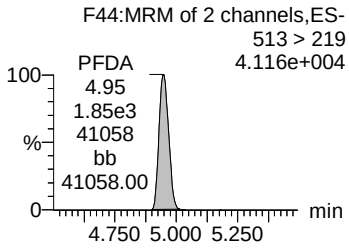
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Printed: Monday, July 15, 2019 08:16:39 Pacific Daylight Time

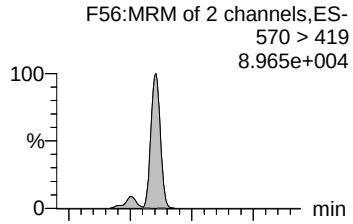
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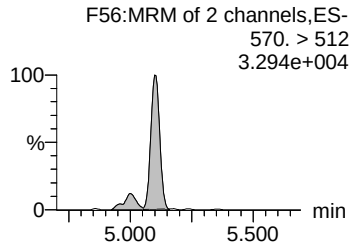
PFDA



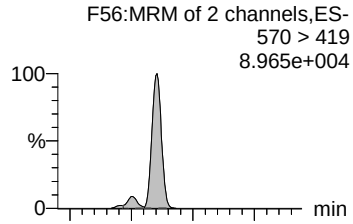


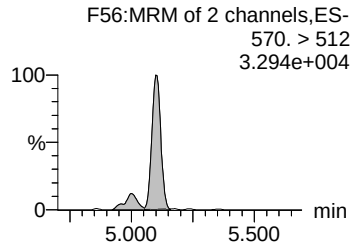
L-MeFOSAA



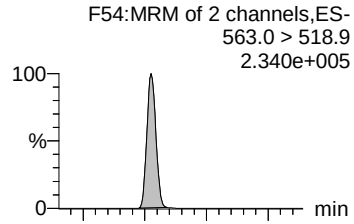


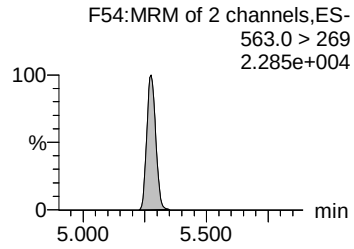
Total N-MeFOSAA



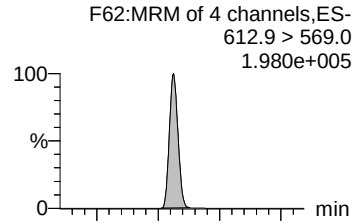


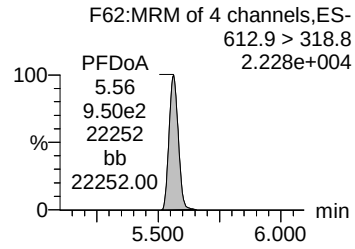
PFUdA



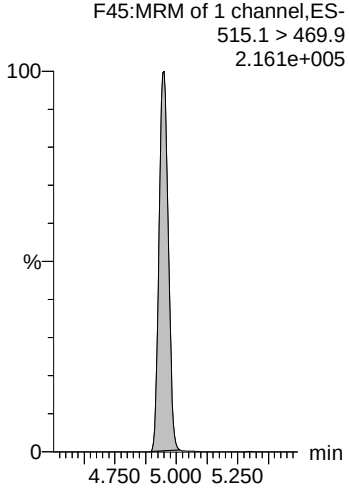


PFDoA

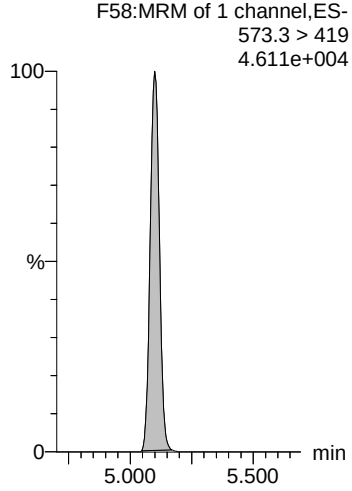




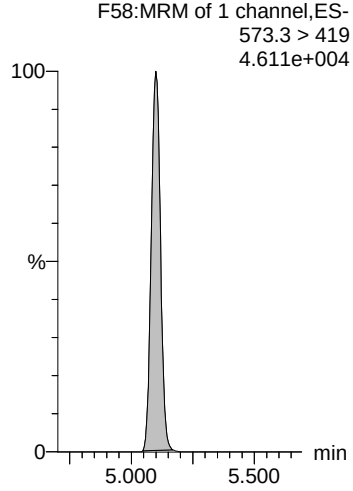
13C2-PFDA



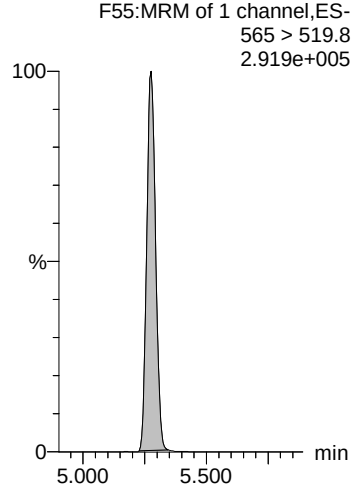
d3-N-MeFOSAA



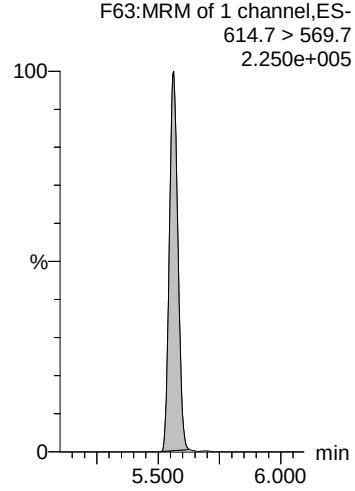
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA



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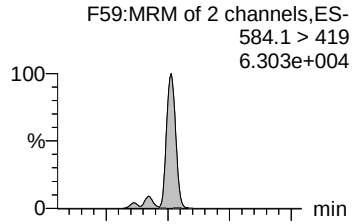
Review: AMR 7/15/2019

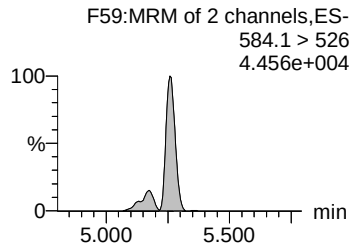
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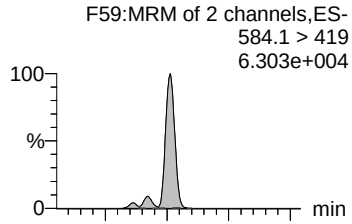
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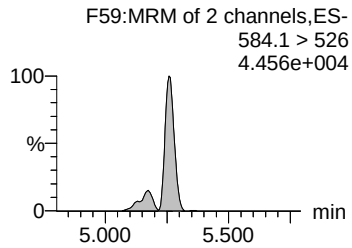
L-EtFOSAA



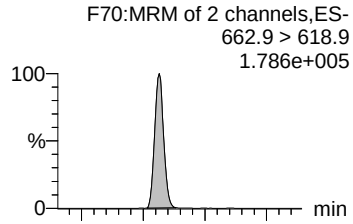


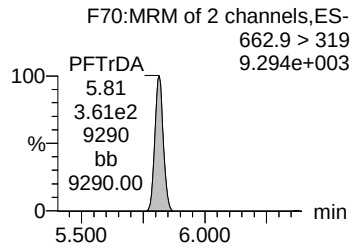
Total N-EtFOSAA



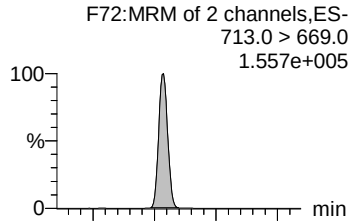


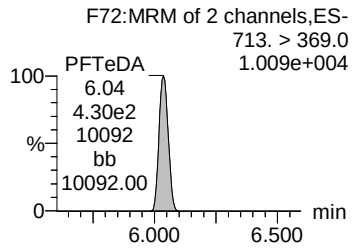
PFTrDA



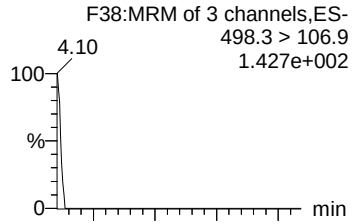


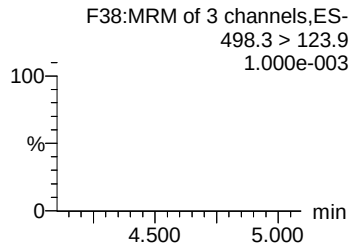
PFTeDA



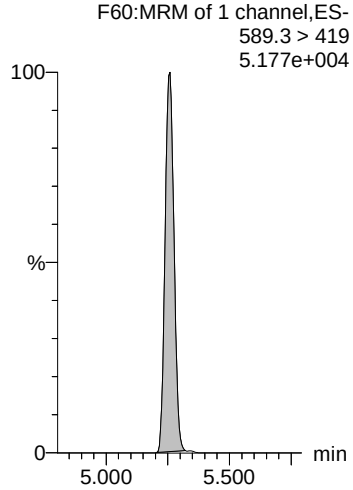


TDCA

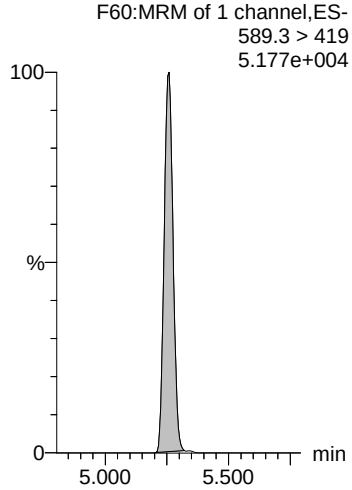




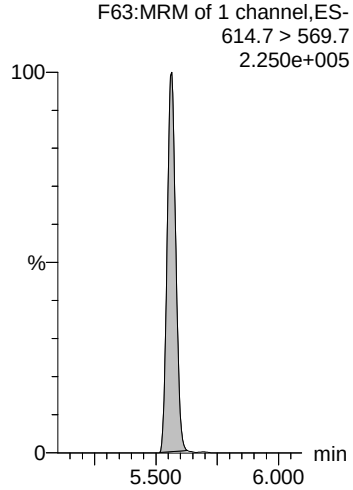
d5-N-EtFOSAA



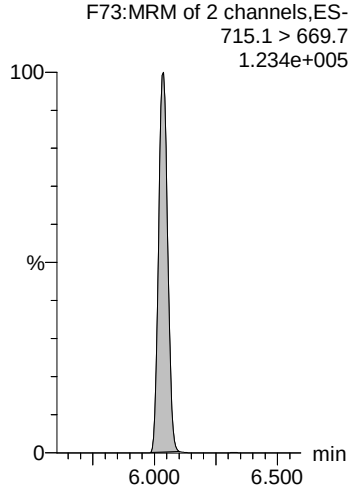
d5-N-EtFOSAA



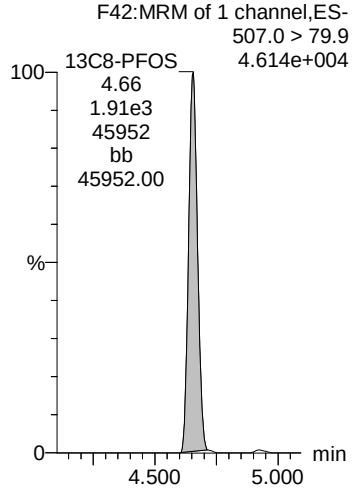
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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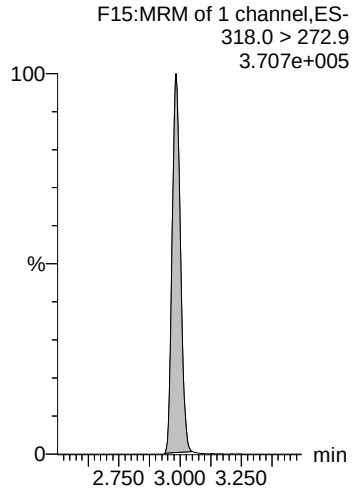
Review: AMR 7/15/2019

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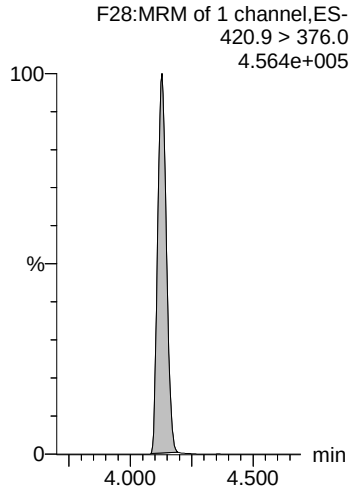
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Name: 190708M3_4, Date: 08-Jul-2019, Time: 16:09:25, ID: B9G0050-BS1 OPR 0.25, Description: OPR

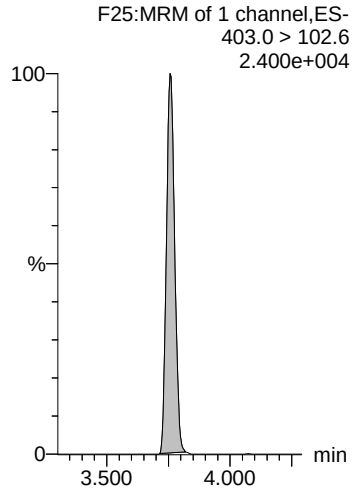
13C5-PFHxA



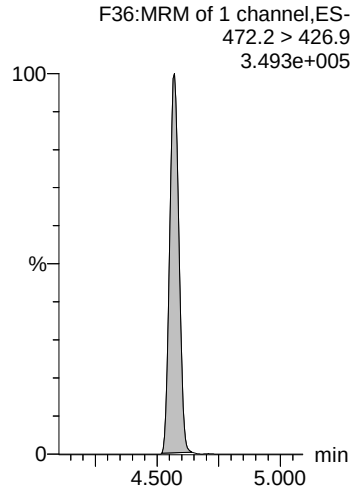
13C8-PFOA



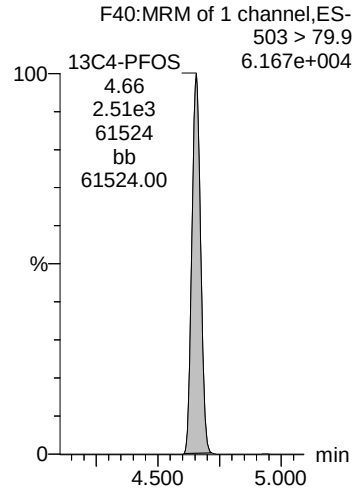
18O2-PFHxS



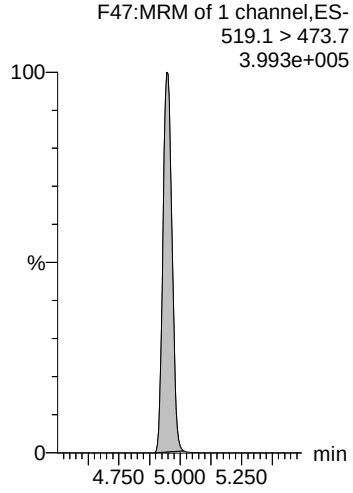
13C9-PFNA



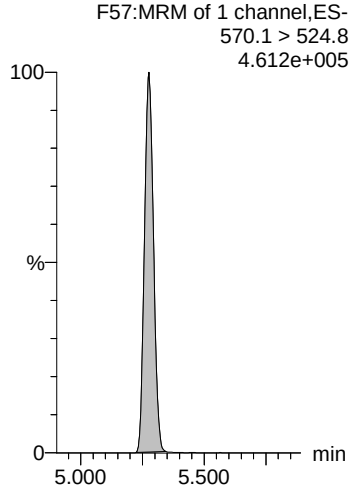
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-5.qld

Last Altered: Monday, July 15, 2019 08:22:31 Pacific Daylight Time
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Name: 190708M3_5, Date: 08-Jul-2019, Time: 16:20:01, ID: B9G0050-BSD1 LCSD 0.25, Description: LCSD

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	2.08e3	1.09e3	0.250		2.48	2.48	23.8	45.5322	113.8	2.825	NO
2	7	PFHxA	313.0 > 269.0	1.13e4	5.88e3	0.250		2.99	2.99	9.63	43.8386	109.6	15.998	NO
3	11	PFHpA	363.0 > 318.9	8.54e3	7.62e3	0.250		3.61	3.61	14.0	43.5446	108.9	13.064	NO
4	13	L-PFHxS	398.9 > 79.6	1.79e3	2.18e3	0.250		3.76	3.76	10.3	46.5964	116.5	1.854	NO
5	80	Total PFHxS	398.9 > 79.6	1.79e3	2.18e3	0.250		3.83		10.3	46.5964			
6	49	13C3-PFBS	302.0 > 98.8	1.09e3	1.05e3	0.250	1.019	2.48	2.48	13.1	51.2371	102.5		
7	52	13C2-PFHxA	315.0 > 270.0	5.88e3	1.54e4	0.250	0.999	2.98	2.99	4.78	19.1495	95.7		
8	53	13C4-PFHpA	367.2 > 321.8	7.62e3	1.54e4	0.250	0.535	3.61	3.61	6.20	46.3894	92.8		
9	54	13C3-PFHxS	401.8 > 79.9	2.18e3	1.05e3	0.250	2.224	3.76	3.76	26.0	46.8395	93.7		
10	54	13C3-PFHxS	401.8 > 79.9	2.18e3	1.05e3	0.250	2.224	3.76	3.76	26.0	46.8395	93.7		
11	-1													
12	16	L-PFOA	412.8 > 368.9	1.69e4	1.38e4	0.250		4.13	4.13	15.3	42.5468	106.4	3.694	NO
13	81	Total PFOA	412.8 > 368.9	1.69e4	1.38e4	0.250		4.21		15.3	42.5468			
14	21	PFNA	463.0 > 418.8	1.35e4	1.29e4	0.250		4.57	4.57	13.1	42.8310	107.1	4.553	NO
15	23	L-PFOS	498.9 > 79.9	2.08e3	2.10e3	0.250		4.66	4.66	12.4	43.4321	108.6	1.954	NO
16	82	Total PFOS	498.9 > 79.9	2.08e3	2.10e3	0.250		4.74		12.4	43.4321			
17	58	13C2-PFOA	414.9 > 369.7	1.38e4	2.00e4	0.250	0.741	4.13	4.13	8.61	46.4653	92.9		
18	58	13C2-PFOA	414.9 > 369.7	1.38e4	2.00e4	0.250	0.741	4.13	4.13	8.61	46.4653	92.9		
19	56	13C5-PFNA	468.2 > 422.9	1.29e4	1.62e4	0.250	0.996	4.57	4.57	9.91	39.7988	79.6		
20	59	13C8-PFOS	507.0 > 79.9	2.10e3	2.54e3	0.250	1.011	4.66	4.66	10.4	41.0049	82.0		
21	59	13C8-PFOS	507.0 > 79.9	2.10e3	2.54e3	0.250	1.011	4.66	4.66	10.4	41.0049	82.0		
22	-1													
23	26	PFDA	513 > 468.8	1.43e4	1.10e4	0.250		4.95	4.95	16.2	44.8508	112.1	5.940	NO
24	29	L-MeFOSAA	570 > 419	4.92e3	2.17e3	0.250		5.10	5.10	28.3	42.2692	105.7	2.826	NO
25	83	Total N-MeFOSAA	570. > 419	4.92e3	2.17e3	0.250		5.19		28.3	42.2692			
26	33	PFUdA	563.0 > 518.9	1.15e4	1.33e4	0.250		5.28	5.28	10.8	46.6196	116.5	11.018	NO
27	37	PFDoA	612.9 > 569.0	9.88e3	1.10e4	0.250		5.56	5.57	11.2	44.5853	111.5	7.707	NO
28	60	13C2-PFDA	515.1 > 469.9	1.10e4	1.86e4	0.250	0.793	4.95	4.95	7.43	37.4697	74.9		
29	62	d3-N-MeFOSAA	573.3 > 419	2.17e3	2.05e4	0.250	0.158	5.10	5.10	1.33	33.5291	67.1		
30	62	d3-N-MeFOSAA	573.3 > 419	2.17e3	2.05e4	0.250	0.158	5.10	5.10	1.33	33.5291	67.1		
31	63	13C2-PFUdA	565 > 519.8	1.33e4	2.05e4	0.250	1.071	5.28	5.28	8.14	30.4097	60.8		
32	65	13C2-PFDoA	614.7 > 569.7	1.10e4	1.86e4	0.250	1.151	5.56	5.56	7.42	25.7877	51.6		
33	-1													
34	31	L-EtFOSAA	584.1 > 419	3.50e3	2.41e3	0.250		5.26	5.26	18.2	42.9185	107.3	1.475	NO
35	84	Total N-EtFOSAA	584.1 > 419	3.50e3	2.41e3	0.250		5.33		18.2	42.9185			
36	39	PFTrDA	662.9 > 618.9	9.08e3	1.10e4	0.250		5.81	5.81	10.3	37.5634	93.9	28.191	NO

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-5.qld

Last Altered: Monday, July 15, 2019 08:22:31 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:23:34 Pacific Daylight Time

Name: 190708M3_5, Date: 08-Jul-2019, Time: 16:20:01, ID: B9G0050-BSD1 LCSD 0.25, Description: LCSD

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	7.13e3	6.05e3	0.250		6.04	6.04	14.7	42.1082	105.3	11.531	NO
38	85	TDCA	498.3>106.9			0.250		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.41e3	2.05e4	0.250	0.175	5.26	5.26	1.47	33.6136	67.2		
40	64	d5-N-EtFOSAA	589.3 > 419	2.41e3	2.05e4	0.250	0.175	5.26	5.26	1.47	33.6136	67.2		
41	65	13C2-PFDoA	614.7 > 569.7	1.10e4	1.86e4	0.250	1.151	5.56	5.56	7.42	25.7877	51.6		
42	67	13C2-PFTeDA	715.1 > 669.7	6.05e3	2.05e4	0.250	0.708	6.04	6.04	3.69	20.8606	41.7		
43	59	13C8-PFOS	507.0 > 79.9	2.10e3	2.54e3	0.250	1.011	4.66	4.66	10.4	41.0049	82.0		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.54e4	1.54e4	0.250	1.000	2.98	2.99	12.5	50.0000	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.00e4	2.00e4	0.250	1.000	4.13	4.13	12.5	50.0000	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.05e3	1.05e3	0.250	1.000	3.76	3.76	12.5	50.0000	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.62e4	1.62e4	0.250	1.000	4.57	4.57	12.5	50.0000	100.0		
49	77	13C4-PFOS	503 > 79.9	2.54e3	2.54e3	0.250	1.000	4.66	4.66	12.5	50.0000	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.86e4	1.86e4	0.250	1.000	4.95	4.95	12.5	50.0000	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.05e4	2.05e4	0.250	1.000	5.28	5.28	12.5	50.0000	100.0		

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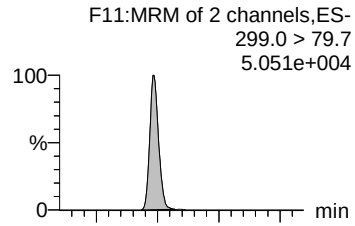
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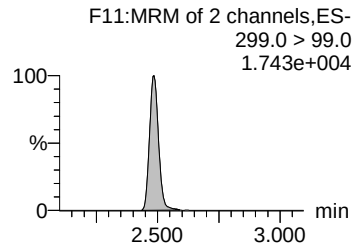
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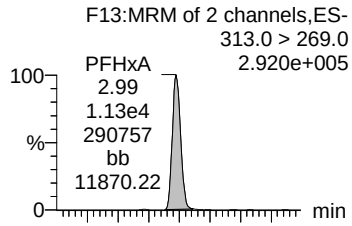
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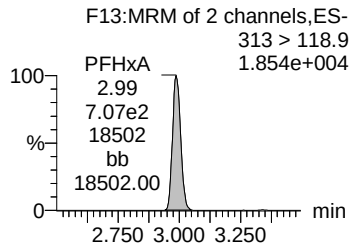
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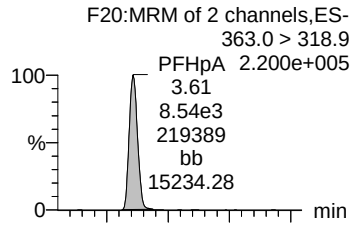


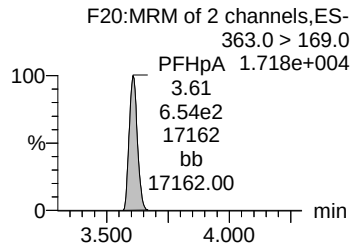
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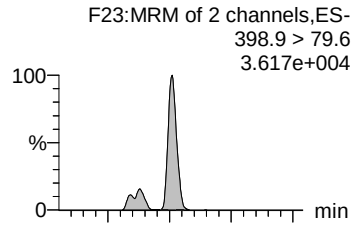


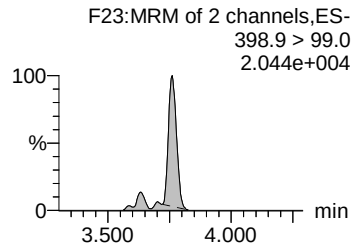
PFHpA



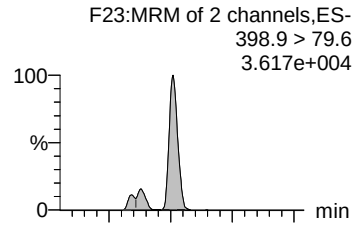


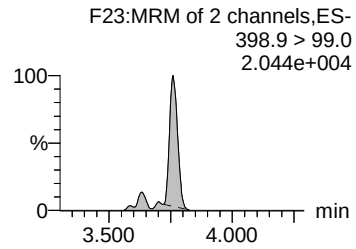
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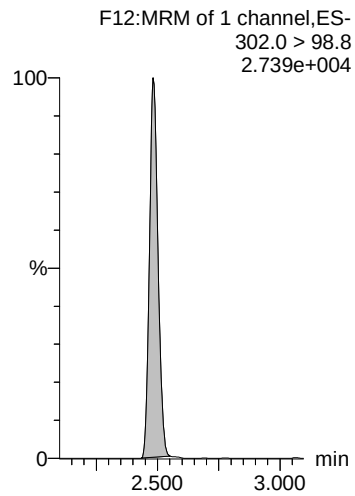


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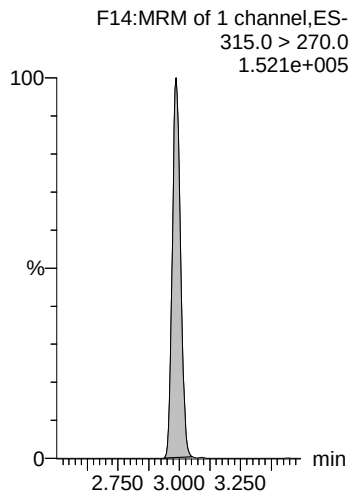




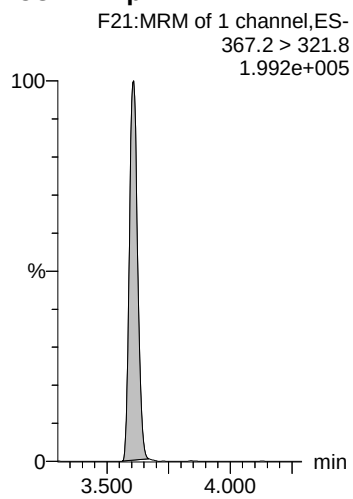
13C3-PFBS



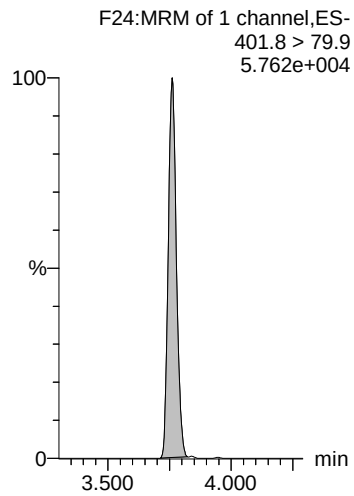
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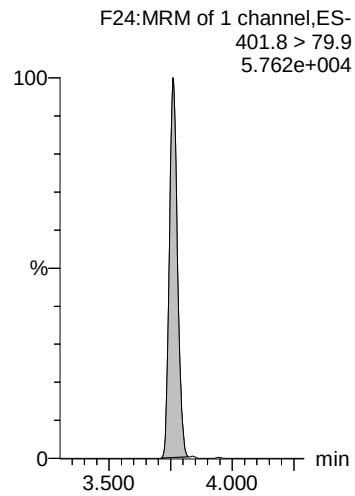
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



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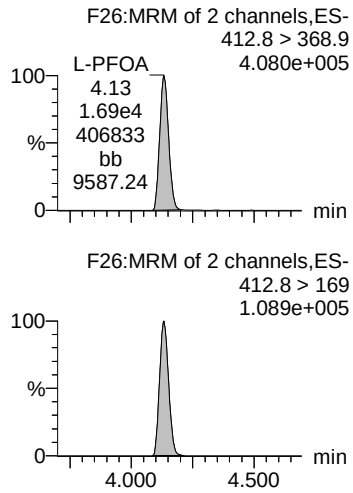
Review: AMR 7/15/2019

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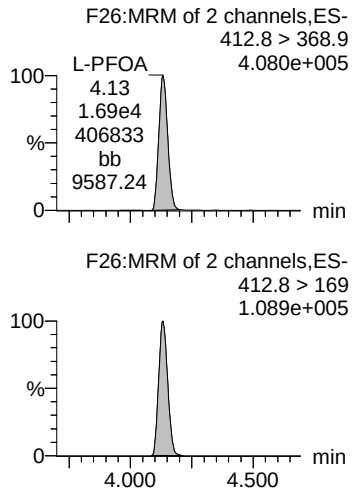
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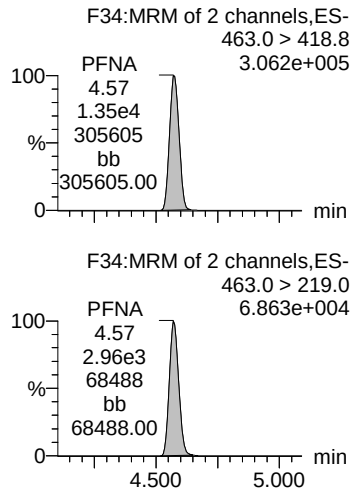
L-PFOA



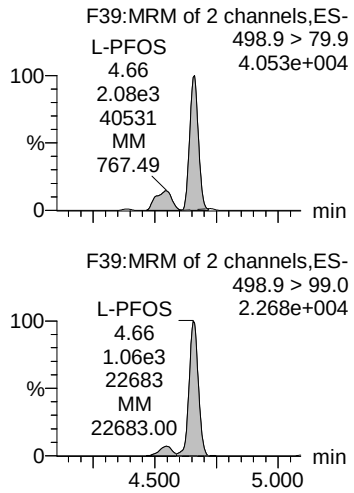
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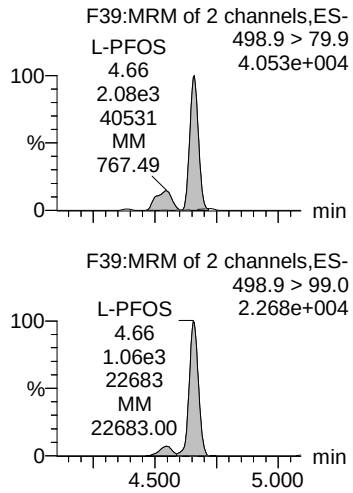
PFNA



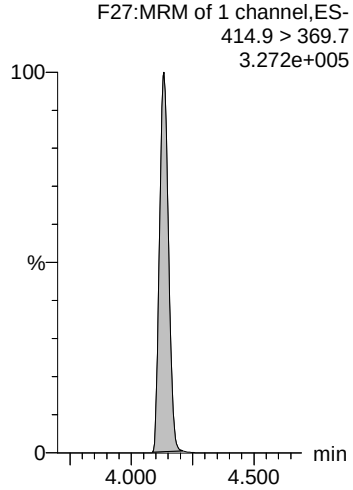
L-PFOS



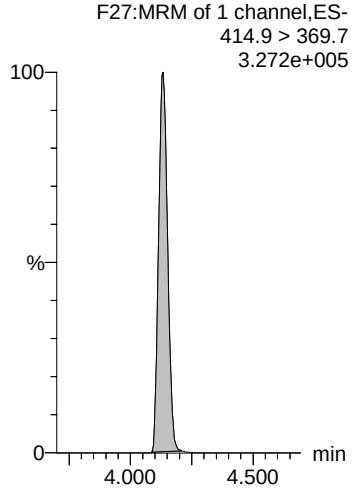
Total PFOS



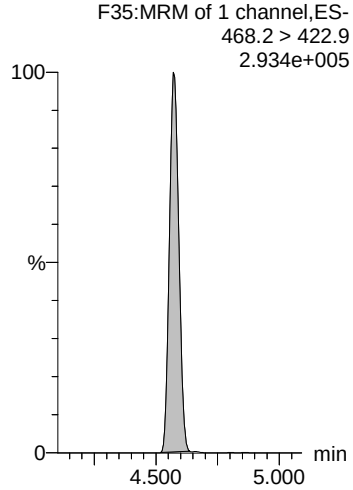
13C2-PFOA



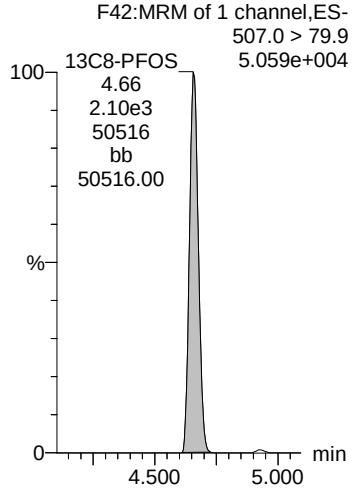
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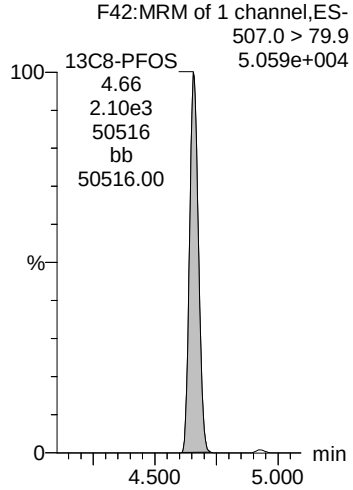
13C5-PFNA



13C8-PFOS



13C8-PFOS



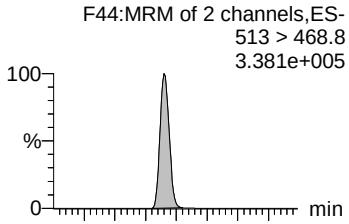
Review: AMR 7/15/2019

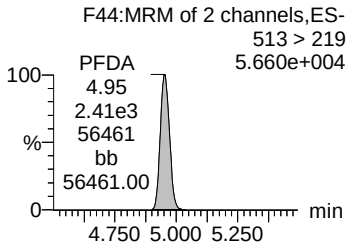
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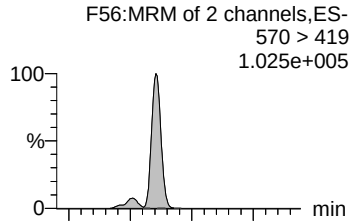
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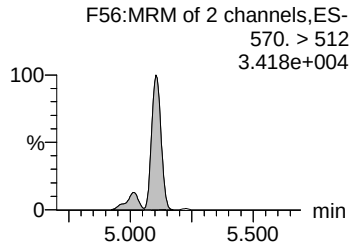
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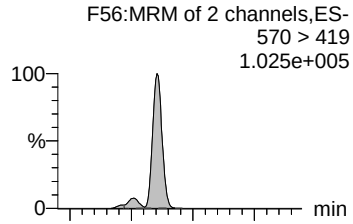


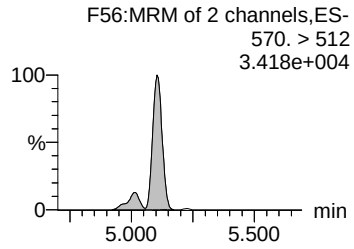
L-MeFOSAA



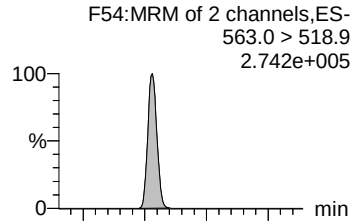


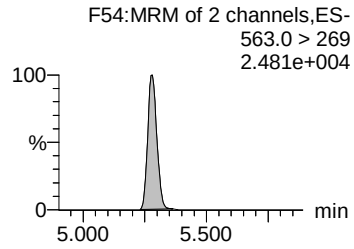
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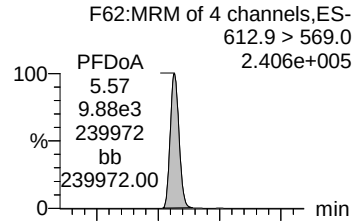


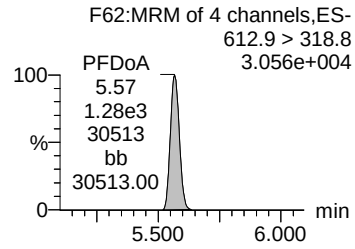
PFUdA



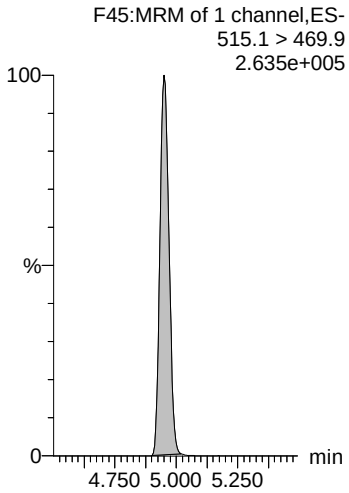


PFDoA

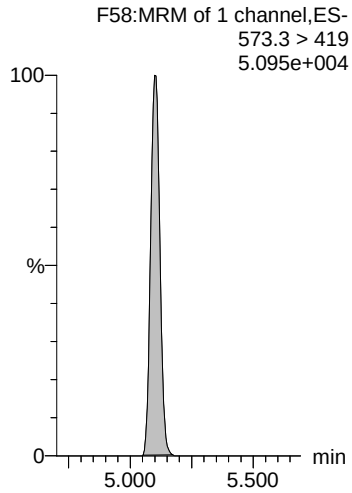




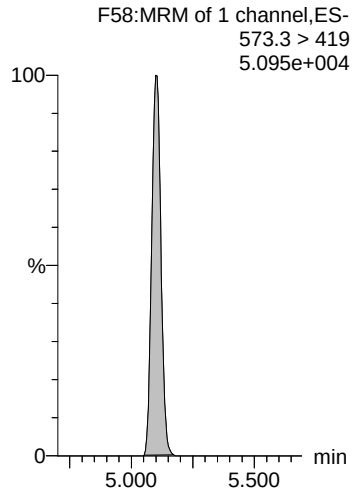
13C2-PFDA



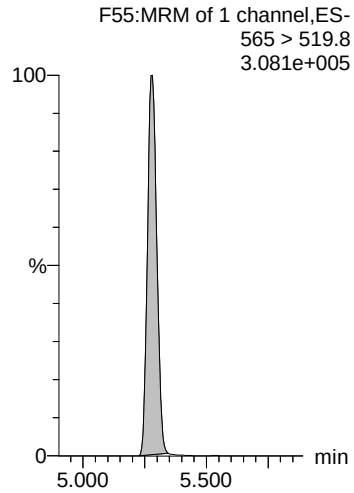
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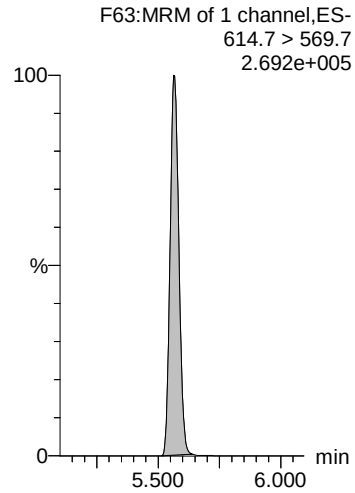
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13C2-PFUdA



13C2-PFDoA



NY 7/15/2019

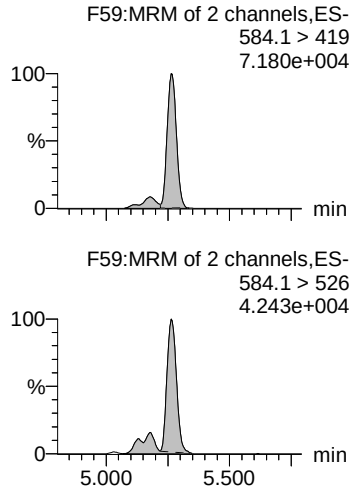
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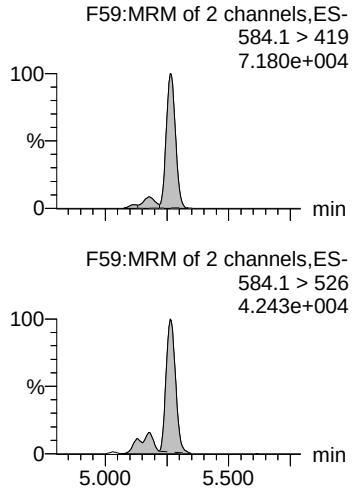
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Name: 190708M3_5, Date: 08-Jul-2019, Time: 16:20:01, ID: B9G0050-BSD1 LCSD 0.25, Description: LCSD

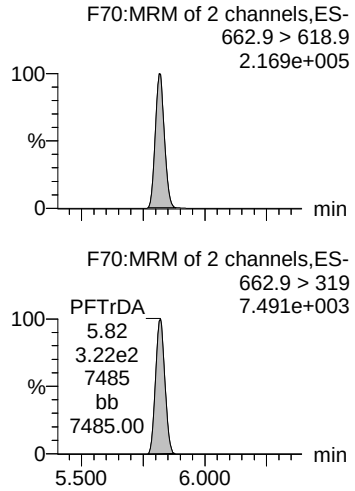
L-EtFOSAA



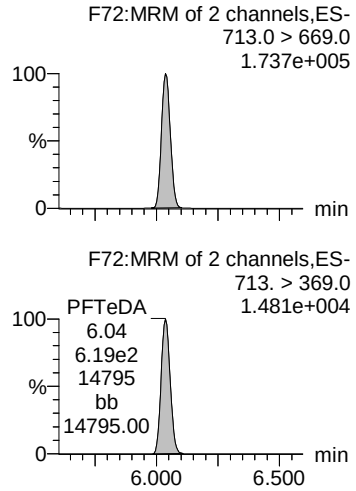
Total N-EtFOSAA



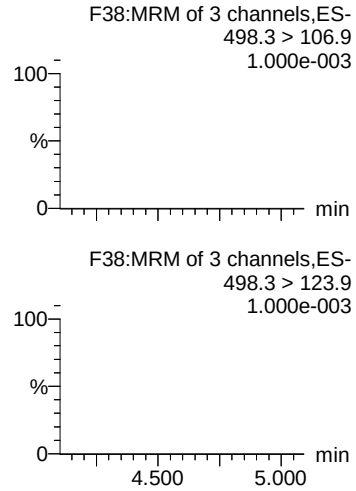
PFTrDA



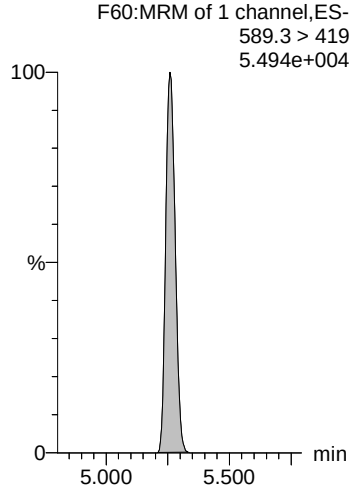
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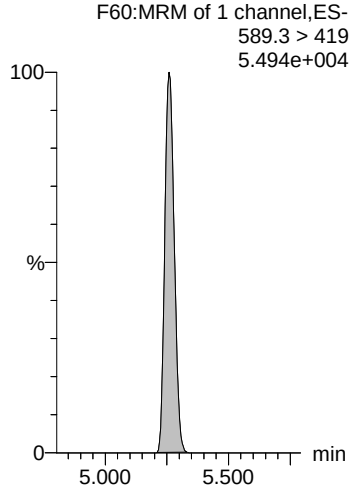
TDCA



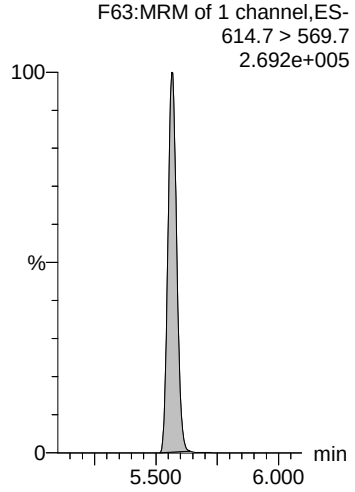
d5-N-EtFOSAA



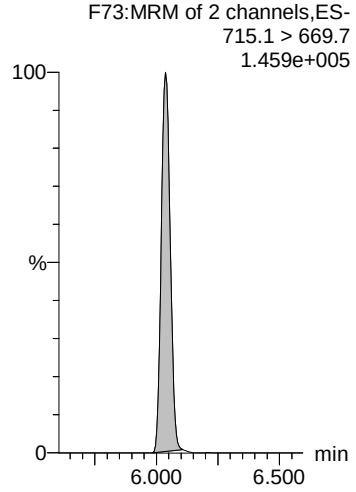
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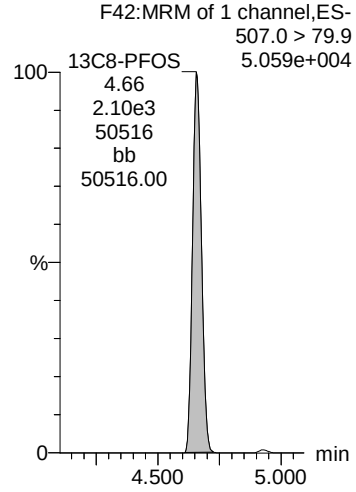
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



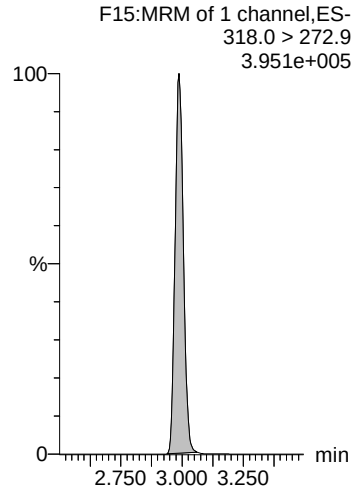
NY 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-5.qld

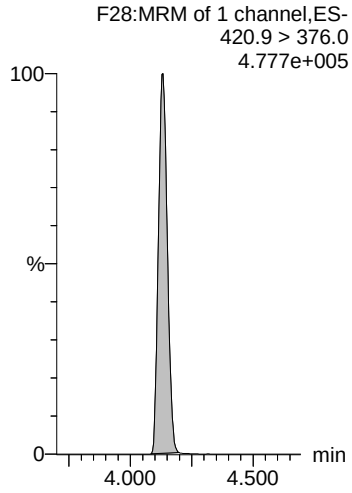
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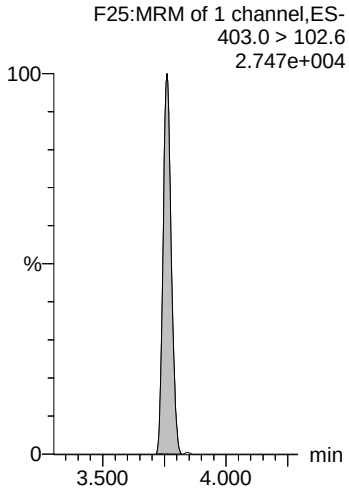
13C5-PFHxA



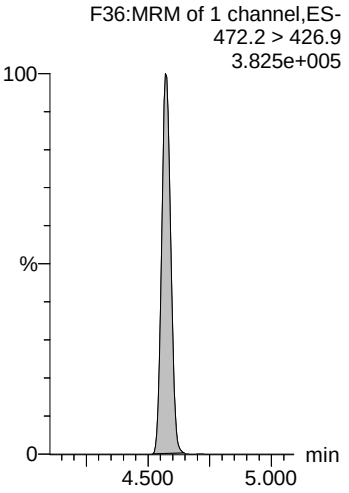
13C8-PFOA



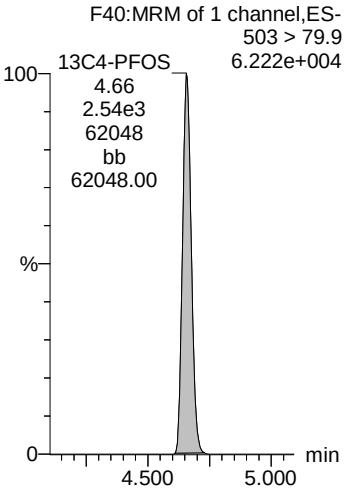
18O2-PFHxS



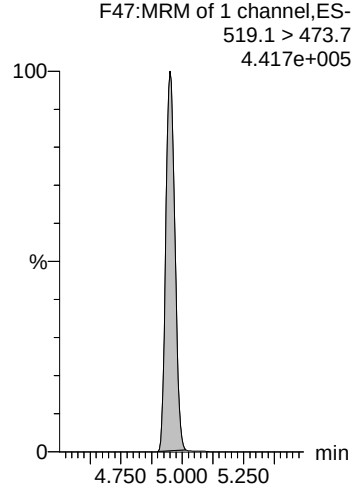
13C9-PFNA



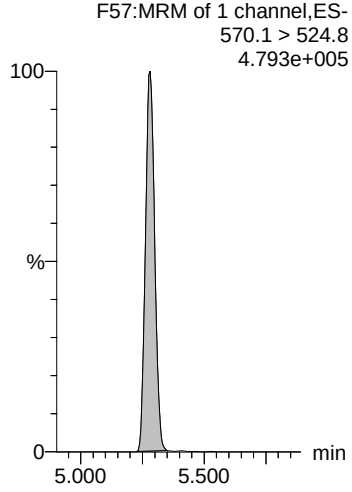
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-7.qld

Last Altered: Monday, July 15, 2019 08:33:24 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:34:10 Pacific Daylight Time

Name: 190708M3_7, Date: 08-Jul-2019, Time: 16:41:12, ID: 1901857-01 SAOA-B05-GW 0.19379, Description: SAOA-B05-GW

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	9.15e2	6.59e2	0.194		2.48	2.48	17.4	42.8477		2.785	NO
2	7	PFHxA	313.0 > 269.0	1.99e4	1.30e3	0.194		2.99	2.98	76.6	450.5180		15.881	NO
3	11	PFHpA	363.0 > 318.9	3.70e3	2.18e3	0.194		3.60	3.60	21.2	84.9814		16.641	NO
4	13	L-PFHxS	398.9 > 79.6	1.61e3	1.45e3	0.194		3.76	3.76	13.9	80.9824		2.025	NO
5	80	Total PFHxS	398.9 > 79.6	1.61e3	1.45e3	0.194		3.83		13.9	80.9824			
6	49	13C3-PFBS	302.0 > 98.8	6.59e2	9.29e2	0.194	1.019	2.48	2.48	8.87	44.9086	69.6		
7	52	13C2-PFHxA	315.0 > 270.0	1.30e3	5.21e3	0.194	0.999	2.98	2.99	3.12	16.1338	62.5		
8	53	13C4-PFHpA	367.2 > 321.8	2.18e3	5.21e3	0.194	0.535	3.61	3.60	5.23	50.4881	78.3		
9	54	13C3-PFHxS	401.8 > 79.9	1.45e3	9.29e2	0.194	2.224	3.76	3.76	19.5	45.2254	70.1		
10	54	13C3-PFHxS	401.8 > 79.9	1.45e3	9.29e2	0.194	2.224	3.76	3.76	19.5	45.2254	70.1		
11	-1													
12	16	L-PFOA	412.8 > 368.9	4.14e3	4.91e3	0.194		4.13	4.13	10.5	37.7513		3.332	NO
13	81	Total PFOA	412.8 > 368.9	4.14e3	4.91e3	0.194		4.21		10.5	37.7513			
14	21	PFNA	463.0 > 418.8	3.31e1	5.77e3	0.194		4.57	4.56	0.0717	0.7201		4.355	NO
15	23	L-PFOS	498.9 > 79.9	4.03e2	1.62e3	0.194		4.66	4.66	3.11	14.4562		2.424	NO
16	82	Total PFOS	498.9 > 79.9	4.03e2	1.62e3	0.194		4.74		3.11	14.4562			
17	58	13C2-PFOA	414.9 > 369.7	4.91e3	1.04e4	0.194	0.741	4.13	4.13	5.88	40.9686	63.5		
18	58	13C2-PFOA	414.9 > 369.7	4.91e3	1.04e4	0.194	0.741	4.13	4.13	5.88	40.9686	63.5		
19	56	13C5-PFNA	468.2 > 422.9	5.77e3	9.46e3	0.194	0.996	4.57	4.57	7.62	39.4870	61.2		
20	59	13C8-PFOS	507.0 > 79.9	1.62e3	2.62e3	0.194	1.011	4.66	4.66	7.72	39.3972	61.1		
21	59	13C8-PFOS	507.0 > 79.9	1.62e3	2.62e3	0.194	1.011	4.66	4.66	7.72	39.3972	61.1		
22	-1													
23	26	PFDA	513 > 468.8	6.49e1	5.62e3	0.194		4.95	4.95	0.144	0.4289		5.372	NO
24	29	L-MeFOSAA	570 > 419		1.31e3	0.194		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.31e3	0.194		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		7.38e3	0.194		5.28						
27	37	PFDoA	612.9 > 569.0		5.68e3	0.194		5.56						
28	60	13C2-PFDA	515.1 > 469.9	5.62e3	1.37e4	0.194	0.793	4.95	4.95	5.11	33.2488	51.5		
29	62	d3-N-MeFOSAA	573.3 > 419	1.31e3	1.60e4	0.194	0.158	5.10	5.10	1.02	33.3814	51.8		
30	62	d3-N-MeFOSAA	573.3 > 419	1.31e3	1.60e4	0.194	0.158	5.10	5.10	1.02	33.3814	51.8		
31	63	13C2-PFUdA	565 > 519.8	7.38e3	1.60e4	0.194	1.071	5.28	5.28	5.77	27.8164	43.1		
32	65	13C2-PFDoA	614.7 > 569.7	5.68e3	1.37e4	0.194	1.151	5.56	5.56	5.16	23.1541	35.9		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		1.38e3	0.194		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	1.38e3	0.194		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		5.68e3	0.194		5.81						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-7.qld

Last Altered: Monday, July 15, 2019 08:33:24 Pacific Daylight Time
Printed: Monday, July 15, 2019 08:34:10 Pacific Daylight Time

Name: 190708M3_7, Date: 08-Jul-2019, Time: 16:41:12, ID: 1901857-01 SAOA-B05-GW 0.19379, Description: SAOA-B05-GW

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.92e3	0.194		6.04						
38	85	TDCA	498.3>106.9			0.194		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	1.38e3	1.60e4	0.194	0.175	5.26	5.26	1.08	31.8474	49.4		
40	64	d5-N-EtFOSAA	589.3 > 419	1.38e3	1.60e4	0.194	0.175	5.26	5.26	1.08	31.8474	49.4		
41	65	13C2-PFDoA	614.7 > 569.7	5.68e3	1.37e4	0.194	1.151	5.56	5.56	5.16	23.1541	35.9		
42	67	13C2-PFTeDA	715.1 > 669.7	1.92e3	1.60e4	0.194	0.708	6.04	6.04	1.51	10.9744	17.0		
43	59	13C8-PFOS	507.0 > 79.9	1.62e3	2.62e3	0.194	1.011	4.66	4.66	7.72	39.3972	61.1		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	5.21e3	5.21e3	0.194	1.000	2.98	2.98	12.5	64.5028	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.04e4	1.04e4	0.194	1.000	4.13	4.13	12.5	64.5028	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	9.29e2	9.29e2	0.194	1.000	3.76	3.76	12.5	64.5028	100.0		
48	76	13C9-PFNA	472.2 > 426.9	9.46e3	9.46e3	0.194	1.000	4.57	4.57	12.5	64.5028	100.0		
49	77	13C4-PFOS	503 > 79.9	2.62e3	2.62e3	0.194	1.000	4.66	4.66	12.5	64.5028	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.37e4	1.37e4	0.194	1.000	4.95	4.95	12.5	64.5028	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.60e4	1.60e4	0.194	1.000	5.28	5.28	12.5	64.5028	100.0		

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Review: AMR 7/15/2019

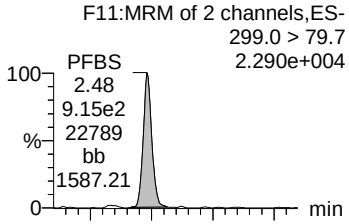
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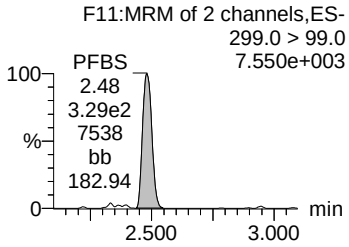
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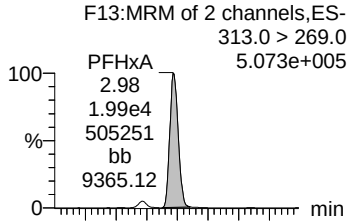
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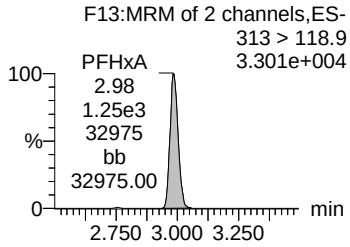
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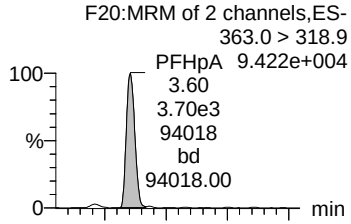


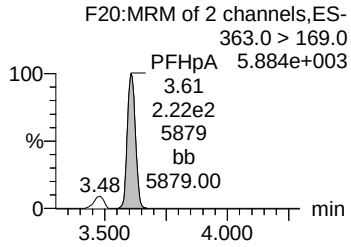
PFHxA



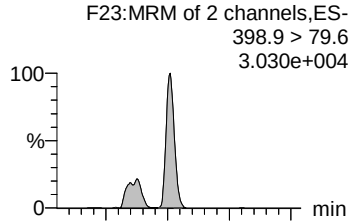


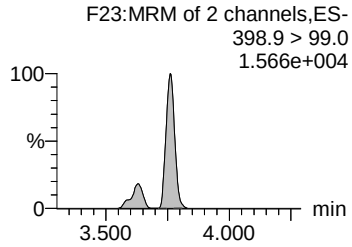
PFHpA



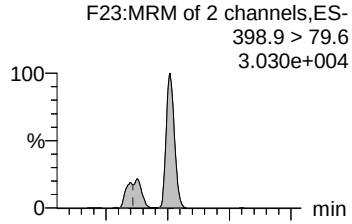


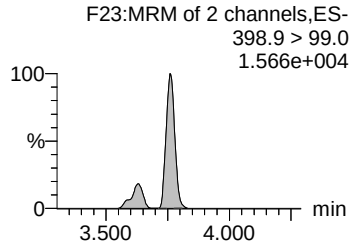
L-PFHxS



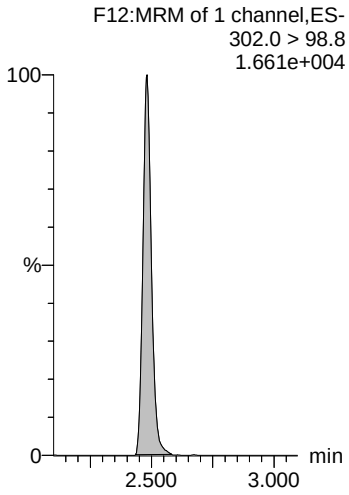


Total PFHxS

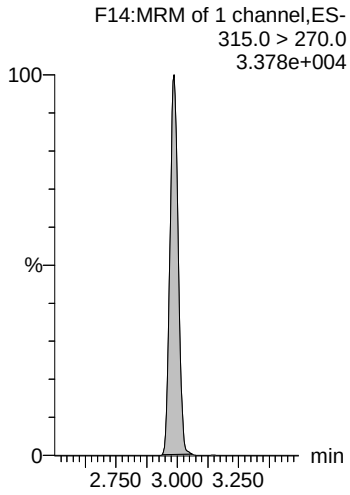




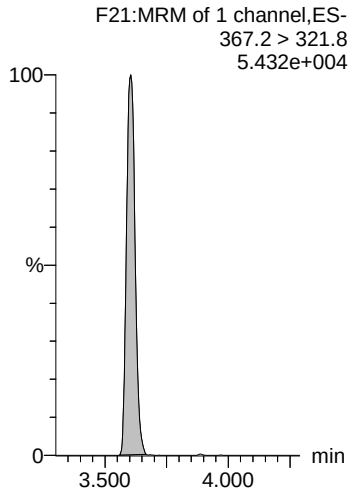
13C3-PFBS



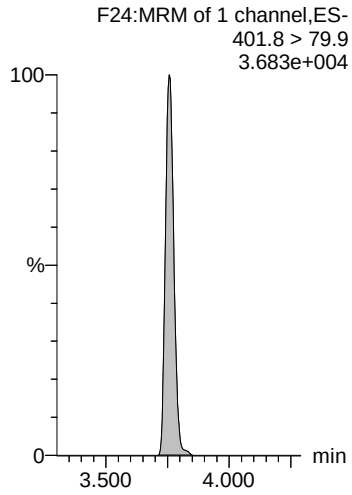
13C2-PFHxA



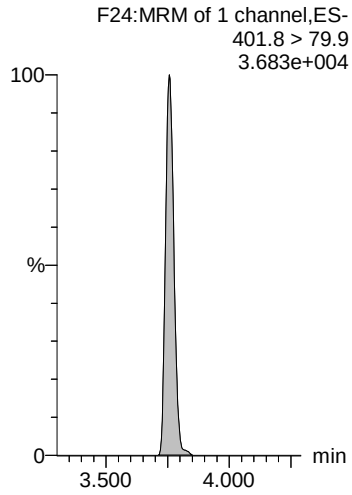
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



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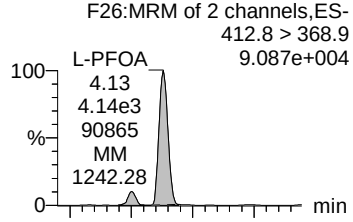
Review: AMR 7/15/2019

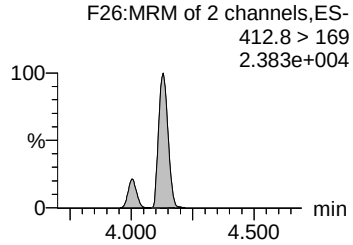
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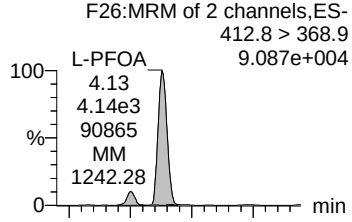
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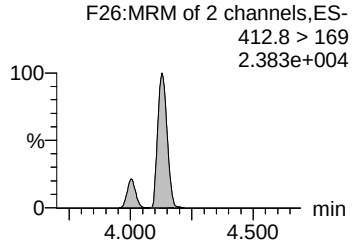
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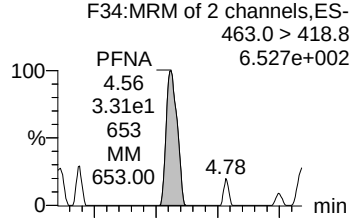


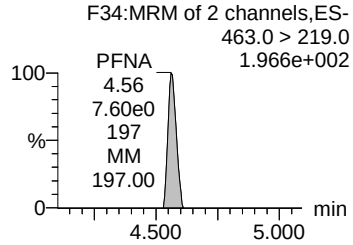
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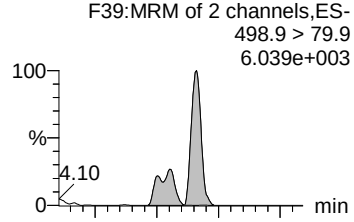


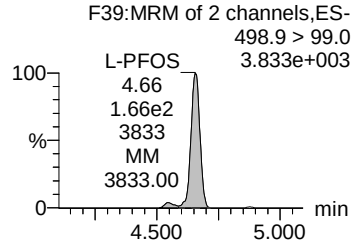
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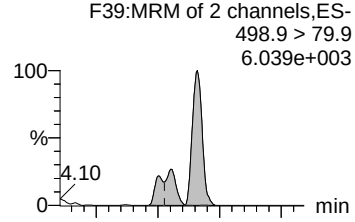


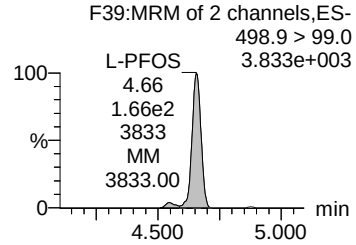
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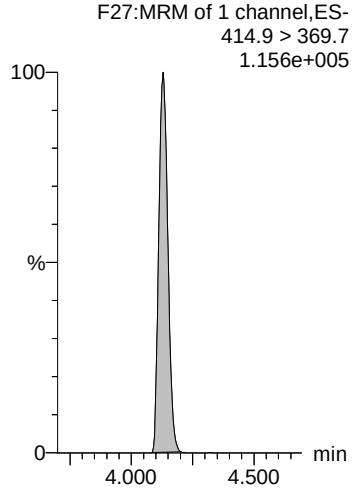


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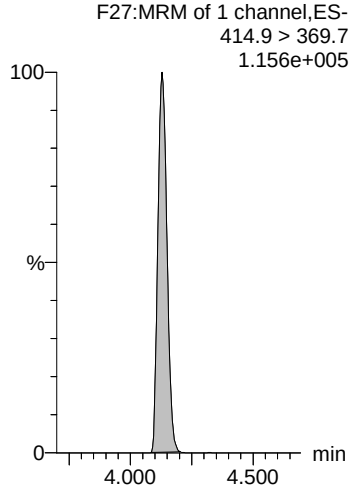




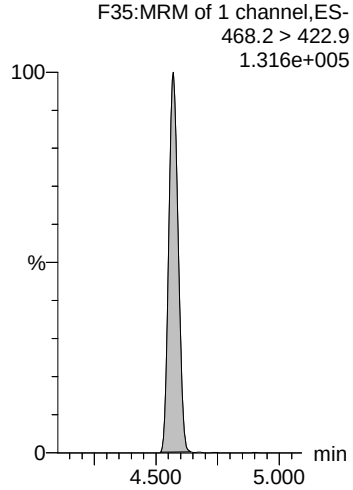
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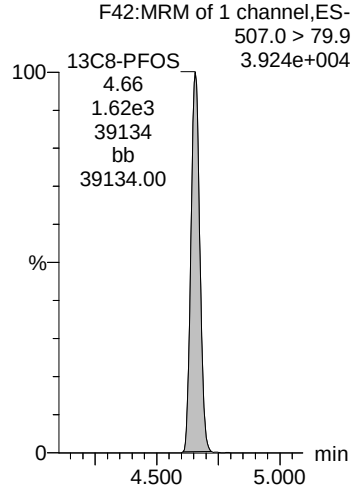
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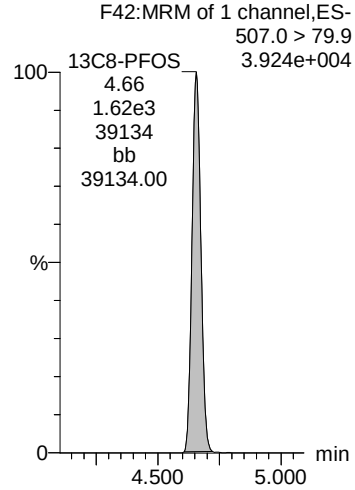
13C5-PFNA



13C8-PFOS



13C8-PFOS



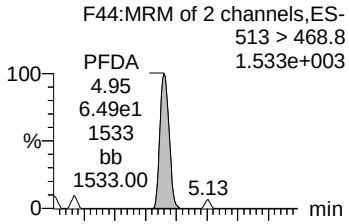
NY 7/15/2019

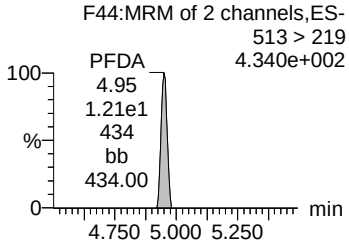
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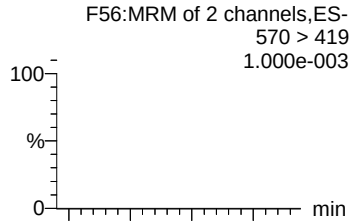
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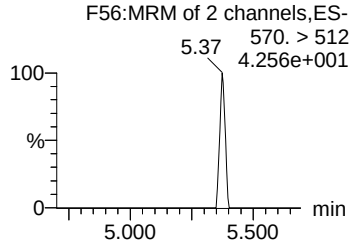
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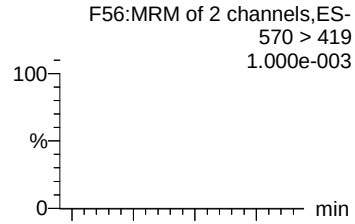


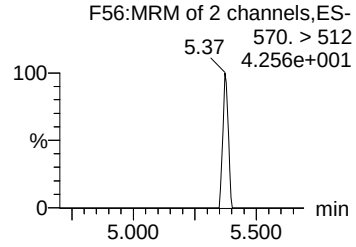
L-MeFOSAA



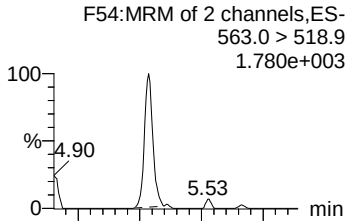


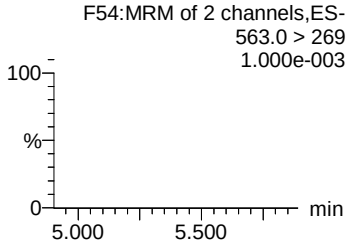
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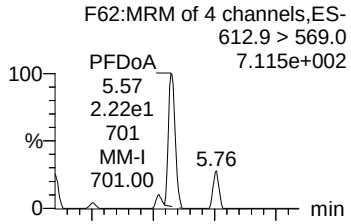


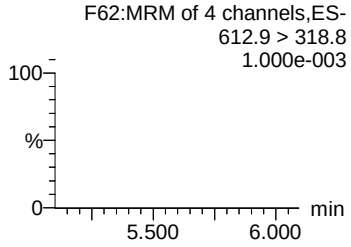
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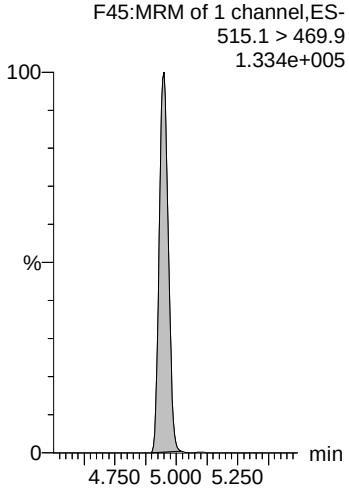


PFDoA

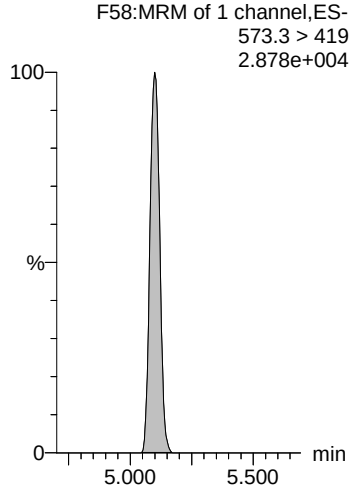




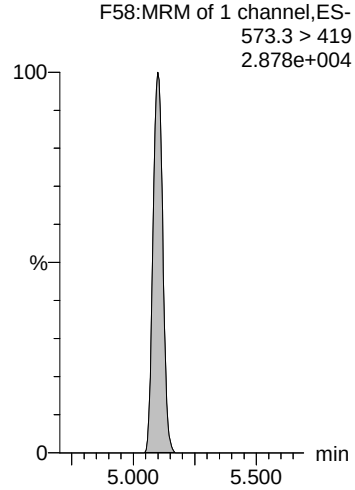
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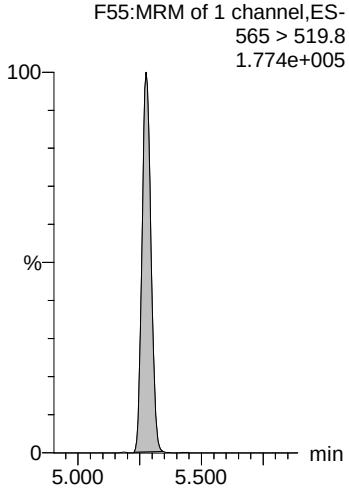
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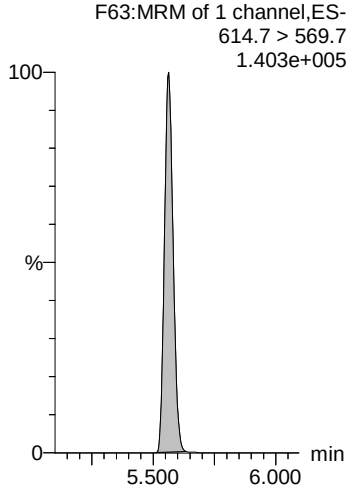
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13C2-PFUdA



13C2-PFDoA



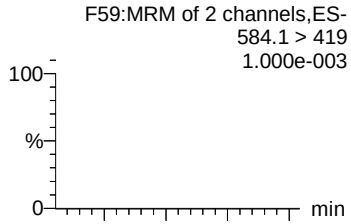
Review: AMR 7/15/2019

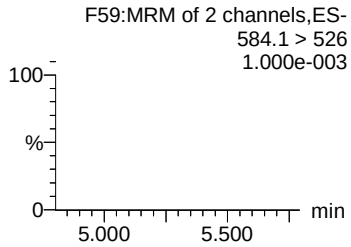
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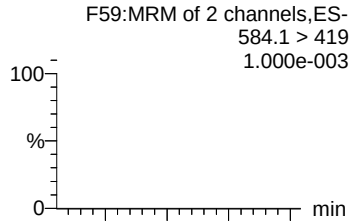
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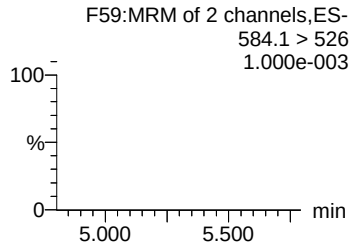
L-EtFOSAA



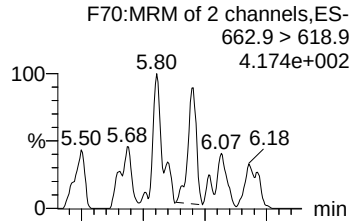


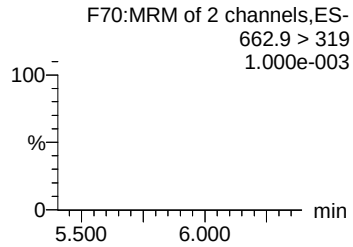
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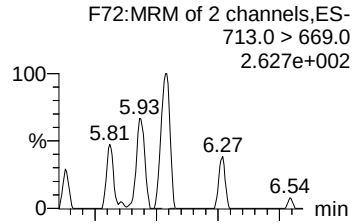


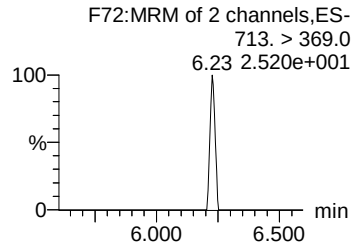
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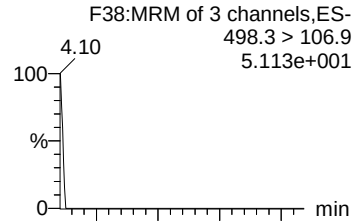


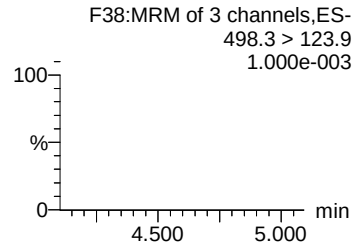
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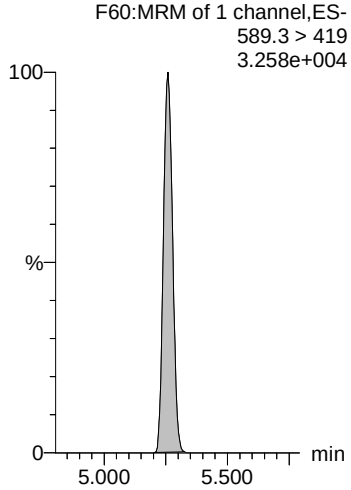


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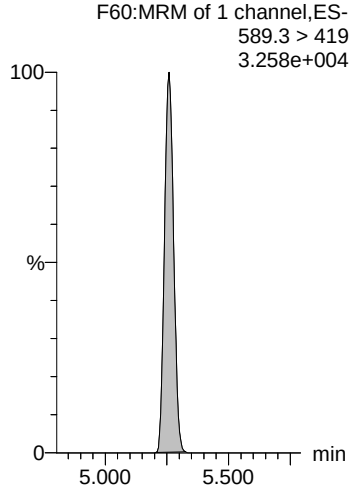




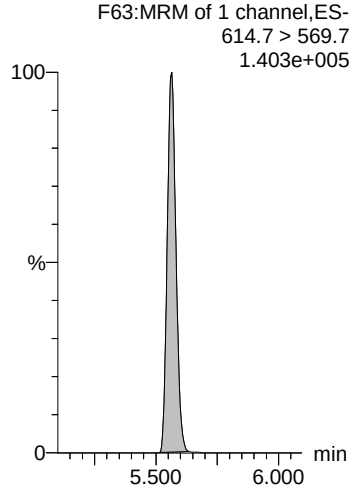
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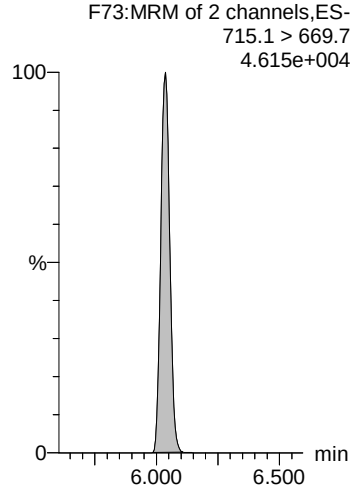
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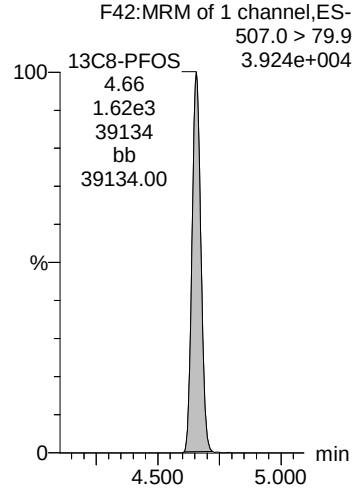
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13C2-PFTeDA



13C8-PFOS



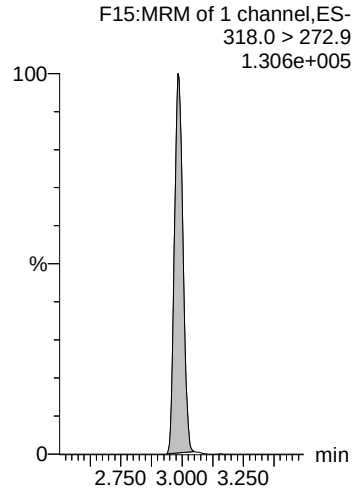
NY 7/15/2019

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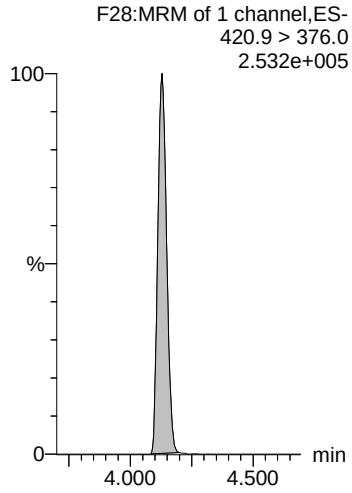
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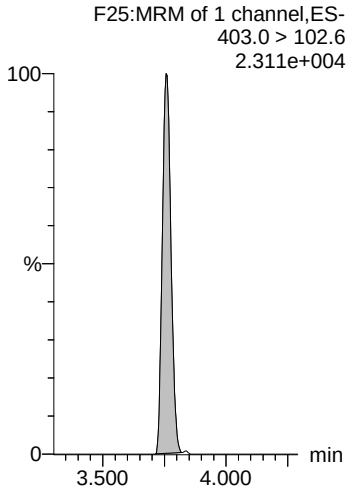
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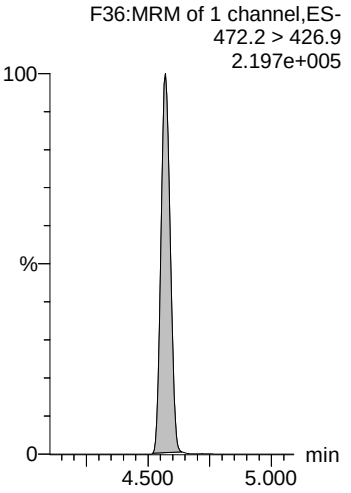
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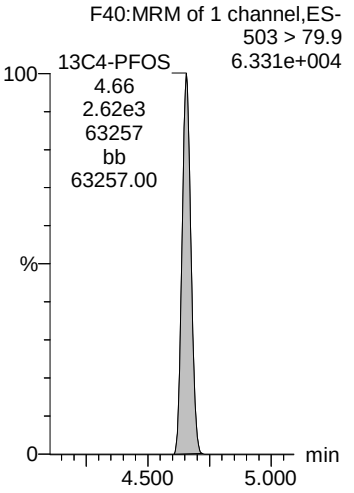
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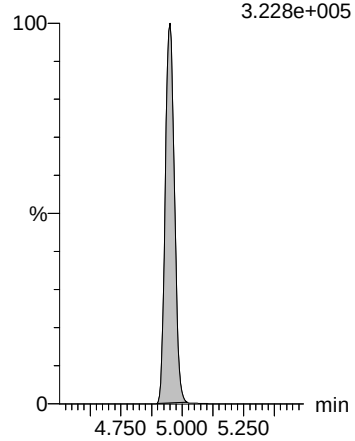
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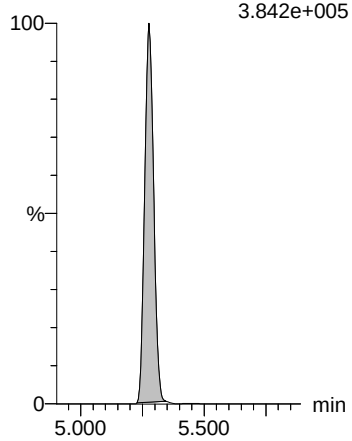
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-8.qld

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Name: 190708M3_8, Date: 08-Jul-2019, Time: 16:51:50, ID: 1901857-04 SAOA-B09-GW 0.11754, Description: SAOA-B09-GW

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	2.65e1	1.04e3	0.118		2.48	2.49	0.318	0.5626		7.009	YES
2	7	PFHxA	313.0 > 269.0	3.49e2	3.68e3	0.118		2.98	2.98	0.474	4.4060		15.580	NO
3	11	PFHpA	363.0 > 318.9		5.27e3	0.118		3.60						
4	13	L-PFHxS	398.9 > 79.6	2.69e2	2.17e3	0.118		3.76	3.76	1.55	15.3563		2.029	NO
5	80	Total PFHxS	398.9 > 79.6	2.69e2	2.17e3	0.118		3.83		1.55	15.3563			
6	49	13C3-PFBS	302.0 > 98.8	1.04e3	1.02e3	0.118	1.019	2.48	2.48	12.8	106.7541	100.4		
7	52	13C2-PFHxA	315.0 > 270.0	3.68e3	1.01e4	0.118	0.999	2.98	2.98	4.56	38.8802	91.4		
8	53	13C4-PFHpA	367.2 > 321.8	5.27e3	1.01e4	0.118	0.535	3.61	3.60	6.54	104.0396	97.8		
9	54	13C3-PFHxS	401.8 > 79.9	2.17e3	1.02e3	0.118	2.224	3.76	3.76	26.6	101.7741	95.7		
10	54	13C3-PFHxS	401.8 > 79.9	2.17e3	1.02e3	0.118	2.224	3.76	3.76	26.6	101.7741	95.7		
11	-1													
12	16	L-PFOA	412.8 > 368.9	8.08e2	9.71e3	0.118		4.13	4.13	1.04	6.0111		4.816	NO
13	81	Total PFOA	412.8 > 368.9	8.08e2	9.71e3	0.118		4.21		1.04	6.0111			
14	21	PFNA	463.0 > 418.8		1.03e4	0.118		4.57						
15	23	L-PFOS	498.9 > 79.9	2.71e2	2.49e3	0.118		4.66	4.66	1.36	10.8495		3.568	YES
16	82	Total PFOS	498.9 > 79.9	2.71e2	2.49e3	0.118		4.74		1.36	10.8495			
17	58	13C2-PFOA	414.9 > 369.7	9.71e3	1.41e4	0.118	0.741	4.13	4.13	8.60	98.7226	92.8		
18	58	13C2-PFOA	414.9 > 369.7	9.71e3	1.41e4	0.118	0.741	4.13	4.13	8.60	98.7226	92.8		
19	56	13C5-PFNA	468.2 > 422.9	1.03e4	1.20e4	0.118	0.996	4.57	4.57	10.7	91.6113	86.1		
20	59	13C8-PFOS	507.0 > 79.9	2.49e3	2.57e3	0.118	1.011	4.66	4.66	12.1	101.8027	95.7		
21	59	13C8-PFOS	507.0 > 79.9	2.49e3	2.57e3	0.118	1.011	4.66	4.66	12.1	101.8027	95.7		
22	-1													
23	26	PFDA	513 > 468.8	7.79e1	9.39e3	0.118		4.95	4.95	0.104	0.4687		29.458	YES
24	29	L-MeFOSAA	570 > 419		2.16e3	0.118		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.16e3	0.118		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.30e4	0.118		5.28						
27	37	PFDoA	612.9 > 569.0		1.17e4	0.118		5.56						
28	60	13C2-PFDA	515.1 > 469.9	9.39e3	1.55e4	0.118	0.793	4.95	4.95	7.58	81.2783	76.4		
29	62	d3-N-MeFOSAA	573.3 > 419	2.16e3	1.77e4	0.118	0.158	5.10	5.10	1.52	81.7653	76.9		
30	62	d3-N-MeFOSAA	573.3 > 419	2.16e3	1.77e4	0.118	0.158	5.10	5.10	1.52	81.7653	76.9		
31	63	13C2-PFUdA	565 > 519.8	1.30e4	1.77e4	0.118	1.071	5.28	5.28	9.18	72.9537	68.6		
32	65	13C2-PFDoA	614.7 > 569.7	1.17e4	1.55e4	0.118	1.151	5.56	5.56	9.41	69.5749	65.4		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.06e3	0.118		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.06e3	0.118		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.17e4	0.118		5.81						

NY 7/15/2019

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-8.qld

Last Altered: Monday, July 15, 2019 11:47:57 Pacific Daylight Time
Printed: Monday, July 15, 2019 11:48:51 Pacific Daylight Time

Name: 190708M3_8, Date: 08-Jul-2019, Time: 16:51:50, ID: 1901857-04 SAOA-B09-GW 0.11754, Description: SAOA-B09-GW

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		6.51e3	0.118		6.04						
38	85	TDCA	498.3>106.9			0.118		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.06e3	1.77e4	0.118	0.175	5.26	5.26	1.45	70.6146	66.4		
40	64	d5-N-EtFOSAA	589.3 > 419	2.06e3	1.77e4	0.118	0.175	5.26	5.26	1.45	70.6146	66.4		
41	65	13C2-PFDoA	614.7 > 569.7	1.17e4	1.55e4	0.118	1.151	5.56	5.56	9.41	69.5749	65.4		
42	67	13C2-PFTeDA	715.1 > 669.7	6.51e3	1.77e4	0.118	0.708	6.04	6.04	4.59	55.1158	51.8		
43	59	13C8-PFOS	507.0 > 79.9	2.49e3	2.57e3	0.118	1.011	4.66	4.66	12.1	101.8027	95.7		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.01e4	1.01e4	0.118	1.000	2.98	2.98	12.5	106.3468	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.41e4	1.41e4	0.118	1.000	4.13	4.13	12.5	106.3468	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.02e3	1.02e3	0.118	1.000	3.76	3.76	12.5	106.3468	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.20e4	1.20e4	0.118	1.000	4.57	4.57	12.5	106.3468	100.0		
49	77	13C4-PFOS	503 > 79.9	2.57e3	2.57e3	0.118	1.000	4.66	4.66	12.5	106.3468	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.55e4	1.55e4	0.118	1.000	4.95	4.95	12.5	106.3468	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.77e4	1.77e4	0.118	1.000	5.28	5.28	12.5	106.3468	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

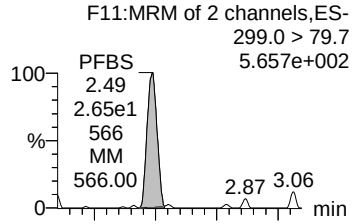
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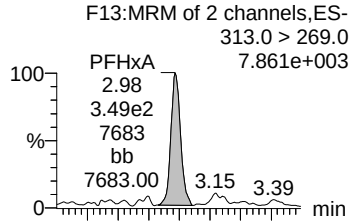
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Name: 190708M3_8, Date: 08-Jul-2019, Time: 16:51:50, ID: 1901857-04 SAOA-B09-GW 0.11754, Description: SAOA-B09-GW

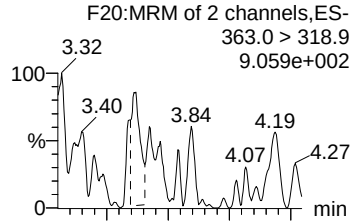
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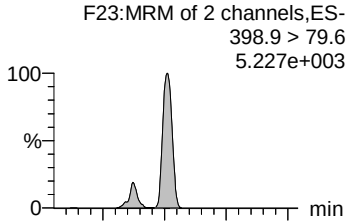
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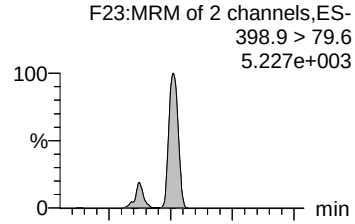
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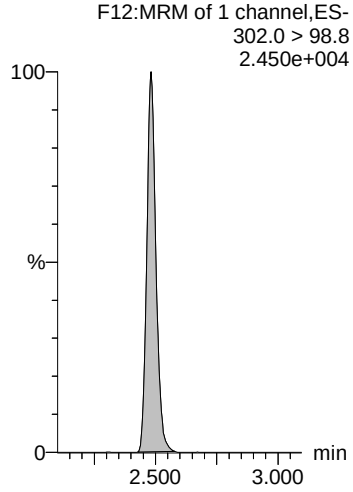
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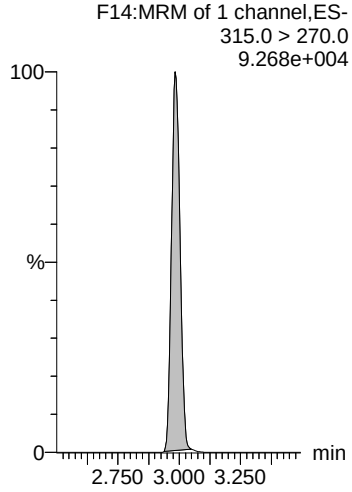
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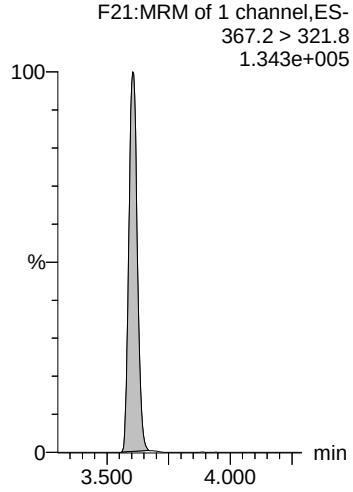
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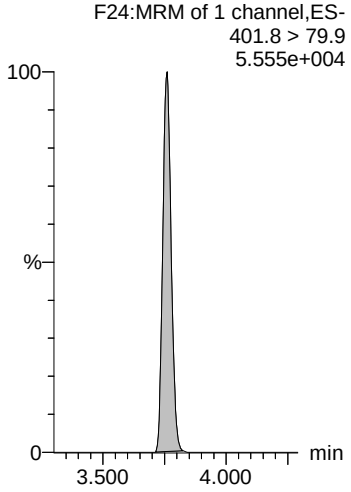
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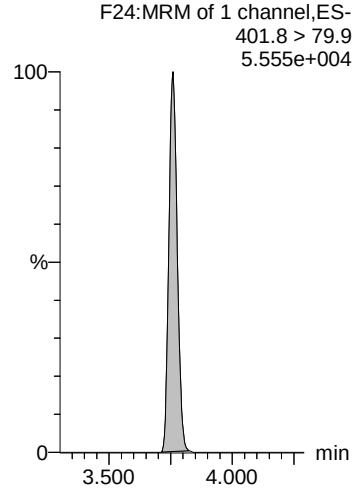
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13C3-PFHxS



13C3-PFHxS



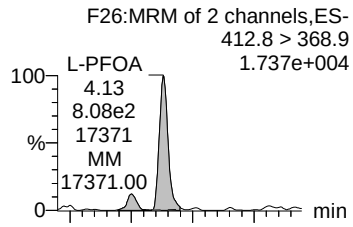
NY 7/15/2019

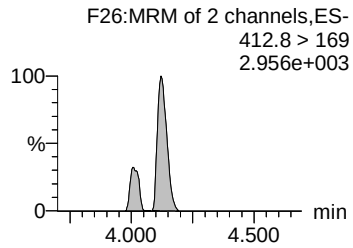
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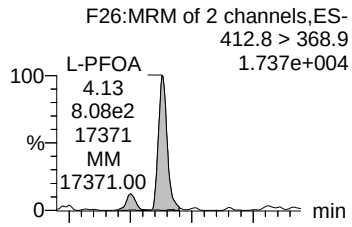
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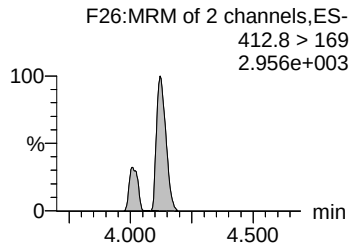
L-PFOA



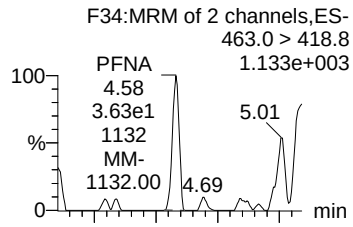


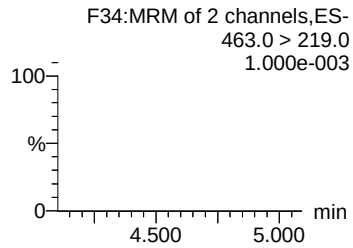
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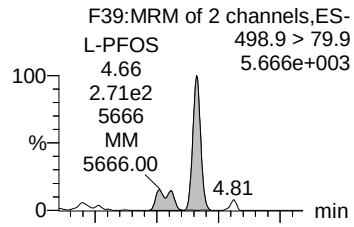


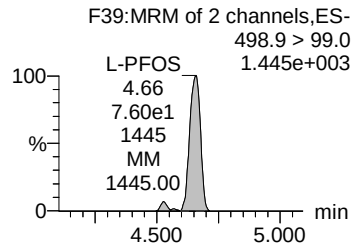
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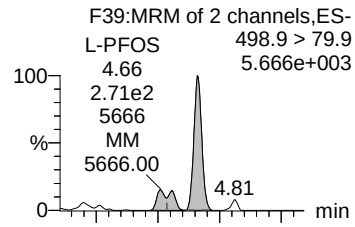


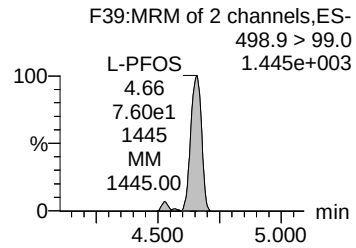
L-PFOS



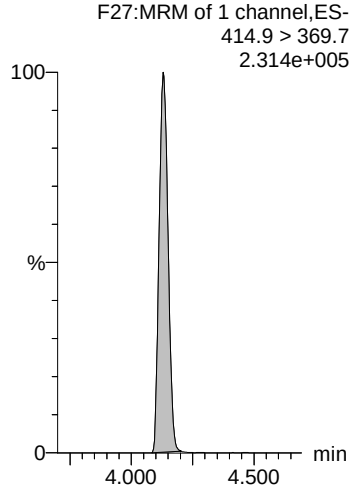


Total PFOS

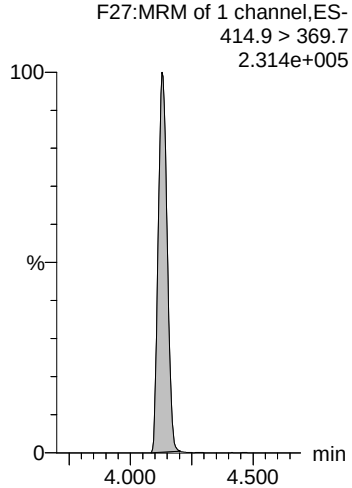




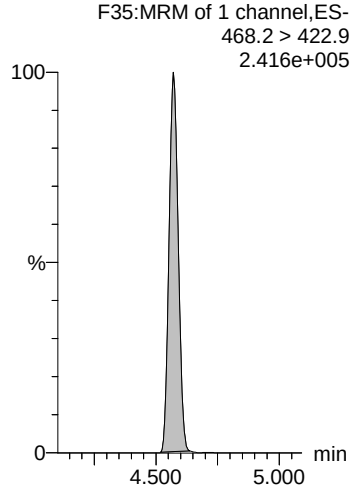
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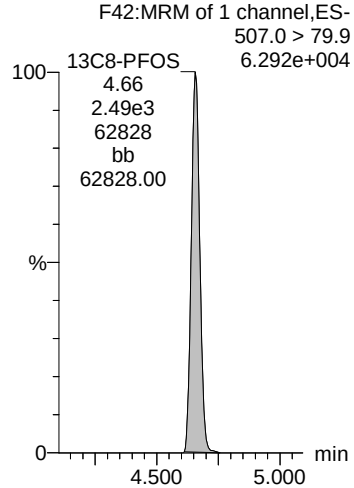
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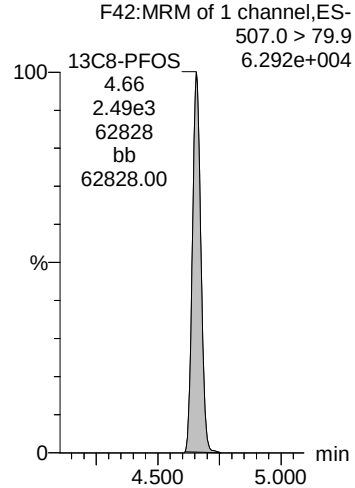
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13C8-PFOS



13C8-PFOS

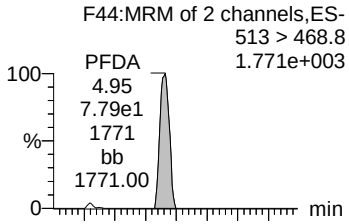


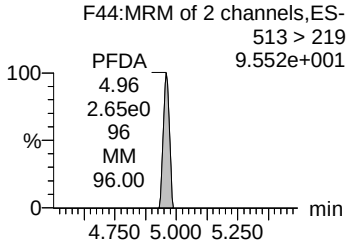
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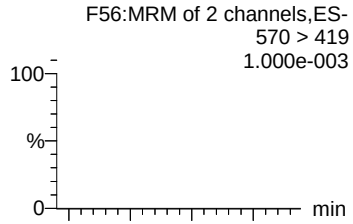
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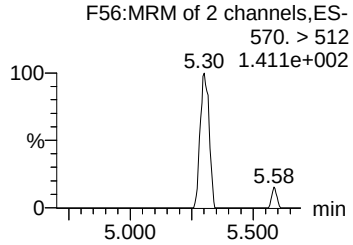
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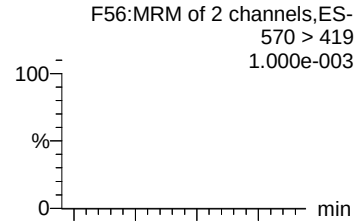


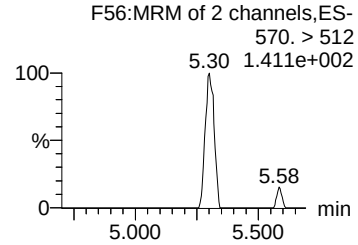
L-MeFOSAA



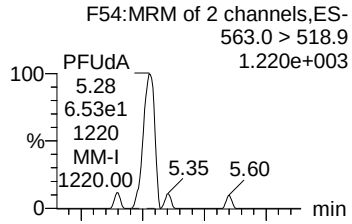


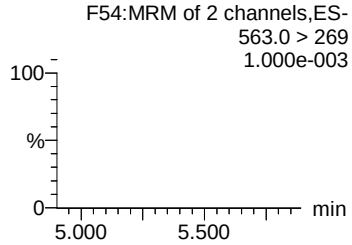
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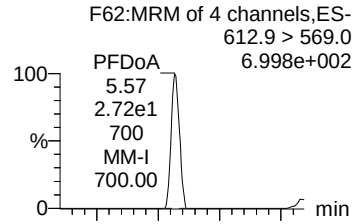


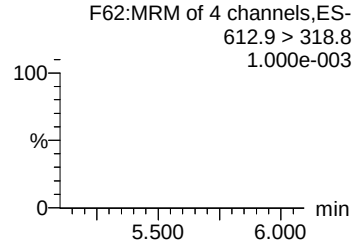
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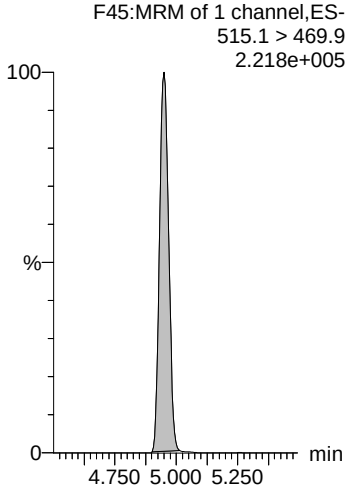


PFDoA

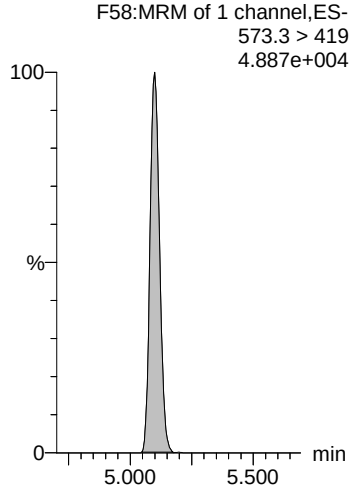




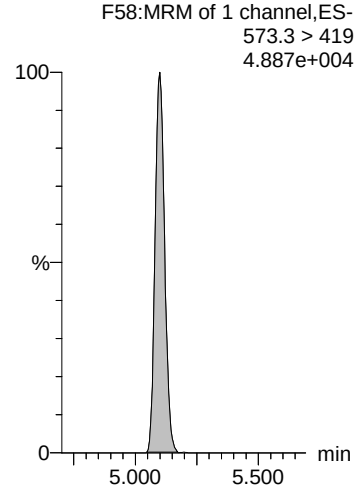
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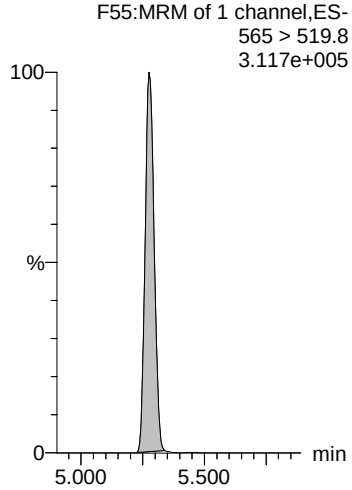
d3-N-MeFOSAA



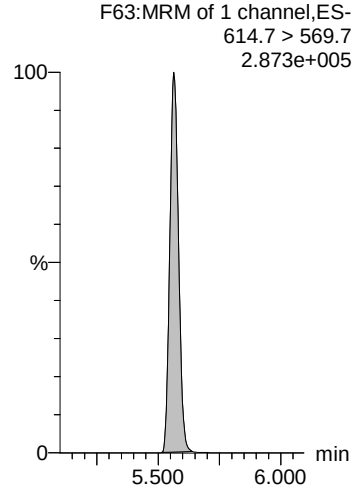
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA



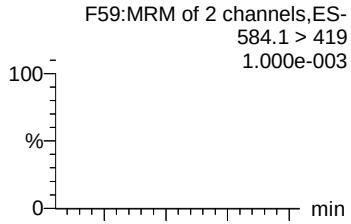
Review: AMR 7/15/2019

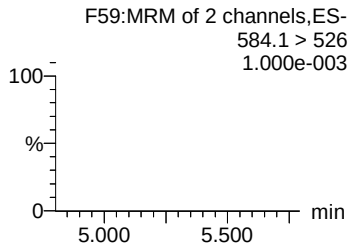
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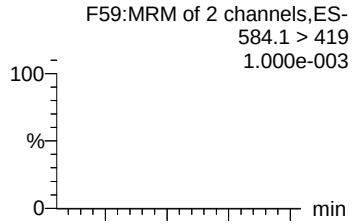
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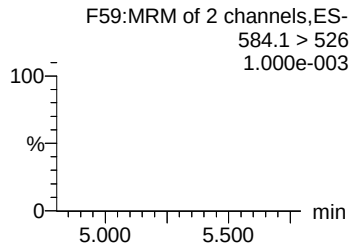
L-EtFOSAA



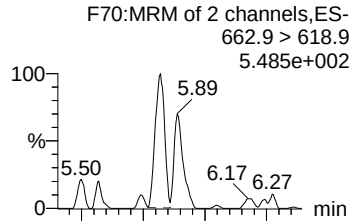


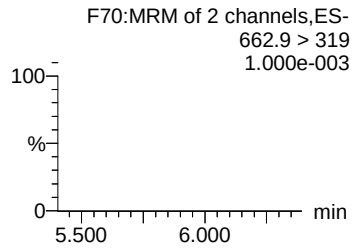
Total N-EtFOSAA



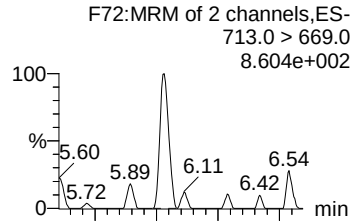


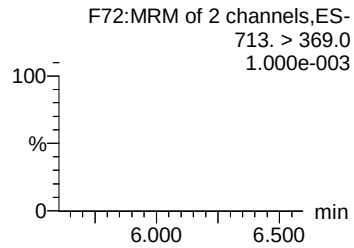
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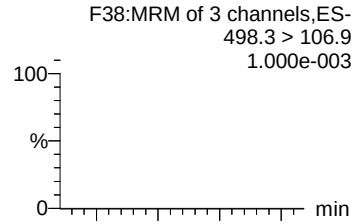


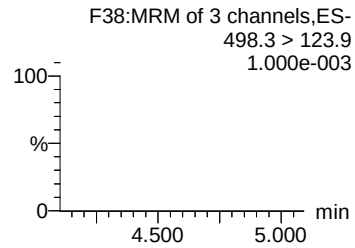
PFTeDA



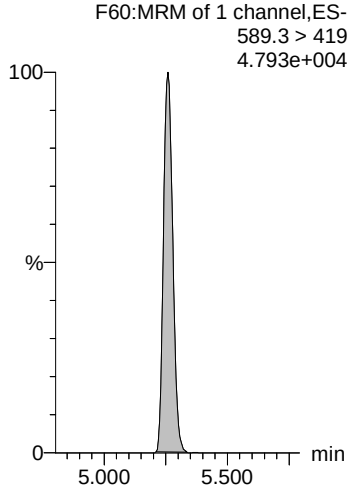


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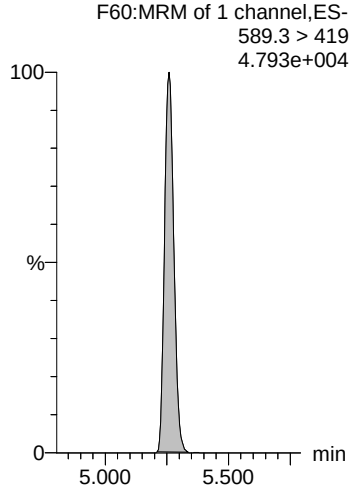




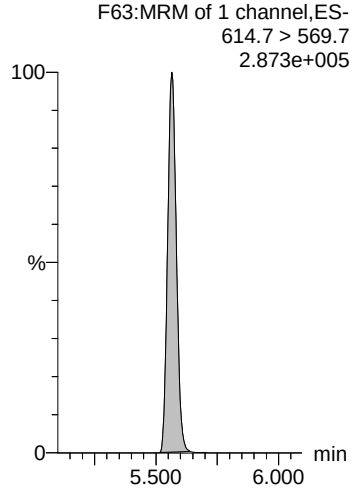
d5-N-EtFOSAA



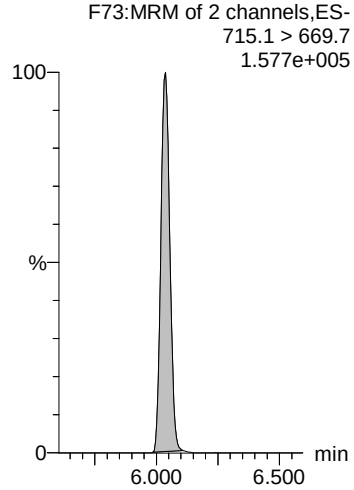
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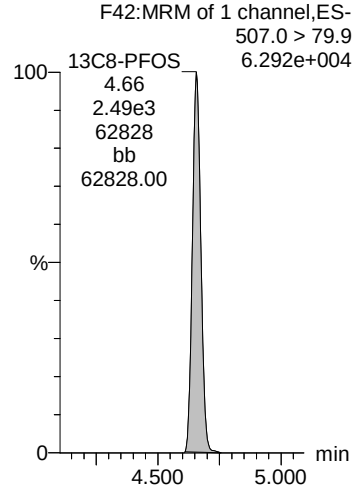
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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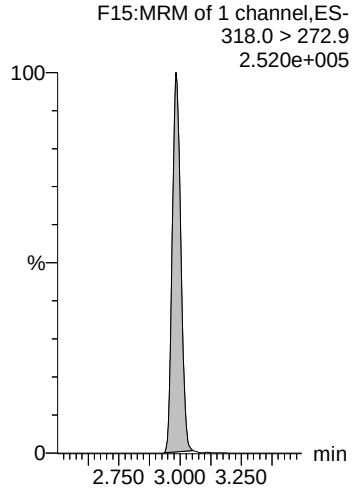
Review: AMR 7/15/2019

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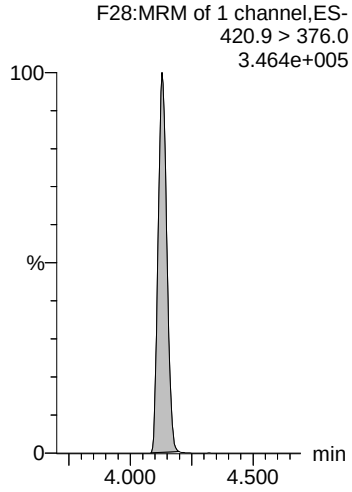
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Name: 190708M3_8, Date: 08-Jul-2019, Time: 16:51:50, ID: 1901857-04 SAOA-B09-GW 0.11754, Description: SAOA-B09-GW

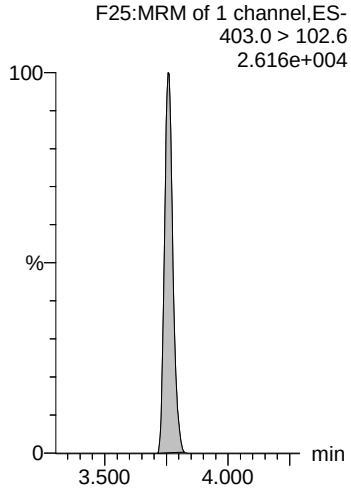
13C5-PFHxA



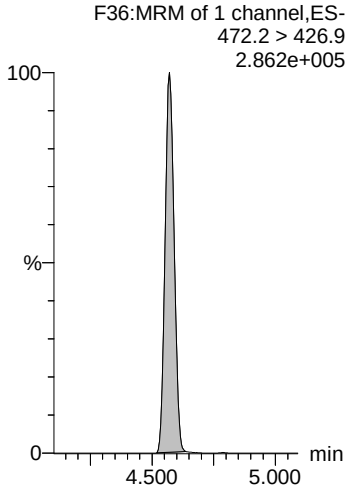
13C8-PFOA



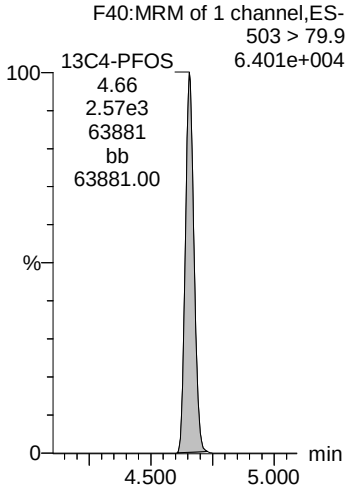
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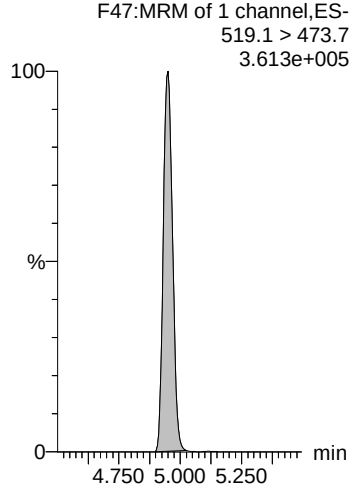
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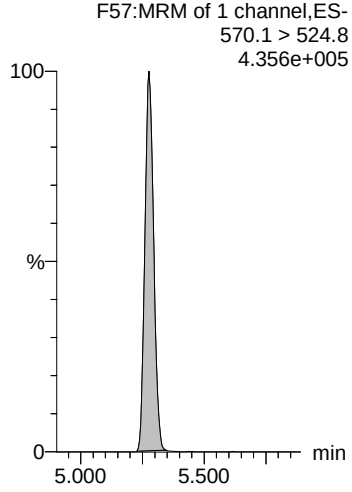
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-9.qld

Last Altered: Monday, July 15, 2019 11:49:49 Pacific Daylight Time
Printed: Monday, July 15, 2019 11:50:17 Pacific Daylight Time

Name: 190708M3_9, Date: 08-Jul-2019, Time: 17:02:20, ID: 1901857-05 FRB-06262019 0.12019, Description: FRB-06262019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		1.20e3	0.120		2.48						
2	7	PFHxA	313.0 > 269.0		5.17e3	0.120		2.99						
3	11	PFHpA	363.0 > 318.9		7.41e3	0.120		3.60						
4	13	L-PFHxS	398.9 > 79.6		2.26e3	0.120		3.76						
5	80	Total PFHxS	398.9 > 79.6	0.00e0	2.26e3	0.120		3.83		0.000				
6	49	13C3-PFBS	302.0 > 98.8	1.20e3	1.16e3	0.120	1.019	2.48	2.48	12.9	105.5558	101.5		
7	52	13C2-PFHxA	315.0 > 270.0	5.17e3	1.35e4	0.120	0.999	2.98	2.99	4.78	39.8410	95.8		
8	53	13C4-PFHpA	367.2 > 321.8	7.41e3	1.35e4	0.120	0.535	3.61	3.60	6.86	106.7286	102.6		
9	54	13C3-PFHxS	401.8 > 79.9	2.26e3	1.16e3	0.120	2.224	3.76	3.76	24.4	91.1296	87.6		
10	54	13C3-PFHxS	401.8 > 79.9	2.26e3	1.16e3	0.120	2.224	3.76	3.76	24.4	91.1296	87.6		
11	-1													
12	16	L-PFOA	412.8 > 368.9		1.43e4	0.120		4.13						
13	81	Total PFOA	412.8 > 368.9	0.00e0	1.43e4	0.120		4.21		0.000				
14	21	PFNA	463.0 > 418.8		1.34e4	0.120		4.57						
15	23	L-PFOS	498.9 > 79.9		2.73e3	0.120		4.66						
16	82	Total PFOS	498.9 > 79.9	0.00e0	2.73e3	0.120		4.74		0.000				
17	58	13C2-PFOA	414.9 > 369.7	1.43e4	1.98e4	0.120	0.741	4.13	4.13	9.03	101.3658	97.5		
18	58	13C2-PFOA	414.9 > 369.7	1.43e4	1.98e4	0.120	0.741	4.13	4.13	9.03	101.3658	97.5		
19	56	13C5-PFNA	468.2 > 422.9	1.34e4	1.66e4	0.120	0.996	4.57	4.57	10.1	84.3941	81.1		
20	59	13C8-PFOS	507.0 > 79.9	2.73e3	2.81e3	0.120	1.011	4.66	4.66	12.2	100.0226	96.2		
21	59	13C8-PFOS	507.0 > 79.9	2.73e3	2.81e3	0.120	1.011	4.66	4.66	12.2	100.0226	96.2		
22	-1													
23	26	PFDA	513 > 468.8		1.14e4	0.120		4.95						
24	29	L-MeFOSAA	570 > 419		2.22e3	0.120		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.22e3	0.120		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.35e4	0.120		5.28						
27	37	PFDoA	612.9 > 569.0		1.40e4	0.120		5.56						
28	60	13C2-PFDA	515.1 > 469.9	1.14e4	2.04e4	0.120	0.793	4.95	4.95	6.97	73.1144	70.3		
29	62	d3-N-MeFOSAA	573.3 > 419	2.22e3	2.15e4	0.120	0.158	5.10	5.10	1.29	67.5617	65.0		
30	62	d3-N-MeFOSAA	573.3 > 419	2.22e3	2.15e4	0.120	0.158	5.10	5.10	1.29	67.5617	65.0		
31	63	13C2-PFUdA	565 > 519.8	1.35e4	2.15e4	0.120	1.071	5.28	5.28	7.81	60.6732	58.3		
32	65	13C2-PFDoA	614.7 > 569.7	1.40e4	2.04e4	0.120	1.151	5.56	5.56	8.57	61.9500	59.6		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.59e3	0.120		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.59e3	0.120		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.40e4	0.120		5.81						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-9.qld

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Name: 190708M3_9, Date: 08-Jul-2019, Time: 17:02:20, ID: 1901857-05 FRB-06262019 0.12019, Description: FRB-06262019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.23e4	0.120		6.04						
38	85	TDCA	498.3>106.9			0.120		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.59e3	2.15e4	0.120	0.175	5.26	5.26	1.51	71.5450	68.8		
40	64	d5-N-EtFOSAA	589.3 > 419	2.59e3	2.15e4	0.120	0.175	5.26	5.26	1.51	71.5450	68.8		
41	65	13C2-PFDoA	614.7 > 569.7	1.40e4	2.04e4	0.120	1.151	5.56	5.56	8.57	61.9500	59.6		
42	67	13C2-PFTeDA	715.1 > 669.7	1.23e4	2.15e4	0.120	0.708	6.04	6.04	7.15	84.0320	80.8		
43	59	13C8-PFOS	507.0 > 79.9	2.73e3	2.81e3	0.120	1.011	4.66	4.66	12.2	100.0226	96.2		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.35e4	1.35e4	0.120	1.000	2.98	2.99	12.5	104.0020	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.98e4	1.98e4	0.120	1.000	4.13	4.13	12.5	104.0020	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.16e3	1.16e3	0.120	1.000	3.76	3.76	12.5	104.0020	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.66e4	1.66e4	0.120	1.000	4.57	4.57	12.5	104.0020	100.0		
49	77	13C4-PFOS	503 > 79.9	2.81e3	2.81e3	0.120	1.000	4.66	4.66	12.5	104.0020	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.04e4	2.04e4	0.120	1.000	4.95	4.95	12.5	104.0020	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.15e4	2.15e4	0.120	1.000	5.28	5.28	12.5	104.0020	100.0		

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Review: AMR 7/15/2019

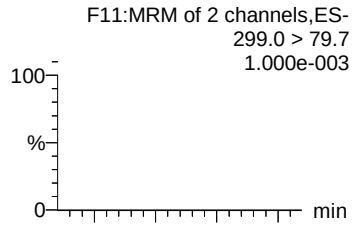
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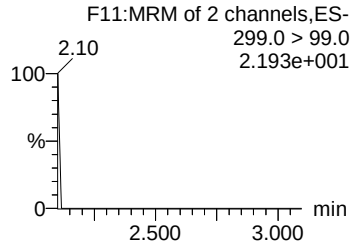
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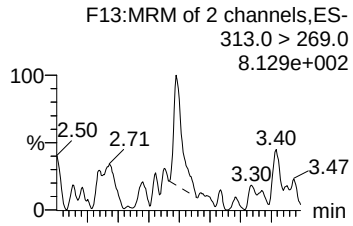
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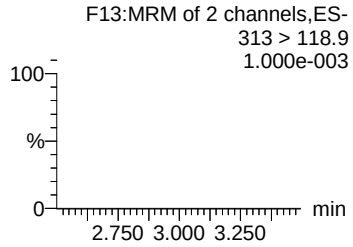
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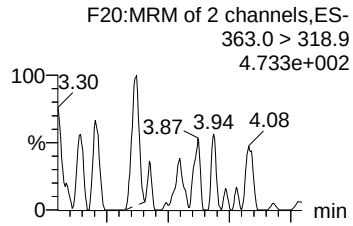


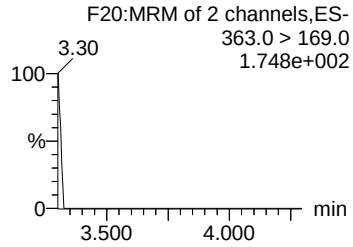
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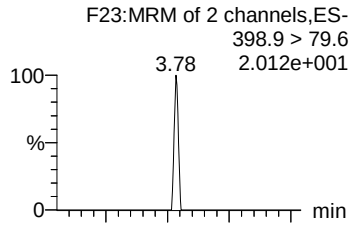


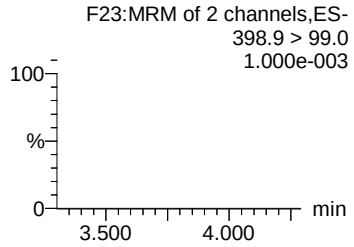
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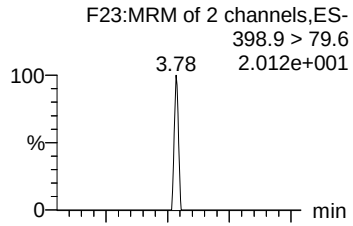


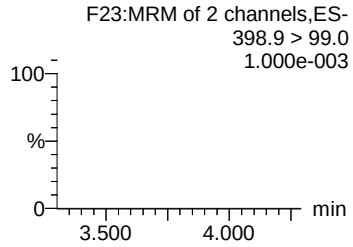
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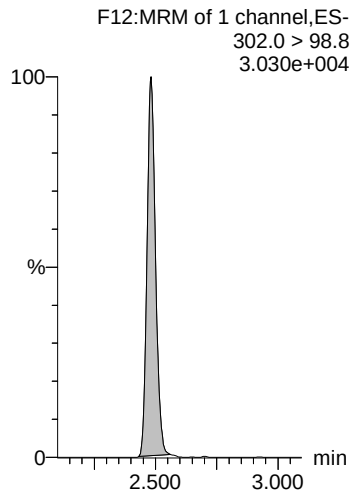


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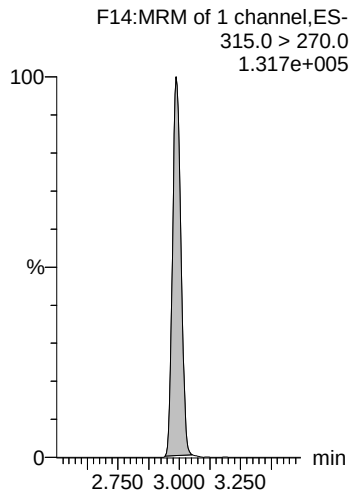




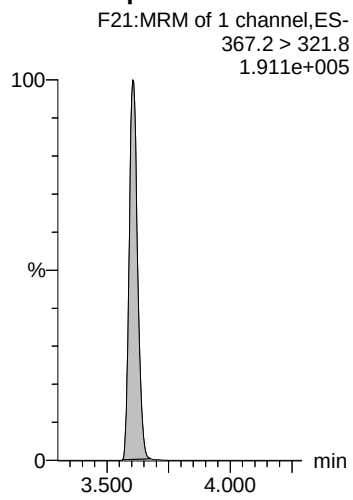
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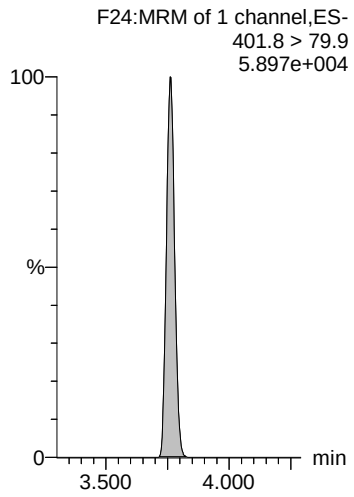
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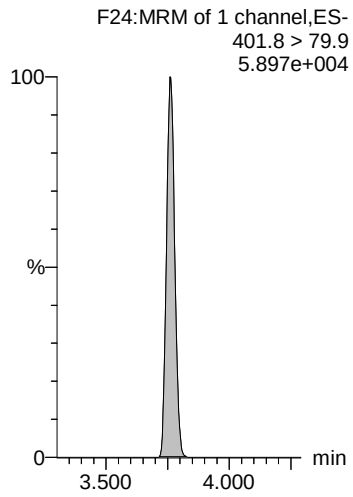
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13C3-PFHxS



13C3-PFHxS



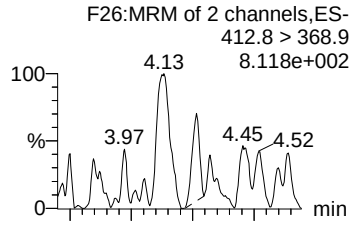
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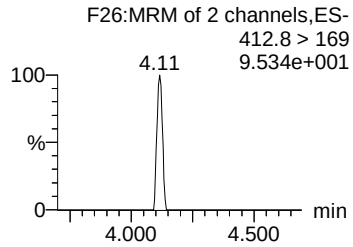
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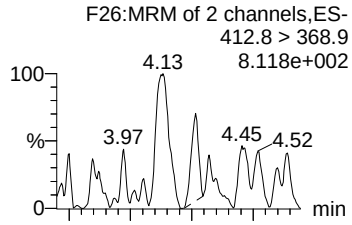
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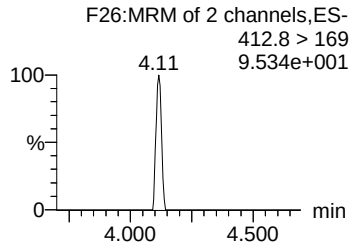
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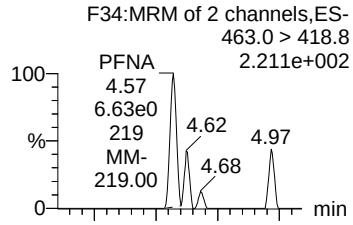


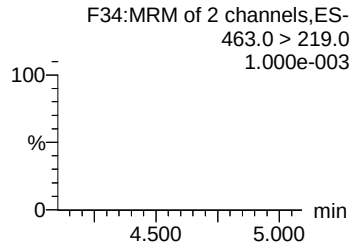
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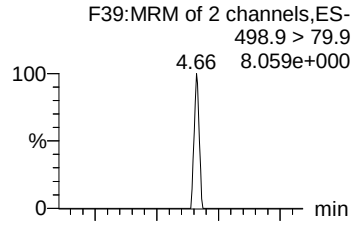


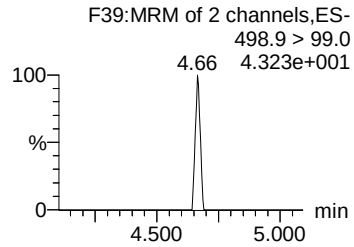
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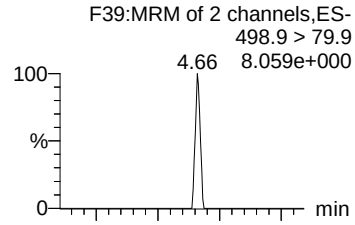


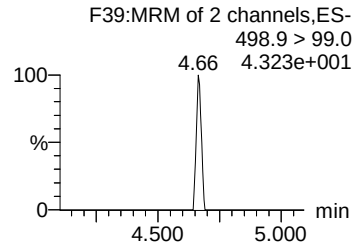
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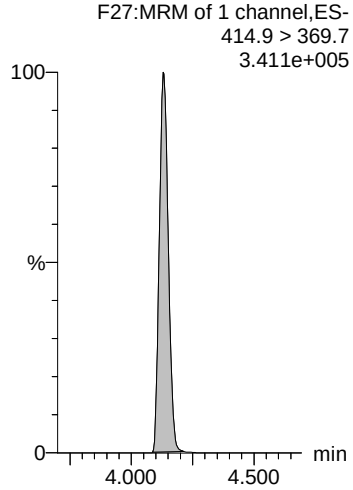


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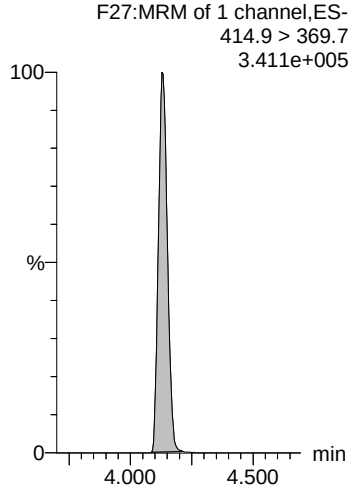




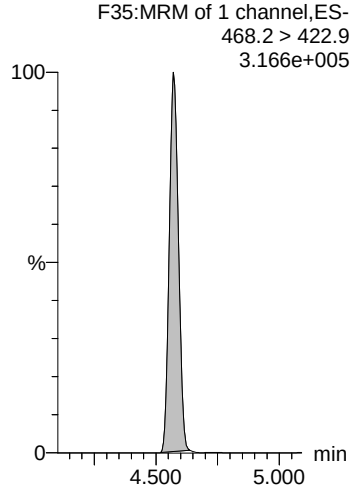
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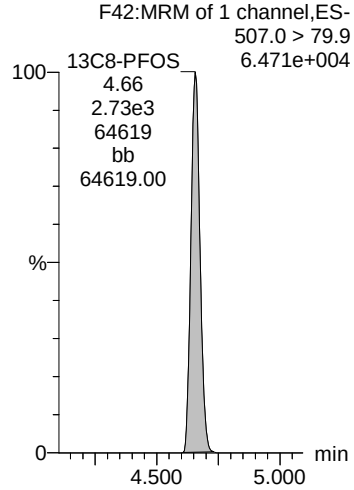
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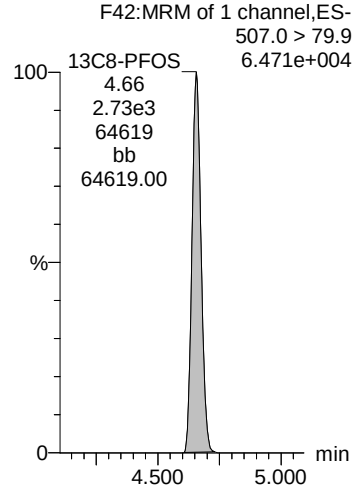
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13C8-PFOS



13C8-PFOS

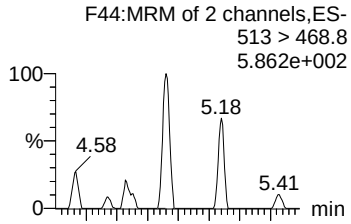


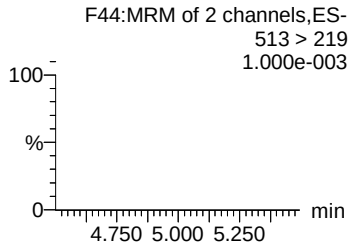
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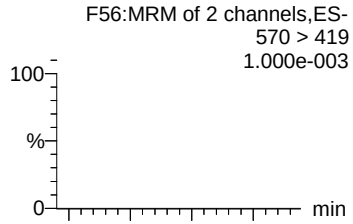
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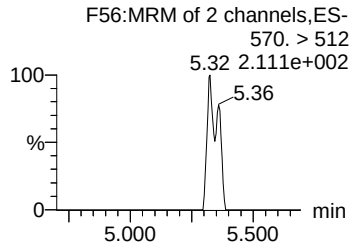
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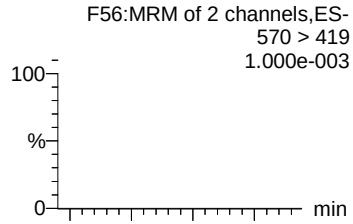


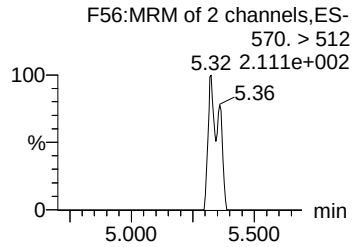
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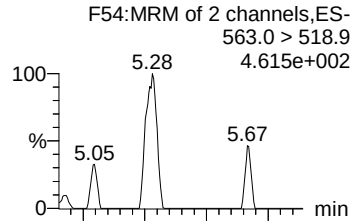


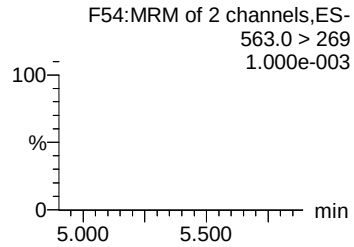
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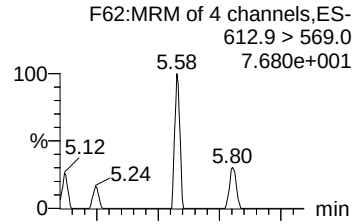


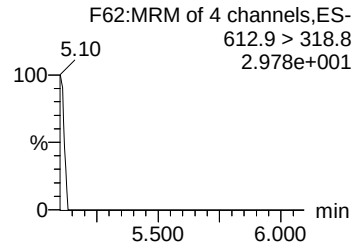
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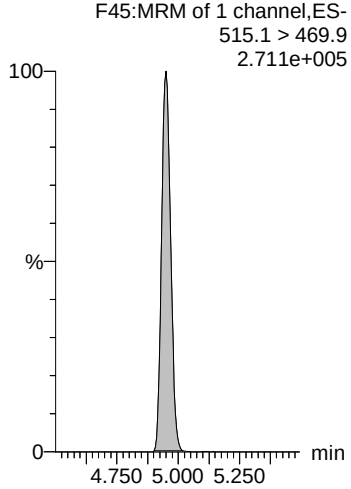


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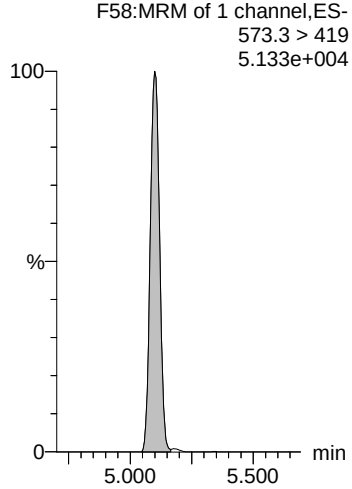




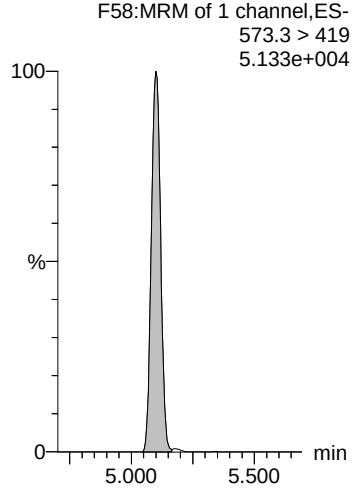
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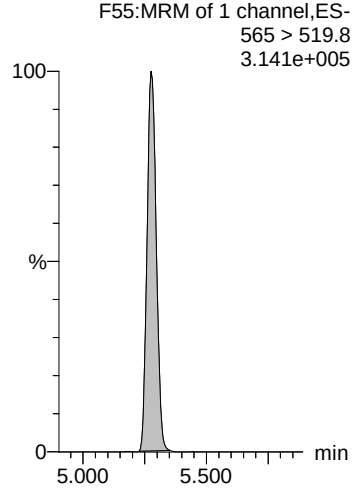
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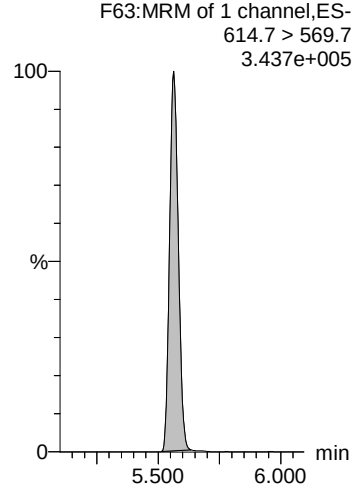
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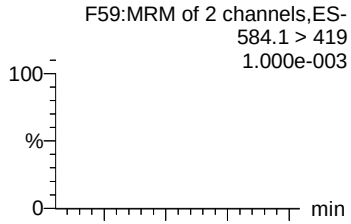
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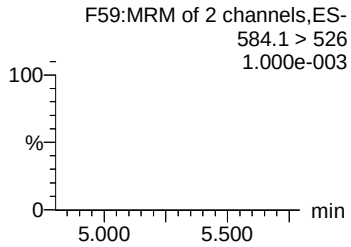
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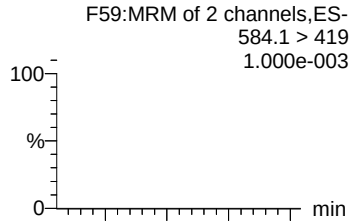
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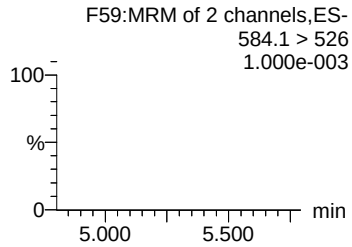
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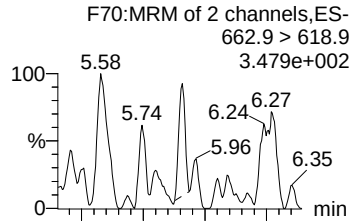


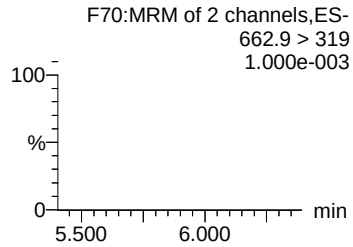
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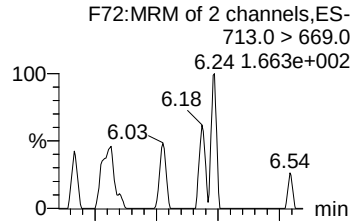


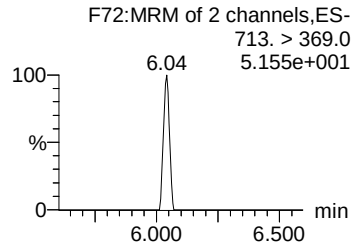
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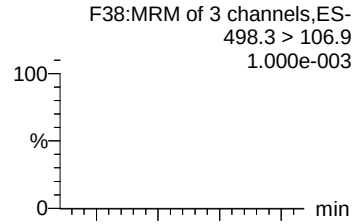


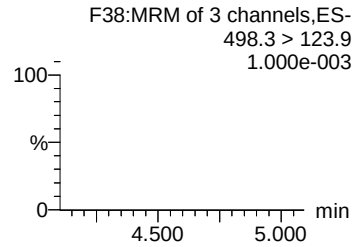
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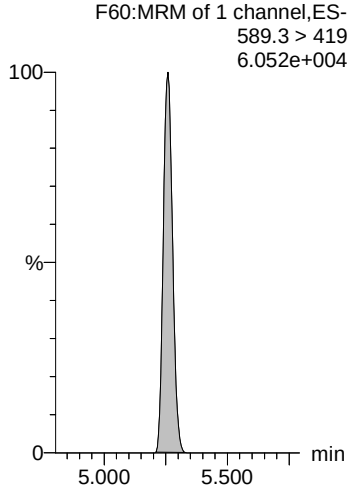


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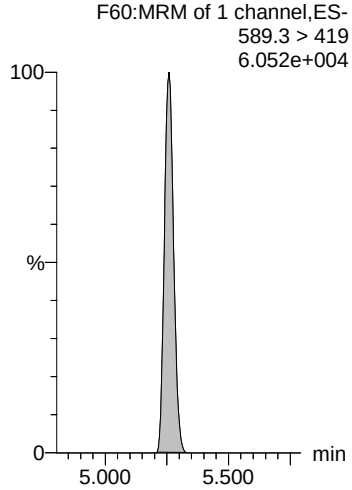




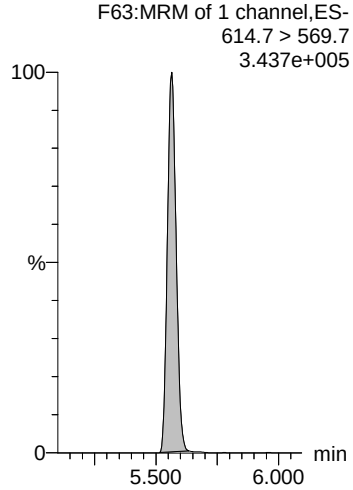
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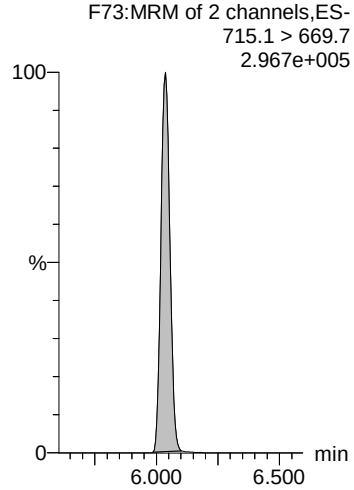
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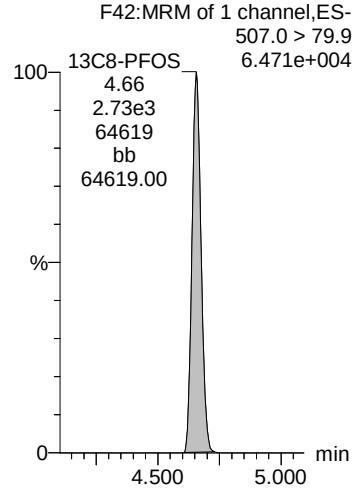
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



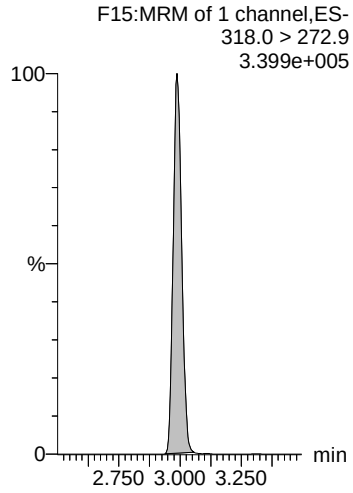
NY 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-9.qld

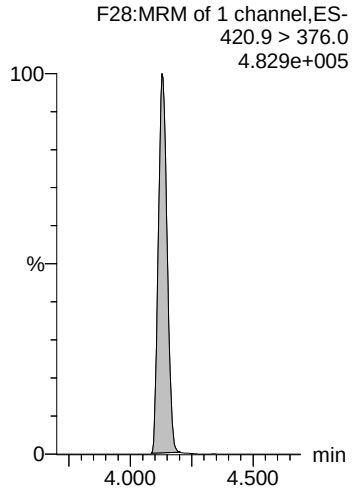
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Printed: Monday, July 15, 2019 11:50:17 Pacific Daylight Time

Name: 190708M3_9, Date: 08-Jul-2019, Time: 17:02:20, ID: 1901857-05 FRB-06262019 0.12019, Description: FRB-06262019

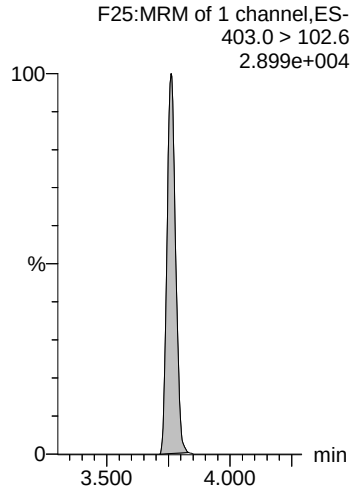
13C5-PFHxA



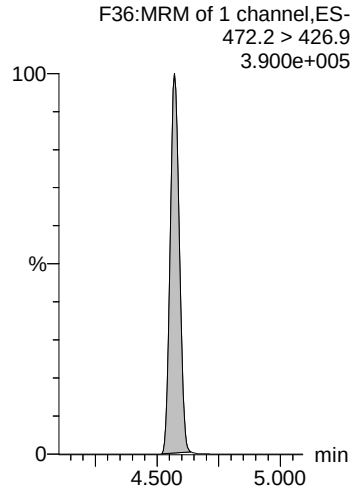
13C8-PFOA



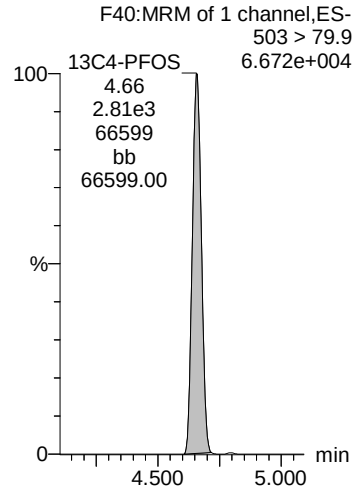
18O2-PFHxS



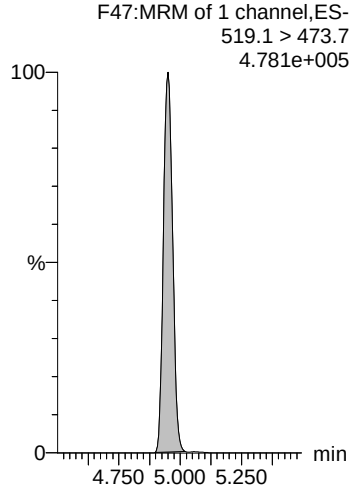
13C9-PFNA



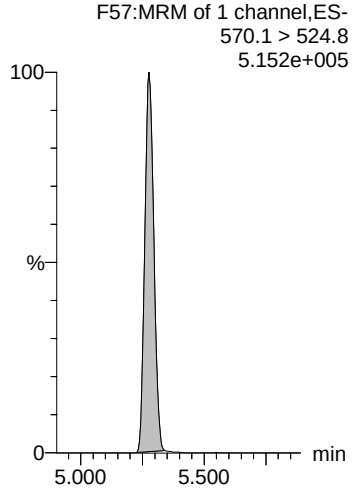
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-10.qld

Last Altered: Monday, July 15, 2019 09:14:50 Pacific Daylight Time
Printed: Monday, July 15, 2019 09:15:27 Pacific Daylight Time

Name: 190708M3_10, Date: 08-Jul-2019, Time: 17:12:58, ID: 1901857-06 EB-06262019 0.11814, Description: EB-06262019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		1.26e3	0.118		2.48						
2	7	PFHxA	313.0 > 269.0		5.94e3	0.118		2.98						
3	11	PFHpA	363.0 > 318.9		8.34e3	0.118		3.60						
4	13	L-PFHxS	398.9 > 79.6	1.07e1	2.45e3	0.118		3.76	3.76	0.0546	0.9655		13.523	YES
5	80	Total PFHxS	398.9 > 79.6	1.07e1	2.45e3	0.118		3.83		0.0546	0.9655			
6	49	13C3-PFBS	302.0 > 98.8	1.26e3	1.16e3	0.118	1.019	2.48	2.48	13.6	112.7222	106.5		
7	52	13C2-PFHxA	315.0 > 270.0	5.94e3	1.57e4	0.118	0.999	2.98	2.98	4.74	40.1803	94.9		
8	53	13C4-PFHpA	367.2 > 321.8	8.34e3	1.57e4	0.118	0.535	3.61	3.60	6.66	105.3951	99.6		
9	54	13C3-PFHxS	401.8 > 79.9	2.45e3	1.16e3	0.118	2.224	3.76	3.76	26.4	100.4986	95.0		
10	54	13C3-PFHxS	401.8 > 79.9	2.45e3	1.16e3	0.118	2.224	3.76	3.76	26.4	100.4986	95.0		
11	-1													
12	16	L-PFOA	412.8 > 368.9	3.83e1	1.44e4	0.118		4.13	4.14	0.0333	0.0490		3.332	NO
13	81	Total PFOA	412.8 > 368.9	3.83e1	1.44e4	0.118		4.21		0.0333	0.0490			
14	21	PFNA	463.0 > 418.8		1.39e4	0.118		4.57						
15	23	L-PFOS	498.9 > 79.9		2.71e3	0.118		4.66						
16	82	Total PFOS	498.9 > 79.9	0.00e0	2.71e3	0.118		4.74		0.000				
17	58	13C2-PFOA	414.9 > 369.7	1.44e4	2.00e4	0.118	0.741	4.13	4.13	8.98	102.5122	96.9		
18	58	13C2-PFOA	414.9 > 369.7	1.44e4	2.00e4	0.118	0.741	4.13	4.13	8.98	102.5122	96.9		
19	56	13C5-PFNA	468.2 > 422.9	1.39e4	1.62e4	0.118	0.996	4.57	4.57	10.7	90.6520	85.7		
20	59	13C8-PFOS	507.0 > 79.9	2.71e3	2.79e3	0.118	1.011	4.66	4.66	12.1	101.6599	96.1		
21	59	13C8-PFOS	507.0 > 79.9	2.71e3	2.79e3	0.118	1.011	4.66	4.66	12.1	101.6599	96.1		
22	-1													
23	26	PFDA	513 > 468.8	1.37e1	1.20e4	0.118		4.95	4.95	0.0143			5.725	NO
24	29	L-MeFOSAA	570 > 419		1.83e3	0.118		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.83e3	0.118		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.37e4	0.118		5.28						
27	37	PFDoA	612.9 > 569.0		1.20e4	0.118		5.56						
28	60	13C2-PFDA	515.1 > 469.9	1.20e4	2.02e4	0.118	0.793	4.95	4.95	7.45	79.5260	75.2		
29	62	d3-N-MeFOSAA	573.3 > 419	1.83e3	2.21e4	0.118	0.158	5.10	5.10	1.03	55.3239	52.3		
30	62	d3-N-MeFOSAA	573.3 > 419	1.83e3	2.21e4	0.118	0.158	5.10	5.10	1.03	55.3239	52.3		
31	63	13C2-PFUdA	565 > 519.8	1.37e4	2.21e4	0.118	1.071	5.28	5.28	7.73	61.1341	57.8		
32	65	13C2-PFDoA	614.7 > 569.7	1.20e4	2.02e4	0.118	1.151	5.56	5.56	7.43	54.6674	51.7		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.09e3	0.118		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.09e3	0.118		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.20e4	0.118		5.81						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-10.qld

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Name: 190708M3_10, Date: 08-Jul-2019, Time: 17:12:58, ID: 1901857-06 EB-06262019 0.11814, Description: EB-06262019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.07e4	0.118		6.04						
38	85	TDCA	498.3>106.9			0.118		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.09e3	2.21e4	0.118	0.175	5.26	5.26	1.18	57.1905	54.1		
40	64	d5-N-EtFOSAA	589.3 > 419	2.09e3	2.21e4	0.118	0.175	5.26	5.26	1.18	57.1905	54.1		
41	65	13C2-PFDoA	614.7 > 569.7	1.20e4	2.02e4	0.118	1.151	5.56	5.56	7.43	54.6674	51.7		
42	67	13C2-PFTeDA	715.1 > 669.7	1.07e4	2.21e4	0.118	0.708	6.04	6.04	6.04	72.2426	68.3		
43	59	13C8-PFOS	507.0 > 79.9	2.71e3	2.79e3	0.118	1.011	4.66	4.66	12.1	101.6599	96.1		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.57e4	1.57e4	0.118	1.000	2.98	2.98	12.5	105.8067	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.00e4	2.00e4	0.118	1.000	4.13	4.13	12.5	105.8067	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.16e3	1.16e3	0.118	1.000	3.76	3.76	12.5	105.8067	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.62e4	1.62e4	0.118	1.000	4.57	4.57	12.5	105.8067	100.0		
49	77	13C4-PFOS	503 > 79.9	2.79e3	2.79e3	0.118	1.000	4.66	4.66	12.5	105.8067	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.02e4	2.02e4	0.118	1.000	4.95	4.95	12.5	105.8067	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.21e4	2.21e4	0.118	1.000	5.28	5.28	12.5	105.8067	100.0		

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Review: AMR 7/15/2019

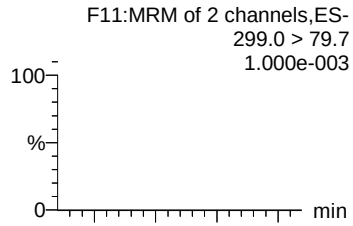
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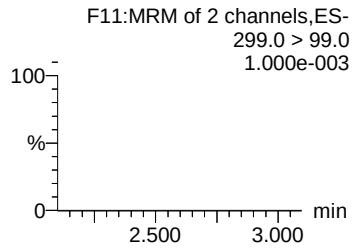
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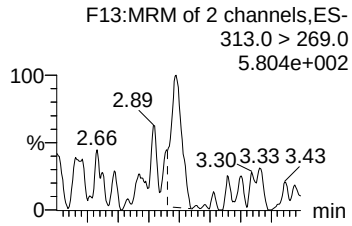
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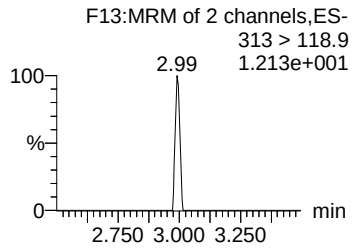
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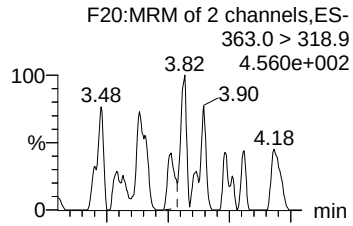


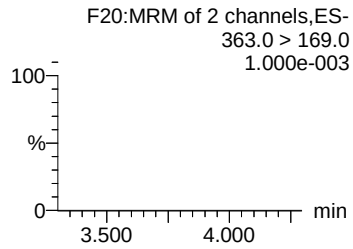
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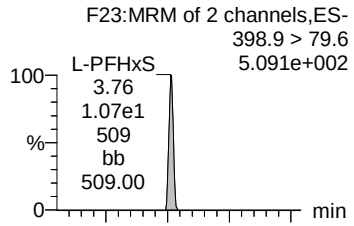


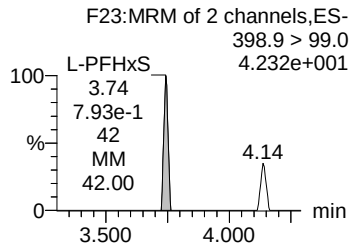
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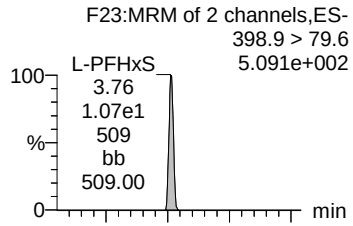


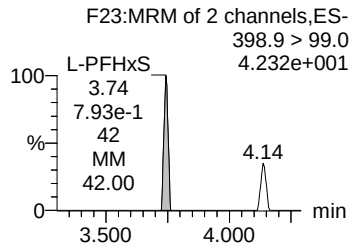
L-PFHxS



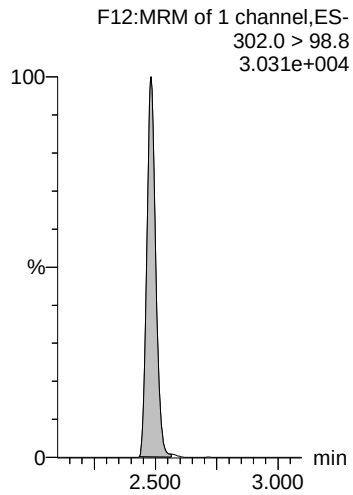


Total PFHxS

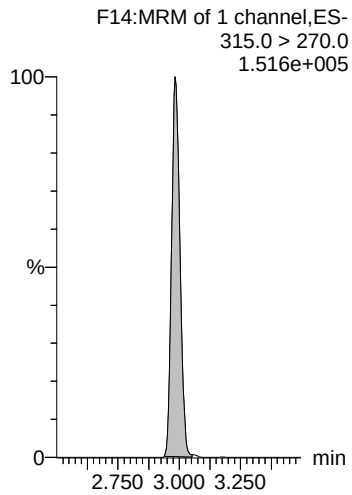




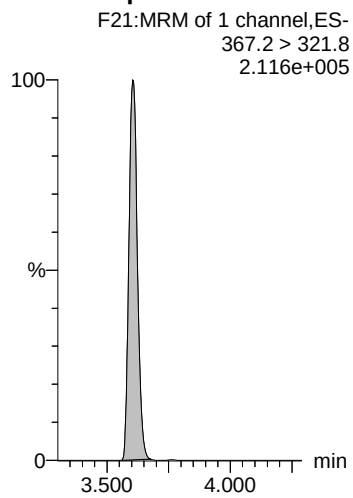
13C3-PFBS



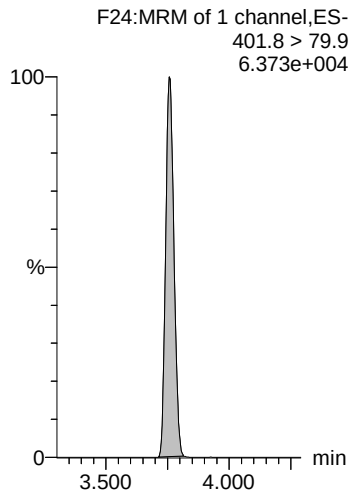
13C2-PFHxA



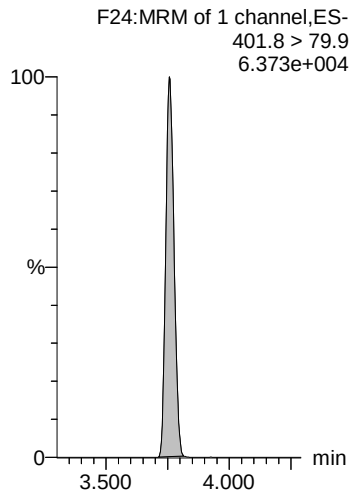
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



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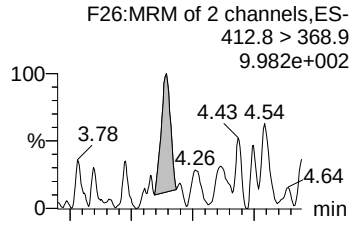
Review: AMR 7/15/2019

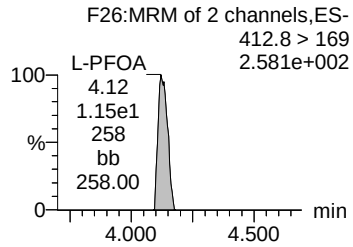
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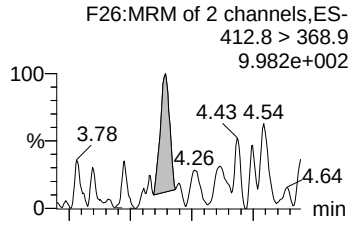
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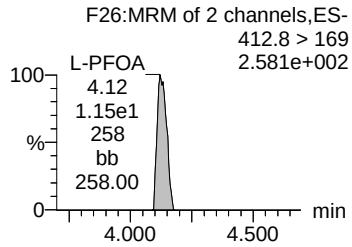
L-PFOA



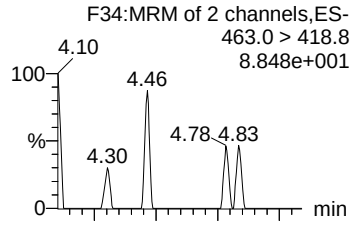


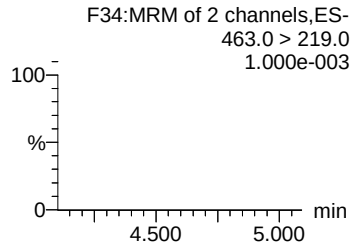
Total PFOA



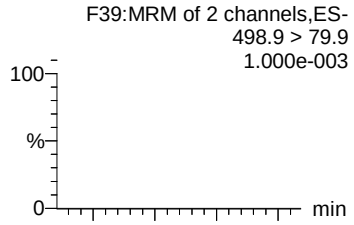


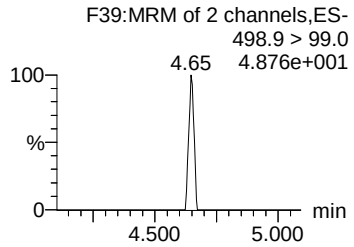
PFNA



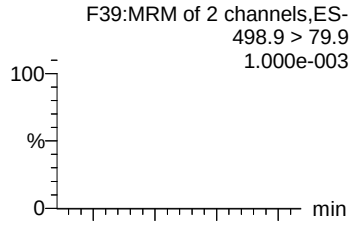


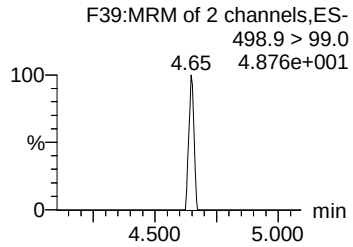
L-PFOS



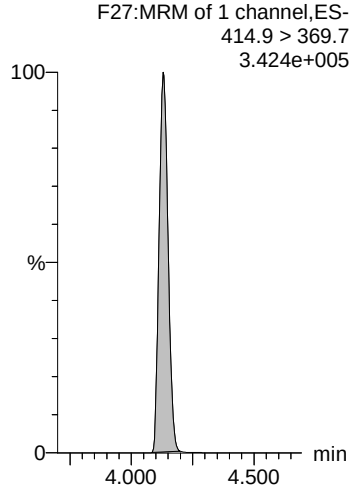


Total PFOS

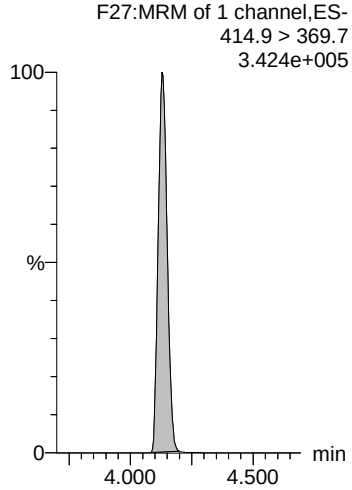




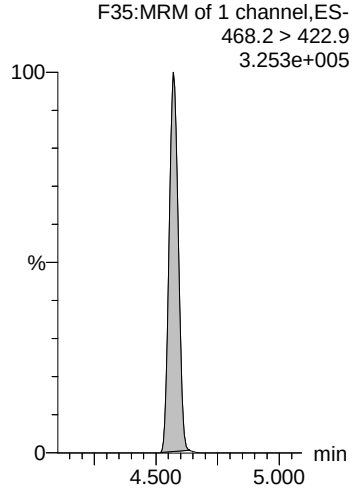
13C2-PFOA



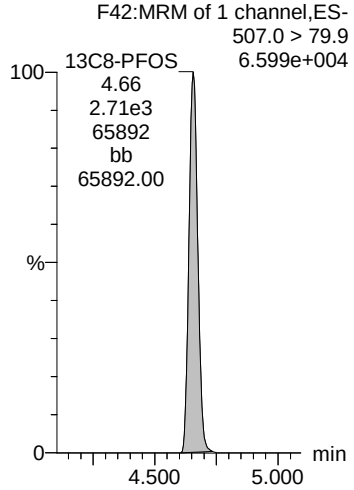
13C2-PFOA



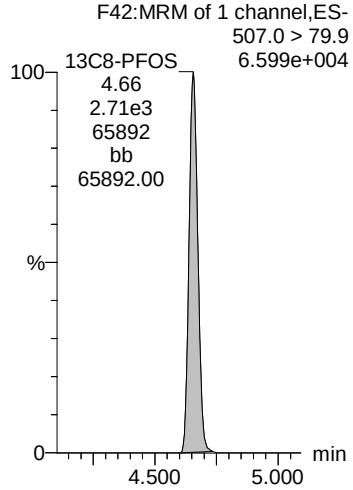
13C5-PFNA



13C8-PFOS



13C8-PFOS



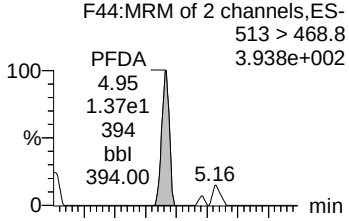
NY 7/15/2019

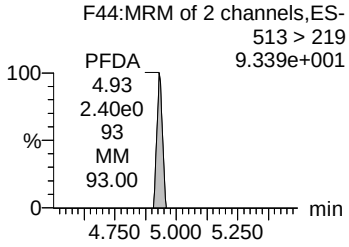
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Printed: Monday, July 15, 2019 09:15:27 Pacific Daylight Time

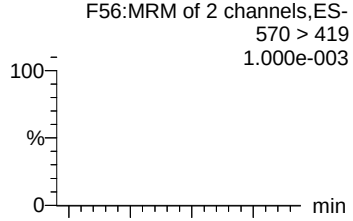
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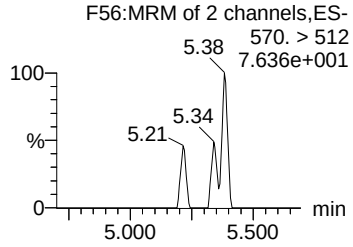
PFDA



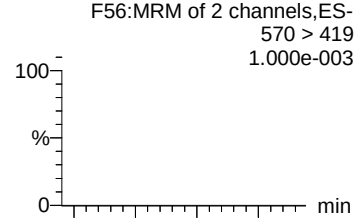


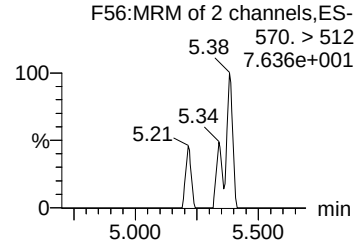
L-MeFOSAA



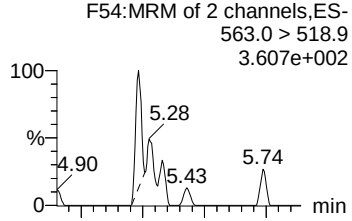


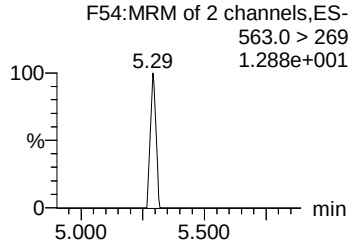
Total N-MeFOSAA



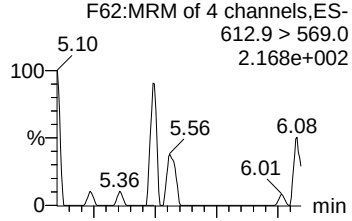


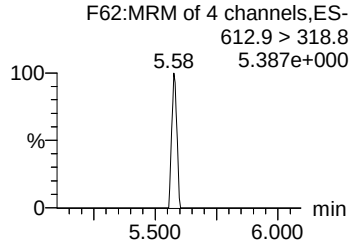
PFUdA



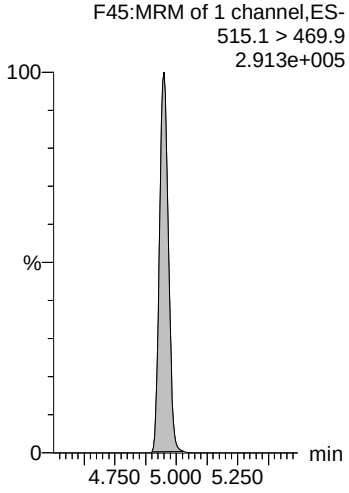


PFDoA

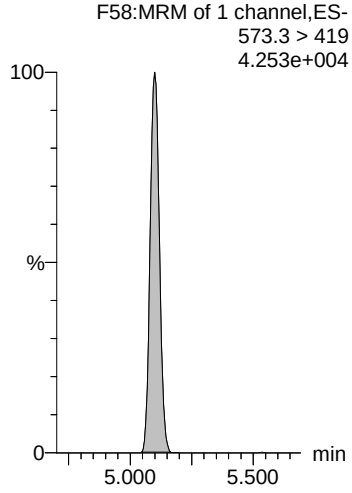




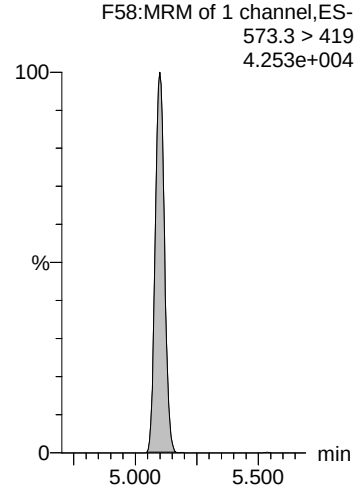
13C2-PFDA



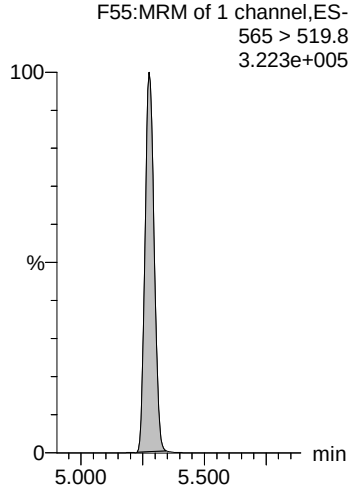
d3-N-MeFOSAA



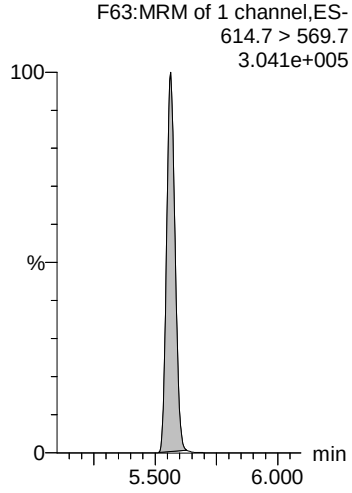
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA



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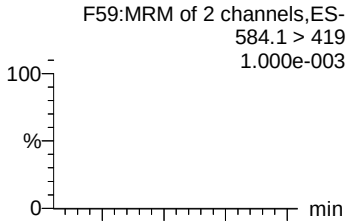
Review: AMR 7/15/2019

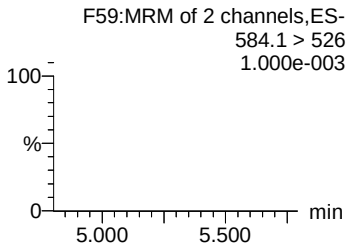
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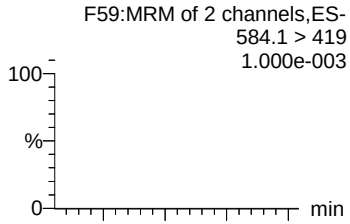
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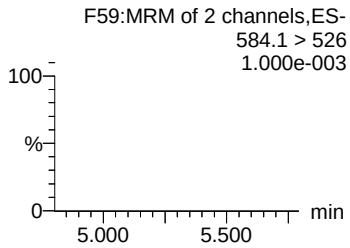
L-EtFOSAA



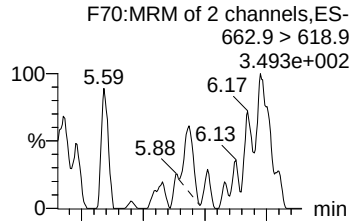


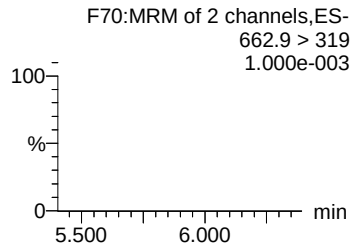
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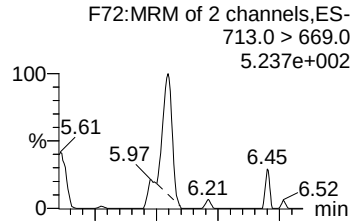


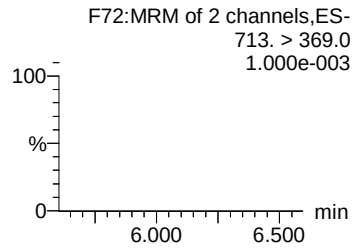
PFTrDA



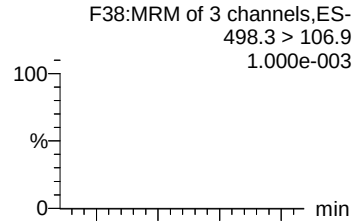


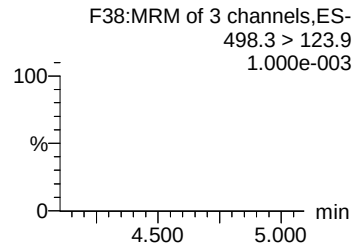
PFTeDA



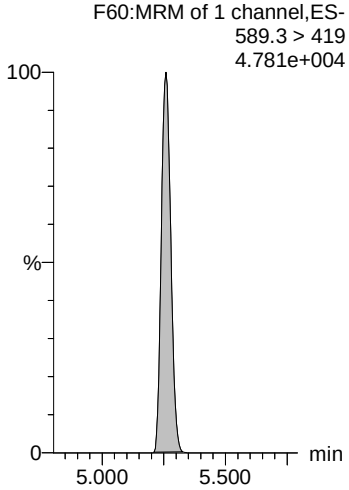


TDCA

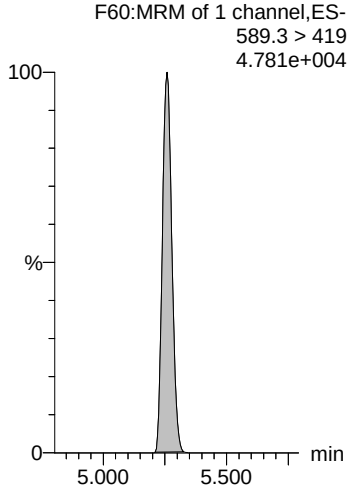




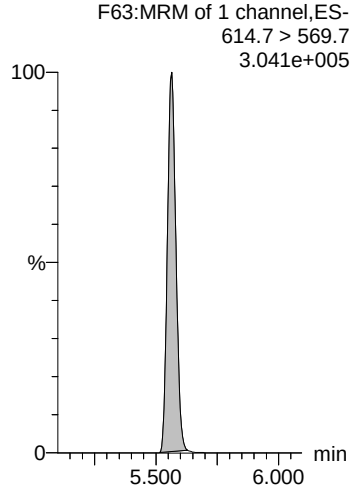
d5-N-EtFOSAA



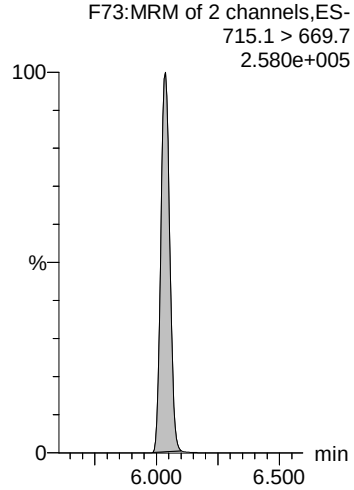
d5-N-EtFOSAA



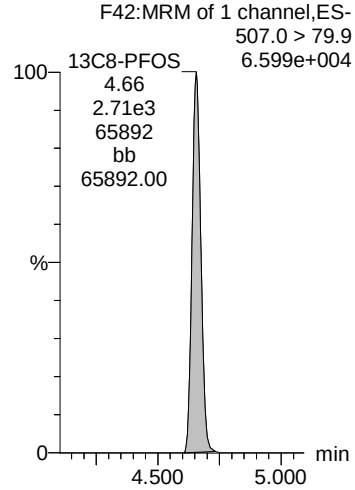
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



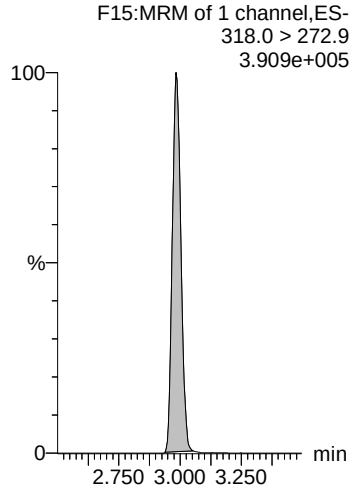
 NY 7/15/2019

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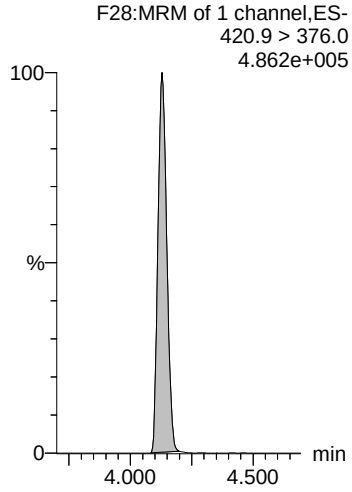
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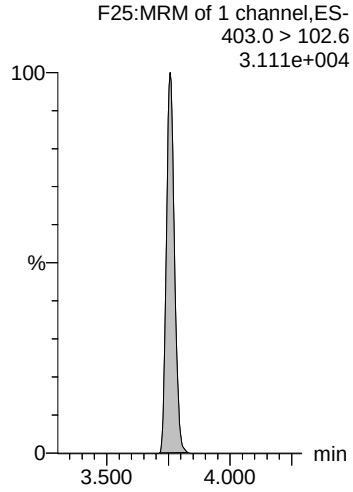
13C5-PFHxA



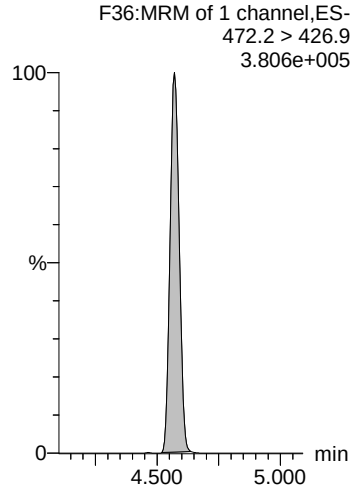
13C8-PFOA



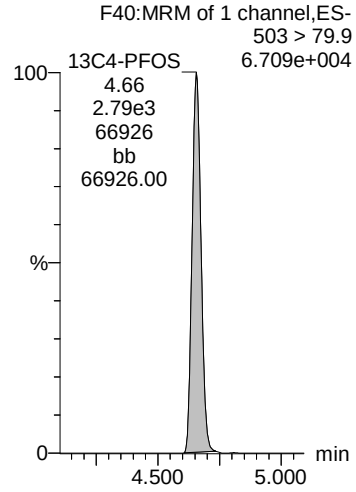
18O2-PFHxS



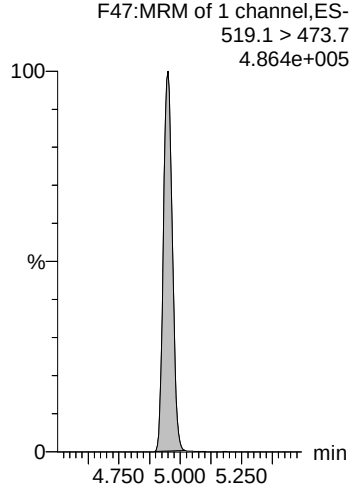
13C9-PFNA



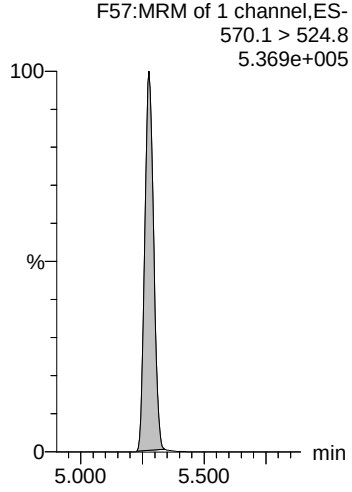
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-11.qld

Last Altered: Monday, July 15, 2019 11:51:41 Pacific Daylight Time
Printed: Monday, July 15, 2019 11:52:03 Pacific Daylight Time

Name: 190708M3_11, Date: 08-Jul-2019, Time: 17:23:32, ID: 1901857-09 SAOA-B11-GW 0.12366, Description: SAOA-B11-GW

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	1.00e2	9.18e2	0.124		2.48	2.48	1.37	4.6463		2.541	NO
2	7	PFHxA	313.0 > 269.0	6.83e2	4.42e3	0.124		2.99	2.98	0.773	6.9508		16.021	NO
3	11	PFHpA	363.0 > 318.9	2.80e2	5.80e3	0.124		3.60	3.60	0.603	4.1228		13.588	NO
4	13	L-PFHxS	398.9 > 79.6	8.21e2	1.89e3	0.124		3.76	3.76	5.43	50.0823		2.022	NO
5	80	Total PFHxS	398.9 > 79.6	8.21e2	1.89e3	0.124		3.83		5.43	50.0823			
6	49	13C3-PFBS	302.0 > 98.8	9.18e2	1.00e3	0.124	1.019	2.48	2.48	11.5	90.9301	90.0		
7	52	13C2-PFHxA	315.0 > 270.0	4.42e3	1.17e4	0.124	0.999	2.98	2.99	4.73	38.3060	94.7		
8	53	13C4-PFHpA	367.2 > 321.8	5.80e3	1.17e4	0.124	0.535	3.61	3.60	6.22	94.0264	93.0		
9	54	13C3-PFHxS	401.8 > 79.9	1.89e3	1.00e3	0.124	2.224	3.76	3.76	23.6	85.7857	84.9		
10	54	13C3-PFHxS	401.8 > 79.9	1.89e3	1.00e3	0.124	2.224	3.76	3.76	23.6	85.7857	84.9		
11	-1													
12	16	L-PFOA	412.8 > 368.9	8.65e3	9.91e3	0.124		4.13	4.13	10.9	61.2298		3.756	NO
13	81	Total PFOA	412.8 > 368.9	8.65e3	9.91e3	0.124		4.21		10.9	61.2298			
14	21	PFNA	463.0 > 418.8		9.82e3	0.124		4.57						
15	23	L-PFOS	498.9 > 79.9	1.96e2	1.99e3	0.124		4.66	4.66	1.23	9.4108		2.233	NO
16	82	Total PFOS	498.9 > 79.9	1.96e2	1.99e3	0.124		4.74		1.23	9.4108			
17	58	13C2-PFOA	414.9 > 369.7	9.91e3	1.46e4	0.124	0.741	4.13	4.13	8.51	92.8722	91.9		
18	58	13C2-PFOA	414.9 > 369.7	9.91e3	1.46e4	0.124	0.741	4.13	4.13	8.51	92.8722	91.9		
19	56	13C5-PFNA	468.2 > 422.9	9.82e3	1.17e4	0.124	0.996	4.57	4.57	10.5	85.4693	84.6		
20	59	13C8-PFOS	507.0 > 79.9	1.99e3	2.16e3	0.124	1.011	4.66	4.66	11.5	91.8729	90.9		
21	59	13C8-PFOS	507.0 > 79.9	1.99e3	2.16e3	0.124	1.011	4.66	4.66	11.5	91.8729	90.9		
22	-1													
23	26	PFDA	513 > 468.8		7.92e3	0.124		4.95						
24	29	L-MeFOSAA	570 > 419		1.65e3	0.124		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.65e3	0.124		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.09e4	0.124		5.28						
27	37	PFDoA	612.9 > 569.0		1.02e4	0.124		5.56						
28	60	13C2-PFDA	515.1 > 469.9	7.92e3	1.41e4	0.124	0.793	4.95	4.95	7.04	71.8001	71.0		
29	62	d3-N-MeFOSAA	573.3 > 419	1.65e3	1.56e4	0.124	0.158	5.10	5.10	1.33	67.7568	67.0		
30	62	d3-N-MeFOSAA	573.3 > 419	1.65e3	1.56e4	0.124	0.158	5.10	5.10	1.33	67.7568	67.0		
31	63	13C2-PFUdA	565 > 519.8	1.09e4	1.56e4	0.124	1.071	5.28	5.28	8.75	66.0721	65.4		
32	65	13C2-PFDoA	614.7 > 569.7	1.02e4	1.41e4	0.124	1.151	5.56	5.56	9.05	63.5881	62.9		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		1.68e3	0.124		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	1.68e3	0.124		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.02e4	0.124		5.81						

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-11.qld

Last Altered: Monday, July 15, 2019 11:51:41 Pacific Daylight Time
Printed: Monday, July 15, 2019 11:52:03 Pacific Daylight Time

Name: 190708M3_11, Date: 08-Jul-2019, Time: 17:23:32, ID: 1901857-09 SAOA-B11-GW 0.12366, Description: SAOA-B11-GW

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	3.03e1	5.20e3	0.124		6.04	6.02	0.0727	0.3708		48.721	YES
38	85	TDCA	498.3>106.9			0.124		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	1.68e3	1.56e4	0.124	0.175	5.26	5.26	1.35	62.3223	61.7		
40	64	d5-N-EtFOSAA	589.3 > 419	1.68e3	1.56e4	0.124	0.175	5.26	5.26	1.35	62.3223	61.7		
41	65	13C2-PFDoA	614.7 > 569.7	1.02e4	1.41e4	0.124	1.151	5.56	5.56	9.05	63.5881	62.9		
42	67	13C2-PFTeDA	715.1 > 669.7	5.20e3	1.56e4	0.124	0.708	6.04	6.04	4.17	47.6752	47.2		
43	59	13C8-PFOS	507.0 > 79.9	1.99e3	2.16e3	0.124	1.011	4.66	4.66	11.5	91.8729	90.9		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.17e4	1.17e4	0.124	1.000	2.98	2.99	12.5	101.0836	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.46e4	1.46e4	0.124	1.000	4.13	4.13	12.5	101.0836	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.00e3	1.00e3	0.124	1.000	3.76	3.76	12.5	101.0836	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.17e4	1.17e4	0.124	1.000	4.57	4.57	12.5	101.0836	100.0		
49	77	13C4-PFOS	503 > 79.9	2.16e3	2.16e3	0.124	1.000	4.66	4.66	12.5	101.0836	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.41e4	1.41e4	0.124	1.000	4.95	4.95	12.5	101.0836	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.56e4	1.56e4	0.124	1.000	5.28	5.28	12.5	101.0836	100.0		

Review: AMR 7/15/2019

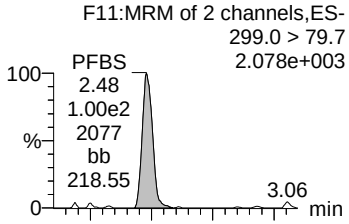
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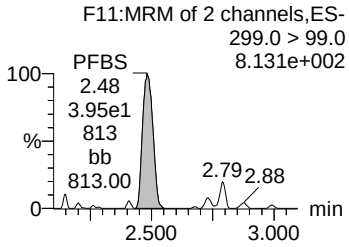
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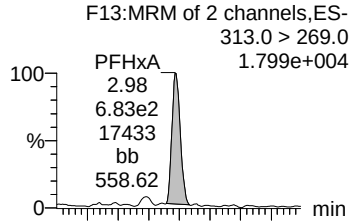
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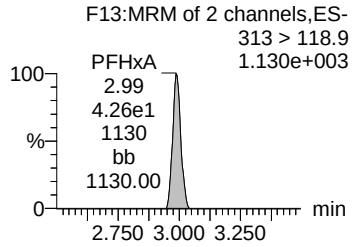
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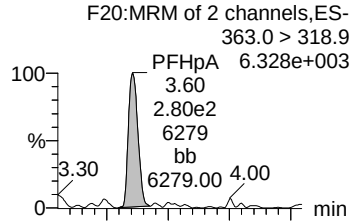


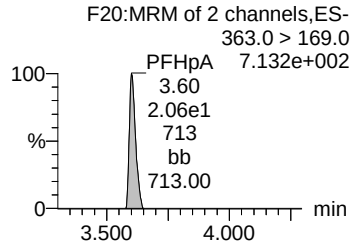
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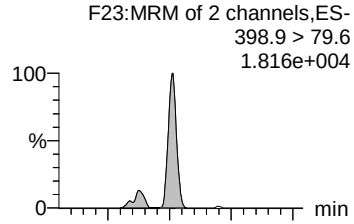


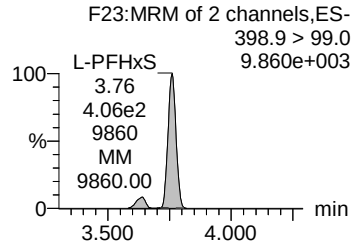
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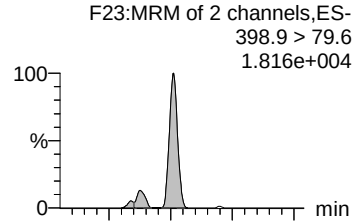


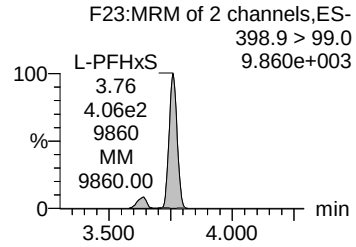
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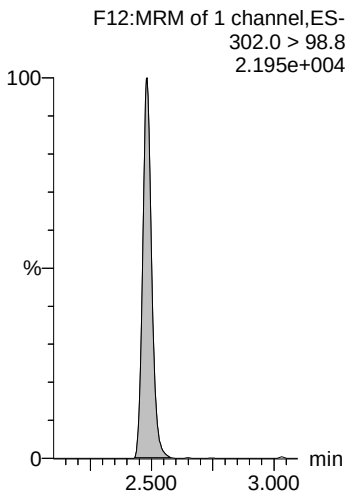


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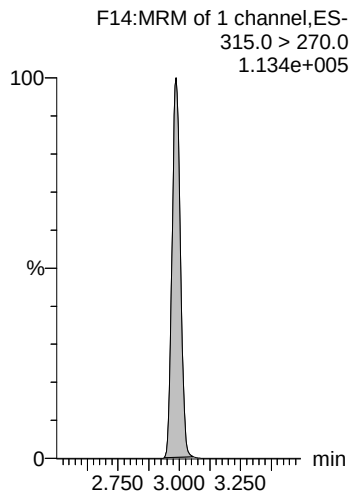




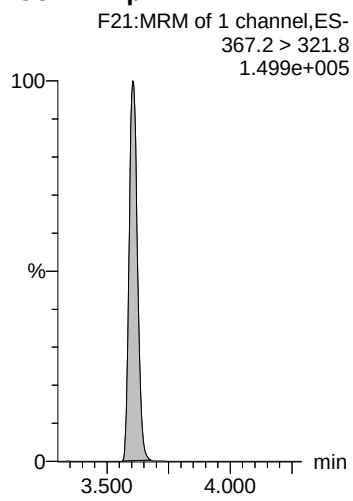
13C3-PFBS



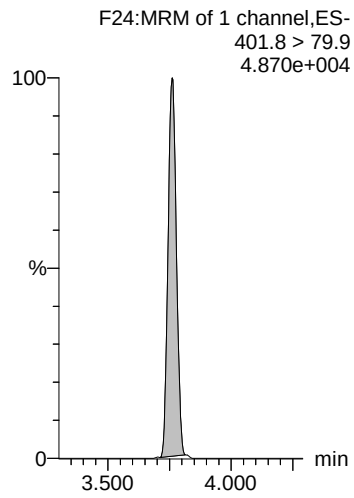
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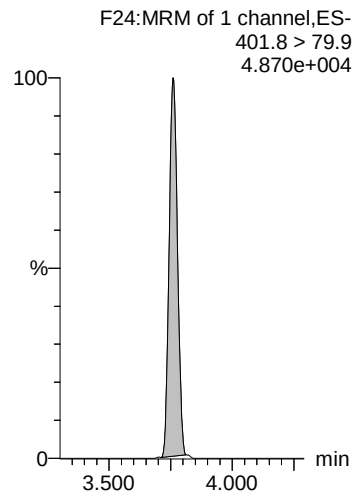
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



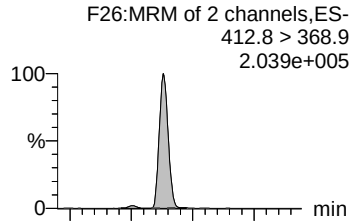
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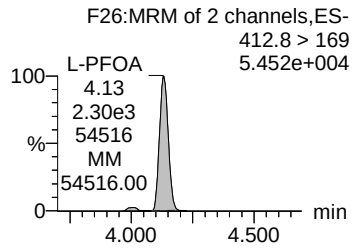
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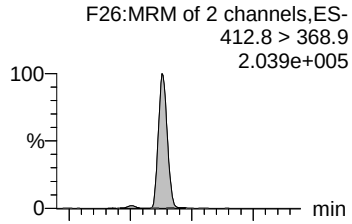
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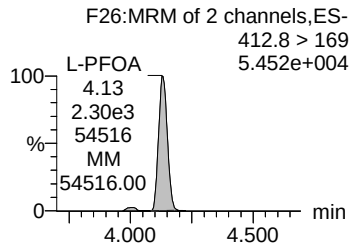
L-PFOA



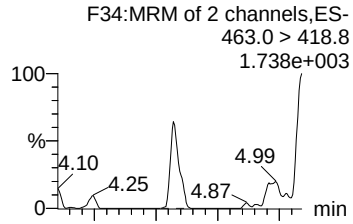


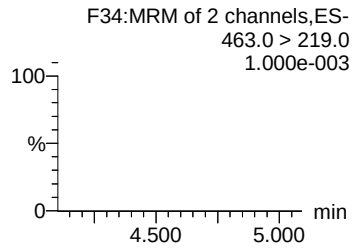
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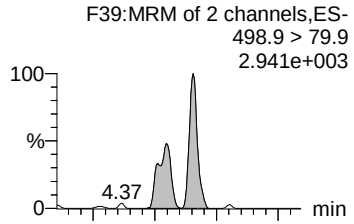


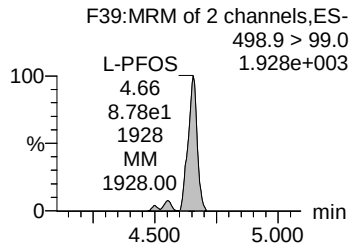
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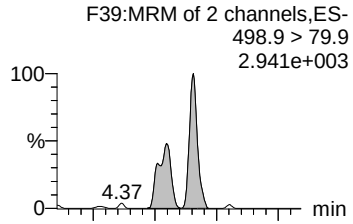


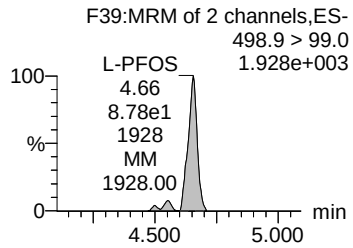
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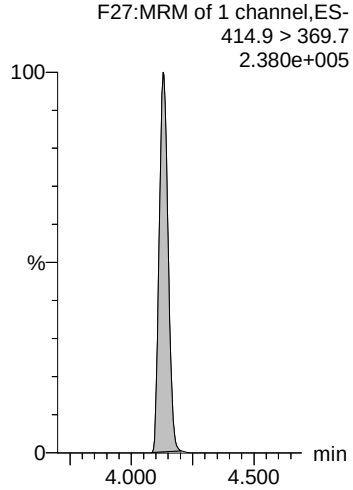


Total PFOS

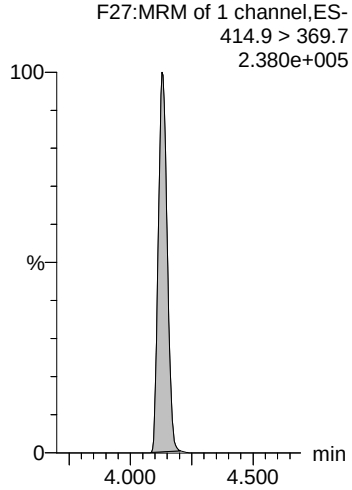




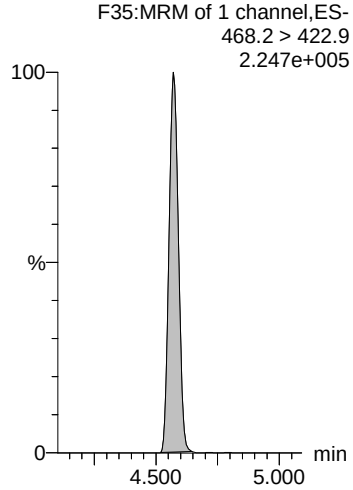
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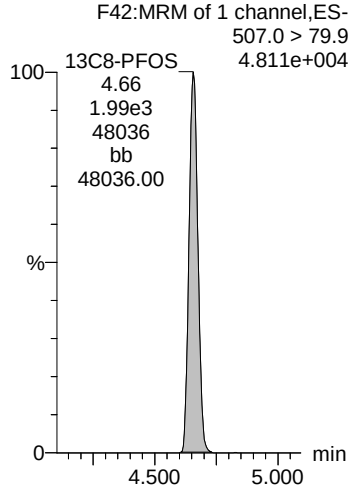
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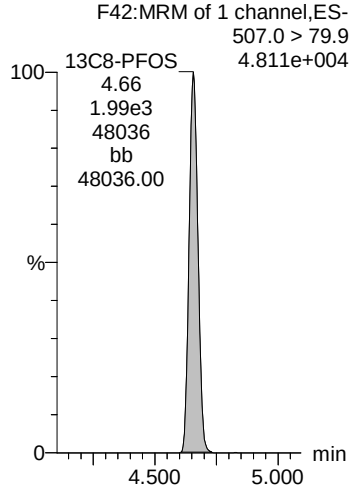
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13C8-PFOS



13C8-PFOS

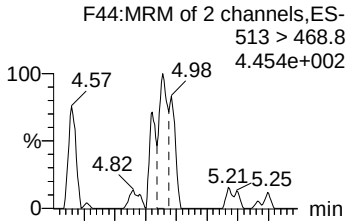


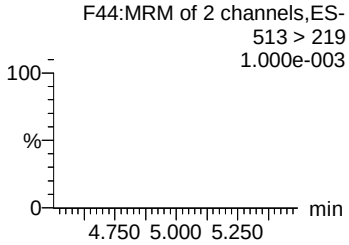
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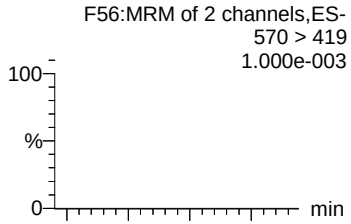
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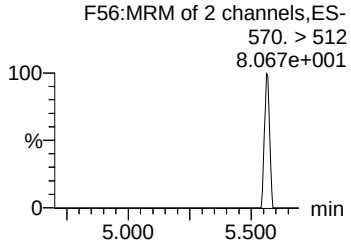
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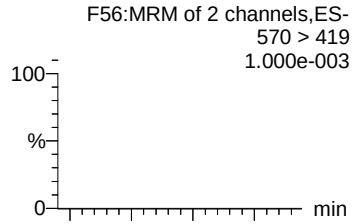


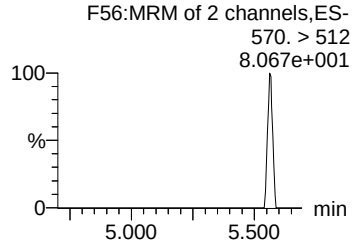
L-MeFOSAA



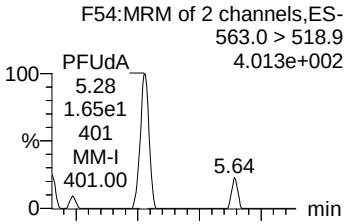


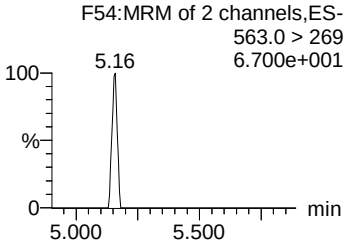
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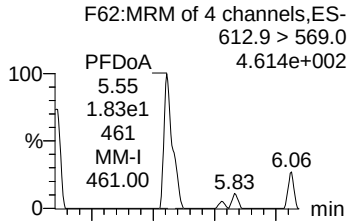


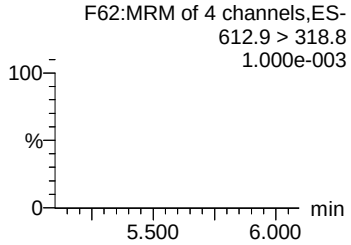
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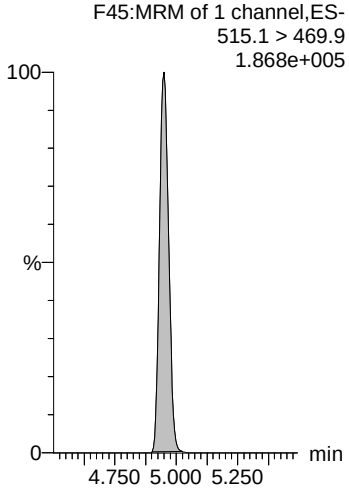


PFDoA

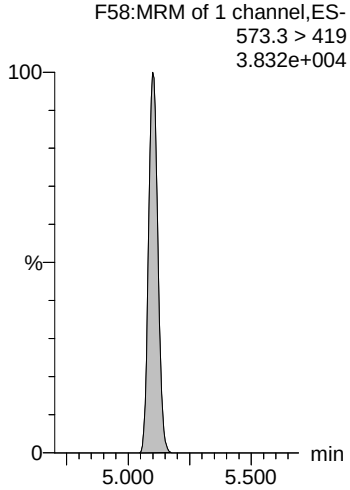




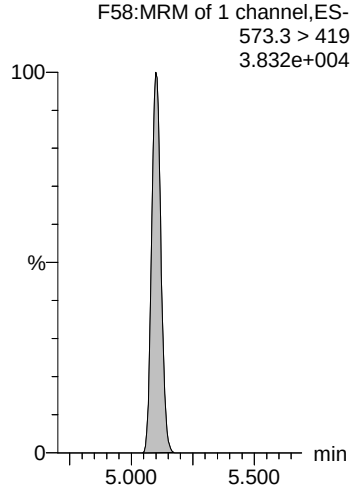
13C2-PFDA



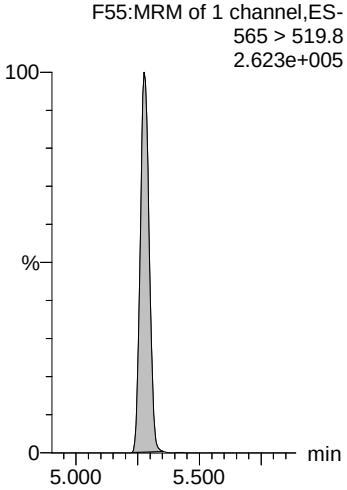
d3-N-MeFOSAA



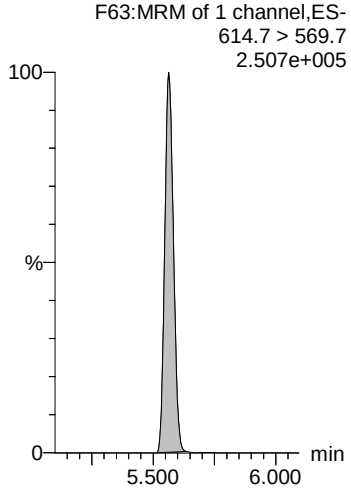
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA



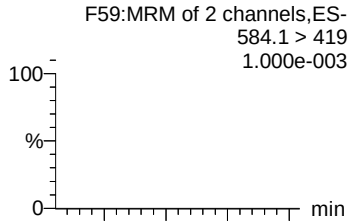
Review: AMR 7/15/2019

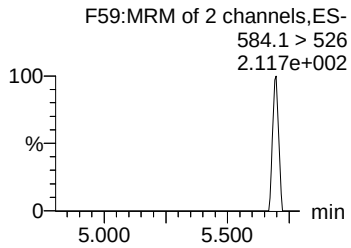
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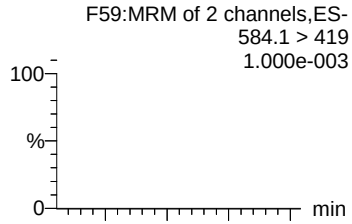
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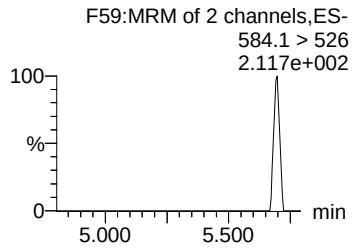
L-EtFOSAA



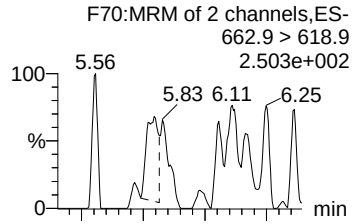


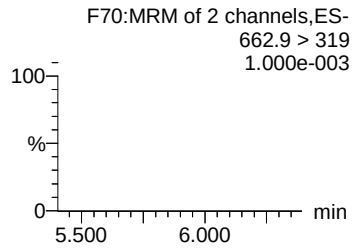
Total N-EtFOSAA



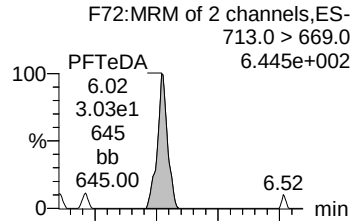


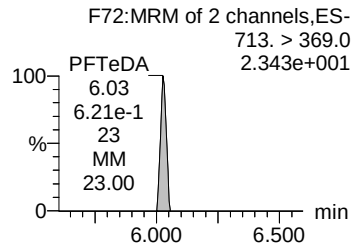
PFTrDA



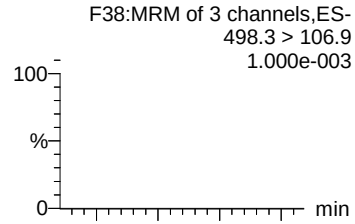


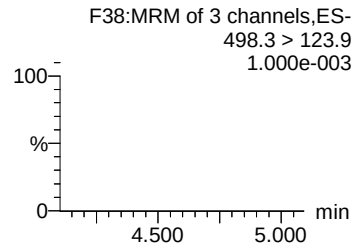
PFTeDA



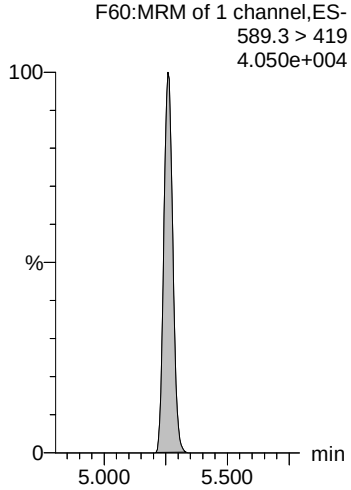


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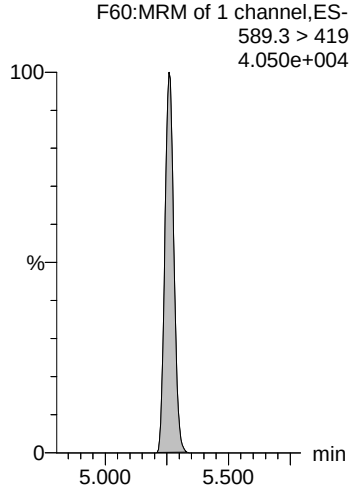




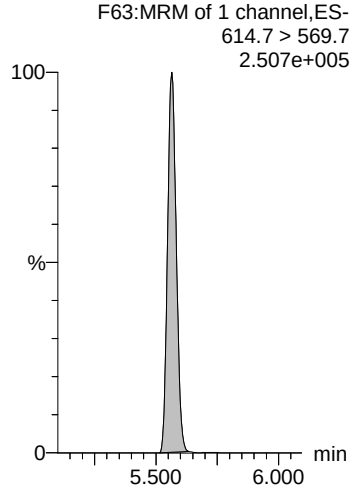
d5-N-EtFOSAA



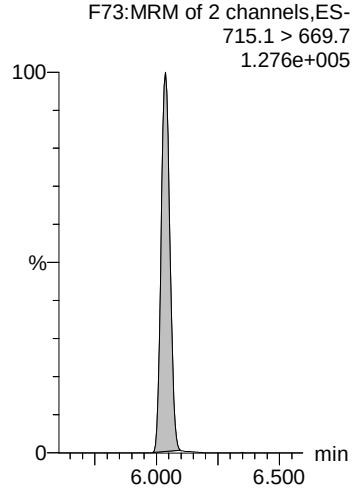
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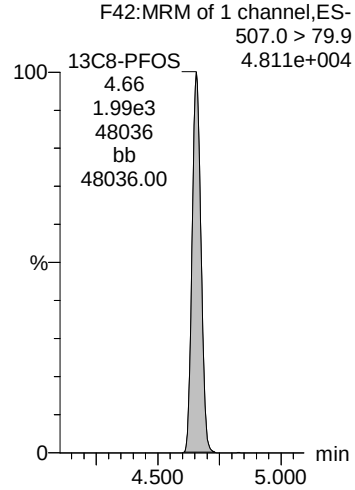
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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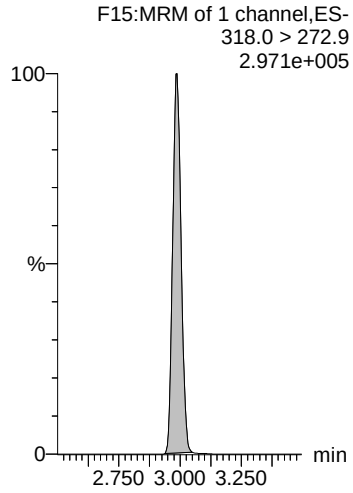
Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-11.qld

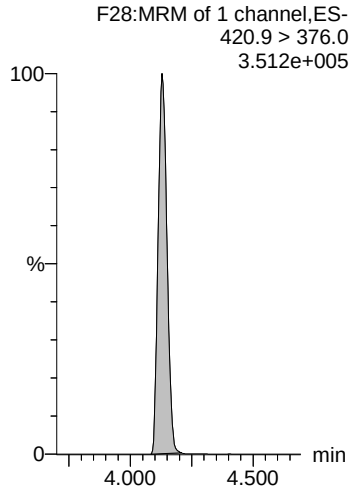
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Name: 190708M3_11, Date: 08-Jul-2019, Time: 17:23:32, ID: 1901857-09 SAOA-B11-GW 0.12366, Description: SAOA-B11-GW

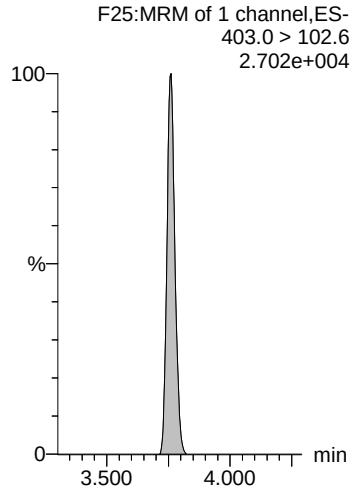
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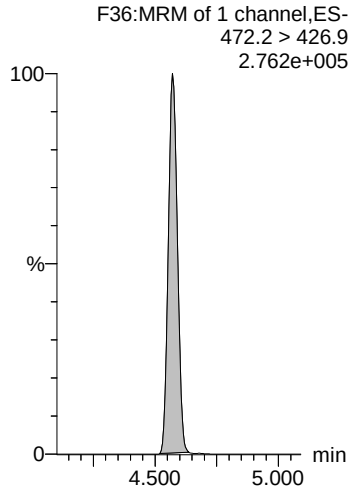
13C8-PFOA



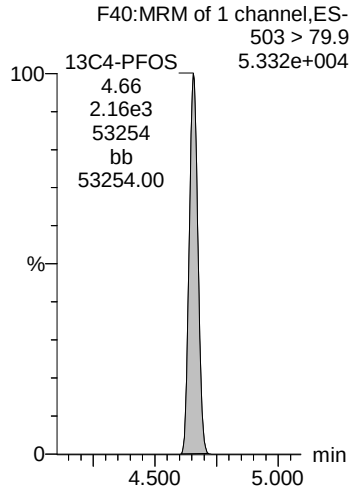
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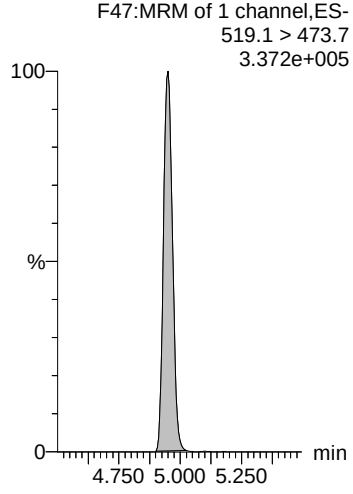
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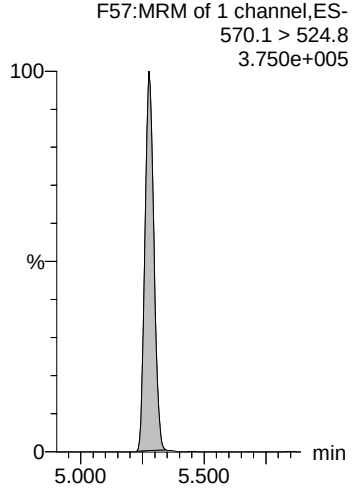
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-12.qld

Last Altered: Monday, July 15, 2019 11:53:02 Pacific Daylight Time
Printed: Monday, July 15, 2019 11:53:21 Pacific Daylight Time

Name: 190708M3_12, Date: 08-Jul-2019, Time: 17:34:11, ID: 1901857-11 EB-06272019 0.11737, Description: EB-06272019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		1.15e3	0.117		2.48						
2	7	PFHxA	313.0 > 269.0		5.12e3	0.117		2.99						
3	11	PFHpA	363.0 > 318.9		7.18e3	0.117		3.60						
4	13	L-PFHxS	398.9 > 79.6	7.86e-1	2.12e3	0.117		3.76	3.76	0.00463	0.4891		0.196	YES
5	80	Total PFHxS	398.9 > 79.6	7.86e-1	2.12e3	0.117		3.83		0.00463	0.4891			
6	49	13C3-PFBS	302.0 > 98.8	1.15e3	1.02e3	0.117	1.019	2.48	2.48	14.0	117.0481	109.9		
7	52	13C2-PFHxA	315.0 > 270.0	5.12e3	1.36e4	0.117	0.999	2.98	2.99	4.70	40.1210	94.2		
8	53	13C4-PFHpA	367.2 > 321.8	7.18e3	1.36e4	0.117	0.535	3.61	3.60	6.59	105.1001	98.7		
9	54	13C3-PFHxS	401.8 > 79.9	2.12e3	1.02e3	0.117	2.224	3.76	3.76	25.9	99.3931	93.3		
10	54	13C3-PFHxS	401.8 > 79.9	2.12e3	1.02e3	0.117	2.224	3.76	3.76	25.9	99.3931	93.3		
11	-1													
12	16	L-PFOA	412.8 > 368.9		1.26e4	0.117		4.13						
13	81	Total PFOA	412.8 > 368.9	0.00e0	1.26e4	0.117		4.21		0.000				
14	21	PFNA	463.0 > 418.8		1.22e4	0.117		4.57						
15	23	L-PFOS	498.9 > 79.9		2.43e3	0.117		4.66						
16	82	Total PFOS	498.9 > 79.9	0.00e0	2.43e3	0.117		4.74		0.000				
17	58	13C2-PFOA	414.9 > 369.7	1.26e4	1.79e4	0.117	0.741	4.13	4.13	8.81	101.2304	95.1		
18	58	13C2-PFOA	414.9 > 369.7	1.26e4	1.79e4	0.117	0.741	4.13	4.13	8.81	101.2304	95.1		
19	56	13C5-PFNA	468.2 > 422.9	1.22e4	1.40e4	0.117	0.996	4.57	4.57	10.9	93.0277	87.3		
20	59	13C8-PFOS	507.0 > 79.9	2.43e3	2.62e3	0.117	1.011	4.66	4.66	11.6	97.4731	91.5		
21	59	13C8-PFOS	507.0 > 79.9	2.43e3	2.62e3	0.117	1.011	4.66	4.66	11.6	97.4731	91.5		
22	-1													
23	26	PFDA	513 > 468.8		1.05e4	0.117		4.95						
24	29	L-MeFOSAA	570 > 419		1.81e3	0.117		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.81e3	0.117		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.21e4	0.117		5.28						
27	37	PFDoA	612.9 > 569.0		1.22e4	0.117		5.56						
28	60	13C2-PFDA	515.1 > 469.9	1.05e4	1.71e4	0.117	0.793	4.95	4.95	7.68	82.4725	77.4		
29	62	d3-N-MeFOSAA	573.3 > 419	1.81e3	1.86e4	0.117	0.158	5.10	5.10	1.21	65.3470	61.4		
30	62	d3-N-MeFOSAA	573.3 > 419	1.81e3	1.86e4	0.117	0.158	5.10	5.10	1.21	65.3470	61.4		
31	63	13C2-PFUdA	565 > 519.8	1.21e4	1.86e4	0.117	1.071	5.28	5.28	8.11	64.5528	60.6		
32	65	13C2-PFDoA	614.7 > 569.7	1.22e4	1.71e4	0.117	1.151	5.56	5.56	8.92	66.0801	62.0		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.44e3	0.117		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.44e3	0.117		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.22e4	0.117		5.81						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-12.qld

Last Altered: Monday, July 15, 2019 11:53:02 Pacific Daylight Time
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Name: 190708M3_12, Date: 08-Jul-2019, Time: 17:34:11, ID: 1901857-11 EB-06272019 0.11737, Description: EB-06272019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.07e4	0.117		6.04						
38	85	TDCA	498.3>106.9			0.117		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.44e3	1.86e4	0.117	0.175	5.26	5.26	1.64	79.7054	74.8		
40	64	d5-N-EtFOSAA	589.3 > 419	2.44e3	1.86e4	0.117	0.175	5.26	5.26	1.64	79.7054	74.8		
41	65	13C2-PFDoA	614.7 > 569.7	1.22e4	1.71e4	0.117	1.151	5.56	5.56	8.92	66.0801	62.0		
42	67	13C2-PFTeDA	715.1 > 669.7	1.07e4	1.86e4	0.117	0.708	6.04	6.04	7.20	86.6552	81.4		
43	59	13C8-PFOS	507.0 > 79.9	2.43e3	2.62e3	0.117	1.011	4.66	4.66	11.6	97.4731	91.5		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.36e4	1.36e4	0.117	1.000	2.98	2.98	12.5	106.5008	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.79e4	1.79e4	0.117	1.000	4.13	4.13	12.5	106.5008	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.02e3	1.02e3	0.117	1.000	3.76	3.76	12.5	106.5008	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.40e4	1.40e4	0.117	1.000	4.57	4.57	12.5	106.5008	100.0		
49	77	13C4-PFOS	503 > 79.9	2.62e3	2.62e3	0.117	1.000	4.66	4.66	12.5	106.5008	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.71e4	1.71e4	0.117	1.000	4.95	4.95	12.5	106.5008	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.86e4	1.86e4	0.117	1.000	5.28	5.28	12.5	106.5008	100.0		

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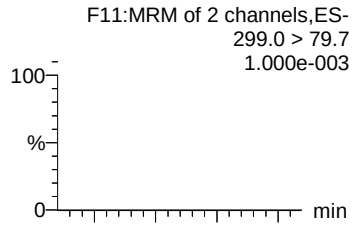
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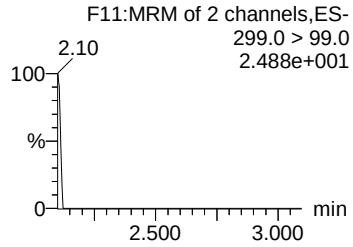
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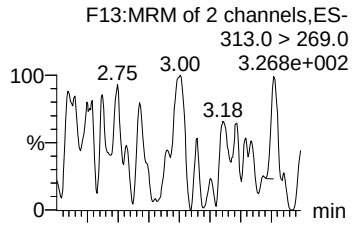
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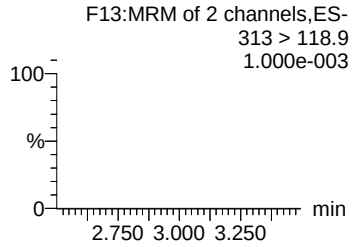
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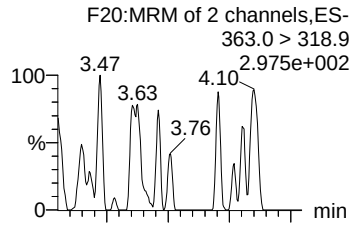


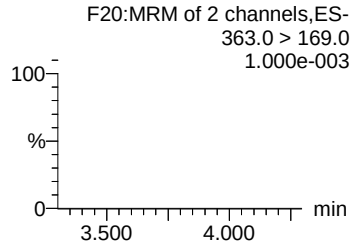
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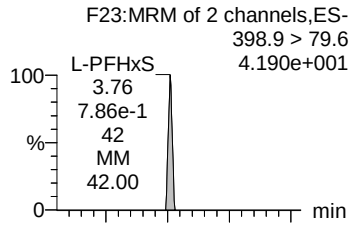


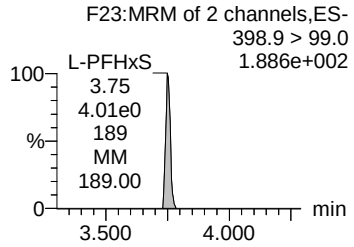
PFHpA



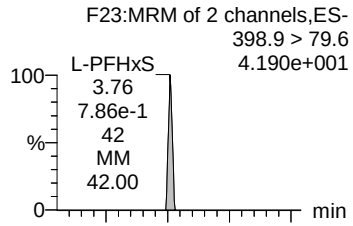


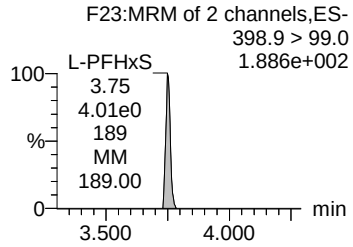
L-PFHxS



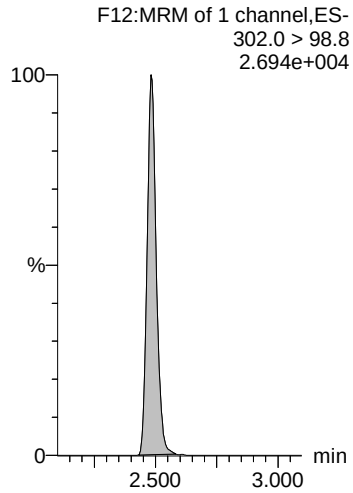


Total PFHxS

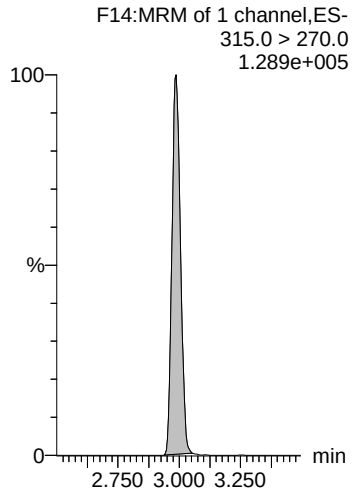




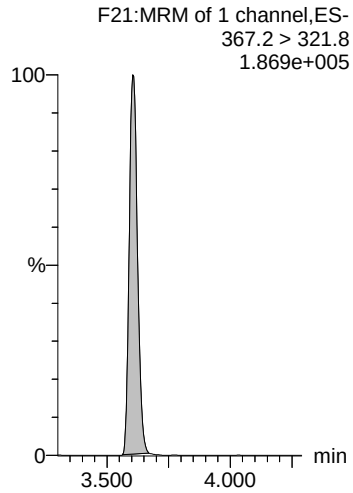
13C3-PFBS



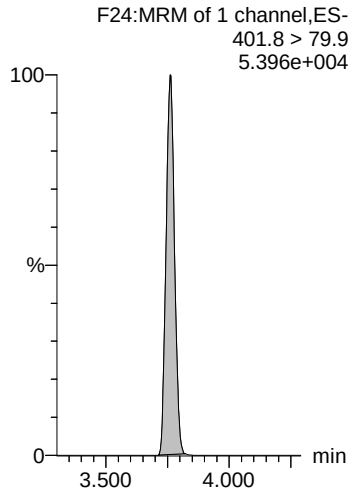
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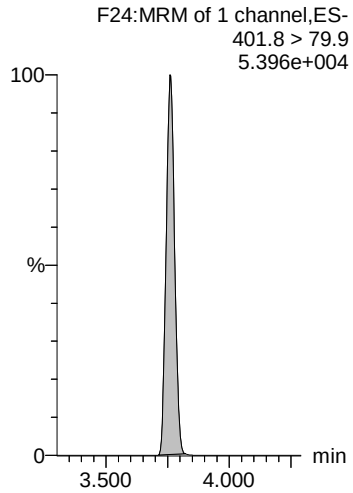
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



 NY 7/15/2019

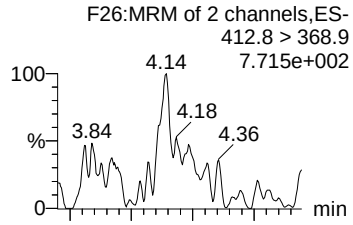
Review: AMR 7/15/2019

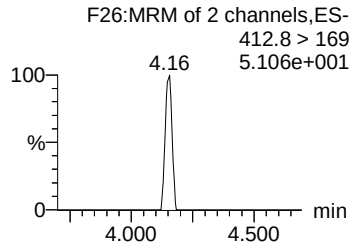
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Printed: Monday, July 15, 2019 11:53:21 Pacific Daylight Time

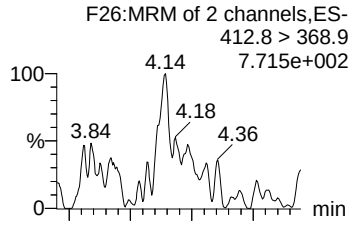
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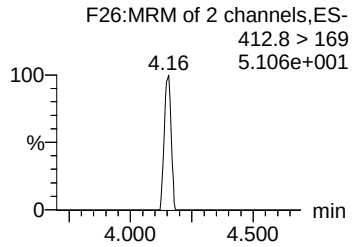
L-PFOA



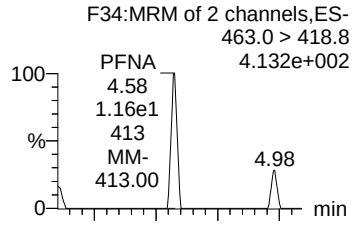


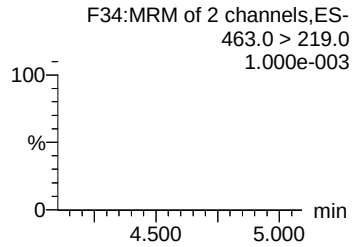
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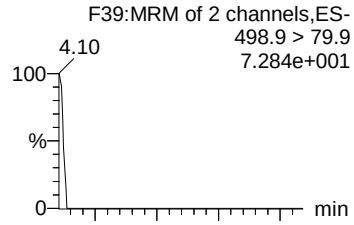


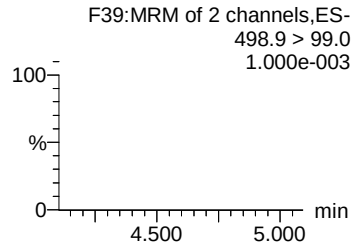
PFNA



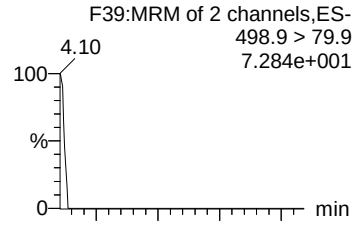


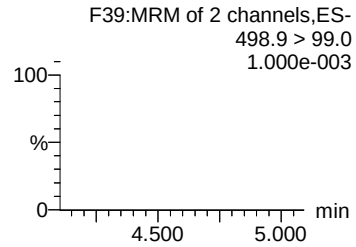
L-PFOS



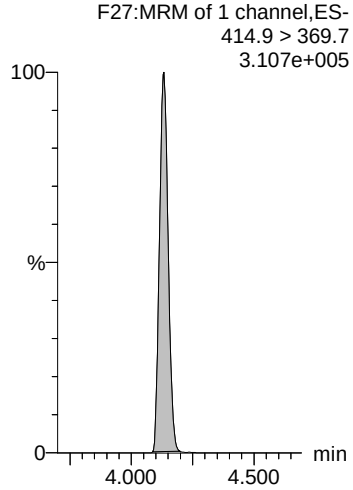


Total PFOS

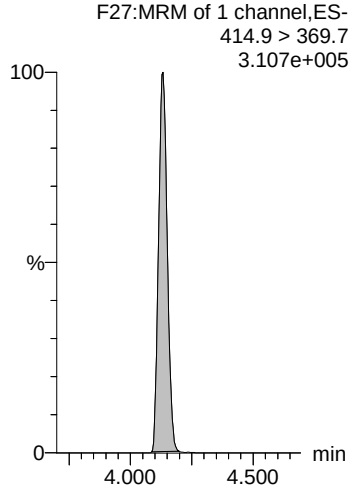




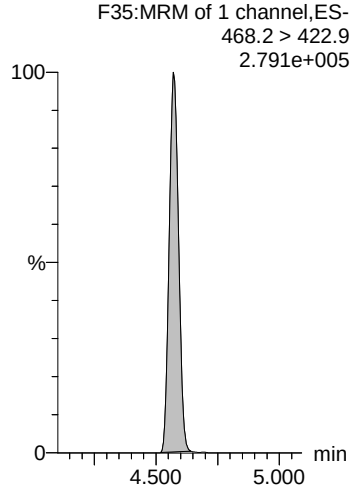
13C2-PFOA



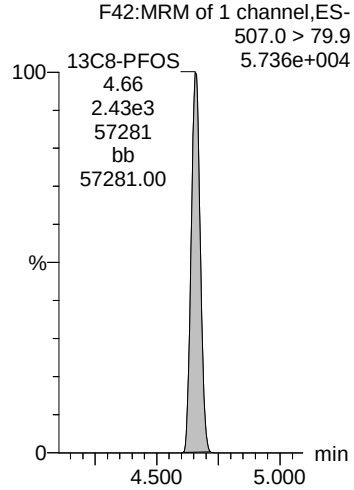
13C2-PFOA



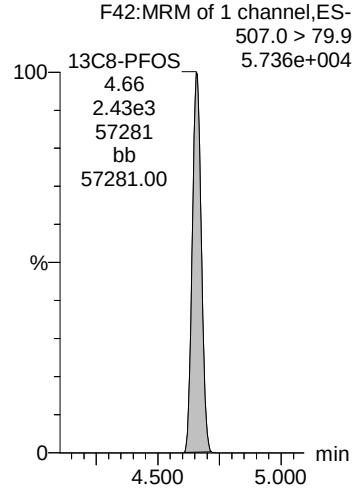
13C5-PFNA



13C8-PFOS



13C8-PFOS



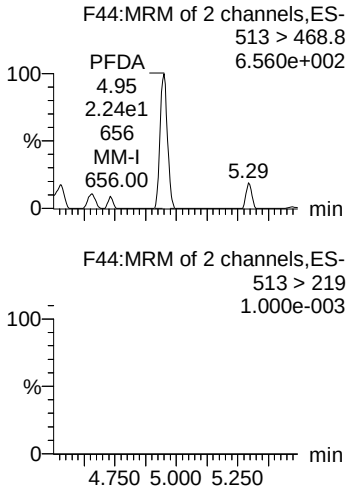
NY 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-12.qld

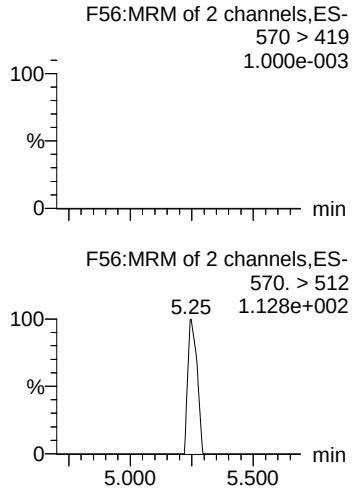
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Name: 190708M3_12, Date: 08-Jul-2019, Time: 17:34:11, ID: 1901857-11 EB-06272019 0.11737, Description: EB-06272019

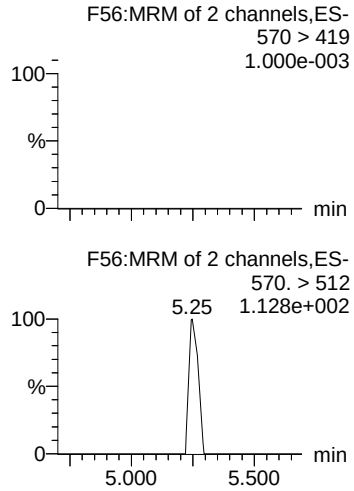
PFDA



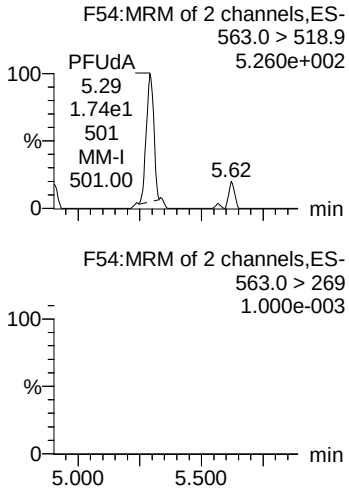
L-MeFOSAA



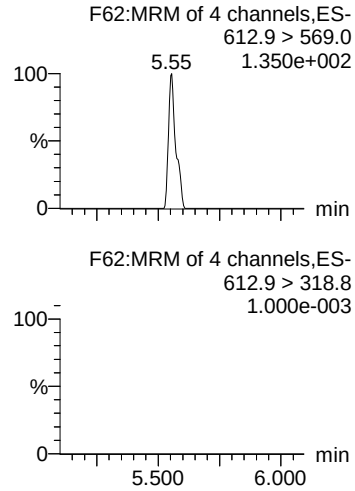
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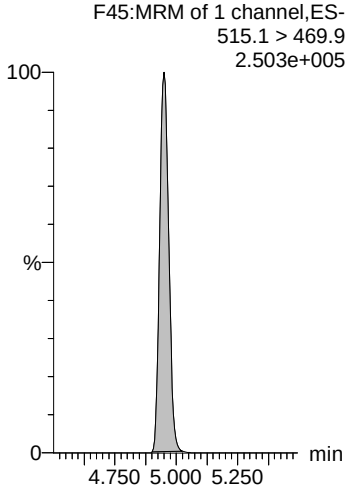
PFUdA



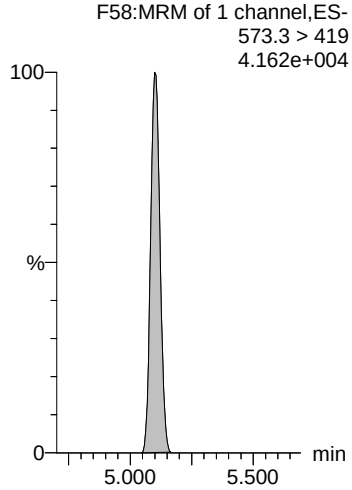
PFDoA



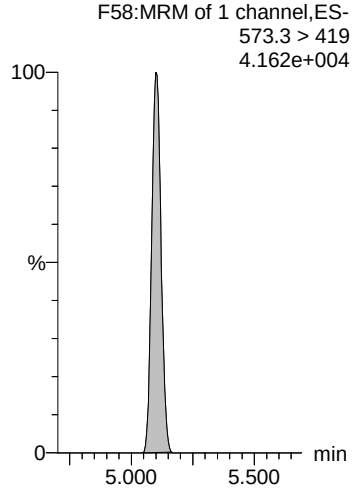
13C2-PFDA



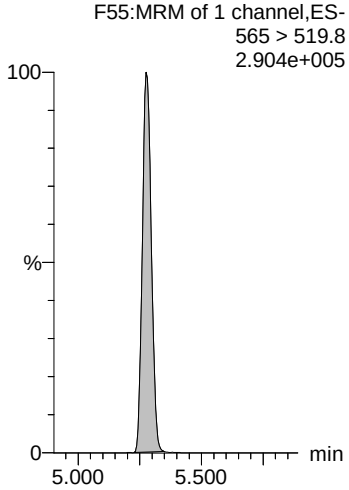
d3-N-MeFOSAA



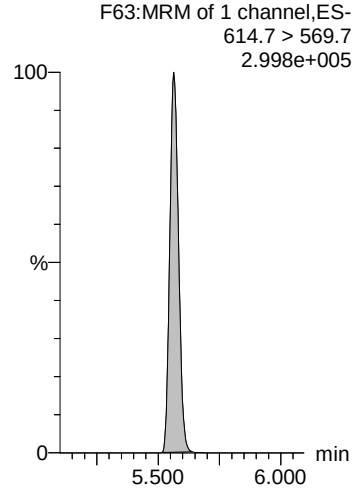
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA

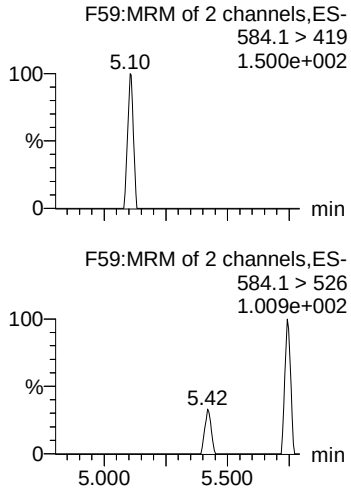


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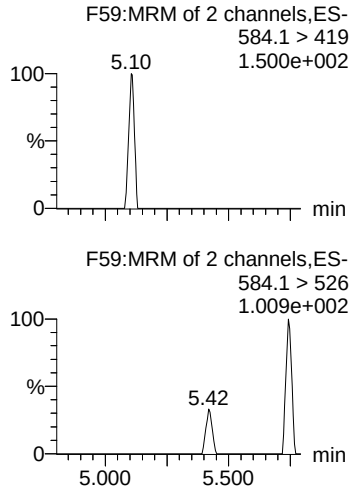
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Printed: Monday, July 15, 2019 11:53:21 Pacific Daylight Time

Name: 190708M3_12, Date: 08-Jul-2019, Time: 17:34:11, ID: 1901857-11 EB-06272019 0.11737, Description: EB-06272019

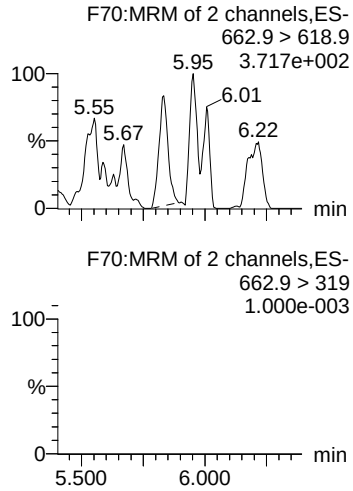
L-EtFOSAA



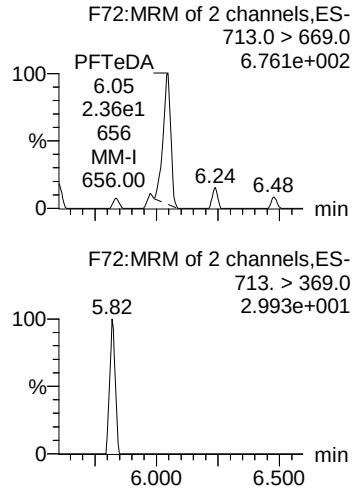
Total N-EtFOSAA



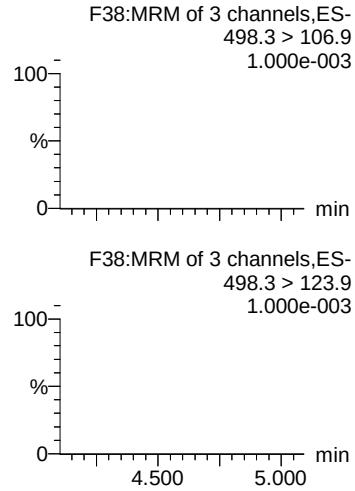
PFTrDA



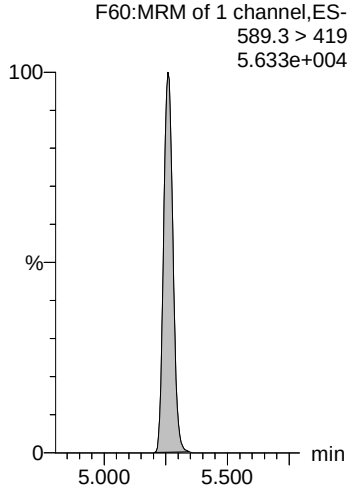
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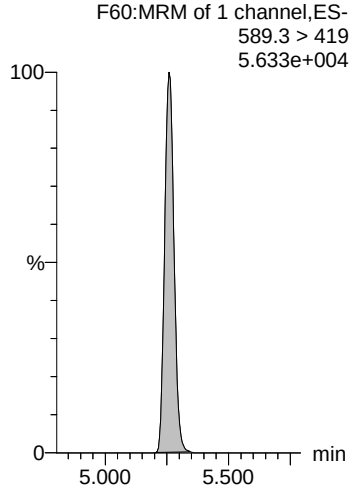
TDCA



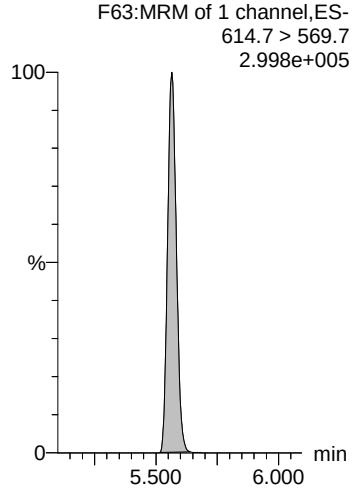
d5-N-EtFOSAA



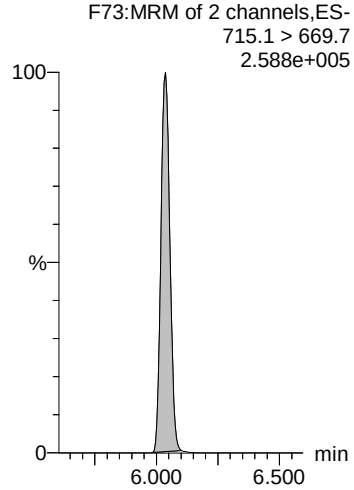
d5-N-EtFOSAA



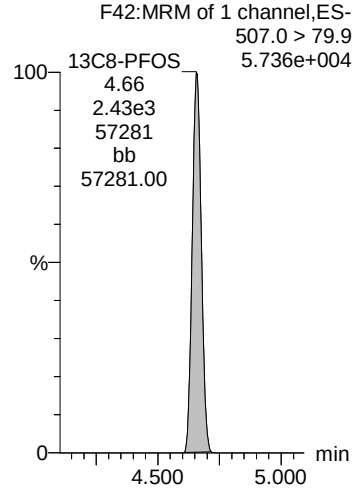
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS

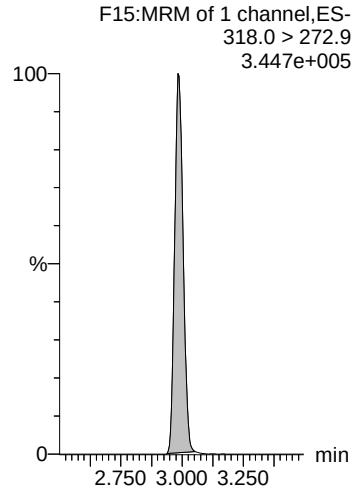


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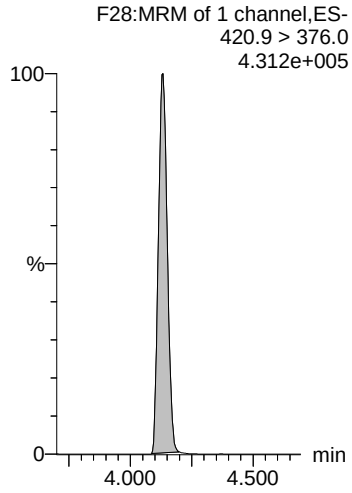
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Name: 190708M3_12, Date: 08-Jul-2019, Time: 17:34:11, ID: 1901857-11 EB-06272019 0.11737, Description: EB-06272019

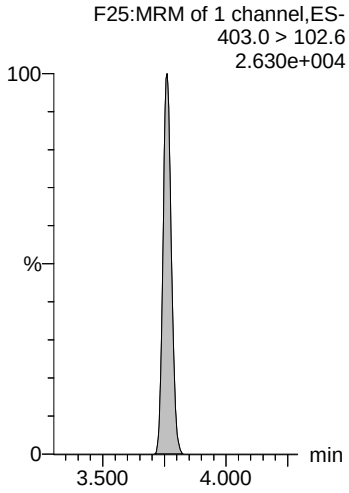
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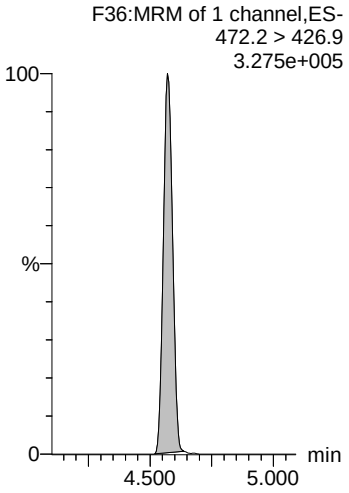
13C8-PFOA



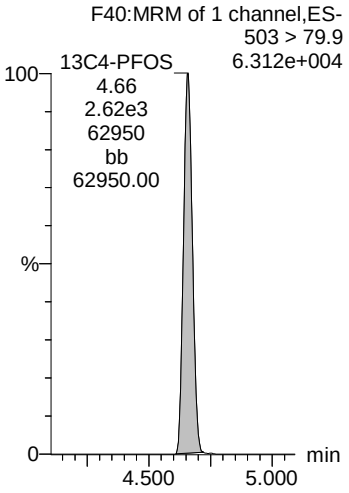
18O2-PFHxS



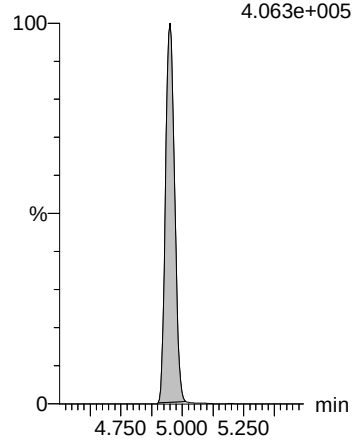
13C9-PFNA



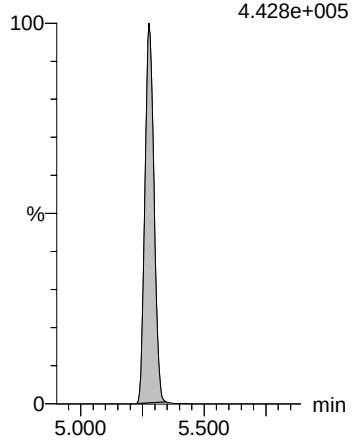
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-13.qld

Last Altered: Monday, July 15, 2019 09:29:50 Pacific Daylight Time
Printed: Monday, July 15, 2019 09:31:14 Pacific Daylight Time

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	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		1.35e3	0.118		2.49						
2	7	PFHxA	313.0 > 269.0	5.34e1	7.01e3	0.118		2.99	2.99	0.0380	0.1768		102.215	YES
3	11	PFHpA	363.0 > 318.9		9.30e3	0.118		3.61						
4	13	L-PFHxS	398.9 > 79.6		2.59e3	0.118		3.76						
5	80	Total PFHxS	398.9 > 79.6	0.00e0	2.59e3	0.118		3.83		0.000				
6	49	13C3-PFBS	302.0 > 98.8	1.35e3	1.21e3	0.118	1.019	2.48	2.49	13.9	115.7750	109.0		
7	52	13C2-PFHxA	315.0 > 270.0	7.01e3	1.77e4	0.118	0.999	2.98	2.99	4.95	42.1381	99.2		
8	53	13C4-PFHpA	367.2 > 321.8	9.30e3	1.77e4	0.118	0.535	3.61	3.61	6.56	104.3232	98.2		
9	54	13C3-PFHxS	401.8 > 79.9	2.59e3	1.21e3	0.118	2.224	3.76	3.76	26.7	101.8462	95.9		
10	54	13C3-PFHxS	401.8 > 79.9	2.59e3	1.21e3	0.118	2.224	3.76	3.76	26.7	101.8462	95.9		
11	-1													
12	16	L-PFOA	412.8 > 368.9		1.62e4	0.118		4.13						
13	81	Total PFOA	412.8 > 368.9	0.00e0	1.62e4	0.118		4.21		0.000				
14	21	PFNA	463.0 > 418.8		1.53e4	0.118		4.58						
15	23	L-PFOS	498.9 > 79.9		2.84e3	0.118		4.66						
16	82	Total PFOS	498.9 > 79.9	0.00e0	2.84e3	0.118		4.74		0.000				
17	58	13C2-PFOA	414.9 > 369.7	1.62e4	2.16e4	0.118	0.741	4.13	4.13	9.38	107.4996	101.2		
18	58	13C2-PFOA	414.9 > 369.7	1.62e4	2.16e4	0.118	0.741	4.13	4.13	9.38	107.4996	101.2		
19	56	13C5-PFNA	468.2 > 422.9	1.53e4	1.80e4	0.118	0.996	4.57	4.58	10.7	90.8746	85.6		
20	59	13C8-PFOS	507.0 > 79.9	2.84e3	2.96e3	0.118	1.011	4.66	4.66	12.0	100.9467	95.1		
21	59	13C8-PFOS	507.0 > 79.9	2.84e3	2.96e3	0.118	1.011	4.66	4.66	12.0	100.9467	95.1		
22	-1													
23	26	PFDA	513 > 468.8		1.13e4	0.118		4.95						
24	29	L-MeFOSAA	570 > 419		1.91e3	0.118		5.10						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.91e3	0.118		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.34e4	0.118		5.28						
27	37	PFDoA	612.9 > 569.0		1.27e4	0.118		5.56						
28	60	13C2-PFDA	515.1 > 469.9	1.13e4	2.03e4	0.118	0.793	4.95	4.95	6.94	74.3610	70.0		
29	62	d3-N-MeFOSAA	573.3 > 419	1.91e3	2.21e4	0.118	0.158	5.10	5.10	1.08	57.7254	54.4		
30	62	d3-N-MeFOSAA	573.3 > 419	1.91e3	2.21e4	0.118	0.158	5.10	5.10	1.08	57.7254	54.4		
31	63	13C2-PFUdA	565 > 519.8	1.34e4	2.21e4	0.118	1.071	5.28	5.28	7.54	59.8285	56.3		
32	65	13C2-PFDoA	614.7 > 569.7	1.27e4	2.03e4	0.118	1.151	5.56	5.56	7.84	57.8657	54.5		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.11e3	0.118		5.26						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.11e3	0.118		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.27e4	0.118		5.81						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-13.qld

Last Altered: Monday, July 15, 2019 09:29:50 Pacific Daylight Time
Printed: Monday, July 15, 2019 09:31:14 Pacific Daylight Time

Name: 190708M3_13, Date: 08-Jul-2019, Time: 17:44:43, ID: 1901857-12 FRB-06272019 0.11771, Description: FRB-06272019

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.06e4	0.118		6.04						
38	85	TDCA	498.3>106.9			0.118		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.11e3	2.21e4	0.118	0.175	5.26	5.26	1.19	57.8549	54.5		
40	64	d5-N-EtFOSAA	589.3 > 419	2.11e3	2.21e4	0.118	0.175	5.26	5.26	1.19	57.8549	54.5		
41	65	13C2-PFDoA	614.7 > 569.7	1.27e4	2.03e4	0.118	1.151	5.56	5.56	7.84	57.8657	54.5		
42	67	13C2-PFTeDA	715.1 > 669.7	1.06e4	2.21e4	0.118	0.708	6.04	6.04	5.97	71.6788	67.5		
43	59	13C8-PFOS	507.0 > 79.9	2.84e3	2.96e3	0.118	1.011	4.66	4.66	12.0	100.9467	95.1		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.77e4	1.77e4	0.118	1.000	2.98	2.99	12.5	106.1932	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.16e4	2.16e4	0.118	1.000	4.13	4.13	12.5	106.1932	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.21e3	1.21e3	0.118	1.000	3.76	3.76	12.5	106.1932	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.80e4	1.80e4	0.118	1.000	4.57	4.57	12.5	106.1932	100.0		
49	77	13C4-PFOS	503 > 79.9	2.96e3	2.96e3	0.118	1.000	4.66	4.66	12.5	106.1932	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.03e4	2.03e4	0.118	1.000	4.95	4.95	12.5	106.1932	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.21e4	2.21e4	0.118	1.000	5.28	5.28	12.5	106.1932	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

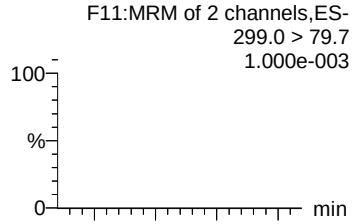
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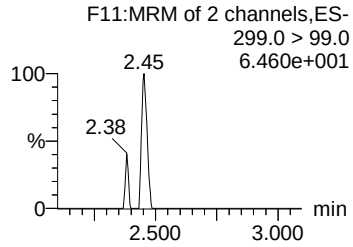
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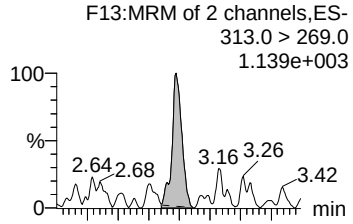
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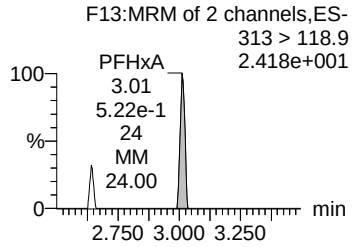
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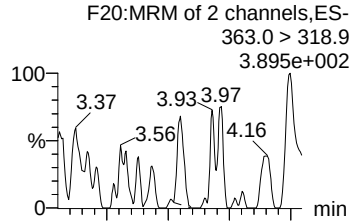


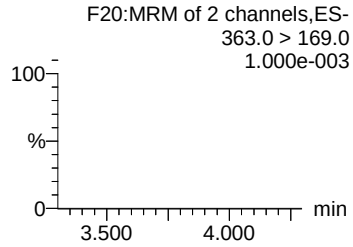
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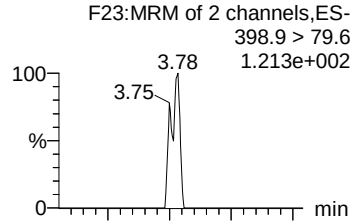


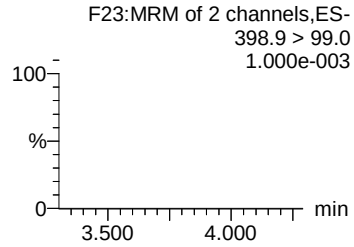
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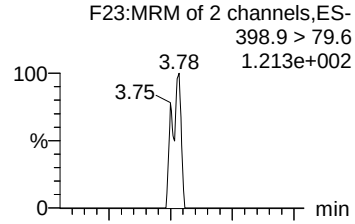


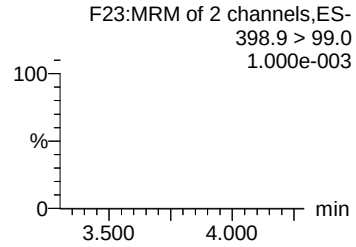
L-PFHxS



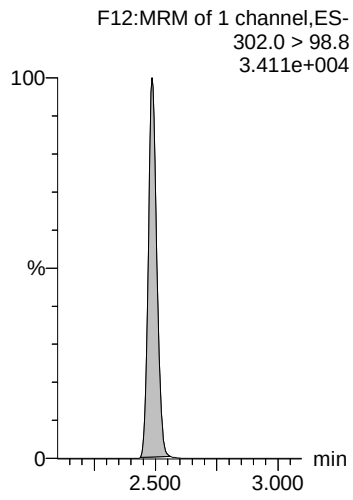


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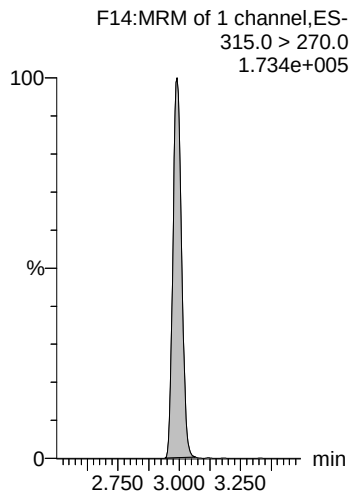




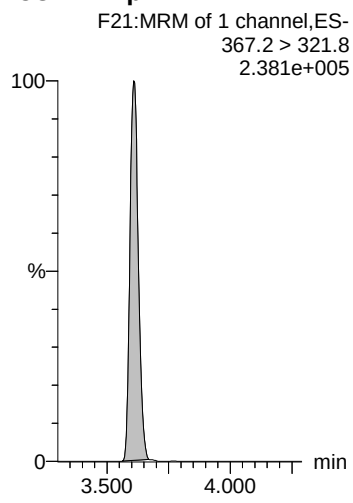
13C3-PFBS



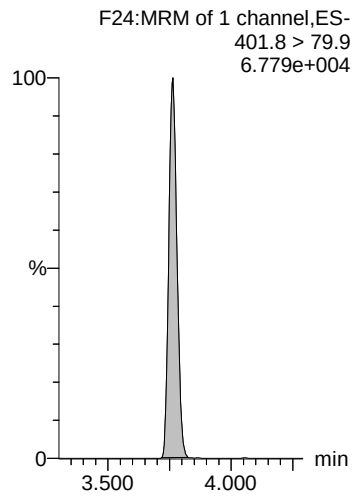
13C2-PFHxA



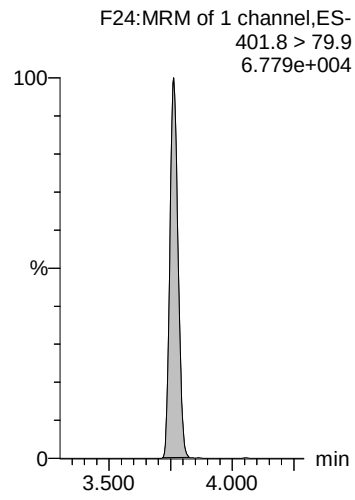
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



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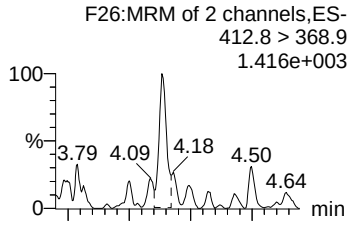
Review: AMR 7/15/2019

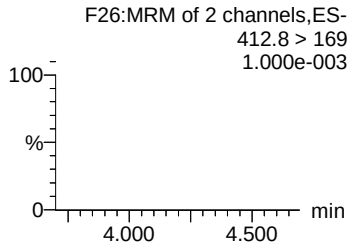
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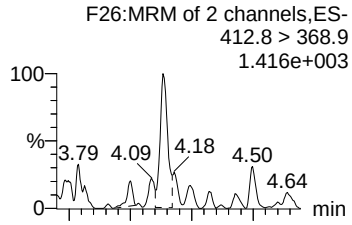
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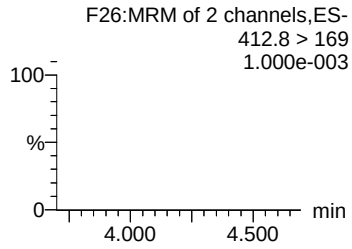
L-PFOA



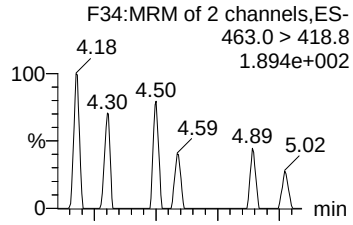


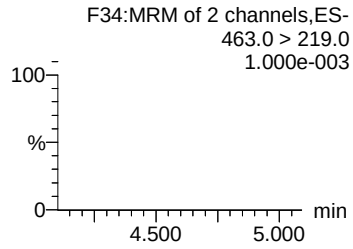
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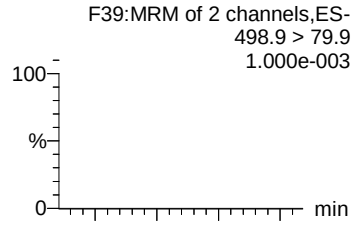


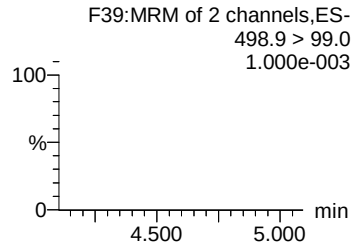
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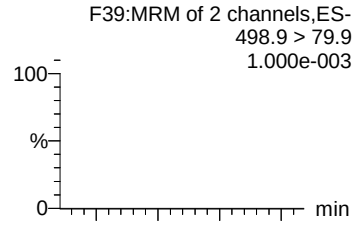


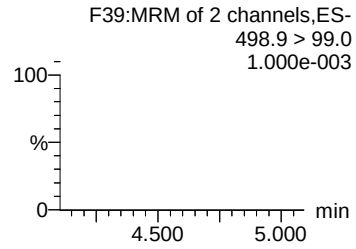
L-PFOS



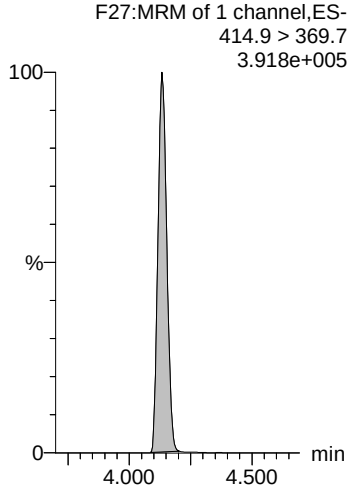


Total PFOS

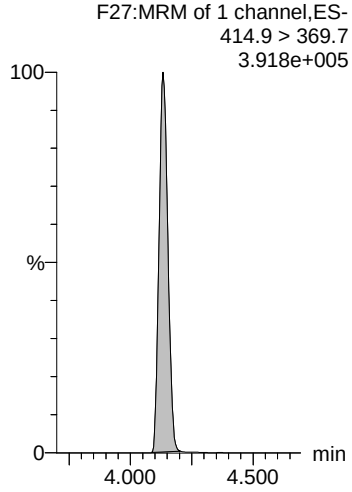




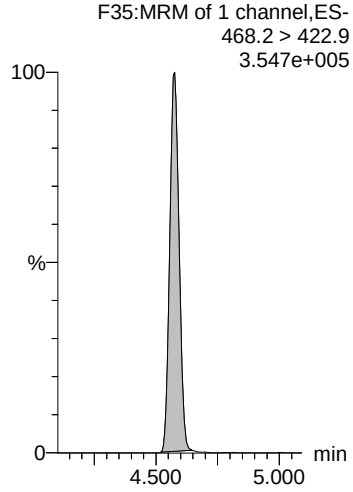
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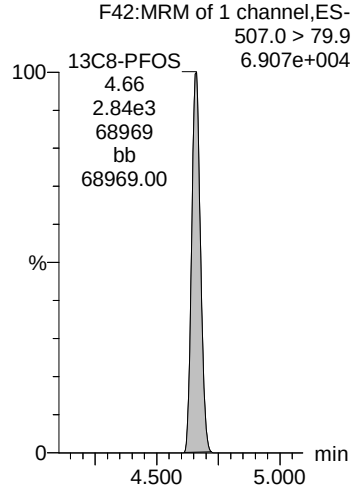
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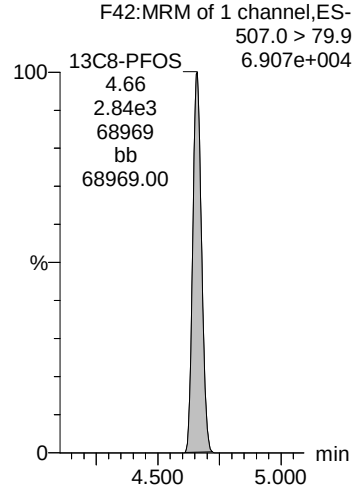
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13C8-PFOS



13C8-PFOS

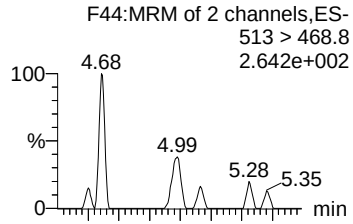


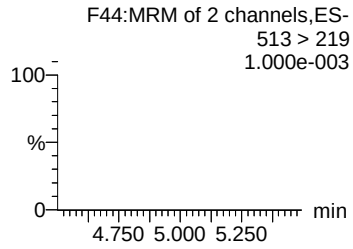
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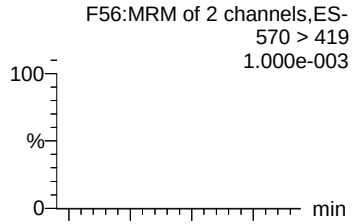
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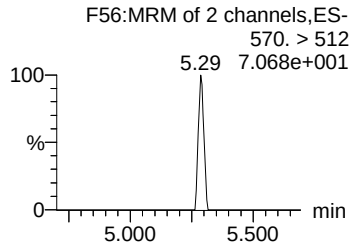
PFDA



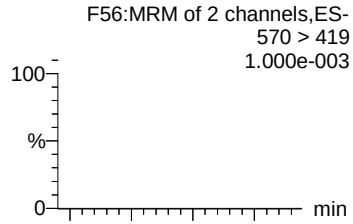


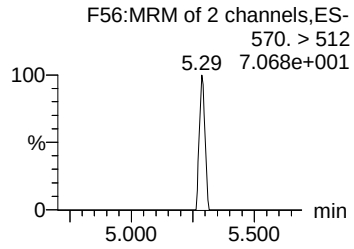
L-MeFOSAA



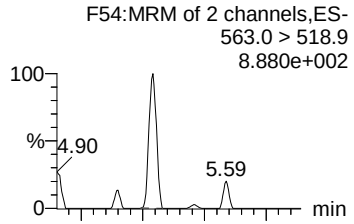


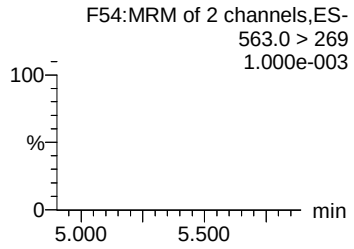
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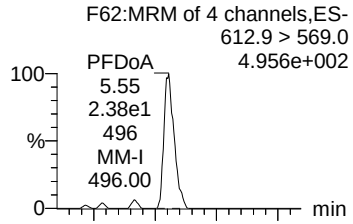


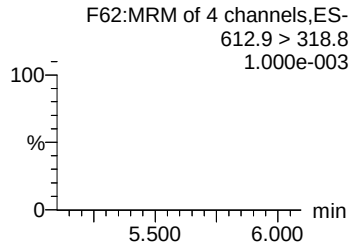
PFUdA



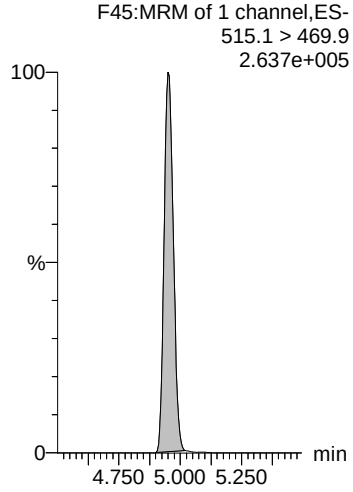


PFDoA

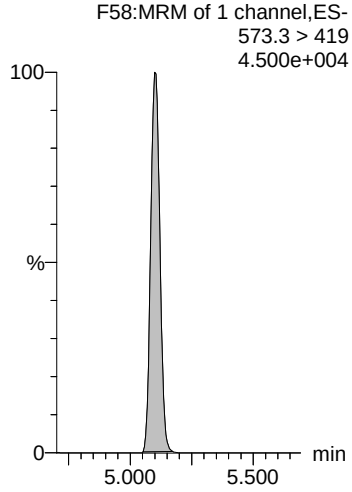




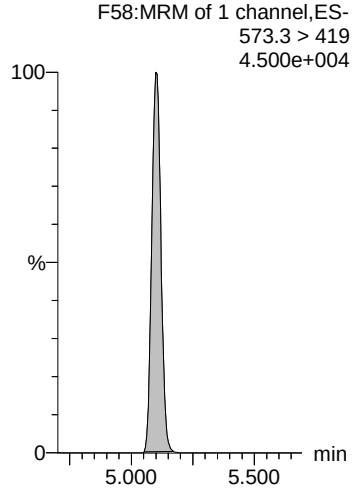
13C2-PFDA



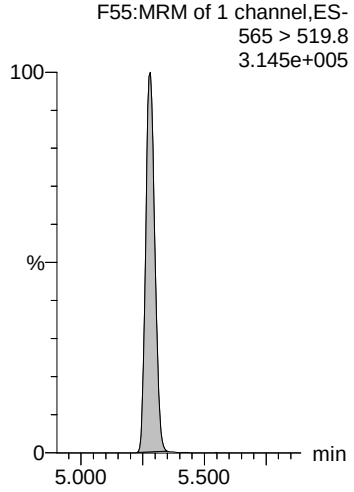
d3-N-MeFOSAA



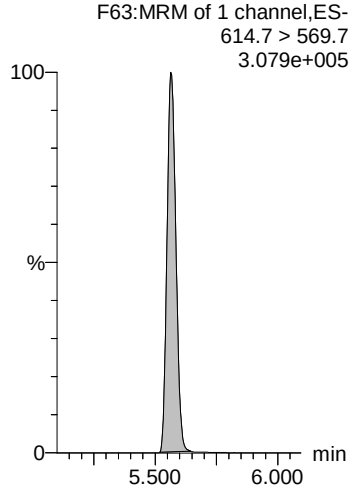
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA

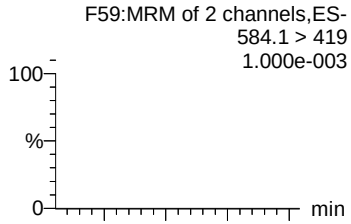


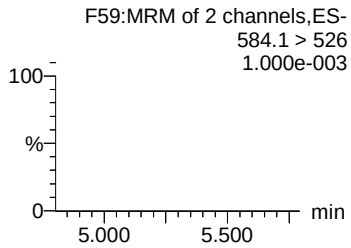
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Printed: Monday, July 15, 2019 09:31:14 Pacific Daylight Time

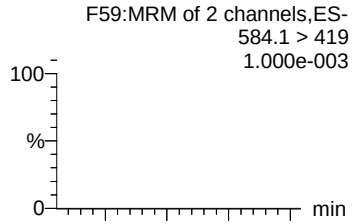
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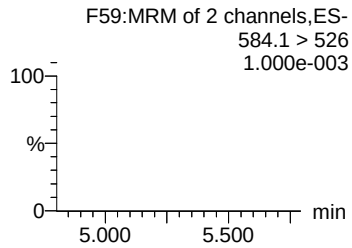
L-EtFOSAA



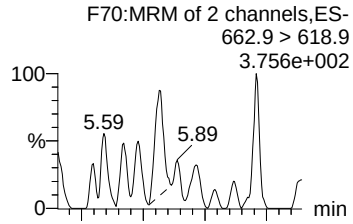


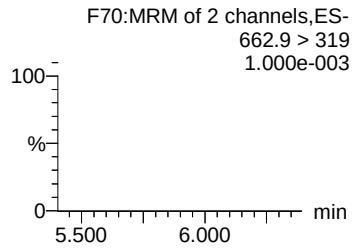
Total N-EtFOSAA



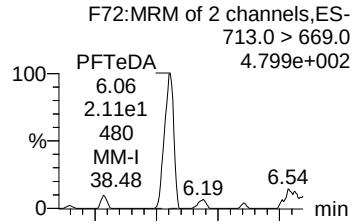


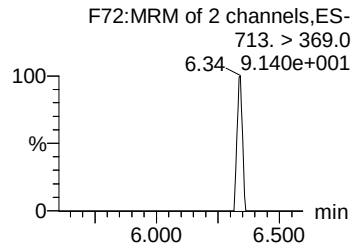
PFTrDA



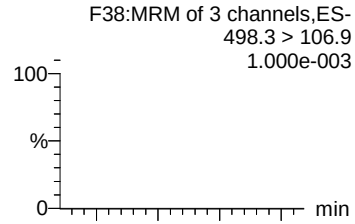


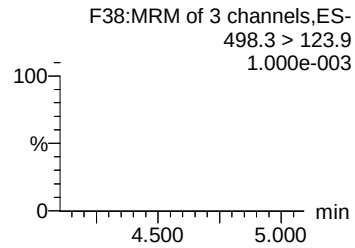
PFTeDA



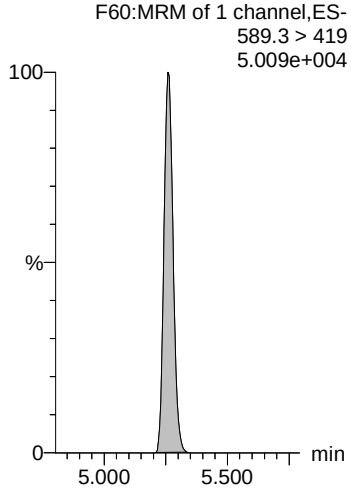


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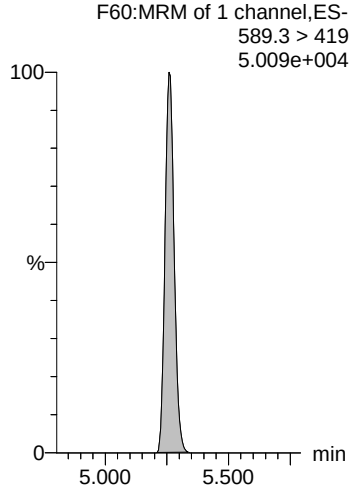




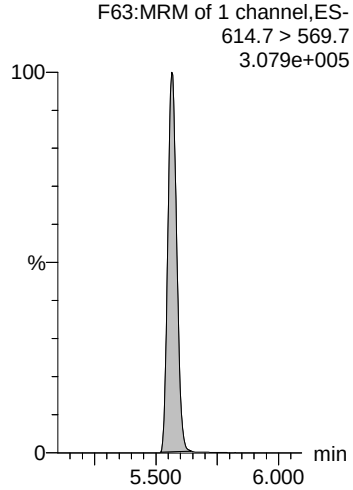
d5-N-EtFOSAA



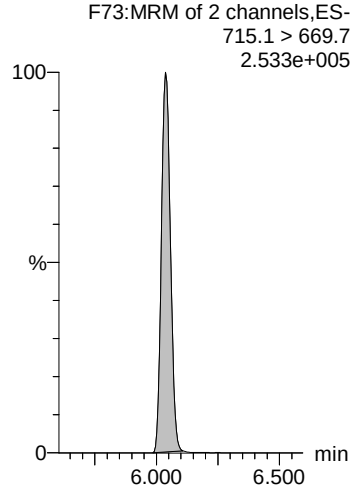
d5-N-EtFOSAA



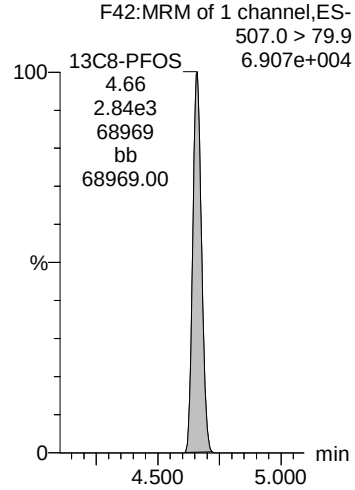
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



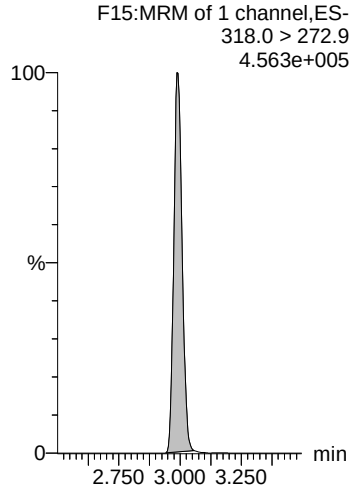
Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190708M3\190708M3-13.qld

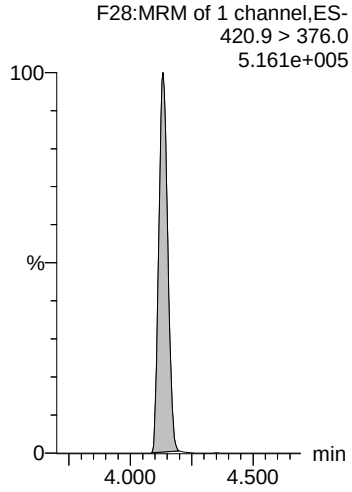
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Printed: Monday, July 15, 2019 09:31:14 Pacific Daylight Time

Name: 190708M3_13, Date: 08-Jul-2019, Time: 17:44:43, ID: 1901857-12 FRB-06272019 0.11771, Description: FRB-06272019

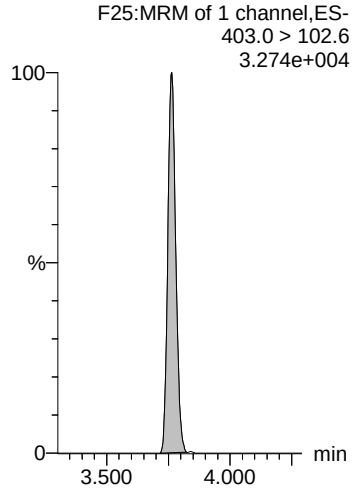
13C5-PFHxA



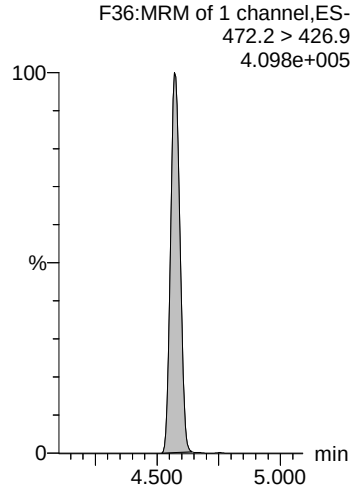
13C8-PFOA



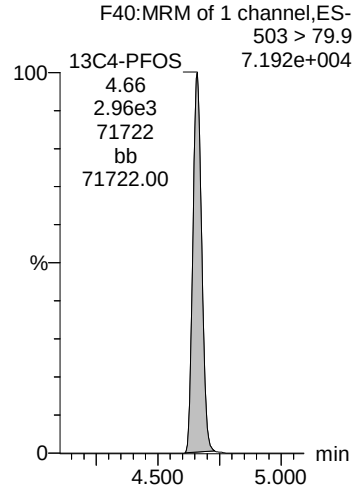
18O2-PFHxS



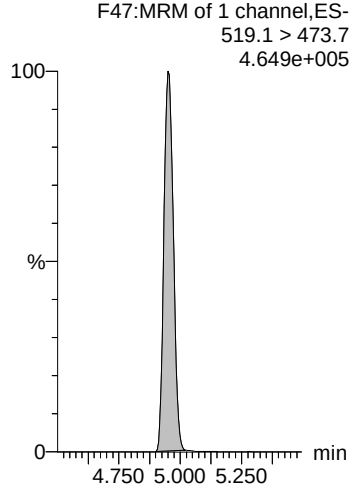
13C9-PFNA



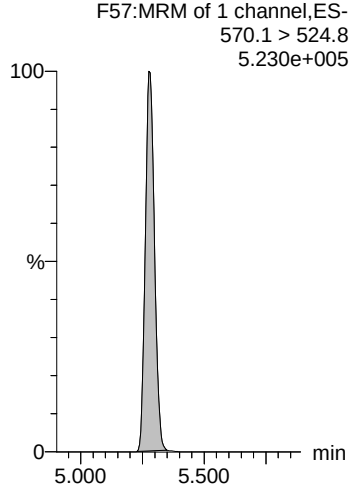
13C4-PFOS



13C6-PFDA



13C7-PFUdA



 NY 7/15/2019

SAMPLE DATA – VAL - PFAS

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-25.qld

Last Altered: Monday, July 15, 2019 14:48:20 Pacific Daylight Time
Printed: Monday, July 15, 2019 14:51:04 Pacific Daylight Time

Name: 190712M2_25, Date: 12-Jul-2019, Time: 21:45:47, ID: B9G0116-BLK1 Method Blank 1, Description: Method Blank

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		9.54e2	1.00		2.42						
2	7	PFHxA	313.0 > 269.0		6.12e3	1.00		2.93						
3	11	PFHpA	363.0 > 318.9		7.72e3	1.00		3.55						
4	13	L-PFHxS	398.9 > 79.6		1.89e3	1.00		3.71						
5	80	Total PFHxS	398.9 > 79.6	0.00e0	1.89e3	1.00		3.83		0.000				
6	49	13C3-PFBS	302.0 > 98.8	9.54e2	9.65e2	1.00	1.073	2.41	2.42	12.4	11.5160	92.1		
7	52	13C2-PFHxA	315.0 > 270.0	6.12e3	1.63e4	1.00	1.009	2.92	2.93	4.68	4.6408	92.8		
8	53	13C4-PFHpA	367.2 > 321.8	7.72e3	1.63e4	1.00	0.512	3.54	3.55	5.90	11.5228	92.2		
9	54	13C3-PFHxS	401.8 > 79.9	1.89e3	9.65e2	1.00	2.197	3.70	3.71	24.4	11.1227	89.0		
10	54	13C3-PFHxS	401.8 > 79.9	1.89e3	9.65e2	1.00	2.197	3.70	3.71	24.4	11.1227	89.0		
11	-1													
12	16	L-PFOA	412.8 > 368.9		1.21e4	1.00		4.08						
13	81	Total PFOA	412.8 > 368.9	0.00e0	1.21e4	1.00		4.21		0.000				
14	21	PFNA	463.0 > 418.8		1.21e4	1.00		4.52						
15	23	L-PFOS	498.9 > 79.9		2.05e3	1.00		4.61						
16	82	Total PFOS	498.9 > 79.9	0.00e0	2.05e3	1.00		4.74		0.000				
17	58	13C2-PFOA	414.9 > 369.7	1.21e4	1.88e4	1.00	0.789	4.07	4.08	8.03	10.1709	81.4		
18	58	13C2-PFOA	414.9 > 369.7	1.21e4	1.88e4	1.00	0.789	4.07	4.08	8.03	10.1709	81.4		
19	56	13C5-PFNA	468.2 > 422.9	1.21e4	1.50e4	1.00	0.991	4.52	4.52	10.1	10.2317	81.9		
20	59	13C8-PFOS	507.0 > 79.9	2.05e3	2.62e3	1.00	1.017	4.60	4.61	9.76	9.6024	76.8		
21	59	13C8-PFOS	507.0 > 79.9	2.05e3	2.62e3	1.00	1.017	4.60	4.61	9.76	9.6024	76.8		
22	-1													
23	26	PFDA	513 > 468.8		9.37e3	1.00		4.90						
24	29	L-MeFOSAA	570 > 419		1.44e3	1.00		5.05						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.44e3	1.00		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.11e4	1.00		5.23						
27	37	PFDoA	612.9 > 569.0	2.36e1	1.02e4	1.00		5.52	5.53	0.0290	0.0347		24.229	YES
28	60	13C2-PFDA	515.1 > 469.9	9.37e3	1.76e4	1.00	0.808	4.90	4.90	6.65	8.2325	65.9		
29	62	d3-N-MeFOSAA	573.3 > 419	1.44e3	1.87e4	1.00	0.140	5.05	5.05	0.966	6.9238	55.4		
30	62	d3-N-MeFOSAA	573.3 > 419	1.44e3	1.87e4	1.00	0.140	5.05	5.05	0.966	6.9238	55.4		
31	63	13C2-PFUdA	565 > 519.8	1.11e4	1.87e4	1.00	1.051	5.23	5.23	7.46	7.0961	56.8		
32	65	13C2-PFDoA	614.7 > 569.7	1.02e4	1.76e4	1.00	1.041	5.52	5.52	7.21	6.9309	55.4		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		1.48e3	1.00		5.22						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	1.48e3	1.00		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.02e4	1.00		5.77						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-25.qld

Last Altered: Monday, July 15, 2019 14:48:20 Pacific Daylight Time
Printed: Monday, July 15, 2019 14:51:04 Pacific Daylight Time

Name: 190712M2_25, Date: 12-Jul-2019, Time: 21:45:47, ID: B9G0116-BLK1 Method Blank 1, Description: Method Blank

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		8.66e3	1.00		6.00						
38	85	TDCA	498.3>106.9			1.00		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	1.48e3	1.87e4	1.00	0.168	5.21	5.22	0.990	5.9070	47.3		
40	64	d5-N-EtFOSAA	589.3 > 419	1.48e3	1.87e4	1.00	0.168	5.21	5.22	0.990	5.9070	47.3		
41	65	13C2-PFDoA	614.7 > 569.7	1.02e4	1.76e4	1.00	1.041	5.52	5.52	7.21	6.9309	55.4		
42	67	13C2-PFTeDA	715.1 > 669.7	8.66e3	1.87e4	1.00	0.690	5.99	6.00	5.80	8.4071	67.3		
43	59	13C8-PFOS	507.0 > 79.9	2.05e3	2.62e3	1.00	1.017	4.60	4.61	9.76	9.6024	76.8		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.63e4	1.63e4	1.00	1.000	2.92	2.93	12.5	12.5000	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.88e4	1.88e4	1.00	1.000	4.07	4.08	12.5	12.5000	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	9.65e2	9.65e2	1.00	1.000	3.70	3.71	12.5	12.5000	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.50e4	1.50e4	1.00	1.000	4.52	4.52	12.5	12.5000	100.0		
49	77	13C4-PFOS	503 > 79.9	2.62e3	2.62e3	1.00	1.000	4.61	4.61	12.5	12.5000	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.76e4	1.76e4	1.00	1.000	4.89	4.90	12.5	12.5000	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.87e4	1.87e4	1.00	1.000	5.23	5.23	12.5	12.5000	100.0		

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Review: AMR 7/15/2019

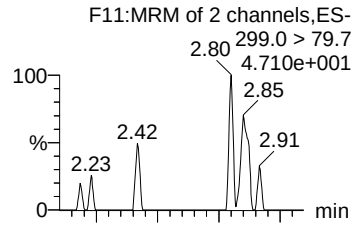
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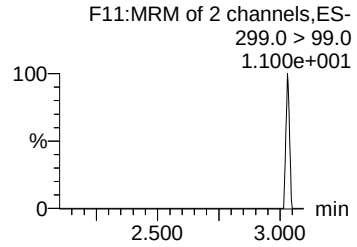
Last Altered: Monday, July 15, 2019 14:48:20 Pacific Daylight Time
Printed: Monday, July 15, 2019 14:51:04 Pacific Daylight Time

Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
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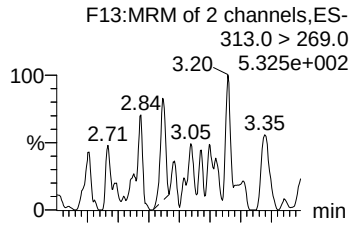
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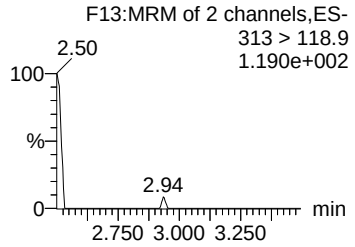
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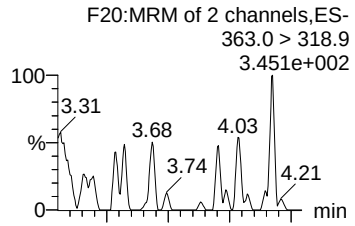


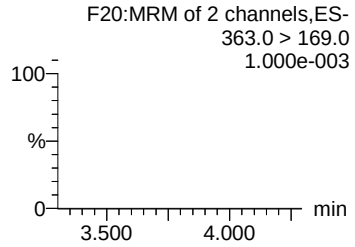
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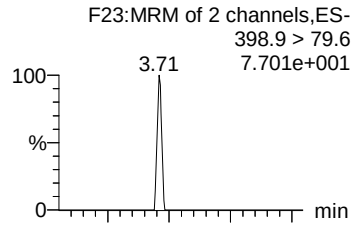


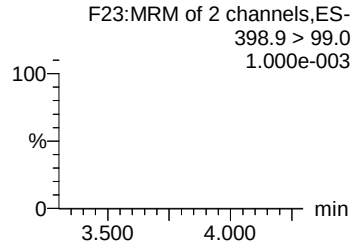
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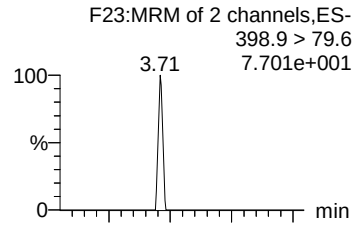


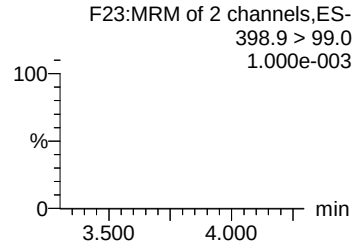
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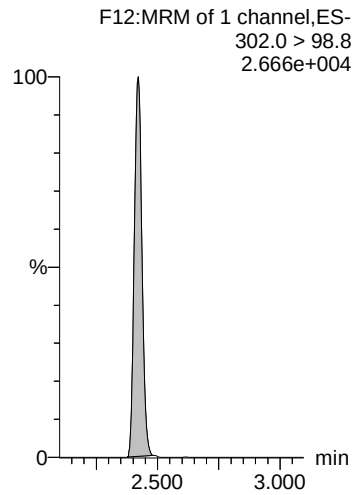


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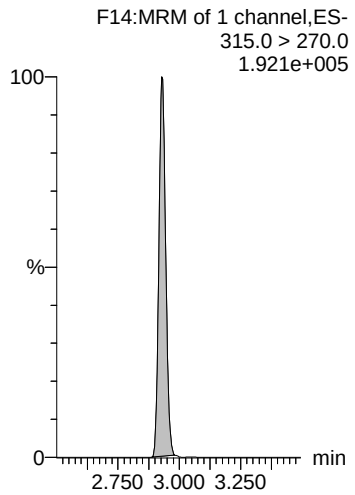




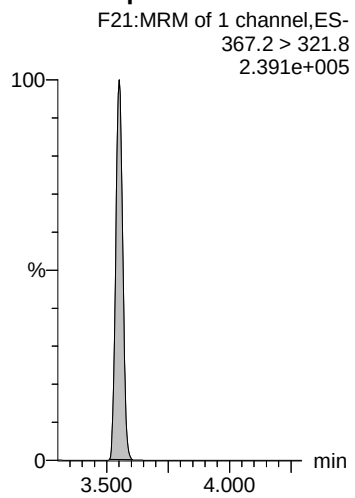
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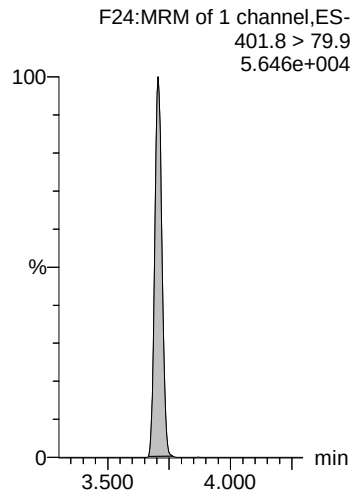
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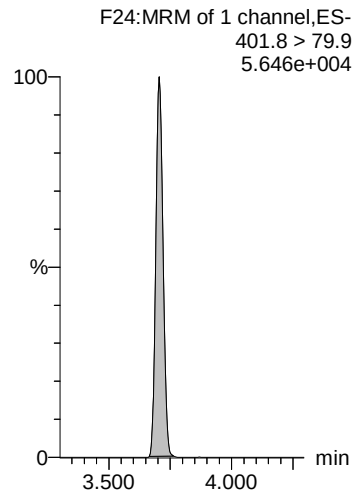
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13C3-PFHxS



13C3-PFHxS



 NY 7/15/2019

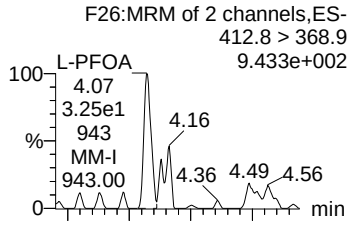
Review: AMR 7/15/2019

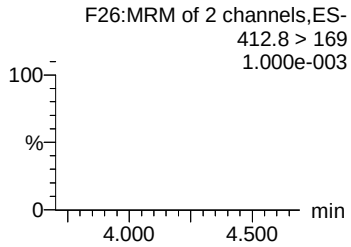
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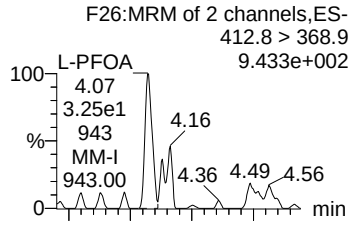
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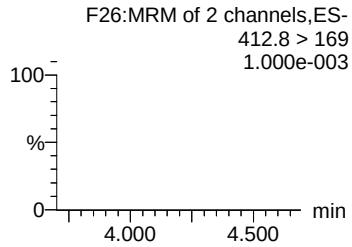
L-PFOA



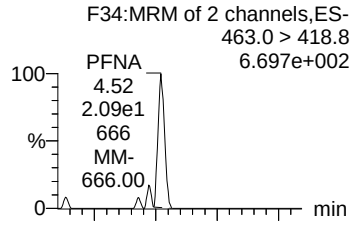


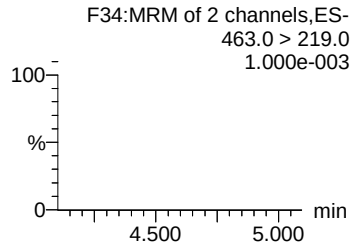
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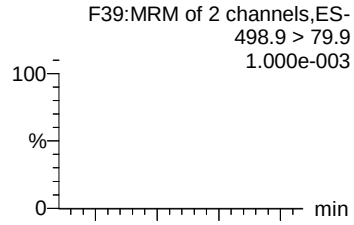


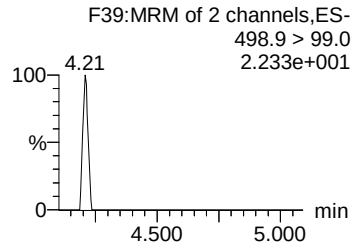
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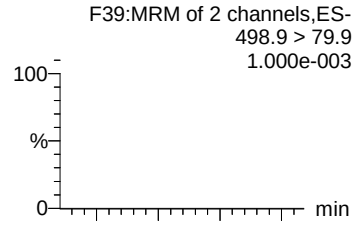


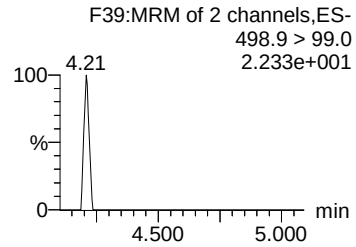
L-PFOS



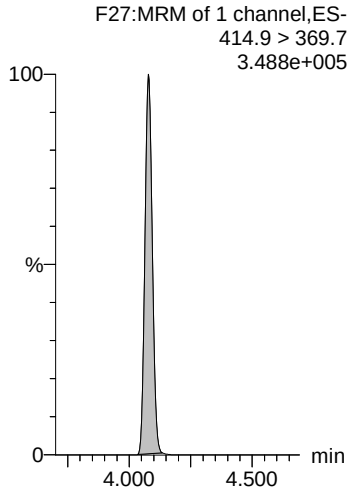


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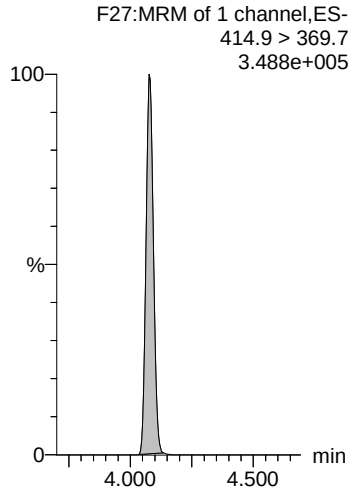




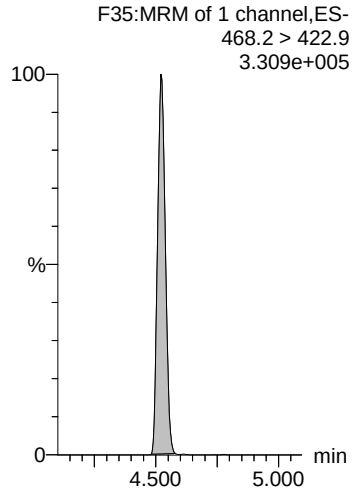
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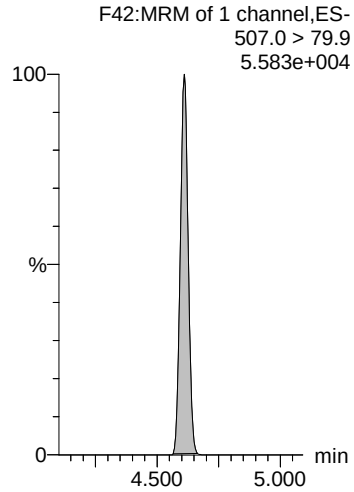
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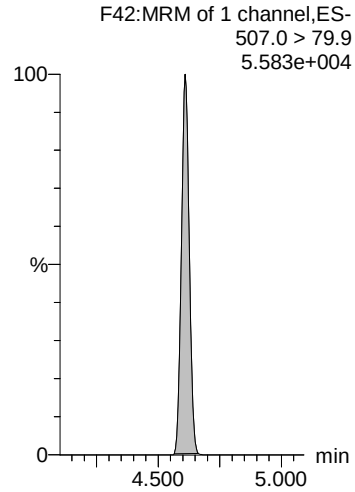
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13C8-PFOS



13C8-PFOS



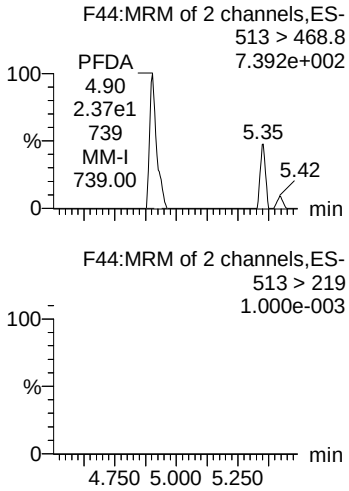
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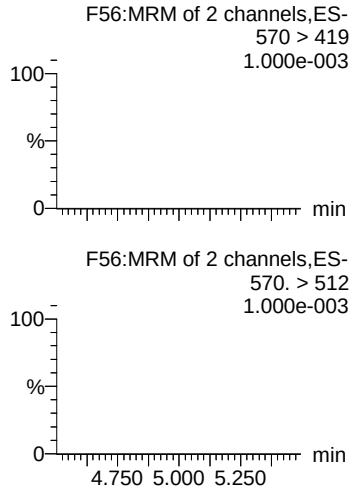
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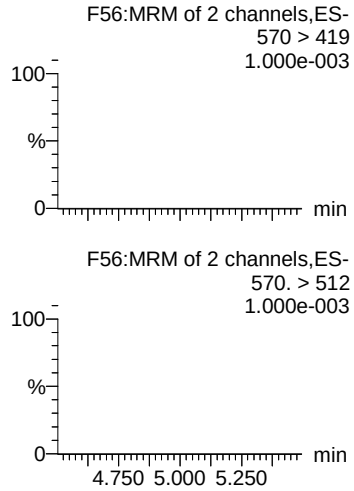
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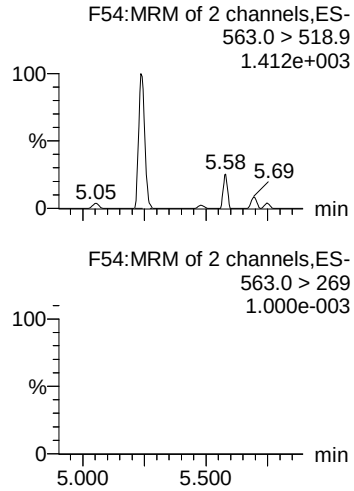
L-MeFOSAA



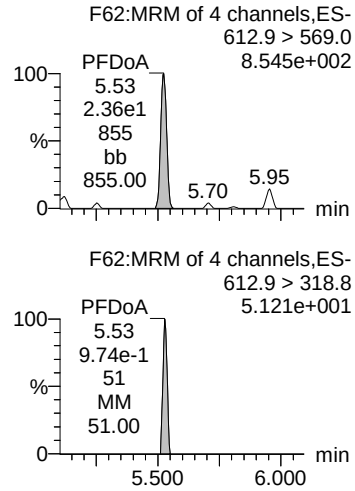
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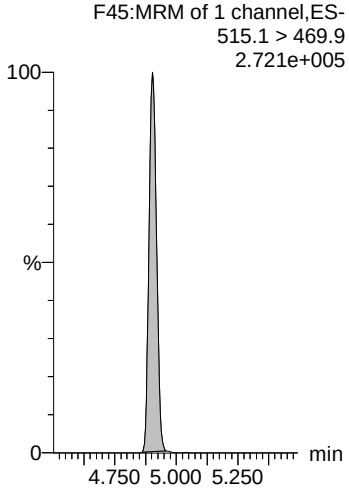
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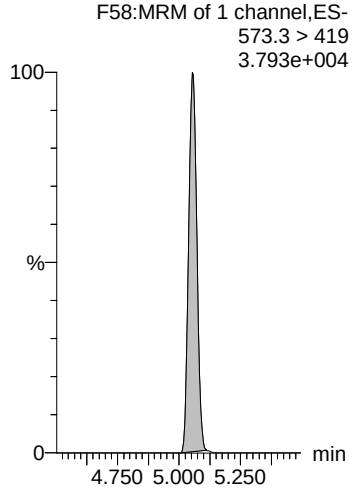
PFDoA



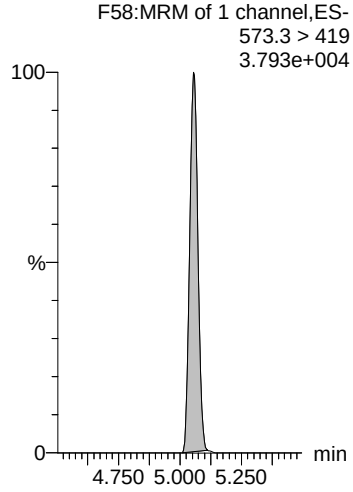
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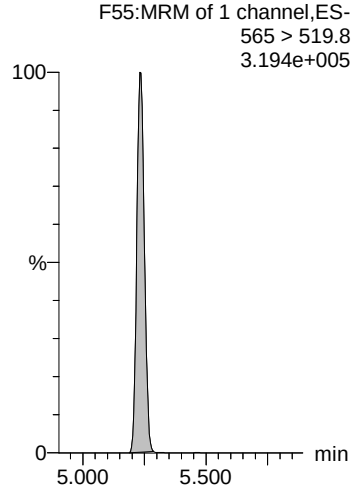
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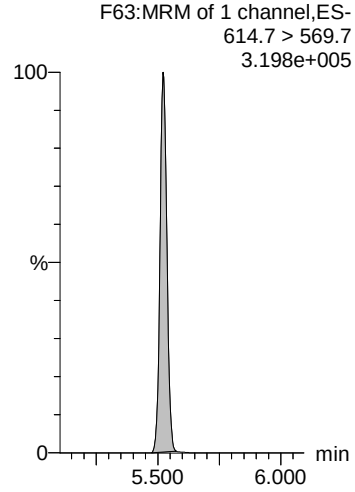
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13C2-PFUdA



13C2-PFDoA



Vista Analytical Laboratory L14

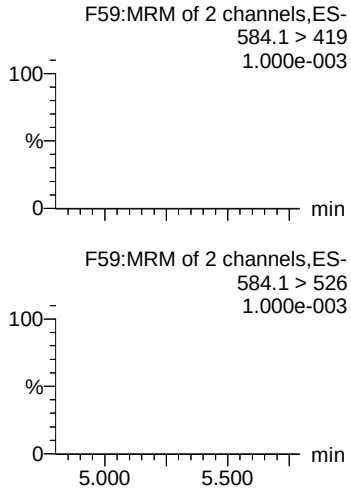
Review: AMR 7/15/2019

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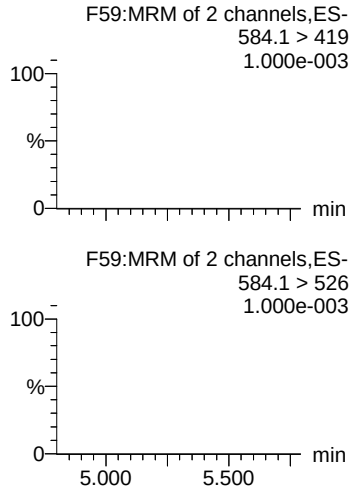
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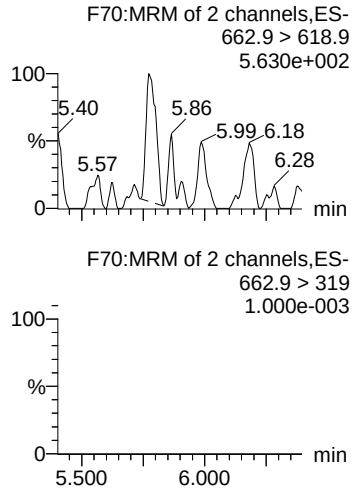
L-EtFOSAA



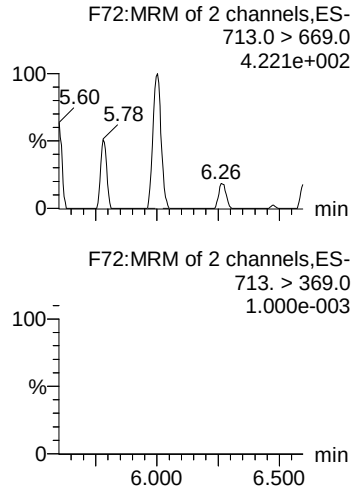
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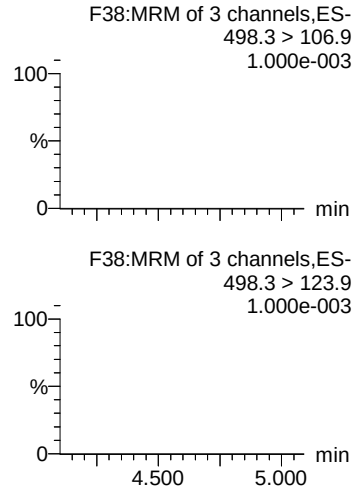
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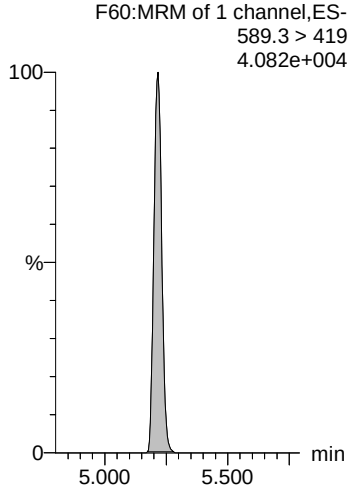
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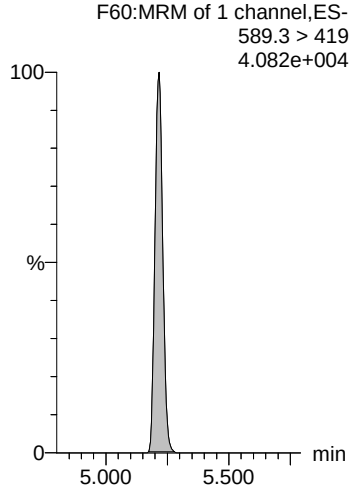
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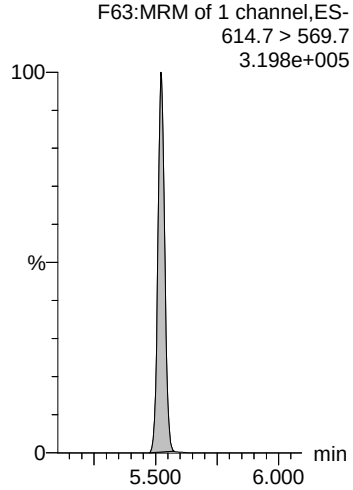
d5-N-EtFOSAA



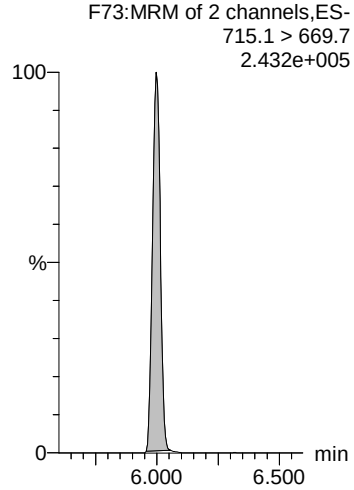
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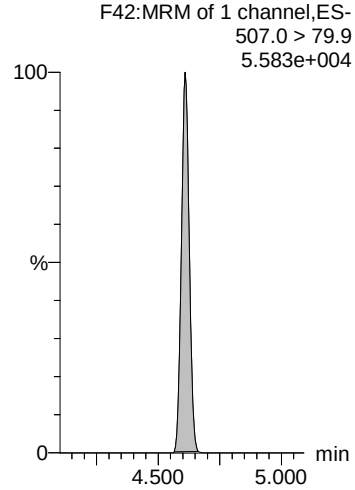
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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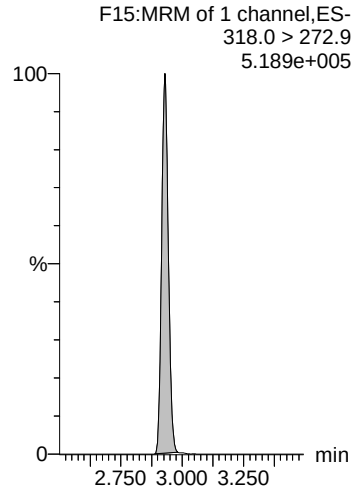
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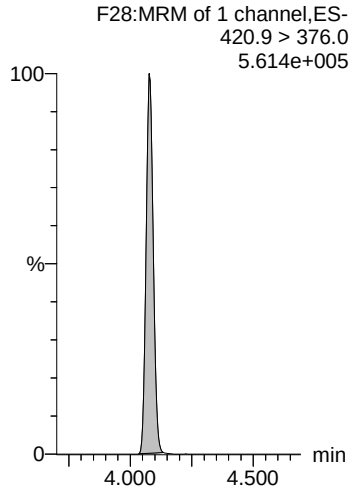
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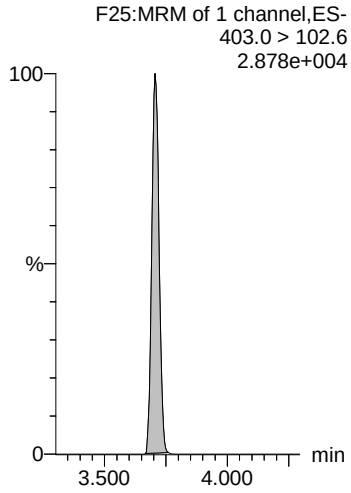
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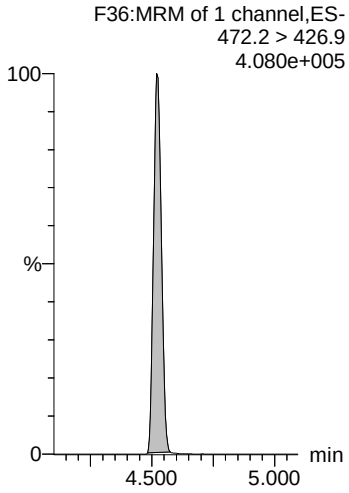
13C8-PFOA



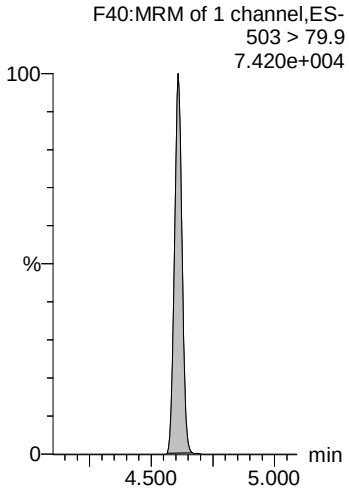
18O2-PFHxS



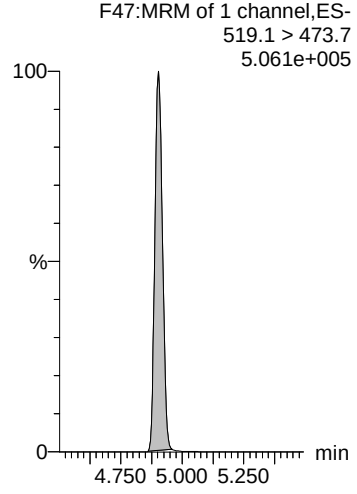
13C9-PFNA



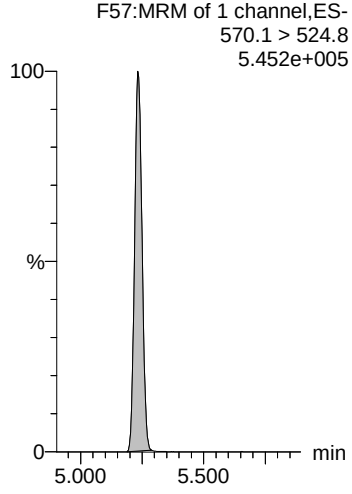
13C4-PFOS



13C6-PFDA



13C7-PFUdA



NY 7/15/2019

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-22.qld

Last Altered: Monday, July 15, 2019 12:30:49 Pacific Daylight Time
Printed: Monday, July 15, 2019 12:35:37 Pacific Daylight Time

Name: 190712M2_22, Date: 12-Jul-2019, Time: 21:13:58, ID: B9G0116-BS1 OPR 1, Description: OPR

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	1.91e3	9.78e2	1.00		2.42	2.42	24.5	10.3730	103.7	2.793	NO
2	7	PFHxA	313.0 > 269.0	1.18e4	5.94e3	1.00		2.93	2.93	9.95	11.3588	113.6	16.929	NO
3	11	PFHpA	363.0 > 318.9	8.48e3	7.53e3	1.00		3.55	3.55	14.1	10.7744	107.7	13.581	NO
4	13	L-PFHxS	398.9 > 79.6	1.62e3	2.09e3	1.00		3.70	3.70	9.69	10.2663	102.7	1.929	NO
5	80	Total PFHxS	398.9 > 79.6	1.62e3	2.09e3	1.00		3.83		9.69	10.2663			
6	49	13C3-PFBS	302.0 > 98.8	9.78e2	9.56e2	1.00	1.073	2.41	2.42	12.8	11.9226	95.4		
7	52	13C2-PFHxA	315.0 > 270.0	5.94e3	1.63e4	1.00	1.009	2.92	2.93	4.56	4.5164	90.3		
8	53	13C4-PFHpA	367.2 > 321.8	7.53e3	1.63e4	1.00	0.512	3.54	3.55	5.78	11.2841	90.3		
9	54	13C3-PFHxS	401.8 > 79.9	2.09e3	9.56e2	1.00	2.197	3.70	3.70	27.3	12.4361	99.5		
10	54	13C3-PFHxS	401.8 > 79.9	2.09e3	9.56e2	1.00	2.197	3.70	3.70	27.3	12.4361	99.5		
11	-1													
12	16	L-PFOA	412.8 > 368.9	1.60e4	1.36e4	1.00		4.08	4.08	14.8	10.7569	107.6	3.466	NO
13	81	Total PFOA	412.8 > 368.9	1.61e4	1.36e4	1.00		4.21		14.8	10.7569			
14	21	PFNA	463.0 > 418.8	1.31e4	1.20e4	1.00		4.52	4.52	13.6	11.1151	111.2	4.752	NO
15	23	L-PFOS	498.9 > 79.9	2.01e3	2.17e3	1.00		4.61	4.61	11.6	10.5026	105.0	1.868	NO
16	82	Total PFOS	498.9 > 79.9	2.01e3	2.17e3	1.00		4.74		11.6	10.5026			
17	58	13C2-PFOA	414.9 > 369.7	1.36e4	1.92e4	1.00	0.789	4.07	4.08	8.86	11.2221	89.8		
18	58	13C2-PFOA	414.9 > 369.7	1.36e4	1.92e4	1.00	0.789	4.07	4.08	8.86	11.2221	89.8		
19	56	13C5-PFNA	468.2 > 422.9	1.20e4	1.50e4	1.00	0.991	4.52	4.52	9.95	10.0387	80.3		
20	59	13C8-PFOS	507.0 > 79.9	2.17e3	2.61e3	1.00	1.017	4.60	4.61	10.4	10.2459	82.0		
21	59	13C8-PFOS	507.0 > 79.9	2.17e3	2.61e3	1.00	1.017	4.60	4.61	10.4	10.2459	82.0		
22	-1													
23	26	PFDA	513 > 468.8	1.26e4	1.01e4	1.00		4.90	4.90	15.7	11.4504	114.5	6.049	NO
24	29	L-MeFOSAA	570 > 419	3.37e3	1.50e3	1.00		5.06	5.06	28.1	9.6623	96.6	2.444	NO
25	83	Total N-MeFOSAA	570. > 419	3.37e3	1.50e3	1.00		5.19		28.1	9.6623			
26	33	PFUdA	563.0 > 518.9	1.01e4	1.17e4	1.00		5.23	5.23	10.8	11.6751	116.8	10.207	NO
27	37	PFDoA	612.9 > 569.0	1.02e4	1.06e4	1.00		5.52	5.52	12.0	11.4735	114.7	7.959	NO
28	60	13C2-PFDA	515.1 > 469.9	1.01e4	1.86e4	1.00	0.808	4.90	4.90	6.76	8.3697	67.0		
29	62	d3-N-MeFOSAA	573.3 > 419	1.50e3	1.97e4	1.00	0.140	5.05	5.06	0.951	6.8131	54.5		
30	62	d3-N-MeFOSAA	573.3 > 419	1.50e3	1.97e4	1.00	0.140	5.05	5.06	0.951	6.8131	54.5		
31	63	13C2-PFUdA	565 > 519.8	1.17e4	1.97e4	1.00	1.051	5.23	5.23	7.40	7.0480	56.4		
32	65	13C2-PFDoA	614.7 > 569.7	1.06e4	1.86e4	1.00	1.041	5.52	5.52	7.13	6.8467	54.8		
33	-1													
34	31	L-EtFOSAA	584.1 > 419	2.63e3	1.50e3	1.00		5.21	5.22	21.9	13.4287	134.3	1.436	NO
35	84	Total N-EtFOSAA	584.1 > 419	2.63e3	1.50e3	1.00		5.33		21.9	13.4287			
36	39	PFTrDA	662.9 > 618.9	1.25e4	1.06e4	1.00		5.77	5.77	14.7	12.2895	122.9	28.151	NO

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-22.qld

Last Altered: Monday, July 15, 2019 12:30:49 Pacific Daylight Time
Printed: Monday, July 15, 2019 12:35:37 Pacific Daylight Time

Name: 190712M2_22, Date: 12-Jul-2019, Time: 21:13:58, ID: B9G0116-BS1 OPR 1, Description: OPR

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	1.14e4	9.23e3	1.00		6.00	6.00	15.5	11.6041	116.0	13.327	NO
38	85	TDCA	498.3>106.9			1.00		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	1.50e3	1.97e4	1.00	0.168	5.21	5.21	0.953	5.6826	45.5		
40	64	d5-N-EtFOSAA	589.3 > 419	1.50e3	1.97e4	1.00	0.168	5.21	5.21	0.953	5.6826	45.5		
41	65	13C2-PFDoA	614.7 > 569.7	1.06e4	1.86e4	1.00	1.041	5.52	5.52	7.13	6.8467	54.8		
42	67	13C2-PFTeDA	715.1 > 669.7	9.23e3	1.97e4	1.00	0.690	5.99	6.00	5.85	8.4786	67.8		
43	59	13C8-PFOS	507.0 > 79.9	2.17e3	2.61e3	1.00	1.017	4.60	4.61	10.4	10.2459	82.0		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.63e4	1.63e4	1.00	1.000	2.92	2.93	12.5	12.5000	100.0		
46	75	13C8-PFOA	420.9 > 376.0	1.92e4	1.92e4	1.00	1.000	4.07	4.08	12.5	12.5000	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	9.56e2	9.56e2	1.00	1.000	3.70	3.70	12.5	12.5000	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.50e4	1.50e4	1.00	1.000	4.52	4.52	12.5	12.5000	100.0		
49	77	13C4-PFOS	503 > 79.9	2.61e3	2.61e3	1.00	1.000	4.61	4.61	12.5	12.5000	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.86e4	1.86e4	1.00	1.000	4.89	4.90	12.5	12.5000	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.97e4	1.97e4	1.00	1.000	5.23	5.23	12.5	12.5000	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

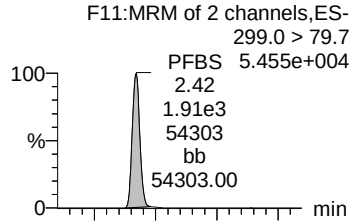
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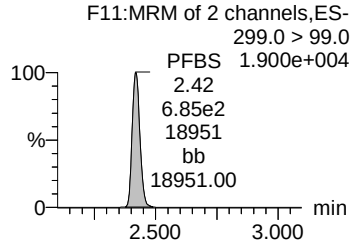
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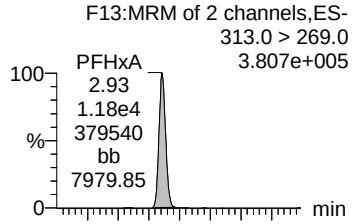
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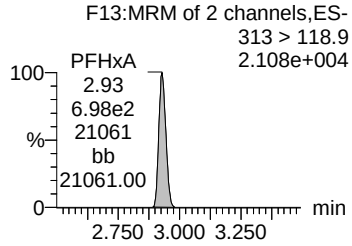
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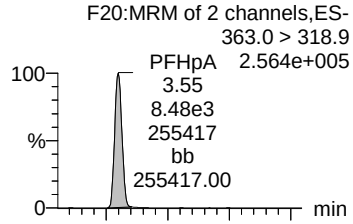


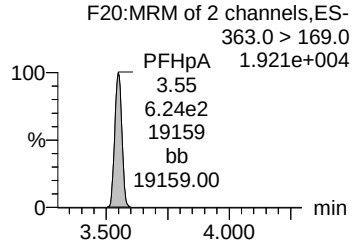
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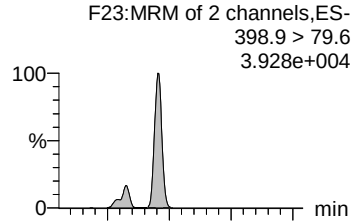


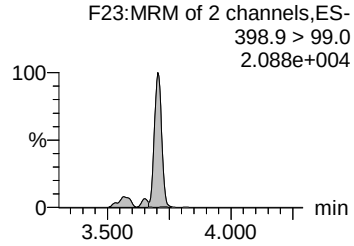
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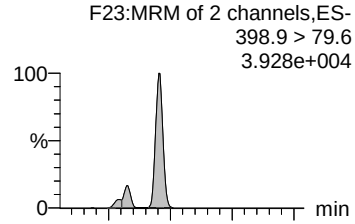


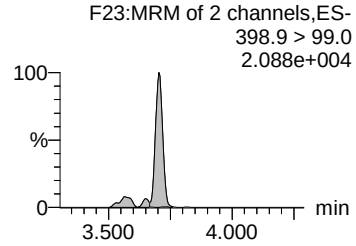
L-PFHxS



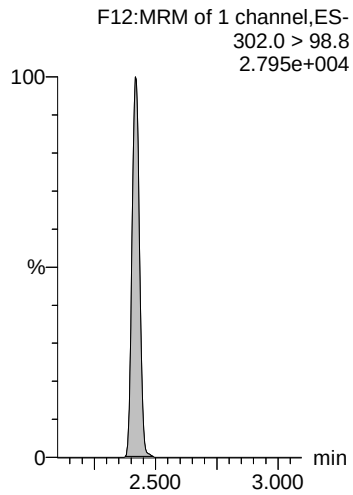


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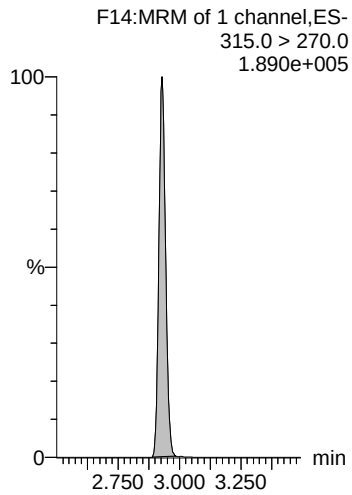




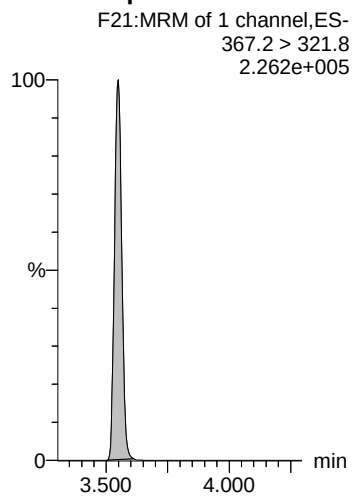
13C3-PFBS



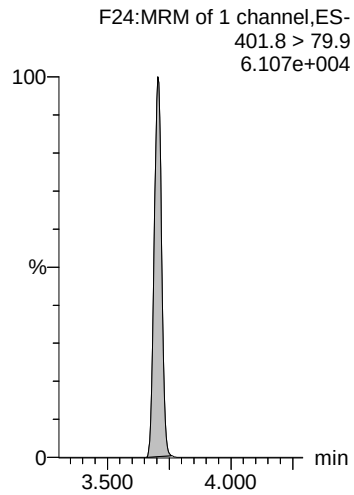
13C2-PFHxA



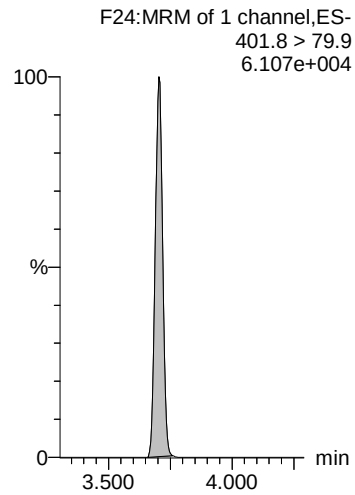
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



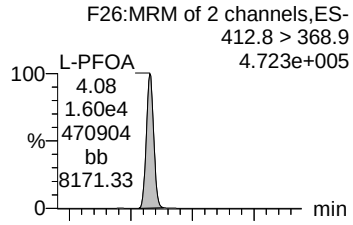
Review: AMR 7/15/2019

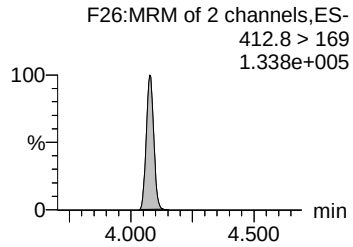
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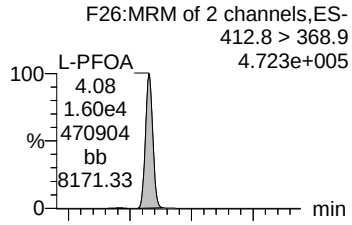
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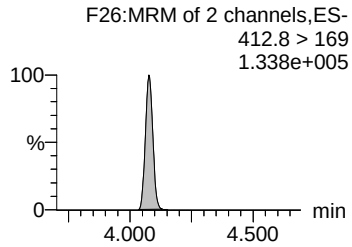
L-PFOA



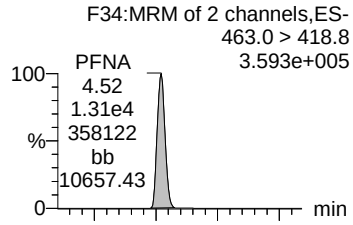


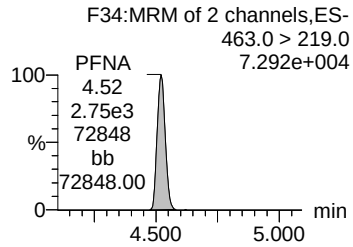
Total PFOA



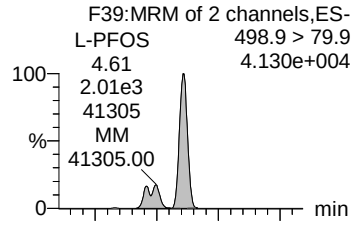


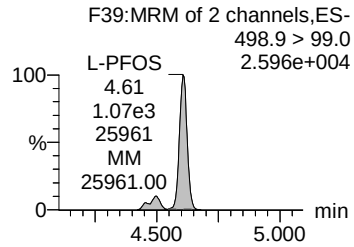
PFNA



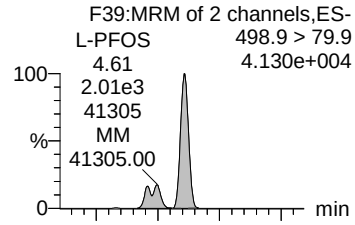


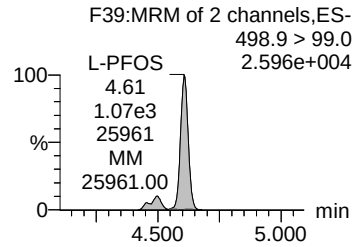
L-PFOS



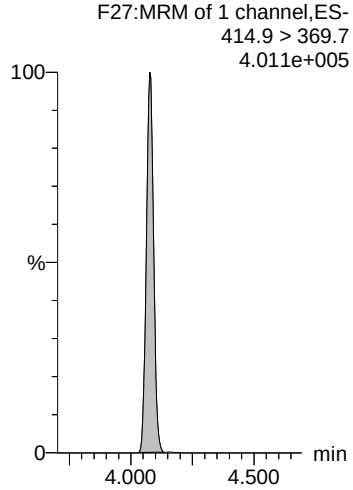


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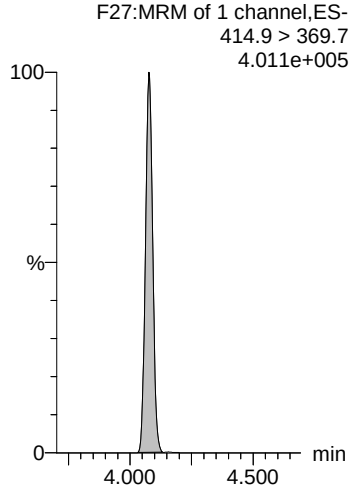




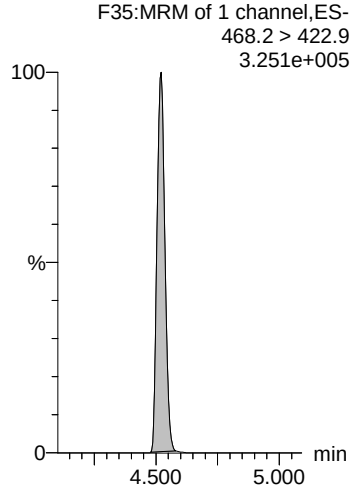
13C2-PFOA



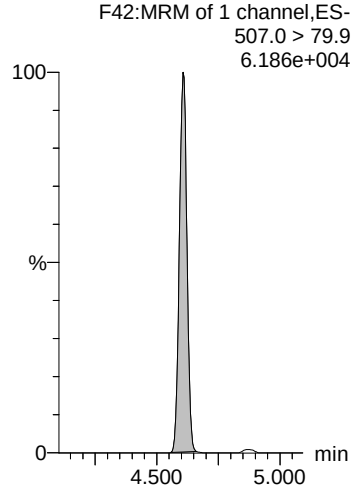
13C2-PFOA



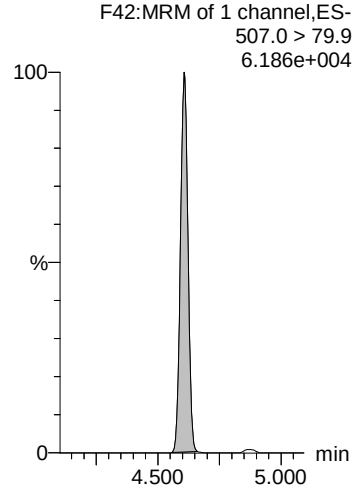
13C5-PFNA



13C8-PFOS



13C8-PFOS



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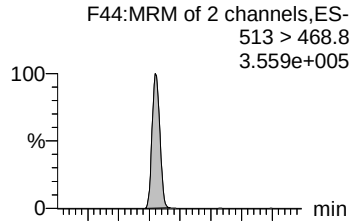
Review: AMR 7/15/2019

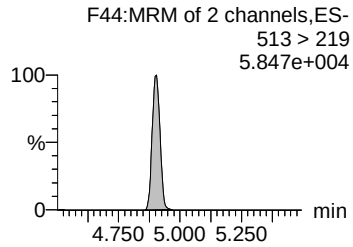
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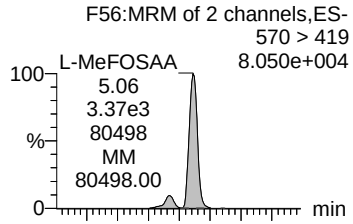
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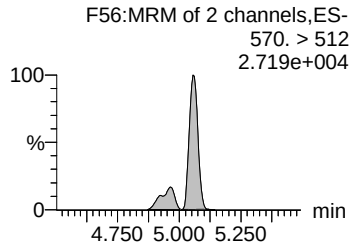
PFDA



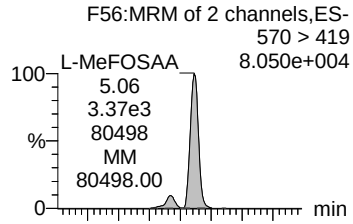


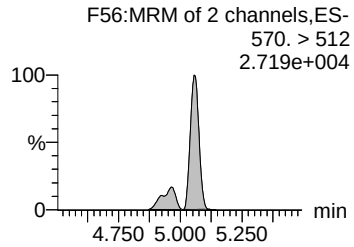
L-MeFOSAA



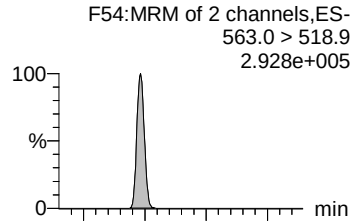


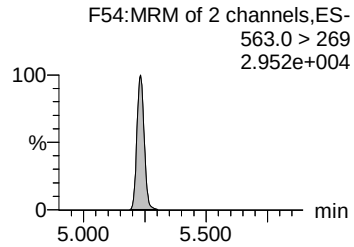
Total N-MeFOSAA



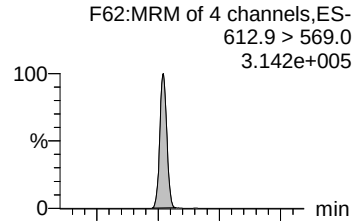


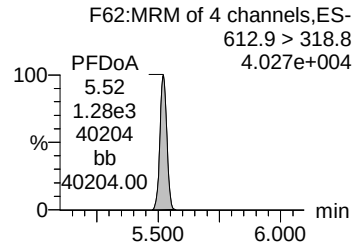
PFUdA



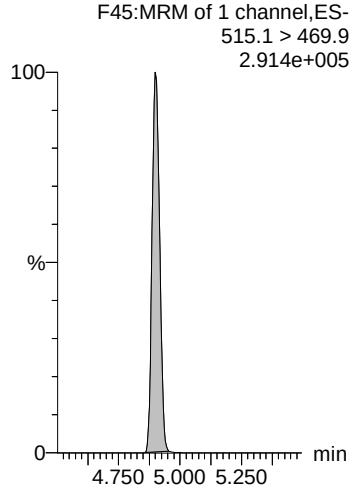


PFDoA

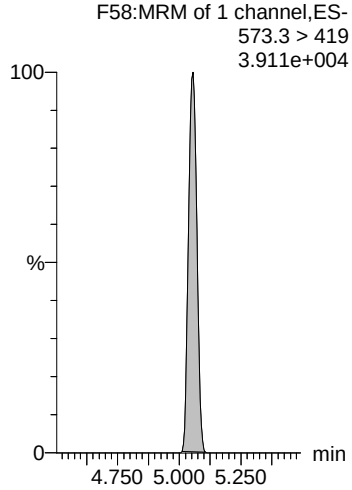




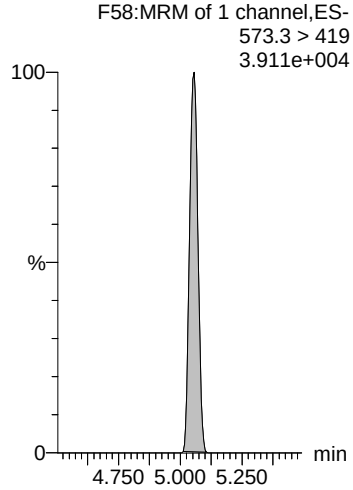
13C2-PFDA



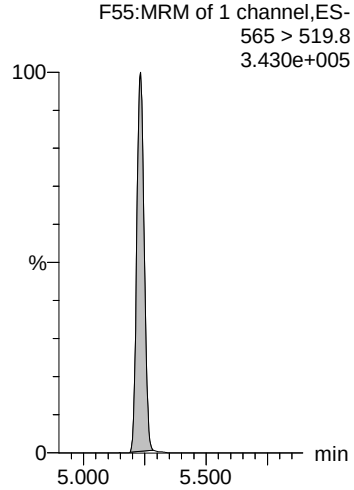
d3-N-MeFOSAA



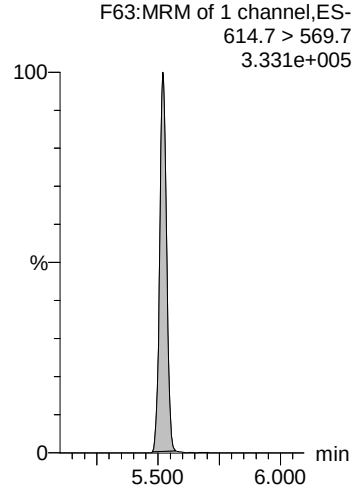
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA



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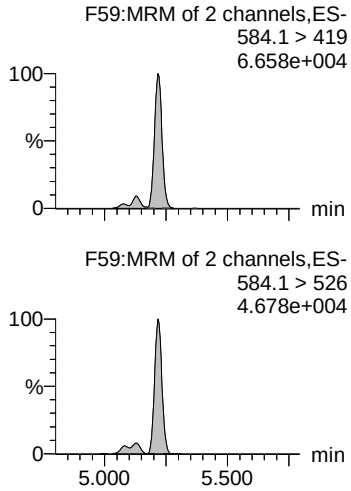
Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-22.qld

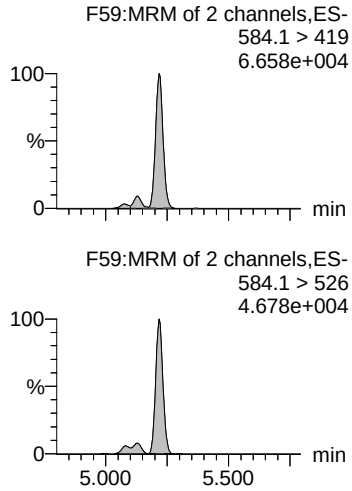
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Name: 190712M2_22, Date: 12-Jul-2019, Time: 21:13:58, ID: B9G0116-BS1 OPR 1, Description: OPR

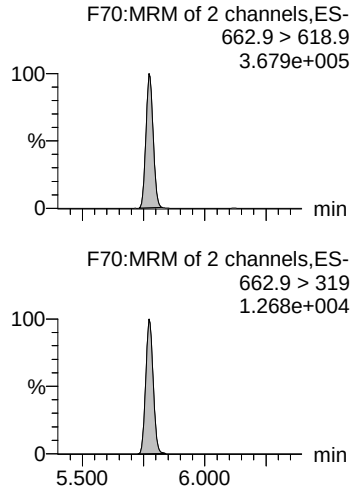
L-EtFOSAA



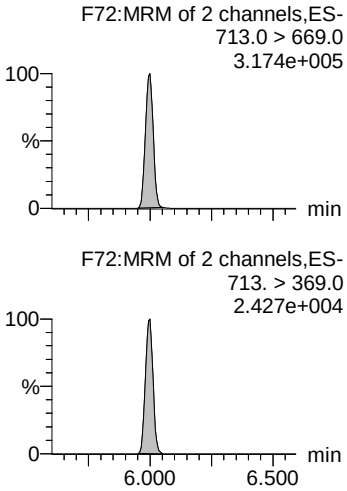
Total N-EtFOSAA



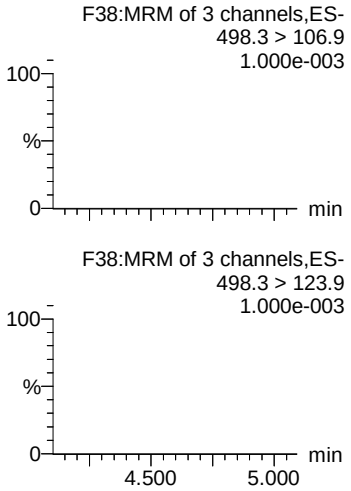
PFTrDA



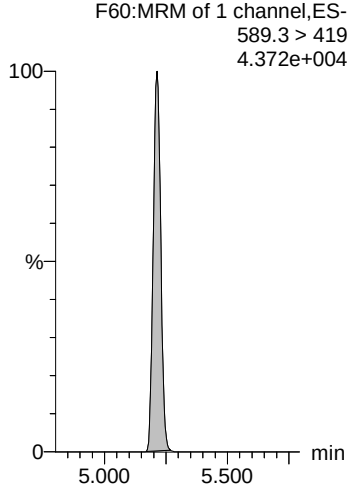
PFTeDA



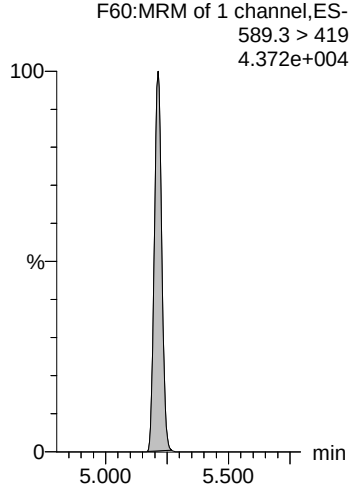
TDCA



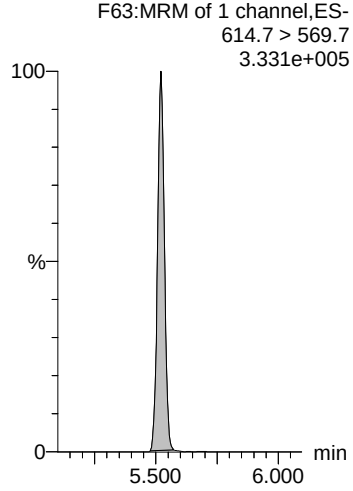
d5-N-EtFOSAA



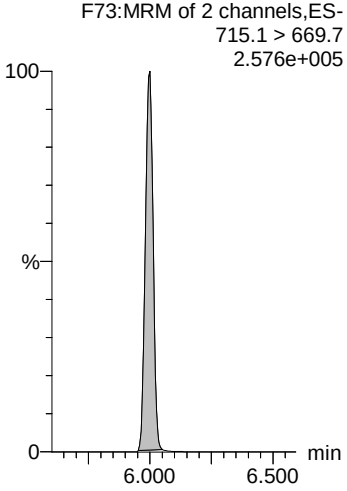
d5-N-EtFOSAA



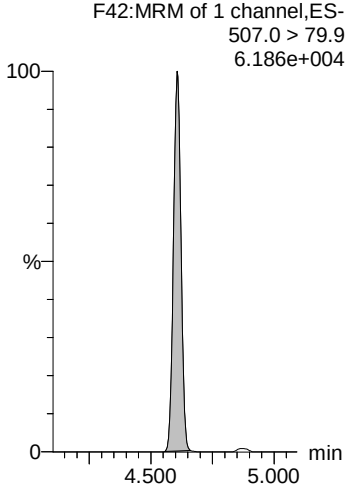
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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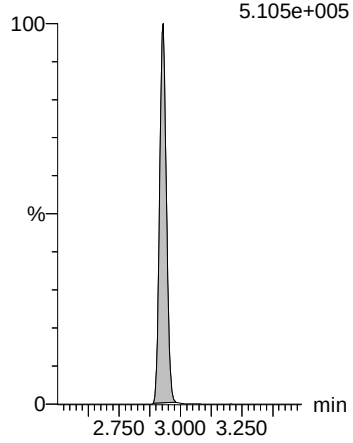
Review: AMR 7/15/2019

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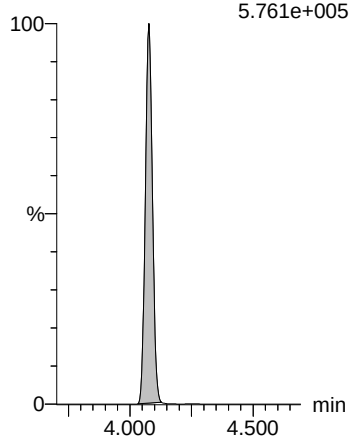
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Name: 190712M2_22, Date: 12-Jul-2019, Time: 21:13:58, ID: B9G0116-BS1 OPR 1, Description: OPR

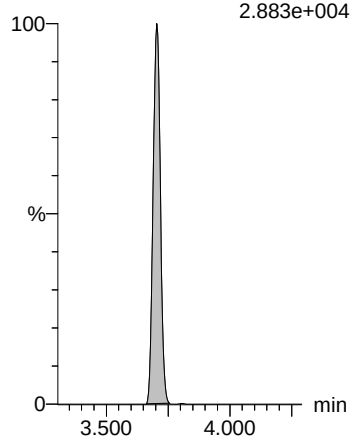
13C5-PFHxA



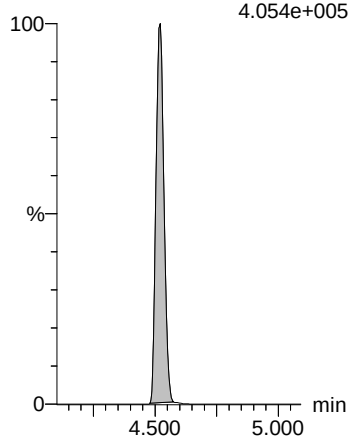
13C8-PFOA



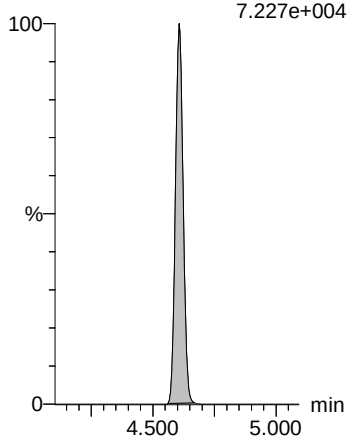
18O2-PFHxS



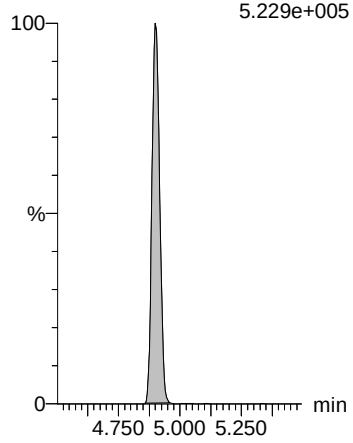
13C9-PFNA



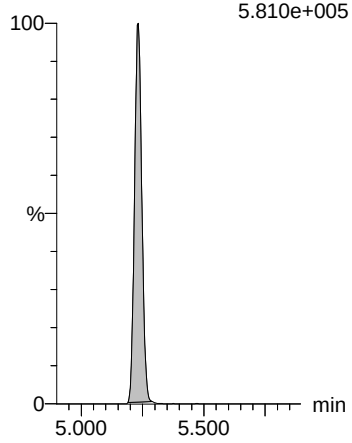
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-26.qld

Last Altered: Monday, July 15, 2019 12:47:17 Pacific Daylight Time
Printed: Monday, July 15, 2019 12:47:58 Pacific Daylight Time

Name: 190712M2_26, Date: 12-Jul-2019, Time: 21:56:20, ID: 1901857-02 SAOA-B09-SO-1-1.5 1.01, Description: SAOA-B09-SO-1-1.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	2.48e1	1.16e3	1.00		2.42	2.42	0.267	0.1776		7.795	YES
2	7	PFHxA	313.0 > 269.0	1.13e3	6.43e3	1.00		2.93	2.93	0.882	0.9735		22.270	NO
3	11	PFHpA	363.0 > 318.9	2.14e2	8.51e3	1.00		3.55	3.55	0.314	0.2699		7.981	NO
4	13	L-PFHxS	398.9 > 79.6	2.08e2	2.30e3	1.00		3.71	3.71	1.13	1.2534		2.312	NO
5	80	Total PFHxS	398.9 > 79.6	2.08e2	2.30e3	1.00		3.83		1.13	1.2534			
6	49	13C3-PFBS	302.0 > 98.8	1.16e3	9.92e2	1.00	1.073	2.41	2.42	14.6	13.5801	109.1		
7	52	13C2-PFHxA	315.0 > 270.0	6.43e3	1.85e4	1.00	1.009	2.92	2.93	4.34	4.2814	86.0		
8	53	13C4-PFHpA	367.2 > 321.8	8.51e3	1.85e4	1.00	0.512	3.54	3.55	5.74	11.1531	89.6		
9	54	13C3-PFHxS	401.8 > 79.9	2.30e3	9.92e2	1.00	2.197	3.70	3.71	29.0	13.1583	105.8		
10	54	13C3-PFHxS	401.8 > 79.9	2.30e3	9.92e2	1.00	2.197	3.70	3.71	29.0	13.1583	105.8		
11	-1													
12	16	L-PFOA	412.8 > 368.9	1.60e3	1.38e4	1.00		4.08	4.08	1.45	1.0066		3.781	NO
13	81	Total PFOA	412.8 > 368.9	1.60e3	1.38e4	1.00		4.21		1.45	1.0066			
14	21	PFNA	463.0 > 418.8	2.59e2	1.16e4	1.00		4.52	4.52	0.278	0.2393		5.957	NO
15	23	L-PFOS	498.9 > 79.9	3.63e3	2.55e3	1.00		4.61	4.61	17.8	15.9957		2.074	NO
16	82	Total PFOS	498.9 > 79.9	3.63e3	2.55e3	1.00		4.74		17.8	15.9957			
17	58	13C2-PFOA	414.9 > 369.7	1.38e4	2.04e4	1.00	0.789	4.07	4.08	8.45	10.6559	85.6		
18	58	13C2-PFOA	414.9 > 369.7	1.38e4	2.04e4	1.00	0.789	4.07	4.08	8.45	10.6559	85.6		
19	56	13C5-PFNA	468.2 > 422.9	1.16e4	1.55e4	1.00	0.991	4.52	4.52	9.37	9.4124	75.7		
20	59	13C8-PFOS	507.0 > 79.9	2.55e3	2.85e3	1.00	1.017	4.60	4.61	11.2	10.9696	88.2		
21	59	13C8-PFOS	507.0 > 79.9	2.55e3	2.85e3	1.00	1.017	4.60	4.61	11.2	10.9696	88.2		
22	-1													
23	26	PFDA	513 > 468.8	2.96e2	9.77e3	1.00		4.90	4.90	0.379	0.2348		9.537	YES
24	29	L-MeFOSAA	570 > 419		2.14e3	1.00		5.06						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.14e3	1.00		5.19		0.000				
26	33	PFUdA	563.0 > 518.9	6.28e1	1.41e4	1.00		5.23	5.24	0.0557	0.0183		4.375	YES
27	37	PFDoA	612.9 > 569.0	1.91e1	1.40e4	1.00		5.52	5.52	0.0170	0.0232		3.061	YES
28	60	13C2-PFDA	515.1 > 469.9	9.77e3	1.80e4	1.00	0.808	4.90	4.90	6.78	8.3565	67.2		
29	62	d3-N-MeFOSAA	573.3 > 419	2.14e3	1.91e4	1.00	0.140	5.05	5.06	1.40	9.9644	80.1		
30	62	d3-N-MeFOSAA	573.3 > 419	2.14e3	1.91e4	1.00	0.140	5.05	5.06	1.40	9.9644	80.1		
31	63	13C2-PFUdA	565 > 519.8	1.41e4	1.91e4	1.00	1.051	5.23	5.23	9.22	8.7307	70.2		
32	65	13C2-PFDoA	614.7 > 569.7	1.40e4	1.80e4	1.00	1.041	5.52	5.52	9.72	9.3005	74.8		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.57e3	1.00		5.21						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.57e3	1.00		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.40e4	1.00		5.78						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-26.qld

Last Altered: Monday, July 15, 2019 12:47:17 Pacific Daylight Time
Printed: Monday, July 15, 2019 12:47:58 Pacific Daylight Time

Name: 190712M2_26, Date: 12-Jul-2019, Time: 21:56:20, ID: 1901857-02 SAOA-B09-SO-1-1.5 1.01, Description: SAOA-B09-SO-1-1.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.09e4	1.00		6.00						
38	85	TDCA	498.3>106.9			1.00		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.57e3	1.91e4	1.00	0.168	5.21	5.21	1.68	9.9717	80.1		
40	64	d5-N-EtFOSAA	589.3 > 419	2.57e3	1.91e4	1.00	0.168	5.21	5.21	1.68	9.9717	80.1		
41	65	13C2-PFDoA	614.7 > 569.7	1.40e4	1.80e4	1.00	1.041	5.52	5.52	9.72	9.3005	74.8		
42	67	13C2-PFTeDA	715.1 > 669.7	1.09e4	1.91e4	1.00	0.690	5.99	6.00	7.14	10.3041	82.8		
43	59	13C8-PFOS	507.0 > 79.9	2.55e3	2.85e3	1.00	1.017	4.60	4.61	11.2	10.9696	88.2		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.85e4	1.85e4	1.00	1.000	2.92	2.93	12.5	12.4419	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.04e4	2.04e4	1.00	1.000	4.07	4.08	12.5	12.4419	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	9.92e2	9.92e2	1.00	1.000	3.70	3.71	12.5	12.4419	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.55e4	1.55e4	1.00	1.000	4.52	4.52	12.5	12.4419	100.0		
49	77	13C4-PFOS	503 > 79.9	2.85e3	2.85e3	1.00	1.000	4.61	4.61	12.5	12.4419	100.0		
50	78	13C6-PFDA	519.1 > 473.7	1.80e4	1.80e4	1.00	1.000	4.89	4.90	12.5	12.4419	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	1.91e4	1.91e4	1.00	1.000	5.23	5.23	12.5	12.4419	100.0		

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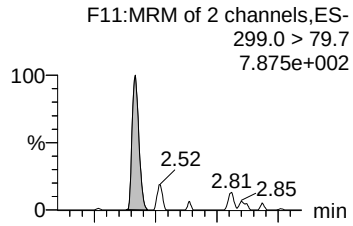
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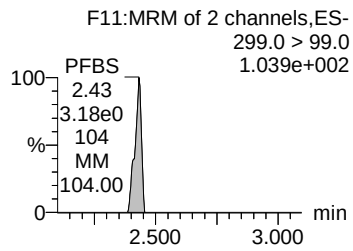
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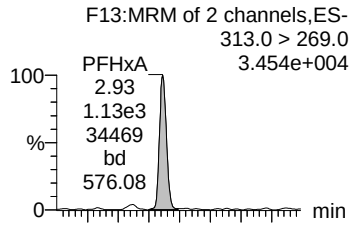
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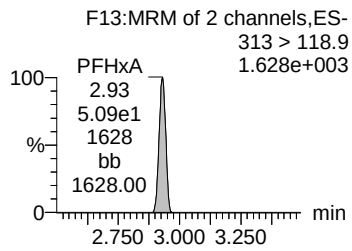
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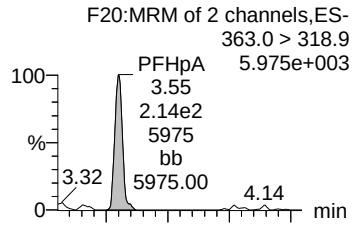


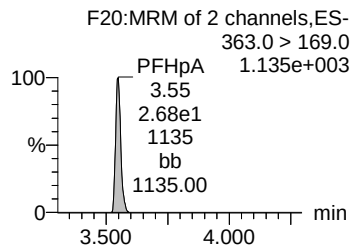
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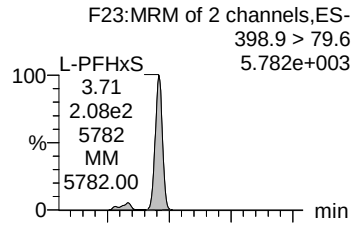


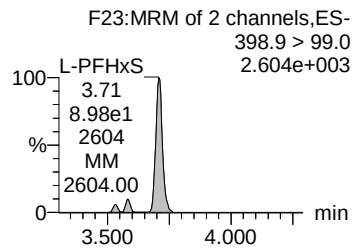
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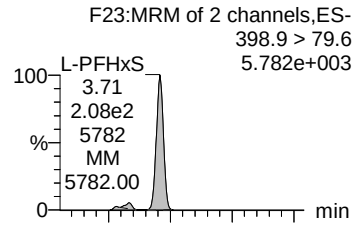


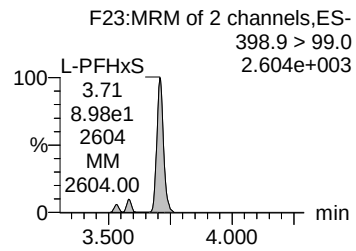
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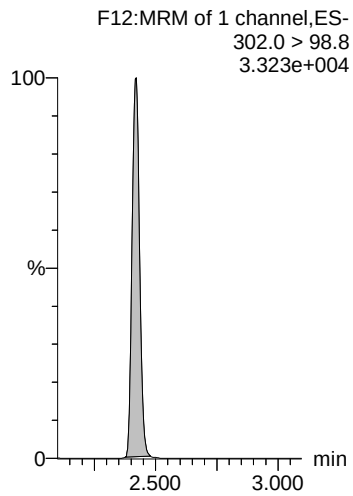


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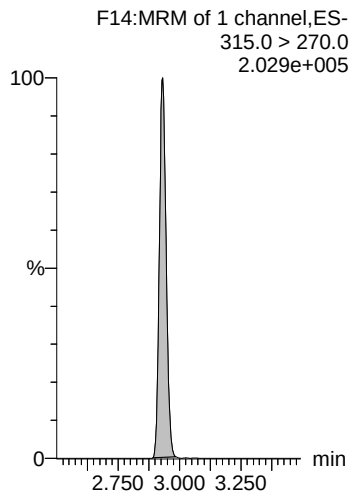




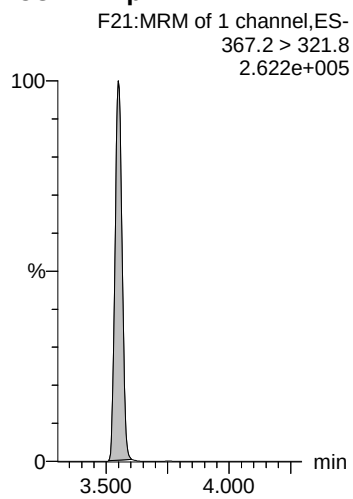
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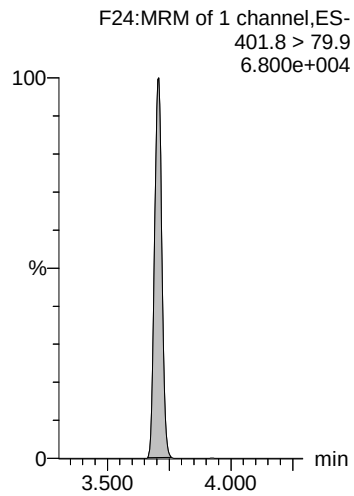
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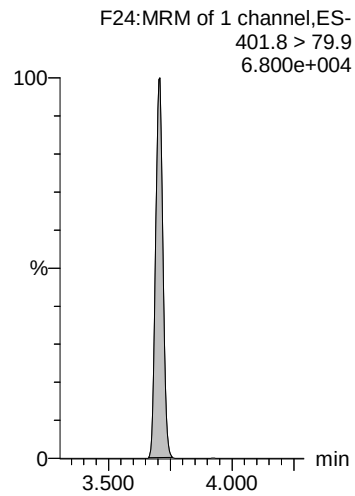
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



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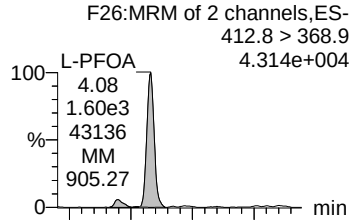
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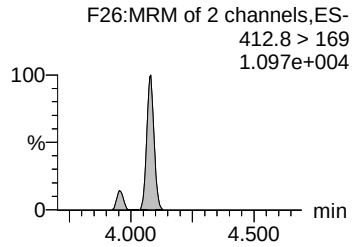
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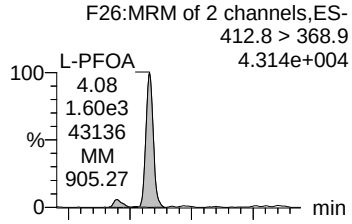
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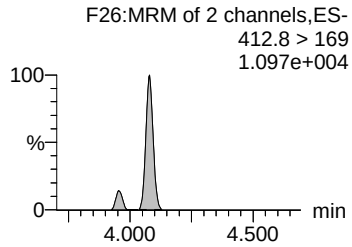
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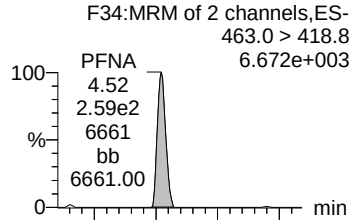


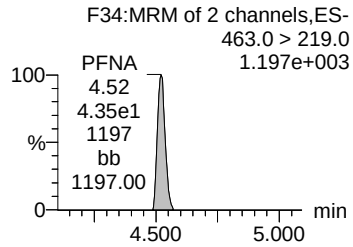
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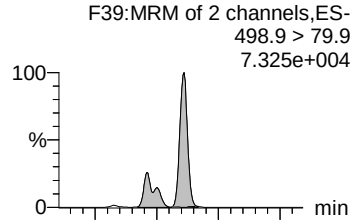


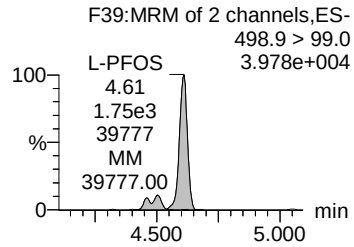
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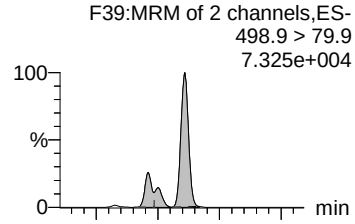


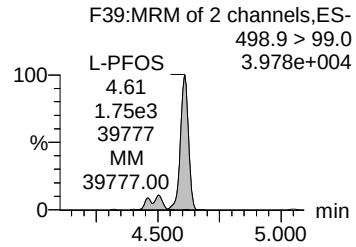
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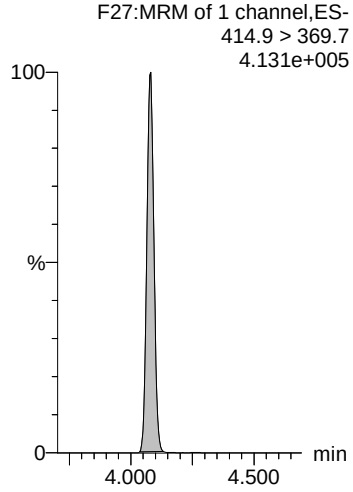


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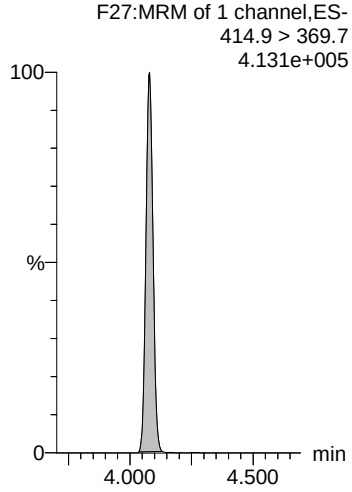




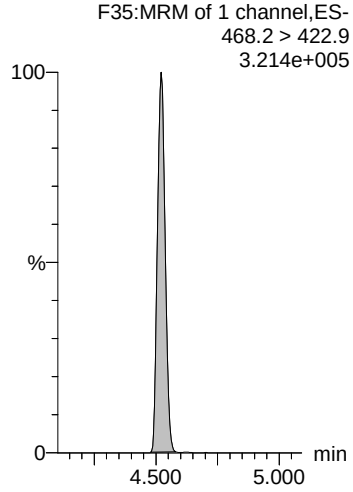
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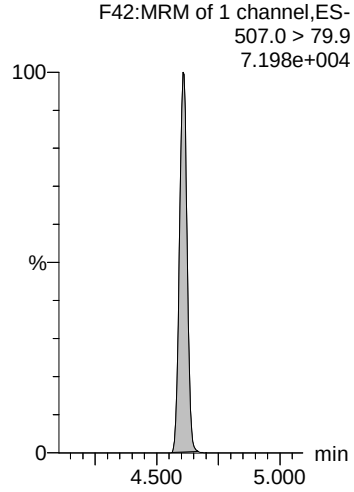
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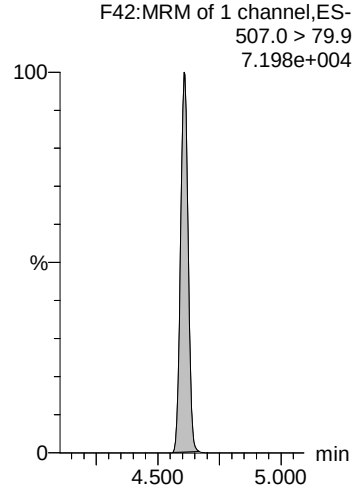
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13C8-PFOS



13C8-PFOS



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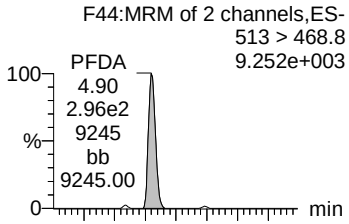
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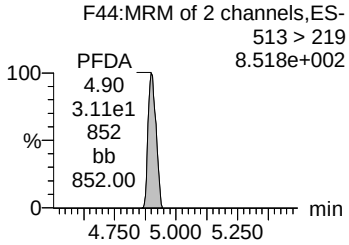
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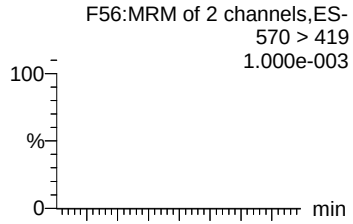
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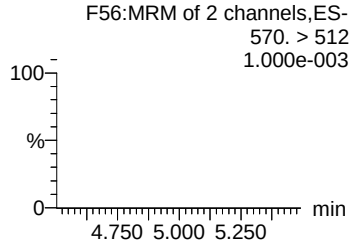
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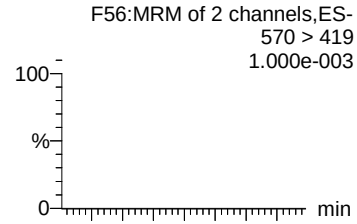


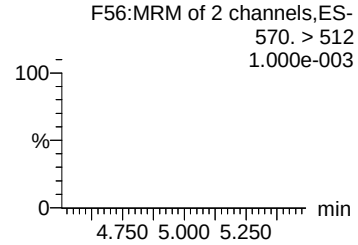
L-MeFOSAA



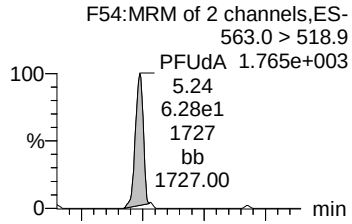


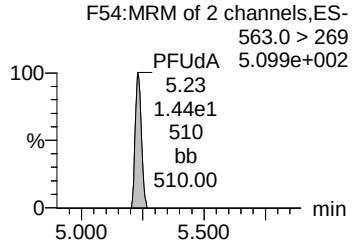
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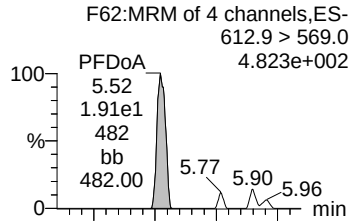


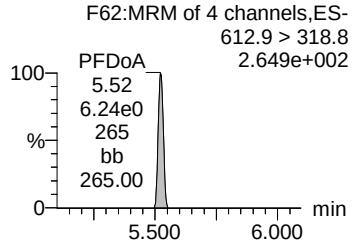
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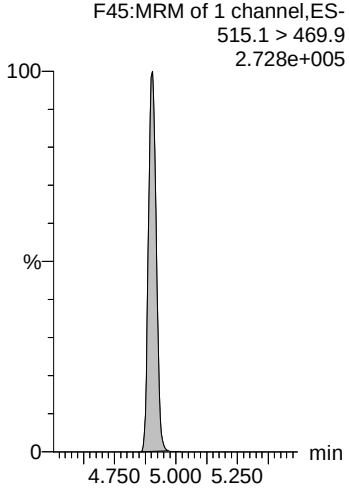


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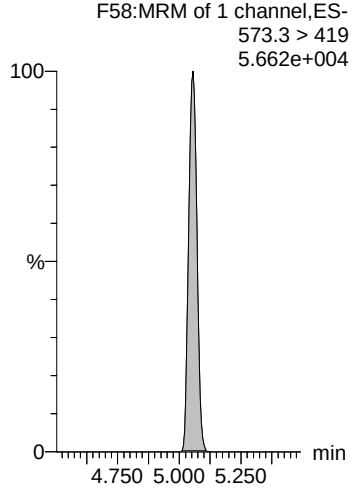




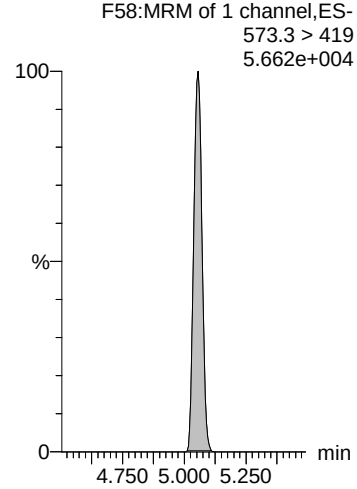
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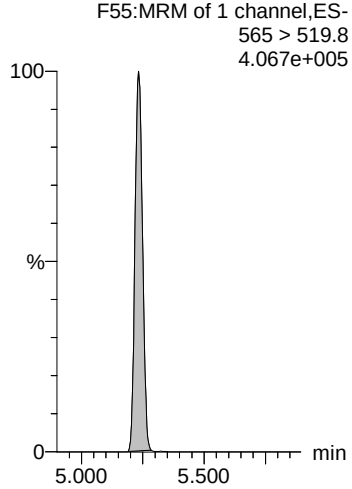
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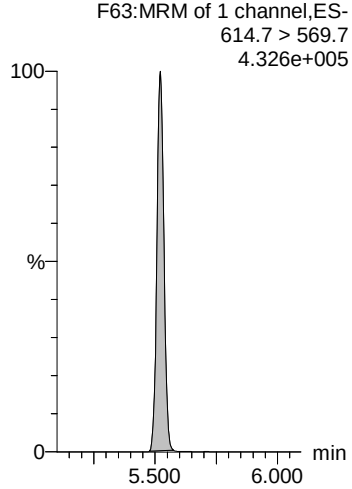
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13C2-PFUdA



13C2-PFDoA



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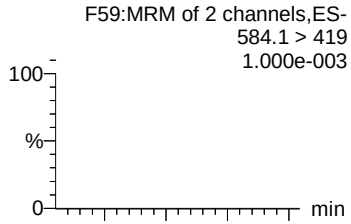
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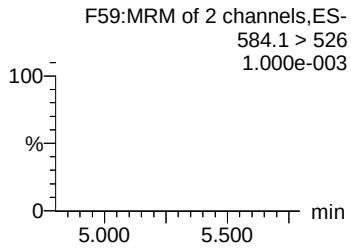
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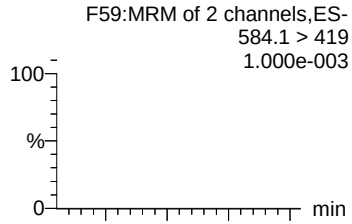
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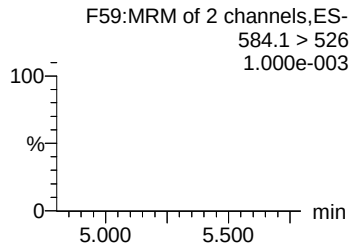
L-EtFOSAA



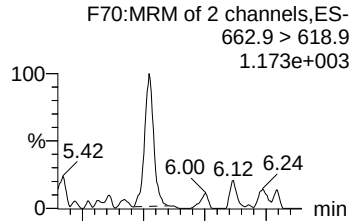


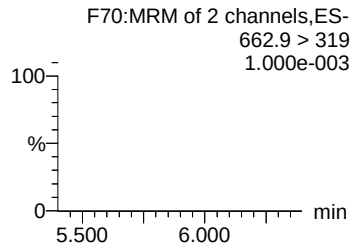
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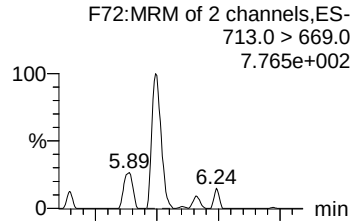


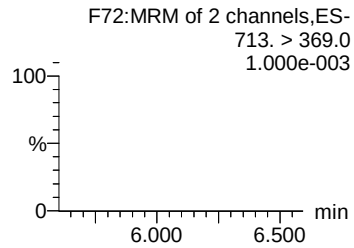
PFTrDA



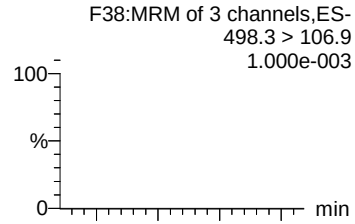


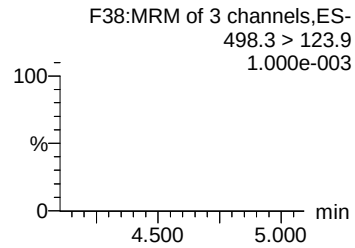
PFTeDA



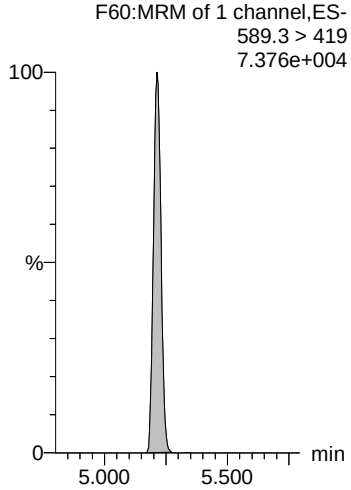


TDCA

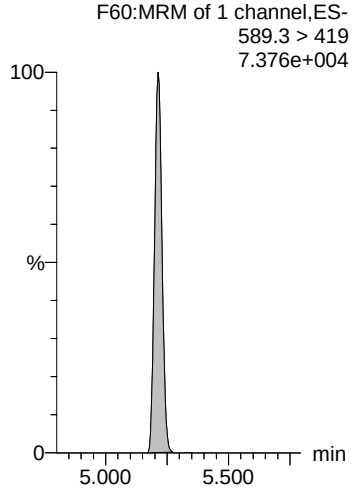




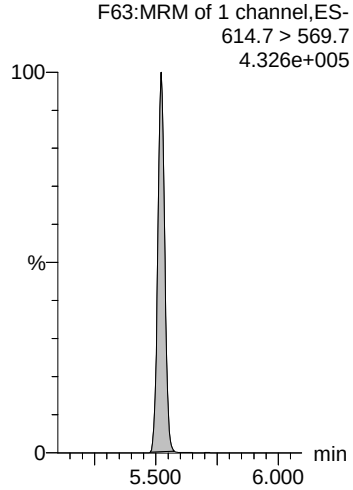
d5-N-EtFOSAA



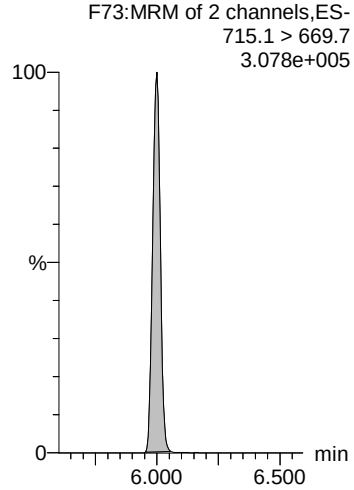
d5-N-EtFOSAA



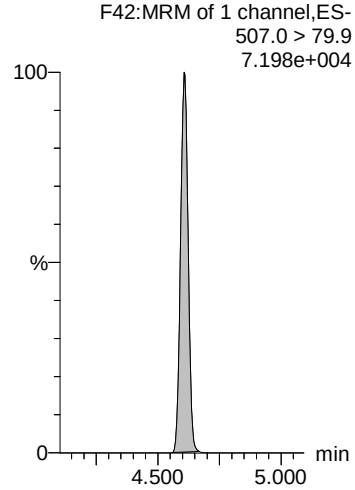
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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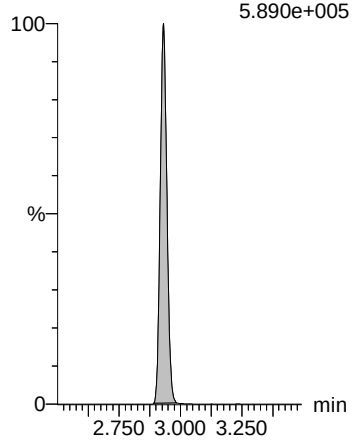
Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-26.qld

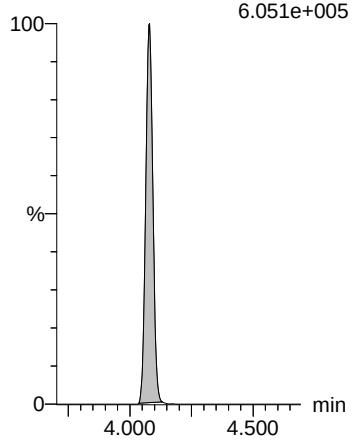
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Printed: Monday, July 15, 2019 12:47:58 Pacific Daylight Time

Name: 190712M2_26, Date: 12-Jul-2019, Time: 21:56:20, ID: 1901857-02 SAOA-B09-SO-1-1.5 1.01, Description: SAOA-B09-SO-1-1.5

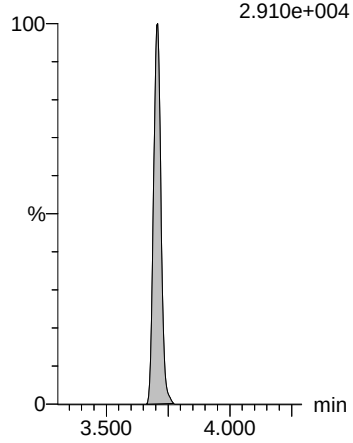
13C5-PFHxA



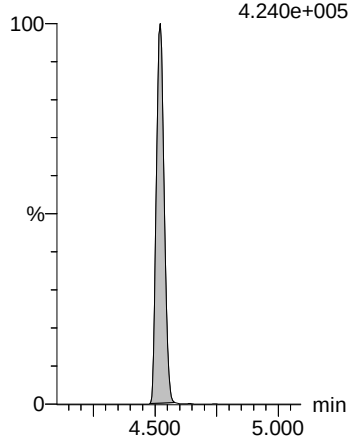
13C8-PFOA



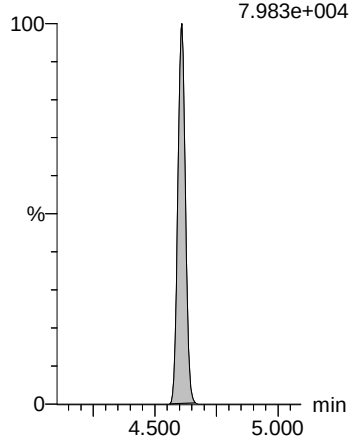
18O2-PFHxS



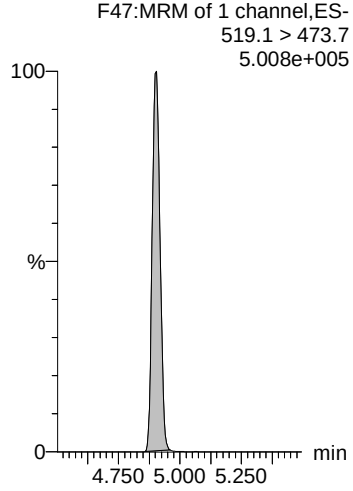
13C9-PFNA



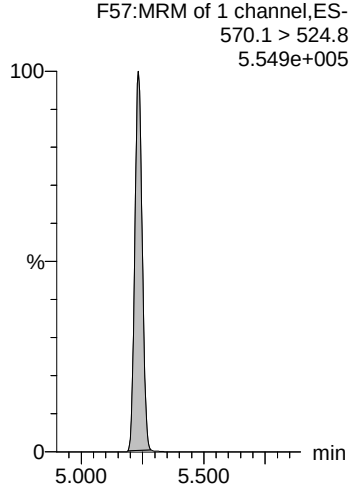
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-27.qld

Last Altered: Monday, July 15, 2019 15:04:00 Pacific Daylight Time
Printed: Monday, July 15, 2019 15:04:43 Pacific Daylight Time

Name: 190712M2_27, Date: 12-Jul-2019, Time: 22:06:59, ID: 1901857-03 SAOA-B09-SO-20-20.5 1.03, Description: SAOA-B09-SO-20-20.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		1.13e3	1.01		2.42						
2	7	PFHxA	313.0 > 269.0	7.41e1	6.61e3	1.01		2.93	2.94	0.0561	0.0323		145.220	YES
3	11	PFHpA	363.0 > 318.9		8.82e3	1.01		3.55						
4	13	L-PFHxS	398.9 > 79.6	5.16e0	2.19e3	1.01		3.71	3.72	0.0295	0.1021		0.638	YES
5	80	Total PFHxS	398.9 > 79.6	5.16e0	2.19e3	1.01		3.83		0.0295	0.1021			
6	49	13C3-PFBS	302.0 > 98.8	1.13e3	1.09e3	1.01	1.073	2.41	2.42	13.0	11.9366	96.8		
7	52	13C2-PFHxA	315.0 > 270.0	6.61e3	1.93e4	1.01	1.009	2.92	2.93	4.27	4.1758	84.6		
8	53	13C4-PFHpA	367.2 > 321.8	8.82e3	1.93e4	1.01	0.512	3.54	3.55	5.70	10.9856	89.1		
9	54	13C3-PFHxS	401.8 > 79.9	2.19e3	1.09e3	1.01	2.197	3.70	3.71	25.2	11.3249	91.8		
10	54	13C3-PFHxS	401.8 > 79.9	2.19e3	1.09e3	1.01	2.197	3.70	3.71	25.2	11.3249	91.8		
11	-1													
12	16	L-PFOA	412.8 > 368.9	5.54e1	1.40e4	1.01		4.08	4.08	0.0493			3.992	NO
13	81	Total PFOA	412.8 > 368.9	5.54e1	1.40e4	1.01		4.21		0.000				
14	21	PFNA	463.0 > 418.8		1.26e4	1.01		4.53						
15	23	L-PFOS	498.9 > 79.9	2.72e1	2.43e3	1.01		4.61	4.61	0.140	0.2662		1.333	NO
16	82	Total PFOS	498.9 > 79.9	2.72e1	2.43e3	1.01		4.74		0.140	0.2662			
17	58	13C2-PFOA	414.9 > 369.7	1.40e4	2.24e4	1.01	0.789	4.07	4.08	7.85	9.8148	79.6		
18	58	13C2-PFOA	414.9 > 369.7	1.40e4	2.24e4	1.01	0.789	4.07	4.08	7.85	9.8148	79.6		
19	56	13C5-PFNA	468.2 > 422.9	1.26e4	1.79e4	1.01	0.991	4.52	4.53	8.84	8.8066	71.4		
20	59	13C8-PFOS	507.0 > 79.9	2.43e3	2.83e3	1.01	1.017	4.60	4.61	10.7	10.3901	84.2		
21	59	13C8-PFOS	507.0 > 79.9	2.43e3	2.83e3	1.01	1.017	4.60	4.61	10.7	10.3901	84.2		
22	-1													
23	26	PFDA	513 > 468.8		1.05e4	1.01		4.91						
24	29	L-MeFOSAA	570 > 419		1.74e3	1.01		5.06						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	1.74e3	1.01		5.19		0.000				
26	33	PFUdA	563.0 > 518.9	5.93e1	1.28e4	1.01		5.24	5.24	0.0581	0.0207		19.782	YES
27	37	PFDoA	612.9 > 569.0		1.18e4	1.01		5.53						
28	60	13C2-PFDA	515.1 > 469.9	1.05e4	2.08e4	1.01	0.808	4.90	4.91	6.29	7.6826	62.3		
29	62	d3-N-MeFOSAA	573.3 > 419	1.74e3	2.20e4	1.01	0.140	5.05	5.06	0.990	7.0005	56.8		
30	62	d3-N-MeFOSAA	573.3 > 419	1.74e3	2.20e4	1.01	0.140	5.05	5.06	0.990	7.0005	56.8		
31	63	13C2-PFUdA	565 > 519.8	1.28e4	2.20e4	1.01	1.051	5.23	5.24	7.26	6.8194	55.3		
32	65	13C2-PFDoA	614.7 > 569.7	1.18e4	2.08e4	1.01	1.041	5.52	5.53	7.08	6.7113	54.4		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.19e3	1.01		5.22						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.19e3	1.01		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.18e4	1.01		5.78						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-27.qld

Last Altered: Monday, July 15, 2019 15:04:00 Pacific Daylight Time
Printed: Monday, July 15, 2019 15:04:43 Pacific Daylight Time

Name: 190712M2_27, Date: 12-Jul-2019, Time: 22:06:59, ID: 1901857-03 SAOA-B09-SO-20-20.5 1.03, Description: SAOA-B09-SO-20-20.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0		1.01e4	1.01		6.00						
38	85	TDCA	498.3>106.9			1.01		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.19e3	2.20e4	1.01	0.168	5.21	5.22	1.24	7.3206	59.4		
40	64	d5-N-EtFOSAA	589.3 > 419	2.19e3	2.20e4	1.01	0.168	5.21	5.22	1.24	7.3206	59.4		
41	65	13C2-PFDoA	614.7 > 569.7	1.18e4	2.08e4	1.01	1.041	5.52	5.53	7.08	6.7113	54.4		
42	67	13C2-PFTeDA	715.1 > 669.7	1.01e4	2.20e4	1.01	0.690	5.99	6.00	5.75	8.2279	66.7		
43	59	13C8-PFOS	507.0 > 79.9	2.43e3	2.83e3	1.01	1.017	4.60	4.61	10.7	10.3901	84.2		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.93e4	1.93e4	1.01	1.000	2.92	2.93	12.5	12.3343	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.24e4	2.24e4	1.01	1.000	4.07	4.08	12.5	12.3343	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.09e3	1.09e3	1.01	1.000	3.70	3.71	12.5	12.3343	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.79e4	1.79e4	1.01	1.000	4.52	4.53	12.5	12.3343	100.0		
49	77	13C4-PFOS	503 > 79.9	2.83e3	2.83e3	1.01	1.000	4.61	4.61	12.5	12.3343	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.08e4	2.08e4	1.01	1.000	4.89	4.91	12.5	12.3343	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.20e4	2.20e4	1.01	1.000	5.23	5.24	12.5	12.3343	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

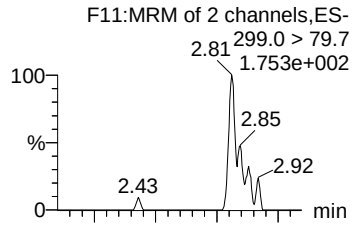
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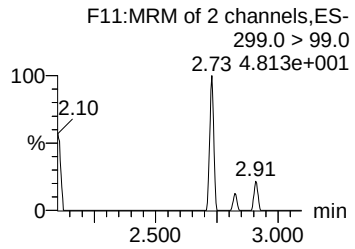
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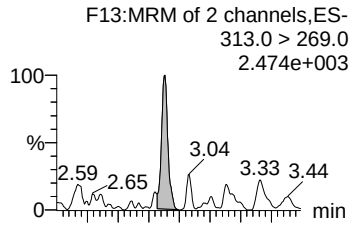
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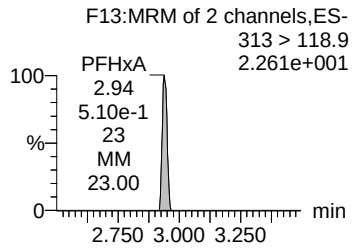
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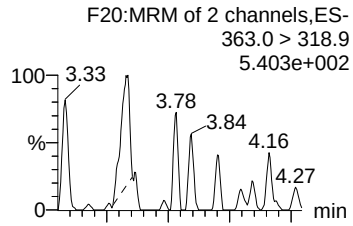


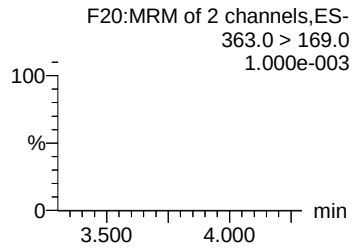
PFHxA



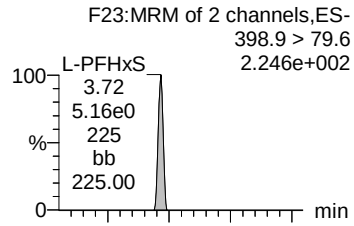


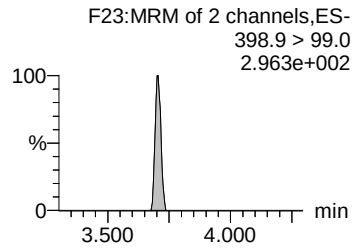
PFHpA



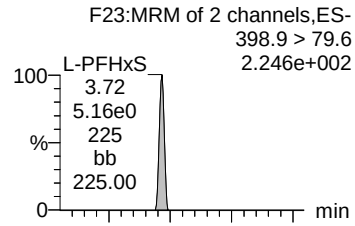


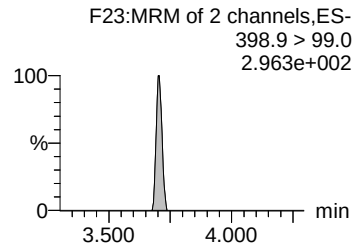
L-PFHxS



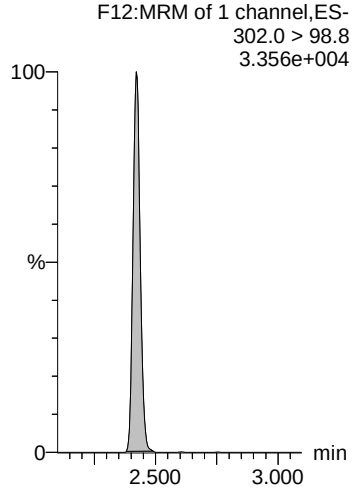


Total PFHxS

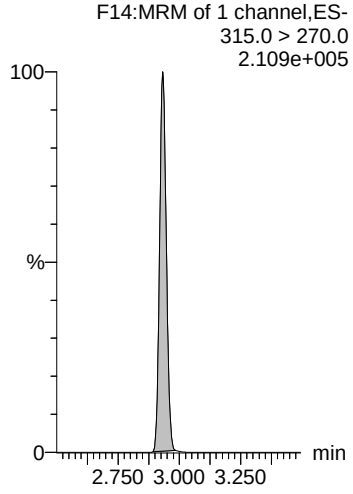




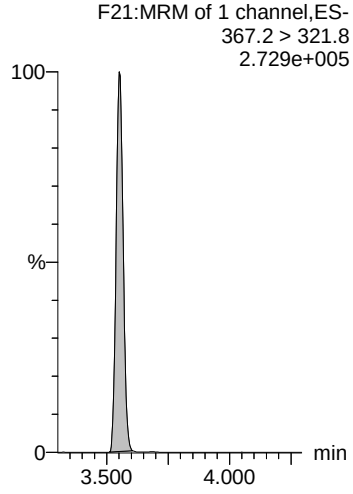
13C3-PFBS



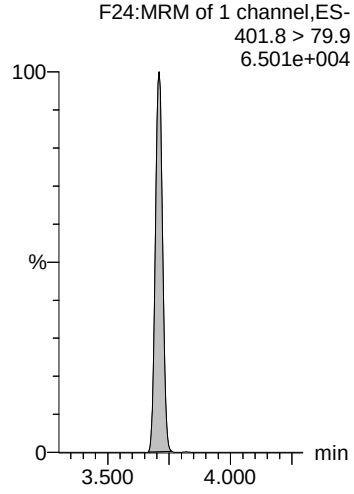
13C2-PFHxA



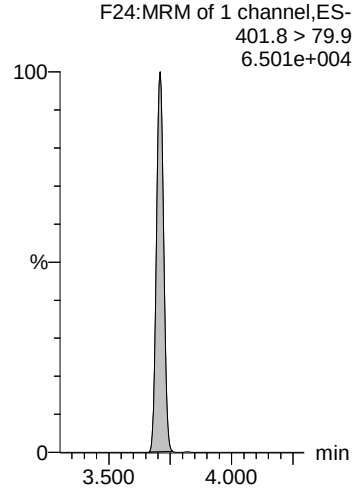
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



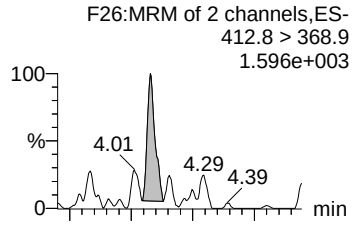
NY 7/15/2019

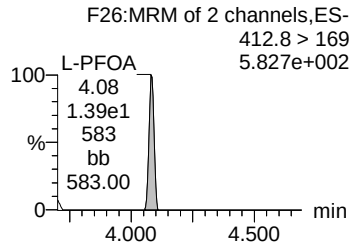
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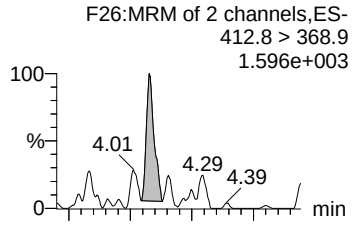
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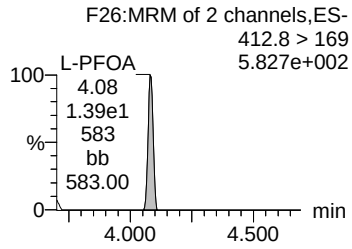
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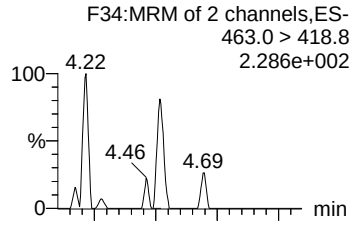


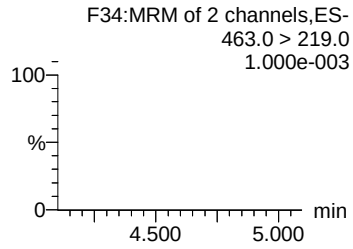
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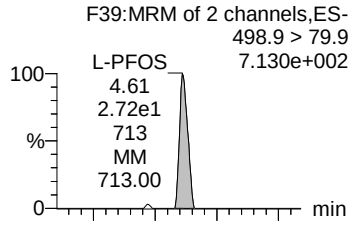


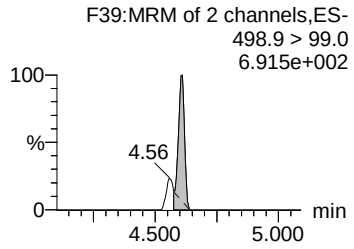
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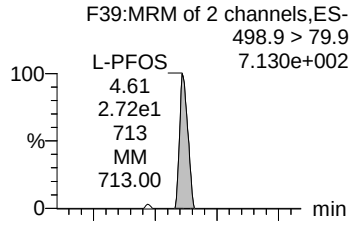


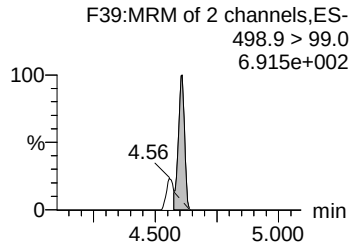
L-PFOS



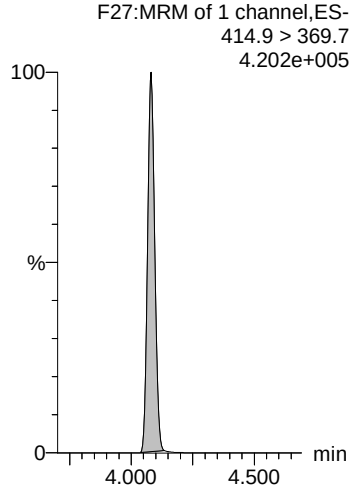


Total PFOS

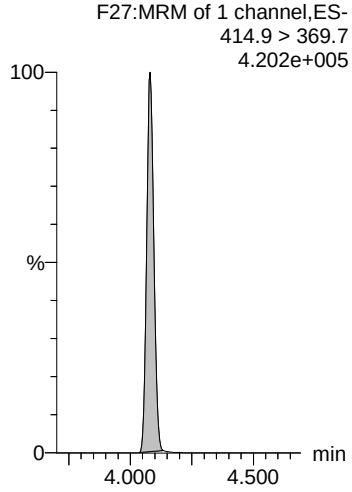




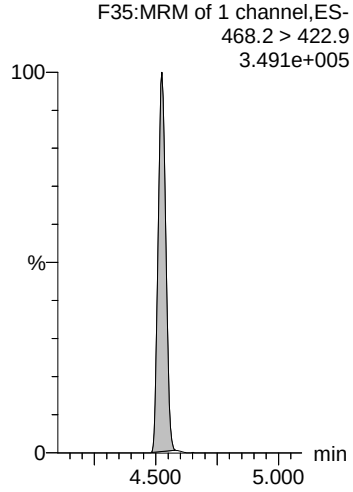
13C2-PFOA



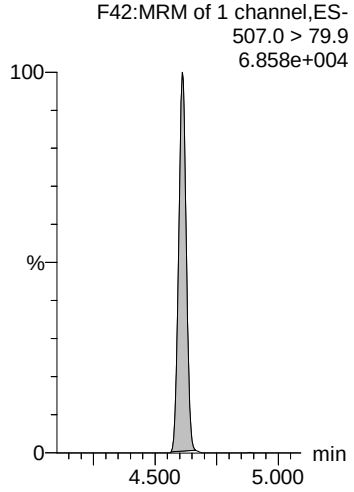
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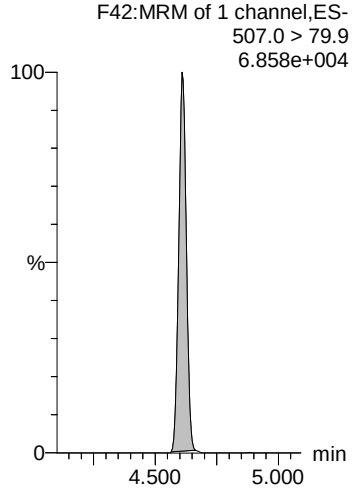
13C5-PFNA



13C8-PFOS



13C8-PFOS

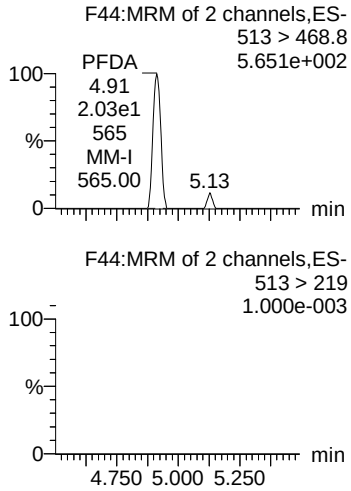


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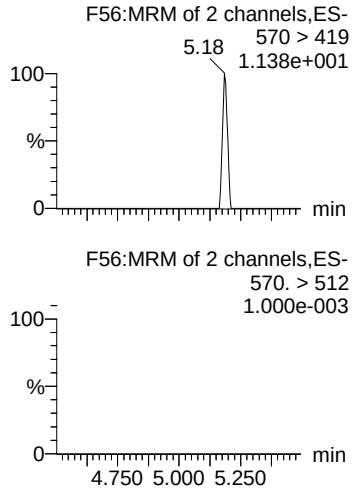
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Name: 190712M2_27, Date: 12-Jul-2019, Time: 22:06:59, ID: 1901857-03 SAOA-B09-SO-20-20.5 1.03, Description: SAOA-B09-SO-20-20.5

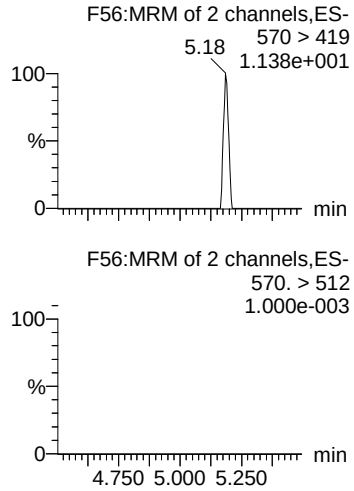
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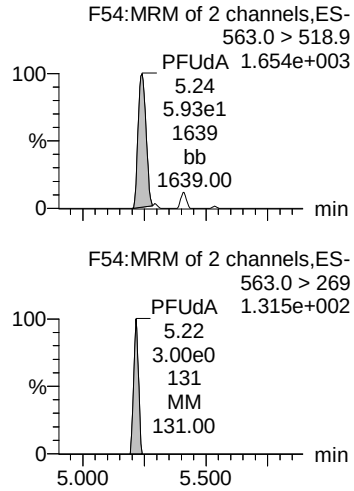
L-MeFOSAA



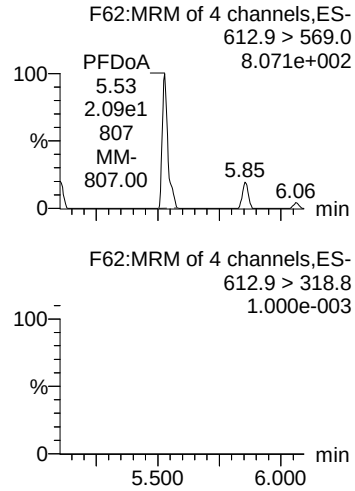
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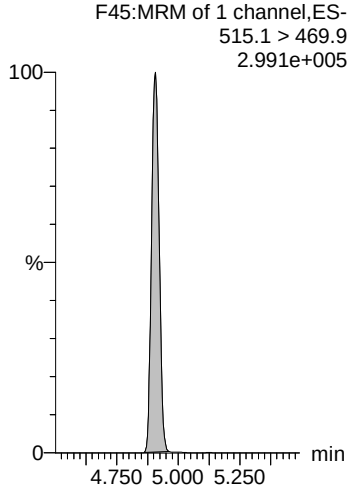
PFUdA



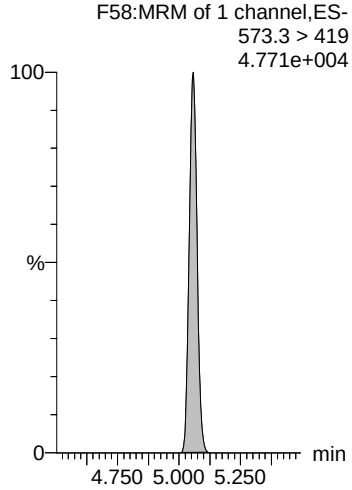
PFDoA



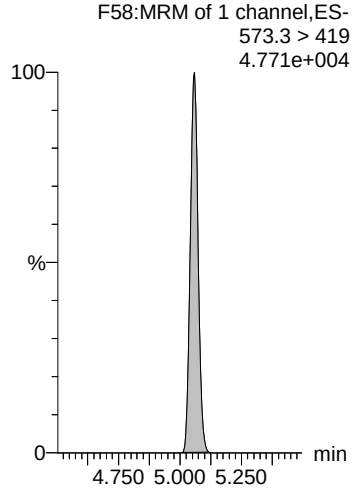
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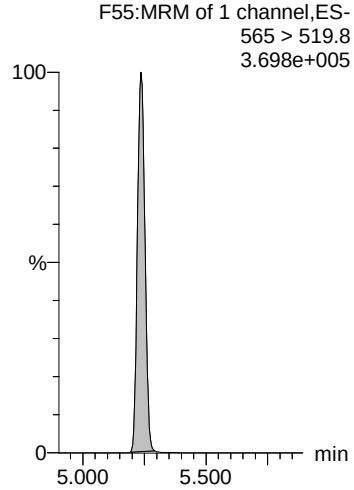
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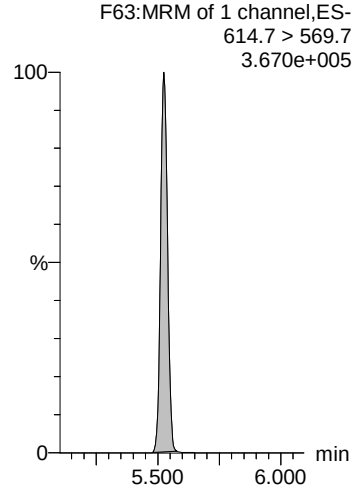
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA

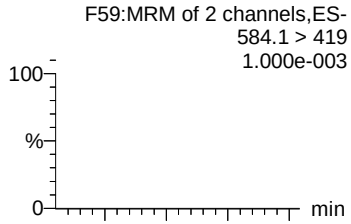


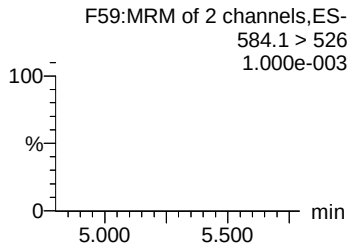
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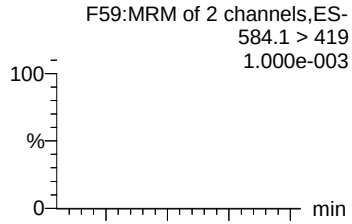
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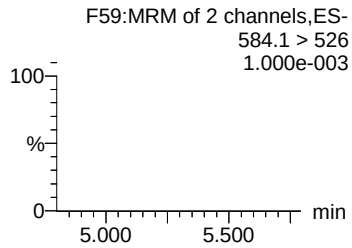
L-EtFOSAA



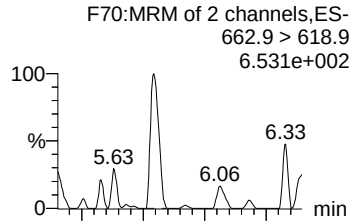


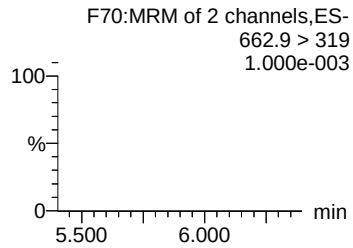
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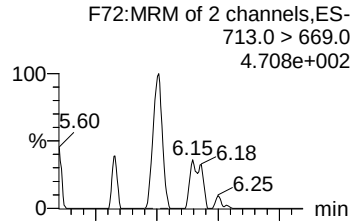


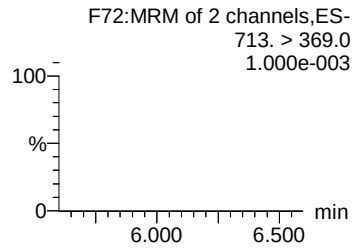
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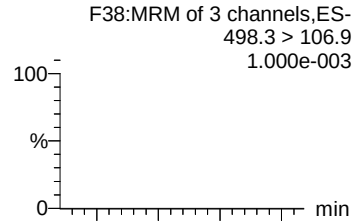


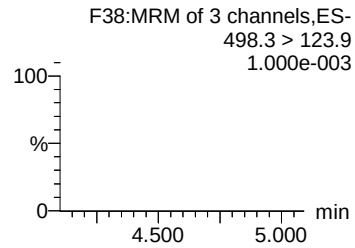
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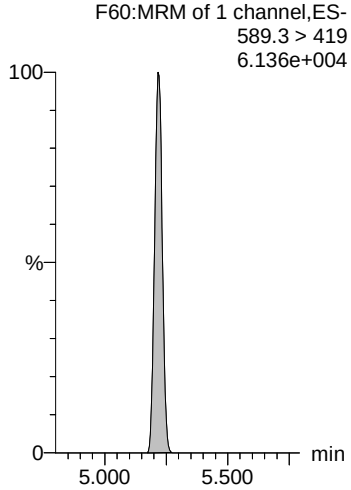


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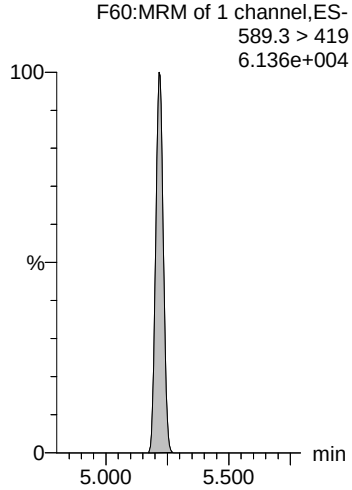




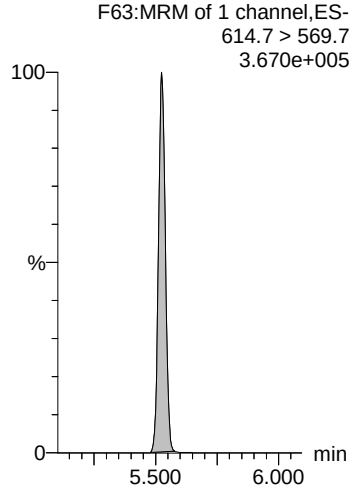
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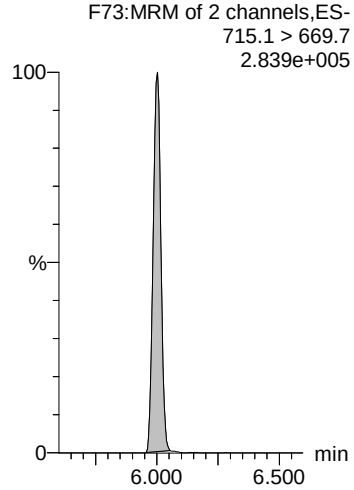
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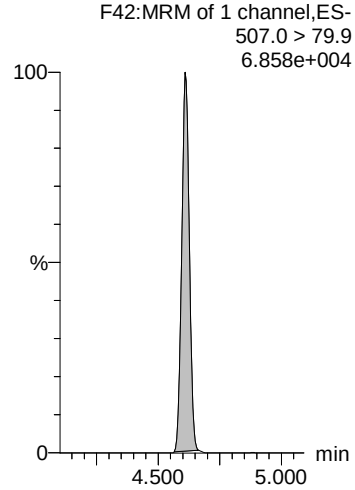
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



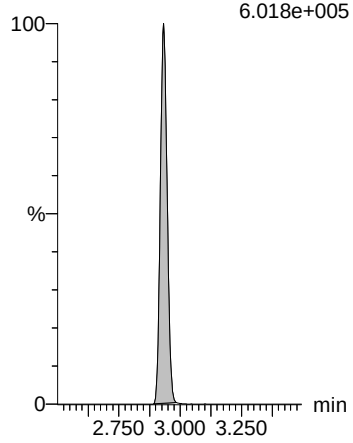
Review: AMR 7/15/2019

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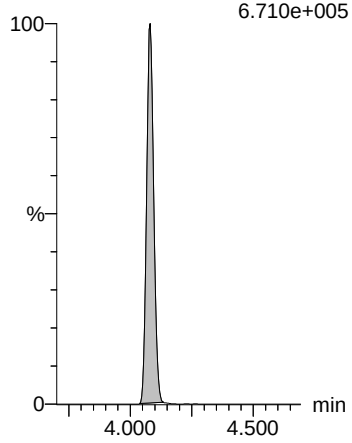
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Name: 190712M2_27, Date: 12-Jul-2019, Time: 22:06:59, ID: 1901857-03 SAOA-B09-SO-20-20.5 1.03, Description: SAOA-B09-SO-20-20.5

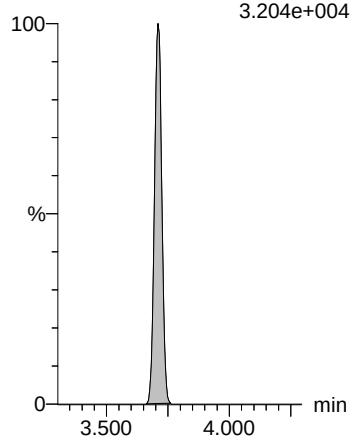
13C5-PFHxA



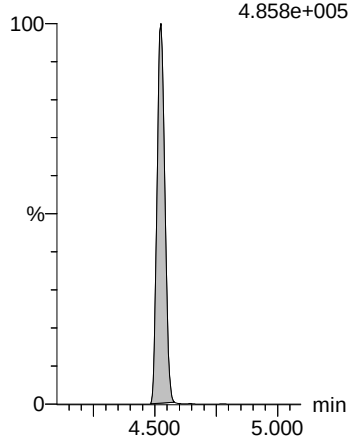
13C8-PFOA



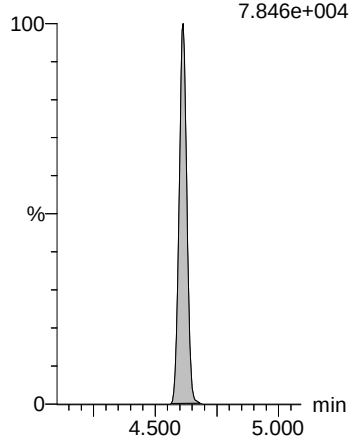
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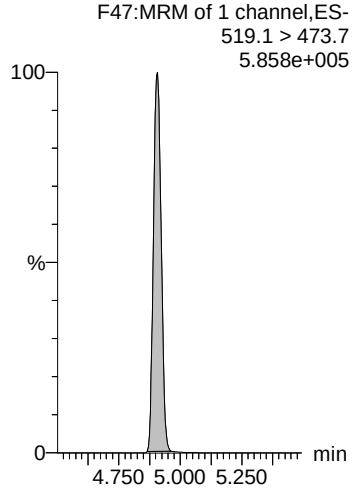
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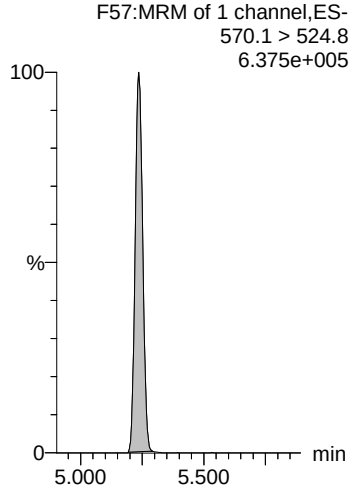
13C4-PFOS



13C6-PFDA



13C7-PFUdA



NY 7/15/2019

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-28.qld

Last Altered: Monday, July 15, 2019 15:07:48 Pacific Daylight Time
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Name: 190712M2_28, Date: 12-Jul-2019, Time: 22:17:29, ID: 1901857-07 SAOA-B11-SO-1-1.5 1, Description: SAOA-B11-SO-1-1.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	1.37e1	1.17e3	0.997		2.42	2.42	0.147	0.1280		1.997	NO
2	7	PFHxA	313.0 > 269.0	6.84e2	7.20e3	0.997		2.93	2.93	0.475	0.5136		22.555	NO
3	11	PFHpA	363.0 > 318.9	2.00e2	9.27e3	0.997		3.55	3.55	0.269	0.2377		22.907	YES
4	13	L-PFHxS	398.9 > 79.6	2.27e2	2.25e3	0.997		3.71	3.71	1.26	1.4065		2.690	NO
5	80	Total PFHxS	398.9 > 79.6	2.27e2	2.25e3	0.997		3.83		1.26	1.4065			
6	49	13C3-PFBS	302.0 > 98.8	1.17e3	1.17e3	0.997	1.073	2.41	2.42	12.4	11.6126	92.7		
7	52	13C2-PFHxA	315.0 > 270.0	7.20e3	1.95e4	0.997	1.009	2.92	2.93	4.62	4.5908	91.6		
8	53	13C4-PFHpA	367.2 > 321.8	9.27e3	1.95e4	0.997	0.512	3.54	3.55	5.95	11.6530	93.0		
9	54	13C3-PFHxS	401.8 > 79.9	2.25e3	1.17e3	0.997	2.197	3.70	3.71	23.9	10.9161	87.1		
10	54	13C3-PFHxS	401.8 > 79.9	2.25e3	1.17e3	0.997	2.197	3.70	3.71	23.9	10.9161	87.1		
11	-1													
12	16	L-PFOA	412.8 > 368.9	1.15e3	1.54e4	0.997		4.08	4.08	0.934	0.6319		3.559	NO
13	81	Total PFOA	412.8 > 368.9	1.15e3	1.54e4	0.997		4.21		0.934	0.6319			
14	21	PFNA	463.0 > 418.8	2.18e2	1.31e4	0.997		4.52	4.52	0.208	0.1839		4.556	NO
15	23	L-PFOS	498.9 > 79.9	1.49e3	2.47e3	0.997		4.61	4.61	7.54	6.9227		1.902	NO
16	82	Total PFOS	498.9 > 79.9	1.49e3	2.47e3	0.997		4.74		7.54	6.9227			
17	58	13C2-PFOA	414.9 > 369.7	1.54e4	2.21e4	0.997	0.789	4.07	4.08	8.70	11.0439	88.1		
18	58	13C2-PFOA	414.9 > 369.7	1.54e4	2.21e4	0.997	0.789	4.07	4.08	8.70	11.0439	88.1		
19	56	13C5-PFNA	468.2 > 422.9	1.31e4	1.73e4	0.997	0.991	4.52	4.52	9.51	9.6175	76.7		
20	59	13C8-PFOS	507.0 > 79.9	2.47e3	2.74e3	0.997	1.017	4.60	4.61	11.3	11.1034	88.6		
21	59	13C8-PFOS	507.0 > 79.9	2.47e3	2.74e3	0.997	1.017	4.60	4.61	11.3	11.1034	88.6		
22	-1													
23	26	PFDA	513 > 468.8	4.16e2	1.10e4	0.997		4.90	4.90	0.473	0.3060		5.814	NO
24	29	L-MeFOSAA	570 > 419		2.13e3	0.997		5.06						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.13e3	0.997		5.19		0.000				
26	33	PFUdA	563.0 > 518.9	2.63e2	1.62e4	0.997		5.23	5.23	0.203	0.1793		16.713	YES
27	37	PFDoA	612.9 > 569.0	3.43e2	1.53e4	0.997		5.52	5.52	0.280	0.2750		16.021	YES
28	60	13C2-PFDA	515.1 > 469.9	1.10e4	2.13e4	0.997	0.808	4.90	4.90	6.46	8.0131	63.9		
29	62	d3-N-MeFOSAA	573.3 > 419	2.13e3	2.18e4	0.997	0.140	5.05	5.06	1.22	8.7716	70.0		
30	62	d3-N-MeFOSAA	573.3 > 419	2.13e3	2.18e4	0.997	0.140	5.05	5.06	1.22	8.7716	70.0		
31	63	13C2-PFUdA	565 > 519.8	1.62e4	2.18e4	0.997	1.051	5.23	5.23	9.29	8.8611	70.7		
32	65	13C2-PFDoA	614.7 > 569.7	1.53e4	2.13e4	0.997	1.041	5.52	5.52	8.99	8.6630	69.1		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.43e3	0.997		5.22						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.43e3	0.997		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9	1.57e2	1.53e4	0.997		5.77	5.78	0.128	0.1216		420.400	YES

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Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-28.qld

Last Altered: Monday, July 15, 2019 15:07:48 Pacific Daylight Time
Printed: Monday, July 15, 2019 15:08:22 Pacific Daylight Time

Name: 190712M2_28, Date: 12-Jul-2019, Time: 22:17:29, ID: 1901857-07 SAOA-B11-SO-1-1.5 1, Description: SAOA-B11-SO-1-1.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	1.05e2	1.09e4	0.997		6.00	6.00	0.121	0.0835		31.389	YES
38	85	TDCA	498.3>106.9			0.997		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.43e3	2.18e4	0.997	0.168	5.21	5.22	1.39	8.3256	66.4		
40	64	d5-N-EtFOSAA	589.3 > 419	2.43e3	2.18e4	0.997	0.168	5.21	5.22	1.39	8.3256	66.4		
41	65	13C2-PFDoA	614.7 > 569.7	1.53e4	2.13e4	0.997	1.041	5.52	5.52	8.99	8.6630	69.1		
42	67	13C2-PFTeDA	715.1 > 669.7	1.09e4	2.18e4	0.997	0.690	5.99	6.00	6.22	9.0429	72.2		
43	59	13C8-PFOS	507.0 > 79.9	2.47e3	2.74e3	0.997	1.017	4.60	4.61	11.3	11.1034	88.6		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	1.95e4	1.95e4	0.997	1.000	2.92	2.93	12.5	12.5319	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.21e4	2.21e4	0.997	1.000	4.07	4.08	12.5	12.5319	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.17e3	1.17e3	0.997	1.000	3.70	3.71	12.5	12.5319	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.73e4	1.73e4	0.997	1.000	4.52	4.52	12.5	12.5319	100.0		
49	77	13C4-PFOS	503 > 79.9	2.74e3	2.74e3	0.997	1.000	4.61	4.61	12.5	12.5319	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.13e4	2.13e4	0.997	1.000	4.89	4.90	12.5	12.5319	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.18e4	2.18e4	0.997	1.000	5.23	5.23	12.5	12.5319	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

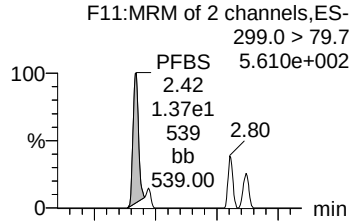
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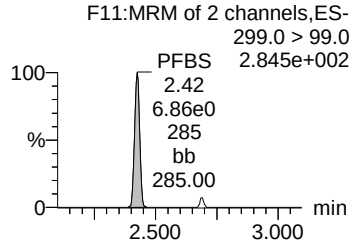
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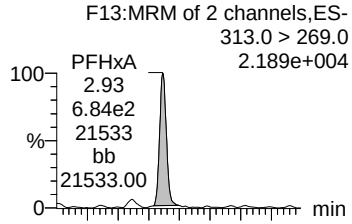
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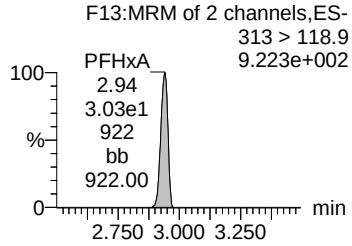
PFBS



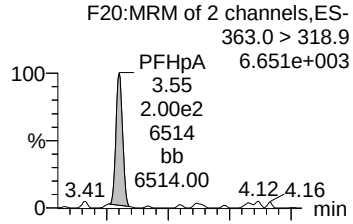


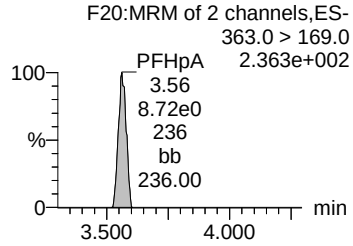
PFHxA



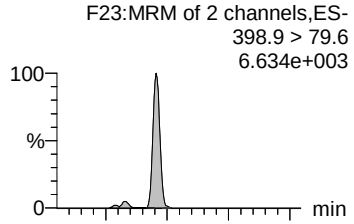


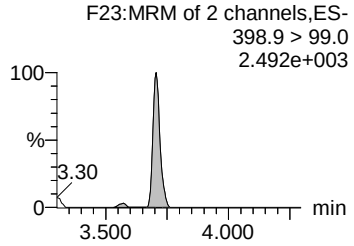
PFHpA



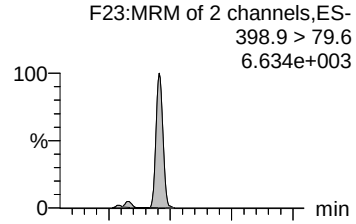


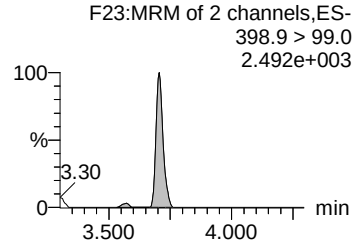
L-PFHxS



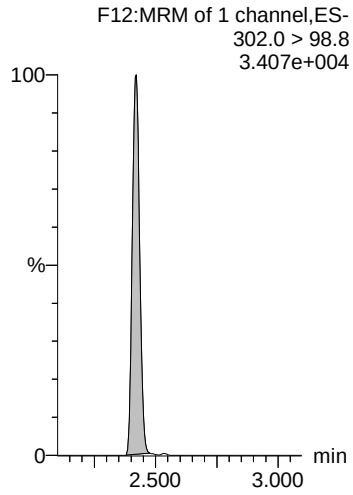


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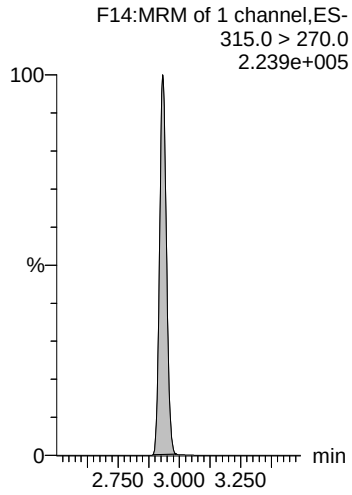




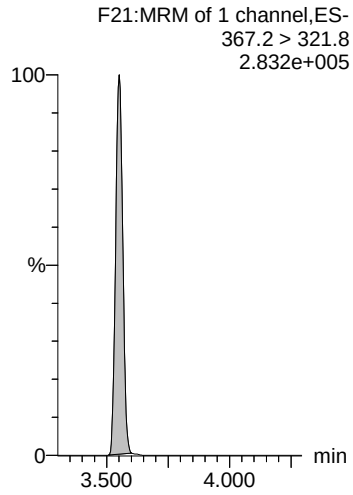
13C3-PFBS



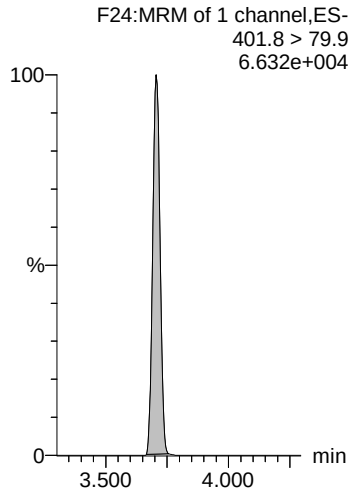
13C2-PFHxA



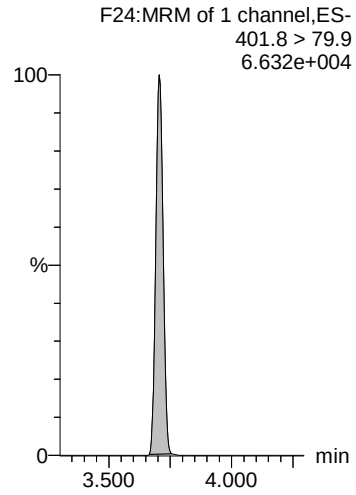
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



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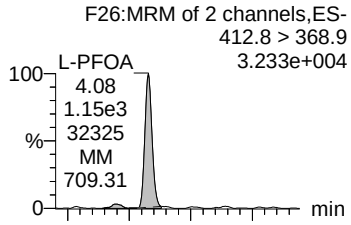
Review: AMR 7/15/2019

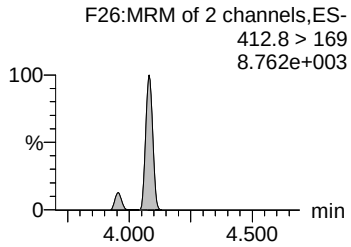
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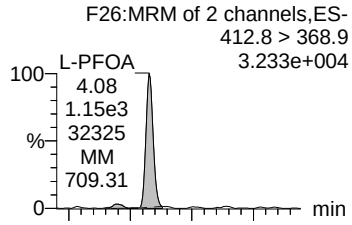
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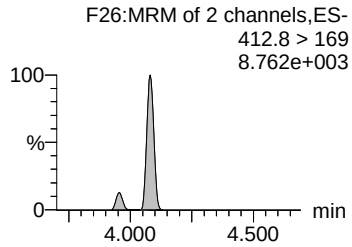
L-PFOA



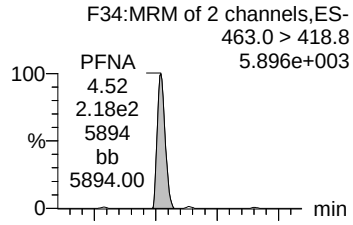


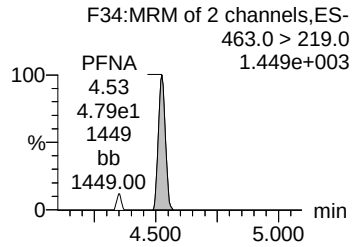
Total PFOA



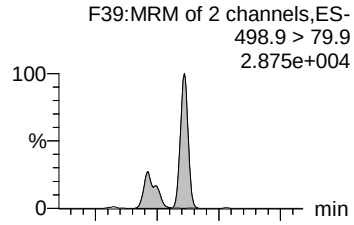


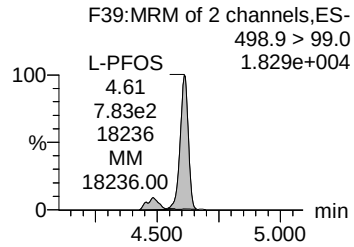
PFNA



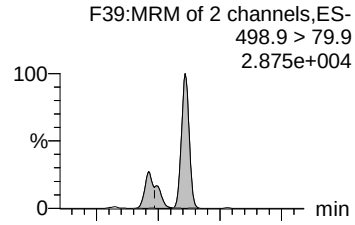


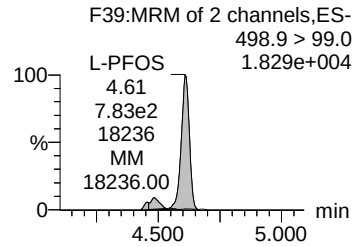
L-PFOS



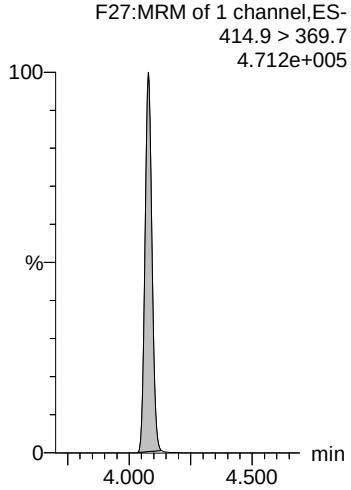


Total PFOS

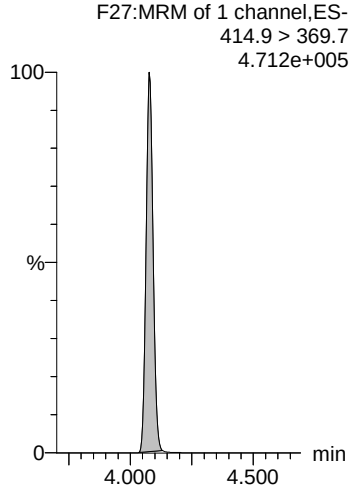




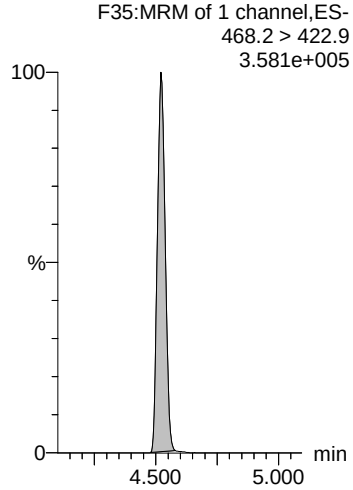
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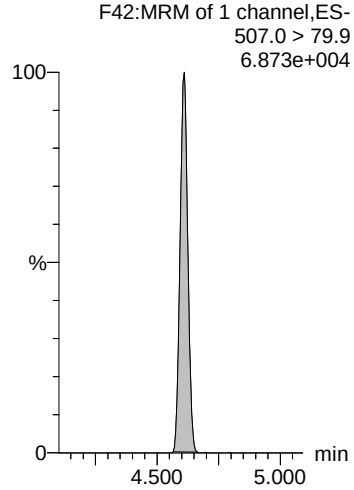
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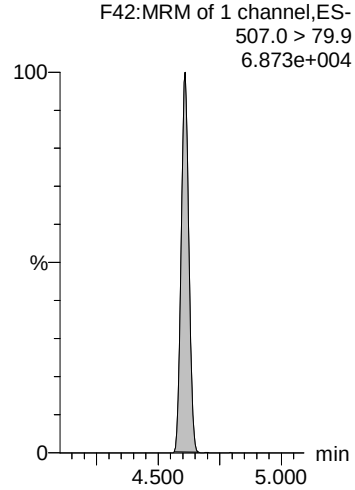
13C5-PFNA



13C8-PFOS



13C8-PFOS



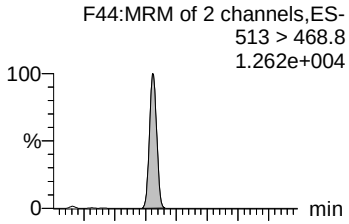
NY 7/15/2019

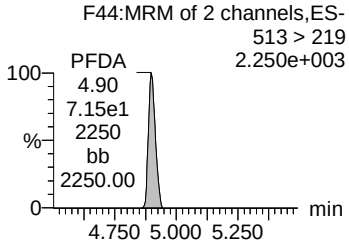
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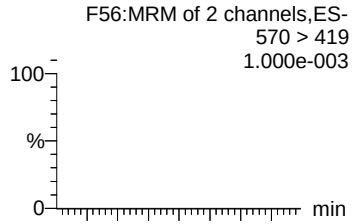
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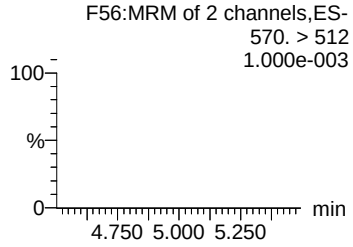
PFDA



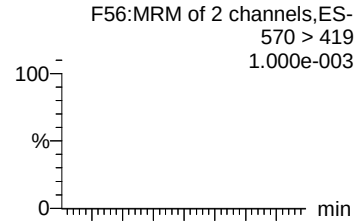


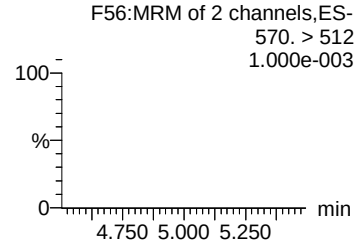
L-MeFOSAA



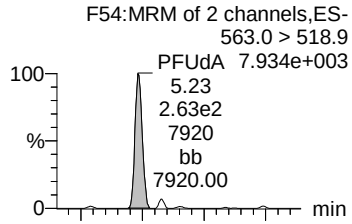


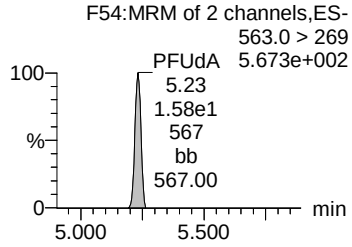
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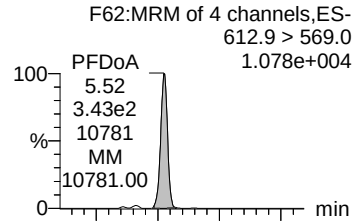


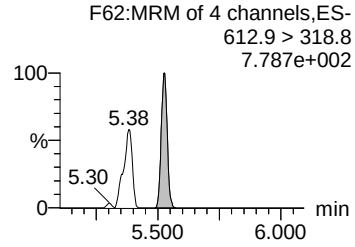
PFUdA



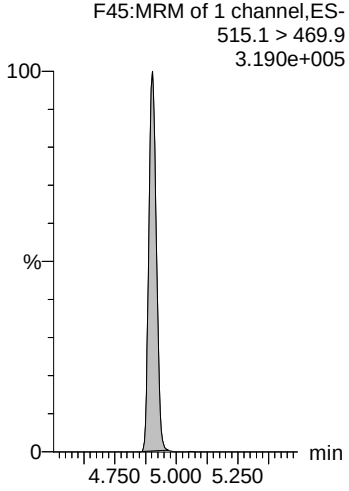


PFDoA

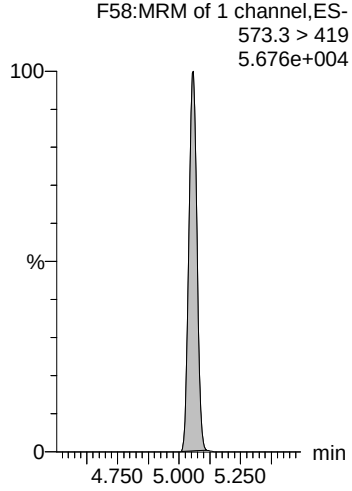




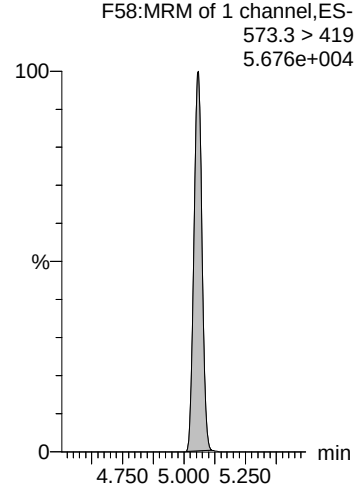
13C2-PFDA



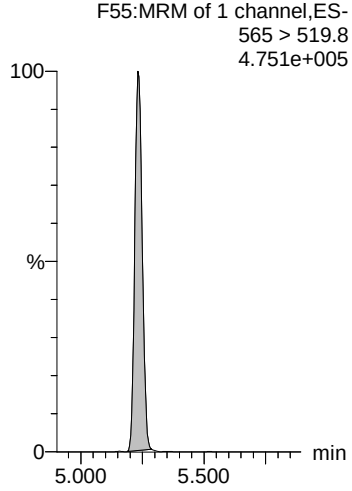
d3-N-MeFOSAA



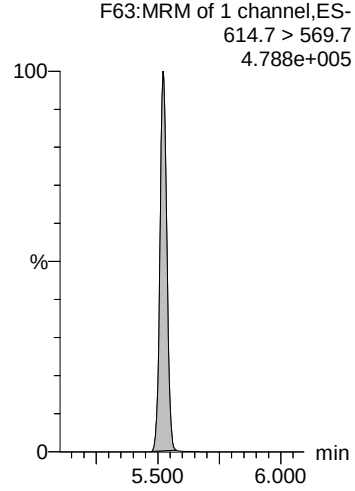
d3-N-MeFOSAA



13C2-PFUdA



13C2-PFDoA



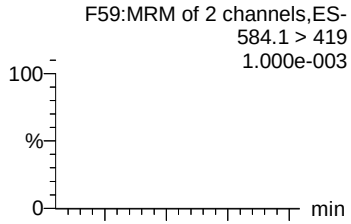
Review: AMR 7/15/2019

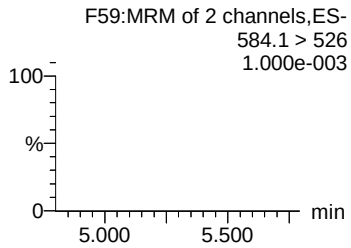
Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-28.qld

Last Altered: Monday, July 15, 2019 15:07:48 Pacific Daylight Time
Printed: Monday, July 15, 2019 15:08:22 Pacific Daylight Time

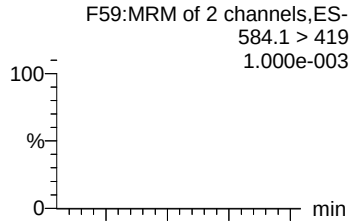
Name: 190712M2_28, Date: 12-Jul-2019, Time: 22:17:29, ID: 1901857-07 SAOA-B11-SO-1-1.5 1, Description: SAOA-B11-SO-1-1.5

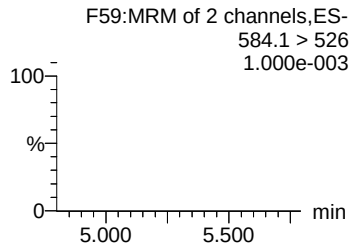
L-EtFOSAA



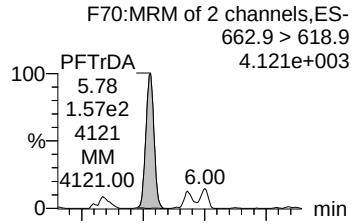


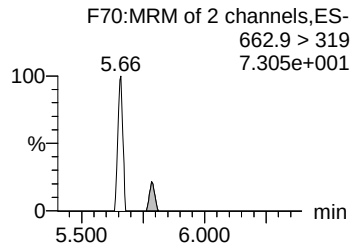
Total N-EtFOSAA



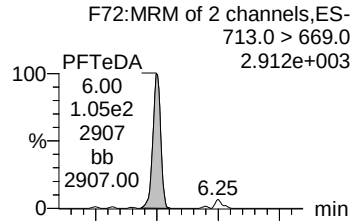


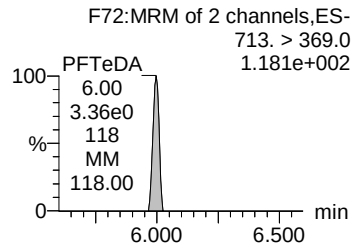
PFTrDA



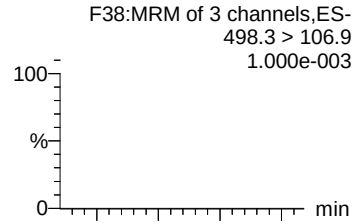


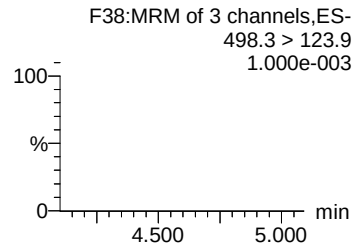
PFTeDA



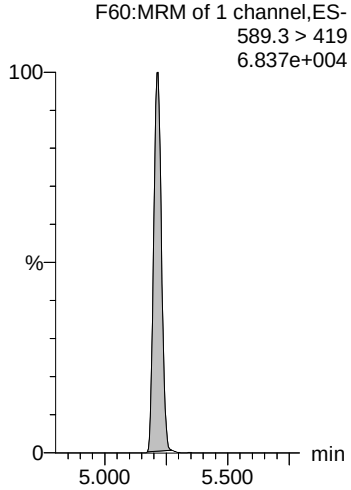


TDCA

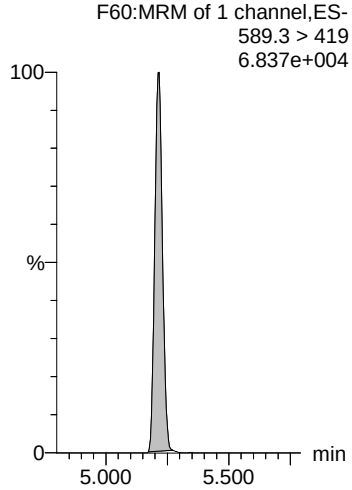




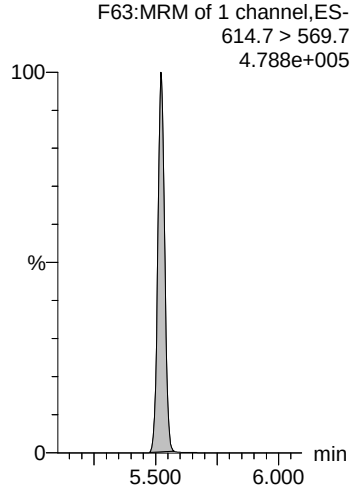
d5-N-EtFOSAA



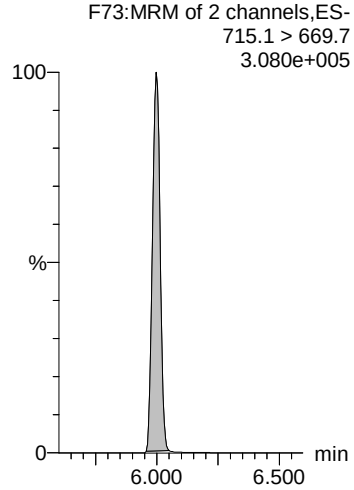
d5-N-EtFOSAA



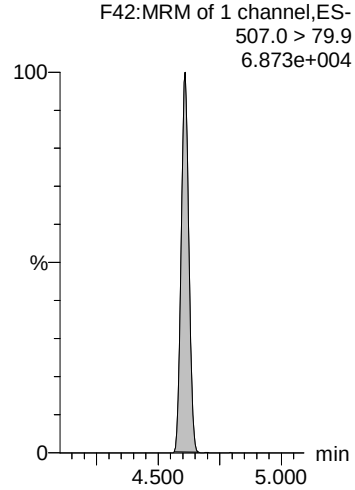
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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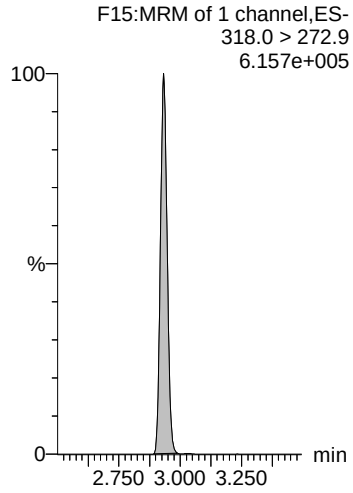
Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-28.qld

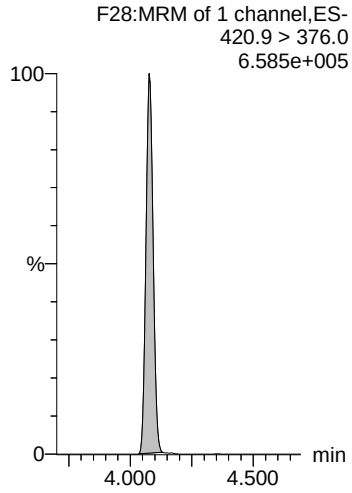
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Printed: Monday, July 15, 2019 15:08:22 Pacific Daylight Time

Name: 190712M2_28, Date: 12-Jul-2019, Time: 22:17:29, ID: 1901857-07 SAOA-B11-SO-1-1.5 1, Description: SAOA-B11-SO-1-1.5

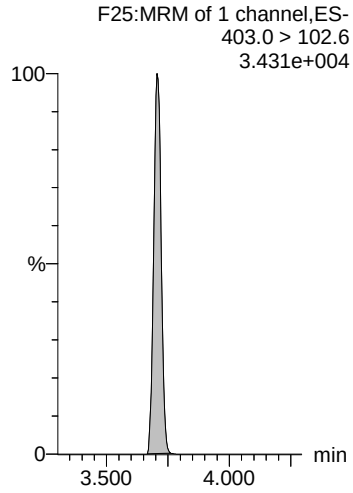
13C5-PFHxA



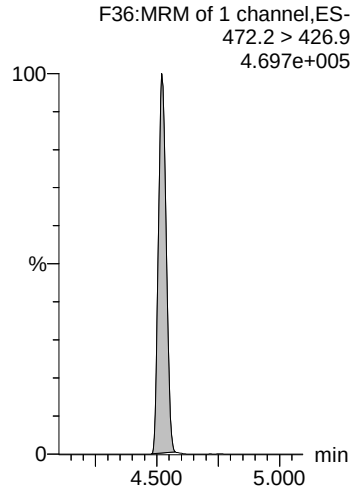
13C8-PFOA



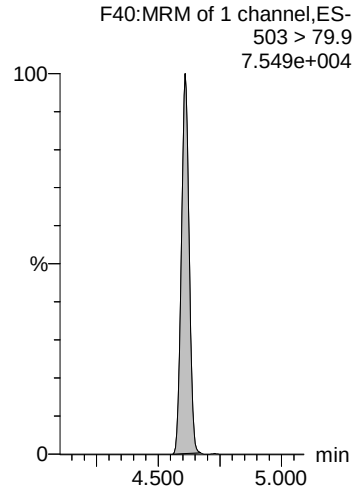
18O2-PFHxS



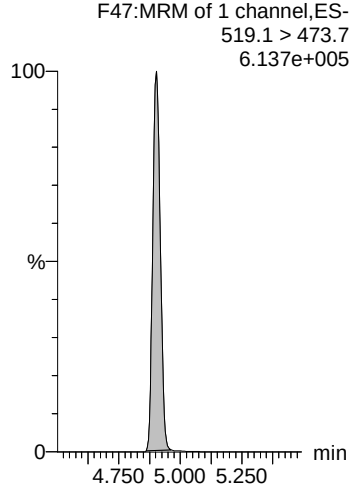
13C9-PFNA



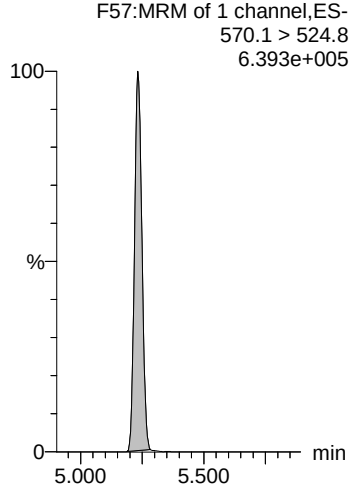
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-29.qld

Last Altered: Monday, July 15, 2019 13:12:29 Pacific Daylight Time
Printed: Monday, July 15, 2019 13:14:02 Pacific Daylight Time

Name: 190712M2_29, Date: 12-Jul-2019, Time: 22:28:07, ID: 1901857-08 SAOA-B11-SO-20-20.5 1.05, Description: SAOA-B11-SO-20-20.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	9.76e1	1.38e3	1.03		2.42	2.42	0.887	0.4262		2.573	NO
2	7	PFHxA	313.0 > 269.0	6.78e3	8.21e3	1.03		2.93	2.93	4.13	4.5535		15.103	NO
3	11	PFHpA	363.0 > 318.9	2.33e3	1.07e4	1.03		3.55	3.55	2.72	2.0477		15.933	NO
4	13	L-PFHxS	398.9 > 79.6	2.14e3	2.87e3	1.03		3.71	3.71	9.34	9.6022		1.933	NO
5	80	Total PFHxS	398.9 > 79.6	2.14e3	2.87e3	1.03		3.83		9.34	9.6022			
6	49	13C3-PFBS	302.0 > 98.8	1.38e3	1.35e3	1.03	1.073	2.41	2.42	12.7	11.5125	95.0		
7	52	13C2-PFHxA	315.0 > 270.0	8.21e3	2.24e4	1.03	1.009	2.92	2.93	4.58	4.4054	90.9		
8	53	13C4-PFHpA	367.2 > 321.8	1.07e4	2.24e4	1.03	0.512	3.54	3.55	5.96	11.2904	93.1		
9	54	13C3-PFHxS	401.8 > 79.9	2.87e3	1.35e3	1.03	2.197	3.70	3.71	26.5	11.7153	96.6		
10	54	13C3-PFHxS	401.8 > 79.9	2.87e3	1.35e3	1.03	2.197	3.70	3.71	26.5	11.7153	96.6		
11	-1													
12	16	L-PFOA	412.8 > 368.9	5.77e3	1.64e4	1.03		4.08	4.08	4.41	3.0831		3.276	NO
13	81	Total PFOA	412.8 > 368.9	5.77e3	1.64e4	1.03		4.21		4.41	3.0831			
14	21	PFNA	463.0 > 418.8	1.31e2	1.43e4	1.03		4.52	4.52	0.114	0.1039		6.881	NO
15	23	L-PFOS	498.9 > 79.9	7.31e2	2.98e3	1.03		4.61	4.61	3.06	2.8022		2.053	NO
16	82	Total PFOS	498.9 > 79.9	7.31e2	2.98e3	1.03		4.74		3.06	2.8022			
17	58	13C2-PFOA	414.9 > 369.7	1.64e4	2.46e4	1.03	0.789	4.07	4.08	8.32	10.2194	84.3		
18	58	13C2-PFOA	414.9 > 369.7	1.64e4	2.46e4	1.03	0.789	4.07	4.08	8.32	10.2194	84.3		
19	56	13C5-PFNA	468.2 > 422.9	1.43e4	1.94e4	1.03	0.991	4.52	4.52	9.22	9.0263	74.5		
20	59	13C8-PFOS	507.0 > 79.9	2.98e3	3.74e3	1.03	1.017	4.60	4.61	9.96	9.5058	78.4		
21	59	13C8-PFOS	507.0 > 79.9	2.98e3	3.74e3	1.03	1.017	4.60	4.61	9.96	9.5058	78.4		
22	-1													
23	26	PFDA	513 > 468.8		1.10e4	1.03		4.90						
24	29	L-MeFOSAA	570 > 419		2.19e3	1.03		5.06						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.19e3	1.03		5.19		0.000				
26	33	PFUdA	563.0 > 518.9		1.45e4	1.03		5.23						
27	37	PFDoA	612.9 > 569.0		1.36e4	1.03		5.52						
28	60	13C2-PFDA	515.1 > 469.9	1.10e4	2.22e4	1.03	0.808	4.90	4.90	6.20	7.4453	61.4		
29	62	d3-N-MeFOSAA	573.3 > 419	2.19e3	2.42e4	1.03	0.140	5.05	5.06	1.13	7.8403	64.7		
30	62	d3-N-MeFOSAA	573.3 > 419	2.19e3	2.42e4	1.03	0.140	5.05	5.06	1.13	7.8403	64.7		
31	63	13C2-PFUdA	565 > 519.8	1.45e4	2.42e4	1.03	1.051	5.23	5.23	7.46	6.8830	56.8		
32	65	13C2-PFDoA	614.7 > 569.7	1.36e4	2.22e4	1.03	1.041	5.52	5.52	7.68	7.1588	59.1		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.39e3	1.03		5.22						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.39e3	1.03		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9		1.36e4	1.03		5.78						

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-29.qld

Last Altered: Monday, July 15, 2019 13:12:29 Pacific Daylight Time
Printed: Monday, July 15, 2019 13:14:02 Pacific Daylight Time

Name: 190712M2_29, Date: 12-Jul-2019, Time: 22:28:07, ID: 1901857-08 SAOA-B11-SO-20-20.5 1.05, Description: SAOA-B11-SO-20-20.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	1.28e1	1.24e4	1.03		6.00	5.99	0.0129	0.0017		27.803	YES
38	85	TDCA	498.3>106.9			1.03		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.39e3	2.42e4	1.03	0.168	5.21	5.22	1.23	7.1174	58.7		
40	64	d5-N-EtFOSAA	589.3 > 419	2.39e3	2.42e4	1.03	0.168	5.21	5.22	1.23	7.1174	58.7		
41	65	13C2-PFDoA	614.7 > 569.7	1.36e4	2.22e4	1.03	1.041	5.52	5.52	7.68	7.1588	59.1		
42	67	13C2-PFTeDA	715.1 > 669.7	1.24e4	2.42e4	1.03	0.690	5.99	6.00	6.40	8.9995	74.2		
43	59	13C8-PFOS	507.0 > 79.9	2.98e3	3.74e3	1.03	1.017	4.60	4.61	9.96	9.5058	78.4		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	2.24e4	2.24e4	1.03	1.000	2.92	2.93	12.5	12.1223	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.46e4	2.46e4	1.03	1.000	4.07	4.08	12.5	12.1223	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.35e3	1.35e3	1.03	1.000	3.70	3.71	12.5	12.1223	100.0		
48	76	13C9-PFNA	472.2 > 426.9	1.94e4	1.94e4	1.03	1.000	4.52	4.52	12.5	12.1223	100.0		
49	77	13C4-PFOS	503 > 79.9	3.74e3	3.74e3	1.03	1.000	4.61	4.61	12.5	12.1223	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.22e4	2.22e4	1.03	1.000	4.89	4.90	12.5	12.1223	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.42e4	2.42e4	1.03	1.000	5.23	5.23	12.5	12.1223	100.0		

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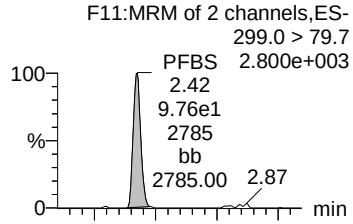
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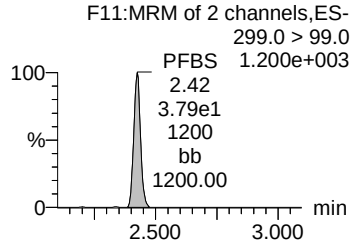
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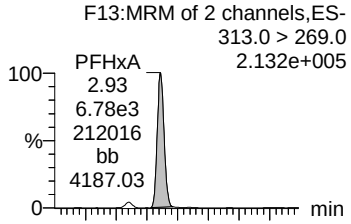
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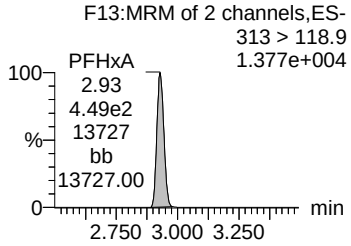
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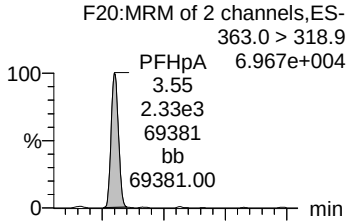


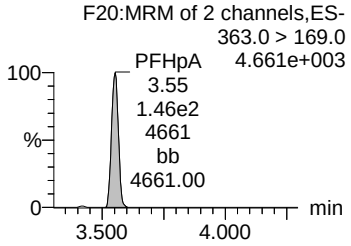
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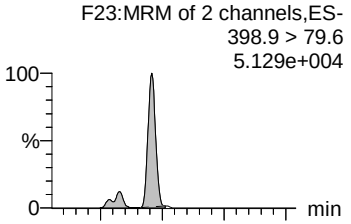


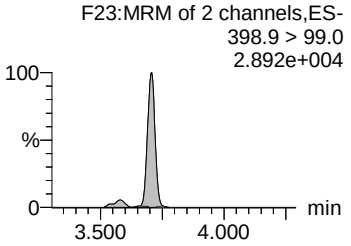
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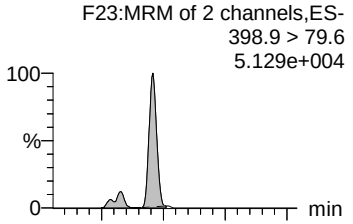


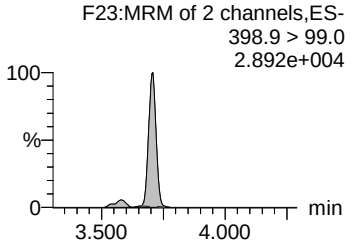
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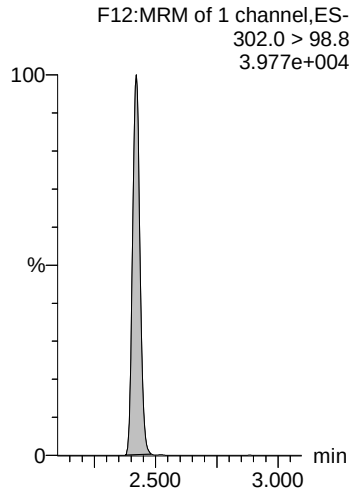


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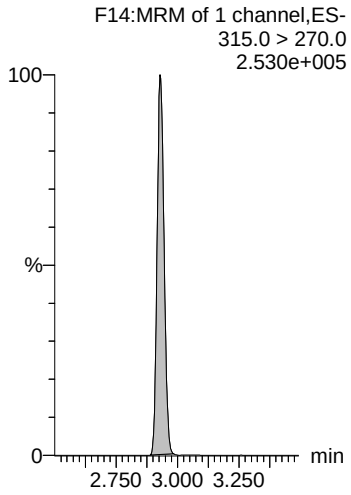




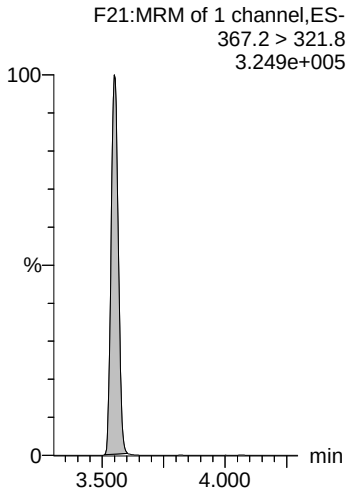
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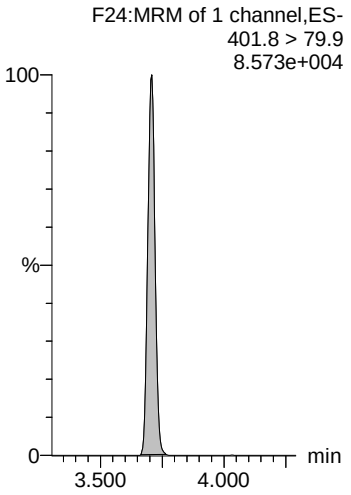
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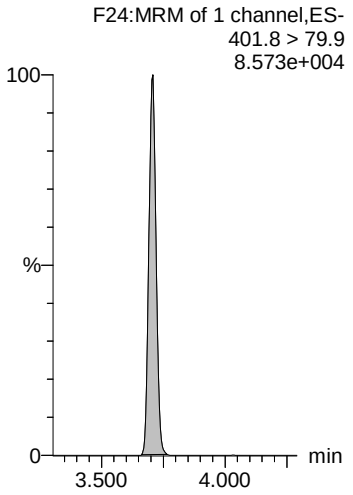
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13C3-PFHxS



13C3-PFHxS



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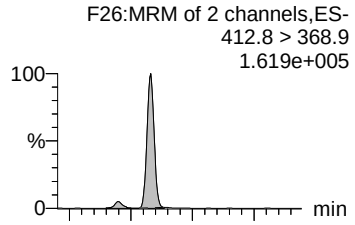
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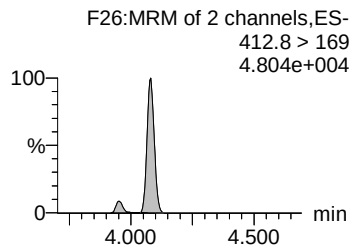
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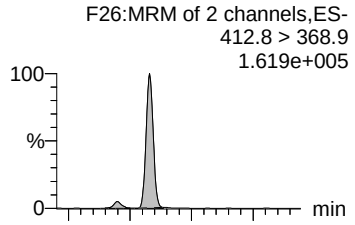
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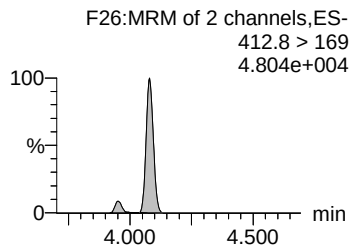
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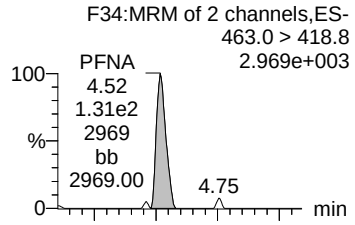


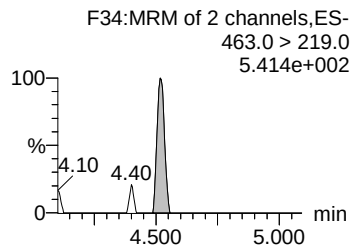
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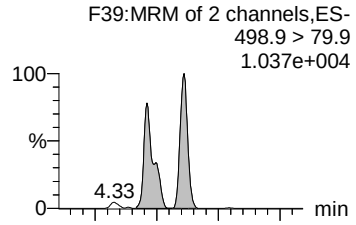


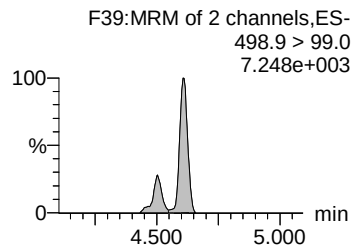
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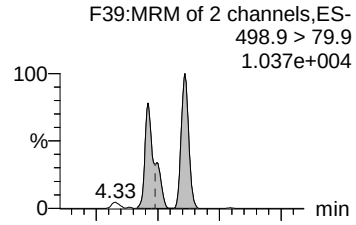


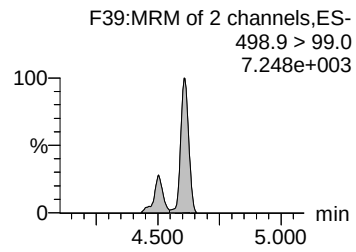
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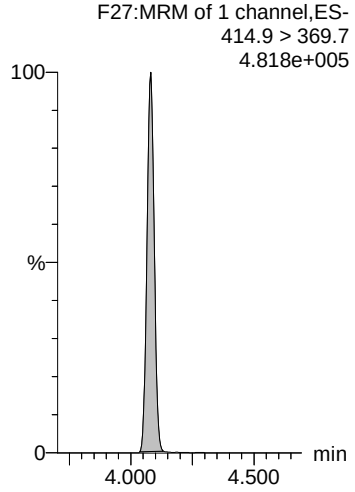


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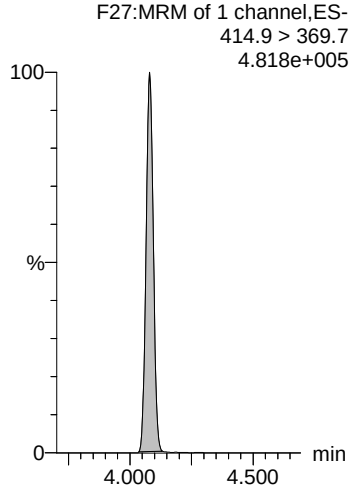




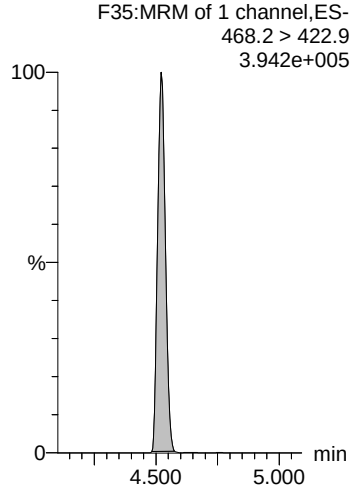
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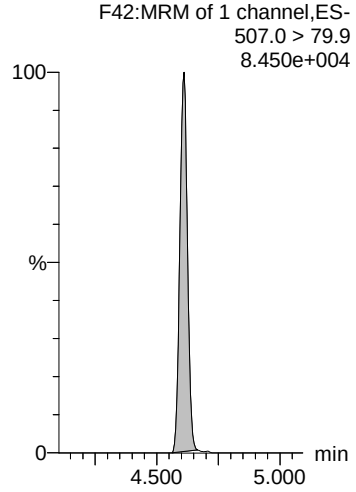
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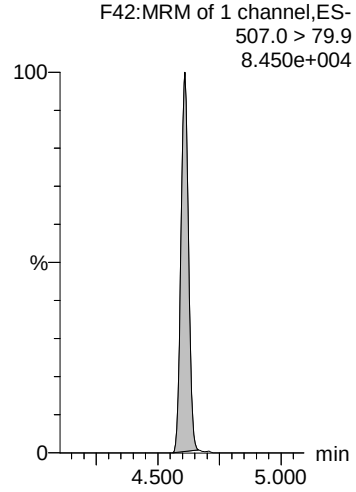
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13C8-PFOS



13C8-PFOS



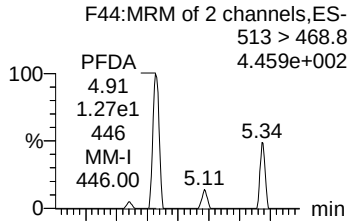
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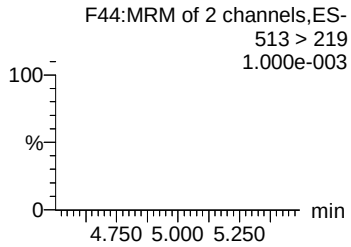
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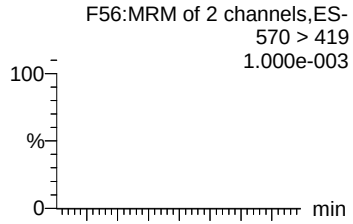
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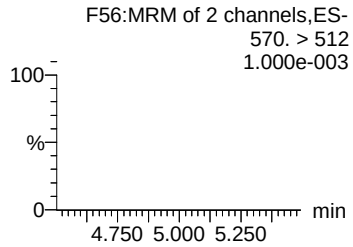
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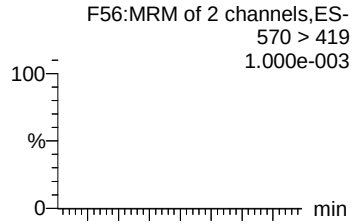


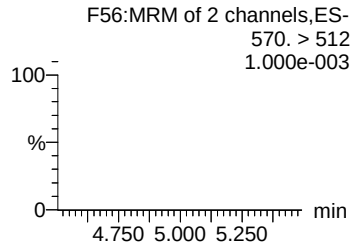
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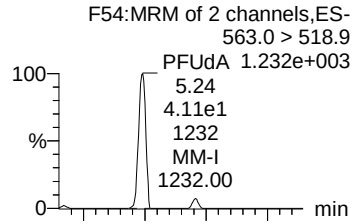


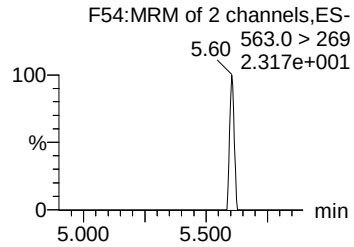
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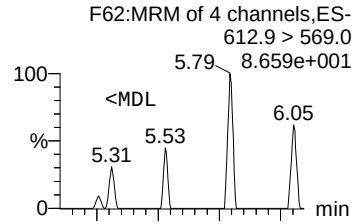


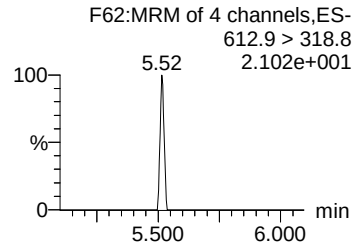
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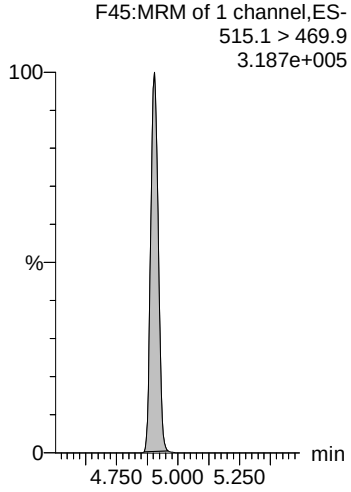


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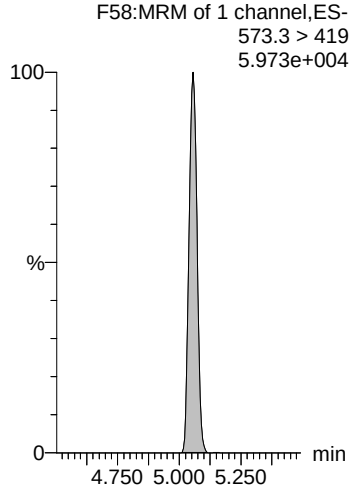




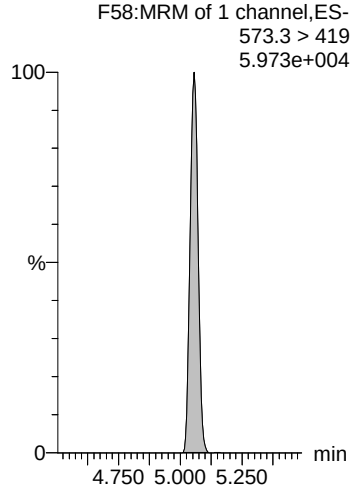
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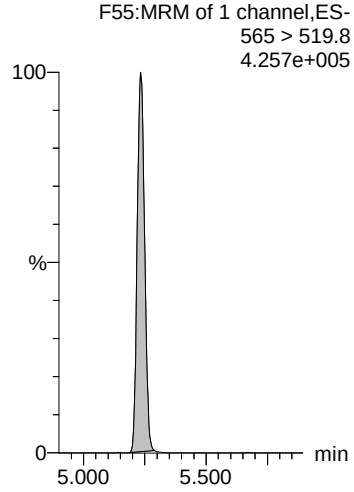
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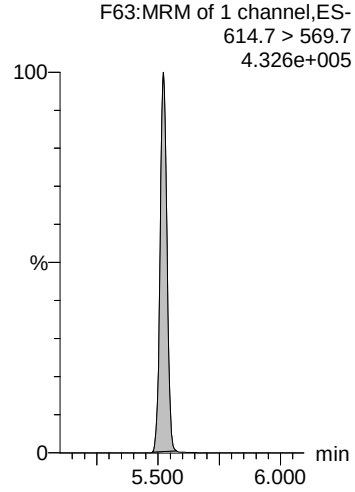
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13C2-PFUdA



13C2-PFDoA



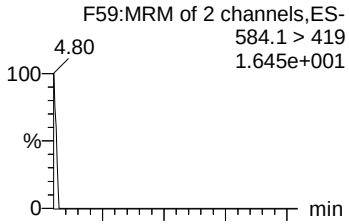
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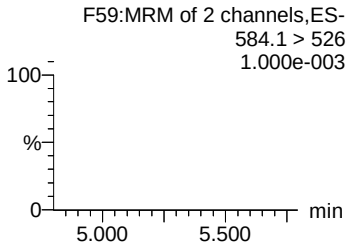
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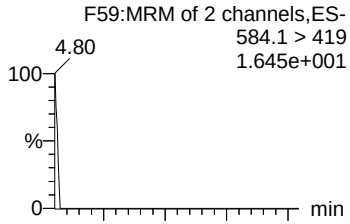
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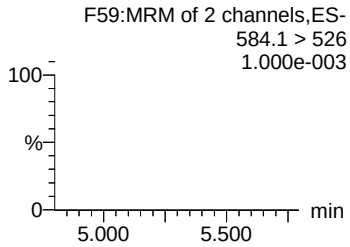
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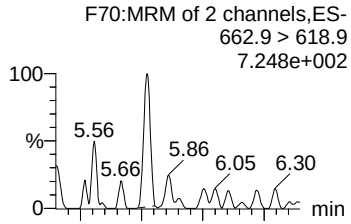


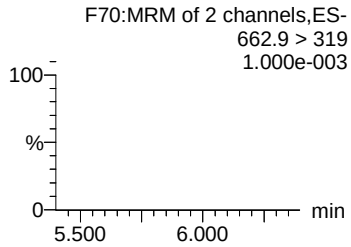
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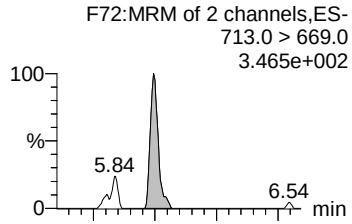


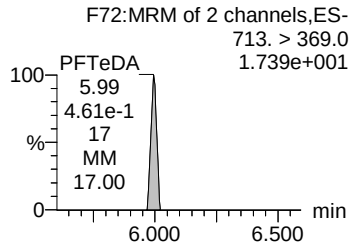
PFTrDA



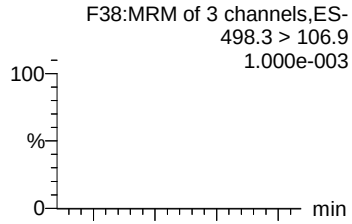


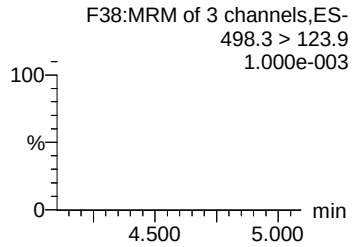
PFTeDA



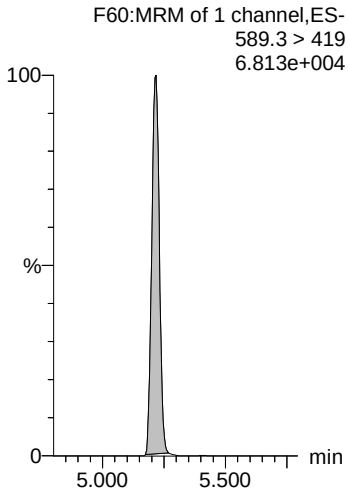


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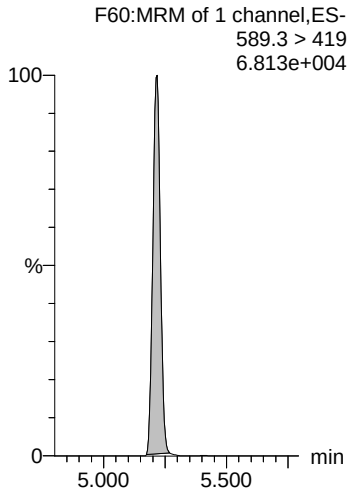




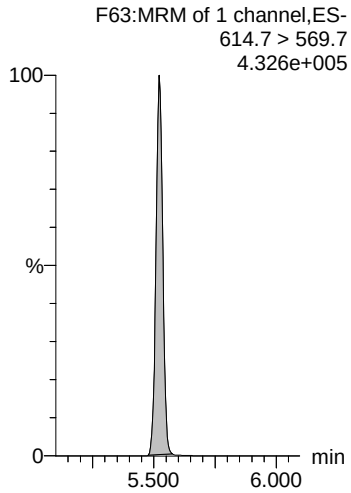
d5-N-EtFOSAA



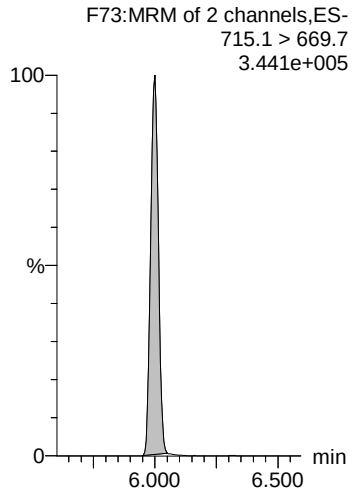
d5-N-EtFOSAA



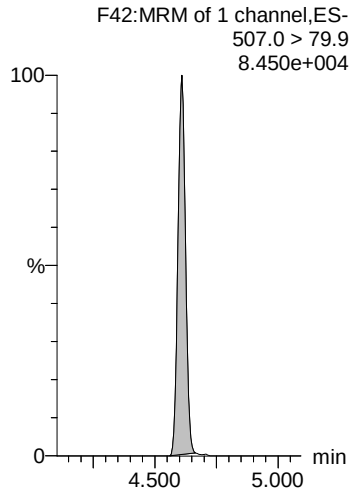
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



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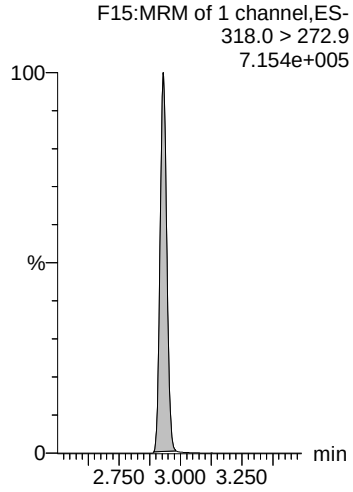
Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-29.qld

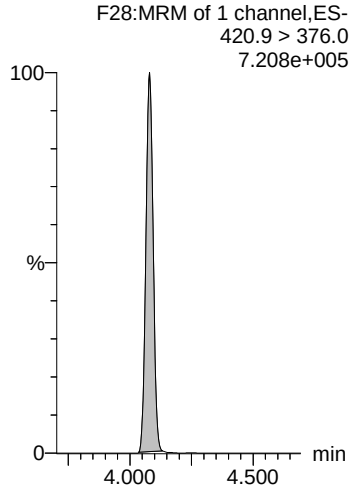
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Printed: Monday, July 15, 2019 13:14:02 Pacific Daylight Time

Name: 190712M2_29, Date: 12-Jul-2019, Time: 22:28:07, ID: 1901857-08 SAOA-B11-SO-20-20.5 1.05, Description: SAOA-B11-SO-20-20.5

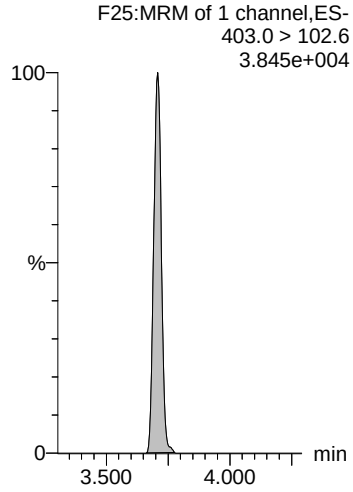
13C5-PFHxA



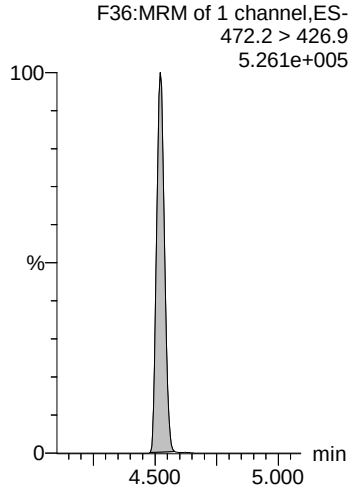
13C8-PFOA



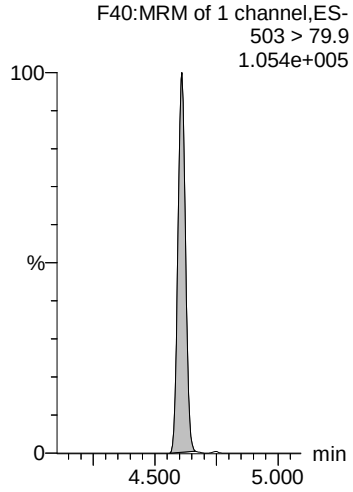
18O2-PFHxS



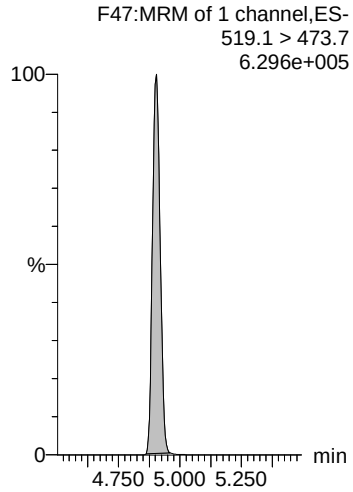
13C9-PFNA



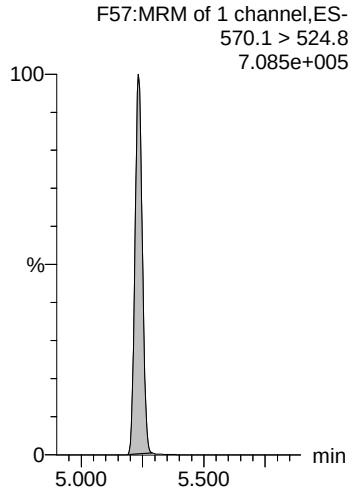
13C4-PFOS



13C6-PFDA



13C7-PFUdA



NY 7/15/2019

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-30.qld

Last Altered: Monday, July 15, 2019 13:17:12 Pacific Daylight Time
Printed: Monday, July 15, 2019 13:18:00 Pacific Daylight Time

Name: 190712M2_30, Date: 12-Jul-2019, Time: 22:38:40, ID: 1901857-10 SAOA-B08-SO-1-1.5 1.06, Description: SAOA-B08-SO-1-1.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	8.69e0	1.41e3	1.04		2.42	2.42	0.0770	0.0942		4.071	YES
2	7	PFHxA	313.0 > 269.0	1.46e4	8.06e3	1.04		2.93	2.93	9.09	9.9393		18.809	NO
3	11	PFHpA	363.0 > 318.9	4.15e3	1.09e4	1.04		3.55	3.55	4.76	3.5155		12.771	NO
4	13	L-PFHxS	398.9 > 79.6	1.93e2	2.76e3	1.04		3.71	3.71	0.877	0.9547		3.557	YES
5	80	Total PFHxS	398.9 > 79.6	1.93e2	2.76e3	1.04		3.83		0.877	0.9547			
6	49	13C3-PFBS	302.0 > 98.8	1.41e3	1.32e3	1.04	1.073	2.41	2.42	13.3	11.9155	99.5		
7	52	13C2-PFHxA	315.0 > 270.0	8.06e3	2.23e4	1.04	1.009	2.92	2.93	4.51	4.2854	89.4		
8	53	13C4-PFHpA	367.2 > 321.8	1.09e4	2.23e4	1.04	0.512	3.54	3.55	6.10	11.4186	95.3		
9	54	13C3-PFHxS	401.8 > 79.9	2.76e3	1.32e3	1.04	2.197	3.70	3.71	26.1	11.3609	94.8		
10	54	13C3-PFHxS	401.8 > 79.9	2.76e3	1.32e3	1.04	2.197	3.70	3.71	26.1	11.3609	94.8		
11	-1													
12	16	L-PFOA	412.8 > 368.9	2.20e4	1.76e4	1.04		4.08	4.08	15.6	10.9118		3.443	NO
13	81	Total PFOA	412.8 > 368.9	2.20e4	1.76e4	1.04		4.21		15.6	10.9118			
14	21	PFNA	463.0 > 418.8	9.89e3	1.55e4	1.04		4.52	4.52	7.95	6.2157		4.561	NO
15	23	L-PFOS	498.9 > 79.9	5.33e3	2.89e3	1.04		4.61	4.61	23.1	19.9478		1.978	NO
16	82	Total PFOS	498.9 > 79.9	5.33e3	2.89e3	1.04		4.74		23.1	19.9478			
17	58	13C2-PFOA	414.9 > 369.7	1.76e4	2.56e4	1.04	0.789	4.07	4.08	8.57	10.4043	86.9		
18	58	13C2-PFOA	414.9 > 369.7	1.76e4	2.56e4	1.04	0.789	4.07	4.08	8.57	10.4043	86.9		
19	56	13C5-PFNA	468.2 > 422.9	1.55e4	2.00e4	1.04	0.991	4.52	4.52	9.73	9.4107	78.6		
20	59	13C8-PFOS	507.0 > 79.9	2.89e3	3.41e3	1.04	1.017	4.60	4.61	10.6	9.9781	83.3		
21	59	13C8-PFOS	507.0 > 79.9	2.89e3	3.41e3	1.04	1.017	4.60	4.61	10.6	9.9781	83.3		
22	-1													
23	26	PFDA	513 > 468.8	1.11e4	1.33e4	1.04		4.90	4.90	10.4	7.2891		7.056	NO
24	29	L-MeFOSAA	570 > 419		2.20e3	1.04		5.05						
25	83	Total N-MeFOSAA	570. > 419	0.00e0	2.20e3	1.04		5.19		0.000				
26	33	PFUdA	563.0 > 518.9	2.72e3	1.77e4	1.04		5.23	5.24	1.92	1.9657		11.696	NO
27	37	PFDoA	612.9 > 569.0	2.91e3	1.71e4	1.04		5.52	5.52	2.12	1.9438		8.379	NO
28	60	13C2-PFDA	515.1 > 469.9	1.33e4	2.38e4	1.04	0.808	4.90	4.90	6.97	8.2606	69.0		
29	62	d3-N-MeFOSAA	573.3 > 419	2.20e3	2.65e4	1.04	0.140	5.05	5.05	1.04	7.1216	59.5		
30	62	d3-N-MeFOSAA	573.3 > 419	2.20e3	2.65e4	1.04	0.140	5.05	5.05	1.04	7.1216	59.5		
31	63	13C2-PFUdA	565 > 519.8	1.77e4	2.65e4	1.04	1.051	5.23	5.23	8.35	7.6188	63.6		
32	65	13C2-PFDoA	614.7 > 569.7	1.71e4	2.38e4	1.04	1.041	5.52	5.52	9.00	8.2828	69.1		
33	-1													
34	31	L-EtFOSAA	584.1 > 419		2.81e3	1.04		5.22						
35	84	Total N-EtFOSAA	584.1 > 419	0.00e0	2.81e3	1.04		5.33		0.000				
36	39	PFTrDA	662.9 > 618.9	1.12e3	1.71e4	1.04		5.77	5.78	0.815	0.6625		26.098	NO

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Review: AMR 7/15/2019

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712M2-30.qld

Last Altered: Monday, July 15, 2019 13:17:12 Pacific Daylight Time
Printed: Monday, July 15, 2019 13:18:00 Pacific Daylight Time

Name: 190712M2_30, Date: 12-Jul-2019, Time: 22:38:40, ID: 1901857-10 SAOA-B08-SO-1-1.5 1.06, Description: SAOA-B08-SO-1-1.5

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	41	PFTeDA	713.0 > 669.0	1.08e3	1.27e4	1.04		6.00	6.00	1.07	0.7606		16.832	NO
38	85	TDCA	498.3>106.9			1.04		5.45						
39	64	d5-N-EtFOSAA	589.3 > 419	2.81e3	2.65e4	1.04	0.168	5.21	5.22	1.33	7.5912	63.4		
40	64	d5-N-EtFOSAA	589.3 > 419	2.81e3	2.65e4	1.04	0.168	5.21	5.22	1.33	7.5912	63.4		
41	65	13C2-PFDoA	614.7 > 569.7	1.71e4	2.38e4	1.04	1.041	5.52	5.52	9.00	8.2828	69.1		
42	67	13C2-PFTeDA	715.1 > 669.7	1.27e4	2.65e4	1.04	0.690	5.99	6.00	6.00	8.3330	69.6		
43	59	13C8-PFOS	507.0 > 79.9	2.89e3	3.41e3	1.04	1.017	4.60	4.61	10.6	9.9781	83.3		
44	-1													
45	73	13C5-PFHxA	318.0 > 272.9	2.23e4	2.23e4	1.04	1.000	2.92	2.93	12.5	11.9782	100.0		
46	75	13C8-PFOA	420.9 > 376.0	2.56e4	2.56e4	1.04	1.000	4.07	4.08	12.5	11.9782	100.0		
47	74	18O2-PFHxS	403.0 > 102.6	1.32e3	1.32e3	1.04	1.000	3.70	3.71	12.5	11.9782	100.0		
48	76	13C9-PFNA	472.2 > 426.9	2.00e4	2.00e4	1.04	1.000	4.52	4.52	12.5	11.9782	100.0		
49	77	13C4-PFOS	503 > 79.9	3.41e3	3.41e3	1.04	1.000	4.61	4.61	12.5	11.9782	100.0		
50	78	13C6-PFDA	519.1 > 473.7	2.38e4	2.38e4	1.04	1.000	4.89	4.90	12.5	11.9782	100.0		
51	79	13C7-PFUdA	570.1 > 524.8	2.65e4	2.65e4	1.04	1.000	5.23	5.23	12.5	11.9782	100.0		

Vista Analytical Laboratory L14

Review: AMR 7/15/2019

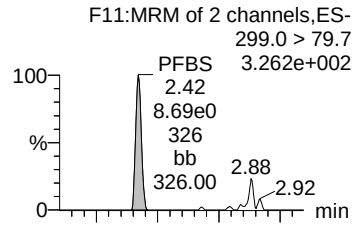
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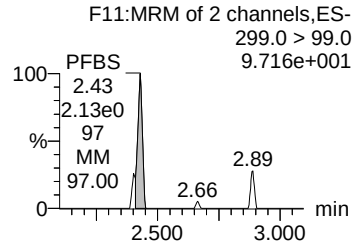
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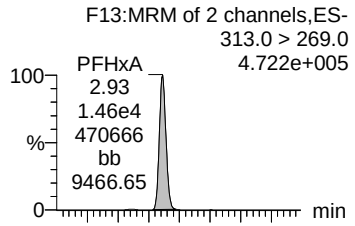
Name: 190712M2_30, Date: 12-Jul-2019, Time: 22:38:40, ID: 1901857-10 SAOA-B08-SO-1-1.5 1.06, Description: SAOA-B08-SO-1-1.5

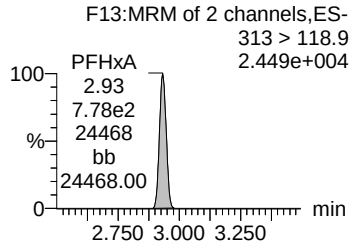
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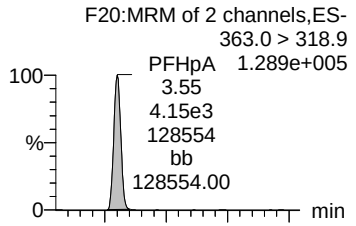


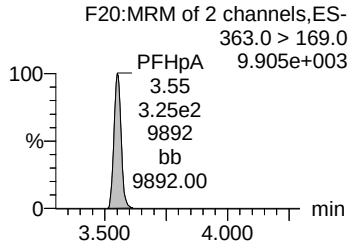
PFHxA



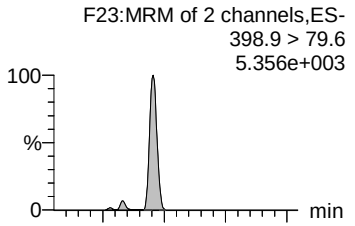


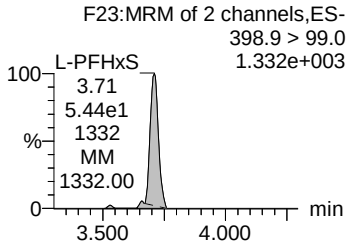
PFHpA



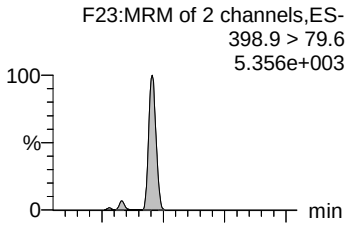


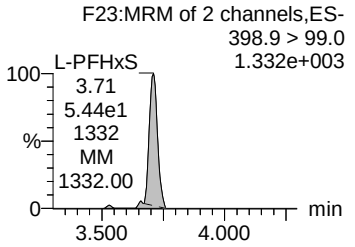
L-PFHxS



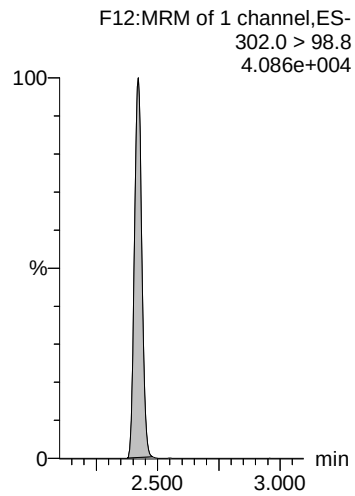


Total PFHxS

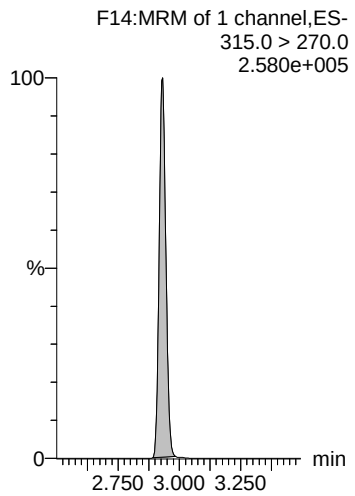




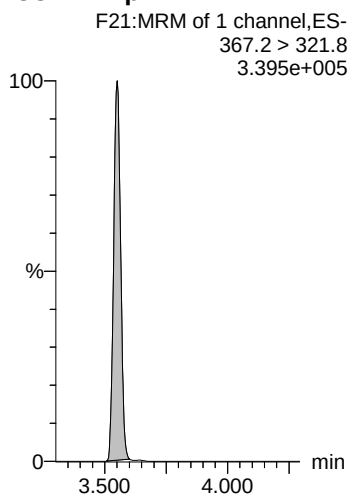
13C3-PFBS



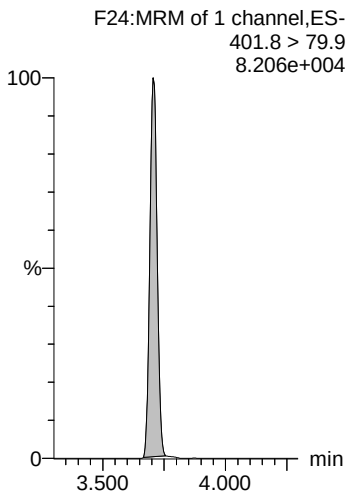
13C2-PFHxA



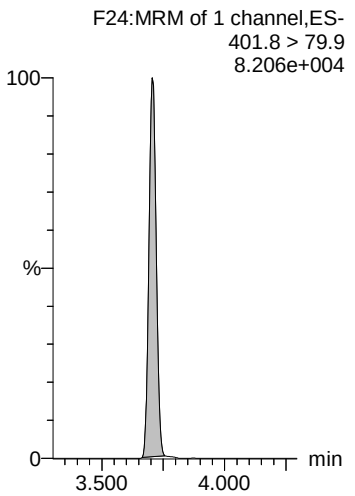
13C4-PFHpA



13C3-PFHxS



13C3-PFHxS



 NY 7/15/2019

Vista Analytical Laboratory L14

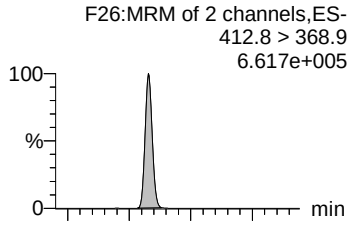
Review: AMR 7/15/2019

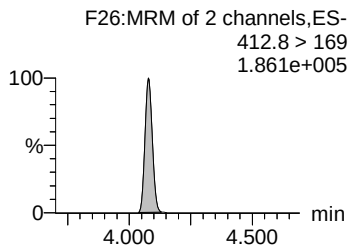
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Printed: Monday, July 15, 2019 13:18:00 Pacific Daylight Time

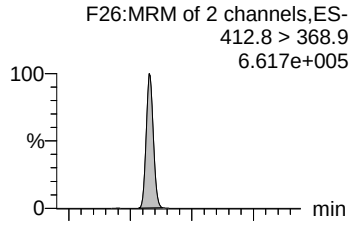
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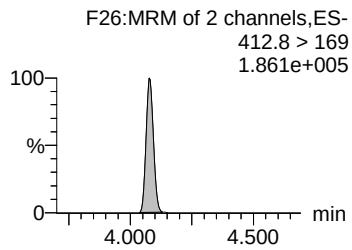
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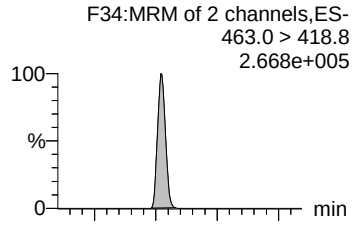


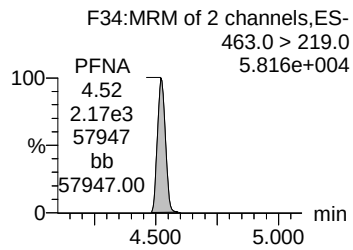
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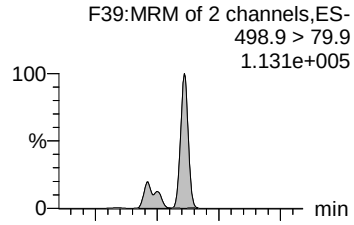


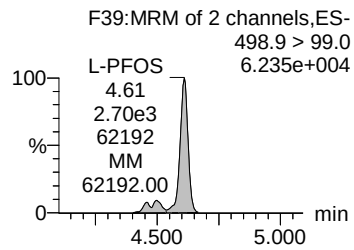
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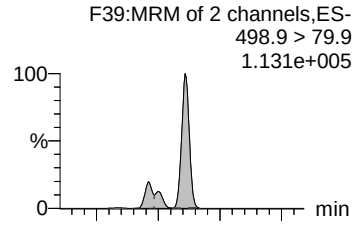


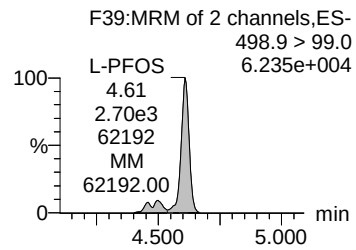
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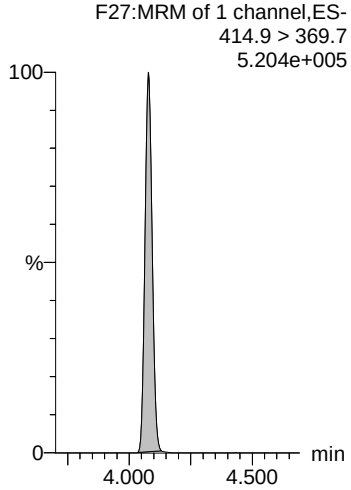


Total PFOS

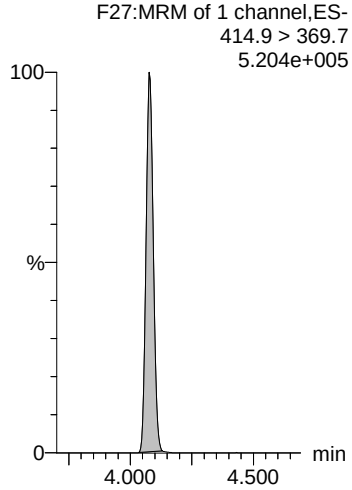




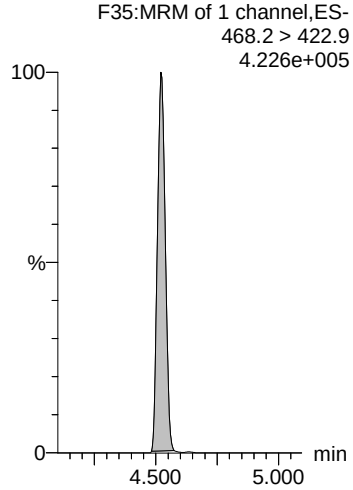
13C2-PFOA



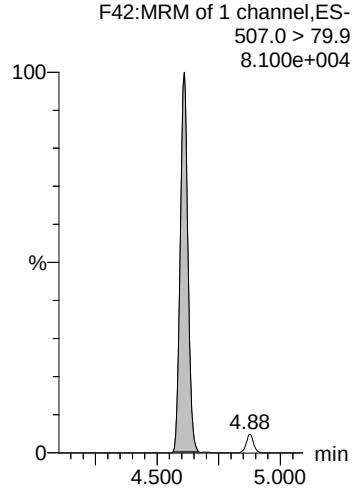
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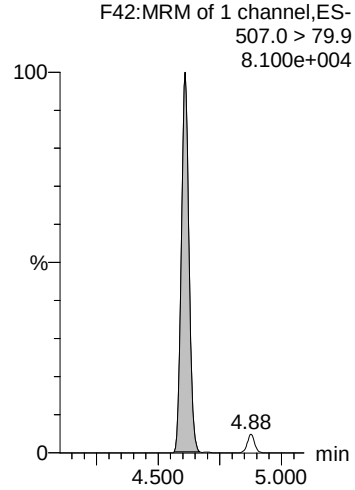
13C5-PFNA



13C8-PFOS



13C8-PFOS



 NY 7/15/2019

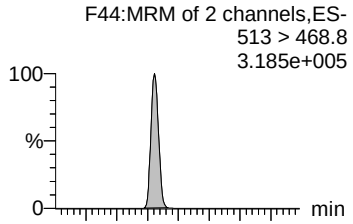
Review: AMR 7/15/2019

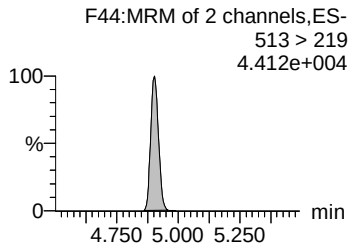
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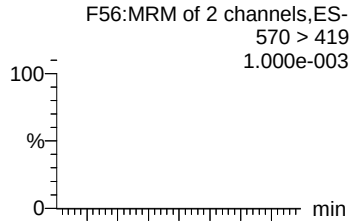
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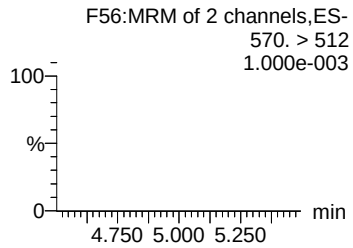
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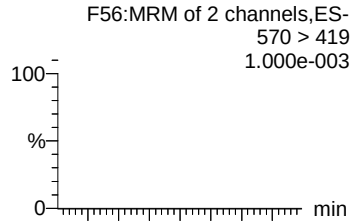


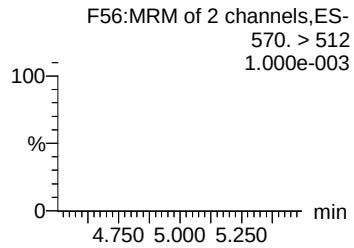
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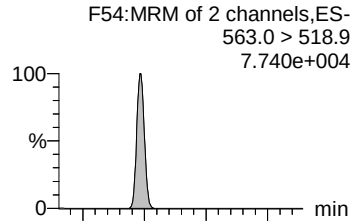


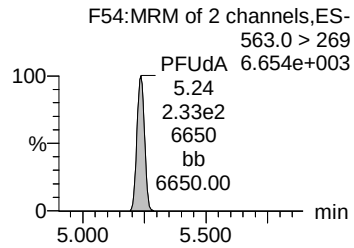
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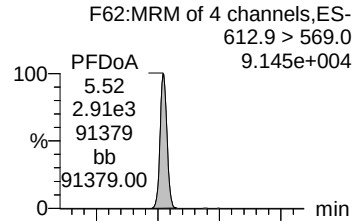


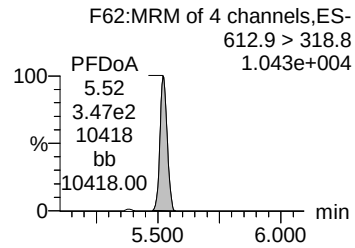
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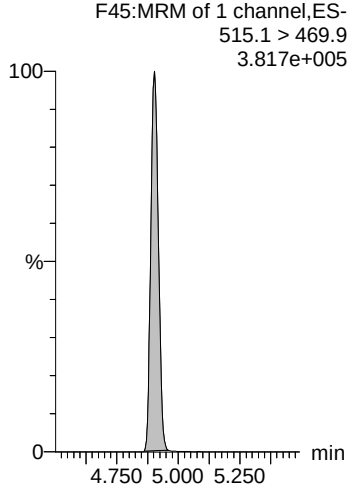


PFDoA

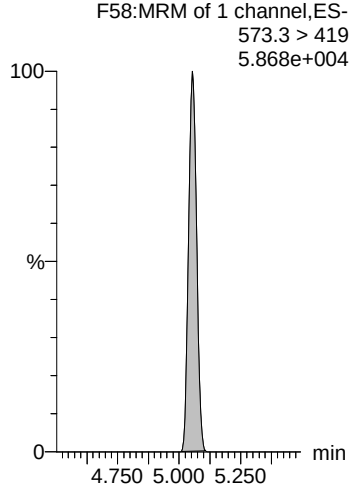




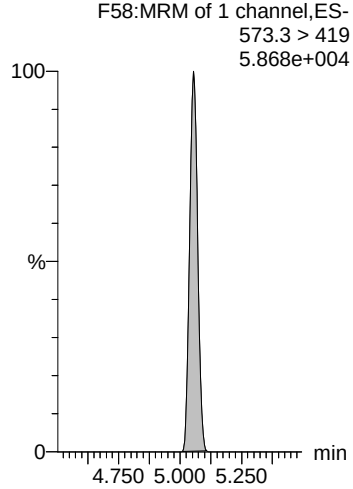
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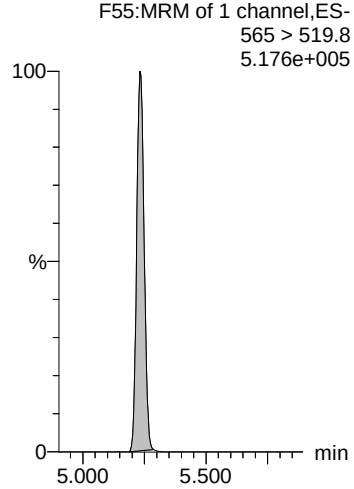
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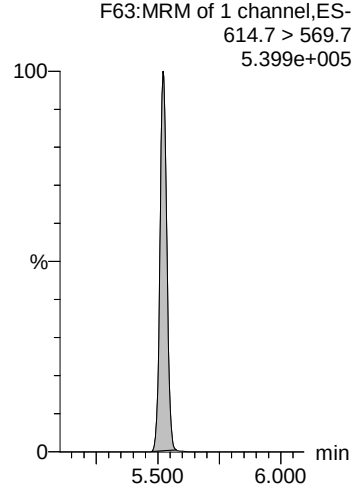
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13C2-PFUdA



13C2-PFDoA



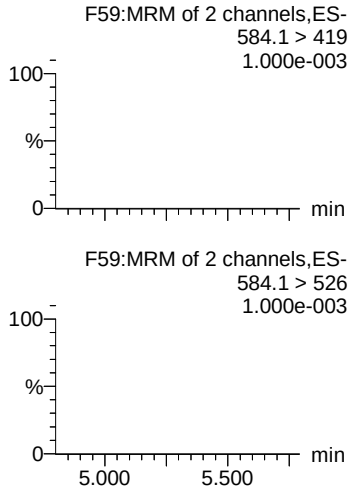
NY 7/15/2019

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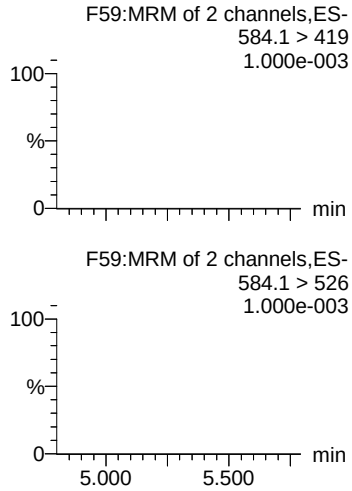
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Printed: Monday, July 15, 2019 13:18:00 Pacific Daylight Time

Name: 190712M2_30, Date: 12-Jul-2019, Time: 22:38:40, ID: 1901857-10 SAOA-B08-SO-1-1.5 1.06, Description: SAOA-B08-SO-1-1.5

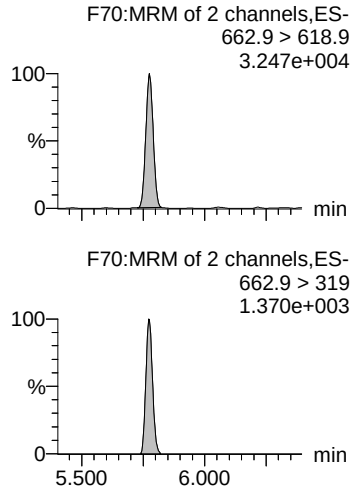
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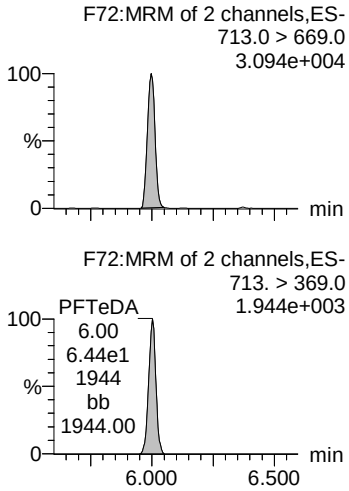
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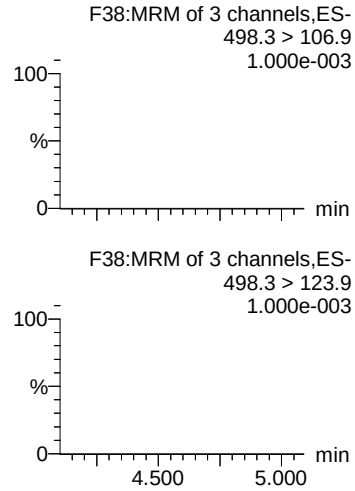
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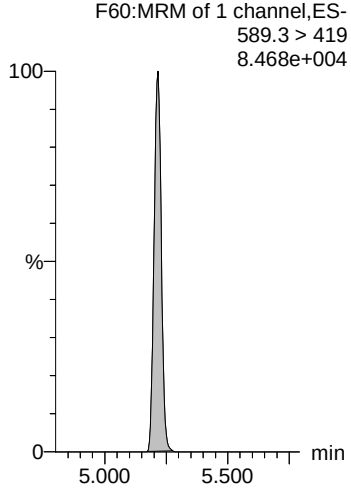
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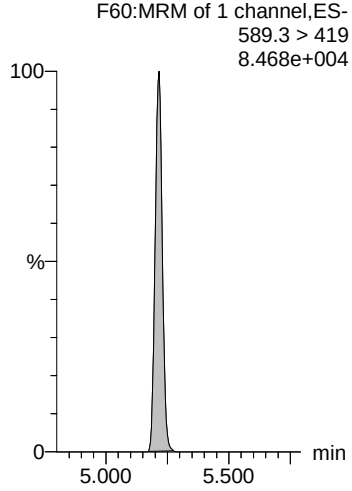
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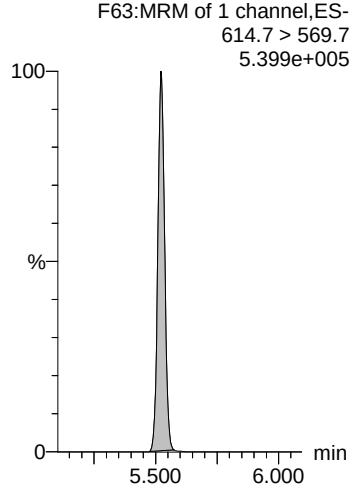
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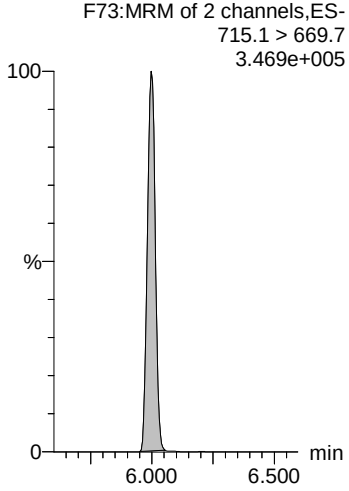
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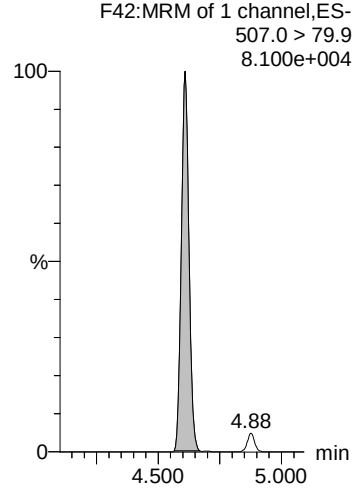
13C2-PFDoA



13C2-PFTeDA



13C8-PFOS



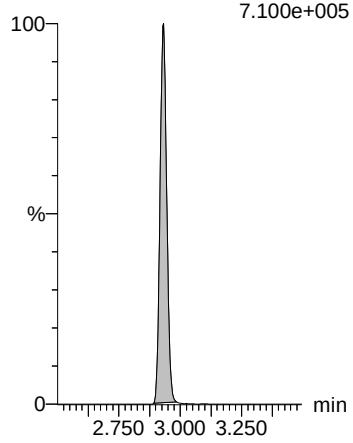
Review: AMR 7/15/2019

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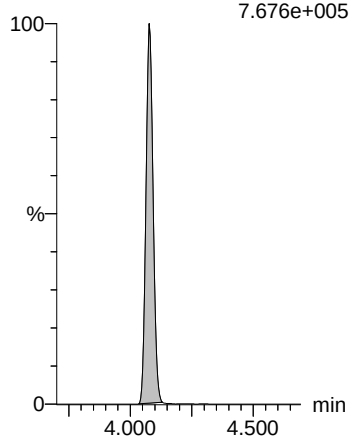
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Name: 190712M2_30, Date: 12-Jul-2019, Time: 22:38:40, ID: 1901857-10 SAOA-B08-SO-1-1.5 1.06, Description: SAOA-B08-SO-1-1.5

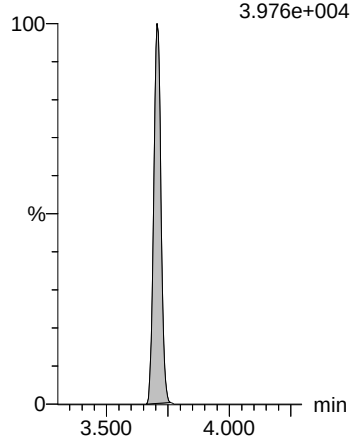
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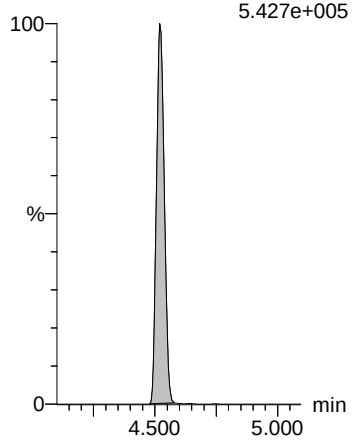
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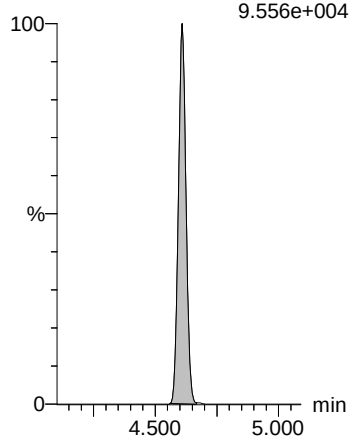
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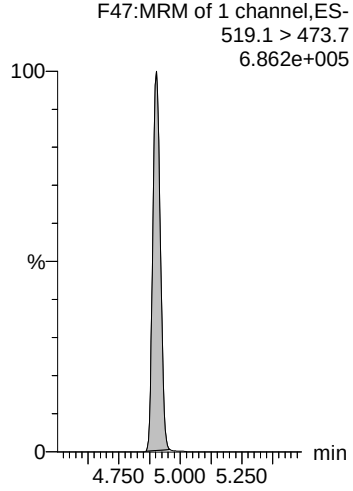
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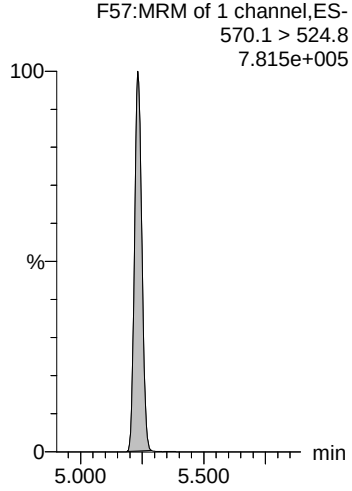
13C4-PFOS



13C6-PFDA



13C7-PFUdA



NY 7/15/2019

INJECTION INTERNAL STANDARD (IIS) AREAS,

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS CCV)

Dataset: Untitled

Last Altered: Tuesday, July 09, 2019 08:04:27 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 08:04:59 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_RS-07-05-19.mdb 05 Jul 2019 12:04:14
Calibration: 09 Jul 2019 08:04:26

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	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190708M3-1 PFC CS0 19F2414	5.81e3	100.0	NO
2	2	13C5-PFHxA	ST190708M3-1 PFC CS0 19F2414	2.00e4	100.0	NO
3	3	18O2-PFHxS	ST190708M3-1 PFC CS0 19F2414	1.22e3	100.0	NO
4	4	13C8-PFOA	ST190708M3-1 PFC CS0 19F2414	2.38e4	100.0	NO
5	5	13C9-PFNA	ST190708M3-1 PFC CS0 19F2414	1.80e4	100.0	NO
6	6	13C4-PFOS	ST190708M3-1 PFC CS0 19F2414	3.12e3	100.0	NO
7	7	13C6-PFDA	ST190708M3-1 PFC CS0 19F2414	2.25e4	100.0	NO
8	8	13C7-PFUdA	ST190708M3-1 PFC CS0 19F2414	2.32e4	100.0	NO

Name: 190708M3_3, Date: 08-Jul-2019, Time: 15:58:50, ID: IB, Description: IB

	#	Name	ID	Area	%Rec	Area Out
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2	2	13C5-PFHxA	IB	2.01e4	100.8	NO
3	3	18O2-PFHxS	IB	1.16e3	95.7	NO
4	4	13C8-PFOA	IB	2.31e4	97.1	NO
5	5	13C9-PFNA	IB	1.84e4	101.8	NO
6	6	13C4-PFOS	IB	2.95e3	94.7	NO
7	7	13C6-PFDA	IB	2.03e4	90.2	NO
8	8	13C7-PFUdA	IB	1.71e4	73.7	NO

Name: 190708M3_4, Date: 08-Jul-2019, Time: 16:09:25, ID: B9G0050-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0050-BS1 OPR 0.25	6.76e3	116.3	NO
2	2	13C5-PFHxA	B9G0050-BS1 OPR 0.25	1.44e4	72.3	NO
3	3	18O2-PFHxS	B9G0050-BS1 OPR 0.25	9.13e2	75.1	NO
4	4	13C8-PFOA	B9G0050-BS1 OPR 0.25	1.87e4	78.6	NO
5	5	13C9-PFNA	B9G0050-BS1 OPR 0.25	1.50e4	83.3	NO
6	6	13C4-PFOS	B9G0050-BS1 OPR 0.25	2.51e3	80.4	NO
7	7	13C6-PFDA	B9G0050-BS1 OPR 0.25	1.68e4	74.7	NO
8	8	13C7-PFUdA	B9G0050-BS1 OPR 0.25	1.94e4	83.4	NO

Name: 190708M3_5, Date: 08-Jul-2019, Time: 16:20:01, ID: B9G0050-BSD1 LCSD 0.25, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0050-BSD1 LCSD 0.25	7.02e3	120.7	NO
2	2	13C5-PFHxA	B9G0050-BSD1 LCSD 0.25	1.54e4	77.0	NO
3	3	18O2-PFHxS	B9G0050-BSD1 LCSD 0.25	1.05e3	86.1	NO
4	4	13C8-PFOA	B9G0050-BSD1 LCSD 0.25	2.00e4	84.1	NO
5	5	13C9-PFNA	B9G0050-BSD1 LCSD 0.25	1.62e4	89.9	NO
6	6	13C4-PFOS	B9G0050-BSD1 LCSD 0.25	2.54e3	81.4	NO
7	7	13C6-PFDA	B9G0050-BSD1 LCSD 0.25	1.86e4	82.6	NO
8	8	13C7-PFUdA	B9G0050-BSD1 LCSD 0.25	2.05e4	88.2	NO

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Name: 190708M3_6, Date: 08-Jul-2019, Time: 16:30:39, ID: B9G0050-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0050-BLK1 Method Blank 0.25	8.73e3	150.2	YES
2	2	13C5-PFHxA	B9G0050-BLK1 Method Blank 0.25	1.79e4	89.7	NO
3	3	18O2-PFHxS	B9G0050-BLK1 Method Blank 0.25	1.06e3	87.5	NO
4	4	13C8-PFOA	B9G0050-BLK1 Method Blank 0.25	2.11e4	88.7	NO
5	5	13C9-PFNA	B9G0050-BLK1 Method Blank 0.25	1.67e4	92.7	NO
6	6	13C4-PFOS	B9G0050-BLK1 Method Blank 0.25	3.00e3	96.3	NO
7	7	13C6-PFDA	B9G0050-BLK1 Method Blank 0.25	2.03e4	90.1	NO
8	8	13C7-PFUdA	B9G0050-BLK1 Method Blank 0.25	2.21e4	95.2	NO

Name: 190708M3_7, Date: 08-Jul-2019, Time: 16:41:12, ID: 1901857-01 SAOA-B05-GW 0.19379, Description: SAOA-B05-GW

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-01 SAOA-B05-GW 0.19379	2.33e3	40.1	YES
2	2	13C5-PFHxA	1901857-01 SAOA-B05-GW 0.19379	5.21e3	26.1	YES
3	3	18O2-PFHxS	1901857-01 SAOA-B05-GW 0.19379	9.29e2	76.4	NO
4	4	13C8-PFOA	1901857-01 SAOA-B05-GW 0.19379	1.04e4	43.8	YES
5	5	13C9-PFNA	1901857-01 SAOA-B05-GW 0.19379	9.46e3	52.5	NO
6	6	13C4-PFOS	1901857-01 SAOA-B05-GW 0.19379	2.62e3	84.1	NO
7	7	13C6-PFDA	1901857-01 SAOA-B05-GW 0.19379	1.37e4	61.1	NO
8	8	13C7-PFUdA	1901857-01 SAOA-B05-GW 0.19379	1.60e4	68.8	NO

Name: 190708M3_8, Date: 08-Jul-2019, Time: 16:51:50, ID: 1901857-04 SAOA-B09-GW 0.11754, Description: SAOA-B09-GW

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-04 SAOA-B09-GW 0.11754	4.55e3	78.3	NO
2	2	13C5-PFHxA	1901857-04 SAOA-B09-GW 0.11754	1.01e4	50.5	NO
3	3	18O2-PFHxS	1901857-04 SAOA-B09-GW 0.11754	1.02e3	83.8	NO
4	4	13C8-PFOA	1901857-04 SAOA-B09-GW 0.11754	1.41e4	59.3	NO
5	5	13C9-PFNA	1901857-04 SAOA-B09-GW 0.11754	1.20e4	66.7	NO
6	6	13C4-PFOS	1901857-04 SAOA-B09-GW 0.11754	2.57e3	82.5	NO
7	7	13C6-PFDA	1901857-04 SAOA-B09-GW 0.11754	1.55e4	68.8	NO
8	8	13C7-PFUdA	1901857-04 SAOA-B09-GW 0.11754	1.77e4	76.4	NO

Name: 190708M3_9, Date: 08-Jul-2019, Time: 17:02:20, ID: 1901857-05 FRB-06262019 0.12019, Description: FRB-06262019

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-05 FRB-06262019 0.12019	5.99e3	103.1	NO
2	2	13C5-PFHxA	1901857-05 FRB-06262019 0.12019	1.35e4	67.7	NO
3	3	18O2-PFHxS	1901857-05 FRB-06262019 0.12019	1.16e3	95.4	NO
4	4	13C8-PFOA	1901857-05 FRB-06262019 0.12019	1.99e4	83.5	NO
5	5	13C9-PFNA	1901857-05 FRB-06262019 0.12019	1.66e4	92.2	NO
6	6	13C4-PFOS	1901857-05 FRB-06262019 0.12019	2.81e3	90.1	NO
7	7	13C6-PFDA	1901857-05 FRB-06262019 0.12019	2.04e4	90.8	NO
8	8	13C7-PFUdA	1901857-05 FRB-06262019 0.12019	2.15e4	92.8	NO

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Name: 190708M3_10, Date: 08-Jul-2019, Time: 17:12:58, ID: 1901857-06 EB-06262019 0.11814, Description: EB-06262019

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-06 EB-06262019 0.11814	7.48e3	128.8	NO
2	2	13C5-PFHxA	1901857-06 EB-06262019 0.11814	1.57e4	78.5	NO
3	3	18O2-PFHxS	1901857-06 EB-06262019 0.11814	1.16e3	95.5	NO
4	4	13C8-PFOA	1901857-06 EB-06262019 0.11814	2.00e4	84.2	NO
5	5	13C9-PFNA	1901857-06 EB-06262019 0.11814	1.62e4	90.1	NO
6	6	13C4-PFOS	1901857-06 EB-06262019 0.11814	2.79e3	89.4	NO
7	7	13C6-PFDA	1901857-06 EB-06262019 0.11814	2.02e4	89.7	NO
8	8	13C7-PFUdA	1901857-06 EB-06262019 0.11814	2.21e4	95.1	NO

Name: 190708M3_11, Date: 08-Jul-2019, Time: 17:23:32, ID: 1901857-09 SAOA-B11-GW 0.12366, Description: SAOA-B11-GW

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-09 SAOA-B11-GW 0.12366	5.46e3	94.0	NO
2	2	13C5-PFHxA	1901857-09 SAOA-B11-GW 0.12366	1.17e4	58.5	NO
3	3	18O2-PFHxS	1901857-09 SAOA-B11-GW 0.12366	1.00e3	82.4	NO
4	4	13C8-PFOA	1901857-09 SAOA-B11-GW 0.12366	1.46e4	61.2	NO
5	5	13C9-PFNA	1901857-09 SAOA-B11-GW 0.12366	1.17e4	64.6	NO
6	6	13C4-PFOS	1901857-09 SAOA-B11-GW 0.12366	2.16e3	69.4	NO
7	7	13C6-PFDA	1901857-09 SAOA-B11-GW 0.12366	1.41e4	62.5	NO
8	8	13C7-PFUdA	1901857-09 SAOA-B11-GW 0.12366	1.56e4	67.1	NO

Name: 190708M3_12, Date: 08-Jul-2019, Time: 17:34:11, ID: 1901857-11 EB-06272019 0.11737, Description: EB-06272019

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-11 EB-06272019 0.11737	6.58e3	113.2	NO
2	2	13C5-PFHxA	1901857-11 EB-06272019 0.11737	1.36e4	68.2	NO
3	3	18O2-PFHxS	1901857-11 EB-06272019 0.11737	1.02e3	84.2	NO
4	4	13C8-PFOA	1901857-11 EB-06272019 0.11737	1.79e4	75.4	NO
5	5	13C9-PFNA	1901857-11 EB-06272019 0.11737	1.40e4	77.6	NO
6	6	13C4-PFOS	1901857-11 EB-06272019 0.11737	2.62e3	84.1	NO
7	7	13C6-PFDA	1901857-11 EB-06272019 0.11737	1.71e4	76.2	NO
8	8	13C7-PFUdA	1901857-11 EB-06272019 0.11737	1.86e4	80.1	NO

Name: 190708M3_13, Date: 08-Jul-2019, Time: 17:44:43, ID: 1901857-12 FRB-06272019 0.11771, Description: FRB-06272019

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-12 FRB-06272019 0.11771	8.32e3	143.2	NO
2	2	13C5-PFHxA	1901857-12 FRB-06272019 0.11771	1.77e4	88.7	NO
3	3	18O2-PFHxS	1901857-12 FRB-06272019 0.11771	1.21e3	99.7	NO
4	4	13C8-PFOA	1901857-12 FRB-06272019 0.11771	2.16e4	90.7	NO
5	5	13C9-PFNA	1901857-12 FRB-06272019 0.11771	1.80e4	99.6	NO
6	6	13C4-PFOS	1901857-12 FRB-06272019 0.11771	2.96e3	94.9	NO
7	7	13C6-PFDA	1901857-12 FRB-06272019 0.11771	2.03e4	90.3	NO
8	8	13C7-PFUdA	1901857-12 FRB-06272019 0.11771	2.21e4	95.4	NO

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Name: 190708M3_14, Date: 08-Jul-2019, Time: 17:55:22, ID: 1901859-05 EB03-062119 0.25551, Description: EB03-062119

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901859-05 EB03-062119 0.25551	9.18e3	158.0	YES
2	2	13C5-PFHxA	1901859-05 EB03-062119 0.25551	1.92e4	96.0	NO
3	3	18O2-PFHxS	1901859-05 EB03-062119 0.25551	1.36e3	112.2	NO
4	4	13C8-PFOA	1901859-05 EB03-062119 0.25551	2.47e4	103.8	NO
5	5	13C9-PFNA	1901859-05 EB03-062119 0.25551	1.96e4	108.8	NO
6	6	13C4-PFOS	1901859-05 EB03-062119 0.25551	3.36e3	107.8	NO
7	7	13C6-PFDA	1901859-05 EB03-062119 0.25551	2.36e4	104.9	NO
8	8	13C7-PFUdA	1901859-05 EB03-062119 0.25551	2.61e4	112.4	NO

Name: 190708M3_15, Date: 08-Jul-2019, Time: 18:05:55, ID: 1901860-11 EB04-062719 0.23415, Description: EB04-062719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901860-11 EB04-062719 0.23415	7.99e3	137.6	NO
2	2	13C5-PFHxA	1901860-11 EB04-062719 0.23415	1.65e4	82.8	NO
3	3	18O2-PFHxS	1901860-11 EB04-062719 0.23415	1.12e3	91.9	NO
4	4	13C8-PFOA	1901860-11 EB04-062719 0.23415	1.99e4	83.9	NO
5	5	13C9-PFNA	1901860-11 EB04-062719 0.23415	1.53e4	84.8	NO
6	6	13C4-PFOS	1901860-11 EB04-062719 0.23415	2.72e3	87.2	NO
7	7	13C6-PFDA	1901860-11 EB04-062719 0.23415	1.85e4	82.0	NO
8	8	13C7-PFUdA	1901860-11 EB04-062719 0.23415	1.95e4	84.0	NO

Name: 190708M3_16, Date: 08-Jul-2019, Time: 18:16:33, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190708M3-2 PFC CS3 19F2417	5.87e3	101.1	NO
2	2	13C5-PFHxA	ST190708M3-2 PFC CS3 19F2417	2.08e4	104.0	NO
3	3	18O2-PFHxS	ST190708M3-2 PFC CS3 19F2417	1.17e3	96.3	NO
4	4	13C8-PFOA	ST190708M3-2 PFC CS3 19F2417	2.49e4	104.8	NO
5	5	13C9-PFNA	ST190708M3-2 PFC CS3 19F2417	1.94e4	107.8	NO
6	6	13C4-PFOS	ST190708M3-2 PFC CS3 19F2417	3.10e3	99.5	NO
7	7	13C6-PFDA	ST190708M3-2 PFC CS3 19F2417	2.23e4	99.0	NO
8	8	13C7-PFUdA	ST190708M3-2 PFC CS3 19F2417	2.41e4	103.6	NO

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Name: 190708M3_18, Date: 08-Jul-2019, Time: 18:37:44, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190708M3_19, Date: 08-Jul-2019, Time: 18:48:18, ID: B9G0016-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0016-BS1 OPR 0.25	7.87e3	135.5	NO
2	2	13C5-PFHxA	B9G0016-BS1 OPR 0.25	1.60e4	80.4	NO
3	3	18O2-PFHxS	B9G0016-BS1 OPR 0.25	1.10e3	90.5	NO
4	4	13C8-PFOA	B9G0016-BS1 OPR 0.25	1.91e4	80.3	NO
5	5	13C9-PFNA	B9G0016-BS1 OPR 0.25	1.57e4	87.2	NO
6	6	13C4-PFOS	B9G0016-BS1 OPR 0.25	2.61e3	83.8	NO
7	7	13C6-PFDA	B9G0016-BS1 OPR 0.25	1.85e4	82.4	NO
8	8	13C7-PFUdA	B9G0016-BS1 OPR 0.25	2.01e4	86.5	NO

Name: 190708M3_20, Date: 08-Jul-2019, Time: 18:58:56, ID: B9G0016-BSD1 LCSD 0.25, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0016-BSD1 LCSD 0.25	7.57e3	130.2	NO
2	2	13C5-PFHxA	B9G0016-BSD1 LCSD 0.25	1.52e4	76.1	NO
3	3	18O2-PFHxS	B9G0016-BSD1 LCSD 0.25	1.00e3	82.5	NO
4	4	13C8-PFOA	B9G0016-BSD1 LCSD 0.25	1.80e4	75.5	NO
5	5	13C9-PFNA	B9G0016-BSD1 LCSD 0.25	1.49e4	82.7	NO
6	6	13C4-PFOS	B9G0016-BSD1 LCSD 0.25	2.51e3	80.4	NO
7	7	13C6-PFDA	B9G0016-BSD1 LCSD 0.25	1.78e4	79.2	NO
8	8	13C7-PFUdA	B9G0016-BSD1 LCSD 0.25	1.88e4	80.9	NO

Name: 190708M3_21, Date: 08-Jul-2019, Time: 19:09:28, ID: B9G0016-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0016-BLK1 Method Blank 0.25	7.56e3	130.1	NO
2	2	13C5-PFHxA	B9G0016-BLK1 Method Blank 0.25	1.50e4	75.2	NO
3	3	18O2-PFHxS	B9G0016-BLK1 Method Blank 0.25	9.47e2	77.9	NO
4	4	13C8-PFOA	B9G0016-BLK1 Method Blank 0.25	1.86e4	78.2	NO
5	5	13C9-PFNA	B9G0016-BLK1 Method Blank 0.25	1.43e4	79.3	NO
6	6	13C4-PFOS	B9G0016-BLK1 Method Blank 0.25	2.60e3	83.6	NO
7	7	13C6-PFDA	B9G0016-BLK1 Method Blank 0.25	1.78e4	79.3	NO
8	8	13C7-PFUdA	B9G0016-BLK1 Method Blank 0.25	2.02e4	87.0	NO

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Name: 190708M3_22, Date: 08-Jul-2019, Time: 19:20:07, ID: 1901782-01 REEPEF1658 FS 0.11714, Description: REEPEF1658 FS

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901782-01 REEPEF1658 FS 0.11714	2.09e3	36.0	YES
2	2	13C5-PFHxA	1901782-01 REEPEF1658 FS 0.11714	4.55e3	22.8	YES
3	3	18O2-PFHxS	1901782-01 REEPEF1658 FS 0.11714	1.01e3	83.5	NO
4	4	13C8-PFOA	1901782-01 REEPEF1658 FS 0.11714	6.95e3	29.2	YES
5	5	13C9-PFNA	1901782-01 REEPEF1658 FS 0.11714	6.15e3	34.1	YES
6	6	13C4-PFOS	1901782-01 REEPEF1658 FS 0.11714	2.65e3	85.1	NO
7	7	13C6-PFDA	1901782-01 REEPEF1658 FS 0.11714	7.81e3	34.7	YES
8	8	13C7-PFUdA	1901782-01 REEPEF1658 FS 0.11714	9.68e3	41.7	YES

Name: 190708M3_23, Date: 08-Jul-2019, Time: 19:30:39, ID: 1901784-01 BWS-1 0.2482, Description: BWS-1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901784-01 BWS-1 0.2482	5.86e3	100.8	NO
2	2	13C5-PFHxA	1901784-01 BWS-1 0.2482	1.23e4	61.8	NO
3	3	18O2-PFHxS	1901784-01 BWS-1 0.2482	9.76e2	80.2	NO
4	4	13C8-PFOA	1901784-01 BWS-1 0.2482	1.53e4	64.5	NO
5	5	13C9-PFNA	1901784-01 BWS-1 0.2482	1.31e4	72.6	NO
6	6	13C4-PFOS	1901784-01 BWS-1 0.2482	2.58e3	82.7	NO
7	7	13C6-PFDA	1901784-01 BWS-1 0.2482	1.61e4	71.6	NO
8	8	13C7-PFUdA	1901784-01 BWS-1 0.2482	1.84e4	79.2	NO

Name: 190708M3_24, Date: 08-Jul-2019, Time: 19:41:18, ID: 1901784-02 FRB-1 0.25006, Description: FRB-1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901784-02 FRB-1 0.25006	6.48e3	111.6	NO
2	2	13C5-PFHxA	1901784-02 FRB-1 0.25006	1.42e4	71.1	NO
3	3	18O2-PFHxS	1901784-02 FRB-1 0.25006	1.12e3	92.3	NO
4	4	13C8-PFOA	1901784-02 FRB-1 0.25006	1.84e4	77.4	NO
5	5	13C9-PFNA	1901784-02 FRB-1 0.25006	1.48e4	82.0	NO
6	6	13C4-PFOS	1901784-02 FRB-1 0.25006	2.72e3	87.4	NO
7	7	13C6-PFDA	1901784-02 FRB-1 0.25006	1.87e4	83.0	NO
8	8	13C7-PFUdA	1901784-02 FRB-1 0.25006	2.02e4	86.9	NO

Name: 190708M3_25, Date: 08-Jul-2019, Time: 19:51:50, ID: 1901785-01 IA-2-REF3-21062019-10-00-RB 0.24805, Description: IA-2-REF3-21062019-10-00-RB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901785-01 IA-2-REF3-21062019-10-0...	7.41e3	127.6	NO
2	2	13C5-PFHxA	1901785-01 IA-2-REF3-21062019-10-0...	1.54e4	77.2	NO
3	3	18O2-PFHxS	1901785-01 IA-2-REF3-21062019-10-0...	1.15e3	94.7	NO
4	4	13C8-PFOA	1901785-01 IA-2-REF3-21062019-10-0...	1.98e4	83.4	NO
5	5	13C9-PFNA	1901785-01 IA-2-REF3-21062019-10-0...	1.58e4	87.8	NO
6	6	13C4-PFOS	1901785-01 IA-2-REF3-21062019-10-0...	2.82e3	90.4	NO
7	7	13C6-PFDA	1901785-01 IA-2-REF3-21062019-10-0...	1.86e4	82.9	NO
8	8	13C7-PFUdA	1901785-01 IA-2-REF3-21062019-10-0...	2.09e4	90.2	NO

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Name: 190708M3_26, Date: 08-Jul-2019, Time: 20:02:29, ID: 1901785-02 IA-2-REF3-21062019-10-05-FB 0.24769, Description: IA-2-REF3-21062019-10-05-FB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901785-02 IA-2-REF3-21062019-10-0...	6.57e3	113.0	NO
2	2	13C5-PFHxA	1901785-02 IA-2-REF3-21062019-10-0...	1.40e4	70.1	NO
3	3	18O2-PFHxS	1901785-02 IA-2-REF3-21062019-10-0...	1.03e3	84.7	NO
4	4	13C8-PFOA	1901785-02 IA-2-REF3-21062019-10-0...	1.84e4	77.4	NO
5	5	13C9-PFNA	1901785-02 IA-2-REF3-21062019-10-0...	1.40e4	77.5	NO
6	6	13C4-PFOS	1901785-02 IA-2-REF3-21062019-10-0...	2.53e3	81.0	NO
7	7	13C6-PFDA	1901785-02 IA-2-REF3-21062019-10-0...	1.71e4	76.2	NO
8	8	13C7-PFUdA	1901785-02 IA-2-REF3-21062019-10-0...	1.97e4	84.7	NO

Name: 190708M3_27, Date: 08-Jul-2019, Time: 20:13:08, ID: 1901831-01 REEPAR1683FS 0.11262, Description: REEPAR1683FS

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901831-01 REEPAR1683FS 0.11262	3.15e3	54.3	NO
2	2	13C5-PFHxA	1901831-01 REEPAR1683FS 0.11262	6.52e3	32.7	YES
3	3	18O2-PFHxS	1901831-01 REEPAR1683FS 0.11262	1.06e3	87.1	NO
4	4	13C8-PFOA	1901831-01 REEPAR1683FS 0.11262	7.37e3	31.0	YES
5	5	13C9-PFNA	1901831-01 REEPAR1683FS 0.11262	6.06e3	33.6	YES
6	6	13C4-PFOS	1901831-01 REEPAR1683FS 0.11262	2.55e3	81.9	NO
7	7	13C6-PFDA	1901831-01 REEPAR1683FS 0.11262	7.33e3	32.6	YES
8	8	13C7-PFUdA	1901831-01 REEPAR1683FS 0.11262	9.39e3	40.4	YES

Name: 190708M3_28, Date: 08-Jul-2019, Time: 20:23:40, ID: 1901872-01 REEPDW1560FS 0.12023, Description: REEPDW1560FS

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901872-01 REEPDW1560FS 0.12023	2.76e3	47.5	YES
2	2	13C5-PFHxA	1901872-01 REEPDW1560FS 0.12023	4.26e3	21.4	YES
3	3	18O2-PFHxS	1901872-01 REEPDW1560FS 0.12023	9.33e2	76.7	NO
4	4	13C8-PFOA	1901872-01 REEPDW1560FS 0.12023	6.09e3	25.6	YES
5	5	13C9-PFNA	1901872-01 REEPDW1560FS 0.12023	5.36e3	29.7	YES
6	6	13C4-PFOS	1901872-01 REEPDW1560FS 0.12023	2.62e3	83.9	NO
7	7	13C6-PFDA	1901872-01 REEPDW1560FS 0.12023	7.27e3	32.3	YES
8	8	13C7-PFUdA	1901872-01 REEPDW1560FS 0.12023	9.14e3	39.4	YES

Name: 190708M3_29, Date: 08-Jul-2019, Time: 20:34:18, ID: B9G0017-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0017-BS1 OPR 0.25	7.55e3	130.0	NO
2	2	13C5-PFHxA	B9G0017-BS1 OPR 0.25	1.56e4	78.1	NO
3	3	18O2-PFHxS	B9G0017-BS1 OPR 0.25	9.40e2	77.3	NO
4	4	13C8-PFOA	B9G0017-BS1 OPR 0.25	1.93e4	81.0	NO
5	5	13C9-PFNA	B9G0017-BS1 OPR 0.25	1.50e4	83.0	NO
6	6	13C4-PFOS	B9G0017-BS1 OPR 0.25	2.38e3	76.3	NO
7	7	13C6-PFDA	B9G0017-BS1 OPR 0.25	1.75e4	77.7	NO
8	8	13C7-PFUdA	B9G0017-BS1 OPR 0.25	1.95e4	83.9	NO

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Name: 190708M3_30, Date: 08-Jul-2019, Time: 20:44:52, ID: B9G0017-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0017-BLK1 Method Blank 0.25	7.60e3	130.8	NO
2	2	13C5-PFHxA	B9G0017-BLK1 Method Blank 0.25	1.53e4	76.6	NO
3	3	18O2-PFHxS	B9G0017-BLK1 Method Blank 0.25	1.05e3	86.1	NO
4	4	13C8-PFOA	B9G0017-BLK1 Method Blank 0.25	1.94e4	81.6	NO
5	5	13C9-PFNA	B9G0017-BLK1 Method Blank 0.25	1.42e4	78.8	NO
6	6	13C4-PFOS	B9G0017-BLK1 Method Blank 0.25	2.53e3	81.1	NO
7	7	13C6-PFDA	B9G0017-BLK1 Method Blank 0.25	1.65e4	73.4	NO
8	8	13C7-PFUdA	B9G0017-BLK1 Method Blank 0.25	1.84e4	79.4	NO

Name: 190708M3_31, Date: 08-Jul-2019, Time: 20:55:30, ID: 1901790-01 1906A01-01A 0.22707, Description: 1906A01-01A

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901790-01 1906A01-01A 0.22707	7.11e3	122.3	NO
2	2	13C5-PFHxA	1901790-01 1906A01-01A 0.22707	1.48e4	73.9	NO
3	3	18O2-PFHxS	1901790-01 1906A01-01A 0.22707	8.55e2	70.3	NO
4	4	13C8-PFOA	1901790-01 1906A01-01A 0.22707	1.92e4	80.9	NO
5	5	13C9-PFNA	1901790-01 1906A01-01A 0.22707	1.36e4	75.5	NO
6	6	13C4-PFOS	1901790-01 1906A01-01A 0.22707	2.32e3	74.4	NO
7	7	13C6-PFDA	1901790-01 1906A01-01A 0.22707	1.76e4	78.3	NO
8	8	13C7-PFUdA	1901790-01 1906A01-01A 0.22707	1.83e4	78.9	NO

Name: 190708M3_32, Date: 08-Jul-2019, Time: 21:06:03, ID: 1901790-02 1906A01-02A 0.25672, Description: 1906A01-02A

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901790-02 1906A01-02A 0.25672	7.93e3	136.5	NO
2	2	13C5-PFHxA	1901790-02 1906A01-02A 0.25672	1.64e4	82.0	NO
3	3	18O2-PFHxS	1901790-02 1906A01-02A 0.25672	9.74e2	80.1	NO
4	4	13C8-PFOA	1901790-02 1906A01-02A 0.25672	1.94e4	81.5	NO
5	5	13C9-PFNA	1901790-02 1906A01-02A 0.25672	1.58e4	87.8	NO
6	6	13C4-PFOS	1901790-02 1906A01-02A 0.25672	2.44e3	78.3	NO
7	7	13C6-PFDA	1901790-02 1906A01-02A 0.25672	1.84e4	81.8	NO
8	8	13C7-PFUdA	1901790-02 1906A01-02A 0.25672	1.92e4	82.7	NO

Name: 190708M3_33, Date: 08-Jul-2019, Time: 21:16:42, ID: 1901791-01 1906B77-01A 0.22629, Description: 1906B77-01A

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901791-01 1906B77-01A 0.22629	7.18e3	123.6	NO
2	2	13C5-PFHxA	1901791-01 1906B77-01A 0.22629	1.10e4	54.9	NO
3	3	18O2-PFHxS	1901791-01 1906B77-01A 0.22629	1.10e3	90.5	NO
4	4	13C8-PFOA	1901791-01 1906B77-01A 0.22629	1.84e4	77.3	NO
5	5	13C9-PFNA	1901791-01 1906B77-01A 0.22629	1.55e4	86.1	NO
6	6	13C4-PFOS	1901791-01 1906B77-01A 0.22629	2.79e3	89.5	NO
7	7	13C6-PFDA	1901791-01 1906B77-01A 0.22629	1.74e4	77.2	NO
8	8	13C7-PFUdA	1901791-01 1906B77-01A 0.22629	1.89e4	81.4	NO

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Name: 190708M3_34, Date: 08-Jul-2019, Time: 21:27:15, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190708M3_35, Date: 08-Jul-2019, Time: 21:37:53, ID: ST190708M3-3 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190708M3-3 PFC CS3 19F2417	6.20e3	106.7	NO
2	2	13C5-PFHxA	ST190708M3-3 PFC CS3 19F2417	2.25e4	112.6	NO
3	3	18O2-PFHxS	ST190708M3-3 PFC CS3 19F2417	1.30e3	106.9	NO
4	4	13C8-PFOA	ST190708M3-3 PFC CS3 19F2417	2.55e4	107.4	NO
5	5	13C9-PFNA	ST190708M3-3 PFC CS3 19F2417	2.03e4	112.5	NO
6	6	13C4-PFOS	ST190708M3-3 PFC CS3 19F2417	3.22e3	103.4	NO
7	7	13C6-PFDA	ST190708M3-3 PFC CS3 19F2417	2.37e4	105.4	NO
8	8	13C7-PFUdA	ST190708M3-3 PFC CS3 19F2417	2.53e4	108.9	NO

Name: 190708M3_36, Date: 08-Jul-2019, Time: 21:48:26, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190708M3_37, Date: 08-Jul-2019, Time: 21:59:04, ID: 1901791-02 1906B77-02A 0.25099, Description: 1906B77-02A

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901791-02 1906B77-02A 0.25099	8.23e3	141.6	NO
2	2	13C5-PFHxA	1901791-02 1906B77-02A 0.25099	1.72e4	86.3	NO
3	3	18O2-PFHxS	1901791-02 1906B77-02A 0.25099	9.49e2	78.0	NO
4	4	13C8-PFOA	1901791-02 1906B77-02A 0.25099	2.04e4	85.9	NO
5	5	13C9-PFNA	1901791-02 1906B77-02A 0.25099	1.68e4	93.1	NO
6	6	13C4-PFOS	1901791-02 1906B77-02A 0.25099	2.73e3	87.5	NO
7	7	13C6-PFDA	1901791-02 1906B77-02A 0.25099	1.89e4	83.9	NO
8	8	13C7-PFUdA	1901791-02 1906B77-02A 0.25099	2.03e4	87.3	NO

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Name: 190708M3_38, Date: 08-Jul-2019, Time: 22:09:37, ID: 1901792-01 GW1591621906241235RAP 0.23602, Description: GW1591621906241235RAP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901792-01 GW1591621906241235RA...	7.72e3	132.9	NO
2	2	13C5-PFHxA	1901792-01 GW1591621906241235RA...	1.59e4	79.8	NO
3	3	18O2-PFHxS	1901792-01 GW1591621906241235RA...	1.12e3	92.4	NO
4	4	13C8-PFOA	1901792-01 GW1591621906241235RA...	2.05e4	86.2	NO
5	5	13C9-PFNA	1901792-01 GW1591621906241235RA...	1.60e4	88.6	NO
6	6	13C4-PFOS	1901792-01 GW1591621906241235RA...	2.76e3	88.6	NO
7	7	13C6-PFDA	1901792-01 GW1591621906241235RA...	1.92e4	85.2	NO
8	8	13C7-PFUdA	1901792-01 GW1591621906241235RA...	2.05e4	88.3	NO

Name: 190708M3_39, Date: 08-Jul-2019, Time: 22:20:15, ID: 1901887-01@5X Ivyland Mop Water 0.24039, Description: Ivyland Mop Water

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901887-01@5X Ivyland Mop Water 0.2...	1.67e3	28.7	YES
2	2	13C5-PFHxA	1901887-01@5X Ivyland Mop Water 0.2...	3.61e3	18.1	YES
3	3	18O2-PFHxS	1901887-01@5X Ivyland Mop Water 0.2...	1.85e2	15.2	YES
4	4	13C8-PFOA	1901887-01@5X Ivyland Mop Water 0.2...	3.97e3	16.7	YES
5	5	13C9-PFNA	1901887-01@5X Ivyland Mop Water 0.2...	3.56e3	19.7	YES
6	6	13C4-PFOS	1901887-01@5X Ivyland Mop Water 0.2...	5.37e2	17.2	YES
7	7	13C6-PFDA	1901887-01@5X Ivyland Mop Water 0.2...	3.82e3	17.0	YES
8	8	13C7-PFUdA	1901887-01@5X Ivyland Mop Water 0.2...	4.27e3	18.4	YES

Name: 190708M3_40, Date: 08-Jul-2019, Time: 22:30:48, ID: 1901887-02@20X Feasterville Mop Water 0.22776, Description: Feasterville Mop Water

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901887-02@20X Feasterville Mop Wat...	9.68e2	16.7	YES
2	2	13C5-PFHxA	1901887-02@20X Feasterville Mop Wat...	2.35e3	11.8	YES
3	3	18O2-PFHxS	1901887-02@20X Feasterville Mop Wat...	1.14e2	9.4	YES
4	4	13C8-PFOA	1901887-02@20X Feasterville Mop Wat...	1.34e3	5.7	YES
5	5	13C9-PFNA	1901887-02@20X Feasterville Mop Wat...	2.57e3	14.3	YES
6	6	13C4-PFOS	1901887-02@20X Feasterville Mop Wat...	3.95e2	12.7	YES
7	7	13C6-PFDA	1901887-02@20X Feasterville Mop Wat...	3.15e3	14.0	YES
8	8	13C7-PFUdA	1901887-02@20X Feasterville Mop Wat...	3.32e3	14.3	YES

Name: 190708M3_41, Date: 08-Jul-2019, Time: 22:41:26, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190708M3_42, Date: 08-Jul-2019, Time: 22:52:00, ID: ST190708M3-4 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190708M3-4 PFC CS3 19F2417	6.34e3	109.1	NO
2	2	13C5-PFHxA	ST190708M3-4 PFC CS3 19F2417	2.17e4	108.8	NO
3	3	18O2-PFHxS	ST190708M3-4 PFC CS3 19F2417	1.35e3	110.7	NO
4	4	13C8-PFOA	ST190708M3-4 PFC CS3 19F2417	2.53e4	106.6	NO
5	5	13C9-PFNA	ST190708M3-4 PFC CS3 19F2417	1.98e4	109.8	NO
6	6	13C4-PFOS	ST190708M3-4 PFC CS3 19F2417	3.15e3	101.1	NO
7	7	13C6-PFDA	ST190708M3-4 PFC CS3 19F2417	2.26e4	100.3	NO
8	8	13C7-PFUdA	ST190708M3-4 PFC CS3 19F2417	2.46e4	105.8	NO

Name: 190708M3_43, Date: 08-Jul-2019, Time: 23:02:38, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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

Dataset: F:\Projects\PFAS.PRO\Results\190708M1\190708M1-IB.qld

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Name: 190708M1_3, Date: 08-Jul-2019, Time: 10:41:11, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8		6923.162	1.00					NO		
2	2	PFPrS	248.9 > 79.9		1217.377	1.00					NO		
3	3	3:3 FTCA	240.9 > 176.9		9369.549	1.00					NO		
4	4	PFPeA	263.1 > 218.9		9369.549	1.00					NO		
5	5	PFBS	299.0 > 79.7		1217.377	1.00					NO		
6	6	4:2 FTS	327.0 > 306.9		2179.252	1.00					NO		
7	47	13C3-PFBA	216.1 > 171.8	6923.162	9634.416	1.00	1.19	8.982	12.3	98.4	NO		
8	49	13C3-PFBS	302.0 > 98.8	1217.377	1134.206	1.00	2.48	13.417	13.2	105.3	NO		
9	48	13C3-PFPeA	266.0 > 221.8	9369.549	18966.732	1.00	2.19	6.175	12.5	100.1	NO		
10	48	13C3-PFPeA	266.0 > 221.8	9369.549	18966.732	1.00	2.19	6.175	12.5	100.1	NO		
11	49	13C3-PFBS	302.0 > 98.8	1217.377	1134.206	1.00	2.48	13.417	13.2	105.3	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2179.252	1134.206	1.00	2.90	24.017	13.7	109.3	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0		7178.315	1.00					NO		
15	8	PFPeS	349.1>80.1		1217.377	1.00					NO		
16	9	HFPO-DA	285.1 > 168.9		1369.180	1.00					NO		
17	10	5:3 FTCA	340.9 > 236.9		10361.233	1.00					NO		
18	11	PFHpA	363.0 > 318.9		10361.233	1.00					NO		
19	12	ADONA	376.8 > 250.9		10361.233	1.00					NO		
20	52	13C2-PFHxA	315.0 > 270.0	7178.315	18966.732	1.00	2.98	4.731	4.7	94.8	NO		
21	49	13C3-PFBS	302.0 > 98.8	1217.377	1134.206	1.00	2.48	13.417	13.2	105.3	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1369.180	18966.732	1.00	3.19	0.902	5.0	99.5	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10361.233	18966.732	1.00	3.60	6.829	12.8	102.2	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10361.233	18966.732	1.00	3.60	6.829	12.8	102.2	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10361.233	18966.732	1.00	3.60	6.829	12.8	102.2	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	12.796	2601.102	1.00	3.77	0.061	0.1		NO	42.371	YES
28	15	6:2 FTS	427.0 > 406.9		1629.901	1.00					NO		
29	16	L-PFOA	412.8 > 368.9	60.033	17451.293	1.00	4.13	0.043	0.0		NO	3.115	NO
30	18	PFecHS	460.8 > 381.0		17451.293	1.00					NO		
31	19	PFHpS	449.0 > 80.0		2580.542	1.00					NO		
32	20	7:3 FTCA	440.9 > 336.9		17208.809	1.00					NO		
33	54	13C3-PFHxS	401.8 > 79.9	2601.102	1134.206	1.00	3.76	28.667	12.9	103.1	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1629.901	2907.036	1.00	4.07	7.008	12.0	95.9	NO		
35	58	13C2-PFOA	414.9 > 369.7	17451.293	22283.285	1.00	4.12	9.789	13.2	105.7	NO		
36	58	13C2-PFOA	414.9 > 369.7	17451.293	22283.285	1.00	4.12	9.789	13.2	105.7	NO		

CGH 7/8/2019

Dataset: F:\Projects\PFAS.PRO\Results\190708M1\190708M1-IB.qld

Last Altered: Monday, July 08, 2019 13:20:55 Pacific Daylight Time
Printed: Monday, July 08, 2019 13:21:15 Pacific Daylight Time

Name: 190708M1_3, Date: 08-Jul-2019, Time: 10:41:11, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	2580.542	2907.036	1.00	4.65	11.096	11.0	87.8	NO		
38	56	13C5-PFNA	468.2 > 422.9	17208.809	17240.268	1.00	4.57	12.477	12.5	100.2	NO		
39	-1												
40	21	PFNA	463.0 > 418.8		17208.809	1.00					NO		
41	22	PFOSA	497.9 > 77.9		1469.397	1.00					NO		
42	23	L-PFOS	498.9 > 79.9	0.363	2580.542	1.00	4.55	0.002	0.1		NO	0.123	YES
43	25	9Cl-PF30NS	530.7 > 350.8		2580.542	1.00					NO		
44	26	PFDA	513 > 468.8		15589.675	1.00					NO		
45	27	8:2 FTS	527.0 > 506.9		1548.976	1.00					NO		
46	56	13C5-PFNA	468.2 > 422.9	17208.809	17240.268	1.00	4.57	12.477	12.5	100.2	NO		
47	57	13C8-PFOSA	506.1 > 77.7	1469.397	16830.045	1.00	4.62	1.091	8.4	67.5	NO		
48	59	13C8-PFOS	507.0 > 79.9	2580.542	2907.036	1.00	4.65	11.096	11.0	87.8	NO		
49	59	13C8-PFOS	507.0 > 79.9	2580.542	2907.036	1.00	4.65	11.096	11.0	87.8	NO		
50	60	13C2-PFDA	515.1 > 469.9	15589.675	19174.002	1.00	4.95	10.163	12.8	102.5	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1548.976	2907.036	1.00	4.91	6.660	11.6	92.8	NO		
52	-1												
53	28	PFNS	549.1 > 80.1		2580.542	1.00					NO		
54	29	L-MeFOSAA	570 > 419		2874.038	1.00					NO		
55	31	L-EtFOSAA	584.1 > 419		3018.664	1.00					NO		
56	33	PFUdA	563.0 > 518.9		17694.518	1.00					NO		
57	34	PFDS	598.8 > 79.9		1548.976	1.00					NO		
58	35	11Cl-PF30UdS	632.6 > 452.7		8516.564	1.00					NO		
59	59	13C8-PFOS	507.0 > 79.9	2580.542	2907.036	1.00	4.65	11.096	11.0	87.8	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	2874.038	16830.045	1.00	5.09	2.135	13.5	107.9	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	3018.664	16830.045	1.00	5.25	2.242	12.8	102.4	NO		
62	63	13C2-PFUdA	565 > 519.8	17694.518	16830.045	1.00	5.27	13.142	12.3	98.2	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1548.976	2907.036	1.00	4.91	6.660	11.6	92.8	NO		
64	65	13C2-PFDoA	614.7 > 569.7	8516.564	19174.002	1.00	5.56	5.552	4.8	38.6	YES		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1548.976	1.00					NO		
67	37	PFDoA	612.9 > 569.0		8516.564	1.00					NO		
68	38	N-MeFOSA	512.1 > 168.9			1.00					NO		
69	39	PFTrDA	662.9 > 618.9		8516.564	1.00					NO		
70	40	PFDoS	698.8 > 79.9		1410.634	1.00					NO		
71	41	PFTeDA	713.0 > 669.0		1410.634	1.00					NO		
72	65	13C2-PFDoA	614.7 > 569.7	8516.564	19174.002	1.00	5.56	5.552	4.8	38.6	YES		

CGH 7/8/2019

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190708M1\190708M1-IB.qld

Last Altered: Monday, July 08, 2019 13:20:55 Pacific Daylight Time
Printed: Monday, July 08, 2019 13:21:15 Pacific Daylight Time

Name: 190708M1_3, Date: 08-Jul-2019, Time: 10:41:11, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	8516.564	19174.002	1.00	5.56	5.552	4.8	38.6	YES		
74	66	d3-N-MeFOSA	515.2 > 168.9		16830.045	1.00					NO		
75	65	13C2-PFDoA	614.7 > 569.7	8516.564	19174.002	1.00	5.56	5.552	4.8	38.6	YES		
76	67	13C2-PFTeDA	715.1 > 669.7	1410.634	16830.045	1.00	6.03	1.048	1.5	11.8	YES		
77	67	13C2-PFTeDA	715.1 > 669.7	1410.634	16830.045	1.00	6.03	1.048	1.5	11.8	YES		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9			1.00					NO		
80	43	PFHxDA	813.1 > 768.6		871.602	1.00					NO		
81	44	PFODA	913.1 > 868.8		871.602	1.00					NO		
82	45	N-MeFOSE	616.1 > 58.9		595.200	1.00					NO		
83	46	N-EtFOSE	630.1 > 58.9		604.432	1.00					NO		
84	72	13C4-PFBA	217.0 > 172.0	9634.416	9634.416	1.00	1.19	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9		16830.045	1.00					NO		
86	69	13C2-PFHxDA	815 > 769.7	871.602	16830.045	1.00	6.39	0.647	0.6	12.9	YES		
87	69	13C2-PFHxDA	815 > 769.7	871.602	16830.045	1.00	6.39	0.647	0.6	12.9	YES		
88	70	d7-N-MeFOSE	623.1 > 58.9	595.200	16830.045	1.00	6.29	0.442	16.0	10.7	YES		
89	71	d9-N-EtFOSE	639.2 > 58.8	604.432	16830.045	1.00	6.45	0.449	15.7	10.5	YES		
90	73	13C5-PFHxA	318.0 > 272.9	18966.732	18966.732	1.00	2.98	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	22283.285	22283.285	1.00	4.12	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1134.206	1134.206	1.00	3.75	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	17240.268	17240.268	1.00	4.57	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	2907.036	2907.036	1.00	4.65	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	19174.002	19174.002	1.00	4.95	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	16830.045	16830.045	1.00	5.27	12.500	12.5	100.0	NO		

Vista Analytical Laboratory

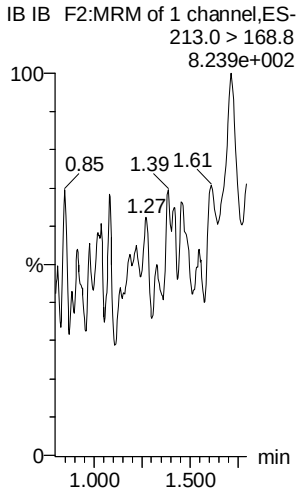
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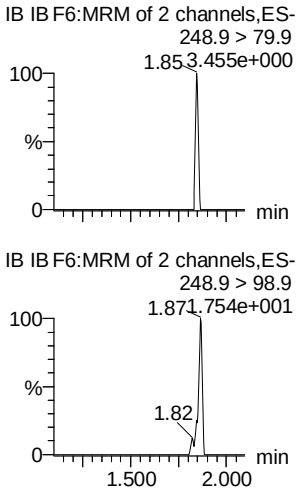
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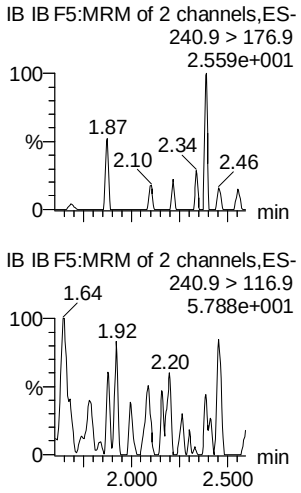
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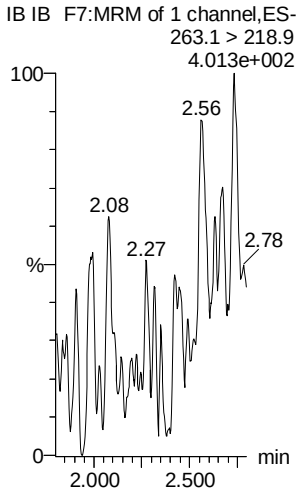
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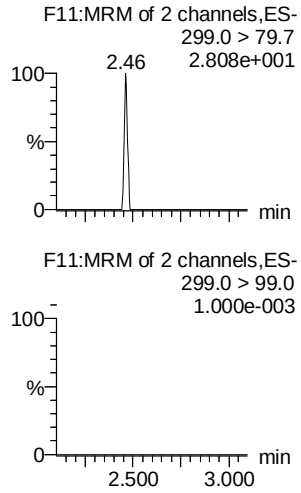
3:3 FTCA



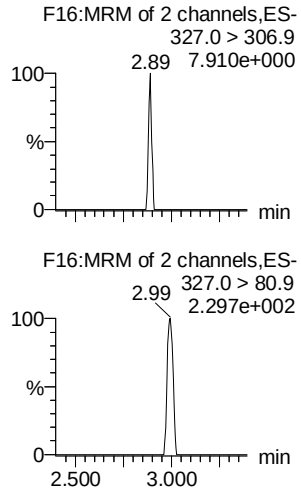
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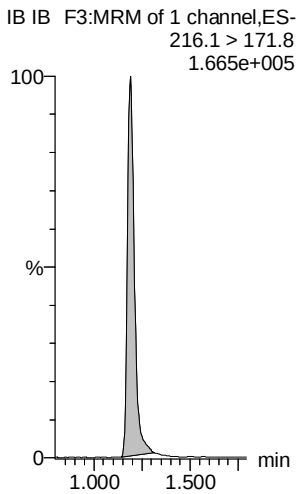
PFBS



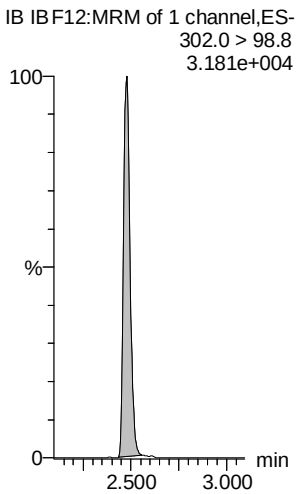
4:2 FTS



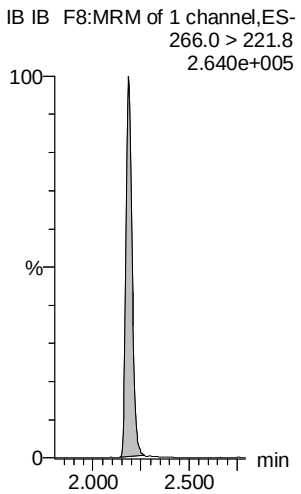
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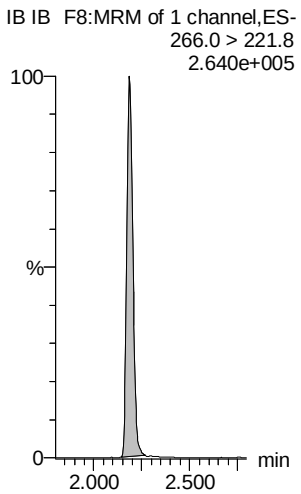
13C3-PFBS



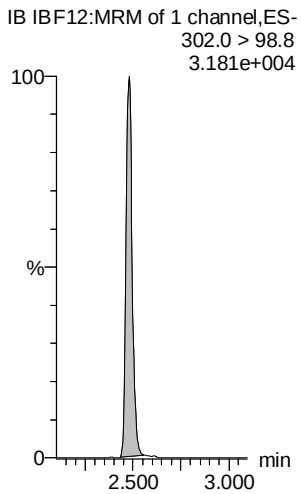
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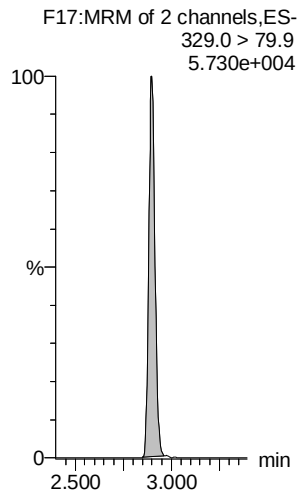
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

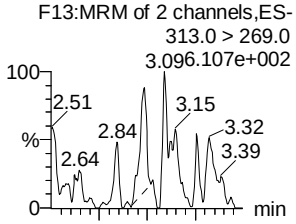


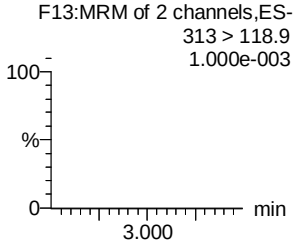
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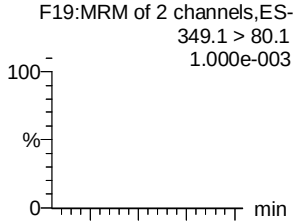
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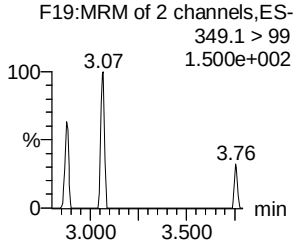
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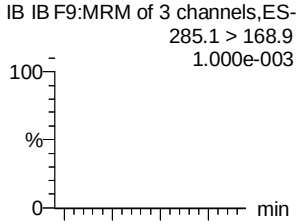


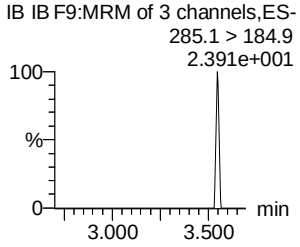
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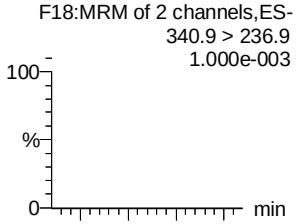


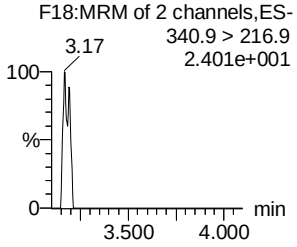
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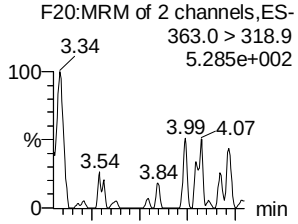


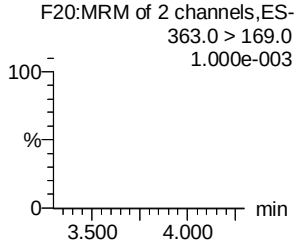
5:3 FTCA



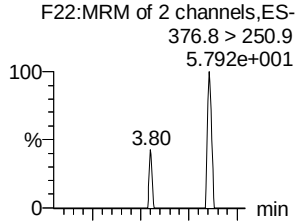


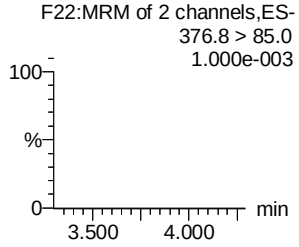
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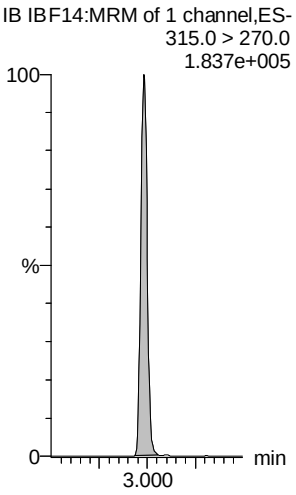


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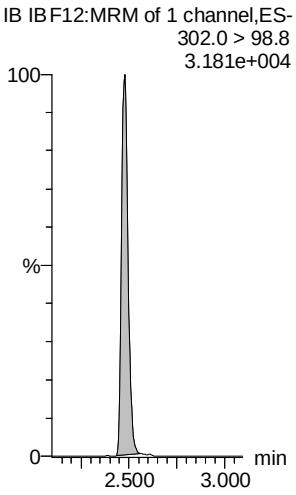




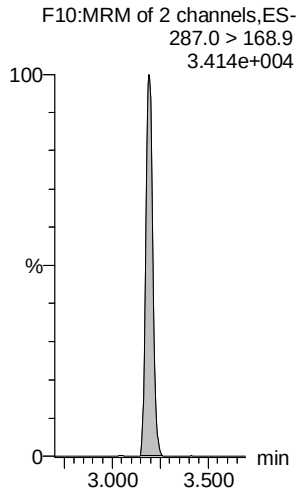
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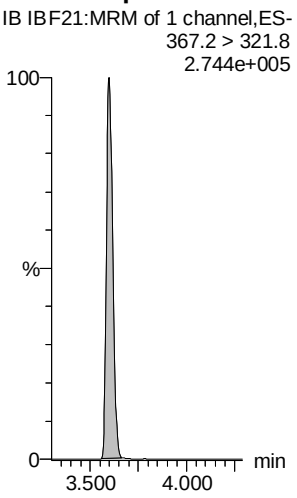
13C3-PFBS



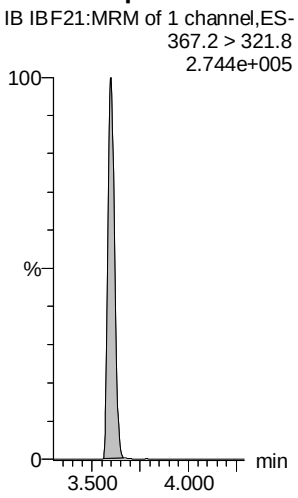
13C3-HFPO-DA



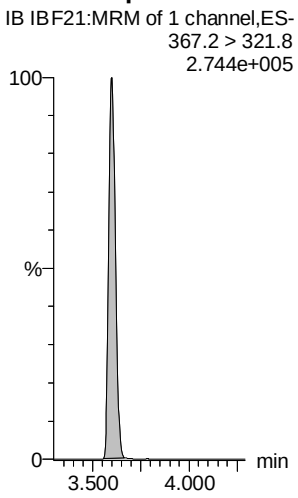
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

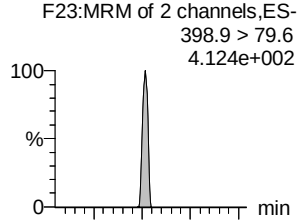


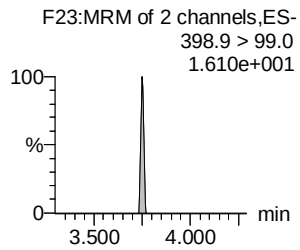
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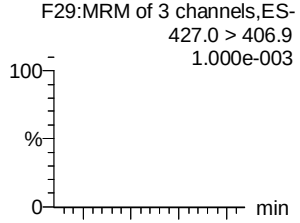
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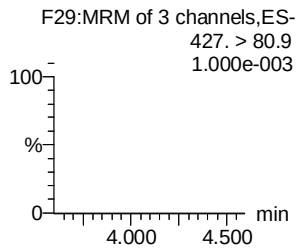
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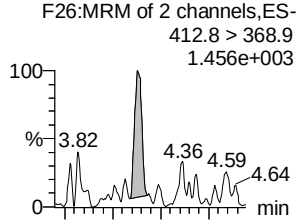


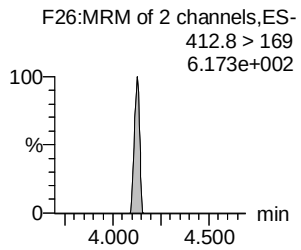
6:2 FTS



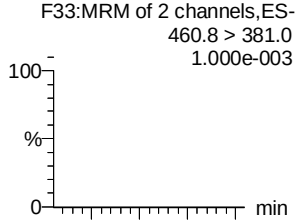


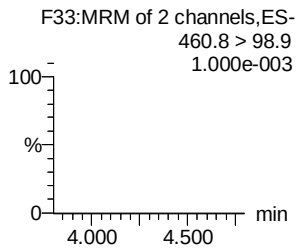
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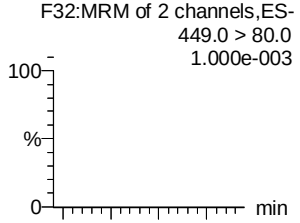


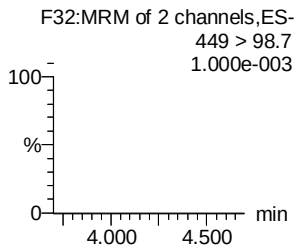
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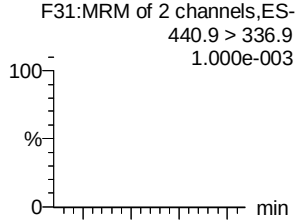


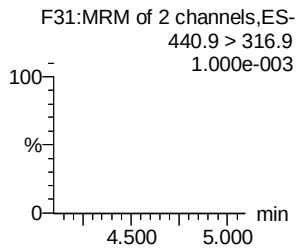
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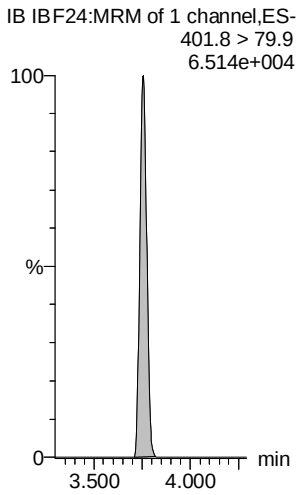


7:3 FTCA

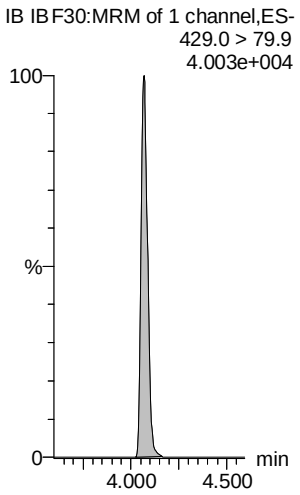




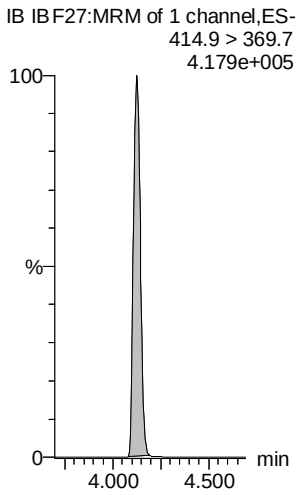
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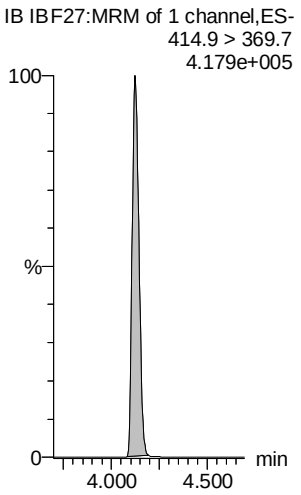
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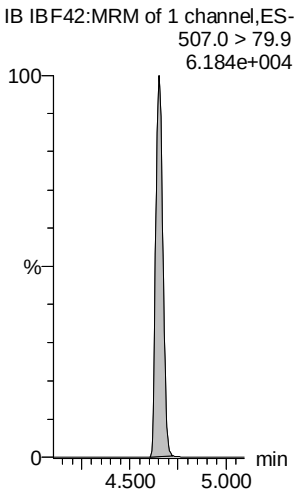
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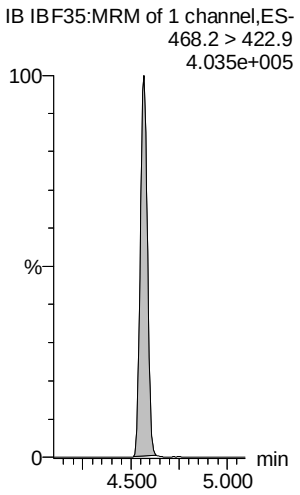
13C2-PFOA



13C8-PFOS



13C5-PFNA

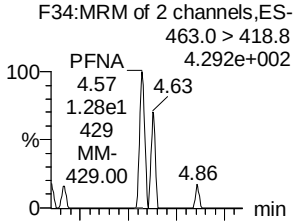


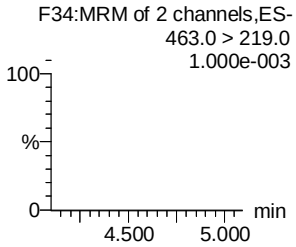
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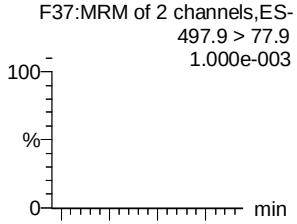
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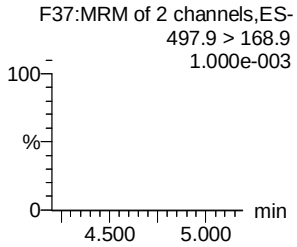
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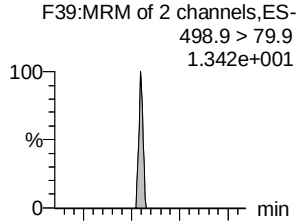


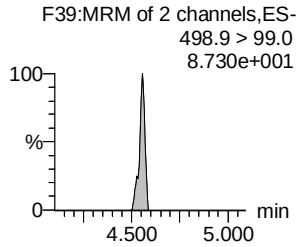
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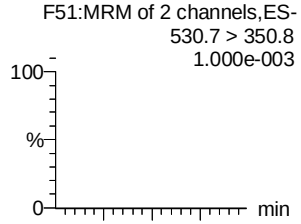


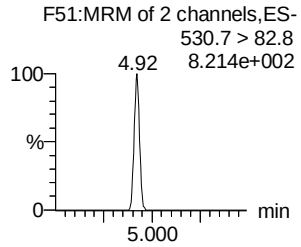
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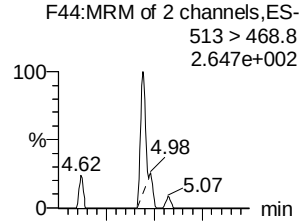


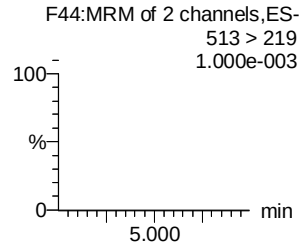
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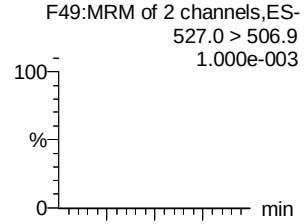


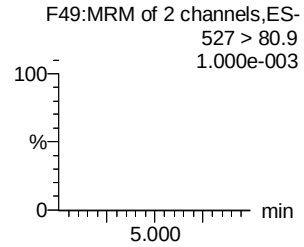
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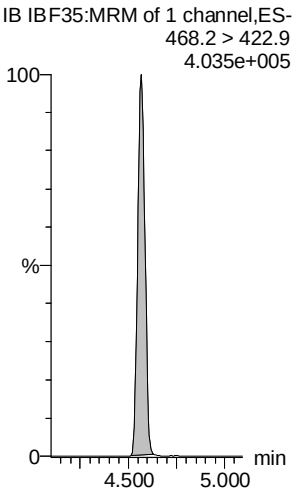


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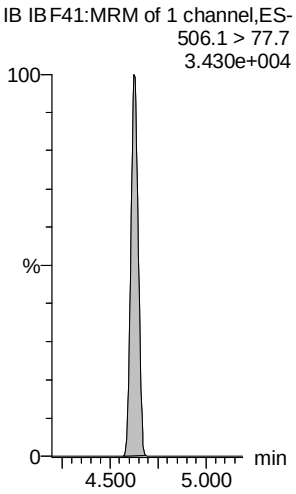




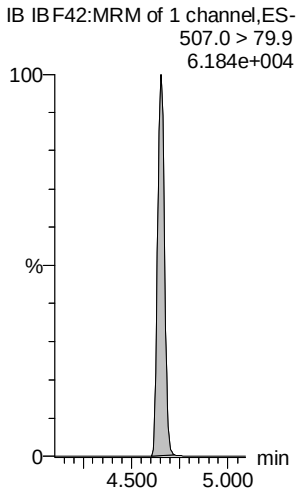
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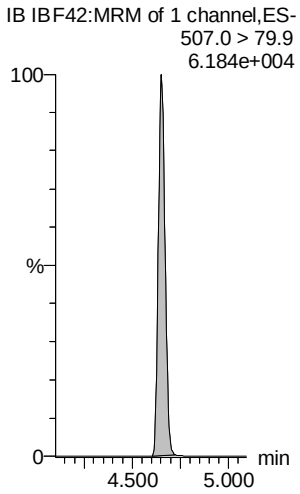
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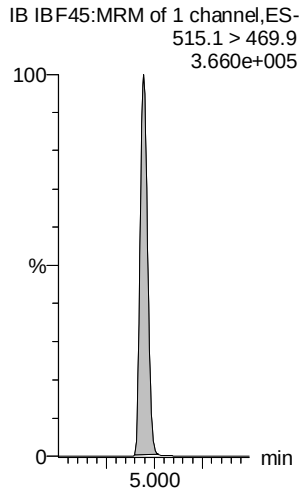
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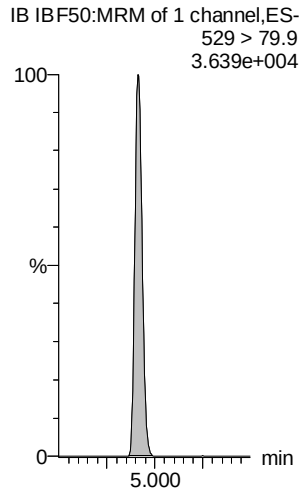
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

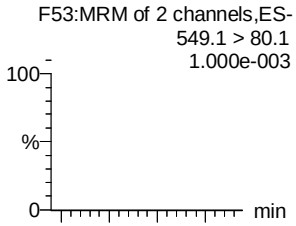


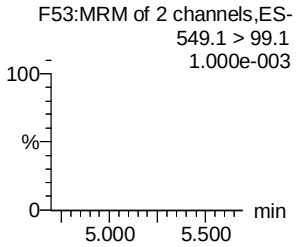
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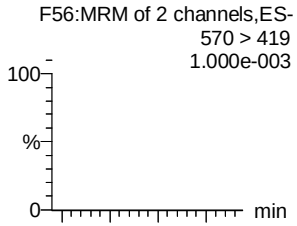
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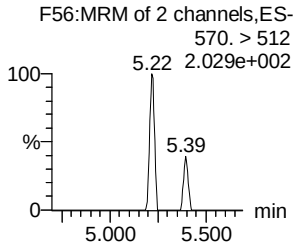
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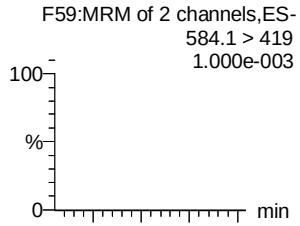


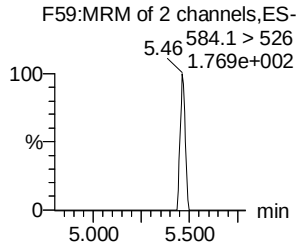
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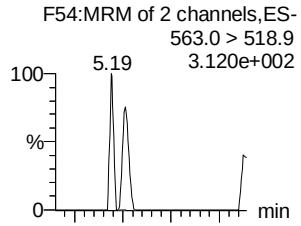


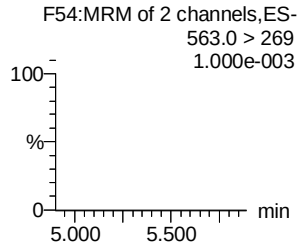
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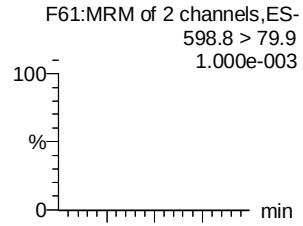


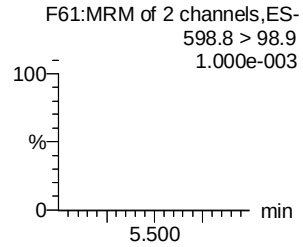
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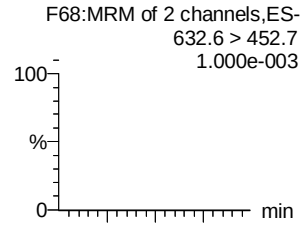


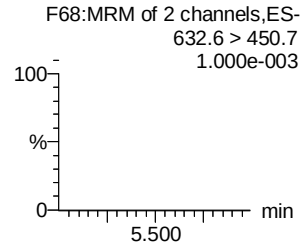
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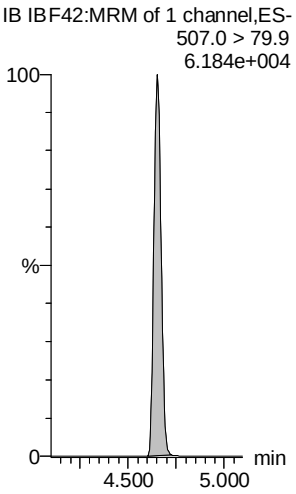


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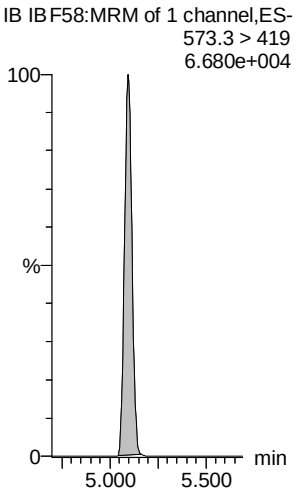




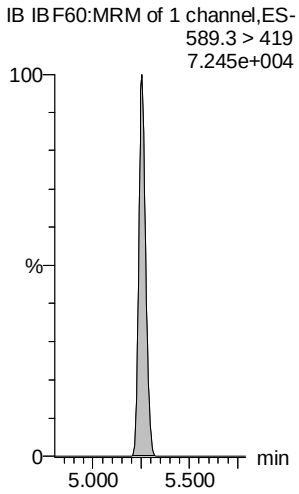
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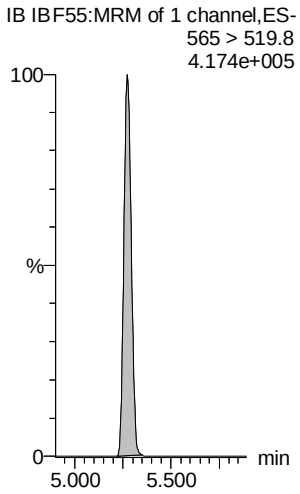
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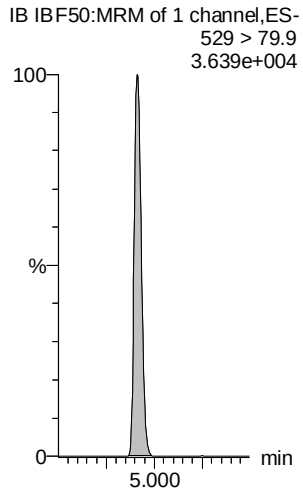
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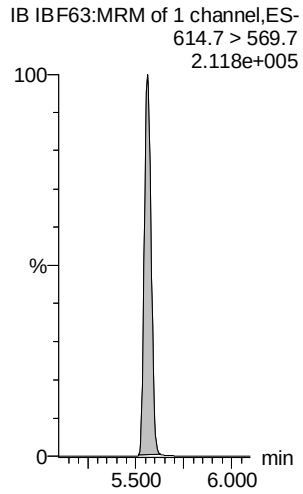
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13C2-8:2 FTS



13C2-PFDoA

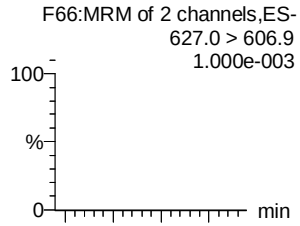


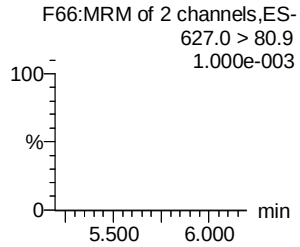
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Last Altered: Monday, July 08, 2019 13:20:55 Pacific Daylight Time
Printed: Monday, July 08, 2019 13:21:15 Pacific Daylight Time

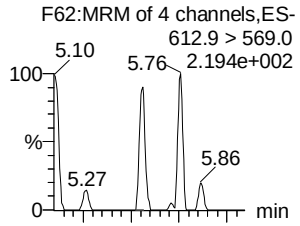
Name: 190708M1_3, Date: 08-Jul-2019, Time: 10:41:11, ID: IB, Description: IB

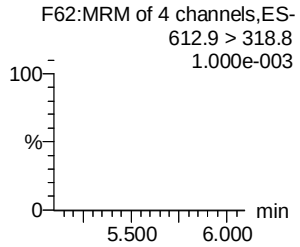
10:2 FTS



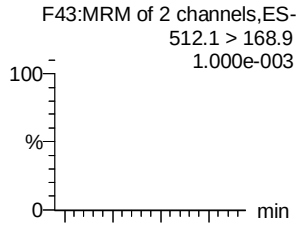


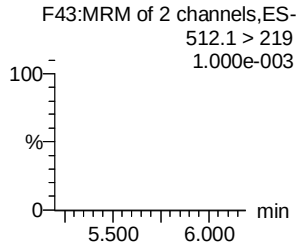
PFDoA



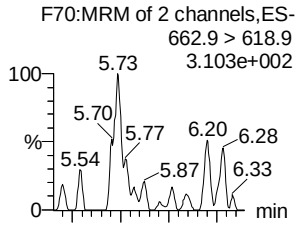


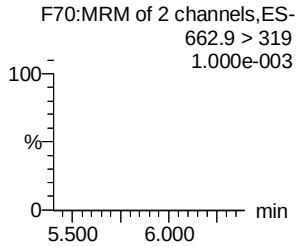
N-MeFOSA



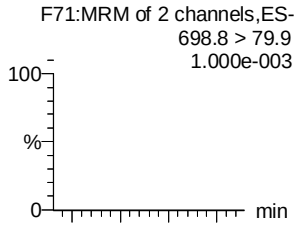


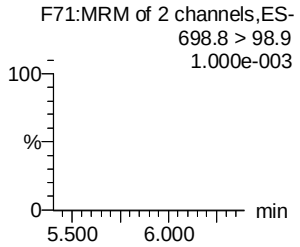
PFTrDA



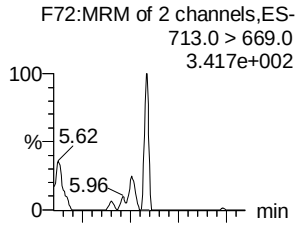


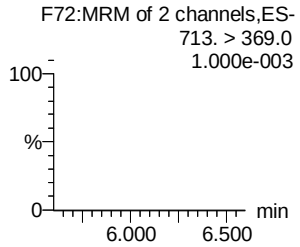
PFDoS



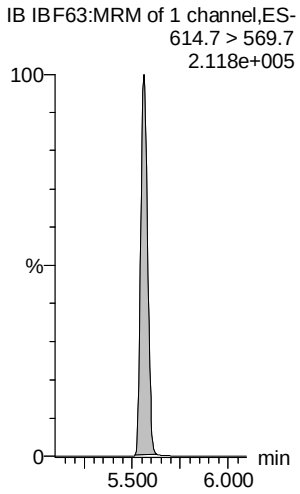


PFTeDA

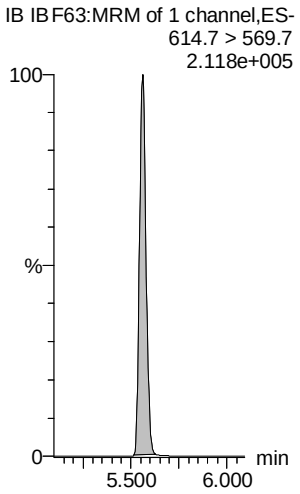




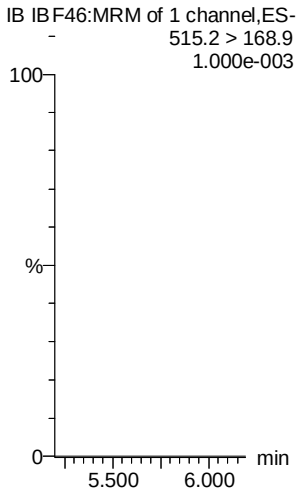
13C2-PFDoA



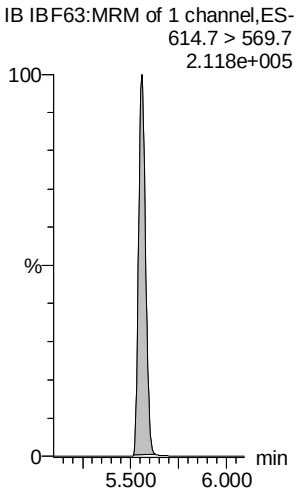
13C2-PFDoA



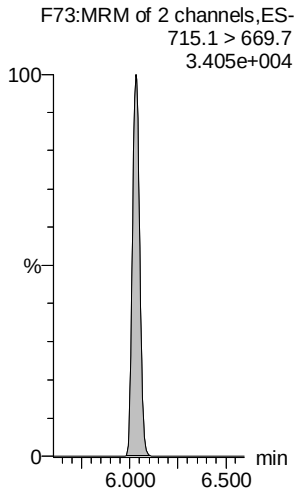
d3-N-MeFOSA



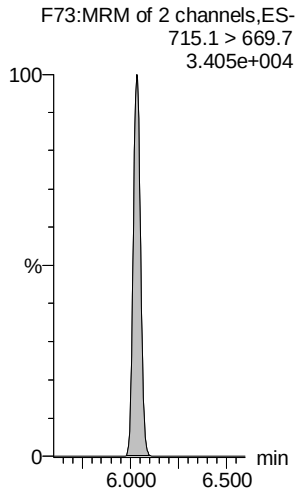
13C2-PFDoA



13C2-PFTeDA



13C2-PFTeDA

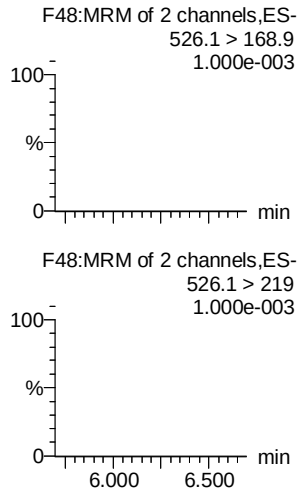


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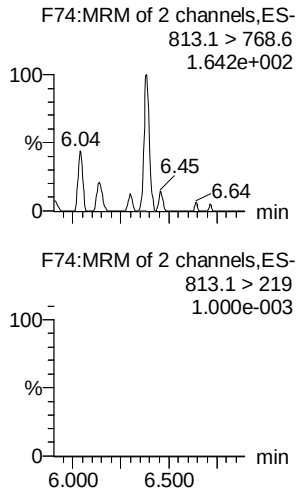
Last Altered: Monday, July 08, 2019 13:20:55 Pacific Daylight Time
Printed: Monday, July 08, 2019 13:21:15 Pacific Daylight Time

Name: 190708M1_3, Date: 08-Jul-2019, Time: 10:41:11, ID: IB, Description: IB

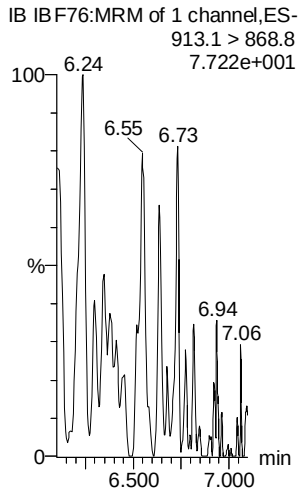
N-EtFOSA



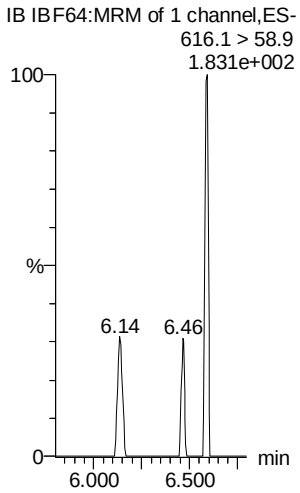
PFHxDA



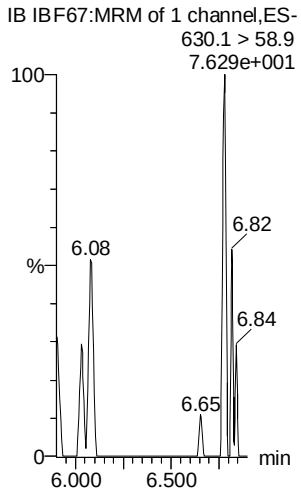
PFODA



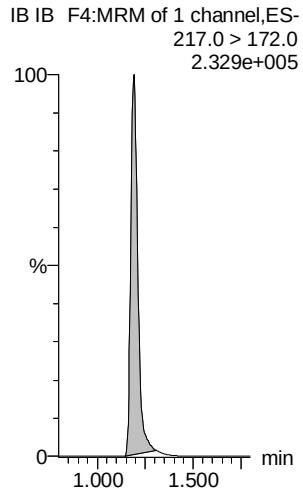
N-MeFOSE



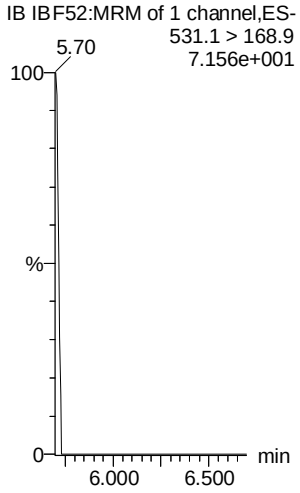
N-EtFOSE



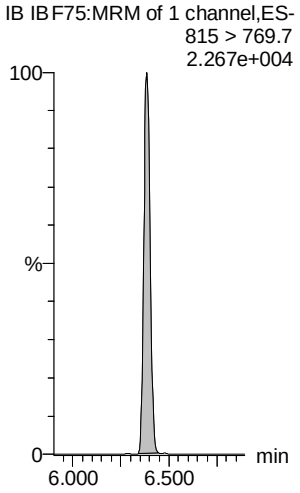
13C4-PFBA



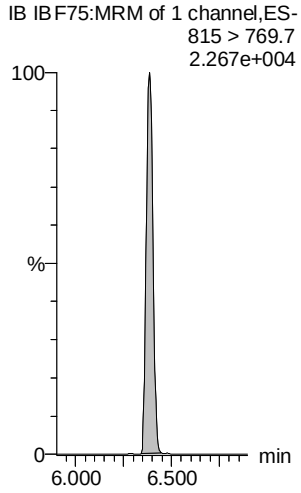
d5-N-ETFOSA



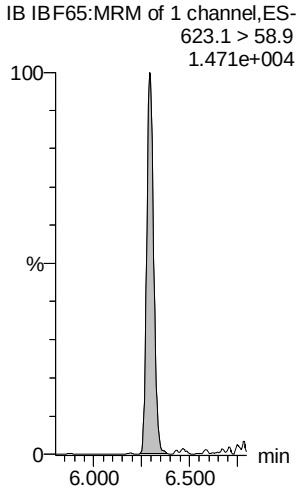
13C2-PFHxDA



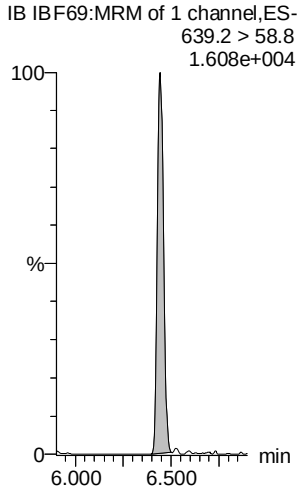
13C2-PFHxDA



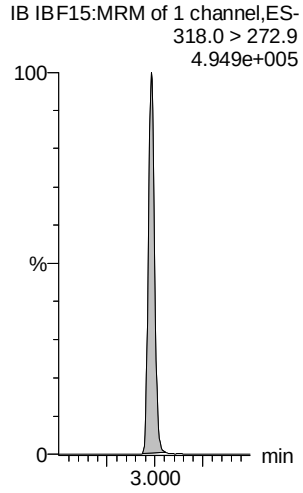
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

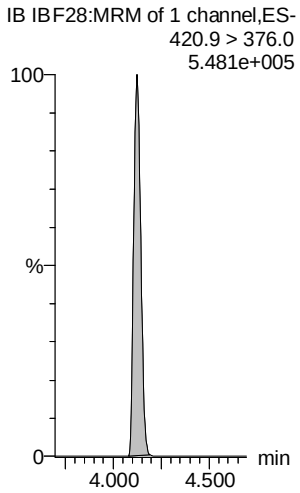


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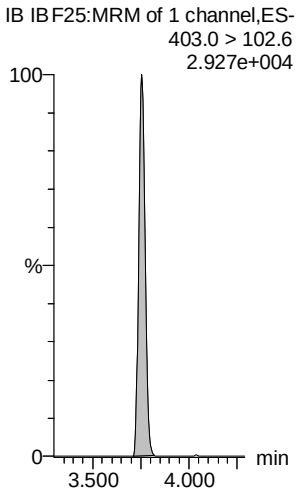
Last Altered: Monday, July 08, 2019 13:20:55 Pacific Daylight Time
Printed: Monday, July 08, 2019 13:21:15 Pacific Daylight Time

Name: 190708M1_3, Date: 08-Jul-2019, Time: 10:41:11, ID: IB, Description: IB

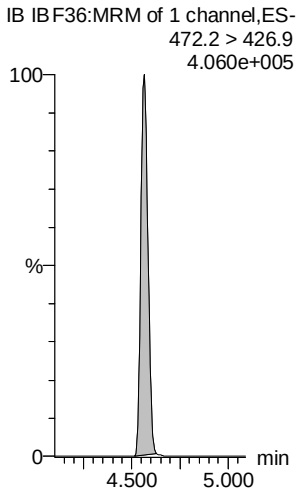
13C8-PFOA



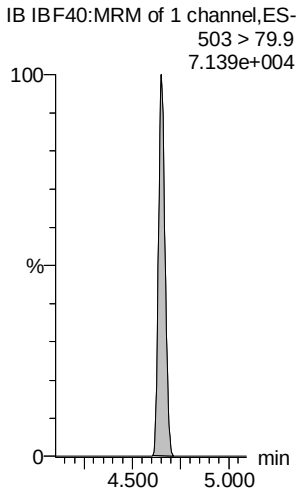
18O2-PFHxS



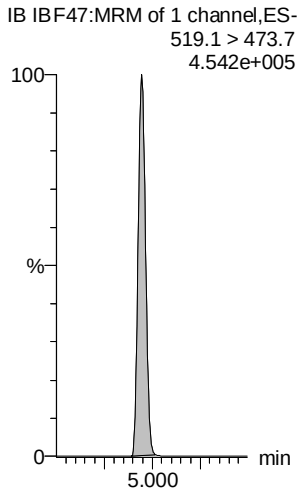
13C9-PFNA



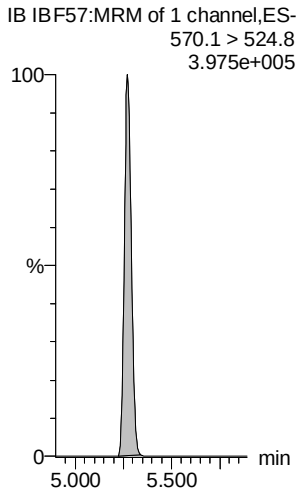
13C4-PFOS



13C6-PFDA



13C7-PFUdA



LC Calibration Standards Review Checklist Q4

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	N/A
Calibration ID: ST190708M3-1	L M H	☑	☑ (A)	☑	☑	☑	☑	☐
Calibration ID: -2	L M H	☑	☑	☑	☑	☑	☑	☐
Calibration ID: -3	L M H	☑	☑ (B)	☑	☑	☑	☑	☐
Calibration ID: -4	L M H	☑	☑	☑	☑	☑	☑	☑
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐ N/A CdH 7/9/19	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 7/3/19

Run Log Present: ☑

of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

All Branches in Acquisition Window ☑

IIS Area Saved ☑

Reviewed By: JM 7/9/19
Initials/Date

Comments:

(A) 7:3 FTCA, MeFOSA >130%
(B) 7:3 FTCA >130%

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190708M3\190708M3-17.qld

Last Altered: Tuesday, July 09, 2019 07:35:04 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:52:22 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070819M3.mdb 09 Jul 2019 07:35:03
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.20	1.20			
2	PFPrS	1.57	1.57	2.340	2.340	NO
3	3:3 FTCA	2.05	2.04	1.975	1.975	NO
4	PFPeA	2.19	2.19			
5	PFBS	2.48	2.49	2.758	2.758	NO
6	4:2 FTS	2.90	2.90	1.650	1.650	NO
7	PFHxA	2.98	2.98	16.376	16.376	NO
8	PFPeS	3.19	3.19	1.585	1.585	NO
9	HFPO-DA	3.19	3.20	2.369	2.369	NO
10	5:3 FTCA	3.53	3.54	1.647	1.647	NO
11	PFHpA	3.61	3.60	11.491	11.491	NO
12	ADONA	3.72	3.72	3.484	3.484	NO
13	L-PFHxS	3.76	3.76	1.824	1.824	NO
14	6:2 FTS	4.07	4.07	2.220	2.220	NO
15	L-PFOA	4.13	4.13	3.434	3.434	NO
16	PFecHS	4.15	4.15	0.873	0.873	NO
17	PFHpS	4.25	4.25	1.977	1.977	NO
18	7:3 FTCA	4.56	4.55	1.709	1.709	NO
19	PFNA	4.57	4.57	4.542	4.542	NO
20	PFOSA	4.63	4.63	27.517	27.517	NO
21	L-PFOS	4.66	4.66	2.081	2.081	NO
22	9Cl-PF30NS	4.88	4.88	19.380	19.380	NO
23	PFDA	4.95	4.95	5.927	5.927	NO
24	8:2 FTS	4.92	4.92	1.111	1.111	NO
25	PFNS	5.01	5.01	1.509	1.509	NO
26	L-MeFOSAA	5.10	5.10	2.558	2.558	NO

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190708M3\190708M3-17.qld

Last Altered: Tuesday, July 09, 2019 07:35:04 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:52:35 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070819M3.mdb 09 Jul 2019 07:35:03
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.26	5.26	1.405	1.405	NO
2	PFUdA	5.28	5.28	9.293	9.293	NO
3	PFDS	5.33	5.33	1.733	1.733	NO
4	11Cl-PF30UdS	5.50	5.50	4.645	4.645	NO
5	10:2 FTS	5.55	5.55	1.593	1.593	NO
6	PFDoA	5.56	5.56	8.234	8.234	NO
7	N-MeFOSA	5.70	5.70	1.487	1.487	NO
8	PFTrDA	5.81	5.81	24.466	24.466	NO
9	PFDoS	5.84	5.84	1.774	1.774	NO
10	PFTeDA	6.04	6.04	13.778	13.778	NO
11	N-EtFOSA	6.12	6.12	1.743	1.743	NO
12	PFHxDA	6.39	6.39	36.823	36.823	NO
13	PFODA	6.63	6.63			
14	N-MeFOSE	6.30	6.30			
15	N-EtFOSE	6.46	6.46			

Dataset: Untitled

Ⓐ 7:3 FTCA, MeFOSA >130%.

Last Altered: Tuesday, July 09, 2019 07:48:28 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:49:01 Pacific Daylight Time

JM 7/9/19

Name: 190708M3_2, Date: 08-Jul-2019, Time: 15:45:19, ID: ST190708M3-1 PFC CS0 19F2414, Description: PFC CS0 19F2414

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	376.318	4234.132	1.00	1.20	1.111	0.9	94.8	NO		
2	2	PFPrS	248.9 > 79.9	78.827	1270.700	1.00	1.56	0.775	0.8	79.3	NO	2.181	NO
3	3	3:3 FTCA	240.9 > 176.9	13.599	10190.419	1.00	2.03	0.017	0.7	74.1	NO	2.693	NO
4	4	PFPeA	263.1 > 218.9	751.583	10190.419	1.00	2.19	0.922	1.0	98.5	NO		
5	5	PFBS	299.0 > 79.7	221.995	1270.700	1.00	2.48	2.184	1.0	97.1	NO	2.944	NO
6	6	4:2 FTS	327.0 > 306.9	387.122	2183.030	1.00	2.90	2.217	1.0	100.7	NO	1.764	NO
7	47	13C3-PFBA	216.1 > 171.8	4234.132	5810.050	1.00	1.20	9.109	12.5	99.7	NO		
8	49	13C3-PFBS	302.0 > 98.8	1270.700	1215.927	1.00	2.48	13.063	12.8	102.6	NO		
9	48	13C3-PFPeA	266.0 > 221.8	10190.419	19959.393	1.00	2.19	6.382	12.9	103.5	NO		
10	48	13C3-PFPeA	266.0 > 221.8	10190.419	19959.393	1.00	2.19	6.382	12.9	103.5	NO		
11	49	13C3-PFBS	302.0 > 98.8	1270.700	1215.927	1.00	2.48	13.063	12.8	102.6	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2183.030	1215.927	1.00	2.90	22.442	12.8	102.2	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0	1448.510	8120.502	1.00	2.98	0.892	1.0	99.5	NO	26.170	YES
15	8	PFPeS	349.1>80.1	163.415	1270.700	1.00	3.19	1.608	0.9	86.7	NO	1.371	NO
16	9	HFPO-DA	285.1 > 168.9	153.077	1479.431	1.00	3.19	0.517	1.0	98.3	NO	2.596	NO
17	10	5:3 FTCA	340.9 > 236.9	128.831	10752.688	1.00	3.53	0.150	1.2	123.0	NO	1.728	NO
18	11	PFHpA	363.0 > 318.9	1099.132	10752.688	1.00	3.60	1.278	1.0	103.2	NO	17.389	YES
19	12	ADONA	376.8 > 250.9	2397.372	10752.688	1.00	3.72	2.787	1.0	95.4	NO	3.256	NO
20	52	13C2-PFHxA	315.0 > 270.0	8120.502	19959.393	1.00	2.98	5.086	5.1	101.9	NO		
21	49	13C3-PFBS	302.0 > 98.8	1270.700	1215.927	1.00	2.48	13.063	12.8	102.6	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1479.431	19959.393	1.00	3.19	0.927	5.1	102.2	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10752.688	19959.393	1.00	3.60	6.734	12.6	100.8	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10752.688	19959.393	1.00	3.60	6.734	12.6	100.8	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10752.688	19959.393	1.00	3.60	6.734	12.6	100.8	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	173.330	2716.248	1.00	3.76	0.798	1.0	95.6	NO	1.560	NO
28	15	6:2 FTS	427.0 > 406.9	454.880	1839.561	1.00	4.07	3.091	1.0	103.7	NO	2.310	NO
29	16	L-PFOA	412.8 > 368.9	2208.476	18284.924	1.00	4.13	1.510	1.0	103.3	NO	3.935	NO
30	18	PFecHS	460.8 > 381.0	240.706	18284.924	1.00	4.14	0.165	0.9	93.5	NO	0.709	NO
31	19	PFHpS	449.0 > 80.0	232.503	2796.097	1.00	4.24	1.039	1.2	120.4	NO	2.978	YES
32	20	7:3 FTCA	440.9 > 336.9	161.219	18205.229	1.00	4.55	0.111	1.6	156.6Ⓐ	YES	1.877	NO
33	54	13C3-PFHxS	401.8 > 79.9	2716.248	1215.927	1.00	3.76	27.924	12.6	100.4	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1839.561	3117.382	1.00	4.07	7.376	12.6	100.9	NO		
35	58	13C2-PFOA	414.9 > 369.7	18284.924	23784.373	1.00	4.13	9.610	13.0	103.7	NO		
36	58	13C2-PFOA	414.9 > 369.7	18284.924	23784.373	1.00	4.13	9.610	13.0	103.7	NO		

CGH 7/9/19

Dataset: Untitled

Last Altered: Tuesday, July 09, 2019 07:48:28 Pacific Daylight Time
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Name: 190708M3_2, Date: 08-Jul-2019, Time: 15:45:19, ID: ST190708M3-1 PFC CS0 19F2414, Description: PFC CS0 19F2414

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	2796.097	3117.382	1.00	4.66	11.212	11.1	88.7	NO		
38	56	13C5-PFNA	468.2 > 422.9	18205.229	18039.896	1.00	4.57	12.615	12.7	101.3	NO		
39	-1												
40	21	PFNA	463.0 > 418.8	1776.366	18205.229	1.00	4.57	1.220	1.1	106.9	NO	4.740	NO
41	22	PFOSA	497.9 > 77.9	297.882	3593.361	1.00	4.63	1.036	0.9	92.1	NO	62.541	YES
42	23	L-PFOS	498.9 > 79.9	233.143	2796.097	1.00	4.66	1.042	1.0	99.8	NO	1.630	NO
43	25	9Cl-PF30NS	530.7 > 350.8	411.832	2796.097	1.00	4.87	1.841	1.0	99.0	NO	7.407	YES
44	26	PFDA	513 > 468.8	1929.826	17956.480	1.00	4.95	1.343	0.9	91.3	NO	6.186	NO
45	27	8:2 FTS	527.0 > 506.9	315.622	1729.273	1.00	4.92	2.281	1.2	118.1	NO	1.256	NO
46	56	13C5-PFNA	468.2 > 422.9	18205.229	18039.896	1.00	4.57	12.615	12.7	101.3	NO		
47	57	13C8-PFOSA	506.1 > 77.7	3593.361	23213.117	1.00	4.63	1.935	15.0	119.7	NO		
48	59	13C8-PFOS	507.0 > 79.9	2796.097	3117.382	1.00	4.66	11.212	11.1	88.7	NO		
49	59	13C8-PFOS	507.0 > 79.9	2796.097	3117.382	1.00	4.66	11.212	11.1	88.7	NO		
50	60	13C2-PFDA	515.1 > 469.9	17956.480	22490.613	1.00	4.95	9.980	12.6	100.7	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1729.273	3117.382	1.00	4.91	6.934	12.1	96.6	NO		
52	-1												
53	28	PFNS	549.1 > 80.1	135.393	2796.097	1.00	5.01	0.605	0.9	91.2	NO	1.385	NO
54	29	L-MeFOSAA	570 > 419	707.913	3562.832	1.00	5.10	2.484	1.0	104.3	NO	2.313	NO
55	31	L-EtFOSAA	584.1 > 419	467.035	4116.971	1.00	5.26	1.418	0.9	89.7	NO	1.349	NO
56	33	PFUdA	563.0 > 518.9	1965.783	24335.410	1.00	5.28	1.010	1.0	102.1	NO	12.677	NO
57	34	PFDS	598.8 > 79.9	269.637	1729.273	1.00	5.33	1.949	1.1	112.5	NO	2.653	YES
58	35	11Cl-PF30UdS	632.6 > 452.7	100.548	22974.096	1.00	5.49	0.055	0.9	93.9	NO	7.157	YES
59	59	13C8-PFOS	507.0 > 79.9	2796.097	3117.382	1.00	4.66	11.212	11.1	88.7	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	3562.832	23213.117	1.00	5.09	1.919	12.1	97.0	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	4116.971	23213.117	1.00	5.25	2.217	12.7	101.3	NO		
62	63	13C2-PFUdA	565 > 519.8	24335.410	23213.117	1.00	5.28	13.104	12.2	97.9	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1729.273	3117.382	1.00	4.91	6.934	12.1	96.6	NO		
64	65	13C2-PFDoA	614.7 > 569.7	22974.096	22490.613	1.00	5.56	12.769	11.1	88.8	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9	394.190	1729.273	1.00	5.55	2.849	1.2	122.8	NO	1.721	NO
67	37	PFDoA	612.9 > 569.0	1868.206	22974.096	1.00	5.56	1.016	1.0	95.8	NO	9.899	NO
68	38	N-MeFOSA	512.1 > 168.9	422.694	8717.988	1.00	5.69	7.273	6.7	133.0 (A)	YES	1.581	NO
69	39	PFTrDA	662.9 > 618.9	2117.952	22974.096	1.00	5.81	1.152	1.0	103.8	NO	24.228	NO
70	40	PFDoS	698.8 > 79.9	178.457	16088.056	1.00	5.84	0.139	0.9	93.8	NO	1.965	NO
71	41	PFTeDA	713.0 > 669.0	1781.495	16088.056	1.00	6.03	1.384	1.0	98.3	NO	20.919	YES
72	65	13C2-PFDoA	614.7 > 569.7	22974.096	22490.613	1.00	5.56	12.769	11.1	88.8	NO		

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Name: 190708M3_2, Date: 08-Jul-2019, Time: 15:45:19, ID: ST190708M3-1 PFC CS0 19F2414, Description: PFC CS0 19F2414

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	22974.096	22490.613	1.00	5.56	12.769	11.1	88.8	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	8717.988	23213.117	1.00	5.72	4.695	134.4	89.6	NO		
75	65	13C2-PFDoA	614.7 > 569.7	22974.096	22490.613	1.00	5.56	12.769	11.1	88.8	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	16088.056	23213.117	1.00	6.03	8.663	12.2	97.9	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	16088.056	23213.117	1.00	6.03	8.663	12.2	97.9	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9	423.480	13365.146	1.00	6.12	4.753	5.0	99.9	NO	1.748	NO
80	43	PFHxDA	813.1 > 768.6	1190.803	7747.359	1.00	6.39	0.769	1.1	105.3	NO	42.900	NO
81	44	PFODA	913.1 > 868.8	1084.580	7747.359	1.00	6.63	0.700	1.0	97.3	NO		
82	45	N-MeFOSE	616.1 > 58.9	275.132	8438.806	1.00	6.30	4.890	4.6	91.8	NO		
83	46	N-EtFOSE	630.1 > 58.9	370.312	7940.477	1.00	6.45	6.995	5.3	105.8	NO		
84	72	13C4-PFBA	217.0 > 172.0	5810.050	5810.050	1.00	1.20	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	13365.146	23213.117	1.00	6.14	7.197	157.2	104.8	NO		
86	69	13C2-PFHxDA	815 > 769.7	7747.359	23213.117	1.00	6.39	4.172	4.1	82.9	NO		
87	69	13C2-PFHxDA	815 > 769.7	7747.359	23213.117	1.00	6.39	4.172	4.1	82.9	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	8438.806	23213.117	1.00	6.30	4.544	164.7	109.8	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	7940.477	23213.117	1.00	6.45	4.276	149.7	99.8	NO		
90	73	13C5-PFHxA	318.0 > 272.9	19959.393	19959.393	1.00	2.98	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	23784.373	23784.373	1.00	4.12	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1215.927	1215.927	1.00	3.76	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	18039.896	18039.896	1.00	4.57	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	3117.382	3117.382	1.00	4.65	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	22490.613	22490.613	1.00	4.95	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	23213.117	23213.117	1.00	5.27	12.500	12.5	100.0	NO		

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Dataset: Untitled

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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070819M3.mdb 09 Jul 2019 07:35:03
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	190708M3_1	IPA	08-Jul-19	15:34:44
2	2	190708M3_2	ST190708M3-1 PFC CS0 19F2414	08-Jul-19	15:45:19
3	3	190708M3_3	IB	08-Jul-19	15:58:50
4	4	190708M3_4	B9G0050-BS1 OPR 0.25	08-Jul-19	16:09:25
5	5	190708M3_5	B9G0050-BSD1 LCSD 0.25	08-Jul-19	16:20:01
6	6	190708M3_6	B9G0050-BLK1 Method Blank 0.25	08-Jul-19	16:30:39
7	7	190708M3_7	1901857-01 SAOA-B05-GW 0.19379	08-Jul-19	16:41:12
8	8	190708M3_8	1901857-04 SAOA-B09-GW 0.11754	08-Jul-19	16:51:50
9	9	190708M3_9	1901857-05 FRB-06262019 0.12019	08-Jul-19	17:02:20
10	10	190708M3_10	1901857-06 EB-06262019 0.11814	08-Jul-19	17:12:58
11	11	190708M3_11	1901857-09 SAOA-B11-GW 0.12366	08-Jul-19	17:23:32
12	12	190708M3_12	1901857-11 EB-06272019 0.11737	08-Jul-19	17:34:11
13	13	190708M3_13	1901857-12 FRB-06272019 0.11771	08-Jul-19	17:44:43
14	14	190708M3_14	1901859-05 EB03-062119 0.25551	08-Jul-19	17:55:22
15	15	190708M3_15	1901860-11 EB04-062719 0.23415	08-Jul-19	18:05:55
16	16	190708M3_16	IPA	08-Jul-19	18:16:33
17	17	190708M3_17	ST190708M3-2 PFC CS3 19F2417	08-Jul-19	18:27:06
18	18	190708M3_18	IPA	08-Jul-19	18:37:44
19	19	190708M3_19	B9G0016-BS1 OPR 0.25	08-Jul-19	18:48:18
20	20	190708M3_20	B9G0016-BSD1 LCSD 0.25	08-Jul-19	18:58:56
21	21	190708M3_21	B9G0016-BLK1 Method Blank 0.25	08-Jul-19	19:09:28
22	22	190708M3_22	1901782-01 REEPEF1658 FS 0.11714	08-Jul-19	19:20:07
23	23	190708M3_23	1901784-01 BWS-1 0.2482	08-Jul-19	19:30:39
24	24	190708M3_24	1901784-02 FRB-1 0.25006	08-Jul-19	19:41:18
25	25	190708M3_25	1901785-01 IA-2-REF3-21062019-10-00-RB 0.24805	08-Jul-19	19:51:50
26	26	190708M3_26	1901785-02 IA-2-REF3-21062019-10-05-FB 0.24769	08-Jul-19	20:02:29
27	27	190708M3_27	1901831-01 REEPAR1683FS 0.11262	08-Jul-19	20:13:08
28	28	190708M3_28	1901872-01 REEPDW1560FS 0.12023	08-Jul-19	20:23:40
29	29	190708M3_29	B9G0017-BS1 OPR 0.25	08-Jul-19	20:34:18
30	30	190708M3_30	B9G0017-BLK1 Method Blank 0.25	08-Jul-19	20:44:52
31	31	190708M3_31	1901790-01 1906A01-01A 0.22707	08-Jul-19	20:55:30
32	32	190708M3_32	1901790-02 1906A01-02A 0.25672	08-Jul-19	21:06:03

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Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
33	33	190708M3_33	1901791-01 1906B77-01A 0.22629	08-Jul-19	21:16:42
34	34	190708M3_34	IPA	08-Jul-19	21:27:15
35	35	190708M3_35	ST190708M3-3 PFC CS3 19F2417	08-Jul-19	21:37:53
36	36	190708M3_36	IPA	08-Jul-19	21:48:26
37	37	190708M3_37	1901791-02 1906B77-02A 0.25099	08-Jul-19	21:59:04
38	38	190708M3_38	1901792-01 GW1591621906241235RAP 0.23602	08-Jul-19	22:09:37
39	39	190708M3_39	1901887-01@5X Ivyland Mop Water 0.24039	08-Jul-19	22:20:15
40	40	190708M3_40	1901887-02@20X Feasterville Mop Water 0.22776	08-Jul-19	22:30:48
41	41	190708M3_41	IPA	08-Jul-19	22:41:26
42	42	190708M3_42	ST190708M3-4 PFC CS3 19F2417	08-Jul-19	22:52:00
43	43	190708M3_43	IPA	08-Jul-19	23:02:38

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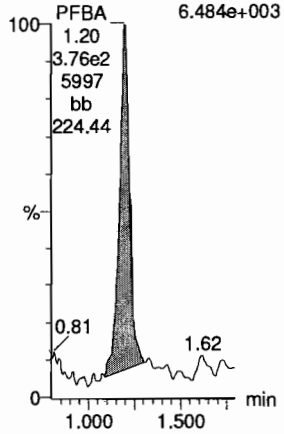
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Last Altered: Tuesday, July 09, 2019 07:48:28 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:49:01 Pacific Daylight Time

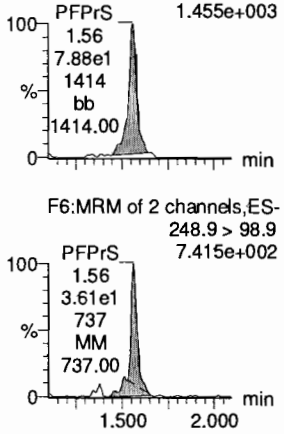
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Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190708M3_2, Date: 08-Jul-2019, Time: 15:45:19, ID: ST190708M3-1 PFC CS0 19F2414, Description: PFC CS0 19F2414

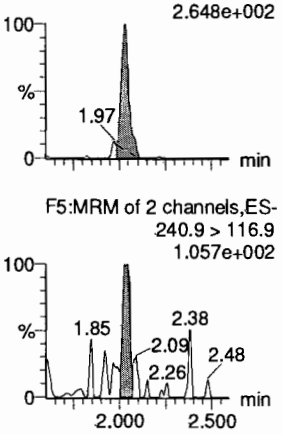
PFBA



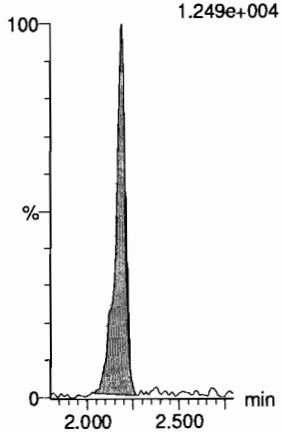
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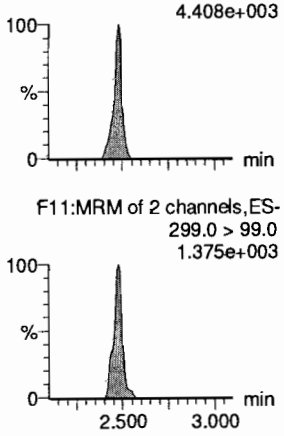
3:3 FTCA



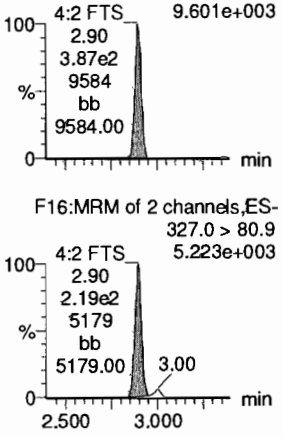
PFPeA



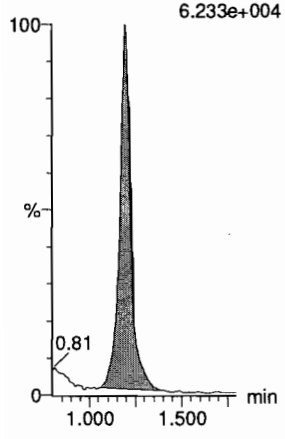
PFBS



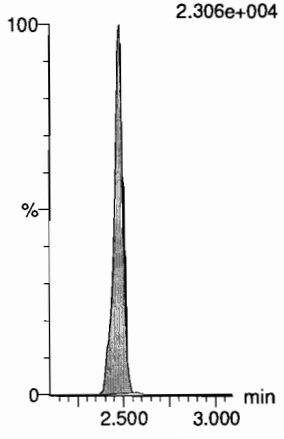
4:2 FTS



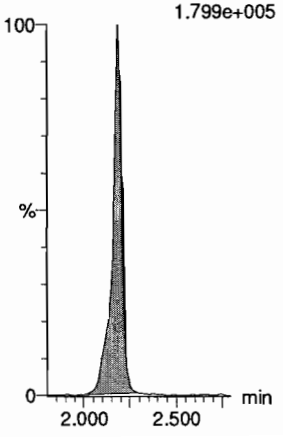
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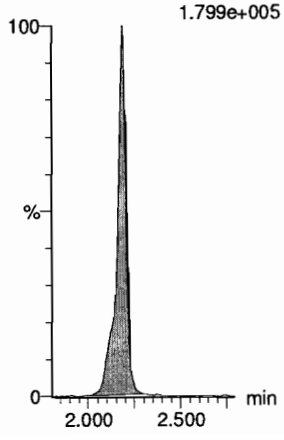
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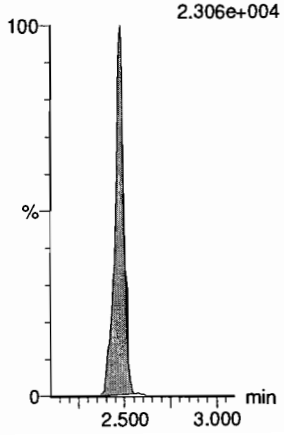
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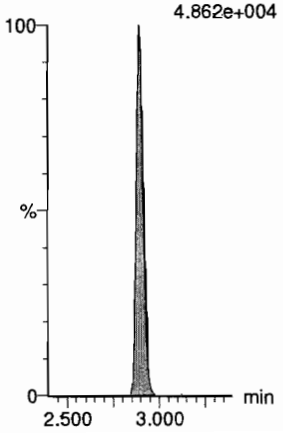
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13C3-PFBS



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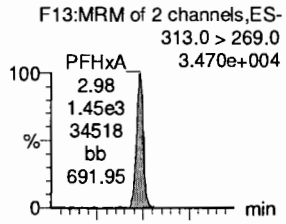
Vista Analytical Laboratory

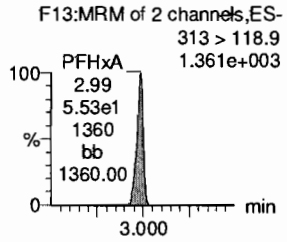
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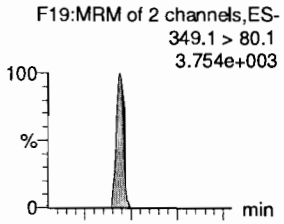
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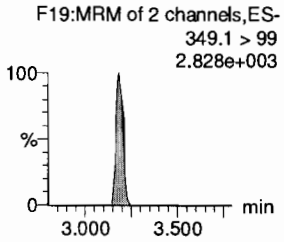
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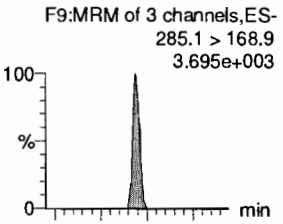


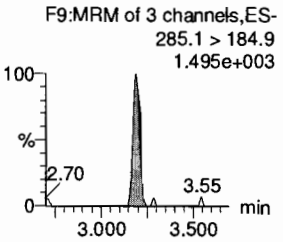
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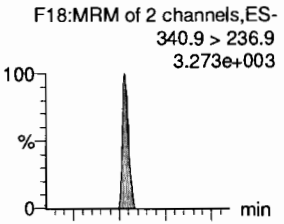


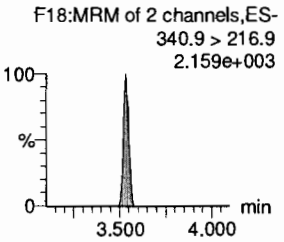
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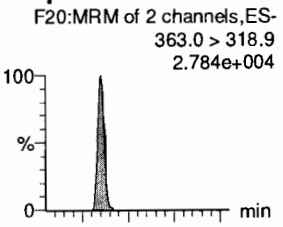


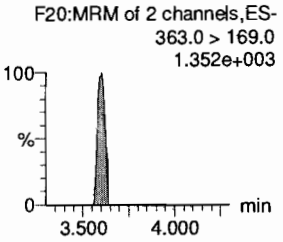
5:3 FTCA



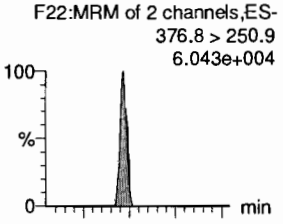


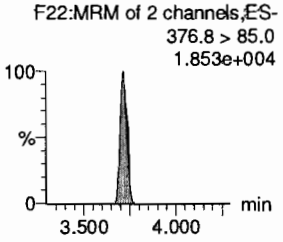
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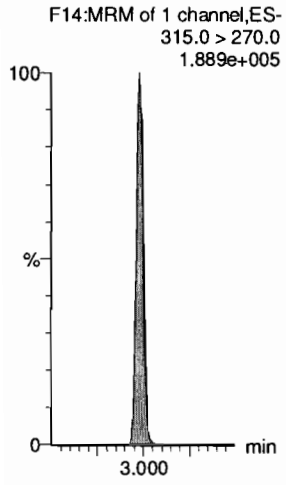


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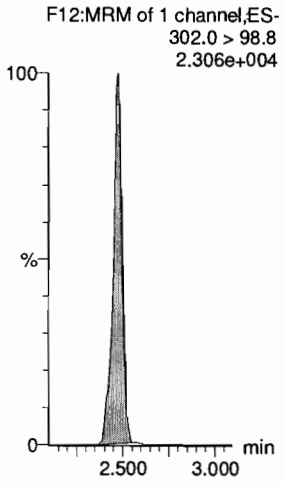




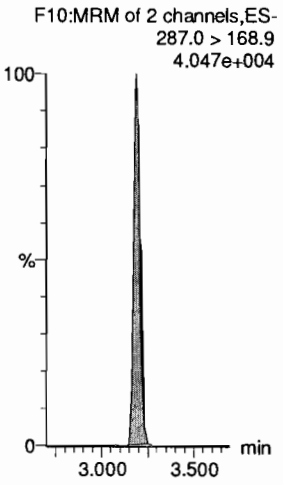
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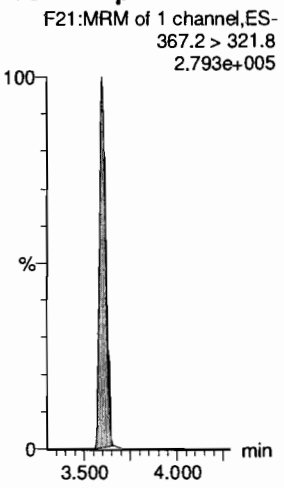
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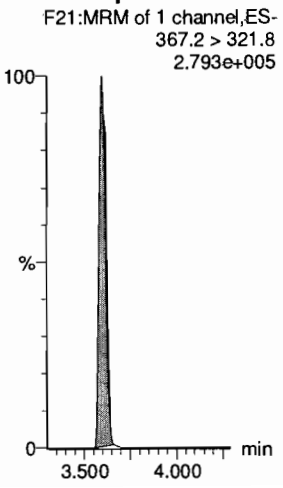
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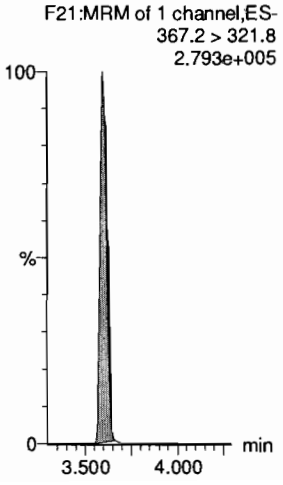
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13C4-PFHpA



13C4-PFHpA

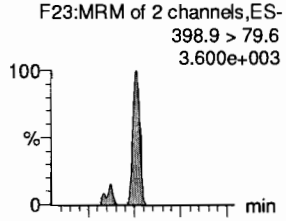


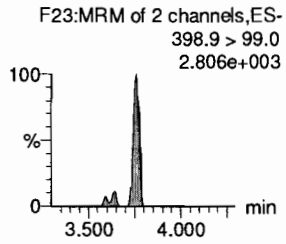
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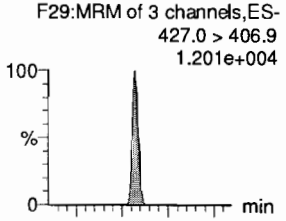
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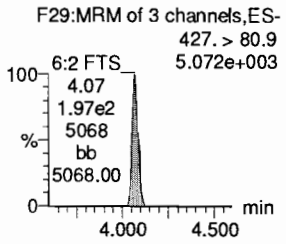
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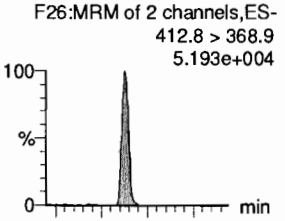


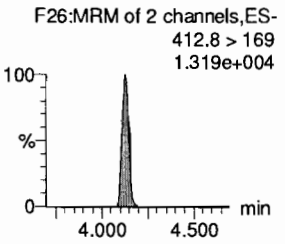
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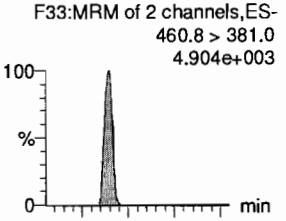


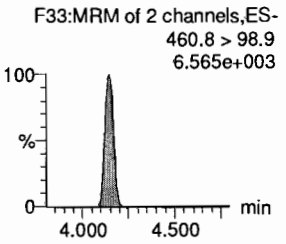
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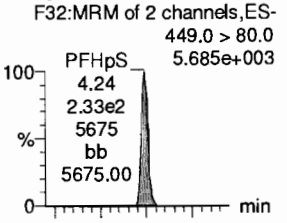


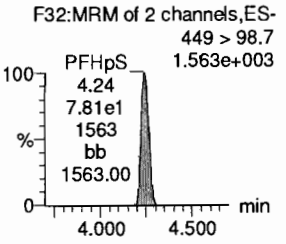
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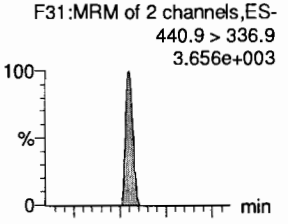


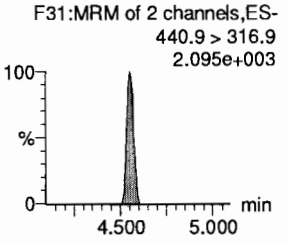
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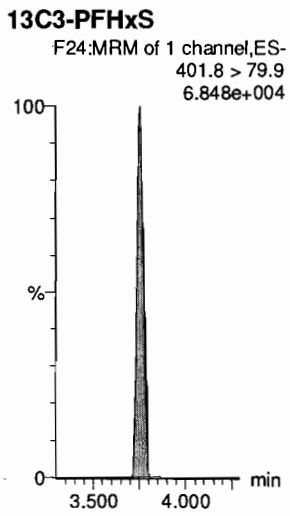


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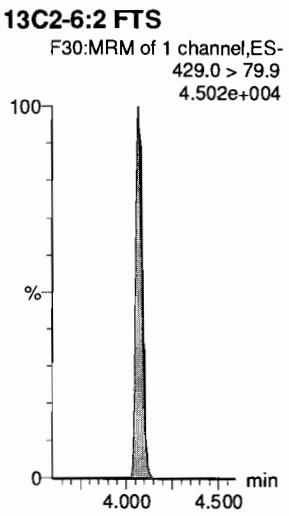




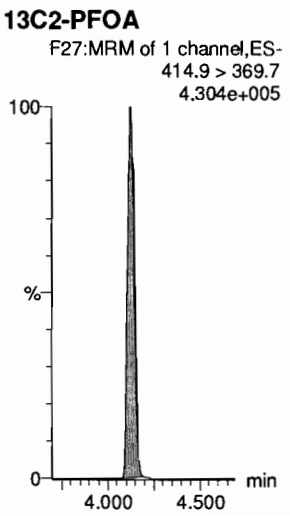
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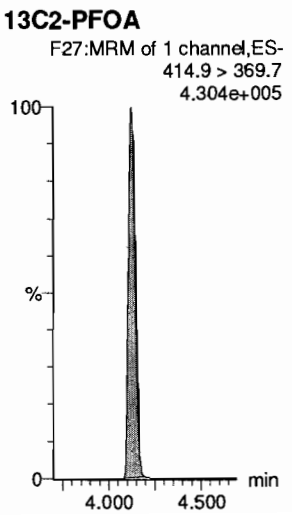
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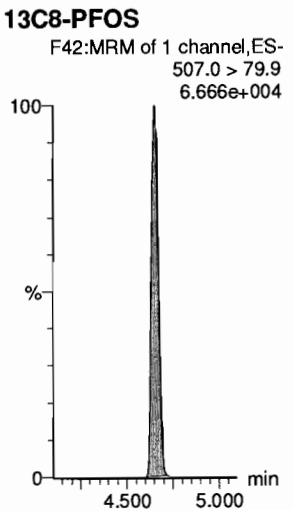
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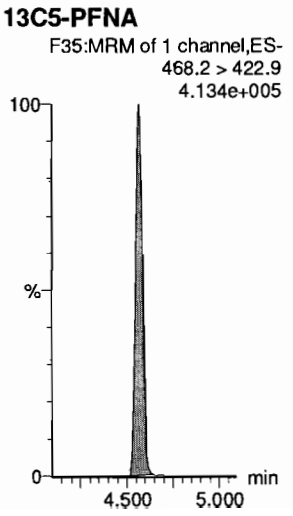
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13C8-PFOS



13C5-PFNA

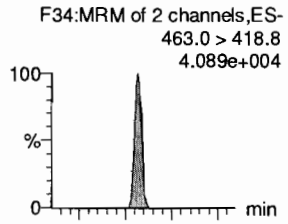


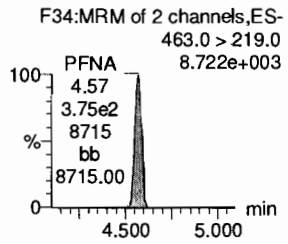
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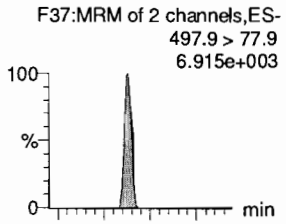
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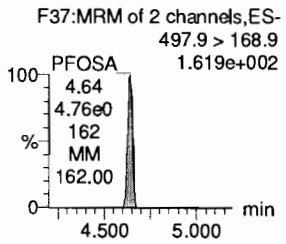
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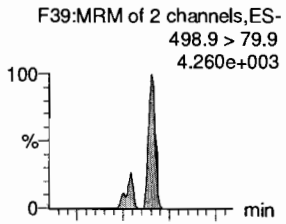


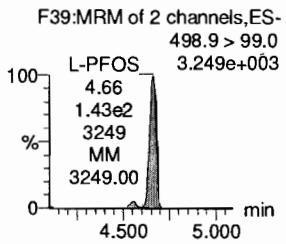
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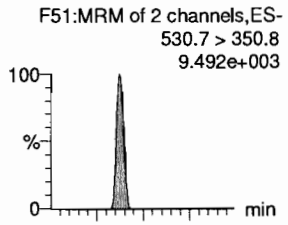


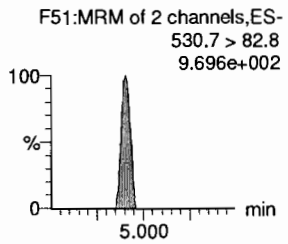
L-PFOS



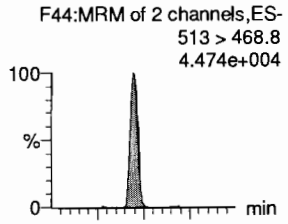


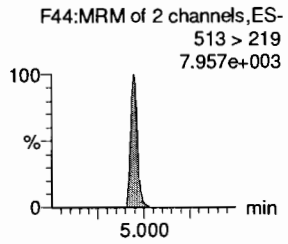
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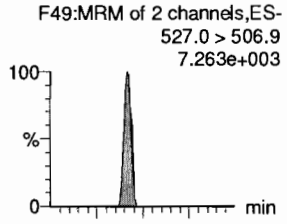


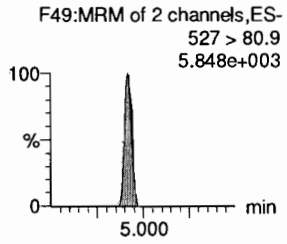
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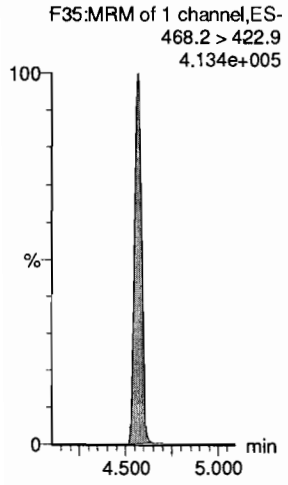


8:2 FTS

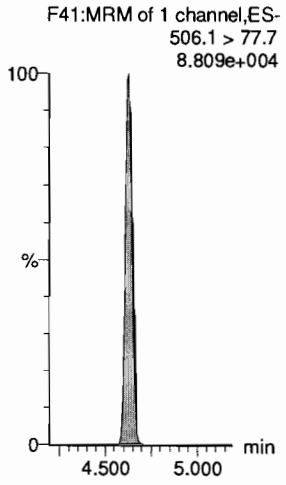




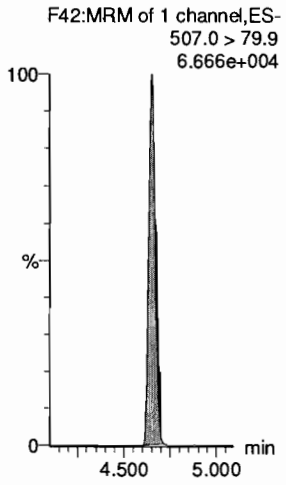
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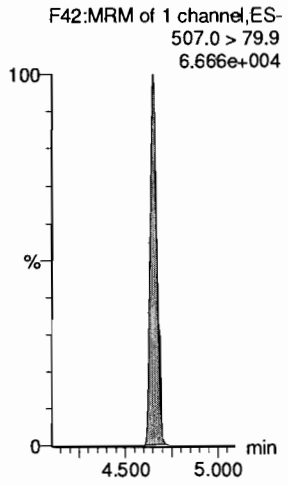
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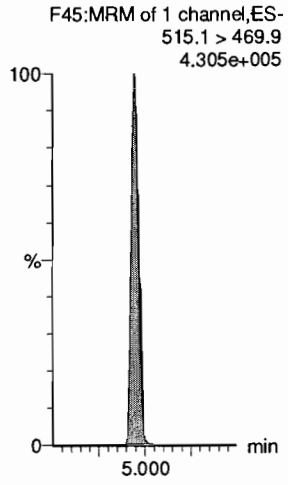
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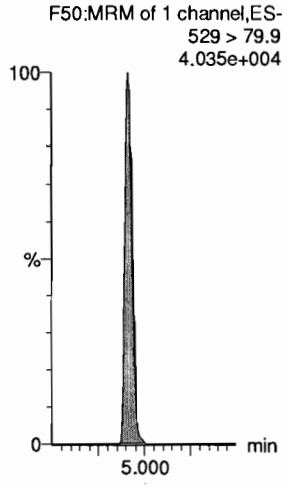
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

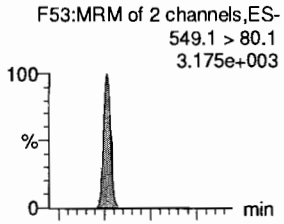


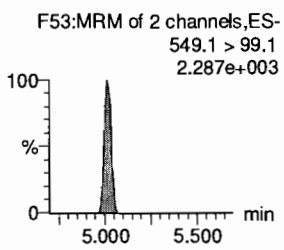
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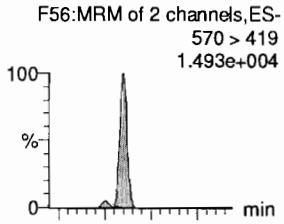
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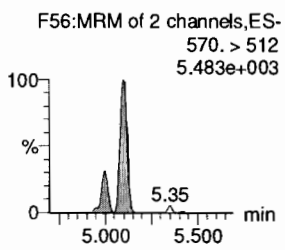
PFNS



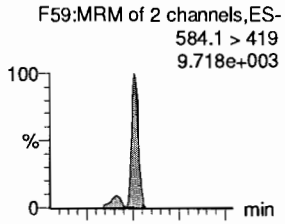


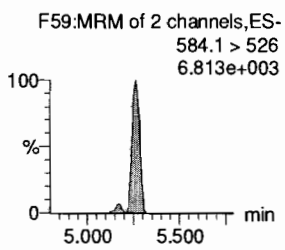
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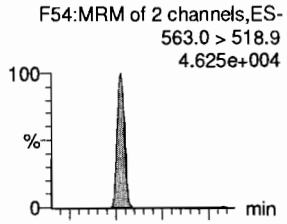


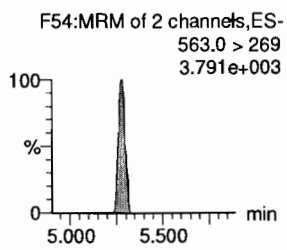
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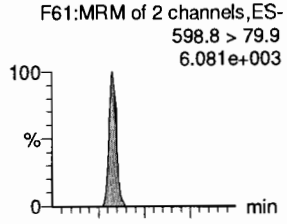


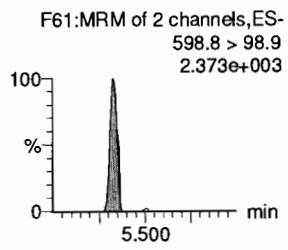
PFUdA



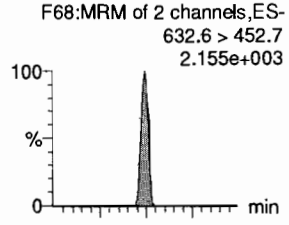


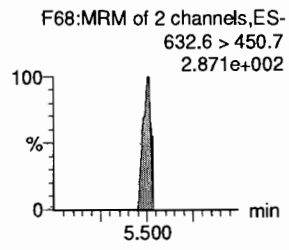
PFDS



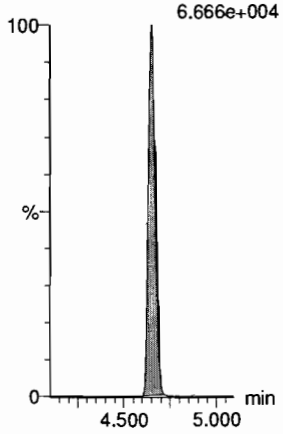


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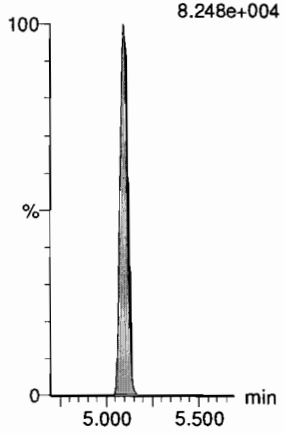




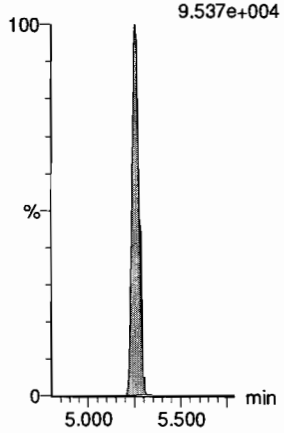
13C8-PFOS



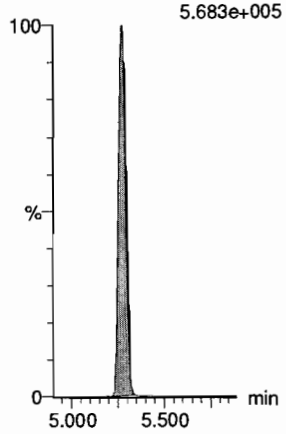
d3-N-MeFOSAA



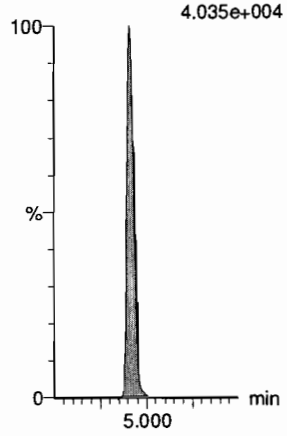
d5-N-EtFOSAA



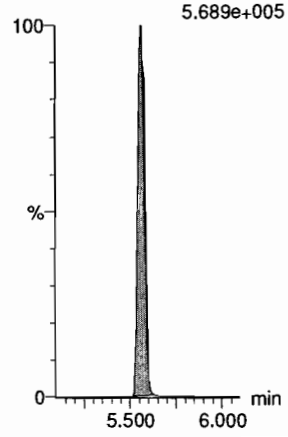
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

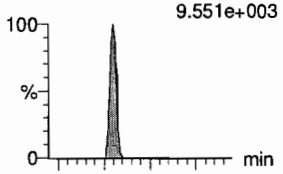


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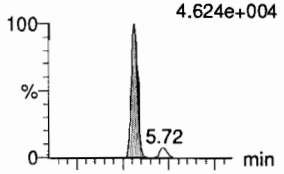
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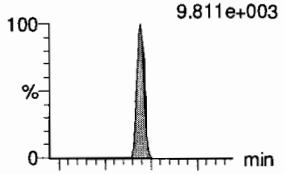
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
9.551e+003



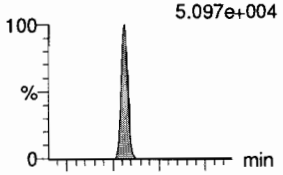
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
4.624e+004



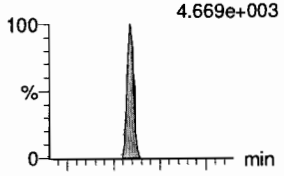
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
9.811e+003



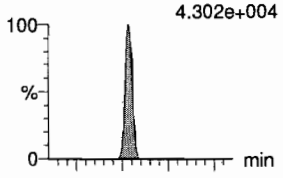
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F70:MRM of 2 channels,ES-
662.9 > 618.9
5.097e+004



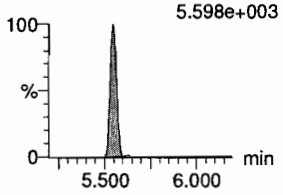
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
4.669e+003



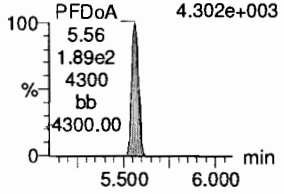
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
4.302e+004



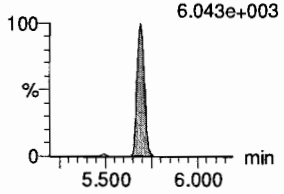
F66:MRM of 2 channels,ES-
627.0 > 80.9
5.598e+003



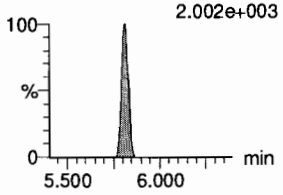
F62:MRM of 4 channels,ES-
612.9 > 318.8
4.302e+003



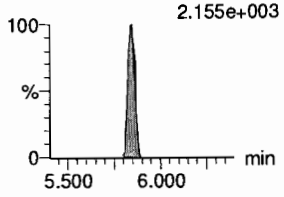
F43:MRM of 2 channels,ES-
512.1 > 219
6.043e+003



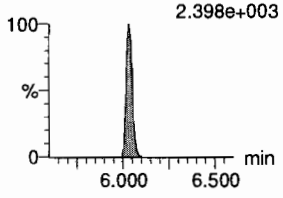
F70:MRM of 2 channels,ES-
662.9 > 319
2.002e+003



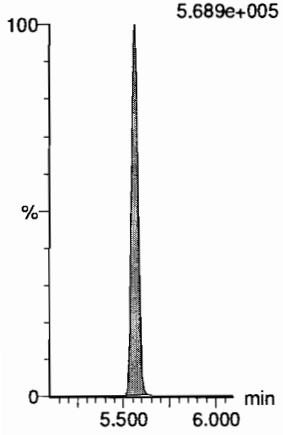
F71:MRM of 2 channels,ES-
698.8 > 98.9
2.155e+003



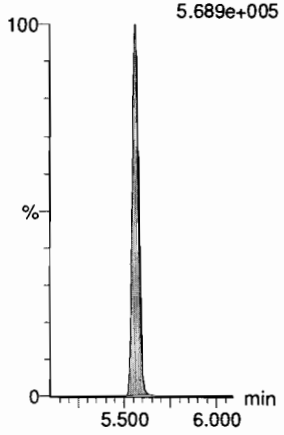
F72:MRM of 2 channels,ES-
713. > 369.0
2.398e+003



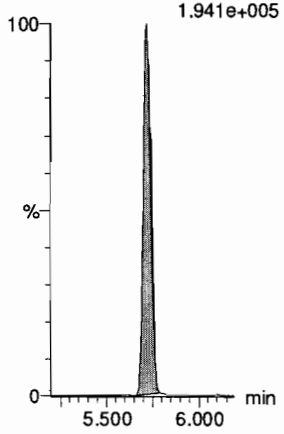
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.689e+005



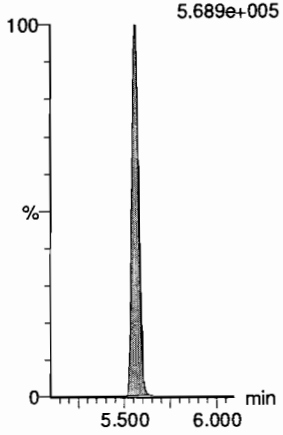
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.689e+005



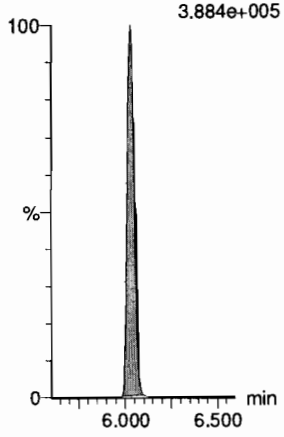
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.941e+005



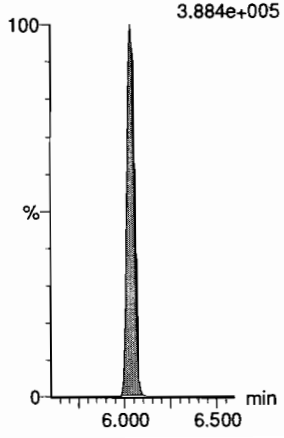
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.689e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.884e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.884e+005

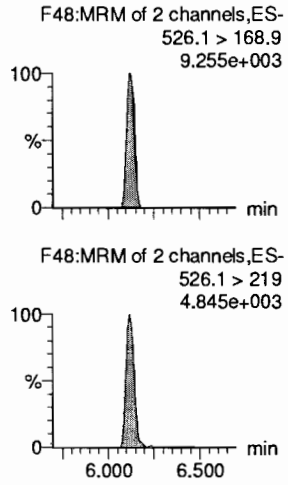


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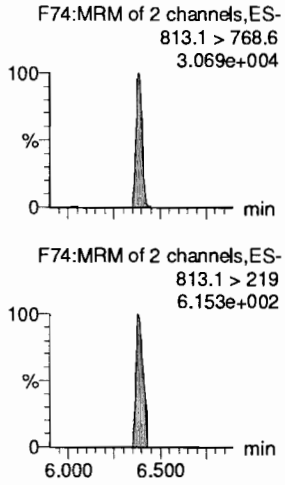
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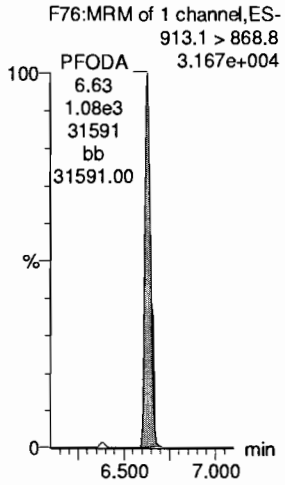
N-EtFOSA



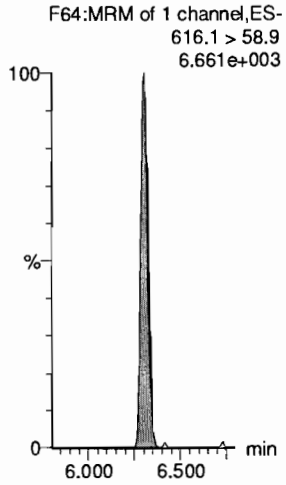
PFHxDA



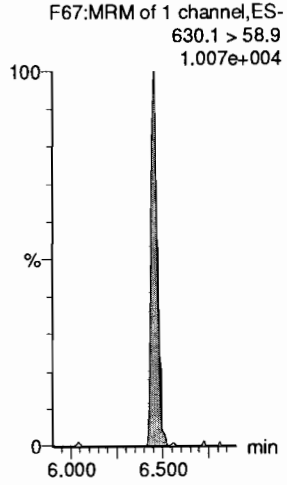
PFODA



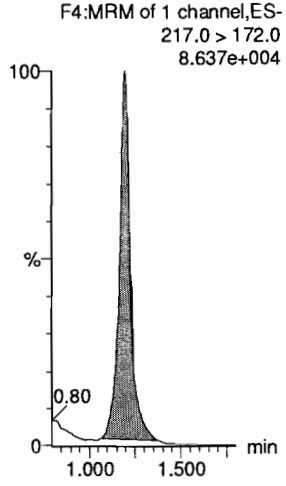
N-MeFOSE



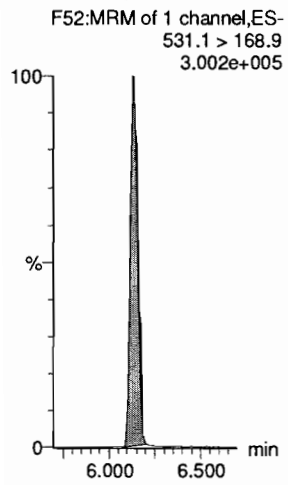
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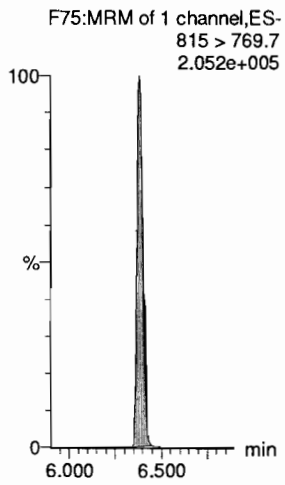
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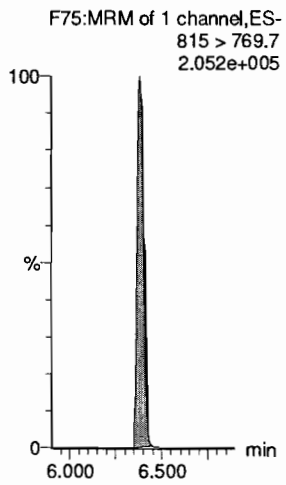
d5-N-ETFOSA



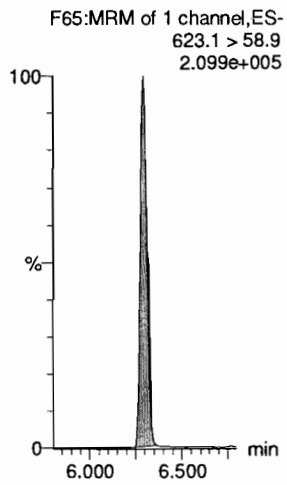
13C2-PFHxDA



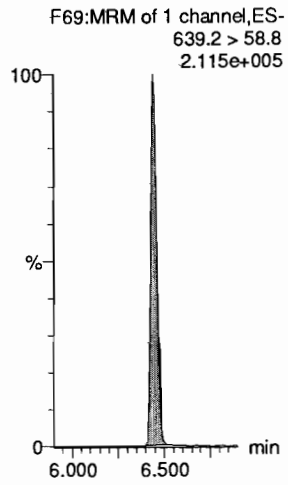
13C2-PFHxDA



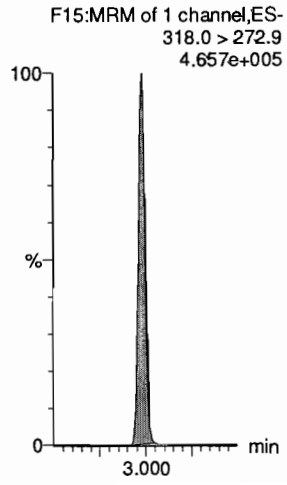
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

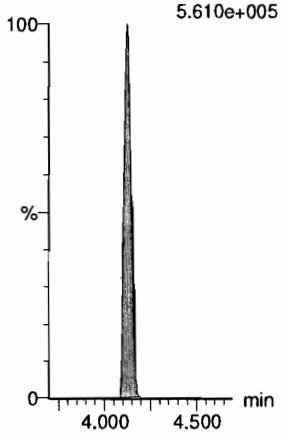


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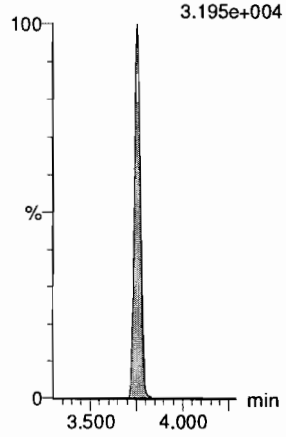
Last Altered: Tuesday, July 09, 2019 07:48:28 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:49:01 Pacific Daylight Time

Name: 190708M3_2, Date: 08-Jul-2019, Time: 15:45:19, ID: ST190708M3-1 PFC CS0 19F2414, Description: PFC CS0 19F2414

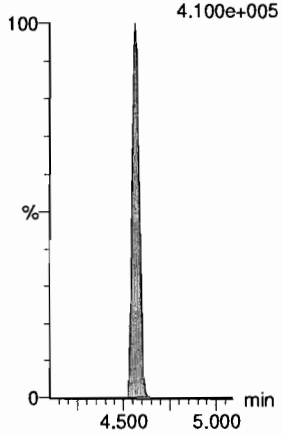
13C8-PFOA



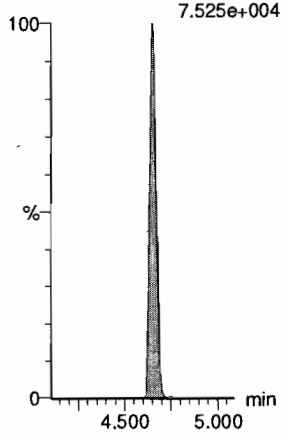
18O2-PFHxS



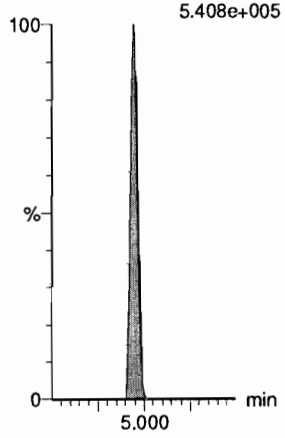
13C9-PFNA



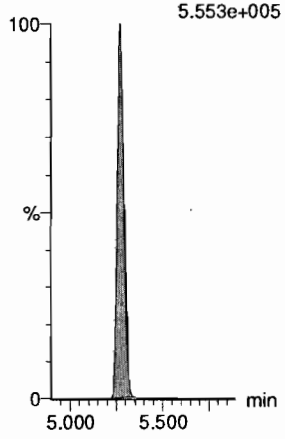
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: Untitled

Last Altered: Tuesday, July 09, 2019 07:35:04 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:35:36 Pacific Daylight Time

JMM 7/9/19

Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	4264.684	4355.670	1.00	1.20	12.239	10.1	101.1	NO		
2	2	PFPrS	248.9 > 79.9	896.341	1350.159	1.00	1.57	8.298	10.0	100.0	NO	2.340	NO
3	3	3:3 FTCA	240.9 > 176.9	242.547	9324.968	1.00	2.04	0.325	11.9	118.6	NO	1.975	NO
4	4	PFPeA	263.1 > 218.9	7135.795	9324.968	1.00	2.19	9.565	9.5	95.1	NO		
5	5	PFBS	299.0 > 79.7	2341.393	1350.159	1.00	2.49	21.677	10.4	103.8	NO	2.758	NO
6	6	4:2 FTS	327.0 > 306.9	4122.680	2353.953	1.00	2.90	21.892	9.7	97.4	NO	1.650	NO
7	47	13C3-PFBA	216.1 > 171.8	4355.670	5874.124	1.00	1.20	9.269	12.7	101.5	NO		
8	49	13C3-PFBS	302.0 > 98.8	1350.159	1170.556	1.00	2.48	14.418	14.2	113.2	NO		
9	48	13C3-PFPeA	266.0 > 221.8	9324.968	20765.813	1.00	2.19	5.613	11.4	91.0	NO		
10	48	13C3-PFPeA	266.0 > 221.8	9324.968	20765.813	1.00	2.19	5.613	11.4	91.0	NO		
11	49	13C3-PFBS	302.0 > 98.8	1350.159	1170.556	1.00	2.48	14.418	14.2	113.2	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2353.953	1170.556	1.00	2.90	25.137	14.3	114.4	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0	14524.347	7960.194	1.00	2.98	9.123	10.4	103.8	NO	16.376	NO
15	8	PFPeS	349.1>80.1	2032.158	1350.159	1.00	3.19	18.814	10.6	105.6	NO	1.585	NO
16	9	HFPO-DA	285.1 > 168.9	1776.892	1488.600	1.00	3.20	5.968	10.5	104.8	NO	2.369	NO
17	10	5:3 FTCA	340.9 > 236.9	1438.717	10981.952	1.00	3.54	1.638	11.4	114.3	NO	1.647	NO
18	11	PFHpA	363.0 > 318.9	10830.270	10981.952	1.00	3.60	12.327	9.6	95.8	NO	11.491	NO
19	12	ADONA	376.8 > 250.9	26031.842	10981.952	1.00	3.72	29.630	9.2	91.7	NO	3.484	NO
20	52	13C2-PFHxA	315.0 > 270.0	7960.194	20765.813	1.00	2.98	4.792	4.8	96.0	NO		
21	49	13C3-PFBS	302.0 > 98.8	1350.159	1170.556	1.00	2.48	14.418	14.2	113.2	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1488.600	20765.813	1.00	3.19	0.896	4.9	98.8	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10981.952	20765.813	1.00	3.61	6.611	12.4	98.9	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10981.952	20765.813	1.00	3.61	6.611	12.4	98.9	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10981.952	20765.813	1.00	3.61	6.611	12.4	98.9	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	1920.093	2724.070	1.00	3.76	8.811	10.0	100.1	NO	1.824	NO
28	15	6:2 FTS	427.0 > 406.9	4408.625	1906.391	1.00	4.07	28.907	9.5	95.2	NO	2.220	NO
29	16	L-PFOA	412.8 > 368.9	20842.918	18644.248	1.00	4.13	13.974	9.7	97.1	NO	3.434	NO
30	18	PFecHS	460.8 > 381.0	2918.903	18644.248	1.00	4.15	1.957	9.4	94.0	NO	0.873	NO
31	19	PFHpS	449.0 > 80.0	2470.755	2952.918	1.00	4.25	10.459	11.3	113.1	NO	1.977	NO
32	20	7:3 FTCA	440.9 > 336.9	1520.219	18641.682	1.00	4.55	1.019	13.0	129.9	NO	1.709	NO
33	54	13C3-PFHxS	401.8 > 79.9	2724.070	1170.556	1.00	3.76	29.089	13.1	104.6	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1906.391	3102.478	1.00	4.07	7.681	13.1	105.1	NO		
35	58	13C2-PFOA	414.9 > 369.7	18644.248	24928.830	1.00	4.13	9.349	12.6	100.9	NO		
36	58	13C2-PFOA	414.9 > 369.7	18644.248	24928.830	1.00	4.13	9.349	12.6	100.9	NO		

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Dataset: Untitled

Last Altered: Tuesday, July 09, 2019 07:35:04 Pacific Daylight Time
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Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	2952.918	3102.478	1.00	4.66	11.897	11.8	94.2	NO		
38	56	13C5-PFNA	468.2 > 422.9	18641.682	19438.197	1.00	4.57	11.988	12.0	96.3	NO		
39	-1												
40	21	PFNA	463.0 > 418.8	17888.271	18641.682	1.00	4.57	11.995	9.8	97.9	NO	4.542	NO
41	22	PFOSA	497.9 > 77.9	3222.106	3315.943	1.00	4.63	12.146	10.3	103.2	NO	27.517	NO
42	23	L-PFOS	498.9 > 79.9	2569.580	2952.918	1.00	4.66	10.877	9.6	95.6	NO	2.081	NO
43	25	9Cl-PF30NS	530.7 > 350.8	4768.363	2952.918	1.00	4.88	20.185	10.0	99.9	NO	19.380	NO
44	26	PFDA	513 > 468.8	20350.086	17122.627	1.00	4.95	14.856	10.3	102.6	NO	5.927	NO
45	27	8:2 FTS	527.0 > 506.9	2714.033	1799.843	1.00	4.92	18.849	10.8	108.2	NO	1.111	NO
46	56	13C5-PFNA	468.2 > 422.9	18641.682	19438.197	1.00	4.57	11.988	12.0	96.3	NO		
47	57	13C8-PFOSA	506.1 > 77.7	3315.943	24054.619	1.00	4.63	1.723	13.3	106.6	NO		
48	59	13C8-PFOS	507.0 > 79.9	2952.918	3102.478	1.00	4.66	11.897	11.8	94.2	NO		
49	59	13C8-PFOS	507.0 > 79.9	2952.918	3102.478	1.00	4.66	11.897	11.8	94.2	NO		
50	60	13C2-PFDA	515.1 > 469.9	17122.627	22254.547	1.00	4.95	9.617	12.1	97.0	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1799.843	3102.478	1.00	4.92	7.252	12.6	101.0	NO		
52	-1												
53	28	PFNS	549.1 > 80.1	1699.822	2952.918	1.00	5.01	7.196	9.1	91.2	NO	1.509	NO
54	29	L-MeFOSAA	570 > 419	7366.617	3710.903	1.00	5.10	24.814	9.3	92.8	NO	2.558	NO
55	31	L-EtFOSAA	584.1 > 419	5388.998	4038.637	1.00	5.26	16.680	9.9	98.6	NO	1.405	NO
56	33	PFUdA	563.0 > 518.9	17976.063	25022.188	1.00	5.28	8.980	9.7	96.5	NO	9.293	NO
57	34	PFDS	598.8 > 79.9	2484.507	1799.843	1.00	5.33	17.255	9.3	92.8	NO	1.733	NO
58	35	11Cl-PF30UdS	632.6 > 452.7	1123.852	24247.662	1.00	5.50	0.579	8.7	87.1	NO	4.645	NO
59	59	13C8-PFOS	507.0 > 79.9	2952.918	3102.478	1.00	4.66	11.897	11.8	94.2	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	3710.903	24054.619	1.00	5.10	1.928	12.2	97.5	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	4038.637	24054.619	1.00	5.26	2.099	12.0	95.9	NO		
62	63	13C2-PFUdA	565 > 519.8	25022.188	24054.619	1.00	5.28	13.003	12.1	97.2	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1799.843	3102.478	1.00	4.92	7.252	12.6	101.0	NO		
64	65	13C2-PFDoA	614.7 > 569.7	24247.662	22254.547	1.00	5.56	13.619	11.8	94.7	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9	3541.998	1799.843	1.00	5.55	24.599	10.3	102.8	NO	1.593	NO
67	37	PFDoA	612.9 > 569.0	19811.236	24247.662	1.00	5.56	10.213	10.2	101.6	NO	8.234	NO
68	38	N-MeFOSA	512.1 > 168.9	4060.711	9177.583	1.00	5.70	66.369	59.1	118.3	NO	1.487	NO
69	39	PFTrDA	662.9 > 618.9	22028.273	24247.662	1.00	5.81	11.356	10.4	103.7	NO	24.466	NO
70	40	PFDoS	698.8 > 79.9	2219.955	16423.234	1.00	5.84	1.690	10.2	101.6	NO	1.774	NO
71	41	PFTeDA	713.0 > 669.0	18418.086	16423.234	1.00	6.04	14.018	10.0	100.1	NO	13.778	NO
72	65	13C2-PFDoA	614.7 > 569.7	24247.662	22254.547	1.00	5.56	13.619	11.8	94.7	NO		

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Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	24247.662	22254.547	1.00	5.56	13.619	11.8	94.7	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	9177.583	24054.619	1.00	5.73	4.769	136.5	91.0	NO		
75	65	13C2-PFDoA	614.7 > 569.7	24247.662	22254.547	1.00	5.56	13.619	11.8	94.7	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	16423.234	24054.619	1.00	6.04	8.534	12.1	96.4	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	16423.234	24054.619	1.00	6.04	8.534	12.1	96.4	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9	4689.833	13422.393	1.00	6.12	52.411	54.0	107.9	NO	1.743	NO
80	43	PFHxDA	813.1 > 768.6	12151.154	8229.227	1.00	6.39	7.383	11.1	111.5	NO	36.823	NO
81	44	PFODA	913.1 > 868.8	12163.729	8229.227	1.00	6.63	7.391	10.8	108.3	NO		
82	45	N-MeFOSE	616.1 > 58.9	3113.743	8476.622	1.00	6.30	55.100	50.6	101.2	NO		
83	46	N-EtFOSE	630.1 > 58.9	3855.648	8097.548	1.00	6.46	71.423	48.4	96.8	NO		
84	72	13C4-PFBA	217.0 > 172.0	5874.124	5874.124	1.00	1.21	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	13422.393	24054.619	1.00	6.14	6.975	152.4	101.6	NO		
86	69	13C2-PFHxDA	815 > 769.7	8229.227	24054.619	1.00	6.39	4.276	4.3	85.0	NO		
87	69	13C2-PFHxDA	815 > 769.7	8229.227	24054.619	1.00	6.39	4.276	4.3	85.0	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	8476.622	24054.619	1.00	6.30	4.405	159.7	106.5	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	8097.548	24054.619	1.00	6.45	4.208	147.3	98.2	NO		
90	73	13C5-PFHxA	318.0 > 272.9	20765.813	20765.813	1.00	2.98	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	24928.830	24928.830	1.00	4.13	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1170.556	1170.556	1.00	3.76	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	19438.197	19438.197	1.00	4.57	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	3102.478	3102.478	1.00	4.66	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	22254.547	22254.547	1.00	4.95	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	24054.619	24054.619	1.00	5.28	12.500	12.5	100.0	NO		

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Last Altered: Tuesday, July 09, 2019 07:38:20 Pacific Daylight Time
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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070819M3.mdb 09 Jul 2019 07:35:03
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
1	1 190708M3_1	IPA	08-Jul-19	15:34:44
2	2 190708M3_2	ST190708M3-1 PFC CS0 19F2414	08-Jul-19	15:45:19
3	3 190708M3_3	IB	08-Jul-19	15:58:50
4	4 190708M3_4	B9G0050-BS1 OPR 0.25	08-Jul-19	16:09:25
5	5 190708M3_5	B9G0050-BSD1 LCSD 0.25	08-Jul-19	16:20:01
6	6 190708M3_6	B9G0050-BLK1 Method Blank 0.25	08-Jul-19	16:30:39
7	7 190708M3_7	1901857-01 SAOA-B05-GW 0.19379	08-Jul-19	16:41:12
8	8 190708M3_8	1901857-04 SAOA-B09-GW 0.11754	08-Jul-19	16:51:50
9	9 190708M3_9	1901857-05 FRB-06262019 0.12019	08-Jul-19	17:02:20
10	10 190708M3_10	1901857-06 EB-06262019 0.11814	08-Jul-19	17:12:58
11	11 190708M3_11	1901857-09 SAOA-B11-GW 0.12366	08-Jul-19	17:23:32
12	12 190708M3_12	1901857-11 EB-06272019 0.11737	08-Jul-19	17:34:11
13	13 190708M3_13	1901857-12 FRB-06272019 0.11771	08-Jul-19	17:44:43
14	14 190708M3_14	1901859-05 EB03-062119 0.25551	08-Jul-19	17:55:22
15	15 190708M3_15	1901860-11 EB04-062719 0.23415	08-Jul-19	18:05:55
16	16 190708M3_16	IPA	08-Jul-19	18:16:33
17	17 190708M3_17	ST190708M3-2 PFC CS3 19F2417	08-Jul-19	18:27:06
18	18 190708M3_18	IPA	08-Jul-19	18:37:44
19	19 190708M3_19	B9G0016-BS1 OPR 0.25	08-Jul-19	18:48:18
20	20 190708M3_20	B9G0016-BSD1 LCSD 0.25	08-Jul-19	18:58:56
21	21 190708M3_21	B9G0016-BLK1 Method Blank 0.25	08-Jul-19	19:09:28
22	22 190708M3_22	1901782-01 REEPEF1658 FS 0.11714	08-Jul-19	19:20:07
23	23 190708M3_23	1901784-01 BWS-1 0.2482	08-Jul-19	19:30:39
24	24 190708M3_24	1901784-02 FRB-1 0.25006	08-Jul-19	19:41:18
25	25 190708M3_25	1901785-01 IA-2-REF3-21062019-10-00-RB 0.24805	08-Jul-19	19:51:50
26	26 190708M3_26	1901785-02 IA-2-REF3-21062019-10-05-FB 0.24769	08-Jul-19	20:02:29
27	27 190708M3_27	1901831-01 REEPAR1683FS 0.11262	08-Jul-19	20:13:08
28	28 190708M3_28	1901872-01 REEPDW1560FS 0.12023	08-Jul-19	20:23:40
29	29 190708M3_29	B9G0017-BS1 OPR 0.25	08-Jul-19	20:34:18
30	30 190708M3_30	B9G0017-BLK1 Method Blank 0.25	08-Jul-19	20:44:52
31	31 190708M3_31	1901790-01 1906A01-01A 0.22707	08-Jul-19	20:55:30
32	32 190708M3_32	1901790-02 1906A01-02A 0.25672	08-Jul-19	21:06:03

Vista Analytical Laboratory

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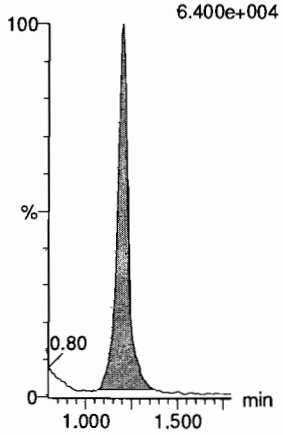
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34	34 190708M3_34	IPA	08-Jul-19	21:27:15
35	35 190708M3_35	ST190708M3-3 PFC CS3 19F2417	08-Jul-19	21:37:53
36	36 190708M3_36	IPA	08-Jul-19	21:48:26
37	37 190708M3_37	1901791-02 1906B77-02A 0.25099	08-Jul-19	21:59:04
38	38 190708M3_38	1901792-01 GW1591621906241235RAP 0.23602	08-Jul-19	22:09:37
39	39 190708M3_39	1901887-01@5X Ivyland Mop Water 0.24039	08-Jul-19	22:20:15
40	40 190708M3_40	1901887-02@20X Feasterville Mop Water 0.22776	08-Jul-19	22:30:48
41	41 190708M3_41	IPA	08-Jul-19	22:41:26
42	42 190708M3_42	ST190708M3-4 PFC CS3 19F2417	08-Jul-19	22:52:00
43	43 190708M3_43	IPA	08-Jul-19	23:02:38

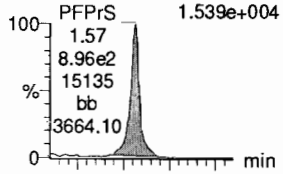
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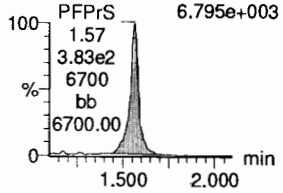
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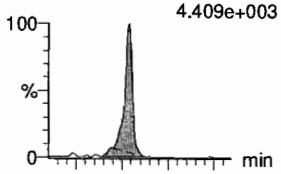
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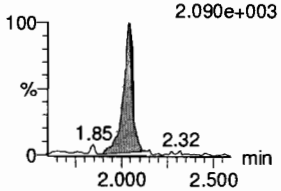
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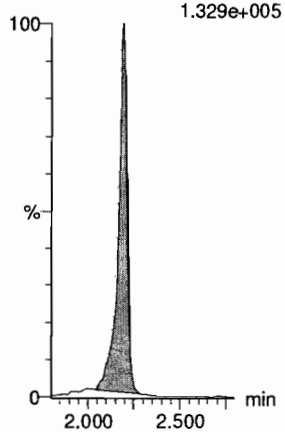
PFBA
F2:MRM of 1 channel,ES-
213.0 > 168.8
6.400e+004


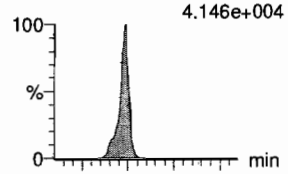
PFPrS
F6:MRM of 2 channels,ES-
248.9 > 79.9
1.539e+004


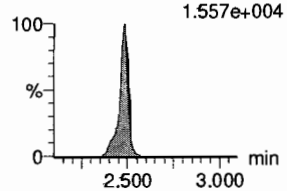
F6:MRM of 2 channels,ES-
248.9 > 98.9
6.795e+003


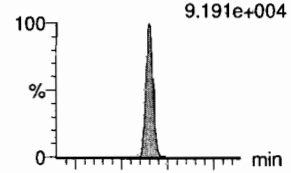
3:3 FTCA
F5:MRM of 2 channels,ES-
240.9 > 176.9
4.409e+003


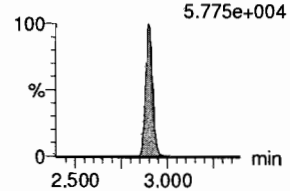
F5:MRM of 2 channels,ES-
240.9 > 116.9
2.090e+003


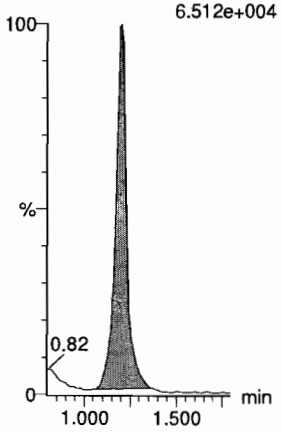
PFPeA
F7:MRM of 1 channel,ES-
263.1 > 218.9
1.329e+005


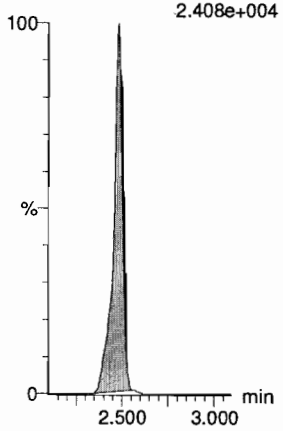
PFBS
F11:MRM of 2 channels,ES-
299.0 > 79.7
4.146e+004


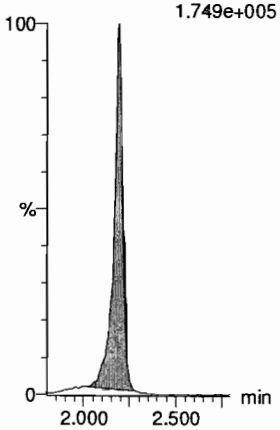
F11:MRM of 2 channels,ES-
299.0 > 99.0
1.557e+004


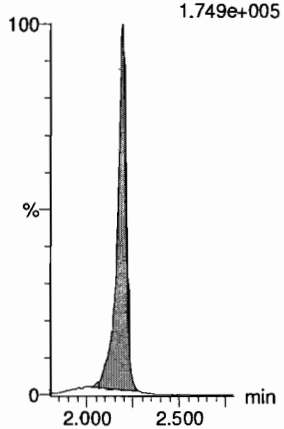
4:2 FTS
F16:MRM of 2 channels,ES-
327.0 > 306.9
9.191e+004


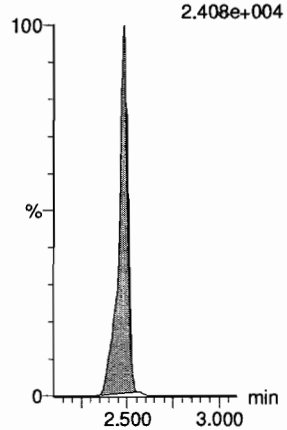
F16:MRM of 2 channels,ES-
327.0 > 80.9
5.775e+004


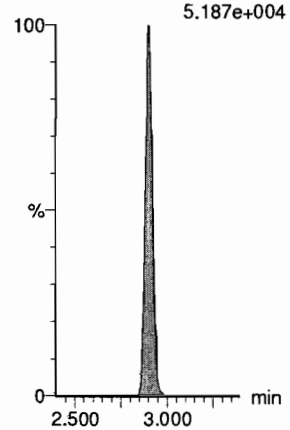
13C3-PFBA
F3:MRM of 1 channel,ES-
216.1 > 171.8
6.512e+004


13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.408e+004


13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.749e+005


13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.749e+005


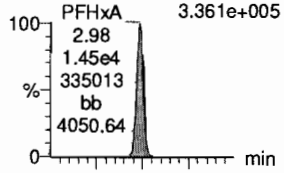
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.408e+004


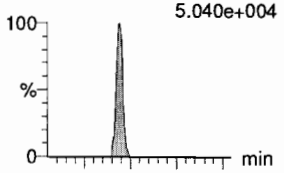
13C2-4:2 FTS
F17:MRM of 2 channels,ES-
329.0 > 79.9
5.187e+004


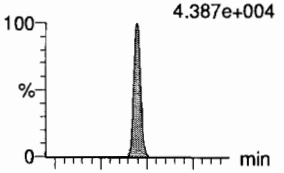
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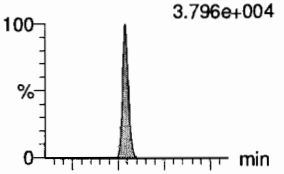
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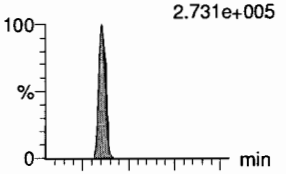
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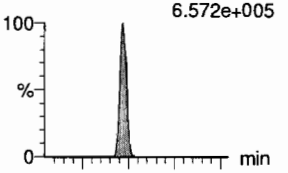
PFHxA
F13:MRM of 2 channels,ES-
313.0 > 269.0
3.361e+005


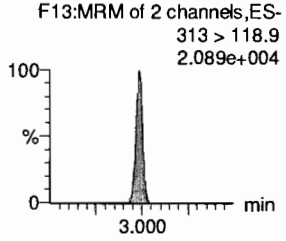
PFPeS
F19:MRM of 2 channels,ES-
349.1 > 80.1
5.040e+004


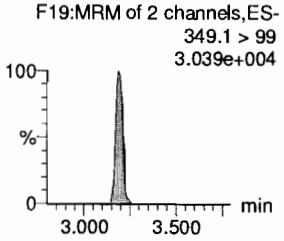
HFPO-DA
F9:MRM of 3 channels,ES-
285.1 > 168.9
4.387e+004


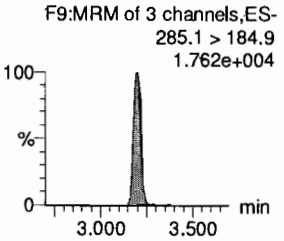
5:3 FTCA
F18:MRM of 2 channels,ES-
340.9 > 236.9
3.796e+004


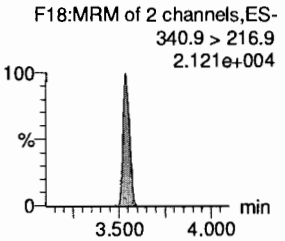
PFHpA
F20:MRM of 2 channels,ES-
363.0 > 318.9
2.731e+005


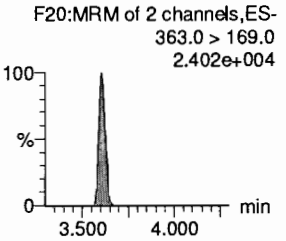
ADONA
F22:MRM of 2 channels,ES-
376.8 > 250.9
6.572e+005


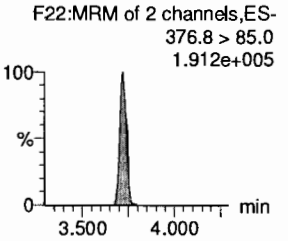
F13:MRM of 2 channels,ES-
313 > 118.9
2.089e+004


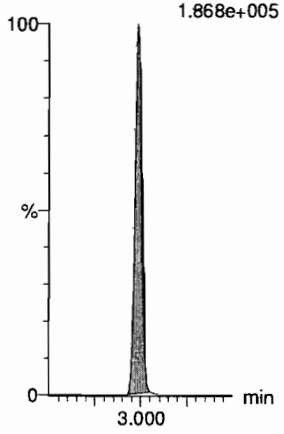
F19:MRM of 2 channels,ES-
349.1 > 99
3.039e+004


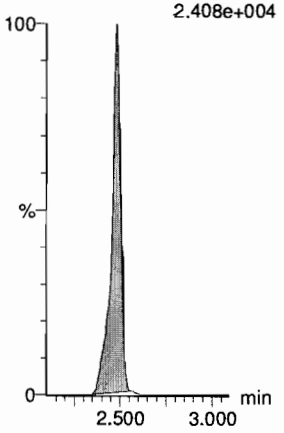
F9:MRM of 3 channels,ES-
285.1 > 184.9
1.762e+004


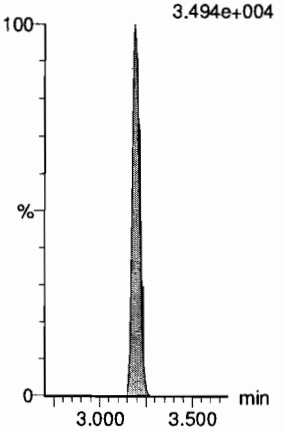
F18:MRM of 2 channels,ES-
340.9 > 216.9
2.121e+004


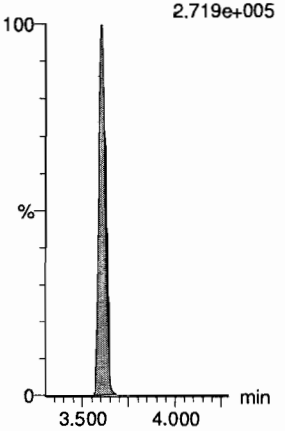
F20:MRM of 2 channels,ES-
363.0 > 169.0
2.402e+004


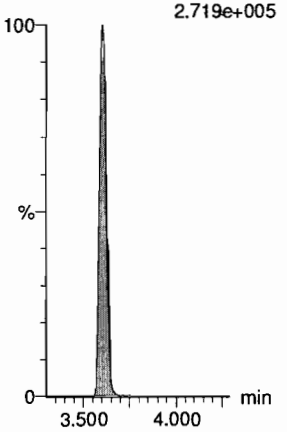
F22:MRM of 2 channels,ES-
376.8 > 85.0
1.912e+005


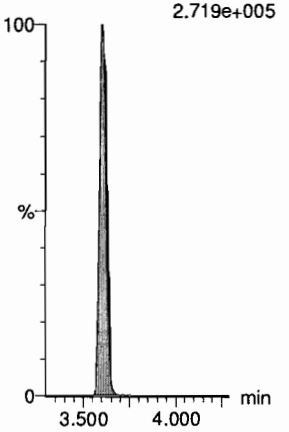
13C2-PFHxA
F14:MRM of 1 channel,ES-
315.0 > 270.0
1.868e+005


13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.408e+004


13C3-HFPO-DA
F10:MRM of 2 channels,ES-
287.0 > 168.9
3.494e+004


13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.719e+005


13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.719e+005


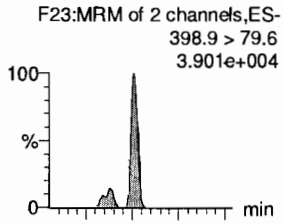
13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.719e+005


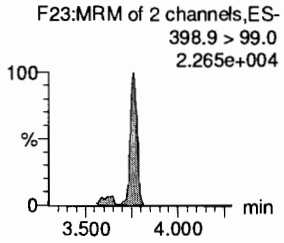
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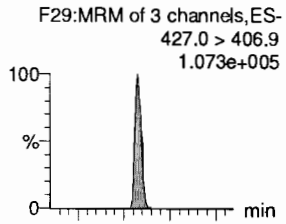
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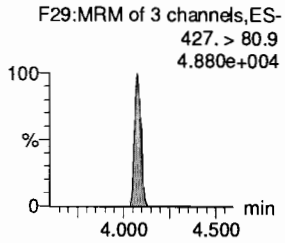
L-PFHxS



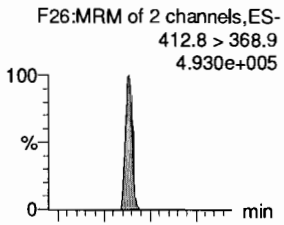


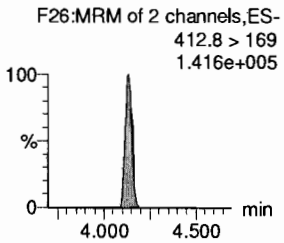
6:2 FTS



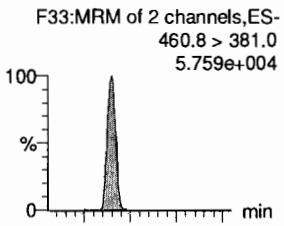


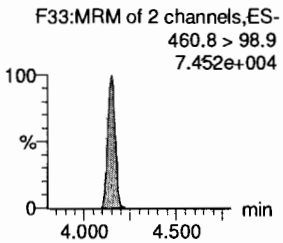
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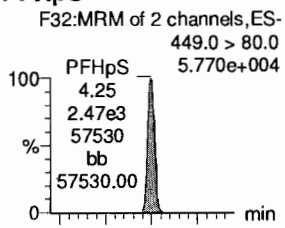


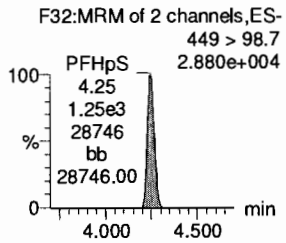
PFEChS



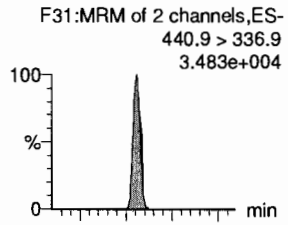


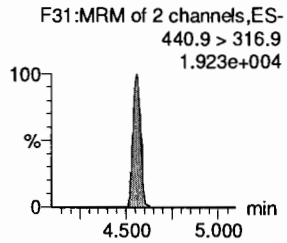
PFHpS



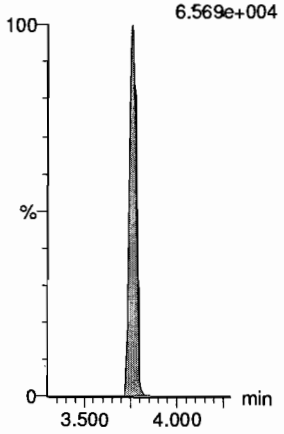


7:3 FTCA

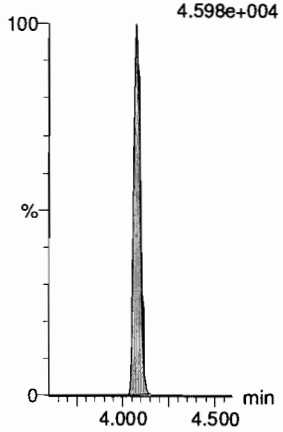




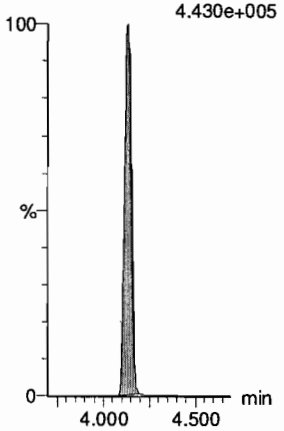
13C3-PFHxS



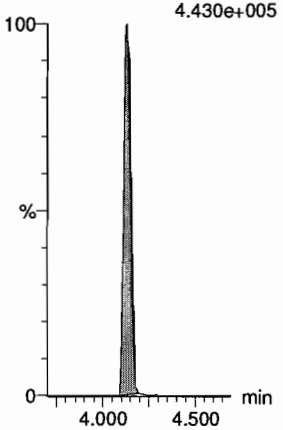
13C2-6:2 FTS



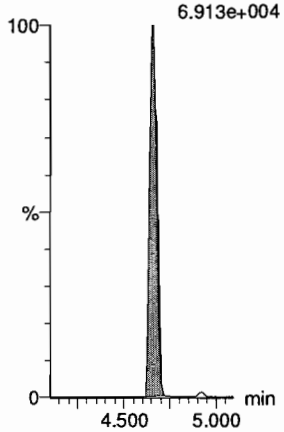
13C2-PFOA



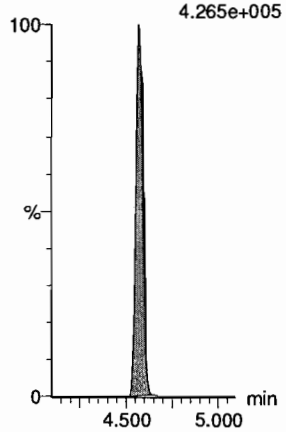
13C2-PFOA



13C8-PFOS



13C5-PFNA

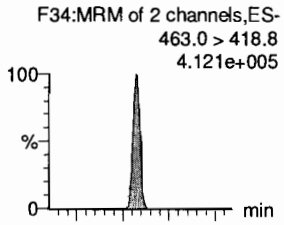


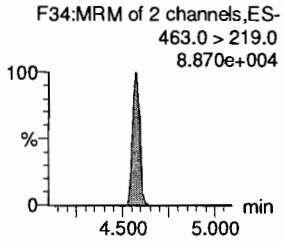
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Printed: Tuesday, July 09, 2019 07:35:36 Pacific Daylight Time

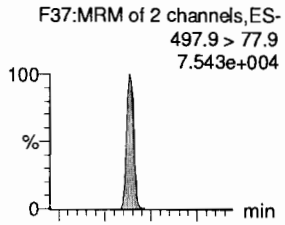
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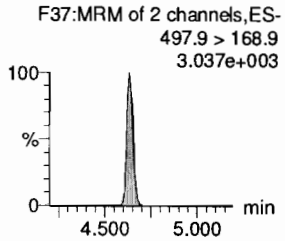
PFNA



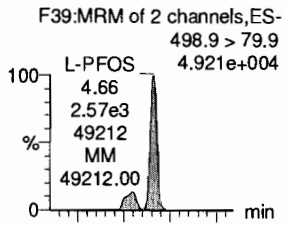


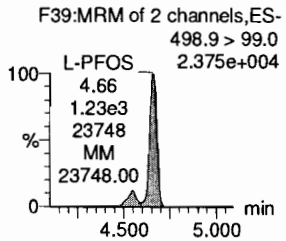
PFOSA



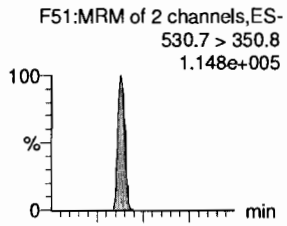


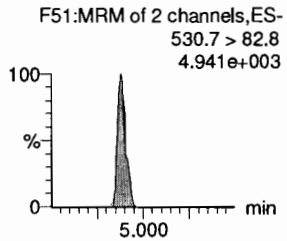
L-PFOS



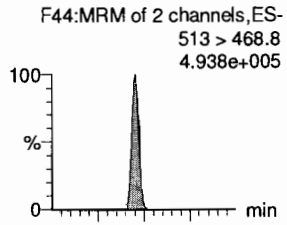


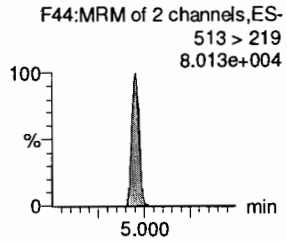
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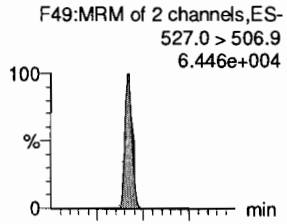


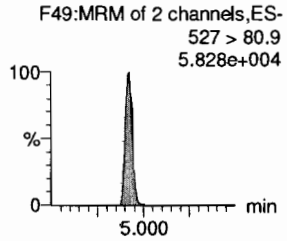
PFDA



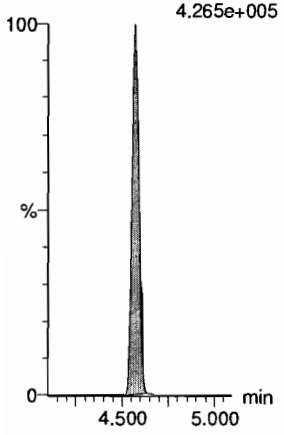


8:2 FTS

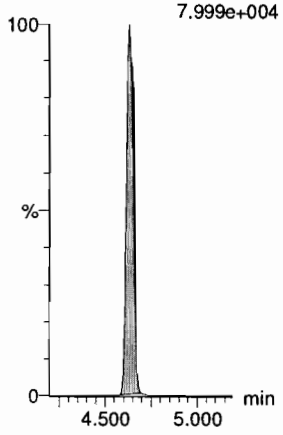




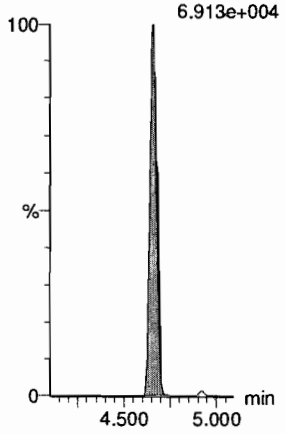
13C5-PFNA



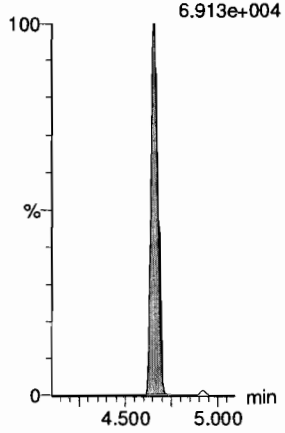
13C8-PFOSA



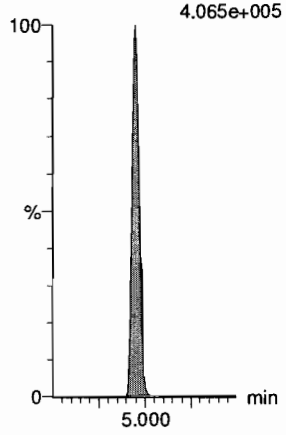
13C8-PFOS



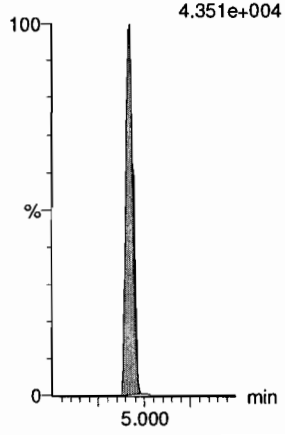
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

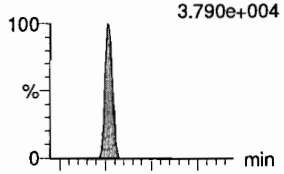


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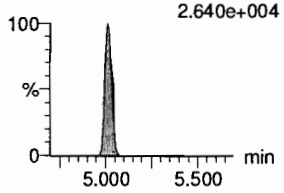
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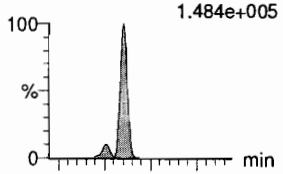
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
3.790e+004



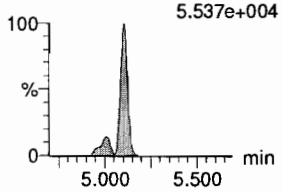
F53:MRM of 2 channels,ES-
549.1 > 99.1
2.640e+004



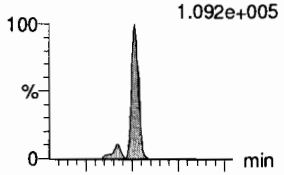
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
1.484e+005



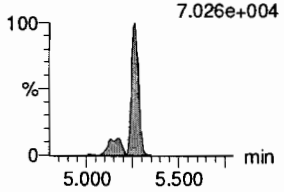
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570. > 512
5.537e+004



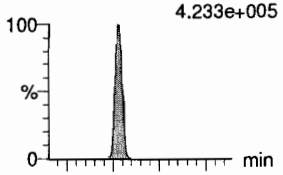
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
1.092e+005



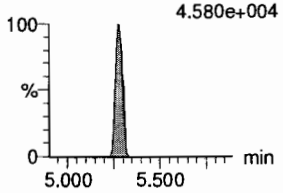
F59:MRM of 2 channels,ES-
584.1 > 526
7.026e+004



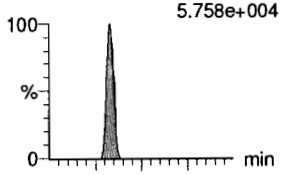
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
4.233e+005



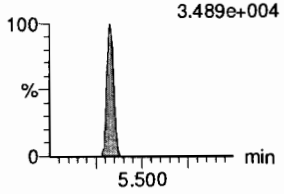
F54:MRM of 2 channels,ES-
563.0 > 269
4.580e+004



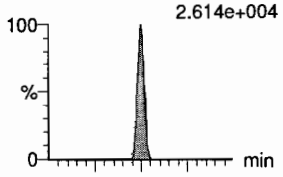
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
5.758e+004



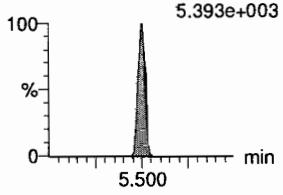
F61:MRM of 2 channels,ES-
598.8 > 98.9
3.489e+004



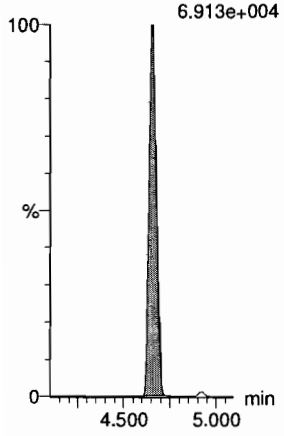
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
2.614e+004



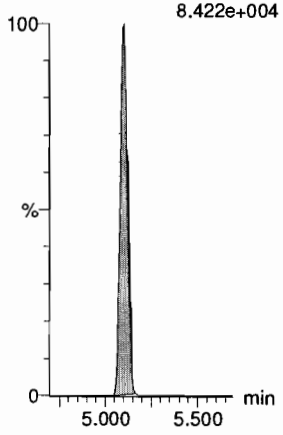
F68:MRM of 2 channels,ES-
632.6 > 450.7
5.393e+003



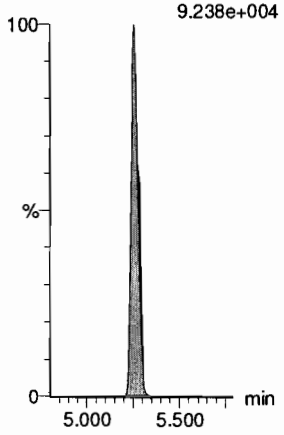
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.913e+004



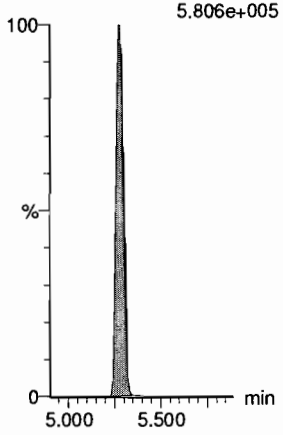
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
8.422e+004



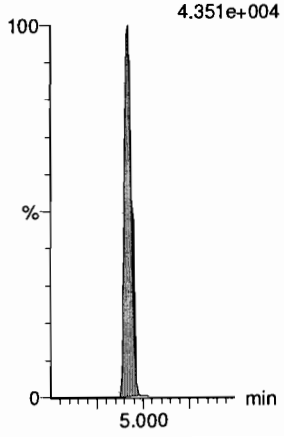
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
9.238e+004



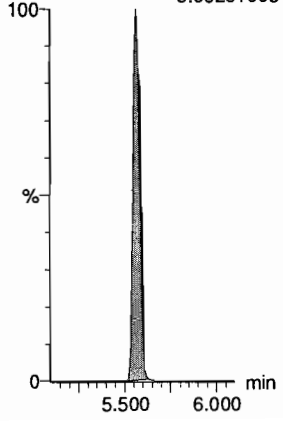
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
5.806e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
4.351e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.962e+005

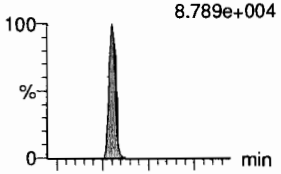


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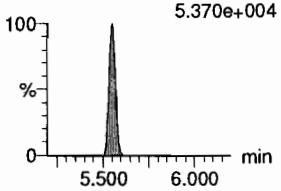
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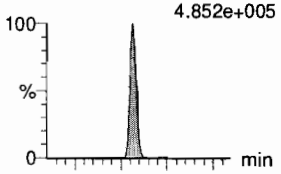
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
8.789e+004



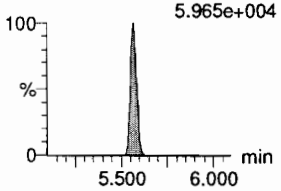
F66:MRM of 2 channels,ES-
627.0 > 80.9
5.370e+004



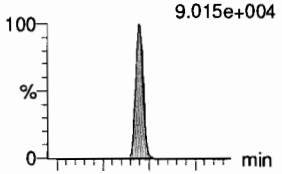
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
4.852e+005



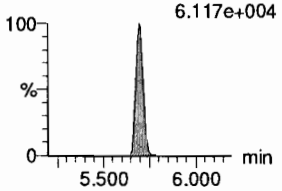
F62:MRM of 4 channels,ES-
612.9 > 318.8
5.965e+004



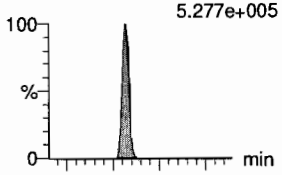
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
9.015e+004



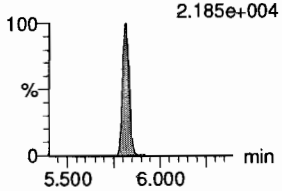
F43:MRM of 2 channels,ES-
512.1 > 219
6.117e+004



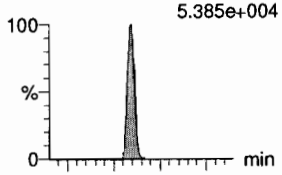
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
5.277e+005



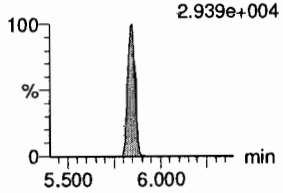
F70:MRM of 2 channels,ES-
662.9 > 319
2.185e+004



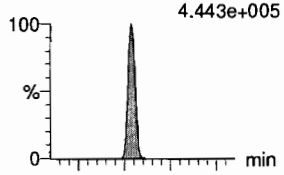
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
5.385e+004



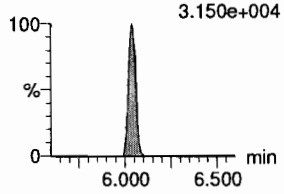
F71:MRM of 2 channels,ES-
698.8 > 98.9
2.939e+004



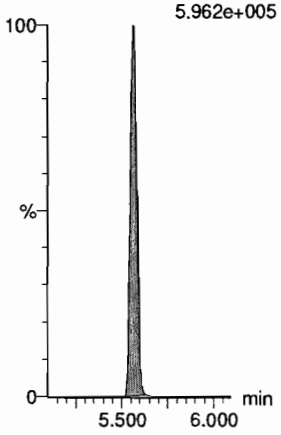
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
4.443e+005



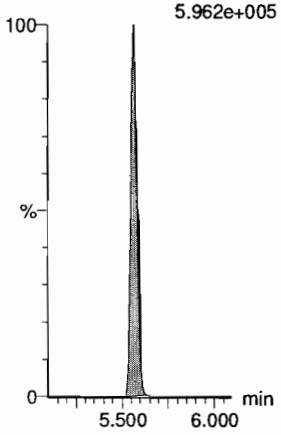
F72:MRM of 2 channels,ES-
713. > 369.0
3.150e+004



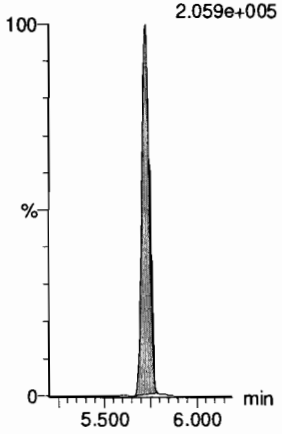
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.962e+005



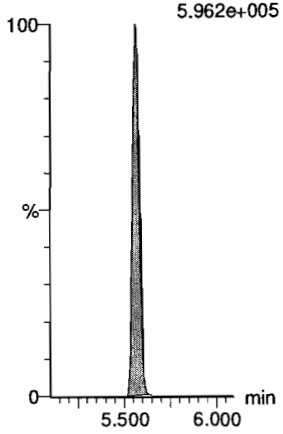
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.962e+005



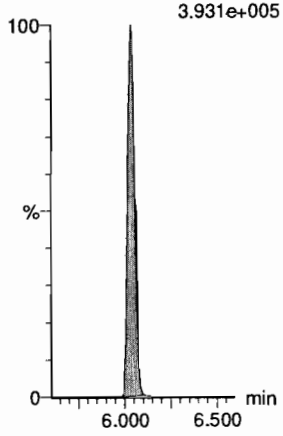
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.059e+005



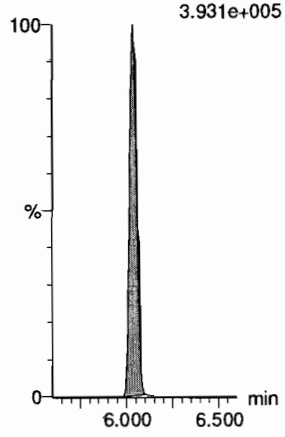
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.962e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.931e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.931e+005

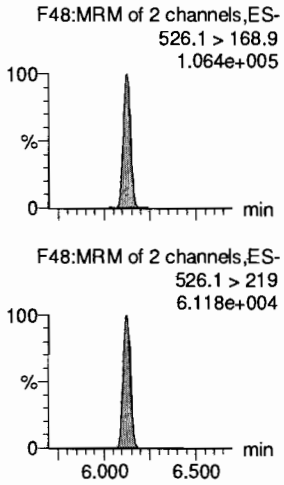


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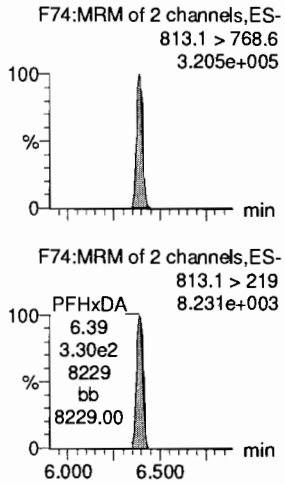
Last Altered: Tuesday, July 09, 2019 07:35:04 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:35:36 Pacific Daylight Time

Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

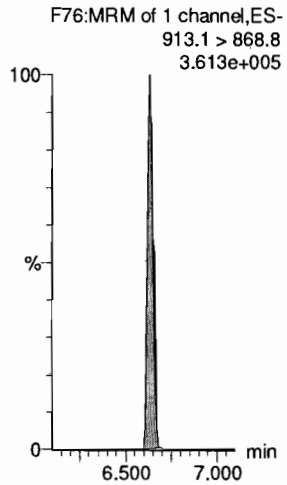
N-EtFOSA



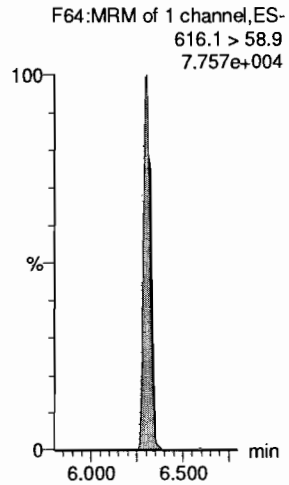
PFHxDA



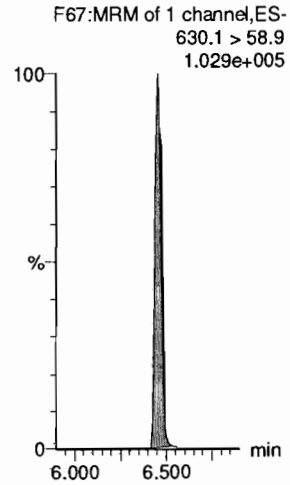
PFODA



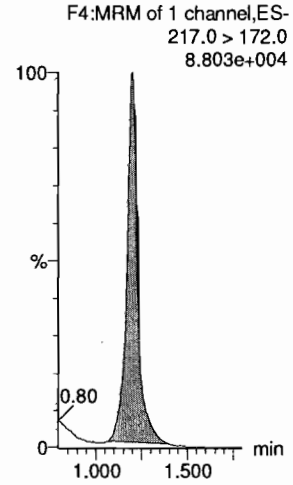
N-MeFOSE



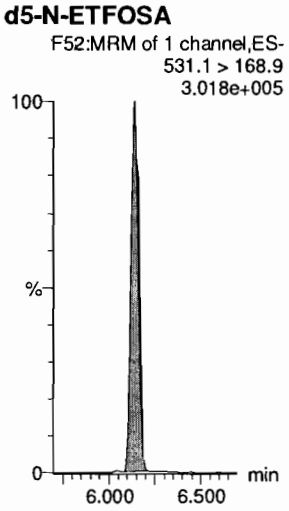
N-EtFOSE



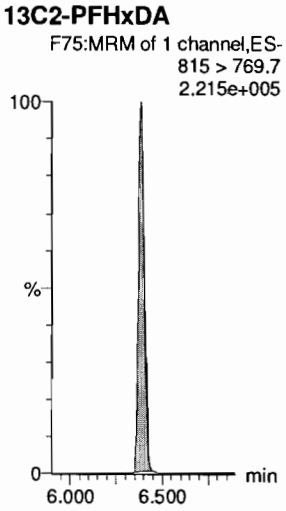
13C4-PFBA



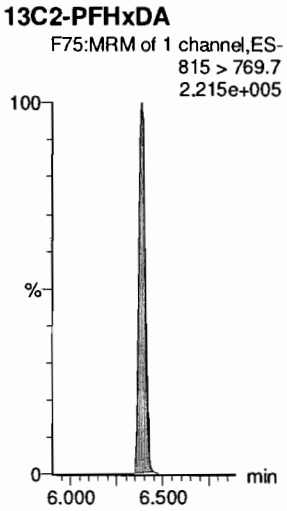
d5-N-ETFOSA



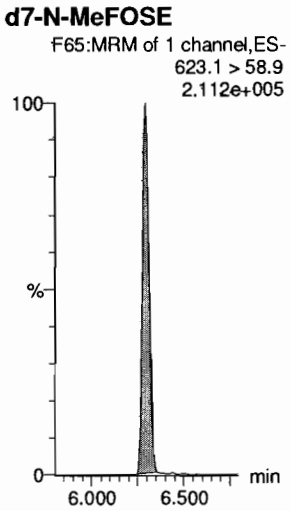
13C2-PFHxDA



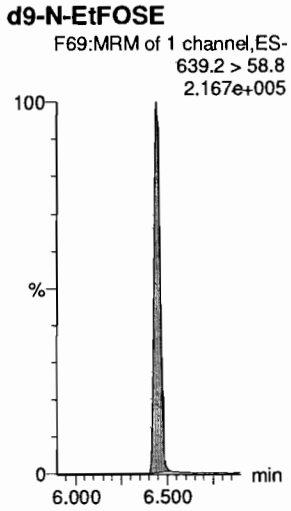
13C2-PFHxDA



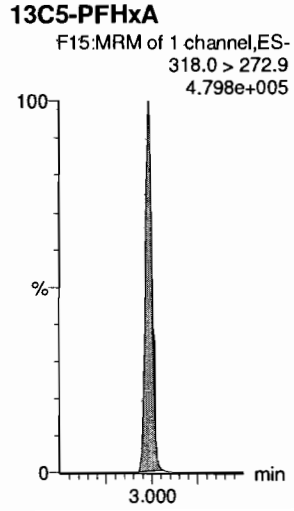
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

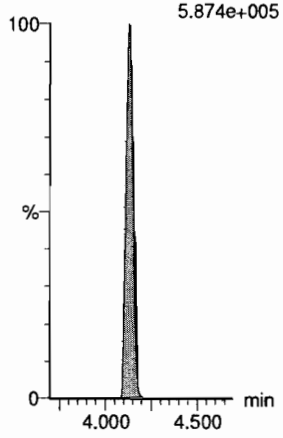


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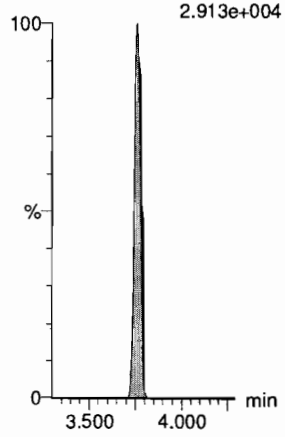
Last Altered: Tuesday, July 09, 2019 07:35:04 Pacific Daylight Time
Printed: Tuesday, July 09, 2019 07:35:36 Pacific Daylight Time

Name: 190708M3_17, Date: 08-Jul-2019, Time: 18:27:06, ID: ST190708M3-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

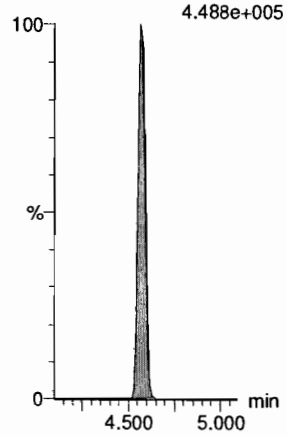
13C8-PFOA



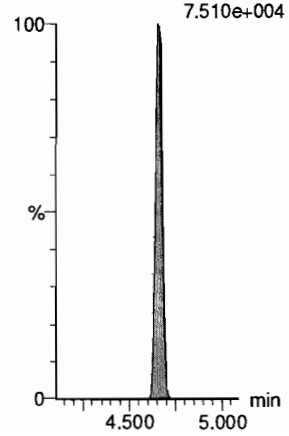
18O2-PFHxS



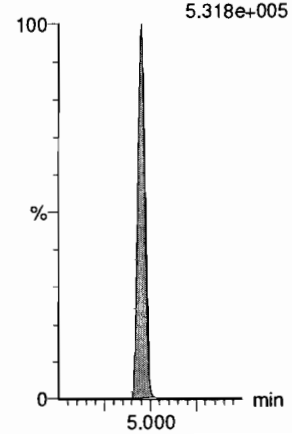
13C9-PFNA



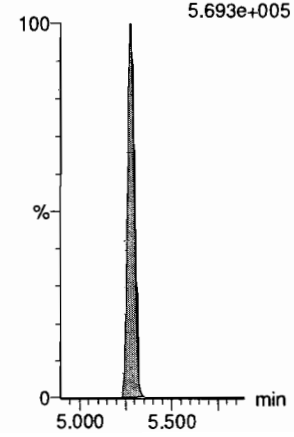
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, July 10, 2019 09:12:08 Pacific Daylight Time
Printed: Wednesday, July 10, 2019 09:12:22 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_RS-07-05-19.mdb 05 Jul 2019 12:04:14
Calibration: 10 Jul 2019 09:12:08

Name: 190709M1_2, Date: 09-Jul-2019, Time: 16:54:35, ID: ST190709M1-1 PFC CS0 19F2414, Description: PFC CS0 19F2414

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190709M1-1 PFC CS0 19F2414	6.18e3	100.0	NO
2	2	13C5-PFHxA	ST190709M1-1 PFC CS0 19F2414	2.09e4	100.0	NO
3	3	18O2-PFHxS	ST190709M1-1 PFC CS0 19F2414	1.19e3	100.0	NO
4	4	13C8-PFOA	ST190709M1-1 PFC CS0 19F2414	2.45e4	100.0	NO
5	5	13C9-PFNA	ST190709M1-1 PFC CS0 19F2414	1.94e4	100.0	NO
6	6	13C4-PFOS	ST190709M1-1 PFC CS0 19F2414	3.15e3	100.0	NO
7	7	13C6-PFDA	ST190709M1-1 PFC CS0 19F2414	2.29e4	100.0	NO
8	8	13C7-PFUdA	ST190709M1-1 PFC CS0 19F2414	2.37e4	100.0	NO

Name: 190709M1_3, Date: 09-Jul-2019, Time: 17:05:13, ID: IB, Description: IB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IB	9.56e3	154.6	YES
2	2	13C5-PFHxA	IB	1.94e4	92.5	NO
3	3	18O2-PFHxS	IB	1.18e3	99.1	NO
4	4	13C8-PFOA	IB	2.28e4	93.0	NO
5	5	13C9-PFNA	IB	1.75e4	90.4	NO
6	6	13C4-PFOS	IB	2.65e3	84.1	NO
7	7	13C6-PFDA	IB	1.96e4	85.8	NO
8	8	13C7-PFUdA	IB	1.75e4	73.7	NO

Name: 190709M1_4, Date: 09-Jul-2019, Time: 17:15:46, ID: 1901857-01 SAOA-B05-GW 0.19379, Description: SAOA-B05-GW

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-01 SAOA-B05-GW 0.19379	2.26e3	36.5	YES
2	2	13C5-PFHxA	1901857-01 SAOA-B05-GW 0.19379	5.39e3	25.7	YES
3	3	18O2-PFHxS	1901857-01 SAOA-B05-GW 0.19379	1.03e3	86.9	NO
4	4	13C8-PFOA	1901857-01 SAOA-B05-GW 0.19379	1.01e4	41.2	YES
5	5	13C9-PFNA	1901857-01 SAOA-B05-GW 0.19379	9.47e3	48.9	YES
6	6	13C4-PFOS	1901857-01 SAOA-B05-GW 0.19379	2.47e3	78.3	NO
7	7	13C6-PFDA	1901857-01 SAOA-B05-GW 0.19379	1.34e4	58.5	NO
8	8	13C7-PFUdA	1901857-01 SAOA-B05-GW 0.19379	1.54e4	64.8	NO

Name: 190709M1_5, Date: 09-Jul-2019, Time: 17:27:59, ID: 1901782-01 REEPEF1658 FS 0.11714, Description: REEPEF1658 FS

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901782-01 REEPEF1658 FS 0.11714	2.10e3	34.0	YES
2	2	13C5-PFHxA	1901782-01 REEPEF1658 FS 0.11714	4.36e3	20.8	YES
3	3	18O2-PFHxS	1901782-01 REEPEF1658 FS 0.11714	9.88e2	83.2	NO
4	4	13C8-PFOA	1901782-01 REEPEF1658 FS 0.11714	6.60e3	26.9	YES
5	5	13C9-PFNA	1901782-01 REEPEF1658 FS 0.11714	6.15e3	31.7	YES
6	6	13C4-PFOS	1901782-01 REEPEF1658 FS 0.11714	2.67e3	84.6	NO
7	7	13C6-PFDA	1901782-01 REEPEF1658 FS 0.11714	7.90e3	34.6	YES
8	8	13C7-PFUdA	1901782-01 REEPEF1658 FS 0.11714	9.43e3	39.8	YES

Dataset: Untitled

Last Altered: Wednesday, July 10, 2019 09:12:08 Pacific Daylight Time
Printed: Wednesday, July 10, 2019 09:12:22 Pacific Daylight Time

Name: 190709M1_6, Date: 09-Jul-2019, Time: 17:38:32, ID: 1901831-01 REEPAR1683FS 0.11262, Description: REEPAR1683FS

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901831-01 REEPAR1683FS 0.11262	3.20e3	51.8	NO
2	2	13C5-PFHxA	1901831-01 REEPAR1683FS 0.11262	6.37e3	30.4	YES
3	3	18O2-PFHxS	1901831-01 REEPAR1683FS 0.11262	9.29e2	78.2	NO
4	4	13C8-PFOA	1901831-01 REEPAR1683FS 0.11262	7.03e3	28.7	YES
5	5	13C9-PFNA	1901831-01 REEPAR1683FS 0.11262	5.41e3	27.9	YES
6	6	13C4-PFOS	1901831-01 REEPAR1683FS 0.11262	2.50e3	79.1	NO
7	7	13C6-PFDA	1901831-01 REEPAR1683FS 0.11262	7.22e3	31.6	YES
8	8	13C7-PFUdA	1901831-01 REEPAR1683FS 0.11262	9.16e3	38.6	YES

Name: 190709M1_7, Date: 09-Jul-2019, Time: 17:49:10, ID: 1901872-01 REEPDW1560FS 0.12023, Description: REEPDW1560FS

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901872-01 REEPDW1560FS 0.12023	2.67e3	43.1	YES
2	2	13C5-PFHxA	1901872-01 REEPDW1560FS 0.12023	4.15e3	19.8	YES
3	3	18O2-PFHxS	1901872-01 REEPDW1560FS 0.12023	9.92e2	83.6	NO
4	4	13C8-PFOA	1901872-01 REEPDW1560FS 0.12023	5.59e3	22.8	YES
5	5	13C9-PFNA	1901872-01 REEPDW1560FS 0.12023	5.00e3	25.8	YES
6	6	13C4-PFOS	1901872-01 REEPDW1560FS 0.12023	2.40e3	76.3	NO
7	7	13C6-PFDA	1901872-01 REEPDW1560FS 0.12023	7.04e3	30.8	YES
8	8	13C7-PFUdA	1901872-01 REEPDW1560FS 0.12023	8.49e3	35.8	YES

Name: 190709M1_8, Date: 09-Jul-2019, Time: 17:59:44, ID: B9F0250-BS1 OPR 1, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9F0250-BS1 OPR 1	9.14e3	148.0	NO
2	2	13C5-PFHxA	B9F0250-BS1 OPR 1	1.77e4	84.3	NO
3	3	18O2-PFHxS	B9F0250-BS1 OPR 1	1.02e3	85.6	NO
4	4	13C8-PFOA	B9F0250-BS1 OPR 1	2.01e4	81.8	NO
5	5	13C9-PFNA	B9F0250-BS1 OPR 1	1.22e4	62.8	NO
6	6	13C4-PFOS	B9F0250-BS1 OPR 1	1.66e3	52.6	NO
7	7	13C6-PFDA	B9F0250-BS1 OPR 1	8.46e3	37.0	YES
8	8	13C7-PFUdA	B9F0250-BS1 OPR 1	3.54e3	14.9	YES

Name: 190709M1_9, Date: 09-Jul-2019, Time: 18:10:22, ID: B9F0250-BSD1 LCSD 1, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9F0250-BSD1 LCSD 1	9.36e3	151.5	YES
2	2	13C5-PFHxA	B9F0250-BSD1 LCSD 1	1.77e4	84.4	NO
3	3	18O2-PFHxS	B9F0250-BSD1 LCSD 1	1.01e3	84.7	NO
4	4	13C8-PFOA	B9F0250-BSD1 LCSD 1	1.91e4	78.0	NO
5	5	13C9-PFNA	B9F0250-BSD1 LCSD 1	1.26e4	64.9	NO
6	6	13C4-PFOS	B9F0250-BSD1 LCSD 1	2.02e3	64.0	NO
7	7	13C6-PFDA	B9F0250-BSD1 LCSD 1	1.04e4	45.5	YES
8	8	13C7-PFUdA	B9F0250-BSD1 LCSD 1	5.20e3	21.9	YES

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Name: 190709M1_10, Date: 09-Jul-2019, Time: 18:20:55, ID: B9F0250-BLK1 Method Blank 1, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9F0250-BLK1 Method Blank 1	8.90e3	144.1	NO
2	2	13C5-PFHxA	B9F0250-BLK1 Method Blank 1	1.75e4	83.7	NO
3	3	18O2-PFHxS	B9F0250-BLK1 Method Blank 1	1.11e3	93.2	NO
4	4	13C8-PFOA	B9F0250-BLK1 Method Blank 1	1.86e4	75.7	NO
5	5	13C9-PFNA	B9F0250-BLK1 Method Blank 1	1.19e4	61.6	NO
6	6	13C4-PFOS	B9F0250-BLK1 Method Blank 1	2.16e3	68.4	NO
7	7	13C6-PFDA	B9F0250-BLK1 Method Blank 1	1.06e4	46.2	YES
8	8	13C7-PFUdA	B9F0250-BLK1 Method Blank 1	5.27e3	22.2	YES

Name: 190709M1_11, Date: 09-Jul-2019, Time: 18:31:33, ID: 1901647-01 B96-PFAS-SB53-0-2-061419 1.15, Description: B96-PFAS-SB53-0-2-061419

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-01 B96-PFAS-SB53-0-2-0614...	9.02e3	145.9	NO
2	2	13C5-PFHxA	1901647-01 B96-PFAS-SB53-0-2-0614...	1.76e4	84.1	NO
3	3	18O2-PFHxS	1901647-01 B96-PFAS-SB53-0-2-0614...	1.03e3	86.8	NO
4	4	13C8-PFOA	1901647-01 B96-PFAS-SB53-0-2-0614...	1.99e4	81.2	NO
5	5	13C9-PFNA	1901647-01 B96-PFAS-SB53-0-2-0614...	1.29e4	66.7	NO
6	6	13C4-PFOS	1901647-01 B96-PFAS-SB53-0-2-0614...	1.52e3	48.4	YES
7	7	13C6-PFDA	1901647-01 B96-PFAS-SB53-0-2-0614...	8.56e3	37.4	YES
8	8	13C7-PFUdA	1901647-01 B96-PFAS-SB53-0-2-0614...	4.39e3	18.5	YES

Name: 190709M1_12, Date: 09-Jul-2019, Time: 18:42:11, ID: 1901647-02 B96-PFAS-SB39-0-2-061419 1.09, Description: B96-PFAS-SB39-0-2-061419

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-02 B96-PFAS-SB39-0-2-0614...	8.83e3	142.8	NO
2	2	13C5-PFHxA	1901647-02 B96-PFAS-SB39-0-2-0614...	1.79e4	85.3	NO
3	3	18O2-PFHxS	1901647-02 B96-PFAS-SB39-0-2-0614...	9.86e2	83.1	NO
4	4	13C8-PFOA	1901647-02 B96-PFAS-SB39-0-2-0614...	1.88e4	76.6	NO
5	5	13C9-PFNA	1901647-02 B96-PFAS-SB39-0-2-0614...	1.02e4	52.7	NO
6	6	13C4-PFOS	1901647-02 B96-PFAS-SB39-0-2-0614...	9.85e2	31.2	YES
7	7	13C6-PFDA	1901647-02 B96-PFAS-SB39-0-2-0614...	5.65e3	24.7	YES
8	8	13C7-PFUdA	1901647-02 B96-PFAS-SB39-0-2-0614...	2.58e3	10.9	YES

Name: 190709M1_13, Date: 09-Jul-2019, Time: 18:52:44, ID: 1901647-03 B96-PFAS-SB54-0-2-061419 1.14, Description: B96-PFAS-SB54-0-2-061419

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-03 B96-PFAS-SB54-0-2-0614...	9.33e3	150.9	YES
2	2	13C5-PFHxA	1901647-03 B96-PFAS-SB54-0-2-0614...	1.83e4	87.5	NO
3	3	18O2-PFHxS	1901647-03 B96-PFAS-SB54-0-2-0614...	9.83e2	82.8	NO
4	4	13C8-PFOA	1901647-03 B96-PFAS-SB54-0-2-0614...	1.81e4	73.8	NO
5	5	13C9-PFNA	1901647-03 B96-PFAS-SB54-0-2-0614...	8.62e3	44.5	YES
6	6	13C4-PFOS	1901647-03 B96-PFAS-SB54-0-2-0614...	5.77e2	18.3	YES
7	7	13C6-PFDA	1901647-03 B96-PFAS-SB54-0-2-0614...	4.37e3	19.1	YES
8	8	13C7-PFUdA	1901647-03 B96-PFAS-SB54-0-2-0614...	1.76e3	7.4	YES

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Name: 190709M1_14, Date: 09-Jul-2019, Time: 19:03:22, ID: 1901647-04 B96-PFAS-SB40-0-2-061419 1.19, Description: B96-PFAS-SB40-0-2-061419

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-04 B96-PFAS-SB40-0-2-0614...	9.13e3	147.7	NO
2	2	13C5-PFHxA	1901647-04 B96-PFAS-SB40-0-2-0614...	1.78e4	84.9	NO
3	3	18O2-PFHxS	1901647-04 B96-PFAS-SB40-0-2-0614...	1.11e3	93.7	NO
4	4	13C8-PFOA	1901647-04 B96-PFAS-SB40-0-2-0614...	2.04e4	83.3	NO
5	5	13C9-PFNA	1901647-04 B96-PFAS-SB40-0-2-0614...	1.32e4	67.9	NO
6	6	13C4-PFOS	1901647-04 B96-PFAS-SB40-0-2-0614...	1.38e3	43.6	YES
7	7	13C6-PFDA	1901647-04 B96-PFAS-SB40-0-2-0614...	8.27e3	36.2	YES
8	8	13C7-PFUdA	1901647-04 B96-PFAS-SB40-0-2-0614...	4.66e3	19.6	YES

Name: 190709M1_15, Date: 09-Jul-2019, Time: 19:13:55, ID: 1901647-05 DUP01-061419 1.16, Description: DUP01-061419

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-05 DUP01-061419 1.16	9.25e3	149.7	NO
2	2	13C5-PFHxA	1901647-05 DUP01-061419 1.16	1.83e4	87.2	NO
3	3	18O2-PFHxS	1901647-05 DUP01-061419 1.16	1.12e3	93.9	NO
4	4	13C8-PFOA	1901647-05 DUP01-061419 1.16	2.04e4	83.3	NO
5	5	13C9-PFNA	1901647-05 DUP01-061419 1.16	1.28e4	66.1	NO
6	6	13C4-PFOS	1901647-05 DUP01-061419 1.16	1.28e3	40.4	YES
7	7	13C6-PFDA	1901647-05 DUP01-061419 1.16	8.08e3	35.3	YES
8	8	13C7-PFUdA	1901647-05 DUP01-061419 1.16	4.64e3	19.6	YES

Name: 190709M1_16, Date: 09-Jul-2019, Time: 19:24:33, ID: 1901647-06 B96-PFAS-SB55-0-2-061419 1.12, Description: B96-PFAS-SB55-0-2-061419

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-06 B96-PFAS-SB55-0-2-0614...	9.47e3	153.2	YES
2	2	13C5-PFHxA	1901647-06 B96-PFAS-SB55-0-2-0614...	1.88e4	89.6	NO
3	3	18O2-PFHxS	1901647-06 B96-PFAS-SB55-0-2-0614...	1.01e3	84.9	NO
4	4	13C8-PFOA	1901647-06 B96-PFAS-SB55-0-2-0614...	2.12e4	86.6	NO
5	5	13C9-PFNA	1901647-06 B96-PFAS-SB55-0-2-0614...	1.42e4	73.3	NO
6	6	13C4-PFOS	1901647-06 B96-PFAS-SB55-0-2-0614...	1.75e3	55.6	NO
7	7	13C6-PFDA	1901647-06 B96-PFAS-SB55-0-2-0614...	1.02e4	44.7	YES
8	8	13C7-PFUdA	1901647-06 B96-PFAS-SB55-0-2-0614...	5.59e3	23.6	YES

Name: 190709M1_17, Date: 09-Jul-2019, Time: 19:35:11, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_18, Date: 09-Jul-2019, Time: 19:45:44, ID: ST190709M1-2 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190709M1-2 PFC CS3 19F2417	6.27e3	101.4	NO
2	2	13C5-PFHxA	ST190709M1-2 PFC CS3 19F2417	2.15e4	102.4	NO
3	3	18O2-PFHxS	ST190709M1-2 PFC CS3 19F2417	1.20e3	101.3	NO
4	4	13C8-PFOA	ST190709M1-2 PFC CS3 19F2417	2.52e4	102.6	NO
5	5	13C9-PFNA	ST190709M1-2 PFC CS3 19F2417	2.00e4	103.2	NO
6	6	13C4-PFOS	ST190709M1-2 PFC CS3 19F2417	3.07e3	97.3	NO
7	7	13C6-PFDA	ST190709M1-2 PFC CS3 19F2417	2.35e4	102.8	NO
8	8	13C7-PFUdA	ST190709M1-2 PFC CS3 19F2417	2.48e4	104.5	NO

Name: 190709M1_19, Date: 09-Jul-2019, Time: 19:56:22, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_20, Date: 09-Jul-2019, Time: 20:06:55, ID: 1901647-08 B96-PFAS-SB50-0-2-061719 1.13, Description: B96-PFAS-SB50-0-2-061719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-08 B96-PFAS-SB50-0-2-0617...	9.94e3	160.8	YES
2	2	13C5-PFHxA	1901647-08 B96-PFAS-SB50-0-2-0617...	1.88e4	89.7	NO
3	3	18O2-PFHxS	1901647-08 B96-PFAS-SB50-0-2-0617...	1.17e3	98.1	NO
4	4	13C8-PFOA	1901647-08 B96-PFAS-SB50-0-2-0617...	2.21e4	90.1	NO
5	5	13C9-PFNA	1901647-08 B96-PFAS-SB50-0-2-0617...	1.55e4	79.7	NO
6	6	13C4-PFOS	1901647-08 B96-PFAS-SB50-0-2-0617...	1.79e3	56.8	NO
7	7	13C6-PFDA	1901647-08 B96-PFAS-SB50-0-2-0617...	1.15e4	50.3	NO
8	8	13C7-PFUdA	1901647-08 B96-PFAS-SB50-0-2-0617...	7.05e3	29.7	YES

Name: 190709M1_21, Date: 09-Jul-2019, Time: 20:17:33, ID: 1901647-09 B96-PFAS-SB51-0-2-061719 1.08, Description: B96-PFAS-SB51-0-2-061719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-09 B96-PFAS-SB51-0-2-0617...	8.68e3	140.5	NO
2	2	13C5-PFHxA	1901647-09 B96-PFAS-SB51-0-2-0617...	1.77e4	84.5	NO
3	3	18O2-PFHxS	1901647-09 B96-PFAS-SB51-0-2-0617...	1.06e3	89.4	NO
4	4	13C8-PFOA	1901647-09 B96-PFAS-SB51-0-2-0617...	1.98e4	80.6	NO
5	5	13C9-PFNA	1901647-09 B96-PFAS-SB51-0-2-0617...	1.24e4	64.1	NO
6	6	13C4-PFOS	1901647-09 B96-PFAS-SB51-0-2-0617...	1.61e3	51.1	NO
7	7	13C6-PFDA	1901647-09 B96-PFAS-SB51-0-2-0617...	8.28e3	36.2	YES
8	8	13C7-PFUdA	1901647-09 B96-PFAS-SB51-0-2-0617...	3.14e3	13.2	YES

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Name: 190709M1_22, Date: 09-Jul-2019, Time: 20:28:07, ID: 1901647-10 B96-PFAS-SB33-0-2-061719 1.07, Description: B96-PFAS-SB33-0-2-061719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-10 B96-PFAS-SB33-0-2-0617...	9.32e3	150.7	YES
2	2	13C5-PFHxA	1901647-10 B96-PFAS-SB33-0-2-0617...	1.87e4	89.0	NO
3	3	18O2-PFHxS	1901647-10 B96-PFAS-SB33-0-2-0617...	1.09e3	91.8	NO
4	4	13C8-PFOA	1901647-10 B96-PFAS-SB33-0-2-0617...	2.00e4	81.5	NO
5	5	13C9-PFNA	1901647-10 B96-PFAS-SB33-0-2-0617...	1.16e4	60.0	NO
6	6	13C4-PFOS	1901647-10 B96-PFAS-SB33-0-2-0617...	9.55e2	30.3	YES
7	7	13C6-PFDA	1901647-10 B96-PFAS-SB33-0-2-0617...	6.36e3	27.8	YES
8	8	13C7-PFUdA	1901647-10 B96-PFAS-SB33-0-2-0617...	3.17e3	13.4	YES

Name: 190709M1_23, Date: 09-Jul-2019, Time: 20:38:45, ID: 1901647-11 B96-PFAS-SB32-0-2-061719 1.07, Description: B96-PFAS-SB32-0-2-061719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-11 B96-PFAS-SB32-0-2-0617...	7.83e3	126.7	NO
2	2	13C5-PFHxA	1901647-11 B96-PFAS-SB32-0-2-0617...	1.56e4	74.2	NO
3	3	18O2-PFHxS	1901647-11 B96-PFAS-SB32-0-2-0617...	8.83e2	74.3	NO
4	4	13C8-PFOA	1901647-11 B96-PFAS-SB32-0-2-0617...	1.68e4	68.3	NO
5	5	13C9-PFNA	1901647-11 B96-PFAS-SB32-0-2-0617...	1.13e4	58.1	NO
6	6	13C4-PFOS	1901647-11 B96-PFAS-SB32-0-2-0617...	1.56e3	49.5	YES
7	7	13C6-PFDA	1901647-11 B96-PFAS-SB32-0-2-0617...	7.62e3	33.3	YES
8	8	13C7-PFUdA	1901647-11 B96-PFAS-SB32-0-2-0617...	2.99e3	12.6	YES

Name: 190709M1_24, Date: 09-Jul-2019, Time: 20:49:18, ID: 1901647-12 B96-PFAS-SB35-0-2-061719 1.13, Description: B96-PFAS-SB35-0-2-061719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-12 B96-PFAS-SB35-0-2-0617...	9.59e3	155.2	YES
2	2	13C5-PFHxA	1901647-12 B96-PFAS-SB35-0-2-0617...	1.94e4	92.5	NO
3	3	18O2-PFHxS	1901647-12 B96-PFAS-SB35-0-2-0617...	1.09e3	91.6	NO
4	4	13C8-PFOA	1901647-12 B96-PFAS-SB35-0-2-0617...	2.13e4	86.9	NO
5	5	13C9-PFNA	1901647-12 B96-PFAS-SB35-0-2-0617...	1.47e4	75.8	NO
6	6	13C4-PFOS	1901647-12 B96-PFAS-SB35-0-2-0617...	1.52e3	48.3	YES
7	7	13C6-PFDA	1901647-12 B96-PFAS-SB35-0-2-0617...	8.52e3	37.3	YES
8	8	13C7-PFUdA	1901647-12 B96-PFAS-SB35-0-2-0617...	3.74e3	15.8	YES

Name: 190709M1_25, Date: 09-Jul-2019, Time: 20:59:57, ID: 1901647-13 B96-PFAS-SB34-0-2-061719 1.08, Description: B96-PFAS-SB34-0-2-061719

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901647-13 B96-PFAS-SB34-0-2-0617...	8.91e3	144.2	NO
2	2	13C5-PFHxA	1901647-13 B96-PFAS-SB34-0-2-0617...	1.78e4	84.8	NO
3	3	18O2-PFHxS	1901647-13 B96-PFAS-SB34-0-2-0617...	9.98e2	84.0	NO
4	4	13C8-PFOA	1901647-13 B96-PFAS-SB34-0-2-0617...	2.00e4	81.4	NO
5	5	13C9-PFNA	1901647-13 B96-PFAS-SB34-0-2-0617...	1.23e4	63.3	NO
6	6	13C4-PFOS	1901647-13 B96-PFAS-SB34-0-2-0617...	1.28e3	40.5	YES
7	7	13C6-PFDA	1901647-13 B96-PFAS-SB34-0-2-0617...	7.72e3	33.8	YES
8	8	13C7-PFUdA	1901647-13 B96-PFAS-SB34-0-2-0617...	4.03e3	17.0	YES

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Name: 190709M1_26, Date: 09-Jul-2019, Time: 21:10:30, ID: B9G0061-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0061-BS1 OPR 0.125	1.32e4	107.1	NO
2	2	13C5-PFHxA	B9G0061-BS1 OPR 0.125	2.74e4	65.4	NO
3	3	18O2-PFHxS	B9G0061-BS1 OPR 0.125	1.68e3	70.7	NO
4	4	13C8-PFOA	B9G0061-BS1 OPR 0.125	3.27e4	66.5	NO
5	5	13C9-PFNA	B9G0061-BS1 OPR 0.125	2.48e4	64.0	NO
6	6	13C4-PFOS	B9G0061-BS1 OPR 0.125	4.48e3	71.1	NO
7	7	13C6-PFDA	B9G0061-BS1 OPR 0.125	3.11e4	68.1	NO
8	8	13C7-PFUdA	B9G0061-BS1 OPR 0.125	3.15e4	66.3	NO

Name: 190709M1_27, Date: 09-Jul-2019, Time: 21:21:08, ID: B9G0061-BSD1 LCSD 0.125, Description: LCSD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0061-BSD1 LCSD 0.125	1.18e4	95.3	NO
2	2	13C5-PFHxA	B9G0061-BSD1 LCSD 0.125	2.50e4	59.7	NO
3	3	18O2-PFHxS	B9G0061-BSD1 LCSD 0.125	1.69e3	71.0	NO
4	4	13C8-PFOA	B9G0061-BSD1 LCSD 0.125	3.06e4	62.4	NO
5	5	13C9-PFNA	B9G0061-BSD1 LCSD 0.125	2.44e4	63.0	NO
6	6	13C4-PFOS	B9G0061-BSD1 LCSD 0.125	3.98e3	63.2	NO
7	7	13C6-PFDA	B9G0061-BSD1 LCSD 0.125	2.91e4	63.7	NO
8	8	13C7-PFUdA	B9G0061-BSD1 LCSD 0.125	3.14e4	66.2	NO

Name: 190709M1_28, Date: 09-Jul-2019, Time: 21:31:42, ID: B9G0061-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0061-BLK1 Method Blank 0.125	1.50e4	121.1	NO
2	2	13C5-PFHxA	B9G0061-BLK1 Method Blank 0.125	3.16e4	75.5	NO
3	3	18O2-PFHxS	B9G0061-BLK1 Method Blank 0.125	1.91e3	80.4	NO
4	4	13C8-PFOA	B9G0061-BLK1 Method Blank 0.125	3.69e4	75.1	NO
5	5	13C9-PFNA	B9G0061-BLK1 Method Blank 0.125	3.05e4	78.7	NO
6	6	13C4-PFOS	B9G0061-BLK1 Method Blank 0.125	4.81e3	76.3	NO
7	7	13C6-PFDA	B9G0061-BLK1 Method Blank 0.125	3.52e4	77.0	NO
8	8	13C7-PFUdA	B9G0061-BLK1 Method Blank 0.125	3.75e4	79.0	NO

Name: 190709M1_29, Date: 09-Jul-2019, Time: 21:42:20, ID: 1901908-01 PFC-AF-01-420-070119 0.125, Description: PFC-AF-01-420-070119

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901908-01 PFC-AF-01-420-070119 0....	8.63e3	69.8	NO
2	2	13C5-PFHxA	1901908-01 PFC-AF-01-420-070119 0....	2.17e4	51.8	NO
3	3	18O2-PFHxS	1901908-01 PFC-AF-01-420-070119 0....	1.33e3	56.1	NO
4	4	13C8-PFOA	1901908-01 PFC-AF-01-420-070119 0....	2.78e4	56.7	NO
5	5	13C9-PFNA	1901908-01 PFC-AF-01-420-070119 0....	2.19e4	56.6	NO
6	6	13C4-PFOS	1901908-01 PFC-AF-01-420-070119 0....	3.69e3	58.5	NO
7	7	13C6-PFDA	1901908-01 PFC-AF-01-420-070119 0....	2.55e4	55.7	NO
8	8	13C7-PFUdA	1901908-01 PFC-AF-01-420-070119 0....	2.82e4	59.4	NO

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Name: 190709M1_30, Date: 09-Jul-2019, Time: 21:52:59, ID: 1901909-01 WIN1907011215MK 0.125, Description: WIN1907011215MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901909-01 WIN1907011215MK 0.125	1.07e4	86.3	NO
2	2	13C5-PFHxA	1901909-01 WIN1907011215MK 0.125	2.15e4	51.2	NO
3	3	18O2-PFHxS	1901909-01 WIN1907011215MK 0.125	1.36e3	57.5	NO
4	4	13C8-PFOA	1901909-01 WIN1907011215MK 0.125	2.67e4	54.4	NO
5	5	13C9-PFNA	1901909-01 WIN1907011215MK 0.125	2.12e4	54.7	NO
6	6	13C4-PFOS	1901909-01 WIN1907011215MK 0.125	3.30e3	52.4	NO
7	7	13C6-PFDA	1901909-01 WIN1907011215MK 0.125	2.44e4	53.5	NO
8	8	13C7-PFUdA	1901909-01 WIN1907011215MK 0.125	2.66e4	56.0	NO

Name: 190709M1_31, Date: 09-Jul-2019, Time: 22:03:31, ID: 1901909-02 WMP1907011205MK 0.125, Description: WMP1907011205MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901909-02 WMP1907011205MK 0.125	1.02e4	82.4	NO
2	2	13C5-PFHxA	1901909-02 WMP1907011205MK 0.125	2.04e4	48.8	YES
3	3	18O2-PFHxS	1901909-02 WMP1907011205MK 0.125	1.24e3	52.0	NO
4	4	13C8-PFOA	1901909-02 WMP1907011205MK 0.125	2.48e4	50.5	NO
5	5	13C9-PFNA	1901909-02 WMP1907011205MK 0.125	1.98e4	51.0	NO
6	6	13C4-PFOS	1901909-02 WMP1907011205MK 0.125	3.48e3	55.1	NO
7	7	13C6-PFDA	1901909-02 WMP1907011205MK 0.125	2.21e4	48.3	YES
8	8	13C7-PFUdA	1901909-02 WMP1907011205MK 0.125	2.52e4	53.2	NO

Name: 190709M1_32, Date: 09-Jul-2019, Time: 22:14:09, ID: 1901909-03 WEF1907011210MK 0.125, Description: WEF1907011210MK

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901909-03 WEF1907011210MK 0.125	8.55e3	69.2	NO
2	2	13C5-PFHxA	1901909-03 WEF1907011210MK 0.125	1.87e4	44.5	YES
3	3	18O2-PFHxS	1901909-03 WEF1907011210MK 0.125	1.37e3	57.9	NO
4	4	13C8-PFOA	1901909-03 WEF1907011210MK 0.125	2.29e4	46.7	YES
5	5	13C9-PFNA	1901909-03 WEF1907011210MK 0.125	1.77e4	45.7	YES
6	6	13C4-PFOS	1901909-03 WEF1907011210MK 0.125	3.41e3	54.0	NO
7	7	13C6-PFDA	1901909-03 WEF1907011210MK 0.125	2.10e4	45.8	YES
8	8	13C7-PFUdA	1901909-03 WEF1907011210MK 0.125	2.27e4	47.9	YES

Name: 190709M1_33, Date: 09-Jul-2019, Time: 22:24:48, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_34, Date: 09-Jul-2019, Time: 22:35:21, ID: ST190709M1-3 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190709M1-3 PFC CS3 19F2417	6.62e3	107.2	NO
2	2	13C5-PFHxA	ST190709M1-3 PFC CS3 19F2417	2.35e4	111.9	NO
3	3	18O2-PFHxS	ST190709M1-3 PFC CS3 19F2417	1.36e3	114.1	NO
4	4	13C8-PFOA	ST190709M1-3 PFC CS3 19F2417	2.77e4	112.9	NO
5	5	13C9-PFNA	ST190709M1-3 PFC CS3 19F2417	2.21e4	114.0	NO
6	6	13C4-PFOS	ST190709M1-3 PFC CS3 19F2417	3.55e3	112.6	NO
7	7	13C6-PFDA	ST190709M1-3 PFC CS3 19F2417	2.52e4	110.2	NO
8	8	13C7-PFUdA	ST190709M1-3 PFC CS3 19F2417	2.68e4	113.0	NO

Name: 190709M1_35, Date: 09-Jul-2019, Time: 22:45:59, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_36, Date: 09-Jul-2019, Time: 22:56:37, ID: B9G0054-BS1 OPR 0.125, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0054-BS1 OPR 0.125	1.00e4	162.6	YES
2	2	13C5-PFHxA	B9G0054-BS1 OPR 0.125	2.05e4	97.9	NO
3	3	18O2-PFHxS	B9G0054-BS1 OPR 0.125	1.13e3	95.1	NO
4	4	13C8-PFOA	B9G0054-BS1 OPR 0.125	2.19e4	89.4	NO
5	5	13C9-PFNA	B9G0054-BS1 OPR 0.125	1.45e4	74.8	NO
6	6	13C4-PFOS	B9G0054-BS1 OPR 0.125	1.47e3	46.6	YES
7	7	13C6-PFDA	B9G0054-BS1 OPR 0.125	1.02e4	44.4	YES
8	8	13C7-PFUdA	B9G0054-BS1 OPR 0.125	4.47e3	18.9	YES

Name: 190709M1_37, Date: 09-Jul-2019, Time: 23:07:10, ID: B9G0054-MS1 Matrix Spike 0.11863, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0054-MS1 Matrix Spike 0.11863	9.85e3	159.4	YES
2	2	13C5-PFHxA	B9G0054-MS1 Matrix Spike 0.11863	2.00e4	95.3	NO
3	3	18O2-PFHxS	B9G0054-MS1 Matrix Spike 0.11863	1.22e3	103.0	NO
4	4	13C8-PFOA	B9G0054-MS1 Matrix Spike 0.11863	2.17e4	88.4	NO
5	5	13C9-PFNA	B9G0054-MS1 Matrix Spike 0.11863	1.52e4	78.7	NO
6	6	13C4-PFOS	B9G0054-MS1 Matrix Spike 0.11863	1.96e3	62.2	NO
7	7	13C6-PFDA	B9G0054-MS1 Matrix Spike 0.11863	1.28e4	55.9	NO
8	8	13C7-PFUdA	B9G0054-MS1 Matrix Spike 0.11863	6.30e3	26.6	YES

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Name: 190709M1_38, Date: 09-Jul-2019, Time: 23:17:48, ID: B9G0054-MSD1 Matrix Spike Dup 0.11187, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0054-MSD1 Matrix Spike Dup 0.111...	1.07e4	173.0	YES
2	2	13C5-PFHxA	B9G0054-MSD1 Matrix Spike Dup 0.111...	2.15e4	102.8	NO
3	3	18O2-PFHxS	B9G0054-MSD1 Matrix Spike Dup 0.111...	1.11e3	93.2	NO
4	4	13C8-PFOA	B9G0054-MSD1 Matrix Spike Dup 0.111...	2.26e4	91.9	NO
5	5	13C9-PFNA	B9G0054-MSD1 Matrix Spike Dup 0.111...	1.53e4	79.0	NO
6	6	13C4-PFOS	B9G0054-MSD1 Matrix Spike Dup 0.111...	1.89e3	59.9	NO
7	7	13C6-PFDA	B9G0054-MSD1 Matrix Spike Dup 0.111...	1.12e4	48.8	YES
8	8	13C7-PFUdA	B9G0054-MSD1 Matrix Spike Dup 0.111...	4.26e3	17.9	YES

Name: 190709M1_39, Date: 09-Jul-2019, Time: 23:28:27, ID: B9G0054-BLK1 Method Blank 0.125, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0054-BLK1 Method Blank 0.125	1.01e4	163.0	YES
2	2	13C5-PFHxA	B9G0054-BLK1 Method Blank 0.125	2.04e4	97.5	NO
3	3	18O2-PFHxS	B9G0054-BLK1 Method Blank 0.125	1.12e3	94.3	NO
4	4	13C8-PFOA	B9G0054-BLK1 Method Blank 0.125	2.03e4	82.9	NO
5	5	13C9-PFNA	B9G0054-BLK1 Method Blank 0.125	1.11e4	57.5	NO
6	6	13C4-PFOS	B9G0054-BLK1 Method Blank 0.125	9.10e2	28.9	YES
7	7	13C6-PFDA	B9G0054-BLK1 Method Blank 0.125	6.34e3	27.7	YES
8	8	13C7-PFUdA	B9G0054-BLK1 Method Blank 0.125	2.68e3	11.3	YES

Name: 190709M1_40, Date: 09-Jul-2019, Time: 23:39:00, ID: 1901902-01 330 Rines 0.11723, Description: 330 Rines

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-01 330 Rines 0.11723	1.00e4	162.6	YES
2	2	13C5-PFHxA	1901902-01 330 Rines 0.11723	2.02e4	96.4	NO
3	3	18O2-PFHxS	1901902-01 330 Rines 0.11723	1.24e3	104.4	NO
4	4	13C8-PFOA	1901902-01 330 Rines 0.11723	2.27e4	92.7	NO
5	5	13C9-PFNA	1901902-01 330 Rines 0.11723	1.51e4	77.8	NO
6	6	13C4-PFOS	1901902-01 330 Rines 0.11723	1.83e3	58.0	NO
7	7	13C6-PFDA	1901902-01 330 Rines 0.11723	1.14e4	50.0	NO
8	8	13C7-PFUdA	1901902-01 330 Rines 0.11723	5.64e3	23.8	YES

Name: 190709M1_41, Date: 09-Jul-2019, Time: 23:49:38, ID: 1901902-02 MW-5S 0.12005, Description: MW-5S

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-02 MW-5S 0.12005	9.64e3	156.0	YES
2	2	13C5-PFHxA	1901902-02 MW-5S 0.12005	1.99e4	94.8	NO
3	3	18O2-PFHxS	1901902-02 MW-5S 0.12005	1.23e3	103.4	NO
4	4	13C8-PFOA	1901902-02 MW-5S 0.12005	2.26e4	92.0	NO
5	5	13C9-PFNA	1901902-02 MW-5S 0.12005	1.56e4	80.4	NO
6	6	13C4-PFOS	1901902-02 MW-5S 0.12005	2.19e3	69.4	NO
7	7	13C6-PFDA	1901902-02 MW-5S 0.12005	1.25e4	54.7	NO
8	8	13C7-PFUdA	1901902-02 MW-5S 0.12005	5.70e3	24.0	YES

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Name: 190709M1_42, Date: 10-Jul-2019, Time: 00:00:12, ID: 1901902-03 MW-5D 0.11682, Description: MW-5D

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-03 MW-5D 0.11682	9.04e3	146.2	NO
2	2	13C5-PFHxA	1901902-03 MW-5D 0.11682	1.83e4	87.6	NO
3	3	18O2-PFHxS	1901902-03 MW-5D 0.11682	1.21e3	101.6	NO
4	4	13C8-PFOA	1901902-03 MW-5D 0.11682	2.17e4	88.3	NO
5	5	13C9-PFNA	1901902-03 MW-5D 0.11682	1.43e4	73.7	NO
6	6	13C4-PFOS	1901902-03 MW-5D 0.11682	1.90e3	60.2	NO
7	7	13C6-PFDA	1901902-03 MW-5D 0.11682	9.67e3	42.3	YES
8	8	13C7-PFUdA	1901902-03 MW-5D 0.11682	4.48e3	18.9	YES

Name: 190709M1_43, Date: 10-Jul-2019, Time: 00:10:50, ID: 1901902-04 MW-3 0.11407, Description: MW-3

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-04 MW-3 0.11407	9.88e3	159.9	YES
2	2	13C5-PFHxA	1901902-04 MW-3 0.11407	1.97e4	94.2	NO
3	3	18O2-PFHxS	1901902-04 MW-3 0.11407	1.30e3	109.7	NO
4	4	13C8-PFOA	1901902-04 MW-3 0.11407	2.21e4	89.9	NO
5	5	13C9-PFNA	1901902-04 MW-3 0.11407	1.61e4	83.2	NO
6	6	13C4-PFOS	1901902-04 MW-3 0.11407	1.93e3	61.1	NO
7	7	13C6-PFDA	1901902-04 MW-3 0.11407	1.09e4	47.5	YES
8	8	13C7-PFUdA	1901902-04 MW-3 0.11407	4.36e3	18.4	YES

Name: 190709M1_44, Date: 10-Jul-2019, Time: 00:21:23, ID: 1901902-05 MW-7 0.11882, Description: MW-7

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-05 MW-7 0.11882	1.05e4	169.9	YES
2	2	13C5-PFHxA	1901902-05 MW-7 0.11882	2.10e4	100.1	NO
3	3	18O2-PFHxS	1901902-05 MW-7 0.11882	1.28e3	108.2	NO
4	4	13C8-PFOA	1901902-05 MW-7 0.11882	2.35e4	95.9	NO
5	5	13C9-PFNA	1901902-05 MW-7 0.11882	1.64e4	84.6	NO
6	6	13C4-PFOS	1901902-05 MW-7 0.11882	2.16e3	68.4	NO
7	7	13C6-PFDA	1901902-05 MW-7 0.11882	1.48e4	64.6	NO
8	8	13C7-PFUdA	1901902-05 MW-7 0.11882	1.05e4	44.2	YES

Name: 190709M1_45, Date: 10-Jul-2019, Time: 00:32:02, ID: 1901902-06 MW-2 0.11398, Description: MW-2

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-06 MW-2 0.11398	1.02e4	164.9	YES
2	2	13C5-PFHxA	1901902-06 MW-2 0.11398	2.08e4	99.1	NO
3	3	18O2-PFHxS	1901902-06 MW-2 0.11398	1.18e3	99.3	NO
4	4	13C8-PFOA	1901902-06 MW-2 0.11398	2.29e4	93.2	NO
5	5	13C9-PFNA	1901902-06 MW-2 0.11398	1.61e4	83.1	NO
6	6	13C4-PFOS	1901902-06 MW-2 0.11398	2.14e3	67.8	NO
7	7	13C6-PFDA	1901902-06 MW-2 0.11398	1.43e4	62.4	NO
8	8	13C7-PFUdA	1901902-06 MW-2 0.11398	8.89e3	37.5	YES

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Name: 190709M1_46, Date: 10-Jul-2019, Time: 00:42:34, ID: 1901902-07 MW-6 0.11432, Description: MW-6

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901902-07 MW-6 0.11432	9.49e3	153.6	YES
2	2	13C5-PFHxA	1901902-07 MW-6 0.11432	1.91e4	91.0	NO
3	3	18O2-PFHxS	1901902-07 MW-6 0.11432	1.19e3	99.8	NO
4	4	13C8-PFOA	1901902-07 MW-6 0.11432	2.25e4	91.6	NO
5	5	13C9-PFNA	1901902-07 MW-6 0.11432	1.60e4	82.3	NO
6	6	13C4-PFOS	1901902-07 MW-6 0.11432	2.20e3	69.8	NO
7	7	13C6-PFDA	1901902-07 MW-6 0.11432	1.45e4	63.2	NO
8	8	13C7-PFUdA	1901902-07 MW-6 0.11432	1.45e4	61.2	NO

Name: 190709M1_47, Date: 10-Jul-2019, Time: 00:53:13, ID: 1901905-01 GW-PT-GZ130-146-157 0.10947, Description: GW-PT-GZ130-146-157

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901905-01 GW-PT-GZ130-146-157 0....	7.87e3	127.3	NO
2	2	13C5-PFHxA	1901905-01 GW-PT-GZ130-146-157 0....	1.58e4	75.6	NO
3	3	18O2-PFHxS	1901905-01 GW-PT-GZ130-146-157 0....	9.55e2	80.4	NO
4	4	13C8-PFOA	1901905-01 GW-PT-GZ130-146-157 0....	1.74e4	70.8	NO
5	5	13C9-PFNA	1901905-01 GW-PT-GZ130-146-157 0....	1.23e4	63.6	NO
6	6	13C4-PFOS	1901905-01 GW-PT-GZ130-146-157 0....	1.42e3	45.1	YES
7	7	13C6-PFDA	1901905-01 GW-PT-GZ130-146-157 0....	8.03e3	35.1	YES
8	8	13C7-PFUdA	1901905-01 GW-PT-GZ130-146-157 0....	3.34e3	14.1	YES

Name: 190709M1_48, Date: 10-Jul-2019, Time: 01:03:51, ID: 1901905-02 GW-PT-GZ130-132.5-143.5 0.11855, Description: GW-PT-GZ130-132.5-143.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901905-02 GW-PT-GZ130-132.5-143....	1.01e4	164.1	YES
2	2	13C5-PFHxA	1901905-02 GW-PT-GZ130-132.5-143....	1.99e4	95.1	NO
3	3	18O2-PFHxS	1901905-02 GW-PT-GZ130-132.5-143....	1.20e3	101.1	NO
4	4	13C8-PFOA	1901905-02 GW-PT-GZ130-132.5-143....	2.25e4	91.7	NO
5	5	13C9-PFNA	1901905-02 GW-PT-GZ130-132.5-143....	1.66e4	85.8	NO
6	6	13C4-PFOS	1901905-02 GW-PT-GZ130-132.5-143....	2.17e3	68.7	NO
7	7	13C6-PFDA	1901905-02 GW-PT-GZ130-132.5-143....	1.35e4	59.3	NO
8	8	13C7-PFUdA	1901905-02 GW-PT-GZ130-132.5-143....	7.05e3	29.7	YES

Name: 190709M1_49, Date: 10-Jul-2019, Time: 01:14:24, ID: 1901905-03 GW-PT-GZ130-115-126 0.11888, Description: GW-PT-GZ130-115-126

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901905-03 GW-PT-GZ130-115-126 0.1..	9.84e3	159.2	YES
2	2	13C5-PFHxA	1901905-03 GW-PT-GZ130-115-126 0.1..	1.91e4	91.3	NO
3	3	18O2-PFHxS	1901905-03 GW-PT-GZ130-115-126 0.1..	1.14e3	96.2	NO
4	4	13C8-PFOA	1901905-03 GW-PT-GZ130-115-126 0.1..	2.13e4	86.6	NO
5	5	13C9-PFNA	1901905-03 GW-PT-GZ130-115-126 0.1..	1.53e4	79.2	NO
6	6	13C4-PFOS	1901905-03 GW-PT-GZ130-115-126 0.1..	2.03e3	64.4	NO
7	7	13C6-PFDA	1901905-03 GW-PT-GZ130-115-126 0.1..	1.25e4	54.6	NO
8	8	13C7-PFUdA	1901905-03 GW-PT-GZ130-115-126 0.1..	5.26e3	22.2	YES

Dataset: Untitled

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Name: 190709M1_50, Date: 10-Jul-2019, Time: 01:25:02, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_51, Date: 10-Jul-2019, Time: 01:35:40, ID: ST190709M1-4 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190709M1-4 PFC CS3 19F2417	6.73e3	108.9	NO
2	2	13C5-PFHxA	ST190709M1-4 PFC CS3 19F2417	2.35e4	112.1	NO
3	3	18O2-PFHxS	ST190709M1-4 PFC CS3 19F2417	1.41e3	119.1	NO
4	4	13C8-PFOA	ST190709M1-4 PFC CS3 19F2417	2.67e4	109.0	NO
5	5	13C9-PFNA	ST190709M1-4 PFC CS3 19F2417	2.14e4	110.5	NO
6	6	13C4-PFOS	ST190709M1-4 PFC CS3 19F2417	3.44e3	109.1	NO
7	7	13C6-PFDA	ST190709M1-4 PFC CS3 19F2417	2.52e4	110.0	NO
8	8	13C7-PFUdA	ST190709M1-4 PFC CS3 19F2417	2.67e4	112.4	NO

Name: 190709M1_52, Date: 10-Jul-2019, Time: 01:46:13, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_53, Date: 10-Jul-2019, Time: 01:56:43, ID: 1901905-04 GW-PT-GZ130-115-126 DUP 0.11362, Description: GW-PT-GZ130-115-126 DUP

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901905-04 GW-PT-GZ130-115-126 D...	1.09e4	176.7	YES
2	2	13C5-PFHxA	1901905-04 GW-PT-GZ130-115-126 D...	2.19e4	104.5	NO
3	3	18O2-PFHxS	1901905-04 GW-PT-GZ130-115-126 D...	1.31e3	110.0	NO
4	4	13C8-PFOA	1901905-04 GW-PT-GZ130-115-126 D...	2.52e4	102.8	NO
5	5	13C9-PFNA	1901905-04 GW-PT-GZ130-115-126 D...	1.80e4	92.8	NO
6	6	13C4-PFOS	1901905-04 GW-PT-GZ130-115-126 D...	2.78e3	88.1	NO
7	7	13C6-PFDA	1901905-04 GW-PT-GZ130-115-126 D...	1.76e4	76.9	NO
8	8	13C7-PFUdA	1901905-04 GW-PT-GZ130-115-126 D...	1.10e4	46.3	YES

Dataset: Untitled

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Name: 190709M1_54, Date: 10-Jul-2019, Time: 02:07:22, ID: 1901905-05 GW-PT-GZ130-74-85 0.11738, Description: GW-PT-GZ130-74-85

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901905-05 GW-PT-GZ130-74-85 0.117..	9.51e3	153.8	YES
2	2	13C5-PFHxA	1901905-05 GW-PT-GZ130-74-85 0.117..	1.89e4	90.3	NO
3	3	18O2-PFHxS	1901905-05 GW-PT-GZ130-74-85 0.117..	1.22e3	102.4	NO
4	4	13C8-PFOA	1901905-05 GW-PT-GZ130-74-85 0.117..	2.12e4	86.4	NO
5	5	13C9-PFNA	1901905-05 GW-PT-GZ130-74-85 0.117..	1.45e4	74.9	NO
6	6	13C4-PFOS	1901905-05 GW-PT-GZ130-74-85 0.117..	1.82e3	57.9	NO
7	7	13C6-PFDA	1901905-05 GW-PT-GZ130-74-85 0.117..	1.13e4	49.6	YES
8	8	13C7-PFUdA	1901905-05 GW-PT-GZ130-74-85 0.117..	5.16e3	21.7	YES

Name: 190709M1_55, Date: 10-Jul-2019, Time: 02:18:00, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190709M1_56, Date: 10-Jul-2019, Time: 02:28:33, ID: ST190709M1-5 PFC CS3 19F2417, Description: PFC CS3 19F2417

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190709M1-5 PFC CS3 19F2417	6.58e3	106.5	NO
2	2	13C5-PFHxA	ST190709M1-5 PFC CS3 19F2417	2.26e4	108.0	NO
3	3	18O2-PFHxS	ST190709M1-5 PFC CS3 19F2417	1.31e3	110.5	NO
4	4	13C8-PFOA	ST190709M1-5 PFC CS3 19F2417	2.61e4	106.3	NO
5	5	13C9-PFNA	ST190709M1-5 PFC CS3 19F2417	2.19e4	113.0	NO
6	6	13C4-PFOS	ST190709M1-5 PFC CS3 19F2417	3.67e3	116.5	NO
7	7	13C6-PFDA	ST190709M1-5 PFC CS3 19F2417	2.48e4	108.3	NO
8	8	13C7-PFUdA	ST190709M1-5 PFC CS3 19F2417	2.66e4	112.0	NO

Name: 190709M1_57, Date: 10-Jul-2019, Time: 02:39:11, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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	6.26e0	0.0	YES

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Dataset: F:\Projects\PFAS.PRO\Results\190709M1\190709M1-IB.qld

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Name: 190709M1_3, Date: 09-Jul-2019, Time: 17:05:13, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8		7119.060	1.00					NO		
2	2	PFPrS	248.9 > 79.9		1215.730	1.00					NO		
3	3	3:3 FTCA	240.9 > 176.9		9608.994	1.00					NO		
4	4	PFPeA	263.1 > 218.9		9608.994	1.00					NO		
5	5	PFBS	299.0 > 79.7		1215.730	1.00					NO		
6	6	4:2 FTS	327.0 > 306.9		2240.177	1.00					NO		
7	47	13C3-PFBA	216.1 > 171.8	7119.060	9555.481	1.00	1.19	9.313	12.7	102.0	NO		
8	49	13C3-PFBS	302.0 > 98.8	1215.730	1177.326	1.00	2.47	12.908	12.7	101.3	NO		
9	48	13C3-PFPeA	266.0 > 221.8	9608.994	19374.793	1.00	2.18	6.199	12.6	100.5	NO		
10	48	13C3-PFPeA	266.0 > 221.8	9608.994	19374.793	1.00	2.18	6.199	12.6	100.5	NO		
11	49	13C3-PFBS	302.0 > 98.8	1215.730	1177.326	1.00	2.47	12.908	12.7	101.3	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2240.177	1177.326	1.00	2.89	23.785	13.5	108.3	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0		7553.757	1.00					NO		
15	8	PFPeS	349.1>80.1		1215.730	1.00					NO		
16	9	HFPO-DA	285.1 > 168.9		1347.523	1.00					NO		
17	10	5:3 FTCA	340.9 > 236.9		9873.420	1.00					NO		
18	11	PFHpA	363.0 > 318.9		9873.420	1.00					NO		
19	12	ADONA	376.8 > 250.9		9873.420	1.00					NO		
20	52	13C2-PFHxA	315.0 > 270.0	7553.757	19374.793	1.00	2.98	4.873	4.9	97.6	NO		
21	49	13C3-PFBS	302.0 > 98.8	1215.730	1177.326	1.00	2.47	12.908	12.7	101.3	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1347.523	19374.793	1.00	3.19	0.869	4.8	95.9	NO		
23	53	13C4-PFHpA	367.2 > 321.8	9873.420	19374.793	1.00	3.59	6.370	11.9	95.3	NO		
24	53	13C4-PFHpA	367.2 > 321.8	9873.420	19374.793	1.00	3.59	6.370	11.9	95.3	NO		
25	53	13C4-PFHpA	367.2 > 321.8	9873.420	19374.793	1.00	3.59	6.370	11.9	95.3	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	5.448	2639.273	1.00	3.75	0.026	0.1		NO	0.979	NO
28	15	6:2 FTS	427.0 > 406.9		1763.114	1.00					NO		
29	16	L-PFOA	412.8 > 368.9	40.107	17153.268	1.00	4.12	0.029	0.0		NO	3.910	NO
30	18	PFecHS	460.8 > 381.0		17153.268	1.00					NO		
31	19	PFHpS	449.0 > 80.0		2776.179	1.00					NO		
32	20	7:3 FTCA	440.9 > 336.9		17078.904	1.00					NO		
33	54	13C3-PFHxS	401.8 > 79.9	2639.273	1177.326	1.00	3.75	28.022	12.6	100.8	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1763.114	2652.298	1.00	4.06	8.309	14.2	113.7	NO		
35	58	13C2-PFOA	414.9 > 369.7	17153.268	22813.297	1.00	4.12	9.399	12.7	101.4	NO		
36	58	13C2-PFOA	414.9 > 369.7	17153.268	22813.297	1.00	4.12	9.399	12.7	101.4	NO		

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Name: 190709M1_3, Date: 09-Jul-2019, Time: 17:05:13, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	2776.179	2652.298	1.00	4.65	13.084	12.9	103.6	NO		
38	56	13C5-PFNA	468.2 > 422.9	17078.904	17520.570	1.00	4.56	12.185	12.2	97.9	NO		
39	-1												
40	21	PFNA	463.0 > 418.8		17078.904	1.00					NO		
41	22	PFOSA	497.9 > 77.9		1328.920	1.00					NO		
42	23	L-PFOS	498.9 > 79.9		2776.179	1.00					NO		
43	25	9Cl-PF30NS	530.7 > 350.8		2776.179	1.00					NO		
44	26	PFDA	513 > 468.8		16131.271	1.00					NO		
45	27	8:2 FTS	527.0 > 506.9		1733.964	1.00					NO		
46	56	13C5-PFNA	468.2 > 422.9	17078.904	17520.570	1.00	4.56	12.185	12.2	97.9	NO		
47	57	13C8-PFOSA	506.1 > 77.7	1328.920	17491.832	1.00	4.62	0.950	7.3	58.7	NO		
48	59	13C8-PFOS	507.0 > 79.9	2776.179	2652.298	1.00	4.65	13.084	12.9	103.6	NO		
49	59	13C8-PFOS	507.0 > 79.9	2776.179	2652.298	1.00	4.65	13.084	12.9	103.6	NO		
50	60	13C2-PFDA	515.1 > 469.9	16131.271	19622.246	1.00	4.94	10.276	13.0	103.6	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1733.964	2652.298	1.00	4.91	8.172	14.2	113.8	NO		
52	-1												
53	28	PFNS	549.1 > 80.1		2776.179	1.00					NO		
54	29	L-MeFOSAA	570 > 419		2776.564	1.00					NO		
55	31	L-EtFOSAA	584.1 > 419		3066.358	1.00					NO		
56	33	PFUdA	563.0 > 518.9		18052.746	1.00					NO		
57	34	PFDS	598.8 > 79.9		1733.964	1.00					NO		
58	35	11Cl-PF30UdS	632.6 > 452.7		8277.722	1.00					NO		
59	59	13C8-PFOS	507.0 > 79.9	2776.179	2652.298	1.00	4.65	13.084	12.9	103.6	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	2776.564	17491.832	1.00	5.09	1.984	12.5	100.3	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	3066.358	17491.832	1.00	5.25	2.191	12.5	100.1	NO		
62	63	13C2-PFUdA	565 > 519.8	18052.746	17491.832	1.00	5.27	12.901	12.0	96.4	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1733.964	2652.298	1.00	4.91	8.172	14.2	113.8	NO		
64	65	13C2-PFDoA	614.7 > 569.7	8277.722	19622.246	1.00	5.56	5.273	4.6	36.7	YES		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1733.964	1.00					NO		
67	37	PFDoA	612.9 > 569.0		8277.722	1.00					NO		
68	38	N-MeFOSA	512.1 > 168.9			1.00					NO		
69	39	PFTrDA	662.9 > 618.9		8277.722	1.00					NO		
70	40	PFDoS	698.8 > 79.9		1172.318	1.00					NO		
71	41	PFTeDA	713.0 > 669.0		1172.318	1.00					NO		
72	65	13C2-PFDoA	614.7 > 569.7	8277.722	19622.246	1.00	5.56	5.273	4.6	36.7	YES		

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Name: 190709M1_3, Date: 09-Jul-2019, Time: 17:05:13, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	8277.722	19622.246	1.00	5.56	5.273	4.6	36.7	YES		
74	66	d3-N-MeFOSA	515.2 > 168.9		17491.832	1.00					NO		
75	65	13C2-PFDoA	614.7 > 569.7	8277.722	19622.246	1.00	5.56	5.273	4.6	36.7	YES		
76	67	13C2-PFTeDA	715.1 > 669.7	1172.318	17491.832	1.00	6.03	0.838	1.2	9.5	YES		
77	67	13C2-PFTeDA	715.1 > 669.7	1172.318	17491.832	1.00	6.03	0.838	1.2	9.5	YES		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9			1.00					NO		
80	43	PFHxDA	813.1 > 768.6		702.355	1.00					NO		
81	44	PFODA	913.1 > 868.8		702.355	1.00					NO		
82	45	N-MeFOSE	616.1 > 58.9		499.152	1.00					NO		
83	46	N-EtFOSE	630.1 > 58.9		423.058	1.00					NO		
84	72	13C4-PFBA	217.0 > 172.0	9555.481	9555.481	1.00	1.19	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9		17491.832	1.00					NO		
86	69	13C2-PFHxDA	815 > 769.7	702.355	17491.832	1.00	6.38	0.502	0.5	10.0	YES		
87	69	13C2-PFHxDA	815 > 769.7	702.355	17491.832	1.00	6.38	0.502	0.5	10.0	YES		
88	70	d7-N-MeFOSE	623.1 > 58.9	499.152	17491.832	1.00	6.30	0.357	12.9	8.6	YES		
89	71	d9-N-EtFOSE	639.2 > 58.8	423.058	17491.832	1.00	6.45	0.302	10.6	7.1	YES		
90	73	13C5-PFHxA	318.0 > 272.9	19374.793	19374.793	1.00	2.98	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	22813.297	22813.297	1.00	4.12	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1177.326	1177.326	1.00	3.75	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	17520.570	17520.570	1.00	4.56	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	2652.298	2652.298	1.00	4.65	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	19622.246	19622.246	1.00	4.94	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	17491.832	17491.832	1.00	5.27	12.500	12.5	100.0	NO		

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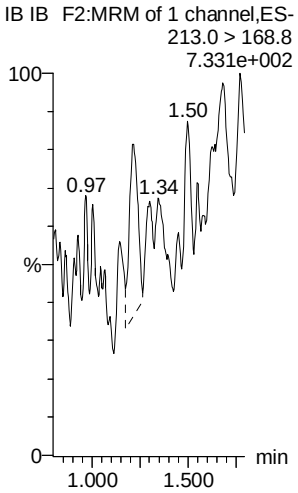
Dataset: F:\Projects\PFAS.PRO\Results\190709M1\190709M1-IB.qld

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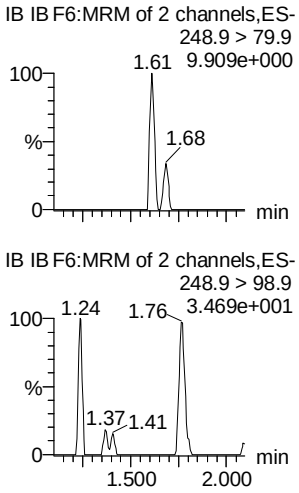
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Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190709M1_3, Date: 09-Jul-2019, Time: 17:05:13, ID: IB, Description: IB

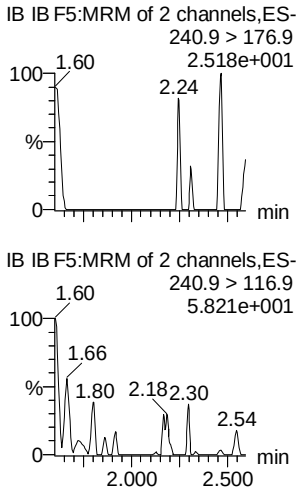
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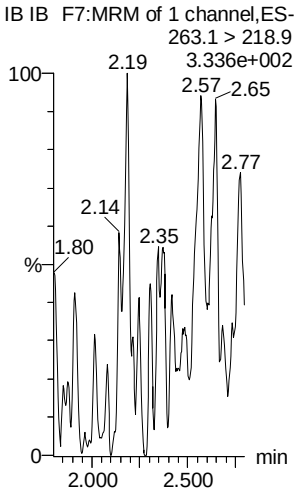
PFPrS



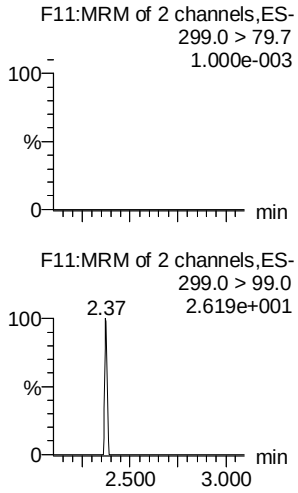
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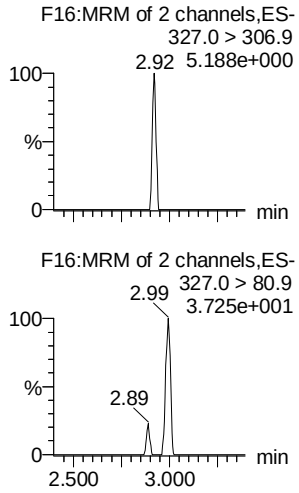
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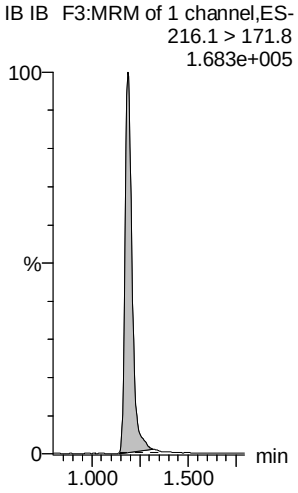
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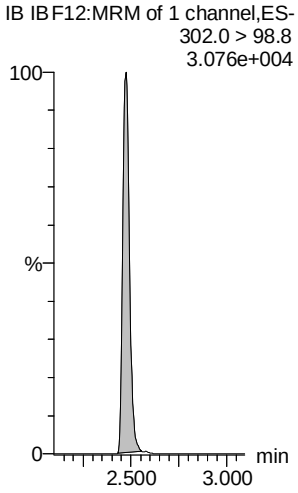
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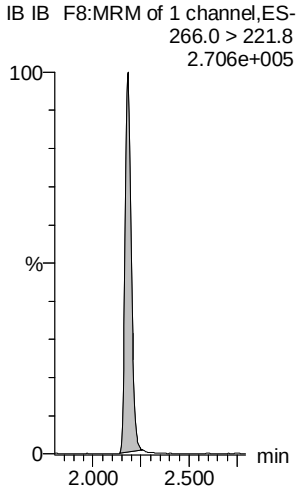
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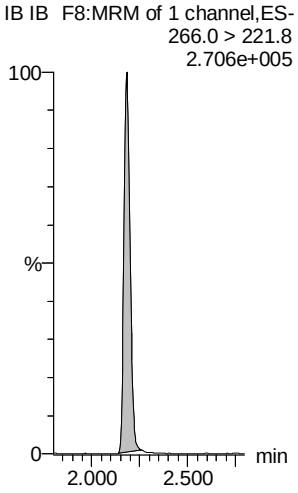
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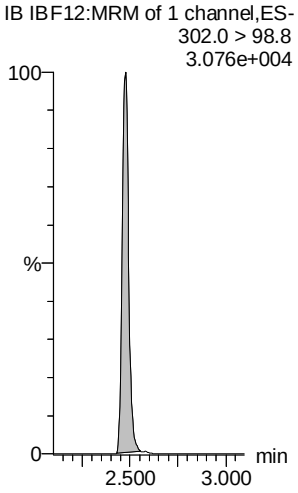
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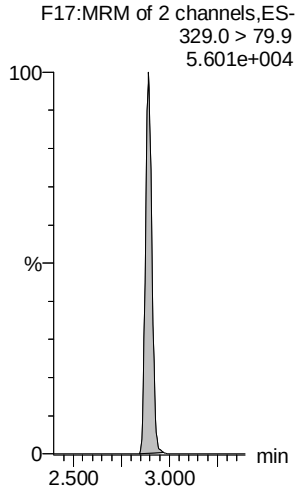
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13C3-PFBS



13C2-4:2 FTS



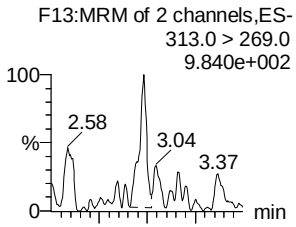
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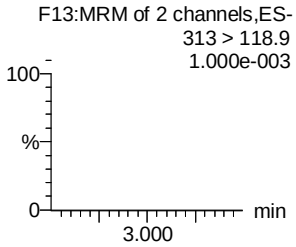
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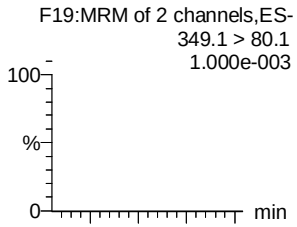
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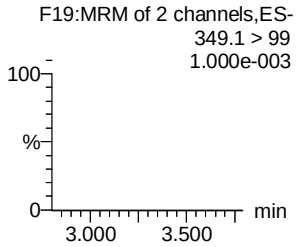
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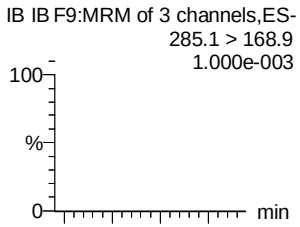


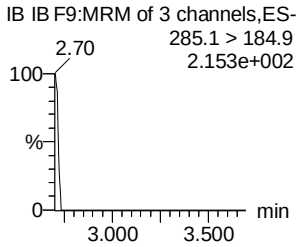
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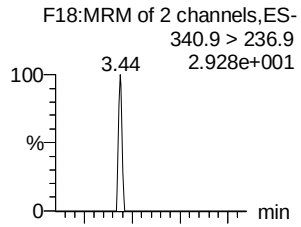


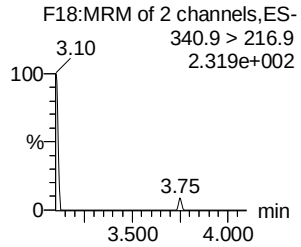
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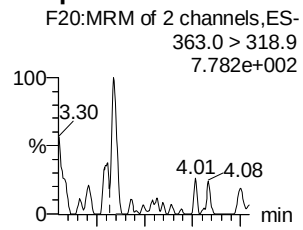


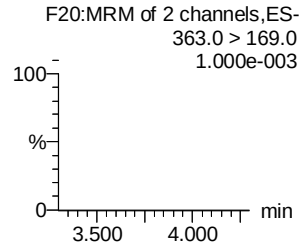
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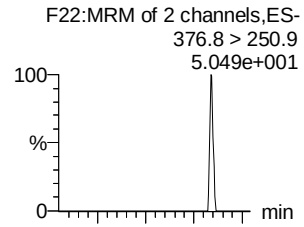


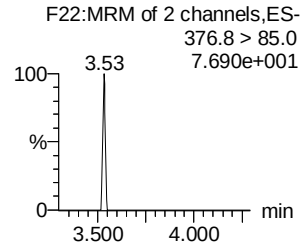
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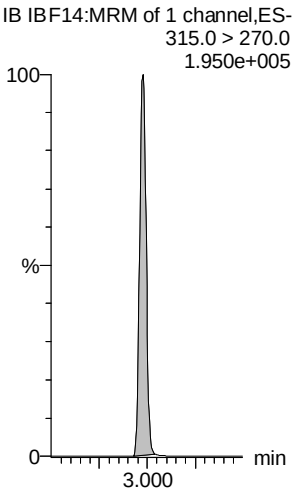


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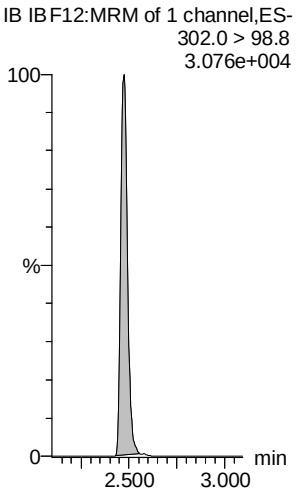




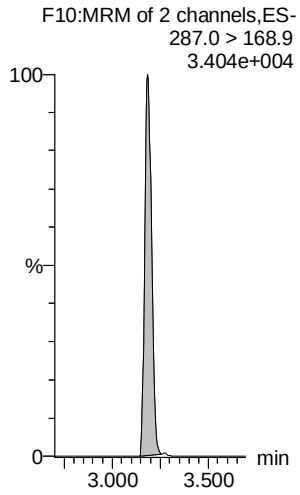
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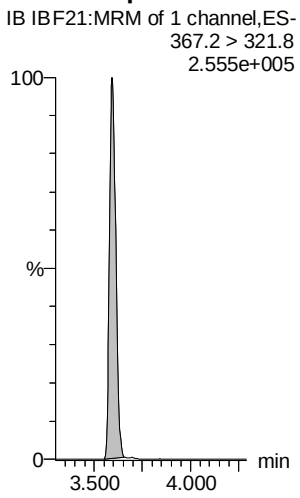
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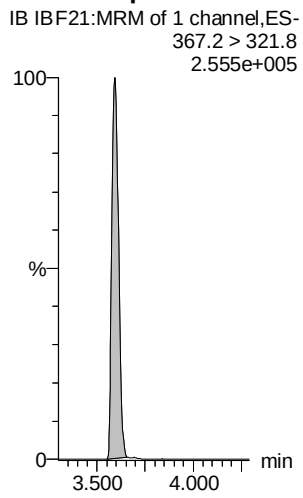
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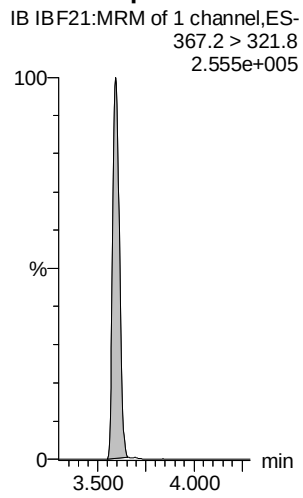
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13C4-PFHpA



13C4-PFHpA

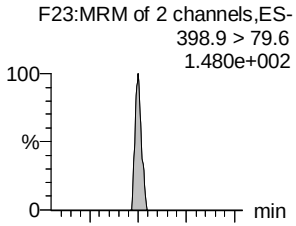


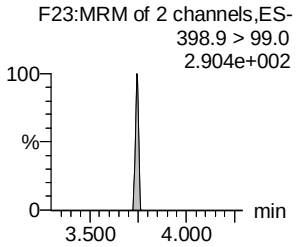
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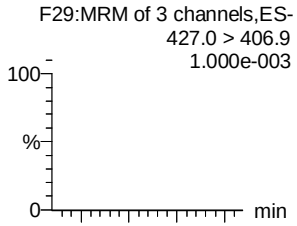
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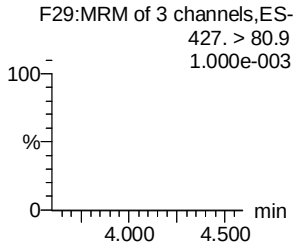
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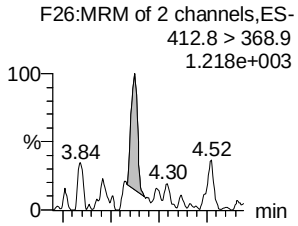


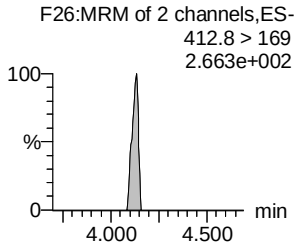
6:2 FTS



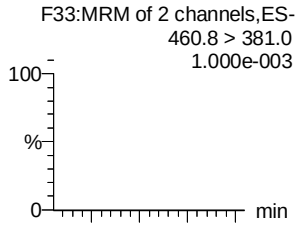


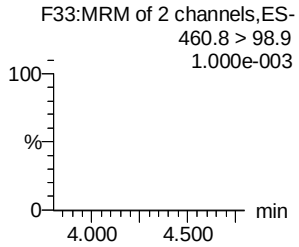
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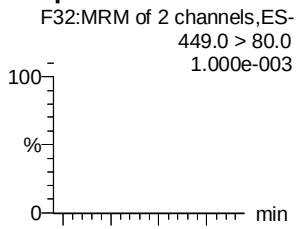


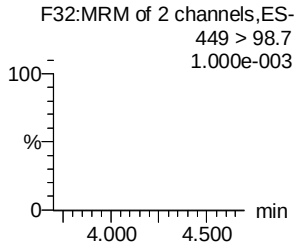
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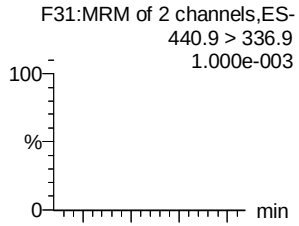


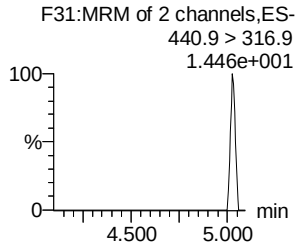
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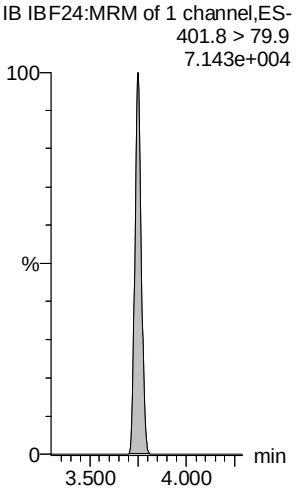


7:3 FTCA

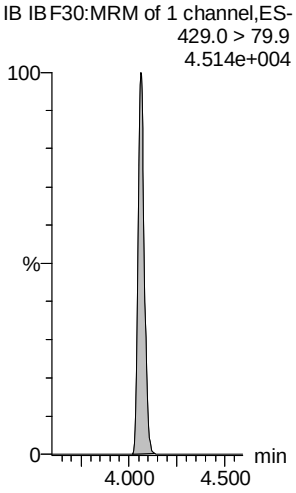




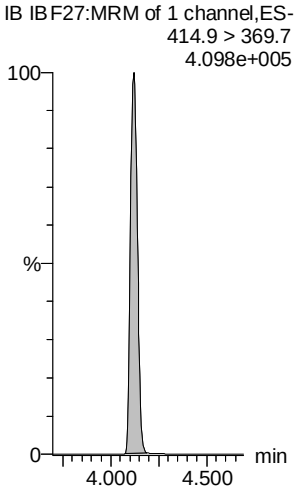
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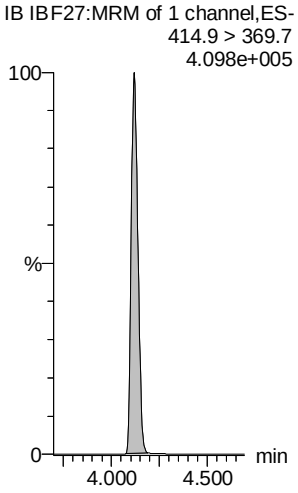
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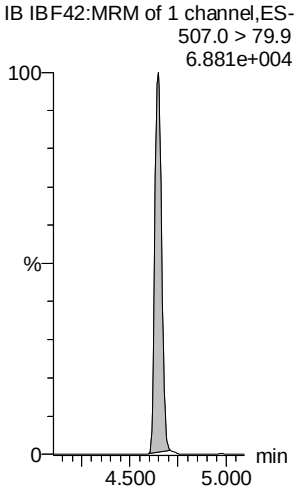
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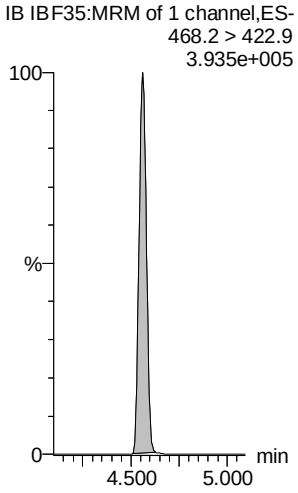
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13C8-PFOS



13C5-PFNA

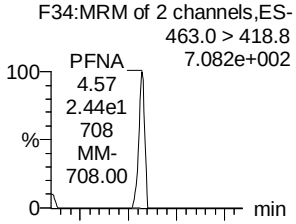


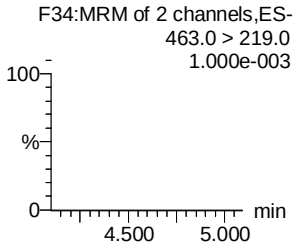
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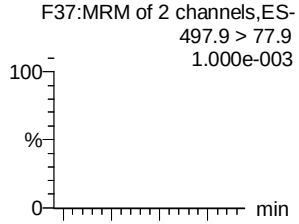
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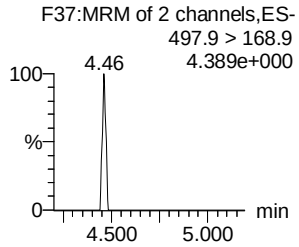
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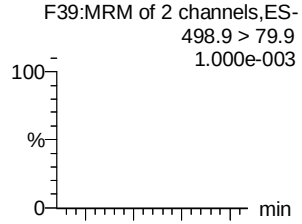


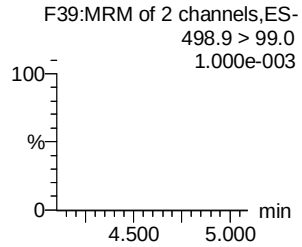
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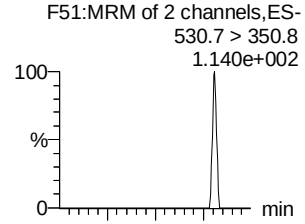


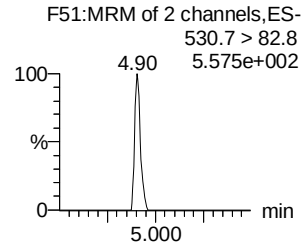
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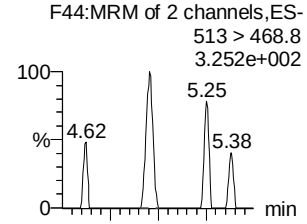


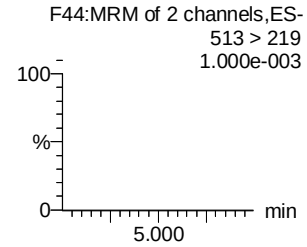
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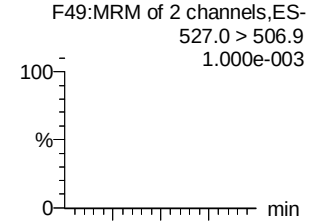


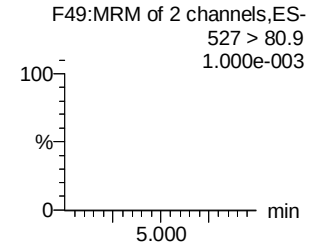
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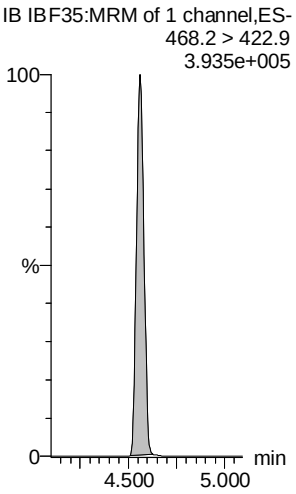


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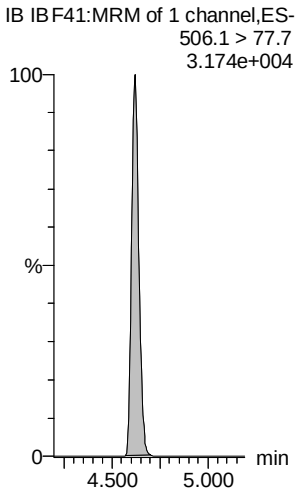




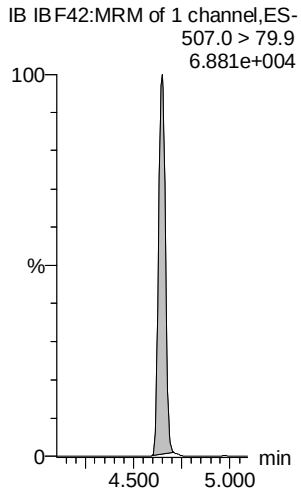
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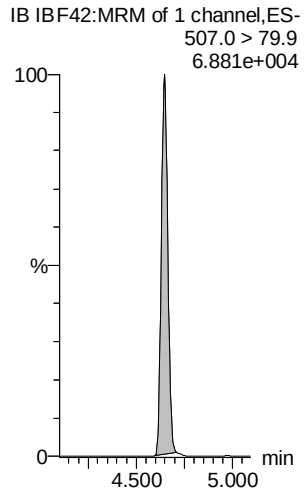
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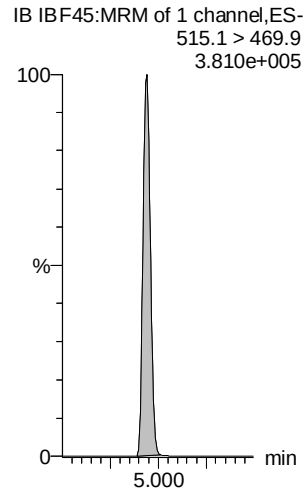
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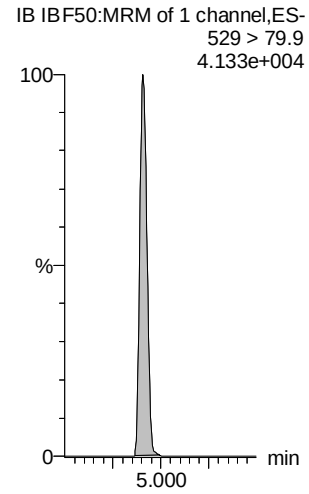
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13C2-PFDA



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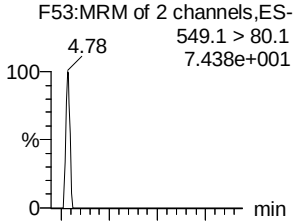


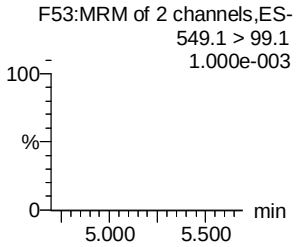
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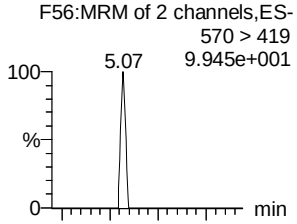
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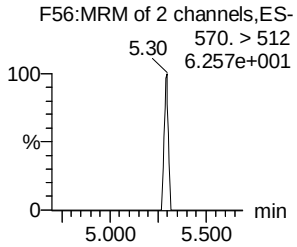
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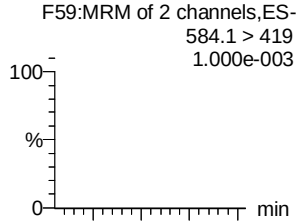


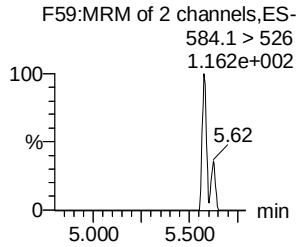
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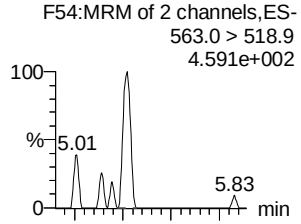


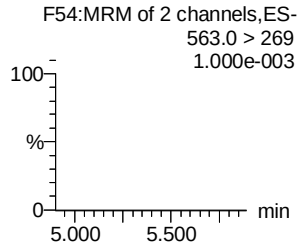
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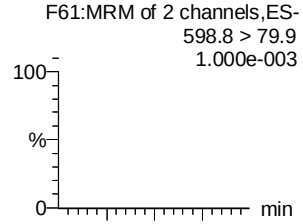


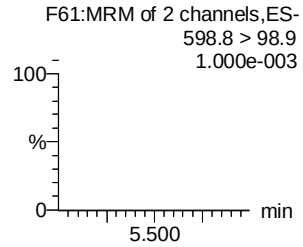
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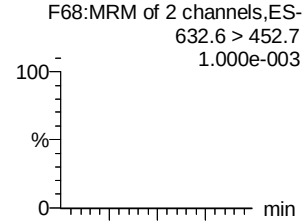


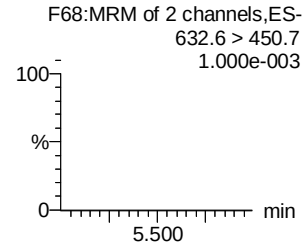
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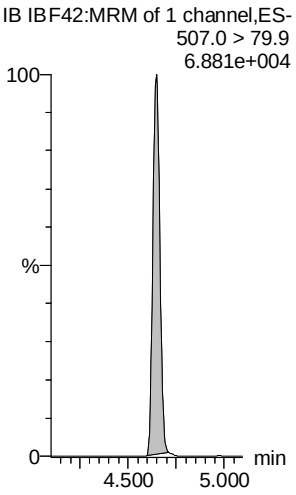


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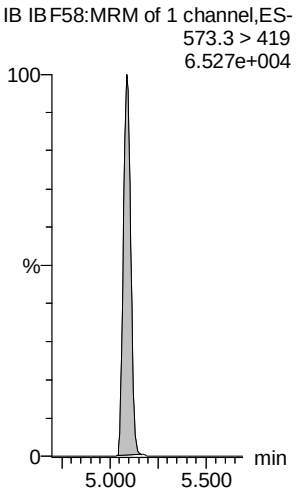




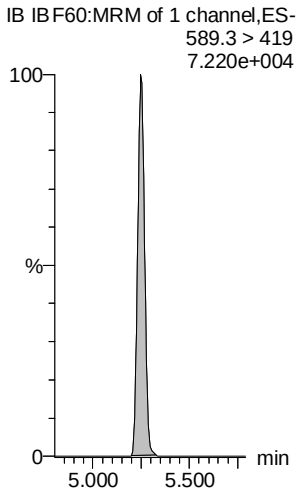
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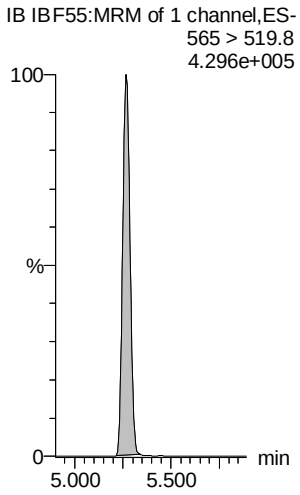
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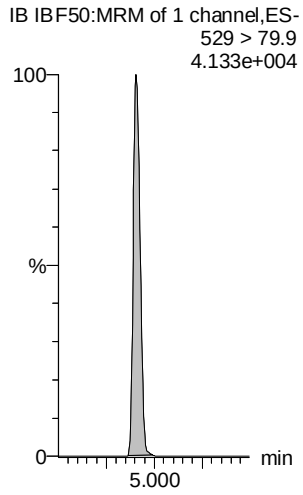
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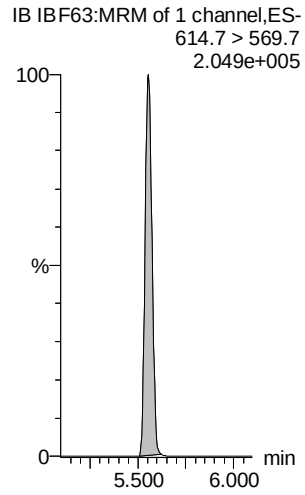
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

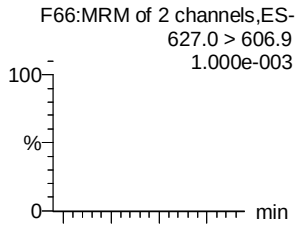


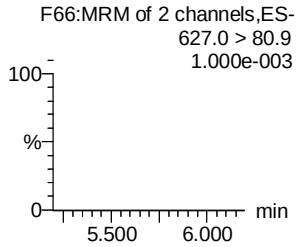
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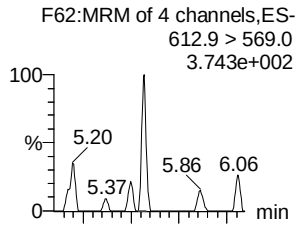
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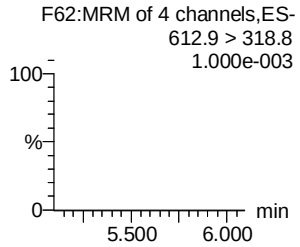
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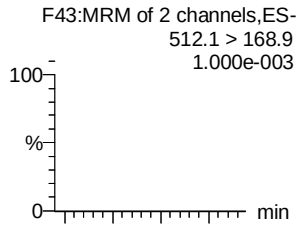


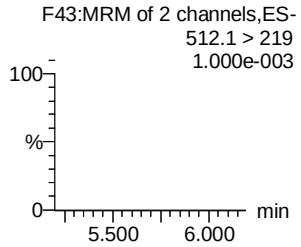
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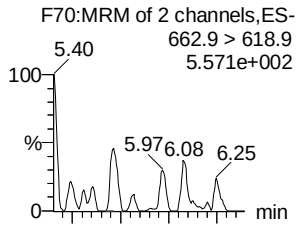


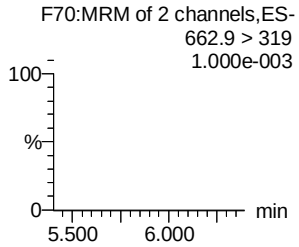
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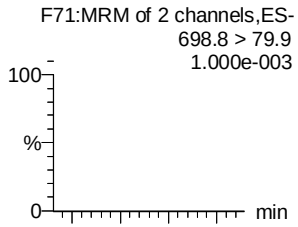


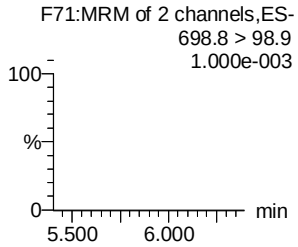
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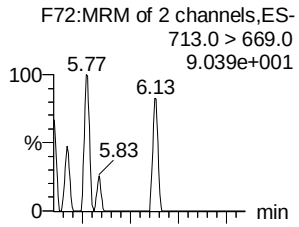


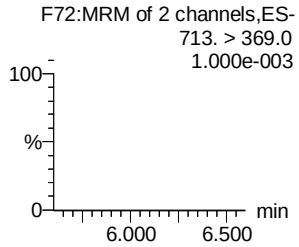
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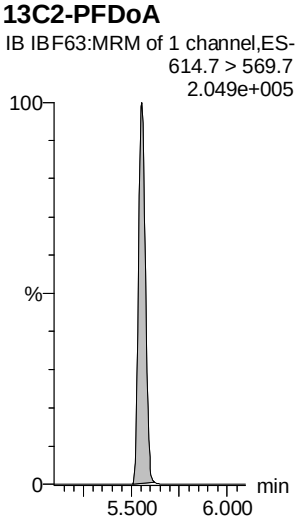


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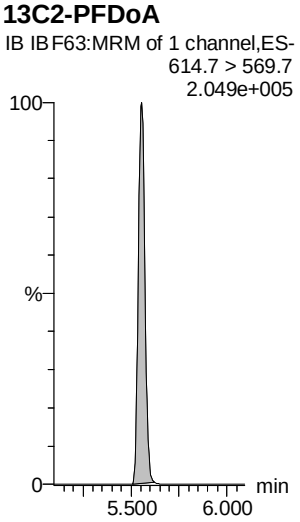




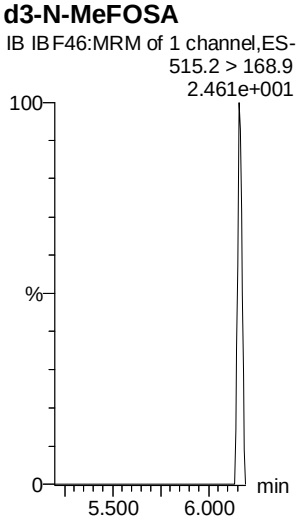
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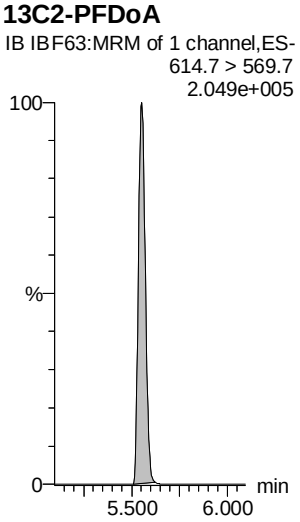
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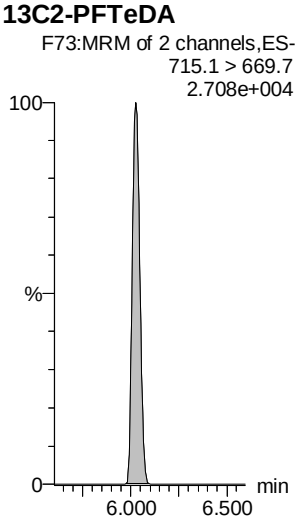
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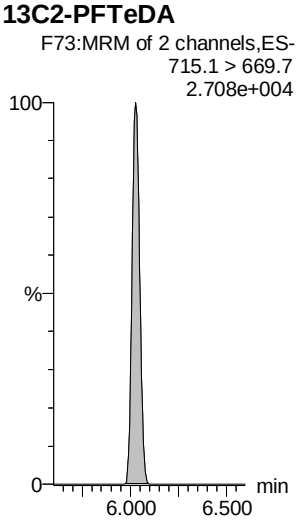
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13C2-PFTeDA



13C2-PFTeDA

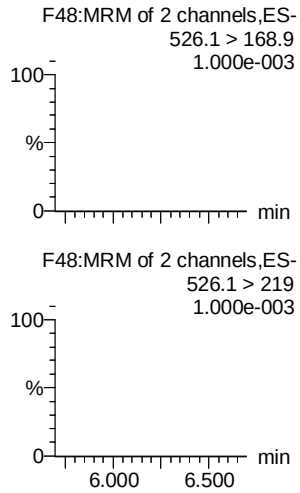


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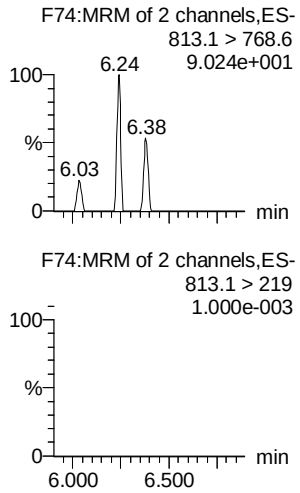
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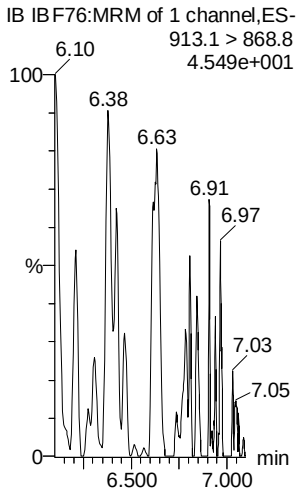
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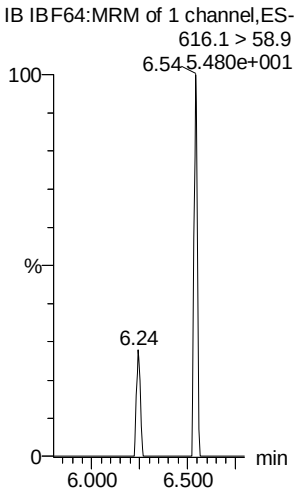
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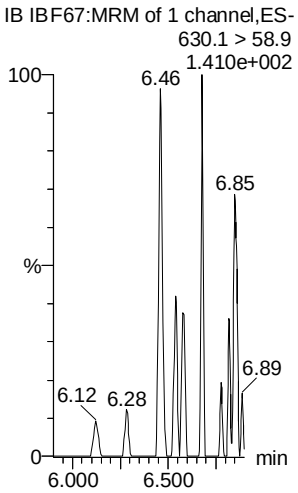
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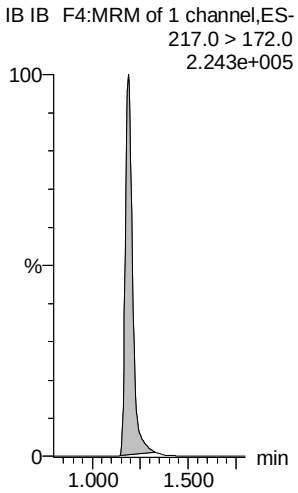
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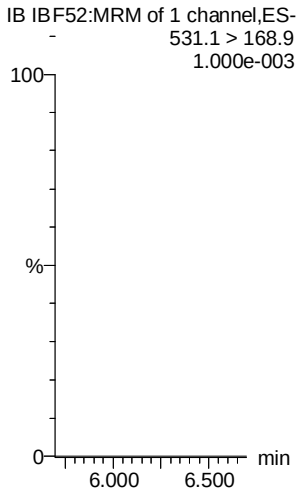
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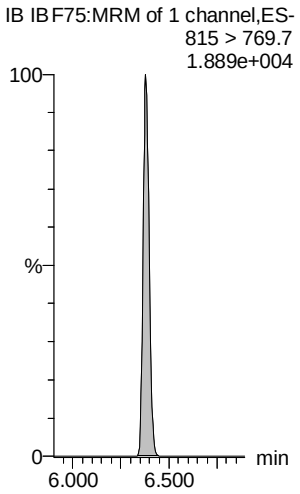
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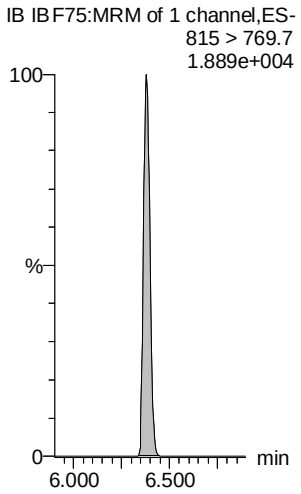
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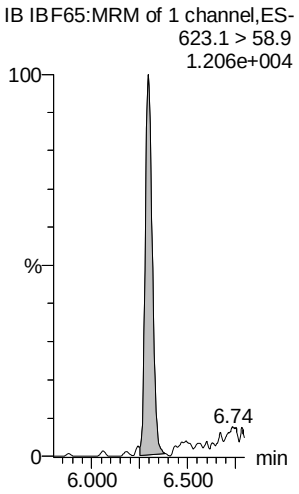
13C2-PFHxDA



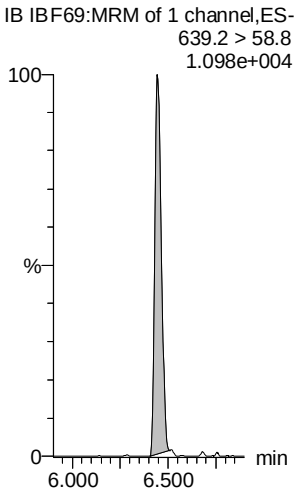
13C2-PFHxDA



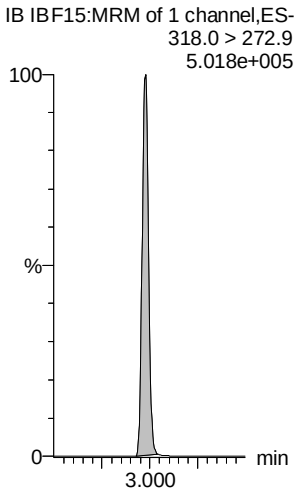
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

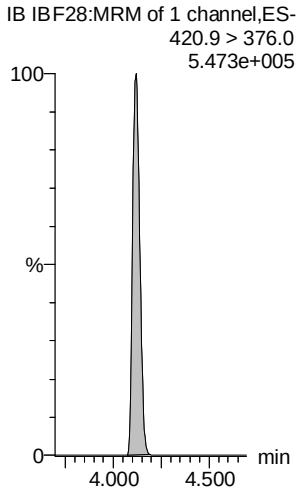


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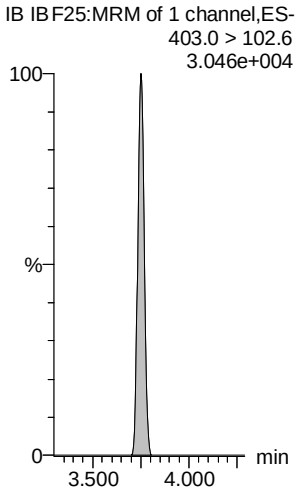
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Name: 190709M1_3, Date: 09-Jul-2019, Time: 17:05:13, ID: IB, Description: IB

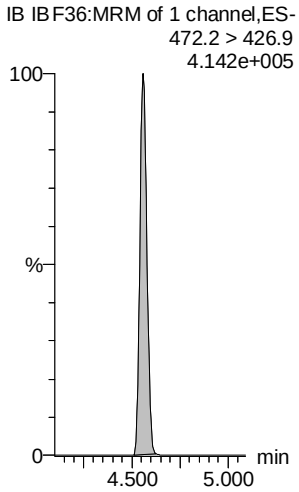
13C8-PFOA



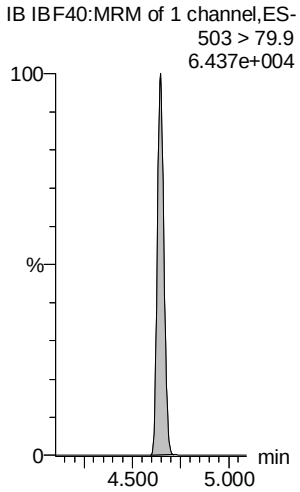
18O2-PFHxS



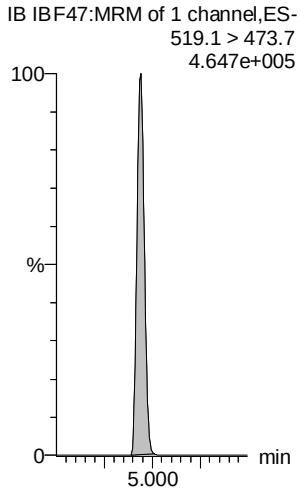
13C9-PFNA



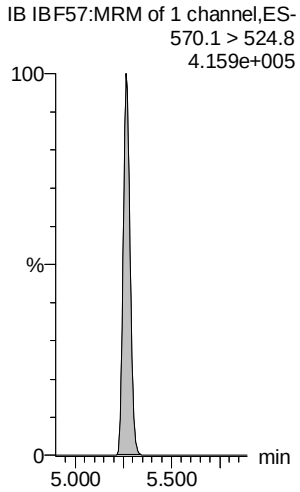
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\AREAS.qld

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Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_RS-07-11-19.mdb 11 Jul 2019 15:12:17
Calibration: 14 Jul 2019 15:03:19

Name: 190712M2_11, Date: 12-Jul-2019, Time: 19:17:24, ID: ST190712M2-6 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-6 PFC CS3 19G1106	5.80e3	100.0	NO
2	2	13C5-PFHxA	ST190712M2-6 PFC CS3 19G1106	2.03e4	100.0	NO
3	3	18O2-PFHxS	ST190712M2-6 PFC CS3 19G1106	1.16e3	100.0	NO
4	4	13C8-PFOA	ST190712M2-6 PFC CS3 19G1106	2.33e4	100.0	NO
5	5	13C9-PFNA	ST190712M2-6 PFC CS3 19G1106	1.81e4	100.0	NO
6	6	13C4-PFOS	ST190712M2-6 PFC CS3 19G1106	2.91e3	100.0	NO
7	7	13C6-PFDA	ST190712M2-6 PFC CS3 19G1106	2.23e4	100.0	NO
8	8	13C7-PFUdA	ST190712M2-6 PFC CS3 19G1106	2.31e4	100.0	NO

Name: 190712M2_12, Date: 12-Jul-2019, Time: 19:27:57, ID: ST190712M2-7 PFC CS4 19G1107, Description: PFC CS4 19G1107

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-7 PFC CS4 19G1107	5.81e3	100.2	NO
2	2	13C5-PFHxA	ST190712M2-7 PFC CS4 19G1107	1.94e4	95.5	NO
3	3	18O2-PFHxS	ST190712M2-7 PFC CS4 19G1107	1.07e3	92.6	NO
4	4	13C8-PFOA	ST190712M2-7 PFC CS4 19G1107	2.22e4	95.6	NO
5	5	13C9-PFNA	ST190712M2-7 PFC CS4 19G1107	1.72e4	95.3	NO
6	6	13C4-PFOS	ST190712M2-7 PFC CS4 19G1107	3.01e3	103.5	NO
7	7	13C6-PFDA	ST190712M2-7 PFC CS4 19G1107	2.10e4	94.1	NO
8	8	13C7-PFUdA	ST190712M2-7 PFC CS4 19G1107	2.18e4	94.4	NO

Name: 190712M2_13, Date: 12-Jul-2019, Time: 19:38:36, ID: ST190712M2-8 PFC CS5 19G1108, Description: PFC CS5 19G1108

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-8 PFC CS5 19G1108	5.81e3	100.2	NO
2	2	13C5-PFHxA	ST190712M2-8 PFC CS5 19G1108	1.93e4	95.2	NO
3	3	18O2-PFHxS	ST190712M2-8 PFC CS5 19G1108	1.19e3	103.0	NO
4	4	13C8-PFOA	ST190712M2-8 PFC CS5 19G1108	2.03e4	87.1	NO
5	5	13C9-PFNA	ST190712M2-8 PFC CS5 19G1108	1.62e4	89.8	NO
6	6	13C4-PFOS	ST190712M2-8 PFC CS5 19G1108	2.59e3	89.1	NO
7	7	13C6-PFDA	ST190712M2-8 PFC CS5 19G1108	2.06e4	92.0	NO
8	8	13C7-PFUdA	ST190712M2-8 PFC CS5 19G1108	2.07e4	89.4	NO

Name: 190712M2_14, Date: 12-Jul-2019, Time: 19:49:09, ID: ST190712M2-9 PFC CS6 19G1109, Description: PFC CS6 19G1109

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-9 PFC CS6 19G1109	5.70e3	98.3	NO
2	2	13C5-PFHxA	ST190712M2-9 PFC CS6 19G1109	1.72e4	84.7	NO
3	3	18O2-PFHxS	ST190712M2-9 PFC CS6 19G1109	9.58e2	82.7	NO
4	4	13C8-PFOA	ST190712M2-9 PFC CS6 19G1109	1.73e4	74.3	NO
5	5	13C9-PFNA	ST190712M2-9 PFC CS6 19G1109	1.55e4	85.7	NO
6	6	13C4-PFOS	ST190712M2-9 PFC CS6 19G1109	2.43e3	83.6	NO
7	7	13C6-PFDA	ST190712M2-9 PFC CS6 19G1109	1.71e4	76.8	NO
8	8	13C7-PFUdA	ST190712M2-9 PFC CS6 19G1109	1.80e4	77.7	NO

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Name: 190712M2_15, Date: 12-Jul-2019, Time: 19:59:47, ID: ST190712M2-10 PFC CS7 19G1110, Description: PFC CS7 19G1110

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-10 PFC CS7 19G1110	5.62e3	96.8	NO
2	2	13C5-PFHxA	ST190712M2-10 PFC CS7 19G1110	1.55e4	76.6	NO
3	3	18O2-PFHxS	ST190712M2-10 PFC CS7 19G1110	9.10e2	78.6	NO
4	4	13C8-PFOA	ST190712M2-10 PFC CS7 19G1110	1.47e4	63.3	NO
5	5	13C9-PFNA	ST190712M2-10 PFC CS7 19G1110	1.33e4	73.7	NO
6	6	13C4-PFOS	ST190712M2-10 PFC CS7 19G1110	2.17e3	74.5	NO
7	7	13C6-PFDA	ST190712M2-10 PFC CS7 19G1110	1.54e4	68.8	NO
8	8	13C7-PFUdA	ST190712M2-10 PFC CS7 19G1110	1.61e4	69.6	NO

Name: 190712M2_16, Date: 12-Jul-2019, Time: 20:10:19, ID: IB, Description: IB

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IB	5.79e3	99.8	NO
2	2	13C5-PFHxA	IB	2.10e4	103.8	NO
3	3	18O2-PFHxS	IB	1.22e3	105.4	NO
4	4	13C8-PFOA	IB	2.44e4	105.1	NO
5	5	13C9-PFNA	IB	1.88e4	104.3	NO
6	6	13C4-PFOS	IB	3.30e3	113.4	NO
7	7	13C6-PFDA	IB	2.35e4	105.1	NO
8	8	13C7-PFUdA	IB	2.38e4	102.9	NO

Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-1 PFC ICV 19G1111	5.89e3	101.5	NO
2	2	13C5-PFHxA	ST190712M2-1 PFC ICV 19G1111	2.14e4	105.4	NO
3	3	18O2-PFHxS	ST190712M2-1 PFC ICV 19G1111	1.10e3	95.1	NO
4	4	13C8-PFOA	ST190712M2-1 PFC ICV 19G1111	2.39e4	102.9	NO
5	5	13C9-PFNA	ST190712M2-1 PFC ICV 19G1111	1.89e4	104.4	NO
6	6	13C4-PFOS	ST190712M2-1 PFC ICV 19G1111	3.39e3	116.7	NO
7	7	13C6-PFDA	ST190712M2-1 PFC ICV 19G1111	2.30e4	103.2	NO
8	8	13C7-PFUdA	ST190712M2-1 PFC ICV 19G1111	2.37e4	102.5	NO

Name: 190712M2_18, Date: 12-Jul-2019, Time: 20:31:30, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\AREAS.qld

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Name: 190712M2_19, Date: 12-Jul-2019, Time: 20:42:09, ID: B9G0095-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0095-BS1 OPR 0.25	1.70e4	146.7	NO
2	2	13C5-PFHxA	B9G0095-BS1 OPR 0.25	3.42e4	84.4	NO
3	3	18O2-PFHxS	B9G0095-BS1 OPR 0.25	2.17e3	93.6	NO
4	4	13C8-PFOA	B9G0095-BS1 OPR 0.25	3.96e4	85.2	NO
5	5	13C9-PFNA	B9G0095-BS1 OPR 0.25	3.19e4	88.2	NO
6	6	13C4-PFOS	B9G0095-BS1 OPR 0.25	5.29e3	91.1	NO
7	7	13C6-PFDA	B9G0095-BS1 OPR 0.25	3.98e4	89.1	NO
8	8	13C7-PFUdA	B9G0095-BS1 OPR 0.25	4.01e4	86.7	NO

Name: 190712M2_20, Date: 12-Jul-2019, Time: 20:52:47, ID: 1901920-11 NAOA-B02-GW 0.122, Description: NAOA-B02-GW

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-11 NAOA-B02-GW 0.122	7.95e3	137.1	NO
2	2	13C5-PFHxA	1901920-11 NAOA-B02-GW 0.122	1.60e4	78.9	NO
3	3	18O2-PFHxS	1901920-11 NAOA-B02-GW 0.122	1.10e3	94.6	NO
4	4	13C8-PFOA	1901920-11 NAOA-B02-GW 0.122	2.01e4	86.4	NO
5	5	13C9-PFNA	1901920-11 NAOA-B02-GW 0.122	1.61e4	89.3	NO
6	6	13C4-PFOS	1901920-11 NAOA-B02-GW 0.122	2.48e3	85.2	NO
7	7	13C6-PFDA	1901920-11 NAOA-B02-GW 0.122	1.95e4	87.4	NO
8	8	13C7-PFUdA	1901920-11 NAOA-B02-GW 0.122	2.07e4	89.3	NO

Name: 190712M2_21, Date: 12-Jul-2019, Time: 21:03:19, ID: 1901920-17 NAOA-B01-GW-D 0.13768, Description: NAOA-B01-GW-D

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-17 NAOA-B01-GW-D 0.13768	6.79e3	117.0	NO
2	2	13C5-PFHxA	1901920-17 NAOA-B01-GW-D 0.13768	1.39e4	68.7	NO
3	3	18O2-PFHxS	1901920-17 NAOA-B01-GW-D 0.13768	1.07e3	92.1	NO
4	4	13C8-PFOA	1901920-17 NAOA-B01-GW-D 0.13768	1.94e4	83.3	NO
5	5	13C9-PFNA	1901920-17 NAOA-B01-GW-D 0.13768	1.52e4	84.0	NO
6	6	13C4-PFOS	1901920-17 NAOA-B01-GW-D 0.13768	2.87e3	98.6	NO
7	7	13C6-PFDA	1901920-17 NAOA-B01-GW-D 0.13768	1.88e4	84.1	NO
8	8	13C7-PFUdA	1901920-17 NAOA-B01-GW-D 0.13768	2.04e4	88.0	NO

Name: 190712M2_22, Date: 12-Jul-2019, Time: 21:13:58, ID: B9G0116-BS1 OPR 1, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0116-BS1 OPR 1	8.72e3	150.3	YES
2	2	13C5-PFHxA	B9G0116-BS1 OPR 1	1.63e4	80.3	NO
3	3	18O2-PFHxS	B9G0116-BS1 OPR 1	9.56e2	82.5	NO
4	4	13C8-PFOA	B9G0116-BS1 OPR 1	1.92e4	82.4	NO
5	5	13C9-PFNA	B9G0116-BS1 OPR 1	1.50e4	83.3	NO
6	6	13C4-PFOS	B9G0116-BS1 OPR 1	2.61e3	89.7	NO
7	7	13C6-PFDA	B9G0116-BS1 OPR 1	1.86e4	83.5	NO
8	8	13C7-PFUdA	B9G0116-BS1 OPR 1	1.97e4	85.3	NO

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Name: 190712M2_23, Date: 12-Jul-2019, Time: 21:24:30, ID: B9G0116-MS1 Matrix Spike 1.01, Description: Matrix Spike

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0116-MS1 Matrix Spike 1.01	8.79e3	151.4	YES
2	2	13C5-PFHxA	B9G0116-MS1 Matrix Spike 1.01	1.71e4	84.2	NO
3	3	18O2-PFHxS	B9G0116-MS1 Matrix Spike 1.01	9.04e2	78.1	NO
4	4	13C8-PFOA	B9G0116-MS1 Matrix Spike 1.01	1.92e4	82.6	NO
5	5	13C9-PFNA	B9G0116-MS1 Matrix Spike 1.01	1.50e4	83.0	NO
6	6	13C4-PFOS	B9G0116-MS1 Matrix Spike 1.01	2.52e3	86.9	NO
7	7	13C6-PFDA	B9G0116-MS1 Matrix Spike 1.01	1.86e4	83.2	NO
8	8	13C7-PFUdA	B9G0116-MS1 Matrix Spike 1.01	1.92e4	83.0	NO

Name: 190712M2_24, Date: 12-Jul-2019, Time: 21:35:09, ID: B9G0116-MSD1 Matrix Spike Dup 1.03, Description: Matrix Spike Dup

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0116-MSD1 Matrix Spike Dup 1.03	9.05e3	155.9	YES
2	2	13C5-PFHxA	B9G0116-MSD1 Matrix Spike Dup 1.03	1.76e4	87.0	NO
3	3	18O2-PFHxS	B9G0116-MSD1 Matrix Spike Dup 1.03	9.77e2	84.4	NO
4	4	13C8-PFOA	B9G0116-MSD1 Matrix Spike Dup 1.03	1.97e4	84.5	NO
5	5	13C9-PFNA	B9G0116-MSD1 Matrix Spike Dup 1.03	1.55e4	85.7	NO
6	6	13C4-PFOS	B9G0116-MSD1 Matrix Spike Dup 1.03	2.70e3	92.8	NO
7	7	13C6-PFDA	B9G0116-MSD1 Matrix Spike Dup 1.03	1.82e4	81.3	NO
8	8	13C7-PFUdA	B9G0116-MSD1 Matrix Spike Dup 1.03	1.99e4	86.0	NO

Name: 190712M2_25, Date: 12-Jul-2019, Time: 21:45:47, ID: B9G0116-BLK1 Method Blank 1, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0116-BLK1 Method Blank 1	8.50e3	146.5	NO
2	2	13C5-PFHxA	B9G0116-BLK1 Method Blank 1	1.63e4	80.6	NO
3	3	18O2-PFHxS	B9G0116-BLK1 Method Blank 1	9.65e2	83.3	NO
4	4	13C8-PFOA	B9G0116-BLK1 Method Blank 1	1.88e4	80.7	NO
5	5	13C9-PFNA	B9G0116-BLK1 Method Blank 1	1.50e4	82.9	NO
6	6	13C4-PFOS	B9G0116-BLK1 Method Blank 1	2.62e3	90.1	NO
7	7	13C6-PFDA	B9G0116-BLK1 Method Blank 1	1.76e4	78.9	NO
8	8	13C7-PFUdA	B9G0116-BLK1 Method Blank 1	1.87e4	80.7	NO

Name: 190712M2_26, Date: 12-Jul-2019, Time: 21:56:20, ID: 1901857-02 SAOA-B09-SO-1-1.5 1.01, Description: SAOA-B09-SO-1-1.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-02 SAOA-B09-SO-1-1.5 1.01	9.60e3	165.5	YES
2	2	13C5-PFHxA	1901857-02 SAOA-B09-SO-1-1.5 1.01	1.85e4	91.4	NO
3	3	18O2-PFHxS	1901857-02 SAOA-B09-SO-1-1.5 1.01	9.92e2	85.6	NO
4	4	13C8-PFOA	1901857-02 SAOA-B09-SO-1-1.5 1.01	2.04e4	87.6	NO
5	5	13C9-PFNA	1901857-02 SAOA-B09-SO-1-1.5 1.01	1.55e4	86.0	NO
6	6	13C4-PFOS	1901857-02 SAOA-B09-SO-1-1.5 1.01	2.85e3	97.9	NO
7	7	13C6-PFDA	1901857-02 SAOA-B09-SO-1-1.5 1.01	1.80e4	80.6	NO
8	8	13C7-PFUdA	1901857-02 SAOA-B09-SO-1-1.5 1.01	1.91e4	82.7	NO

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Name: 190712M2_27, Date: 12-Jul-2019, Time: 22:06:59, ID: 1901857-03 SAOA-B09-SO-20-20.5 1.03, Description: SAOA-B09-SO-20-20.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-03 SAOA-B09-SO-20-20.5 1.03	9.77e3	168.4	YES
2	2	13C5-PFHxA	1901857-03 SAOA-B09-SO-20-20.5 1.03	1.93e4	95.4	NO
3	3	18O2-PFHxS	1901857-03 SAOA-B09-SO-20-20.5 1.03	1.09e3	93.7	NO
4	4	13C8-PFOA	1901857-03 SAOA-B09-SO-20-20.5 1.03	2.24e4	96.1	NO
5	5	13C9-PFNA	1901857-03 SAOA-B09-SO-20-20.5 1.03	1.79e4	98.9	NO
6	6	13C4-PFOS	1901857-03 SAOA-B09-SO-20-20.5 1.03	2.83e3	97.5	NO
7	7	13C6-PFDA	1901857-03 SAOA-B09-SO-20-20.5 1.03	2.08e4	93.0	NO
8	8	13C7-PFUdA	1901857-03 SAOA-B09-SO-20-20.5 1.03	2.20e4	95.0	NO

Name: 190712M2_28, Date: 12-Jul-2019, Time: 22:17:29, ID: 1901857-07 SAOA-B11-SO-1-1.5 1, Description: SAOA-B11-SO-1-1.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-07 SAOA-B11-SO-1-1.5 1	9.86e3	170.0	YES
2	2	13C5-PFHxA	1901857-07 SAOA-B11-SO-1-1.5 1	1.95e4	96.1	NO
3	3	18O2-PFHxS	1901857-07 SAOA-B11-SO-1-1.5 1	1.17e3	101.5	NO
4	4	13C8-PFOA	1901857-07 SAOA-B11-SO-1-1.5 1	2.21e4	95.1	NO
5	5	13C9-PFNA	1901857-07 SAOA-B11-SO-1-1.5 1	1.73e4	95.6	NO
6	6	13C4-PFOS	1901857-07 SAOA-B11-SO-1-1.5 1	2.74e3	94.3	NO
7	7	13C6-PFDA	1901857-07 SAOA-B11-SO-1-1.5 1	2.13e4	95.2	NO
8	8	13C7-PFUdA	1901857-07 SAOA-B11-SO-1-1.5 1	2.18e4	94.3	NO

Name: 190712M2_29, Date: 12-Jul-2019, Time: 22:28:07, ID: 1901857-08 SAOA-B11-SO-20-20.5 1.05, Description: SAOA-B11-SO-20-20.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-08 SAOA-B11-SO-20-20.5 1.05	1.21e4	208.7	YES
2	2	13C5-PFHxA	1901857-08 SAOA-B11-SO-20-20.5 1.05	2.24e4	110.5	NO
3	3	18O2-PFHxS	1901857-08 SAOA-B11-SO-20-20.5 1.05	1.35e3	116.6	NO
4	4	13C8-PFOA	1901857-08 SAOA-B11-SO-20-20.5 1.05	2.46e4	105.7	NO
5	5	13C9-PFNA	1901857-08 SAOA-B11-SO-20-20.5 1.05	1.94e4	107.4	NO
6	6	13C4-PFOS	1901857-08 SAOA-B11-SO-20-20.5 1.05	3.74e3	128.7	NO
7	7	13C6-PFDA	1901857-08 SAOA-B11-SO-20-20.5 1.05	2.22e4	99.4	NO
8	8	13C7-PFUdA	1901857-08 SAOA-B11-SO-20-20.5 1.05	2.42e4	104.7	NO

Name: 190712M2_30, Date: 12-Jul-2019, Time: 22:38:40, ID: 1901857-10 SAOA-B08-SO-1-1.5 1.06, Description: SAOA-B08-SO-1-1.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901857-10 SAOA-B08-SO-1-1.5 1.06	1.14e4	196.5	YES
2	2	13C5-PFHxA	1901857-10 SAOA-B08-SO-1-1.5 1.06	2.23e4	110.1	NO
3	3	18O2-PFHxS	1901857-10 SAOA-B08-SO-1-1.5 1.06	1.32e3	114.2	NO
4	4	13C8-PFOA	1901857-10 SAOA-B08-SO-1-1.5 1.06	2.56e4	110.2	NO
5	5	13C9-PFNA	1901857-10 SAOA-B08-SO-1-1.5 1.06	2.00e4	110.5	NO
6	6	13C4-PFOS	1901857-10 SAOA-B08-SO-1-1.5 1.06	3.41e3	117.4	NO
7	7	13C6-PFDA	1901857-10 SAOA-B08-SO-1-1.5 1.06	2.38e4	106.7	NO
8	8	13C7-PFUdA	1901857-10 SAOA-B08-SO-1-1.5 1.06	2.65e4	114.4	NO

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Name: 190712M2_31, Date: 12-Jul-2019, Time: 22:49:18, ID: 1901920-01 SAOA-B08-SO-30-30.5 1.01, Description: SAOA-B08-SO-30-30.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-01 SAOA-B08-SO-30-30.5 1.01	1.12e4	192.9	YES
2	2	13C5-PFHxA	1901920-01 SAOA-B08-SO-30-30.5 1.01	2.19e4	107.8	NO
3	3	18O2-PFHxS	1901920-01 SAOA-B08-SO-30-30.5 1.01	1.30e3	112.4	NO
4	4	13C8-PFOA	1901920-01 SAOA-B08-SO-30-30.5 1.01	2.50e4	107.5	NO
5	5	13C9-PFNA	1901920-01 SAOA-B08-SO-30-30.5 1.01	1.90e4	105.0	NO
6	6	13C4-PFOS	1901920-01 SAOA-B08-SO-30-30.5 1.01	3.27e3	112.6	NO
7	7	13C6-PFDA	1901920-01 SAOA-B08-SO-30-30.5 1.01	2.31e4	103.3	NO
8	8	13C7-PFUdA	1901920-01 SAOA-B08-SO-30-30.5 1.01	2.49e4	107.5	NO

Name: 190712M2_32, Date: 12-Jul-2019, Time: 22:59:51, ID: 1901920-07 NAOA-B08-SO-1-1.5 1.03, Description: NAOA-B08-SO-1-1.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-07 NAOA-B08-SO-1-1.5 1.03	9.82e3	169.4	YES
2	2	13C5-PFHxA	1901920-07 NAOA-B08-SO-1-1.5 1.03	1.86e4	91.5	NO
3	3	18O2-PFHxS	1901920-07 NAOA-B08-SO-1-1.5 1.03	1.11e3	95.5	NO
4	4	13C8-PFOA	1901920-07 NAOA-B08-SO-1-1.5 1.03	2.21e4	94.9	NO
5	5	13C9-PFNA	1901920-07 NAOA-B08-SO-1-1.5 1.03	1.74e4	96.3	NO
6	6	13C4-PFOS	1901920-07 NAOA-B08-SO-1-1.5 1.03	2.82e3	96.9	NO
7	7	13C6-PFDA	1901920-07 NAOA-B08-SO-1-1.5 1.03	2.10e4	94.1	NO
8	8	13C7-PFUdA	1901920-07 NAOA-B08-SO-1-1.5 1.03	2.21e4	95.5	NO

Name: 190712M2_33, Date: 12-Jul-2019, Time: 23:10:30, ID: 1901920-08 NAOA-B08-SO-20-20.5 1.01, Description: NAOA-B08-SO-20-20.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-08 NAOA-B08-SO-20-20.5 1.01	1.03e4	176.9	YES
2	2	13C5-PFHxA	1901920-08 NAOA-B08-SO-20-20.5 1.01	2.00e4	98.9	NO
3	3	18O2-PFHxS	1901920-08 NAOA-B08-SO-20-20.5 1.01	1.12e3	96.6	NO
4	4	13C8-PFOA	1901920-08 NAOA-B08-SO-20-20.5 1.01	2.32e4	99.8	NO
5	5	13C9-PFNA	1901920-08 NAOA-B08-SO-20-20.5 1.01	1.81e4	100.2	NO
6	6	13C4-PFOS	1901920-08 NAOA-B08-SO-20-20.5 1.01	3.11e3	107.0	NO
7	7	13C6-PFDA	1901920-08 NAOA-B08-SO-20-20.5 1.01	2.13e4	95.5	NO
8	8	13C7-PFUdA	1901920-08 NAOA-B08-SO-20-20.5 1.01	2.31e4	100.1	NO

Name: 190712M2_34, Date: 12-Jul-2019, Time: 23:21:08, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_35, Date: 12-Jul-2019, Time: 23:31:41, ID: ST190712M2-11 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-11 PFC CS3 19G1106	5.93e3	102.2	NO
2	2	13C5-PFHxA	ST190712M2-11 PFC CS3 19G1106	2.15e4	106.2	NO
3	3	18O2-PFHxS	ST190712M2-11 PFC CS3 19G1106	1.19e3	103.2	NO
4	4	13C8-PFOA	ST190712M2-11 PFC CS3 19G1106	2.38e4	102.4	NO
5	5	13C9-PFNA	ST190712M2-11 PFC CS3 19G1106	1.89e4	104.5	NO
6	6	13C4-PFOS	ST190712M2-11 PFC CS3 19G1106	3.00e3	103.1	NO
7	7	13C6-PFDA	ST190712M2-11 PFC CS3 19G1106	2.33e4	104.2	NO
8	8	13C7-PFUdA	ST190712M2-11 PFC CS3 19G1106	2.41e4	104.0	NO

Name: 190712M2_36, Date: 12-Jul-2019, Time: 23:42:20, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_37, Date: 12-Jul-2019, Time: 23:52:52, ID: 1901920-09 NAOA-B09-SO-1-1.5 1.06, Description: NAOA-B09-SO-1-1.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-09 NAOA-B09-SO-1-1.5 1.06	8.32e3	143.4	NO
2	2	13C5-PFHxA	1901920-09 NAOA-B09-SO-1-1.5 1.06	1.60e4	78.7	NO
3	3	18O2-PFHxS	1901920-09 NAOA-B09-SO-1-1.5 1.06	9.74e2	84.1	NO
4	4	13C8-PFOA	1901920-09 NAOA-B09-SO-1-1.5 1.06	1.76e4	75.7	NO
5	5	13C9-PFNA	1901920-09 NAOA-B09-SO-1-1.5 1.06	1.41e4	78.3	NO
6	6	13C4-PFOS	1901920-09 NAOA-B09-SO-1-1.5 1.06	2.44e3	84.1	NO
7	7	13C6-PFDA	1901920-09 NAOA-B09-SO-1-1.5 1.06	1.75e4	78.2	NO
8	8	13C7-PFUdA	1901920-09 NAOA-B09-SO-1-1.5 1.06	1.88e4	81.1	NO

Name: 190712M2_38, Date: 13-Jul-2019, Time: 00:03:31, ID: 1901920-10 NAOA-B09-SO-20-20.5 1.06, Description: NAOA-B09-SO-20-20.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-10 NAOA-B09-SO-20-20.5 1.06	8.88e3	153.1	YES
2	2	13C5-PFHxA	1901920-10 NAOA-B09-SO-20-20.5 1.06	1.76e4	86.8	NO
3	3	18O2-PFHxS	1901920-10 NAOA-B09-SO-20-20.5 1.06	1.02e3	88.0	NO
4	4	13C8-PFOA	1901920-10 NAOA-B09-SO-20-20.5 1.06	2.00e4	86.0	NO
5	5	13C9-PFNA	1901920-10 NAOA-B09-SO-20-20.5 1.06	1.59e4	87.8	NO
6	6	13C4-PFOS	1901920-10 NAOA-B09-SO-20-20.5 1.06	2.82e3	97.1	NO
7	7	13C6-PFDA	1901920-10 NAOA-B09-SO-20-20.5 1.06	1.93e4	86.3	NO
8	8	13C7-PFUdA	1901920-10 NAOA-B09-SO-20-20.5 1.06	2.08e4	90.0	NO

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Name: 190712M2_39, Date: 13-Jul-2019, Time: 00:14:01, ID: 1901920-13 NAOA-B01-SO-1-1.5 1.05, Description: NAOA-B01-SO-1-1.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-13 NAOA-B01-SO-1-1.5 1.05	9.03e3	155.6	YES
2	2	13C5-PFHxA	1901920-13 NAOA-B01-SO-1-1.5 1.05	1.73e4	85.4	NO
3	3	18O2-PFHxS	1901920-13 NAOA-B01-SO-1-1.5 1.05	1.00e3	86.8	NO
4	4	13C8-PFOA	1901920-13 NAOA-B01-SO-1-1.5 1.05	2.01e4	86.3	NO
5	5	13C9-PFNA	1901920-13 NAOA-B01-SO-1-1.5 1.05	1.62e4	89.6	NO
6	6	13C4-PFOS	1901920-13 NAOA-B01-SO-1-1.5 1.05	2.59e3	89.1	NO
7	7	13C6-PFDA	1901920-13 NAOA-B01-SO-1-1.5 1.05	1.91e4	85.3	NO
8	8	13C7-PFUdA	1901920-13 NAOA-B01-SO-1-1.5 1.05	2.05e4	88.5	NO

Name: 190712M2_40, Date: 13-Jul-2019, Time: 00:24:40, ID: 1901920-15 NAOA-B01-SO-20-20.5 1.04, Description: NAOA-B01-SO-20-20.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-15 NAOA-B01-SO-20-20.5 1.04	8.53e3	147.1	NO
2	2	13C5-PFHxA	1901920-15 NAOA-B01-SO-20-20.5 1.04	1.66e4	81.9	NO
3	3	18O2-PFHxS	1901920-15 NAOA-B01-SO-20-20.5 1.04	9.19e2	79.4	NO
4	4	13C8-PFOA	1901920-15 NAOA-B01-SO-20-20.5 1.04	1.82e4	78.2	NO
5	5	13C9-PFNA	1901920-15 NAOA-B01-SO-20-20.5 1.04	1.47e4	81.1	NO
6	6	13C4-PFOS	1901920-15 NAOA-B01-SO-20-20.5 1.04	2.49e3	85.6	NO
7	7	13C6-PFDA	1901920-15 NAOA-B01-SO-20-20.5 1.04	1.78e4	79.7	NO
8	8	13C7-PFUdA	1901920-15 NAOA-B01-SO-20-20.5 1.04	1.89e4	81.7	NO

Name: 190712M2_41, Date: 13-Jul-2019, Time: 00:35:12, ID: 1901920-18 CAOA-B02-SO-0.5-1 1.03, Description: CAOA-B02-SO-0.5-1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-18 CAOA-B02-SO-0.5-1 1.03	8.64e3	149.0	NO
2	2	13C5-PFHxA	1901920-18 CAOA-B02-SO-0.5-1 1.03	1.68e4	82.8	NO
3	3	18O2-PFHxS	1901920-18 CAOA-B02-SO-0.5-1 1.03	1.00e3	86.5	NO
4	4	13C8-PFOA	1901920-18 CAOA-B02-SO-0.5-1 1.03	1.99e4	85.4	NO
5	5	13C9-PFNA	1901920-18 CAOA-B02-SO-0.5-1 1.03	1.56e4	86.6	NO
6	6	13C4-PFOS	1901920-18 CAOA-B02-SO-0.5-1 1.03	2.69e3	92.6	NO
7	7	13C6-PFDA	1901920-18 CAOA-B02-SO-0.5-1 1.03	1.90e4	85.2	NO
8	8	13C7-PFUdA	1901920-18 CAOA-B02-SO-0.5-1 1.03	1.99e4	86.0	NO

Name: 190712M2_42, Date: 13-Jul-2019, Time: 00:45:50, ID: 1901920-19 CAOA-B02-SO-20-20.5 1.02, Description: CAOA-B02-SO-20-20.5

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901920-19 CAOA-B02-SO-20-20.5 1.02	1.01e4	174.2	YES
2	2	13C5-PFHxA	1901920-19 CAOA-B02-SO-20-20.5 1.02	2.00e4	98.4	NO
3	3	18O2-PFHxS	1901920-19 CAOA-B02-SO-20-20.5 1.02	1.24e3	107.3	NO
4	4	13C8-PFOA	1901920-19 CAOA-B02-SO-20-20.5 1.02	2.31e4	99.4	NO
5	5	13C9-PFNA	1901920-19 CAOA-B02-SO-20-20.5 1.02	1.76e4	97.5	NO
6	6	13C4-PFOS	1901920-19 CAOA-B02-SO-20-20.5 1.02	2.96e3	101.9	NO
7	7	13C6-PFDA	1901920-19 CAOA-B02-SO-20-20.5 1.02	2.13e4	95.3	NO
8	8	13C7-PFUdA	1901920-19 CAOA-B02-SO-20-20.5 1.02	2.26e4	97.7	NO

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Name: 190712M2_43, Date: 13-Jul-2019, Time: 00:56:23, ID: B9G0081-BS1 OPR 0.0992, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0081-BS1 OPR 0.0992	2.39e4	412.1	YES
2	2	13C5-PFHxA	B9G0081-BS1 OPR 0.0992	4.54e4	224.1	YES
3	3	18O2-PFHxS	B9G0081-BS1 OPR 0.0992	2.72e3	235.3	YES
4	4	13C8-PFOA	B9G0081-BS1 OPR 0.0992	5.15e4	221.4	YES
5	5	13C9-PFNA	B9G0081-BS1 OPR 0.0992	4.18e4	231.1	YES
6	6	13C4-PFOS	B9G0081-BS1 OPR 0.0992	6.93e3	238.3	YES
7	7	13C6-PFDA	B9G0081-BS1 OPR 0.0992	4.83e4	216.1	YES
8	8	13C7-PFUdA	B9G0081-BS1 OPR 0.0992	5.29e4	228.8	YES

Name: 190712M2_44, Date: 13-Jul-2019, Time: 01:07:02, ID: B9G0081-BLK1 Method Blank 0.0995, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0081-BLK1 Method Blank 0.0995	2.51e4	432.8	YES
2	2	13C5-PFHxA	B9G0081-BLK1 Method Blank 0.0995	4.87e4	240.0	YES
3	3	18O2-PFHxS	B9G0081-BLK1 Method Blank 0.0995	2.79e3	240.5	YES
4	4	13C8-PFOA	B9G0081-BLK1 Method Blank 0.0995	5.43e4	233.7	YES
5	5	13C9-PFNA	B9G0081-BLK1 Method Blank 0.0995	4.41e4	244.1	YES
6	6	13C4-PFOS	B9G0081-BLK1 Method Blank 0.0995	7.08e3	243.6	YES
7	7	13C6-PFDA	B9G0081-BLK1 Method Blank 0.0995	5.09e4	227.8	YES
8	8	13C7-PFUdA	B9G0081-BLK1 Method Blank 0.0995	5.43e4	234.8	YES

Name: 190712M2_45, Date: 13-Jul-2019, Time: 01:17:34, ID: 1901989-01 #1 0.0995, Description: #1

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901989-01 #1 0.0995	1.93e4	333.5	YES
2	2	13C5-PFHxA	1901989-01 #1 0.0995	3.68e4	181.6	YES
3	3	18O2-PFHxS	1901989-01 #1 0.0995	2.19e3	189.4	YES
4	4	13C8-PFOA	1901989-01 #1 0.0995	4.17e4	179.2	YES
5	5	13C9-PFNA	1901989-01 #1 0.0995	3.45e4	190.9	YES
6	6	13C4-PFOS	1901989-01 #1 0.0995	5.44e3	187.1	YES
7	7	13C6-PFDA	1901989-01 #1 0.0995	4.05e4	181.5	YES
8	8	13C7-PFUdA	1901989-01 #1 0.0995	4.32e4	186.7	YES

Name: 190712M2_46, Date: 13-Jul-2019, Time: 01:28:12, ID: 1901989-02 #2 0.0997, Description: #2

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901989-02 #2 0.0997	2.34e4	403.0	YES
2	2	13C5-PFHxA	1901989-02 #2 0.0997	4.43e4	218.3	YES
3	3	18O2-PFHxS	1901989-02 #2 0.0997	2.61e3	225.5	YES
4	4	13C8-PFOA	1901989-02 #2 0.0997	4.72e4	203.0	YES
5	5	13C9-PFNA	1901989-02 #2 0.0997	3.91e4	216.6	YES
6	6	13C4-PFOS	1901989-02 #2 0.0997	4.59e3	158.0	YES
7	7	13C6-PFDA	1901989-02 #2 0.0997	4.71e4	211.0	YES
8	8	13C7-PFUdA	1901989-02 #2 0.0997	5.01e4	216.5	YES

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Name: 190712M2_47, Date: 13-Jul-2019, Time: 01:38:45, ID: 1901989-03 #3 0.0996, Description: #3

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901989-03 #3 0.0996	2.44e4	420.2	YES
2	2	13C5-PFHxA	1901989-03 #3 0.0996	4.73e4	233.5	YES
3	3	18O2-PFHxS	1901989-03 #3 0.0996	2.73e3	235.7	YES
4	4	13C8-PFOA	1901989-03 #3 0.0996	5.16e4	221.8	YES
5	5	13C9-PFNA	1901989-03 #3 0.0996	4.14e4	229.3	YES
6	6	13C4-PFOS	1901989-03 #3 0.0996	5.73e3	197.2	YES
7	7	13C6-PFDA	1901989-03 #3 0.0996	5.05e4	226.1	YES
8	8	13C7-PFUdA	1901989-03 #3 0.0996	5.29e4	228.5	YES

Name: 190712M2_48, Date: 13-Jul-2019, Time: 01:49:15, ID: 1901989-04 #4 0.0996, Description: #4

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901989-04 #4 0.0996	2.47e4	425.3	YES
2	2	13C5-PFHxA	1901989-04 #4 0.0996	4.70e4	231.7	YES
3	3	18O2-PFHxS	1901989-04 #4 0.0996	2.62e3	226.5	YES
4	4	13C8-PFOA	1901989-04 #4 0.0996	5.20e4	223.7	YES
5	5	13C9-PFNA	1901989-04 #4 0.0996	4.19e4	232.1	YES
6	6	13C4-PFOS	1901989-04 #4 0.0996	6.14e3	211.1	YES
7	7	13C6-PFDA	1901989-04 #4 0.0996	5.03e4	225.3	YES
8	8	13C7-PFUdA	1901989-04 #4 0.0996	5.33e4	230.5	YES

Name: 190712M2_49, Date: 13-Jul-2019, Time: 01:59:53, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_50, Date: 13-Jul-2019, Time: 02:10:27, ID: ST190712M2-12 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-12 PFC CS3 19G1106	6.06e3	104.5	NO
2	2	13C5-PFHxA	ST190712M2-12 PFC CS3 19G1106	2.03e4	100.1	NO
3	3	18O2-PFHxS	ST190712M2-12 PFC CS3 19G1106	1.29e3	111.4	NO
4	4	13C8-PFOA	ST190712M2-12 PFC CS3 19G1106	2.35e4	101.1	NO
5	5	13C9-PFNA	ST190712M2-12 PFC CS3 19G1106	1.89e4	104.4	NO
6	6	13C4-PFOS	ST190712M2-12 PFC CS3 19G1106	3.09e3	106.2	NO
7	7	13C6-PFDA	ST190712M2-12 PFC CS3 19G1106	2.26e4	101.2	NO
8	8	13C7-PFUdA	ST190712M2-12 PFC CS3 19G1106	2.36e4	102.0	NO

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Name: 190712M2_51, Date: 13-Jul-2019, Time: 02:21:05, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_52, Date: 13-Jul-2019, Time: 02:31:38, ID: B9G0018-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0018-BS1 OPR 0.25	7.75e3	133.6	NO
2	2	13C5-PFHxA	B9G0018-BS1 OPR 0.25	1.55e4	76.5	NO
3	3	18O2-PFHxS	B9G0018-BS1 OPR 0.25	1.07e3	92.6	NO
4	4	13C8-PFOA	B9G0018-BS1 OPR 0.25	1.86e4	79.9	NO
5	5	13C9-PFNA	B9G0018-BS1 OPR 0.25	1.51e4	83.7	NO
6	6	13C4-PFOS	B9G0018-BS1 OPR 0.25	2.68e3	92.1	NO
7	7	13C6-PFDA	B9G0018-BS1 OPR 0.25	1.85e4	82.8	NO
8	8	13C7-PFUdA	B9G0018-BS1 OPR 0.25	1.96e4	84.7	NO

Name: 190712M2_53, Date: 13-Jul-2019, Time: 02:42:16, ID: B9G0018-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0018-BLK1 Method Blank 0.25	7.02e3	121.0	NO
2	2	13C5-PFHxA	B9G0018-BLK1 Method Blank 0.25	1.44e4	70.9	NO
3	3	18O2-PFHxS	B9G0018-BLK1 Method Blank 0.25	9.49e2	81.9	NO
4	4	13C8-PFOA	B9G0018-BLK1 Method Blank 0.25	1.72e4	73.9	NO
5	5	13C9-PFNA	B9G0018-BLK1 Method Blank 0.25	1.37e4	75.6	NO
6	6	13C4-PFOS	B9G0018-BLK1 Method Blank 0.25	2.37e3	81.4	NO
7	7	13C6-PFDA	B9G0018-BLK1 Method Blank 0.25	1.66e4	74.3	NO
8	8	13C7-PFUdA	B9G0018-BLK1 Method Blank 0.25	1.80e4	78.0	NO

Name: 190712M2_54, Date: 13-Jul-2019, Time: 02:52:55, ID: 1901800-01 SWIN1906241030KER 0.23934, Description: SWIN1906241030KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901800-01 SWIN1906241030KER 0.2...	6.62e3	114.0	NO
2	2	13C5-PFHxA	1901800-01 SWIN1906241030KER 0.2...	1.39e4	68.4	NO
3	3	18O2-PFHxS	1901800-01 SWIN1906241030KER 0.2...	9.82e2	84.8	NO
4	4	13C8-PFOA	1901800-01 SWIN1906241030KER 0.2...	1.64e4	70.5	NO
5	5	13C9-PFNA	1901800-01 SWIN1906241030KER 0.2...	1.29e4	71.5	NO
6	6	13C4-PFOS	1901800-01 SWIN1906241030KER 0.2...	2.36e3	81.2	NO
7	7	13C6-PFDA	1901800-01 SWIN1906241030KER 0.2...	1.55e4	69.3	NO
8	8	13C7-PFUdA	1901800-01 SWIN1906241030KER 0.2...	1.63e4	70.7	NO

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Name: 190712M2_55, Date: 13-Jul-2019, Time: 03:03:27, ID: 1901800-02 SWIN1906241030KER-FD 0.24043, Description: SWIN1906241030KER-FD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901800-02 SWIN1906241030KER-FD...	7.99e3	137.7	NO
2	2	13C5-PFHxA	1901800-02 SWIN1906241030KER-FD...	1.72e4	85.0	NO
3	3	18O2-PFHxS	1901800-02 SWIN1906241030KER-FD...	1.14e3	98.3	NO
4	4	13C8-PFOA	1901800-02 SWIN1906241030KER-FD...	2.03e4	87.2	NO
5	5	13C9-PFNA	1901800-02 SWIN1906241030KER-FD...	1.60e4	88.6	NO
6	6	13C4-PFOS	1901800-02 SWIN1906241030KER-FD...	3.18e3	109.3	NO
7	7	13C6-PFDA	1901800-02 SWIN1906241030KER-FD...	1.93e4	86.4	NO
8	8	13C7-PFUdA	1901800-02 SWIN1906241030KER-FD...	1.93e4	83.6	NO

Name: 190712M2_56, Date: 13-Jul-2019, Time: 03:14:06, ID: 1901801-01 SWIN1906241130KER 0.23531, Description: SWIN1906241130KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901801-01 SWIN1906241130KER 0.2...	7.43e3	128.0	NO
2	2	13C5-PFHxA	1901801-01 SWIN1906241130KER 0.2...	1.55e4	76.3	NO
3	3	18O2-PFHxS	1901801-01 SWIN1906241130KER 0.2...	9.70e2	83.8	NO
4	4	13C8-PFOA	1901801-01 SWIN1906241130KER 0.2...	1.78e4	76.5	NO
5	5	13C9-PFNA	1901801-01 SWIN1906241130KER 0.2...	1.44e4	79.7	NO
6	6	13C4-PFOS	1901801-01 SWIN1906241130KER 0.2...	2.44e3	84.0	NO
7	7	13C6-PFDA	1901801-01 SWIN1906241130KER 0.2...	1.70e4	76.1	NO
8	8	13C7-PFUdA	1901801-01 SWIN1906241130KER 0.2...	1.79e4	77.3	NO

Name: 190712M2_57, Date: 13-Jul-2019, Time: 03:24:39, ID: 1901802-01 SWIN1906241230KER 0.2312, Description: SWIN1906241230KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901802-01 SWIN1906241230KER 0.2...	7.10e3	122.5	NO
2	2	13C5-PFHxA	1901802-01 SWIN1906241230KER 0.2...	1.51e4	74.6	NO
3	3	18O2-PFHxS	1901802-01 SWIN1906241230KER 0.2...	1.05e3	90.9	NO
4	4	13C8-PFOA	1901802-01 SWIN1906241230KER 0.2...	1.66e4	71.5	NO
5	5	13C9-PFNA	1901802-01 SWIN1906241230KER 0.2...	1.37e4	76.0	NO
6	6	13C4-PFOS	1901802-01 SWIN1906241230KER 0.2...	2.66e3	91.4	NO
7	7	13C6-PFDA	1901802-01 SWIN1906241230KER 0.2...	1.51e4	67.8	NO
8	8	13C7-PFUdA	1901802-01 SWIN1906241230KER 0.2...	1.64e4	71.0	NO

Name: 190712M2_58, Date: 13-Jul-2019, Time: 03:35:17, ID: 1901803-01 SWIN1906241350KER 0.2306, Description: SWIN1906241350KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901803-01 SWIN1906241350KER 0.2...	6.73e3	116.1	NO
2	2	13C5-PFHxA	1901803-01 SWIN1906241350KER 0.2...	1.34e4	65.9	NO
3	3	18O2-PFHxS	1901803-01 SWIN1906241350KER 0.2...	8.99e2	77.6	NO
4	4	13C8-PFOA	1901803-01 SWIN1906241350KER 0.2...	1.61e4	69.2	NO
5	5	13C9-PFNA	1901803-01 SWIN1906241350KER 0.2...	1.22e4	67.5	NO
6	6	13C4-PFOS	1901803-01 SWIN1906241350KER 0.2...	2.32e3	79.8	NO
7	7	13C6-PFDA	1901803-01 SWIN1906241350KER 0.2...	1.49e4	66.8	NO
8	8	13C7-PFUdA	1901803-01 SWIN1906241350KER 0.2...	1.60e4	69.1	NO

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Name: 190712M2_59, Date: 13-Jul-2019, Time: 03:45:50, ID: 1901804-01 SWIN1906241420KER 0.23872, Description: SWIN1906241420KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901804-01 SWIN1906241420KER 0.2...	7.33e3	126.3	NO
2	2	13C5-PFHxA	1901804-01 SWIN1906241420KER 0.2...	1.46e4	72.1	NO
3	3	18O2-PFHxS	1901804-01 SWIN1906241420KER 0.2...	9.50e2	82.0	NO
4	4	13C8-PFOA	1901804-01 SWIN1906241420KER 0.2...	1.67e4	71.8	NO
5	5	13C9-PFNA	1901804-01 SWIN1906241420KER 0.2...	1.39e4	77.1	NO
6	6	13C4-PFOS	1901804-01 SWIN1906241420KER 0.2...	2.47e3	84.9	NO
7	7	13C6-PFDA	1901804-01 SWIN1906241420KER 0.2...	1.63e4	73.1	NO
8	8	13C7-PFUdA	1901804-01 SWIN1906241420KER 0.2...	1.68e4	72.7	NO

Name: 190712M2_60, Date: 13-Jul-2019, Time: 03:56:29, ID: 1901833-01 SWIN1906241120GSC 0.23073, Description: SWIN1906241120GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901833-01 SWIN1906241120GSC 0.2...	7.83e3	134.9	NO
2	2	13C5-PFHxA	1901833-01 SWIN1906241120GSC 0.2...	1.53e4	75.5	NO
3	3	18O2-PFHxS	1901833-01 SWIN1906241120GSC 0.2...	8.88e2	76.7	NO
4	4	13C8-PFOA	1901833-01 SWIN1906241120GSC 0.2...	1.78e4	76.7	NO
5	5	13C9-PFNA	1901833-01 SWIN1906241120GSC 0.2...	1.46e4	80.9	NO
6	6	13C4-PFOS	1901833-01 SWIN1906241120GSC 0.2...	2.28e3	78.3	NO
7	7	13C6-PFDA	1901833-01 SWIN1906241120GSC 0.2...	1.60e4	71.8	NO
8	8	13C7-PFUdA	1901833-01 SWIN1906241120GSC 0.2...	1.72e4	74.6	NO

Name: 190712M2_61, Date: 13-Jul-2019, Time: 04:07:07, ID: 1901834-01 SWIN1906241200GSC 0.21167, Description: SWIN1906241200GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901834-01 SWIN1906241200GSC 0.2...	7.46e3	128.6	NO
2	2	13C5-PFHxA	1901834-01 SWIN1906241200GSC 0.2...	1.49e4	73.6	NO
3	3	18O2-PFHxS	1901834-01 SWIN1906241200GSC 0.2...	9.11e2	78.7	NO
4	4	13C8-PFOA	1901834-01 SWIN1906241200GSC 0.2...	1.69e4	72.8	NO
5	5	13C9-PFNA	1901834-01 SWIN1906241200GSC 0.2...	1.34e4	74.2	NO
6	6	13C4-PFOS	1901834-01 SWIN1906241200GSC 0.2...	2.24e3	77.0	NO
7	7	13C6-PFDA	1901834-01 SWIN1906241200GSC 0.2...	1.65e4	73.9	NO
8	8	13C7-PFUdA	1901834-01 SWIN1906241200GSC 0.2...	1.70e4	73.5	NO

Name: 190712M2_62, Date: 13-Jul-2019, Time: 04:17:40, ID: 1901835-01 SWIN1906241230GSC 0.22418, Description: SWIN1906241230GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901835-01 SWIN1906241230GSC 0.2...	7.99e3	137.7	NO
2	2	13C5-PFHxA	1901835-01 SWIN1906241230GSC 0.2...	1.52e4	75.1	NO
3	3	18O2-PFHxS	1901835-01 SWIN1906241230GSC 0.2...	1.04e3	89.4	NO
4	4	13C8-PFOA	1901835-01 SWIN1906241230GSC 0.2...	1.94e4	83.2	NO
5	5	13C9-PFNA	1901835-01 SWIN1906241230GSC 0.2...	1.62e4	89.7	NO
6	6	13C4-PFOS	1901835-01 SWIN1906241230GSC 0.2...	2.60e3	89.6	NO
7	7	13C6-PFDA	1901835-01 SWIN1906241230GSC 0.2...	1.83e4	82.0	NO
8	8	13C7-PFUdA	1901835-01 SWIN1906241230GSC 0.2...	1.86e4	80.6	NO

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Name: 190712M2_63, Date: 13-Jul-2019, Time: 04:28:18, ID: 1901836-01 SWIN1906241300GSC 0.23525, Description: SWIN1906241300GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901836-01 SWIN1906241300GSC 0.2...	7.29e3	125.6	NO
2	2	13C5-PFHxA	1901836-01 SWIN1906241300GSC 0.2...	1.48e4	73.2	NO
3	3	18O2-PFHxS	1901836-01 SWIN1906241300GSC 0.2...	1.07e3	92.1	NO
4	4	13C8-PFOA	1901836-01 SWIN1906241300GSC 0.2...	1.69e4	72.8	NO
5	5	13C9-PFNA	1901836-01 SWIN1906241300GSC 0.2...	1.42e4	78.3	NO
6	6	13C4-PFOS	1901836-01 SWIN1906241300GSC 0.2...	2.36e3	81.1	NO
7	7	13C6-PFDA	1901836-01 SWIN1906241300GSC 0.2...	1.58e4	70.7	NO
8	8	13C7-PFUdA	1901836-01 SWIN1906241300GSC 0.2...	1.73e4	74.8	NO

Name: 190712M2_64, Date: 13-Jul-2019, Time: 04:38:57, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_65, Date: 13-Jul-2019, Time: 04:49:29, ID: ST190712M2-13 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-13 PFC CS3 19G1106	6.18e3	106.6	NO
2	2	13C5-PFHxA	ST190712M2-13 PFC CS3 19G1106	2.21e4	108.8	NO
3	3	18O2-PFHxS	ST190712M2-13 PFC CS3 19G1106	1.23e3	106.6	NO
4	4	13C8-PFOA	ST190712M2-13 PFC CS3 19G1106	2.53e4	108.8	NO
5	5	13C9-PFNA	ST190712M2-13 PFC CS3 19G1106	1.97e4	109.2	NO
6	6	13C4-PFOS	ST190712M2-13 PFC CS3 19G1106	3.23e3	110.9	NO
7	7	13C6-PFDA	ST190712M2-13 PFC CS3 19G1106	2.24e4	100.3	NO
8	8	13C7-PFUdA	ST190712M2-13 PFC CS3 19G1106	2.46e4	106.3	NO

Name: 190712M2_66, Date: 13-Jul-2019, Time: 05:00:07, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_67, Date: 13-Jul-2019, Time: 05:10:41, ID: 1901837-01 SWIN1906241330GSC 0.22552, Description: SWIN1906241330GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901837-01 SWIN1906241330GSC 0.2...	7.82e3	134.8	NO
2	2	13C5-PFHxA	1901837-01 SWIN1906241330GSC 0.2...	1.59e4	78.3	NO
3	3	18O2-PFHxS	1901837-01 SWIN1906241330GSC 0.2...	8.97e2	77.5	NO
4	4	13C8-PFOA	1901837-01 SWIN1906241330GSC 0.2...	1.84e4	79.2	NO
5	5	13C9-PFNA	1901837-01 SWIN1906241330GSC 0.2...	1.40e4	77.7	NO
6	6	13C4-PFOS	1901837-01 SWIN1906241330GSC 0.2...	2.37e3	81.4	NO
7	7	13C6-PFDA	1901837-01 SWIN1906241330GSC 0.2...	1.68e4	75.4	NO
8	8	13C7-PFUdA	1901837-01 SWIN1906241330GSC 0.2...	1.85e4	79.8	NO

Name: 190712M2_68, Date: 13-Jul-2019, Time: 05:21:19, ID: 1901838-01 SWIN1906241410GSC 0.22937, Description: SWIN1906241410GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901838-01 SWIN1906241410GSC 0.2...	7.17e3	123.7	NO
2	2	13C5-PFHxA	1901838-01 SWIN1906241410GSC 0.2...	1.49e4	73.7	NO
3	3	18O2-PFHxS	1901838-01 SWIN1906241410GSC 0.2...	8.21e2	70.9	NO
4	4	13C8-PFOA	1901838-01 SWIN1906241410GSC 0.2...	1.66e4	71.4	NO
5	5	13C9-PFNA	1901838-01 SWIN1906241410GSC 0.2...	1.34e4	74.0	NO
6	6	13C4-PFOS	1901838-01 SWIN1906241410GSC 0.2...	2.21e3	76.1	NO
7	7	13C6-PFDA	1901838-01 SWIN1906241410GSC 0.2...	1.59e4	71.4	NO
8	8	13C7-PFUdA	1901838-01 SWIN1906241410GSC 0.2...	1.62e4	70.2	NO

Name: 190712M2_69, Date: 13-Jul-2019, Time: 05:31:53, ID: B9G0019-BS1 OPR 0.25, Description: OPR

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0019-BS1 OPR 0.25	7.14e3	123.1	NO
2	2	13C5-PFHxA	B9G0019-BS1 OPR 0.25	1.44e4	71.0	NO
3	3	18O2-PFHxS	B9G0019-BS1 OPR 0.25	9.90e2	85.5	NO
4	4	13C8-PFOA	B9G0019-BS1 OPR 0.25	1.71e4	73.7	NO
5	5	13C9-PFNA	B9G0019-BS1 OPR 0.25	1.40e4	77.7	NO
6	6	13C4-PFOS	B9G0019-BS1 OPR 0.25	2.40e3	82.4	NO
7	7	13C6-PFDA	B9G0019-BS1 OPR 0.25	1.63e4	72.9	NO
8	8	13C7-PFUdA	B9G0019-BS1 OPR 0.25	1.79e4	77.3	NO

Name: 190712M2_70, Date: 13-Jul-2019, Time: 05:42:31, ID: B9G0019-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	B9G0019-BLK1 Method Blank 0.25	7.45e3	128.4	NO
2	2	13C5-PFHxA	B9G0019-BLK1 Method Blank 0.25	1.51e4	74.4	NO
3	3	18O2-PFHxS	B9G0019-BLK1 Method Blank 0.25	1.02e3	87.9	NO
4	4	13C8-PFOA	B9G0019-BLK1 Method Blank 0.25	1.87e4	80.6	NO
5	5	13C9-PFNA	B9G0019-BLK1 Method Blank 0.25	1.49e4	82.5	NO
6	6	13C4-PFOS	B9G0019-BLK1 Method Blank 0.25	2.50e3	86.0	NO
7	7	13C6-PFDA	B9G0019-BLK1 Method Blank 0.25	1.77e4	79.1	NO
8	8	13C7-PFUdA	B9G0019-BLK1 Method Blank 0.25	1.94e4	83.8	NO

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Name: 190712M2_71, Date: 13-Jul-2019, Time: 05:53:04, ID: 1901805-01 SWIN1906251340KER 0.24387, Description: SWIN1906251340KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901805-01 SWIN1906251340KER 0.2...	8.48e3	146.2	NO
2	2	13C5-PFHxA	1901805-01 SWIN1906251340KER 0.2...	1.65e4	81.2	NO
3	3	18O2-PFHxS	1901805-01 SWIN1906251340KER 0.2...	1.06e3	91.7	NO
4	4	13C8-PFOA	1901805-01 SWIN1906251340KER 0.2...	1.93e4	83.2	NO
5	5	13C9-PFNA	1901805-01 SWIN1906251340KER 0.2...	1.45e4	80.1	NO
6	6	13C4-PFOS	1901805-01 SWIN1906251340KER 0.2...	2.64e3	90.8	NO
7	7	13C6-PFDA	1901805-01 SWIN1906251340KER 0.2...	1.81e4	81.0	NO
8	8	13C7-PFUdA	1901805-01 SWIN1906251340KER 0.2...	1.88e4	81.2	NO

Name: 190712M2_72, Date: 13-Jul-2019, Time: 06:03:42, ID: 1901807-01 SWIN1906251000KER 0.24038, Description: SWIN1906251000KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901807-01 SWIN1906251000KER 0.2...	7.53e3	129.9	NO
2	2	13C5-PFHxA	1901807-01 SWIN1906251000KER 0.2...	1.49e4	73.4	NO
3	3	18O2-PFHxS	1901807-01 SWIN1906251000KER 0.2...	9.18e2	79.3	NO
4	4	13C8-PFOA	1901807-01 SWIN1906251000KER 0.2...	1.69e4	72.7	NO
5	5	13C9-PFNA	1901807-01 SWIN1906251000KER 0.2...	1.34e4	74.0	NO
6	6	13C4-PFOS	1901807-01 SWIN1906251000KER 0.2...	2.41e3	83.0	NO
7	7	13C6-PFDA	1901807-01 SWIN1906251000KER 0.2...	1.61e4	71.9	NO
8	8	13C7-PFUdA	1901807-01 SWIN1906251000KER 0.2...	1.71e4	73.8	NO

Name: 190712M2_73, Date: 13-Jul-2019, Time: 06:14:21, ID: 1901808-01 SWIN1906251130KER 0.23854, Description: SWIN1906251130KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901808-01 SWIN1906251130KER 0.2...	8.73e3	150.4	YES
2	2	13C5-PFHxA	1901808-01 SWIN1906251130KER 0.2...	1.73e4	85.5	NO
3	3	18O2-PFHxS	1901808-01 SWIN1906251130KER 0.2...	1.20e3	103.7	NO
4	4	13C8-PFOA	1901808-01 SWIN1906251130KER 0.2...	1.99e4	85.8	NO
5	5	13C9-PFNA	1901808-01 SWIN1906251130KER 0.2...	1.59e4	88.2	NO
6	6	13C4-PFOS	1901808-01 SWIN1906251130KER 0.2...	2.72e3	93.5	NO
7	7	13C6-PFDA	1901808-01 SWIN1906251130KER 0.2...	1.90e4	85.2	NO
8	8	13C7-PFUdA	1901808-01 SWIN1906251130KER 0.2...	2.02e4	87.3	NO

Name: 190712M2_74, Date: 13-Jul-2019, Time: 06:24:54, ID: 1901809-01 SWIN1906251200KER 0.23354, Description: SWIN1906251200KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901809-01 SWIN1906251200KER 0.2...	8.82e3	152.0	YES
2	2	13C5-PFHxA	1901809-01 SWIN1906251200KER 0.2...	1.80e4	88.9	NO
3	3	18O2-PFHxS	1901809-01 SWIN1906251200KER 0.2...	1.07e3	92.7	NO
4	4	13C8-PFOA	1901809-01 SWIN1906251200KER 0.2...	2.00e4	85.9	NO
5	5	13C9-PFNA	1901809-01 SWIN1906251200KER 0.2...	1.58e4	87.7	NO
6	6	13C4-PFOS	1901809-01 SWIN1906251200KER 0.2...	2.67e3	91.9	NO
7	7	13C6-PFDA	1901809-01 SWIN1906251200KER 0.2...	1.88e4	84.0	NO
8	8	13C7-PFUdA	1901809-01 SWIN1906251200KER 0.2...	1.95e4	84.1	NO

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Name: 190712M2_75, Date: 13-Jul-2019, Time: 06:35:32, ID: 1901810-01 SWIN1906251300KER 0.24769, Description: SWIN1906251300KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901810-01 SWIN1906251300KER 0.2...	8.40e3	144.8	NO
2	2	13C5-PFHxA	1901810-01 SWIN1906251300KER 0.2...	1.69e4	83.2	NO
3	3	18O2-PFHxS	1901810-01 SWIN1906251300KER 0.2...	1.08e3	93.6	NO
4	4	13C8-PFOA	1901810-01 SWIN1906251300KER 0.2...	1.98e4	85.1	NO
5	5	13C9-PFNA	1901810-01 SWIN1906251300KER 0.2...	1.52e4	84.4	NO
6	6	13C4-PFOS	1901810-01 SWIN1906251300KER 0.2...	2.65e3	91.1	NO
7	7	13C6-PFDA	1901810-01 SWIN1906251300KER 0.2...	1.83e4	82.1	NO
8	8	13C7-PFUdA	1901810-01 SWIN1906251300KER 0.2...	1.91e4	82.4	NO

Name: 190712M2_76, Date: 13-Jul-2019, Time: 06:46:06, ID: 1901811-01 SWIN1906260910KER 0.24171, Description: SWIN1906260910KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901811-01 SWIN1906260910KER 0.2...	9.56e3	164.8	YES
2	2	13C5-PFHxA	1901811-01 SWIN1906260910KER 0.2...	1.92e4	94.5	NO
3	3	18O2-PFHxS	1901811-01 SWIN1906260910KER 0.2...	1.09e3	94.5	NO
4	4	13C8-PFOA	1901811-01 SWIN1906260910KER 0.2...	2.19e4	94.1	NO
5	5	13C9-PFNA	1901811-01 SWIN1906260910KER 0.2...	1.77e4	98.2	NO
6	6	13C4-PFOS	1901811-01 SWIN1906260910KER 0.2...	2.93e3	100.7	NO
7	7	13C6-PFDA	1901811-01 SWIN1906260910KER 0.2...	2.16e4	96.5	NO
8	8	13C7-PFUdA	1901811-01 SWIN1906260910KER 0.2...	2.23e4	96.5	NO

Name: 190712M2_77, Date: 13-Jul-2019, Time: 06:56:44, ID: 1901812-01 SWIN1906261030KER 0.24255, Description: SWIN1906261030KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901812-01 SWIN1906261030KER 0.2...	8.34e3	143.8	NO
2	2	13C5-PFHxA	1901812-01 SWIN1906261030KER 0.2...	1.65e4	81.3	NO
3	3	18O2-PFHxS	1901812-01 SWIN1906261030KER 0.2...	9.86e2	85.2	NO
4	4	13C8-PFOA	1901812-01 SWIN1906261030KER 0.2...	1.89e4	81.1	NO
5	5	13C9-PFNA	1901812-01 SWIN1906261030KER 0.2...	1.53e4	84.4	NO
6	6	13C4-PFOS	1901812-01 SWIN1906261030KER 0.2...	2.34e3	80.4	NO
7	7	13C6-PFDA	1901812-01 SWIN1906261030KER 0.2...	1.77e4	79.2	NO
8	8	13C7-PFUdA	1901812-01 SWIN1906261030KER 0.2...	1.87e4	80.8	NO

Name: 190712M2_78, Date: 13-Jul-2019, Time: 07:07:16, ID: 1901813-01 SWIN1906261110KER 0.25097, Description: SWIN1906261110KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901813-01 SWIN1906261110KER 0.2...	9.30e3	160.4	YES
2	2	13C5-PFHxA	1901813-01 SWIN1906261110KER 0.2...	1.86e4	91.7	NO
3	3	18O2-PFHxS	1901813-01 SWIN1906261110KER 0.2...	1.02e3	88.4	NO
4	4	13C8-PFOA	1901813-01 SWIN1906261110KER 0.2...	2.15e4	92.6	NO
5	5	13C9-PFNA	1901813-01 SWIN1906261110KER 0.2...	1.67e4	92.5	NO
6	6	13C4-PFOS	1901813-01 SWIN1906261110KER 0.2...	2.94e3	101.2	NO
7	7	13C6-PFDA	1901813-01 SWIN1906261110KER 0.2...	2.00e4	89.4	NO
8	8	13C7-PFUdA	1901813-01 SWIN1906261110KER 0.2...	2.10e4	90.9	NO

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Name: 190712M2_79, Date: 13-Jul-2019, Time: 07:17:54, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_80, Date: 13-Jul-2019, Time: 07:28:27, ID: ST190712M2-14 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-14 PFC CS3 19G1106	6.33e3	109.1	NO
2	2	13C5-PFHxA	ST190712M2-14 PFC CS3 19G1106	2.17e4	106.8	NO
3	3	18O2-PFHxS	ST190712M2-14 PFC CS3 19G1106	1.25e3	107.8	NO
4	4	13C8-PFOA	ST190712M2-14 PFC CS3 19G1106	2.44e4	105.1	NO
5	5	13C9-PFNA	ST190712M2-14 PFC CS3 19G1106	1.94e4	107.4	NO
6	6	13C4-PFOS	ST190712M2-14 PFC CS3 19G1106	3.24e3	111.5	NO
7	7	13C6-PFDA	ST190712M2-14 PFC CS3 19G1106	2.35e4	105.0	NO
8	8	13C7-PFUdA	ST190712M2-14 PFC CS3 19G1106	2.41e4	104.4	NO

Name: 190712M2_81, Date: 13-Jul-2019, Time: 07:39:05, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_82, Date: 13-Jul-2019, Time: 07:49:38, ID: 1901814-01 SWIN1906261140KER 0.24991, Description: SWIN1906261140KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901814-01 SWIN1906261140KER 0.2...	9.55e3	164.6	YES
2	2	13C5-PFHxA	1901814-01 SWIN1906261140KER 0.2...	1.82e4	89.6	NO
3	3	18O2-PFHxS	1901814-01 SWIN1906261140KER 0.2...	9.86e2	85.1	NO
4	4	13C8-PFOA	1901814-01 SWIN1906261140KER 0.2...	2.13e4	91.4	NO
5	5	13C9-PFNA	1901814-01 SWIN1906261140KER 0.2...	1.69e4	93.4	NO
6	6	13C4-PFOS	1901814-01 SWIN1906261140KER 0.2...	3.02e3	104.0	NO
7	7	13C6-PFDA	1901814-01 SWIN1906261140KER 0.2...	1.99e4	88.9	NO
8	8	13C7-PFUdA	1901814-01 SWIN1906261140KER 0.2...	2.06e4	88.9	NO

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Name: 190712M2_83, Date: 13-Jul-2019, Time: 08:00:16, ID: 1901815-01 SWIN1906261220KER 0.243, Description: SWIN1906261220KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901815-01 SWIN1906261220KER 0.2...	9.21e3	158.8	YES
2	2	13C5-PFHxA	1901815-01 SWIN1906261220KER 0.2...	1.82e4	89.8	NO
3	3	18O2-PFHxS	1901815-01 SWIN1906261220KER 0.2...	1.05e3	91.1	NO
4	4	13C8-PFOA	1901815-01 SWIN1906261220KER 0.2...	2.06e4	88.5	NO
5	5	13C9-PFNA	1901815-01 SWIN1906261220KER 0.2...	1.66e4	91.9	NO
6	6	13C4-PFOS	1901815-01 SWIN1906261220KER 0.2...	2.91e3	100.2	NO
7	7	13C6-PFDA	1901815-01 SWIN1906261220KER 0.2...	1.94e4	87.0	NO
8	8	13C7-PFUdA	1901815-01 SWIN1906261220KER 0.2...	2.02e4	87.3	NO

Name: 190712M2_84, Date: 13-Jul-2019, Time: 08:10:48, ID: 1901816-01 SWIN1906261300KER 0.24809, Description: SWIN1906261300KER

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901816-01 SWIN1906261300KER 0.2...	8.21e3	141.5	NO
2	2	13C5-PFHxA	1901816-01 SWIN1906261300KER 0.2...	1.58e4	77.7	NO
3	3	18O2-PFHxS	1901816-01 SWIN1906261300KER 0.2...	9.61e2	82.9	NO
4	4	13C8-PFOA	1901816-01 SWIN1906261300KER 0.2...	1.84e4	79.1	NO
5	5	13C9-PFNA	1901816-01 SWIN1906261300KER 0.2...	1.41e4	78.1	NO
6	6	13C4-PFOS	1901816-01 SWIN1906261300KER 0.2...	2.59e3	89.0	NO
7	7	13C6-PFDA	1901816-01 SWIN1906261300KER 0.2...	1.70e4	76.2	NO
8	8	13C7-PFUdA	1901816-01 SWIN1906261300KER 0.2...	1.78e4	77.1	NO

Name: 190712M2_85, Date: 13-Jul-2019, Time: 08:21:27, ID: 1901839-01 SWIN1906250800GSC 0.23982, Description: SWIN1906250800GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901839-01 SWIN1906250800GSC 0.2...	8.13e3	140.2	NO
2	2	13C5-PFHxA	1901839-01 SWIN1906250800GSC 0.2...	1.67e4	82.1	NO
3	3	18O2-PFHxS	1901839-01 SWIN1906250800GSC 0.2...	9.64e2	83.2	NO
4	4	13C8-PFOA	1901839-01 SWIN1906250800GSC 0.2...	1.91e4	82.3	NO
5	5	13C9-PFNA	1901839-01 SWIN1906250800GSC 0.2...	1.49e4	82.4	NO
6	6	13C4-PFOS	1901839-01 SWIN1906250800GSC 0.2...	2.65e3	91.3	NO
7	7	13C6-PFDA	1901839-01 SWIN1906250800GSC 0.2...	1.77e4	79.4	NO
8	8	13C7-PFUdA	1901839-01 SWIN1906250800GSC 0.2...	1.90e4	82.0	NO

Name: 190712M2_86, Date: 13-Jul-2019, Time: 08:32:00, ID: 1901839-02 SWIN1906250800GSC-FD 0.23997, Description: SWIN1906250800GSC-FD

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901839-02 SWIN1906250800GSC-FD...	8.11e3	139.8	NO
2	2	13C5-PFHxA	1901839-02 SWIN1906250800GSC-FD...	1.62e4	80.1	NO
3	3	18O2-PFHxS	1901839-02 SWIN1906250800GSC-FD...	9.79e2	84.6	NO
4	4	13C8-PFOA	1901839-02 SWIN1906250800GSC-FD...	1.91e4	82.3	NO
5	5	13C9-PFNA	1901839-02 SWIN1906250800GSC-FD...	1.51e4	83.8	NO
6	6	13C4-PFOS	1901839-02 SWIN1906250800GSC-FD...	2.44e3	83.9	NO
7	7	13C6-PFDA	1901839-02 SWIN1906250800GSC-FD...	1.83e4	81.7	NO
8	8	13C7-PFUdA	1901839-02 SWIN1906250800GSC-FD...	1.88e4	81.1	NO

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Name: 190712M2_87, Date: 13-Jul-2019, Time: 08:42:38, ID: 1901840-01 SWIN1906251015GSC 0.24588, Description: SWIN1906251015GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901840-01 SWIN1906251015GSC 0.2...	7.95e3	137.1	NO
2	2	13C5-PFHxA	1901840-01 SWIN1906251015GSC 0.2...	1.58e4	77.8	NO
3	3	18O2-PFHxS	1901840-01 SWIN1906251015GSC 0.2...	9.04e2	78.0	NO
4	4	13C8-PFOA	1901840-01 SWIN1906251015GSC 0.2...	1.80e4	77.4	NO
5	5	13C9-PFNA	1901840-01 SWIN1906251015GSC 0.2...	1.44e4	79.7	NO
6	6	13C4-PFOS	1901840-01 SWIN1906251015GSC 0.2...	2.46e3	84.5	NO
7	7	13C6-PFDA	1901840-01 SWIN1906251015GSC 0.2...	1.69e4	75.8	NO
8	8	13C7-PFUdA	1901840-01 SWIN1906251015GSC 0.2...	1.83e4	79.1	NO

Name: 190712M2_88, Date: 13-Jul-2019, Time: 08:53:11, ID: 1901841-01 SWIN1906251200GSC 0.24185, Description: SWIN1906251200GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901841-01 SWIN1906251200GSC 0.2...	7.86e3	135.5	NO
2	2	13C5-PFHxA	1901841-01 SWIN1906251200GSC 0.2...	1.53e4	75.4	NO
3	3	18O2-PFHxS	1901841-01 SWIN1906251200GSC 0.2...	8.64e2	74.6	NO
4	4	13C8-PFOA	1901841-01 SWIN1906251200GSC 0.2...	1.77e4	75.9	NO
5	5	13C9-PFNA	1901841-01 SWIN1906251200GSC 0.2...	1.42e4	78.4	NO
6	6	13C4-PFOS	1901841-01 SWIN1906251200GSC 0.2...	2.49e3	85.8	NO
7	7	13C6-PFDA	1901841-01 SWIN1906251200GSC 0.2...	1.63e4	73.1	NO
8	8	13C7-PFUdA	1901841-01 SWIN1906251200GSC 0.2...	1.76e4	75.9	NO

Name: 190712M2_89, Date: 13-Jul-2019, Time: 09:03:49, ID: 1901842-01 SWIN1906251220GSC 0.23393, Description: SWIN1906251220GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901842-01 SWIN1906251220GSC 0.2...	8.05e3	138.8	NO
2	2	13C5-PFHxA	1901842-01 SWIN1906251220GSC 0.2...	1.63e4	80.6	NO
3	3	18O2-PFHxS	1901842-01 SWIN1906251220GSC 0.2...	9.63e2	83.2	NO
4	4	13C8-PFOA	1901842-01 SWIN1906251220GSC 0.2...	1.82e4	78.5	NO
5	5	13C9-PFNA	1901842-01 SWIN1906251220GSC 0.2...	1.48e4	81.7	NO
6	6	13C4-PFOS	1901842-01 SWIN1906251220GSC 0.2...	2.71e3	93.2	NO
7	7	13C6-PFDA	1901842-01 SWIN1906251220GSC 0.2...	1.73e4	77.6	NO
8	8	13C7-PFUdA	1901842-01 SWIN1906251220GSC 0.2...	1.87e4	80.7	NO

Name: 190712M2_90, Date: 13-Jul-2019, Time: 09:14:22, ID: 1901843-01 SWIN1906251330GSC 0.24762, Description: SWIN1906251330GSC

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	1901843-01 SWIN1906251330GSC 0.2...	8.06e3	139.0	NO
2	2	13C5-PFHxA	1901843-01 SWIN1906251330GSC 0.2...	1.61e4	79.4	NO
3	3	18O2-PFHxS	1901843-01 SWIN1906251330GSC 0.2...	9.66e2	83.4	NO
4	4	13C8-PFOA	1901843-01 SWIN1906251330GSC 0.2...	1.81e4	77.8	NO
5	5	13C9-PFNA	1901843-01 SWIN1906251330GSC 0.2...	1.45e4	80.3	NO
6	6	13C4-PFOS	1901843-01 SWIN1906251330GSC 0.2...	2.39e3	82.3	NO
7	7	13C6-PFDA	1901843-01 SWIN1906251330GSC 0.2...	1.71e4	76.5	NO
8	8	13C7-PFUdA	1901843-01 SWIN1906251330GSC 0.2...	1.81e4	78.4	NO

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\AREAS.qld

Last Altered: Sunday, July 14, 2019 15:03:19 Pacific Daylight Time
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Name: 190712M2_91, Date: 13-Jul-2019, Time: 09:25:00, ID: IPA, Description: IPA

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	IPA			NO
2	2	13C5-PFHxA	IPA			NO
3	3	18O2-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: 190712M2_92, Date: 13-Jul-2019, Time: 09:35:34, ID: ST190712M2-15 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	ID	Area	%Rec	Area Out
1	1	13C4-PFBA	ST190712M2-15 PFC CS3 19G1106	6.06e3	104.5	NO
2	2	13C5-PFHxA	ST190712M2-15 PFC CS3 19G1106	2.22e4	109.7	NO
3	3	18O2-PFHxS	ST190712M2-15 PFC CS3 19G1106	1.36e3	117.3	NO
4	4	13C8-PFOA	ST190712M2-15 PFC CS3 19G1106	2.54e4	109.2	NO
5	5	13C9-PFNA	ST190712M2-15 PFC CS3 19G1106	1.97e4	109.1	NO
6	6	13C4-PFOS	ST190712M2-15 PFC CS3 19G1106	3.45e3	118.8	NO
7	7	13C6-PFDA	ST190712M2-15 PFC CS3 19G1106	2.37e4	106.2	NO
8	8	13C7-PFUdA	ST190712M2-15 PFC CS3 19G1106	2.47e4	106.7	NO

Dataset: F:\Projects\PFAS.PRO\Results\190712M1\190712M1-IB.qld

Last Altered: Friday, July 12, 2019 12:30:13 Pacific Daylight Time
Printed: Friday, July 12, 2019 12:30:43 Pacific Daylight Time

Name: 190712M1_3, Date: 12-Jul-2019, Time: 10:41:27, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8		2082.429	1.00					NO		
2	2	PFPrS	248.9 > 79.9		556.826	1.00					NO		
3	3	3:3 FTCA	240.9 > 176.9		3829.493	1.00					NO		
4	4	PFPeA	263.1 > 218.9		3829.493	1.00					NO		
5	5	PFBS	299.0 > 79.7		556.826	1.00					NO		
6	6	4:2 FTS	327.0 > 306.9		1262.880	1.00					NO		
7	47	13C3-PFBA	216.1 > 171.8	2082.429	3139.752	1.00	1.18	8.291	12.8	102.0	NO		
8	49	13C3-PFBS	302.0 > 98.8	556.826	602.155	1.00	2.46	11.559	11.2	89.3	NO		
9	48	13C3-PFPeA	266.0 > 221.8	3829.493	10917.353	1.00	2.17	4.385	10.8	86.1	NO		
10	48	13C3-PFPeA	266.0 > 221.8	3829.493	10917.353	1.00	2.17	4.385	10.8	86.1	NO		
11	49	13C3-PFBS	302.0 > 98.8	556.826	602.155	1.00	2.46	11.559	11.2	89.3	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	1262.880	602.155	1.00	2.88	26.216	11.7	93.7	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0		3402.869	1.00					NO		
15	8	PFPeS	349.1>80.1		556.826	1.00					NO		
16	9	HFPO-DA	285.1 > 168.9		1241.046	1.00					NO		
17	10	5:3 FTCA	340.9 > 236.9		4188.277	1.00					NO		
18	11	PFHpA	363.0 > 318.9		4188.277	1.00					NO		
19	12	ADONA	376.8 > 250.9		4188.277	1.00					NO		
20	52	13C2-PFHxA	315.0 > 270.0	3402.869	10917.353	1.00	2.97	3.896	4.9	98.3	NO		
21	49	13C3-PFBS	302.0 > 98.8	556.826	602.155	1.00	2.46	11.559	11.2	89.3	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1241.046	10917.353	1.00	3.18	1.421	4.6	92.7	NO		
23	53	13C4-PFHpA	367.2 > 321.8	4188.277	10917.353	1.00	3.59	4.795	12.3	98.1	NO		
24	53	13C4-PFHpA	367.2 > 321.8	4188.277	10917.353	1.00	3.59	4.795	12.3	98.1	NO		
25	53	13C4-PFHpA	367.2 > 321.8	4188.277	10917.353	1.00	3.59	4.795	12.3	98.1	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	6.435	1440.783	1.00	3.74	0.056	0.2		NO	22.266	YES
28	15	6:2 FTS	427.0 > 406.9		1128.066	1.00					NO		
29	16	L-PFOA	412.8 > 368.9	20.398	7985.296	1.00	4.11	0.032			NO	1.436	YES
30	18	PFecHS	460.8 > 381.0		7985.296	1.00					NO		
31	19	PFHpS	449.0 > 80.0		1384.866	1.00					NO		
32	20	7:3 FTCA	440.9 > 336.9		8834.818	1.00					NO		
33	54	13C3-PFHxS	401.8 > 79.9	1440.783	602.155	1.00	3.74	29.909	11.7	93.9	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1128.066	1389.837	1.00	4.06	10.146	13.8	110.3	NO		
35	58	13C2-PFOA	414.9 > 369.7	7985.296	15024.184	1.00	4.11	6.644	11.8	94.2	NO		
36	58	13C2-PFOA	414.9 > 369.7	7985.296	15024.184	1.00	4.11	6.644	11.8	94.2	NO		

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Dataset: F:\Projects\PFAS.PRO\Results\190712M1\190712M1-IB.qld

Last Altered: Friday, July 12, 2019 12:30:13 Pacific Daylight Time
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Name: 190712M1_3, Date: 12-Jul-2019, Time: 10:41:27, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	1384.866	1389.837	1.00	4.64	12.455	11.8	94.0	NO		
38	56	13C5-PFNA	468.2 > 422.9	8834.818	9260.604	1.00	4.56	11.925	12.1	97.1	NO		
39	-1												
40	21	PFNA	463.0 > 418.8		8834.818	1.00					NO		
41	22	PFOSA	497.9 > 77.9		1611.925	1.00					NO		
42	23	L-PFOS	498.9 > 79.9		1384.866	1.00					NO		
43	25	9Cl-PF30NS	530.7 > 350.8		1384.866	1.00					NO		
44	26	PFDA	513 > 468.8		7709.601	1.00					NO		
45	27	8:2 FTS	527.0 > 506.9		1001.451	1.00					NO		
46	56	13C5-PFNA	468.2 > 422.9	8834.818	9260.604	1.00	4.56	11.925	12.1	97.1	NO		
47	57	13C8-PFOSA	506.1 > 77.7	1611.925	12742.808	1.00	4.62	1.581	12.1	97.1	NO		
48	59	13C8-PFOS	507.0 > 79.9	1384.866	1389.837	1.00	4.64	12.455	11.8	94.0	NO		
49	59	13C8-PFOS	507.0 > 79.9	1384.866	1389.837	1.00	4.64	12.455	11.8	94.0	NO		
50	60	13C2-PFDA	515.1 > 469.9	7709.601	11153.614	1.00	4.94	8.640	13.0	104.4	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1001.451	1389.837	1.00	4.90	9.007	13.0	103.6	NO		
52	-1												
53	28	PFNS	549.1 > 80.1		1384.866	1.00					NO		
54	29	L-MeFOSAA	570 > 419		1545.079	1.00					NO		
55	31	L-EtFOSAA	584.1 > 419		1889.642	1.00					NO		
56	33	PFUdA	563.0 > 518.9		11672.776	1.00					NO		
57	34	PFDS	598.8 > 79.9		1001.451	1.00					NO		
58	35	11Cl-PF30UdS	632.6 > 452.7		13046.855	1.00					NO		
59	59	13C8-PFOS	507.0 > 79.9	1384.866	1389.837	1.00	4.64	12.455	11.8	94.0	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	1545.079	12742.808	1.00	5.08	1.516	11.7	94.0	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	1889.642	12742.808	1.00	5.24	1.854	12.6	100.6	NO		
62	63	13C2-PFUdA	565 > 519.8	11672.776	12742.808	1.00	5.26	11.450	13.4	106.9	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1001.451	1389.837	1.00	4.90	9.007	13.0	103.6	NO		
64	65	13C2-PFDoA	614.7 > 569.7	13046.855	11153.614	1.00	5.55	14.622	11.9	95.2	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1001.451	1.00					NO		
67	37	PFDoA	612.9 > 569.0		13046.855	1.00					NO		
68	38	N-MeFOSA	512.1 > 168.9		3568.511	1.00					NO		
69	39	PFTrDA	662.9 > 618.9		13046.855	1.00					NO		
70	40	PFDoS	698.8 > 79.9		6712.177	1.00					NO		
71	41	PFTeDA	713.0 > 669.0		6712.177	1.00					NO		
72	65	13C2-PFDoA	614.7 > 569.7	13046.855	11153.614	1.00	5.55	14.622	11.9	95.2	NO		

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Dataset: F:\Projects\PFAS.PRO\Results\190712M1\190712M1-IB.qld

Last Altered: Friday, July 12, 2019 12:30:13 Pacific Daylight Time
Printed: Friday, July 12, 2019 12:30:43 Pacific Daylight Time

Name: 190712M1_3, Date: 12-Jul-2019, Time: 10:41:27, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	13046.855	11153.614	1.00	5.55	14.622	11.9	95.2	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	3568.511	12742.808	1.00	5.71	3.501	158.0	105.3	NO		
75	65	13C2-PFDoA	614.7 > 569.7	13046.855	11153.614	1.00	5.55	14.622	11.9	95.2	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	6712.177	12742.808	1.00	6.02	6.584	12.9	103.0	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	6712.177	12742.808	1.00	6.02	6.584	12.9	103.0	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9		5073.952	1.00					NO		
80	43	PFHxDA	813.1 > 768.6		3796.567	1.00					NO		
81	44	PFODA	913.1 > 868.8		3796.567	1.00					NO		
82	45	N-MeFOSE	616.1 > 58.9		4793.504	1.00					NO		
83	46	N-EtFOSE	630.1 > 58.9		4552.058	1.00					NO		
84	72	13C4-PFBA	217.0 > 172.0	3139.752	3139.752	1.00	1.18	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	5073.952	12742.808	1.00	6.13	4.977	159.7	106.5	NO		
86	69	13C2-PFHxDA	815 > 769.7	3796.567	12742.808	1.00	6.38	3.724	5.1	101.4	NO		
87	69	13C2-PFHxDA	815 > 769.7	3796.567	12742.808	1.00	6.38	3.724	5.1	101.4	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	4793.504	12742.808	1.00	6.29	4.702	168.2	112.1	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	4552.058	12742.808	1.00	6.44	4.465	162.3	108.2	NO		
90	73	13C5-PFHxA	318.0 > 272.9	10917.353	10917.353	1.00	2.97	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	15024.184	15024.184	1.00	4.11	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	602.155	602.155	1.00	3.74	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	9260.604	9260.604	1.00	4.56	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	1389.837	1389.837	1.00	4.64	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	11153.614	11153.614	1.00	4.94	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	12742.808	12742.808	1.00	5.26	12.500	12.5	100.0	NO		

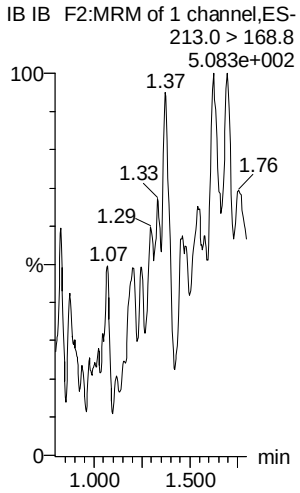
Dataset: F:\Projects\PFAS.PRO\Results\190712M1\190712M1-IB.qld

Last Altered: Friday, July 12, 2019 12:30:13 Pacific Daylight Time
Printed: Friday, July 12, 2019 12:30:43 Pacific Daylight Time

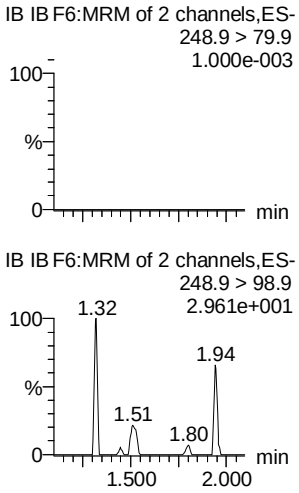
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Name: 190712M1_3, Date: 12-Jul-2019, Time: 10:41:27, ID: IB, Description: IB

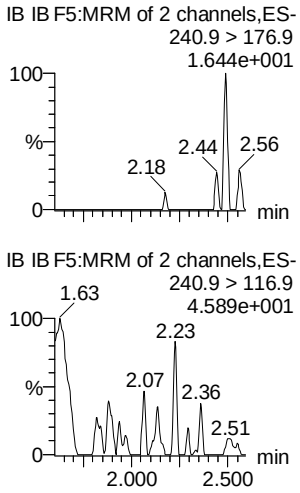
PFBA



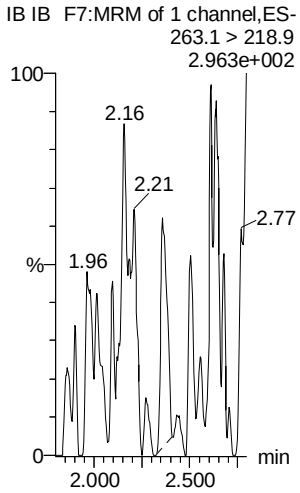
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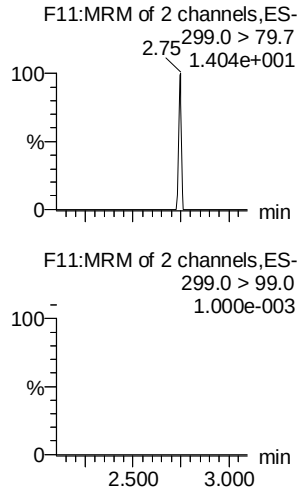
3:3 FTCA



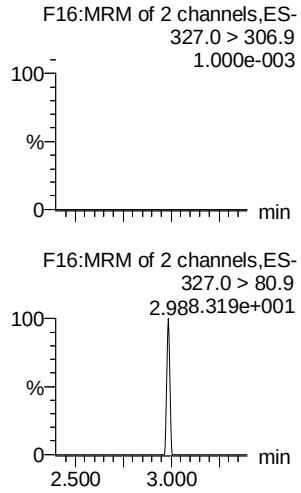
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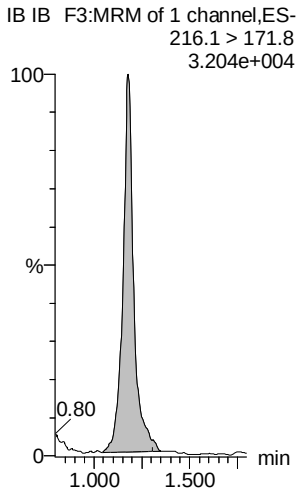
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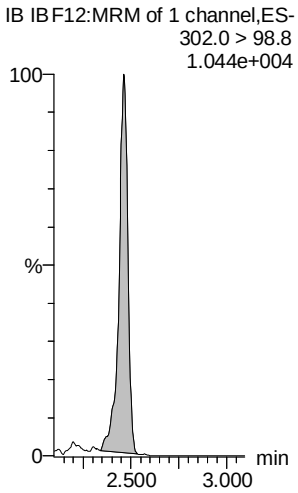
4:2 FTS



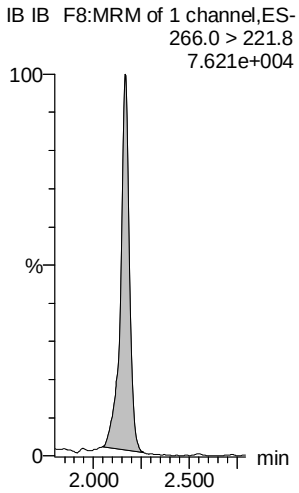
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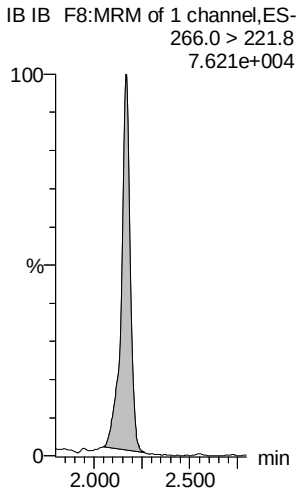
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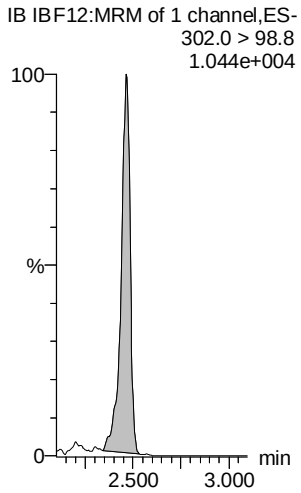
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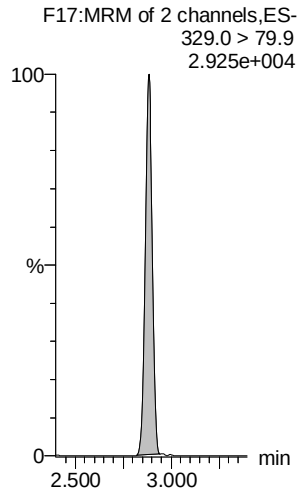
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13C3-PFBS



13C2-4:2 FTS



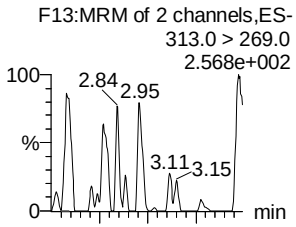
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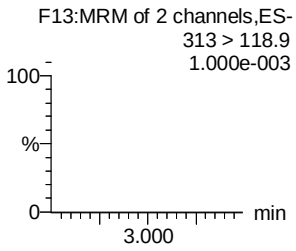
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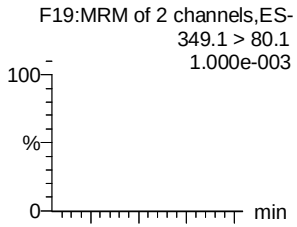
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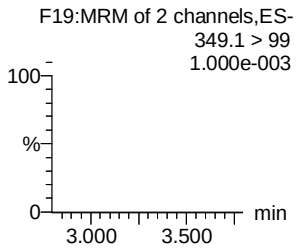
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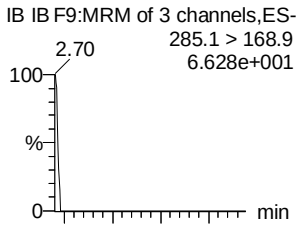


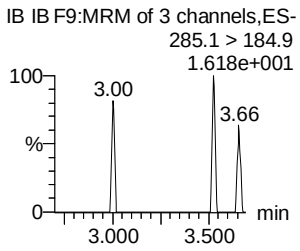
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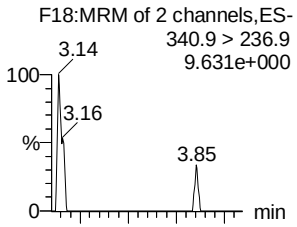


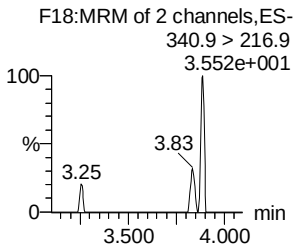
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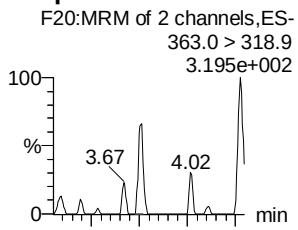


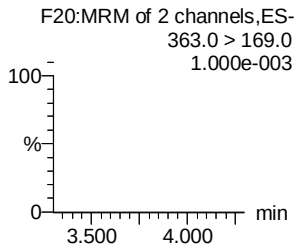
5:3 FTCA



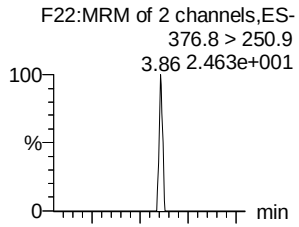


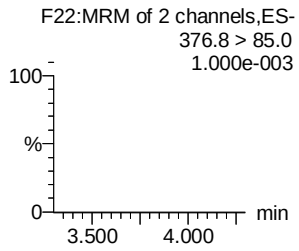
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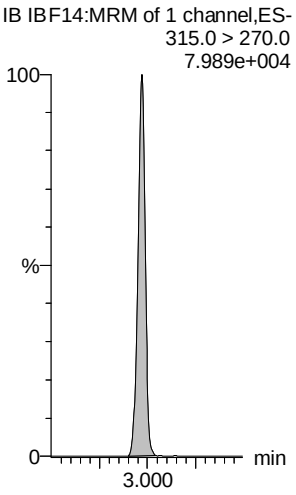


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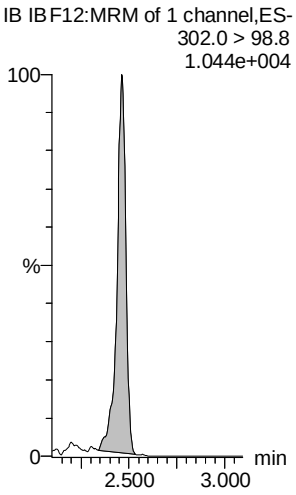




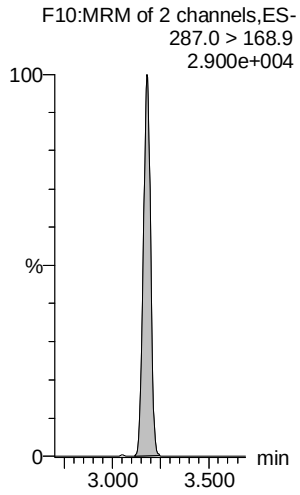
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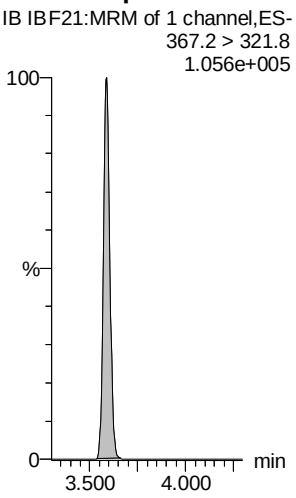
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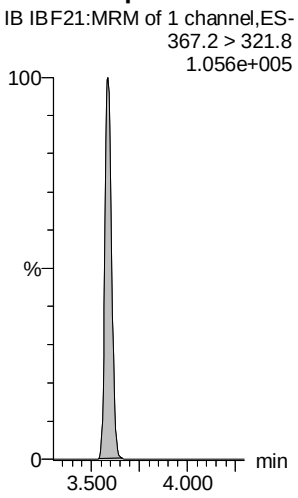
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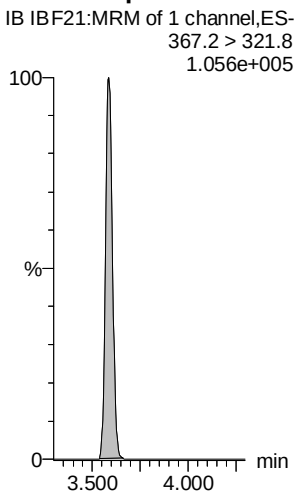
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

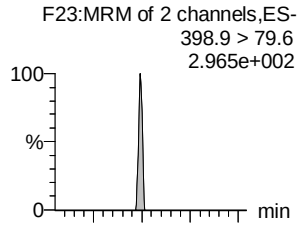


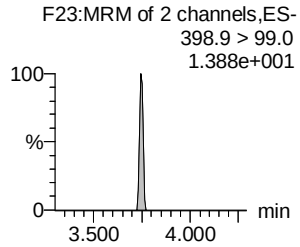
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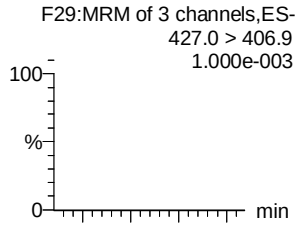
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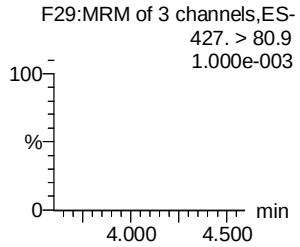
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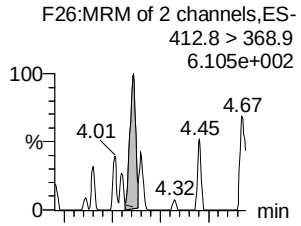


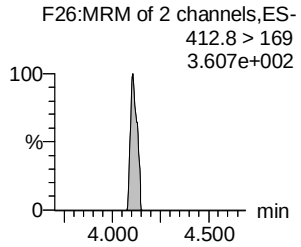
6:2 FTS



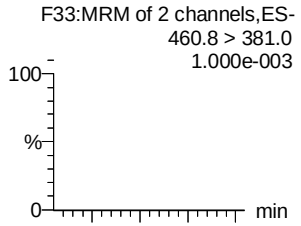


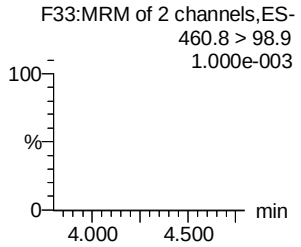
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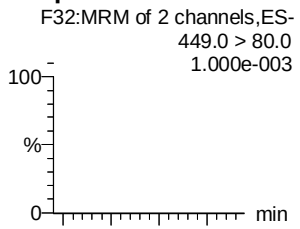


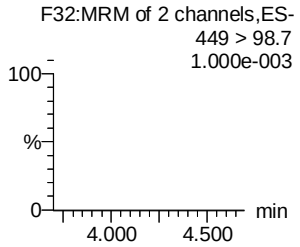
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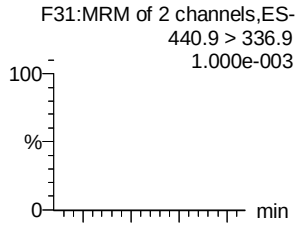


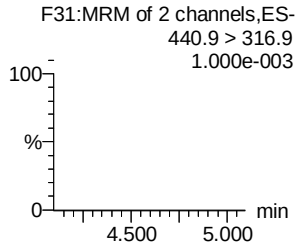
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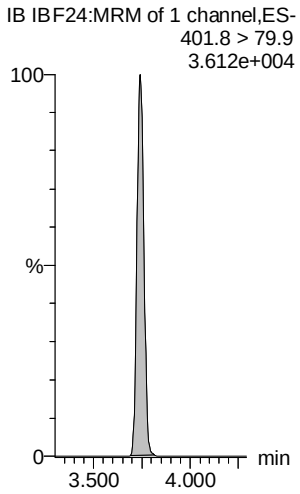


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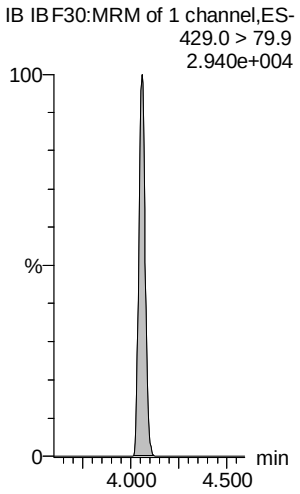




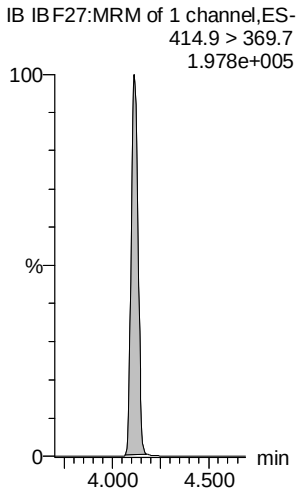
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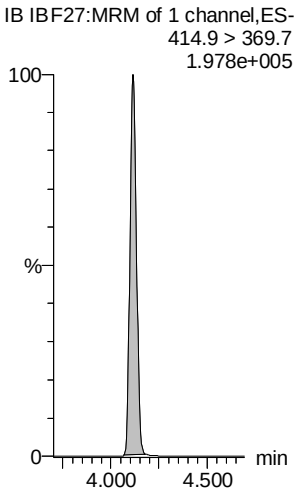
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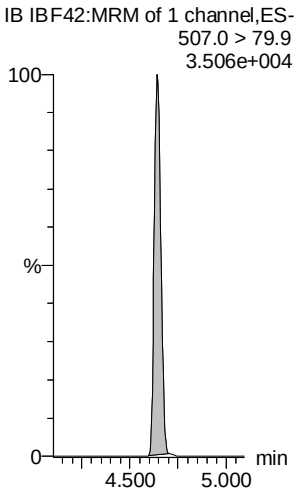
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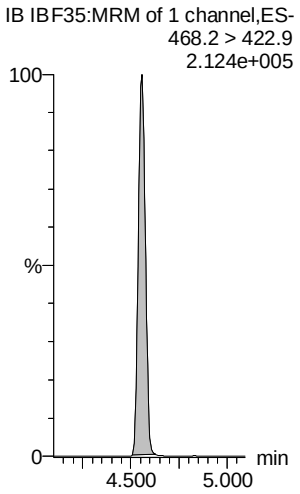
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13C8-PFOS



13C5-PFNA

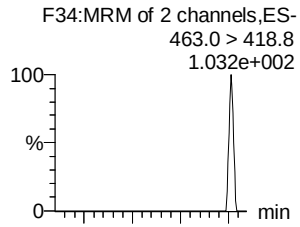


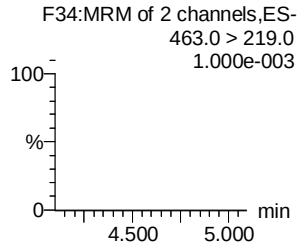
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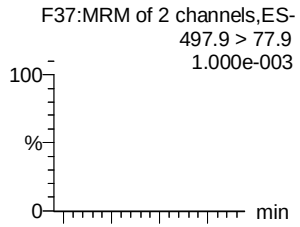
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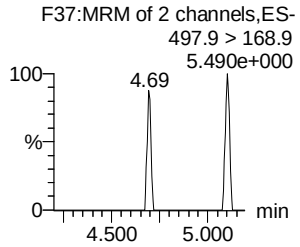
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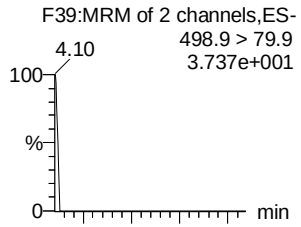


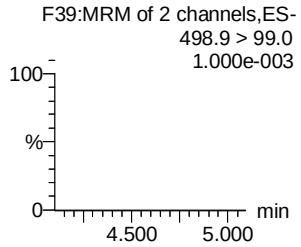
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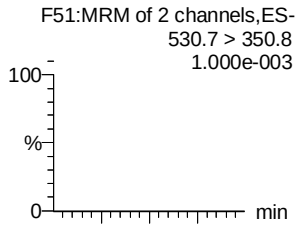


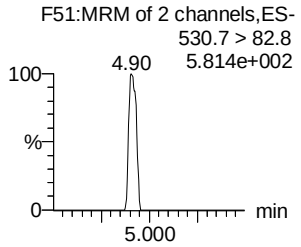
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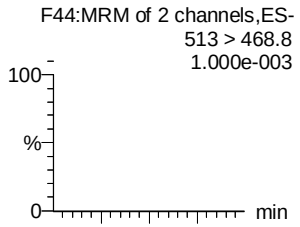


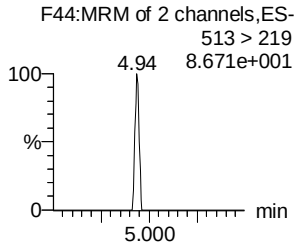
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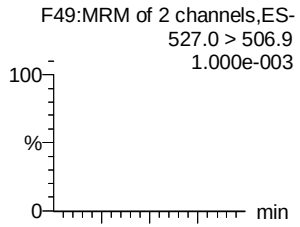


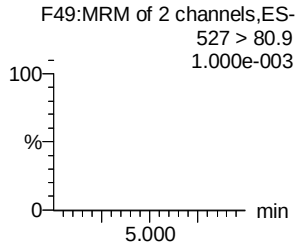
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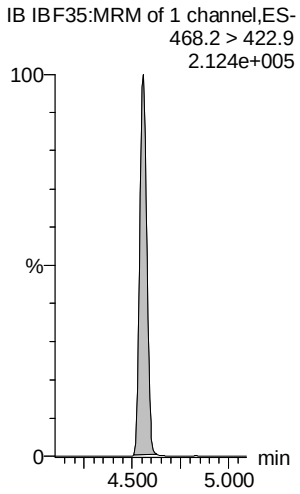


8:2 FTS

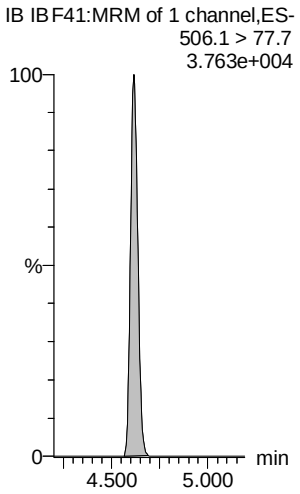




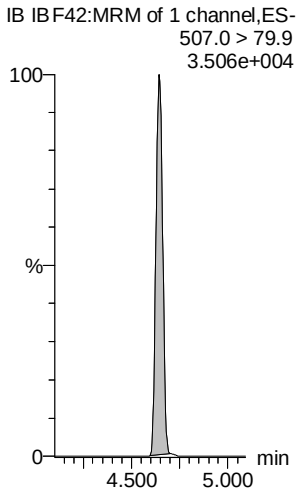
13C5-PFNA



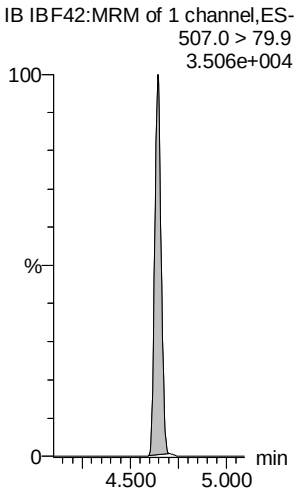
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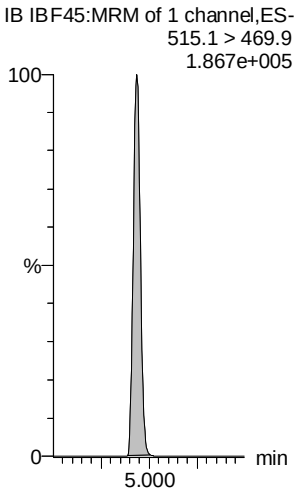
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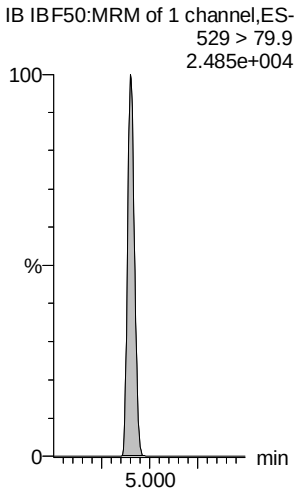
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13C2-PFDA



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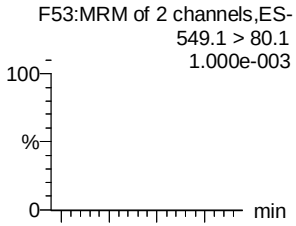


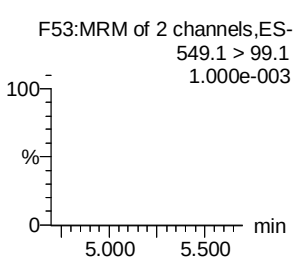
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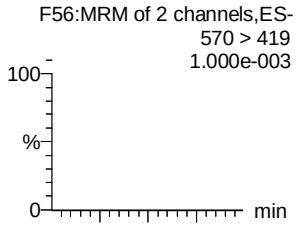
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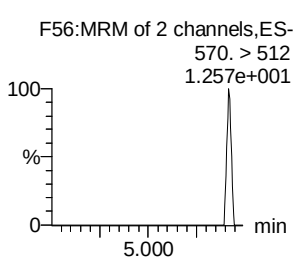
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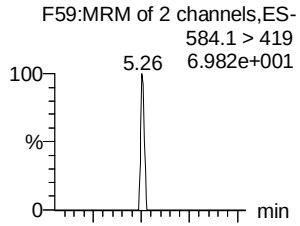


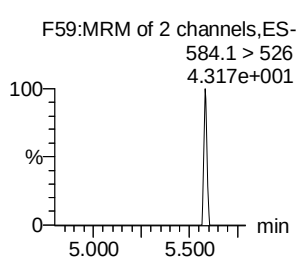
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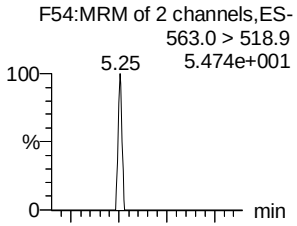


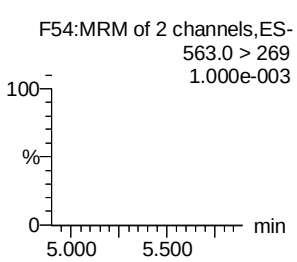
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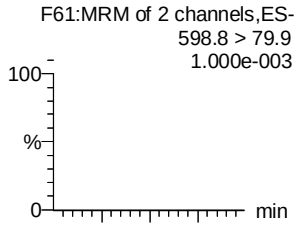


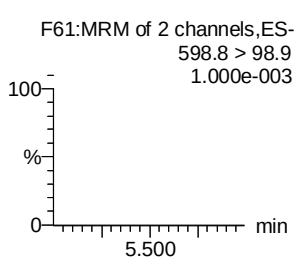
PFUdA



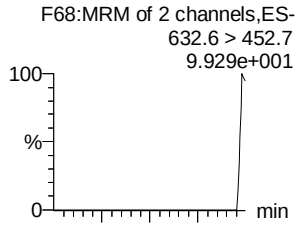


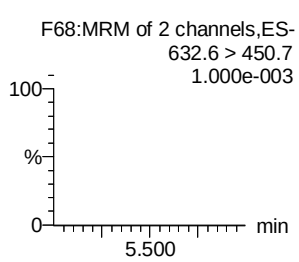
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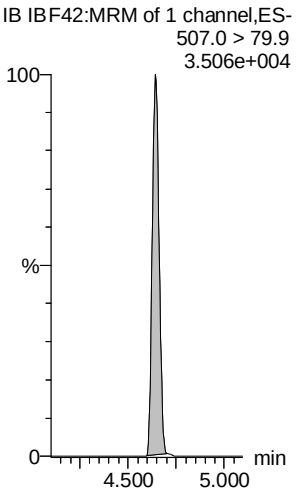


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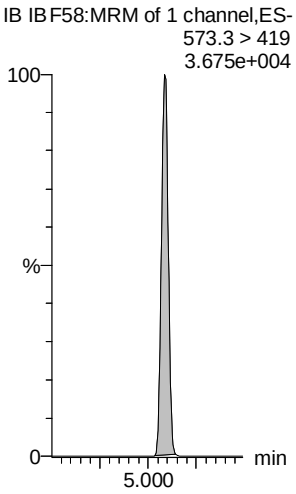




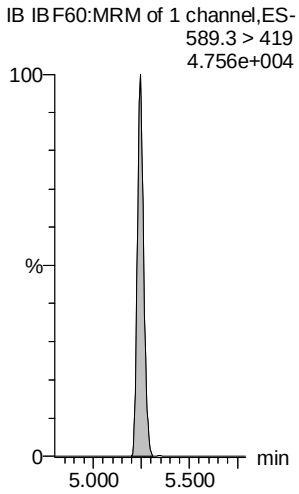
13C8-PFOS



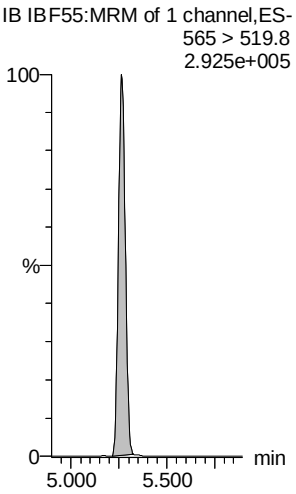
d3-N-MeFOSAA



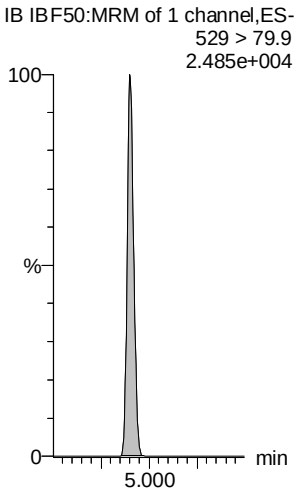
d5-N-EtFOSAA



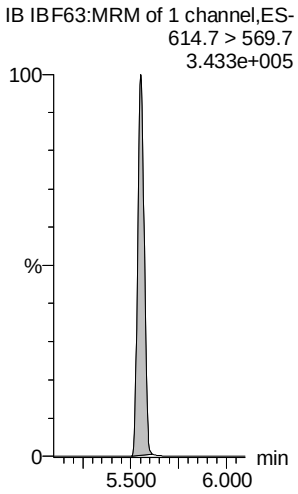
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

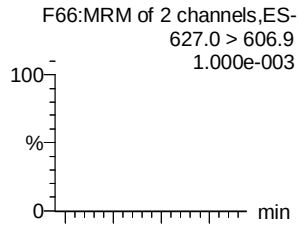


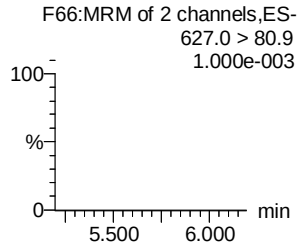
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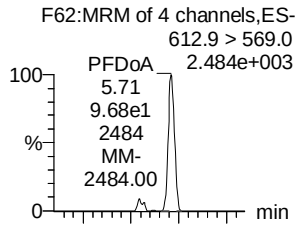
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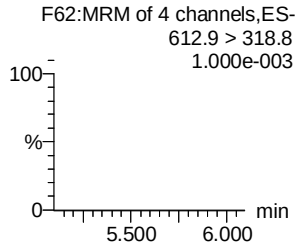
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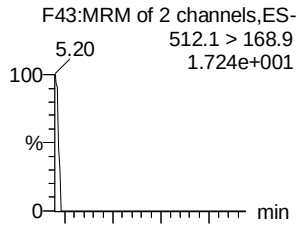


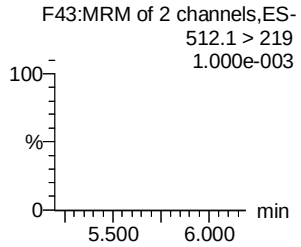
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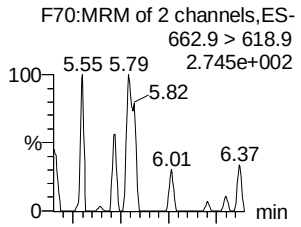


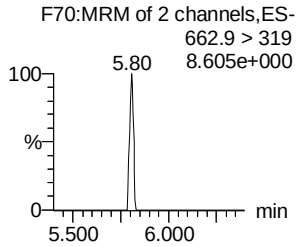
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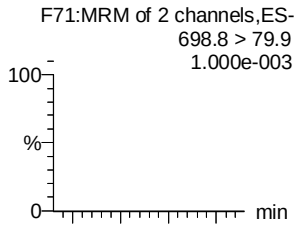


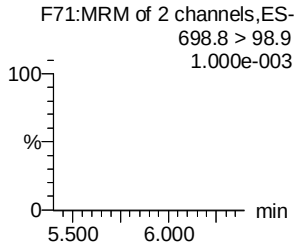
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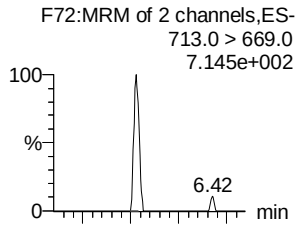


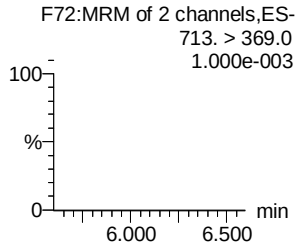
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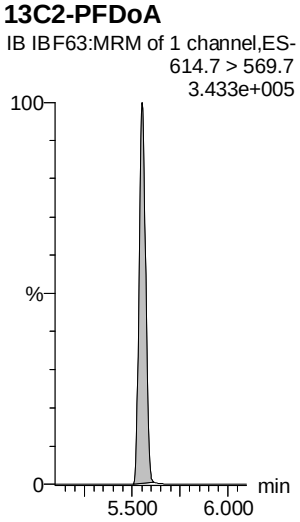


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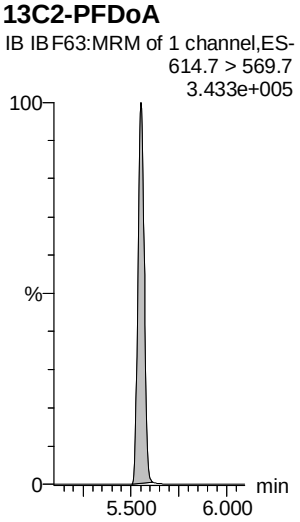




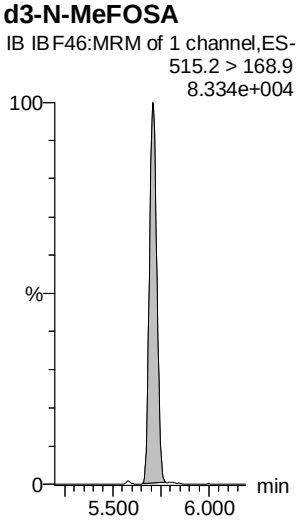
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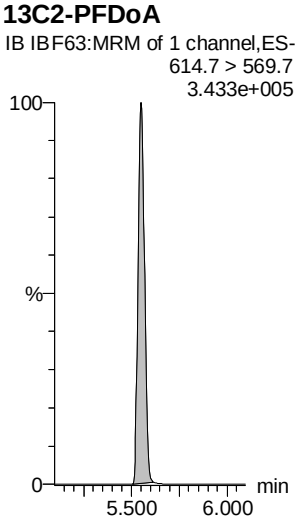
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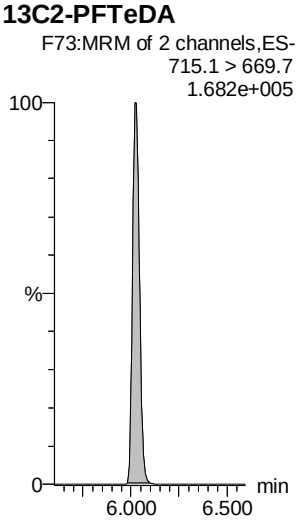
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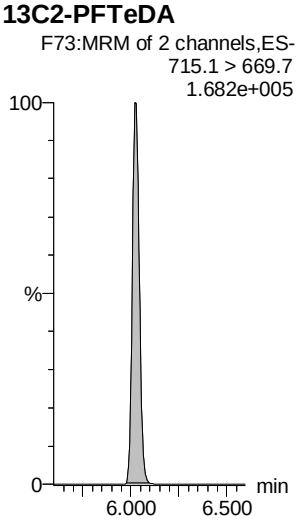
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13C2-PFTeDA



13C2-PFTeDA

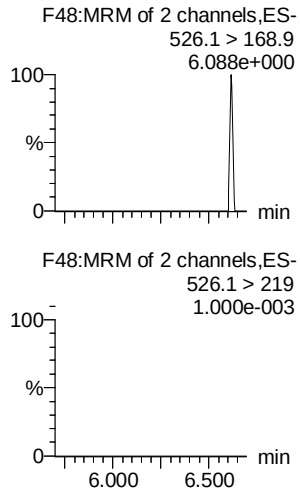


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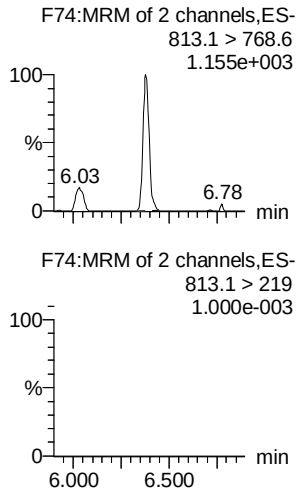
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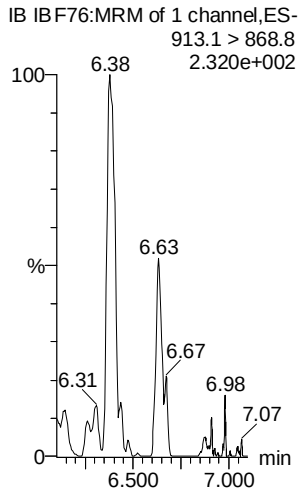
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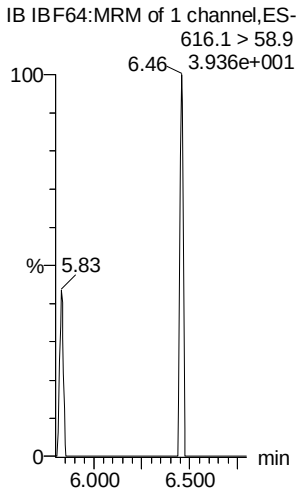
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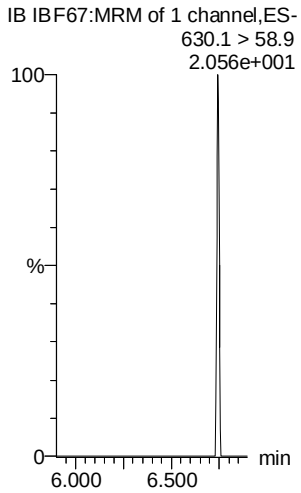
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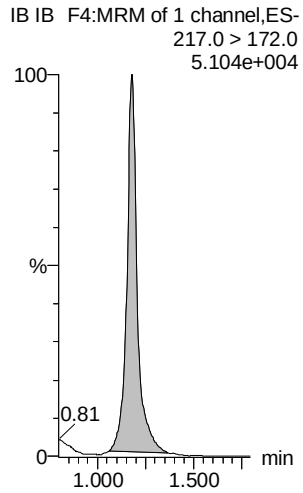
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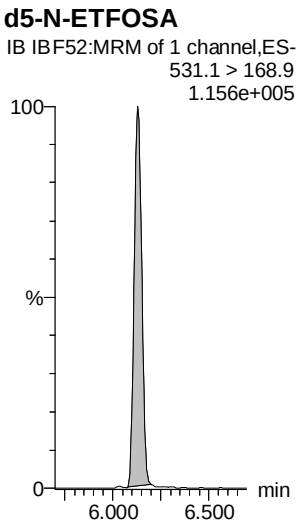
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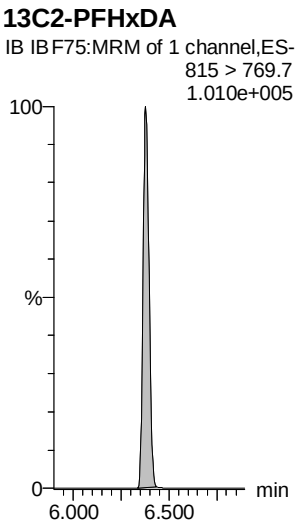
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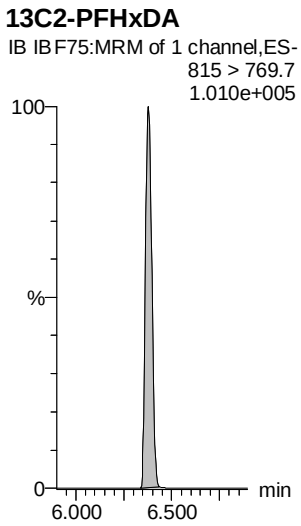
d5-N-ETFOSA



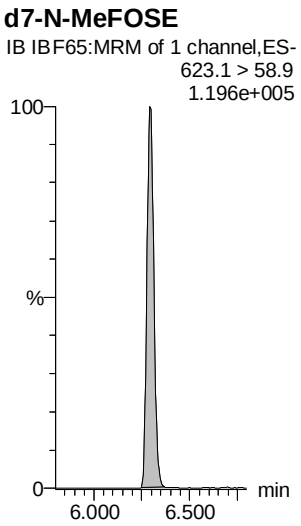
13C2-PFHxDA



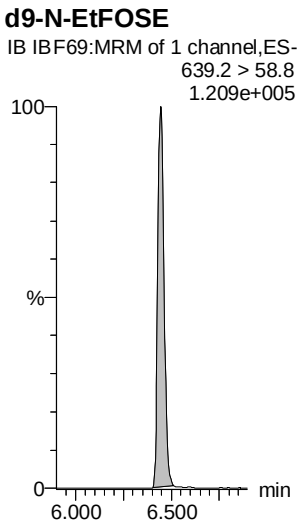
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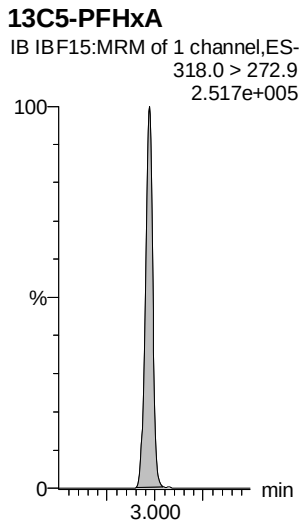
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d9-N-EtFOSE



13C5-PFHxA

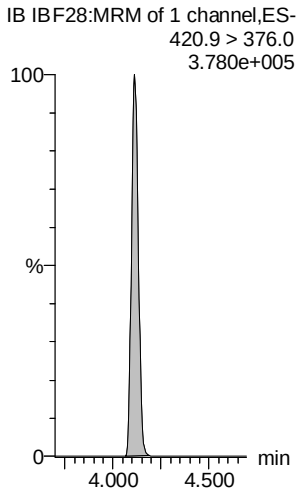


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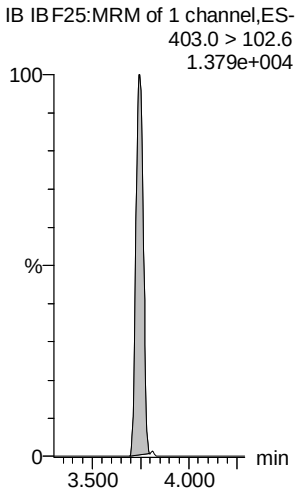
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Printed: Friday, July 12, 2019 12:30:43 Pacific Daylight Time

Name: 190712M1_3, Date: 12-Jul-2019, Time: 10:41:27, ID: IB, Description: IB

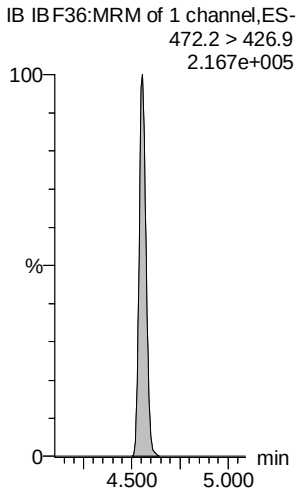
13C8-PFOA



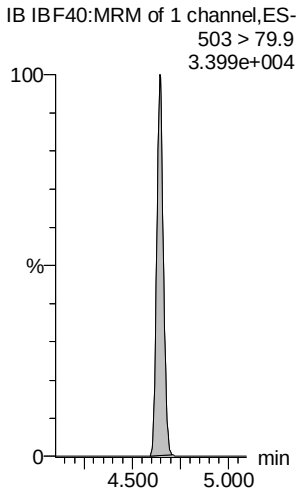
18O2-PFHxS



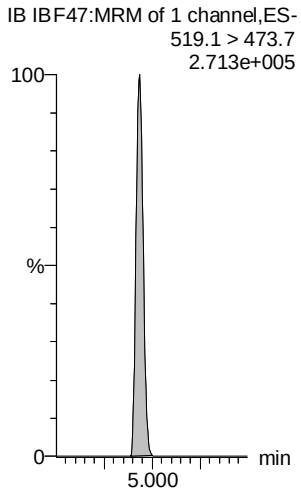
13C9-PFNA



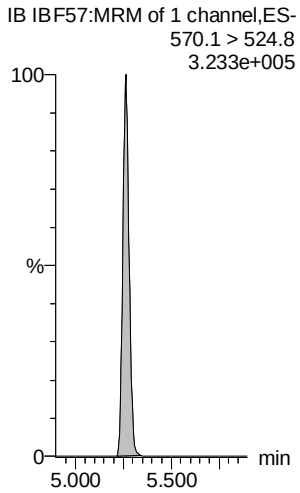
13C4-PFOS



13C6-PFDA



13C7-PFUdA



LC Calibration Standards Review Checklist 04

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NA
Calibration ID:	ST190712M2-11	L M H	☑	☑	☑	☑	☑	☑	☐
Calibration ID:	-12	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-13	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-14	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-15	L M H	☑	☑	☑	☑	☑	☑	☑
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 7/3/19

Run Log Present: ☑

of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

All Branches in Acquisition Window ☑

IIS Area Saved ☑

Reviewed By: [signature] 7/14/19

Initials/Date

Comments:

NA [signature] 7/14/19

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712m2-35.qld

Last Altered: Sunday, July 14, 2019 14:01:58 Pacific Daylight Time
Printed: Sunday, July 14, 2019 14:10:52 Pacific Daylight Time

JM2 7/14/19

Name: 190712M2_35, Date: 12-Jul-2019, Time: 23:31:41, ID: ST190712M2-11 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	4465.543	4365.716	1.00	1.15	12.786	10.3	102.8	NO		
2	2	PFPrS	248.9 > 79.9	924.435	1261.097	1.00	1.51	9.163	9.9	99.0	NO	2.530	NO
3	3	3:3 FTCA	240.9 > 176.9	253.574	10084.398	1.00	1.98	0.314	9.8	97.7	NO	2.116	NO
4	4	PFPeA	263.1 > 218.9	7664.600	10084.398	1.00	2.13	9.501	10.1	101.4	NO		
5	5	PFBS	299.0 > 79.7	2466.210	1261.097	1.00	2.42	24.445	10.4	103.7	NO	2.890	NO
6	6	4:2 FTS	327.0 > 306.9	3900.428	2352.277	1.00	2.85	20.727	9.3	92.7	NO	1.589	NO
7	47	13C3-PFBA	216.1 > 171.8	4365.716	5928.742	1.00	1.15	9.205	12.6	100.6	NO		
8	49	13C3-PFBS	302.0 > 98.8	1261.097	1194.878	1.00	2.42	13.193	12.3	98.4	NO		
9	48	13C3-PFPeA	266.0 > 221.8	10084.398	21540.266	1.00	2.13	5.852	11.5	92.0	NO		
10	48	13C3-PFPeA	266.0 > 221.8	10084.398	21540.266	1.00	2.13	5.852	11.5	92.0	NO		
11	49	13C3-PFBS	302.0 > 98.8	1261.097	1194.878	1.00	2.42	13.193	12.3	98.4	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2352.277	1194.878	1.00	2.84	24.608	13.9	110.9	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0	15217.889	8099.055	1.00	2.93	9.395	10.7	107.3	NO	15.412	NO
15	8	PFPeS	349.1>80.1	2021.337	1261.097	1.00	3.13	20.036	11.8	117.8	NO	1.689	NO
16	9	HFPO-DA	285.1 > 168.9	1602.080	1216.664	1.00	3.14	6.584	12.6	126.5	NO	2.345	NO
17	10	5:3 FTCA	340.9 > 236.9	1331.298	10702.437	1.00	3.48	1.555	10.0	100.4	NO	1.544	NO
18	11	PFHpA	363.0 > 318.9	11027.521	10702.437	1.00	3.55	12.880	9.9	98.6	NO	12.570	NO
19	12	ADONA	376.8 > 250.9	25448.795	10702.437	1.00	3.67	29.723	9.4	93.7	NO	3.461	NO
20	52	13C2-PFHxA	315.0 > 270.0	8099.055	21540.266	1.00	2.93	4.700	4.7	93.2	NO		
21	49	13C3-PFBS	302.0 > 98.8	1261.097	1194.878	1.00	2.42	13.193	12.3	98.4	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1216.664	21540.266	1.00	3.14	0.706	4.1	81.8	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10702.437	21540.266	1.00	3.55	6.211	12.1	97.0	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10702.437	21540.266	1.00	3.55	6.211	12.1	97.0	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10702.437	21540.266	1.00	3.55	6.211	12.1	97.0	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	1996.353	2716.090	1.00	3.71	9.188	9.7	97.4	NO	1.895	NO
28	15	6:2 FTS	427.0 > 406.9	4587.095	1884.843	1.00	4.02	30.421	10.0	99.8	NO	2.155	NO
29	16	L-PFOA	412.8 > 368.9	20726.605	18561.695	1.00	4.08	13.958	10.2	101.7	NO	3.391	NO
30	18	PFecHS	460.8 > 381.0	2895.123	18561.695	1.00	4.10	1.950	9.9	98.9	NO	0.763	NO
31	19	PFHpS	449.0 > 80.0	2540.250	3141.364	1.00	4.19	10.108	10.7	106.9	NO	2.080	NO
32	20	7:3 FTCA	440.9 > 336.9	1447.516	18805.922	1.00	4.51	0.962	9.2	91.6	NO	1.879	NO
33	54	13C3-PFHxS	401.8 > 79.9	2716.090	1194.878	1.00	3.71	28.414	12.9	103.4	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1884.843	2997.198	1.00	4.02	7.861	13.3	106.7	NO		

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712m2-35.qld

Last Altered: Sunday, July 14, 2019 14:01:58 Pacific Daylight Time
Printed: Sunday, July 14, 2019 14:10:52 Pacific Daylight Time

Name: 190712M2_35, Date: 12-Jul-2019, Time: 23:31:41, ID: ST190712M2-11 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
35	58	13C2-PFOA	414.9 > 369.7	18561.695	23806.930	1.00	4.08	9.746	12.3	98.8	NO		
36	58	13C2-PFOA	414.9 > 369.7	18561.695	23806.930	1.00	4.08	9.746	12.3	98.8	NO		
37	59	13C8-PFOS	507.0 > 79.9	3141.364	2997.198	1.00	4.61	13.101	12.9	103.1	NO		
38	56	13C5-PFNA	468.2 > 422.9	18805.922	18874.678	1.00	4.52	12.454	12.6	100.6	NO		
39	-1												
40	21	PFNA	463.0 > 418.8	18402.420	18805.922	1.00	4.52	12.232	10.0	99.7	NO	4.613	NO
41	22	PFOSA	497.9 > 77.9	2925.539	3310.981	1.00	4.59	11.045	9.5	94.9	NO	27.031	NO
42	23	L-PFOS	498.9 > 79.9	2596.912	3141.364	1.00	4.61	10.334	9.4	94.1	NO	2.024	NO
43	25	9Cl-PF30NS	530.7 > 350.8	4657.964	3141.364	1.00	4.83	18.535	9.7	97.3	NO	14.852	NO
44	26	PFDA	513 > 468.8	20288.828	17635.783	1.00	4.90	14.380	10.5	105.1	NO	5.939	NO
45	27	8:2 FTS	527.0 > 506.9	2832.852	1859.778	1.00	4.88	19.040	10.4	103.7	NO	1.107	NO
46	56	13C5-PFNA	468.2 > 422.9	18805.922	18874.678	1.00	4.52	12.454	12.6	100.6	NO		
47	57	13C8-PFOSA	506.1 > 77.7	3310.981	24057.434	1.00	4.58	1.720	11.6	92.7	NO		
48	59	13C8-PFOS	507.0 > 79.9	3141.364	2997.198	1.00	4.61	13.101	12.9	103.1	NO		
49	59	13C8-PFOS	507.0 > 79.9	3141.364	2997.198	1.00	4.61	13.101	12.9	103.1	NO		
50	60	13C2-PFDA	515.1 > 469.9	17635.783	23269.193	1.00	4.90	9.474	11.7	93.8	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1859.778	2997.198	1.00	4.88	7.756	13.0	104.3	NO		
52	-1												
53	28	PFNS	549.1 > 80.1	1876.785	3141.364	1.00	4.97	7.468	10.1	100.8	NO	1.852	NO
54	29	L-MeFOSAA	570 > 419	7387.040	3127.678	1.00	5.06	29.523	10.1	101.5	NO	2.505	NO
55	31	L-EtFOSAA	584.1 > 419	5222.178	3784.248	1.00	5.22	17.250	10.6	105.9	NO	1.464	NO
56	33	PFUdA	563.0 > 518.9	19337.852	24405.525	1.00	5.23	9.904	10.7	107.4	NO	12.055	NO
57	34	PFDS	598.8 > 79.9	2524.982	1859.778	1.00	5.28	16.971	9.6	96.3	NO	1.564	NO
58	35	11Cl-PF30UdS	632.6 > 452.7	1260.236	23076.705	1.00	5.45	0.683	10.0	99.8	NO	5.772	NO
59	59	13C8-PFOS	507.0 > 79.9	3141.364	2997.198	1.00	4.61	13.101	12.9	103.1	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	3127.678	24057.434	1.00	5.06	1.625	11.6	93.2	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	3784.248	24057.434	1.00	5.22	1.966	11.7	93.8	NO		
62	63	13C2-PFUdA	565 > 519.8	24405.525	24057.434	1.00	5.23	12.681	12.1	96.6	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1859.778	2997.198	1.00	4.88	7.756	13.0	104.3	NO		
64	65	13C2-PFDoA	614.7 > 569.7	23076.705	23269.193	1.00	5.52	12.397	11.9	95.3	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9	3608.508	1859.778	1.00	5.51	24.254	9.9	99.0	NO	1.566	NO
67	37	PFDoA	612.9 > 569.0	20321.809	23076.705	1.00	5.52	11.008	10.5	105.3	NO	8.117	NO
68	38	N-MeFOSA	512.1 > 168.9	4231.219	9758.595	1.00	5.67	65.038	48.8	97.5	NO	1.459	NO

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712m2-35.qld

Last Altered: Sunday, July 14, 2019 14:01:58 Pacific Daylight Time
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Name: 190712M2_35, Date: 12-Jul-2019, Time: 23:31:41, ID: ST190712M2-11 PFC CS3 19G1106, Description: PFC CS3 19G1106

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
69	39	PFTrDA	662.9 > 618.9	22659.500	23076.705	1.00	5.78	12.274	10.2	102.4	NO	25.799	NO
70	40	PFDoS	698.8 > 79.9	2268.270	16247.282	1.00	5.80	1.745	9.9	99.4	NO	1.945	NO
71	41	PFTeDA	713.0 > 669.0	17877.287	16247.282	1.00	6.00	13.754	10.3	103.3	NO	12.889	NO
72	65	13C2-PFDoA	614.7 > 569.7	23076.705	23269.193	1.00	5.52	12.397	11.9	95.3	NO		
73	65	13C2-PFDoA	614.7 > 569.7	23076.705	23269.193	1.00	5.52	12.397	11.9	95.3	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	9758.595	24057.434	1.00	5.69	5.070	134.5	89.6	NO		
75	65	13C2-PFDoA	614.7 > 569.7	23076.705	23269.193	1.00	5.52	12.397	11.9	95.3	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	16247.282	24057.434	1.00	6.00	8.442	12.2	97.9	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	16247.282	24057.434	1.00	6.00	8.442	12.2	97.9	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9	4534.106	14777.929	1.00	6.09	46.022	45.4	90.7	NO	1.527	NO
80	43	PFHxDA	813.1 > 768.6	12074.604	8280.127	1.00	6.36	7.291	9.7	97.3	NO	38.217	NO
81	44	PFODA	913.1 > 868.8	12414.029	8280.127	1.00	6.61	7.496	11.0	109.9	NO		
82	45	N-MeFOSE	616.1 > 58.9	3461.398	9005.272	1.00	6.29	57.656	52.2	104.3	NO		
83	46	N-EtFOSE	630.1 > 58.9	4270.490	8801.746	1.00	6.44	72.778	51.0	102.0	NO		
84	72	13C4-PFBA	217.0 > 172.0	5928.742	5928.742	1.00	1.15	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	14777.929	24057.434	1.00	6.12	7.678	144.0	96.0	NO		
86	69	13C2-PFHxDA	815 > 769.7	8280.127	24057.434	1.00	6.36	4.302	4.8	95.7	NO		
87	69	13C2-PFHxDA	815 > 769.7	8280.127	24057.434	1.00	6.36	4.302	4.8	95.7	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	9005.272	24057.434	1.00	6.28	4.679	134.4	89.6	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	8801.746	24057.434	1.00	6.43	4.573	139.0	92.7	NO		
90	73	13C5-PFHxA	318.0 > 272.9	21540.266	21540.266	1.00	2.93	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	23806.930	23806.930	1.00	4.08	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1194.878	1194.878	1.00	3.71	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	18874.678	18874.678	1.00	4.52	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	2997.198	2997.198	1.00	4.61	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	23269.193	23269.193	1.00	4.90	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	24057.434	24057.434	1.00	5.23	12.500	12.5	100.0	NO		

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\LOG.qld

Last Altered: Sunday, July 14, 2019 14:36:28 Pacific Daylight Time
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Method: Z:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: Z:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	190712M2_5	IPA	12-Jul-19	18:13:51
2	2	190712M2_6	ST190712M2-1 PFC CS-2 19G1101	12-Jul-19	18:24:24
3	3	190712M2_7	ST190712M2-2 PFC CS-1 19G1102	12-Jul-19	18:35:02
4	4	190712M2_8	ST190712M2-3 PFC CS0 19G1103	12-Jul-19	18:45:35
5	5	190712M2_9	ST190712M2-4 PFC CS1 19G1104	12-Jul-19	18:56:14
6	6	190712M2_10	ST190712M2-5 PFC CS2 19G1105	12-Jul-19	19:06:47
7	7	190712M2_11	ST190712M2-6 PFC CS3 19G1106	12-Jul-19	19:17:24
8	8	190712M2_12	ST190712M2-7 PFC CS4 19G1107	12-Jul-19	19:27:57
9	9	190712M2_13	ST190712M2-8 PFC CS5 19G1108	12-Jul-19	19:38:36
10	10	190712M2_14	ST190712M2-9 PFC CS6 19G1109	12-Jul-19	19:49:09
11	11	190712M2_15	ST190712M2-10 PFC CS7 19G1110	12-Jul-19	19:59:47
12	12	190712M2_16	IB	12-Jul-19	20:10:19
13	13	190712M2_17	ST190712M2-1 PFC ICV 19G1111	12-Jul-19	20:20:58
14	14	190712M2_18	IPA	12-Jul-19	20:31:30
15	15	190712M2_19	B9G0095-BS1 OPR 0.25	12-Jul-19	20:42:09
16	16	190712M2_20	1901920-11 NAOA-B02-GW 0.122	12-Jul-19	20:52:47
17	17	190712M2_21	1901920-17 NAOA-B01-GW-D 0.13768	12-Jul-19	21:03:19
18	18	190712M2_22	B9G0116-BS1 OPR 1	12-Jul-19	21:13:58
19	19	190712M2_23	B9G0116-MS1 Matrix Spike 1.01	12-Jul-19	21:24:30
20	20	190712M2_24	B9G0116-MSD1 Matrix Spike Dup 1.03	12-Jul-19	21:35:09
21	21	190712M2_25	B9G0116-BLK1 Method Blank 1	12-Jul-19	21:45:47
22	22	190712M2_26	1901857-02 SAOA-B09-SO-1-1.5 1.01	12-Jul-19	21:56:20
23	23	190712M2_27	1901857-03 SAOA-B09-SO-20-20.5 1.03	12-Jul-19	22:06:59
24	24	190712M2_28	1901857-07 SAOA-B11-SO-1-1.5 1	12-Jul-19	22:17:29
25	25	190712M2_29	1901857-08 SAOA-B11-SO-20-20.5 1.05	12-Jul-19	22:28:07
26	26	190712M2_30	1901857-10 SAOA-B08-SO-1-1.5 1.06	12-Jul-19	22:38:40
27	27	190712M2_31	1901920-01 SAOA-B08-SO-30-30.5 1.01	12-Jul-19	22:49:18
28	28	190712M2_32	1901920-07 NAOA-B08-SO-1-1.5 1.03	12-Jul-19	22:59:51
29	29	190712M2_33	1901920-08 NAOA-B08-SO-20-20.5 1.01	12-Jul-19	23:10:30
30	30	190712M2_34	IPA	12-Jul-19	23:21:08
31	31	190712M2_35	ST190712M2-11 PFC CS3 19G1106	12-Jul-19	23:31:41
32	32	190712M2_36	IPA	12-Jul-19	23:42:20

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\LOG.qld

Last Altered: Sunday, July 14, 2019 14:36:28 Pacific Daylight Time
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Compound name: PFBA

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33	33	190712M2_37	1901920-09 NAOA-B09-SO-1-1.5 1.06	12-Jul-19	23:52:52
34	34	190712M2_38	1901920-10 NAOA-B09-SO-20-20.5 1.06	13-Jul-19	00:03:31
35	35	190712M2_39	1901920-13 NAOA-B01-SO-1-1.5 1.05	13-Jul-19	00:14:01
36	36	190712M2_40	1901920-15 NAOA-B01-SO-20-20.5 1.04	13-Jul-19	00:24:40
37	37	190712M2_41	1901920-18 CAOA-B02-SO-0.5-1 1.03	13-Jul-19	00:35:12
38	38	190712M2_42	1901920-19 CAOA-B02-SO-20-20.5 1.02	13-Jul-19	00:45:50
39	39	190712M2_43	B9G0081-BS1 OPR 0.0992	13-Jul-19	00:56:23
40	40	190712M2_44	B9G0081-BLK1 Method Blank 0.0995	13-Jul-19	01:07:02
41	41	190712M2_45	1901989-01 #1 0.0995	13-Jul-19	01:17:34
42	42	190712M2_46	1901989-02 #2 0.0997	13-Jul-19	01:28:12
43	43	190712M2_47	1901989-03 #3 0.0996	13-Jul-19	01:38:45
44	44	190712M2_48	1901989-04 #4 0.0996	13-Jul-19	01:49:15
45	45	190712M2_49	IPA	13-Jul-19	01:59:53
46	46	190712M2_50	ST190712M2-12 PFC CS3 19G1106	13-Jul-19	02:10:27
47	47	190712M2_51	IPA	13-Jul-19	02:21:05
48	48	190712M2_52	B9G0018-BS1 OPR 0.25	13-Jul-19	02:31:38
49	49	190712M2_53	B9G0018-BLK1 Method Blank 0.25	13-Jul-19	02:42:16
50	50	190712M2_54	1901800-01 SWIN1906241030KER 0.23934	13-Jul-19	02:52:55
51	51	190712M2_55	1901800-02 SWIN1906241030KER-FD 0.24043	13-Jul-19	03:03:27
52	52	190712M2_56	1901801-01 SWIN1906241130KER 0.23531	13-Jul-19	03:14:06
53	53	190712M2_57	1901802-01 SWIN1906241230KER 0.2312	13-Jul-19	03:24:39
54	54	190712M2_58	1901803-01 SWIN1906241350KER 0.2306	13-Jul-19	03:35:17
55	55	190712M2_59	1901804-01 SWIN1906241420KER 0.23872	13-Jul-19	03:45:50
56	56	190712M2_60	1901833-01 SWIN1906241120GSC 0.23073	13-Jul-19	03:56:29
57	57	190712M2_61	1901834-01 SWIN1906241200GSC 0.21167	13-Jul-19	04:07:07
58	58	190712M2_62	1901835-01 SWIN1906241230GSC 0.22418	13-Jul-19	04:17:40
59	59	190712M2_63	1901836-01 SWIN1906241300GSC 0.23525	13-Jul-19	04:28:18
60	60	190712M2_64	IPA	13-Jul-19	04:38:57
61	61	190712M2_65	ST190712M2-13 PFC CS3 19G1106	13-Jul-19	04:49:29
62	62	190712M2_66	IPA	13-Jul-19	05:00:07
63	63	190712M2_67	1901837-01 SWIN1906241330GSC 0.22552	13-Jul-19	05:10:41
64	64	190712M2_68	1901838-01 SWIN1906241410GSC 0.22937	13-Jul-19	05:21:19
65	65	190712M2_69	B9G0019-BS1 OPR 0.25	13-Jul-19	05:31:53
66	66	190712M2_70	B9G0019-BLK1 Method Blank 0.25	13-Jul-19	05:42:31
67	67	190712M2_71	1901805-01 SWIN1906251340KER 0.24387	13-Jul-19	05:53:04
68	68	190712M2_72	1901807-01 SWIN1906251000KER 0.24038	13-Jul-19	06:03:42

Vista Analytical Laboratory

Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\LOG.qld

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Compound name: PFBA

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70	70	190712M2_74	1901809-01 SWIN1906251200KER 0.23354	13-Jul-19	06:24:54
71	71	190712M2_75	1901810-01 SWIN1906251300KER 0.24769	13-Jul-19	06:35:32
72	72	190712M2_76	1901811-01 SWIN1906260910KER 0.24171	13-Jul-19	06:46:06
73	73	190712M2_77	1901812-01 SWIN1906261030KER 0.24255	13-Jul-19	06:56:44
74	74	190712M2_78	1901813-01 SWIN1906261110KER 0.25097	13-Jul-19	07:07:16
75	75	190712M2_79	IPA	13-Jul-19	07:17:54
76	76	190712M2_80	ST190712M2-14 PFC CS3 19G1106	13-Jul-19	07:28:27
77	77	190712M2_81	IPA	13-Jul-19	07:39:05
78	78	190712M2_82	1901814-01 SWIN1906261140KER 0.24991	13-Jul-19	07:49:38
79	79	190712M2_83	1901815-01 SWIN1906261220KER 0.243	13-Jul-19	08:00:16
80	80	190712M2_84	1901816-01 SWIN1906261300KER 0.24809	13-Jul-19	08:10:48
81	81	190712M2_85	1901839-01 SWIN1906250800GSC 0.23982	13-Jul-19	08:21:27
82	82	190712M2_86	1901839-02 SWIN1906250800GSC-FD 0.23997	13-Jul-19	08:32:00
83	83	190712M2_87	1901840-01 SWIN1906251015GSC 0.24588	13-Jul-19	08:42:38
84	84	190712M2_88	1901841-01 SWIN1906251200GSC 0.24185	13-Jul-19	08:53:11
85	85	190712M2_89	1901842-01 SWIN1906251220GSC 0.23393	13-Jul-19	09:03:49
86	86	190712M2_90	1901843-01 SWIN1906251330GSC 0.24762	13-Jul-19	09:14:22
87	87	190712M2_91	IPA	13-Jul-19	09:25:00
88	88	190712M2_92	ST190712M2-15 PFC CS3 19G1106	13-Jul-19	09:35:34
89	89	190712M2_93	IPA	13-Jul-19	09:46:12

Vista Analytical Laboratory

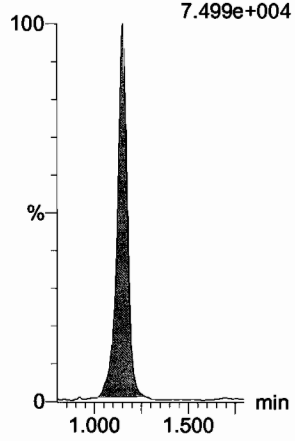
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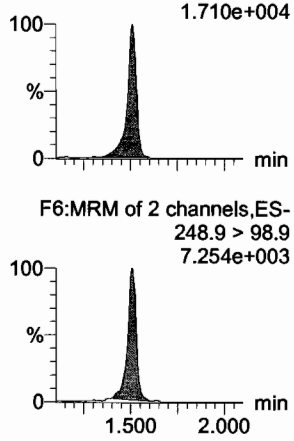
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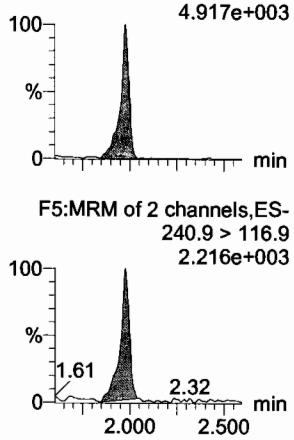
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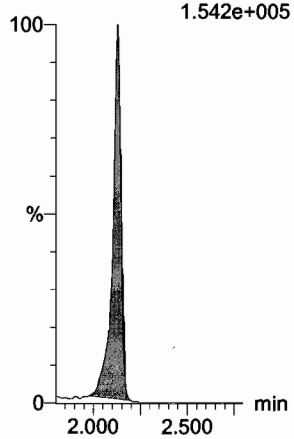
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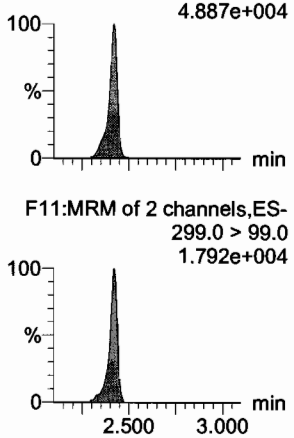
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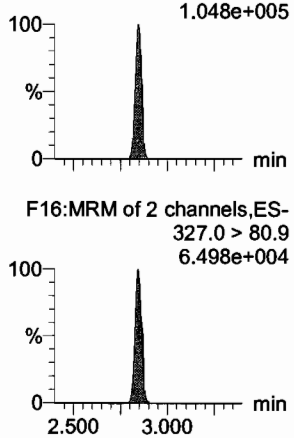
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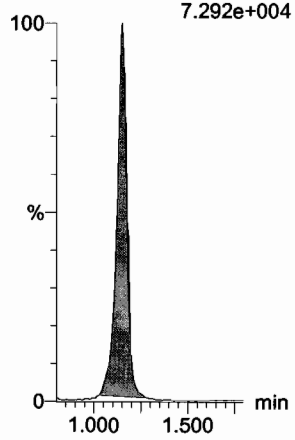
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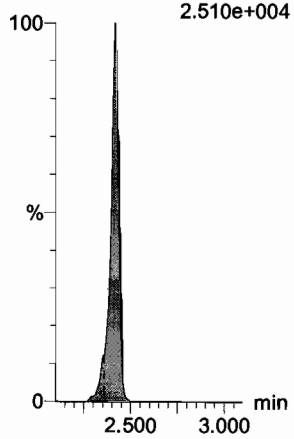
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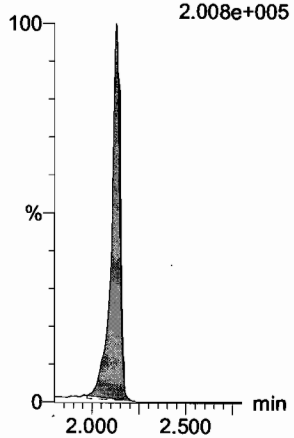
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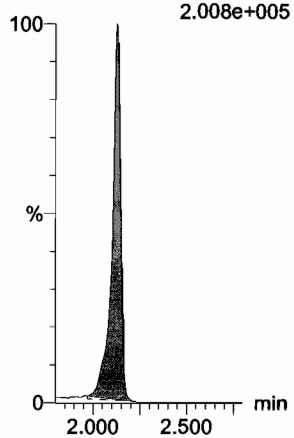
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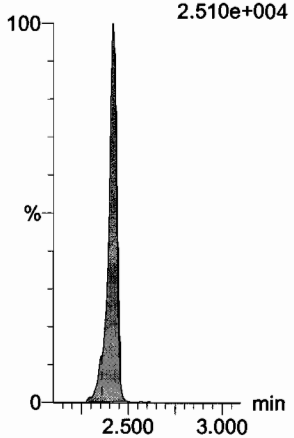
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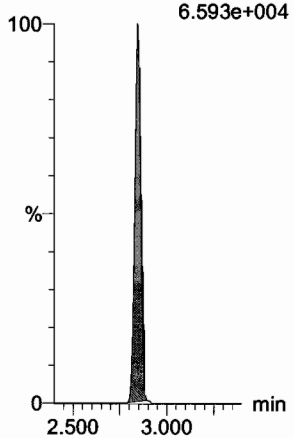
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13C3-PFBS



13C2-4:2 FTS

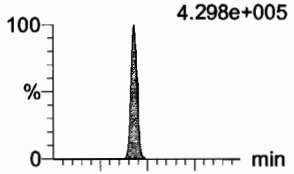


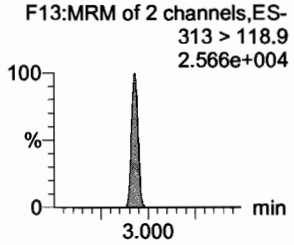
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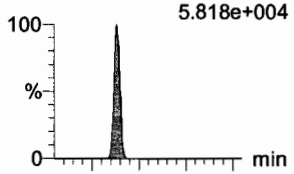
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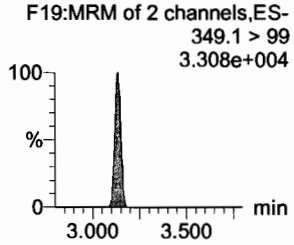
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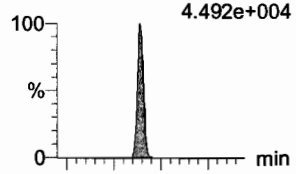


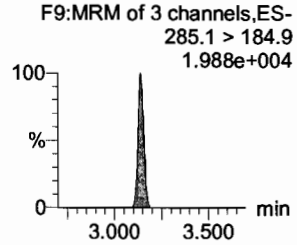
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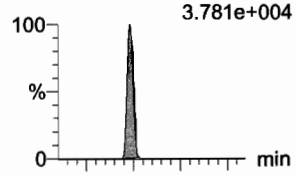


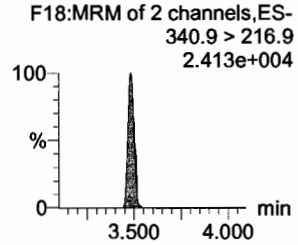
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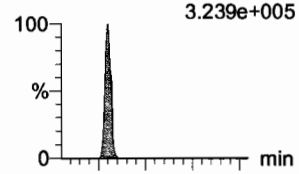


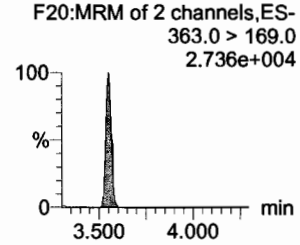
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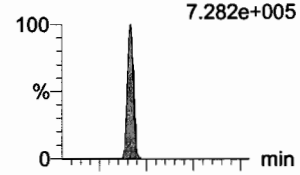


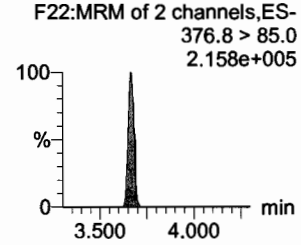
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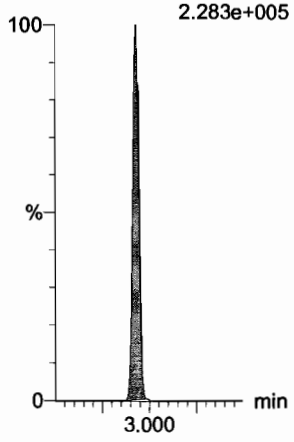


ADONA

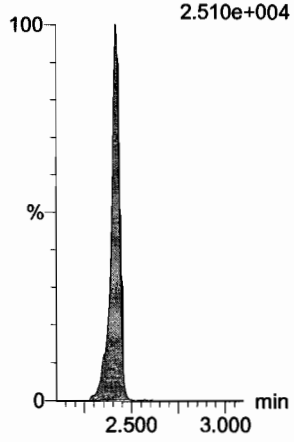




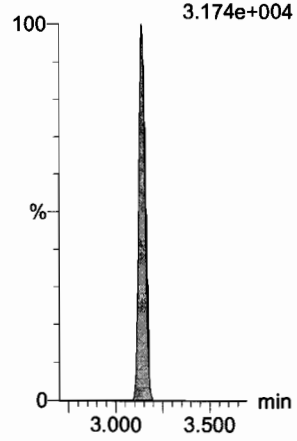
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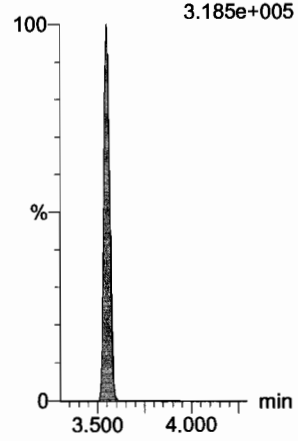
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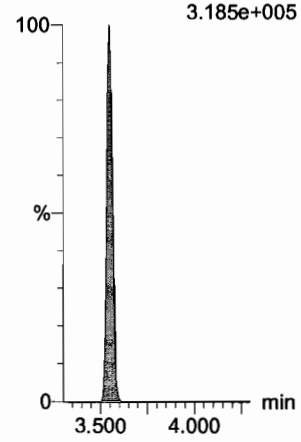
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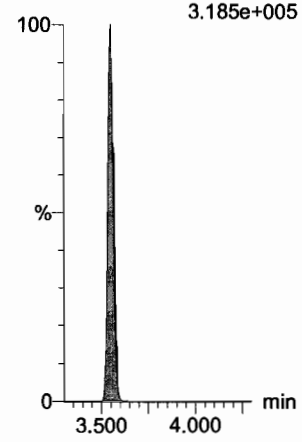
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13C4-PFHpA



13C4-PFHpA

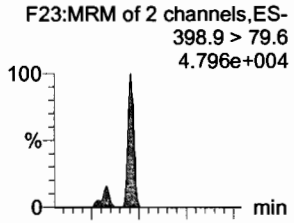


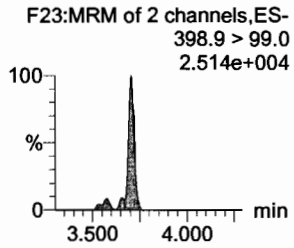
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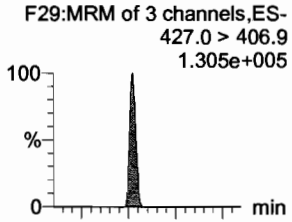
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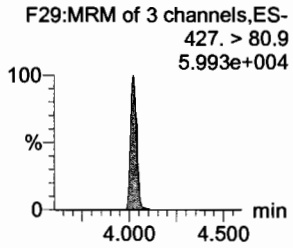
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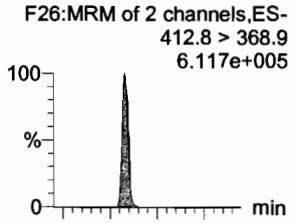


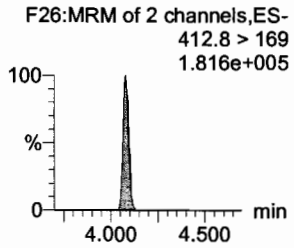
6:2 FTS



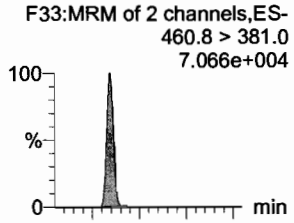


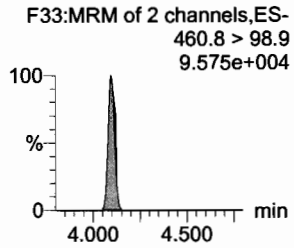
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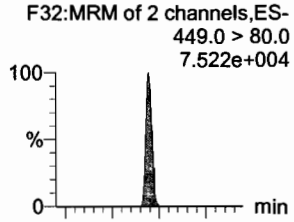


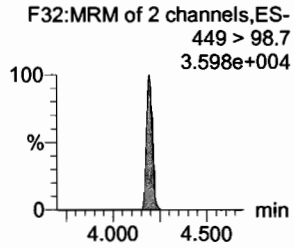
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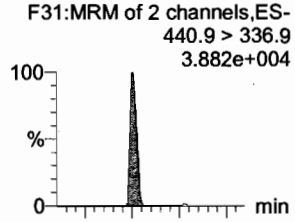


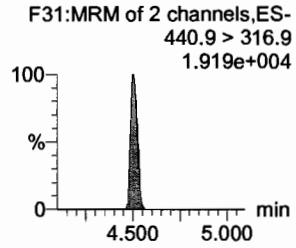
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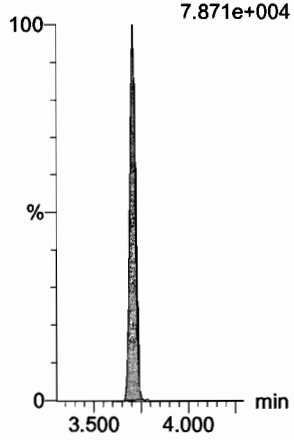


7:3 FTCA

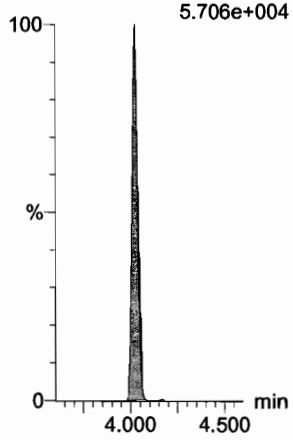




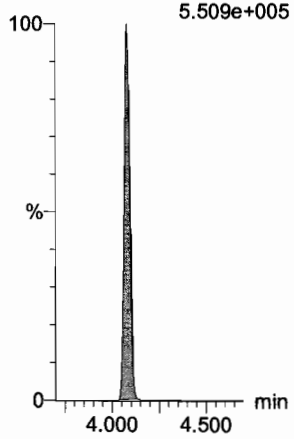
13C3-PFHxS



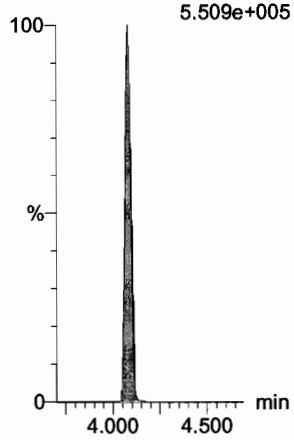
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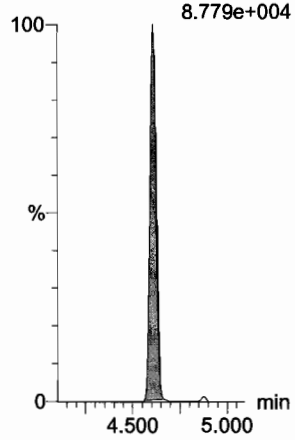
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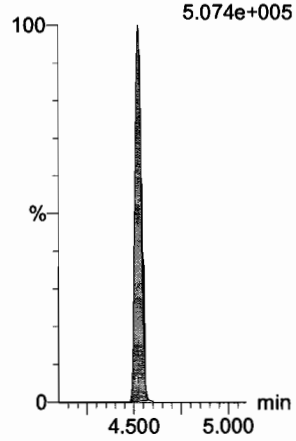
13C2-PFOA



13C8-PFOS



13C5-PFNA

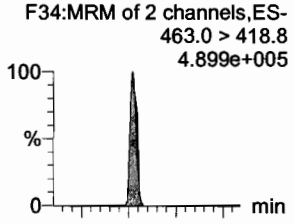


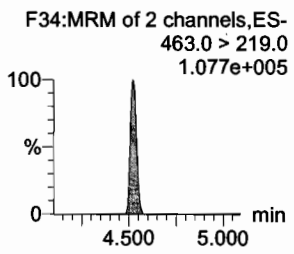
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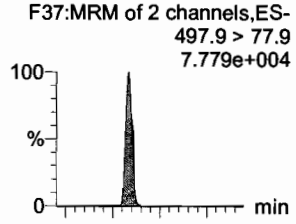
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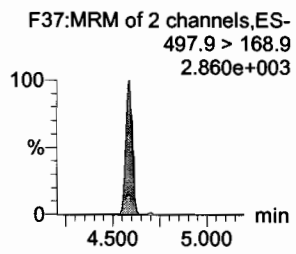
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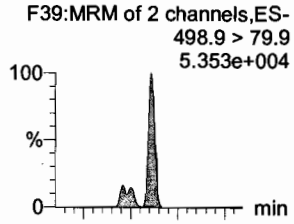


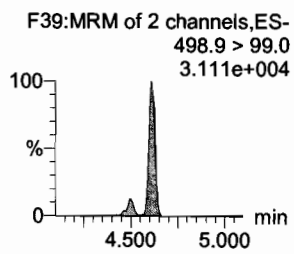
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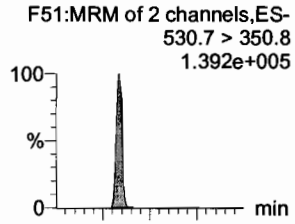


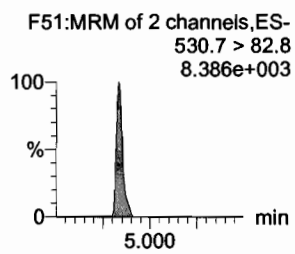
L-PFOS



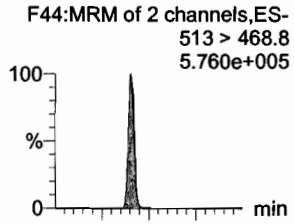


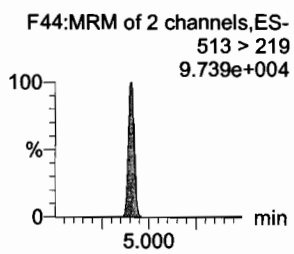
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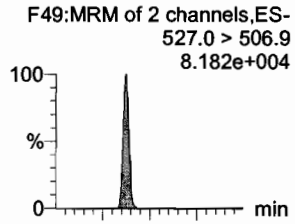


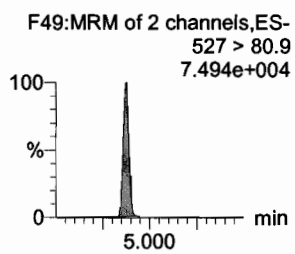
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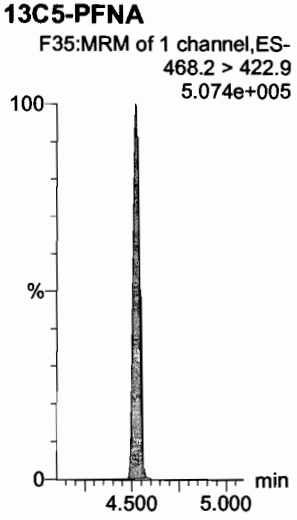


8:2 FTS

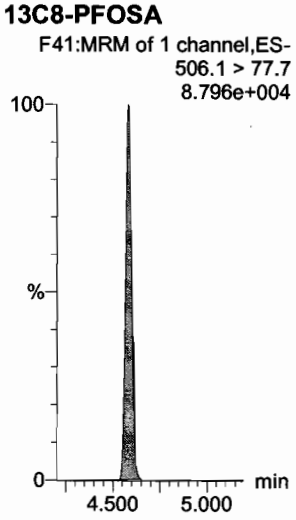




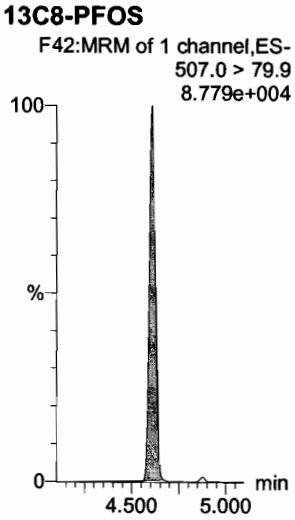
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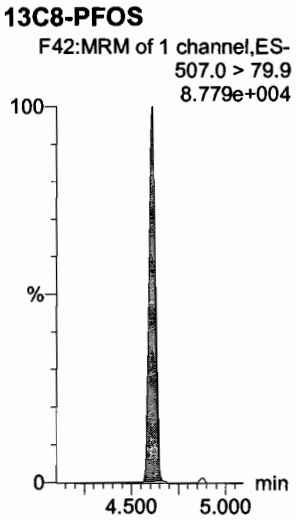
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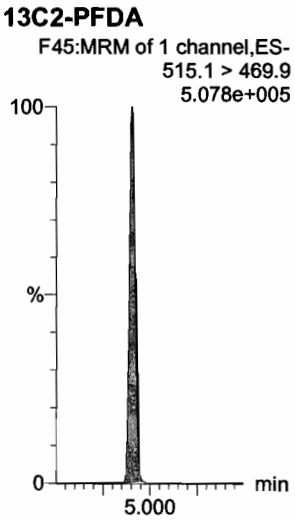
13C8-PFOS



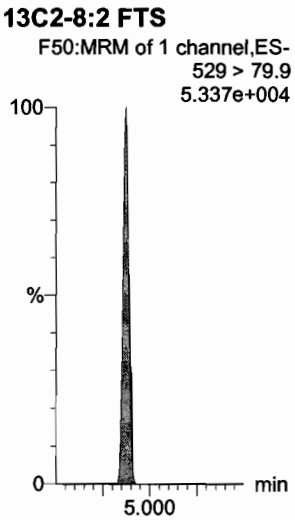
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

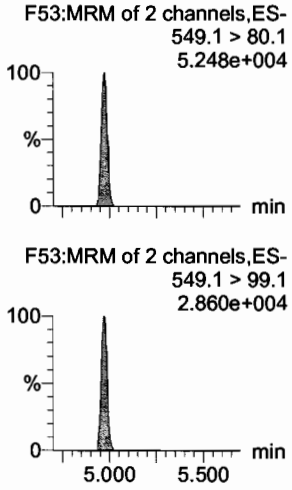


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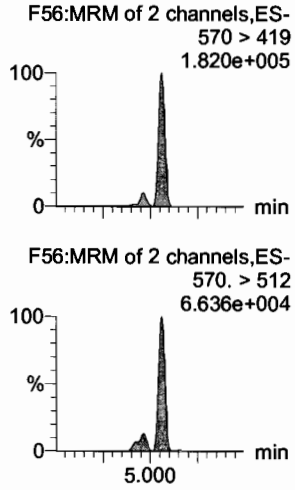
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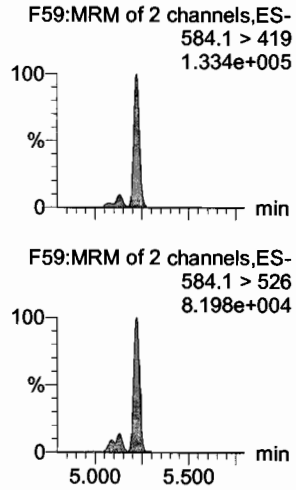
PFNS



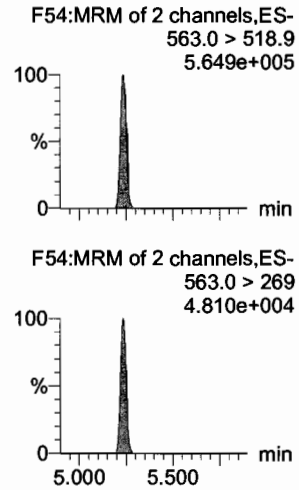
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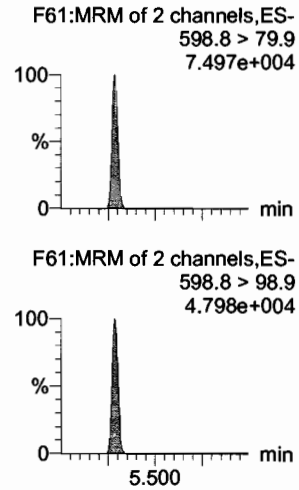
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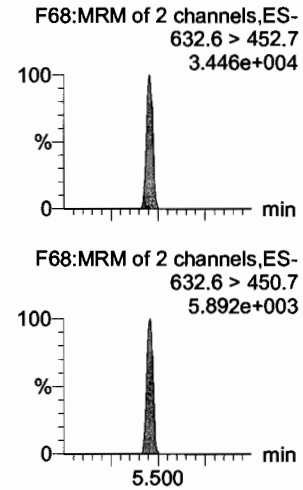
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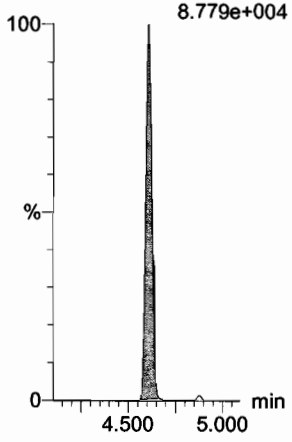
PFDS



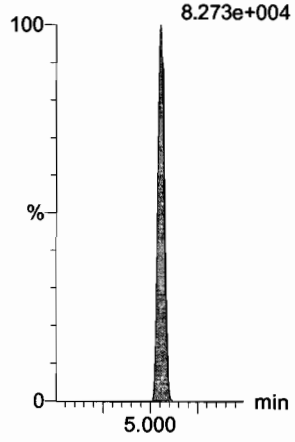
11Cl-PF30UdS



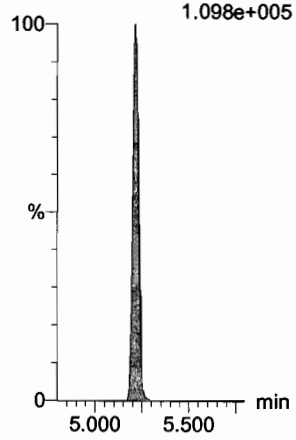
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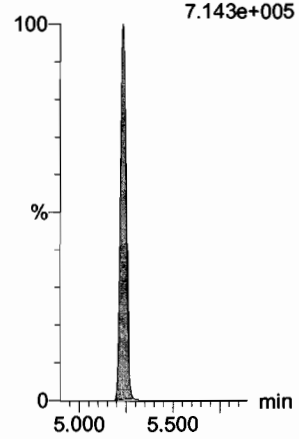
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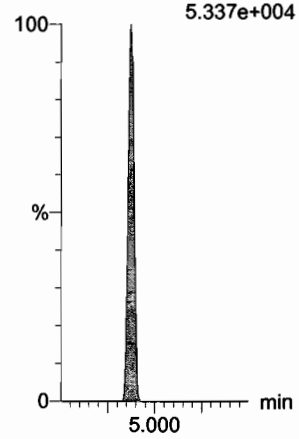
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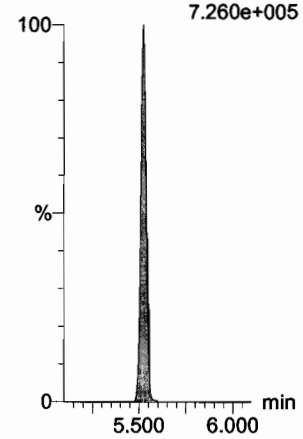
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

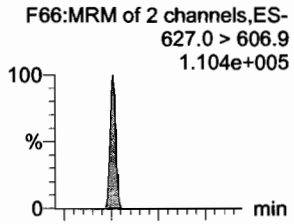


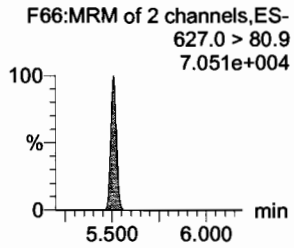
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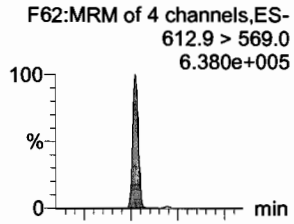
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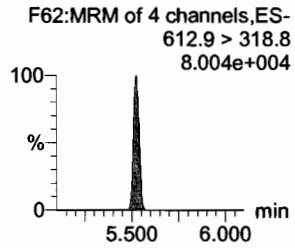
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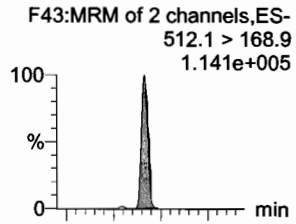


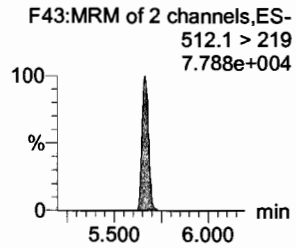
PFDoA



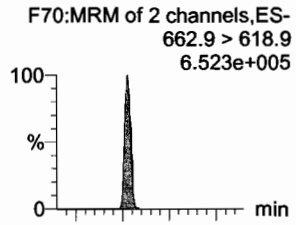


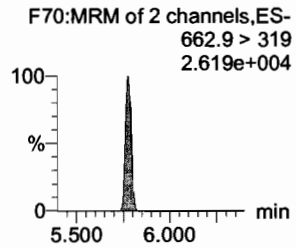
N-MeFOSA



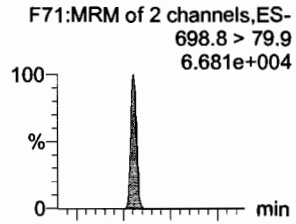


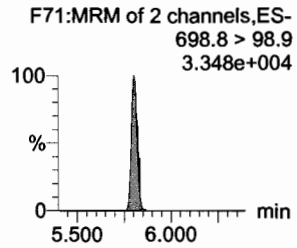
PFTrDA



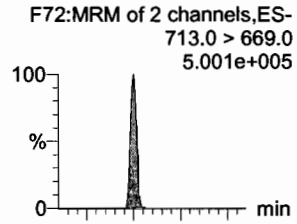


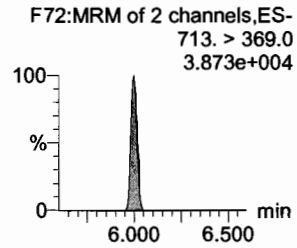
PFDoS



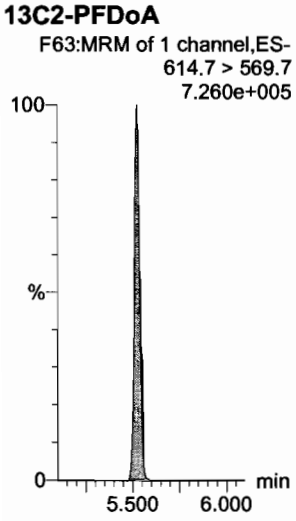


PFTeDA

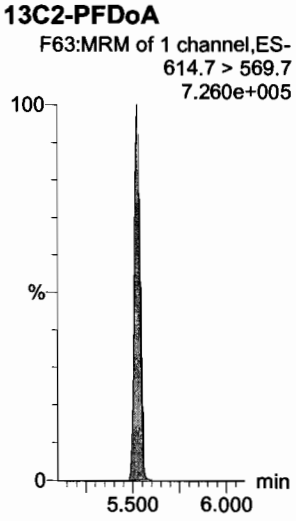




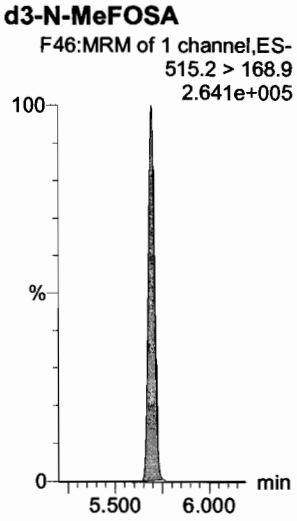
13C2-PFDoA



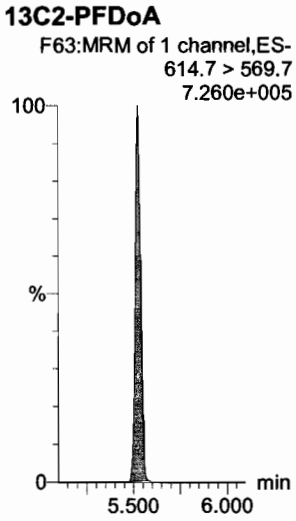
13C2-PFDoA



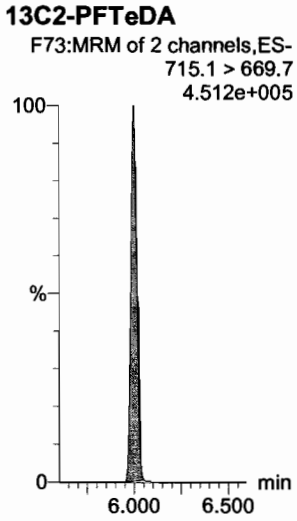
d3-N-MeFOSA



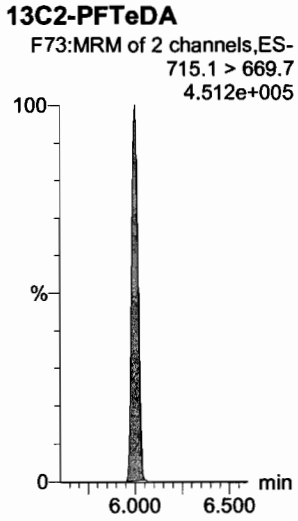
13C2-PFDoA



13C2-PFTeDA



13C2-PFTeDA

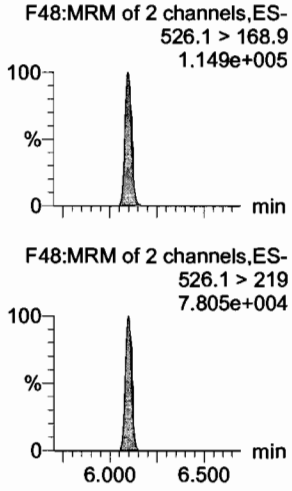


Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712m2-35.qld

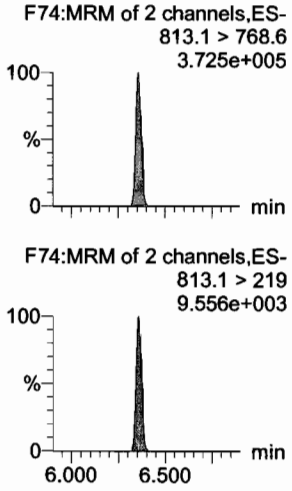
Last Altered: Sunday, July 14, 2019 14:01:58 Pacific Daylight Time
Printed: Sunday, July 14, 2019 14:10:52 Pacific Daylight Time

Name: 190712M2_35, Date: 12-Jul-2019, Time: 23:31:41, ID: ST190712M2-11 PFC CS3 19G1106, Description: PFC CS3 19G1106

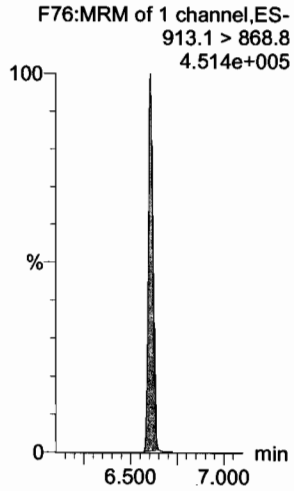
N-EtFOSA



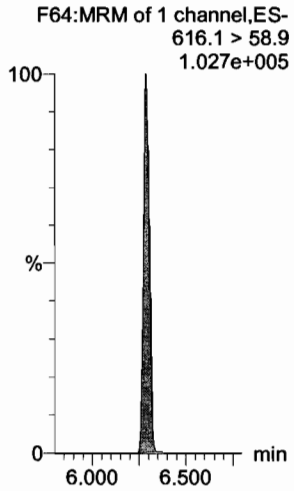
PFHxDA



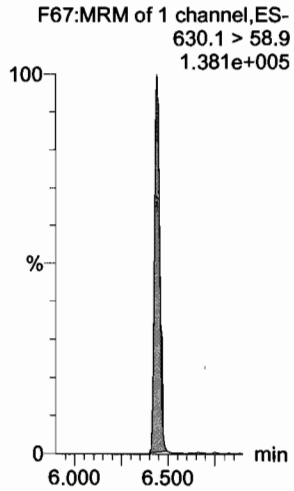
PFODA



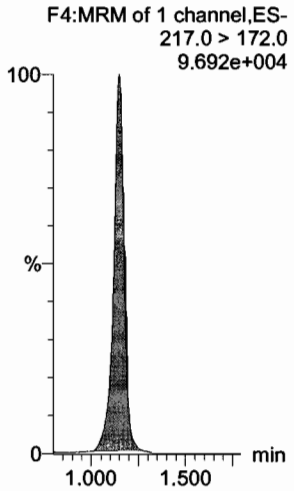
N-MeFOSE



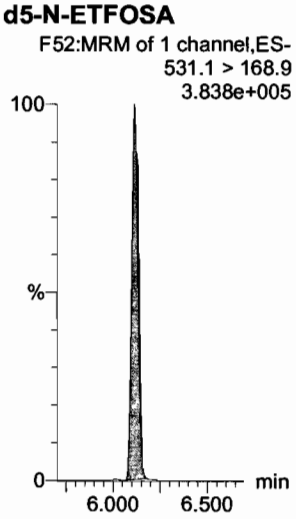
N-EtFOSE



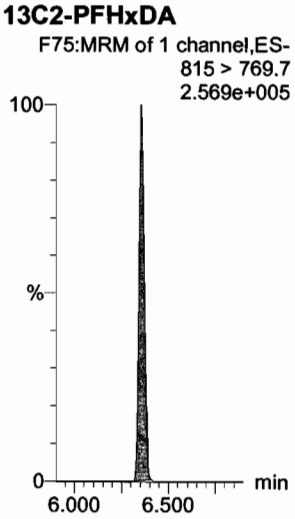
13C4-PFBA



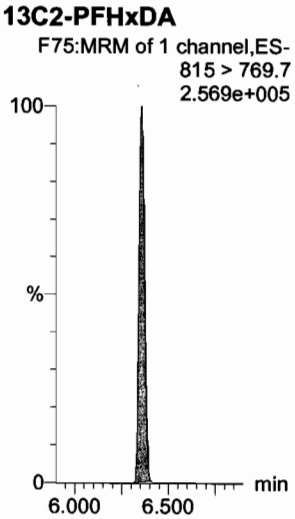
d5-N-ETFOSA



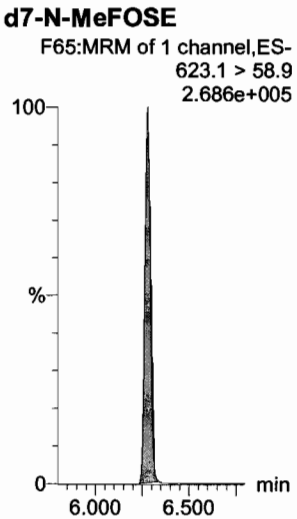
13C2-PFHxDA



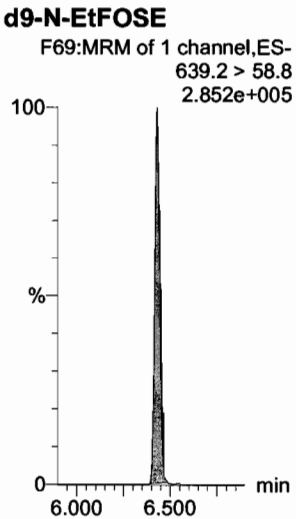
13C2-PFHxDA



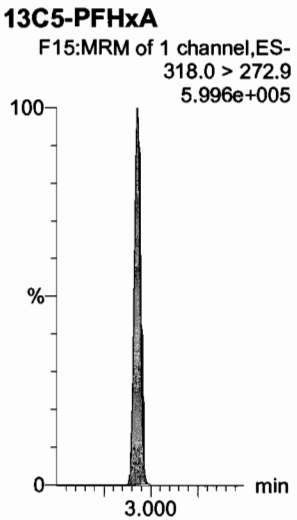
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

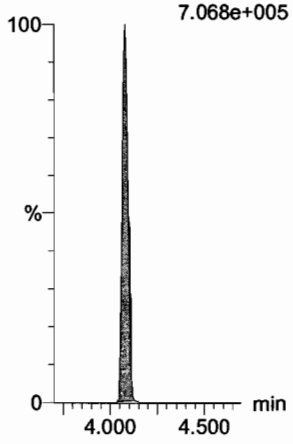


Dataset: Z:\Projects\PFAS.PRO\Results\190712M2\190712m2-35.qld

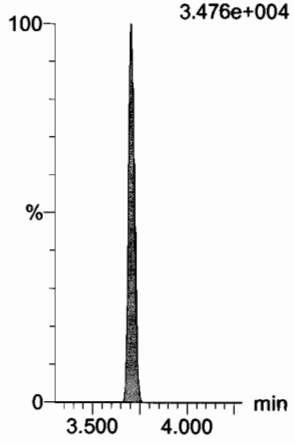
Last Altered: Sunday, July 14, 2019 14:01:58 Pacific Daylight Time
Printed: Sunday, July 14, 2019 14:10:52 Pacific Daylight Time

Name: 190712M2_35, Date: 12-Jul-2019, Time: 23:31:41, ID: ST190712M2-11 PFC CS3 19G1106, Description: PFC CS3 19G1106

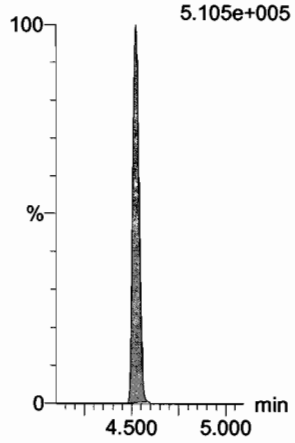
13C8-PFOA



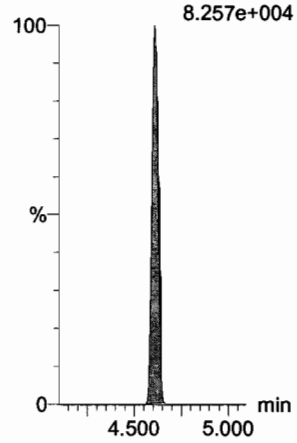
18O2-PFHxS



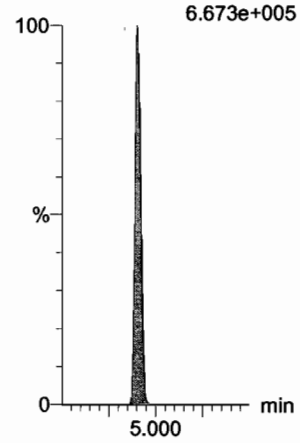
13C9-PFNA



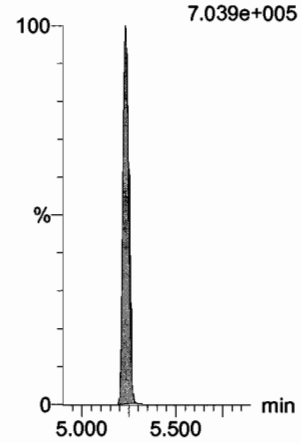
13C4-PFOS



13C6-PFDA



13C7-PFUdA



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

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

Low PE

PFPrS = 0.5
8:2 FTS

High PE

HFPO-DA = 250
PFDS
MeFOSE
3:3 FTCA = 100
5:3 FTCA
7:3 FTCA = 50

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:15:00 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

JM 7/10/19

Compound name: PFBA
Coefficient of Determination: R^2 = 0.999713
Calibration curve: 0.000263094 * x^2 + 1.21169 * x + -0.0383318
Response type: Internal Std (Ref 47), 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	190707M2_3	Standard	0.250	1.32	99.344	3714.739	0.334	0.3	23.0	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	1.31	166.955	3953.893	0.528	0.5	-6.6	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	1.31	309.299	3852.726	1.004	0.9	-14.0	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	1.31	698.739	3853.889	2.266	1.9	-4.9	NO	1.000	NO	MM
5	5	190707M2_7	Standard	5.000	1.31	2177.704	4364.409	6.237	5.2	3.5	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	1.31	3754.236	4037.560	11.623	9.6	-4.0	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	1.27	20513.836	4112.877	62.346	50.9	1.8	NO	1.000	NO	MM
8	8	190707M2_10	Standard	100.000	1.24	38769.383	3804.965	127.364	102.8	2.8	NO	1.000	NO	MM
9	9	190707M2_11	Standard	250.000	1.23	99677.203	3986.414	312.553	245.0	-2.0	NO	1.000	NO	MM
10	10	190707M2_12	Standard	500.000	1.24	195749.438	3629.609	674.141	501.7	0.3	NO	1.000	NO	MM

Compound name: PFPrS
Coefficient of Determination: R^2 = 0.997827
Calibration curve: 0.00088973 * x^2 + 0.807783 * x + 0.133982
Response type: Internal Std (Ref 49), 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	190707M2_3	Standard	0.250	1.67	11.629	1037.449	0.140	0.0	-97.0	YES	0.998	NO	MMX
2	2	190707M2_4	Standard	0.500	1.67	46.157	1184.476	0.487	0.4	-12.6	NO	0.998	NO	MM
3	3	190707M2_5	Standard	1.000	1.67	84.221	1111.306	0.947	1.0	0.6	NO	0.998	NO	MM
4	4	190707M2_6	Standard	2.000	1.67	160.543	1110.958	1.806	2.1	3.3	NO	0.998	NO	MM
5	5	190707M2_7	Standard	5.000	1.67	468.606	1232.211	4.754	5.7	13.7	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	1.67	871.818	1119.923	9.731	11.7	17.3	NO	0.998	NO	db
7	7	190707M2_9	Standard	50.000	1.63	4581.445	1179.829	48.539	56.4	12.8	NO	0.998	NO	db
8	8	190707M2_10	Standard	100.000	1.60	7978.260	1079.453	92.388	102.6	2.6	NO	0.998	NO	bb
9	9	190707M2_11	Standard	250.000	1.60	20367.717	1064.299	239.215	235.1	-6.0	NO	0.998	NO	bb
10	10	190707M2_12	Standard	500.000	1.60	39618.230	780.421	634.565	504.8	1.0	NO	0.998	NO	MM

CAH 7/8/19

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:15:00 Pacific Daylight Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999342
Calibration curve: 9.86472e-005 * x^2 + 0.0264982 * x + -0.00300185
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	190707M2_3	Standard	0.250	2.15	2.522	7976.044	0.004	0.3	4.9	NO	0.999	NO	MM
2	2	190707M2_4	Standard	0.500	2.13	4.462	8569.826	0.007	0.4	-28.3	NO	0.999	NO	MM
3	3	190707M2_5	Standard	1.000	2.13	15.101	8716.294	0.022	0.9	-7.3	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	2.13	28.830	8645.623	0.042	1.7	-16.2	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	2.13	98.184	9199.766	0.133	5.1	1.1	NO	0.999	NO	MM
6	6	190707M2_8	Standard	10.000	2.14	184.351	8541.886	0.270	9.9	-0.7	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	2.09	1140.215	8923.304	1.597	50.8	1.6	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	2.07	2402.576	8297.844	3.619	99.7	-0.3	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	2.07	6697.585	8706.298	9.616	205.6	-17.8	NO	0.999	NO	bbX
10	10	190707M2_12	Standard	500.000	2.07	2375.012	7158.594	4.147	110.9	-77.8	YES	0.999	NO	bbX

Compound name: PFPeA
Correlation coefficient: r = 0.998566, r^2 = 0.997133
Calibration curve: 1.01384 * x + -0.0767196
Response type: Internal Std (Ref 48), 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	190707M2_3	Standard	0.250	2.28	153.345	7976.044	0.240	0.3	25.1	NO	0.997	NO	MM
2	2	190707M2_4	Standard	0.500	2.29	295.033	8569.826	0.430	0.5	0.0	NO	0.997	NO	bb
3	3	190707M2_5	Standard	1.000	2.28	670.184	8716.294	0.961	1.0	2.4	NO	0.997	NO	bb
4	4	190707M2_6	Standard	2.000	2.29	1263.700	8645.623	1.827	1.9	-6.1	NO	0.997	NO	bb
5	5	190707M2_7	Standard	5.000	2.29	3520.827	9199.766	4.784	4.8	-4.1	NO	0.997	NO	bb
6	6	190707M2_8	Standard	10.000	2.29	6533.171	8541.886	9.560	9.5	-4.9	NO	0.997	NO	bb
7	7	190707M2_9	Standard	50.000	2.24	34261.250	8923.304	47.994	47.4	-5.2	NO	0.997	NO	bb
8	8	190707M2_10	Standard	100.000	2.22	63181.453	8297.844	95.178	94.0	-6.0	NO	0.997	NO	bb
9	9	190707M2_11	Standard	250.000	2.22	166016.984	8706.298	238.358	235.2	-5.9	NO	0.997	NO	bb
10	10	190707M2_12	Standard	500.000	2.22	304307.938	7158.594	531.368	524.2	4.8	NO	0.997	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:15:00 Pacific Daylight Time

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999306
Calibration curve: 0.00103198 * x^2 + 2.05991 * x + 0.181678
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	190707M2_3	Standard	0.250	2.57	62.570	1037.449	0.754	0.3	11.1	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	2.58	90.524	1184.476	0.955	0.4	-24.9	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	2.57	196.524	1111.306	2.211	1.0	-1.6	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	2.57	377.896	1110.958	4.252	2.0	-1.3	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	2.57	1052.083	1232.211	10.673	5.1	1.6	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	2.57	2057.323	1119.923	22.963	11.0	10.0	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	2.53	10606.280	1179.829	112.371	53.1	6.1	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	2.51	19033.166	1079.453	220.403	101.7	1.7	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	2.51	47481.730	1064.299	557.664	241.4	-3.4	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	2.51	81016.680	780.421	1297.644	503.1	0.6	NO	0.999	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999524
Calibration curve: 7.1759e-006 * x^2 + 2.2541 * x + -0.0528447
Response type: Internal Std (Ref 51), 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	190707M2_3	Standard	0.250	2.98	72.742	1989.406	0.457	0.2	-9.5	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	2.97	197.636	2030.065	1.217	0.6	12.7	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	2.98	385.147	2108.561	2.283	1.0	3.6	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	2.98	684.258	2148.790	3.980	1.8	-10.5	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	2.98	2067.740	2216.228	11.662	5.2	3.9	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	2.98	3564.263	2086.566	21.352	9.5	-5.0	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	2.94	17784.488	1877.459	118.408	52.5	5.1	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	2.92	30677.146	1669.119	229.741	101.9	1.9	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	2.92	68133.133	1552.307	548.644	243.2	-2.7	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	2.92	111006.883	1222.530	1135.012	502.8	0.6	NO	1.000	NO	bb

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Compound name: PFHxA
Correlation coefficient: r = 0.999647, r^2 = 0.999295
Calibration curve: 0.876757 * x + 0.0197972
Response type: Internal Std (Ref 52), 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	190707M2_3	Standard	0.250	3.06	306.326	6659.736	0.230	0.2	-4.1	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	3.06	661.932	6946.671	0.476	0.5	4.2	NO	0.999	NO	dd
3	3	190707M2_5	Standard	1.000	3.06	1275.757	6925.042	0.921	1.0	2.8	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	3.06	2494.784	6674.311	1.869	2.1	5.5	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	3.07	6860.343	7713.172	4.447	5.0	1.0	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	3.06	12371.419	7028.057	8.801	10.0	0.2	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	3.03	62832.367	7128.301	44.072	50.2	0.5	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	3.01	117781.273	6607.889	89.122	101.6	1.6	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	3.01	293969.344	7004.441	209.845	239.3	-4.3	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	3.01	525714.063	5894.519	445.935	508.6	1.7	NO	0.999	NO	bb

Compound name: PFPeS
Coefficient of Determination: R^2 = 0.998193
Calibration curve: 5.23944e-005 * x^2 + 1.77402 * x + 0.0702337
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	190707M2_3	Standard	0.250	3.27	40.061	1037.449	0.483	0.2	-7.0	NO	0.998	NO	bb
2	2	190707M2_4	Standard	0.500	3.27	85.511	1184.476	0.902	0.5	-6.2	NO	0.998	NO	bb
3	3	190707M2_5	Standard	1.000	3.26	120.375	1111.306	1.354	0.7	-27.6	NO	0.998	NO	bb
4	4	190707M2_6	Standard	2.000	3.27	357.130	1110.958	4.018	2.2	11.3	NO	0.998	NO	bb
5	5	190707M2_7	Standard	5.000	3.27	972.974	1232.211	9.870	5.5	10.5	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	3.27	1810.772	1119.923	20.211	11.3	13.5	NO	0.998	NO	bb
7	7	190707M2_9	Standard	50.000	3.23	8984.800	1179.829	95.192	53.5	7.1	NO	0.998	NO	bb
8	8	190707M2_10	Standard	100.000	3.21	15860.009	1079.453	183.658	103.2	3.2	NO	0.998	NO	bb
9	9	190707M2_11	Standard	250.000	3.21	35785.102	1064.299	420.290	235.2	-5.9	NO	0.998	NO	bb
10	10	190707M2_12	Standard	500.000	3.21	56916.953	780.421	911.639	506.3	1.3	NO	0.998	NO	bb

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Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998009
Calibration curve: -0.000326525 * x^2 + 0.577526 * x + -0.0499051
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	190707M2_3	Standard	0.250	3.28	25.382	1354.360	0.094	0.2	-0.5	NO	0.998	NO	bb
2	2	190707M2_4	Standard	0.500	3.28	51.850	1532.345	0.169	0.4	-24.1	NO	0.998	NO	bb
3	3	190707M2_5	Standard	1.000	3.27	110.950	1379.156	0.402	0.8	-21.7	NO	0.998	NO	bb
4	4	190707M2_6	Standard	2.000	3.28	287.022	1132.486	1.267	2.3	14.2	NO	0.998	NO	bb
5	5	190707M2_7	Standard	5.000	3.28	739.445	1376.603	2.686	4.7	-5.0	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	3.28	1494.636	1327.957	5.628	9.9	-1.1	NO	0.998	NO	bb
7	7	190707M2_9	Standard	50.000	3.23	7436.262	1229.345	30.245	54.1	8.2	NO	0.998	NO	bb
8	8	190707M2_10	Standard	100.000	3.22	12819.055	1236.137	51.851	95.0	-5.0	NO	0.998	NO	bb
9	9	190707M2_11	Standard	250.000	3.22	28874.740	1159.479	124.516	251.4	0.6	NO	0.998	NO	bb
10	10	190707M2_12	Standard	500.000	3.22	52686.203	798.747	329.805			NO	0.998	NO	bbXI

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.998913
Calibration curve: 0.000375683 * x^2 + 0.141095 * x + -0.0243565
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	190707M2_3	Standard	0.250	3.60	11.978	9138.501	0.016	0.3	15.4	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	3.61	35.823	9854.410	0.045	0.5	-1.2	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	3.61	101.827	9381.140	0.136	1.1	13.1	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	3.62	164.219	9717.326	0.211	1.7	-16.9	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	3.62	523.851	10248.323	0.639	4.6	-7.1	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	3.62	1035.589	9706.761	1.334	9.4	-6.1	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	3.57	6255.021	9444.232	8.279	51.7	3.4	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	3.56	12520.982	8842.653	17.700	99.3	-0.7	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	3.56	34722.047	8621.728	50.341	223.7	-10.5	NO	0.999	NO	bbX
10	10	190707M2_12	Standard	500.000	3.56	12620.245	7065.005	22.329	120.1	-76.0	YES	0.999	NO	bbX

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Compound name: PFHpA
Correlation coefficient: r = 0.999352, r^2 = 0.998704
Calibration curve: 1.29227 * x + -0.0560064
Response type: Internal Std (Ref 53), 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	190707M2_3	Standard	0.250	3.68	207.384	9138.501	0.284	0.3	5.1	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	3.68	480.736	9854.410	0.610	0.5	3.0	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	3.68	1002.706	9381.140	1.336	1.1	7.7	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	3.68	1874.343	9717.326	2.411	1.9	-4.5	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	3.68	5161.573	10248.323	6.296	4.9	-1.7	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	3.68	9524.050	9706.761	12.265	9.5	-4.7	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	3.64	49159.477	9444.232	65.065	50.4	0.8	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	3.63	87151.344	8842.653	123.197	95.4	-4.6	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	3.63	213327.516	8621.728	309.288	239.4	-4.2	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	3.63	376401.531	7065.005	665.961	515.4	3.1	NO	0.999	NO	bb

Compound name: ADONA
Correlation coefficient: r = 0.999048, r^2 = 0.998096
Calibration curve: 3.26873 * x + -0.331771
Response type: Internal Std (Ref 53), 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	190707M2_3	Standard	0.250	3.79	481.905	9138.501	0.659	0.3	21.3	NO	0.998	NO	bb
2	2	190707M2_4	Standard	0.500	3.79	1088.966	9854.410	1.381	0.5	4.8	NO	0.998	NO	bb
3	3	190707M2_5	Standard	1.000	3.79	2295.312	9381.140	3.058	1.0	3.7	NO	0.998	NO	bb
4	4	190707M2_6	Standard	2.000	3.79	4523.355	9717.326	5.819	1.9	-5.9	NO	0.998	NO	bb
5	5	190707M2_7	Standard	5.000	3.79	12724.154	10248.323	15.520	4.8	-3.0	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	3.79	22741.971	9706.761	29.286	9.1	-9.4	NO	0.998	NO	bb
7	7	190707M2_9	Standard	50.000	3.75	116945.922	9444.232	154.785	47.5	-5.1	NO	0.998	NO	bb
8	8	190707M2_10	Standard	100.000	3.74	215503.281	8842.653	304.636	93.3	-6.7	NO	0.998	NO	bb
9	9	190707M2_11	Standard	250.000	3.74	543672.375	8621.728	788.230	241.2	-3.5	NO	0.998	NO	bb
10	10	190707M2_12	Standard	500.000	3.74	958835.188	7065.005	1696.452	519.1	3.8	NO	0.998	NO	bb

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999461
Calibration curve: 0.000243936 * x^2 + 0.882442 * x + -0.0460332
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	190707M2_3	Standard	0.250	3.83	24.525	2482.273	0.124	0.2	-23.2	NO	0.999	NO	MM
2	2	190707M2_4	Standard	0.500	3.82	69.636	2523.046	0.345	0.4	-11.4	NO	0.999	NO	MM
3	3	190707M2_5	Standard	1.000	3.83	160.209	2417.488	0.828	1.0	-0.9	NO	0.999	NO	MM
4	4	190707M2_6	Standard	2.000	3.83	359.195	2438.051	1.842	2.1	6.9	NO	0.999	NO	MM
5	5	190707M2_7	Standard	5.000	3.83	974.122	2745.702	4.435	5.1	1.4	NO	0.999	NO	MM
6	6	190707M2_8	Standard	10.000	3.83	1777.774	2449.135	9.073	10.3	3.1	NO	0.999	NO	MM
7	7	190707M2_9	Standard	50.000	3.79	9111.685	2496.044	45.631	51.0	2.1	NO	0.999	NO	MM
8	8	190707M2_10	Standard	100.000	3.78	16653.676	2210.438	94.176	103.8	3.8	NO	0.999	NO	MM
9	9	190707M2_11	Standard	250.000	3.78	41094.105	2255.240	227.770	242.0	-3.2	NO	0.999	NO	MM
10	10	190707M2_12	Standard	500.000	3.78	71613.594	1771.314	505.371	502.8	0.6	NO	0.999	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999654
Calibration curve: -0.000390457 * x^2 + 3.04721 * x + -0.0695802
Response type: Internal Std (Ref 55), 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	190707M2_3	Standard	0.250	4.15	88.572	1494.053	0.741	0.3	6.4	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	4.14	175.505	1682.808	1.304	0.5	-9.9	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	4.14	334.748	1549.299	2.701	0.9	-9.1	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	4.14	771.701	1610.396	5.990	2.0	-0.5	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	4.14	2247.496	1787.876	15.713	5.2	3.7	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	4.14	3910.109	1637.714	29.844	9.8	-1.7	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	4.10	19185.217	1579.940	151.788	50.2	0.3	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	4.10	34331.875	1377.832	311.466	103.6	3.6	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	4.10	77800.969	1350.596	720.061	244.0	-2.4	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	4.10	126654.656	1105.291	1432.368	502.4	0.5	NO	1.000	NO	bb

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Compound name: L-PFOA
Correlation coefficient: r = 0.999783, r^2 = 0.999567
Calibration curve: 1.437 * x + 0.0249848
Response type: Internal Std (Ref 58), 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	190707M2_3	Standard	0.250	4.20	480.538	15881.059	0.378	0.2	-1.7	NO	1.000	NO	bd
2	2	190707M2_4	Standard	0.500	4.19	936.033	16610.031	0.704	0.5	-5.4	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	4.19	2103.502	16408.889	1.602	1.1	9.8	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	4.19	3894.073	16464.014	2.957	2.0	2.0	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	4.20	10589.390	18794.840	7.043	4.9	-2.3	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	4.20	18949.732	16696.314	14.187	9.9	-1.4	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	4.16	93513.891	16408.902	71.237	49.6	-0.9	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	4.15	171128.156	14616.800	146.345	101.8	1.8	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	4.15	396337.906	14239.479	347.922	242.1	-3.2	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	4.15	648931.250	11140.520	728.120	506.7	1.3	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999912
Calibration curve: 7.83445e-005 * x^2 + 0.211024 * x + -0.032791
Response type: Internal Std (Ref 58), 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	190707M2_3	Standard	0.250	4.21	25.343	15881.059	0.020	0.2	-0.0	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	4.21	100.985	16610.031	0.076	0.5	3.1	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	4.21	227.379	16408.889	0.173	1.0	-2.4	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	4.21	531.378	16464.014	0.403	2.1	3.3	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	4.21	1569.462	18794.840	1.044	5.1	1.8	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	4.21	2583.469	16696.314	1.934	9.3	-7.1	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	4.18	14108.847	16408.902	10.748	50.2	0.3	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	4.17	25981.369	14616.800	22.219	101.6	1.6	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	4.17	65168.539	14239.479	57.208	248.4	-0.7	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	4.17	111581.203	11140.520	125.197	500.5	0.1	NO	1.000	NO	db

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: PFHpS
Correlation coefficient: r = 0.999063, r^2 = 0.998127
Calibration curve: 0.93206 * x + -0.08299
Response type: Internal Std (Ref 59), 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	190707M2_3	Standard	0.250	4.33	35.329	2634.025	0.168	0.3	7.6	NO	0.998	NO	bb
2	2	190707M2_4	Standard	0.500	4.31	82.441	2639.184	0.390	0.5	1.6	NO	0.998	NO	bb
3	3	190707M2_5	Standard	1.000	4.31	126.445	2714.801	0.582	0.7	-28.6	NO	0.998	NO	bb
4	4	190707M2_6	Standard	2.000	4.31	425.986	2799.909	1.902	2.1	6.5	NO	0.998	NO	bb
5	5	190707M2_7	Standard	5.000	4.31	1242.900	3072.105	5.057	5.5	10.3	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	4.31	1876.692	2694.117	8.707	9.4	-5.7	NO	0.998	NO	bb
7	7	190707M2_9	Standard	50.000	4.27	10643.280	2631.175	50.563	54.3	8.7	NO	0.998	NO	bb
8	8	190707M2_10	Standard	100.000	4.27	18362.719	2361.315	97.206	104.4	4.4	NO	0.998	NO	bb
9	9	190707M2_11	Standard	250.000	4.27	45391.105	2589.153	219.141	235.2	-5.9	NO	0.998	NO	bb
10	10	190707M2_12	Standard	500.000	4.27	76660.016	2031.124	471.783	506.3	1.3	NO	0.998	NO	bb

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.998052
Calibration curve: 0.000657237 * x^2 + 0.0699837 * x + -0.000532529
Response type: Internal Std (Ref 56), 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	190707M2_3	Standard	0.250	4.62	23.328	16311.578	0.018	0.3	5.0	NO	0.998	NO	bb
2	2	190707M2_4	Standard	0.500	4.61	56.254	17512.373	0.040	0.6	15.6	NO	0.998	NO	bb
3	3	190707M2_5	Standard	1.000	4.62	86.403	17010.654	0.063	0.9	-9.3	NO	0.998	NO	bb
4	4	190707M2_6	Standard	2.000	4.61	140.154	16633.891	0.105	1.5	-25.4	NO	0.998	NO	bb
5	5	190707M2_7	Standard	5.000	4.61	610.557	18588.576	0.411	5.6	11.6	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	4.61	1065.679	17552.000	0.759	9.9	-0.7	NO	0.998	NO	bb
7	7	190707M2_9	Standard	50.000	4.58	6840.518	16635.418	5.140	50.0	-0.0	NO	0.998	NO	bb
8	8	190707M2_10	Standard	100.000	4.57	13345.436	15362.772	10.859	85.9	-14.1	NO	0.998	NO	bbX
9	9	190707M2_11	Standard	250.000	4.57	37657.156	15166.001	31.037	170.5	-31.8	YES	0.998	NO	bbX
10	10	190707M2_12	Standard	500.000	4.57	12803.688	11855.307	13.500	99.7	-80.1	YES	0.998	NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: PFNA
Correlation coefficient: r = 0.998187, r^2 = 0.996377
Calibration curve: 1.23544 * x + -0.100732
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	190707M2_3	Standard	0.250	4.63	329.117	16311.578	0.252	0.3	14.3	NO	0.996	NO	bb
2	2	190707M2_4	Standard	0.500	4.63	741.125	17512.373	0.529	0.5	1.9	NO	0.996	NO	bb
3	3	190707M2_5	Standard	1.000	4.63	1692.506	17010.654	1.244	1.1	8.8	NO	0.996	NO	bd
4	4	190707M2_6	Standard	2.000	4.63	2970.819	16633.891	2.233	1.9	-5.6	NO	0.996	NO	bb
5	5	190707M2_7	Standard	5.000	4.63	9158.945	18588.576	6.159	5.1	1.3	NO	0.996	NO	bb
6	6	190707M2_8	Standard	10.000	4.63	15456.165	17552.000	11.007	9.0	-10.1	NO	0.996	NO	bb
7	7	190707M2_9	Standard	50.000	4.60	79447.883	16635.418	59.698	48.4	-3.2	NO	0.996	NO	bb
8	8	190707M2_10	Standard	100.000	4.59	143623.000	15362.772	116.860	94.7	-5.3	NO	0.996	NO	bb
9	9	190707M2_11	Standard	250.000	4.59	346409.969	15166.001	285.515	231.2	-7.5	NO	0.996	NO	bb
10	10	190707M2_12	Standard	500.000	4.59	617005.188	11855.307	650.558	526.7	5.3	NO	0.996	NO	bb

Compound name: PFOSA
Correlation coefficient: r = 0.999646, r^2 = 0.999292
Calibration curve: 1.18267 * x + -0.05342
Response type: Internal Std (Ref 57), 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	190707M2_3	Standard	0.250	4.70	59.627	2455.287	0.304	0.3	20.7	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	4.70	108.076	2461.127	0.549	0.5	1.9	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	4.69	199.738	2334.013	1.070	0.9	-5.0	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	4.70	438.577	2460.025	2.229	1.9	-3.5	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	4.70	1244.943	2783.280	5.591	4.8	-4.5	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	4.70	2225.157	2440.359	11.398	9.7	-3.2	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	4.66	13034.379	2796.270	58.267	49.3	-1.4	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	4.65	24479.227	2739.780	111.684	94.5	-5.5	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	4.65	62952.316	2704.294	290.983	246.1	-1.6	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	4.65	110962.297	2296.513	603.972	510.7	2.1	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: L-PFOS
Correlation coefficient: r = 0.998281, r^2 = 0.996565
Calibration curve: 1.14901 * x + -0.104113
Response type: Internal Std (Ref 59), 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	190707M2_3	Standard	0.250	4.71	46.412	2634.025	0.220	0.3	12.9	NO	0.997	NO	MM
2	2	190707M2_4	Standard	0.500	4.71	86.331	2639.184	0.409	0.4	-10.7	NO	0.997	NO	MM
3	3	190707M2_5	Standard	1.000	4.71	198.495	2714.801	0.914	0.9	-11.4	NO	0.997	NO	MM
4	4	190707M2_6	Standard	2.000	4.71	450.940	2799.909	2.013	1.8	-7.9	NO	0.997	NO	MM
5	5	190707M2_7	Standard	5.000	4.71	1310.399	3072.105	5.332	4.7	-5.4	NO	0.997	NO	MM
6	6	190707M2_8	Standard	10.000	4.71	2210.518	2694.117	10.256	9.0	-9.8	NO	0.997	NO	MM
7	7	190707M2_9	Standard	50.000	4.68	11785.442	2631.175	55.989	48.8	-2.4	NO	0.997	NO	MM
8	8	190707M2_10	Standard	100.000	4.68	22281.047	2361.315	117.948	102.7	2.7	NO	0.997	NO	MM
9	9	190707M2_11	Standard	250.000	4.67	54284.512	2589.153	262.077	228.2	-8.7	NO	0.997	NO	MM
10	10	190707M2_12	Standard	500.000	4.67	97404.852	2031.124	599.452	521.8	4.4	NO	0.997	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.998846
Calibration curve: 0.000366653 * x^2 + 2.03424 * x + -0.17287
Response type: Internal Std (Ref 59), 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	190707M2_3	Standard	0.250	4.93	91.503	2634.025	0.434	0.3	19.4	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	4.93	171.132	2639.184	0.811	0.5	-3.3	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	4.92	372.655	2714.801	1.716	0.9	-7.2	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	4.93	811.023	2799.909	3.621	1.9	-6.8	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	4.93	2211.876	3072.105	9.000	4.5	-9.9	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	4.93	4482.307	2694.117	20.797	10.3	2.9	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	4.90	21980.320	2631.175	104.423	50.9	1.9	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	4.89	41728.488	2361.315	220.896	106.6	6.6	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	4.89	105005.305	2589.153	506.948	239.0	-4.4	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	4.89	181630.734	2031.124	1117.797	503.8	0.8	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: PFDA
Correlation coefficient: r = 0.999894, r^2 = 0.999788
Calibration curve: 1.4454 * x + 0.0241357
Response type: Internal Std (Ref 60), 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	190707M2_3	Standard	0.250	5.00	464.606	14583.376	0.398	0.3	3.5	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	5.00	844.047	15609.120	0.676	0.5	-9.8	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	5.00	1818.116	14988.125	1.516	1.0	3.2	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	5.00	3523.975	15163.957	2.905	2.0	-0.3	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	5.00	9940.384	16579.166	7.495	5.2	3.4	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	5.00	17437.486	15151.726	14.386	9.9	-0.6	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	4.97	89753.023	15318.326	73.240	50.7	1.3	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	4.97	159727.953	13700.522	145.732	100.8	0.8	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	4.97	399010.719	14123.966	353.133	244.3	-2.3	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	4.97	683641.875	11726.740	728.721	504.1	0.8	NO	1.000	NO	bb

Compound name: 8:2 FTS
Correlation coefficient: r = 0.999433, r^2 = 0.998867
Calibration curve: 1.719 * x + 0.251669
Response type: Internal Std (Ref 61), 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	190707M2_3	Standard	0.250	4.97	24.749	1545.376	0.200			NO	0.999	NO	bbXI
2	2	190707M2_4	Standard	0.500	4.97	157.682	1640.520	1.201	0.6	10.5	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	4.96	230.813	1612.810	1.789	0.9	-10.6	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	4.97	407.753	1607.793	3.170	1.7	-15.1	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	4.97	1276.186	1750.148	9.115	5.2	3.1	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	4.97	2167.168	1531.983	17.683	10.1	1.4	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	4.94	11417.230	1569.972	90.903	52.7	5.5	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	4.94	20014.105	1371.123	182.461	106.0	6.0	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	4.94	43560.840	1243.271	437.966	254.6	1.9	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	4.94	70129.492	1047.482	836.882	486.7	-2.7	NO	0.999	NO	bb

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Compound name: PFNS
Correlation coefficient: r = 0.999403, r^2 = 0.998806
Calibration curve: 0.802949 * x + -0.126905
Response type: Internal Std (Ref 59), 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	190707M2_3	Standard	0.250	5.06	18.752	2634.025	0.089	0.3	7.6	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	5.06	61.814	2639.184	0.293	0.5	4.5	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	5.07	147.404	2714.801	0.679	1.0	0.3	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	5.06	299.575	2799.909	1.337	1.8	-8.8	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	5.06	935.763	3072.105	3.807	4.9	-2.0	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	5.06	1632.347	2694.117	7.574	9.6	-4.1	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	5.04	8433.709	2631.175	40.066	50.1	0.1	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	5.03	16039.002	2361.315	84.905	105.9	5.9	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	5.03	39512.879	2589.153	190.762	237.7	-4.9	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	5.03	66121.727	2031.124	406.928	507.0	1.4	NO	0.999	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999786
Calibration curve: -0.000169157 * x^2 + 2.71324 * x + -0.345173
Response type: Internal Std (Ref 62), 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	190707M2_3	Standard	0.250	5.15	100.978	2982.144	0.423	0.3	13.3	NO	1.000	NO	MM
2	2	190707M2_4	Standard	0.500	5.15	292.189	3236.516	1.128	0.5	8.6	NO	1.000	NO	MM
3	3	190707M2_5	Standard	1.000	5.15	532.442	3105.870	2.143	0.9	-8.3	NO	1.000	NO	MM
4	4	190707M2_6	Standard	2.000	5.15	1235.343	3347.593	4.613	1.8	-8.6	NO	1.000	NO	MM
5	5	190707M2_7	Standard	5.000	5.15	3761.081	3550.042	13.243	5.0	0.2	NO	1.000	NO	MM
6	6	190707M2_8	Standard	10.000	5.15	6872.454	3308.479	25.965	9.7	-3.0	NO	1.000	NO	MM
7	7	190707M2_9	Standard	50.000	5.12	35039.754	3396.058	128.972	47.8	-4.4	NO	1.000	NO	MM
8	8	190707M2_10	Standard	100.000	5.12	64383.715	2949.322	272.875	101.3	1.3	NO	1.000	NO	MM
9	9	190707M2_11	Standard	250.000	5.12	157555.766	2918.549	674.803	252.8	1.1	NO	1.000	NO	MM
10	10	190707M2_12	Standard	500.000	5.12	272296.875	2597.911	1310.172	498.5	-0.3	NO	1.000	NO	MM

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Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.999413, r^2 = 0.998826
Calibration curve: 1.70212 * x + -0.108827
Response type: Internal Std (Ref 64), 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	190707M2_3	Standard	0.250	5.31	108.047	3493.714	0.387	0.3	16.4	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	5.31	172.331	3800.883	0.567	0.4	-20.6	NO	0.999	NO	MM
3	3	190707M2_5	Standard	1.000	5.31	433.834	3761.652	1.442	0.9	-8.9	NO	0.999	NO	MM
4	4	190707M2_6	Standard	2.000	5.31	884.093	4056.834	2.724	1.7	-16.8	NO	0.999	NO	MM
5	5	190707M2_7	Standard	5.000	5.31	2552.552	3788.870	8.421	5.0	0.2	NO	0.999	NO	MM
6	6	190707M2_8	Standard	10.000	5.31	4832.463	3642.125	16.585	9.8	-1.9	NO	0.999	NO	MM
7	7	190707M2_9	Standard	50.000	5.28	24602.176	3442.240	89.339	52.6	5.1	NO	0.999	NO	MM
8	8	190707M2_10	Standard	100.000	5.28	43917.047	3086.180	177.878	104.6	4.6	NO	0.999	NO	MM
9	9	190707M2_11	Standard	250.000	5.28	104342.086	3218.352	405.262	238.2	-4.7	NO	0.999	NO	MM
10	10	190707M2_12	Standard	500.000	5.28	176481.734	2564.757	860.129	505.4	1.1	NO	0.999	NO	MM

Compound name: PFUdA
Correlation coefficient: r = 0.999904, r^2 = 0.999809
Calibration curve: 0.923261 * x + 0.0668512
Response type: Internal Std (Ref 63), 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	190707M2_3	Standard	0.250	5.32	486.979	20906.992	0.291	0.2	-2.8	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	5.32	945.177	22535.773	0.524	0.5	-0.9	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	5.32	1783.737	22582.182	0.987	1.0	-0.3	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	5.32	3497.728	22501.063	1.943	2.0	1.6	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	5.32	8845.739	24515.289	4.510	4.8	-3.7	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	5.32	16785.584	21751.781	9.646	10.4	3.8	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	5.30	82922.484	22469.873	46.130	49.9	-0.2	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	5.30	150658.719	19667.529	95.753	103.6	3.6	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	5.30	363163.750	19766.180	229.662	248.7	-0.5	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	5.30	598702.125	16287.978	459.466	497.6	-0.5	NO	1.000	NO	bb

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Compound name: PFDS
Coefficient of Determination: R^2 = 0.999676
Calibration curve: 0.00103773 * x^2 + 1.8671 * x + -0.153144
Response type: Internal Std (Ref 61), 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	190707M2_3	Standard	0.250	5.37	42.191	1545.376	0.341	0.3	5.9	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	5.36	97.568	1640.520	0.743	0.5	-4.0	NO	1.000	NO	bb
3	3	190707M2_5	Standard	1.000	5.37	169.294	1612.810	1.312	0.8	-21.6	NO	1.000	NO	bb
4	4	190707M2_6	Standard	2.000	5.36	387.752	1607.793	3.015	1.7	-15.2	NO	1.000	NO	bb
5	5	190707M2_7	Standard	5.000	5.37	1334.712	1750.148	9.533	5.2	3.5	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	5.37	2244.951	1531.983	18.317	9.8	-1.6	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	5.34	11905.272	1569.972	94.789	49.5	-1.0	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	5.34	21922.809	1371.123	199.862	101.4	1.4	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	5.34	52766.605	1243.271	530.522	249.6	-0.2	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	5.34	89253.703	1047.482	1065.098	455.3	-8.9	NO	1.000	NO	bbX

Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.999445
Calibration curve: -3.71514e-006 * x^2 + 0.0675775 * x + -0.00872591
Response type: Internal Std (Ref 65), 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	190707M2_3	Standard	0.250	5.55	20.454	20707.248	0.012	0.3	24.7	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	5.53	31.776	21789.090	0.018	0.4	-20.2	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	5.53	106.897	21434.699	0.062	1.1	5.2	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	5.53	215.829	21691.166	0.124	2.0	-1.5	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	5.53	575.311	24007.496	0.300	4.6	-8.7	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	5.53	1152.646	21192.254	0.680	10.2	2.0	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	5.51	6013.230	22183.021	3.388	50.4	0.8	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	5.51	10767.786	20991.336	6.412	95.5	-4.5	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	5.51	27676.799	20209.621	17.119	257.1	2.8	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	5.51	48032.625	18374.607	32.676	497.3	-0.5	NO	0.999	NO	bb

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999612
Calibration curve: -0.000719965 * x^2 + 2.41049 * x + -0.109536
Response type: Internal Std (Ref 61), 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 190707M2_3	Standard	0.250	5.58	74.386	1545.376	0.602	0.3	18.0	NO	1.000	NO	bb
2	2 190707M2_4	Standard	0.500	5.59	113.644	1640.520	0.866	0.4	-19.1	NO	1.000	NO	bb
3	3 190707M2_5	Standard	1.000	5.59	231.816	1612.810	1.797	0.8	-20.9	NO	1.000	NO	bb
4	4 190707M2_6	Standard	2.000	5.59	628.384	1607.793	4.885	2.1	3.7	NO	1.000	NO	bb
5	5 190707M2_7	Standard	5.000	5.59	1831.254	1750.148	13.079	5.5	9.6	NO	1.000	NO	bb
6	6 190707M2_8	Standard	10.000	5.59	3176.021	1531.983	25.914	10.8	8.3	NO	1.000	NO	bb
7	7 190707M2_9	Standard	50.000	5.57	15039.172	1569.972	119.741	50.5	1.0	NO	1.000	NO	bb
8	8 190707M2_10	Standard	100.000	5.56	25857.283	1371.123	235.731	100.9	0.9	NO	1.000	NO	bb
9	9 190707M2_11	Standard	250.000	5.56	54406.289	1243.271	547.008	244.9	-2.0	NO	1.000	NO	bb
10	10 190707M2_12	Standard	500.000	5.56	86298.594	1047.482	1029.834	502.8	0.6	NO	1.000	NO	bb

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999862
Calibration curve: -0.00014003 * x^2 + 1.00153 * x + 0.0568473
Response type: Internal Std (Ref 65), 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 190707M2_3	Standard	0.250	5.60	457.724	20707.248	0.276	0.2	-12.3	NO	1.000	NO	bb
2	2 190707M2_4	Standard	0.500	5.60	955.871	21789.090	0.548	0.5	-1.8	NO	1.000	NO	bb
3	3 190707M2_5	Standard	1.000	5.60	1954.195	21434.699	1.140	1.1	8.1	NO	1.000	NO	bb
4	4 190707M2_6	Standard	2.000	5.60	3551.895	21691.166	2.047	2.0	-0.6	NO	1.000	NO	bb
5	5 190707M2_7	Standard	5.000	5.60	9822.613	24007.496	5.114	5.1	1.1	NO	1.000	NO	bb
6	6 190707M2_8	Standard	10.000	5.60	17960.604	21192.254	10.594	10.5	5.4	NO	1.000	NO	bb
7	7 190707M2_9	Standard	50.000	5.58	90403.617	22183.021	50.942	51.2	2.3	NO	1.000	NO	bb
8	8 190707M2_10	Standard	100.000	5.58	162324.797	20991.336	96.662	97.8	-2.2	NO	1.000	NO	bb
9	9 190707M2_11	Standard	250.000	5.58	390977.375	20209.621	241.826	250.1	0.1	NO	1.000	NO	bb
10	10 190707M2_12	Standard	500.000	5.58	685076.500	18374.607	466.048	500.3	0.1	NO	1.000	NO	bb

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999462
Calibration curve: -5.28888e-005 * x^2 + 1.12936 * x + -0.23549
Response type: Internal Std (Ref 66), 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	190707M2_3	Standard	1.250	5.77	45.310	7267.182	0.935	1.0	-17.1	NO	0.999	NO	bb
2	2	190707M2_4	Standard	2.500	5.78	131.937	7629.305	2.594	2.5	0.2	NO	0.999	NO	bb
3	3	190707M2_5	Standard	5.000	5.78	267.881	7708.350	5.213	4.8	-3.5	NO	0.999	NO	bb
4	4	190707M2_6	Standard	10.000	5.77	581.809	7913.323	11.028	10.0	-0.2	NO	0.999	NO	bb
5	5	190707M2_7	Standard	25.000	5.77	1580.644	8473.617	27.981	25.0	0.1	NO	0.999	NO	bb
6	6	190707M2_8	Standard	50.000	5.77	2974.236	7952.065	56.103	50.0	0.0	NO	0.999	NO	bb
7	7	190707M2_9	Standard	250.000	5.73	17097.521	8913.381	287.728	258.1	3.2	NO	0.999	NO	bb
8	8	190707M2_10	Standard	500.000	5.72	32288.074	8516.819	568.664	516.2	3.2	NO	0.999	NO	bb
9	9	190707M2_11	Standard	1250.000	5.72	79655.875	9293.079	1285.729	1206.9	-3.4	NO	0.999	NO	bb
10	10	190707M2_12	Standard	2500.000	5.72	140432.781	8393.114	2509.786	2519.9	0.8	NO	0.999	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999896
Calibration curve: -0.000335029 * x^2 + 1.09747 * x + 0.0130985
Response type: Internal Std (Ref 65), 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	190707M2_3	Standard	0.250	5.85	453.162	20707.248	0.274	0.2	-5.1	NO	1.000	NO	bb
2	2	190707M2_4	Standard	0.500	5.85	916.727	21789.090	0.526	0.5	-6.5	NO	1.000	NO	db
3	3	190707M2_5	Standard	1.000	5.85	1921.154	21434.699	1.120	1.0	0.9	NO	1.000	NO	bd
4	4	190707M2_6	Standard	2.000	5.85	3801.340	21691.166	2.191	2.0	-0.7	NO	1.000	NO	bd
5	5	190707M2_7	Standard	5.000	5.85	11209.195	24007.496	5.836	5.3	6.3	NO	1.000	NO	bb
6	6	190707M2_8	Standard	10.000	5.85	19619.604	21192.254	11.572	10.6	5.7	NO	1.000	NO	bb
7	7	190707M2_9	Standard	50.000	5.83	96735.023	22183.021	54.510	50.4	0.9	NO	1.000	NO	bb
8	8	190707M2_10	Standard	100.000	5.83	176331.047	20991.336	105.002	98.6	-1.4	NO	1.000	NO	bb
9	9	190707M2_11	Standard	250.000	5.83	409173.219	20209.621	253.081	249.6	-0.2	NO	1.000	NO	bb
10	10	190707M2_12	Standard	500.000	5.83	684106.750	18374.607	465.389	500.5	0.1	NO	1.000	NO	bb

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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999103
Calibration curve: 4.46468e-006 * x^2 + 0.168099 * x + -0.0190692
Response type: Internal Std (Ref 67), 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 190707M2_3	Standard	0.250	5.88	16.282	13810.754	0.015	0.2	-19.6	NO	0.999	NO	bb
2	2 190707M2_4	Standard	0.500	5.87	87.171	14595.131	0.075	0.6	11.5	NO	0.999	NO	bb
3	3 190707M2_5	Standard	1.000	5.87	179.871	14482.255	0.155	1.0	3.7	NO	0.999	NO	bb
4	4 190707M2_6	Standard	2.000	5.87	377.683	14469.561	0.326	2.1	2.7	NO	0.999	NO	bb
5	5 190707M2_7	Standard	5.000	5.87	1051.113	15748.360	0.834	5.1	1.5	NO	0.999	NO	bb
6	6 190707M2_8	Standard	10.000	5.87	1836.856	14423.534	1.592	9.6	-4.2	NO	0.999	NO	bb
7	7 190707M2_9	Standard	50.000	5.86	10249.189	14949.988	8.570	51.0	2.0	NO	0.999	NO	bb
8	8 190707M2_10	Standard	100.000	5.85	18417.195	12951.332	17.775	105.6	5.6	NO	0.999	NO	bb
9	9 190707M2_11	Standard	250.000	5.85	44194.230	13623.525	40.550	239.8	-4.1	NO	0.999	NO	bb
10	10 190707M2_12	Standard	500.000	5.85	78177.086	11388.107	85.810	503.8	0.8	NO	0.999	NO	bb

Compound name: PFTeDA
Correlation coefficient: r = 0.999790, r^2 = 0.999581
Calibration curve: 1.39936 * x + 0.00853027
Response type: Internal Std (Ref 67), 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 190707M2_3	Standard	0.250	6.07	398.227	13810.754	0.360	0.3	0.6	NO	1.000	NO	bb
2	2 190707M2_4	Standard	0.500	6.07	875.141	14595.131	0.750	0.5	5.9	NO	1.000	NO	bb
3	3 190707M2_5	Standard	1.000	6.06	1467.254	14482.255	1.266	0.9	-10.1	NO	1.000	NO	bb
4	4 190707M2_6	Standard	2.000	6.07	3273.814	14469.561	2.828	2.0	0.7	NO	1.000	NO	bb
5	5 190707M2_7	Standard	5.000	6.07	8746.153	15748.360	6.942	5.0	-0.9	NO	1.000	NO	bb
6	6 190707M2_8	Standard	10.000	6.07	16736.377	14423.534	14.504	10.4	3.6	NO	1.000	NO	bb
7	7 190707M2_9	Standard	50.000	6.05	83823.555	14949.988	70.087	50.1	0.2	NO	1.000	NO	bb
8	8 190707M2_10	Standard	100.000	6.05	148032.859	12951.332	142.874	102.1	2.1	NO	1.000	NO	bb
9	9 190707M2_11	Standard	250.000	6.05	369227.531	13623.525	338.778	242.1	-3.2	NO	1.000	NO	db
10	10 190707M2_12	Standard	500.000	6.05	644437.000	11388.107	707.357	505.5	1.1	NO	1.000	NO	bb

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999930
Calibration curve: 1.81858e-006 * x^2 + 0.973368 * x + -0.109791
Response type: Internal Std (Ref 68), 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	190707M2_3	Standard	1.250	6.17	70.376	10519.031	1.004	1.1	-8.5	NO	1.000	NO	bb
2	2	190707M2_4	Standard	2.500	6.17	193.171	10634.513	2.725	2.9	16.5	NO	1.000	NO	bb
3	3	190707M2_5	Standard	5.000	6.17	324.560	10651.051	4.571	4.8	-3.8	NO	1.000	NO	bb
4	4	190707M2_6	Standard	10.000	6.17	688.647	11054.476	9.344	9.7	-2.9	NO	1.000	NO	bb
5	5	190707M2_7	Standard	25.000	6.17	1874.027	11985.535	23.454	24.2	-3.2	NO	1.000	NO	bb
6	6	190707M2_8	Standard	50.000	6.17	3562.910	10941.130	48.847	50.3	0.6	NO	1.000	NO	bb
7	7	190707M2_9	Standard	250.000	6.14	18869.018	11518.293	245.727	252.4	1.0	NO	1.000	NO	bb
8	8	190707M2_10	Standard	500.000	6.14	36126.367	11007.196	492.310	505.4	1.1	NO	1.000	NO	bb
9	9	190707M2_11	Standard	1250.000	6.14	88756.625	11020.989	1208.013	1238.3	-0.9	NO	1.000	NO	bb
10	10	190707M2_12	Standard	2500.000	6.14	150883.891	9241.188	2449.099	2504.5	0.2	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998780
Calibration curve: -0.000101737 * x^2 + 0.656512 * x + 0.0772838
Response type: Internal Std (Ref 69), 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	190707M2_3	Standard	0.250	6.41	331.222	7694.541	0.215	0.2	-15.9	NO	0.999	NO	bb
2	2	190707M2_4	Standard	0.500	6.41	648.014	8360.317	0.388	0.5	-5.5	NO	0.999	NO	bb
3	3	190707M2_5	Standard	1.000	6.41	1176.454	7879.394	0.747	1.0	2.0	NO	0.999	NO	bb
4	4	190707M2_6	Standard	2.000	6.41	2201.940	7838.119	1.405	2.0	1.1	NO	0.999	NO	bb
5	5	190707M2_7	Standard	5.000	6.41	6429.237	8764.577	3.668	5.5	9.5	NO	0.999	NO	bb
6	6	190707M2_8	Standard	10.000	6.41	10941.793	7987.322	6.849	10.3	3.3	NO	0.999	NO	bb
7	7	190707M2_9	Standard	50.000	6.40	55698.977	8013.304	34.754	53.3	6.5	NO	0.999	NO	bb
8	8	190707M2_10	Standard	100.000	6.40	102278.984	7672.817	66.650	103.0	3.0	NO	0.999	NO	bb
9	9	190707M2_11	Standard	250.000	6.40	242532.656	8087.290	149.947	237.0	-5.2	NO	0.999	NO	bb
10	10	190707M2_12	Standard	500.000	6.40	436206.531	7121.904	306.243	506.0	1.2	NO	0.999	NO	bb

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Compound name: PFODA
Correlation coefficient: r = 0.999146, r^2 = 0.998292
Calibration curve: 0.678858 * x + 0.0397262
Response type: Internal Std (Ref 69), 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	190707M2_3	Standard	0.250	6.65	266.518	7694.541	0.173	0.2	-21.4	NO	0.998	NO	bb
2	2	190707M2_4	Standard	0.500	6.65	625.031	8360.317	0.374	0.5	-1.6	NO	0.998	NO	bb
3	3	190707M2_5	Standard	1.000	6.65	1216.192	7879.394	0.772	1.1	7.8	NO	0.998	NO	bb
4	4	190707M2_6	Standard	2.000	6.65	2304.891	7838.119	1.470	2.1	5.4	NO	0.998	NO	bb
5	5	190707M2_7	Standard	5.000	6.65	6573.365	8764.577	3.750	5.5	9.3	NO	0.998	NO	bb
6	6	190707M2_8	Standard	10.000	6.65	11935.583	7987.322	7.472	10.9	9.5	NO	0.998	NO	bb
7	7	190707M2_9	Standard	50.000	6.64	60685.105	8013.304	37.865	55.7	11.4	NO	0.998	NO	bb
8	8	190707M2_10	Standard	100.000	6.64	111342.883	7672.817	72.557	106.8	6.8	NO	0.998	NO	bb
9	9	190707M2_11	Standard	250.000	6.64	268621.781	8087.290	166.077	244.6	-2.2	NO	0.998	NO	bb
10	10	190707M2_12	Standard	500.000	6.64	475157.406	7121.904	333.589	491.3	-1.7	NO	0.998	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.999795, r^2 = 0.999591
Calibration curve: 1.09163 * x + -0.120858
Response type: Internal Std (Ref 70), 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	190707M2_3	Standard	1.250	6.31	40.576	5878.465	1.035	1.1	-15.3	NO	1.000	NO	bb
2	2	190707M2_4	Standard	2.500	6.31	110.914	6341.028	2.624	2.5	0.6	NO	1.000	NO	bb
3	3	190707M2_5	Standard	5.000	6.31	251.874	6144.030	6.149	5.7	14.9	NO	1.000	NO	bb
4	4	190707M2_6	Standard	10.000	6.31	462.500	6088.207	11.395	10.5	5.5	NO	1.000	NO	bb
5	5	190707M2_7	Standard	25.000	6.31	1224.823	6840.625	26.858	24.7	-1.1	NO	1.000	NO	bb
6	6	190707M2_8	Standard	50.000	6.31	2152.870	6428.805	50.232	46.1	-7.7	NO	1.000	NO	bb
7	7	190707M2_9	Standard	250.000	6.31	14055.896	7525.076	280.181	256.8	2.7	NO	1.000	NO	bb
8	8	190707M2_10	Standard	500.000	6.31	27045.104	7335.242	553.051	506.7	1.3	NO	1.000	NO	bb
9	9	190707M2_11	Standard	1250.000	6.31	74175.719	8223.577	1352.983	1239.5	-0.8	NO	1.000	NO	bb
10	10	190707M2_12	Standard	2500.000	6.31	147267.063	7594.374	2908.740	2664.7	6.6	NO	1.000	NO	bbX

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.997729, r^2 = 0.995463
Calibration curve: 1.49528 * x + -0.916473
Response type: Internal Std (Ref 71), 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	190707M2_3	Standard	1.250	6.47	64.061	5714.919	1.681	1.7	39.0	YES	0.995	NO	bb
2	2	190707M2_4	Standard	2.500	6.46	122.550	6326.004	2.906	2.6	2.3	NO	0.995	NO	bb
3	3	190707M2_5	Standard	5.000	6.46	259.189	6271.799	6.199	4.8	-4.8	NO	0.995	NO	bb
4	4	190707M2_6	Standard	10.000	6.46	550.551	6170.102	13.384	9.6	-4.4	NO	0.995	NO	bb
5	5	190707M2_7	Standard	25.000	6.46	1560.925	7000.806	33.445	23.0	-8.1	NO	0.995	NO	bb
6	6	190707M2_8	Standard	50.000	6.46	2830.751	6257.550	67.856	46.0	-8.0	NO	0.995	NO	bb
7	7	190707M2_9	Standard	250.000	6.46	17315.523	7488.002	346.865	232.6	-7.0	NO	0.995	NO	bb
8	8	190707M2_10	Standard	500.000	6.46	33351.316	7282.209	686.975	460.0	-8.0	NO	0.995	NO	bb
9	9	190707M2_11	Standard	1250.000	6.46	91058.055	7869.146	1735.729	1161.4	-7.1	NO	0.995	NO	bb
10	10	190707M2_12	Standard	2500.000	6.46	178055.406	6736.482	3964.727	2652.1	6.1	NO	0.995	NO	bb

Compound name: 13C3-PFBA
Response Factor: 0.730627
RRF SD: 0.0122031, Relative SD: 1.67023
Response type: Internal Std (Ref 72), 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	190707M2_3	Standard	12.500	1.32	3714.739	5017.686	9.254	12.7	1.3	NO		NO	bb
2	2	190707M2_4	Standard	12.500	1.32	3953.893	5374.751	9.196	12.6	0.7	NO		NO	bb
3	3	190707M2_5	Standard	12.500	1.31	3852.726	5244.281	9.183	12.6	0.6	NO		NO	MM
4	4	190707M2_6	Standard	12.500	1.32	3853.889	5271.945	9.138	12.5	0.1	NO		NO	bb
5	5	190707M2_7	Standard	12.500	1.32	4364.409	5853.527	9.320	12.8	2.0	NO		NO	bb
6	6	190707M2_8	Standard	12.500	1.31	4037.560	5410.553	9.328	12.8	2.1	NO		NO	bb
7	7	190707M2_9	Standard	12.500	1.27	4112.877	5655.671	9.090	12.4	-0.5	NO		NO	bb
8	8	190707M2_10	Standard	12.500	1.24	3804.965	5306.033	8.964	12.3	-1.9	NO		NO	MM
9	9	190707M2_11	Standard	12.500	1.23	3986.414	5569.532	8.947	12.2	-2.0	NO		NO	bb
10	10	190707M2_12	Standard	12.500	1.23	3629.609	5092.646	8.909	12.2	-2.5	NO		NO	bb

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Compound name: 13C3-PFPeA
Response Factor: 0.493414
RRF SD: 0.0146136, Relative SD: 2.96173
Response type: Internal Std (Ref 73), 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 190707M2_3	Standard	12.500	2.29	7976.044	16482.514	6.049	12.3	-1.9	NO		NO	bb
2	2 190707M2_4	Standard	12.500	2.29	8569.826	17760.549	6.032	12.2	-2.2	NO		NO	bb
3	3 190707M2_5	Standard	12.500	2.28	8716.294	17929.006	6.077	12.3	-1.5	NO		NO	bb
4	4 190707M2_6	Standard	12.500	2.29	8645.623	17542.195	6.161	12.5	-0.1	NO		NO	bd
5	5 190707M2_7	Standard	12.500	2.29	9199.766	19279.166	5.965	12.1	-3.3	NO		NO	bb
6	6 190707M2_8	Standard	12.500	2.28	8541.886	17773.336	6.008	12.2	-2.6	NO		NO	bb
7	7 190707M2_9	Standard	12.500	2.24	8923.304	17936.152	6.219	12.6	0.8	NO		NO	bb
8	8 190707M2_10	Standard	12.500	2.22	8297.844	16228.656	6.391	13.0	3.6	NO		NO	bb
9	9 190707M2_11	Standard	12.500	2.22	8706.298	17434.598	6.242	12.7	1.2	NO		NO	bb
10	10 190707M2_12	Standard	12.500	2.22	7158.594	13694.313	6.534	13.2	5.9	NO		NO	bb

Compound name: 13C3-PFBS
Response Factor: 1.01891
RRF SD: 0.051612, Relative SD: 5.06539
Response type: Internal Std (Ref 74), 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 190707M2_3	Standard	12.500	2.57	1037.449	1151.372	11.263	11.1	-11.6	NO		NO	bb
2	2 190707M2_4	Standard	12.500	2.57	1184.476	1087.912	13.610	13.4	6.9	NO		NO	bb
3	3 190707M2_5	Standard	12.500	2.57	1111.30[illegible]	1153.469	12.043	11.8	-5.4	NO		NO	bb
4	4 190707M2_6	Standard	12.500	2.57	1110.95[illegible]	1067.621	13.007	12.8	2.1	NO		NO	bb
5	5 190707M2_7	Standard	12.500	2.57	1232.211	1195.890	12.880	12.6	1.1	NO		NO	bb
6	6 190707M2_8	Standard	12.500	2.57	1119.92[illegible]	1095.607	12.777	12.5	0.3	NO		NO	bb
7	7 190707M2_9	Standard	12.500	2.53	1179.829	1126.712	13.089	12.8	2.8	NO		NO	bb
8	8 190707M2_10	Standard	12.500	2.51	1079.453	1041.554	12.955	12.7	1.7	NO		NO	bb
9	9 190707M2_11	Standard	12.500	2.51	1064.299	1024.120	12.990	12.7	2.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	2.51	780.421	765.147	12.750	12.5	0.1	NO		NO	bb

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Compound name: 13C3-HFPO-DA
Response Factor: 0.181397
RRF SD: 0.0210493, Relative SD: 11.604
Response type: Internal Std (Ref 73), 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 190707M2_3	Standard	5.000	3.28	1354.360	16482.514	1.027	5.7	13.2	NO		NO	bb
2	2 190707M2_4	Standard	5.000	3.27	1532.345	17760.549	1.078	5.9	18.9	NO		NO	bb
3	3 190707M2_5	Standard	5.000	3.27	1379.156	17929.006	0.962	5.3	6.0	NO		NO	bb
4	4 190707M2_6	Standard	5.000	3.28	1132.486	17542.195	0.807	4.4	-11.0	NO		NO	bb
5	5 190707M2_7	Standard	5.000	3.27	1376.603	19279.166	0.893	4.9	-1.6	NO		NO	bb
6	6 190707M2_8	Standard	5.000	3.27	1327.957	17773.336	0.934	5.1	3.0	NO		NO	bb
7	7 190707M2_9	Standard	5.000	3.24	1229.345	17936.152	0.857	4.7	-5.5	NO		NO	bb
8	8 190707M2_10	Standard	5.000	3.22	1236.137	16228.656	0.952	5.2	5.0	NO		NO	bb
9	9 190707M2_11	Standard	5.000	3.22	1159.479	17434.598	0.831	4.6	-8.3	NO		NO	bb
10	10 190707M2_12	Standard	5.000	3.21	798.747	13694.313	0.729	4.0	-19.6	NO		NO	bb

Compound name: 13C2-4:2 FTS
Response Factor: 1.75746
RRF SD: 0.159792, Relative SD: 9.0922
Response type: Internal Std (Ref 74), 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 190707M2_3	Standard	12.500	2.98	1989.406	1151.372	21.598	12.3	-1.7	NO		NO	bb
2	2 190707M2_4	Standard	12.500	2.98	2030.065	1087.912	23.325	13.3	6.2	NO		NO	bb
3	3 190707M2_5	Standard	12.500	2.98	2108.561	1153.469	22.850	13.0	4.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	2.98	2148.790	1067.621	25.159	14.3	14.5	NO		NO	bb
5	5 190707M2_7	Standard	12.500	2.98	2216.228	1195.890	23.165	13.2	5.4	NO		NO	bb
6	6 190707M2_8	Standard	12.500	2.98	2086.566	1095.607	23.806	13.5	8.4	NO		NO	bb
7	7 190707M2_9	Standard	12.500	2.94	1877.459	1126.712	20.829	11.9	-5.2	NO		NO	bb
8	8 190707M2_10	Standard	12.500	2.92	1669.119	1041.554	20.032	11.4	-8.8	NO		NO	bb
9	9 190707M2_11	Standard	12.500	2.92	1552.307	1024.120	18.947	10.8	-13.8	NO		NO	bb
10	10 190707M2_12	Standard	12.500	2.92	1222.530	765.147	19.972	11.4	-9.1	NO		NO	bb

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Compound name: 13C2-PFHxA
Response Factor: 0.998549
RRF SD: 0.0340607, Relative SD: 3.41102
Response type: Internal Std (Ref 73), 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	190707M2_3	Standard	5.000	3.06	6659.736	16482.514	5.051	5.1	1.2	NO		NO	bb
2	2	190707M2_4	Standard	5.000	3.06	6946.671	17760.549	4.889	4.9	-2.1	NO		NO	bb
3	3	190707M2_5	Standard	5.000	3.06	6925.042	17929.006	4.828	4.8	-3.3	NO		NO	bb
4	4	190707M2_6	Standard	5.000	3.06	6674.311	17542.195	4.756	4.8	-4.7	NO		NO	bb
5	5	190707M2_7	Standard	5.000	3.06	7713.172	19279.166	5.001	5.0	0.2	NO		NO	bb
6	6	190707M2_8	Standard	5.000	3.06	7028.057	17773.336	4.943	5.0	-1.0	NO		NO	bb
7	7	190707M2_9	Standard	5.000	3.02	7128.301	17936.152	4.968	5.0	-0.5	NO		NO	bb
8	8	190707M2_10	Standard	5.000	3.01	6607.889	16228.656	5.090	5.1	1.9	NO		NO	bb
9	9	190707M2_11	Standard	5.000	3.01	7004.441	17434.598	5.022	5.0	0.6	NO		NO	bb
10	10	190707M2_12	Standard	5.000	3.01	5894.519	13694.313	5.380	5.4	7.8	NO		NO	bb

Compound name: 13C4-PFHpA
Response Factor: 0.534603
RRF SD: 0.0199315, Relative SD: 3.72829
Response type: Internal Std (Ref 73), 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	190707M2_3	Standard	12.500	3.68	9138.501	16482.514	6.930	13.0	3.7	NO		NO	bb
2	2	190707M2_4	Standard	12.500	3.68	9854.410	17760.549	6.936	13.0	3.8	NO		NO	bb
3	3	190707M2_5	Standard	12.500	3.68	9381.140	17929.006	6.540	12.2	-2.1	NO		NO	bb
4	4	190707M2_6	Standard	12.500	3.68	9717.326	17542.195	6.924	13.0	3.6	NO		NO	bb
5	5	190707M2_7	Standard	12.500	3.68	10248.323	19279.166	6.645	12.4	-0.6	NO		NO	bb
6	6	190707M2_8	Standard	12.500	3.68	9706.761	17773.336	6.827	12.8	2.2	NO		NO	bb
7	7	190707M2_9	Standard	12.500	3.64	9444.232	17936.152	6.582	12.3	-1.5	NO		NO	bb
8	8	190707M2_10	Standard	12.500	3.63	8842.653	16228.656	6.811	12.7	1.9	NO		NO	bb
9	9	190707M2_11	Standard	12.500	3.63	8621.728	17434.598	6.181	11.6	-7.5	NO		NO	bb
10	10	190707M2_12	Standard	12.500	3.63	7065.005	13694.313	6.449	12.1	-3.5	NO		NO	bb

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Compound name: 13C3-PFHxS
Response Factor: 2.22406
RRF SD: 0.0803912, Relative SD: 3.61461
Response type: Internal Std (Ref 74), 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 190707M2_3	Standard	12.500	3.83	2482.273	1151.372	26.949	12.1	-3.1	NO		NO	bb
2	2 190707M2_4	Standard	12.500	3.83	2523.046	1087.912	28.990	13.0	4.3	NO		NO	bb
3	3 190707M2_5	Standard	12.500	3.83	2417.488	1153.469	26.198	11.8	-5.8	NO		NO	bb
4	4 190707M2_6	Standard	12.500	3.83	2438.051	1067.621	28.545	12.8	2.7	NO		NO	bd
5	5 190707M2_7	Standard	12.500	3.83	2745.702	1195.890	28.699	12.9	3.2	NO		NO	bb
6	6 190707M2_8	Standard	12.500	3.83	2449.135	1095.607	27.943	12.6	0.5	NO		NO	bb
7	7 190707M2_9	Standard	12.500	3.79	2496.044	1126.712	27.692	12.5	-0.4	NO		NO	bb
8	8 190707M2_10	Standard	12.500	3.78	2210.438	1041.554	26.528	11.9	-4.6	NO		NO	bb
9	9 190707M2_11	Standard	12.500	3.78	2255.240	1024.120	27.527	12.4	-1.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	3.78	1771.314	765.147	28.937	13.0	4.1	NO		NO	bb

Compound name: 13C2-6:2 FTS
Response Factor: 0.584631
RRF SD: 0.0352916, Relative SD: 6.03657
Response type: Internal Std (Ref 77), 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 190707M2_3	Standard	12.500	4.14	1494.053	2378.202	7.853	13.4	7.5	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.14	1682.808	2632.716	7.990	13.7	9.3	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.14	1549.299	2649.859	7.308	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.14	1610.396	2716.166	7.411	12.7	1.4	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.14	1787.876	3075.751	7.266	12.4	-0.6	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.14	1637.714	2669.247	7.669	13.1	4.9	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.10	1579.940	2773.566	7.121	12.2	-2.6	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.10	1377.832	2597.382	6.631	11.3	-9.3	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.09	1350.596	2494.936	6.767	11.6	-7.4	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.10	1105.291	1956.110	7.063	12.1	-3.4	NO		NO	bb

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Compound name: 13C5-PFNA
Response Factor: 0.996046
RRF SD: 0.0328715, Relative SD: 3.3002
Response type: Internal Std (Ref 76), 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 190707M2_3	Standard	12.500	4.63	16311.578	15776.283	12.924	13.0	3.8	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.63	17512.373	17116.816	12.789	12.8	2.7	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.63	17010.654	18010.486	11.806	11.9	-5.2	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.63	16633.891	16974.643	12.249	12.3	-1.6	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.63	18588.576	19047.602	12.199	12.2	-2.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.63	17552.000	16785.385	13.071	13.1	5.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.60	16635.418	17305.480	12.016	12.1	-3.5	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.59	15362.772	15391.899	12.476	12.5	0.2	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.59	15166.001	14935.233	12.693	12.7	1.9	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.59	11855.307	12065.306	12.282	12.3	-1.4	NO		NO	bb

Compound name: 13C8-PFOSA
Response Factor: 0.129341
RRF SD: 0.0170845, Relative SD: 13.2089
Response type: Internal Std (Ref 79), 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 190707M2_3	Standard	12.500	4.70	2455.287	19245.984	1.595	12.3	-1.4	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.70	2461.127	21439.588	1.435	11.1	-11.2	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.70	2334.013	21583.674	1.352	10.5	-16.4	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.70	2460.025	20189.105	1.523	11.8	-5.8	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.70	2783.280	23004.336	1.512	11.7	-6.5	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.70	2440.359	21348.879	1.429	11.0	-11.6	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.66	2796.270	21117.664	1.655	12.8	2.4	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.65	2739.780	19255.564	1.779	13.8	10.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.65	2704.294	18034.055	1.874	14.5	15.9	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.65	2296.513	14254.953	2.014	15.6	24.6	NO		NO	bb

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Compound name: 13C2-PFOA
Response Factor: 0.741181
RRF SD: 0.0164781, Relative SD: 2.22322
Response type: Internal Std (Ref 75), 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	190707M2_3	Standard	12.500	4.20	15881.059	20877.695	9.508	12.8	2.6	NO		NO	bb
2	2	190707M2_4	Standard	12.500	4.19	16610.031	22416.795	9.262	12.5	-0.0	NO		NO	bb
3	3	190707M2_5	Standard	12.500	4.19	16408.889	22416.010	9.150	12.3	-1.2	NO		NO	bb
4	4	190707M2_6	Standard	12.500	4.20	16464.014	22885.582	8.993	12.1	-2.9	NO		NO	bb
5	5	190707M2_7	Standard	12.500	4.20	18794.840	24312.830	9.663	13.0	4.3	NO		NO	bb
6	6	190707M2_8	Standard	12.500	4.19	16696.314	22252.789	9.379	12.7	1.2	NO		NO	bb
7	7	190707M2_9	Standard	12.500	4.16	16408.902	22452.582	9.135	12.3	-1.4	NO		NO	bb
8	8	190707M2_10	Standard	12.500	4.15	14616.800	19856.443	9.202	12.4	-0.7	NO		NO	bb
9	9	190707M2_11	Standard	12.500	4.15	14239.479	19646.105	9.060	12.2	-2.2	NO		NO	bb
10	10	190707M2_12	Standard	12.500	4.15	11140.520	14980.566	9.296	12.5	0.3	NO		NO	bb

Compound name: 13C8-PFOS
Response Factor: 1.01074
RRF SD: 0.0535996, Relative SD: 5.30302
Response type: Internal Std (Ref 77), 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	190707M2_3	Standard	12.500	4.71	2634.025	2378.202	13.845	13.7	9.6	NO		NO	bb
2	2	190707M2_4	Standard	12.500	4.71	2639.184	2632.716	12.531	12.4	-0.8	NO		NO	bb
3	3	190707M2_5	Standard	12.500	4.71	2714.801	2649.859	12.806	12.7	1.4	NO		NO	bb
4	4	190707M2_6	Standard	12.500	4.71	2799.909	2716.166	12.885	12.7	2.0	NO		NO	bb
5	5	190707M2_7	Standard	12.500	4.71	3072.105	3075.751	12.485	12.4	-1.2	NO		NO	bb
6	6	190707M2_8	Standard	12.500	4.71	2694.117	2669.247	12.616	12.5	-0.1	NO		NO	bb
7	7	190707M2_9	Standard	12.500	4.68	2631.175	2773.566	11.858	11.7	-6.1	NO		NO	bb
8	8	190707M2_10	Standard	12.500	4.67	2361.315	2597.382	11.364	11.2	-10.1	NO		NO	bb
9	9	190707M2_11	Standard	12.500	4.67	2589.153	2494.936	12.972	12.8	2.7	NO		NO	bb
10	10	190707M2_12	Standard	12.500	4.67	2031.124	1956.110	12.979	12.8	2.7	NO		NO	bb

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Compound name: 13C2-PFDA
Response Factor: 0.793228
RRF SD: 0.0189286, Relative SD: 2.38628
Response type: Internal Std (Ref 78), 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 190707M2_3	Standard	12.500	5.00	14583.376	18036.650	10.107	12.7	1.9	NO		NO	bb
2	2 190707M2_4	Standard	12.500	5.00	15609.120	19756.236	9.876	12.5	-0.4	NO		NO	bb
3	3 190707M2_5	Standard	12.500	5.00	14988.125	18923.361	9.901	12.5	-0.1	NO		NO	bb
4	4 190707M2_6	Standard	12.500	5.00	15163.957	19005.355	9.973	12.6	0.6	NO		NO	bb
5	5 190707M2_7	Standard	12.500	5.00	16579.166	21533.920	9.624	12.1	-2.9	NO		NO	bb
6	6 190707M2_8	Standard	12.500	5.00	15151.726	19682.520	9.623	12.1	-3.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.97	15318.326	19862.121	9.640	12.2	-2.8	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.97	13700.522	17230.754	9.939	12.5	0.2	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.97	14123.966	17371.186	10.163	12.8	2.5	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.97	11726.740	14221.212	10.307	13.0	4.0	NO		NO	bb

Compound name: 13C2-8:2 FTS
Response Factor: 0.574421
RRF SD: 0.0460742, Relative SD: 8.02099
Response type: Internal Std (Ref 77), 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 190707M2_3	Standard	12.500	4.97	1545.376	2378.202	8.123	14.1	13.1	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.97	1640.520	2632.716	7.789	13.6	8.5	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.97	1612.810	2649.859	7.608	13.2	6.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.97	1607.793	2716.166	7.399	12.9	3.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.97	1750.148	3075.751	7.113	12.4	-0.9	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.97	1531.983	2669.247	7.174	12.5	-0.1	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.94	1569.972	2773.566	7.076	12.3	-1.5	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.94	1371.123	2597.382	6.599	11.5	-8.1	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.94	1243.271	2494.936	6.229	10.8	-13.2	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.94	1047.482	1956.110	6.694	11.7	-6.8	NO		NO	bb

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Compound name: d3-N-MeFOSAA
Response Factor: 0.158298
RRF SD: 0.0104053, Relative SD: 6.57324
Response type: Internal Std (Ref 79), 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	190707M2_3	Standard	12.500	5.15	2982.144	19245.984	1.937	12.2	-2.1	NO		NO	bb
2	2	190707M2_4	Standard	12.500	5.15	3236.516	21439.588	1.887	11.9	-4.6	NO		NO	bb
3	3	190707M2_5	Standard	12.500	5.15	3105.870	21583.674	1.799	11.4	-9.1	NO		NO	bb
4	4	190707M2_6	Standard	12.500	5.15	3347.593	20189.105	2.073	13.1	4.7	NO		NO	bb
5	5	190707M2_7	Standard	12.500	5.15	3550.042	23004.336	1.929	12.2	-2.5	NO		NO	bb
6	6	190707M2_8	Standard	12.500	5.15	3308.479	21348.879	1.937	12.2	-2.1	NO		NO	bb
7	7	190707M2_9	Standard	12.500	5.12	3396.058	21117.664	2.010	12.7	1.6	NO		NO	bb
8	8	190707M2_10	Standard	12.500	5.12	2949.322	19255.564	1.915	12.1	-3.2	NO		NO	bb
9	9	190707M2_11	Standard	12.500	5.11	2918.549	18034.055	2.023	12.8	2.2	NO		NO	bb
10	10	190707M2_12	Standard	12.500	5.12	2597.911	14254.953	2.278	14.4	15.1	NO		NO	bb

Compound name: 13C2-PFUdA
Response Factor: 1.07069
RRF SD: 0.0396444, Relative SD: 3.70271
Response type: Internal Std (Ref 79), 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	190707M2_3	Standard	12.500	5.32	20906.992	19245.984	13.579	12.7	1.5	NO		NO	bb
2	2	190707M2_4	Standard	12.500	5.32	22535.773	21439.588	13.139	12.3	-1.8	NO		NO	bb
3	3	190707M2_5	Standard	12.500	5.32	22582.182	21583.674	13.078	12.2	-2.3	NO		NO	bb
4	4	190707M2_6	Standard	12.500	5.32	22501.063	20189.105	13.931	13.0	4.1	NO		NO	bb
5	5	190707M2_7	Standard	12.500	5.32	24515.289	23004.336	13.321	12.4	-0.5	NO		NO	bb
6	6	190707M2_8	Standard	12.500	5.32	21751.781	21348.879	12.736	11.9	-4.8	NO		NO	bb
7	7	190707M2_9	Standard	12.500	5.30	22469.873	21117.664	13.300	12.4	-0.6	NO		NO	bb
8	8	190707M2_10	Standard	12.500	5.30	19667.529	19255.564	12.767	11.9	-4.6	NO		NO	bb
9	9	190707M2_11	Standard	12.500	5.29	19766.180	18034.055	13.701	12.8	2.4	NO		NO	bb
10	10	190707M2_12	Standard	12.500	5.30	16287.978	14254.953	14.283	13.3	6.7	NO		NO	bb

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Compound name: d5-N-EtFOSAA
Response Factor: 0.1751
RRF SD: 0.0117548, Relative SD: 6.71321
Response type: Internal Std (Ref 79), 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	190707M2_3	Standard	12.500	5.30	3493.714	19245.984	2.269	13.0	3.7	NO		NO	bb
2	2	190707M2_4	Standard	12.500	5.30	3800.883	21439.588	2.216	12.7	1.2	NO		NO	bb
3	3	190707M2_5	Standard	12.500	5.30	3761.652	21583.674	2.179	12.4	-0.5	NO		NO	bb
4	4	190707M2_6	Standard	12.500	5.30	4056.834	20189.105	2.512	14.3	14.8	NO		NO	bb
5	5	190707M2_7	Standard	12.500	5.30	3788.870	23004.336	2.059	11.8	-5.9	NO		NO	bb
6	6	190707M2_8	Standard	12.500	5.30	3642.125	21348.879	2.133	12.2	-2.6	NO		NO	bb
7	7	190707M2_9	Standard	12.500	5.28	3442.240	21117.664	2.038	11.6	-6.9	NO		NO	bb
8	8	190707M2_10	Standard	12.500	5.27	3086.180	19255.564	2.003	11.4	-8.5	NO		NO	bb
9	9	190707M2_11	Standard	12.500	5.27	3218.352	18034.055	2.231	12.7	1.9	NO		NO	bb
10	10	190707M2_12	Standard	12.500	5.27	2564.757	14254.953	2.249	12.8	2.8	NO		NO	bb

Compound name: 13C2-PFDoA
Response Factor: 1.15071
RRF SD: 0.0626404, Relative SD: 5.44362
Response type: Internal Std (Ref 78), 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	190707M2_3	Standard	12.500	5.60	20707.248	18036.650	14.351	12.5	-0.2	NO		NO	bb
2	2	190707M2_4	Standard	12.500	5.60	21789.090	19756.236	13.786	12.0	-4.2	NO		NO	bb
3	3	190707M2_5	Standard	12.500	5.60	21434.699	18923.361	14.159	12.3	-1.6	NO		NO	bb
4	4	190707M2_6	Standard	12.500	5.60	21691.166	19005.355	14.266	12.4	-0.8	NO		NO	bb
5	5	190707M2_7	Standard	12.500	5.60	24007.496	21533.920	13.936	12.1	-3.1	NO		NO	bb
6	6	190707M2_8	Standard	12.500	5.60	21192.254	19682.520	13.459	11.7	-6.4	NO		NO	bb
7	7	190707M2_9	Standard	12.500	5.58	22183.021	19862.121	13.961	12.1	-2.9	NO		NO	bb
8	8	190707M2_10	Standard	12.500	5.58	20991.336	17230.754	15.228	13.2	5.9	NO		NO	bb
9	9	190707M2_11	Standard	12.500	5.58	20209.621	17371.186	14.542	12.6	1.1	NO		NO	bb
10	10	190707M2_12	Standard	12.500	5.58	18374.607	14221.212	16.151	14.0	12.3	NO		NO	bb

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Compound name: d3-N-MeFOSA
Response Factor: 0.0349321
RRF SD: 0.00643368, Relative SD: 18.4177
Response type: Internal Std (Ref 79), 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 190707M2_3	Standard	150.000	5.80	7267.182	19245.984	4.720	135.1	-9.9	NO		NO	bb
2	2 190707M2_4	Standard	150.000	5.80	7629.305	21439.588	4.448	127.3	-15.1	NO		NO	bb
3	3 190707M2_5	Standard	150.000	5.80	7708.350	21583.674	4.464	127.8	-14.8	NO		NO	bb
4	4 190707M2_6	Standard	150.000	5.80	7913.323	20189.105	4.900	140.3	-6.5	NO		NO	bb
5	5 190707M2_7	Standard	150.000	5.80	8473.617	23004.336	4.604	131.8	-12.1	NO		NO	bb
6	6 190707M2_8	Standard	150.000	5.80	7952.065	21348.879	4.656	133.3	-11.1	NO		NO	bb
7	7 190707M2_9	Standard	150.000	5.75	8913.381	21117.664	5.276	151.0	0.7	NO		NO	bb
8	8 190707M2_10	Standard	150.000	5.75	8516.819	19255.564	5.529	158.3	5.5	NO		NO	bb
9	9 190707M2_11	Standard	150.000	5.74	9293.079	18034.055	6.441	184.4	22.9	NO		NO	bb
10	10 190707M2_12	Standard	150.000	5.75	8393.114	14254.953	7.360	210.7	40.5	NO		NO	bb

Compound name: 13C2-PFTeDA
Response Factor: 0.708108
RRF SD: 0.0416882, Relative SD: 5.88726
Response type: Internal Std (Ref 79), 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 190707M2_3	Standard	12.500	6.07	13810.754	19245.984	8.970	12.7	1.3	NO		NO	bb
2	2 190707M2_4	Standard	12.500	6.07	14595.131	21439.588	8.509	12.0	-3.9	NO		NO	bb
3	3 190707M2_5	Standard	12.500	6.07	14482.255	21583.674	8.387	11.8	-5.2	NO		NO	bb
4	4 190707M2_6	Standard	12.500	6.07	14469.561	20189.105	8.959	12.7	1.2	NO		NO	bb
5	5 190707M2_7	Standard	12.500	6.07	15748.360	23004.336	8.557	12.1	-3.3	NO		NO	bb
6	6 190707M2_8	Standard	12.500	6.06	14423.534	21348.879	8.445	11.9	-4.6	NO		NO	bb
7	7 190707M2_9	Standard	12.500	6.05	14949.988	21117.664	8.849	12.5	-0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	6.05	12951.332	19255.564	8.408	11.9	-5.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	6.05	13623.525	18034.055	9.443	13.3	6.7	NO		NO	bb
10	10 190707M2_12	Standard	12.500	6.05	11388.107	14254.953	9.986	14.1	12.8	NO		NO	bb

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Compound name: d5-N-ETFOSA
Response Factor: 0.0457798
RRF SD: 0.00414372, Relative SD: 9.05142
Response type: Internal Std (Ref 79), 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 190707M2_3	Standard	150.000	6.18	10519.031	19245.984	6.832	149.2	-0.5	NO		NO	bb
2	2 190707M2_4	Standard	150.000	6.18	10634.513	21439.588	6.200	135.4	-9.7	NO		NO	bb
3	3 190707M2_5	Standard	150.000	6.18	10651.051	21583.674	6.168	134.7	-10.2	NO		NO	bb
4	4 190707M2_6	Standard	150.000	6.18	11054.476	20189.105	6.844	149.5	-0.3	NO		NO	bb
5	5 190707M2_7	Standard	150.000	6.18	11985.535	23004.336	6.513	142.3	-5.2	NO		NO	bb
6	6 190707M2_8	Standard	150.000	6.18	10941.130	21348.879	6.406	139.9	-6.7	NO		NO	bb
7	7 190707M2_9	Standard	150.000	6.16	11518.293	21117.664	6.818	148.9	-0.7	NO		NO	bb
8	8 190707M2_10	Standard	150.000	6.15	11007.196	19255.564	7.145	156.1	4.1	NO		NO	bb
9	9 190707M2_11	Standard	150.000	6.16	11020.989	18034.055	7.639	166.9	11.2	NO		NO	bb
10	10 190707M2_12	Standard	150.000	6.16	9241.188	14254.953	8.103	177.0	18.0	NO		NO	bb

Compound name: 13C2-PFHxDA
Response Factor: 1.00604
RRF SD: 0.102487, Relative SD: 10.1872
Response type: Internal Std (Ref 79), 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 190707M2_3	Standard	5.000	6.41	7694.541	19245.984	4.997	5.0	-0.7	NO		NO	bb
2	2 190707M2_4	Standard	5.000	6.41	8360.317	21439.588	4.874	4.8	-3.1	NO		NO	bb
3	3 190707M2_5	Standard	5.000	6.41	7879.394	21583.674	4.563	4.5	-9.3	NO		NO	bb
4	4 190707M2_6	Standard	5.000	6.41	7838.119	20189.105	4.853	4.8	-3.5	NO		NO	bb
5	5 190707M2_7	Standard	5.000	6.41	8764.577	23004.336	4.762	4.7	-5.3	NO		NO	bb
6	6 190707M2_8	Standard	5.000	6.41	7987.322	21348.879	4.677	4.6	-7.0	NO		NO	bb
7	7 190707M2_9	Standard	5.000	6.40	8013.304	21117.664	4.743	4.7	-5.7	NO		NO	bb
8	8 190707M2_10	Standard	5.000	6.40	7672.817	19255.564	4.981	5.0	-1.0	NO		NO	bb
9	9 190707M2_11	Standard	5.000	6.40	8087.290	18034.055	5.606	5.6	11.4	NO		NO	bb
10	10 190707M2_12	Standard	5.000	6.40	7121.904	14254.953	6.245	6.2	24.2	NO		NO	bb

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Compound name: d7-N-MeFOSE
Response Factor: 0.0275852
RRF SD: 0.00472276, Relative SD: 17.1206
Response type: Internal Std (Ref 79), 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	190707M2_3	Standard	150.000	6.30	5878.465	19245.984	3.818	138.4	-7.7	NO		NO	bb
2	2	190707M2_4	Standard	150.000	6.30	6341.028	21439.588	3.697	134.0	-10.7	NO		NO	bb
3	3	190707M2_5	Standard	150.000	6.30	6144.030	21583.674	3.558	129.0	-14.0	NO		NO	bb
4	4	190707M2_6	Standard	150.000	6.30	6088.207	20189.105	3.769	136.6	-8.9	NO		NO	bb
5	5	190707M2_7	Standard	150.000	6.30	6840.625	23004.336	3.717	134.7	-10.2	NO		NO	bb
6	6	190707M2_8	Standard	150.000	6.30	6428.805	21348.879	3.764	136.5	-9.0	NO		NO	bb
7	7	190707M2_9	Standard	150.000	6.30	7525.076	21117.664	4.454	161.5	7.6	NO		NO	bb
8	8	190707M2_10	Standard	150.000	6.30	7335.242	19255.564	4.762	172.6	15.1	NO		NO	bb
9	9	190707M2_11	Standard	150.000	6.30	8223.577	18034.055	5.700	206.6	37.8	NO		NO	bb
10	10	190707M2_12	Standard	150.000	6.30	7594.374	14254.953	6.659	241.4	60.9	NO		NO	bbX

Compound name: d9-N-EtFOSE
Response Factor: 0.028561
RRF SD: 0.00551542, Relative SD: 19.311
Response type: Internal Std (Ref 79), 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	190707M2_3	Standard	150.000	6.45	5714.919	19245.984	3.712	130.0	-13.4	NO		NO	bb
2	2	190707M2_4	Standard	150.000	6.45	6326.004	21439.588	3.688	129.1	-13.9	NO		NO	bb
3	3	190707M2_5	Standard	150.000	6.45	6271.799	21583.674	3.632	127.2	-15.2	NO		NO	bb
4	4	190707M2_6	Standard	150.000	6.45	6170.102	20189.105	3.820	133.8	-10.8	NO		NO	bb
5	5	190707M2_7	Standard	150.000	6.45	7000.806	23004.336	3.804	133.2	-11.2	NO		NO	bb
6	6	190707M2_8	Standard	150.000	6.45	6257.550	21348.879	3.664	128.3	-14.5	NO		NO	bb
7	7	190707M2_9	Standard	150.000	6.45	7488.002	21117.664	4.432	155.2	3.5	NO		NO	bb
8	8	190707M2_10	Standard	150.000	6.45	7282.209	19255.564	4.727	165.5	10.3	NO		NO	bb
9	9	190707M2_11	Standard	150.000	6.45	7869.146	18034.055	5.454	191.0	27.3	NO		NO	bb
10	10	190707M2_12	Standard	150.000	6.45	6736.482	14254.953	5.907	206.8	37.9	NO		NO	bb

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Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 72), 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 190707M2_3	Standard	12.500	1.32	5017.686	5017.686	12.500	12.5	0.0	NO		NO	bb
2	2 190707M2_4	Standard	12.500	1.32	5374.751	5374.751	12.500	12.5	0.0	NO		NO	bb
3	3 190707M2_5	Standard	12.500	1.31	5244.281	5244.281	12.500	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	1.32	5271.945	5271.945	12.500	12.5	0.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	1.31	5853.527	5853.527	12.500	12.5	0.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	1.31	5410.553	5410.553	12.500	12.5	0.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	1.27	5655.671	5655.671	12.500	12.5	0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	1.24	5306.033	5306.033	12.500	12.5	0.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	1.23	5569.532	5569.532	12.500	12.5	0.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	1.23	5092.646	5092.646	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 73), 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 190707M2_3	Standard	12.500	3.06	16482.514	16482.514	12.500	12.5	0.0	NO		NO	bb
2	2 190707M2_4	Standard	12.500	3.06	17760.549	17760.549	12.500	12.5	0.0	NO		NO	bb
3	3 190707M2_5	Standard	12.500	3.06	17929.006	17929.006	12.500	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	3.06	17542.195	17542.195	12.500	12.5	0.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	3.06	19279.166	19279.166	12.500	12.5	0.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	3.06	17773.336	17773.336	12.500	12.5	0.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	3.02	17936.152	17936.152	12.500	12.5	0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	3.01	16228.656	16228.656	12.500	12.5	0.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	3.01	17434.598	17434.598	12.500	12.5	0.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	3.01	13694.313	13694.313	12.500	12.5	0.0	NO		NO	bb

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Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 74), 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 190707M2_3	Standard	12.500	3.83	1151.372	1151.372	12.500	12.5	0.0	NO		NO	bb
2	2 190707M2_4	Standard	12.500	3.83	1087.912	1087.912	12.500	12.5	0.0	NO		NO	bb
3	3 190707M2_5	Standard	12.500	3.83	1153.469	1153.469	12.500	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	3.83	1067.621	1067.621	12.500	12.5	0.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	3.83	1195.890	1195.890	12.500	12.5	0.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	3.83	1095.607	1095.607	12.500	12.5	0.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	3.79	1126.712	1126.712	12.500	12.5	0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	3.78	1041.554	1041.554	12.500	12.5	0.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	3.78	1024.120	1024.120	12.500	12.5	0.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	3.78	765.147	765.147	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 75), 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 190707M2_3	Standard	12.500	4.19	20877.695	20877.695	12.500	12.5	0.0	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.19	22416.795	22416.795	12.500	12.5	0.0	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.19	22416.010	22416.010	12.500	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.19	22885.582	22885.582	12.500	12.5	0.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.20	24312.830	24312.830	12.500	12.5	0.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.19	22252.789	22252.789	12.500	12.5	0.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.16	22452.582	22452.582	12.500	12.5	0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.15	19856.443	19856.443	12.500	12.5	0.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.15	19646.105	19646.105	12.500	12.5	0.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.15	14980.566	14980.566	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 76), 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 190707M2_3	Standard	12.500	4.63	15776.283	15776.283	12.500	12.5	0.0	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.63	17116.816	17116.816	12.500	12.5	0.0	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.63	18010.486	18010.486	12.500	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.63	16974.643	16974.643	12.500	12.5	0.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.63	19047.602	19047.602	12.500	12.5	0.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.63	16785.385	16785.385	12.500	12.5	0.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.60	17305.480	17305.480	12.500	12.5	0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.59	15391.899	15391.899	12.500	12.5	0.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.59	14935.233	14935.233	12.500	12.5	0.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.59	12065.306	12065.306	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 77), 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 190707M2_3	Standard	12.500	4.71	2378.202	2378.202	12.500	12.5	0.0	NO		NO	bb
2	2 190707M2_4	Standard	12.500	4.71	2632.716	2632.716	12.500	12.5	0.0	NO		NO	bb
3	3 190707M2_5	Standard	12.500	4.71	2649.859	2649.859	12.500	12.5	0.0	NO		NO	bb
4	4 190707M2_6	Standard	12.500	4.71	2716.166	2716.166	12.500	12.5	0.0	NO		NO	bb
5	5 190707M2_7	Standard	12.500	4.71	3075.751	3075.751	12.500	12.5	0.0	NO		NO	bb
6	6 190707M2_8	Standard	12.500	4.71	2669.247	2669.247	12.500	12.5	0.0	NO		NO	bb
7	7 190707M2_9	Standard	12.500	4.68	2773.566	2773.566	12.500	12.5	0.0	NO		NO	bb
8	8 190707M2_10	Standard	12.500	4.67	2597.382	2597.382	12.500	12.5	0.0	NO		NO	bb
9	9 190707M2_11	Standard	12.500	4.67	2494.936	2494.936	12.500	12.5	0.0	NO		NO	bb
10	10 190707M2_12	Standard	12.500	4.67	1956.110	1956.110	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 78), 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	190707M2_3	Standard	12.500	5.00	18036.650	18036.650	12.500	12.5	0.0	NO		NO	bb
2	2	190707M2_4	Standard	12.500	5.00	19756.236	19756.236	12.500	12.5	0.0	NO		NO	bb
3	3	190707M2_5	Standard	12.500	5.00	18923.361	18923.361	12.500	12.5	0.0	NO		NO	bb
4	4	190707M2_6	Standard	12.500	5.00	19005.355	19005.355	12.500	12.5	0.0	NO		NO	bb
5	5	190707M2_7	Standard	12.500	5.00	21533.920	21533.920	12.500	12.5	0.0	NO		NO	bb
6	6	190707M2_8	Standard	12.500	5.00	19682.520	19682.520	12.500	12.5	0.0	NO		NO	bb
7	7	190707M2_9	Standard	12.500	4.97	19862.121	19862.121	12.500	12.5	0.0	NO		NO	bb
8	8	190707M2_10	Standard	12.500	4.97	17230.754	17230.754	12.500	12.5	0.0	NO		NO	bb
9	9	190707M2_11	Standard	12.500	4.96	17371.186	17371.186	12.500	12.5	0.0	NO		NO	bb
10	10	190707M2_12	Standard	12.500	4.96	14221.212	14221.212	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 79), 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	190707M2_3	Standard	12.500	5.32	19245.984	19245.984	12.500	12.5	0.0	NO		NO	bb
2	2	190707M2_4	Standard	12.500	5.32	21439.588	21439.588	12.500	12.5	0.0	NO		NO	bb
3	3	190707M2_5	Standard	12.500	5.32	21583.674	21583.674	12.500	12.5	0.0	NO		NO	bb
4	4	190707M2_6	Standard	12.500	5.32	20189.105	20189.105	12.500	12.5	0.0	NO		NO	bb
5	5	190707M2_7	Standard	12.500	5.32	23004.336	23004.336	12.500	12.5	0.0	NO		NO	bb
6	6	190707M2_8	Standard	12.500	5.32	21348.879	21348.879	12.500	12.5	0.0	NO		NO	bb
7	7	190707M2_9	Standard	12.500	5.30	21117.664	21117.664	12.500	12.5	0.0	NO		NO	bb
8	8	190707M2_10	Standard	12.500	5.30	19255.564	19255.564	12.500	12.5	0.0	NO		NO	bb
9	9	190707M2_11	Standard	12.500	5.29	18034.055	18034.055	12.500	12.5	0.0	NO		NO	bb
10	10	190707M2_12	Standard	12.500	5.30	14254.953	14254.953	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, July 08, 2019 08:25:36 Pacific Daylight Time
Printed: Monday, July 08, 2019 08:26:05 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 08:13:24

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	190707M2_2	IPA	07-Jul-19	17:22:17
2	2	190707M2_3	ST190707M2-1 PFC CS-2 19F2412	07-Jul-19	17:32:53
3	3	190707M2_4	ST190707M2-2 PFC CS-1 19F2413	07-Jul-19	17:43:25
4	4	190707M2_5	ST190707M2-3 PFC CS0 19F2414	07-Jul-19	17:54:04
5	5	190707M2_6	ST190707M2-4 PFC CS1 19F2415	07-Jul-19	18:04:37
6	6	190707M2_7	ST190707M2-5 PFC CS2 19F2416	07-Jul-19	18:15:16
7	7	190707M2_8	ST190707M2-6 PFC CS3 19F2417	07-Jul-19	18:25:53
8	8	190707M2_9	ST190707M2-7 PFC CS4 19F2418	07-Jul-19	18:36:27
9	9	190707M2_10	ST190707M2-8 PFC CS5 19F2419	07-Jul-19	18:47:06
10	10	190707M2_11	ST190707M2-9 PFC CS6 19F2420	07-Jul-19	18:57:38
11	11	190707M2_12	ST190707M2-10 PFC CS7 19F2421	07-Jul-19	19:08:17
12	12	190707M2_13	IB	07-Jul-19	19:18:55
13	13	190707M2_14	ICV190707M2-1 PFC ICV 19F2422	07-Jul-19	19:29:28
14	14	190707M2_15	IPA	07-Jul-19	19:40:07

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:18:57 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.27	1.27			
2	PFPrS	1.63	1.63	2.442	2.442	NO
3	3:3 FTCA	2.10	2.09	1.981	1.981	NO
4	PFPeA	2.24	2.24			
5	PFBS	2.53	2.53	2.785	2.785	NO
6	4:2 FTS	2.94	2.94	1.689	1.689	NO
7	PFHxA	3.02	3.03	15.067	15.067	NO
8	PFPeS	3.23	3.23	1.643	1.643	NO
9	HFPO-DA	3.24	3.23	2.578	2.578	NO
10	5:3 FTCA	3.56	3.57	1.588	1.588	NO
11	PFHpA	3.64	3.64	11.335	11.335	NO
12	ADONA	3.75	3.75	3.607	3.607	NO
13	L-PFHxS	3.79	3.79	1.845	1.845	NO
14	6:2 FTS	4.10	4.10	2.139	2.139	NO
15	L-PFOA	4.16	4.16	3.497	3.497	NO
16	PFecHS	4.18	4.18	0.885	0.885	NO
17	PFHpS	4.27	4.27	1.982	1.982	NO
18	7:3 FTCA	4.59	4.58	1.870	1.870	NO
19	PFNA	4.60	4.60	4.387	4.387	NO
20	PFOSA	4.66	4.66	28.152	28.152	NO
21	L-PFOS	4.68	4.68	1.981	1.981	NO
22	9Cl-PF30NS	4.90	4.90	17.460	17.460	NO
23	PFDA	4.97	4.97	5.721	5.721	NO
24	8:2 FTS	4.94	4.94	1.053	1.053	NO
25	PFNS	5.04	5.04	1.707	1.707	NO
26	L-MeFOSAA	5.12	5.12	2.526	2.526	NO

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:19:25 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.28	5.28	1.436	1.436	NO
2	PFUdA	5.30	5.30	10.192	10.192	NO
3	PFDS	5.34	5.34	1.815	1.815	NO
4	11Cl-PF30UdS	5.51	5.51	5.220	5.220	NO
5	10:2 FTS	5.57	5.57	1.550	1.550	NO
6	PFDoA	5.58	5.58	8.193	8.193	NO
7	N-MeFOSA	5.73	5.73	1.530	1.530	NO
8	PFTrDA	5.83	5.83	23.399	23.399	NO
9	PFDoS	5.86	5.86	1.872	1.872	NO
10	PFTeDA	6.05	6.05	14.486	14.486	NO
11	N-EtFOSA	6.14	6.14	1.637	1.637	NO
12	PFHxDA	6.40	6.40	33.680	33.680	NO
13	PFODA	6.64	6.64			
14	N-MeFOSE	6.31	6.31			
15	N-EtFOSE	6.46	6.46			

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:17:12 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190707M2_3, Date: 07-Jul-2019, Time: 17:32:53, ID: ST190707M2-1 PFC CS-2 19F2412, Description: PFC CS-2 19F2412

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9997	NO	
2	2	PFPrS	49	0.9978	NO	
3	3	3:3 FTCA	48	0.9993	NO	
4	4	PFPeA	48	0.9971	NO	
5	5	PFBS	49	0.9993	NO	
6	6	4:2 FTS	51	0.9995	NO	
7	7	PFHxA	52	0.9993	NO	
8	8	PFPeS	49	0.9982	NO	
9	9	HFPO-DA	50	0.9980	NO	
10	10	5:3 FTCA	53	0.9989	NO	
11	11	PFHpA	53	0.9987	NO	
12	12	ADONA	53	0.9981	NO	
13	13	L-PFHxS	54	0.9995	NO	
14	15	6:2 FTS	55	0.9997	NO	
15	16	L-PFOA	58	0.9996	NO	
16	18	PFecHS	58	0.9999	NO	
17	19	PFHpS	59	0.9981	NO	
18	20	7:3 FTCA	56	0.9981	NO	
19	21	PFNA	56	0.9964	NO	
20	22	PFOSA	57	0.9993	NO	
21	23	L-PFOS	59	0.9966	NO	
22	25	9Cl-PF30NS	59	0.9988	NO	
23	26	PFDA	60	0.9998	NO	
24	27	8:2 FTS	61	0.9989	NO	
25	28	PFNS	59	0.9988	NO	
26	29	L-MeFOSAA	62	0.9998	NO	

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:17:28 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Name: 190707M2_3, Date: 07-Jul-2019, Time: 17:32:53, ID: ST190707M2-1 PFC CS-2 19F2412, Description: PFC CS-2 19F2412

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	64	0.9988	NO	
2	33	PFUdA	63	0.9998	NO	
3	34	PFDS	61	0.9997	NO	
4	35	11Cl-PF30UdS	65	0.9994	NO	
5	36	10:2 FTS	61	0.9996	NO	
6	37	PFDoA	65	0.9999	NO	
7	38	N-MeFOSA	66	0.9995	NO	
8	39	PFTrDA	65	0.9999	NO	
9	40	PFDoS	67	0.9991	NO	
10	41	PFTeDA	67	0.9996	NO	
11	42	N-EtFOSA	68	0.9999	NO	
12	43	PFHxDA	69	0.9988	NO	
13	44	PFODA	69	0.9983	NO	
14	45	N-MeFOSE	70	0.9996	NO	
15	46	N-EtFOSE	71	0.9955	NO	
16	47	13C3-PFBA	72		NO	1.670
17	48	13C3-PFPeA	73		NO	2.962
18	49	13C3-PFBS	74		NO	5.065
19	50	13C3-HFPO-DA	73		NO	11.604
20	51	13C2-4:2 FTS	74		NO	9.092
21	52	13C2-PFHxA	73		NO	3.411
22	53	13C4-PFHpA	73		NO	3.728
23	54	13C3-PFHxS	74		NO	3.615
24	55	13C2-6:2 FTS	77		NO	6.037
25	56	13C5-PFNA	76		NO	3.300
26	57	13C8-PFOSA	79		NO	13.209
27	58	13C2-PFOA	75		NO	2.223
28	59	13C8-PFOS	77		NO	5.303
29	60	13C2-PFDA	78		NO	2.386
30	61	13C2-8:2 FTS	77		NO	8.021
31	62	d3-N-MeFOSAA	79		NO	6.573
32	63	13C2-PFUdA	79		NO	3.703

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:17:28 Pacific Daylight Time

Name: 190707M2_3, Date: 07-Jul-2019, Time: 17:32:53, ID: ST190707M2-1 PFC CS-2 19F2412, Description: PFC CS-2 19F2412

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	d5-N-EtFOSAA	79		NO	6.713
34	65	13C2-PFDoA	78		NO	5.444
35	66	d3-N-MeFOSA	79		NO	18.418
36	67	13C2-PFTeDA	79		NO	5.887
37	68	d5-N-ETFOSA	79		NO	9.051
38	69	13C2-PFHxDA	79		NO	10.187
39	70	d7-N-MeFOSE	79		NO	17.121
40	71	d9-N-EtFOSE	79		NO	19.311
41	72	13C4-PFBA	72		NO	0.000
42	73	13C5-PFHxA	73		NO	0.000
43	74	18O2-PFHxS	74		NO	0.000
44	75	13C8-PFOA	75		NO	0.000
45	76	13C9-PFNA	76		NO	0.000
46	77	13C4-PFOS	77		NO	0.000
47	78	13C6-PFDA	78		NO	0.000
48	79	13C7-PFUdA	79		NO	0.000

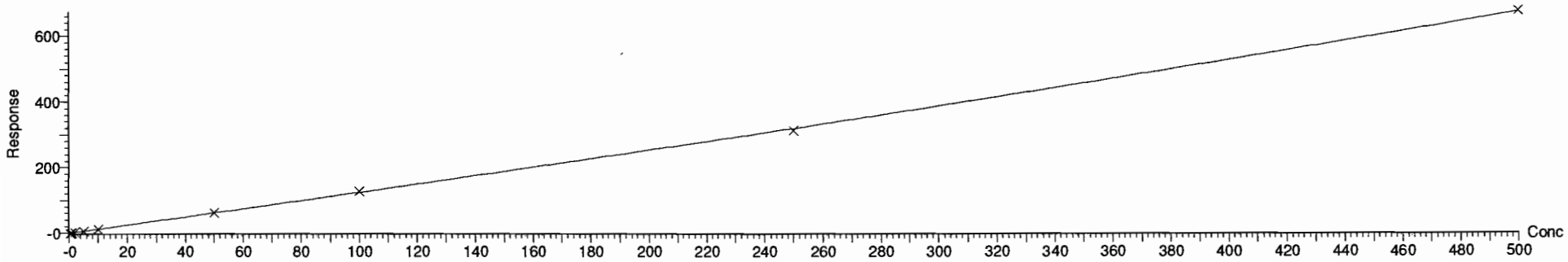
Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

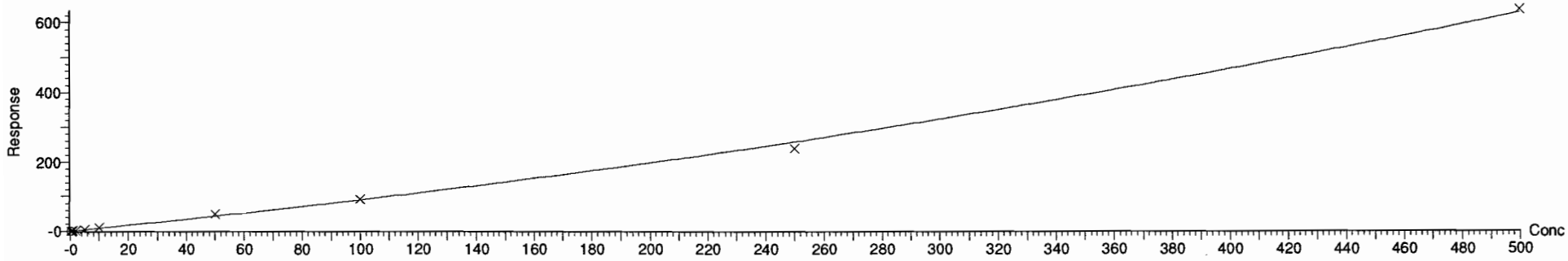
Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:20:48 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Compound name: PFBA
Coefficient of Determination: R^2 = 0.999713
Calibration curve: 0.000263094 * x^2 + 1.21169 * x + -0.0383318
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



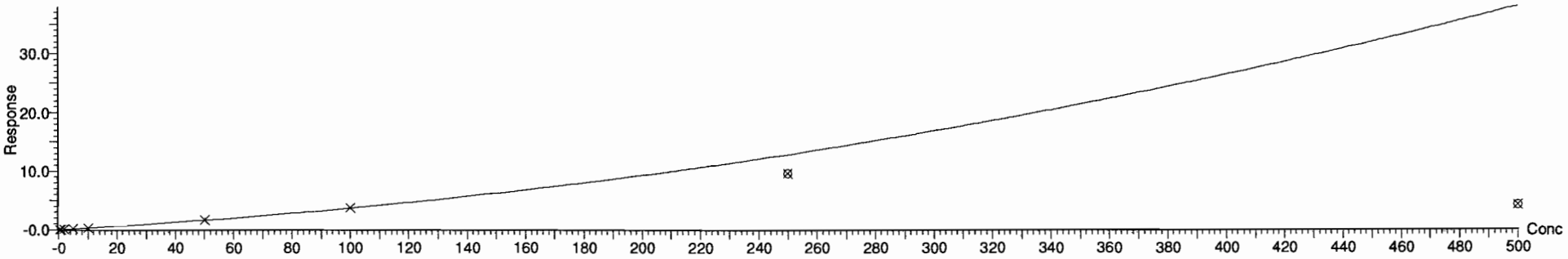
Compound name: PFPrS
Coefficient of Determination: R^2 = 0.997827
Calibration curve: 0.00088973 * x^2 + 0.807783 * x + 0.133982
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



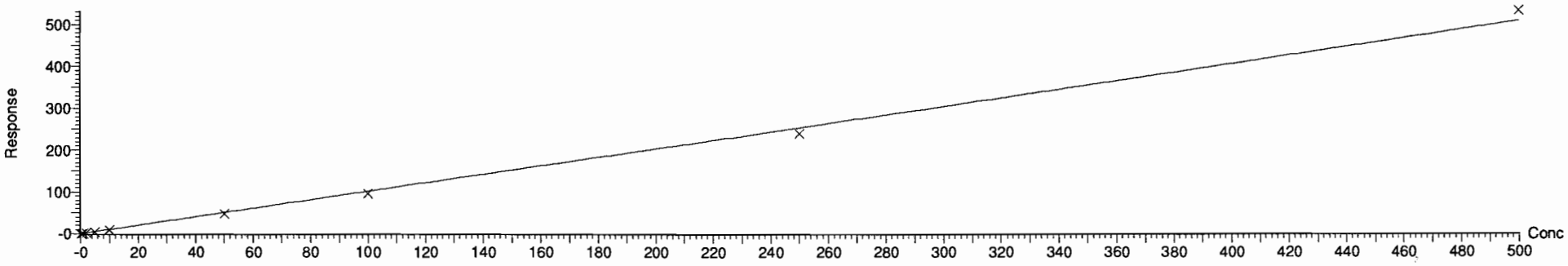
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:20:48 Pacific Daylight Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999342
Calibration curve: 9.86472e-005 * x^2 + 0.0264982 * x + -0.00300185
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



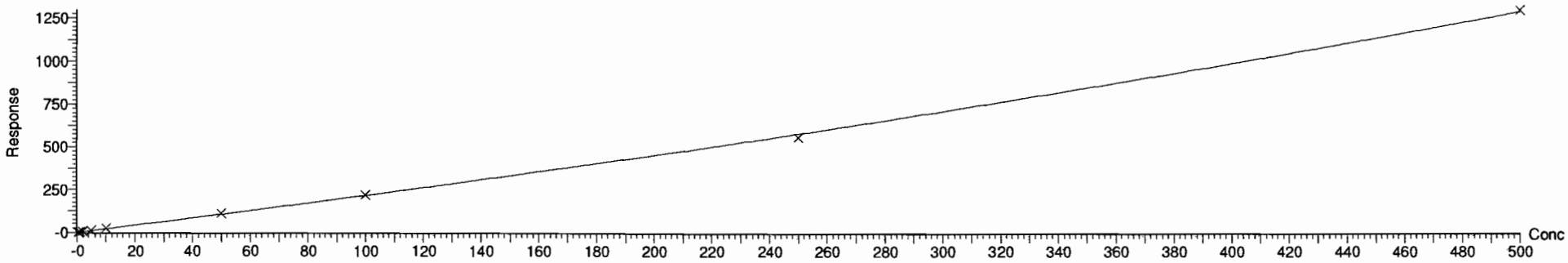
Compound name: PFPeA
Correlation coefficient: r = 0.998566, r^2 = 0.997133
Calibration curve: 1.01384 * x + -0.0767196
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



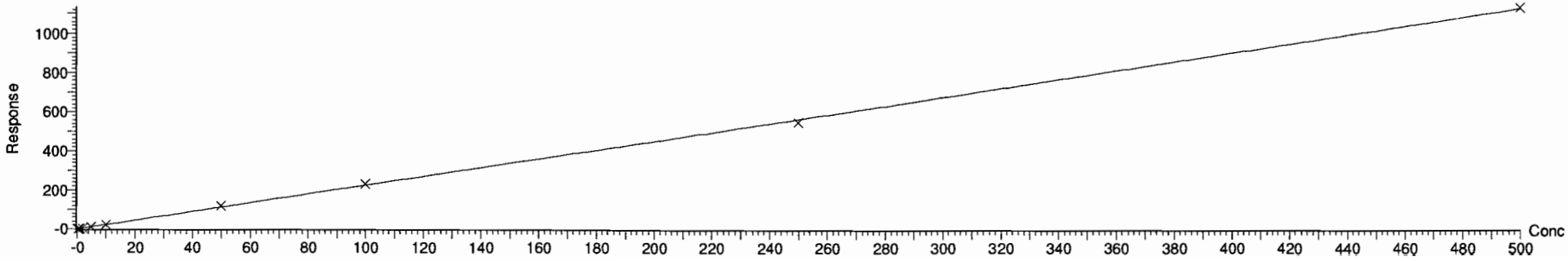
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Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:20:48 Pacific Daylight Time

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999306
Calibration curve: 0.00103198 * x^2 + 2.05991 * x + 0.181678
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



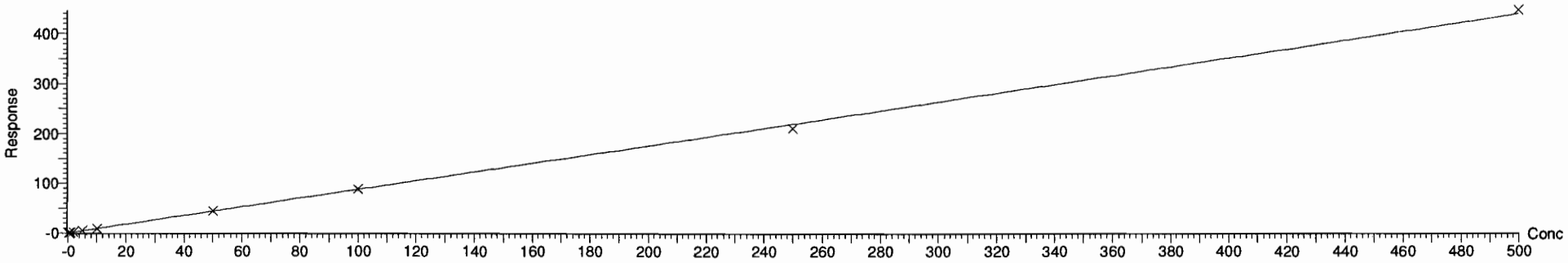
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999524
Calibration curve: 7.1759e-006 * x^2 + 2.2541 * x + -0.0528447
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



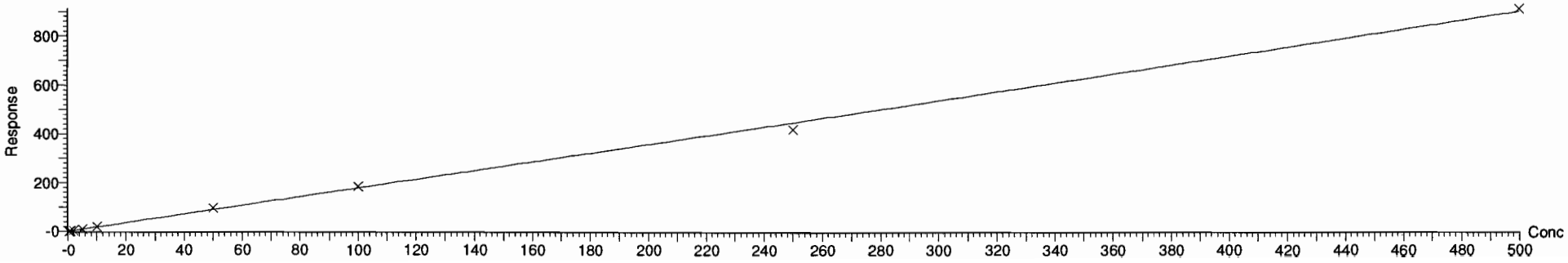
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Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:20:48 Pacific Daylight Time

Compound name: PFHxA
Correlation coefficient: r = 0.999647, r^2 = 0.999295
Calibration curve: 0.876757 * x + 0.0197972
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



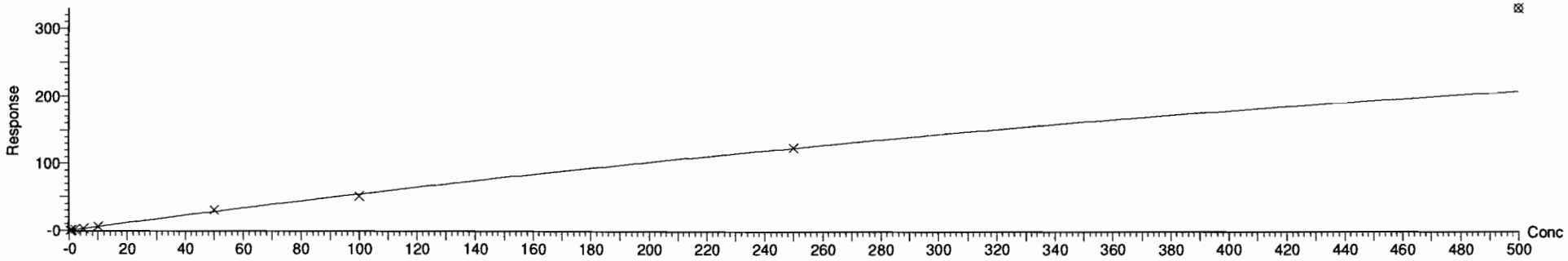
Compound name: PFPeS
Coefficient of Determination: R^2 = 0.998193
Calibration curve: 5.23944e-005 * x^2 + 1.77402 * x + 0.0702337
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



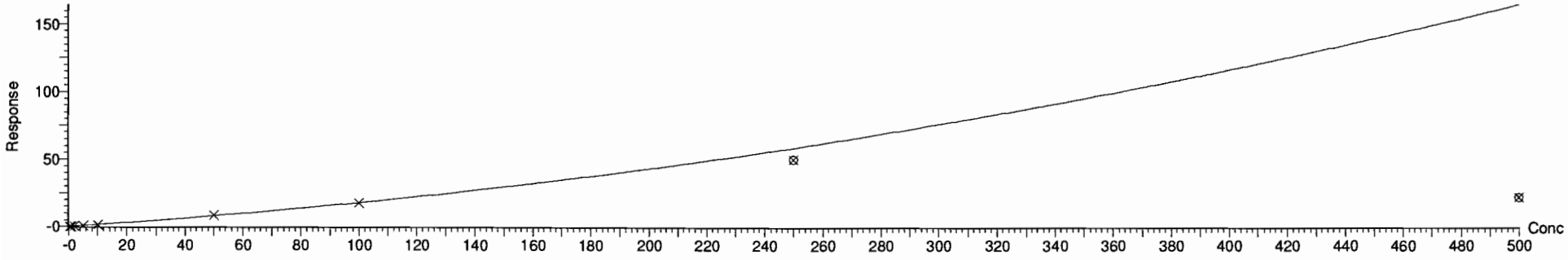
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:20:48 Pacific Daylight Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998009
Calibration curve: -0.000326525 * x^2 + 0.577526 * x + -0.0499051
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



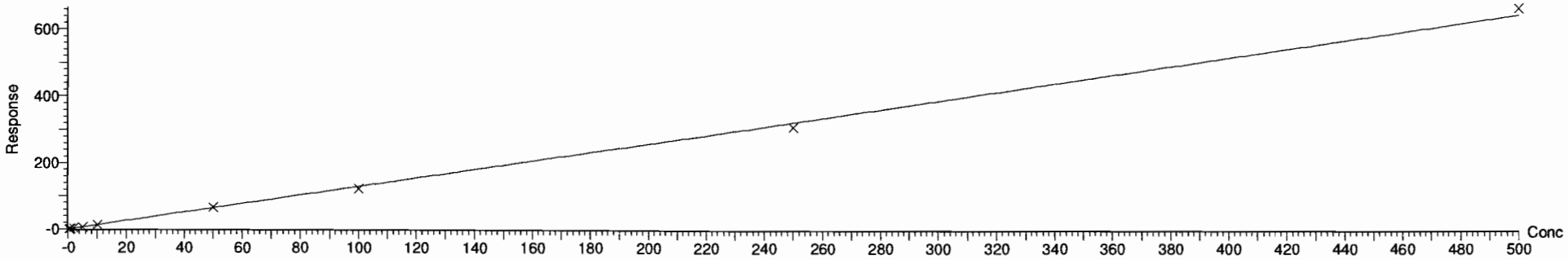
Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.998913
Calibration curve: 0.000375683 * x^2 + 0.141095 * x + -0.0243565
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



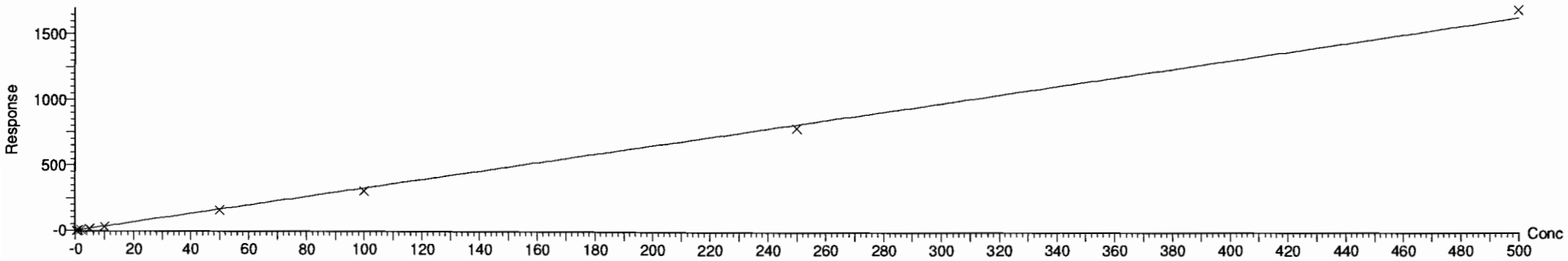
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Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:20:48 Pacific Daylight Time

Compound name: PFHpA
Correlation coefficient: r = 0.999352, r^2 = 0.998704
Calibration curve: 1.29227 * x + -0.0560064
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



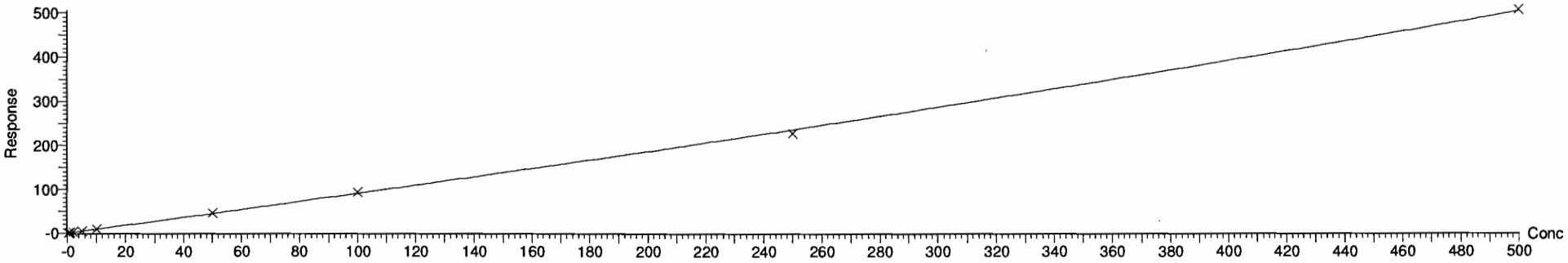
Compound name: ADONA
Correlation coefficient: r = 0.999048, r^2 = 0.998096
Calibration curve: 3.26873 * x + -0.331771
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



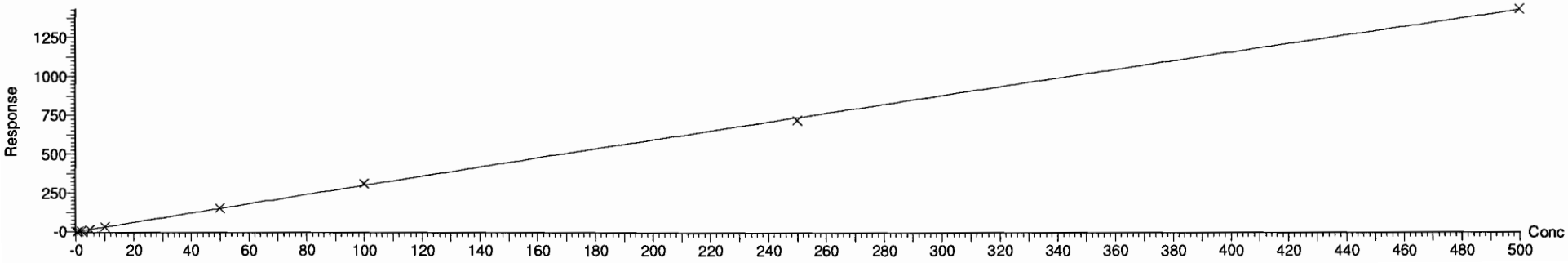
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999461
Calibration curve: 0.000243936 * x^2 + 0.882442 * x + -0.0460332
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



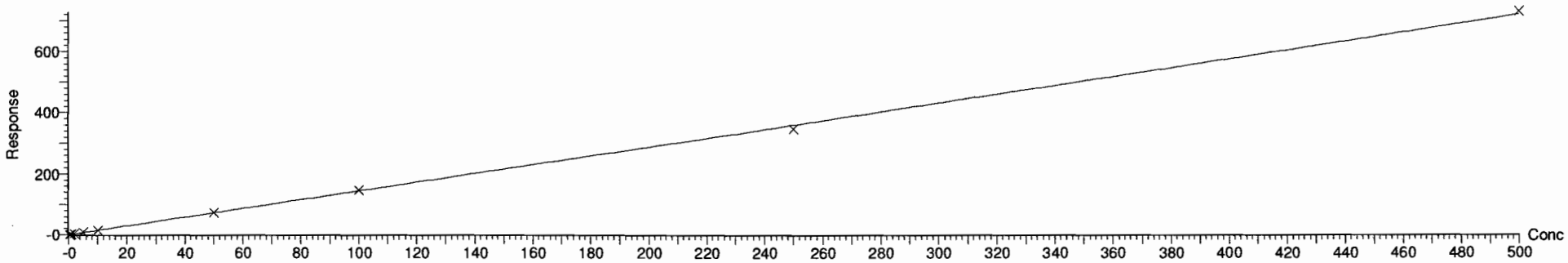
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999654
Calibration curve: -0.000390457 * x^2 + 3.04721 * x + -0.0695802
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



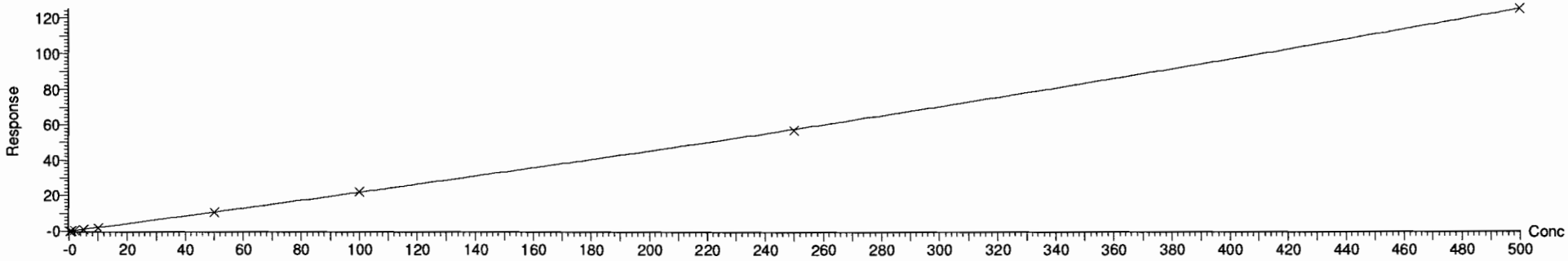
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: L-PFOA
Correlation coefficient: r = 0.999783, r^2 = 0.999567
Calibration curve: 1.437 * x + 0.0249848
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



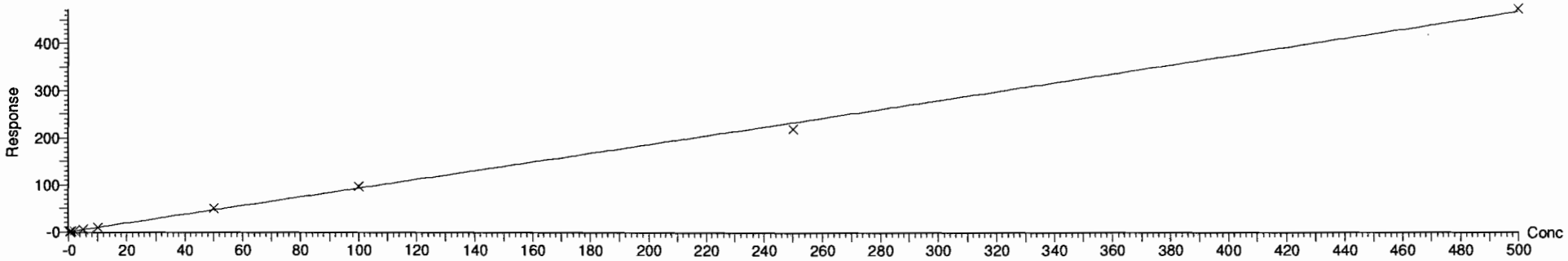
Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999912
Calibration curve: 7.83445e-005 * x^2 + 0.211024 * x + -0.032791
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



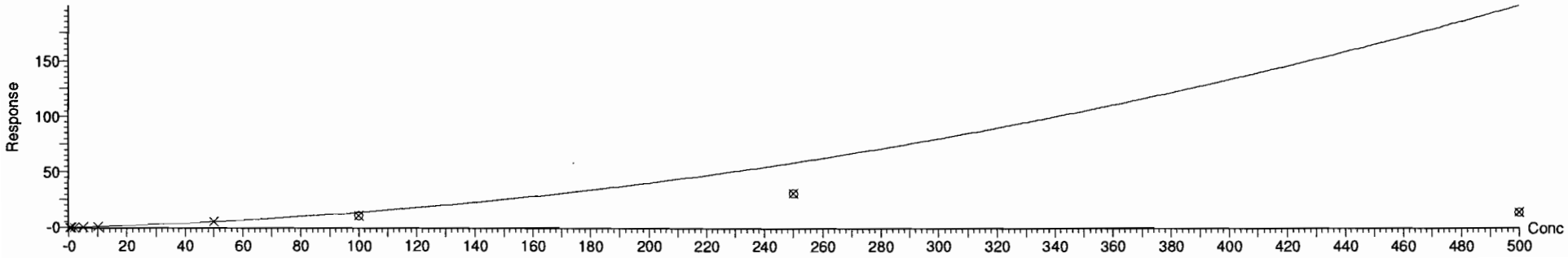
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: PFHpS
Correlation coefficient: r = 0.999063, r^2 = 0.998127
Calibration curve: 0.93206 * x + -0.08299
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



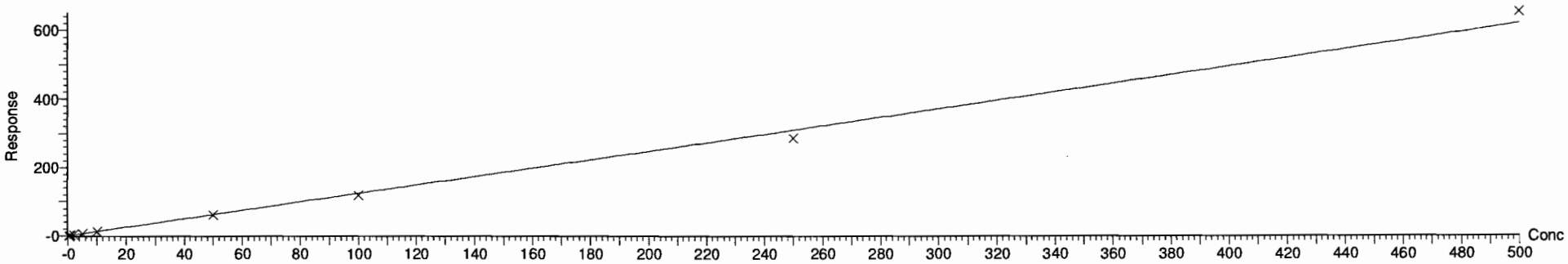
Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.998052
Calibration curve: 0.000657237 * x^2 + 0.0699837 * x + -0.000532529
Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



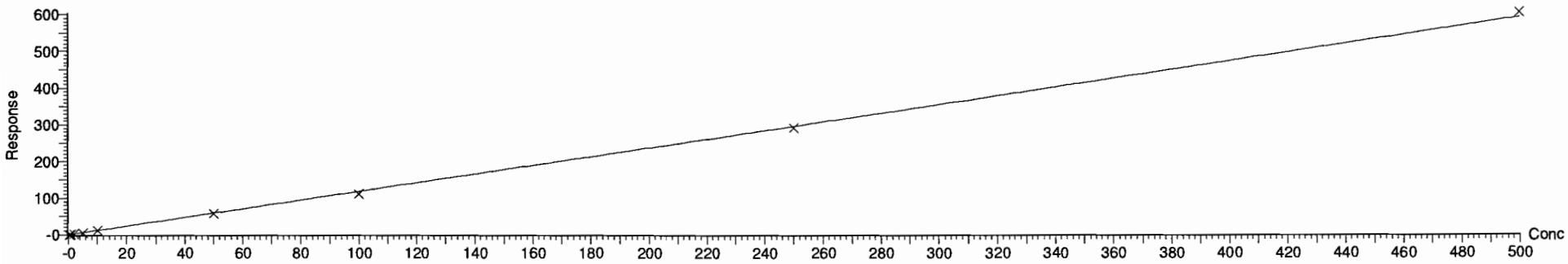
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
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Compound name: PFNA
Correlation coefficient: r = 0.998187, r^2 = 0.996377
Calibration curve: 1.23544 * x + -0.100732
Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



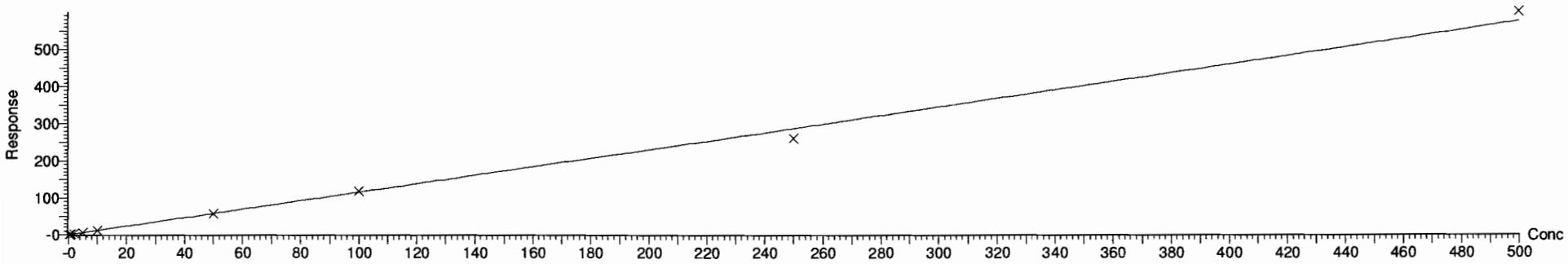
Compound name: PFOSA
Correlation coefficient: r = 0.999646, r^2 = 0.999292
Calibration curve: 1.18267 * x + -0.05342
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



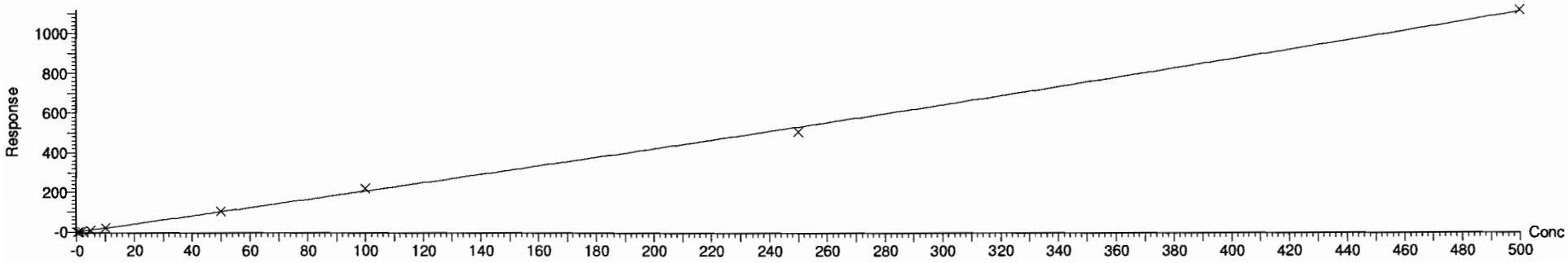
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: L-PFOS
Correlation coefficient: r = 0.998281, r^2 = 0.996565
Calibration curve: 1.14901 * x + -0.104113
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



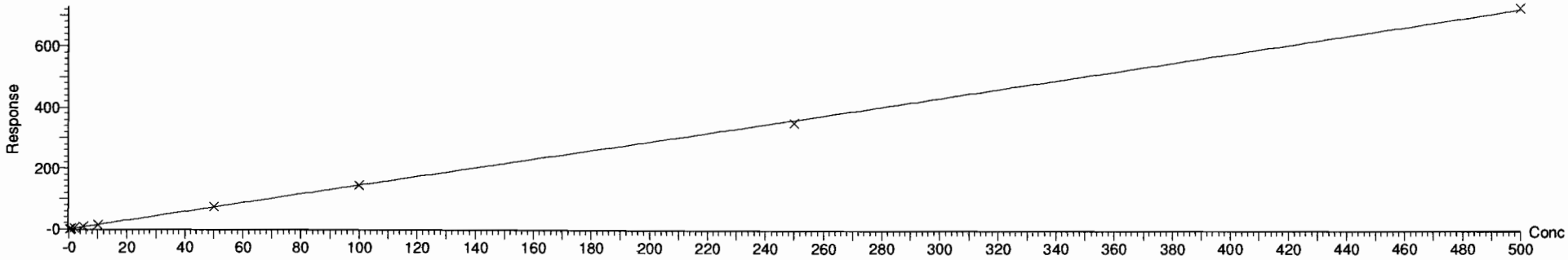
Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.998846
Calibration curve: 0.000366653 * x^2 + 2.03424 * x + -0.17287
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



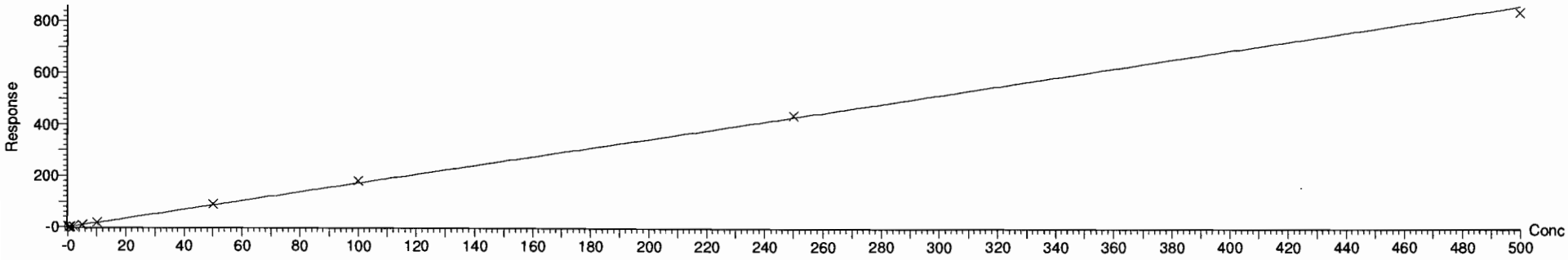
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: PFDA
Correlation coefficient: r = 0.999894, r^2 = 0.999788
Calibration curve: 1.4454 * x + 0.0241357
Response type: Internal Std (Ref 60), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



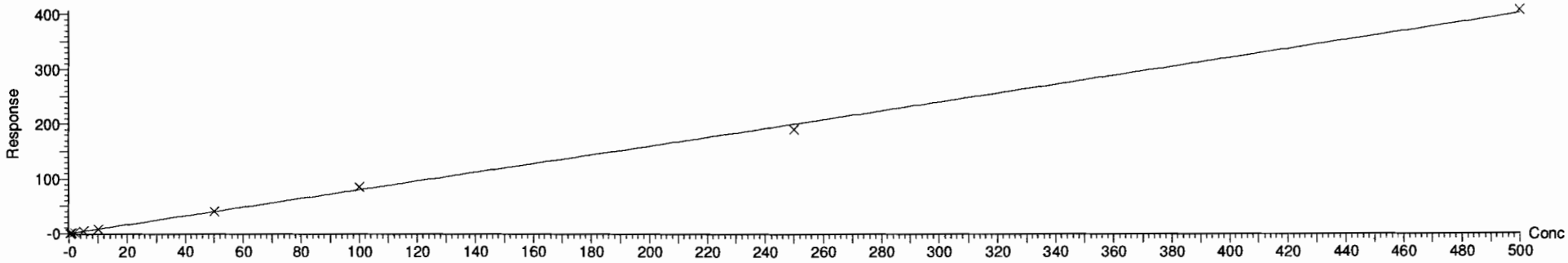
Compound name: 8:2 FTS
Correlation coefficient: r = 0.999433, r^2 = 0.998867
Calibration curve: 1.719 * x + 0.251669
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



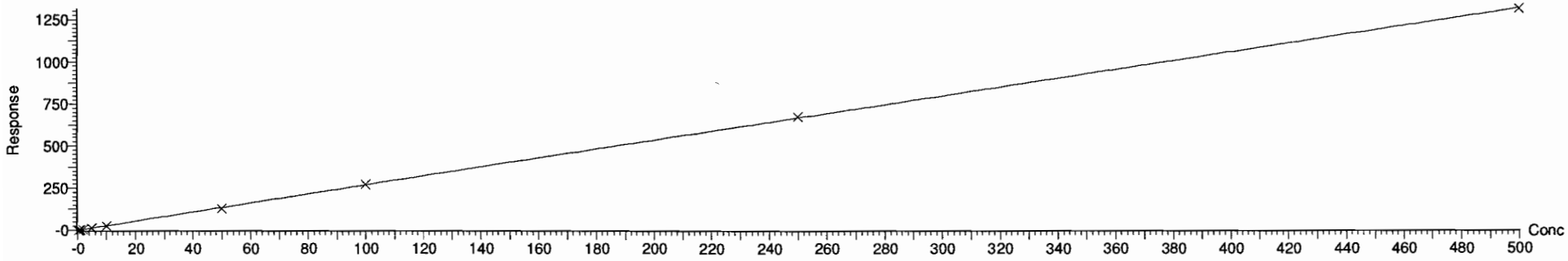
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Compound name: PFNS
Correlation coefficient: r = 0.999403, r^2 = 0.998806
Calibration curve: 0.802949 * x + -0.126905
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999786
Calibration curve: -0.000169157 * x^2 + 2.71324 * x + -0.345173
Response type: Internal Std (Ref 62), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



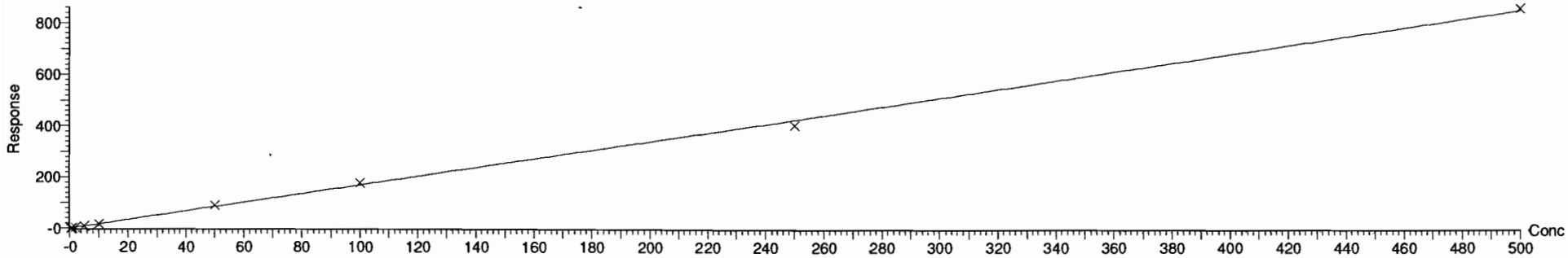
Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

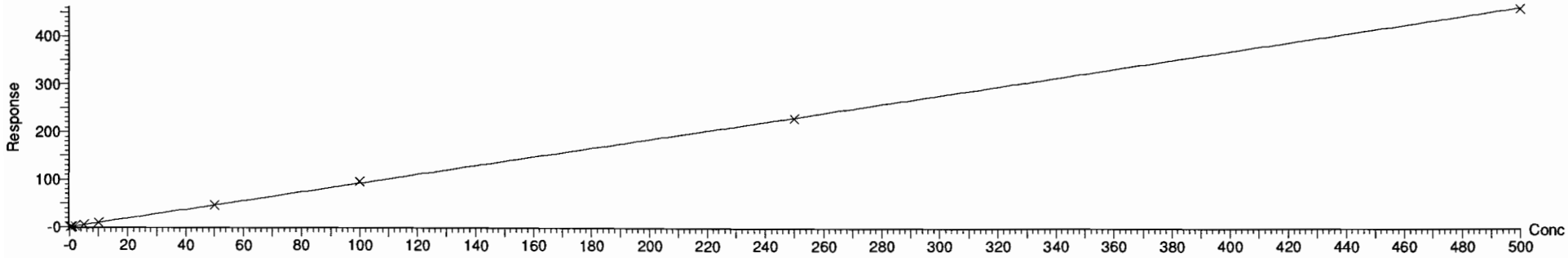
Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:21:05 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_070719.mdb 08 Jul 2019 08:11:40
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-07-19.cdb 08 Jul 2019 11:11:05

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.999413, r^2 = 0.998826
Calibration curve: 1.70212 * x + -0.108827
Response type: Internal Std (Ref 64), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



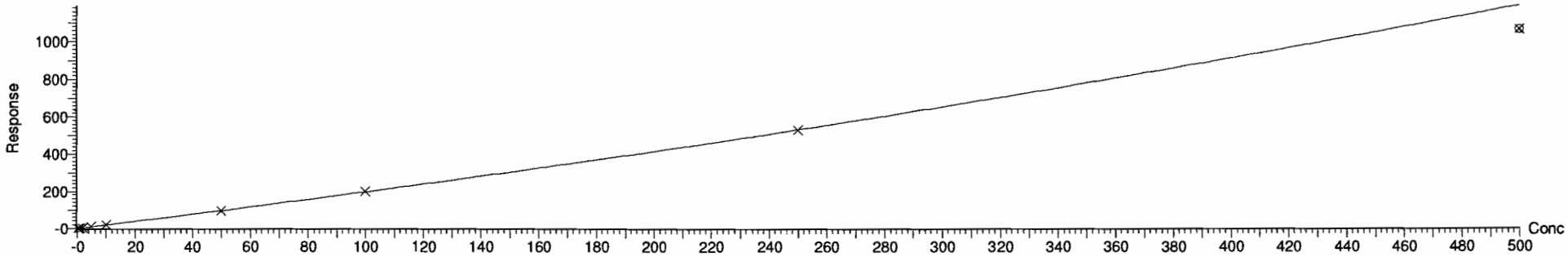
Compound name: PFUdA
Correlation coefficient: r = 0.999904, r^2 = 0.999809
Calibration curve: 0.923261 * x + 0.0668512
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



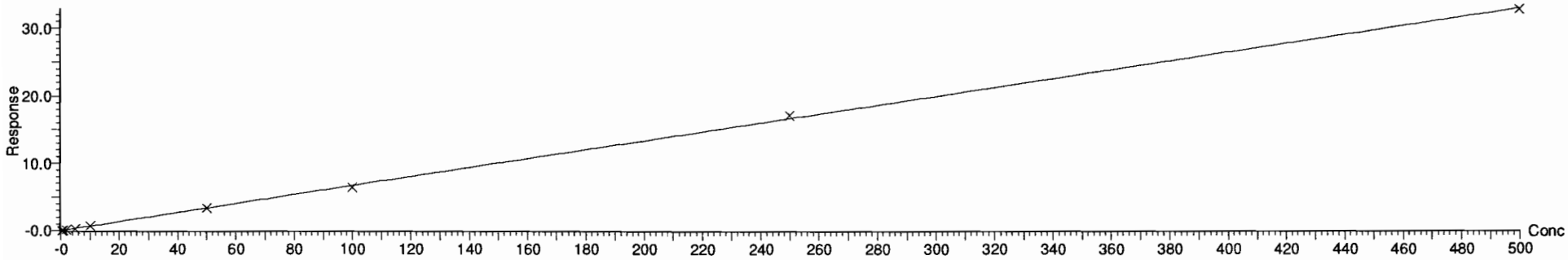
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: PFDS
Coefficient of Determination: R^2 = 0.999676
Calibration curve: 0.00103773 * x^2 + 1.8671 * x + -0.153144
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



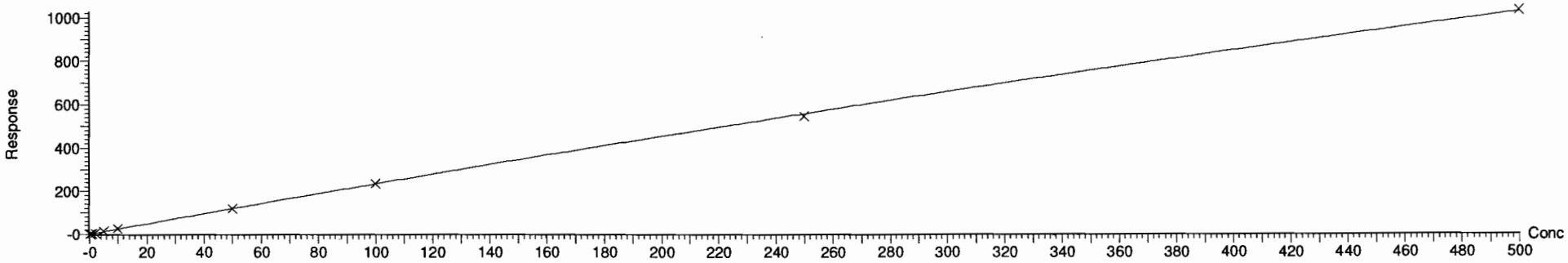
Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.999445
Calibration curve: -3.71514e-006 * x^2 + 0.0675775 * x + -0.00872591
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



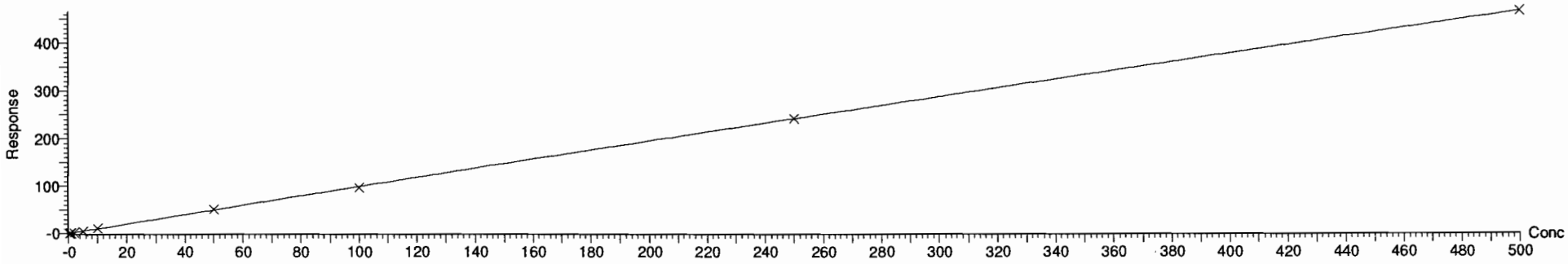
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999612
Calibration curve: -0.000719965 * x^2 + 2.41049 * x + -0.109536
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



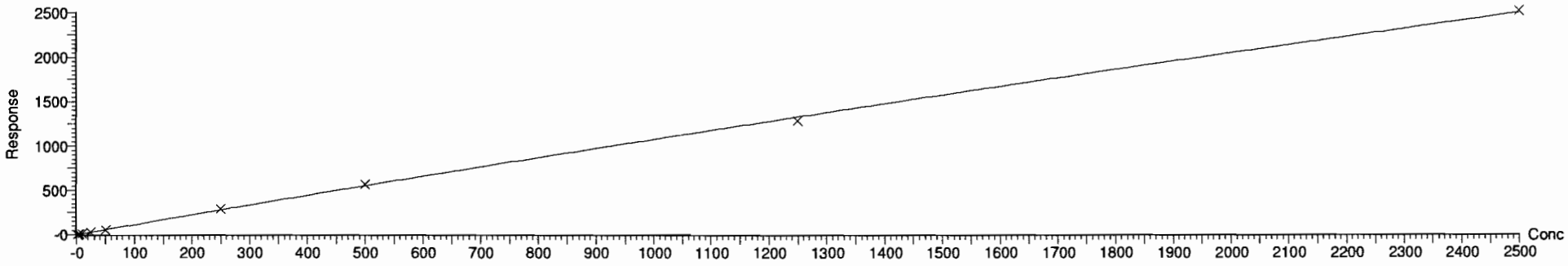
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999862
Calibration curve: -0.00014003 * x^2 + 1.00153 * x + 0.0568473
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



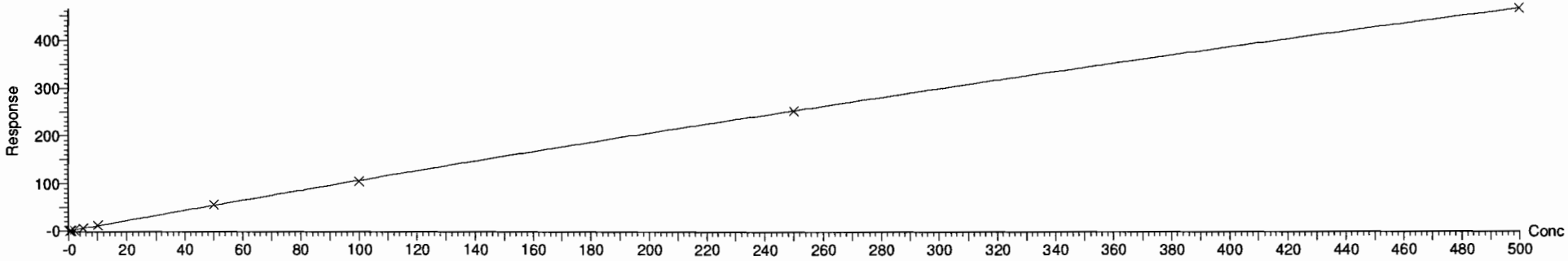
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999462
Calibration curve: -5.28888e-005 * x^2 + 1.12936 * x + -0.23549
Response type: Internal Std (Ref 66), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



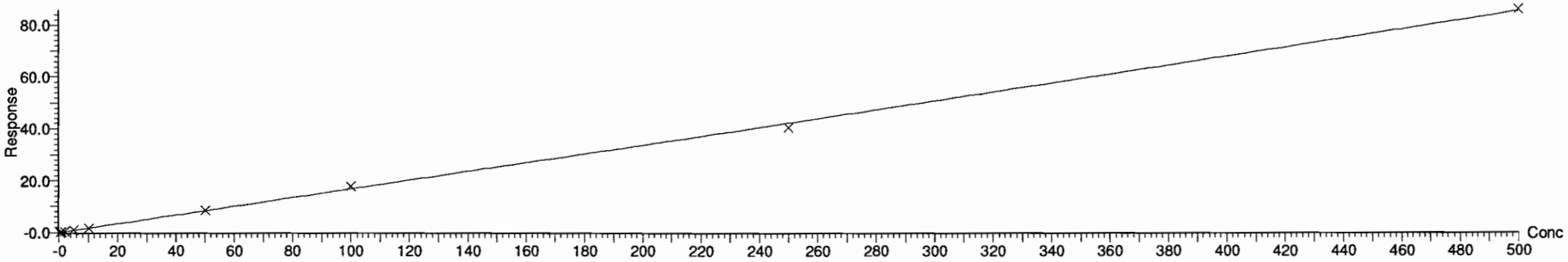
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999896
Calibration curve: -0.000335029 * x^2 + 1.09747 * x + 0.0130985
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



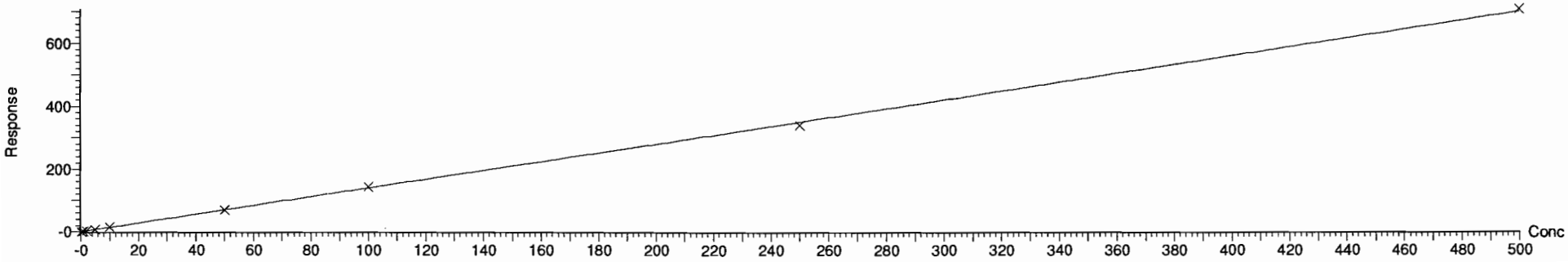
Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

Last Altered: Monday, July 08, 2019 11:11:05 Pacific Daylight Time
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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999103
Calibration curve: 4.46468e-006 * x^2 + 0.168099 * x + -0.0190692
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



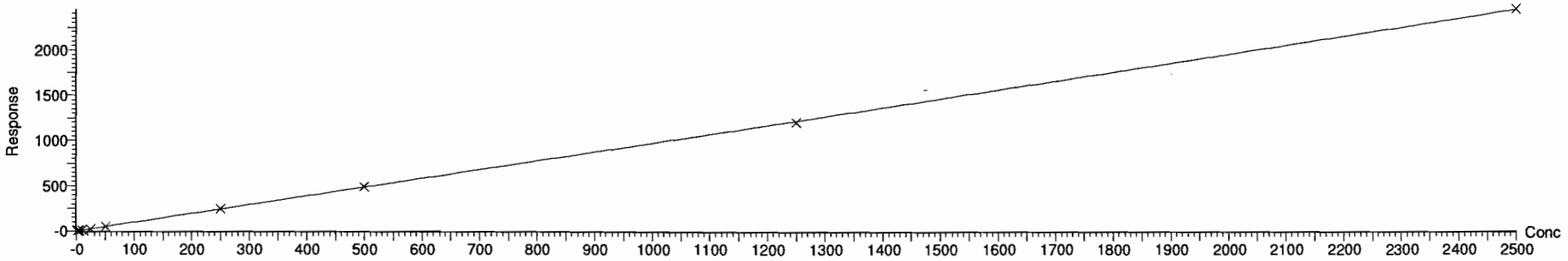
Compound name: PFTeDA
Correlation coefficient: r = 0.999790, r^2 = 0.999581
Calibration curve: 1.39936 * x + 0.00853027
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



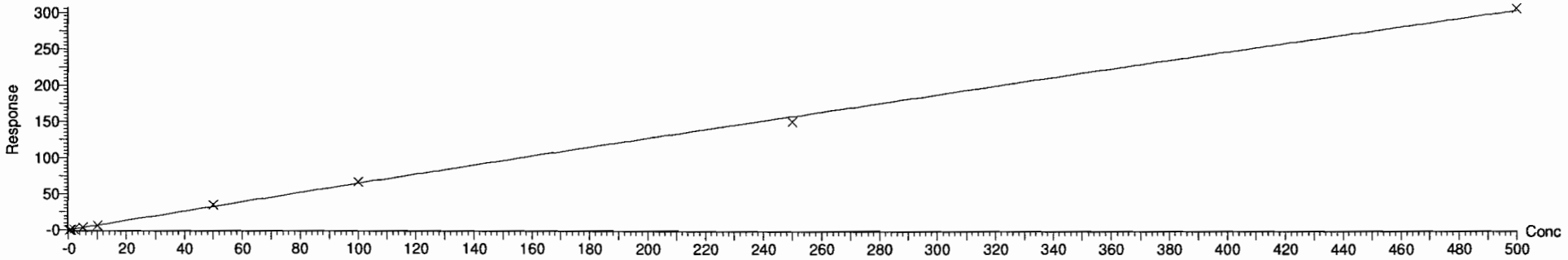
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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999930
Calibration curve: 1.81858e-006 * x^2 + 0.973368 * x + -0.109791
Response type: Internal Std (Ref 68), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



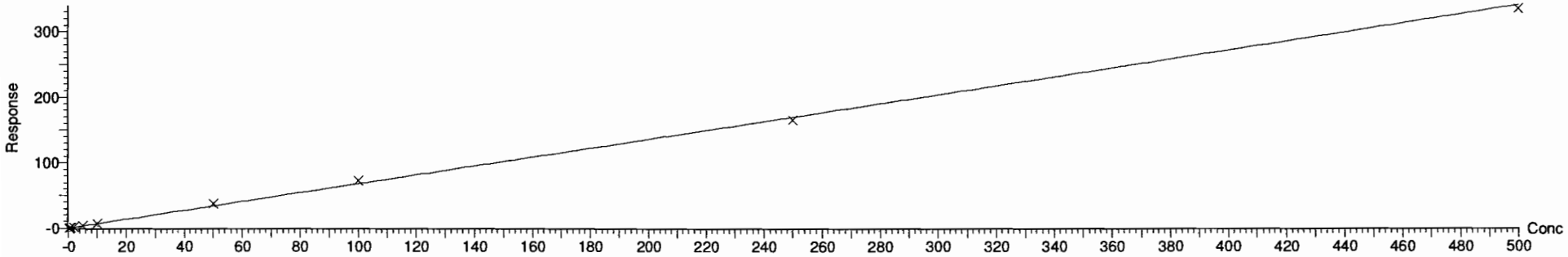
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998780
Calibration curve: -0.000101737 * x^2 + 0.656512 * x + 0.0772838
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



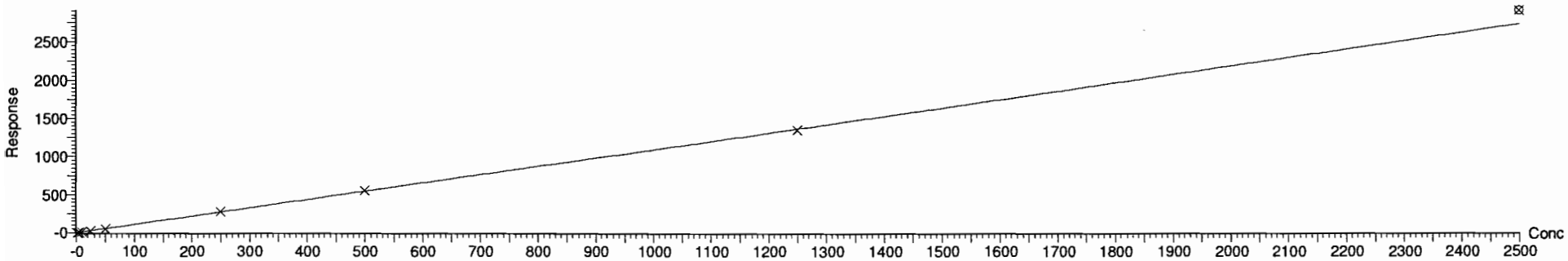
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Compound name: PFODA
Correlation coefficient: r = 0.999146, r^2 = 0.998292
Calibration curve: 0.678858 * x + 0.0397262
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



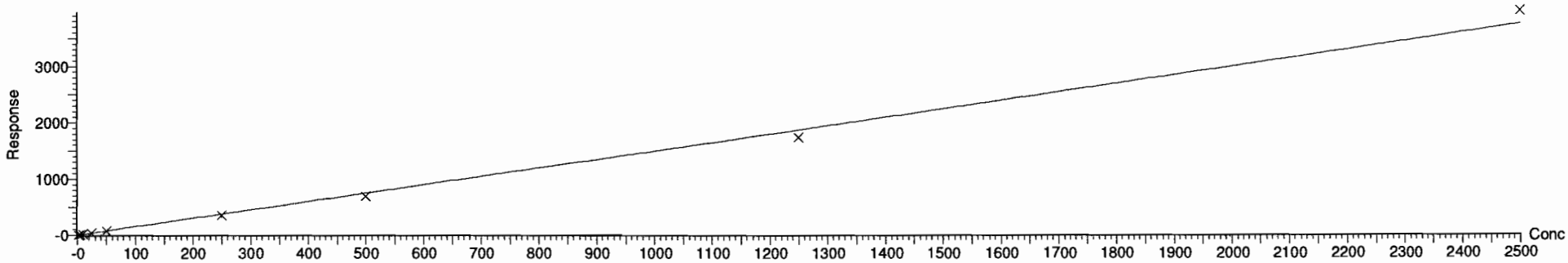
Compound name: N-MeFOSE
Correlation coefficient: r = 0.999795, r^2 = 0.999591
Calibration curve: 1.09163 * x + -0.120858
Response type: Internal Std (Ref 70), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.997729, r^2 = 0.995463
Calibration curve: 1.49528 * x + -0.916473
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



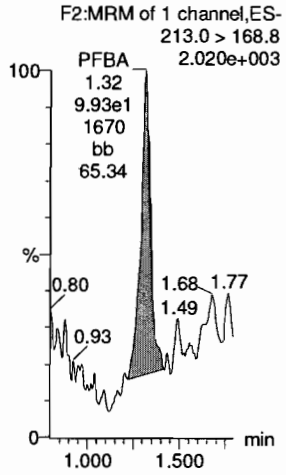
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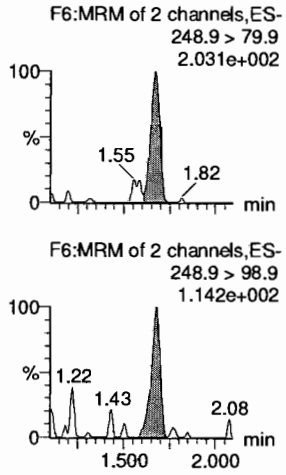
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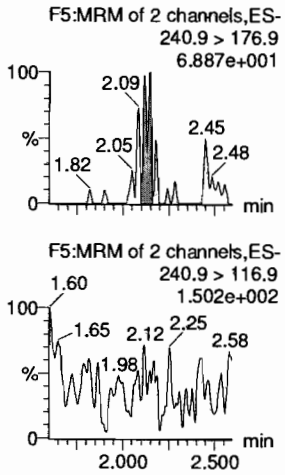
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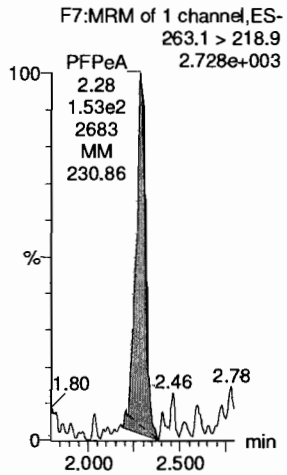
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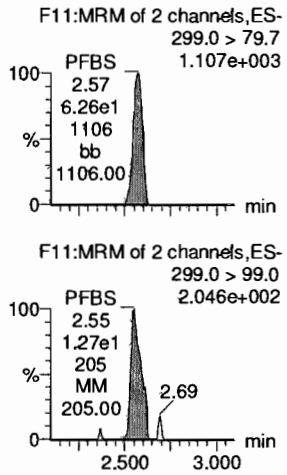
3:3 FTCA



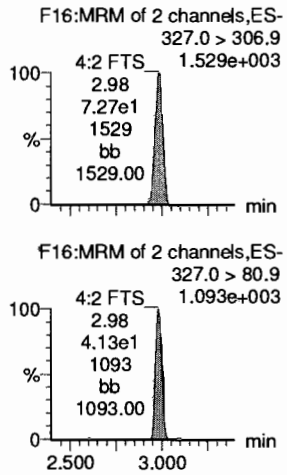
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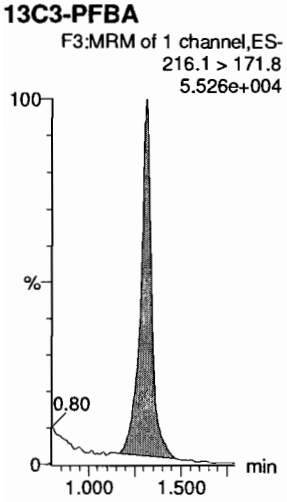
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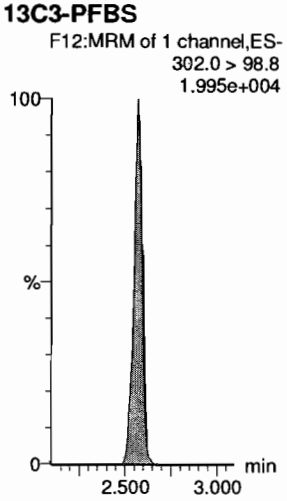
4:2 FTS



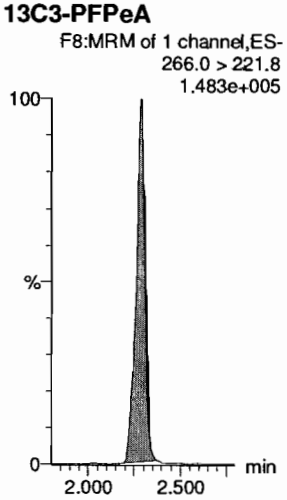
13C3-PFBA



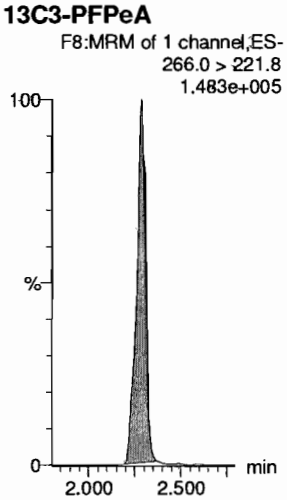
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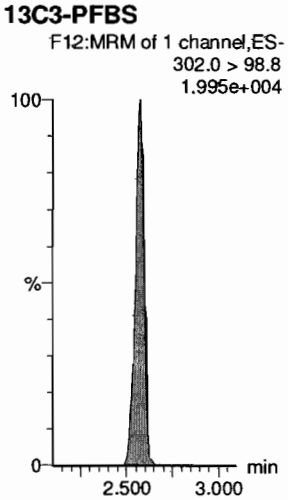
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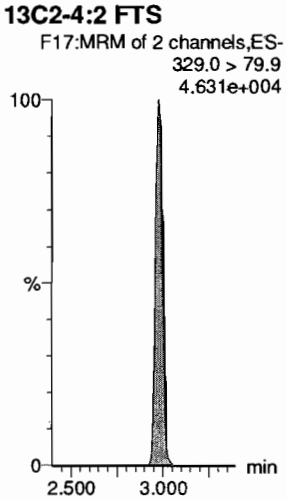
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13C3-PFBS



13C2-4:2 FTS

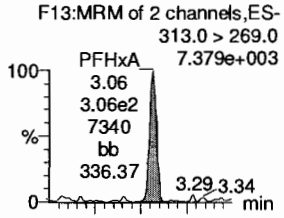


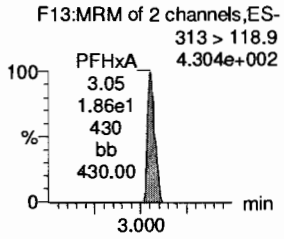
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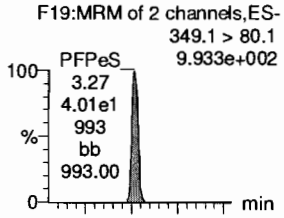
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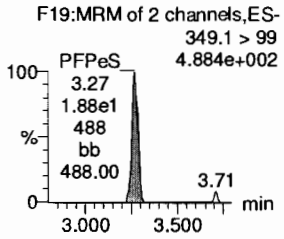
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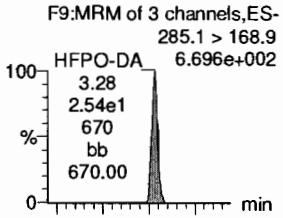


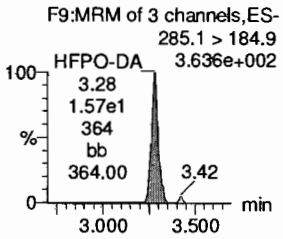
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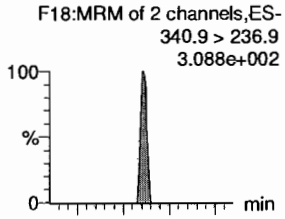


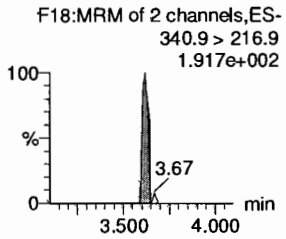
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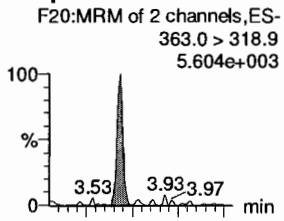


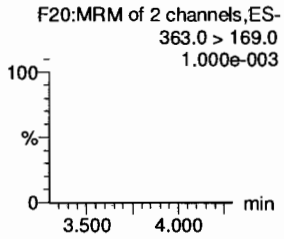
5:3 FTCA



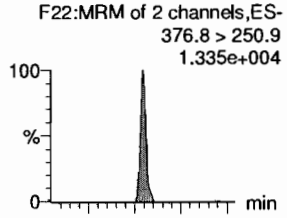


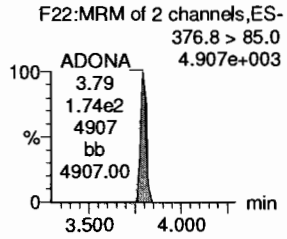
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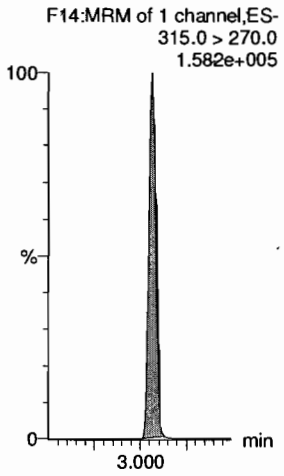


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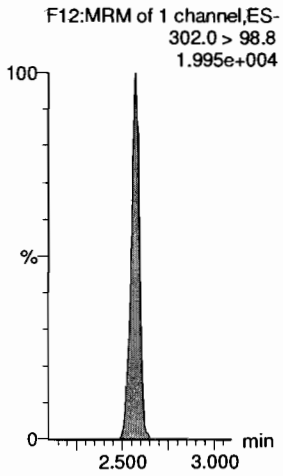




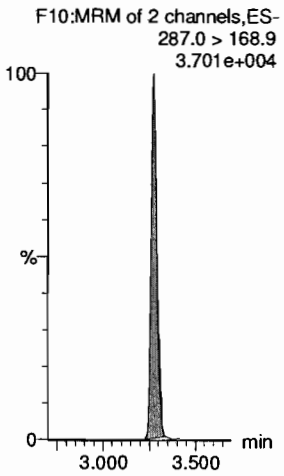
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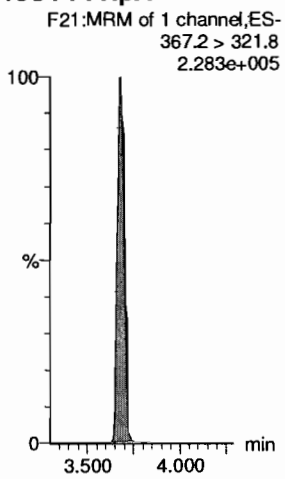
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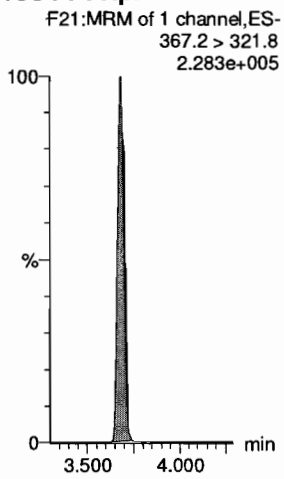
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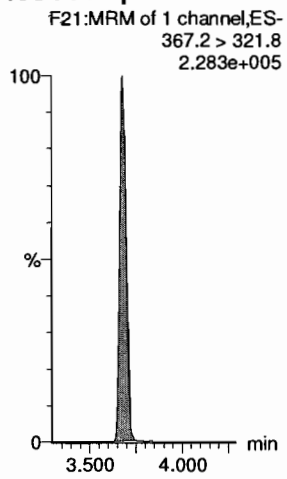
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

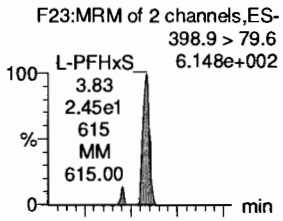


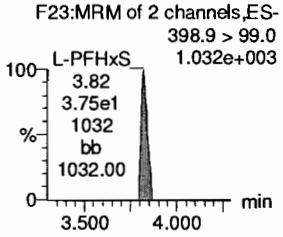
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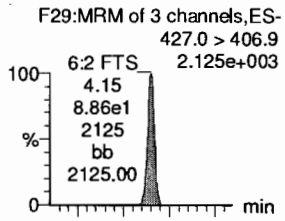
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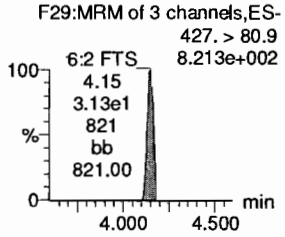
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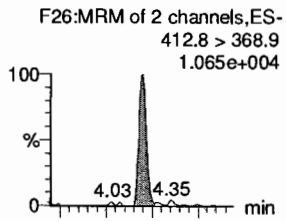


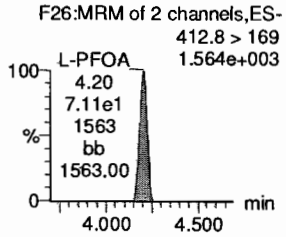
6:2 FTS



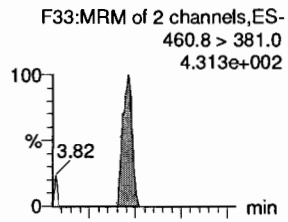


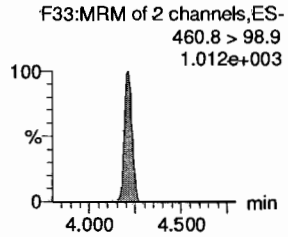
L-PFOA



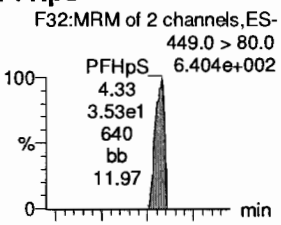


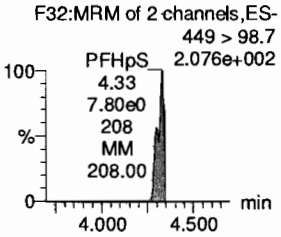
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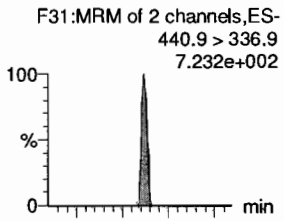


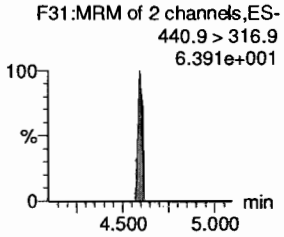
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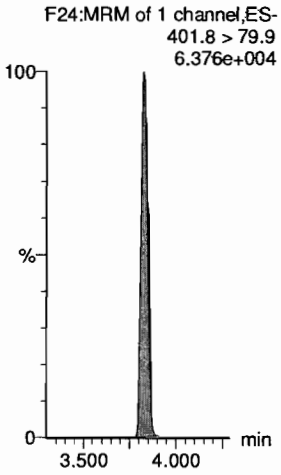


7:3 FTCA

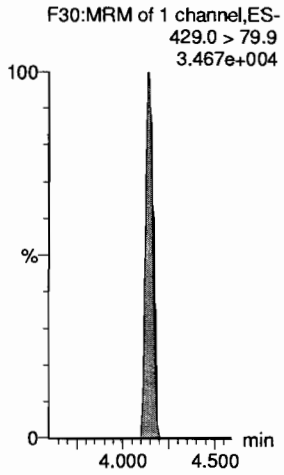




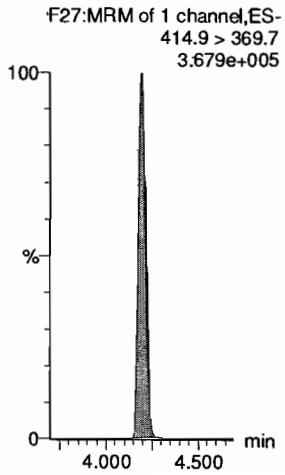
13C3-PFHxS



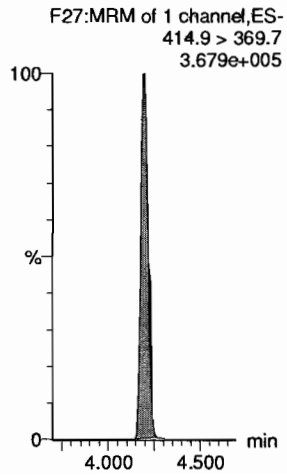
13C2-6:2 FTS



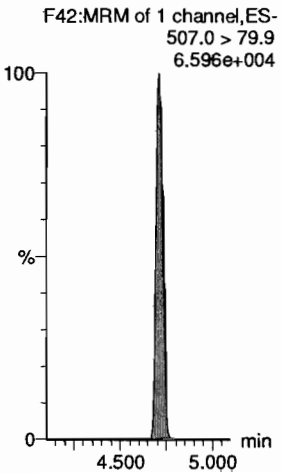
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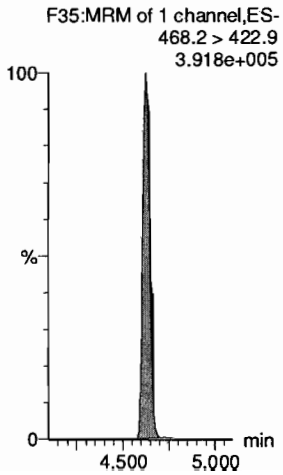
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13C8-PFOS



13C5-PFNA

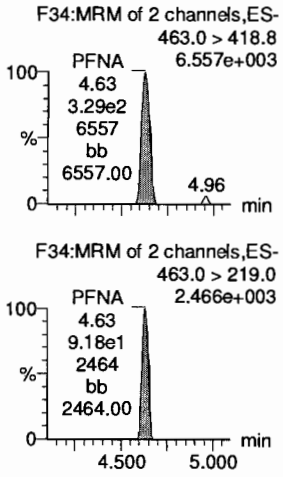


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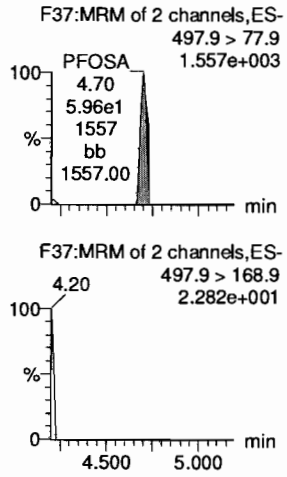
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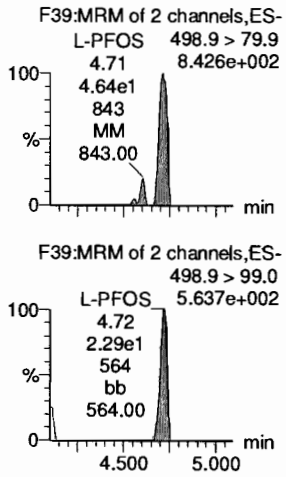
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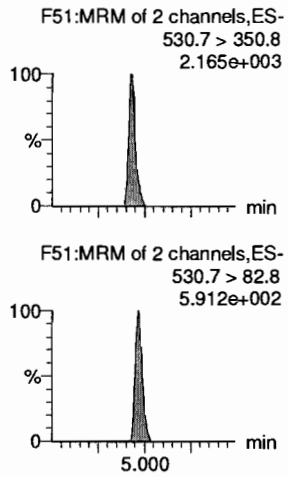
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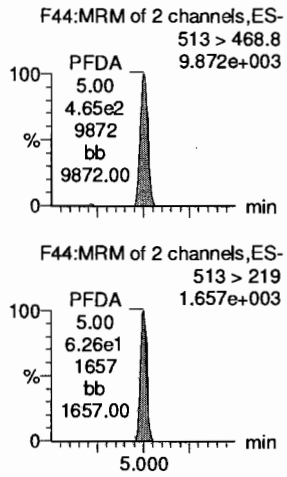
L-PFOS



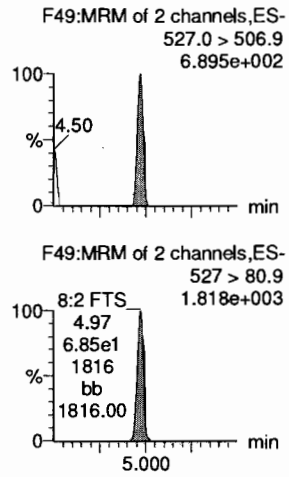
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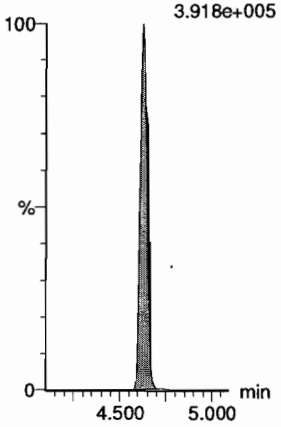
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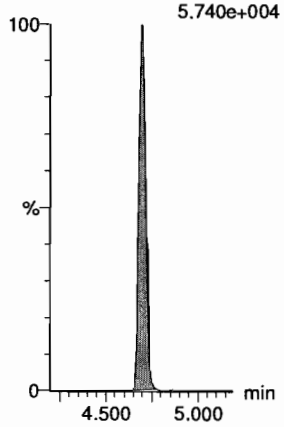
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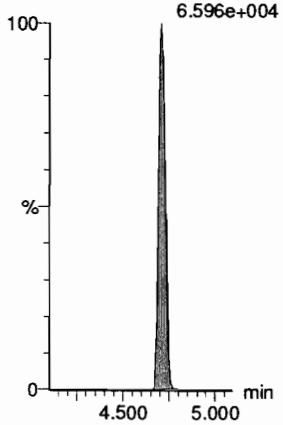
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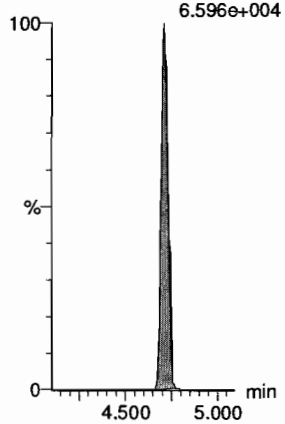
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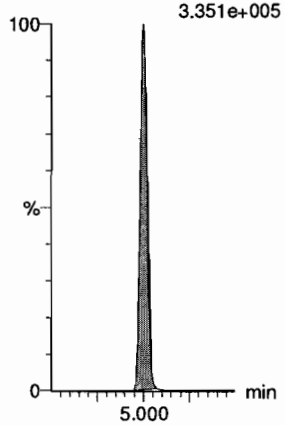
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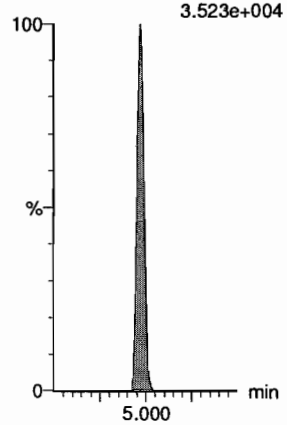
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

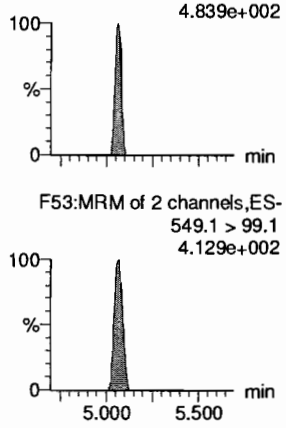


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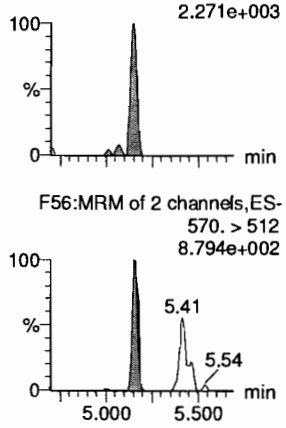
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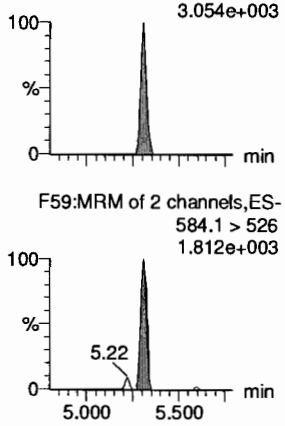
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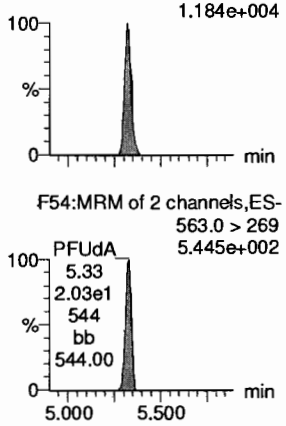
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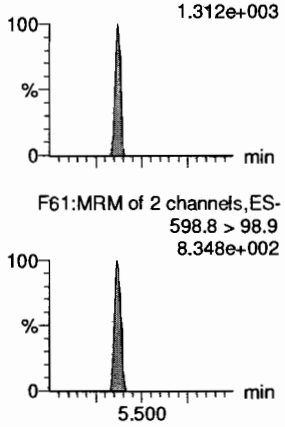
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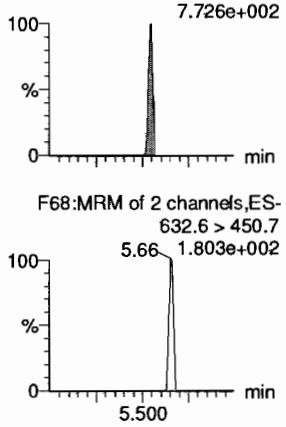
PFUdA



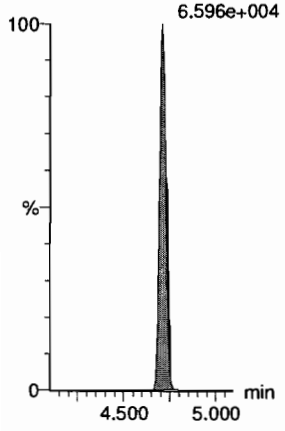
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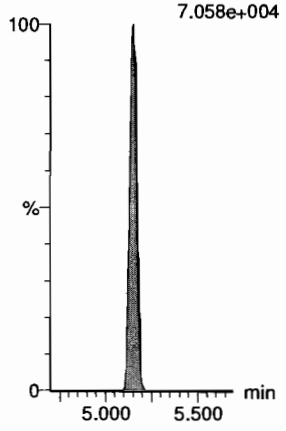
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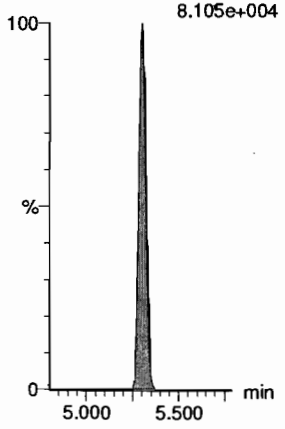
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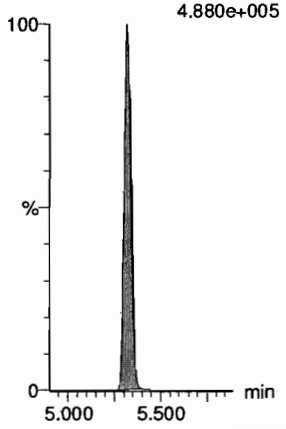
d3-N-MeFOSAA



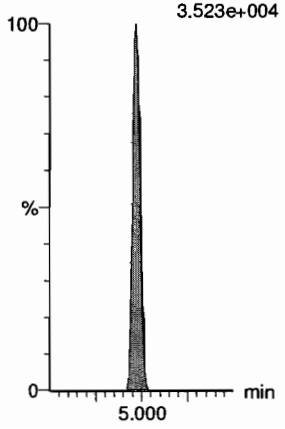
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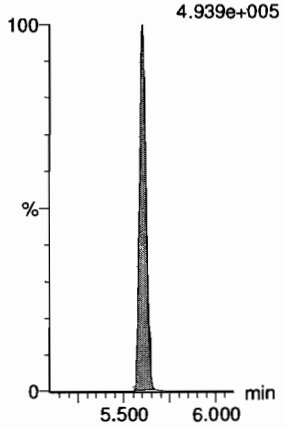
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

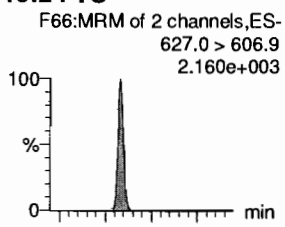


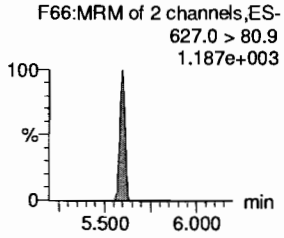
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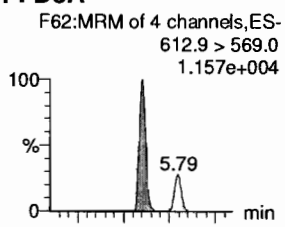
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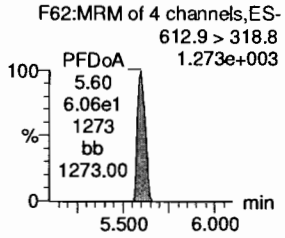
10:2 FTS



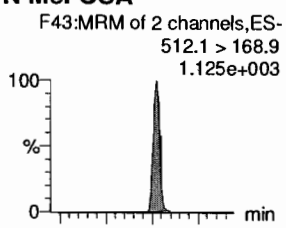


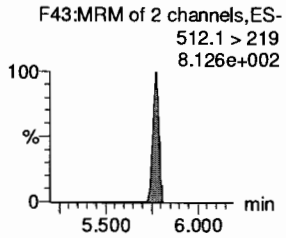
PFDoA



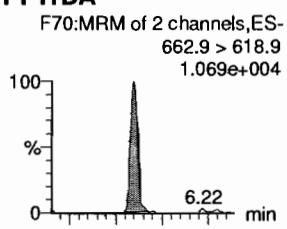


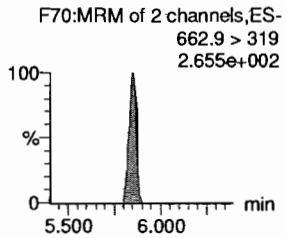
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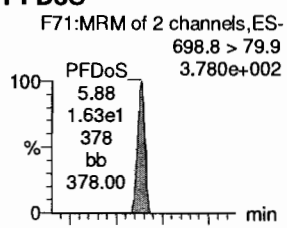


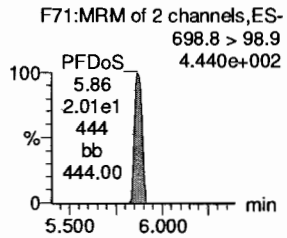
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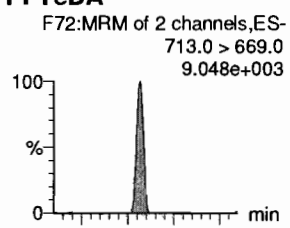


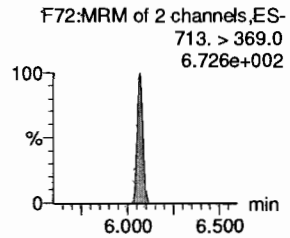
PFDoS



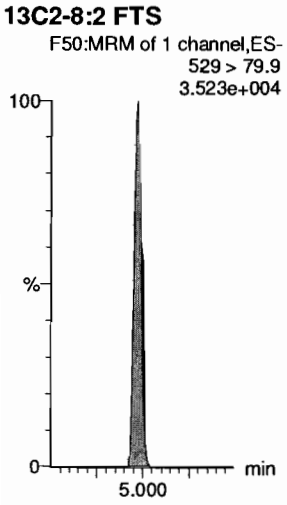


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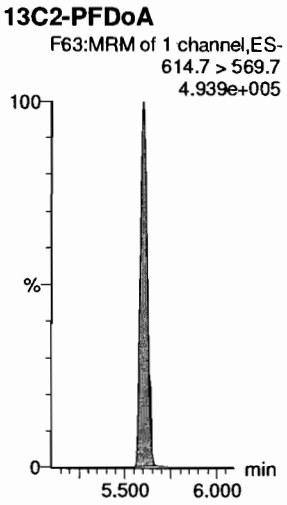




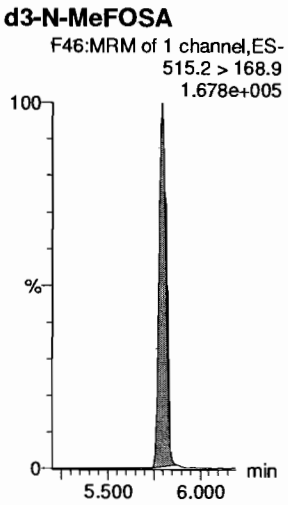
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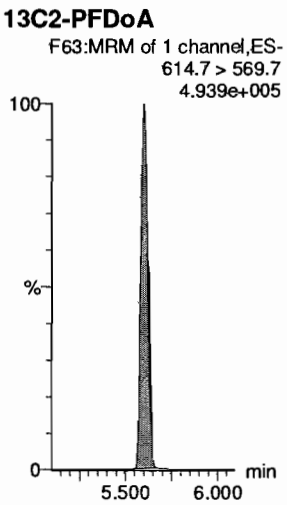
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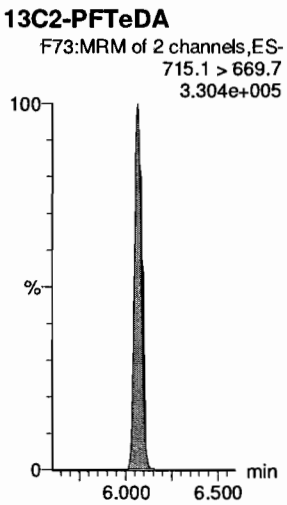
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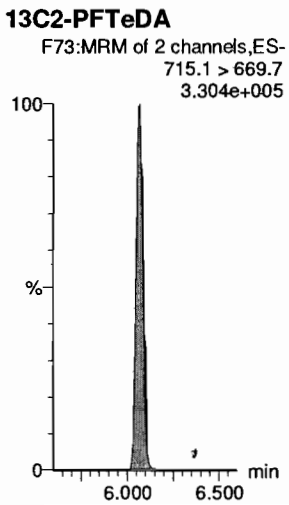
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13C2-PFTeDA



13C2-PFTeDA

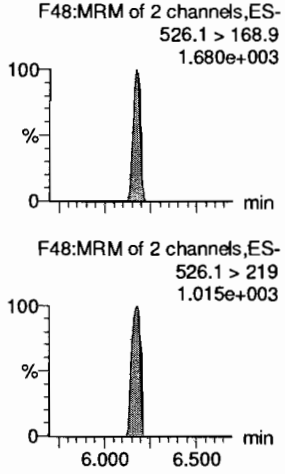


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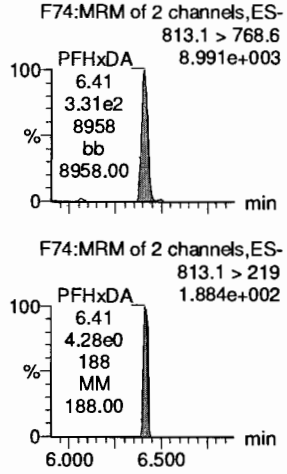
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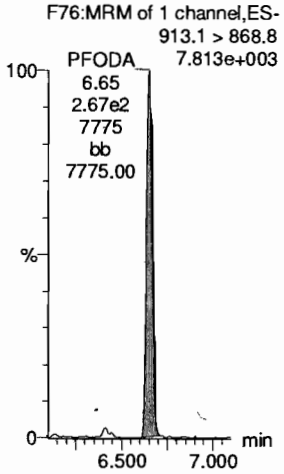
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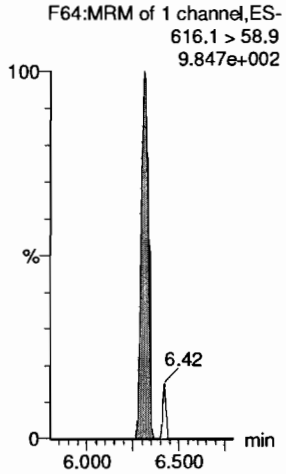
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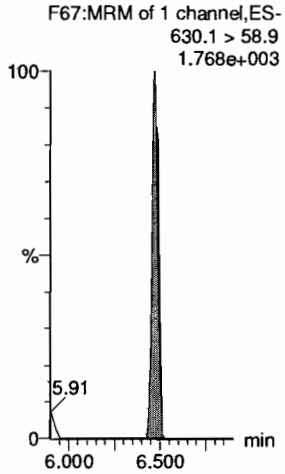
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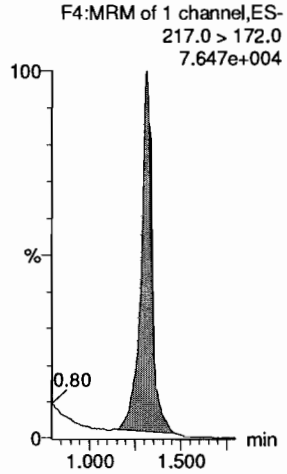
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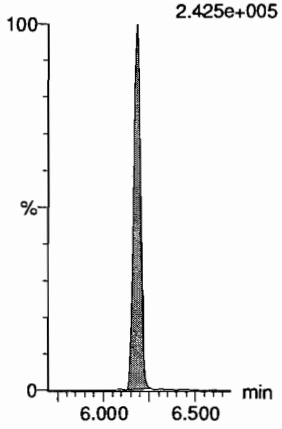
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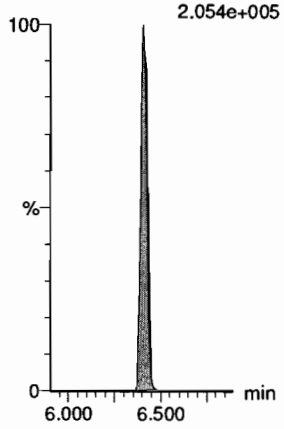
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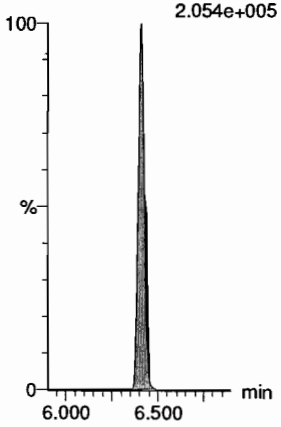
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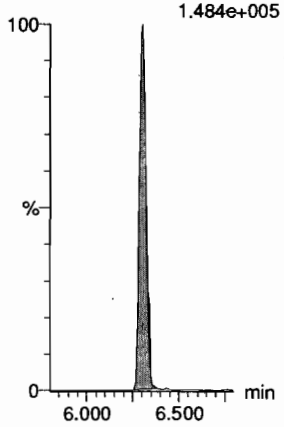
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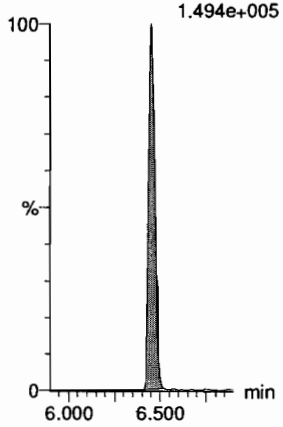
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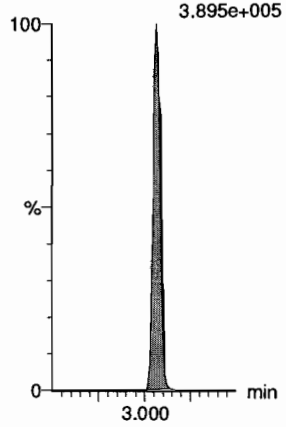
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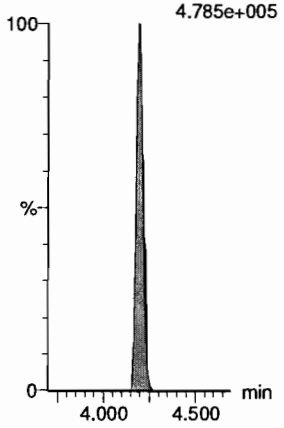


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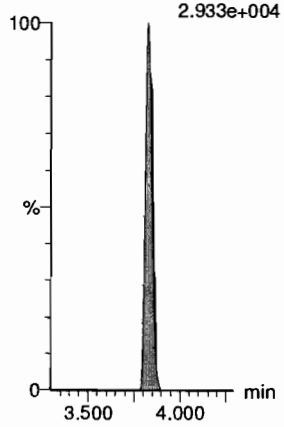
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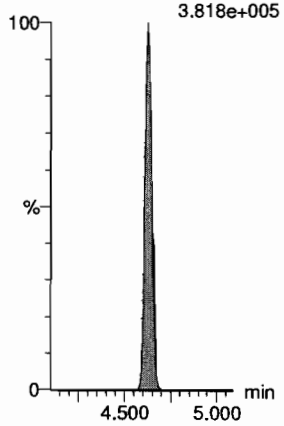
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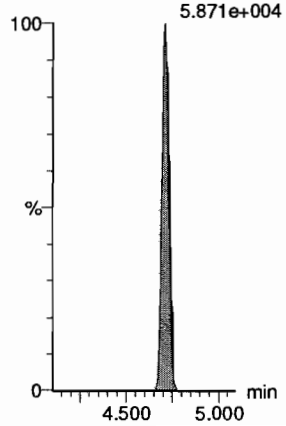
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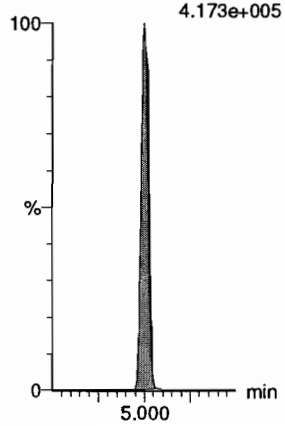
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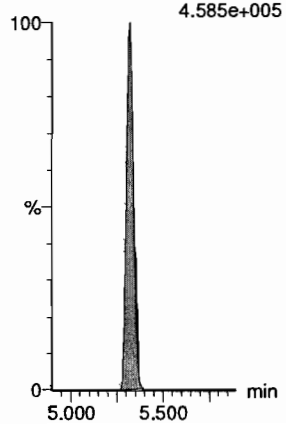
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13C6-PFDA



13C7-PFUdA

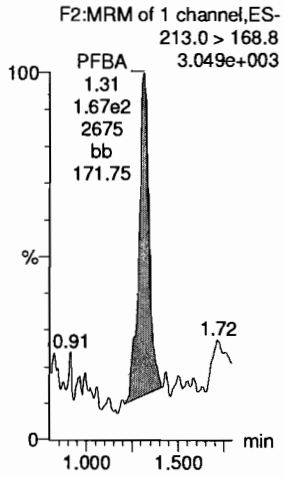


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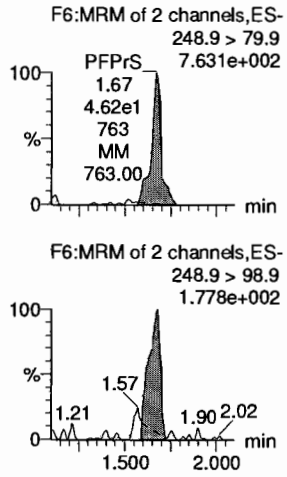
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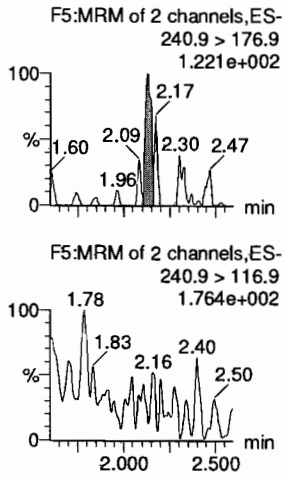
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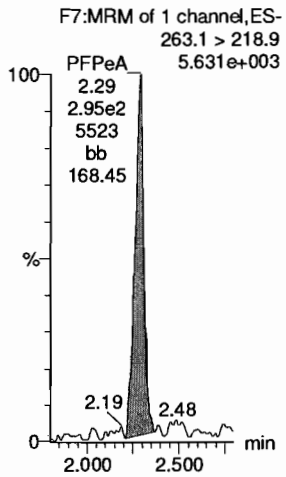
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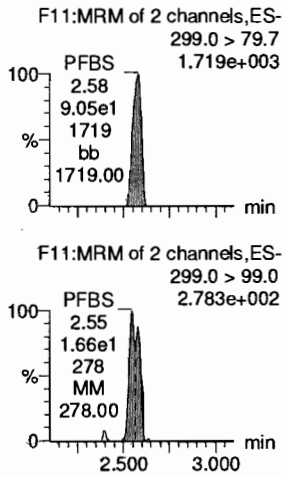
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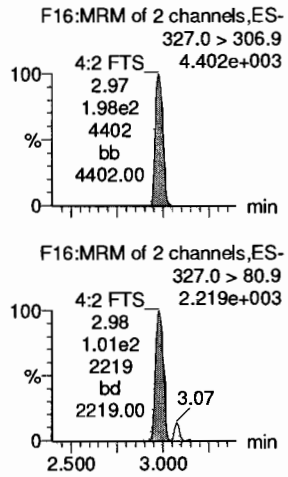
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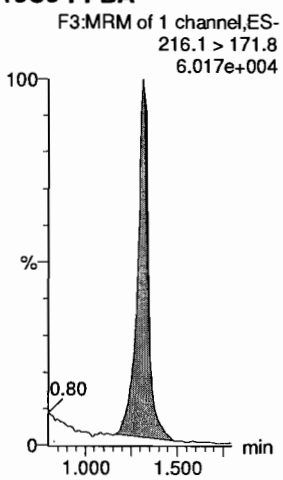
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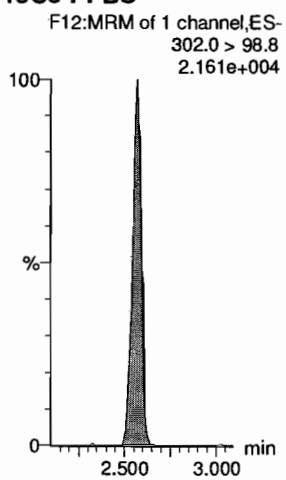
4:2 FTS



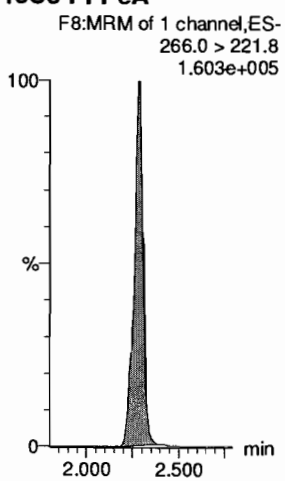
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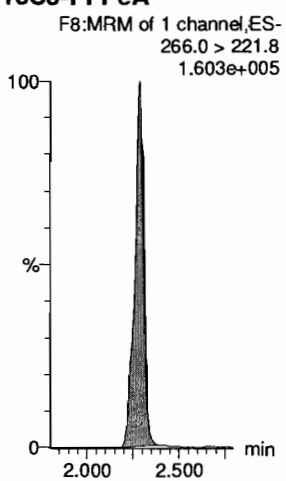
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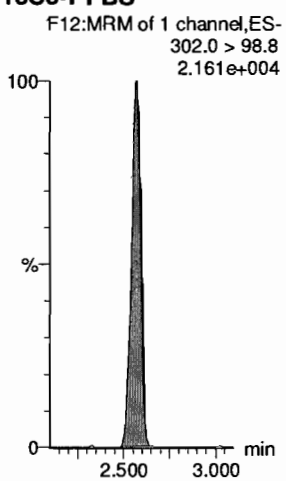
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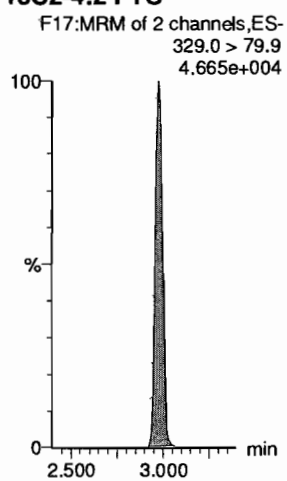
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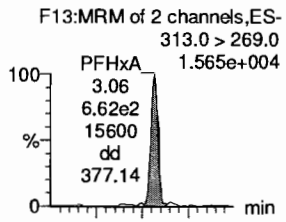


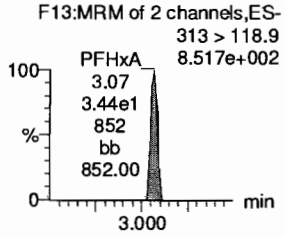
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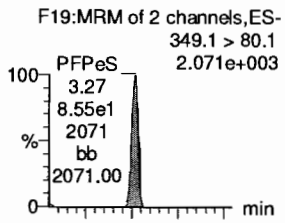
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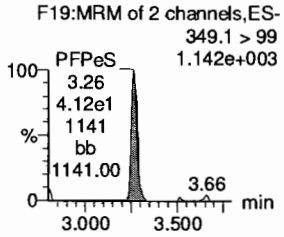
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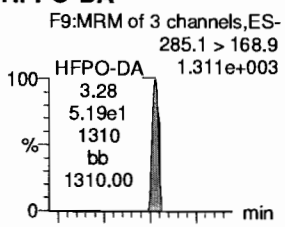


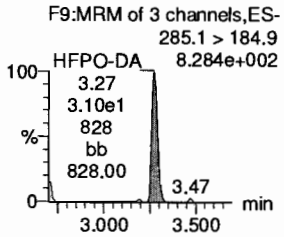
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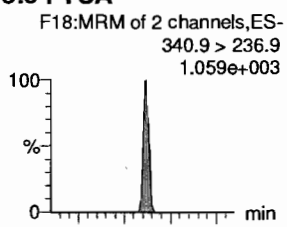


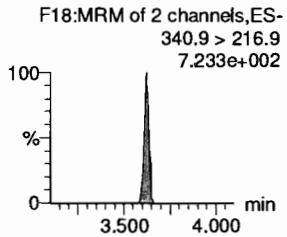
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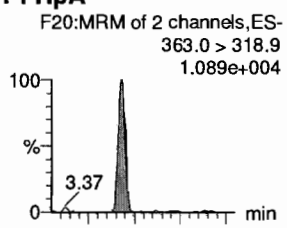


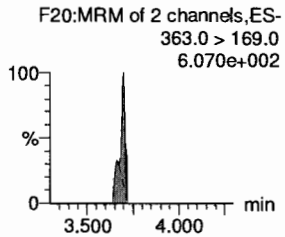
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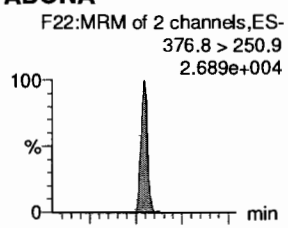


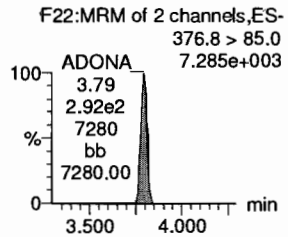
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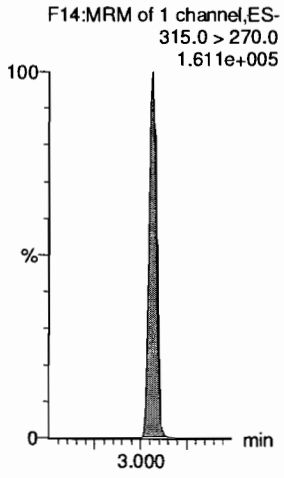


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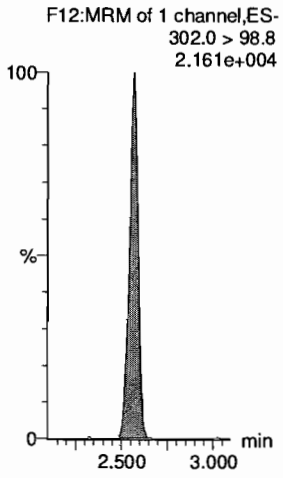




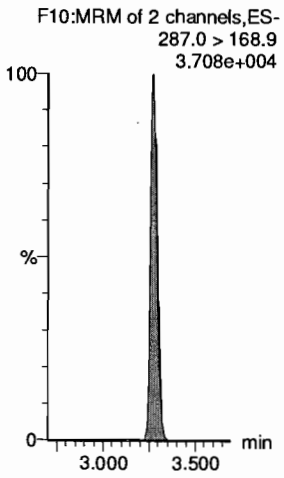
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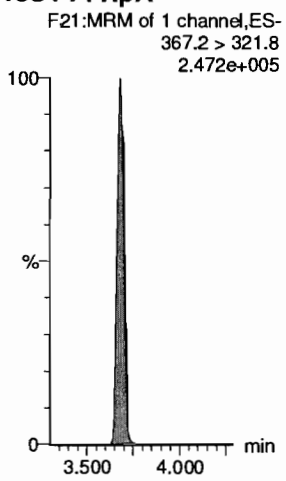
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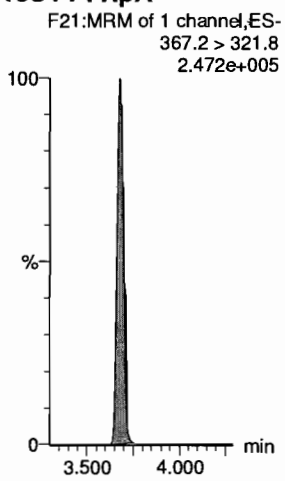
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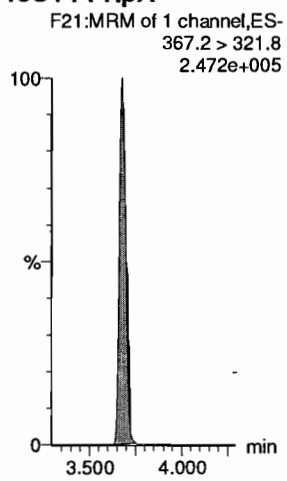
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13C4-PFHpA



13C4-PFHpA

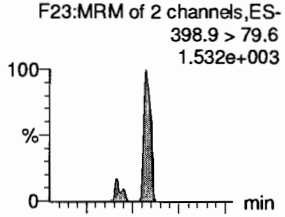


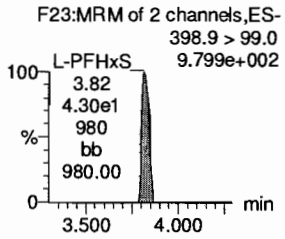
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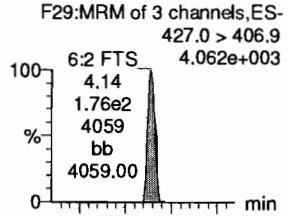
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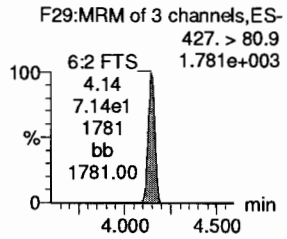
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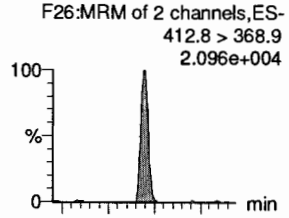


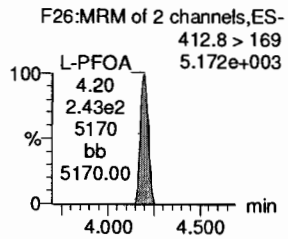
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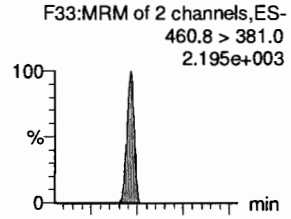


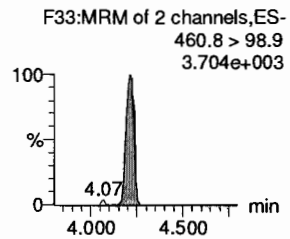
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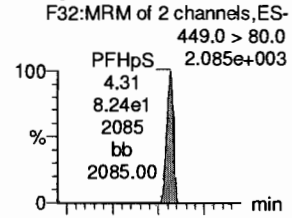


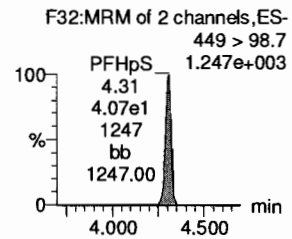
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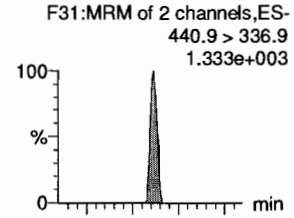


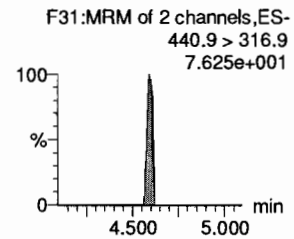
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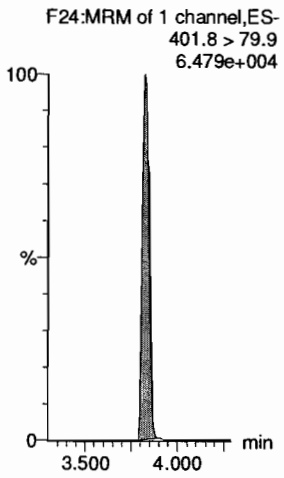


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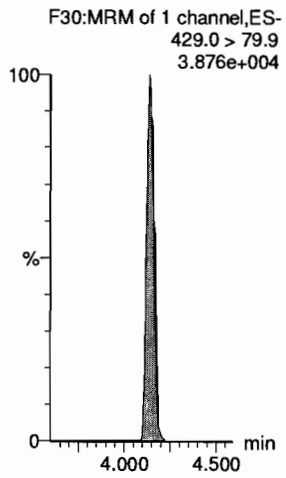




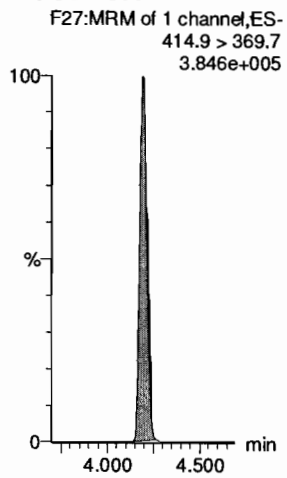
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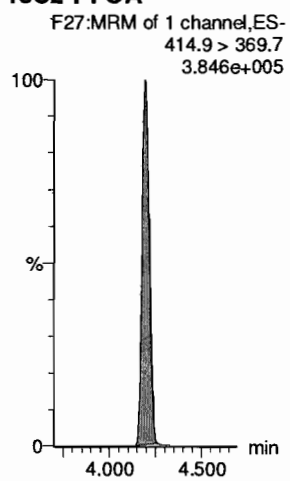
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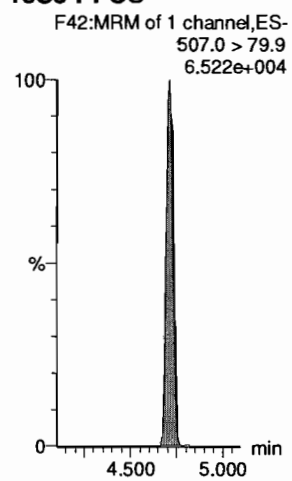
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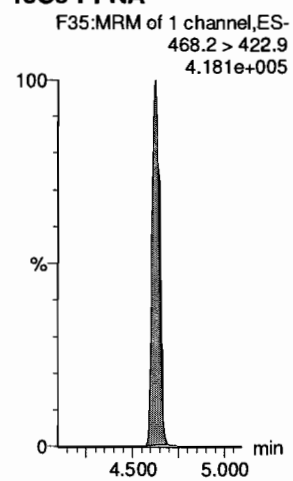
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13C8-PFOS



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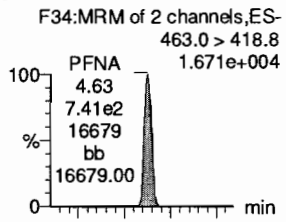


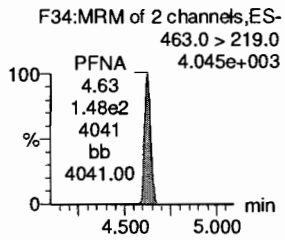
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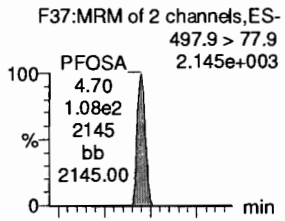
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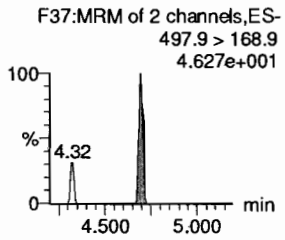
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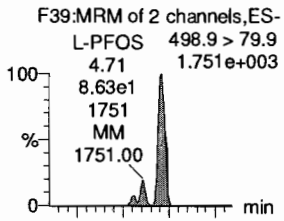


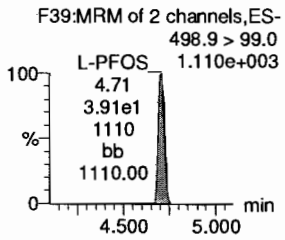
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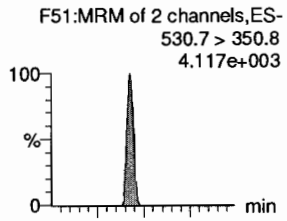


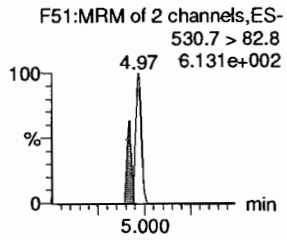
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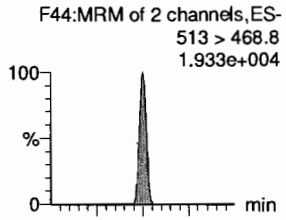


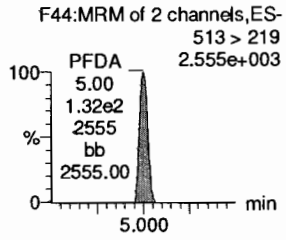
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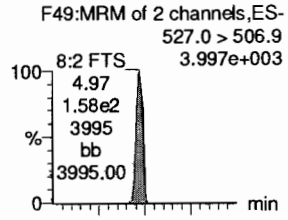


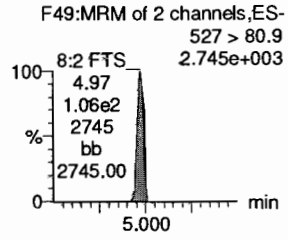
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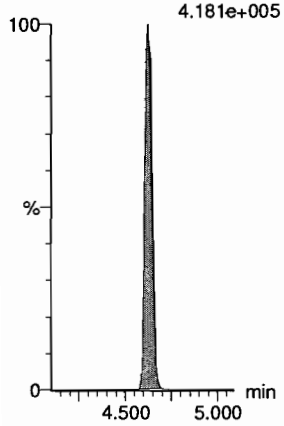


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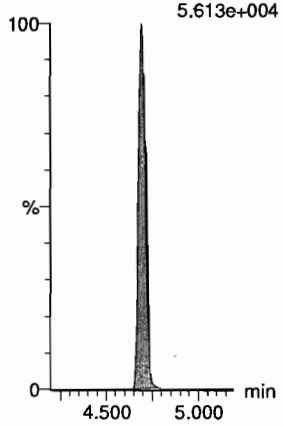




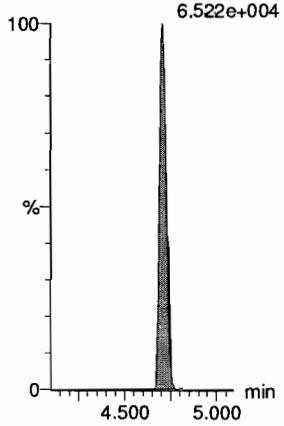
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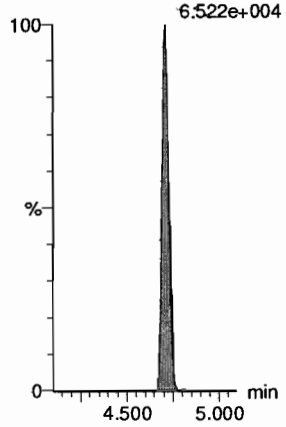
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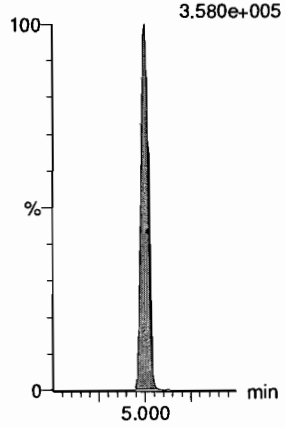
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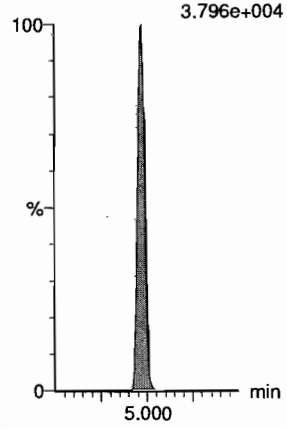
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13C2-PFDA



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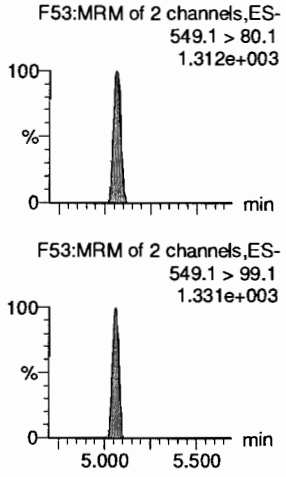


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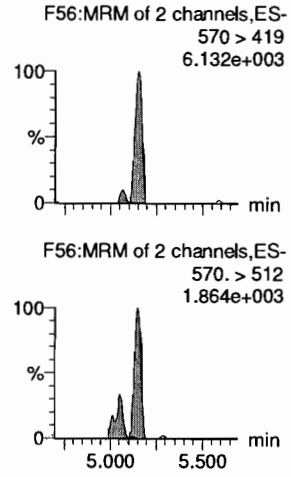
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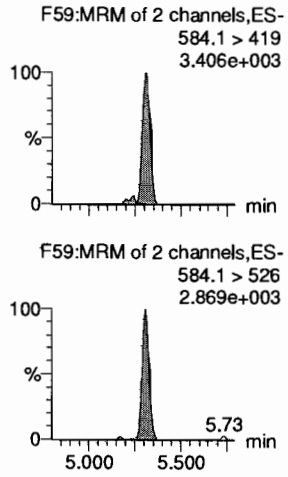
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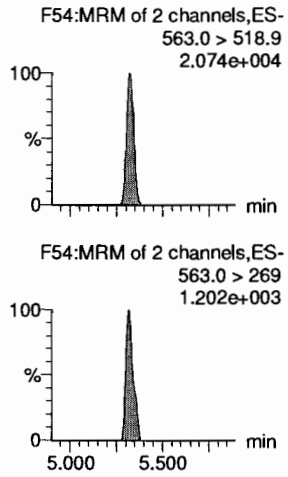
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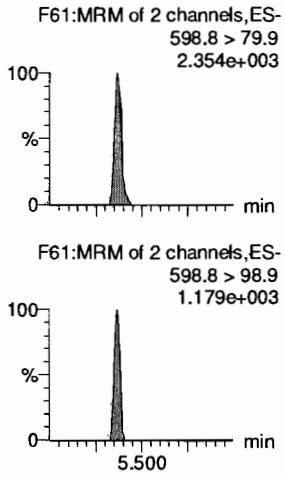
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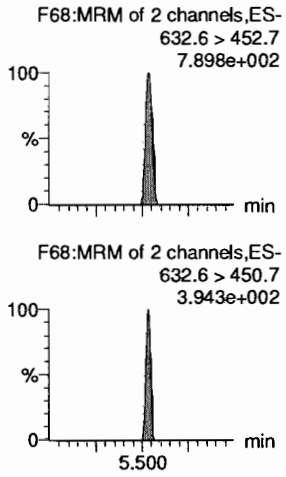
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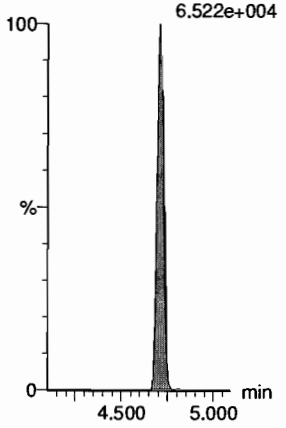
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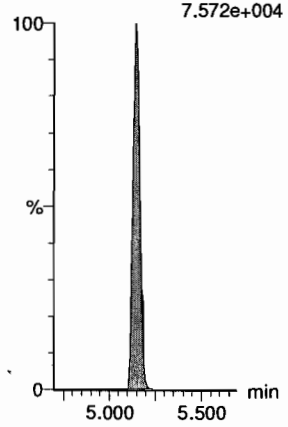
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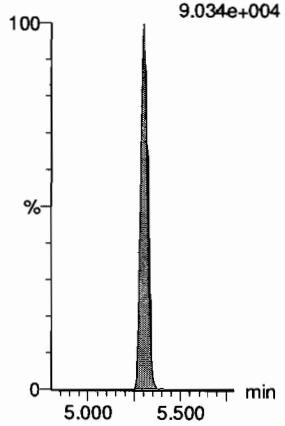
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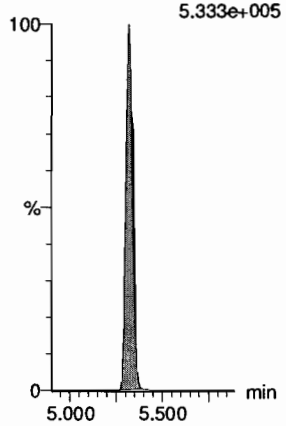
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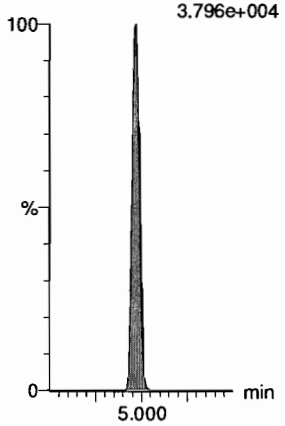
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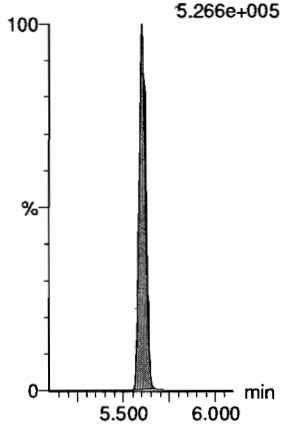
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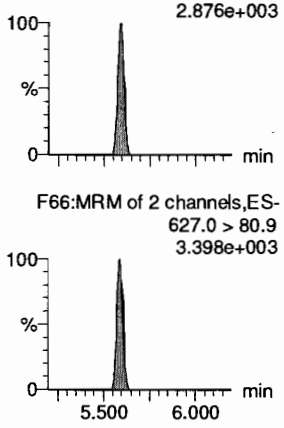


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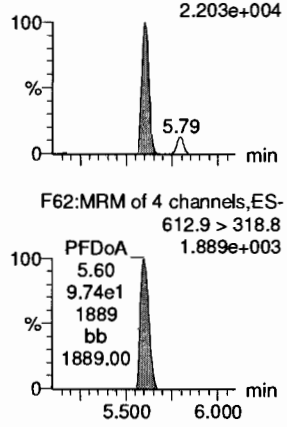
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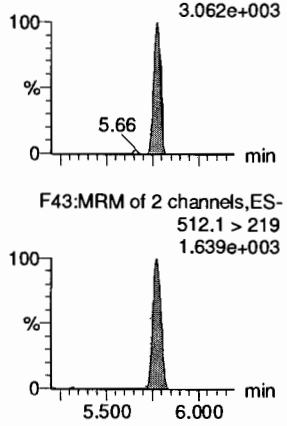
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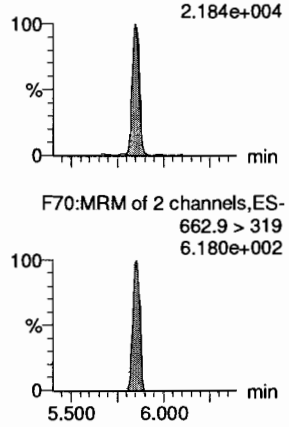
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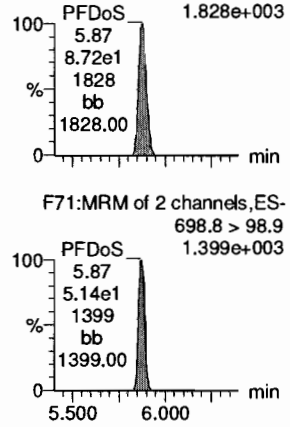
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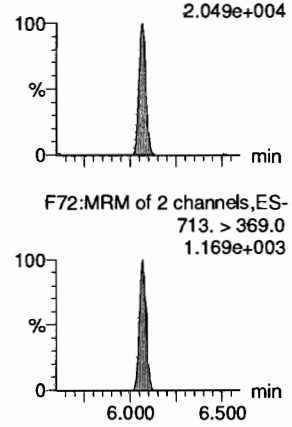
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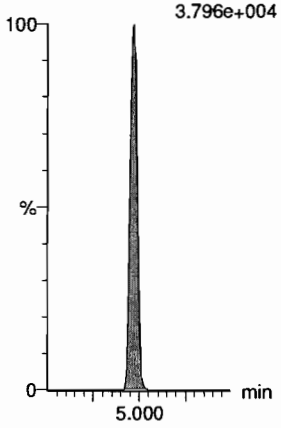
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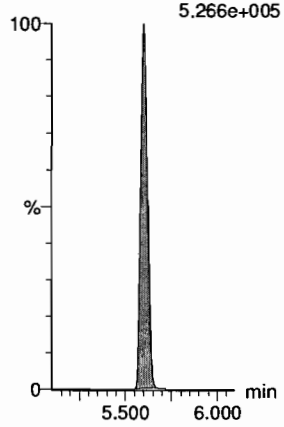
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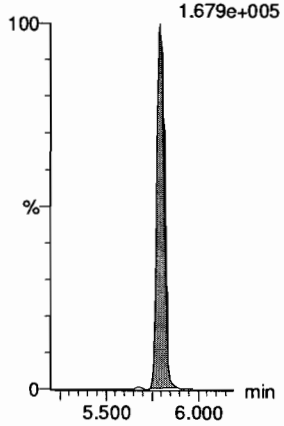
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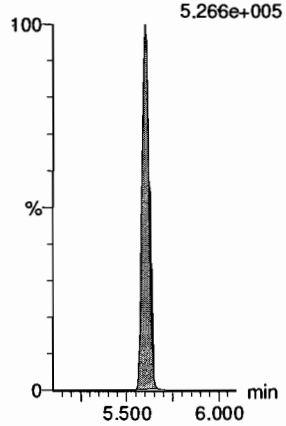
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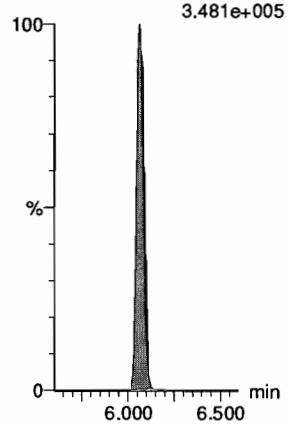
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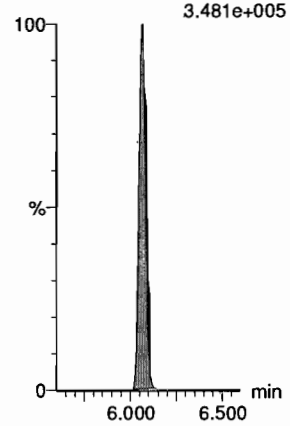
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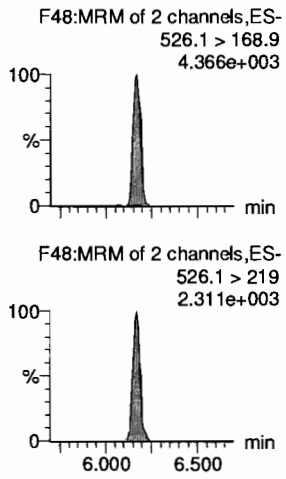


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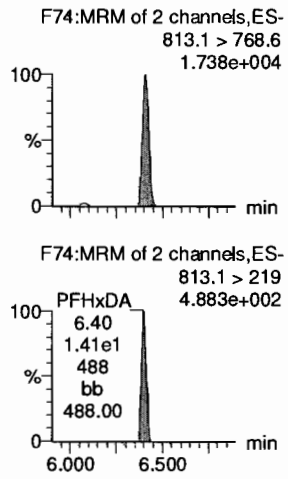
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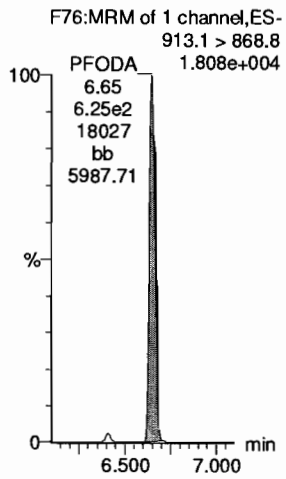
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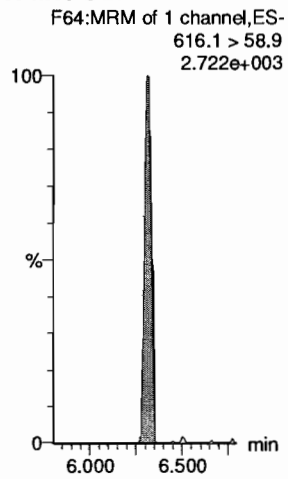
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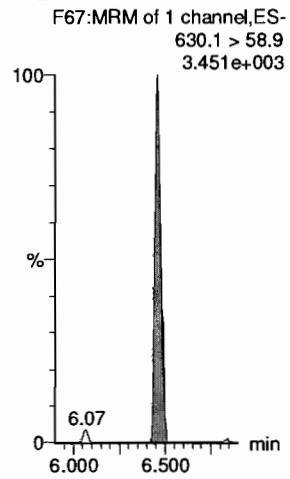
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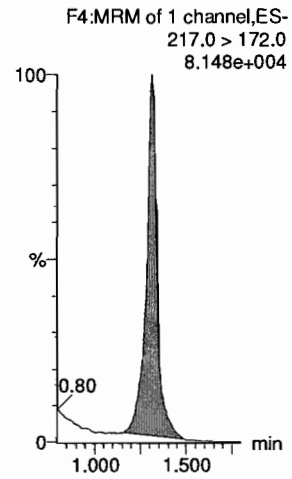
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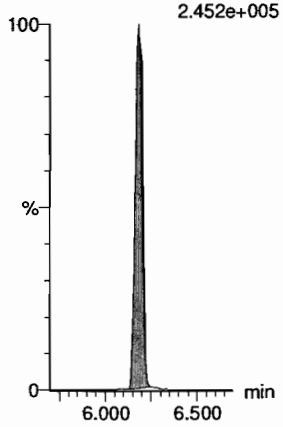
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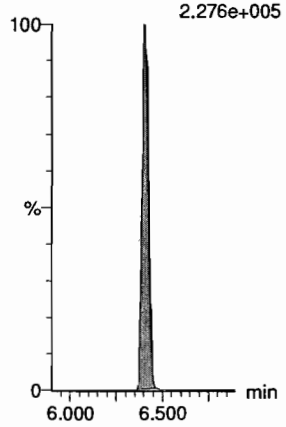
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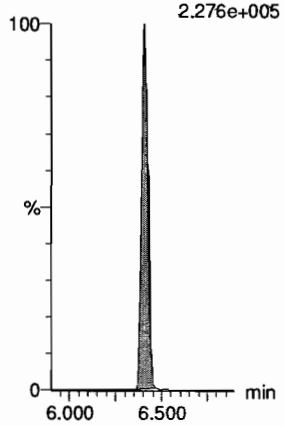
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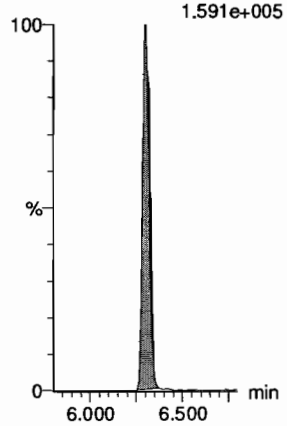
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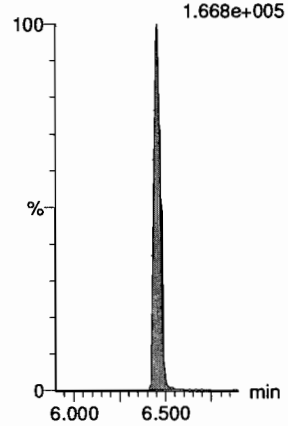
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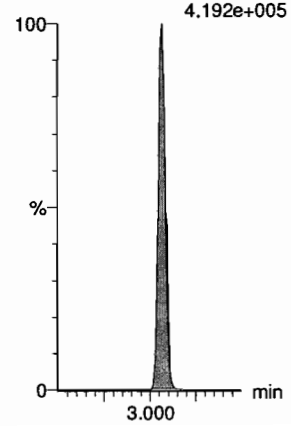
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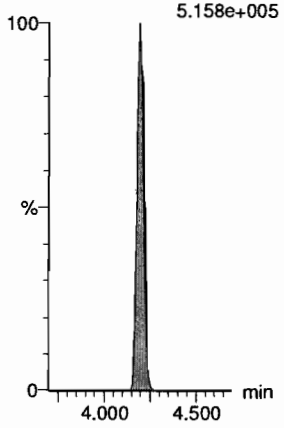


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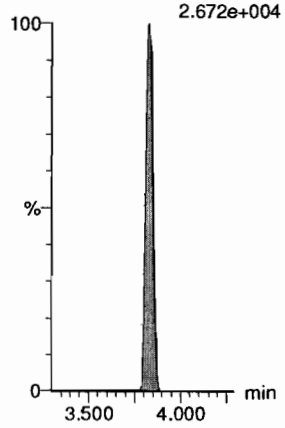
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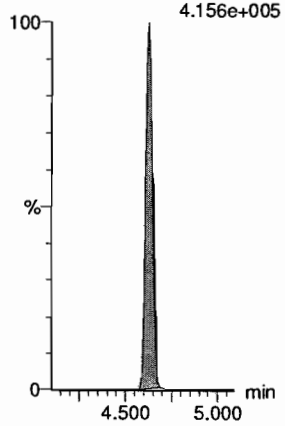
13C8-PFOA



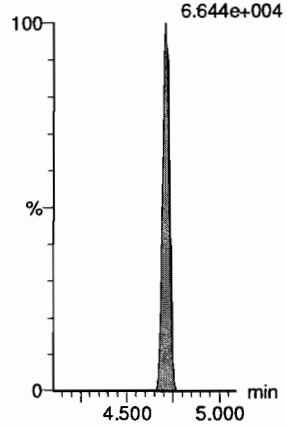
18O2-PFHxS



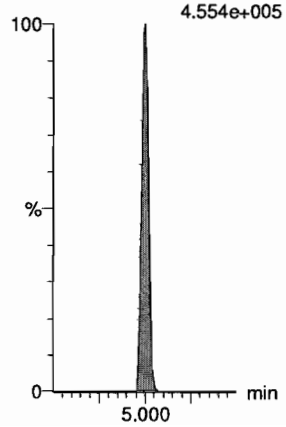
13C9-PFNA



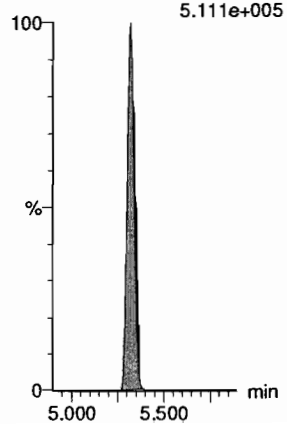
13C4-PFOS



13C6-PFDA



13C7-PFUdA

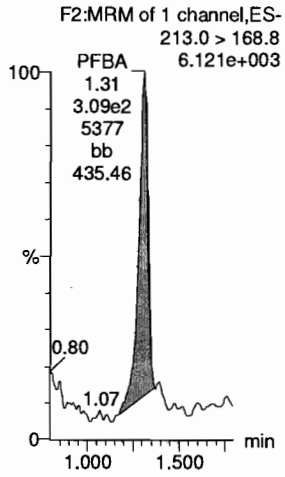


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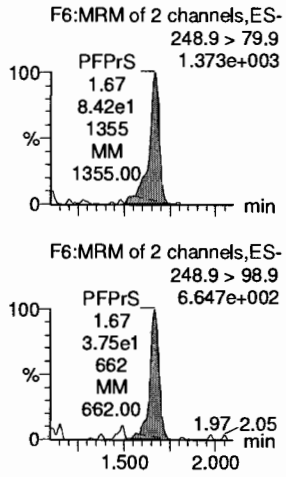
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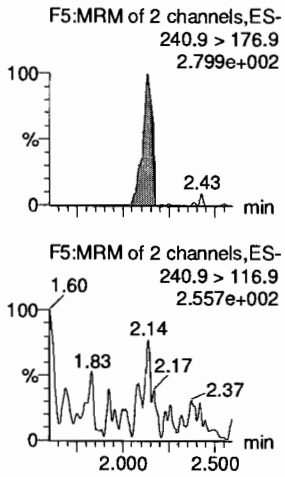
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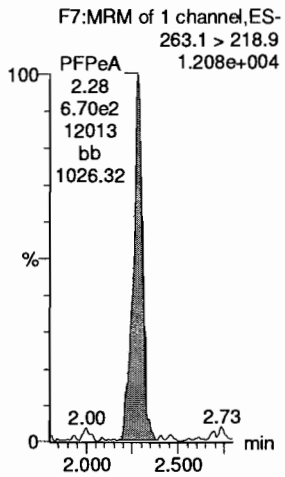
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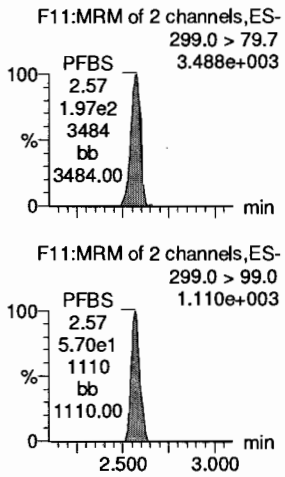
3:3 FTCA



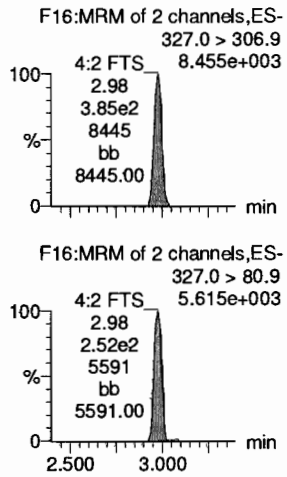
PFPeA



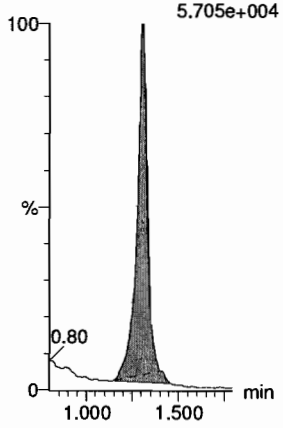
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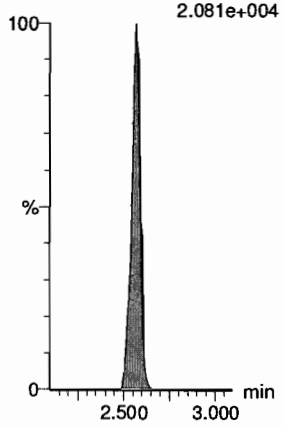
4:2 FTS



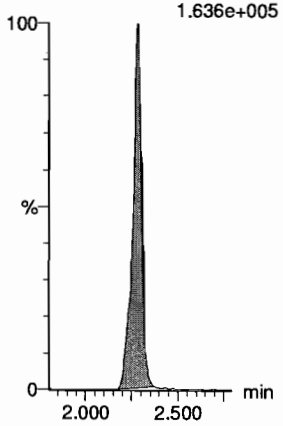
13C3-PFBA



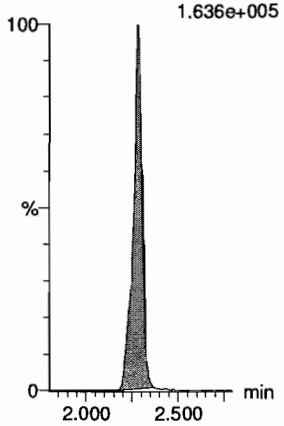
13C3-PFBS



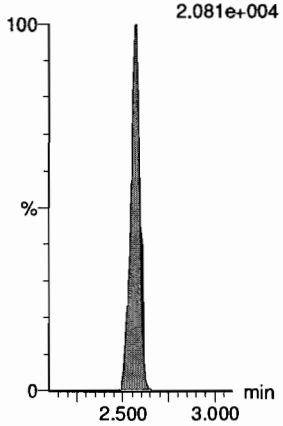
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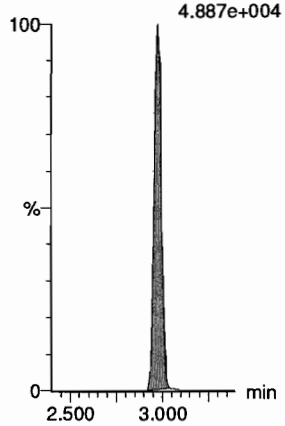
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

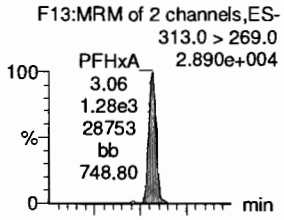


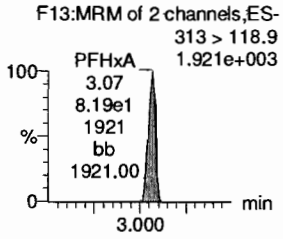
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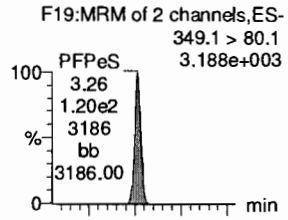
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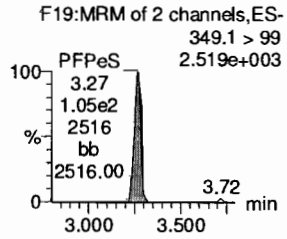
PFHxA



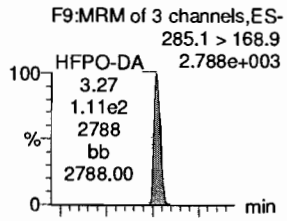


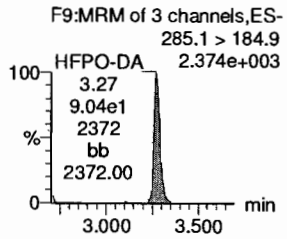
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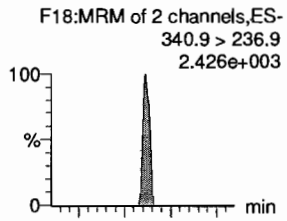


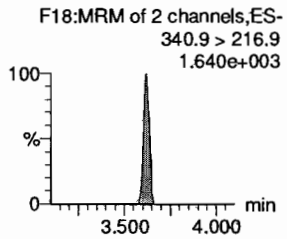
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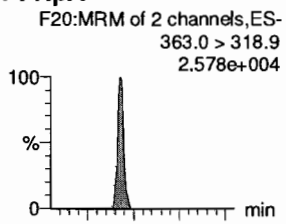


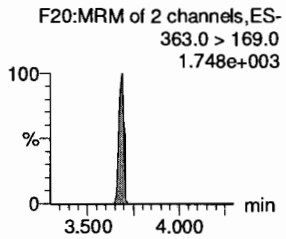
5:3 FTCA



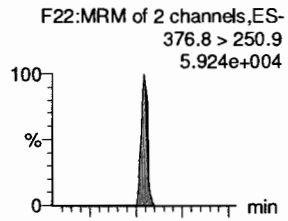


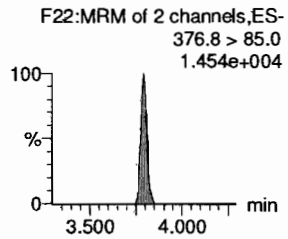
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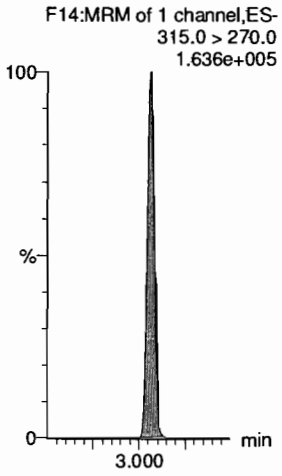


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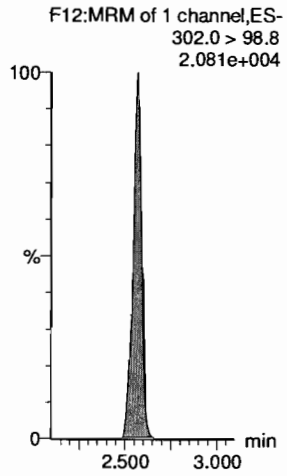




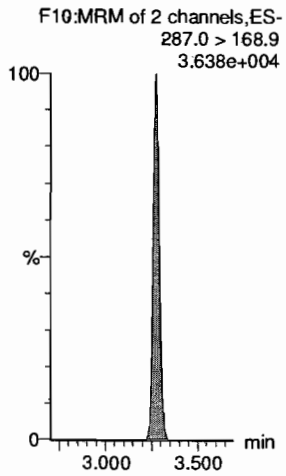
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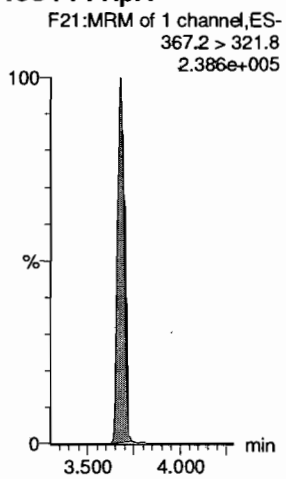
13C3-PFBS



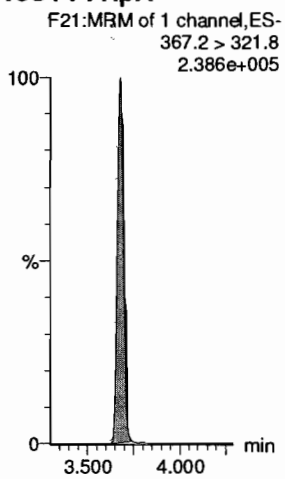
13C3-HFPO-DA



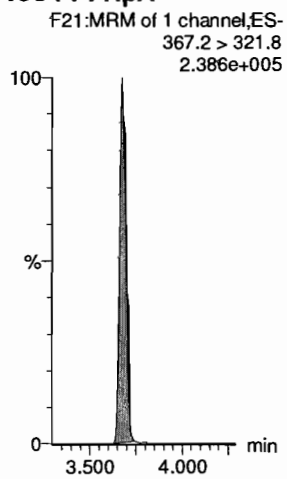
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13C4-PFHpA



13C4-PFHpA

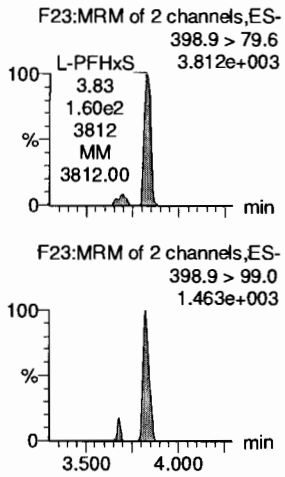


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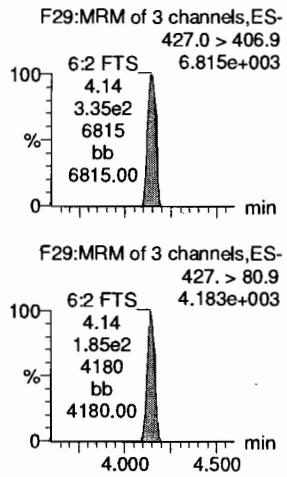
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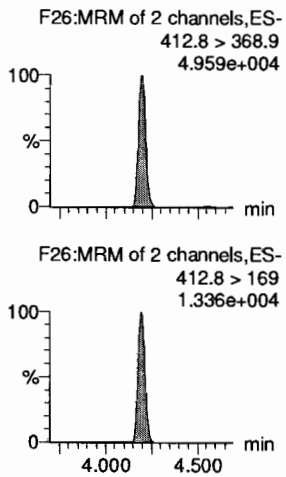
L-PFHxS



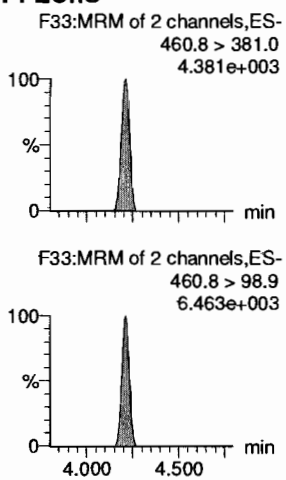
6:2 FTS



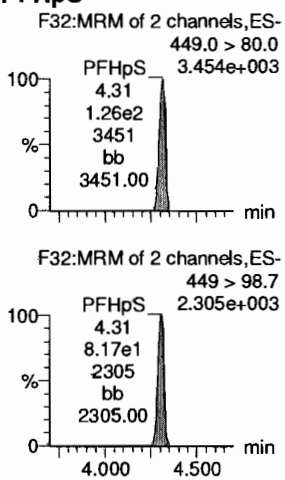
L-PFOA



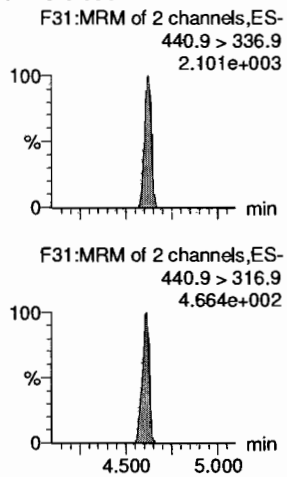
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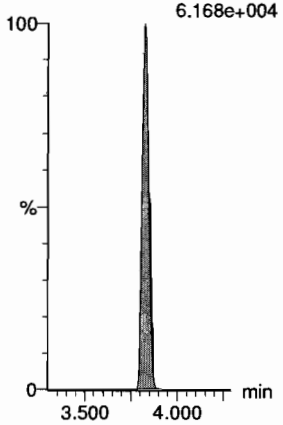
PFHpS



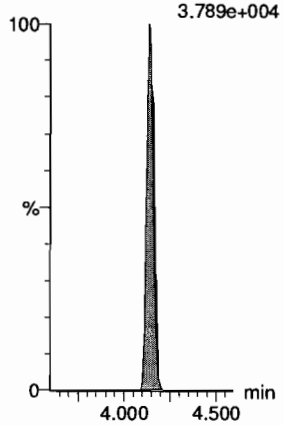
7:3 FTCA



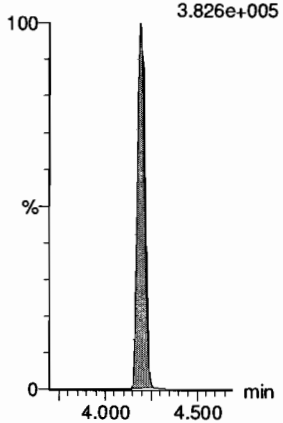
13C3-PFHxS



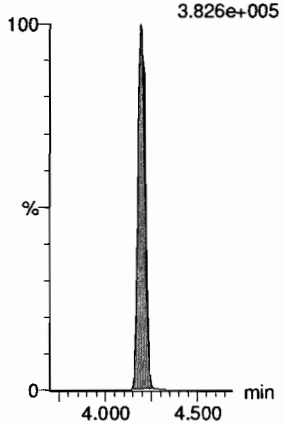
13C2-6:2 FTS



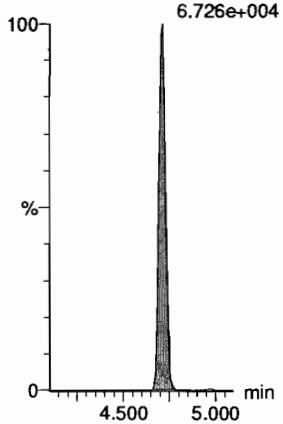
13C2-PFOA



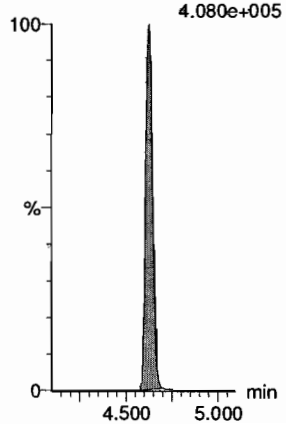
13C2-PFOA



13C8-PFOS



13C5-PFNA

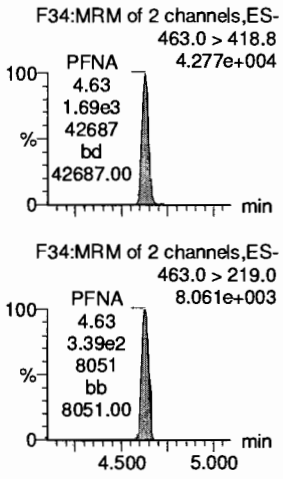


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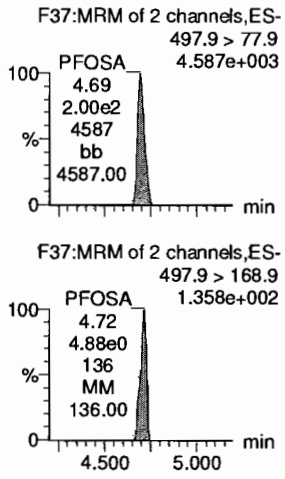
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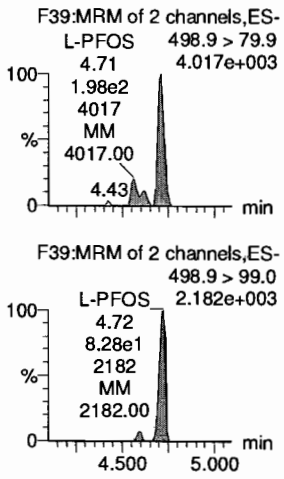
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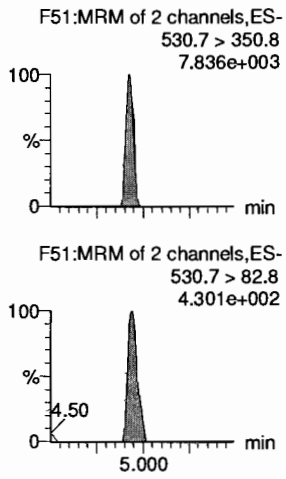
PFOSA



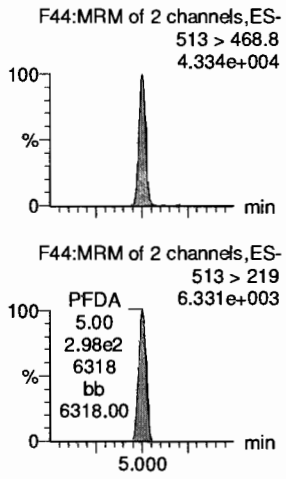
L-PFOS



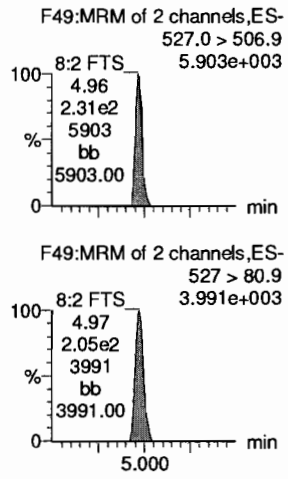
9Cl-PF30NS



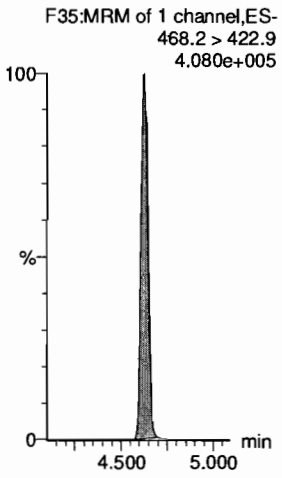
PFDA



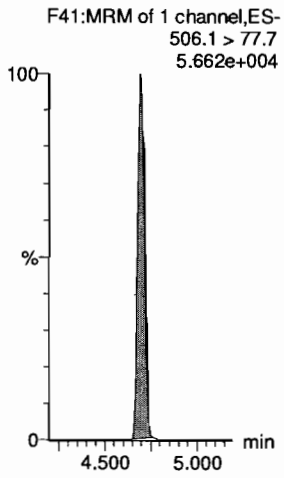
8:2 FTS



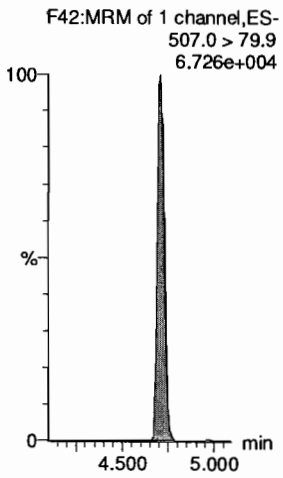
13C5-PFNA



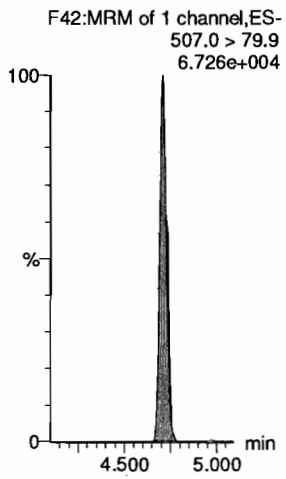
13C8-PFOSA



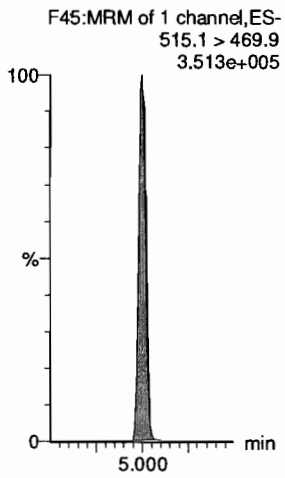
13C8-PFOS



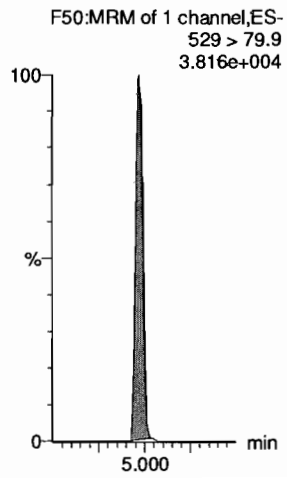
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

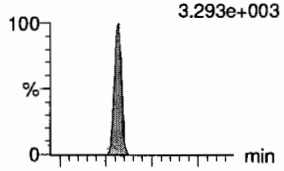


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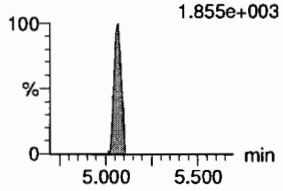
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Name: 190707M2_5, Date: 07-Jul-2019, Time: 17:54:04, ID: ST190707M2-3 PFC CS0 19F2414, Description: PFC CS0 19F2414

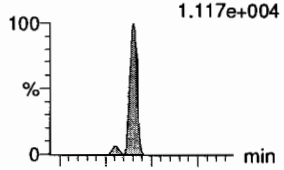
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
3.293e+003



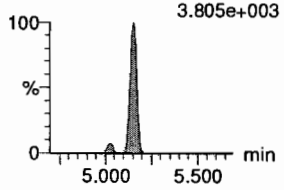
F53:MRM of 2 channels,ES-
549.1 > 99.1
1.855e+003



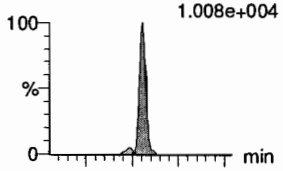
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
1.117e+004



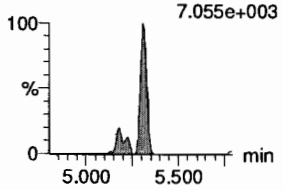
F56:MRM of 2 channels,ES-
570. > 512
3.805e+003



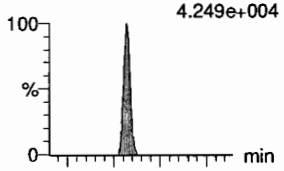
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
1.008e+004



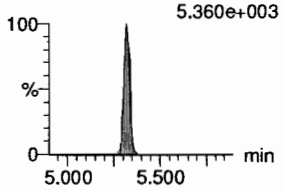
F59:MRM of 2 channels,ES-
584.1 > 526
7.055e+003



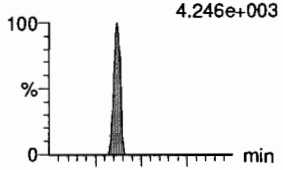
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
4.249e+004



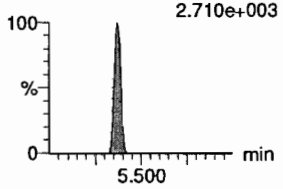
F54:MRM of 2 channels,ES-
563.0 > 269
5.360e+003



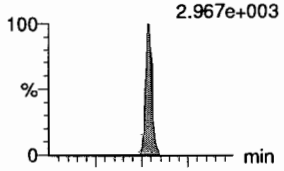
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
4.246e+003



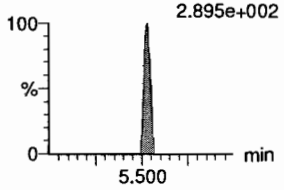
F61:MRM of 2 channels,ES-
598.8 > 98.9
2.710e+003



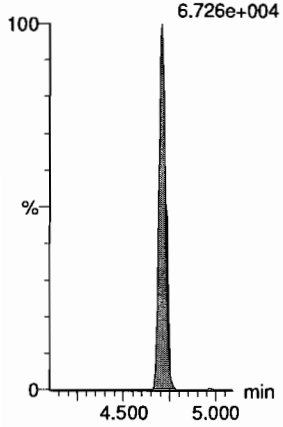
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
2.967e+003



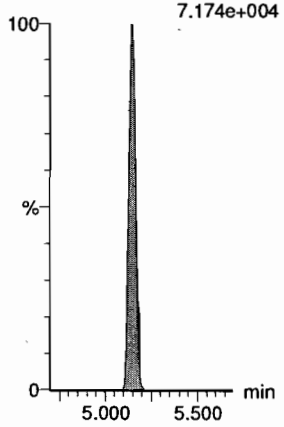
F68:MRM of 2 channels,ES-
632.6 > 450.7
2.895e+002



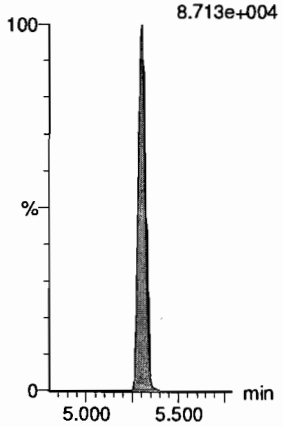
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.726e+004



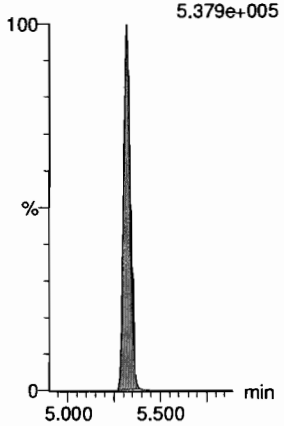
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
7.174e+004



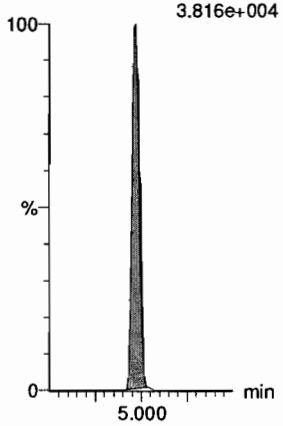
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
8.713e+004



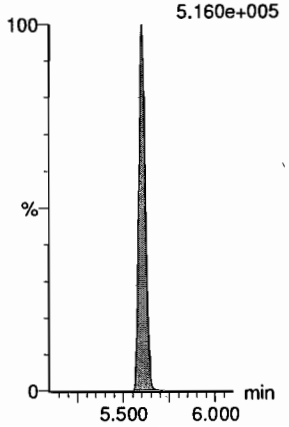
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
5.379e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.816e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.160e+005

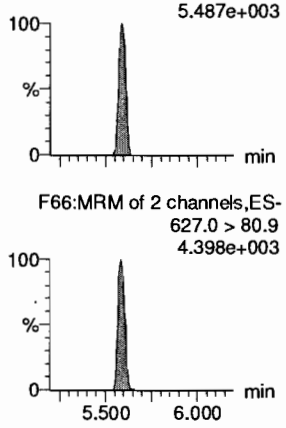


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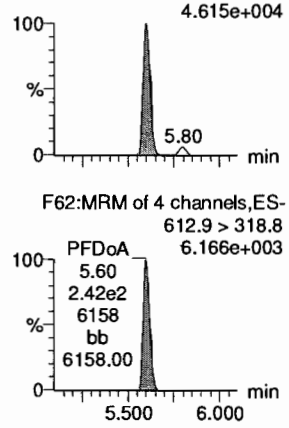
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Name: 190707M2_5, Date: 07-Jul-2019, Time: 17:54:04, ID: ST190707M2-3 PFC CS0 19F2414, Description: PFC CS0 19F2414

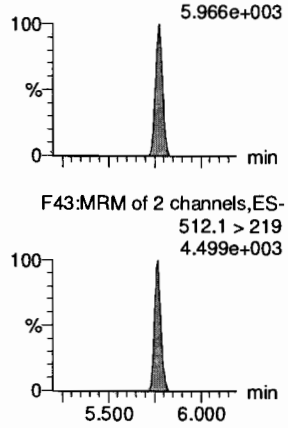
10:2 FTS



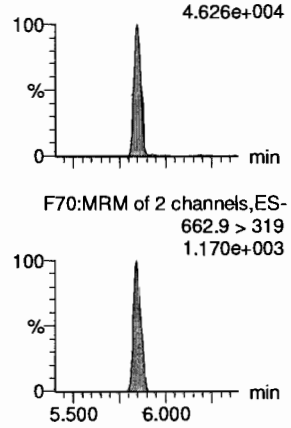
PFDoA



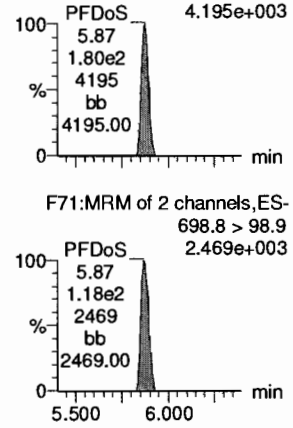
N-MeFOSA



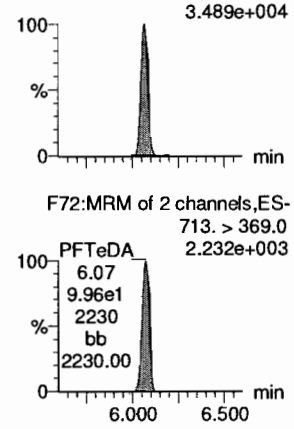
PFTrDA



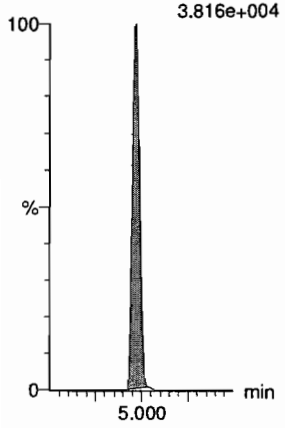
PFDoS



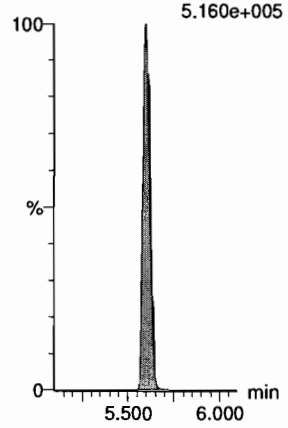
PFTeDA



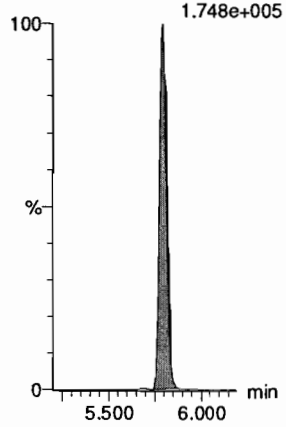
13C2-8:2 FTS



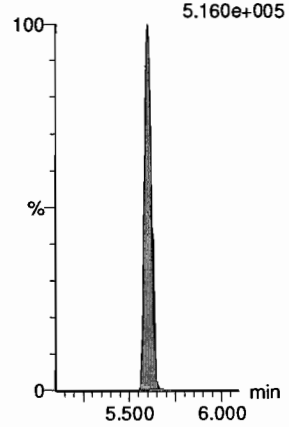
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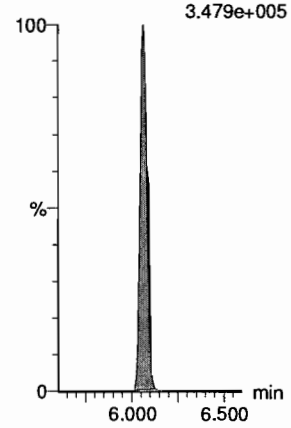
d3-N-MeFOSA



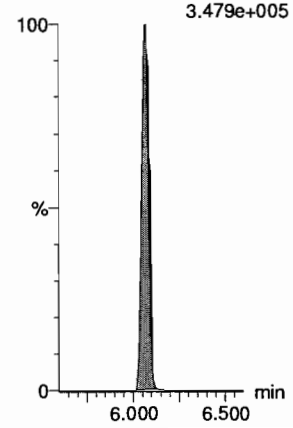
13C2-PFDoA



13C2-PFTeDA



13C2-PFTeDA

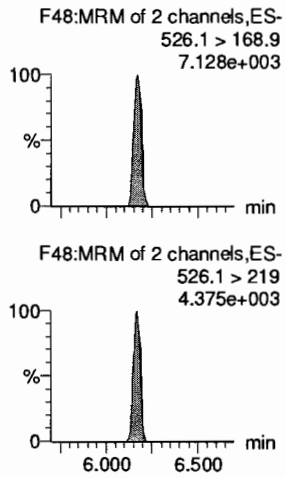


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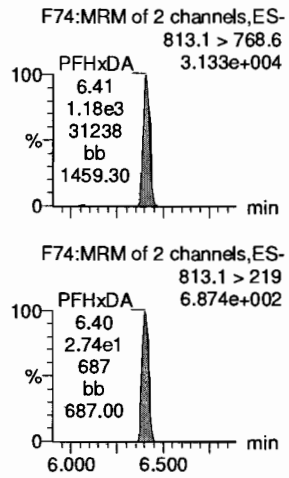
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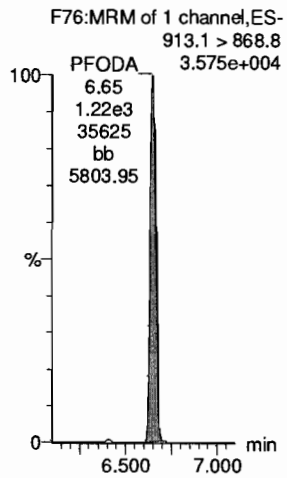
N-EtFOSA



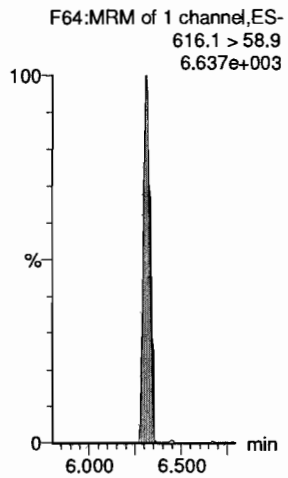
PFHxDA



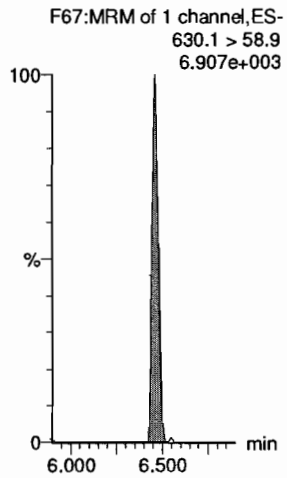
PFODA



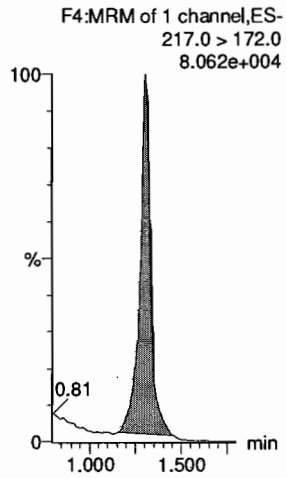
N-MeFOSE



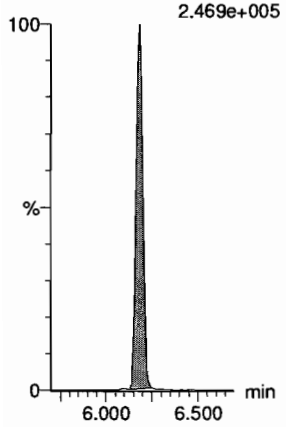
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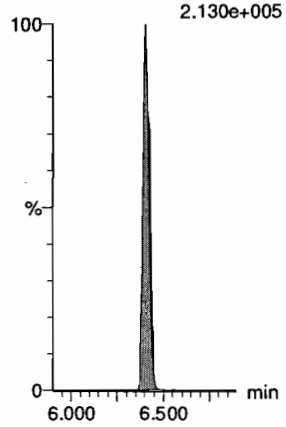
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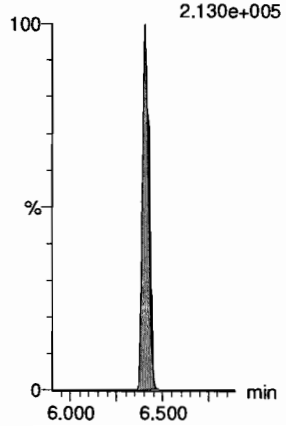
d5-N-ETFOSA



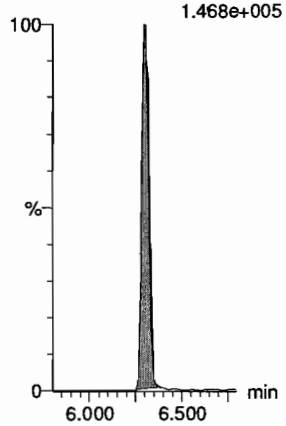
13C2-PFHxDA



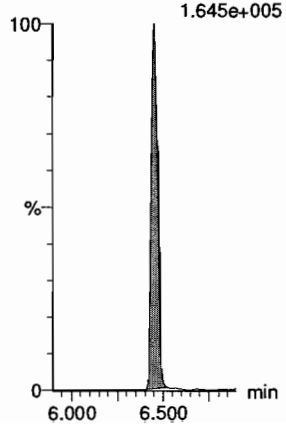
13C2-PFHxDA



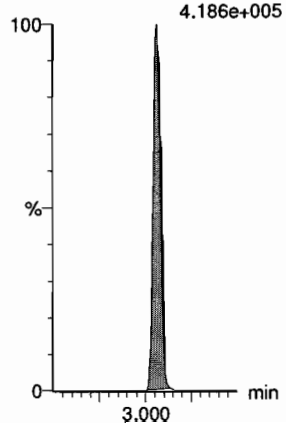
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d9-N-EtFOSE



13C5-PFHxA

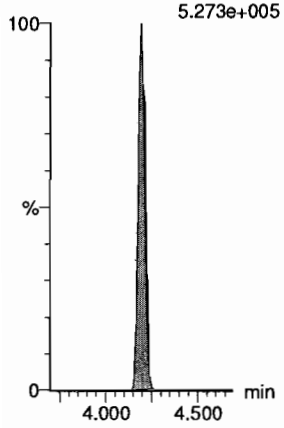


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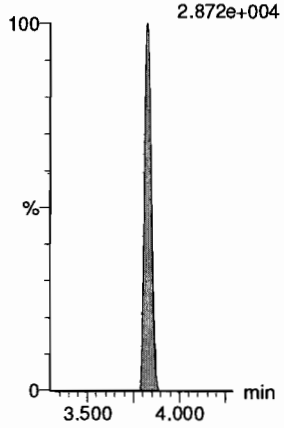
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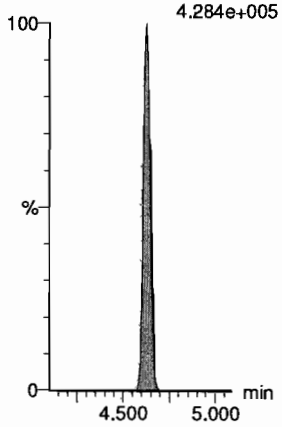
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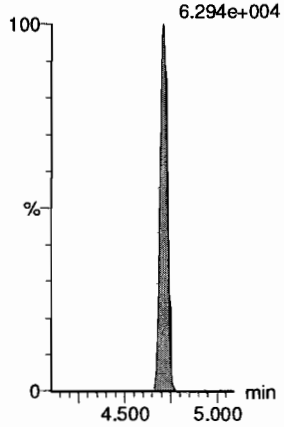
18O2-PFHxS



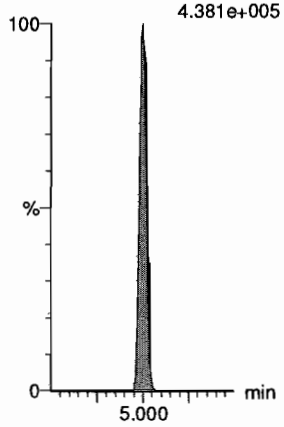
13C9-PFNA



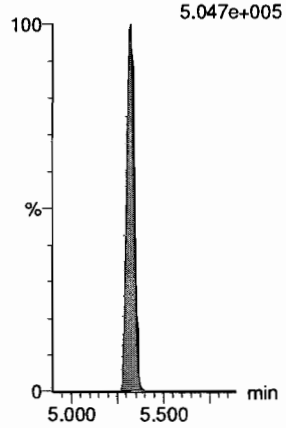
13C4-PFOS



13C6-PFDA



13C7-PFUdA

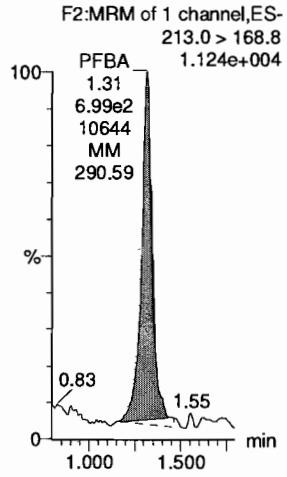


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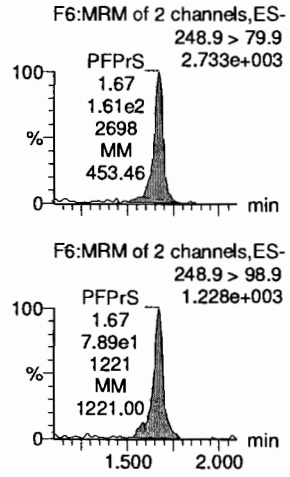
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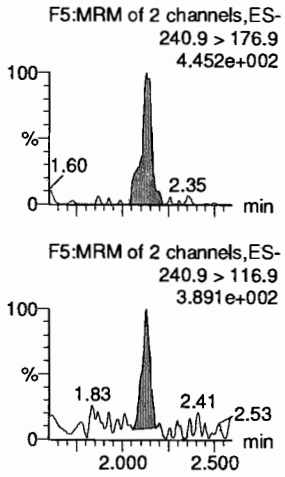
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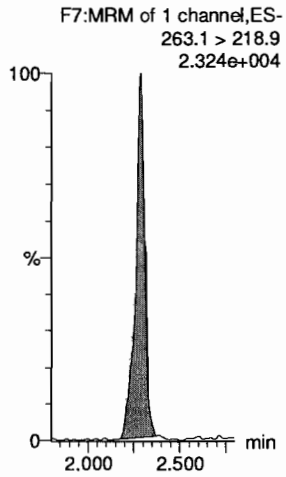
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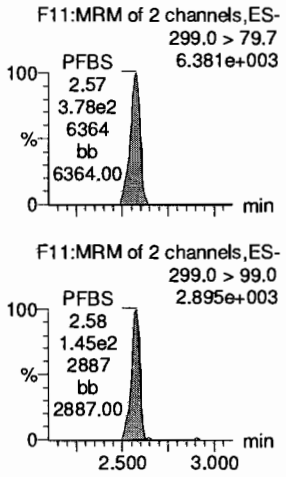
3:3 FTCA



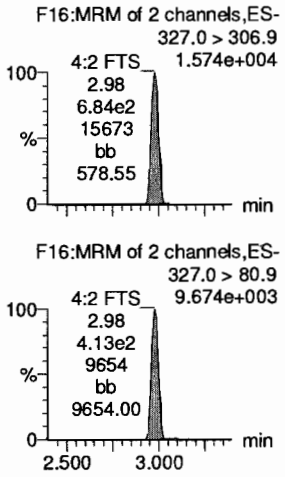
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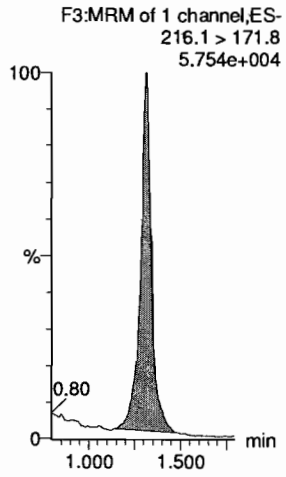
PFBS



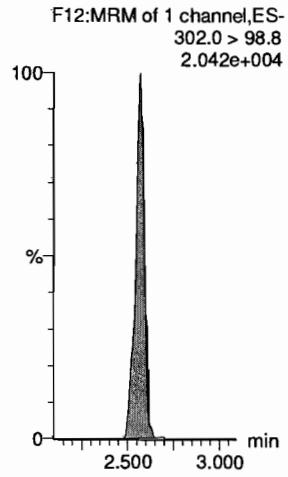
4:2 FTS



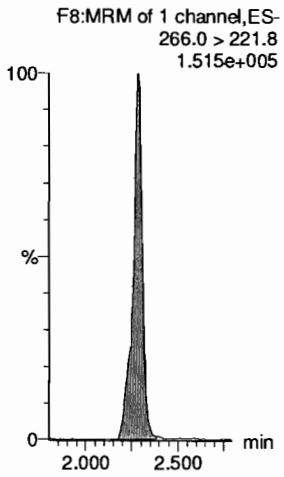
13C3-PFBA



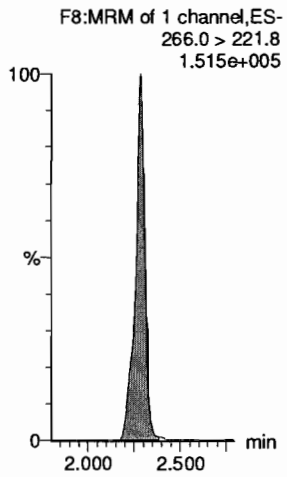
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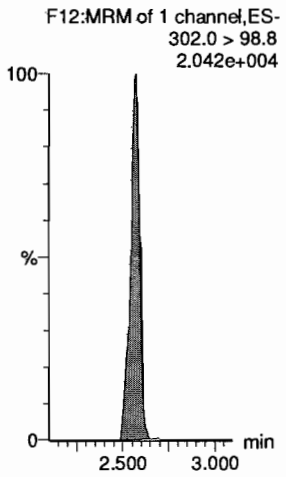
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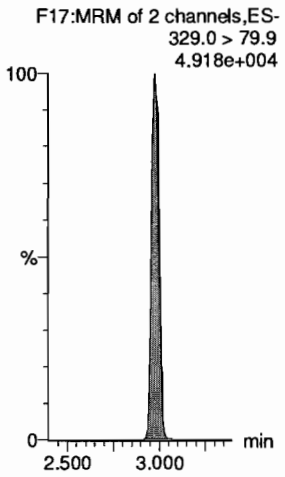
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

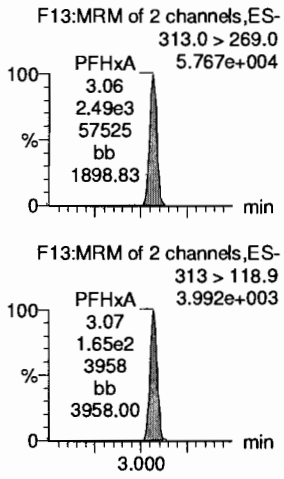


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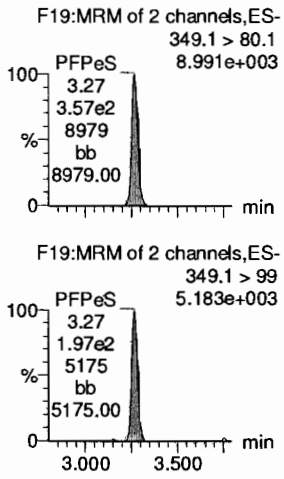
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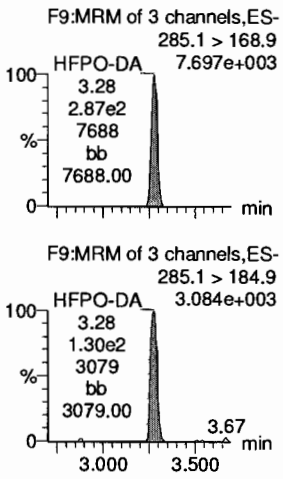
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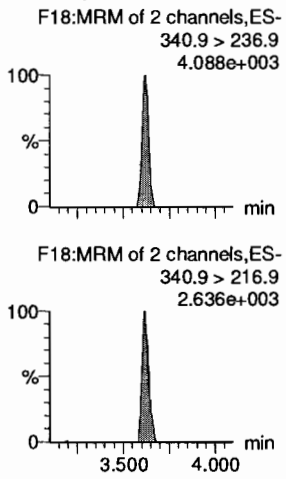
PFPeS



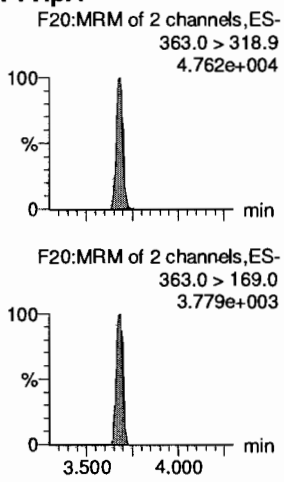
HFPO-DA



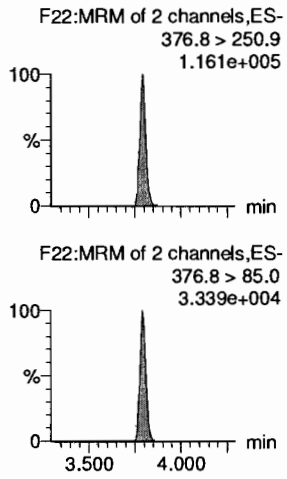
5:3 FTCA



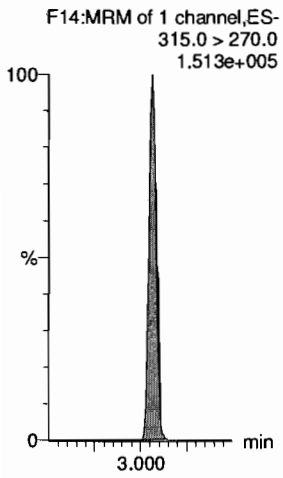
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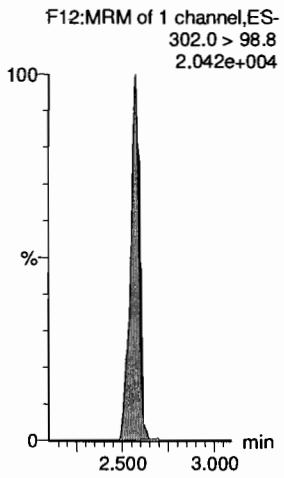
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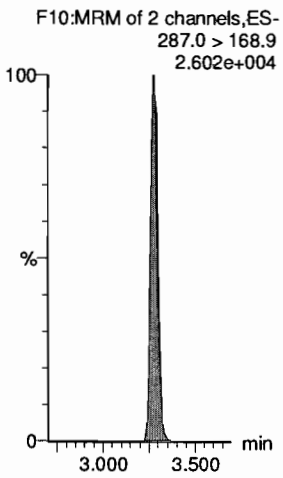
13C2-PFHxA



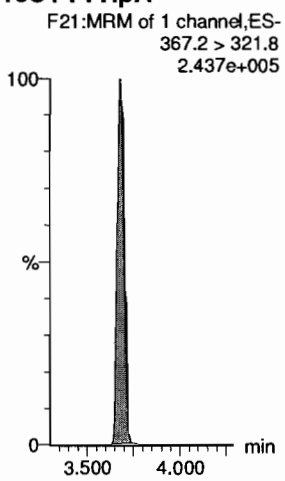
13C3-PFBS



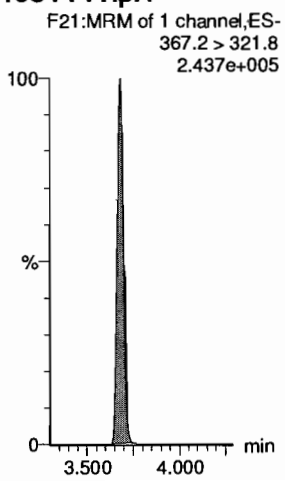
13C3-HFPO-DA



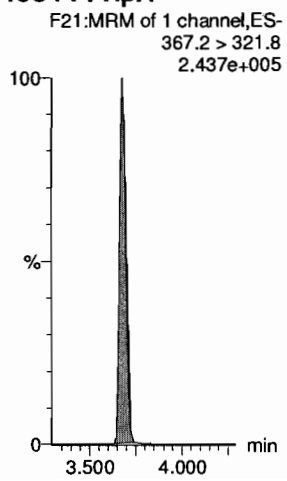
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

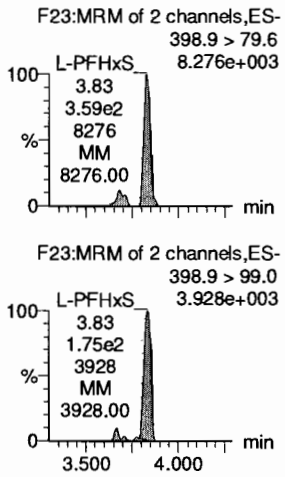


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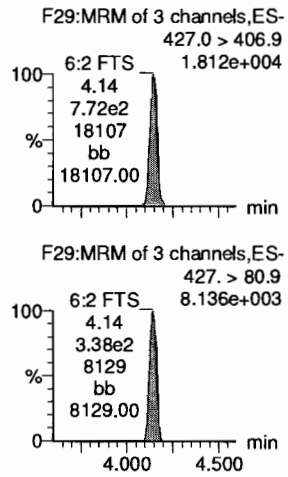
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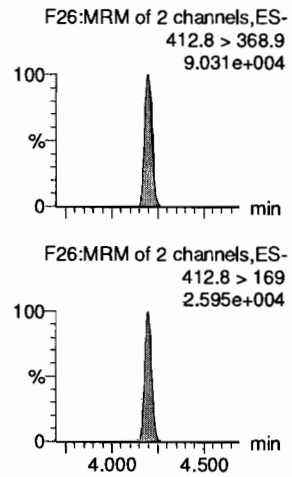
L-PFHxS



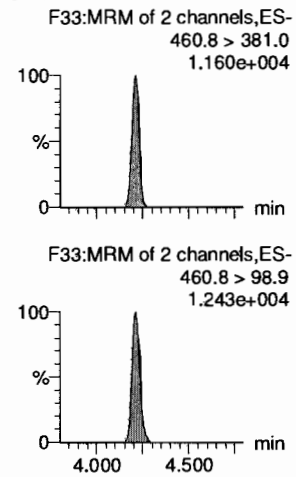
6:2 FTS



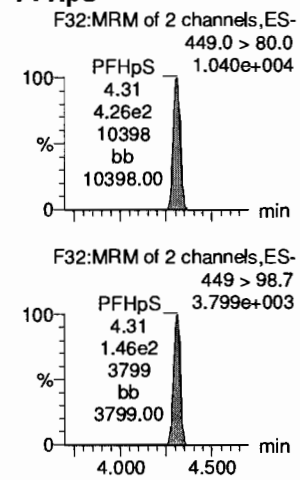
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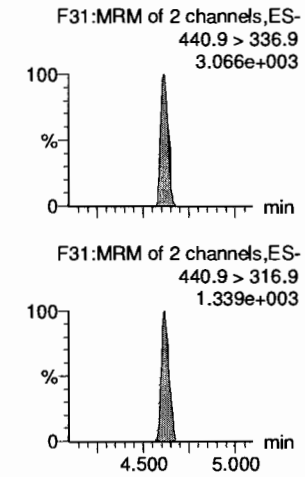
PFEChS



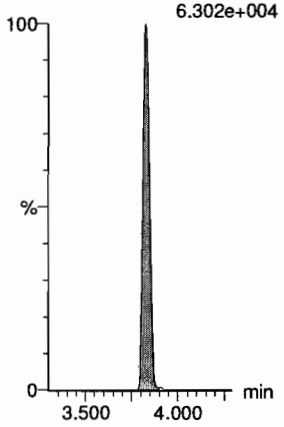
PFHpS



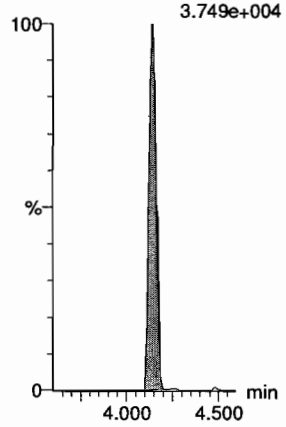
7:3 FTCA



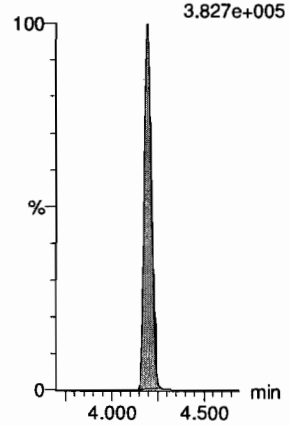
13C3-PFHxS



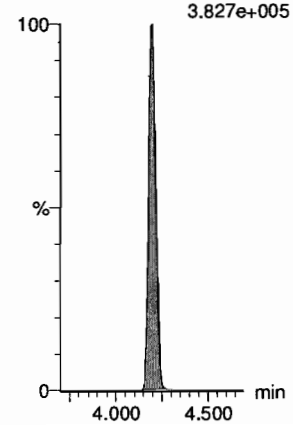
13C2-6:2 FTS



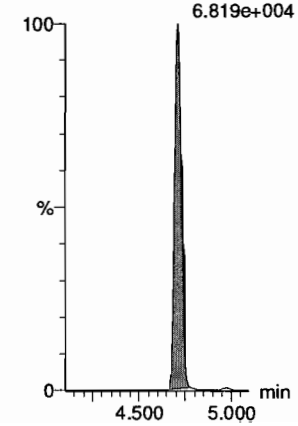
13C2-PFOA



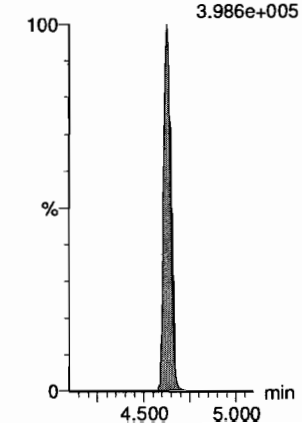
13C2-PFOA



13C8-PFOS



13C5-PFNA

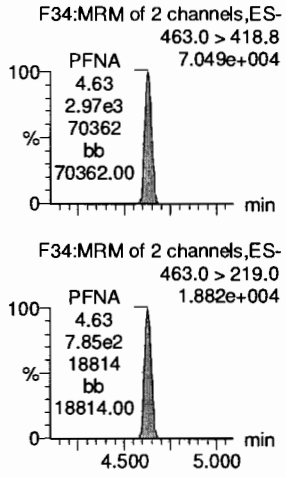


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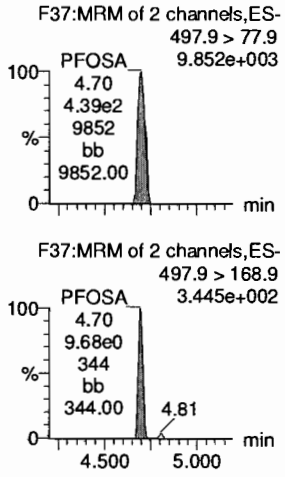
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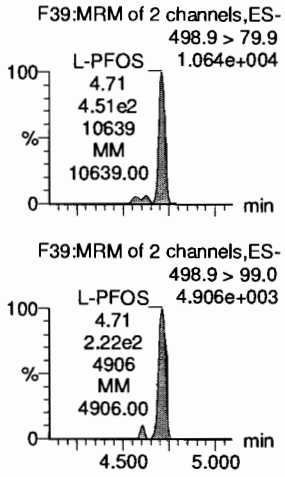
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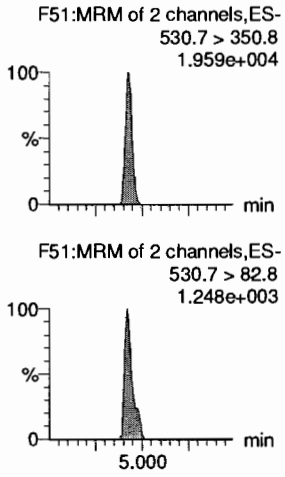
PFOSA



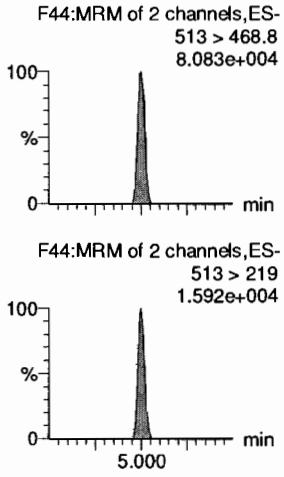
L-PFOS



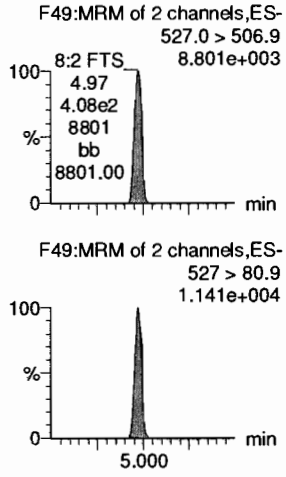
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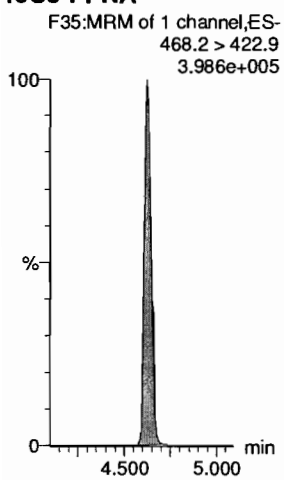
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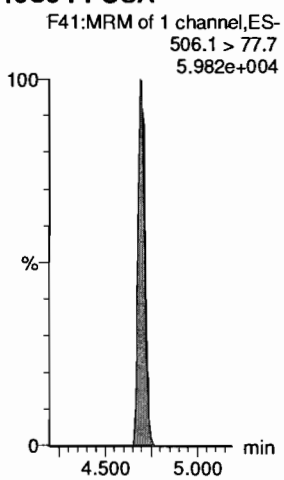
8:2 FTS



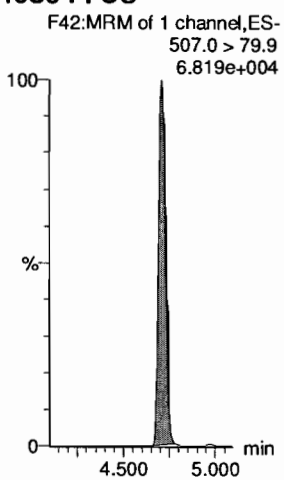
13C5-PFNA



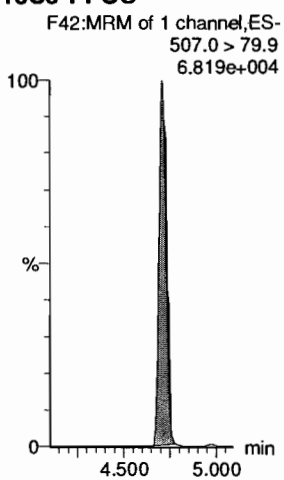
13C8-PFOSA



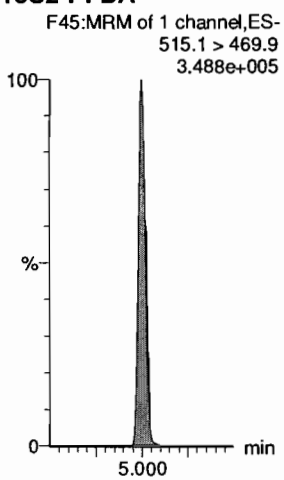
13C8-PFOS



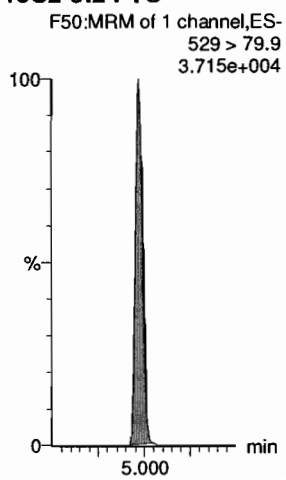
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

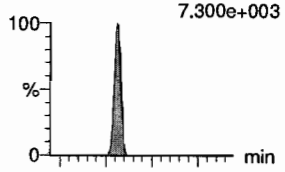


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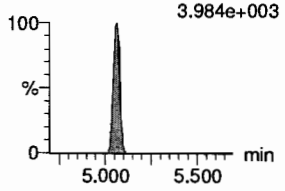
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Name: 190707M2_6, Date: 07-Jul-2019, Time: 18:04:37, ID: ST190707M2-4 PFC CS1 19F2415, Description: PFC CS1 19F2415

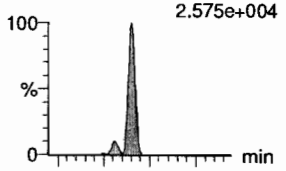
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
7.300e+003



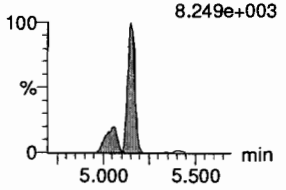
F53:MRM of 2 channels,ES-
549.1 > 99.1
3.984e+003



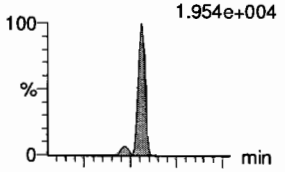
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
2.575e+004



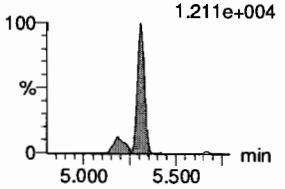
F56:MRM of 2 channels,ES-
570. > 512
8.249e+003



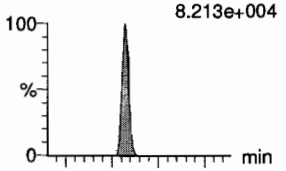
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
1.954e+004



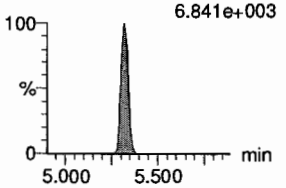
F59:MRM of 2 channels,ES-
584.1 > 526
1.211e+004



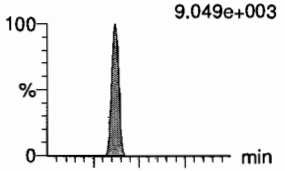
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
8.213e+004



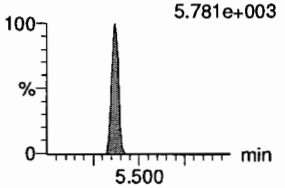
F54:MRM of 2 channels,ES-
563.0 > 269
6.841e+003



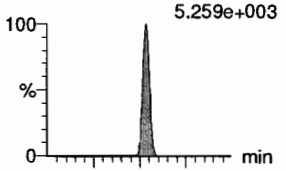
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
9.049e+003



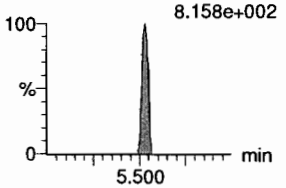
F61:MRM of 2 channels,ES-
598.8 > 98.9
5.781e+003



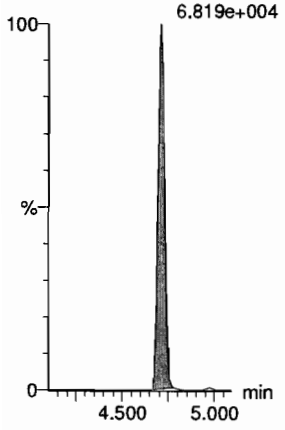
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
5.259e+003



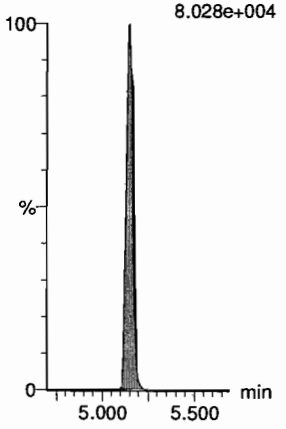
F68:MRM of 2 channels,ES-
632.6 > 450.7
8.158e+002



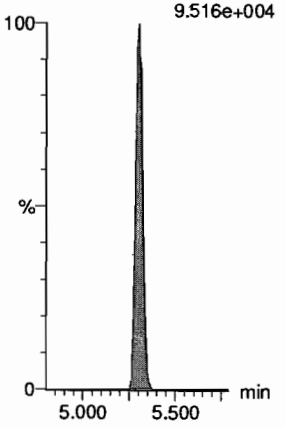
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.819e+004



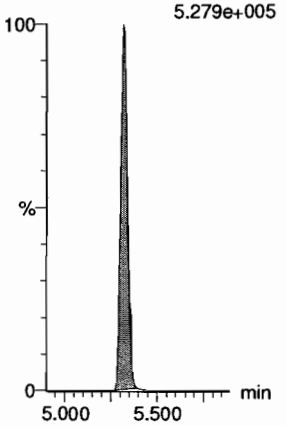
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
8.028e+004



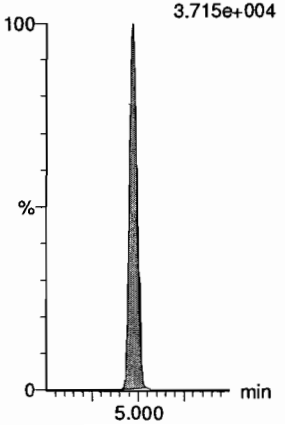
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
9.516e+004



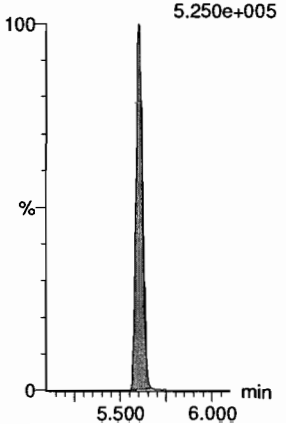
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
5.279e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.715e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.250e+005

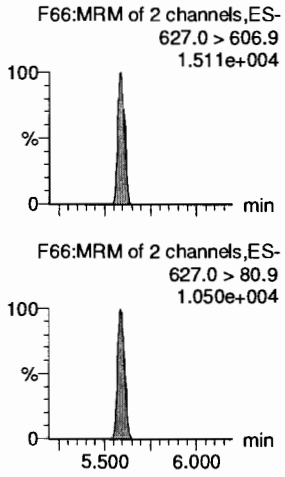


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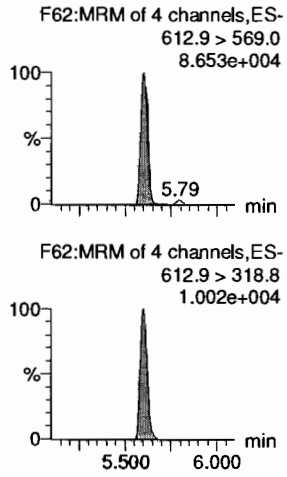
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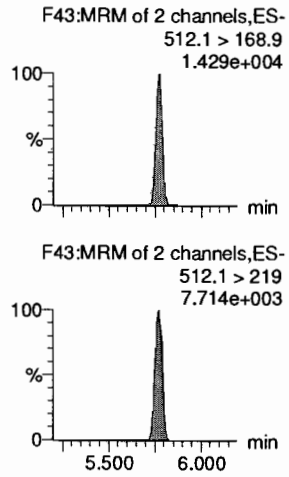
10:2 FTS



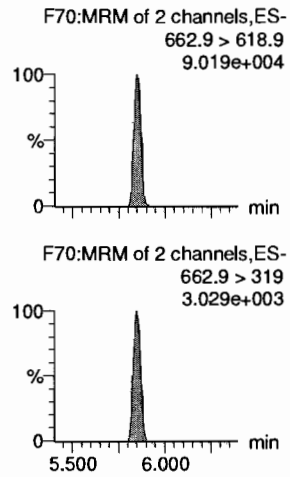
PFDoA



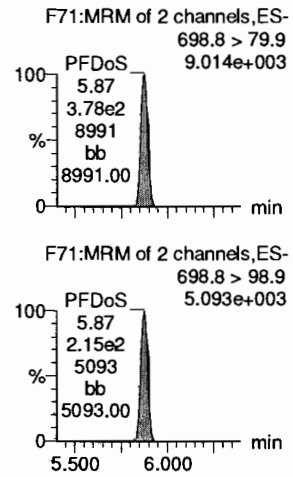
N-MeFOSA



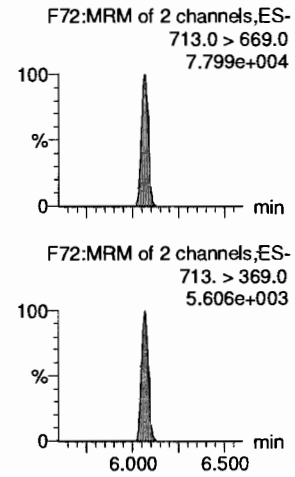
PFTrDA



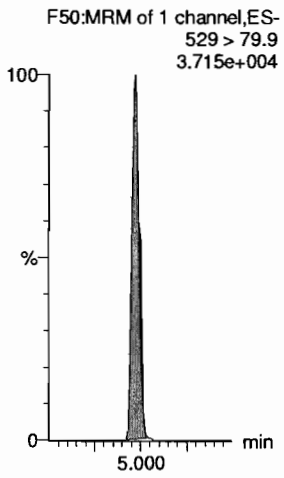
PFDoS



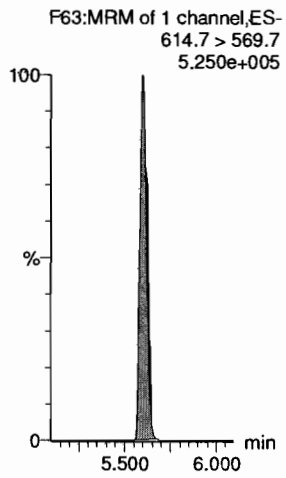
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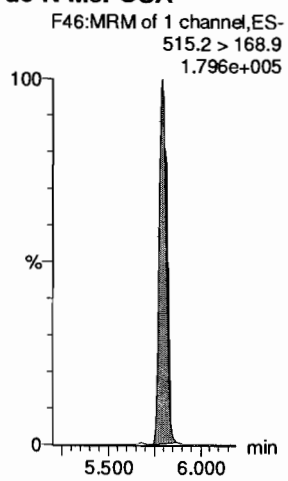
13C2-8:2 FTS



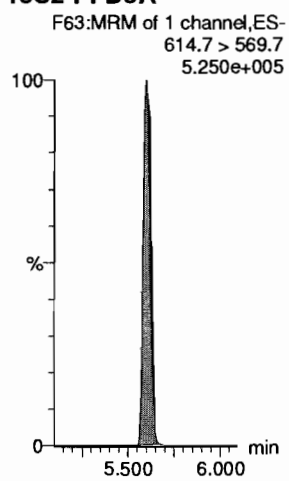
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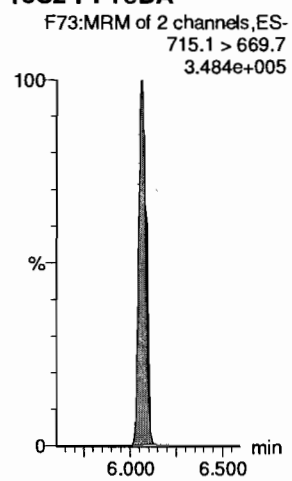
d3-N-MeFOSA



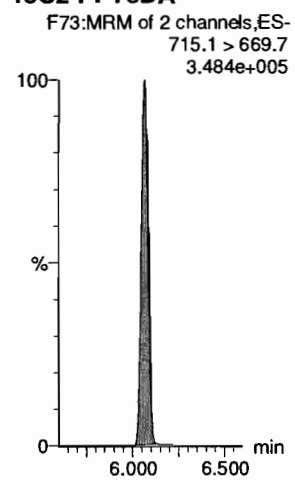
13C2-PFDoA



13C2-PFTeDA



13C2-PFTeDA

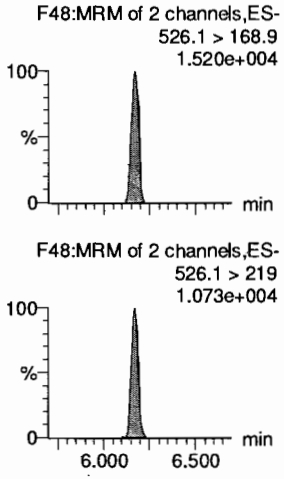


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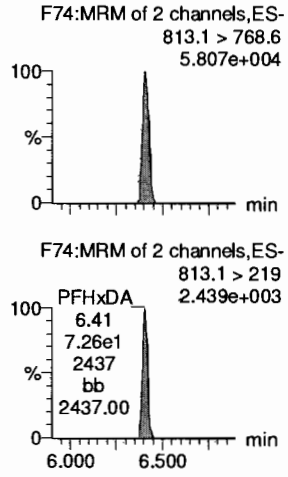
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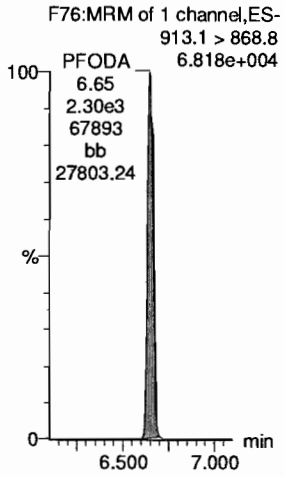
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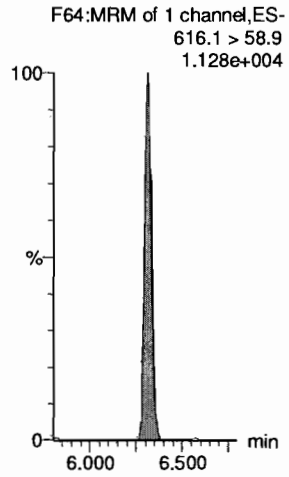
PFHxDA



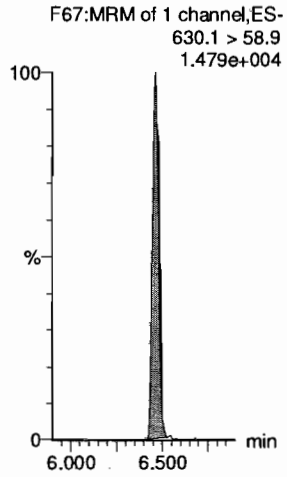
PFODA



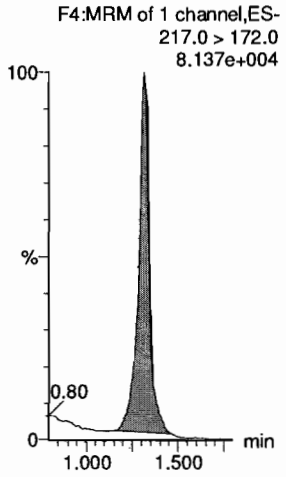
N-MeFOSE



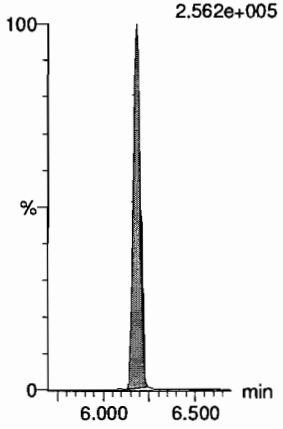
N-EtFOSE



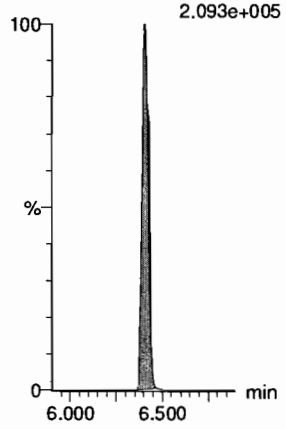
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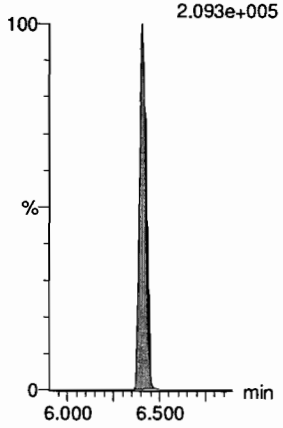
d5-N-ETFOSA



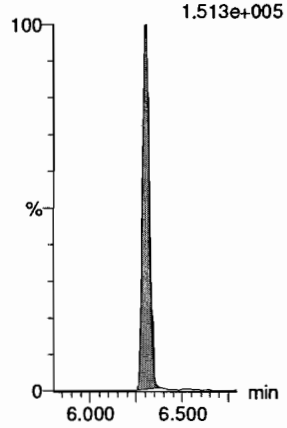
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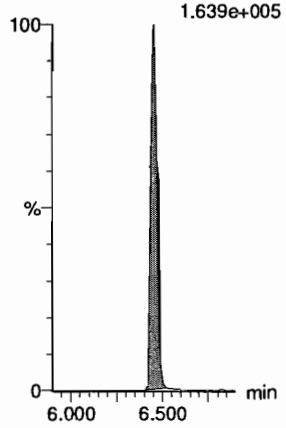
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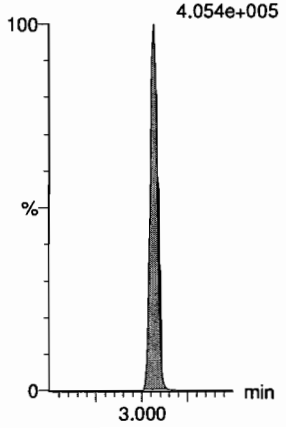
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

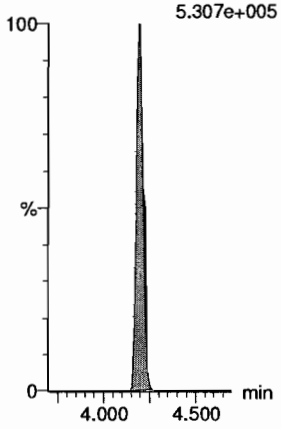


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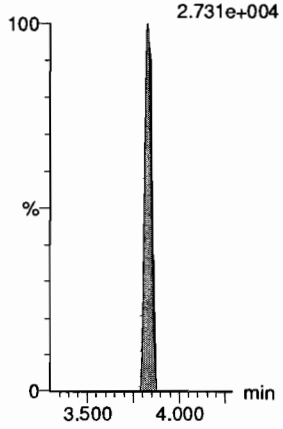
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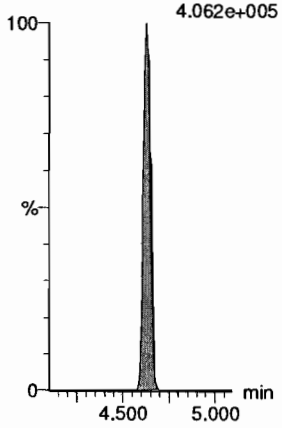
13C8-PFOA



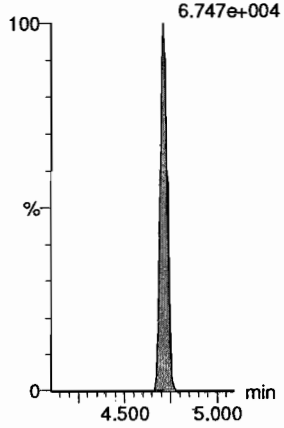
18O2-PFHxS



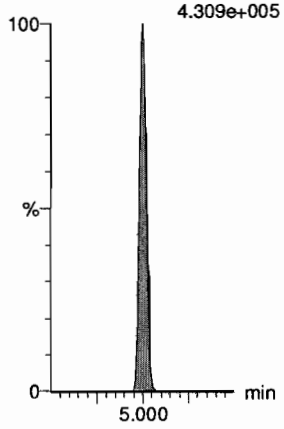
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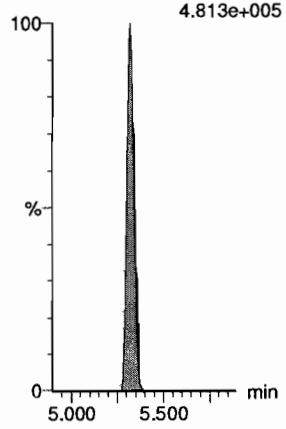
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13C6-PFDA



13C7-PFUdA

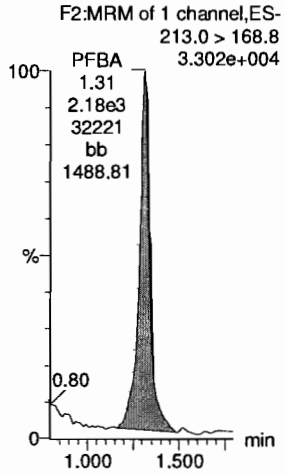


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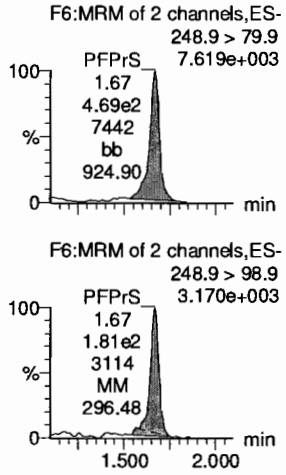
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Name: 190707M2_7, Date: 07-Jul-2019, Time: 18:15:16, ID: ST190707M2-5 PFC CS2 19F2416, Description: PFC CS2 19F2416

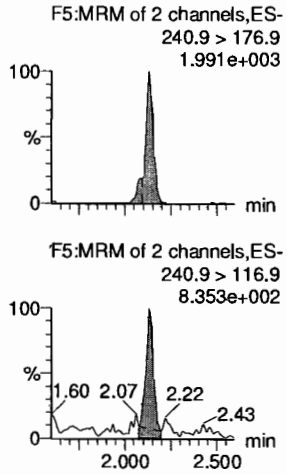
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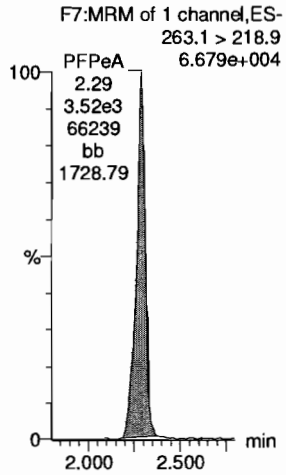
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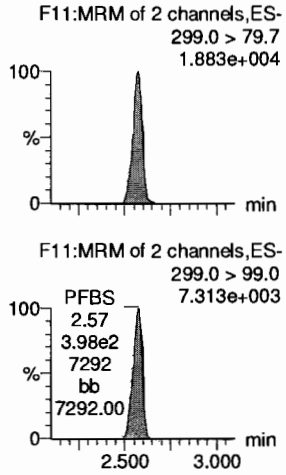
3:3 FTCA



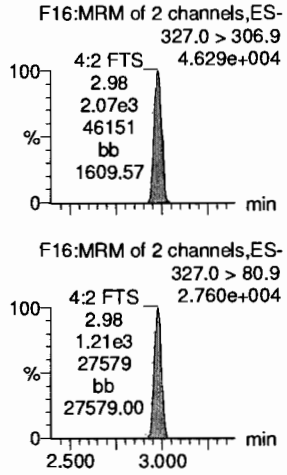
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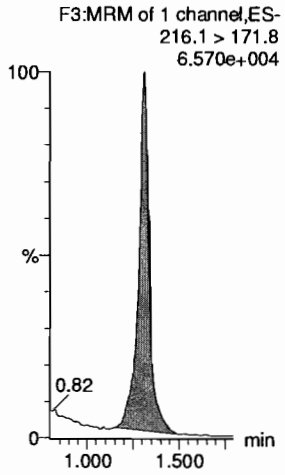
PFBS



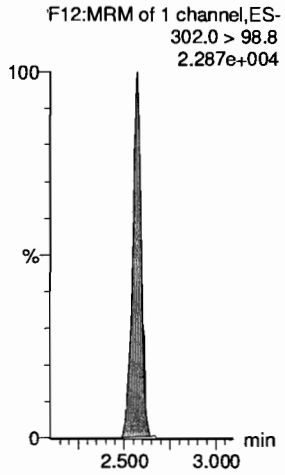
4:2 FTS



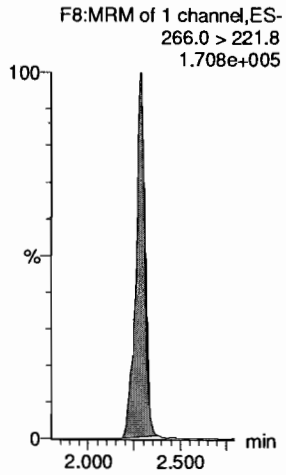
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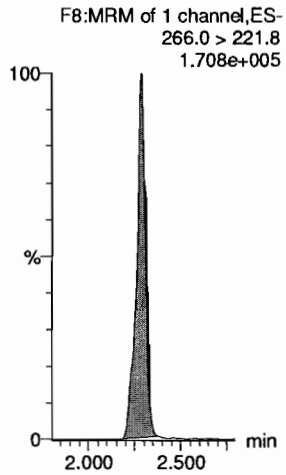
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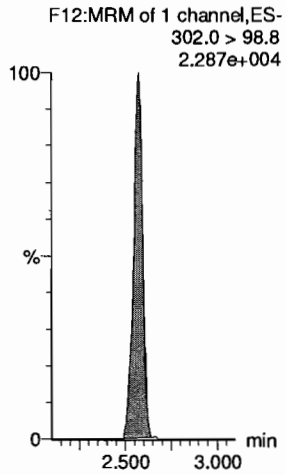
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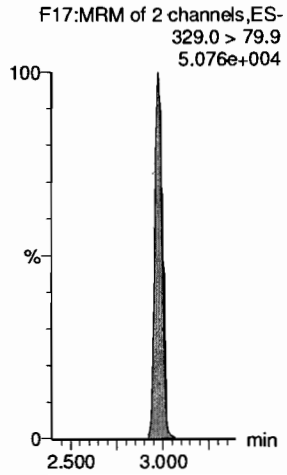
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13C3-PFBS



13C2-4:2 FTS

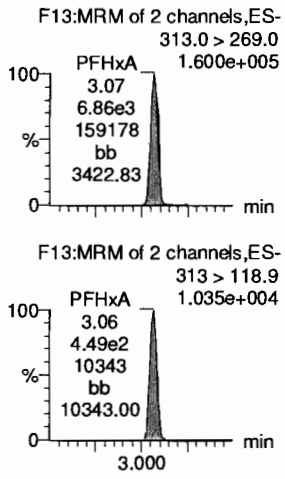


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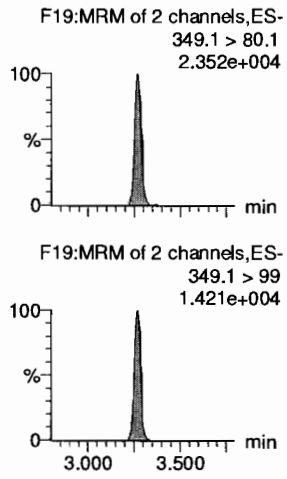
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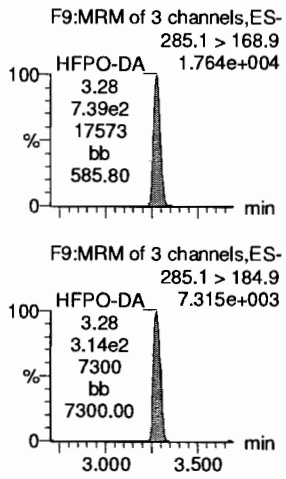
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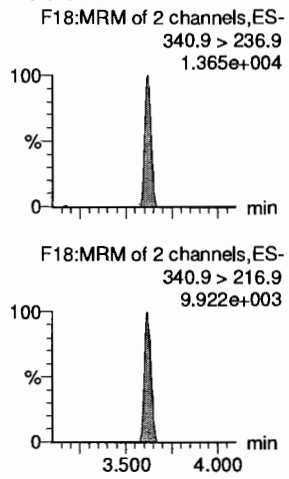
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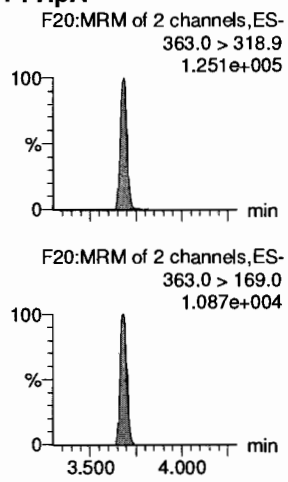
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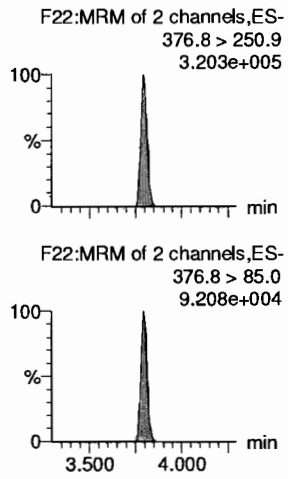
5:3 FTCA



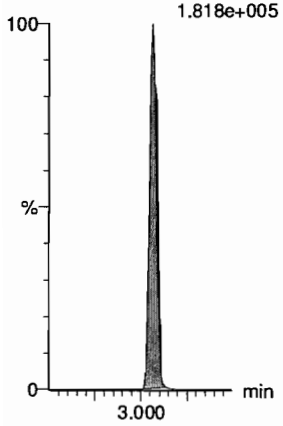
PFHpA



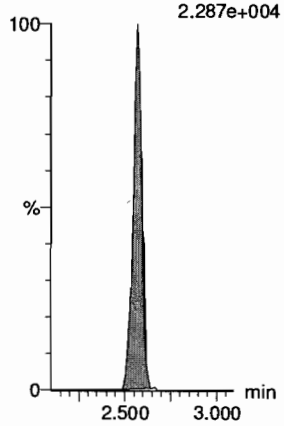
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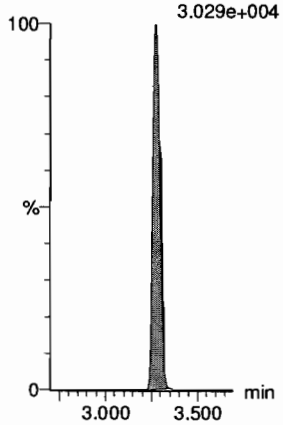
13C2-PFHxA



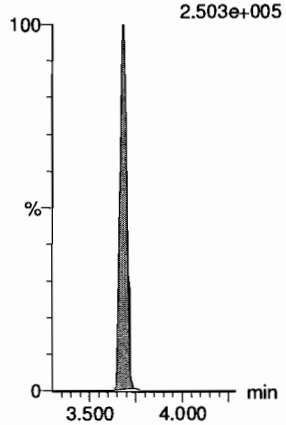
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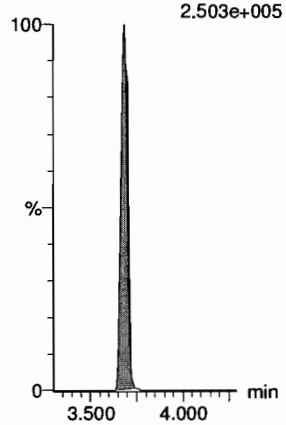
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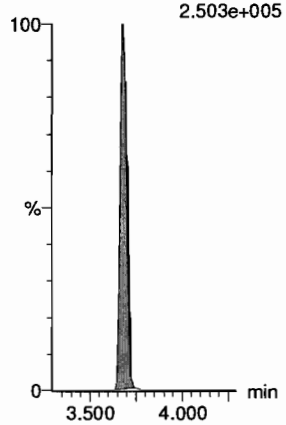
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13C4-PFHpA



13C4-PFHpA

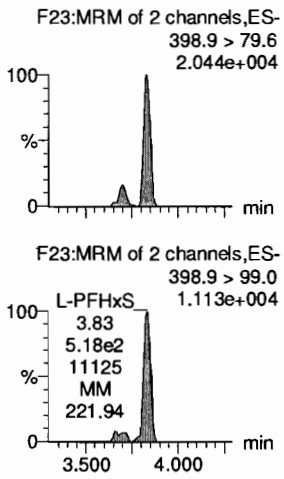


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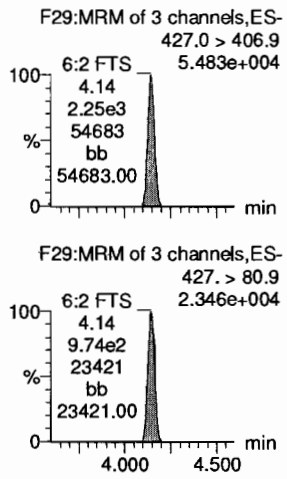
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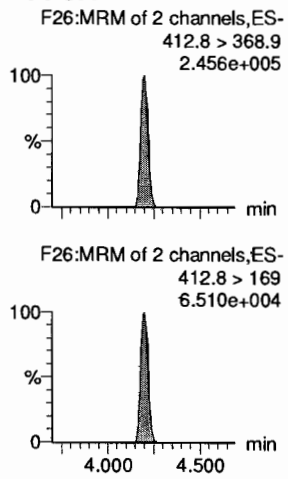
L-PFHxS



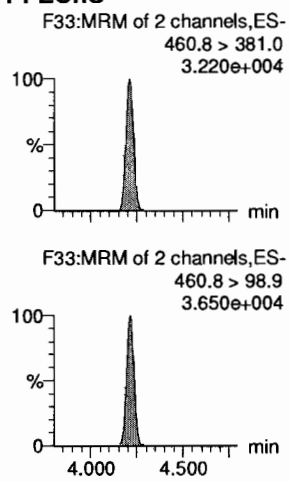
6:2 FTS



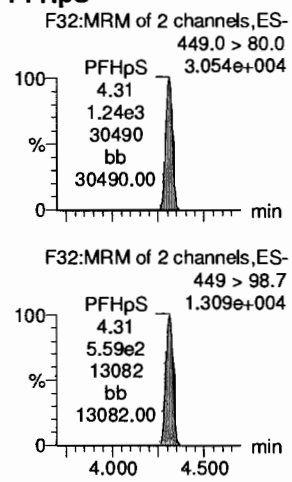
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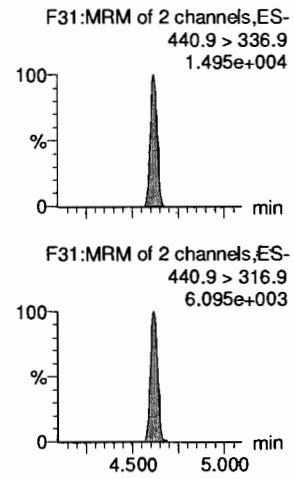
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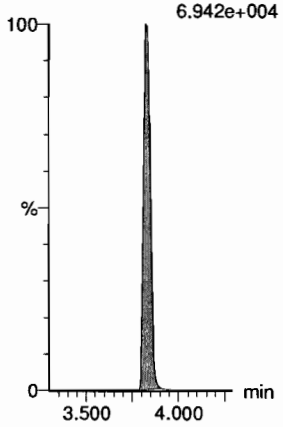
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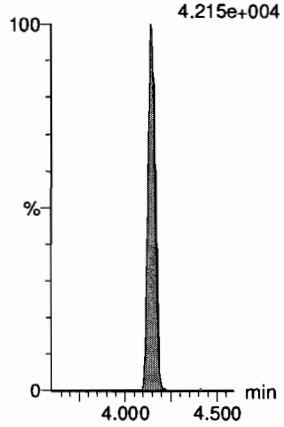
7:3 FTCA



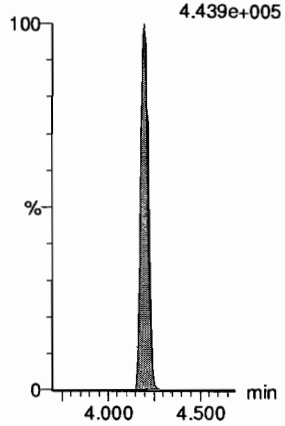
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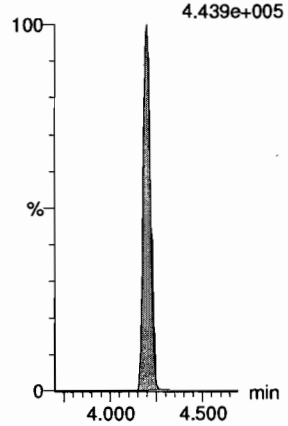
13C2-6:2 FTS



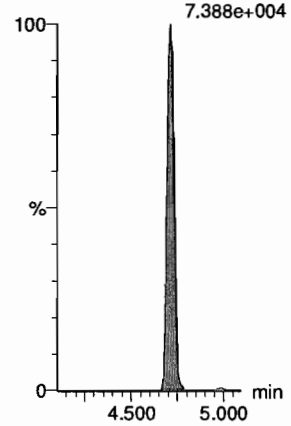
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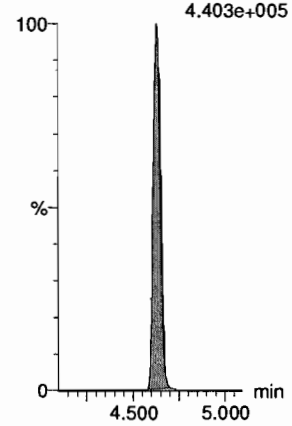
13C2-PFOA



13C8-PFOS



13C5-PFNA

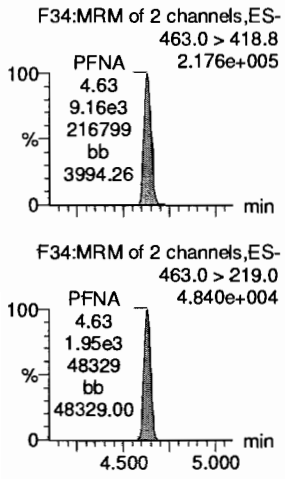


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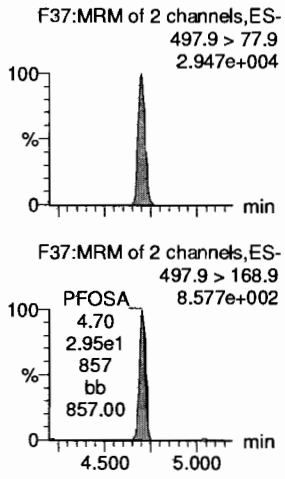
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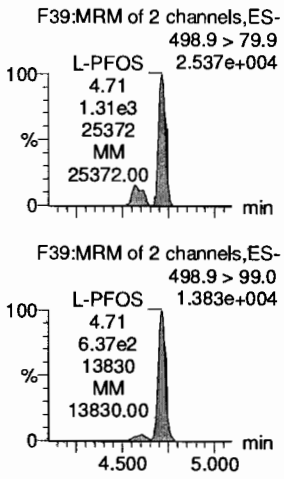
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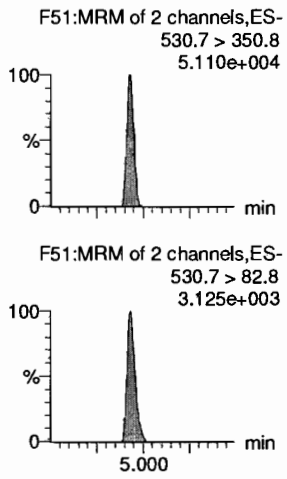
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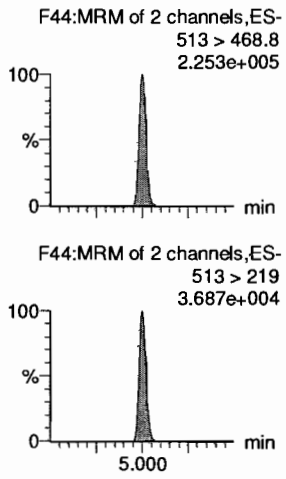
L-PFOS



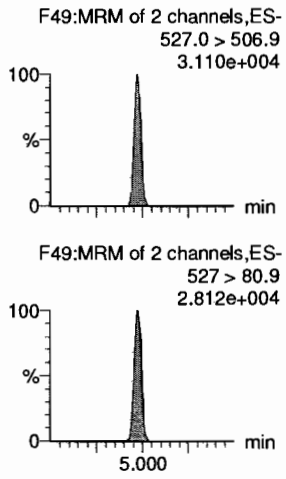
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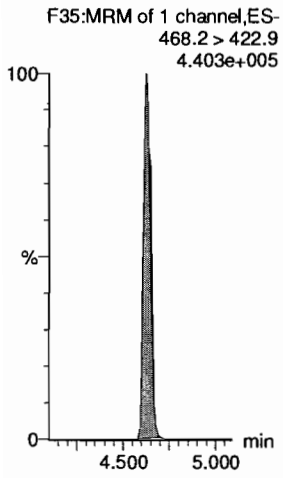
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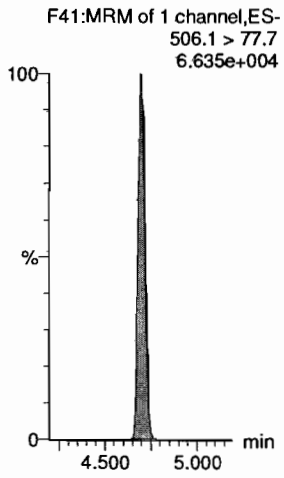
8:2 FTS



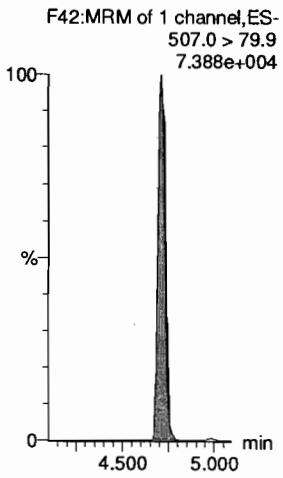
13C5-PFNA



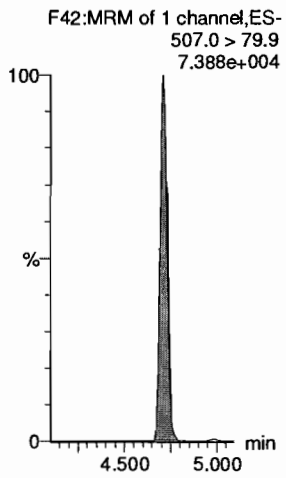
13C8-PFOSA



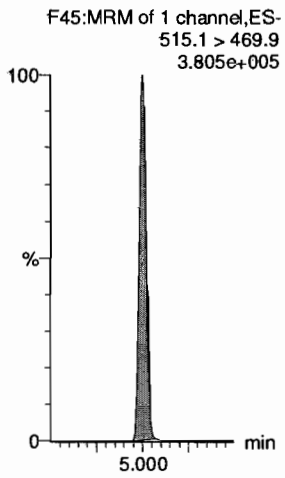
13C8-PFOS



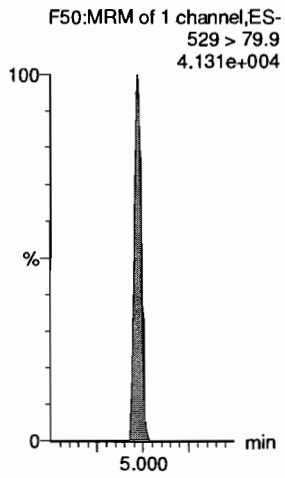
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

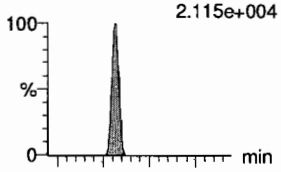


Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

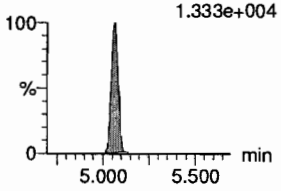
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_7, Date: 07-Jul-2019, Time: 18:15:16, ID: ST190707M2-5 PFC CS2 19F2416, Description: PFC CS2 19F2416

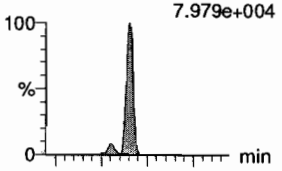
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
2.115e+004



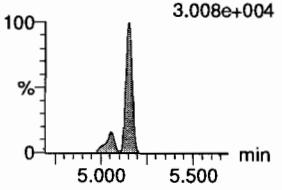
F53:MRM of 2 channels,ES-
549.1 > 99.1
1.333e+004



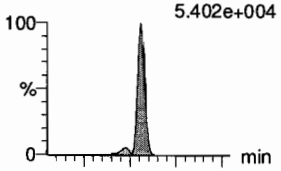
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
7.979e+004



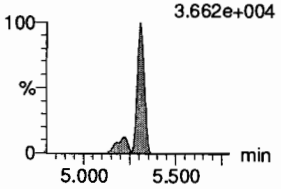
F56:MRM of 2 channels,ES-
570. > 512
3.008e+004



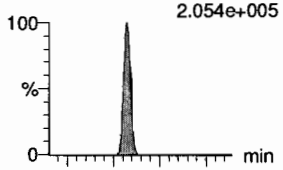
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
5.402e+004



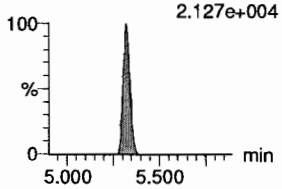
F59:MRM of 2 channels,ES-
584.1 > 526
3.662e+004



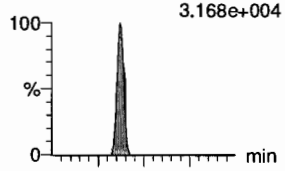
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
2.054e+005



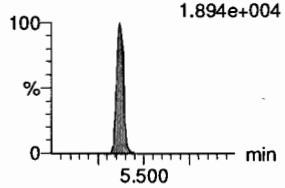
F54:MRM of 2 channels,ES-
563.0 > 269
2.127e+004



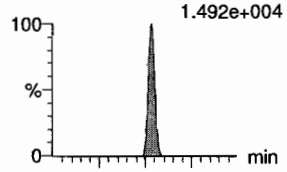
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
3.168e+004



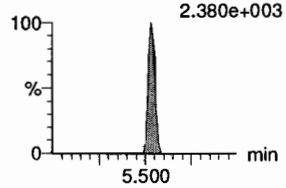
F61:MRM of 2 channels,ES-
598.8 > 98.9
1.894e+004



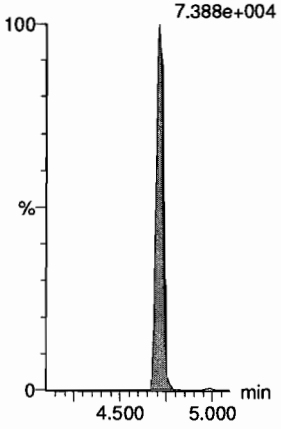
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
1.492e+004



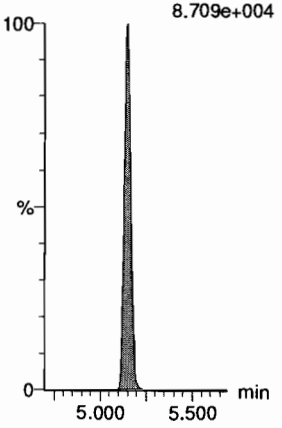
F68:MRM of 2 channels,ES-
632.6 > 450.7
2.380e+003



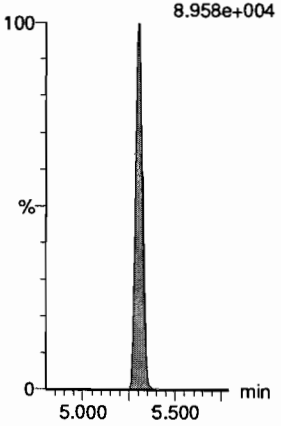
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
7.388e+004



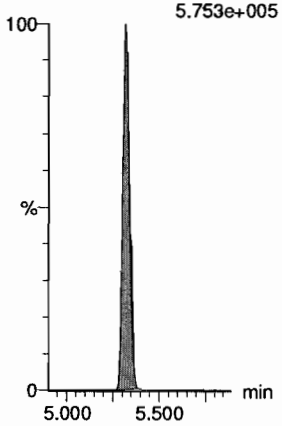
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
8.709e+004



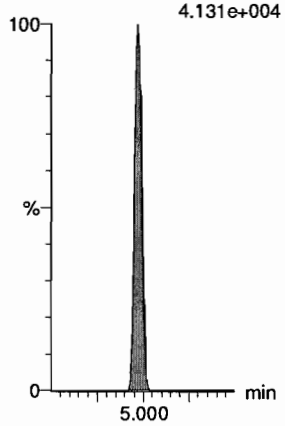
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
8.958e+004



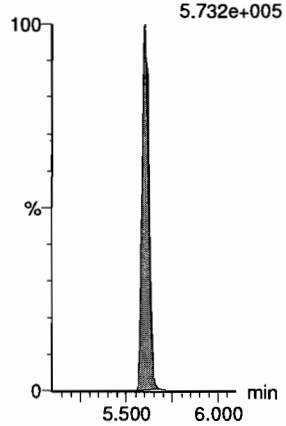
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
5.753e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
4.131e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.732e+005

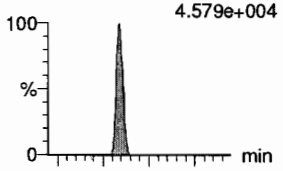


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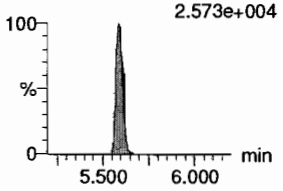
Last Altered: Monday, July 08, 2019 07:58:32 Pacific Daylight Time
Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_7, Date: 07-Jul-2019, Time: 18:15:16, ID: ST190707M2-5 PFC CS2 19F2416, Description: PFC CS2 19F2416

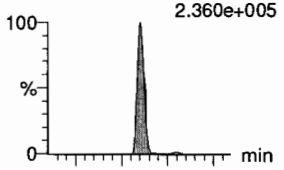
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
4.579e+004



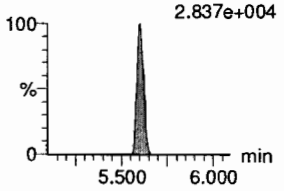
F66:MRM of 2 channels,ES-
627.0 > 80.9
2.573e+004



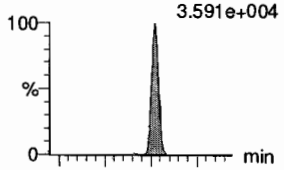
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
2.360e+005



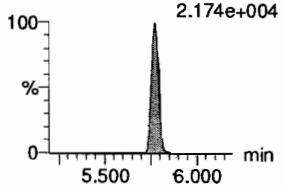
F62:MRM of 4 channels,ES-
612.9 > 318.8
2.837e+004



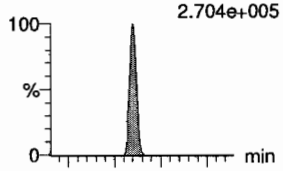
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
3.591e+004



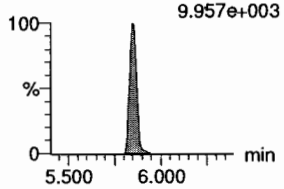
F43:MRM of 2 channels,ES-
512.1 > 219
2.174e+004



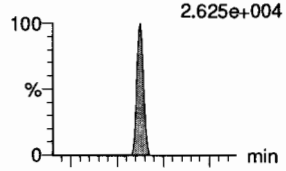
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
2.704e+005



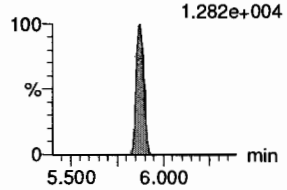
F70:MRM of 2 channels,ES-
662.9 > 319
9.957e+003



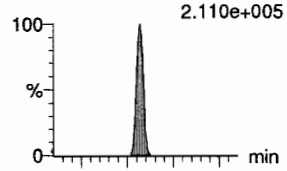
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
2.625e+004



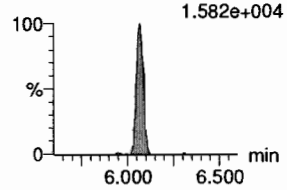
F71:MRM of 2 channels,ES-
698.8 > 98.9
1.282e+004



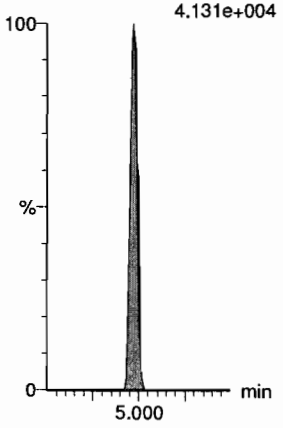
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
2.110e+005



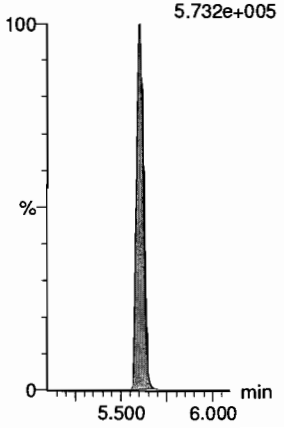
F72:MRM of 2 channels,ES-
713. > 369.0
1.582e+004



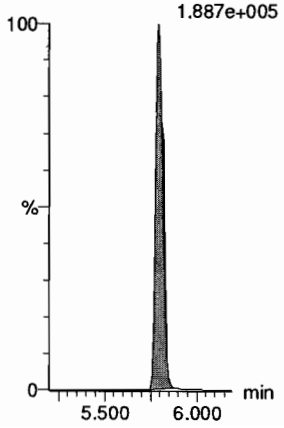
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
4.131e+004



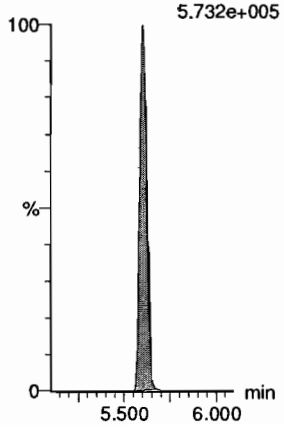
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.732e+005



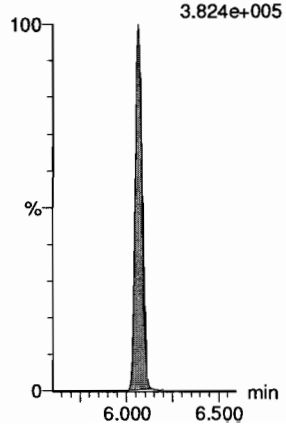
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.887e+005



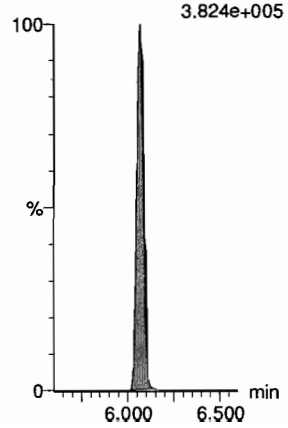
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.732e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.824e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.824e+005

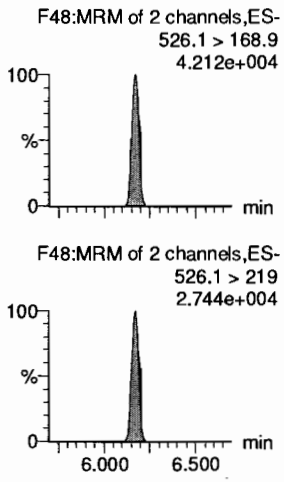


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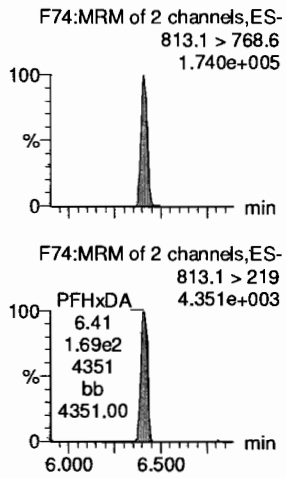
Last Altered: Monday, July 08, 2019 07:58:32 Pacific Daylight Time
Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_7, Date: 07-Jul-2019, Time: 18:15:16, ID: ST190707M2-5 PFC CS2 19F2416, Description: PFC CS2 19F2416

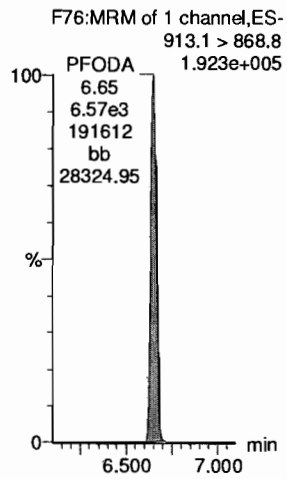
N-EtFOSA



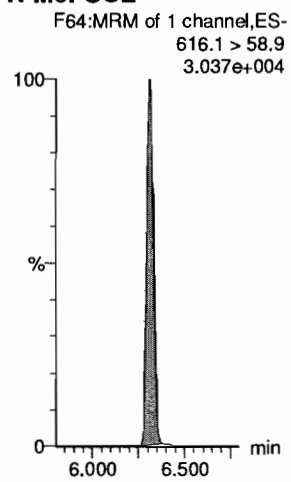
PFHxDA



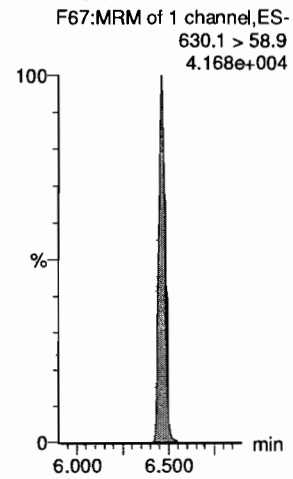
PFODA



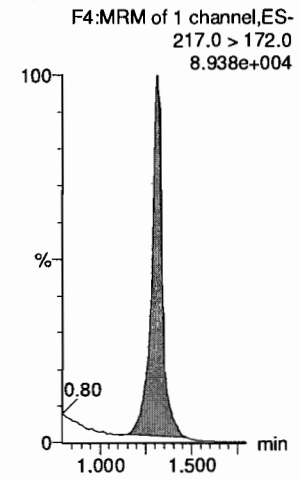
N-MeFOSE



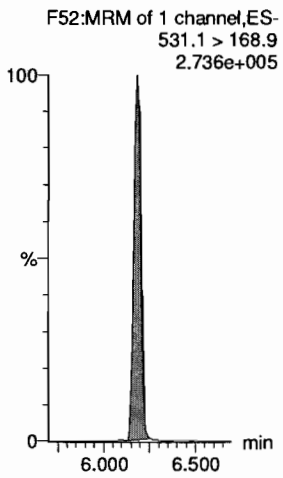
N-EtFOSE



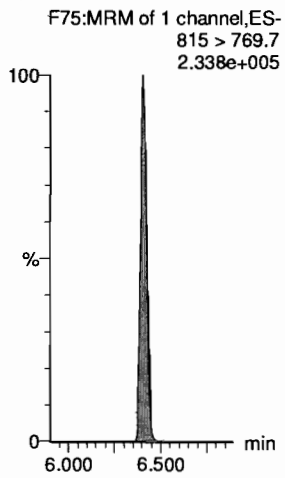
13C4-PFBA



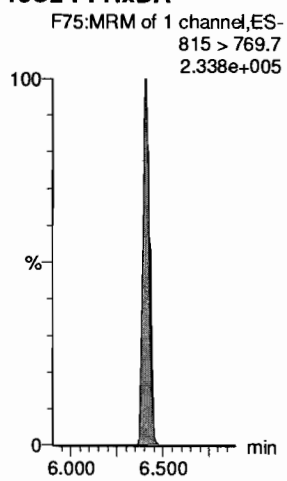
d5-N-ETFOSA



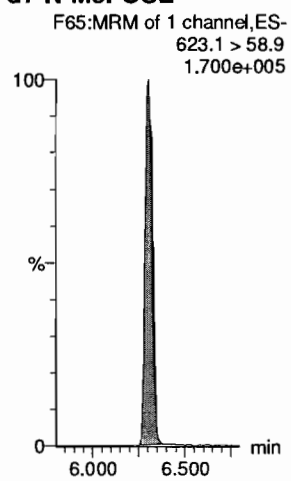
13C2-PFHxDA



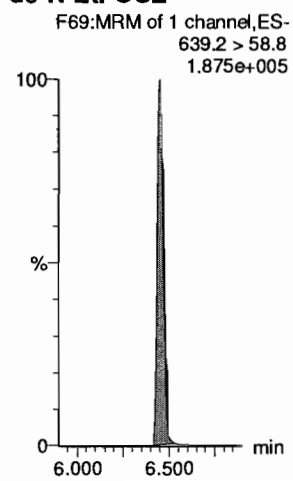
13C2-PFHxDA



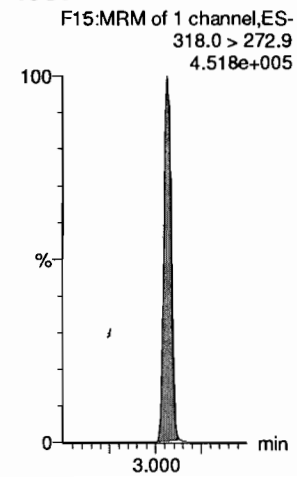
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

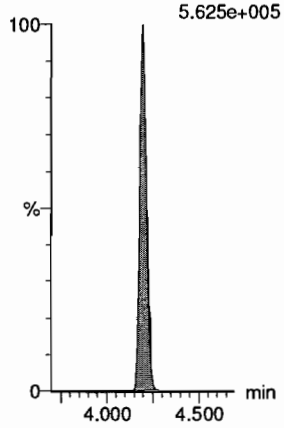


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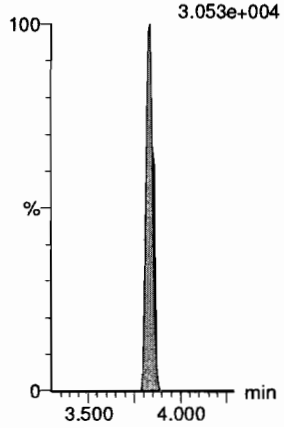
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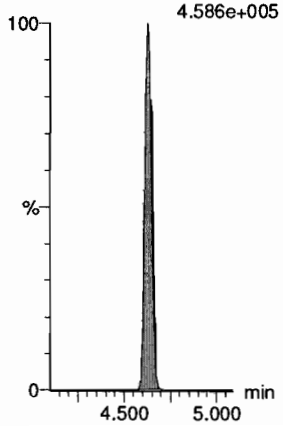
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
5.625e+005



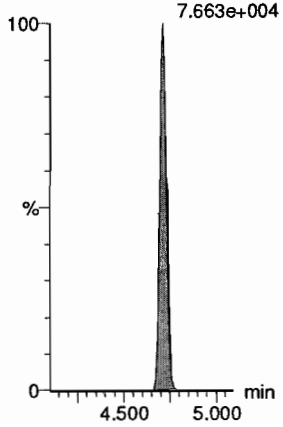
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
3.053e+004



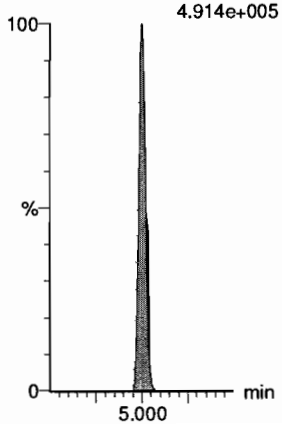
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
4.586e+005



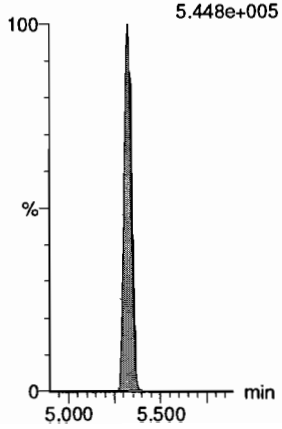
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.9
7.663e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
4.914e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
5.448e+005

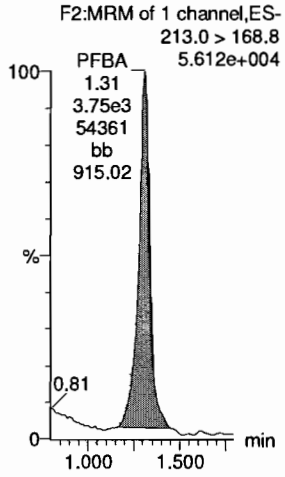


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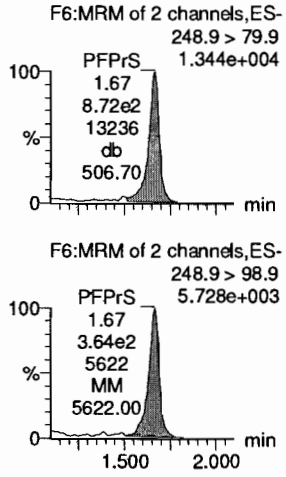
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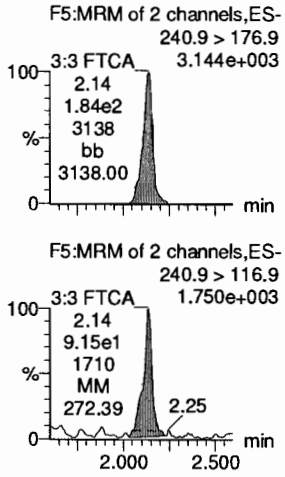
PFBA



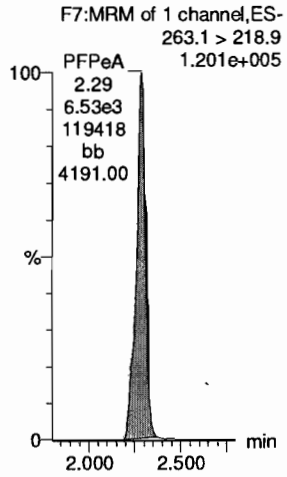
PFPrS



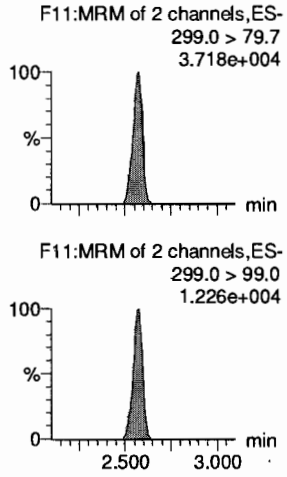
3:3 FTCA



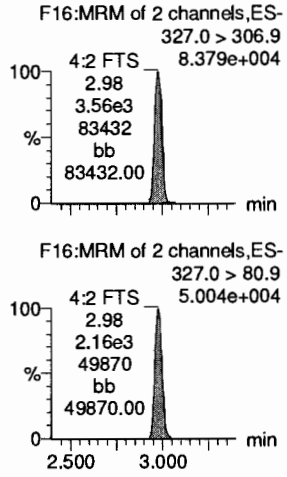
PFPeA



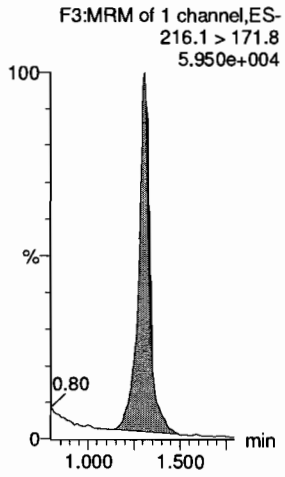
PFBS



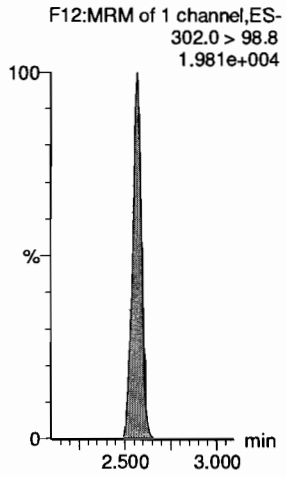
4:2 FTS



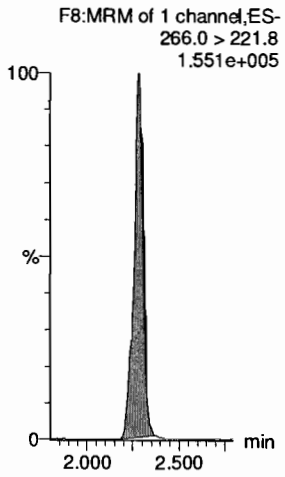
13C3-PFBA



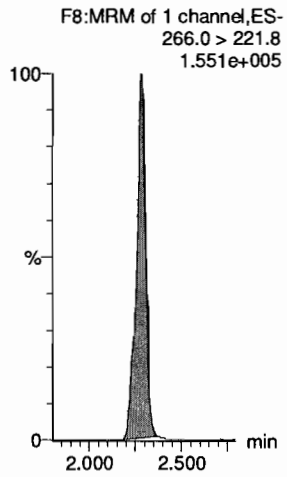
13C3-PFBS



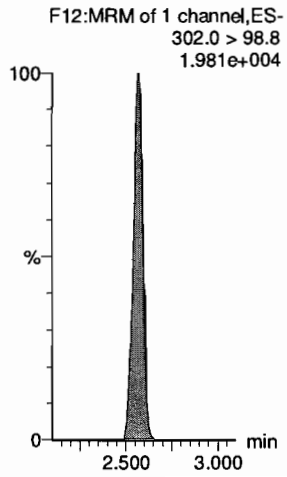
13C3-PFPeA



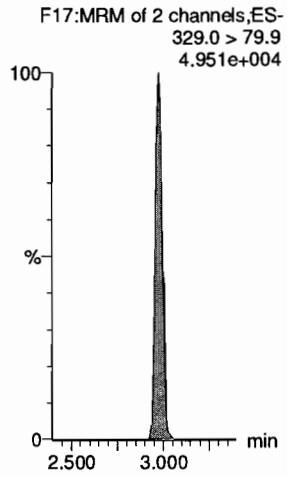
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

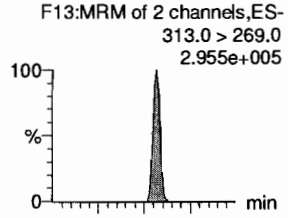


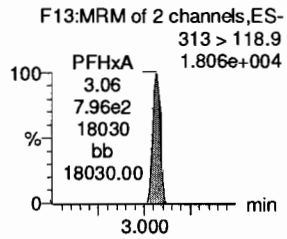
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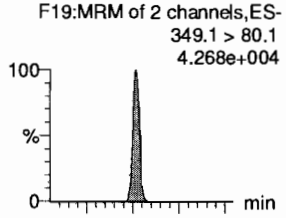
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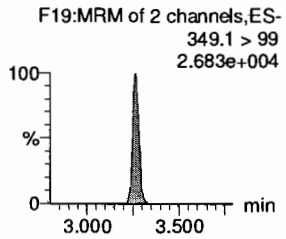
PFHxA



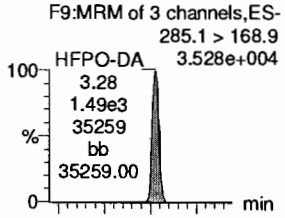


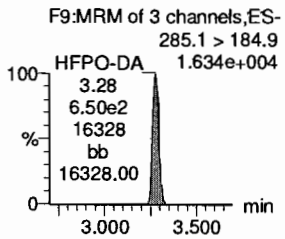
PFPeS



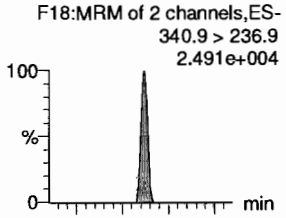


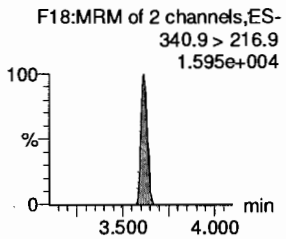
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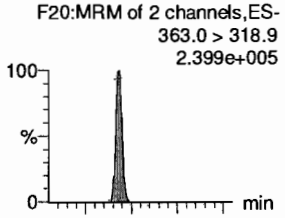


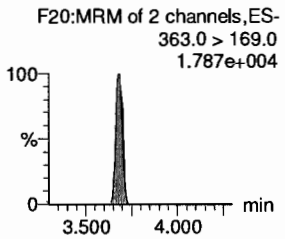
5:3 FTCA



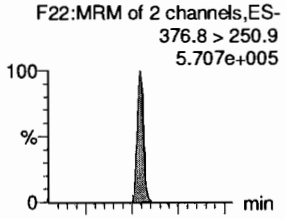


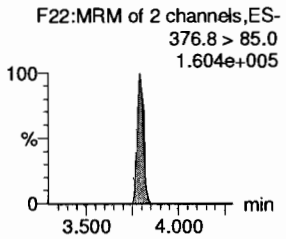
PFHpA



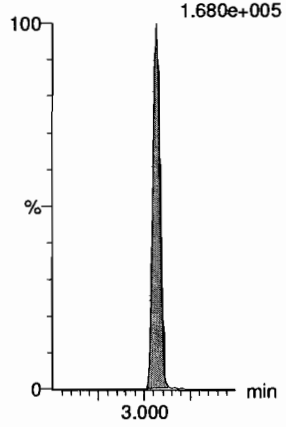


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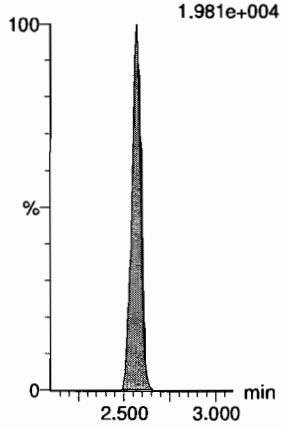




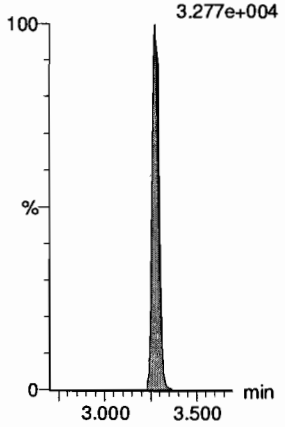
13C2-PFHxA



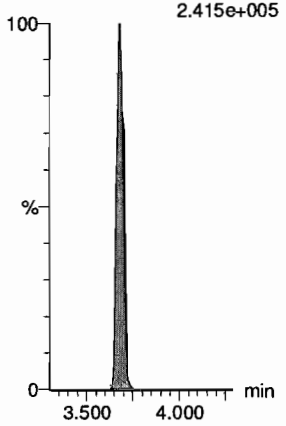
13C3-PFBS



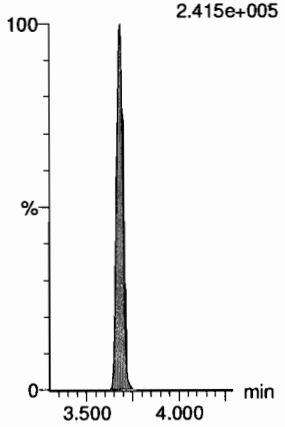
13C3-HFPO-DA



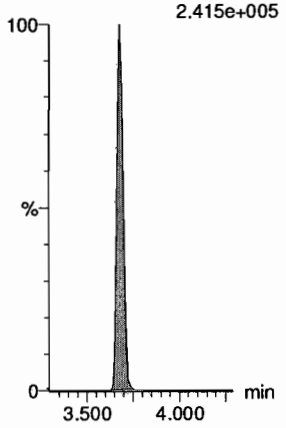
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

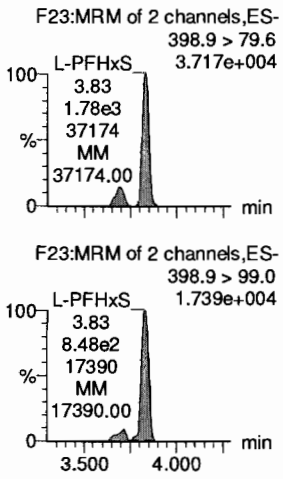


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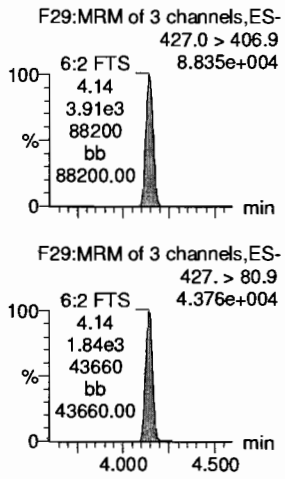
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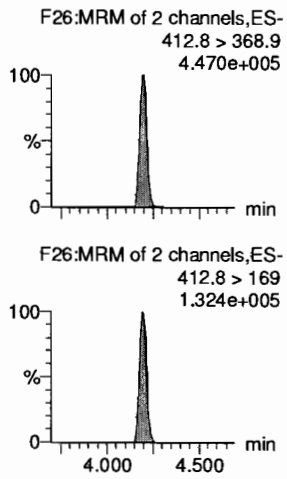
L-PFHxS



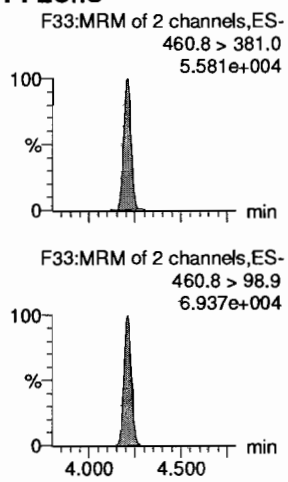
6:2 FTS



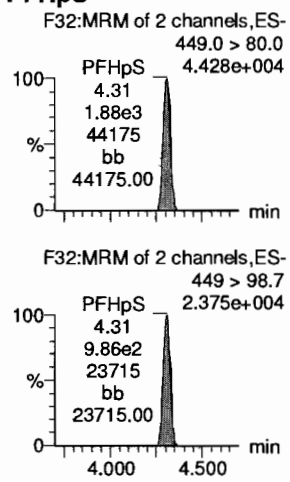
L-PFOA



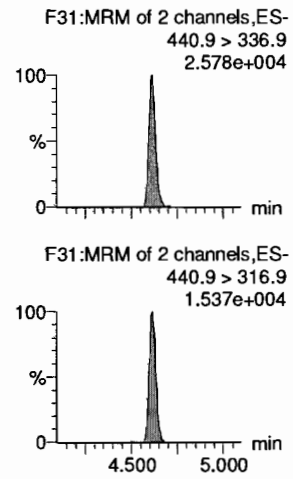
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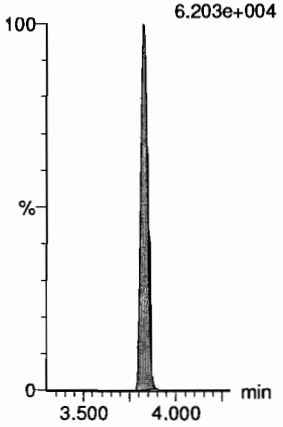
PFHpS



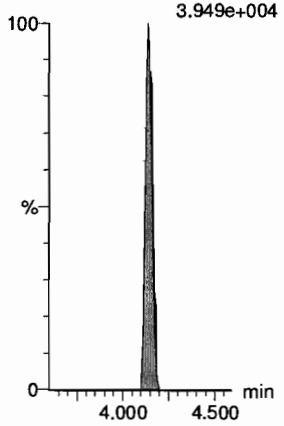
7:3 FTCA



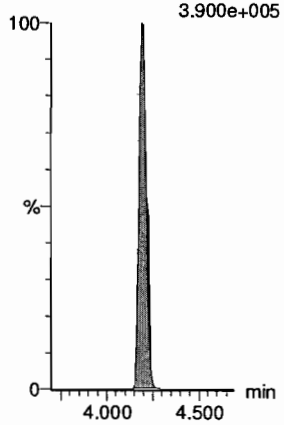
13C3-PFHxS



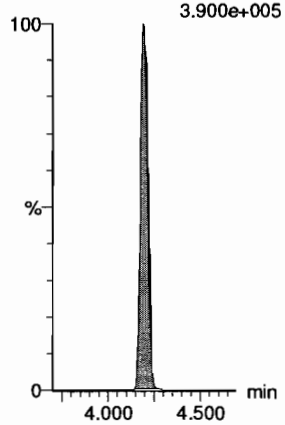
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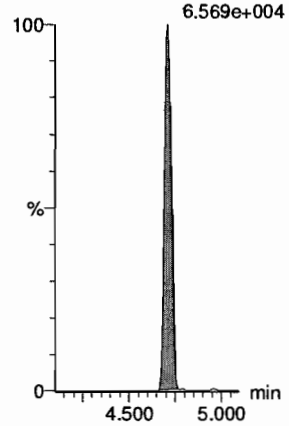
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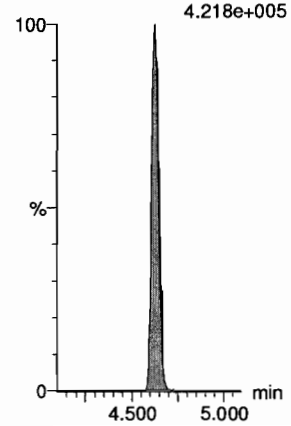
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13C8-PFOS



13C5-PFNA

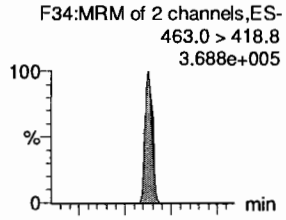


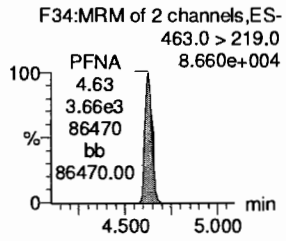
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

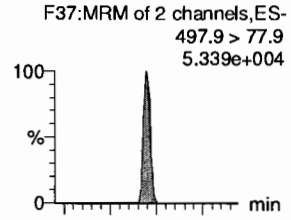
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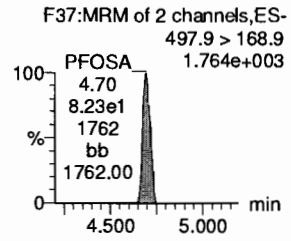
PFNA



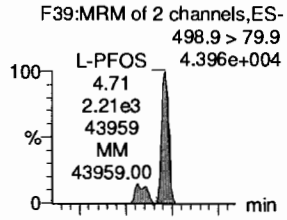


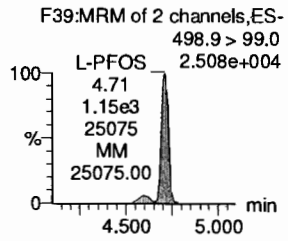
PFOSA



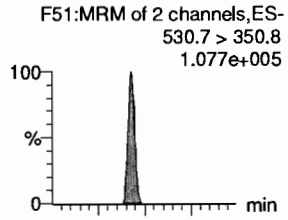


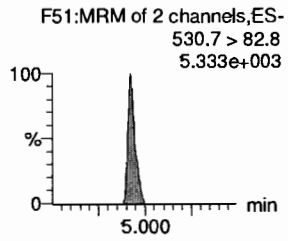
L-PFOS



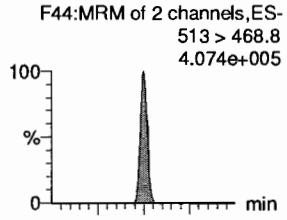


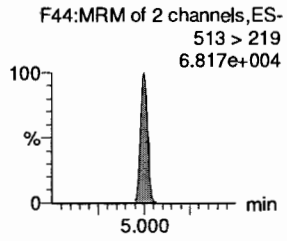
9Cl-PF30NS



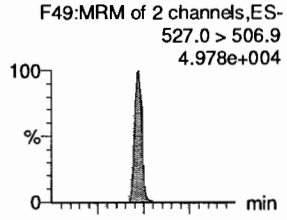


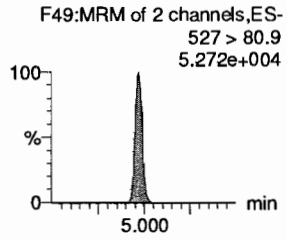
PFDA



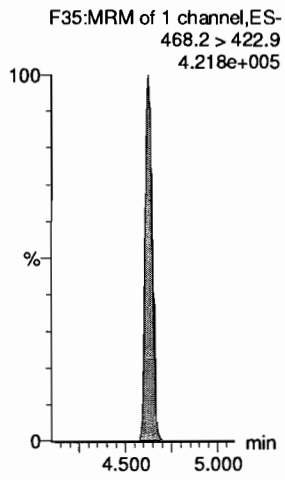


8:2 FTS

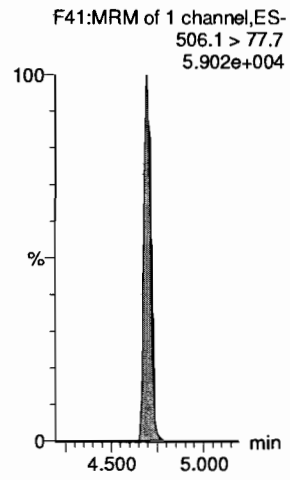




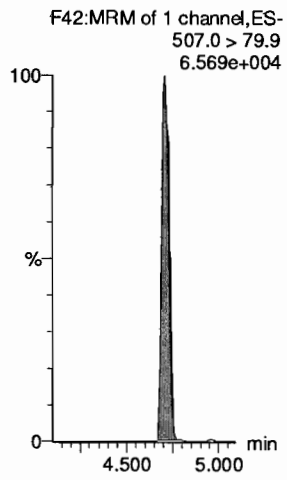
13C5-PFNA



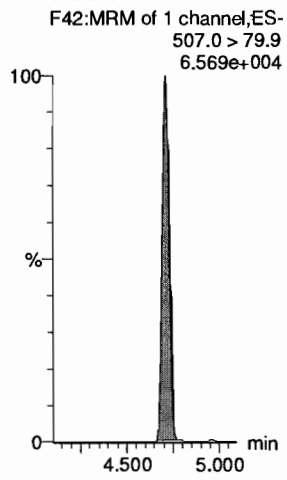
13C8-PFOSA



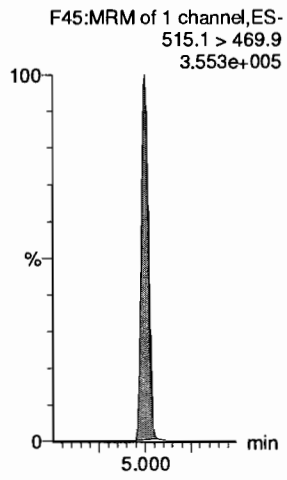
13C8-PFOS



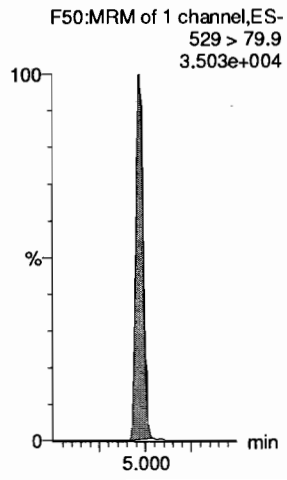
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

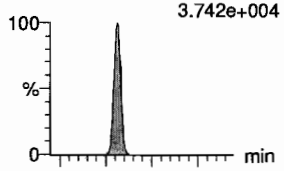


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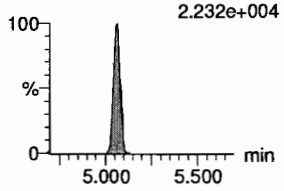
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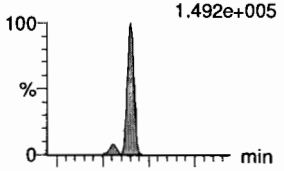
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
3.742e+004



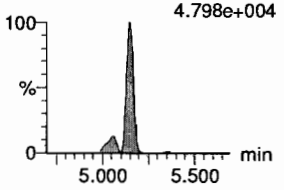
F53:MRM of 2 channels,ES-
549.1 > 99.1
2.232e+004



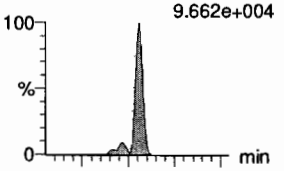
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
1.492e+005



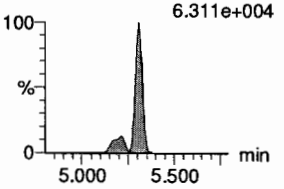
F56:MRM of 2 channels,ES-
570. > 512
4.798e+004



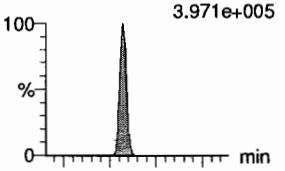
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
9.662e+004



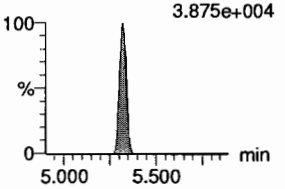
F59:MRM of 2 channels,ES-
584.1 > 526
6.311e+004



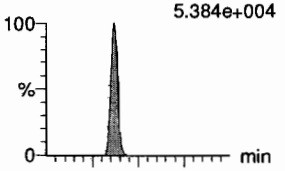
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
3.971e+005



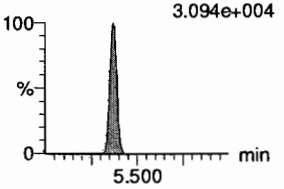
F54:MRM of 2 channels,ES-
563.0 > 269
3.875e+004



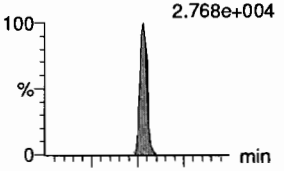
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
5.384e+004



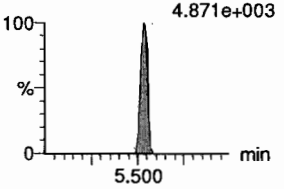
F61:MRM of 2 channels,ES-
598.8 > 98.9
3.094e+004



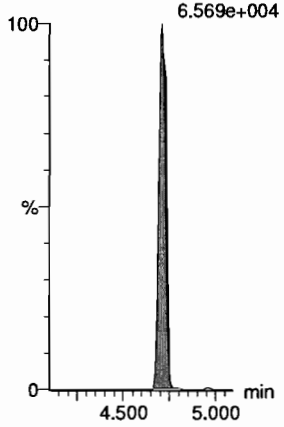
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
2.768e+004



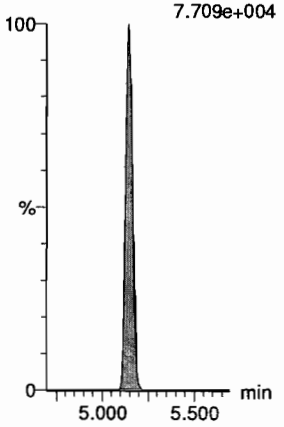
F68:MRM of 2 channels,ES-
632.6 > 450.7
4.871e+003



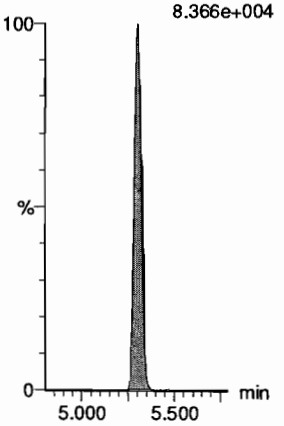
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.569e+004



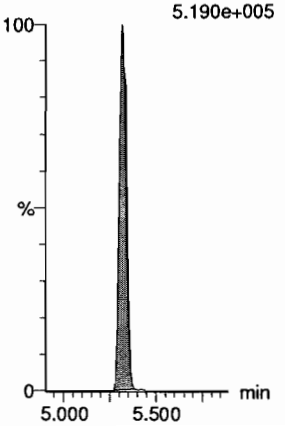
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
7.709e+004



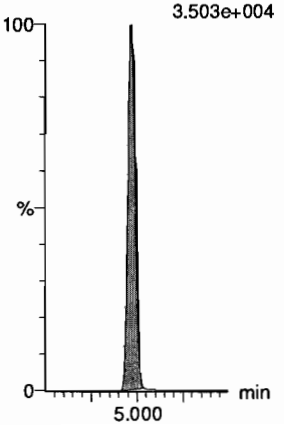
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
8.366e+004



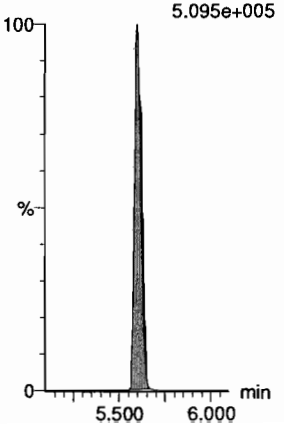
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
5.190e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.503e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.095e+005

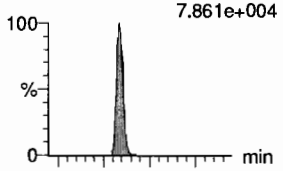


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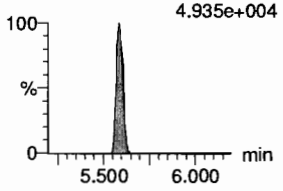
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Name: 190707M2_8, Date: 07-Jul-2019, Time: 18:25:53, ID: ST190707M2-6 PFC CS3 19F2417, Description: PFC CS3 19F2417

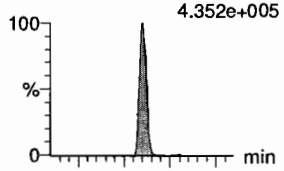
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
7.861e+004



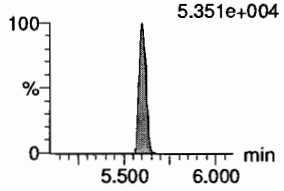
F66:MRM of 2 channels,ES-
627.0 > 80.9
4.935e+004



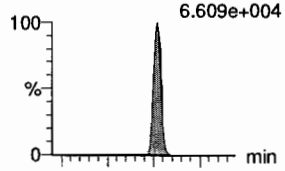
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
4.352e+005



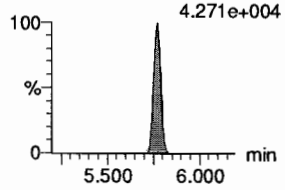
F62:MRM of 4 channels,ES-
612.9 > 318.8
5.351e+004



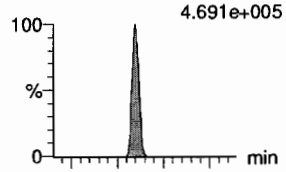
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
6.609e+004



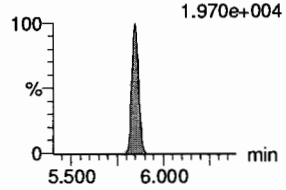
F43:MRM of 2 channels,ES-
512.1 > 219
4.271e+004



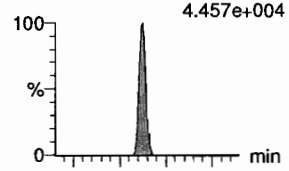
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
4.691e+005



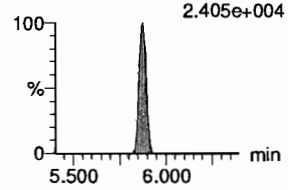
F70:MRM of 2 channels,ES-
662.9 > 319
1.970e+004



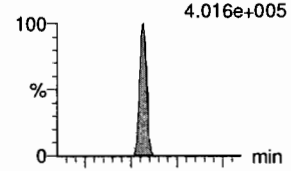
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
4.457e+004



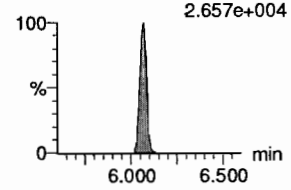
F71:MRM of 2 channels,ES-
698.8 > 98.9
2.405e+004



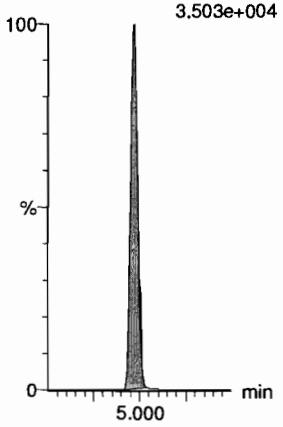
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
4.016e+005



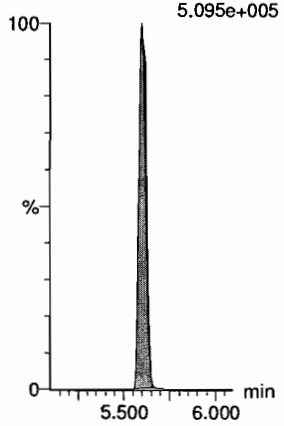
F72:MRM of 2 channels,ES-
713. > 369.0
2.657e+004



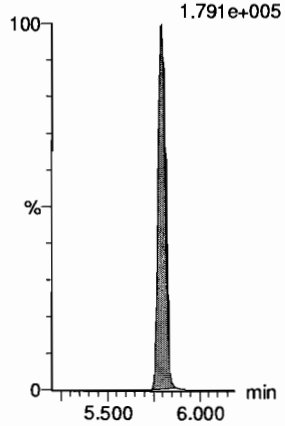
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.503e+004



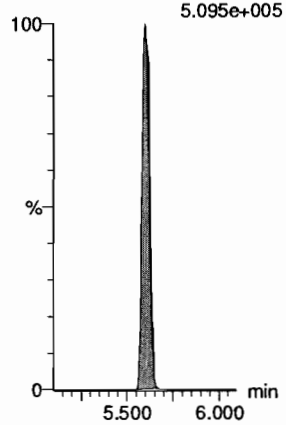
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.095e+005



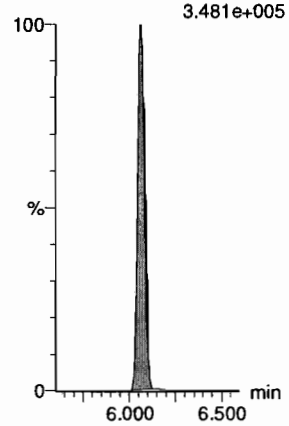
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.791e+005



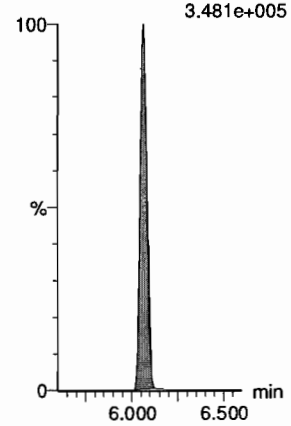
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.095e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.481e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.481e+005

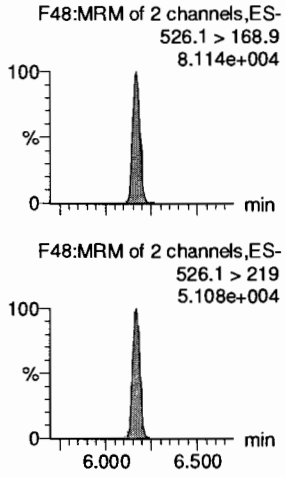


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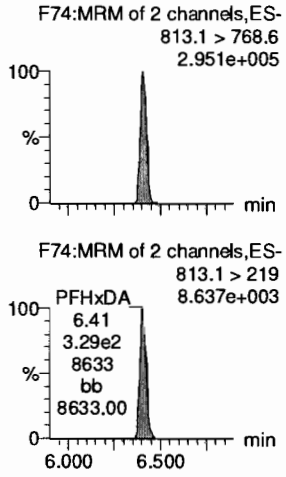
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Name: 190707M2_8, Date: 07-Jul-2019, Time: 18:25:53, ID: ST190707M2-6 PFC CS3 19F2417, Description: PFC CS3 19F2417

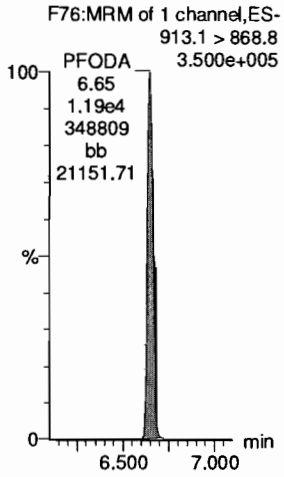
N-EtFOSA



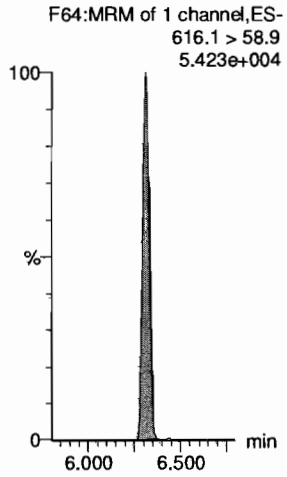
PFHxDA



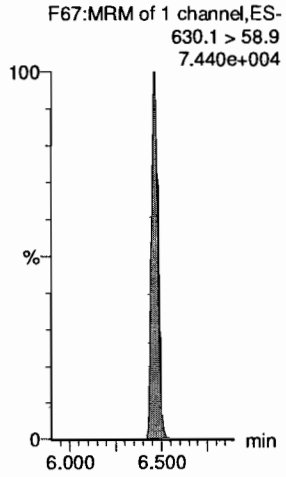
PFODA



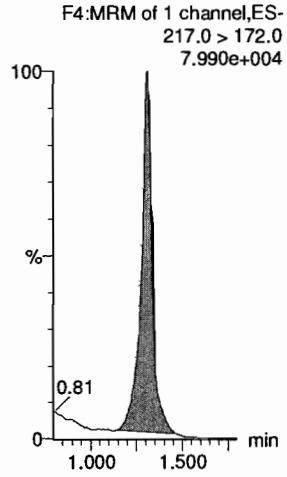
N-MeFOSE



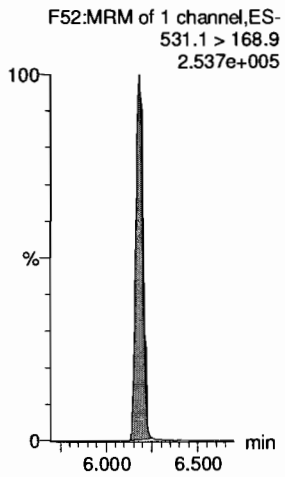
N-EtFOSE



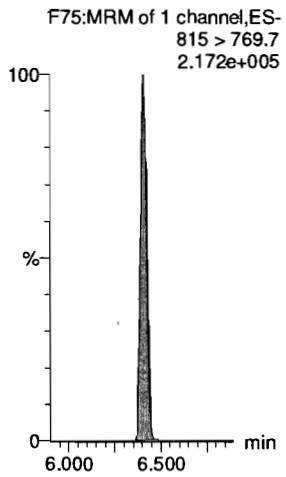
13C4-PFBA



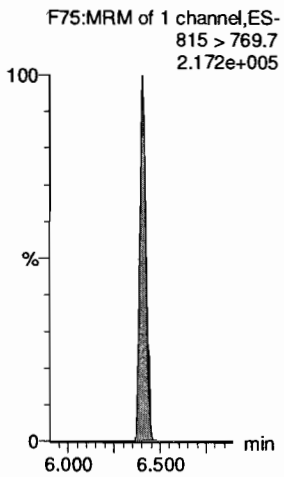
d5-N-ETFOSA



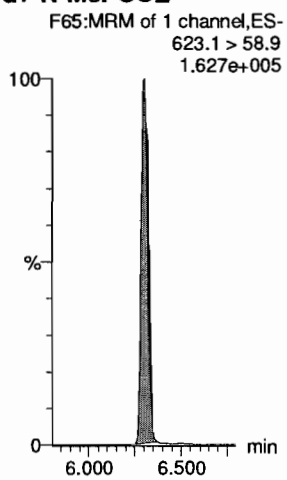
13C2-PFHxDA



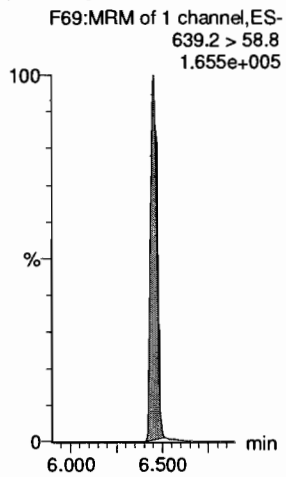
13C2-PFHxDA



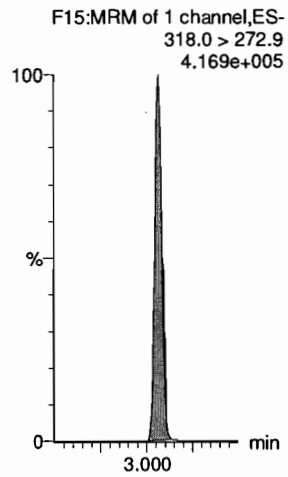
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

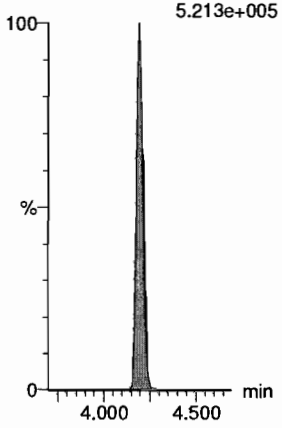


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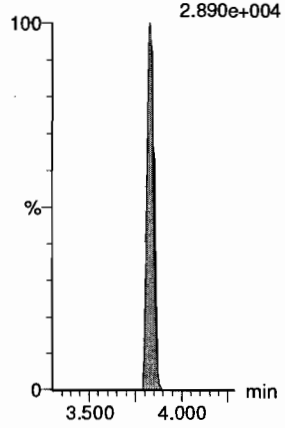
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Name: 190707M2_8, Date: 07-Jul-2019, Time: 18:25:53, ID: ST190707M2-6 PFC CS3 19F2417, Description: PFC CS3 19F2417

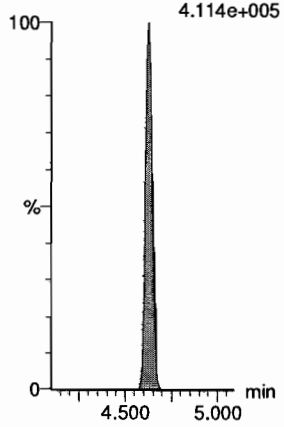
13C8-PFOA



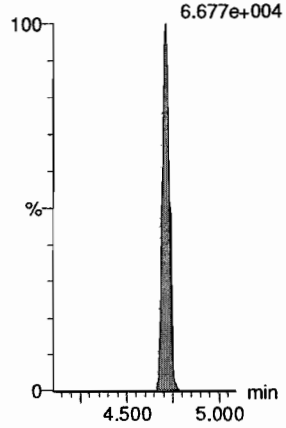
18O2-PFHxS



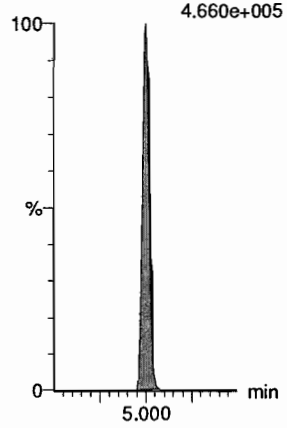
13C9-PFNA



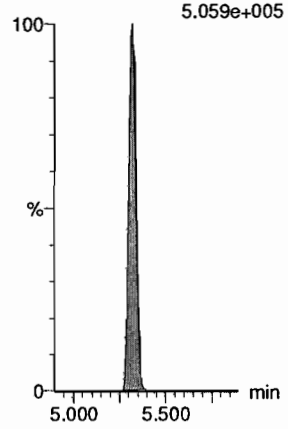
13C4-PFOS



13C6-PFDA



13C7-PFUdA

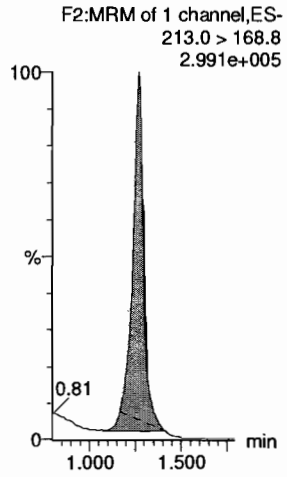


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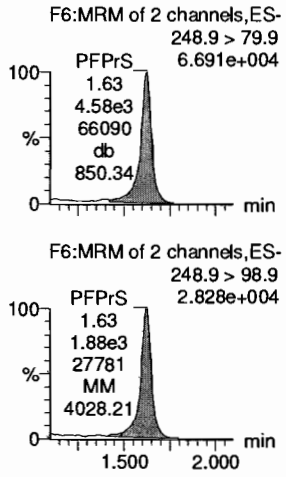
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Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

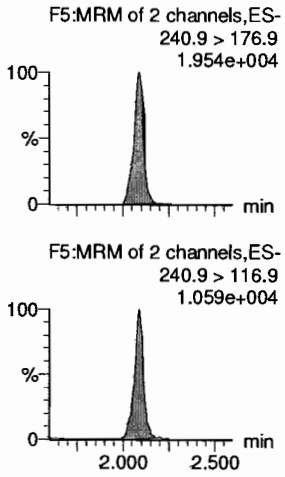
PFBA



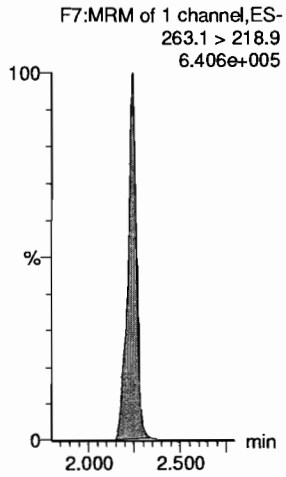
PFPrS



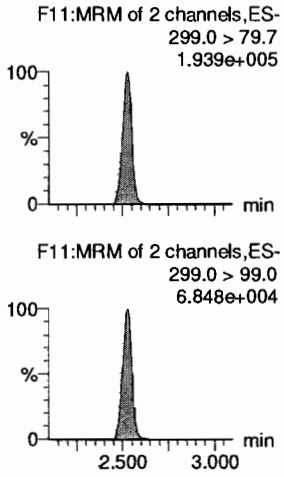
3:3 FTCA



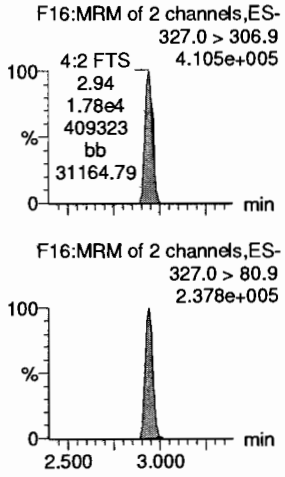
PFPeA



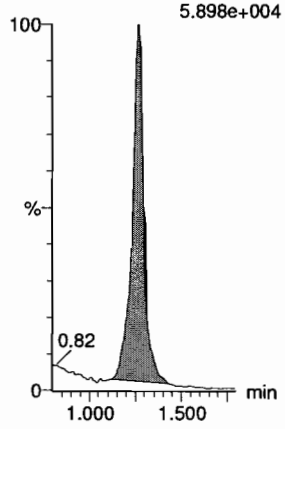
PFBS



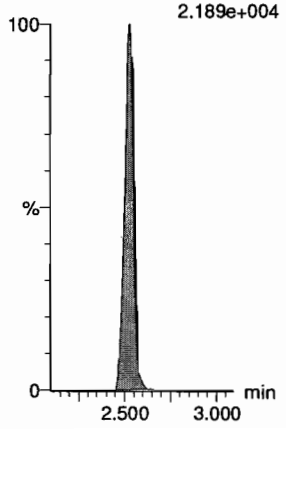
4:2 FTS



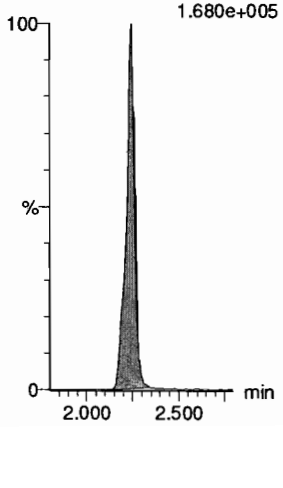
13C3-PFBA



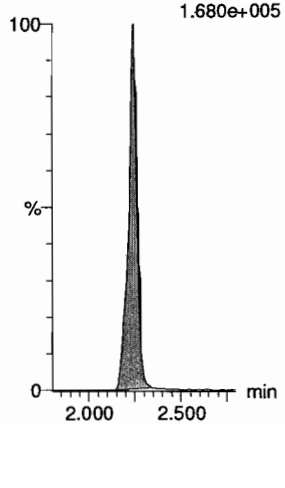
13C3-PFBS



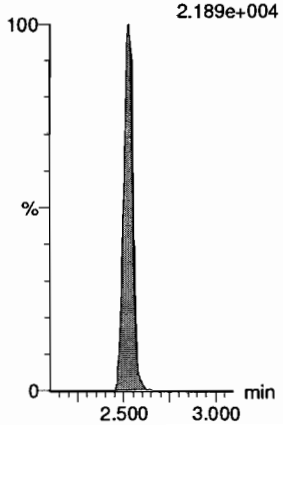
13C3-PFPeA



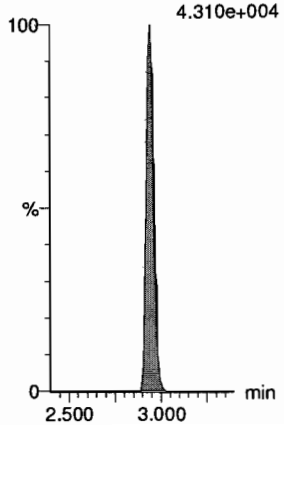
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

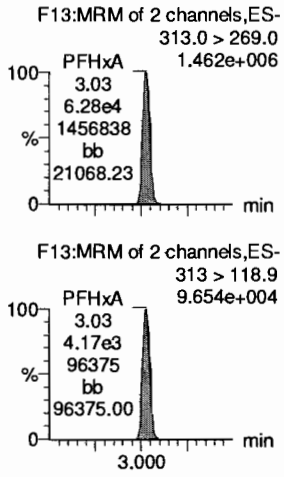


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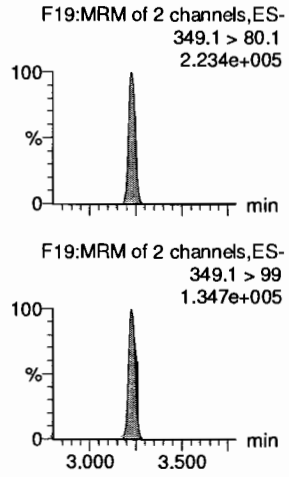
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Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

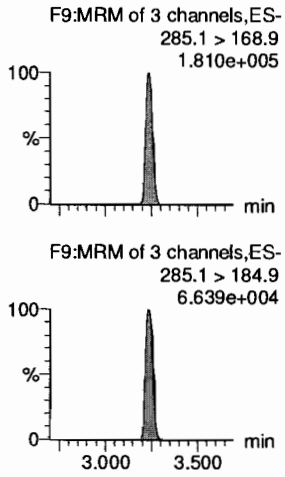
PFHxA



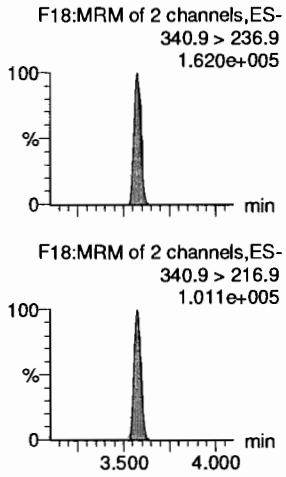
PFPeS



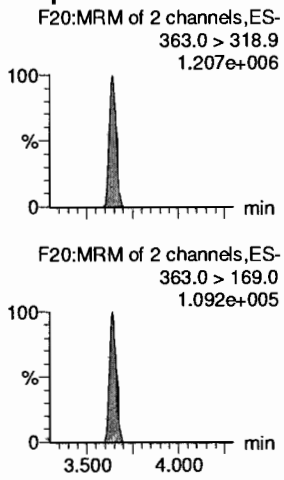
HFPO-DA



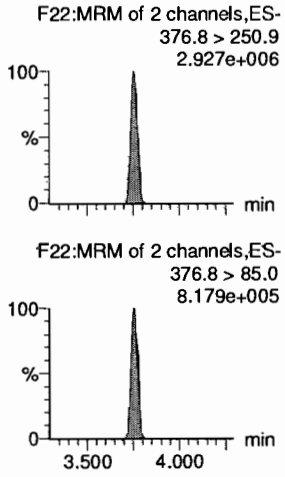
5:3 FTCA



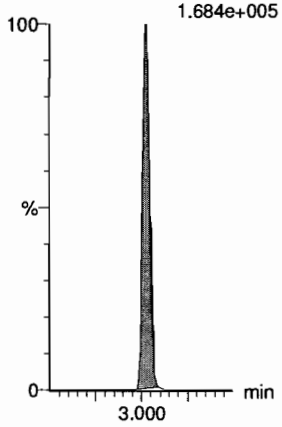
PFHpA



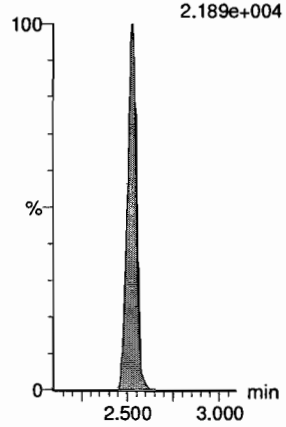
ADONA



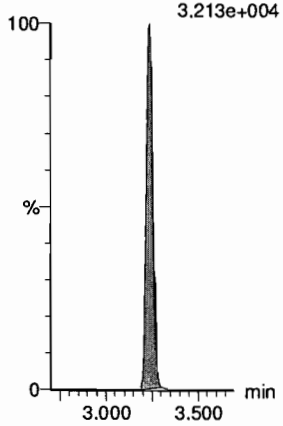
13C2-PFHxA



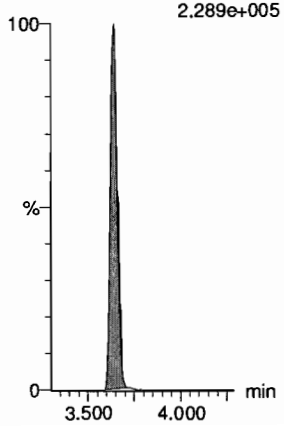
13C3-PFBS



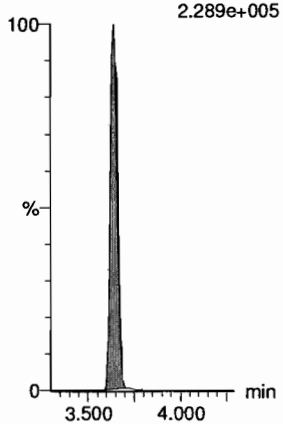
13C3-HFPO-DA



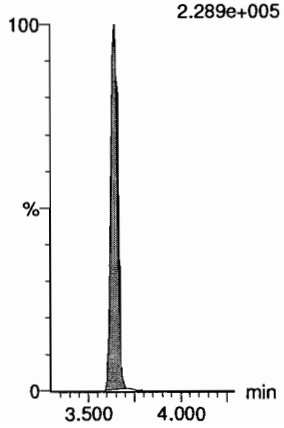
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

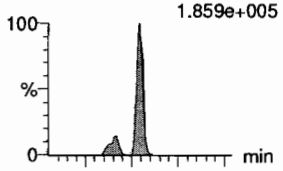


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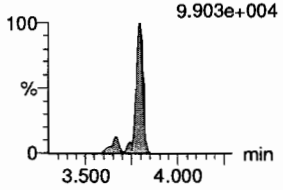
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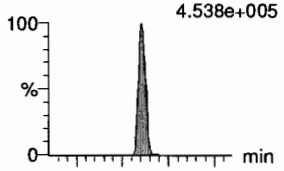
L-PFHxS
F23:MRM of 2 channels,ES-
398.9 > 79.6
1.859e+005



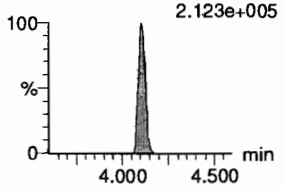
F23:MRM of 2 channels,ES-
398.9 > 99.0
9.903e+004



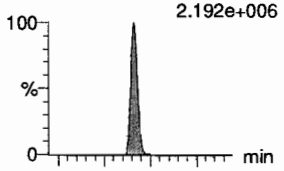
6:2 FTS
F29:MRM of 3 channels,ES-
427.0 > 406.9
4.538e+005



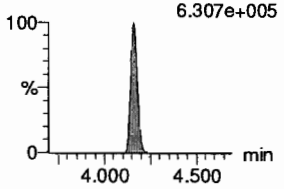
F29:MRM of 3 channels,ES-
427. > 80.9
2.123e+005



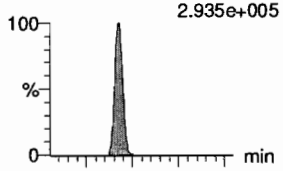
L-PFOA
F26:MRM of 2 channels,ES-
412.8 > 368.9
2.192e+006



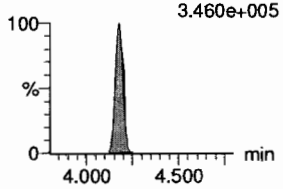
F26:MRM of 2 channels,ES-
412.8 > 169
6.307e+005



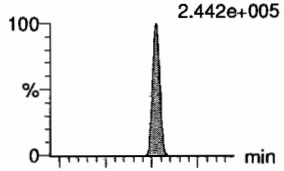
PFEChS
F33:MRM of 2 channels,ES-
460.8 > 381.0
2.935e+005



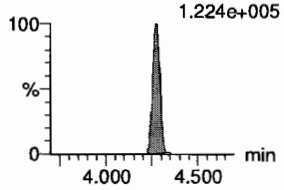
F33:MRM of 2 channels,ES-
460.8 > 98.9
3.460e+005



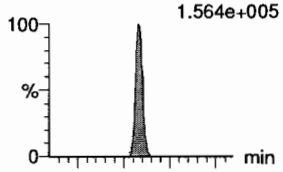
PFHpS
F32:MRM of 2 channels,ES-
449.0 > 80.0
2.442e+005



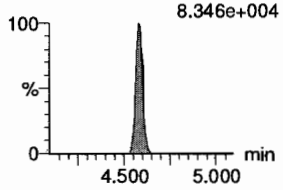
F32:MRM of 2 channels,ES-
449 > 98.7
1.224e+005



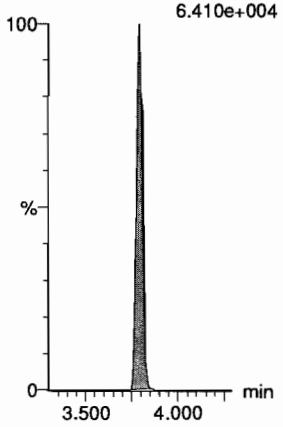
7:3 FTCA
F31:MRM of 2 channels,ES-
440.9 > 336.9
1.564e+005



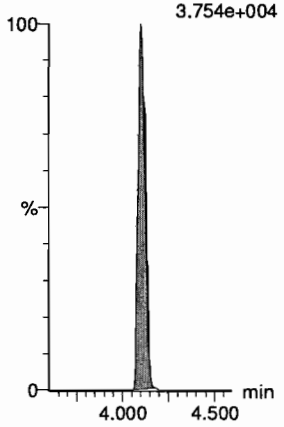
F31:MRM of 2 channels,ES-
440.9 > 316.9
8.346e+004



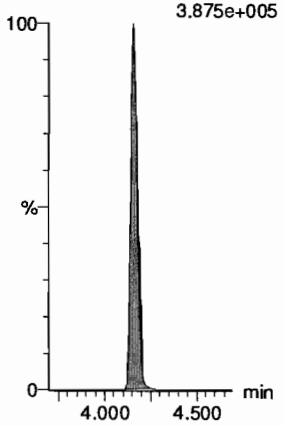
13C3-PFHxS
F24:MRM of 1 channel,ES-
401.8 > 79.9
6.410e+004



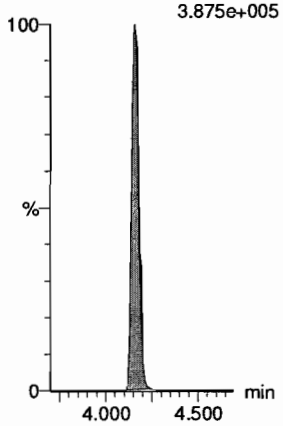
13C2-6:2 FTS
F30:MRM of 1 channel,ES-
429.0 > 79.9
3.754e+004



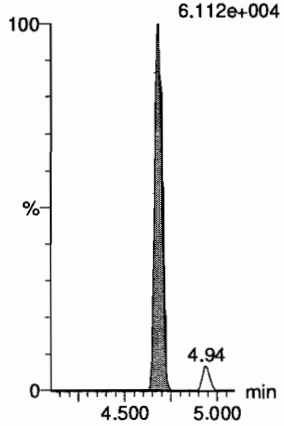
13C2-PFOA
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.875e+005



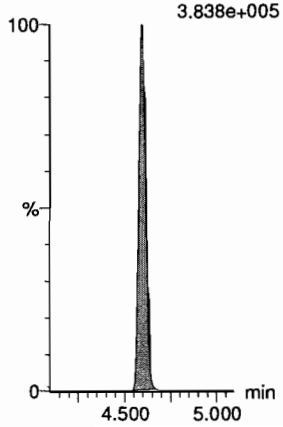
13C2-PFOA
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.875e+005



13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.112e+004



13C5-PFNA
F35:MRM of 1 channel,ES-
468.2 > 422.9
3.838e+005

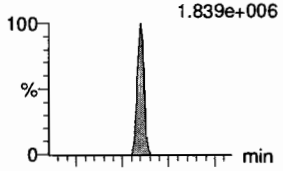


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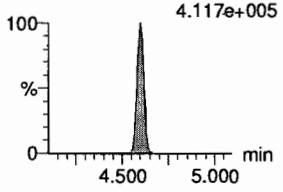
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Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

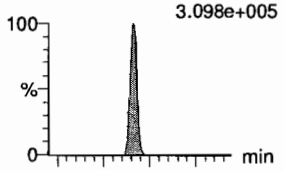
PFNA
F34:MRM of 2 channels,ES-
463.0 > 418.8
1.839e+006



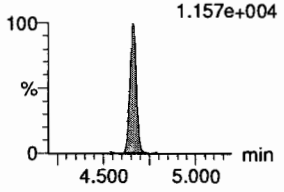
F34:MRM of 2 channels,ES-
463.0 > 219.0
4.117e+005



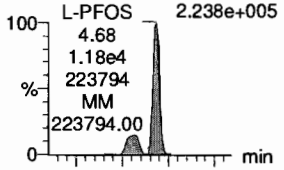
PFOSA
F37:MRM of 2 channels,ES-
497.9 > 77.9
3.098e+005



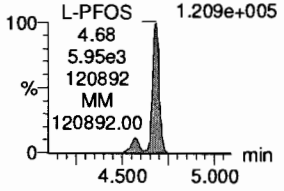
F37:MRM of 2 channels,ES-
497.9 > 168.9
1.157e+004



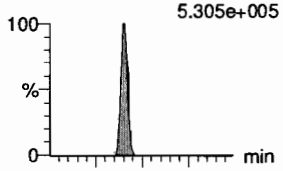
L-PFOS
F39:MRM of 2 channels,ES-
498.9 > 79.9
2.238e+005
L-PFOS
4.68
1.18e4
223794
MM
223794.00



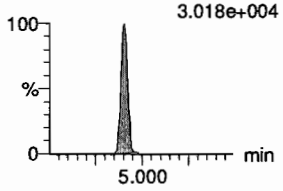
F39:MRM of 2 channels,ES-
498.9 > 99.0
1.209e+005
L-PFOS
4.68
5.95e3
120892
MM
120892.00



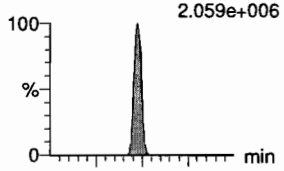
9Cl-PF30NS
F51:MRM of 2 channels,ES-
530.7 > 350.8
5.305e+005



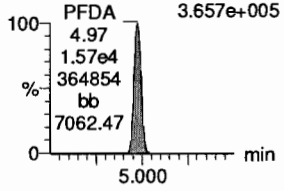
F51:MRM of 2 channels,ES-
530.7 > 82.8
3.018e+004



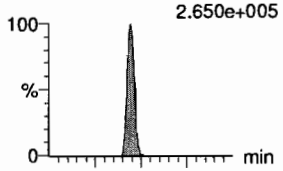
PFDA
F44:MRM of 2 channels,ES-
513 > 468.8
2.059e+006



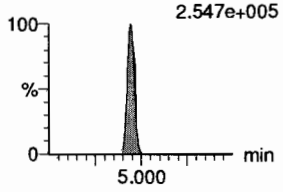
F44:MRM of 2 channels,ES-
513 > 219
3.657e+005
PFDA
4.97
1.57e4
364854
bb
7062.47



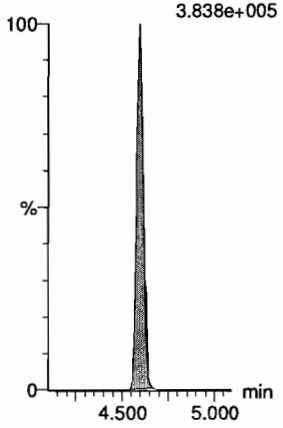
8:2 FTS
F49:MRM of 2 channels,ES-
527.0 > 506.9
2.650e+005



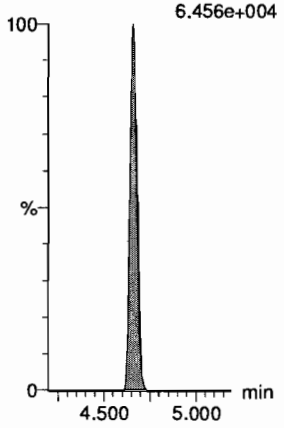
F49:MRM of 2 channels,ES-
527 > 80.9
2.547e+005



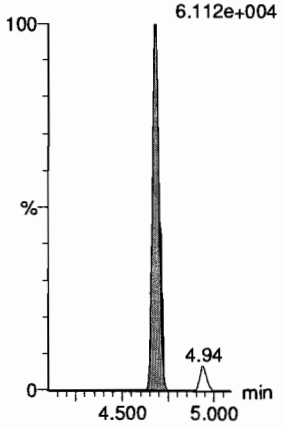
13C5-PFNA
F35:MRM of 1 channel,ES-
468.2 > 422.9
3.838e+005



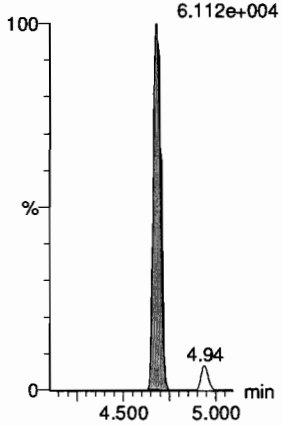
13C8-PFOSA
F41:MRM of 1 channel,ES-
506.1 > 77.7
6.456e+004



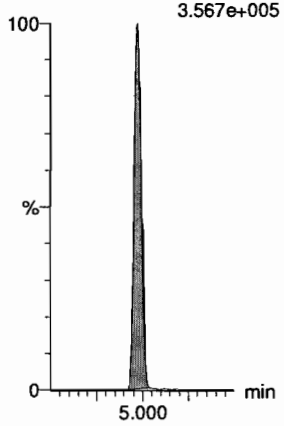
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.112e+004
4.94



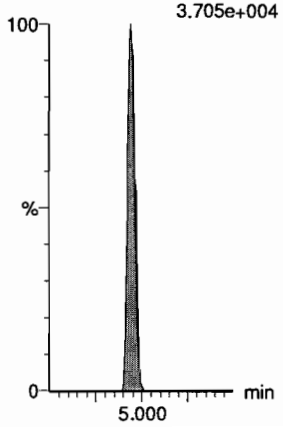
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
6.112e+004
4.94



13C2-PFDA
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.567e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.705e+004

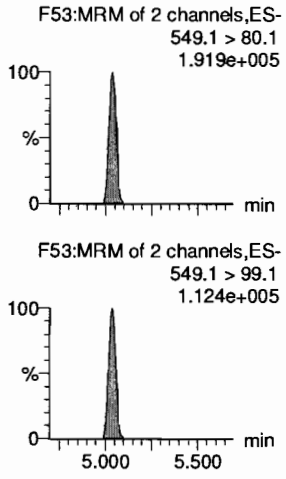


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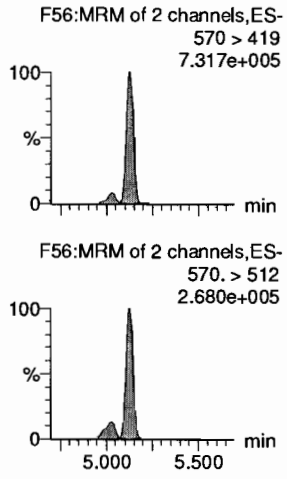
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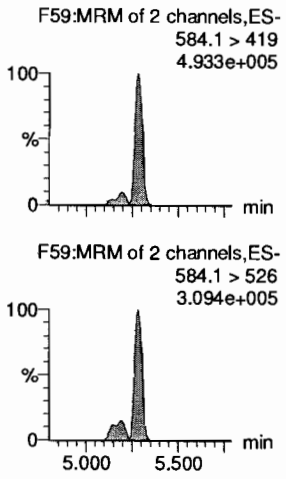
PFNS



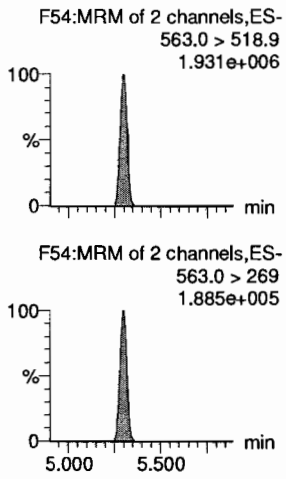
L-MeFOSAA



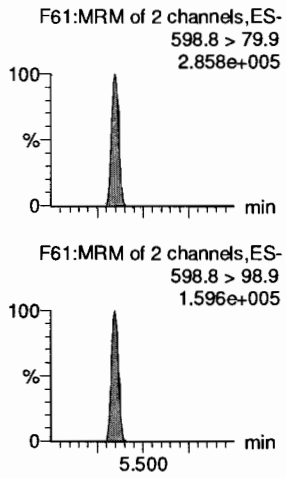
L-EtFOSAA



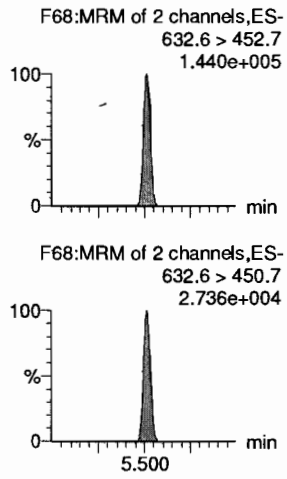
PFUdA



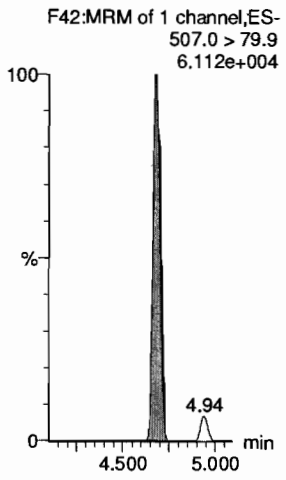
PFDS



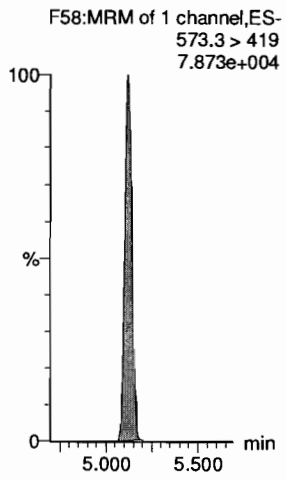
11Cl-PF30UdS



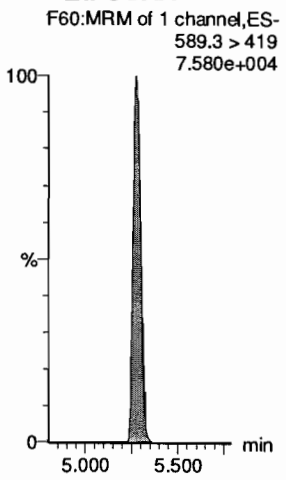
13C8-PFOS



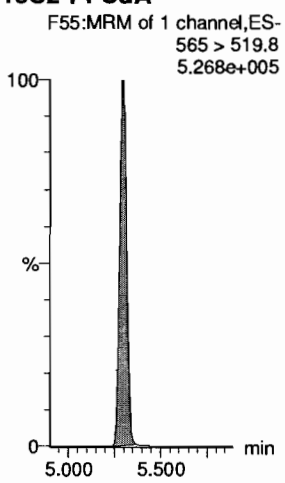
d3-N-MeFOSAA



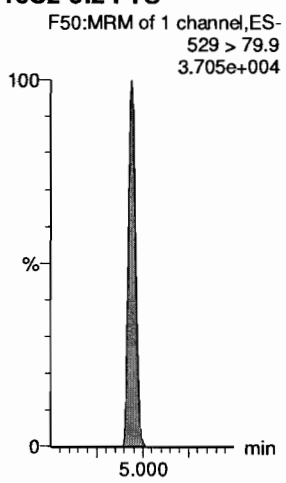
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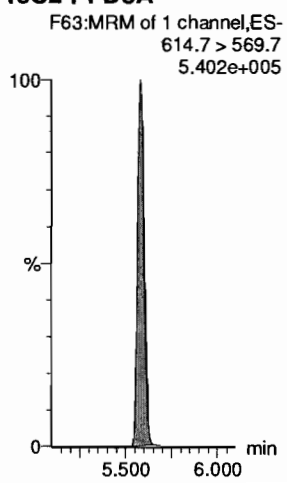
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

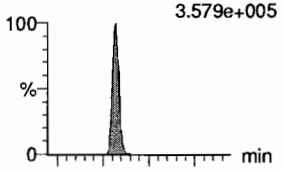


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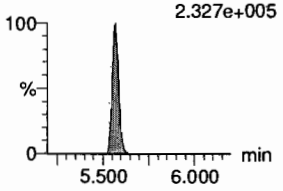
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

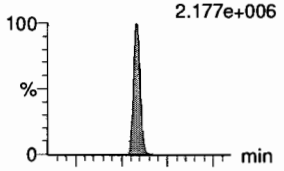
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
3.579e+005



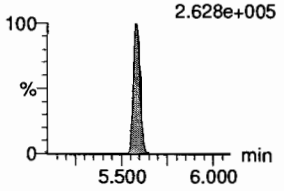
F66:MRM of 2 channels,ES-
627.0 > 80.9
2.327e+005



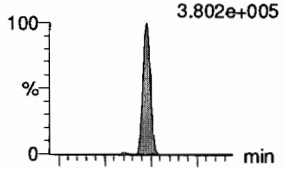
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
2.177e+006



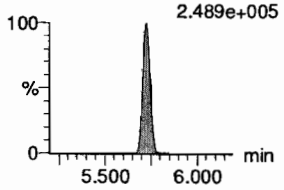
F62:MRM of 4 channels,ES-
612.9 > 318.8
2.628e+005



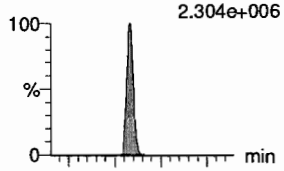
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
3.802e+005



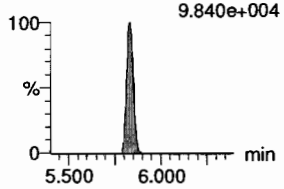
F43:MRM of 2 channels,ES-
512.1 > 219
2.489e+005



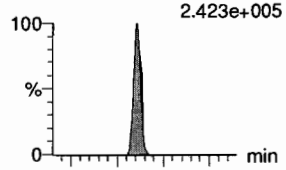
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
2.304e+006



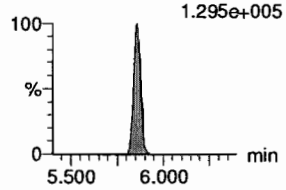
F70:MRM of 2 channels,ES-
662.9 > 319
9.840e+004



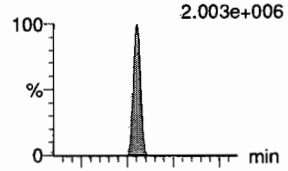
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
2.423e+005



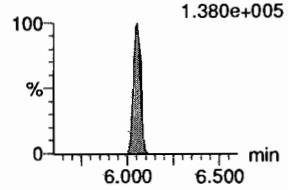
F71:MRM of 2 channels,ES-
698.8 > 98.9
1.295e+005



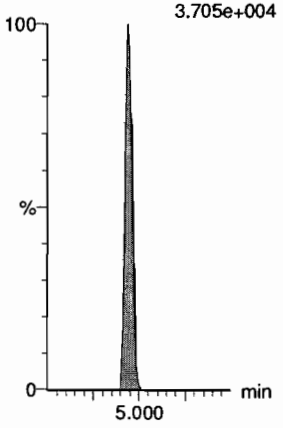
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
2.003e+006



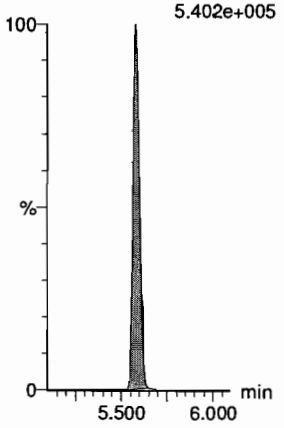
F72:MRM of 2 channels,ES-
713. > 369.0
1.380e+005



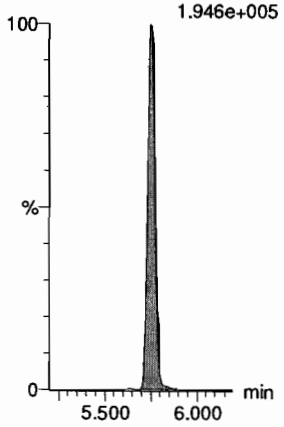
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.705e+004



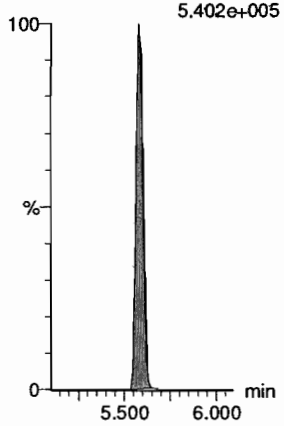
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.402e+005



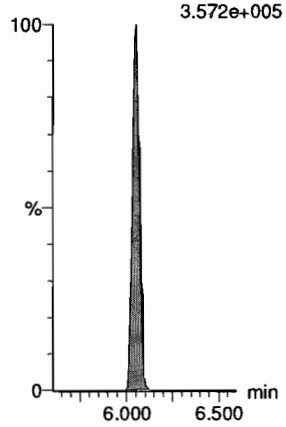
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.946e+005



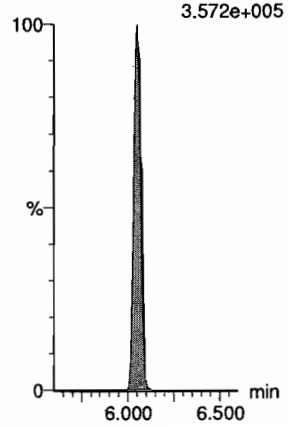
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.402e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.572e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.572e+005

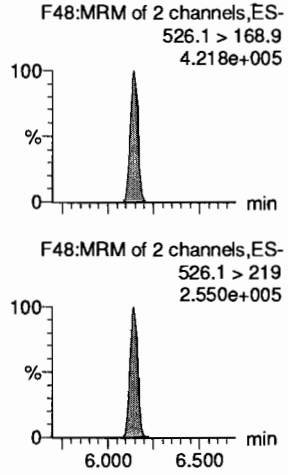


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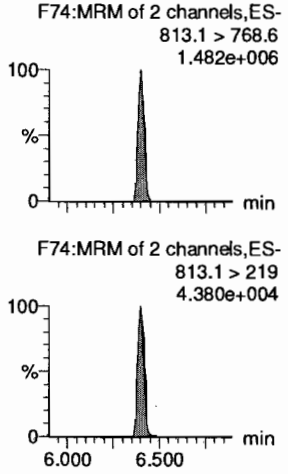
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_9, Date: 07-Jul-2019, Time: 18:36:27, ID: ST190707M2-7 PFC CS4 19F2418, Description: PFC CS4 19F2418

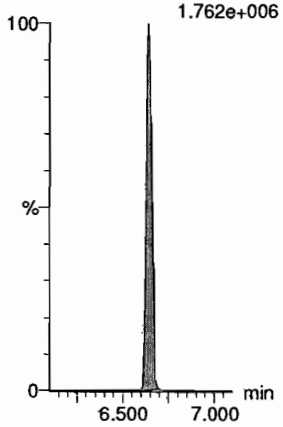
N-EtFOSA



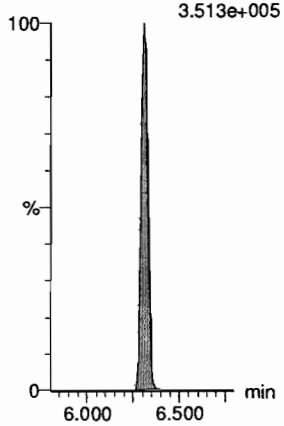
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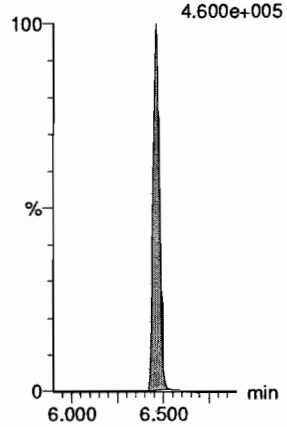
PFODA



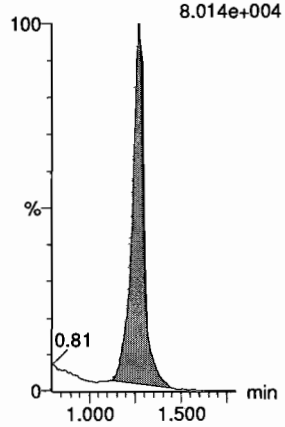
N-MeFOSE



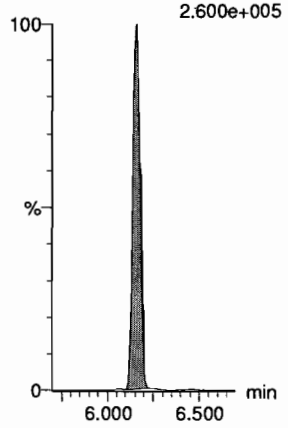
N-EtFOSE



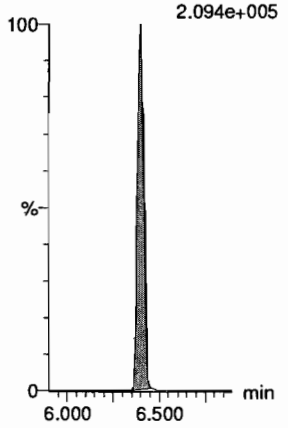
13C4-PFBA



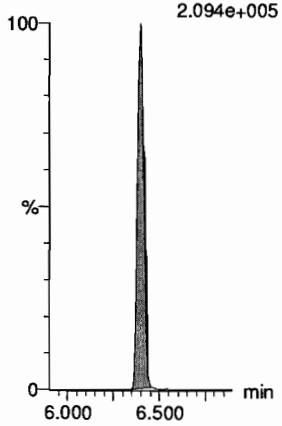
d5-N-ETFOSA



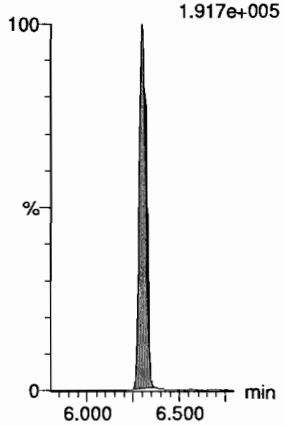
13C2-PFHxDA



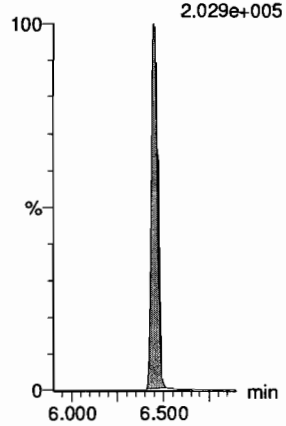
13C2-PFHxDA



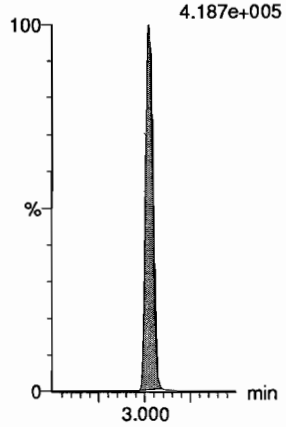
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

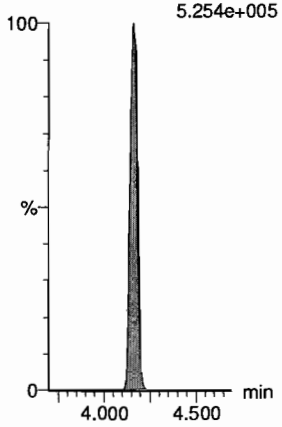


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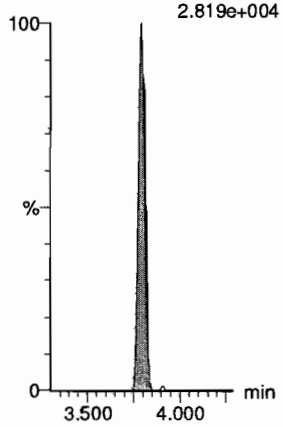
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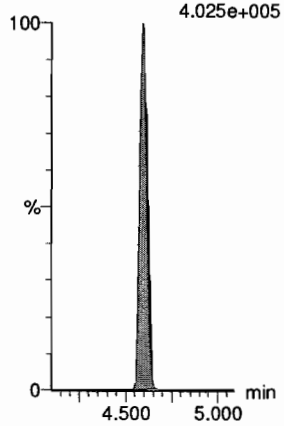
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
5.254e+005



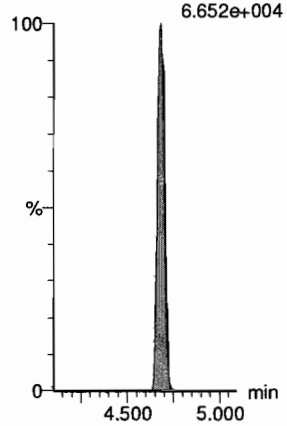
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
2.819e+004



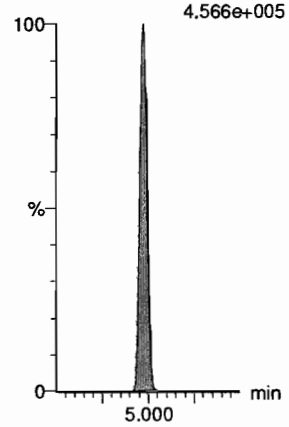
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
4.025e+005



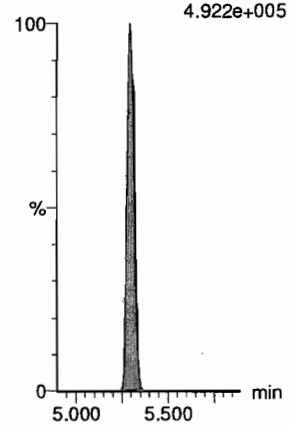
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.9
6.652e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
4.566e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
4.922e+005

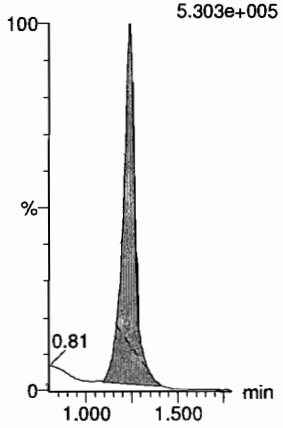


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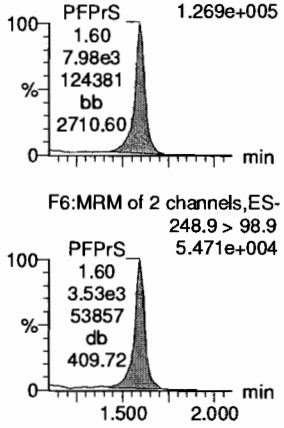
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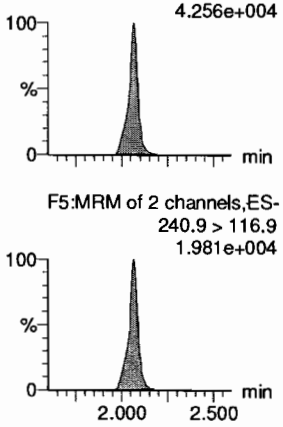
PFBA



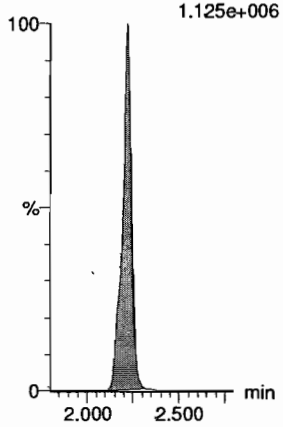
PFPrS



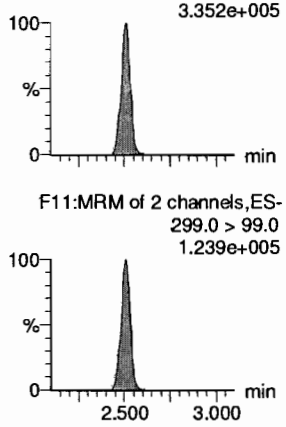
3:3 FTCA



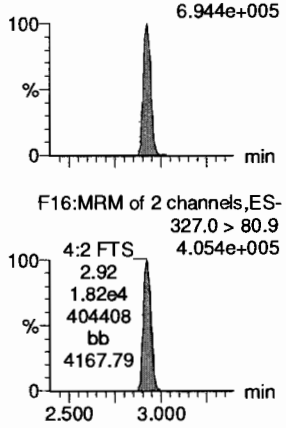
PFPeA



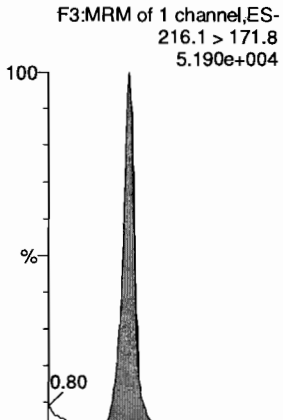
PFBS



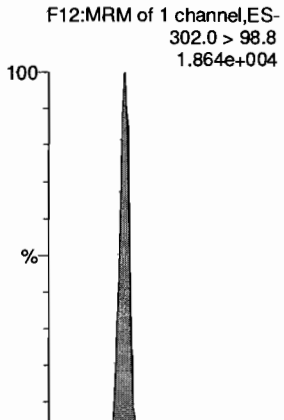
4:2 FTS



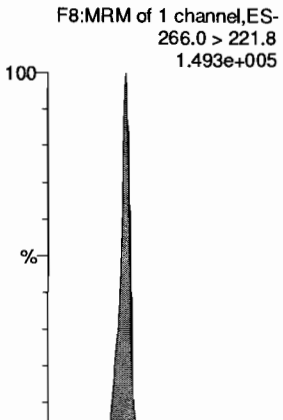
13C3-PFBA



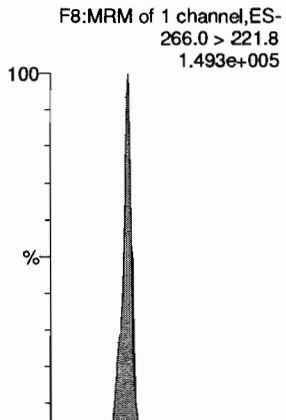
13C3-PFBS



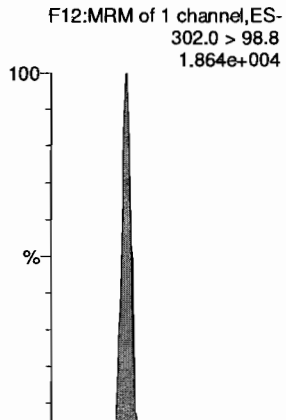
13C3-PFPeA



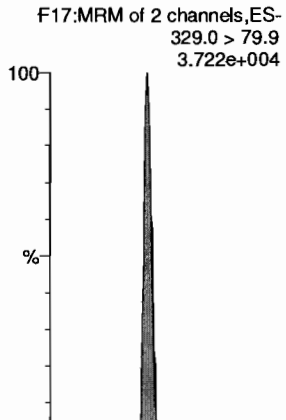
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

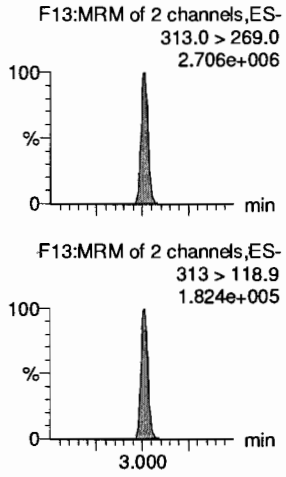


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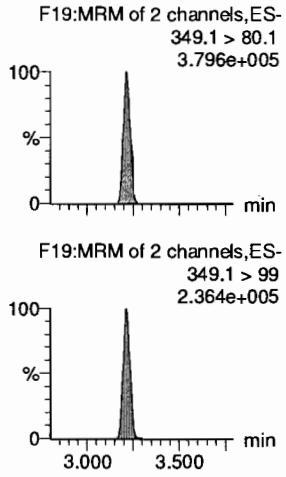
Last Altered: Monday, July 08, 2019 07:58:32 Pacific Daylight Time
Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_10, Date: 07-Jul-2019, Time: 18:47:06, ID: ST190707M2-8 PFC CS5 19F2419, Description: PFC CS5 19F2419

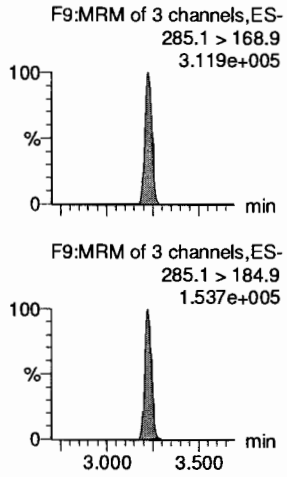
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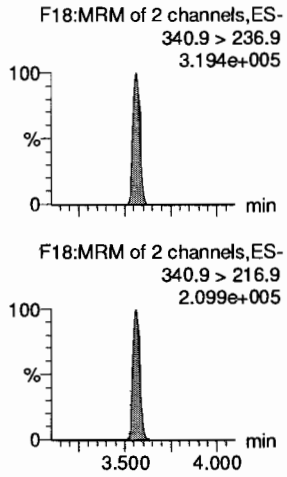
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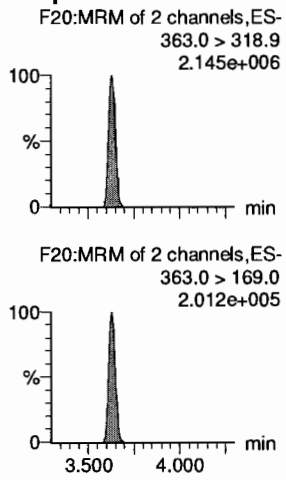
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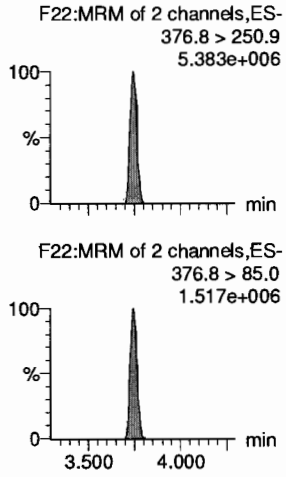
5:3 FTCA



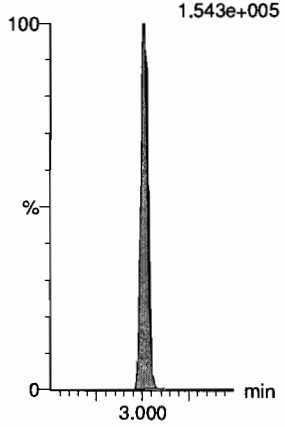
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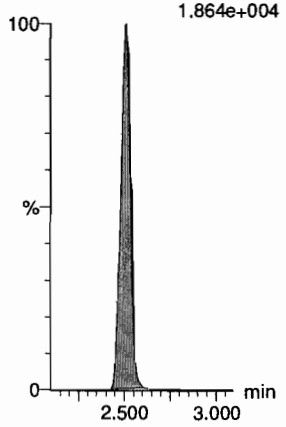
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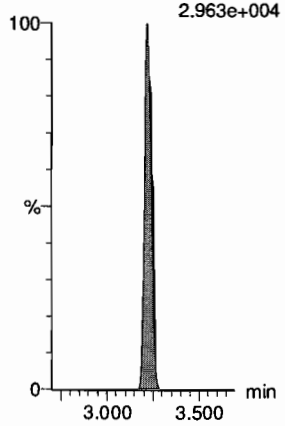
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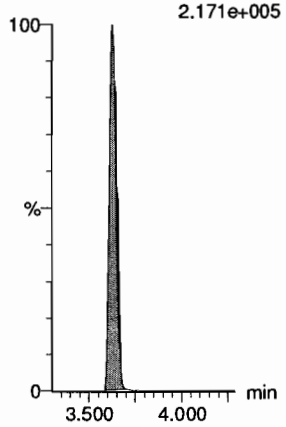
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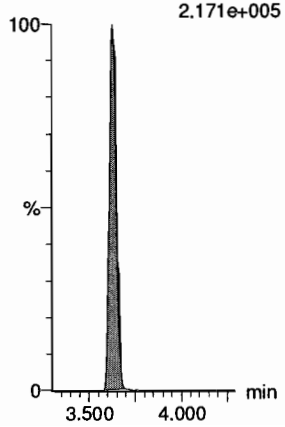
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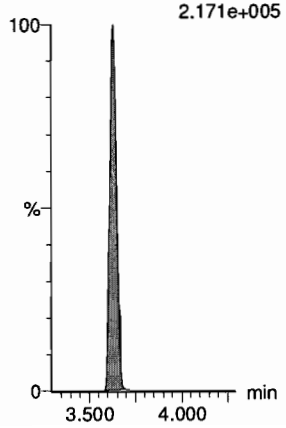
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13C4-PFHpA



13C4-PFHpA

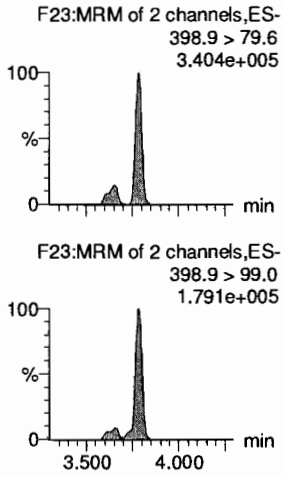


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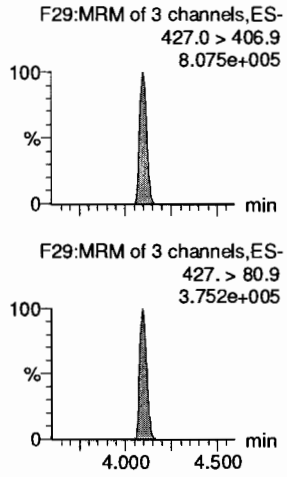
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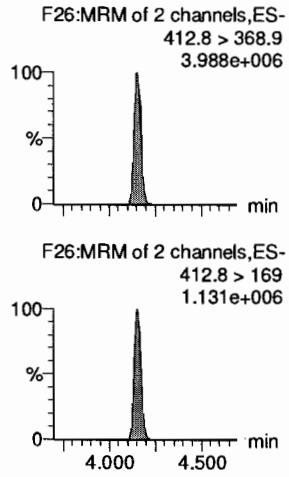
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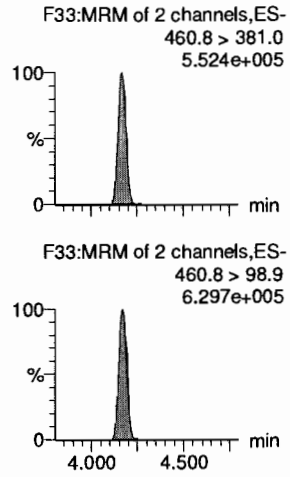
6:2 FTS



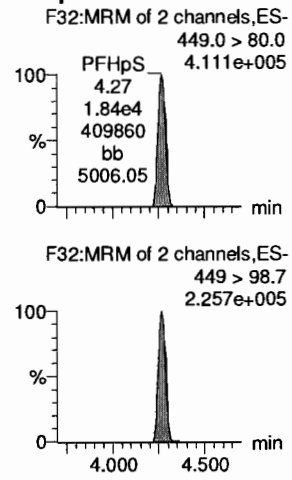
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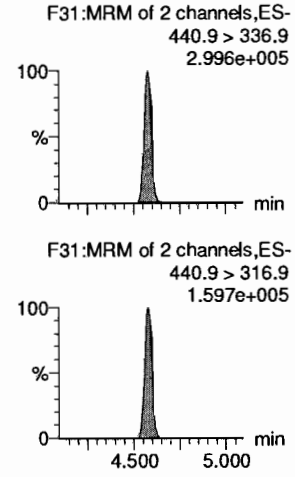
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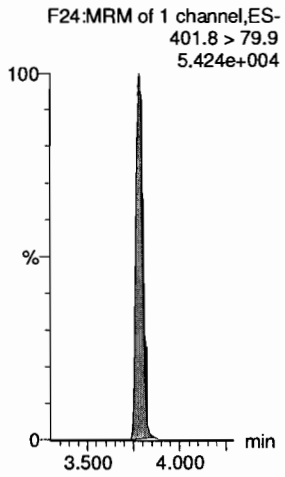
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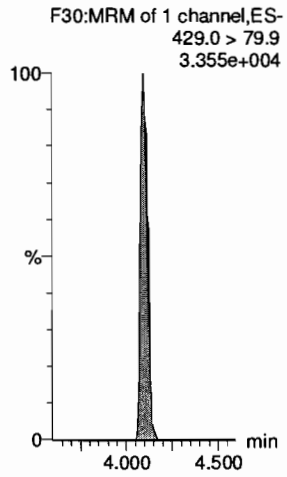
7:3 FTCA



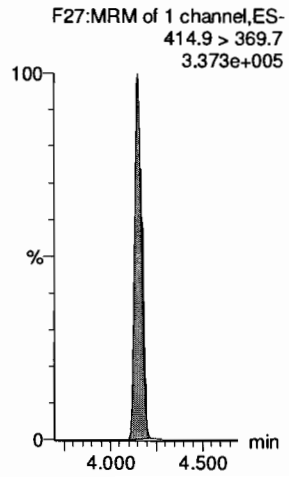
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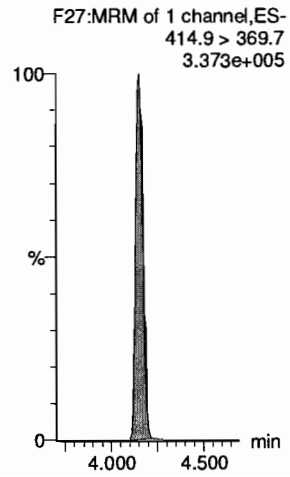
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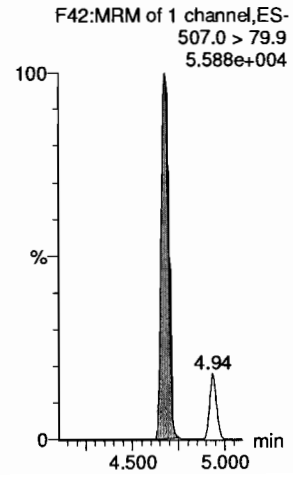
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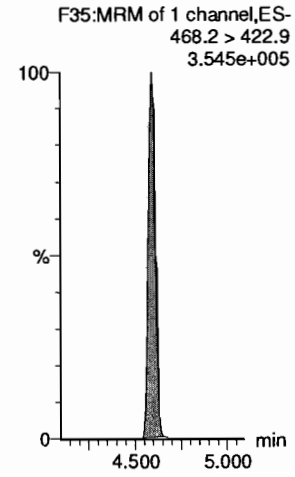
13C2-PFOA



13C8-PFOS



13C5-PFNA

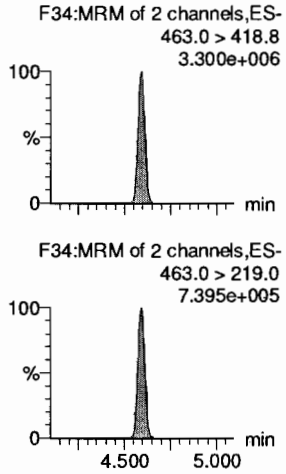


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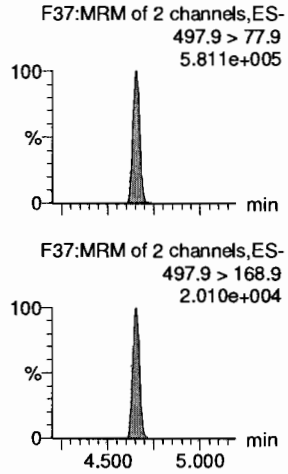
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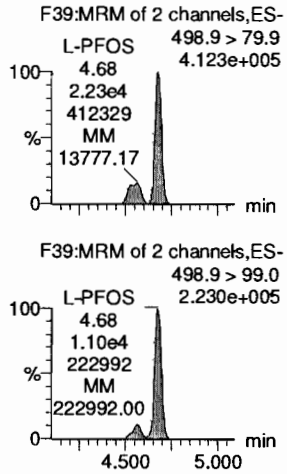
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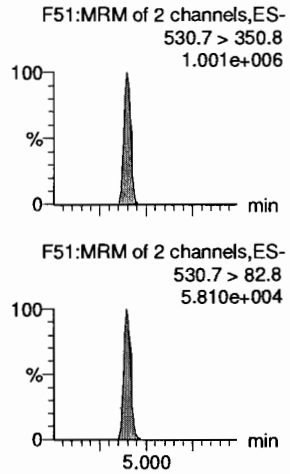
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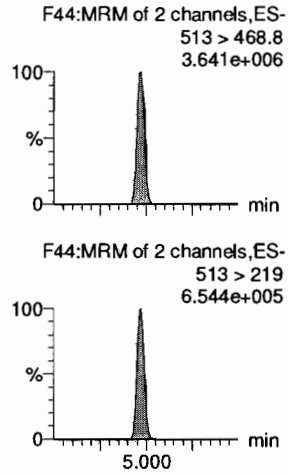
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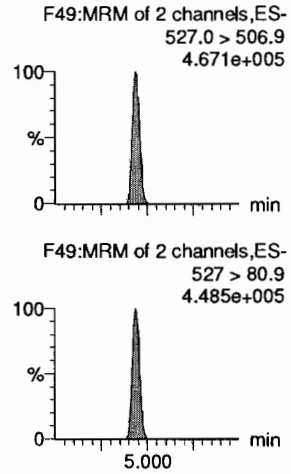
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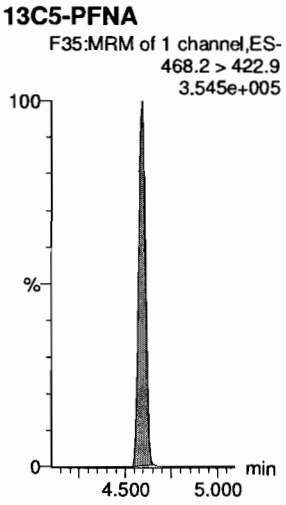
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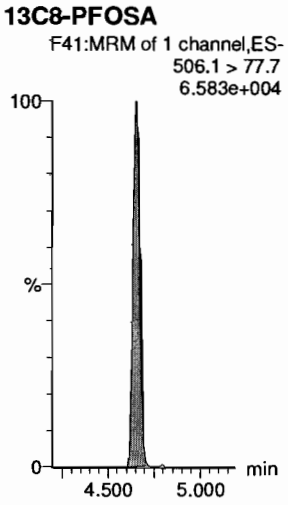
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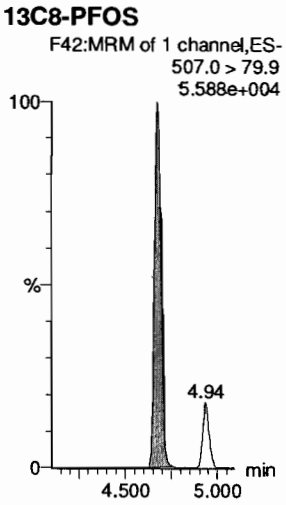
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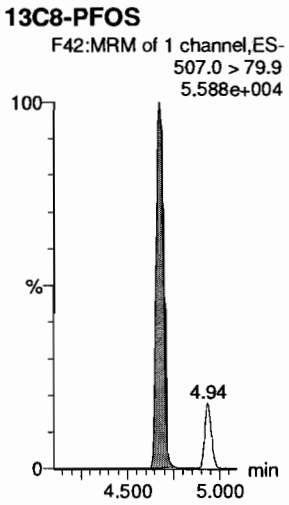
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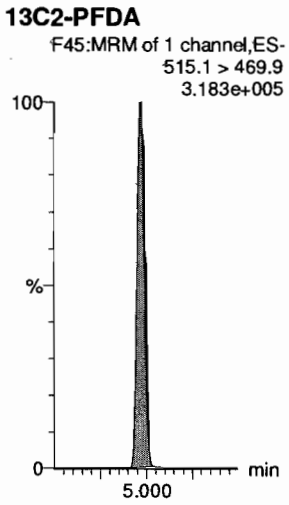
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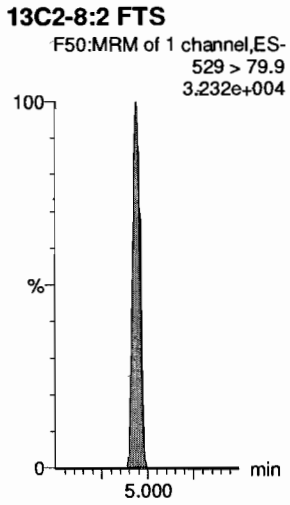
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

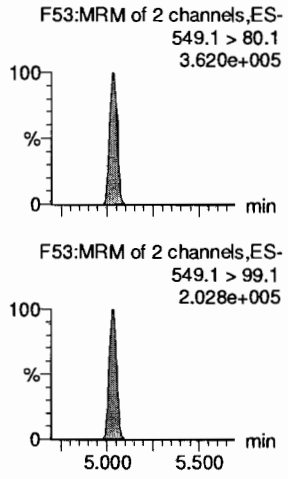


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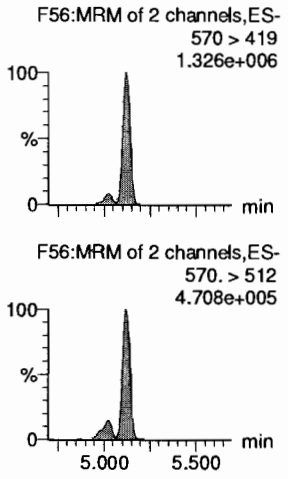
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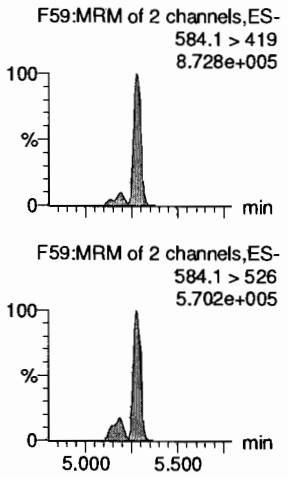
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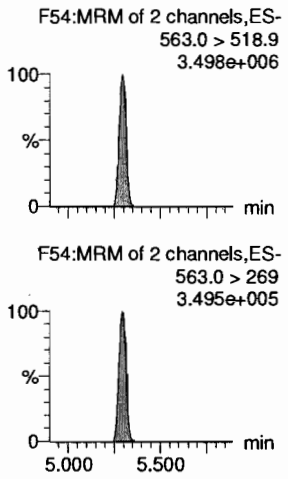
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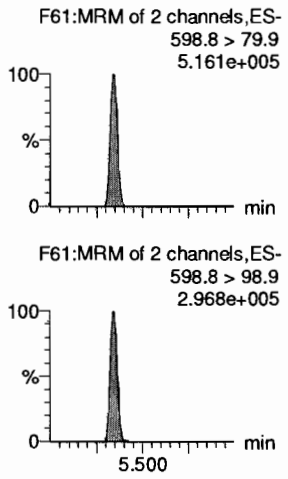
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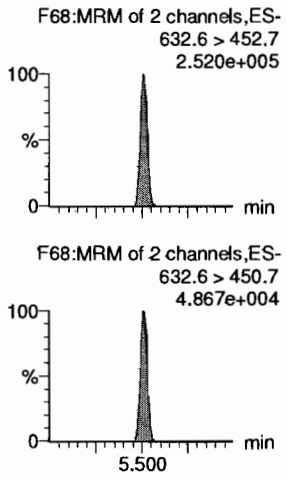
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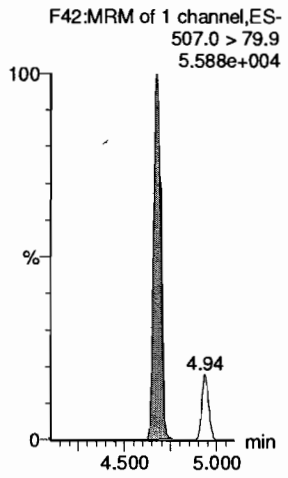
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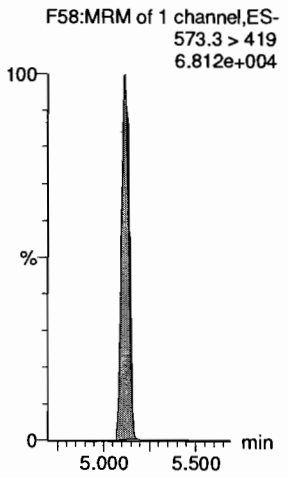
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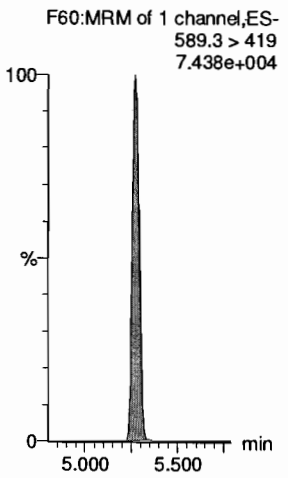
13C8-PFOS



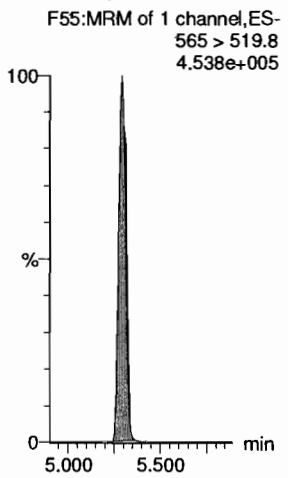
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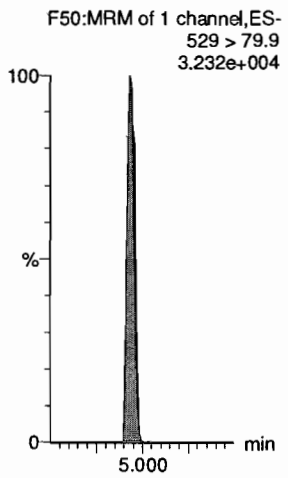
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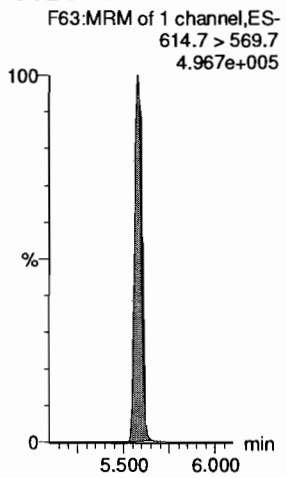
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13C2-8:2 FTS



13C2-PFDoA

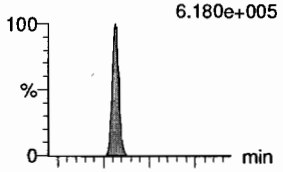


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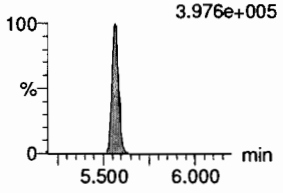
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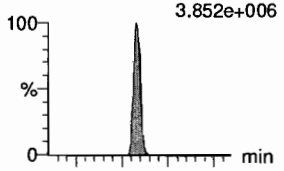
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
6.180e+005



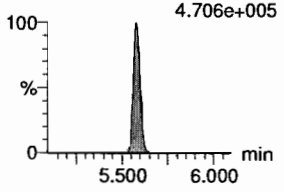
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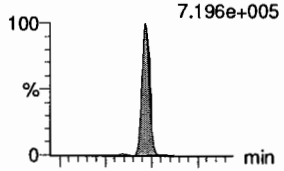
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3.852e+006



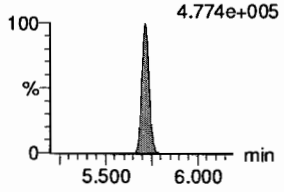
F62:MRM of 4 channels,ES-
612.9 > 318.8
4.706e+005



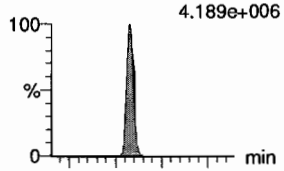
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
7.196e+005



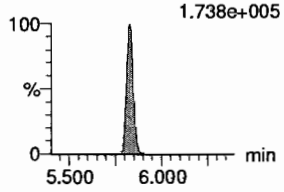
F43:MRM of 2 channels,ES-
512.1 > 219
4.774e+005



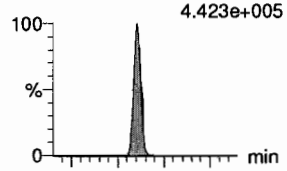
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
4.189e+006



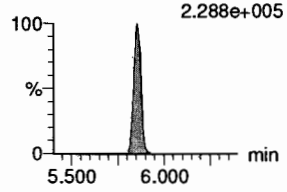
F70:MRM of 2 channels,ES-
662.9 > 319
1.738e+005



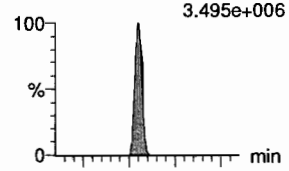
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
4.423e+005



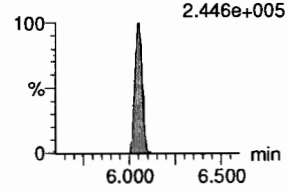
F71:MRM of 2 channels,ES-
698.8 > 98.9
2.288e+005



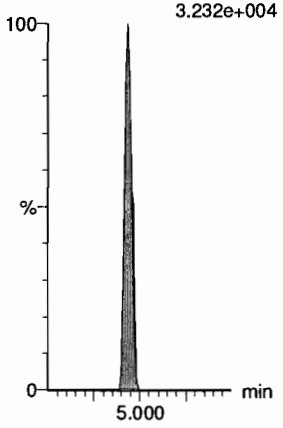
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
3.495e+006



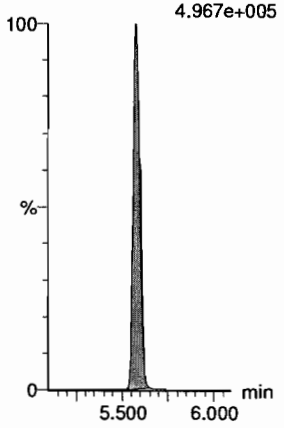
F72:MRM of 2 channels,ES-
713. > 369.0
2.446e+005



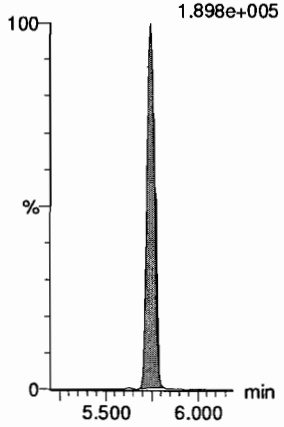
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.232e+004



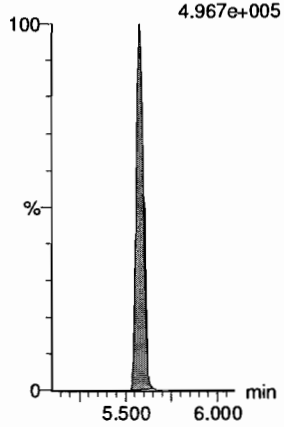
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.967e+005



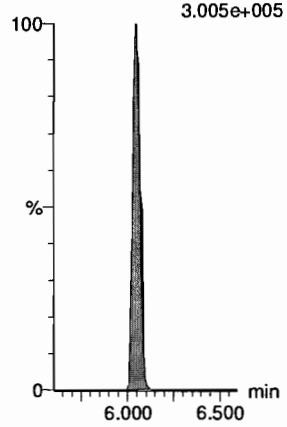
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.898e+005



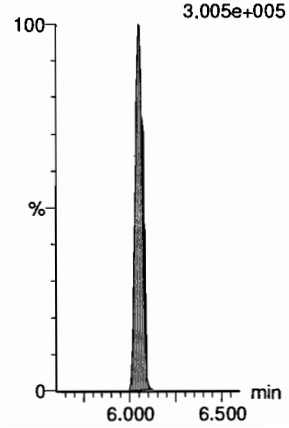
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.967e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.005e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.005e+005

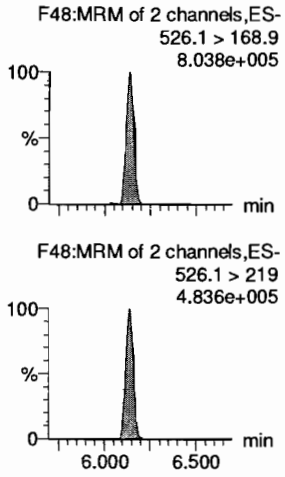


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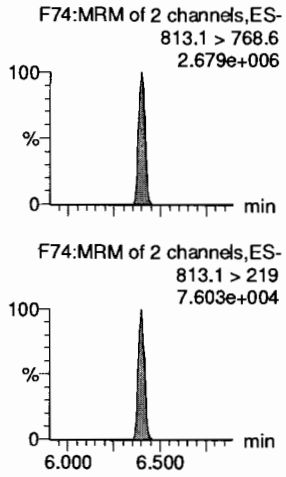
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Name: 190707M2_10, Date: 07-Jul-2019, Time: 18:47:06, ID: ST190707M2-8 PFC CS5 19F2419, Description: PFC CS5 19F2419

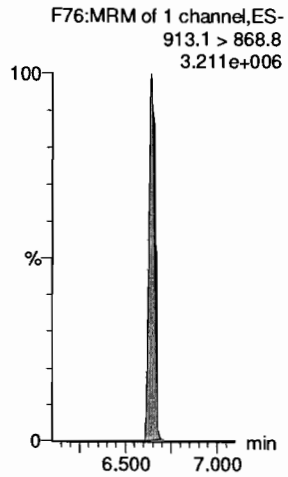
N-EtFOSA



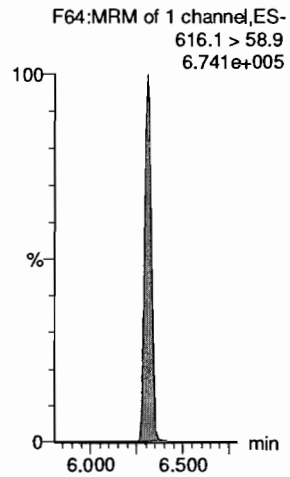
PFHxDA



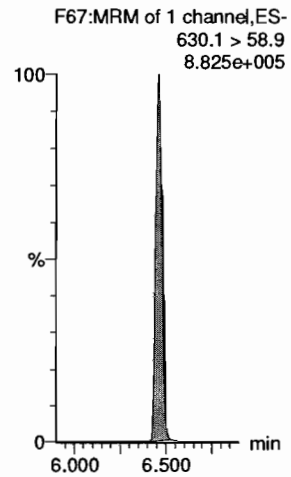
PFODA



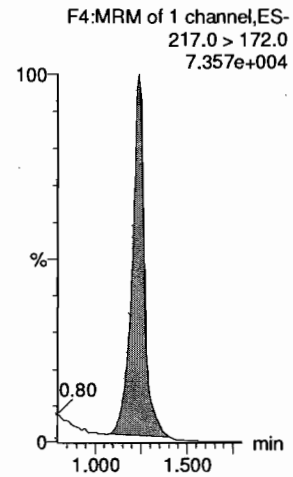
N-MeFOSE



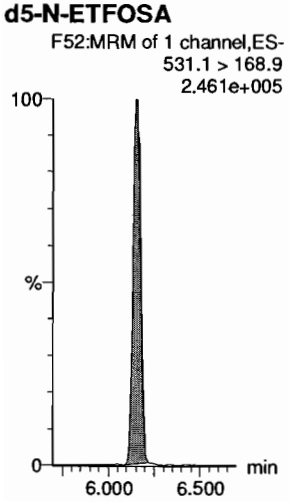
N-EtFOSE



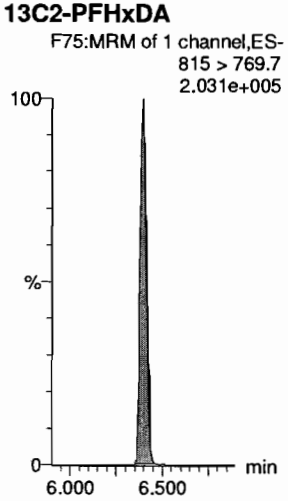
13C4-PFBA



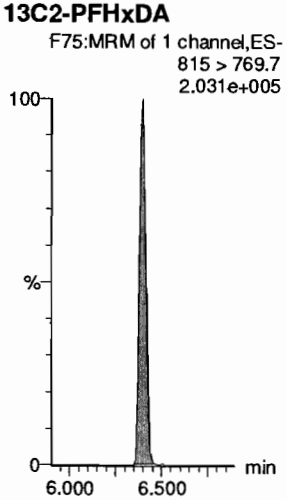
d5-N-ETFOSA



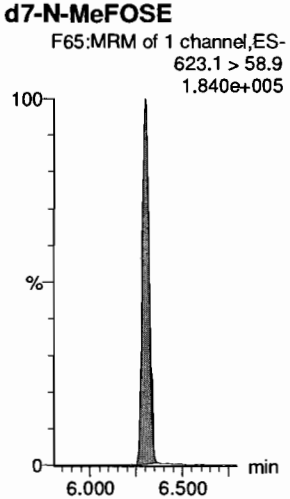
13C2-PFHxDA



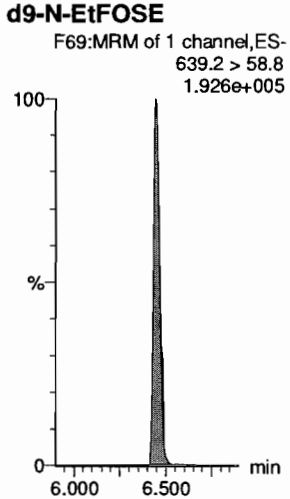
13C2-PFHxDA



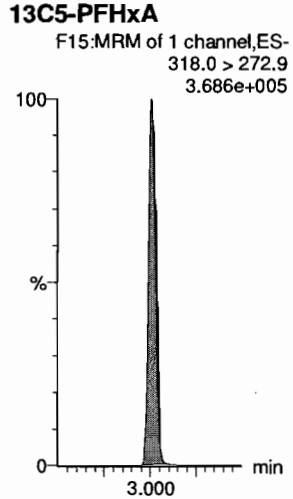
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

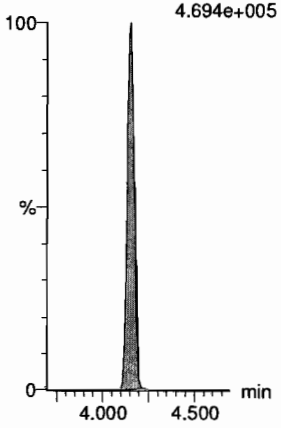


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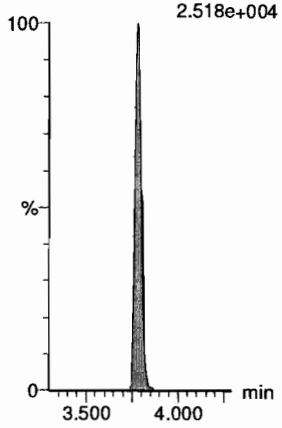
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Name: 190707M2_10, Date: 07-Jul-2019, Time: 18:47:06, ID: ST190707M2-8 PFC CS5 19F2419, Description: PFC CS5 19F2419

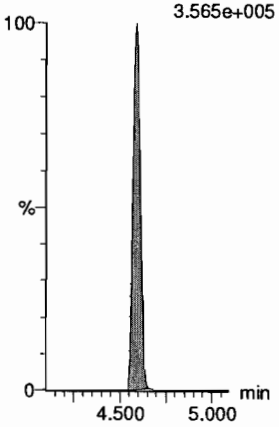
13C8-PFOA



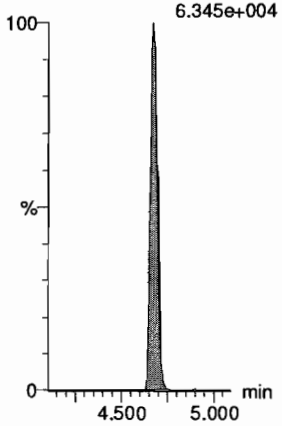
18O2-PFHxS



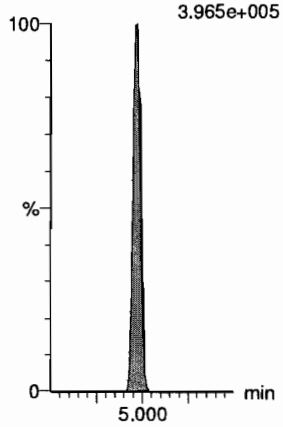
13C9-PFNA



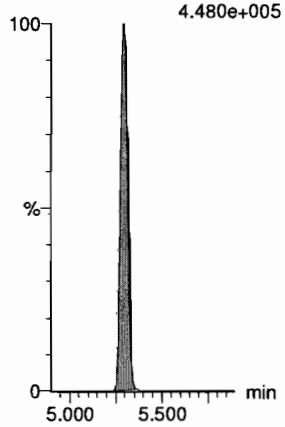
13C4-PFOS



13C6-PFDA



13C7-PFUdA

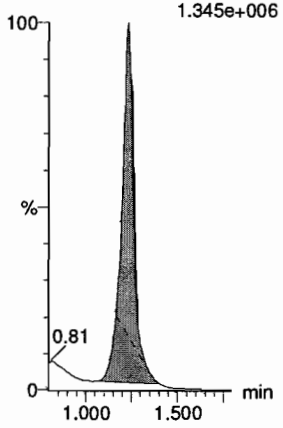


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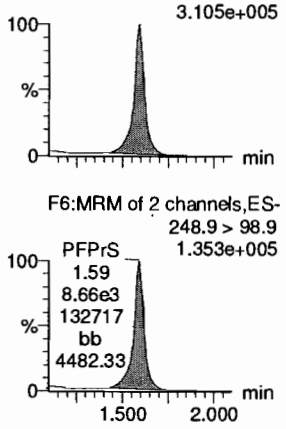
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

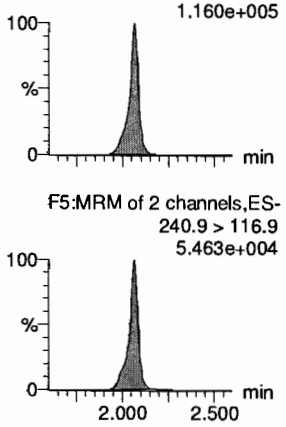
PFBA



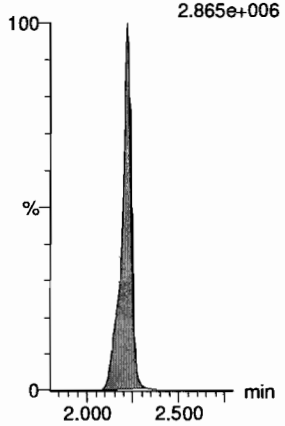
PFPrS



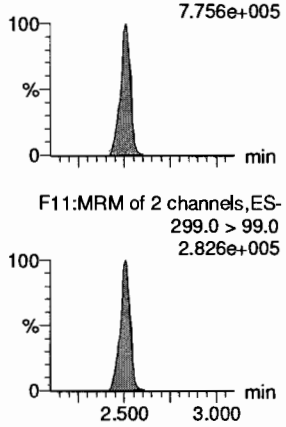
3:3 FTCA



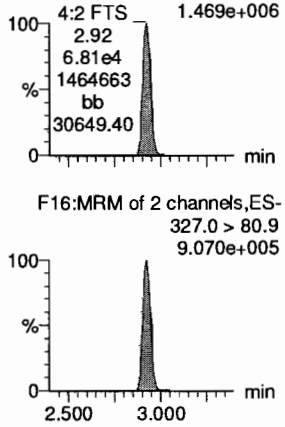
PFPeA



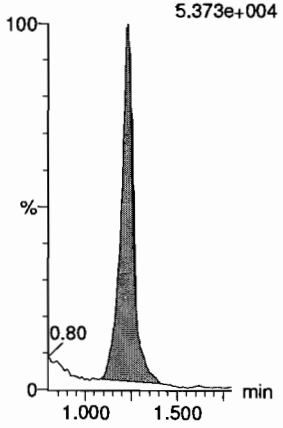
PFBS



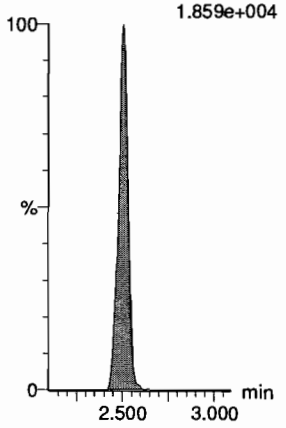
4:2 FTS



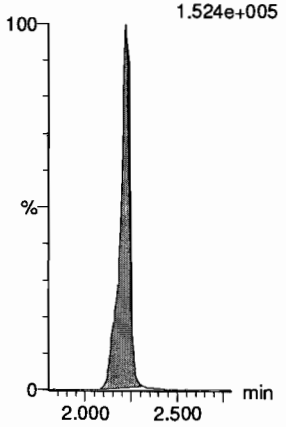
13C3-PFBA



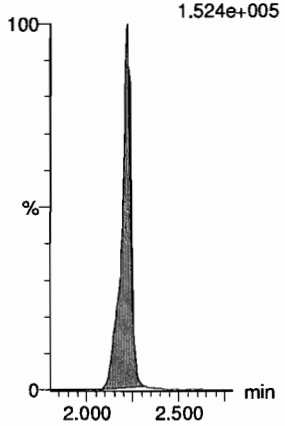
13C3-PFBS



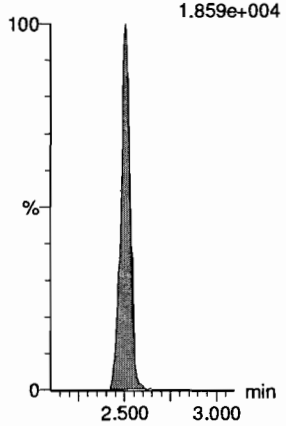
13C3-PFPeA



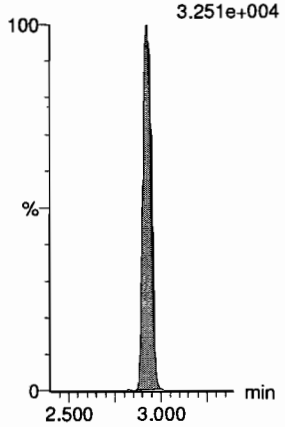
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

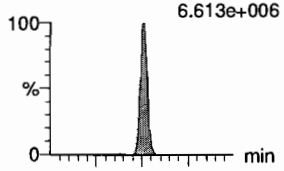


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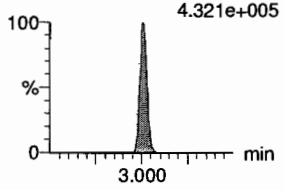
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

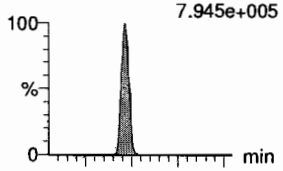
PFHxA
F13:MRM of 2 channels,ES-
313.0 > 269.0
6.613e+006



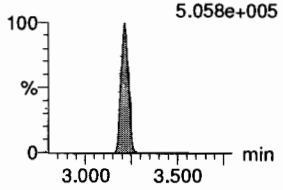
F13:MRM of 2 channels,ES-
313 > 118.9
4.321e+005



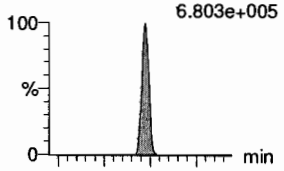
PFPeS
F19:MRM of 2 channels,ES-
349.1 > 80.1
7.945e+005



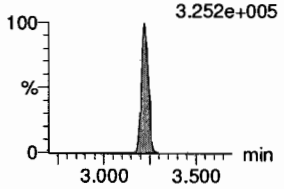
F19:MRM of 2 channels,ES-
349.1 > 99
5.058e+005



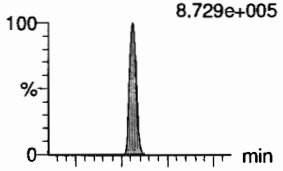
HFPO-DA
F9:MRM of 3 channels,ES-
285.1 > 168.9
6.803e+005



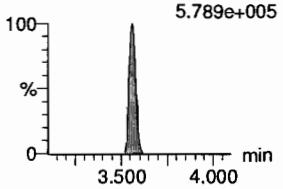
F9:MRM of 3 channels,ES-
285.1 > 184.9
3.252e+005



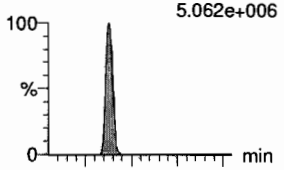
5:3 FTCA
F18:MRM of 2 channels,ES-
340.9 > 236.9
8.729e+005



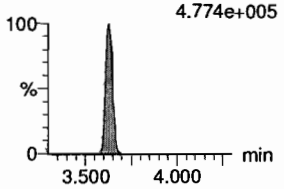
F18:MRM of 2 channels,ES-
340.9 > 216.9
5.789e+005



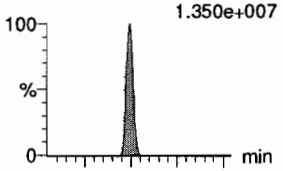
PFHpA
F20:MRM of 2 channels,ES-
363.0 > 318.9
5.062e+006



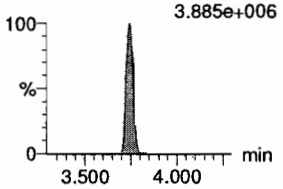
F20:MRM of 2 channels,ES-
363.0 > 169.0
4.774e+005



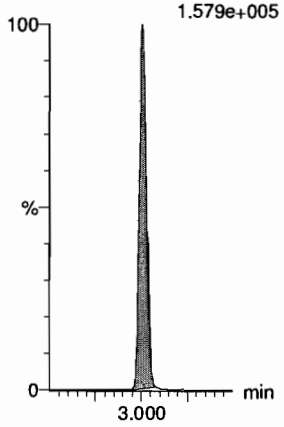
ADONA
F22:MRM of 2 channels,ES-
376.8 > 250.9
1.350e+007



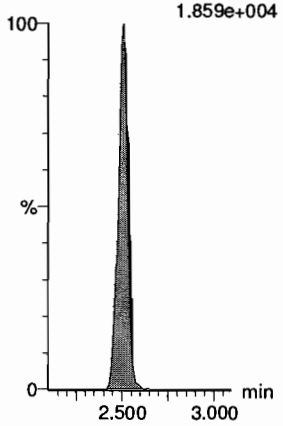
F22:MRM of 2 channels,ES-
376.8 > 85.0
3.885e+006



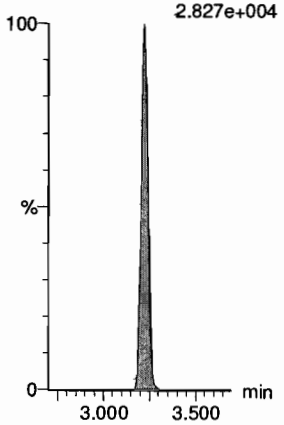
13C2-PFHxA
F14:MRM of 1 channel,ES-
315.0 > 270.0
1.579e+005



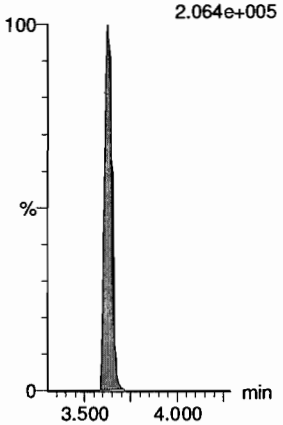
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.859e+004



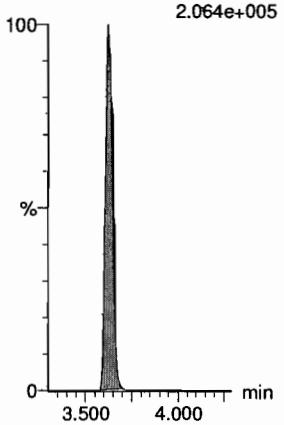
13C3-HFPO-DA
F10:MRM of 2 channels,ES-
287.0 > 168.9
2.827e+004



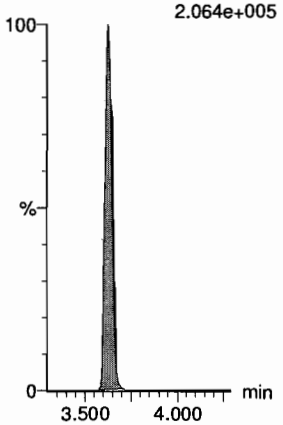
13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.064e+005



13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.064e+005



13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.064e+005

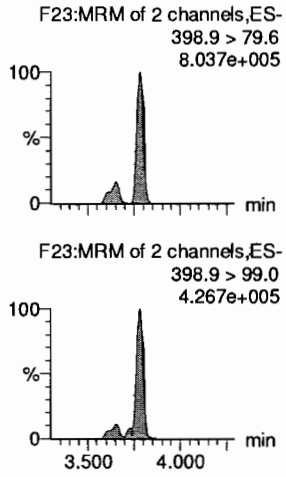


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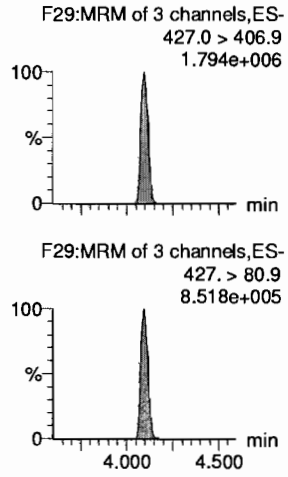
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

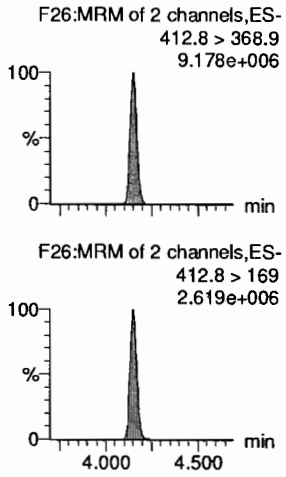
L-PFHxS



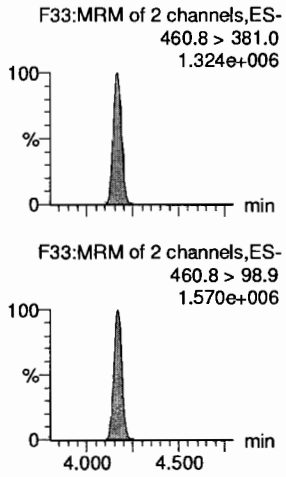
6:2 FTS



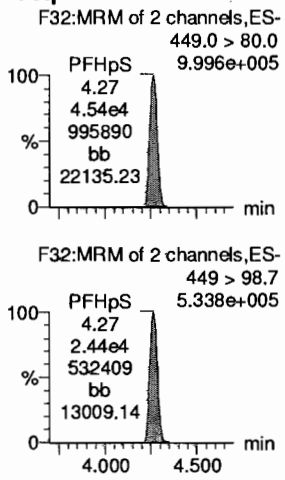
L-PFOA



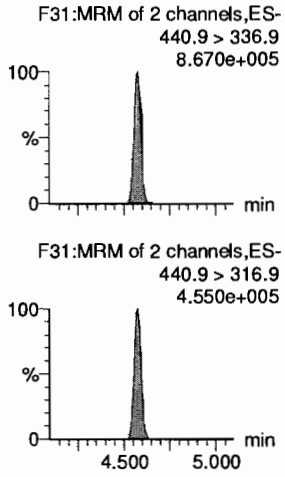
PFEChS



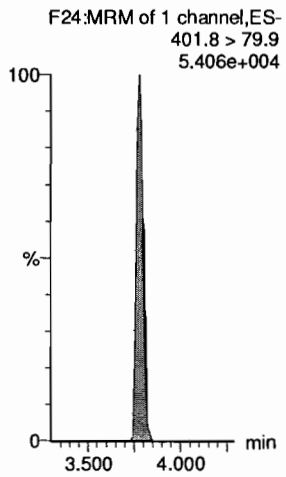
PFHpS



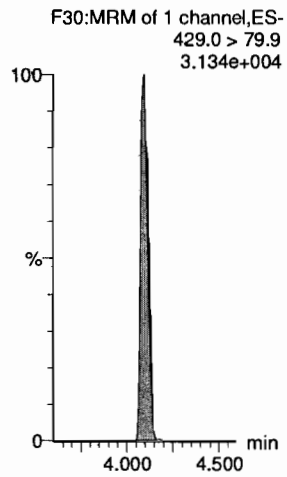
7:3 FTCA



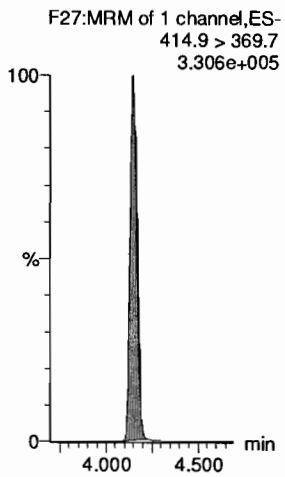
13C3-PFHxS



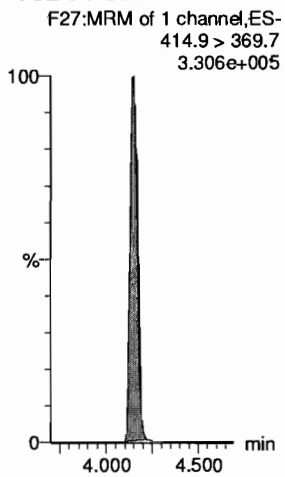
13C2-6:2 FTS



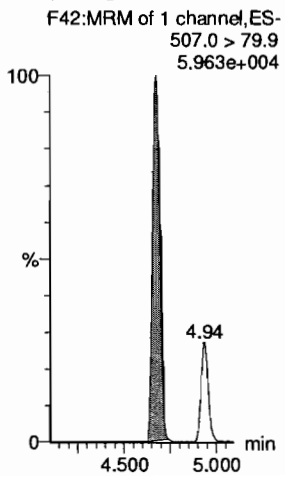
13C2-PFOA



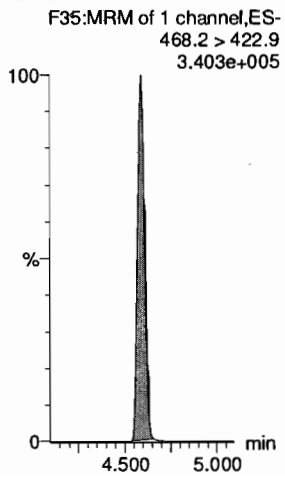
13C2-PFOA



13C8-PFOS



13C5-PFNA

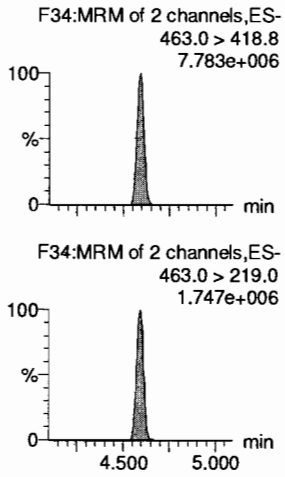


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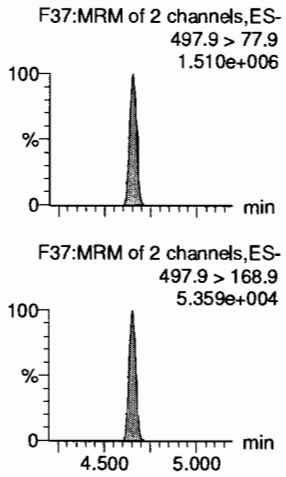
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

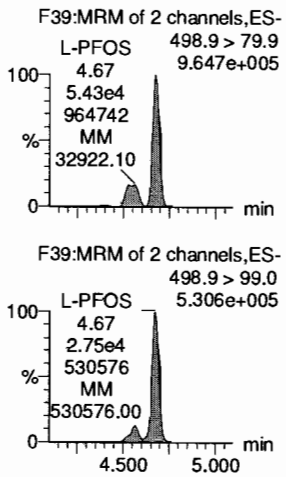
PFNA



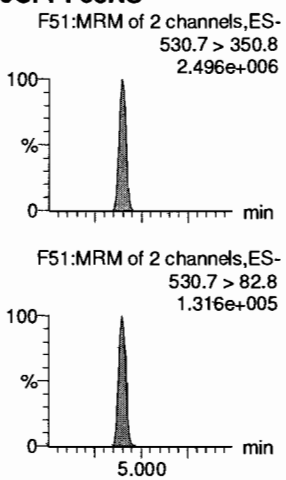
PFOSA



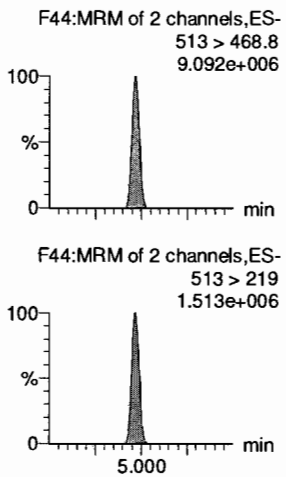
L-PFOS



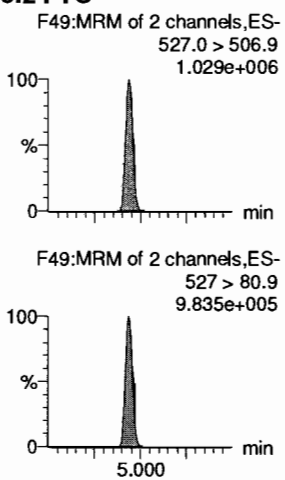
9Cl-PF30NS



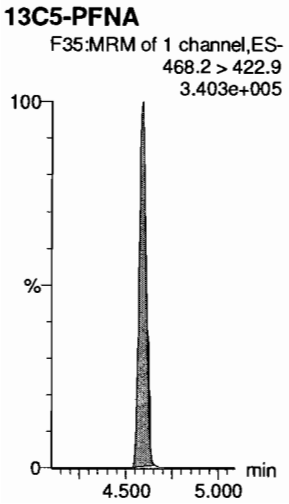
PFDA



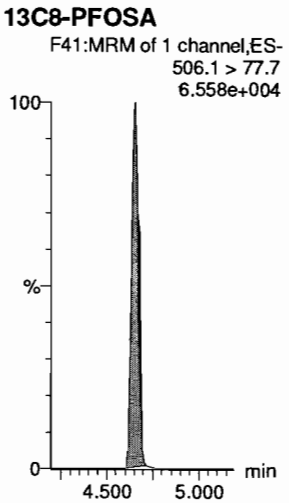
8:2 FTS



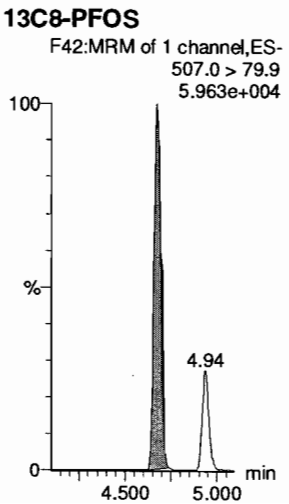
13C5-PFNA



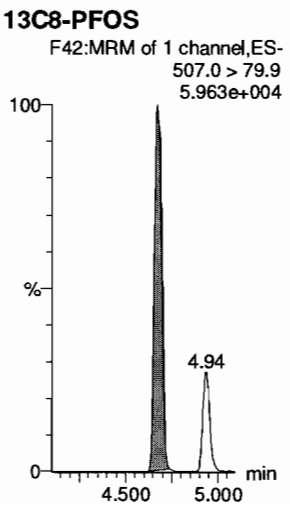
13C8-PFOSA



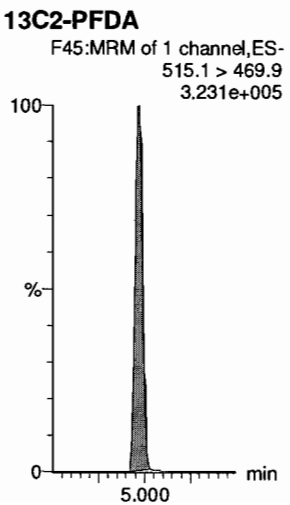
13C8-PFOS



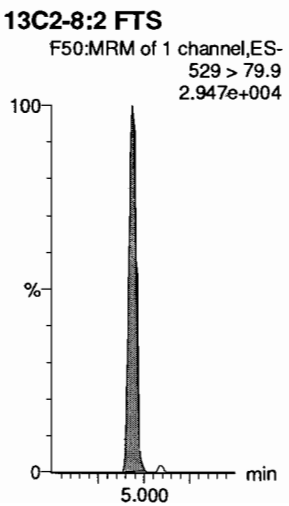
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

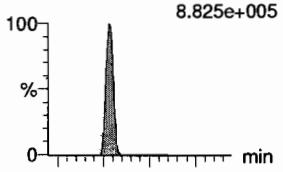


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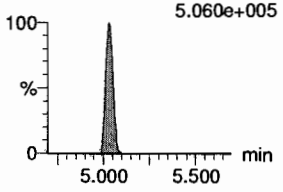
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

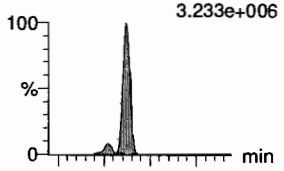
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
8.825e+005



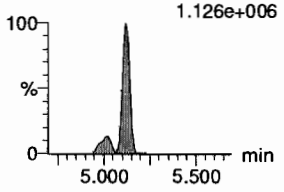
F53:MRM of 2 channels,ES-
549.1 > 99.1
5.060e+005



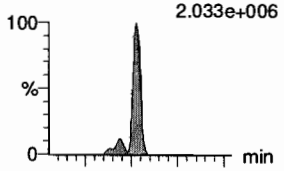
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
3.233e+006



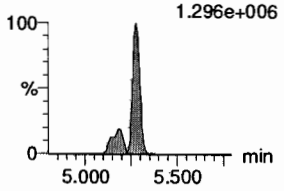
F56:MRM of 2 channels,ES-
570. > 512
1.126e+006



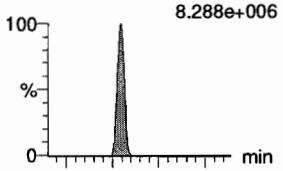
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
2.033e+006



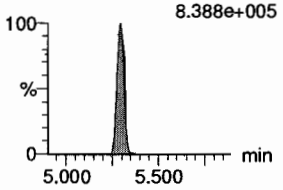
F59:MRM of 2 channels,ES-
584.1 > 526
1.296e+006



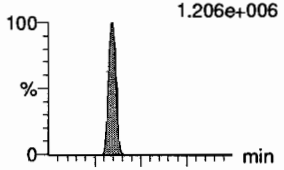
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
8.288e+006



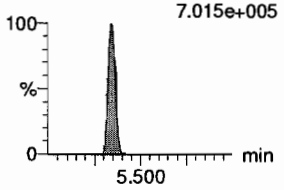
F54:MRM of 2 channels,ES-
563.0 > 269
8.388e+005



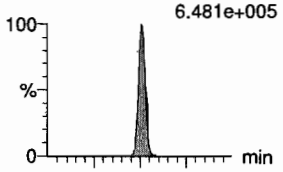
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
1.206e+006



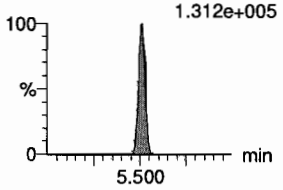
F61:MRM of 2 channels,ES-
598.8 > 98.9
7.015e+005



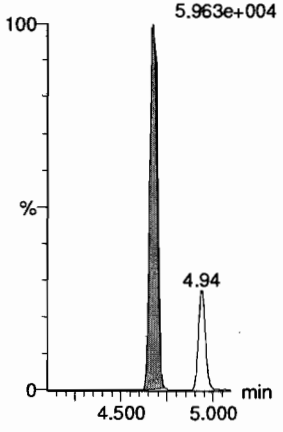
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
6.481e+005



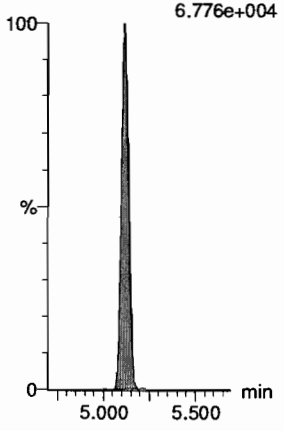
F68:MRM of 2 channels,ES-
632.6 > 450.7
1.312e+005



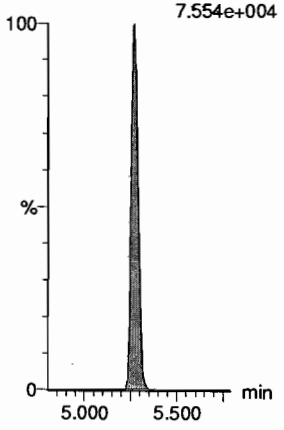
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
5.963e+004



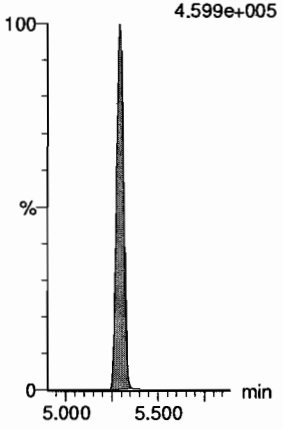
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
6.776e+004



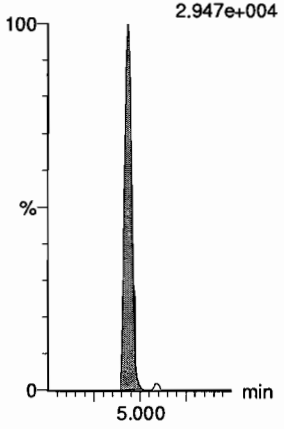
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
7.554e+004



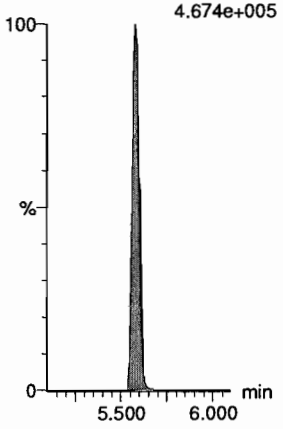
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
4.599e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
2.947e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.674e+005

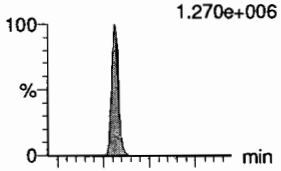


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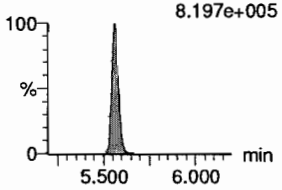
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

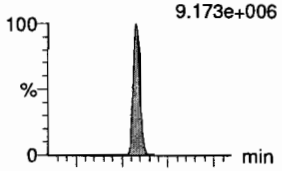
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
1.270e+006



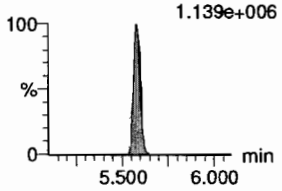
F66:MRM of 2 channels,ES-
627.0 > 80.9
8.197e+005



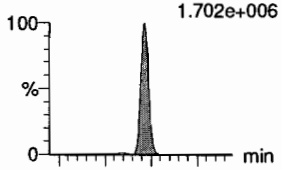
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
9.173e+006



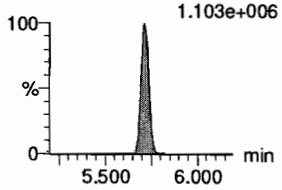
F62:MRM of 4 channels,ES-
612.9 > 318.8
1.139e+006



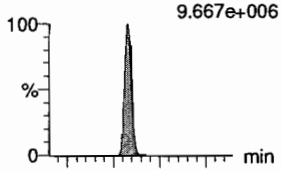
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
1.702e+006



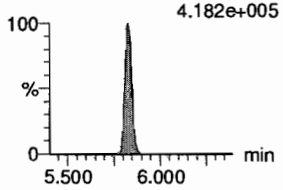
F43:MRM of 2 channels,ES-
512.1 > 219
1.103e+006



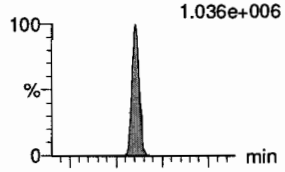
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
9.667e+006



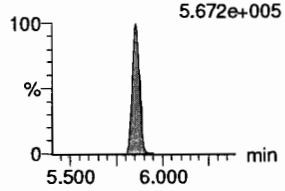
F70:MRM of 2 channels,ES-
662.9 > 319
4.182e+005



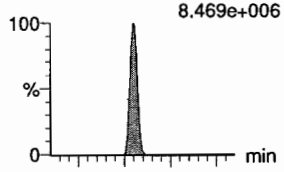
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
1.036e+006



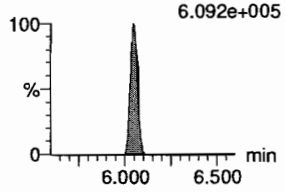
F71:MRM of 2 channels,ES-
698.8 > 98.9
5.672e+005



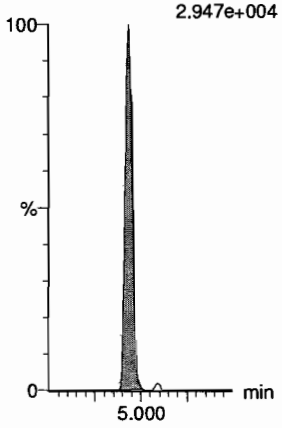
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
8.469e+006



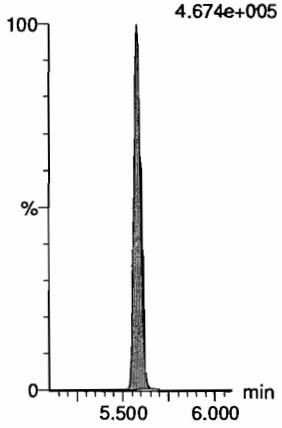
F72:MRM of 2 channels,ES-
713. > 369.0
6.092e+005



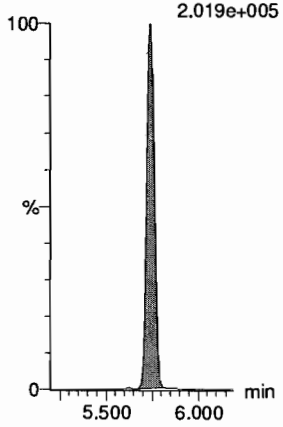
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
2.947e+004



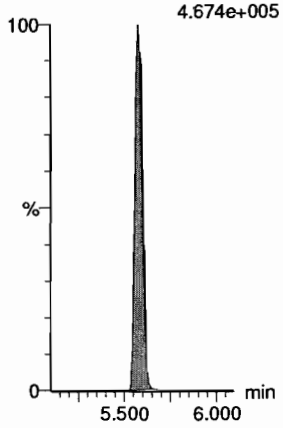
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.674e+005



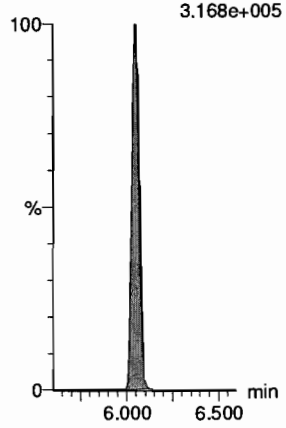
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.019e+005



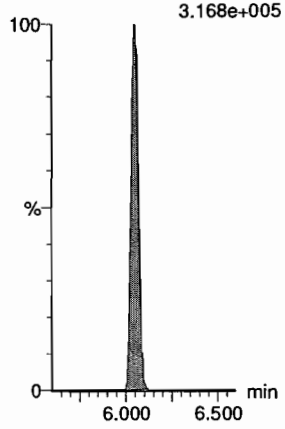
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.674e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.168e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.168e+005

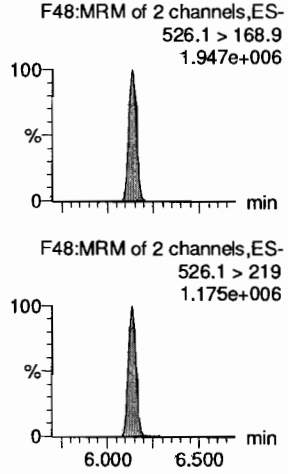


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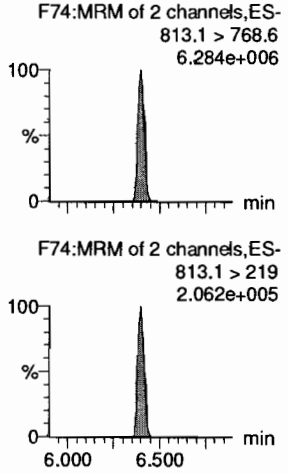
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

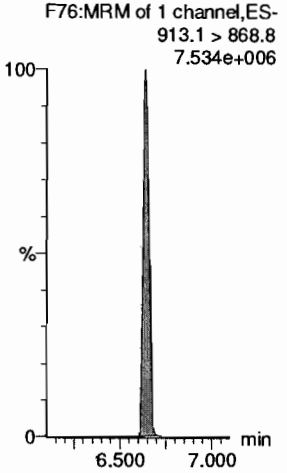
N-EtFOSA



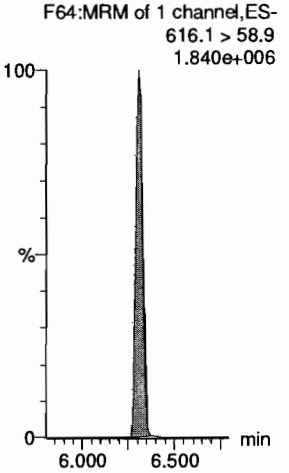
PFHxDA



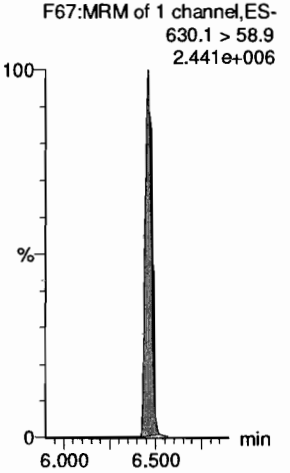
PFODA



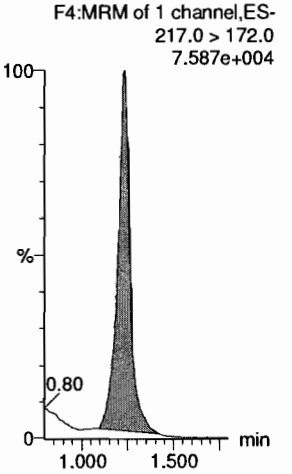
N-MeFOSE



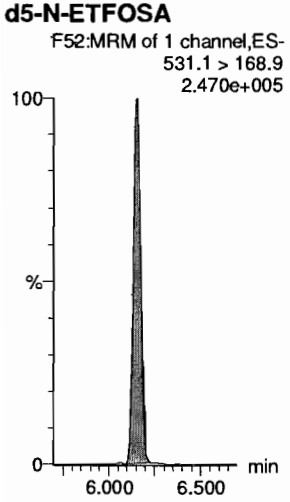
N-EtFOSE



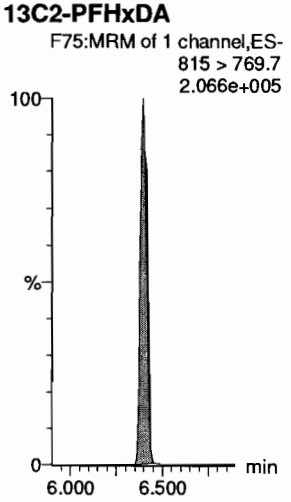
13C4-PFBA



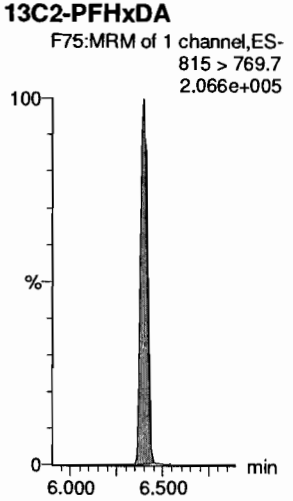
d5-N-ETFOSA



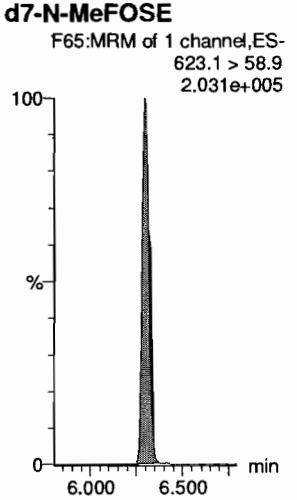
13C2-PFHxDA



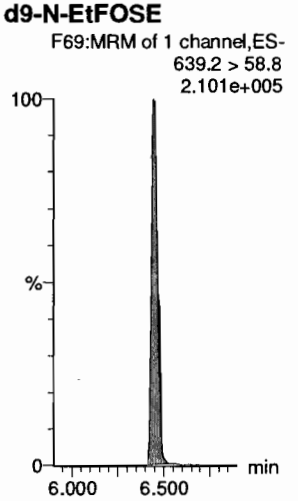
13C2-PFHxDA



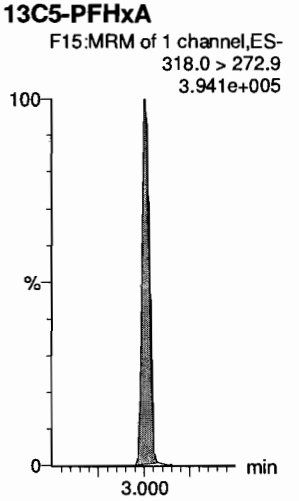
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

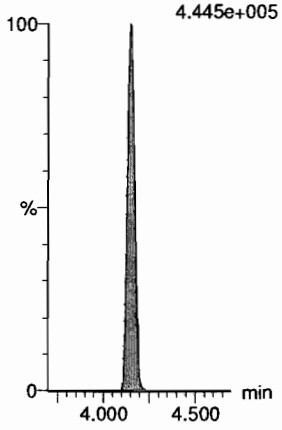


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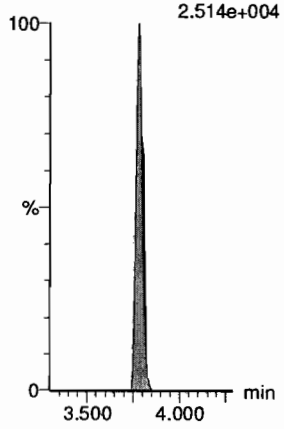
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Name: 190707M2_11, Date: 07-Jul-2019, Time: 18:57:38, ID: ST190707M2-9 PFC CS6 19F2420, Description: PFC CS6 19F2420

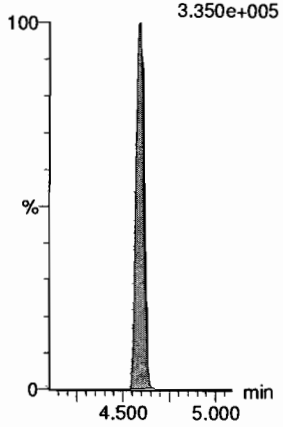
13C8-PFOA



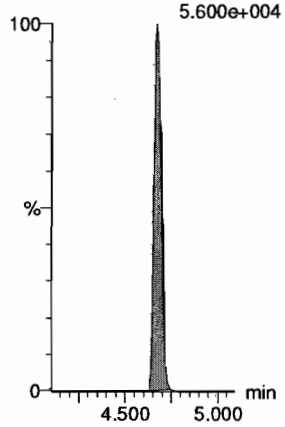
18O2-PFHxS



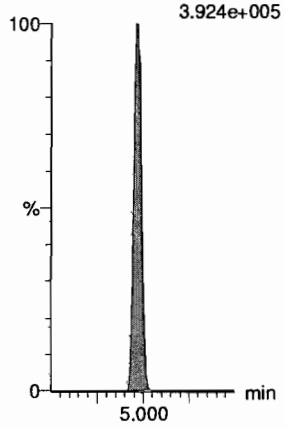
13C9-PFNA



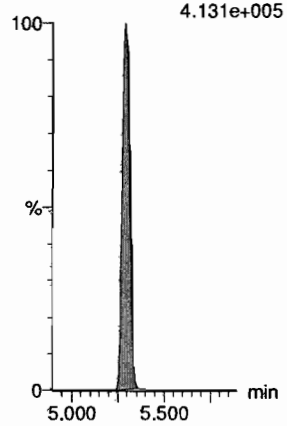
13C4-PFOS



13C6-PFDA



13C7-PFUdA

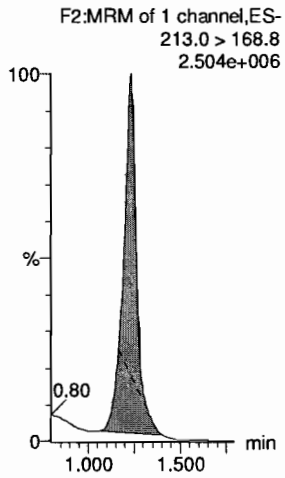


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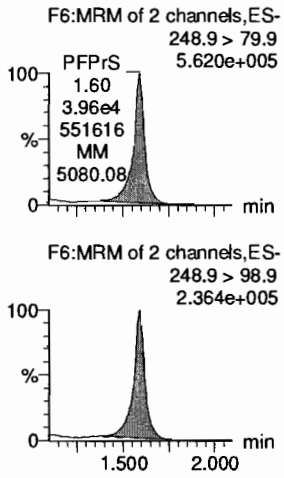
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Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

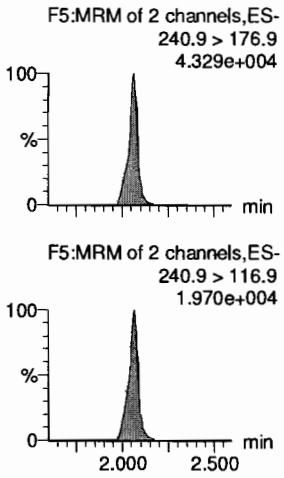
PFBA



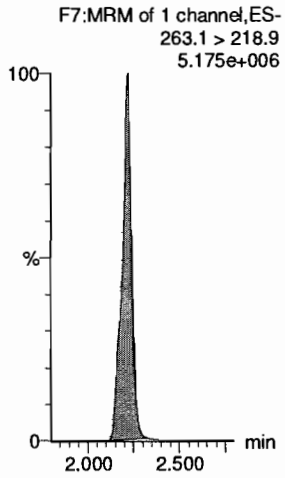
PFPrS



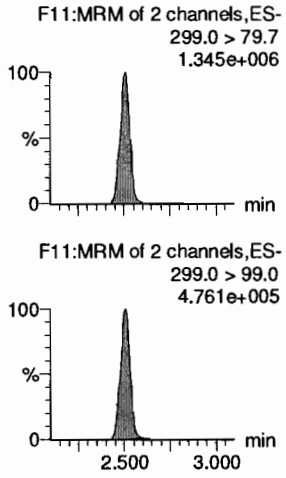
3:3 FTCA



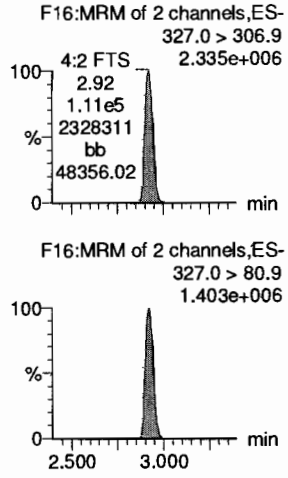
PFPeA



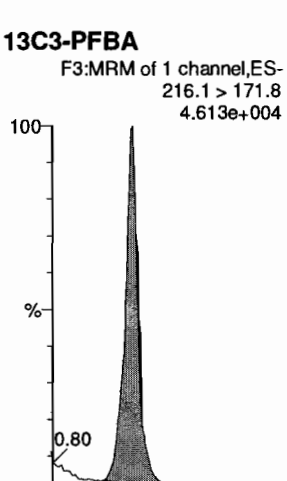
PFBS



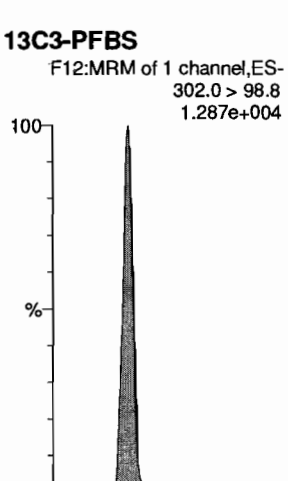
4:2 FTS



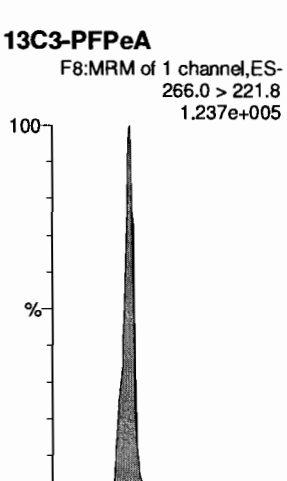
13C3-PFBA



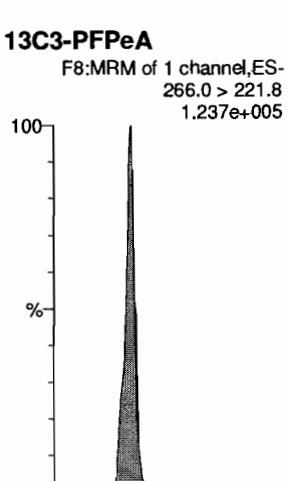
13C3-PFBS



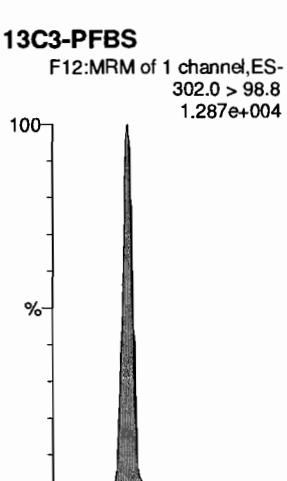
13C3-PFPeA



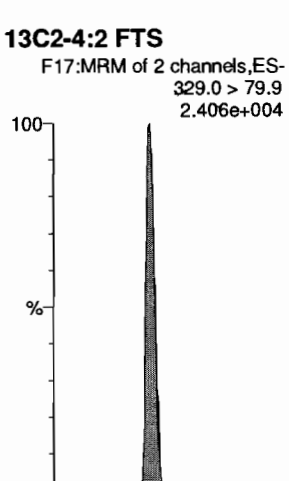
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

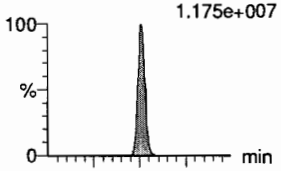


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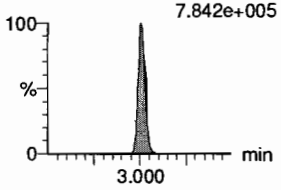
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Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

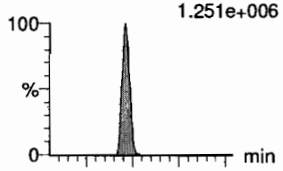
PFHxA
F13:MRM of 2 channels,ES-
313.0 > 269.0
1.175e+007



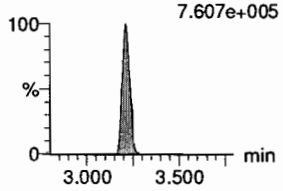
F13:MRM of 2 channels,ES-
313 > 118.9
7.842e+005



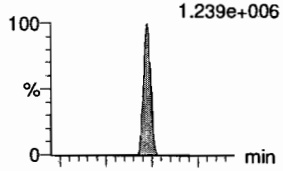
PFPeS
F19:MRM of 2 channels,ES-
349.1 > 80.1
1.251e+006



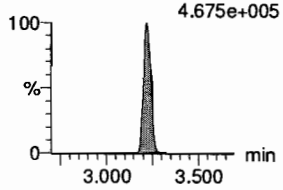
F19:MRM of 2 channels,ES-
349.1 > 99
7.607e+005



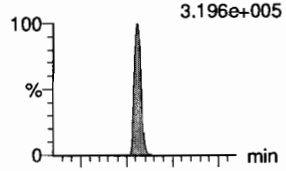
HFPO-DA
F9:MRM of 3 channels,ES-
285.1 > 168.9
1.239e+006



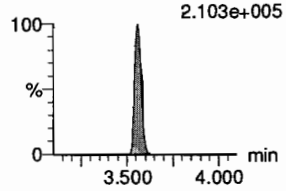
F9:MRM of 3 channels,ES-
285.1 > 184.9
4.675e+005



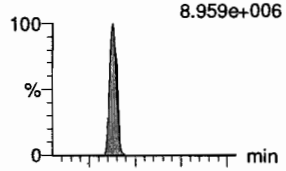
5:3 FTCA
F18:MRM of 2 channels,ES-
340.9 > 236.9
3.196e+005



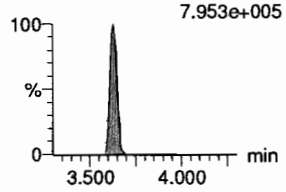
F18:MRM of 2 channels,ES-
340.9 > 216.9
2.103e+005



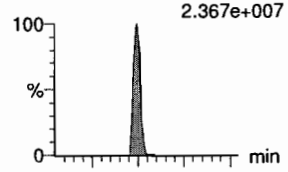
PFHpA
F20:MRM of 2 channels,ES-
363.0 > 318.9
8.959e+006



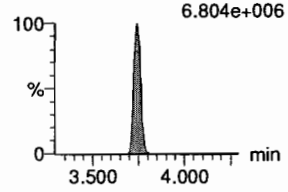
F20:MRM of 2 channels,ES-
363.0 > 169.0
7.953e+005



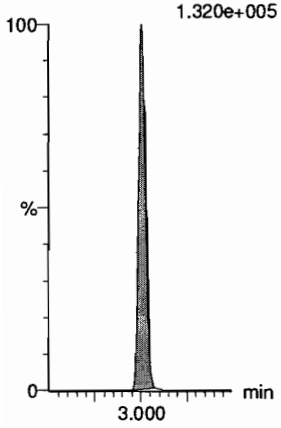
ADONA
F22:MRM of 2 channels,ES-
376.8 > 250.9
2.367e+007



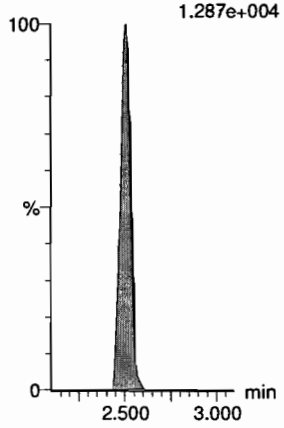
F22:MRM of 2 channels,ES-
376.8 > 85.0
6.804e+006



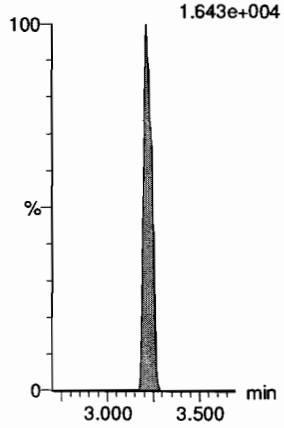
13C2-PFHxA
F14:MRM of 1 channel,ES-
315.0 > 270.0
1.320e+005



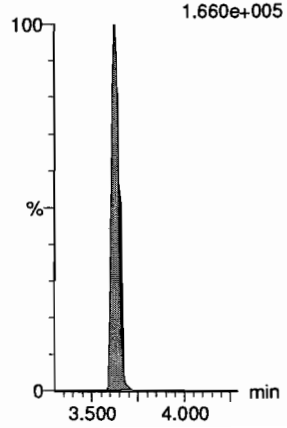
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.287e+004



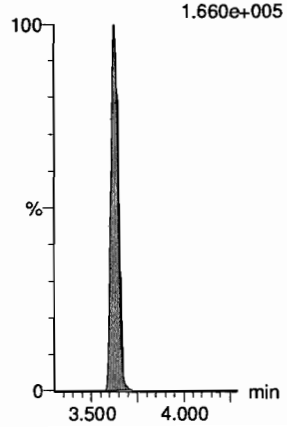
13C3-HFPO-DA
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.643e+004



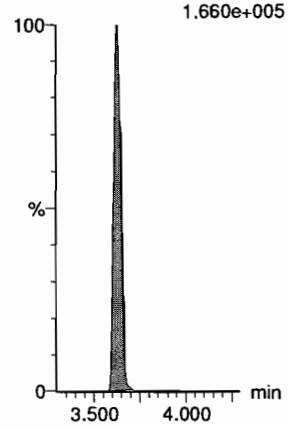
13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.660e+005



13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.660e+005



13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.660e+005

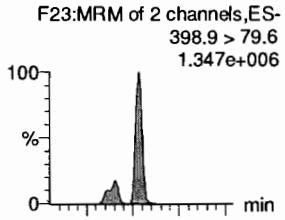


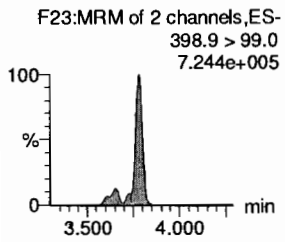
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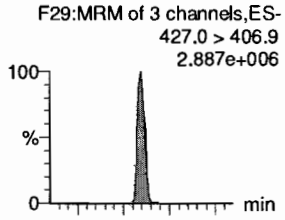
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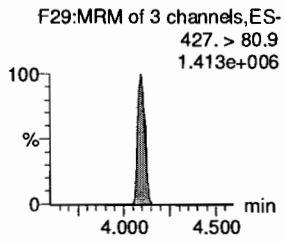
L-PFHxS



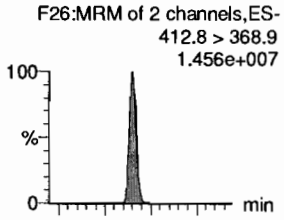


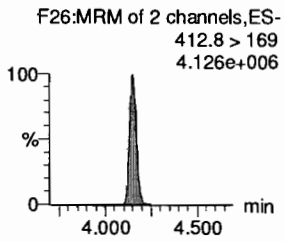
6:2 FTS



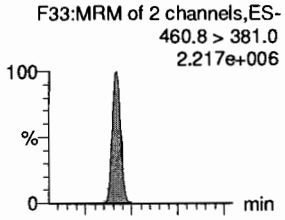


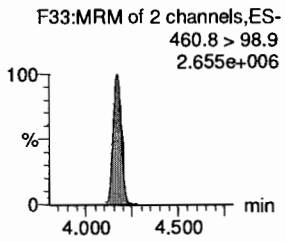
L-PFOA



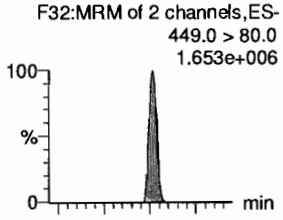


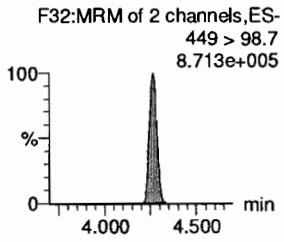
PFEChS



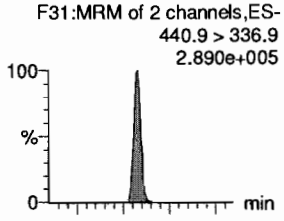


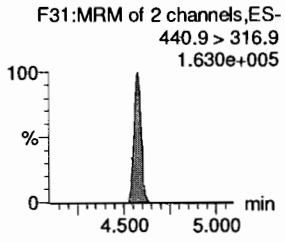
PFHpS



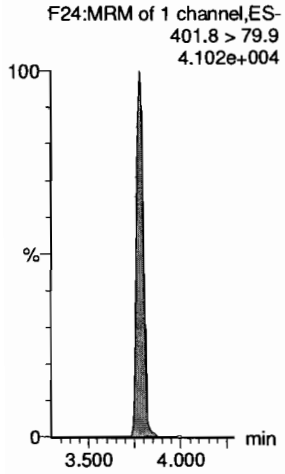


7:3 FTCA

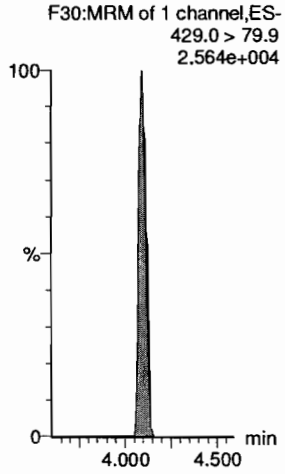




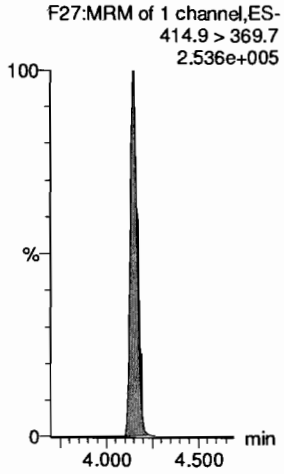
13C3-PFHxS



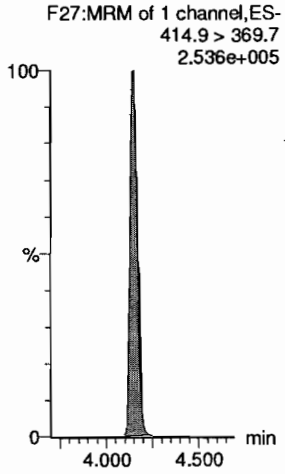
13C2-6:2 FTS



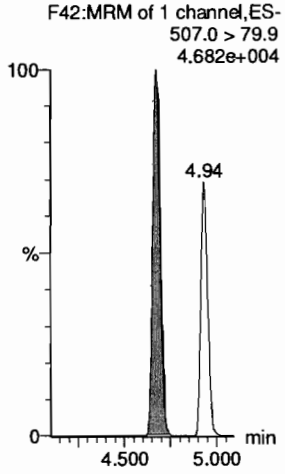
13C2-PFOA



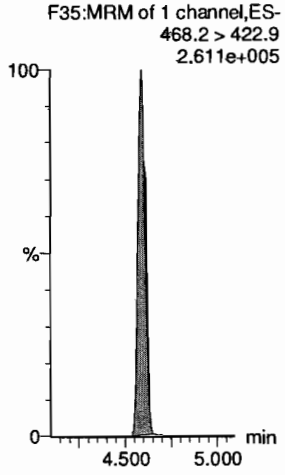
13C2-PFOA



13C8-PFOS



13C5-PFNA

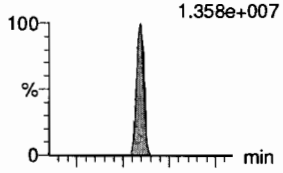


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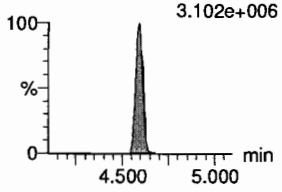
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Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

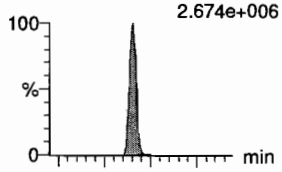
PFNA
F34:MRM of 2 channels,ES-
463.0 > 418.8
1.358e+007



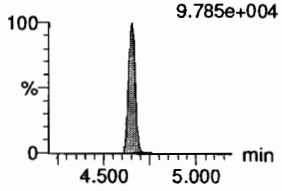
F34:MRM of 2 channels,ES-
463.0 > 219.0
3.102e+006



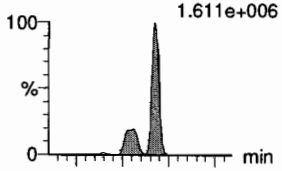
PFOSA
F37:MRM of 2 channels,ES-
497.9 > 77.9
2.674e+006



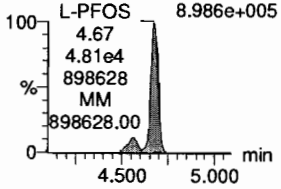
F37:MRM of 2 channels,ES-
497.9 > 168.9
9.785e+004



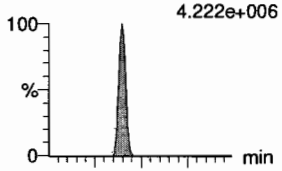
L-PFOS
F39:MRM of 2 channels,ES-
498.9 > 79.9
1.611e+006



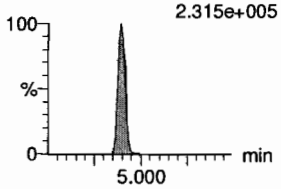
F39:MRM of 2 channels,ES-
498.9 > 99.0
8.986e+005



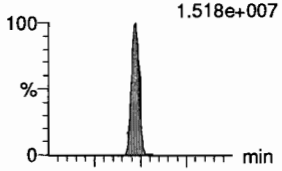
9Cl-PF30NS
F51:MRM of 2 channels,ES-
530.7 > 350.8
4.222e+006



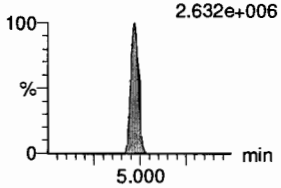
F51:MRM of 2 channels,ES-
530.7 > 82.8
2.315e+005



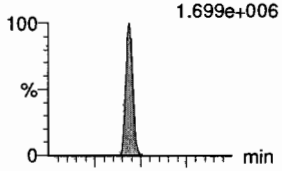
PFDA
F44:MRM of 2 channels,ES-
513 > 468.8
1.518e+007



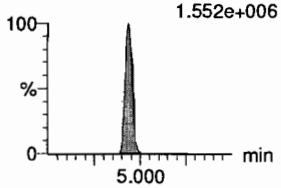
F44:MRM of 2 channels,ES-
513 > 219
2.632e+006



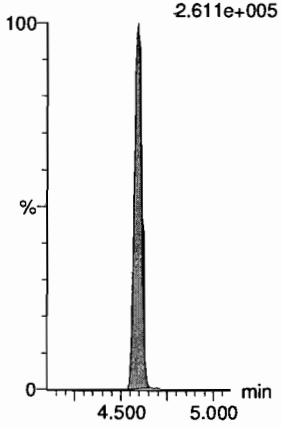
8:2 FTS
F49:MRM of 2 channels,ES-
527.0 > 506.9
1.699e+006



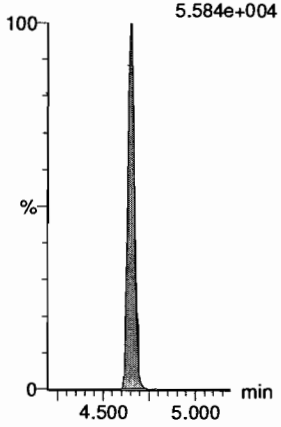
F49:MRM of 2 channels,ES-
527 > 80.9
1.552e+006



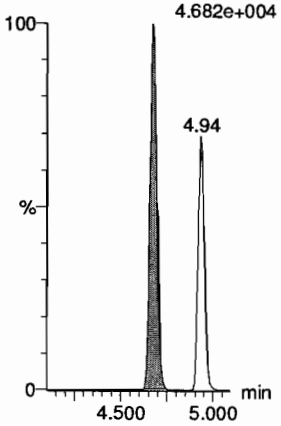
13C5-PFNA
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.611e+005



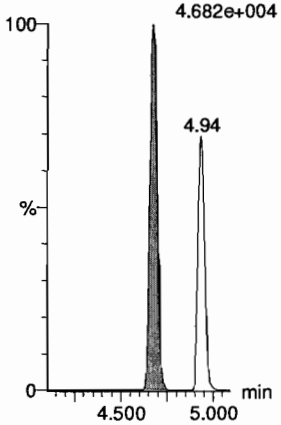
13C8-PFOSA
F41:MRM of 1 channel,ES-
506.1 > 77.7
5.584e+004



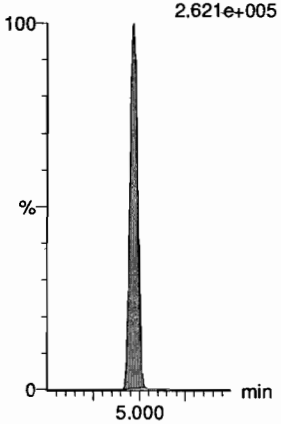
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
4.682e+004



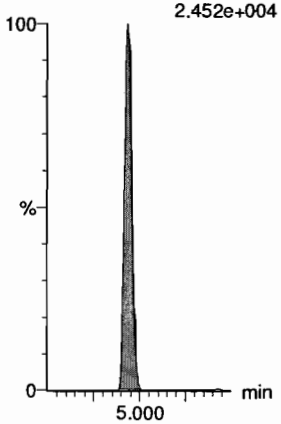
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
4.682e+004



13C2-PFDA
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.621e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
2.452e+004

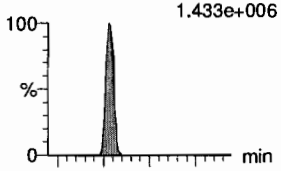


Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-CRV.qld

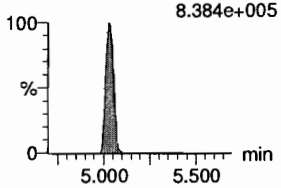
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

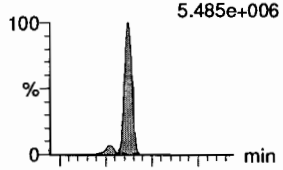
PFNS
F53:MRM of 2 channels,ES-
549.1 > 80.1
1.433e+006



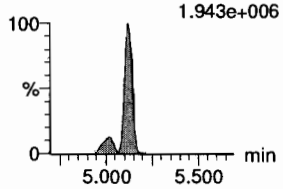
F53:MRM of 2 channels,ES-
549.1 > 99.1
8.384e+005



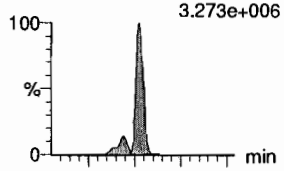
L-MeFOSAA
F56:MRM of 2 channels,ES-
570 > 419
5.485e+006



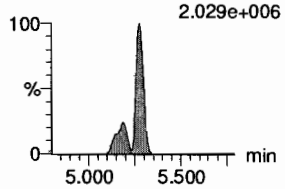
F56:MRM of 2 channels,ES-
570. > 512
1.943e+006



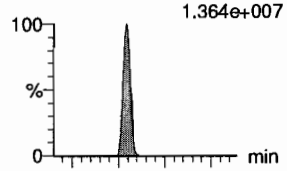
L-EtFOSAA
F59:MRM of 2 channels,ES-
584.1 > 419
3.273e+006



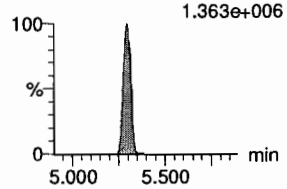
F59:MRM of 2 channels,ES-
584.1 > 526
2.029e+006



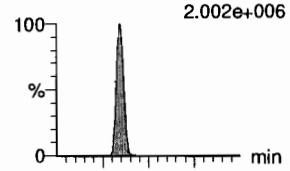
PFUdA
F54:MRM of 2 channels,ES-
563.0 > 518.9
1.364e+007



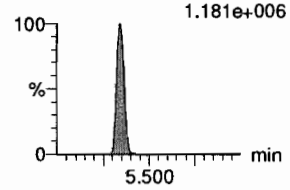
F54:MRM of 2 channels,ES-
563.0 > 269
1.363e+006



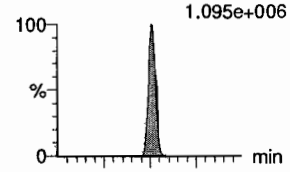
PFDS
F61:MRM of 2 channels,ES-
598.8 > 79.9
2.002e+006



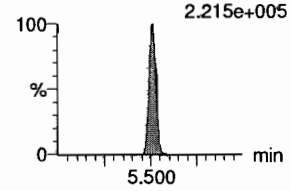
F61:MRM of 2 channels,ES-
598.8 > 98.9
1.181e+006



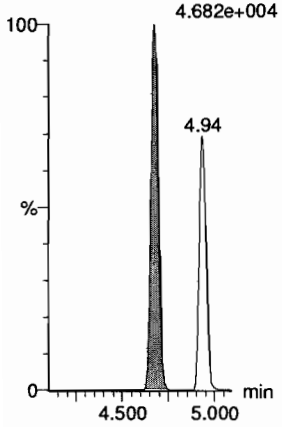
11Cl-PF30UdS
F68:MRM of 2 channels,ES-
632.6 > 452.7
1.095e+006



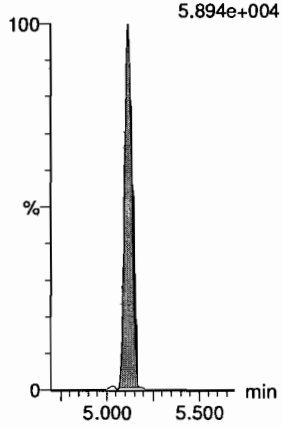
F68:MRM of 2 channels,ES-
632.6 > 450.7
2.215e+005



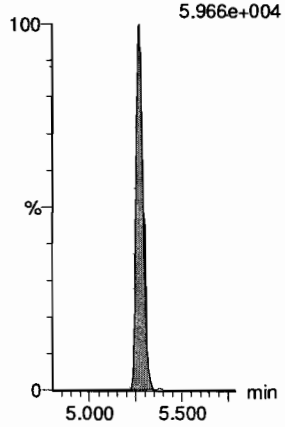
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
4.682e+004



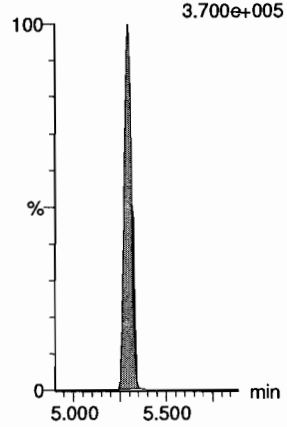
d3-N-MeFOSAA
F58:MRM of 1 channel,ES-
573.3 > 419
5.894e+004



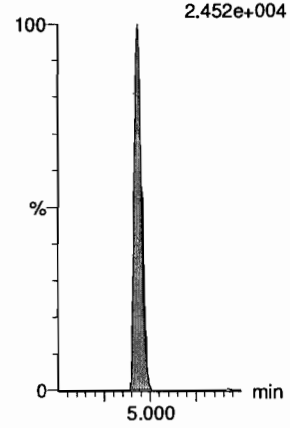
d5-N-EtFOSAA
F60:MRM of 1 channel,ES-
589.3 > 419
5.966e+004



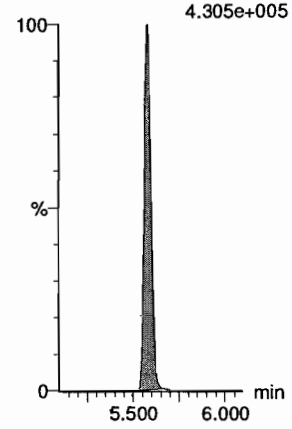
13C2-PFUdA
F55:MRM of 1 channel,ES-
565 > 519.8
3.700e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
2.452e+004



13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.305e+005

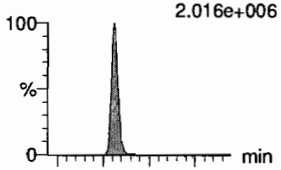


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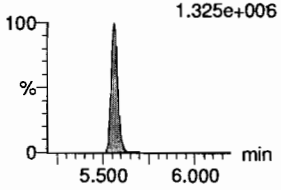
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

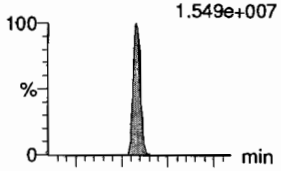
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
2.016e+006



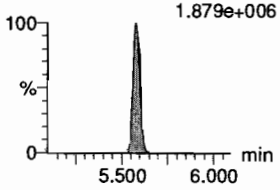
F66:MRM of 2 channels,ES-
627.0 > 80.9
1.325e+006



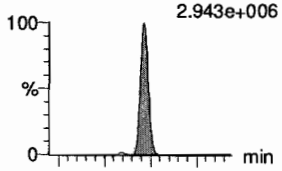
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
1.549e+007



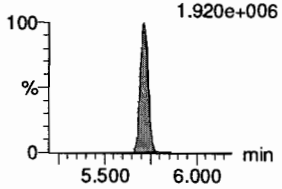
F62:MRM of 4 channels,ES-
612.9 > 318.8
1.879e+006



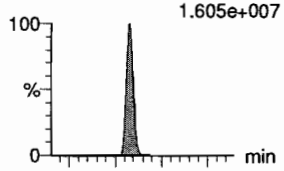
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
2.943e+006



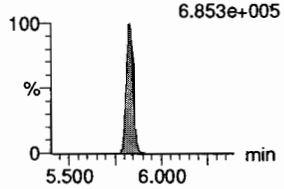
F43:MRM of 2 channels,ES-
512.1 > 219
1.920e+006



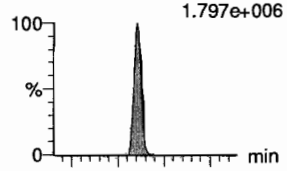
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
1.605e+007



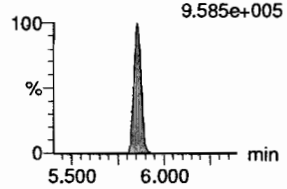
F70:MRM of 2 channels,ES-
662.9 > 319
6.853e+005



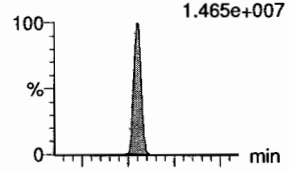
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
1.797e+006



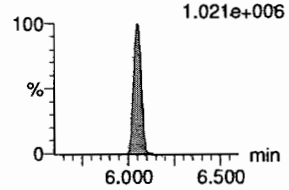
F71:MRM of 2 channels,ES-
698.8 > 98.9
9.585e+005



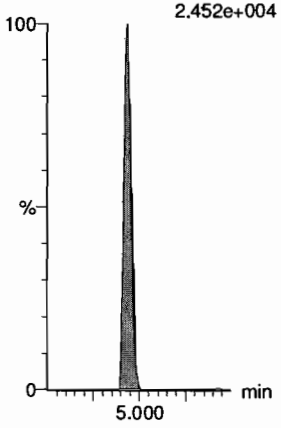
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
1.465e+007



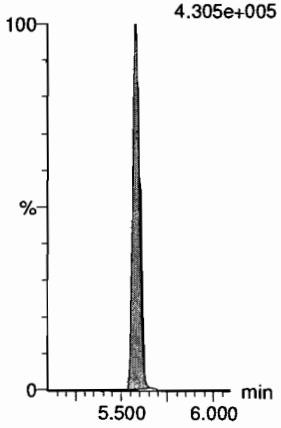
F72:MRM of 2 channels,ES-
713. > 369.0
1.021e+006



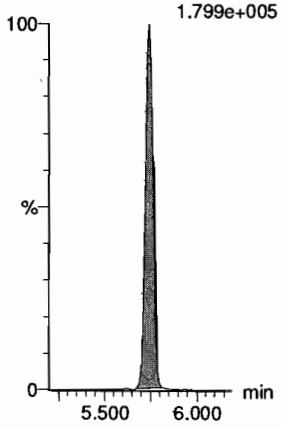
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
2.452e+004



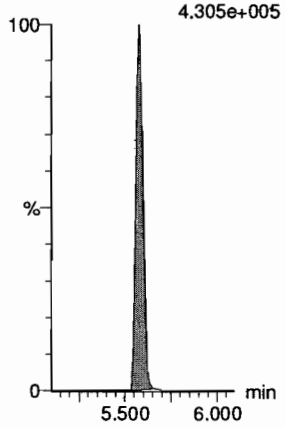
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.305e+005



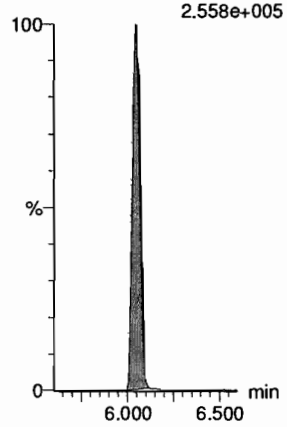
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.799e+005



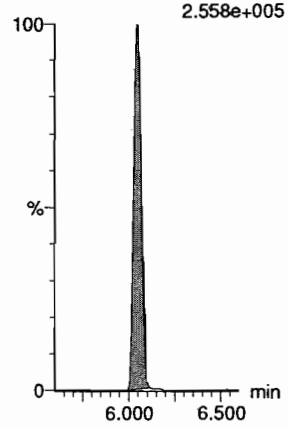
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.305e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
2.558e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
2.558e+005

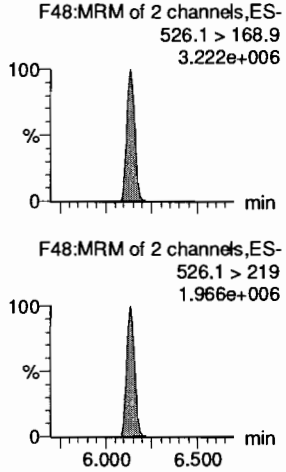


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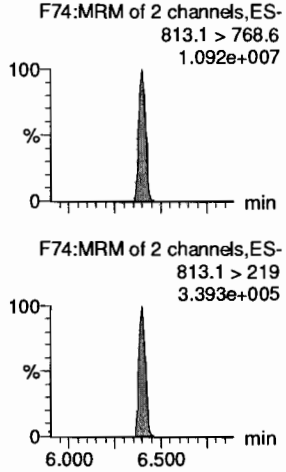
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Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

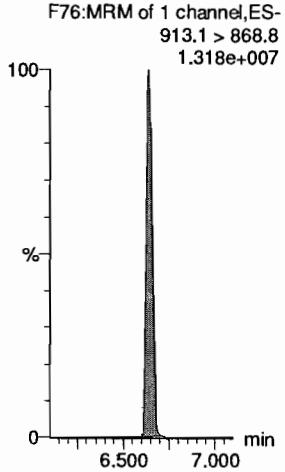
N-EtFOSA



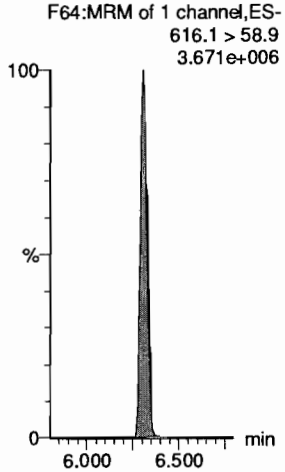
PFHxDA



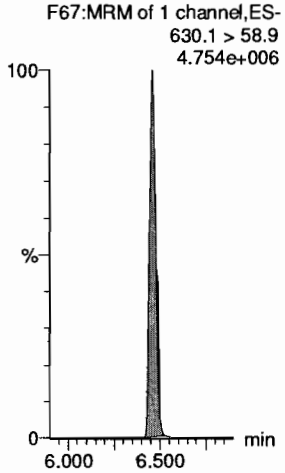
PFODA



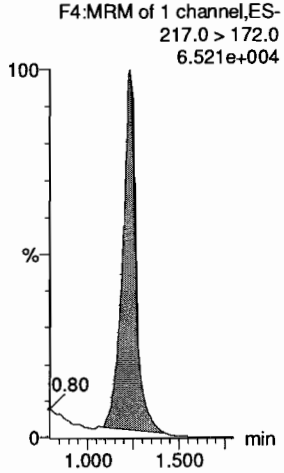
N-MeFOSE



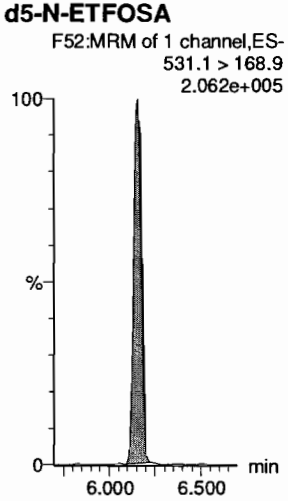
N-EtFOSE



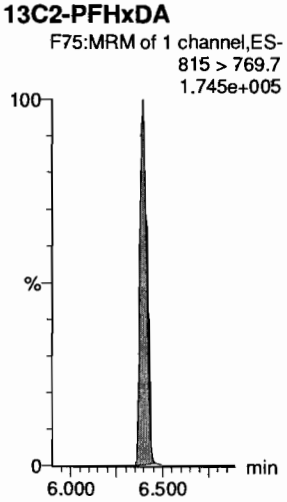
13C4-PFBA



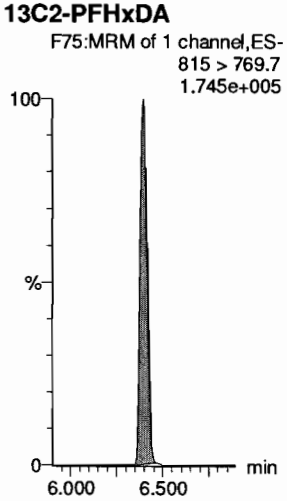
d5-N-ETFOSA



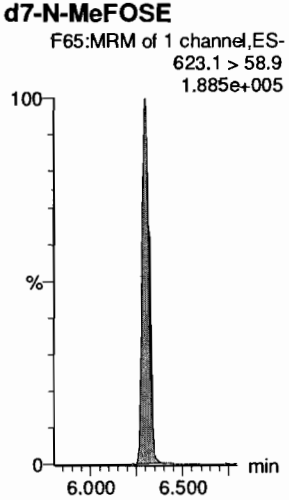
13C2-PFHxDA



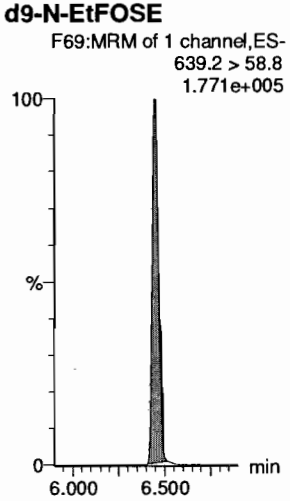
13C2-PFHxDA



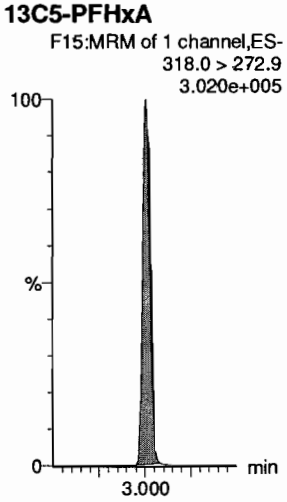
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

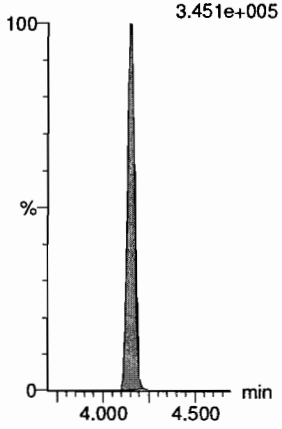


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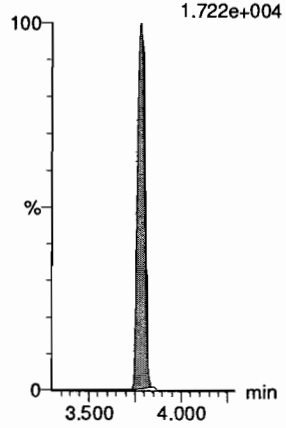
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Printed: Monday, July 08, 2019 08:00:27 Pacific Daylight Time

Name: 190707M2_12, Date: 07-Jul-2019, Time: 19:08:17, ID: ST190707M2-10 PFC CS7 19F2421, Description: PFC CS7 19F2421

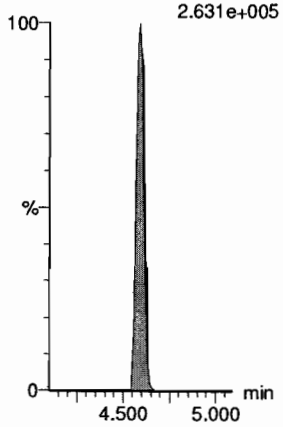
13C8-PFOA



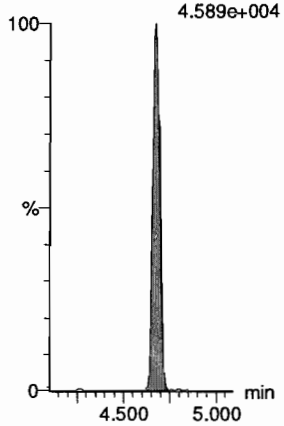
18O2-PFHxS



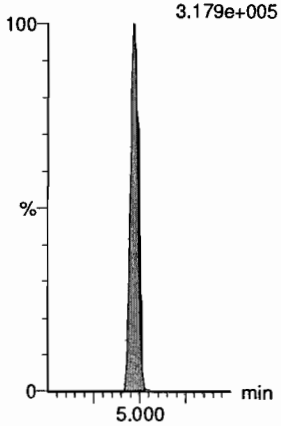
13C9-PFNA



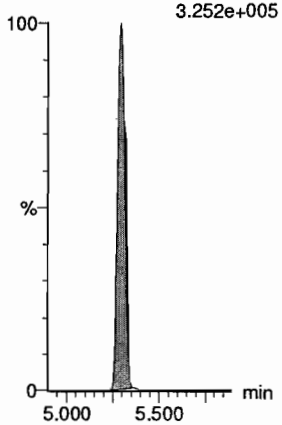
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-ICV.qld

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(A) Compounds not present in ICV

JM 7/8/19

Name: 190707M2_14, Date: 07-Jul-2019, Time: 19:29:28, ID: ICV190707M2-1 PFC ICV 19F2422, Description: PFC ICV 19F2422

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	3531.078	4576.507	1.00	1.23	9.645	8.0	79.8	NO		
2	2	PFPrS	248.9 > 79.9		1320.926	1.00				(A)	NO		
3	3	3:3 FTCA	240.9 > 176.9		10069.820	1.00				↓	NO		
4	4	PFPeA	263.1 > 218.9	6170.866	10069.820	1.00	2.22	7.660	7.6	76.3	NO		
5	5	PFBS	299.0 > 79.7	1651.923	1320.926	1.00	2.50	15.632	7.5	84.5	NO	3.003	NO
6	6	4:2 FTS	327.0 > 306.9	3009.257	2323.372	1.00	2.92	16.190	7.2	77.0	NO	1.724	NO
7	47	13C3-PFBA	216.1 > 171.8	4576.507	6218.326	1.00	1.23	9.200	12.6	100.7	NO		
8	49	13C3-PFBS	302.0 > 98.8	1320.926	1237.412	1.00	2.51	13.344	13.1	104.8	NO		
9	48	13C3-PFPeA	266.0 > 221.8	10069.820	20834.941	1.00	2.22	6.041	12.2	98.0	NO		
10	48	13C3-PFPeA	266.0 > 221.8	10069.820	20834.941	1.00	2.22	6.041	12.2	98.0	NO		
11	49	13C3-PFBS	302.0 > 98.8	1320.926	1237.412	1.00	2.51	13.344	13.1	104.8	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2323.372	1237.412	1.00	2.92	23.470	13.4	106.8	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0	11868.412	8113.508	1.00	3.01	7.314	8.3	83.2	NO	14.854	NO
15	8	PFPeS	349.1>80.1	1464.185	1320.926	1.00	3.22	13.856	7.8	77.7	NO	1.620	NO
16	9	HFPO-DA	285.1 > 168.9		1570.441	1.00				(A)	NO		
17	10	5:3 FTCA	340.9 > 236.9		10901.904	1.00				↓	NO		
18	11	PFHpA	363.0 > 318.9	8590.218	10901.904	1.00	3.63	9.849	7.7	76.7	NO	11.097	NO
19	12	ADONA	376.8 > 250.9		10901.904	1.00				(A)	NO		
20	52	13C2-PFHxA	315.0 > 270.0	8113.508	20834.941	1.00	3.01	4.868	4.9	97.5	NO		
21	49	13C3-PFBS	302.0 > 98.8	1320.926	1237.412	1.00	2.51	13.344	13.1	104.8	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1570.441	20834.941	1.00	3.22	0.942	5.2	103.9	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10901.904	20834.941	1.00	3.63	6.541	12.2	97.9	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10901.904	20834.941	1.00	3.63	6.541	12.2	97.9	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10901.904	20834.941	1.00	3.63	6.541	12.2	97.9	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	1482.998	2750.722	1.00	3.78	6.739	7.7	84.1	NO	2.005	NO
28	15	6:2 FTS	427.0 > 406.9	3680.055	1921.065	1.00	4.10	23.945	7.9	82.9	NO	2.335	NO
29	16	L-PFOA	412.8 > 368.9	17348.469	19102.689	1.00	4.15	11.352	7.9	78.8	NO	3.561	NO
30	18	PFecHS	460.8 > 381.0		19102.689	1.00				(A)	NO		
31	19	PFHpS	449.0 > 80.0	1586.132	3067.466	1.00	4.27	6.464	7.0	73.8	NO	1.789	NO
32	20	7:3 FTCA	440.9 > 336.9		19377.070	1.00				(A)	NO		
33	54	13C3-PFHxS	401.8 > 79.9	2750.722	1237.412	1.00	3.78	27.787	12.5	100.0	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1921.065	2994.913	1.00	4.10	8.018	13.7	109.7	NO		
35	58	13C2-PFOA	414.9 > 369.7	19102.689	25361.068	1.00	4.15	9.415	12.7	101.6	NO		
36	58	13C2-PFOA	414.9 > 369.7	19102.689	25361.068	1.00	4.15	9.415	12.7	101.6	NO		

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Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-ICV.qld

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Name: 190707M2_14, Date: 07-Jul-2019, Time: 19:29:28, ID: ICV190707M2-1 PFC ICV 19F2422, Description: PFC ICV 19F2422

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	3067.466	2994.913	1.00	4.67	12.803	12.7	101.3	NO		
38	56	13C5-PFNA	468.2 > 422.9	19377.070	19082.912	1.00	4.59	12.693	12.7	101.9	NO		
39	-1												
40	21	PFNA	463.0 > 418.8	13886.577	19377.070	1.00	4.59	8.958	7.3	73.3	NO	4.402	NO
41	22	PFOSA	497.9 > 77.9	2490.111	3367.413	1.00	4.65	9.243	7.9	78.6	NO	29.917	NO
42	23	L-PFOS	498.9 > 79.9	1990.456	3067.466	1.00	4.67	8.111	7.1	77.4	NO	2.084	NO
43	25	9Cl-PF30NS	530.7 > 350.8		3067.466	1.00				A	NO		
44	26	PFDA	513 > 468.8	15990.886	17418.090	1.00	4.97	11.476	7.9	79.2	NO	5.787	NO
45	27	8:2 FTS	527.0 > 506.9	2011.116	1910.038	1.00	4.94	13.161	7.5	78.2	NO	1.155	NO
46	56	13C5-PFNA	468.2 > 422.9	19377.070	19082.912	1.00	4.59	12.693	12.7	101.9	NO		
47	57	13C8-PFOSA	506.1 > 77.7	3367.413	24107.711	1.00	4.65	1.746	13.5	108.0	NO		
48	59	13C8-PFOS	507.0 > 79.9	3067.466	2994.913	1.00	4.67	12.803	12.7	101.3	NO		
49	59	13C8-PFOS	507.0 > 79.9	3067.466	2994.913	1.00	4.67	12.803	12.7	101.3	NO		
50	60	13C2-PFDA	515.1 > 469.9	17418.090	22652.467	1.00	4.96	9.612	12.1	96.9	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1910.038	2994.913	1.00	4.94	7.972	13.9	111.0	NO		
52	-1												
53	28	PFNS	549.1 > 80.1	1553.262	3067.466	1.00	5.03	6.330	8.0	80.4	NO	1.805	NO
54	29	L-MeFOSAA	570 > 419	6911.723	3598.800	1.00	5.12	24.007	9.0	89.8	NO	2.823	NO
55	31	L-EtFOSAA	584.1 > 419	5200.944	4075.933	1.00	5.28	15.950	9.4	94.3	NO	1.467	NO
56	33	PFUdA	563.0 > 518.9	15553.844	25802.092	1.00	5.29	7.535	8.1	80.9	NO	10.305	NO
57	34	PFDS	598.8 > 79.9	1973.990	1910.038	1.00	5.34	12.919	7.0	72.3	NO	1.892	NO
58	35	11Cl-PF30UdS	632.6 > 452.7		24797.561	1.00				A	NO		
59	59	13C8-PFOS	507.0 > 79.9	3067.466	2994.913	1.00	4.67	12.803	12.7	101.3	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	3598.800	24107.711	1.00	5.12	1.866	11.8	94.3	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	4075.933	24107.711	1.00	5.27	2.113	12.1	96.6	NO		
62	63	13C2-PFUdA	565 > 519.8	25802.092	24107.711	1.00	5.29	13.379	12.5	100.0	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1910.038	2994.913	1.00	4.94	7.972	13.9	111.0	NO		
64	65	13C2-PFDoA	614.7 > 569.7	24797.561	22652.467	1.00	5.58	13.684	11.9	95.1	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1910.038	1.00				A	NO		
67	37	PFDoA	612.9 > 569.0	16022.228	24797.561	1.00	5.58	8.077	8.0	80.2	NO	7.314	NO
68	38	N-MeFOSA	512.1 > 168.9		10425.888	1.00				A	NO		
69	39	PFTrDA	662.9 > 618.9	16890.402	24797.561	1.00	5.83	8.514	7.8	77.6	NO	23.491	NO
70	40	PFDoS	698.8 > 79.9		16023.095	1.00				A	NO		
71	41	PFTeDA	713.0 > 669.0	14292.296	16023.095	1.00	6.05	11.150	8.0	79.6	NO	13.948	NO
72	65	13C2-PFDoA	614.7 > 569.7	24797.561	22652.467	1.00	5.58	13.684	11.9	95.1	NO		

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Name: 190707M2_14, Date: 07-Jul-2019, Time: 19:29:28, ID: ICV190707M2-1 PFC ICV 19F2422, Description: PFC ICV 19F2422

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	24797.561	22652.467	1.00	5.58	13.684	11.9	95.1	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	10425.888	24107.711	1.00	5.74	5.406	154.8	103.2	NO		
75	65	13C2-PFDoA	614.7 > 569.7	24797.561	22652.467	1.00	5.58	13.684	11.9	95.1	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	16023.095	24107.711	1.00	6.05	8.308	11.7	93.9	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	16023.095	24107.711	1.00	6.05	8.308	11.7	93.9	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9		13238.412	1.00				Ⓐ	NO		
80	43	PFHxDA	813.1 > 768.6		9281.380	1.00					NO		
81	44	PFODA	913.1 > 868.8		9281.380	1.00					NO		
82	45	N-MeFOSE	616.1 > 58.9		8784.854	1.00					NO		
83	46	N-EtFOSE	630.1 > 58.9		8682.199	1.00					NO		
84	72	13C4-PFBA	217.0 > 172.0	6218.326	6218.326	1.00	1.23	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	13238.412	24107.711	1.00	6.15	6.864	149.9	100.0	NO		
86	69	13C2-PFHxDA	815 > 769.7	9281.380	24107.711	1.00	6.40	4.812	4.8	95.7	NO		
87	69	13C2-PFHxDA	815 > 769.7	9281.380	24107.711	1.00	6.40	4.812	4.8	95.7	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	8784.854	24107.711	1.00	6.30	4.555	165.1	110.1	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	8682.199	24107.711	1.00	6.45	4.502	157.6	105.1	NO		
90	73	13C5-PFHxA	318.0 > 272.9	20834.941	20834.941	1.00	3.01	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	25361.068	25361.068	1.00	4.15	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1237.412	1237.412	1.00	3.78	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	19082.912	19082.912	1.00	4.59	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	2994.913	2994.913	1.00	4.67	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	22652.467	22652.467	1.00	4.96	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	24107.711	24107.711	1.00	5.29	12.500	12.5	100.0	NO		

Vista Analytical Laboratory

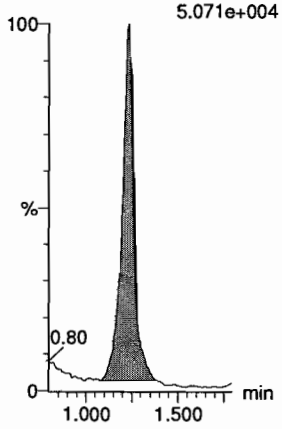
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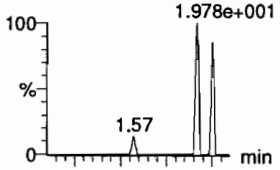
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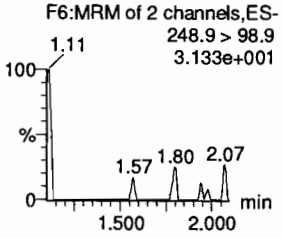
PFBA
F2:MRM of 1 channel,ES-
213.0 > 168.8
5.071e+004



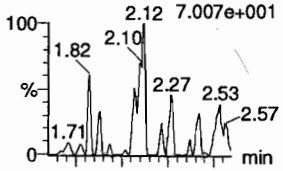
PFPrS
F6:MRM of 2 channels,ES-
248.9 > 79.9
1.978e+001



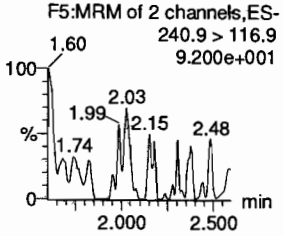
F6:MRM of 2 channels,ES-
248.9 > 98.9
3.133e+001



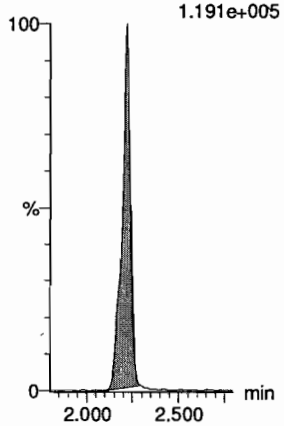
3:3 FTCA
F5:MRM of 2 channels,ES-
240.9 > 176.9
7.007e+001



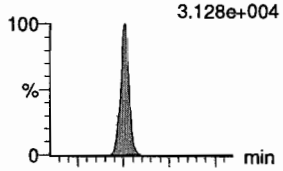
F5:MRM of 2 channels,ES-
240.9 > 116.9
9.200e+001



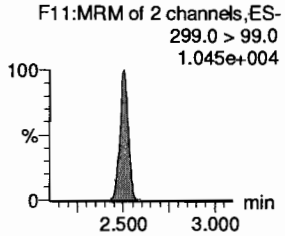
PFPeA
F7:MRM of 1 channel,ES-
263.1 > 218.9
1.191e+005



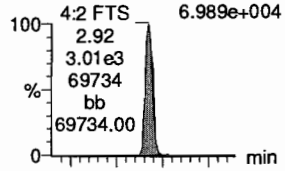
PFBS
F11:MRM of 2 channels,ES-
299.0 > 79.7
3.128e+004



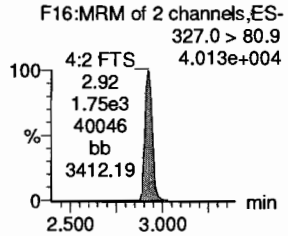
F11:MRM of 2 channels,ES-
299.0 > 99.0
1.045e+004



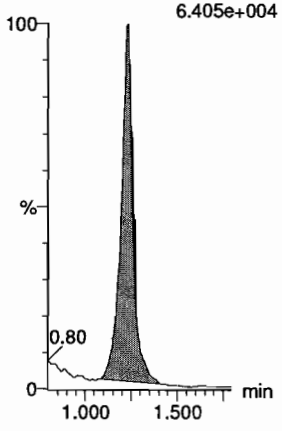
4:2 FTS
F16:MRM of 2 channels,ES-
327.0 > 306.9
6.989e+004



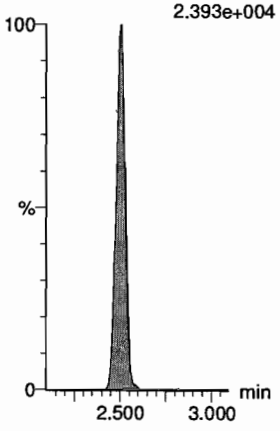
F16:MRM of 2 channels,ES-
327.0 > 80.9
4.013e+004



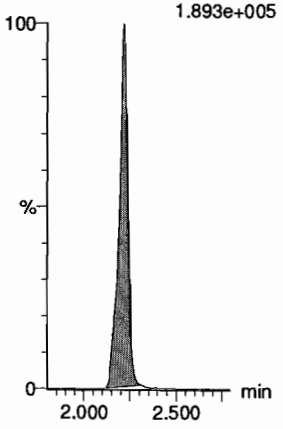
13C3-PFBA
F3:MRM of 1 channel,ES-
216.1 > 171.8
6.405e+004



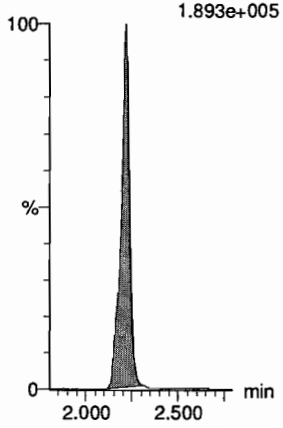
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.393e+004



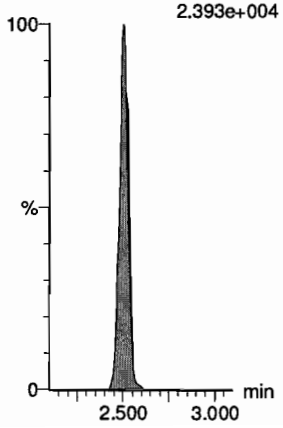
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.893e+005



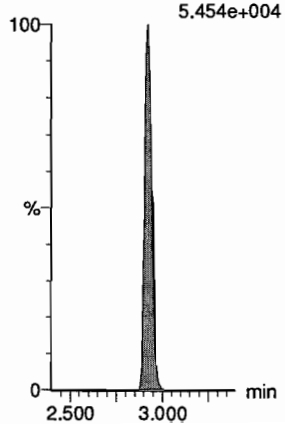
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.893e+005



13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.393e+004



13C2-4:2 FTS
F17:MRM of 2 channels,ES-
329.0 > 79.9
5.454e+004

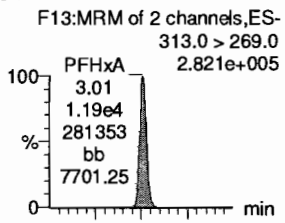


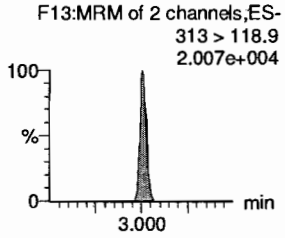
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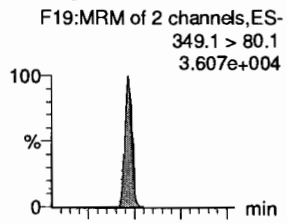
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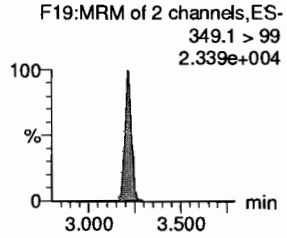
PFHxA



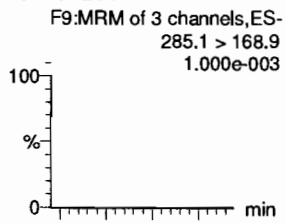


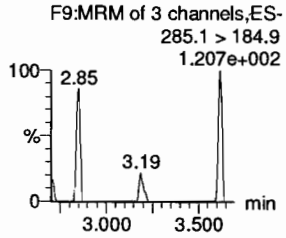
PFPeS



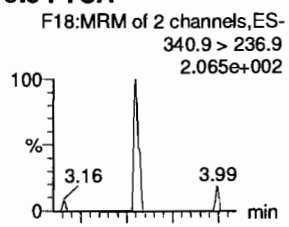


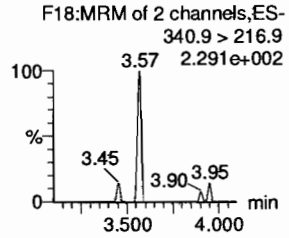
HFPO-DA



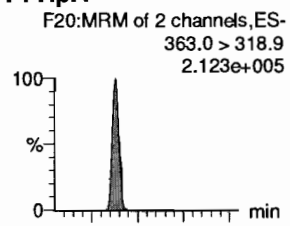


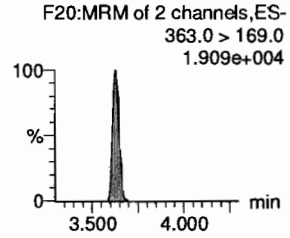
5:3 FTCA



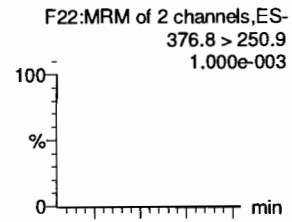


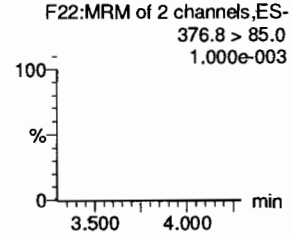
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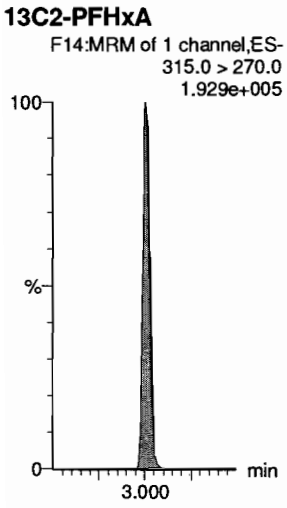


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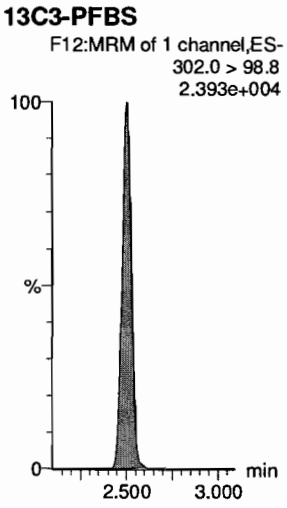




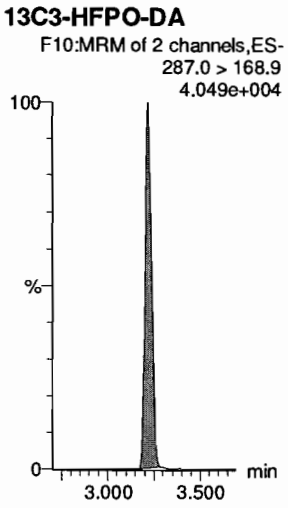
13C2-PFHxA



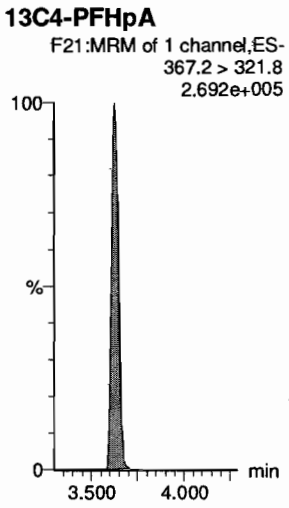
13C3-PFBS



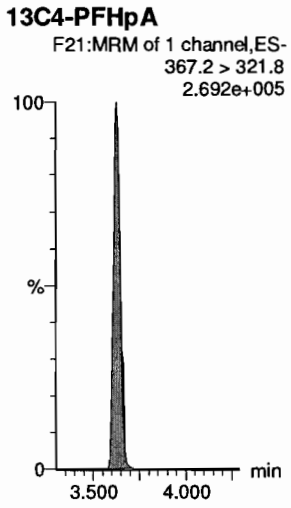
13C3-HFPO-DA



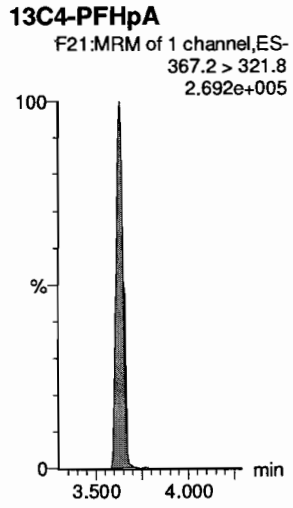
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

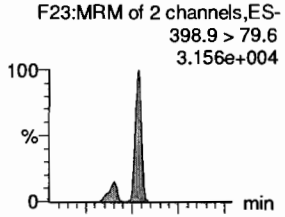


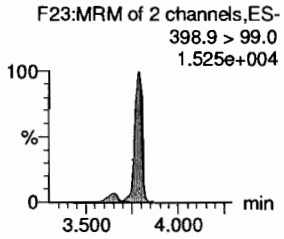
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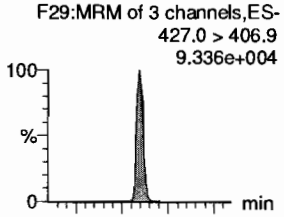
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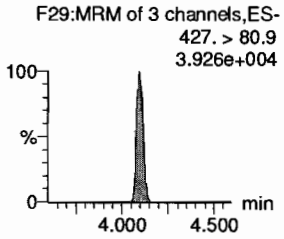
L-PFHxS



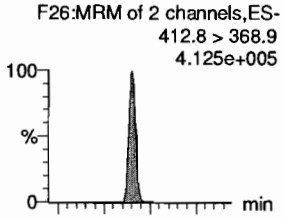


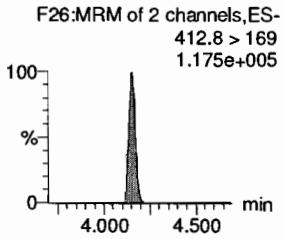
6:2 FTS



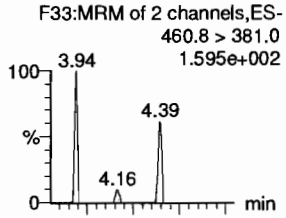


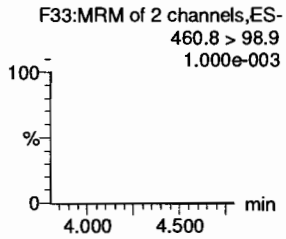
L-PFOA



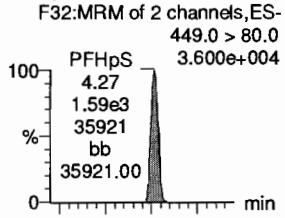


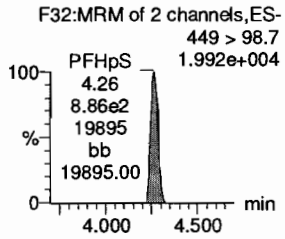
PFEChS



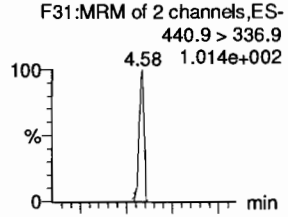


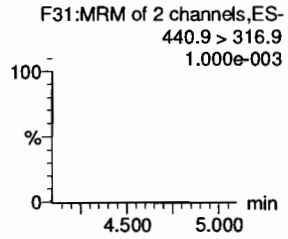
PFHpS



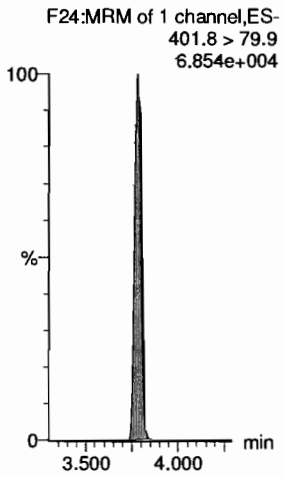


7:3 FTCA

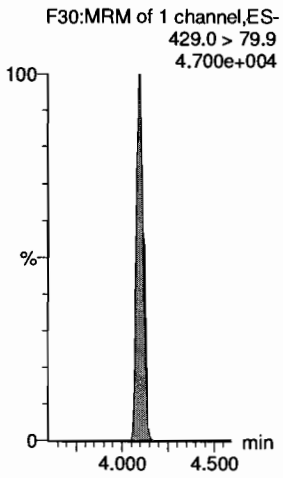




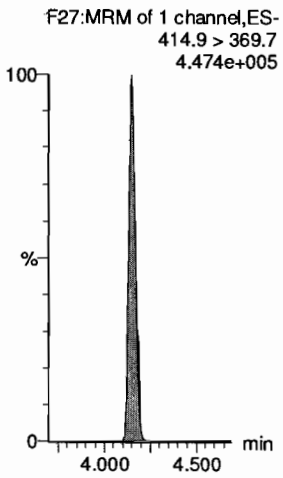
13C3-PFHxS



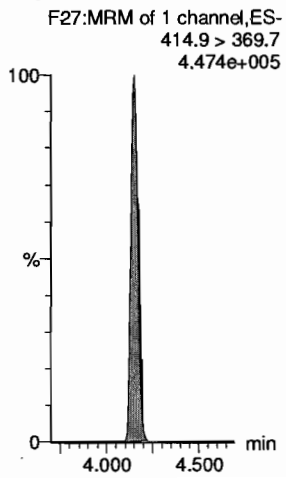
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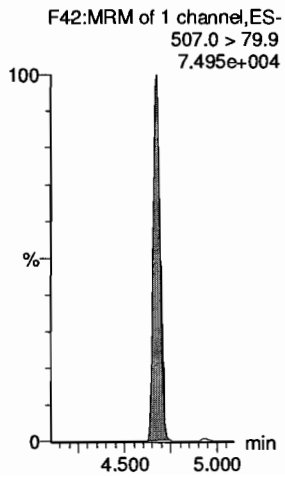
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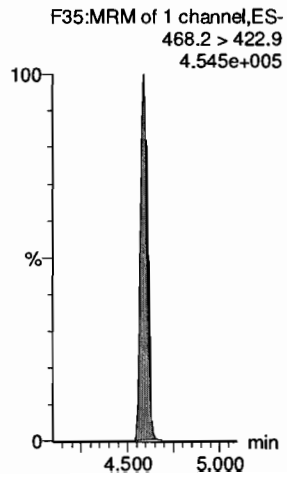
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13C8-PFOS



13C5-PFNA

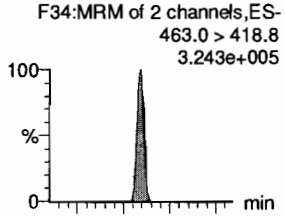


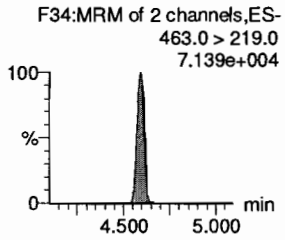
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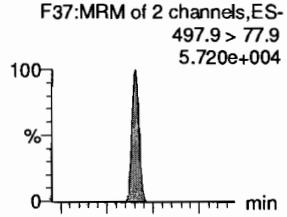
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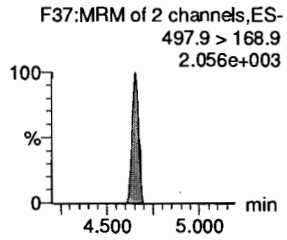
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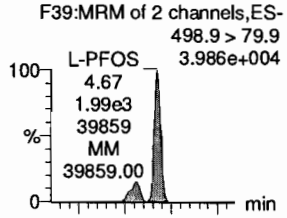


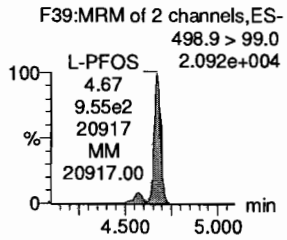
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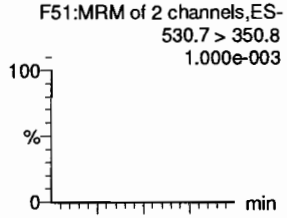


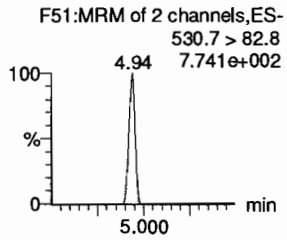
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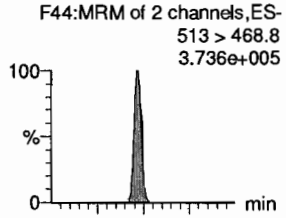


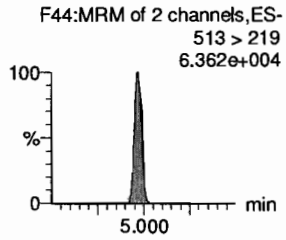
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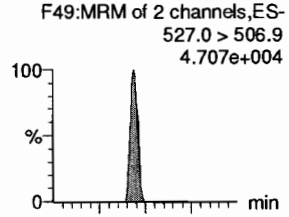


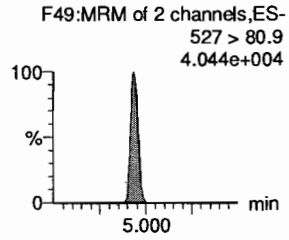
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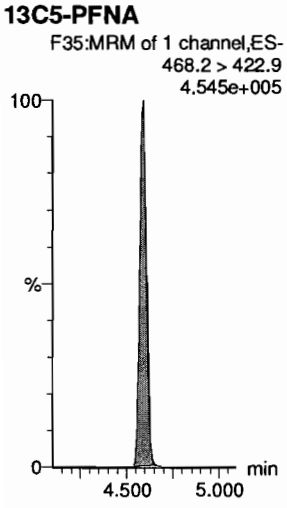


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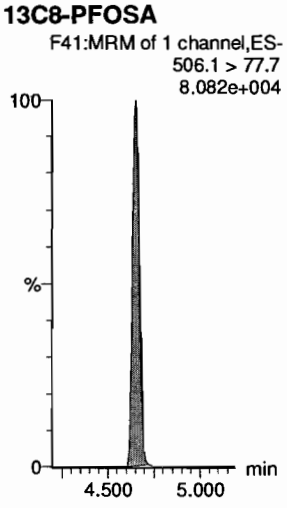




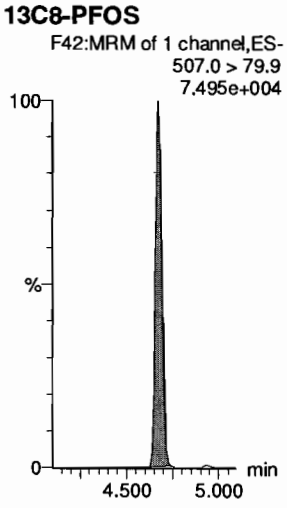
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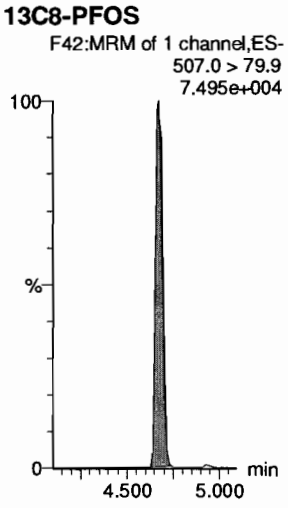
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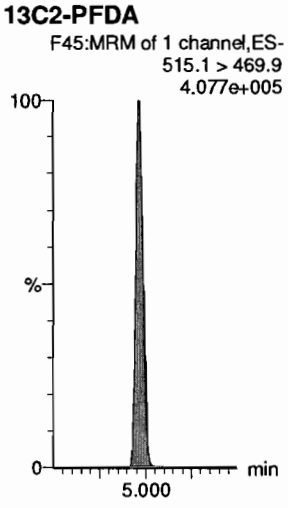
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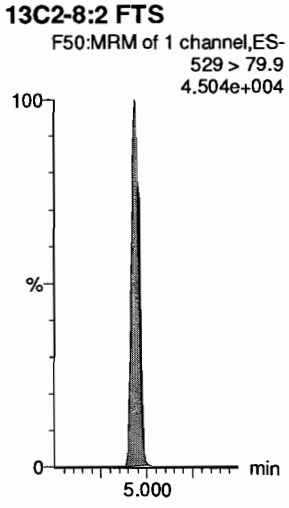
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13C2-PFDA



13C2-8:2 FTS

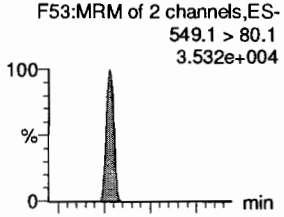


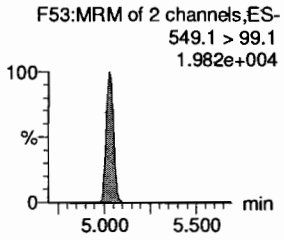
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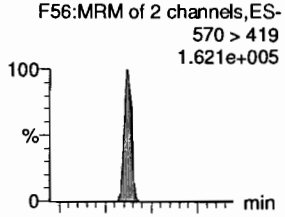
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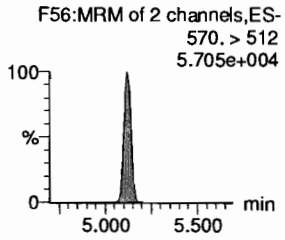
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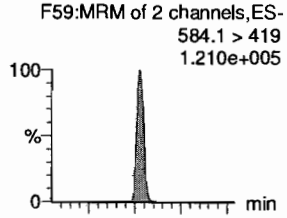


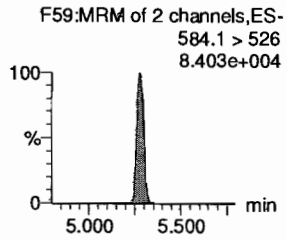
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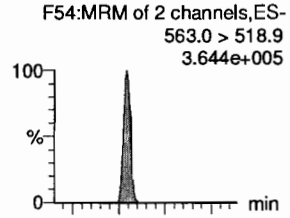


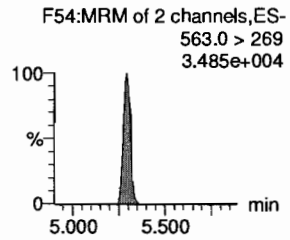
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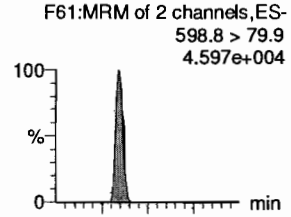


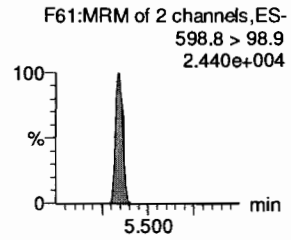
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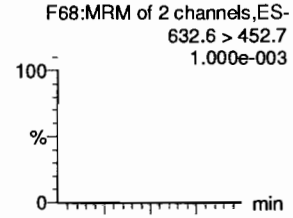


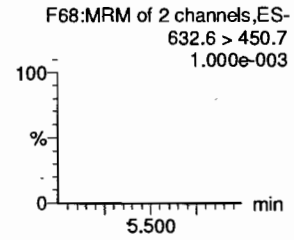
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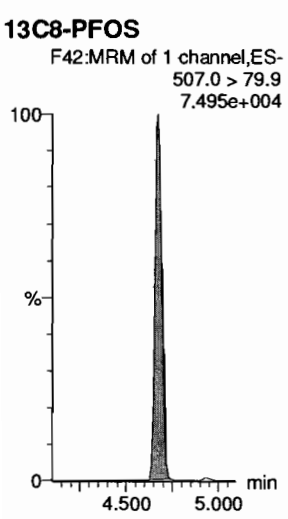


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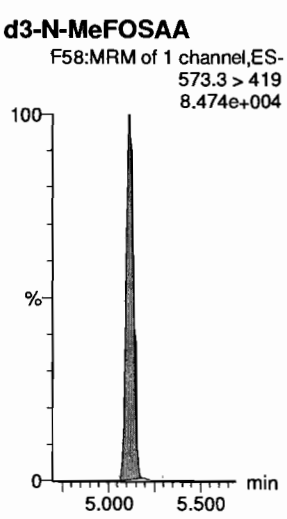




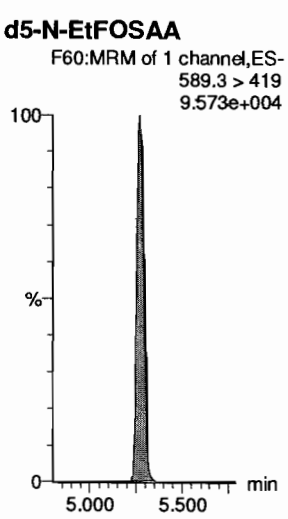
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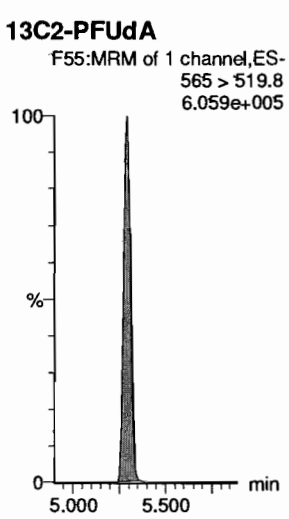
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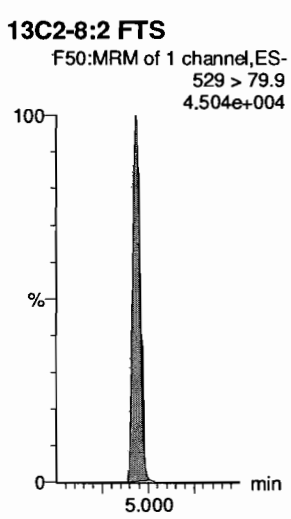
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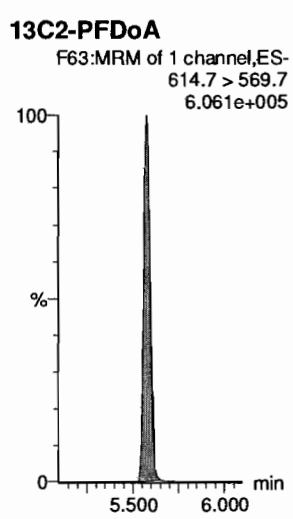
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13C2-8:2 FTS



13C2-PFDoA

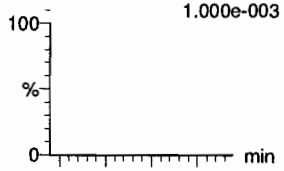


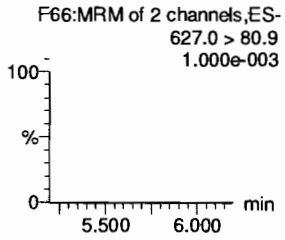
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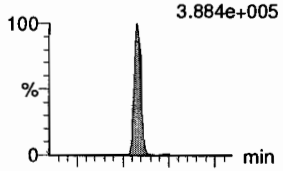
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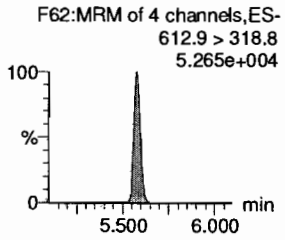
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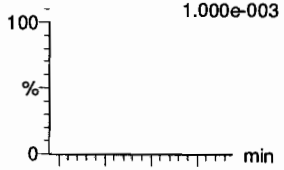


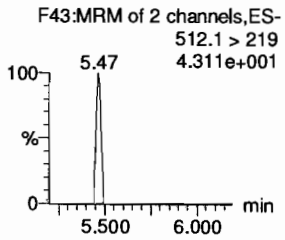
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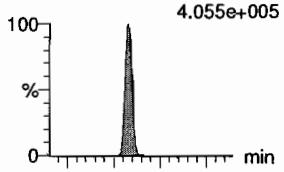


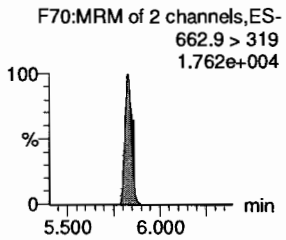
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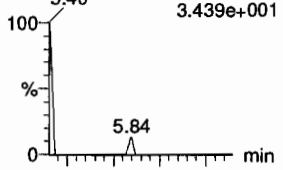


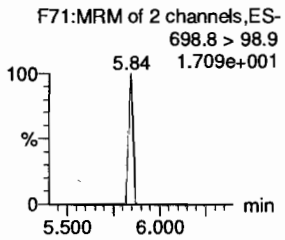
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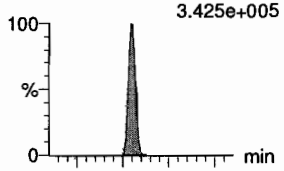


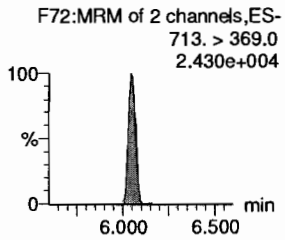
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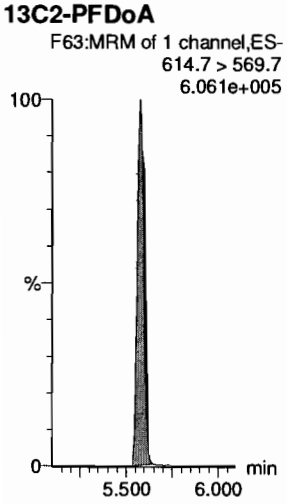


PFTeDA

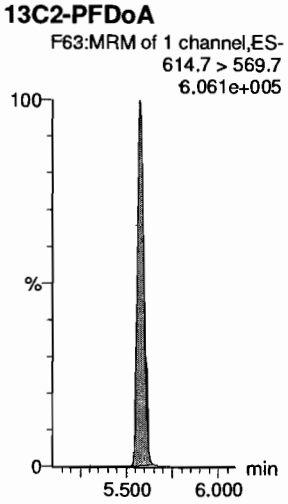




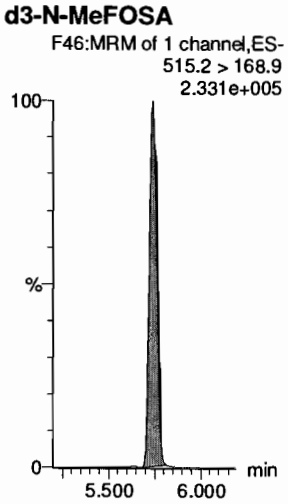
13C2-PFDoA



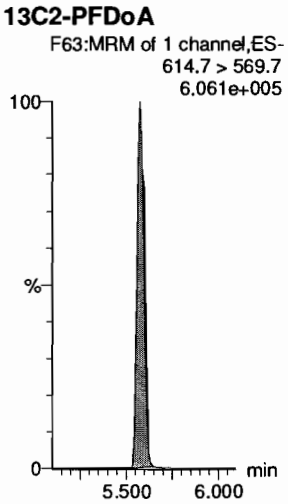
13C2-PFDoA



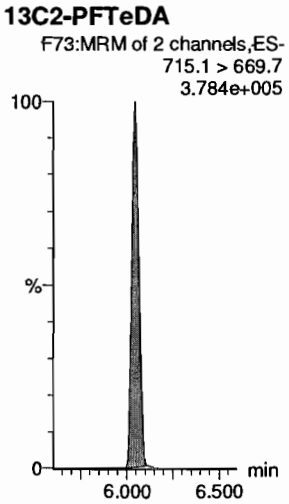
d3-N-MeFOSA



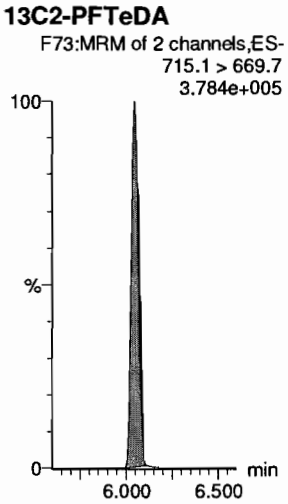
13C2-PFDoA



13C2-PFTeDA



13C2-PFTeDA

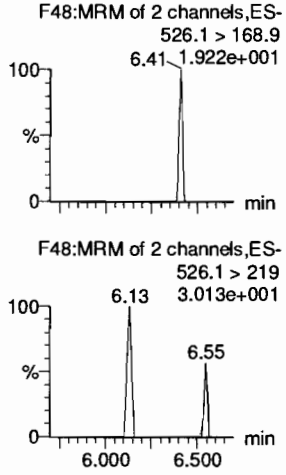


Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-ICV.qld

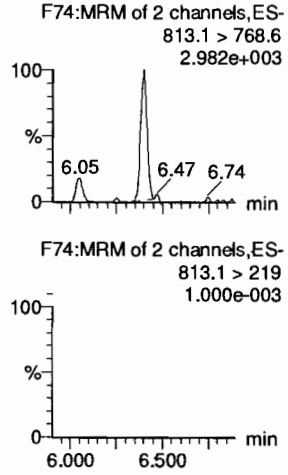
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Printed: Monday, July 08, 2019 11:26:29 Pacific Daylight Time

Name: 190707M2_14, Date: 07-Jul-2019, Time: 19:29:28, ID: ICV190707M2-1 PFC ICV 19F2422, Description: PFC ICV 19F2422

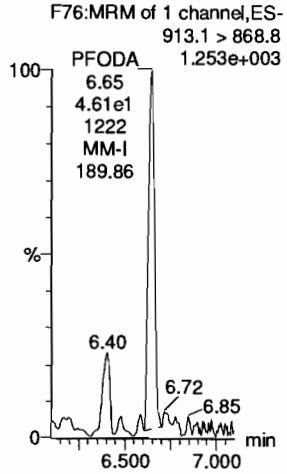
N-EtFOSA



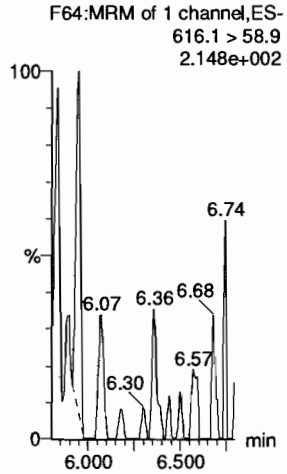
PFHxDA



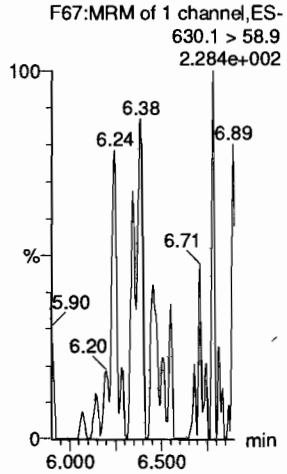
PFODA



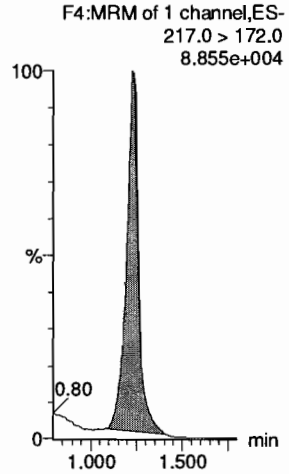
N-MeFOSE



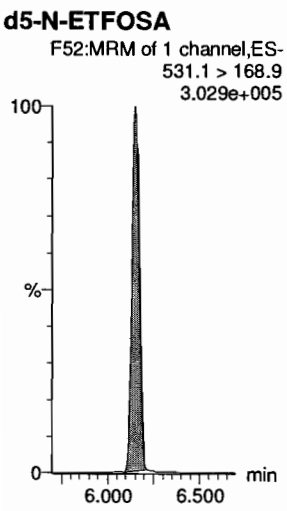
N-EtFOSE



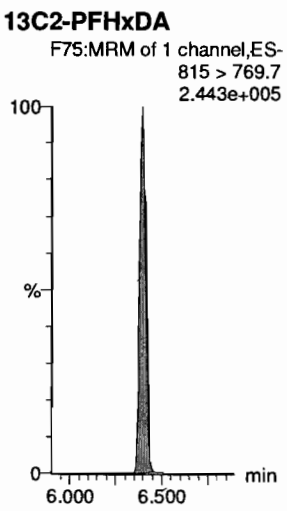
13C4-PFBA



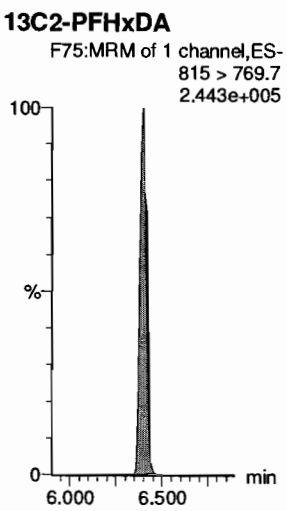
d5-N-ETFOSA



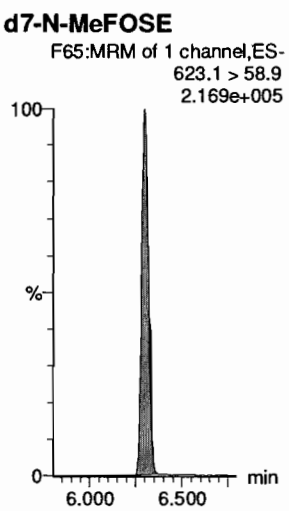
13C2-PFHxDA



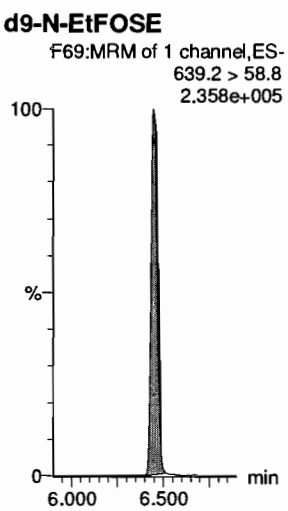
13C2-PFHxDA



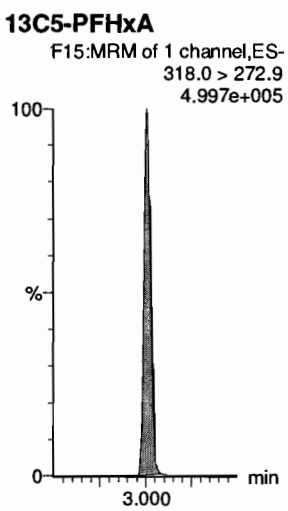
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

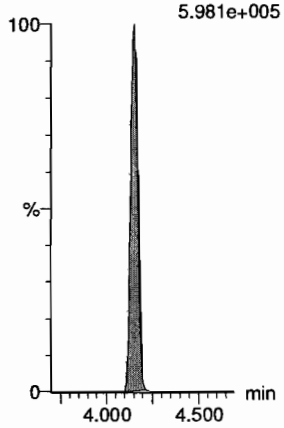


Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-ICV.qld

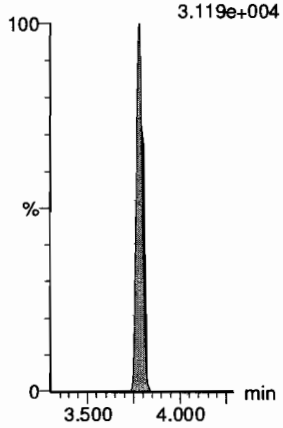
Last Altered: Monday, July 08, 2019 11:25:54 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:26:29 Pacific Daylight Time

Name: 190707M2_14, Date: 07-Jul-2019, Time: 19:29:28, ID: ICV190707M2-1 PFC ICV 19F2422, Description: PFC ICV 19F2422

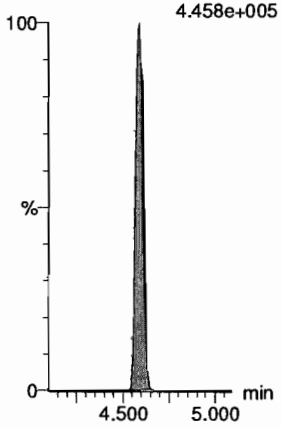
13C8-PFOA



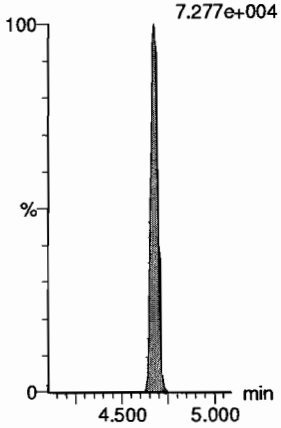
18O2-PFHxS



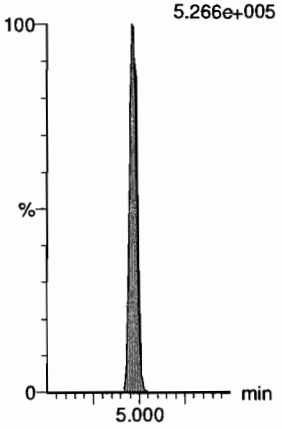
13C9-PFNA



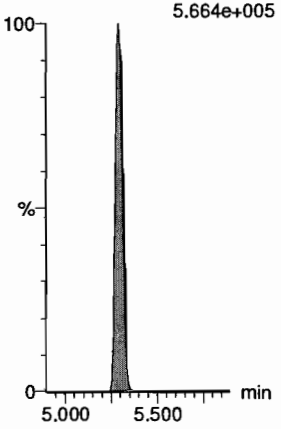
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-IB.qld

Last Altered: Monday, July 08, 2019 11:31:31 Pacific Daylight Time
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Name: 190707M2_13, Date: 07-Jul-2019, Time: 19:18:55, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8		6569.207	1.00					NO		
2	2	PFPrS	248.9 > 79.9		1115.681	1.00					NO		
3	3	3:3 FTCA	240.9 > 176.9		8750.863	1.00					NO		
4	4	PFPeA	263.1 > 218.9		8750.863	1.00					NO		
5	5	PFBS	299.0 > 79.7	0.842	1115.681	1.00	2.52	0.009			NO	3.118	NO
6	6	4:2 FTS	327.0 > 306.9		2183.055	1.00					NO		
7	47	13C3-PFBA	216.1 > 171.8	6569.207	8894.975	1.00	1.23	9.232	12.6	101.1	NO		
8	49	13C3-PFBS	302.0 > 98.8	1115.681	1137.792	1.00	2.51	12.257	12.0	96.2	NO		
9	48	13C3-PFPeA	266.0 > 221.8	8750.863	18493.193	1.00	2.23	5.915	12.0	95.9	NO		
10	48	13C3-PFPeA	266.0 > 221.8	8750.863	18493.193	1.00	2.23	5.915	12.0	95.9	NO		
11	49	13C3-PFBS	302.0 > 98.8	1115.681	1137.792	1.00	2.51	12.257	12.0	96.2	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2183.055	1137.792	1.00	2.93	23.983	13.6	109.2	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0		6948.729	1.00					NO		
15	8	PFPeS	349.1>80.1		1115.681	1.00					NO		
16	9	HFPO-DA	285.1 > 168.9		1309.127	1.00					NO		
17	10	5:3 FTCA	340.9 > 236.9		9641.791	1.00					NO		
18	11	PFHpA	363.0 > 318.9		9641.791	1.00					NO		
19	12	ADONA	376.8 > 250.9		9641.791	1.00					NO		
20	52	13C2-PFHxA	315.0 > 270.0	6948.729	18493.193	1.00	3.01	4.697	4.7	94.1	NO		
21	49	13C3-PFBS	302.0 > 98.8	1115.681	1137.792	1.00	2.51	12.257	12.0	96.2	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1309.127	18493.193	1.00	3.22	0.885	4.9	97.6	NO		
23	53	13C4-PFHpA	367.2 > 321.8	9641.791	18493.193	1.00	3.63	6.517	12.2	97.5	NO		
24	53	13C4-PFHpA	367.2 > 321.8	9641.791	18493.193	1.00	3.63	6.517	12.2	97.5	NO		
25	53	13C4-PFHpA	367.2 > 321.8	9641.791	18493.193	1.00	3.63	6.517	12.2	97.5	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6		2397.699	1.00					NO		
28	15	6:2 FTS	427.0 > 406.9		1741.135	1.00					NO		
29	16	L-PFOA	412.8 > 368.9		16644.902	1.00					NO		
30	18	PFecHS	460.8 > 381.0		16644.902	1.00					NO		
31	19	PFHpS	449.0 > 80.0		2579.294	1.00					NO		
32	20	7:3 FTCA	440.9 > 336.9		16604.293	1.00					NO		
33	54	13C3-PFHxS	401.8 > 79.9	2397.699	1137.792	1.00	3.78	26.342	11.8	94.8	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1741.135	2634.379	1.00	4.10	8.262	14.1	113.1	NO		
35	58	13C2-PFOA	414.9 > 369.7	16644.902	22524.588	1.00	4.15	9.237	12.5	99.7	NO		
36	58	13C2-PFOA	414.9 > 369.7	16644.902	22524.588	1.00	4.15	9.237	12.5	99.7	NO		

Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-IB.qld

Last Altered: Monday, July 08, 2019 11:31:31 Pacific Daylight Time
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Name: 190707M2_13, Date: 07-Jul-2019, Time: 19:18:55, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	2579.294	2634.379	1.00	4.67	12.239	12.1	96.9	NO		
38	56	13C5-PFNA	468.2 > 422.9	16604.293	16776.922	1.00	4.59	12.371	12.4	99.4	NO		
39	-1												
40	21	PFNA	463.0 > 418.8		16604.293	1.00					NO		
41	22	PFOSA	497.9 > 77.9		1226.378	1.00					NO		
42	23	L-PFOS	498.9 > 79.9		2579.294	1.00					NO		
43	25	9Cl-PF30NS	530.7 > 350.8		2579.294	1.00					NO		
44	26	PFDA	513 > 468.8		14685.406	1.00					NO		
45	27	8:2 FTS	527.0 > 506.9		1358.584	1.00					NO		
46	56	13C5-PFNA	468.2 > 422.9	16604.293	16776.922	1.00	4.59	12.371	12.4	99.4	NO		
47	57	13C8-PFOSA	506.1 > 77.7	1226.378	17402.473	1.00	4.65	0.881	6.8	54.5	NO		
48	59	13C8-PFOS	507.0 > 79.9	2579.294	2634.379	1.00	4.67	12.239	12.1	96.9	NO		
49	59	13C8-PFOS	507.0 > 79.9	2579.294	2634.379	1.00	4.67	12.239	12.1	96.9	NO		
50	60	13C2-PFDA	515.1 > 469.9	14685.406	18653.658	1.00	4.96	9.841	12.4	99.2	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1358.584	2634.379	1.00	4.94	6.446	11.2	89.8	NO		
52	-1												
53	28	PFNS	549.1 > 80.1		2579.294	1.00					NO		
54	29	L-MeFOSAA	570 > 419		2682.987	1.00					NO		
55	31	L-EtFOSAA	584.1 > 419		2854.747	1.00					NO		
56	33	PFUdA	563.0 > 518.9		17691.381	1.00					NO		
57	34	PFDS	598.8 > 79.9		1358.584	1.00					NO		
58	35	11Cl-PF30UdS	632.6 > 452.7		9245.204	1.00					NO		
59	59	13C8-PFOS	507.0 > 79.9	2579.294	2634.379	1.00	4.67	12.239	12.1	96.9	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	2682.987	17402.473	1.00	5.11	1.927	12.2	97.4	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	2854.747	17402.473	1.00	5.27	2.051	11.7	93.7	NO		
62	63	13C2-PFUdA	565 > 519.8	17691.381	17402.473	1.00	5.29	12.708	11.9	94.9	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1358.584	2634.379	1.00	4.94	6.446	11.2	89.8	NO		
64	65	13C2-PFDoA	614.7 > 569.7	9245.204	18653.658	1.00	5.58	6.195	5.4	43.1	YES		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1358.584	1.00					NO		
67	37	PFDoA	612.9 > 569.0		9245.204	1.00					NO		
68	38	N-MeFOSA	512.1 > 168.9			1.00					NO		
69	39	PFTrDA	662.9 > 618.9		9245.204	1.00					NO		
70	40	PFDoS	698.8 > 79.9		1338.470	1.00					NO		
71	41	PFTeDA	713.0 > 669.0		1338.470	1.00					NO		
72	65	13C2-PFDoA	614.7 > 569.7	9245.204	18653.658	1.00	5.58	6.195	5.4	43.1	YES		

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Name: 190707M2_13, Date: 07-Jul-2019, Time: 19:18:55, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	9245.204	18653.658	1.00	5.58	6.195	5.4	43.1	YES		
74	66	d3-N-MeFOSA	515.2 > 168.9		17402.473	1.00					NO		
75	65	13C2-PFDoA	614.7 > 569.7	9245.204	18653.658	1.00	5.58	6.195	5.4	43.1	YES		
76	67	13C2-PFTeDA	715.1 > 669.7	1338.470	17402.473	1.00	6.05	0.961	1.4	10.9	YES		
77	67	13C2-PFTeDA	715.1 > 669.7	1338.470	17402.473	1.00	6.05	0.961	1.4	10.9	YES		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9			1.00					NO		
80	43	PFHxDA	813.1 > 768.6		805.351	1.00					NO		
81	44	PFODA	913.1 > 868.8		805.351	1.00					NO		
82	45	N-MeFOSE	616.1 > 58.9		610.182	1.00					NO		
83	46	N-EtFOSE	630.1 > 58.9		519.999	1.00					NO		
84	72	13C4-PFBA	217.0 > 172.0	8894.975	8894.975	1.00	1.23	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9		17402.473	1.00					NO		
86	69	13C2-PFHxDA	815 > 769.7	805.351	17402.473	1.00	6.40	0.578	0.6	11.5	YES		
87	69	13C2-PFHxDA	815 > 769.7	805.351	17402.473	1.00	6.40	0.578	0.6	11.5	YES		
88	70	d7-N-MeFOSE	623.1 > 58.9	610.182	17402.473	1.00	6.30	0.438	15.9	10.6	YES		
89	71	d9-N-EtFOSE	639.2 > 58.8	519.999	17402.473	1.00	6.45	0.374	13.1	8.7	YES		
90	73	13C5-PFHxA	318.0 > 272.9	18493.193	18493.193	1.00	3.01	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	22524.588	22524.588	1.00	4.15	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1137.792	1137.792	1.00	3.78	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	16776.922	16776.922	1.00	4.59	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	2634.379	2634.379	1.00	4.67	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	18653.658	18653.658	1.00	4.96	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	17402.473	17402.473	1.00	5.29	12.500	12.5	100.0	NO		

Vista Analytical Laboratory

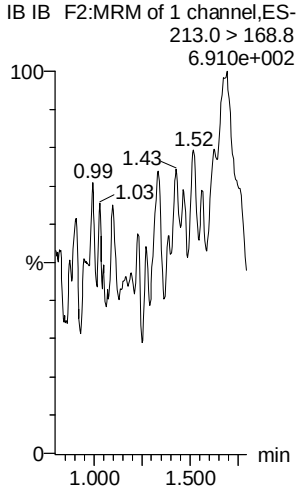
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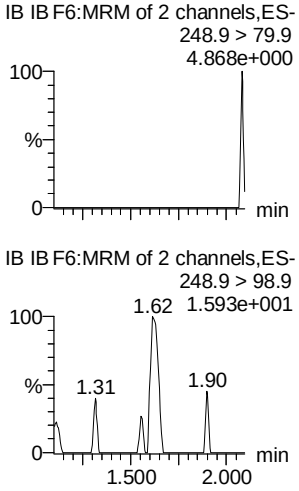
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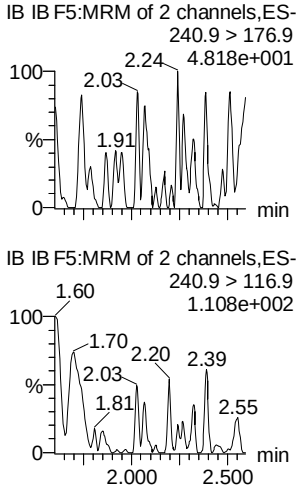
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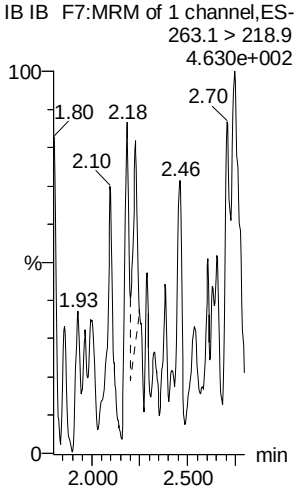
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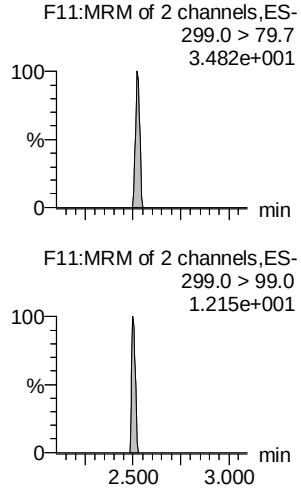
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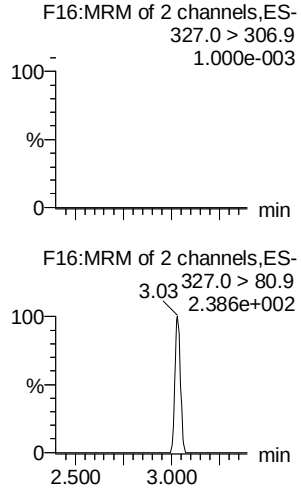
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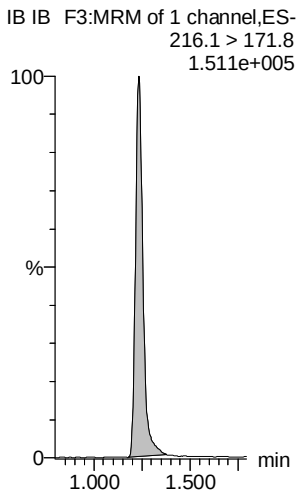
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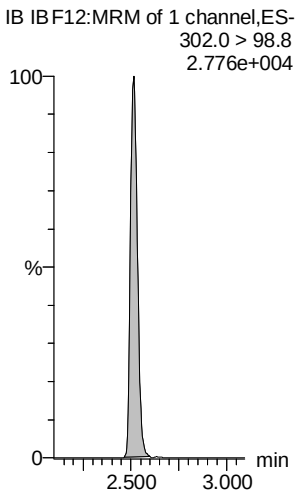
4:2 FTS



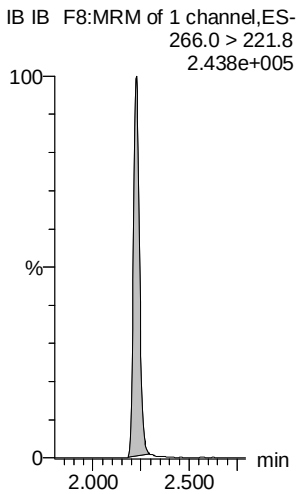
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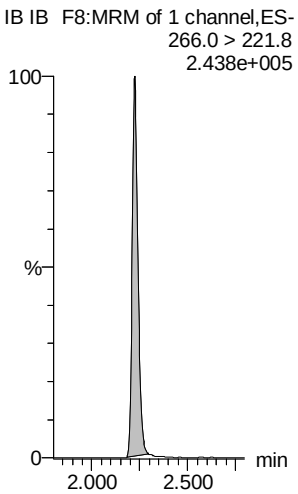
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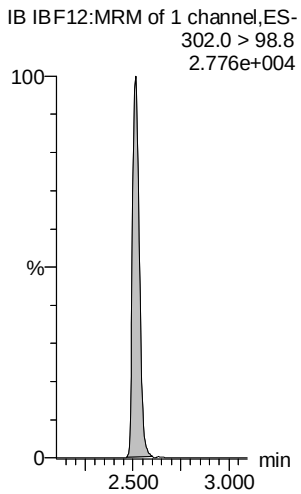
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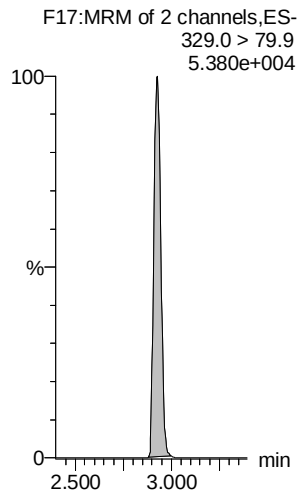
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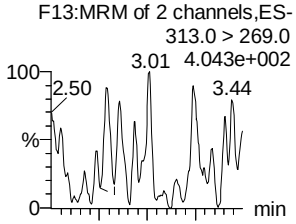


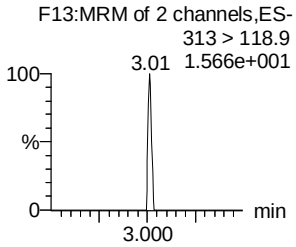
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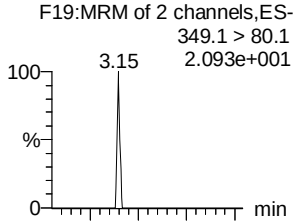
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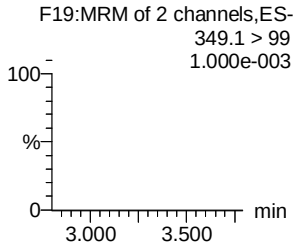
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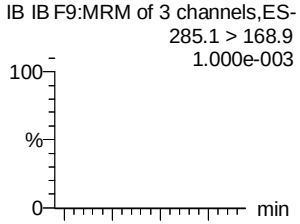


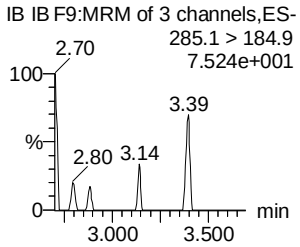
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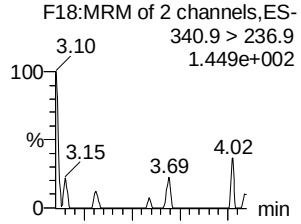


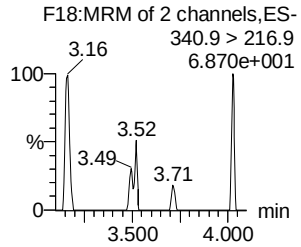
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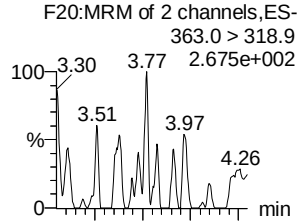


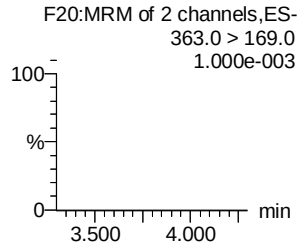
5:3 FTCA



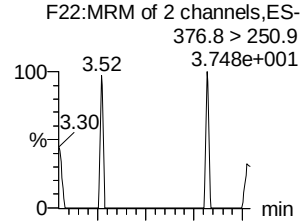


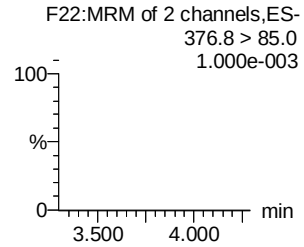
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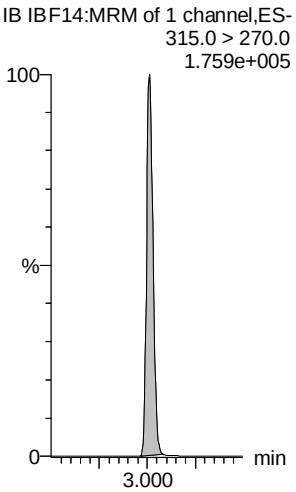


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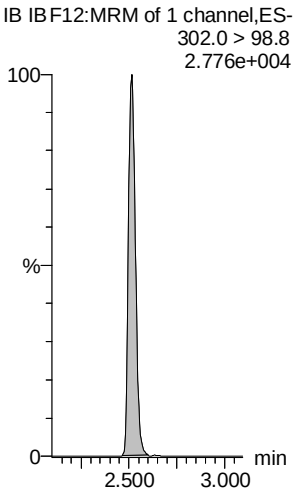




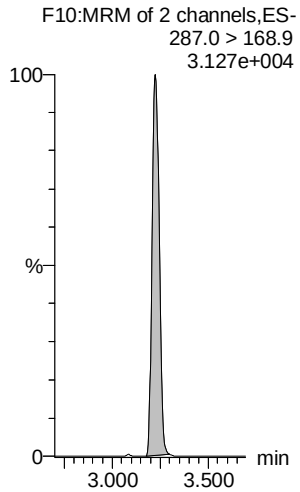
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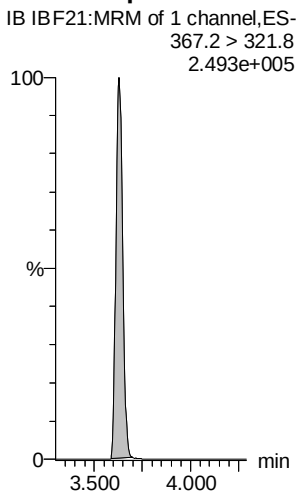
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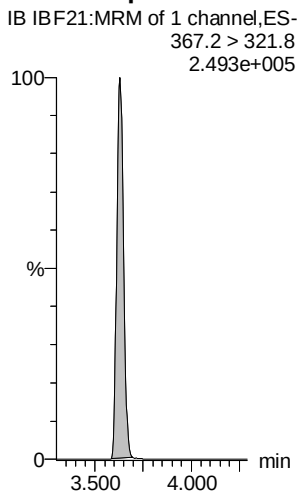
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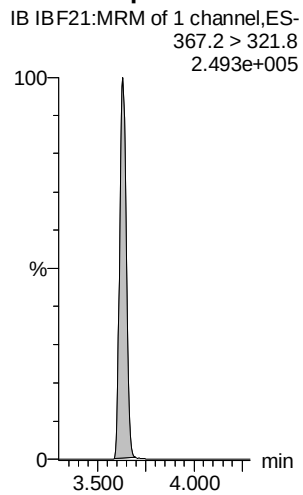
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13C4-PFHpA



13C4-PFHpA

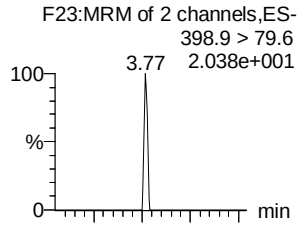


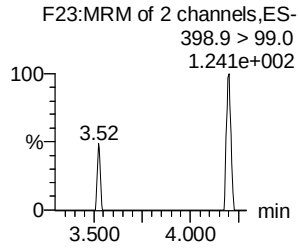
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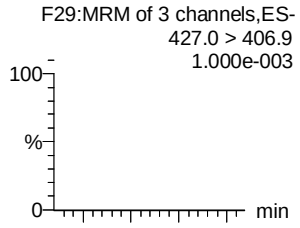
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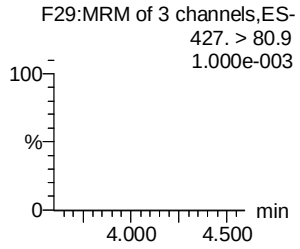
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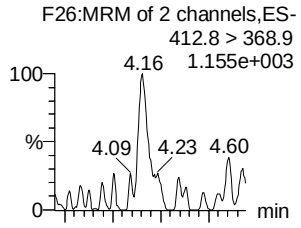


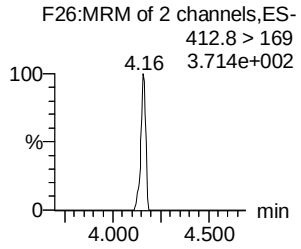
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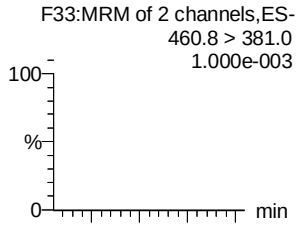


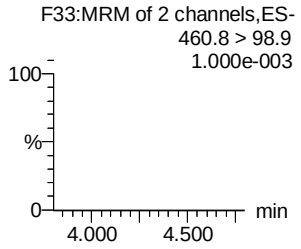
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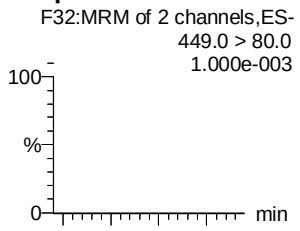


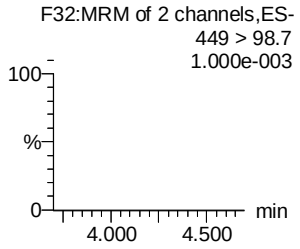
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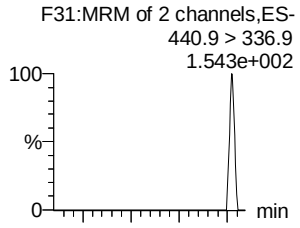


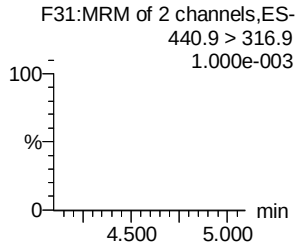
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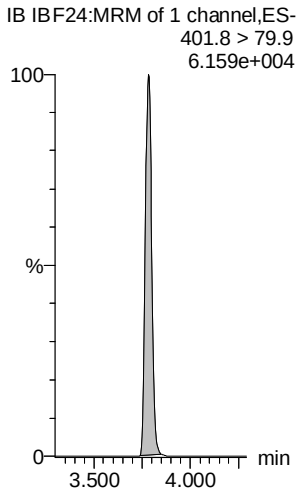


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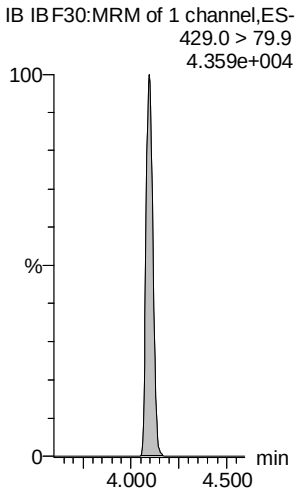




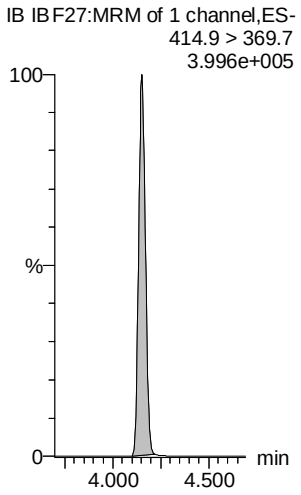
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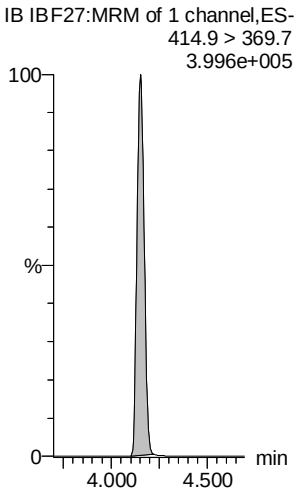
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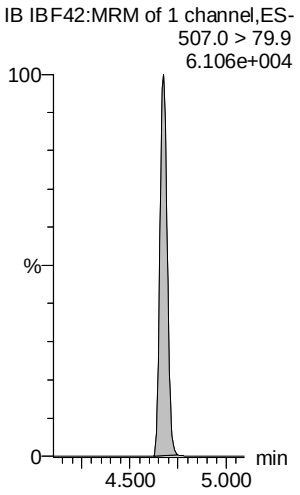
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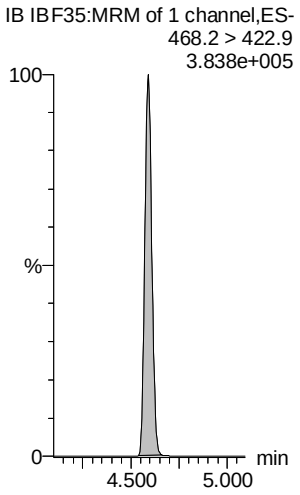
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13C8-PFOS



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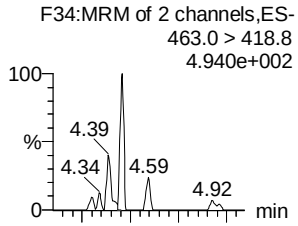


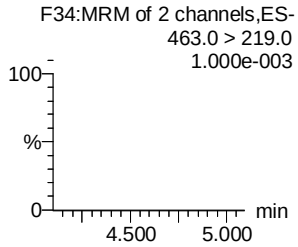
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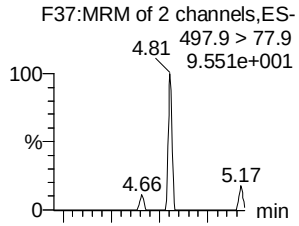
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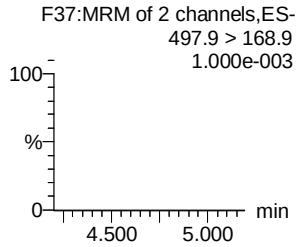
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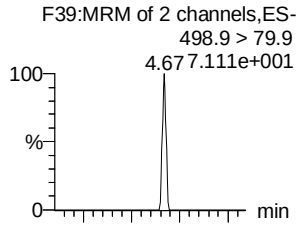


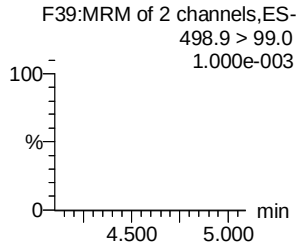
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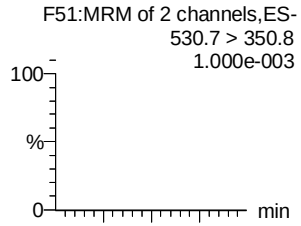


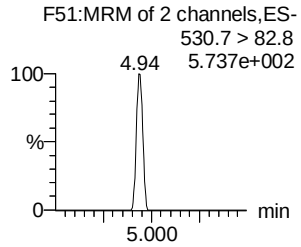
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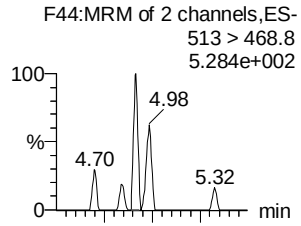


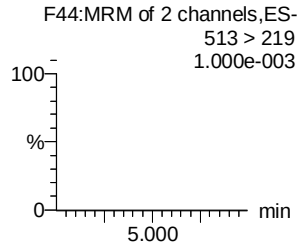
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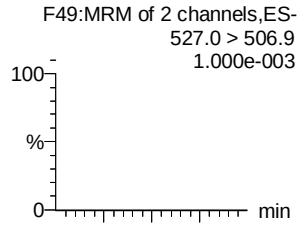


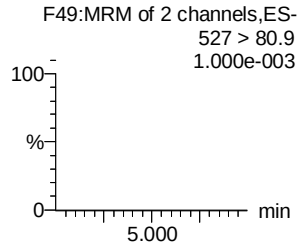
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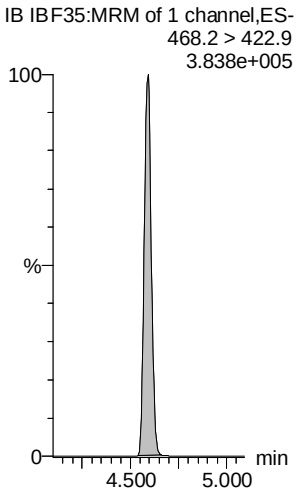


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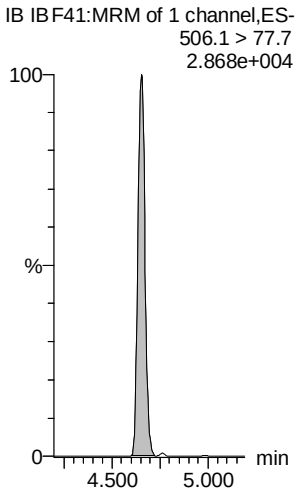




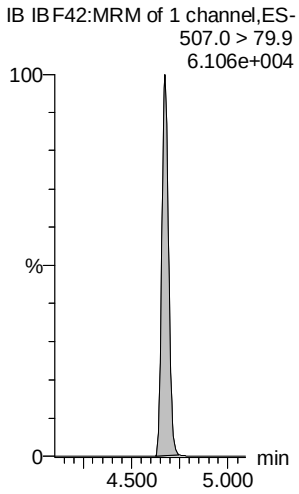
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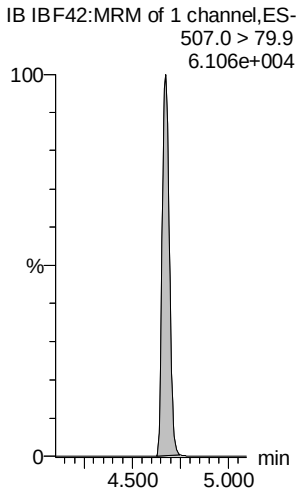
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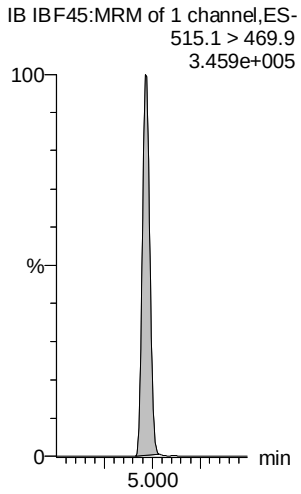
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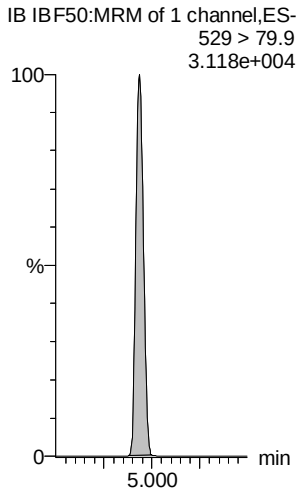
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13C2-PFDA



13C2-8:2 FTS

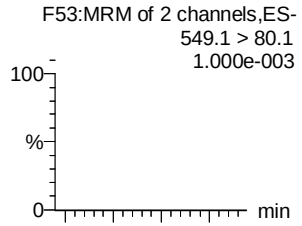


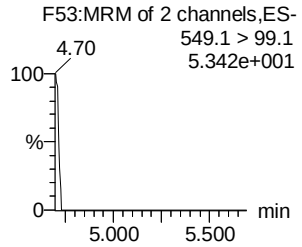
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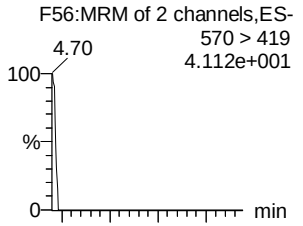
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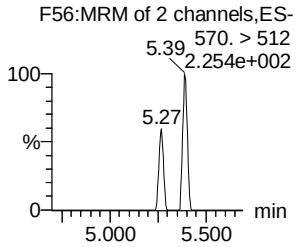
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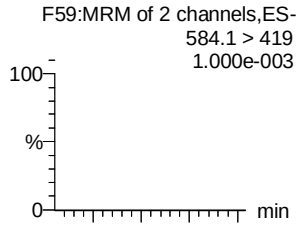


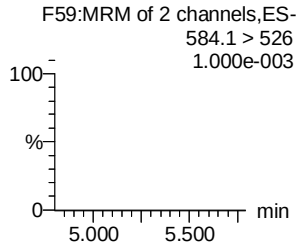
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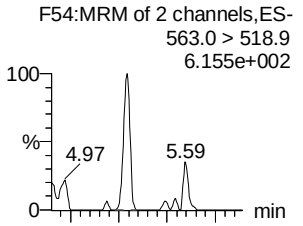


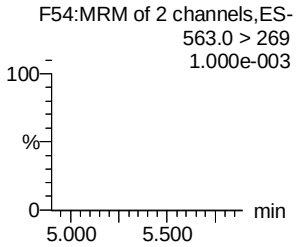
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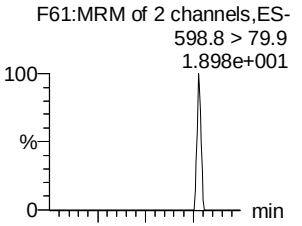


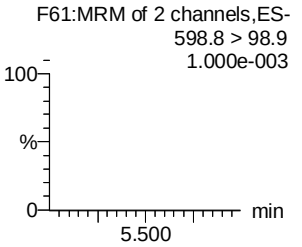
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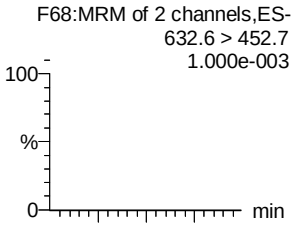


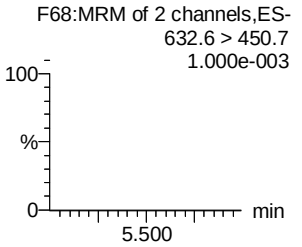
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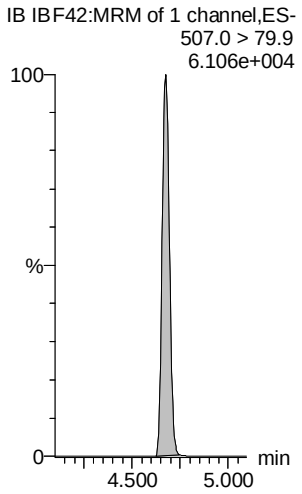


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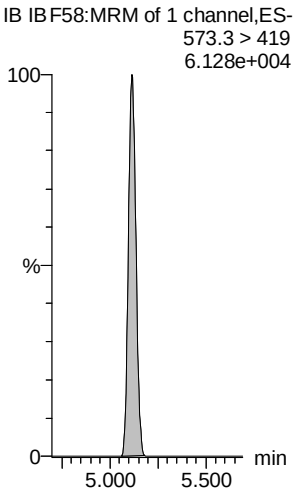




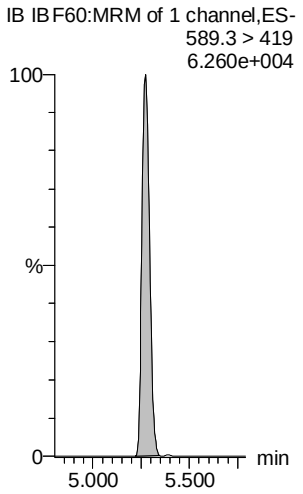
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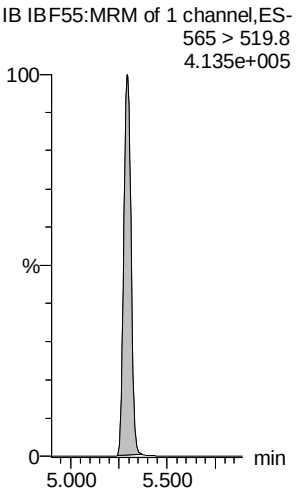
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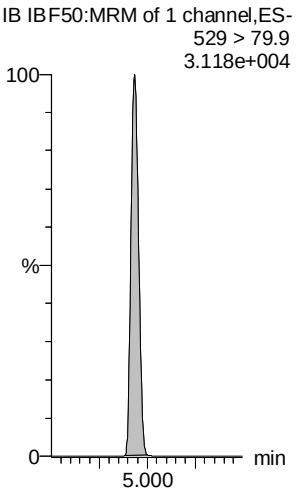
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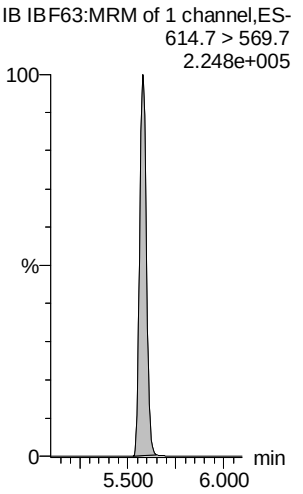
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

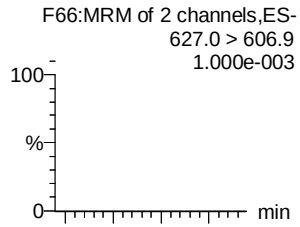


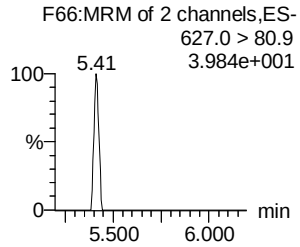
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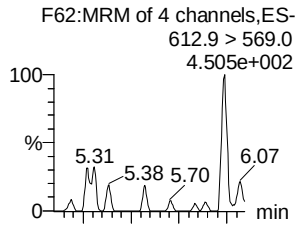
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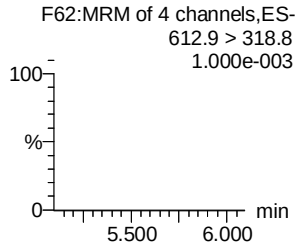
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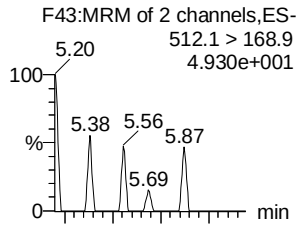


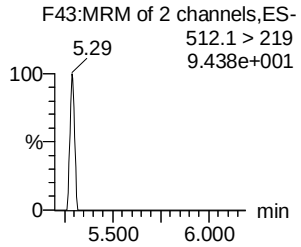
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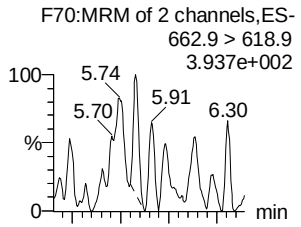


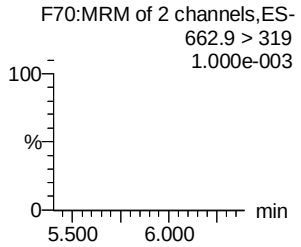
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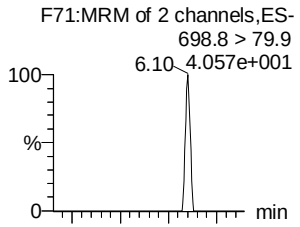


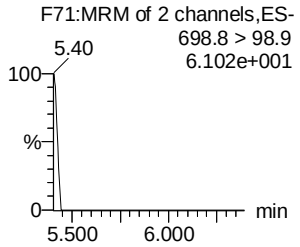
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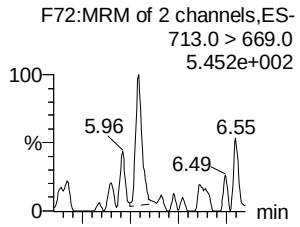


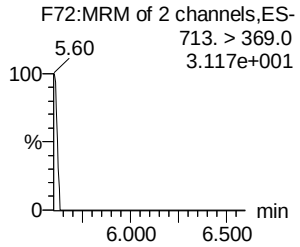
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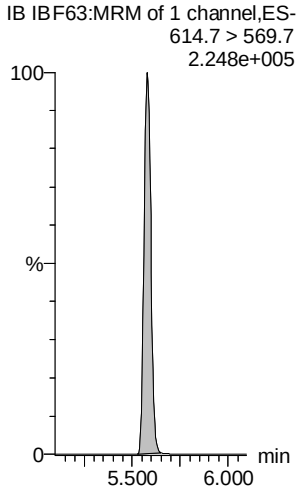


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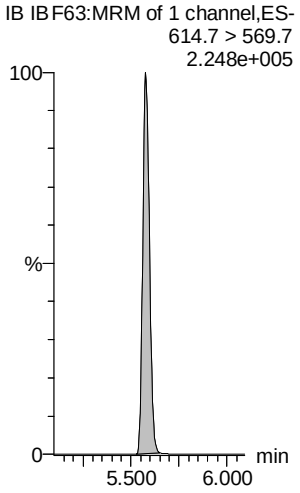




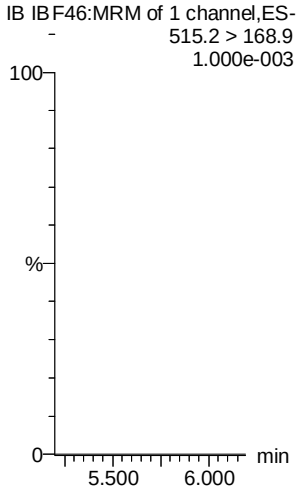
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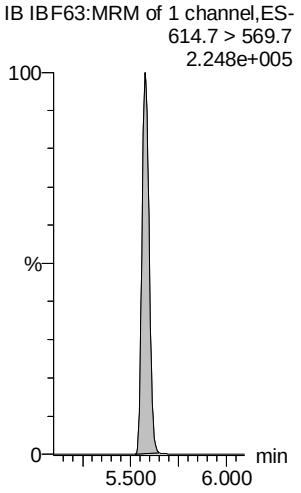
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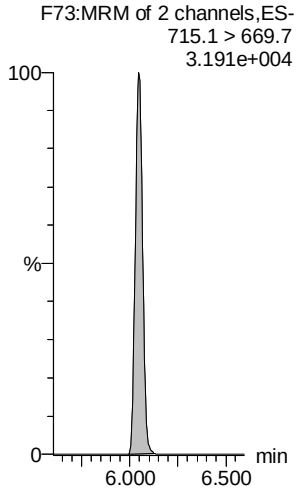
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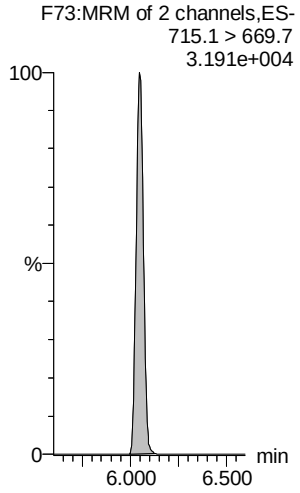
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13C2-PFTeDA



13C2-PFTeDA

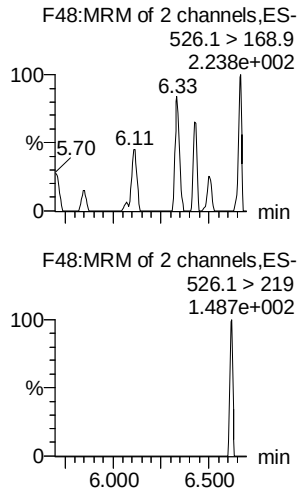


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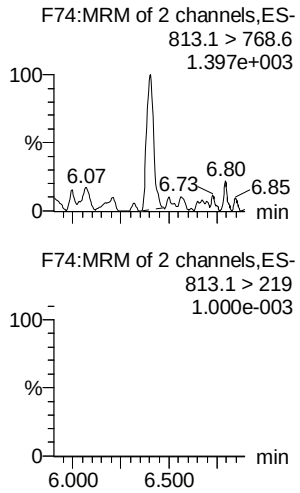
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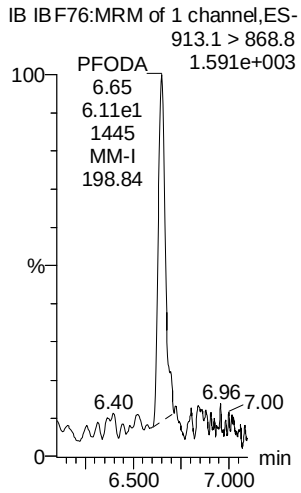
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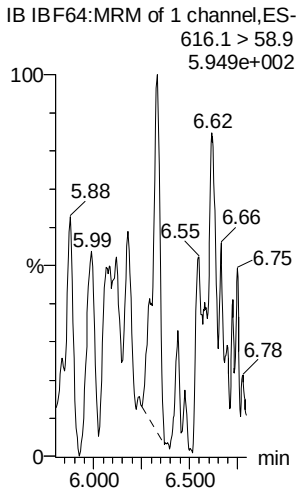
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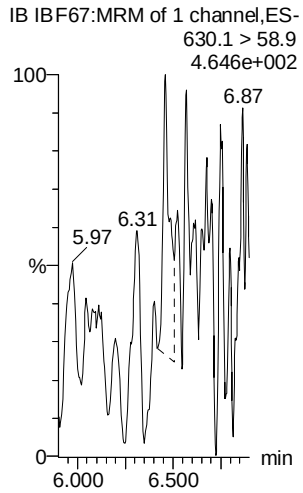
PFODA



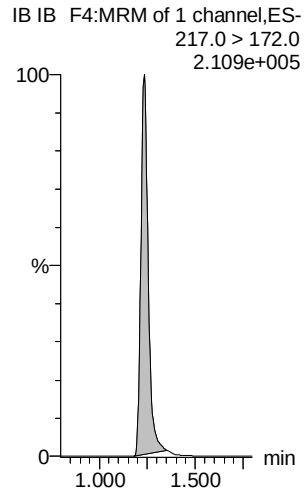
N-MeFOSE



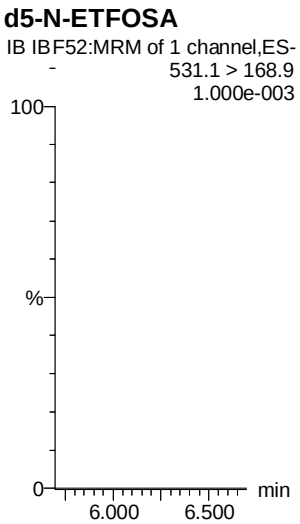
N-EtFOSE



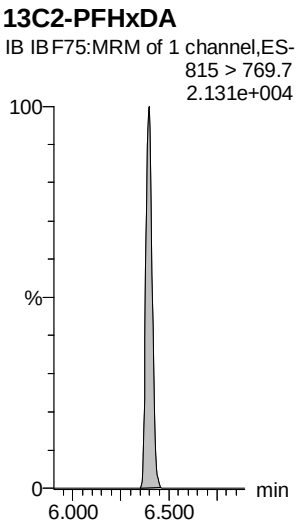
13C4-PFBA



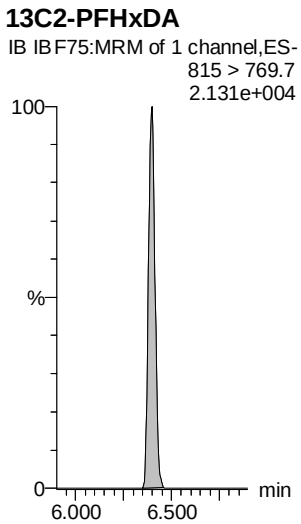
d5-N-ETFOSA



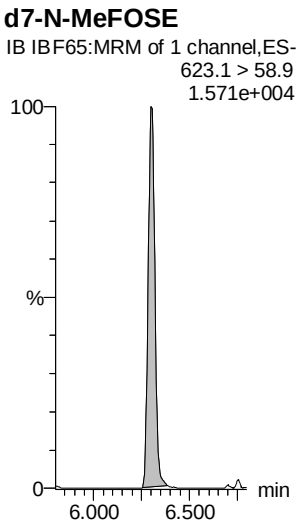
13C2-PFHxDA



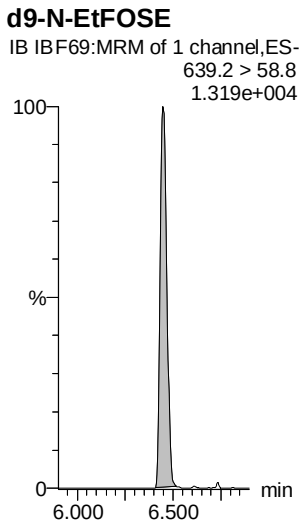
13C2-PFHxDA



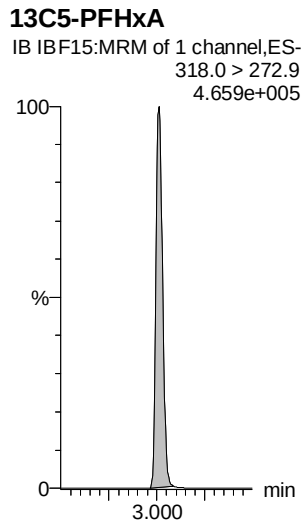
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

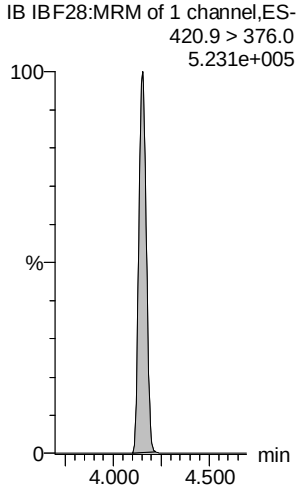


Dataset: F:\Projects\PFAS.PRO\Results\190707M2\190707M2-IB.qld

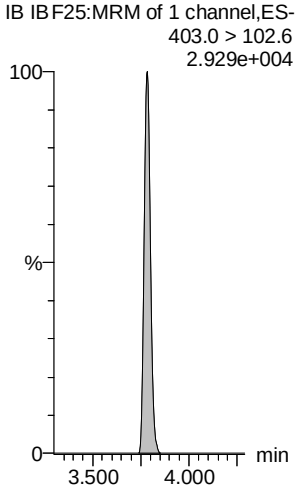
Last Altered: Monday, July 08, 2019 11:31:31 Pacific Daylight Time
Printed: Monday, July 08, 2019 11:31:51 Pacific Daylight Time

Name: 190707M2_13, Date: 07-Jul-2019, Time: 19:18:55, ID: IB, Description: IB

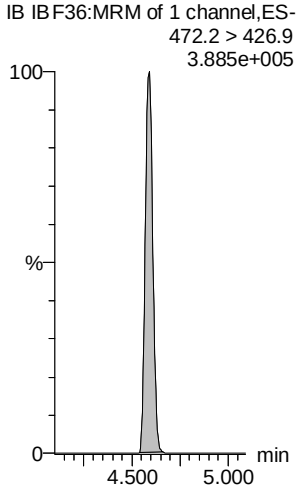
13C8-PFOA



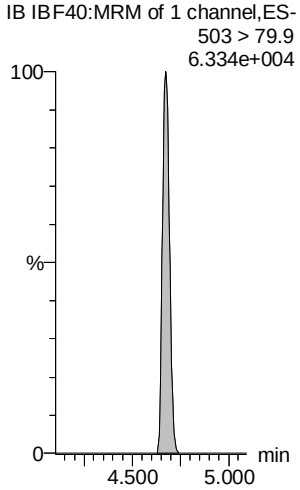
18O2-PFHxS



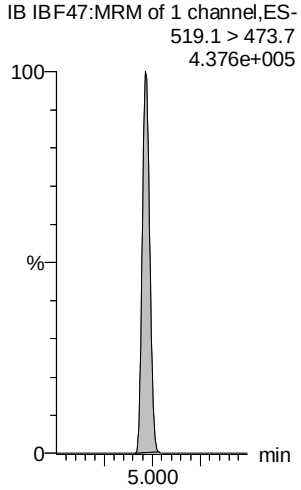
13C9-PFNA



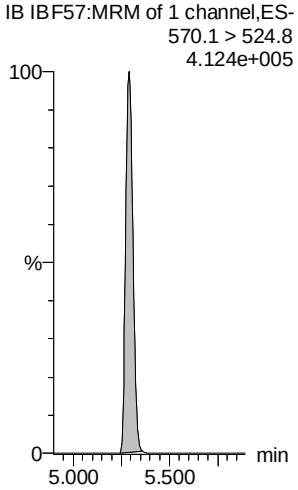
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:50:03 Pacific Daylight Time

low pt
PFDS = 0.5
PFDS ↓

high pt
3:3 FTCA = 100
5:3 FTCA ↓
7:3 FTCA
4:2 FTS = 250
PFPeS ↓
6:2 FTS
8:2 FTS ↓

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

JAn 7/14/19
7/14/19

Compound name: PFBA
Correlation coefficient: r = 0.999852, r^2 = 0.999704
Calibration curve: 1.24734 * x + -0.0353972
Response type: Internal Std (Ref 47), 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	190712M2_6	Standard	0.250	1.15	94.822	3951.750	0.300	0.3	7.5	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	1.15	188.493	4192.511	0.562	0.5	-4.2	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	1.14	392.103	4209.422	1.164	1.0	-3.8	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	1.15	933.950	4836.335	2.414	2.0	-1.8	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	1.15	2120.197	4277.267	6.196	5.0	-0.1	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	1.15	4182.155	4227.104	12.367	9.9	-0.6	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	1.15	21263.998	4201.730	63.260	50.7	1.5	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	1.15	43075.449	4297.443	125.294	100.5	0.5	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	1.15	104382.930	4085.317	319.384	256.1	2.4	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	1.15	205401.953	4176.878	614.699	492.8	-1.4	NO	1.000	NO	bb

Compound name: PFPrS
Coefficient of Determination: R^2 = 0.999806
Calibration curve: 0.000283057 * x^2 + 0.936439 * x + -0.135279
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	190712M2_6	Standard	0.250	1.50	14.697	1221.430	0.150	0.3	22.0	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	1.51	40.486	1289.349	0.393	0.6	12.7	NO	1.000	NO	MM
3	3	190712M2_8	Standard	1.000	1.50	69.668	1251.236	0.696	0.9	-11.3	NO	1.000	NO	MM
4	4	190712M2_9	Standard	2.000	1.51	197.064	1508.714	1.633	1.9	-5.7	NO	1.000	NO	MM
5	5	190712M2_10	Standard	5.000	1.51	401.312	1354.983	3.702	4.1	-18.1	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	1.51	903.143	1233.165	9.155	9.9	-1.1	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	1.50	4410.618	1151.665	47.872	50.5	1.0	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	1.51	8843.591	1145.725	96.485	100.1	0.1	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	1.50	21487.529	1063.064	252.660	250.9	0.4	NO	1.000	NO	MM
10	10	190712M2_15	Standard	500.000	1.51	40397.859	938.114	538.286	499.5	-0.1	NO	1.000	NO	bb

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999737
Calibration curve: 2.87032e-005 * x^2 + 0.0324429 * x + -0.00531914
Response type: Internal Std (Ref 48), 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	190712M2_6	Standard	0.250	1.96	3.077	9174.475	0.004	0.3	17.2	NO	1.000	NO	MM
2	2	190712M2_7	Standard	0.500	1.98	8.735	9440.304	0.012	0.5	4.0	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	1.97	16.624	9506.008	0.022	0.8	-16.3	NO	1.000	NO	MM
4	4	190712M2_9	Standard	2.000	1.96	52.329	11499.399	0.057	1.9	-4.3	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	1.97	122.249	9992.066	0.153	4.9	-2.9	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	1.97	254.453	9709.080	0.328	10.2	1.7	NO	1.000	NO	MM
7	7	190712M2_12	Standard	50.000	1.97	1362.999	10026.567	1.699	50.3	0.6	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	1.97	2771.261	9839.865	3.520	99.9	-0.1	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	1.97	1437.050	9585.236	1.874	55.2	-77.9	YES	1.000	NO	bbX
10	10	190712M2_15	Standard	500.000	1.97	3036.498	9471.328	4.007	112.5	-77.5	YES	1.000	NO	bbX

Compound name: PFPeA
Correlation coefficient: r = 0.999910, r^2 = 0.999820
Calibration curve: 0.937411 * x + -0.00202089
Response type: Internal Std (Ref 48), 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	190712M2_6	Standard	0.250	2.12	177.115	9174.475	0.241	0.3	3.8	NO	1.000	NO	MM
2	2	190712M2_7	Standard	0.500	2.12	333.080	9440.304	0.441	0.5	-5.5	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	2.12	689.993	9506.008	0.907	1.0	-3.0	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	2.13	1684.657	11499.399	1.831	2.0	-2.2	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	2.13	3712.674	9992.066	4.645	5.0	-0.9	NO	1.000	NO	MM
6	6	190712M2_11	Standard	10.000	2.13	7540.332	9709.080	9.708	10.4	3.6	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	2.12	38428.668	10026.567	47.909	51.1	2.2	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	2.13	75489.242	9839.865	95.897	102.3	2.3	NO	1.000	NO	MM
9	9	190712M2_14	Standard	250.000	2.13	180923.969	9585.236	235.941	251.7	0.7	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	2.13	351352.781	9471.328	463.706	494.7	-1.1	NO	1.000	NO	bb

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: PFBS
Correlation coefficient: r = 0.999843, r^2 = 0.999687
Calibration curve: 2.37276 * x + -0.156245
Response type: Internal Std (Ref 49), 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	190712M2_6	Standard	0.250	2.42	52.828	1221.430	0.541	0.3	17.5	NO	1.000	NO	MM
2	2	190712M2_7	Standard	0.500	2.41	101.154	1289.349	0.981	0.5	-4.2	NO	1.000	NO	MM
3	3	190712M2_8	Standard	1.000	2.41	204.244	1251.236	2.040	0.9	-7.4	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	2.41	506.930	1508.714	4.200	1.8	-8.2	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	2.41	1186.275	1354.983	10.944	4.7	-6.4	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	2.41	2389.361	1233.165	24.220	10.3	2.7	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	2.41	11580.064	1151.665	125.688	53.0	6.1	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	2.41	22001.563	1145.725	240.040	101.2	1.2	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	2.41	49943.738	1063.064	587.262	247.6	-1.0	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	2.42	88744.938	938.114	1182.491	498.4	-0.3	NO	1.000	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.998954
Calibration curve: 0.000308893 * x^2 + 2.23604 * x + -0.0376249
Response type: Internal Std (Ref 51), 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	190712M2_6	Standard	0.250	2.84	77.980	2220.376	0.439	0.2	-14.7	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	2.83	227.634	2303.805	1.235	0.6	13.8	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	2.84	369.987	2178.746	2.123	1.0	-3.4	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	2.84	944.357	2532.486	4.661	2.1	5.0	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	2.84	1953.536	2276.247	10.728	4.8	-3.8	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	2.84	4024.313	2244.131	22.416	10.0	0.3	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	2.84	17911.037	1865.145	120.038	53.3	6.6	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	2.84	32033.688	1846.296	216.878	95.7	-4.3	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	2.84	66282.375	1426.793	580.694	251.0	0.4	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	2.84	111218.945	1351.793	1028.439	433.9	-13.2	NO	0.999	NO	bbX

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: PFHxA
Correlation coefficient: r = 0.999691, r^2 = 0.999382
Calibration curve: 0.873244 * x + 0.0275135
Response type: Internal Std (Ref 52), 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	190712M2_6	Standard	0.250	2.92	401.529	7565.288	0.265	0.3	9.0	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	2.92	713.983	8089.753	0.441	0.5	-5.2	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	2.92	1459.485	8004.647	0.912	1.0	1.2	NO	0.999	NO	MM
4	4	190712M2_9	Standard	2.000	2.92	3148.470	9006.723	1.748	2.0	-1.5	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	2.92	7408.621	8408.540	4.405	5.0	0.3	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	2.92	15034.992	8293.517	9.064	10.3	3.5	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	2.92	70312.750	7870.440	44.669	51.1	2.2	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	2.92	135617.016	7574.628	89.521	102.5	2.5	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	2.92	313942.969	6988.033	224.629	257.2	2.9	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	2.92	555862.563	6510.241	426.914	488.9	-2.2	NO	0.999	NO	bb

Compound name: PFPeS
Correlation coefficient: r = 0.996561, r^2 = 0.993135
Calibration curve: 1.69347 * x + 0.0925013
Response type: Internal Std (Ref 49), 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	190712M2_6	Standard	0.250	3.12	41.187	1221.430	0.422	0.2	-22.3	NO	0.993	NO	bb
2	2	190712M2_7	Standard	0.500	3.12	83.739	1289.349	0.812	0.4	-15.0	NO	0.993	NO	bb
3	3	190712M2_8	Standard	1.000	3.13	174.310	1251.236	1.741	1.0	-2.6	NO	0.993	NO	bb
4	4	190712M2_9	Standard	2.000	3.12	416.237	1508.714	3.449	2.0	-0.9	NO	0.993	NO	bb
5	5	190712M2_10	Standard	5.000	3.13	1011.237	1354.983	9.329	5.5	9.1	NO	0.993	NO	bb
6	6	190712M2_11	Standard	10.000	3.13	1958.277	1233.165	19.850	11.7	16.7	NO	0.993	NO	bb
7	7	190712M2_12	Standard	50.000	3.13	9042.237	1151.665	98.143	57.9	15.8	NO	0.993	NO	bb
8	8	190712M2_13	Standard	100.000	3.13	16375.701	1145.725	178.661	105.4	5.4	NO	0.993	NO	bb
9	9	190712M2_14	Standard	250.000	3.13	33811.133	1063.064	397.567	234.7	-6.1	NO	0.993	NO	bb
10	10	190712M2_15	Standard	500.000	3.13	55092.953	938.114	734.092	433.4	-13.3	NO	0.993	NO	bbX

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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998577
Calibration curve: -3.60857e-005 * x^2 + 0.525117 * x + -0.051754
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	190712M2_6	Standard	0.250	3.14	25.280	1374.330	0.092	0.3	9.5	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	3.13	50.375	1375.197	0.183	0.4	-10.5	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	3.14	125.082	1160.301	0.539	1.1	12.5	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	3.13	293.403	1672.864	0.877	1.8	-11.6	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	3.13	769.482	1358.388	2.832	5.5	9.9	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	3.14	1578.343	1615.177	4.886	9.4	-5.9	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	3.13	7270.841	1407.855	25.822	49.4	-1.1	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	3.13	13867.788	1427.484	48.574	93.2	-6.8	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	3.14	29953.539	1106.350	135.371	262.6	5.1	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	3.13	48116.719	958.410	251.024	495.0	-1.0	NO	0.999	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999853
Calibration curve: 0.000284581 * x^2 + 0.152498 * x + -0.00490294
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	190712M2_6	Standard	0.250	3.47	27.663	10141.064	0.034	0.3	2.2	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	3.47	53.363	10552.625	0.063	0.4	-10.7	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	3.47	124.914	10601.032	0.147	1.0	-0.4	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	3.47	296.829	11779.045	0.315	2.1	4.5	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	3.47	678.548	10638.573	0.797	5.2	4.2	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	3.47	1344.921	10732.636	1.566	10.1	1.1	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	3.48	6859.149	10422.711	8.226	49.4	-1.2	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	3.47	13541.632	9331.513	18.140	100.2	0.2	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	3.48	6716.722	8275.448	10.146	59.9	-76.1	YES	1.000	NO	bbX
10	10	190712M2_15	Standard	500.000	3.48	14212.274	7291.069	24.366	128.8	-74.2	YES	1.000	NO	bbX

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Compound name: PFHpA
Correlation coefficient: r = 0.999931, r^2 = 0.999863
Calibration curve: 1.3101 * x + -0.0413598
Response type: Internal Std (Ref 53), 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	190712M2_6	Standard	0.250	3.54	243.872	10141.064	0.301	0.3	4.4	NO	1.000	NO	MM
2	2	190712M2_7	Standard	0.500	3.54	508.759	10552.625	0.603	0.5	-1.7	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	3.54	1072.376	10601.032	1.264	1.0	-0.3	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	3.54	2402.215	11779.045	2.549	2.0	-1.1	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	3.54	5468.718	10638.573	6.426	4.9	-1.3	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	3.54	11519.664	10732.636	13.417	10.3	2.7	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	3.54	52293.703	10422.711	62.716	47.9	-4.2	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	3.54	98595.070	9331.513	132.073	100.8	0.8	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	3.54	218647.484	8275.448	330.265	252.1	0.8	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	3.55	381252.875	7291.069	653.630	498.9	-0.2	NO	1.000	NO	bb

Compound name: ADONA
Correlation coefficient: r = 0.999288, r^2 = 0.998576
Calibration curve: 3.20131 * x + -0.268884
Response type: Internal Std (Ref 53), 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	190712M2_6	Standard	0.250	3.66	609.356	10141.064	0.751	0.3	27.4	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	3.66	1189.608	10552.625	1.409	0.5	4.8	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	3.66	2515.798	10601.032	2.966	1.0	1.1	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	3.66	5459.274	11779.045	5.793	1.9	-5.3	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	3.66	12444.935	10638.573	14.622	4.7	-7.0	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	3.66	25052.098	10732.636	29.177	9.2	-8.0	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	3.66	121691.219	10422.711	145.945	45.7	-8.7	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	3.66	220903.219	9331.513	295.910	92.5	-7.5	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	3.66	534971.313	8275.448	808.070	252.5	1.0	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	3.66	953010.125	7291.069	1633.866	510.5	2.1	NO	0.999	NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999823
Calibration curve: 0.000138177 * x^2 + 0.948867 * x + -0.0687586
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	190712M2_6	Standard	0.250	3.70	34.792	2713.482	0.160	0.2	-3.5	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	3.71	86.091	2471.737	0.435	0.5	6.3	NO	1.000	NO	MM
3	3	190712M2_8	Standard	1.000	3.70	155.926	2745.598	0.710	0.8	-17.9	NO	1.000	NO	MM
4	4	190712M2_9	Standard	2.000	3.70	398.081	3034.427	1.640	1.8	-10.0	NO	1.000	NO	MM
5	5	190712M2_10	Standard	5.000	3.70	955.509	2651.179	4.505	4.8	-3.7	NO	1.000	NO	MM
6	6	190712M2_11	Standard	10.000	3.70	1965.460	2562.264	9.588	10.2	1.6	NO	1.000	NO	MM
7	7	190712M2_12	Standard	50.000	3.70	9516.059	2581.445	46.079	48.3	-3.4	NO	1.000	NO	MM
8	8	190712M2_13	Standard	100.000	3.70	18233.701	2346.975	97.113	100.9	0.9	NO	1.000	NO	MM
9	9	190712M2_14	Standard	250.000	3.70	40323.063	2032.473	247.993	252.2	0.9	NO	1.000	NO	MM
10	10	190712M2_15	Standard	500.000	3.70	72963.156	1796.111	507.786	499.0	-0.2	NO	1.000	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999832
Calibration curve: -4.8036e-005 * x^2 + 3.06357 * x + -0.156613
Response type: Internal Std (Ref 55), 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	190712M2_6	Standard	0.250	4.01	66.437	1716.675	0.484	0.2	-16.4	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	4.02	215.183	1820.051	1.478	0.5	6.7	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	4.01	380.283	1854.420	2.563	0.9	-11.2	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	4.01	912.420	1971.665	5.785	1.9	-3.0	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	4.02	2262.664	1772.810	15.954	5.3	5.2	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	4.01	4595.169	1907.899	30.106	9.9	-1.2	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	4.01	20989.408	1740.232	150.766	49.3	-1.4	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	4.02	37321.570	1510.867	308.776	101.0	1.0	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	4.02	78983.742	1295.766	761.941	249.7	-0.1	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	4.02	133926.188	1216.533	1376.105	452.4	-9.5	NO	1.000	NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

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Compound name: L-PFOA
Correlation coefficient: r = 0.999945, r^2 = 0.999890
Calibration curve: 1.36486 * x + 0.0739172
Response type: Internal Std (Ref 58), 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	190712M2_6	Standard	0.250	4.07	585.039	18136.037	0.403	0.2	-3.5	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	4.07	1109.363	18106.699	0.766	0.5	1.4	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	4.07	1996.596	17908.924	1.394	1.0	-3.3	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	4.07	4449.107	19910.906	2.793	2.0	-0.4	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	4.07	10432.041	18881.467	6.906	5.0	0.1	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	4.07	21096.107	18604.402	14.174	10.3	3.3	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	4.07	96155.797	17063.852	70.438	51.6	3.1	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	4.07	180848.500	16506.775	136.950	100.3	0.3	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	4.07	376138.000	13944.007	337.186	247.0	-1.2	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	4.07	644388.063	11781.346	683.695	500.9	0.2	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999965
Calibration curve: 6.23843e-005 * x^2 + 0.198261 * x + -0.0178896
Response type: Internal Std (Ref 58), 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	190712M2_6	Standard	0.250	4.10	39.104	18136.037	0.027	0.2	-9.5	NO	1.000	NO	MM
2	2	190712M2_7	Standard	0.500	4.09	125.990	18106.699	0.087	0.5	5.8	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	4.08	279.501	17908.924	0.195	1.1	7.4	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	4.09	609.282	19910.906	0.383	2.0	0.9	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	4.09	1397.538	18881.467	0.925	4.7	-5.0	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	4.09	2936.792	18604.402	1.973	10.0	0.1	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	4.09	13680.303	17063.852	10.021	49.9	-0.3	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	4.09	27256.561	16506.775	20.640	101.0	1.0	NO	1.000	NO	bd
9	9	190712M2_14	Standard	250.000	4.09	59370.730	13944.007	53.222	249.0	-0.4	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	4.09	108183.523	11781.346	114.783	500.3	0.1	NO	1.000	NO	bd

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Compound name: PFHpS
Correlation coefficient: r = 0.999877, r^2 = 0.999755
Calibration curve: 0.947743 * x + -0.026999
Response type: Internal Std (Ref 59), 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	190712M2_6	Standard	0.250	4.19	50.755	2972.283	0.213	0.3	1.5	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	4.19	91.514	2979.653	0.384	0.4	-13.3	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	4.19	197.187	2962.104	0.832	0.9	-9.4	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	4.19	555.597	3382.259	2.053	2.2	9.8	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	4.19	1147.909	3037.856	4.723	5.0	0.2	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	4.19	2452.509	3050.850	10.048	10.6	6.3	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	4.19	11601.761	2935.979	49.395	52.1	4.3	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	4.19	21903.088	2846.372	96.189	101.5	1.5	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	4.19	47567.078	2514.789	236.437	249.5	-0.2	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	4.19	81830.555	2175.448	470.194	496.1	-0.8	NO	1.000	NO	bb

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999265
Calibration curve: 3.2948e-005 * x^2 + 0.106989 * x + -0.0203978
Response type: Internal Std (Ref 56), 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	190712M2_6	Standard	0.250	4.49	18.883	17521.201	0.013	0.3	26.6	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	4.50	47.378	17772.717	0.033	0.5	0.4	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	4.49	87.296	19065.916	0.057	0.7	-27.5	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	4.50	318.424	19756.031	0.201	2.1	3.6	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	4.50	743.764	18412.686	0.505	4.9	-1.9	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	4.50	1471.912	17960.967	1.024	9.7	-2.6	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	4.50	7461.382	16924.672	5.511	50.9	1.8	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	4.50	14625.477	16677.789	10.962	99.6	-0.4	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	4.50	7239.446	15113.572	5.988	55.2	-77.9	YES	0.999	NO	bbX
10	10	190712M2_15	Standard	500.000	4.50	14770.366	13397.055	13.781	124.2	-75.2	YES	0.999	NO	bbX

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

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Compound name: PFNA
Correlation coefficient: r = 0.999957, r^2 = 0.999913
Calibration curve: 1.22879 * x + -0.0175663
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	190712M2_6	Standard	0.250	4.52	373.809	17521.201	0.267	0.2	-7.5	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	4.52	820.820	17772.717	0.577	0.5	-3.2	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	4.52	1830.222	19065.916	1.200	1.0	-0.9	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	4.52	4088.445	19756.031	2.587	2.1	6.0	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	4.52	8961.922	18412.686	6.084	5.0	-0.7	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	4.52	18470.594	17960.967	12.855	10.5	4.8	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	4.52	84570.766	16924.672	62.461	50.8	1.7	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	4.52	163371.344	16677.789	122.447	99.7	-0.3	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	4.52	374212.156	15113.572	309.500	251.9	0.8	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	4.52	654631.688	13397.055	610.798	497.1	-0.6	NO	1.000	NO	bb

Compound name: PFOSA
Correlation coefficient: r = 0.999717, r^2 = 0.999434
Calibration curve: 1.17513 * x + -0.106628
Response type: Internal Std (Ref 57), 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	190712M2_6	Standard	0.250	4.58	62.905	3208.497	0.245	0.3	19.7	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	4.58	130.625	3163.173	0.516	0.5	6.0	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	4.58	294.306	3352.661	1.097	1.0	2.4	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	4.58	576.167	3765.844	1.912	1.7	-14.1	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	4.58	1451.686	3432.385	5.287	4.6	-8.2	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	4.58	2955.703	3533.940	10.455	9.0	-10.1	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	4.58	15362.730	3125.368	61.444	52.4	4.8	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	4.58	28660.381	3109.574	115.210	98.1	-1.9	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	4.58	67262.352	2798.268	300.464	255.8	2.3	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	4.58	126445.766	2715.979	581.953	495.3	-0.9	NO	0.999	NO	bb

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

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Compound name: L-PFOS
Correlation coefficient: r = 0.999549, r^2 = 0.999099
Calibration curve: 1.1152 * x + -0.160592
Response type: Internal Std (Ref 59), 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 190712M2_6	Standard	0.250	4.60	80.691	2972.283	0.339	0.4	79.3	YES	0.999	NO	MMX
2	2 190712M2_7	Standard	0.500	4.61	81.887	2979.653	0.344	0.5	-9.6	NO	0.999	NO	MM
3	3 190712M2_8	Standard	1.000	4.61	227.483	2962.104	0.960	1.0	0.5	NO	0.999	NO	MM
4	4 190712M2_9	Standard	2.000	4.61	503.222	3382.259	1.860	1.8	-9.4	NO	0.999	NO	MM
5	5 190712M2_10	Standard	5.000	4.61	1339.280	3037.856	5.511	5.1	1.7	NO	0.999	NO	MM
6	6 190712M2_11	Standard	10.000	4.61	2622.468	3050.850	10.745	9.8	-2.2	NO	0.999	NO	MM
7	7 190712M2_12	Standard	50.000	4.61	12363.208	2935.979	52.637	47.3	-5.3	NO	0.999	NO	MM
8	8 190712M2_13	Standard	100.000	4.61	23626.637	2846.372	103.758	93.2	-6.8	NO	0.999	NO	MM
9	9 190712M2_14	Standard	250.000	4.61	56492.207	2514.789	280.800	251.9	0.8	NO	0.999	NO	MM
10	10 190712M2_15	Standard	500.000	4.61	98547.961	2175.448	566.251	507.9	1.6	NO	0.999	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999757
Calibration curve: -1.64188e-005 * x^2 + 1.92142 * x + -0.163446
Response type: Internal Std (Ref 59), 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 190712M2_6	Standard	0.250	4.82	88.061	2972.283	0.370	0.3	11.1	NO	1.000	NO	bb
2	2 190712M2_7	Standard	0.500	4.83	215.620	2979.653	0.905	0.6	11.2	NO	1.000	NO	bb
3	3 190712M2_8	Standard	1.000	4.83	383.858	2962.104	1.620	0.9	-7.2	NO	1.000	NO	bb
4	4 190712M2_9	Standard	2.000	4.82	875.243	3382.259	3.235	1.8	-11.6	NO	1.000	NO	bb
5	5 190712M2_10	Standard	5.000	4.83	2300.924	3037.856	9.468	5.0	0.3	NO	1.000	NO	bb
6	6 190712M2_11	Standard	10.000	4.82	4535.295	3050.850	18.582	9.8	-2.4	NO	1.000	NO	bb
7	7 190712M2_12	Standard	50.000	4.83	22351.365	2935.979	95.161	49.6	-0.7	NO	1.000	NO	bb
8	8 190712M2_13	Standard	100.000	4.83	42678.406	2846.372	187.425	97.7	-2.3	NO	1.000	NO	bb
9	9 190712M2_14	Standard	250.000	4.83	98412.086	2514.789	489.167	255.2	2.1	NO	1.000	NO	bb
10	10 190712M2_15	Standard	500.000	4.83	165752.172	2175.448	952.403	497.9	-0.4	NO	1.000	NO	bb

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Compound name: PFDA
Correlation coefficient: r = 0.999262, r^2 = 0.998524
Calibration curve: 1.36294 * x + 0.0573661
Response type: Internal Std (Ref 60), 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 190712M2_6	Standard	0.250	4.89	475.465	17047.721	0.349	0.2	-14.5	NO	0.999	NO	bb
2	2 190712M2_7	Standard	0.500	4.90	989.614	17841.223	0.693	0.5	-6.7	NO	0.999	NO	bb
3	3 190712M2_8	Standard	1.000	4.89	2194.601	18656.340	1.470	1.0	3.7	NO	0.999	NO	bb
4	4 190712M2_9	Standard	2.000	4.89	4470.009	19772.314	2.826	2.0	1.6	NO	0.999	NO	bb
5	5 190712M2_10	Standard	5.000	4.90	9935.964	18107.758	6.859	5.0	-0.2	NO	0.999	NO	bb
6	6 190712M2_11	Standard	10.000	4.90	20185.570	17124.600	14.734	10.8	7.7	NO	0.999	NO	bb
7	7 190712M2_12	Standard	50.000	4.90	94920.453	16425.102	72.237	53.0	5.9	NO	0.999	NO	bb
8	8 190712M2_13	Standard	100.000	4.90	186723.406	16912.354	138.008	101.2	1.2	NO	0.999	NO	bb
9	9 190712M2_14	Standard	250.000	4.90	410970.250	14407.154	356.568	261.6	4.6	NO	0.999	NO	bb
10	10 190712M2_15	Standard	500.000	4.90	686057.563	13012.556	659.034	483.5	-3.3	NO	0.999	NO	bb

Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.999124
Calibration curve: -0.000508701 * x^2 + 1.8517 * x + -0.11439
Response type: Internal Std (Ref 61), 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 190712M2_6	Standard	0.250	4.86	53.390	1760.670	0.379	0.3	6.6	NO	0.999	NO	bb
2	2 190712M2_7	Standard	0.500	4.86	116.981	1777.674	0.823	0.5	1.2	NO	0.999	NO	bb
3	3 190712M2_8	Standard	1.000	4.87	238.405	1910.545	1.560	0.9	-9.6	NO	0.999	NO	bb
4	4 190712M2_9	Standard	2.000	4.87	474.505	2112.955	2.807	1.6	-21.1	NO	0.999	NO	bb
5	5 190712M2_10	Standard	5.000	4.87	1294.922	1922.851	8.418	4.6	-7.7	NO	0.999	NO	bb
6	6 190712M2_11	Standard	10.000	4.87	2638.689	1743.825	18.915	10.3	3.1	NO	0.999	NO	bb
7	7 190712M2_12	Standard	50.000	4.87	12029.235	1570.813	95.725	52.5	5.0	NO	0.999	NO	bb
8	8 190712M2_13	Standard	100.000	4.87	21715.582	1544.820	175.713	97.6	-2.4	NO	0.999	NO	bb
9	9 190712M2_14	Standard	250.000	4.87	45977.840	1330.954	431.813	250.5	0.2	NO	0.999	NO	bb
10	10 190712M2_15	Standard	500.000	4.87	73978.094	1274.003	725.843	446.9	-10.6	NO	0.999	NO	bbX

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Compound name: PFNS
Correlation coefficient: r = 0.999570, r^2 = 0.999140
Calibration curve: 0.737712 * x + 0.034269
Response type: Internal Std (Ref 59), 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	190712M2_6	Standard	0.250	4.96	55.155	2972.283	0.232	0.3	7.2	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	4.97	83.650	2979.653	0.351	0.4	-14.2	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	4.97	181.577	2962.104	0.766	1.0	-0.8	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	4.96	349.905	3382.259	1.293	1.7	-14.7	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	4.97	964.469	3037.856	3.969	5.3	6.7	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	4.96	1964.084	3050.850	8.047	10.9	8.6	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	4.96	9268.895	2935.979	39.463	53.4	6.9	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	4.97	17383.520	2846.372	76.341	103.4	3.4	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	4.97	35885.918	2514.789	178.374	241.7	-3.3	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	4.97	64267.875	2175.448	369.280	500.5	0.1	NO	0.999	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999147
Calibration curve: -0.000920396 * x^2 + 2.94574 * x + -0.277912
Response type: Internal Std (Ref 62), 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	190712M2_6	Standard	0.250	5.05	153.535	3140.943	0.611	0.3	20.7	NO	0.999	NO	MM
2	2	190712M2_7	Standard	0.500	5.05	277.972	3131.604	1.110	0.5	-5.8	NO	0.999	NO	MM
3	3	190712M2_8	Standard	1.000	5.05	715.792	3164.304	2.828	1.1	5.5	NO	0.999	NO	MM
4	4	190712M2_9	Standard	2.000	5.05	1520.353	3540.984	5.367	1.9	-4.1	NO	0.999	NO	MM
5	5	190712M2_10	Standard	5.000	5.05	3317.217	3220.702	12.875	4.5	-10.6	NO	0.999	NO	MM
6	6	190712M2_11	Standard	10.000	5.05	7270.233	3173.772	28.634	9.8	-1.5	NO	0.999	NO	MM
7	7	190712M2_12	Standard	50.000	5.06	33154.375	3016.586	137.384	47.4	-5.1	NO	0.999	NO	MM
8	8	190712M2_13	Standard	100.000	5.05	64010.949	2868.771	278.913	97.8	-2.2	NO	0.999	NO	MM
9	9	190712M2_14	Standard	250.000	5.05	140951.422	2496.669	705.697	260.9	4.4	NO	0.999	NO	MM
10	10	190712M2_15	Standard	500.000	5.06	251990.438	2558.889	1230.956	494.3	-1.1	NO	0.999	NO	MM

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

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Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.998470, r^2 = 0.996943
Calibration curve: 1.62608 * x + 0.0226238
Response type: Internal Std (Ref 64), 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	190712M2_6	Standard	0.250	5.22	109.113	3754.324	0.363	0.2	-16.2	NO	0.997	NO	bb
2	2	190712M2_7	Standard	0.500	5.22	287.114	3927.580	0.914	0.5	9.6	NO	0.997	NO	MM
3	3	190712M2_8	Standard	1.000	5.22	501.278	3851.082	1.627	1.0	-1.3	NO	0.997	NO	MM
4	4	190712M2_9	Standard	2.000	5.21	1085.053	4298.146	3.156	1.9	-3.7	NO	0.997	NO	MM
5	5	190712M2_10	Standard	5.000	5.22	2592.861	4017.538	8.067	4.9	-1.1	NO	0.997	NO	MM
6	6	190712M2_11	Standard	10.000	5.22	5622.646	3963.581	17.732	10.9	8.9	NO	0.997	NO	MM
7	7	190712M2_12	Standard	50.000	5.21	24916.367	3704.807	84.068	51.7	3.4	NO	0.997	NO	MM
8	8	190712M2_13	Standard	100.000	5.22	46920.309	3486.810	168.206	103.4	3.4	NO	0.997	NO	MM
9	9	190712M2_14	Standard	250.000	5.22	100726.875	2885.221	436.392	268.4	7.3	NO	0.997	NO	MM
10	10	190712M2_15	Standard	500.000	5.21	167814.344	2711.365	773.662	475.8	-4.8	NO	0.997	NO	MM

Compound name: PFUdA
Correlation coefficient: r = 0.999588, r^2 = 0.999177
Calibration curve: 0.918609 * x + 0.0387869
Response type: Internal Std (Ref 63), 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	190712M2_6	Standard	0.250	5.23	436.680	22627.100	0.241	0.2	-11.8	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	5.23	889.983	24092.484	0.462	0.5	-7.9	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	5.23	1978.550	24449.457	1.012	1.1	5.9	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	5.23	4077.467	27236.840	1.871	2.0	-0.3	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	5.23	9389.325	25159.160	4.665	5.0	0.7	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	5.23	18674.277	24154.344	9.664	10.5	4.8	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	5.23	87614.898	23002.064	47.613	51.8	3.6	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	5.23	168086.063	21352.746	98.398	107.1	7.1	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	5.23	362783.031	19808.254	228.934	249.2	-0.3	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	5.23	616744.438	17074.875	451.500	491.5	-1.7	NO	0.999	NO	bb

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Compound name: PFDS
Correlation coefficient: r = 0.997550, r^2 = 0.995106
Calibration curve: 1.74852 * x + 0.127653
Response type: Internal Std (Ref 61), 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 190712M2_6	Standard	0.250	5.28	18.043	1760.670	0.128	0.0	-99.9	YES	0.995	NO	bbX
2	2 190712M2_7	Standard	0.500	5.28	124.412	1777.674	0.875	0.4	-14.5	NO	0.995	NO	bb
3	3 190712M2_8	Standard	1.000	5.28	313.144	1910.545	2.049	1.1	9.9	NO	0.995	NO	bb
4	4 190712M2_9	Standard	2.000	5.28	542.608	2112.955	3.210	1.8	-11.9	NO	0.995	NO	bb
5	5 190712M2_10	Standard	5.000	5.28	1308.321	1922.851	8.505	4.8	-4.2	NO	0.995	NO	bb
6	6 190712M2_11	Standard	10.000	5.28	2507.062	1743.825	17.971	10.2	2.0	NO	0.995	NO	bb
7	7 190712M2_12	Standard	50.000	5.28	12351.143	1570.813	98.286	56.1	12.3	NO	0.995	NO	bb
8	8 190712M2_13	Standard	100.000	5.28	22597.455	1544.820	182.849	104.5	4.5	NO	0.995	NO	bb
9	9 190712M2_14	Standard	250.000	5.28	50244.586	1330.954	471.885	269.8	7.9	NO	0.995	NO	bb
10	10 190712M2_15	Standard	500.000	5.28	83731.242	1274.003	821.537	469.8	-6.0	NO	0.995	NO	bb

Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.998877
Calibration curve: -3.59269e-006 * x^2 + 0.0688991 * x + -0.00478901
Response type: Internal Std (Ref 65), 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 190712M2_6	Standard	0.250	5.45	13.946	21827.584	0.008	0.2	-25.8	NO	0.999	NO	bb
2	2 190712M2_7	Standard	0.500	5.45	69.606	22589.061	0.039	0.6	25.7	NO	0.999	NO	bb
3	3 190712M2_8	Standard	1.000	5.45	118.710	22921.080	0.065	1.0	0.9	NO	0.999	NO	bb
4	4 190712M2_9	Standard	2.000	5.45	289.303	24988.051	0.145	2.2	8.5	NO	0.999	NO	bb
5	5 190712M2_10	Standard	5.000	5.45	622.563	23146.453	0.336	5.0	-1.0	NO	0.999	NO	bb
6	6 190712M2_11	Standard	10.000	5.45	1200.050	22535.000	0.666	9.7	-2.6	NO	0.999	NO	bb
7	7 190712M2_12	Standard	50.000	5.45	5675.775	21772.752	3.259	47.5	-5.0	NO	0.999	NO	bb
8	8 190712M2_13	Standard	100.000	5.45	11095.830	21188.383	6.546	95.6	-4.4	NO	0.999	NO	bb
9	9 190712M2_14	Standard	250.000	5.45	26725.578	18767.543	17.800	262.0	4.8	NO	0.999	NO	bb
10	10 190712M2_15	Standard	500.000	5.45	47244.031	17775.680	33.222	495.0	-1.0	NO	0.999	NO	bb

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999126
Calibration curve: -0.00146773 * x^2 + 2.46 * x + 0.0547691
Response type: Internal Std (Ref 61), 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 190712M2_6	Standard	0.250	5.50	88.878	1760.670	0.631	0.2	-6.3	NO	0.999	NO	bb
2	2 190712M2_7	Standard	0.500	5.50	184.502	1777.674	1.297	0.5	1.1	NO	0.999	NO	bb
3	3 190712M2_8	Standard	1.000	5.50	371.906	1910.545	2.433	1.0	-3.3	NO	0.999	NO	bb
4	4 190712M2_9	Standard	2.000	5.50	812.401	2112.955	4.806	1.9	-3.3	NO	0.999	NO	bb
5	5 190712M2_10	Standard	5.000	5.50	1966.991	1922.851	12.787	5.2	3.8	NO	0.999	NO	bb
6	6 190712M2_11	Standard	10.000	5.50	3599.107	1743.825	25.799	10.5	5.3	NO	0.999	NO	bb
7	7 190712M2_12	Standard	50.000	5.51	16121.602	1570.813	128.290	53.9	7.7	NO	0.999	NO	bb
8	8 190712M2_13	Standard	100.000	5.50	27255.758	1544.820	220.542	95.0	-5.0	NO	0.999	NO	bb
9	9 190712M2_14	Standard	250.000	5.50	55549.199	1330.954	521.705	249.1	-0.4	NO	0.999	NO	bb
10	10 190712M2_15	Standard	500.000	5.50	88178.742	1274.003	865.174	502.1	0.4	NO	0.999	NO	bb

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999981
Calibration curve: -0.000303859 * x^2 + 1.04937 * x + -0.00738853
Response type: Internal Std (Ref 65), 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 190712M2_6	Standard	0.250	5.52	419.439	21827.584	0.240	0.2	-5.6	NO	1.000	NO	bb
2	2 190712M2_7	Standard	0.500	5.52	931.957	22589.061	0.516	0.5	-0.3	NO	1.000	NO	bb
3	3 190712M2_8	Standard	1.000	5.52	1867.922	22921.080	1.019	1.0	-2.2	NO	1.000	NO	bb
4	4 190712M2_9	Standard	2.000	5.52	4367.755	24988.051	2.185	2.1	4.5	NO	1.000	NO	bb
5	5 190712M2_10	Standard	5.000	5.52	9871.675	23146.453	5.331	5.1	1.9	NO	1.000	NO	bb
6	6 190712M2_11	Standard	10.000	5.52	19198.826	22535.000	10.649	10.2	1.9	NO	1.000	NO	bb
7	7 190712M2_12	Standard	50.000	5.52	90383.875	21772.752	51.890	50.2	0.4	NO	1.000	NO	bb
8	8 190712M2_13	Standard	100.000	5.52	171898.172	21188.383	101.411	99.5	-0.5	NO	1.000	NO	bb
9	9 190712M2_14	Standard	250.000	5.52	364967.594	18767.543	243.084	249.7	-0.1	NO	1.000	NO	bb
10	10 190712M2_15	Standard	500.000	5.52	638378.000	17775.680	448.913	500.3	0.1	NO	1.000	NO	bb

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999823
Calibration curve: -0.000171568 * x^2 + 1.34961 * x + -0.35958
Response type: Internal Std (Ref 66), 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	190712M2_6	Standard	1.250	5.66	77.538	9270.478	1.255	1.2	-4.3	NO	1.000	NO	bb
2	2	190712M2_7	Standard	2.500	5.66	167.230	9596.727	2.614	2.2	-11.8	NO	1.000	NO	bb
3	3	190712M2_8	Standard	5.000	5.66	419.282	9964.387	6.312	4.9	-1.1	NO	1.000	NO	bb
4	4	190712M2_9	Standard	10.000	5.66	919.957	10643.908	12.965	9.9	-1.1	NO	1.000	NO	bb
5	5	190712M2_10	Standard	25.000	5.66	2154.550	9850.780	32.808	24.7	-1.4	NO	1.000	NO	bb
6	6	190712M2_11	Standard	50.000	5.66	4306.411	9862.311	65.498	49.1	-1.8	NO	1.000	NO	bb
7	7	190712M2_12	Standard	250.000	5.66	20989.877	9523.072	330.616	253.4	1.4	NO	1.000	NO	bb
8	8	190712M2_13	Standard	500.000	5.66	39148.156	9494.082	618.514	488.9	-2.2	NO	1.000	NO	bb
9	9	190712M2_14	Standard	1250.000	5.66	88123.031	9202.735	1436.362	1269.4	1.6	NO	1.000	NO	bb
10	10	190712M2_15	Standard	2500.000	5.66	150217.063	9819.486	2294.678	2486.5	-0.5	NO	1.000	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999906
Calibration curve: -0.000467463 * x^2 + 1.20461 * x + -0.0179675
Response type: Internal Std (Ref 65), 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	190712M2_6	Standard	0.250	5.77	502.529	21827.584	0.288	0.3	1.5	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	5.77	1043.126	22589.061	0.577	0.5	-1.2	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	5.77	2163.518	22921.080	1.180	1.0	-0.5	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	5.77	4886.679	24988.051	2.445	2.0	2.3	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	5.77	10791.761	23146.453	5.828	4.9	-2.8	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	5.77	21848.492	22535.000	12.119	10.1	1.2	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	5.77	103319.789	21772.752	59.317	50.2	0.5	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	5.77	192600.297	21188.383	113.624	98.1	-1.9	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	5.77	412621.719	18767.543	274.824	253.0	1.2	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	5.77	688801.125	17775.680	484.370	498.6	-0.3	NO	1.000	NO	bb

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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999567
Calibration curve: -2.24391e-005 * x^2 + 0.176956 * x + -0.0107261
Response type: Internal Std (Ref 67), 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	190712M2_6	Standard	0.250	5.80	46.119	15139.587	0.038	0.3	10.3	NO	1.000	NO	bb
2	2	190712M2_7	Standard	0.500	5.80	87.588	15161.746	0.072	0.5	-6.3	NO	1.000	NO	bb
3	3	190712M2_8	Standard	1.000	5.80	205.905	16127.418	0.160	1.0	-3.7	NO	1.000	NO	bb
4	4	190712M2_9	Standard	2.000	5.80	512.499	17316.654	0.370	2.2	7.6	NO	1.000	NO	bb
5	5	190712M2_10	Standard	5.000	5.80	1092.260	16085.099	0.849	4.9	-2.8	NO	1.000	NO	bb
6	6	190712M2_11	Standard	10.000	5.80	2187.819	15841.613	1.726	9.8	-1.7	NO	1.000	NO	bb
7	7	190712M2_12	Standard	50.000	5.80	10164.704	14974.800	8.485	48.3	-3.4	NO	1.000	NO	bb
8	8	190712M2_13	Standard	100.000	5.80	20417.590	14973.014	17.045	97.6	-2.4	NO	1.000	NO	bb
9	9	190712M2_14	Standard	250.000	5.80	45166.656	12804.417	44.093	257.7	3.1	NO	1.000	NO	bb
10	10	190712M2_15	Standard	500.000	5.80	76855.805	11667.836	82.337	496.6	-0.7	NO	1.000	NO	bb

Compound name: PFTeDA
Correlation coefficient: r = 0.999546, r^2 = 0.999093
Calibration curve: 1.33064 * x + 0.0105238
Response type: Internal Std (Ref 67), 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	190712M2_6	Standard	0.250	5.99	422.060	15139.587	0.348	0.3	1.6	NO	0.999	NO	bb
2	2	190712M2_7	Standard	0.500	6.00	764.290	15161.746	0.630	0.5	-6.9	NO	0.999	NO	bb
3	3	190712M2_8	Standard	1.000	5.99	1681.579	16127.418	1.303	1.0	-2.8	NO	0.999	NO	bb
4	4	190712M2_9	Standard	2.000	5.99	3769.051	17316.654	2.721	2.0	1.8	NO	0.999	NO	bb
5	5	190712M2_10	Standard	5.000	5.99	8332.091	16085.099	6.475	4.9	-2.8	NO	0.999	NO	bb
6	6	190712M2_11	Standard	10.000	5.99	16971.832	15841.613	13.392	10.1	0.6	NO	0.999	NO	bb
7	7	190712M2_12	Standard	50.000	5.99	85848.430	14974.800	71.661	53.8	7.7	NO	0.999	NO	bb
8	8	190712M2_13	Standard	100.000	6.00	159485.422	14973.014	133.144	100.1	0.1	NO	0.999	NO	bb
9	9	190712M2_14	Standard	250.000	6.00	351484.594	12804.417	343.128	257.9	3.1	NO	0.999	NO	bb
10	10	190712M2_15	Standard	500.000	6.00	606563.188	11667.836	649.824	488.3	-2.3	NO	0.999	NO	bb

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999426
Calibration curve: -7.21463e-005 * x^2 + 1.02352 * x + -0.257314
Response type: Internal Std (Ref 68), 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 190712M2_6	Standard	1.250	6.09	92.771	13789.952	1.009	1.2	-1.0	NO	0.999	NO	bb
2	2 190712M2_7	Standard	2.500	6.10	246.228	14292.511	2.584	2.8	11.1	NO	0.999	NO	bb
3	3 190712M2_8	Standard	5.000	6.09	416.565	14300.545	4.369	4.5	-9.6	NO	0.999	NO	bb
4	4 190712M2_9	Standard	10.000	6.09	1086.668	15698.592	10.383	10.4	4.0	NO	0.999	NO	bd
5	5 190712M2_10	Standard	25.000	6.09	2419.596	14789.742	24.540	24.3	-2.9	NO	0.999	NO	bb
6	6 190712M2_11	Standard	50.000	6.09	4871.395	14185.052	51.513	50.8	1.5	NO	0.999	NO	bb
7	7 190712M2_12	Standard	250.000	6.09	22793.146	13893.367	246.087	244.9	-2.0	NO	0.999	NO	bb
8	8 190712M2_13	Standard	500.000	6.09	42453.563	13394.135	475.435	481.1	-3.8	NO	0.999	NO	bb
9	9 190712M2_14	Standard	1250.000	6.09	97573.578	12157.304	1203.888	1294.6	3.6	NO	0.999	NO	bb
10	10 190712M2_15	Standard	2500.000	6.09	168668.875	12088.109	2092.993	2478.0	-0.9	NO	0.999	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999903
Calibration curve: -0.000336432 * x^2 + 0.750379 * x + 0.0191383
Response type: Internal Std (Ref 69), 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 190712M2_6	Standard	0.250	6.35	356.603	7736.784	0.230	0.3	12.7	NO	1.000	NO	bb
2	2 190712M2_7	Standard	0.500	6.35	657.287	8031.846	0.409	0.5	4.0	NO	1.000	NO	bb
3	3 190712M2_8	Standard	1.000	6.35	1189.417	8085.707	0.736	1.0	-4.5	NO	1.000	NO	bb
4	4 190712M2_9	Standard	2.000	6.35	2521.725	8837.436	1.427	1.9	-6.1	NO	1.000	NO	bb
5	5 190712M2_10	Standard	5.000	6.35	5957.216	8122.378	3.667	4.9	-2.6	NO	1.000	NO	bb
6	6 190712M2_11	Standard	10.000	6.35	11880.400	8149.342	7.289	9.7	-2.7	NO	1.000	NO	bb
7	7 190712M2_12	Standard	50.000	6.35	56573.383	7833.486	36.110	49.2	-1.6	NO	1.000	NO	bb
8	8 190712M2_13	Standard	100.000	6.35	103556.219	7221.900	71.696	100.0	0.0	NO	1.000	NO	bb
9	9 190712M2_14	Standard	250.000	6.35	236002.344	7007.512	168.392	253.1	1.2	NO	1.000	NO	bb
10	10 190712M2_15	Standard	500.000	6.35	396968.188	6838.119	290.261	498.0	-0.4	NO	1.000	NO	bb

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Compound name: PFODA
Correlation coefficient: r = 0.997921, r^2 = 0.995847
Calibration curve: 0.67714 * x + 0.0513513
Response type: Internal Std (Ref 69), 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 190712M2_6	Standard	0.250	6.60	298.135	7736.784	0.193	0.2	-16.5	NO	0.996	NO	bb
2	2 190712M2_7	Standard	0.500	6.60	653.333	8031.846	0.407	0.5	5.0	NO	0.996	NO	bb
3	3 190712M2_8	Standard	1.000	6.60	1174.926	8085.707	0.727	1.0	-0.3	NO	0.996	NO	bb
4	4 190712M2_9	Standard	2.000	6.60	2625.667	8837.436	1.486	2.1	5.9	NO	0.996	NO	bb
5	5 190712M2_10	Standard	5.000	6.60	6073.330	8122.378	3.739	5.4	8.9	NO	0.996	NO	bb
6	6 190712M2_11	Standard	10.000	6.60	12066.627	8149.342	7.403	10.9	8.6	NO	0.996	NO	bb
7	7 190712M2_12	Standard	50.000	6.60	58025.434	7833.486	37.037	54.6	9.2	NO	0.996	NO	bb
8	8 190712M2_13	Standard	100.000	6.60	108238.211	7221.900	74.937	110.6	10.6	NO	0.996	NO	bb
9	9 190712M2_14	Standard	250.000	6.60	248175.922	7007.512	177.078	261.4	4.6	NO	0.996	NO	bb
10	10 190712M2_15	Standard	500.000	6.60	437132.781	6838.119	319.629	472.0	-5.6	NO	0.996	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.999687, r^2 = 0.999374
Calibration curve: 1.11151 * x + -0.31262
Response type: Internal Std (Ref 70), 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 190712M2_6	Standard	1.250	6.29	65.942	8501.867	1.163	1.3	6.2	NO	0.999	NO	MM
2	2 190712M2_7	Standard	2.500	6.29	151.610	8975.147	2.534	2.6	2.4	NO	0.999	NO	bb
3	3 190712M2_8	Standard	5.000	6.28	297.989	9314.944	4.799	4.6	-8.0	NO	0.999	NO	bb
4	4 190712M2_9	Standard	10.000	6.28	691.691	9663.702	10.736	9.9	-0.6	NO	0.999	NO	bb
5	5 190712M2_10	Standard	25.000	6.29	1623.697	9103.208	26.755	24.4	-2.6	NO	0.999	NO	bb
6	6 190712M2_11	Standard	50.000	6.28	3339.660	8988.615	55.732	50.4	0.8	NO	0.999	NO	bb
7	7 190712M2_12	Standard	250.000	6.28	16428.535	9051.299	272.257	245.2	-1.9	NO	0.999	NO	bb
8	8 190712M2_13	Standard	500.000	6.29	32555.070	8613.932	566.903	510.3	2.1	NO	0.999	NO	bb
9	9 190712M2_14	Standard	1250.000	6.29	81866.102	8541.824	1437.622	1293.7	3.5	NO	0.999	NO	bb
10	10 190712M2_15	Standard	2500.000	6.29	163840.047	9020.852	2724.355	2451.3	-1.9	NO	0.999	NO	bb

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.999975, r^2 = 0.999950
Calibration curve: 1.42969 * x + -0.1022
Response type: Internal Std (Ref 71), 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 190712M2_6	Standard	1.250	6.44	106.503	8049.390	1.985	1.5	16.8	NO	1.000	NO	bb
2	2 190712M2_7	Standard	2.500	6.44	199.344	8351.787	3.580	2.6	3.0	NO	1.000	NO	bb
3	3 190712M2_8	Standard	5.000	6.44	366.475	8505.161	6.463	4.6	-8.2	NO	1.000	NO	bb
4	4 190712M2_9	Standard	10.000	6.44	857.780	9396.786	13.693	9.6	-3.5	NO	1.000	NO	bb
5	5 190712M2_10	Standard	25.000	6.44	1903.737	8485.407	33.653	23.6	-5.6	NO	1.000	NO	bb
6	6 190712M2_11	Standard	50.000	6.44	3909.385	8481.641	69.138	48.4	-3.1	NO	1.000	NO	bb
7	7 190712M2_12	Standard	250.000	6.44	20059.340	8363.979	359.745	251.7	0.7	NO	1.000	NO	bb
8	8 190712M2_13	Standard	500.000	6.44	40403.539	8505.054	712.580	498.5	-0.3	NO	1.000	NO	bb
9	9 190712M2_14	Standard	1250.000	6.44	97518.898	8176.127	1789.091	1251.5	0.1	NO	1.000	NO	bb
10	10 190712M2_15	Standard	2500.000	6.44	202110.422	8476.127	3576.700	2501.8	0.1	NO	1.000	NO	bb

Compound name: 13C3-PFBA
Response Factor: 0.73215
RRF SD: 0.0149698, Relative SD: 2.04463
Response type: Internal Std (Ref 72), 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 190712M2_6	Standard	12.500	1.14	3951.750	5538.102	8.919	12.2	-2.5	NO		NO	bd
2	2 190712M2_7	Standard	12.500	1.15	4192.511	5557.770	9.429	12.9	3.0	NO		NO	db
3	3 190712M2_8	Standard	12.500	1.14	4209.422	5772.425	9.115	12.5	-0.4	NO		NO	bb
4	4 190712M2_9	Standard	12.500	1.15	4836.335	6414.388	9.425	12.9	3.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	1.15	4277.267	5944.043	8.995	12.3	-1.7	NO		NO	bb
6	6 190712M2_11	Standard	12.500	1.15	4227.104	5801.056	9.108	12.4	-0.5	NO		NO	bb
7	7 190712M2_12	Standard	12.500	1.14	4201.730	5810.840	9.039	12.3	-1.2	NO		NO	bb
8	8 190712M2_13	Standard	12.500	1.15	4297.443	5814.471	9.239	12.6	0.9	NO		NO	db
9	9 190712M2_14	Standard	12.500	1.14	4085.317	5704.754	8.952	12.2	-2.2	NO		NO	MM
10	10 190712M2_15	Standard	12.500	1.15	4176.878	5615.494	9.298	12.7	1.6	NO		NO	bb

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Compound name: 13C3-PFPeA
Response Factor: 0.509115
RRF SD: 0.0486164, Relative SD: 9.5492
Response type: Internal Std (Ref 73), 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	190712M2_6	Standard	12.500	2.12	9174.475	20187.811	5.681	11.2	-10.7	NO		NO	MM
2	2	190712M2_7	Standard	12.500	2.12	9440.304	20042.258	5.888	11.6	-7.5	NO		NO	bb
3	3	190712M2_8	Standard	12.500	2.12	9506.008	20693.125	5.742	11.3	-9.8	NO		NO	bb
4	4	190712M2_9	Standard	12.500	2.12	11499.399	21459.996	6.698	13.2	5.3	NO		NO	bb
5	5	190712M2_10	Standard	12.500	2.12	9992.066	20133.777	6.204	12.2	-2.5	NO		NO	bb
6	6	190712M2_11	Standard	12.500	2.12	9709.080	20274.980	5.986	11.8	-5.9	NO		NO	MM
7	7	190712M2_12	Standard	12.500	2.12	10026.567	19365.455	6.472	12.7	1.7	NO		NO	bb
8	8	190712M2_13	Standard	12.500	2.13	9839.865	19302.855	6.372	12.5	0.1	NO		NO	MM
9	9	190712M2_14	Standard	12.500	2.12	9585.236	17168.412	6.979	13.7	9.7	NO		NO	bb
10	10	190712M2_15	Standard	12.500	2.13	9471.328	15540.355	7.618	15.0	19.7	NO		NO	bb

Compound name: 13C3-PFBS
Response Factor: 1.07282
RRF SD: 0.0572674, Relative SD: 5.33802
Response type: Internal Std (Ref 74), 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	190712M2_6	Standard	12.500	2.41	1221.430	1140.059	13.392	12.5	-0.1	NO		NO	bb
2	2	190712M2_7	Standard	12.500	2.41	1289.349	1183.238	13.621	12.7	1.6	NO		NO	MM
3	3	190712M2_8	Standard	12.500	2.41	1251.236	1201.364	13.019	12.1	-2.9	NO		NO	bb
4	4	190712M2_9	Standard	12.500	2.41	1508.714	1278.431	14.752	13.8	10.0	NO		NO	bb
5	5	190712M2_10	Standard	12.500	2.41	1354.983	1226.969	13.804	12.9	2.9	NO		NO	bb
6	6	190712M2_11	Standard	12.500	2.41	1233.165	1157.986	13.312	12.4	-0.7	NO		NO	bb
7	7	190712M2_12	Standard	12.500	2.41	1151.665	1072.143	13.427	12.5	0.1	NO		NO	bb
8	8	190712M2_13	Standard	12.500	2.41	1145.725	1192.504	12.010	11.2	-10.4	NO		NO	bb
9	9	190712M2_14	Standard	12.500	2.41	1063.064	957.621	13.876	12.9	3.5	NO		NO	bb
10	10	190712M2_15	Standard	12.500	2.42	938.114	909.726	12.890	12.0	-3.9	NO		NO	bb

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Compound name: 13C3-HFPO-DA
Response Factor: 0.172653
RRF SD: 0.0182002, Relative SD: 10.5415
Response type: Internal Std (Ref 73), 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 190712M2_6	Standard	5.000	3.13	1374.330	20187.811	0.851	4.9	-1.4	NO		NO	bb
2	2 190712M2_7	Standard	5.000	3.13	1375.197	20042.258	0.858	5.0	-0.6	NO		NO	bb
3	3 190712M2_8	Standard	5.000	3.13	1160.301	20693.125	0.701	4.1	-18.8	NO		NO	bb
4	4 190712M2_9	Standard	5.000	3.13	1672.864	21459.996	0.974	5.6	12.9	NO		NO	bb
5	5 190712M2_10	Standard	5.000	3.13	1358.388	20133.777	0.843	4.9	-2.3	NO		NO	bb
6	6 190712M2_11	Standard	5.000	3.13	1615.177	20274.980	0.996	5.8	15.4	NO		NO	bb
7	7 190712M2_12	Standard	5.000	3.13	1407.855	19365.455	0.909	5.3	5.3	NO		NO	bb
8	8 190712M2_13	Standard	5.000	3.13	1427.484	19302.855	0.924	5.4	7.1	NO		NO	bb
9	9 190712M2_14	Standard	5.000	3.14	1106.350	17168.412	0.806	4.7	-6.7	NO		NO	bb
10	10 190712M2_15	Standard	5.000	3.14	958.410	15540.355	0.771	4.5	-10.7	NO		NO	bb

Compound name: 13C2-4:2 FTS
Response Factor: 1.7746
RRF SD: 0.198256, Relative SD: 11.1719
Response type: Internal Std (Ref 74), 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 190712M2_6	Standard	12.500	2.84	2220.376	1140.059	24.345	13.7	9.7	NO		NO	bb
2	2 190712M2_7	Standard	12.500	2.84	2303.805	1183.238	24.338	13.7	9.7	NO		NO	MM
3	3 190712M2_8	Standard	12.500	2.84	2178.746	1201.364	22.670	12.8	2.2	NO		NO	bb
4	4 190712M2_9	Standard	12.500	2.84	2532.486	1278.431	24.762	14.0	11.6	NO		NO	bb
5	5 190712M2_10	Standard	12.500	2.84	2276.247	1226.969	23.190	13.1	4.5	NO		NO	bb
6	6 190712M2_11	Standard	12.500	2.84	2244.131	1157.986	24.225	13.7	9.2	NO		NO	bb
7	7 190712M2_12	Standard	12.500	2.84	1865.145	1072.143	21.746	12.3	-2.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	2.84	1846.296	1192.504	19.353	10.9	-12.8	NO		NO	bb
9	9 190712M2_14	Standard	12.500	2.84	1426.793	957.621	18.624	10.5	-16.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	2.84	1351.793	909.726	18.574	10.5	-16.3	NO		NO	bb

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Compound name: 13C2-PFHxA
Response Factor: 1.00909
RRF SD: 0.0370764, Relative SD: 3.67423
Response type: Internal Std (Ref 73), 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	190712M2_6	Standard	5.000	2.92	7565.288	20187.811	4.684	4.6	-7.2	NO		NO	bb
2	2	190712M2_7	Standard	5.000	2.92	8089.753	20042.258	5.045	5.0	-0.0	NO		NO	bb
3	3	190712M2_8	Standard	5.000	2.92	8004.647	20693.125	4.835	4.8	-4.2	NO		NO	bb
4	4	190712M2_9	Standard	5.000	2.92	9006.723	21459.996	5.246	5.2	4.0	NO		NO	bb
5	5	190712M2_10	Standard	5.000	2.92	8408.540	20133.777	5.220	5.2	3.5	NO		NO	bb
6	6	190712M2_11	Standard	5.000	2.92	8293.517	20274.980	5.113	5.1	1.3	NO		NO	bb
7	7	190712M2_12	Standard	5.000	2.92	7870.440	19365.455	5.080	5.0	0.7	NO		NO	bb
8	8	190712M2_13	Standard	5.000	2.92	7574.628	19302.855	4.905	4.9	-2.8	NO		NO	bb
9	9	190712M2_14	Standard	5.000	2.92	6988.033	17168.412	5.088	5.0	0.8	NO		NO	bb
10	10	190712M2_15	Standard	5.000	2.92	6510.241	15540.355	5.237	5.2	3.8	NO		NO	bb

Compound name: 13C4-PFHpA
Response Factor: 0.512061
RRF SD: 0.0268152, Relative SD: 5.23673
Response type: Internal Std (Ref 73), 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	190712M2_6	Standard	12.500	3.54	10141.064	20187.811	6.279	12.3	-1.9	NO		NO	bb
2	2	190712M2_7	Standard	12.500	3.54	10552.625	20042.258	6.581	12.9	2.8	NO		NO	bb
3	3	190712M2_8	Standard	12.500	3.54	10601.032	20693.125	6.404	12.5	0.0	NO		NO	bb
4	4	190712M2_9	Standard	12.500	3.54	11779.045	21459.996	6.861	13.4	7.2	NO		NO	bb
5	5	190712M2_10	Standard	12.500	3.54	10638.573	20133.777	6.605	12.9	3.2	NO		NO	bb
6	6	190712M2_11	Standard	12.500	3.54	10732.636	20274.980	6.617	12.9	3.4	NO		NO	bb
7	7	190712M2_12	Standard	12.500	3.54	10422.711	19365.455	6.728	13.1	5.1	NO		NO	bb
8	8	190712M2_13	Standard	12.500	3.54	9331.513	19302.855	6.043	11.8	-5.6	NO		NO	bb
9	9	190712M2_14	Standard	12.500	3.54	8275.448	17168.412	6.025	11.8	-5.9	NO		NO	bb
10	10	190712M2_15	Standard	12.500	3.55	7291.069	15540.355	5.865	11.5	-8.4	NO		NO	bb

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Compound name: 13C3-PFHxS
Response Factor: 2.19741
RRF SD: 0.162513, Relative SD: 7.39568
Response type: Internal Std (Ref 74), 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	190712M2_6	Standard	12.500	3.70	2713.482	1140.059	29.752	13.5	8.3	NO		NO	bb
2	2	190712M2_7	Standard	12.500	3.70	2471.737	1183.238	26.112	11.9	-4.9	NO		NO	bb
3	3	190712M2_8	Standard	12.500	3.70	2745.598	1201.364	28.568	13.0	4.0	NO		NO	bb
4	4	190712M2_9	Standard	12.500	3.70	3034.427	1278.431	29.669	13.5	8.0	NO		NO	bb
5	5	190712M2_10	Standard	12.500	3.70	2651.179	1226.969	27.009	12.3	-1.7	NO		NO	bb
6	6	190712M2_11	Standard	12.500	3.70	2562.264	1157.986	27.659	12.6	0.7	NO		NO	bb
7	7	190712M2_12	Standard	12.500	3.70	2581.445	1072.143	30.097	13.7	9.6	NO		NO	bb
8	8	190712M2_13	Standard	12.500	3.70	2346.975	1192.504	24.601	11.2	-10.4	NO		NO	bb
9	9	190712M2_14	Standard	12.500	3.70	2032.473	957.621	26.530	12.1	-3.4	NO		NO	bb
10	10	190712M2_15	Standard	12.500	3.70	1796.111	909.726	24.679	11.2	-10.2	NO		NO	bb

Compound name: 13C2-6:2 FTS
Response Factor: 0.5894
RRF SD: 0.0344712, Relative SD: 5.84852
Response type: Internal Std (Ref 77), 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	190712M2_6	Standard	12.500	4.01	1716.675	3020.678	7.104	12.1	-3.6	NO		NO	bb
2	2	190712M2_7	Standard	12.500	4.01	1820.051	3112.057	7.310	12.4	-0.8	NO		NO	bb
3	3	190712M2_8	Standard	12.500	4.01	1854.420	2989.618	7.754	13.2	5.2	NO		NO	bb
4	4	190712M2_9	Standard	12.500	4.01	1971.665	3200.260	7.701	13.1	4.5	NO		NO	bb
5	5	190712M2_10	Standard	12.500	4.02	1772.810	2997.381	7.393	12.5	0.3	NO		NO	bb
6	6	190712M2_11	Standard	12.500	4.02	1907.899	2907.157	8.203	13.9	11.3	NO		NO	bb
7	7	190712M2_12	Standard	12.500	4.01	1740.232	3008.507	7.230	12.3	-1.9	NO		NO	bb
8	8	190712M2_13	Standard	12.500	4.01	1510.867	2589.390	7.294	12.4	-1.0	NO		NO	bb
9	9	190712M2_14	Standard	12.500	4.02	1295.766	2430.183	6.665	11.3	-9.5	NO		NO	bb
10	10	190712M2_15	Standard	12.500	4.02	1216.533	2166.090	7.020	11.9	-4.7	NO		NO	bb

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Compound name: 13C5-PFNA
Response Factor: 0.990839
RRF SD: 0.0274117, Relative SD: 2.76651
Response type: Internal Std (Ref 76), 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 190712M2_6	Standard	12.500	4.52	17521.201	18529.576	11.820	11.9	-4.6	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.52	17772.717	18378.943	12.088	12.2	-2.4	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.52	19065.916	18681.502	12.757	12.9	3.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.52	19756.031	19367.885	12.751	12.9	2.9	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.52	18412.686	19030.867	12.094	12.2	-2.4	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.52	17960.967	18064.176	12.429	12.5	0.3	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.52	16924.672	17213.973	12.290	12.4	-0.8	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.52	16677.789	16225.691	12.848	13.0	3.7	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.52	15113.572	15475.788	12.207	12.3	-1.4	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.52	13397.055	13320.776	12.572	12.7	1.5	NO		NO	bb

Compound name: 13C8-PFOSA
Response Factor: 0.148444
RRF SD: 0.0093246, Relative SD: 6.28156
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	12.500	4.58	3208.497	22850.191	1.755	11.8	-5.4	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.58	3163.173	22565.707	1.752	11.8	-5.6	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.58	3352.661	24429.031	1.716	11.6	-7.5	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.58	3765.844	25104.756	1.875	12.6	1.1	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.58	3432.385	23524.727	1.824	12.3	-1.7	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.58	3533.940	23132.238	1.910	12.9	2.9	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.58	3125.368	21827.463	1.790	12.1	-3.5	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.58	3109.574	20687.432	1.879	12.7	1.3	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.58	2798.268	17977.869	1.946	13.1	4.9	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.58	2715.979	16091.949	2.110	14.2	13.7	NO		NO	bb

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Compound name: 13C2-PFOA
Response Factor: 0.789437
RRF SD: 0.0213245, Relative SD: 2.70123
Response type: Internal Std (Ref 75), 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	190712M2_6	Standard	12.500	4.07	18136.037	23340.748	9.713	12.3	-1.6	NO		NO	bb
2	2	190712M2_7	Standard	12.500	4.07	18106.699	22776.100	9.937	12.6	0.7	NO		NO	bb
3	3	190712M2_8	Standard	12.500	4.07	17908.924	24039.371	9.312	11.8	-5.6	NO		NO	bb
4	4	190712M2_9	Standard	12.500	4.07	19910.906	25395.973	9.800	12.4	-0.7	NO		NO	bb
5	5	190712M2_10	Standard	12.500	4.07	18881.467	23494.541	10.046	12.7	1.8	NO		NO	bb
6	6	190712M2_11	Standard	12.500	4.07	18604.402	23253.861	10.001	12.7	1.3	NO		NO	bb
7	7	190712M2_12	Standard	12.500	4.07	17063.852	22242.154	9.590	12.1	-2.8	NO		NO	bb
8	8	190712M2_13	Standard	12.500	4.07	16506.775	20253.340	10.188	12.9	3.2	NO		NO	bb
9	9	190712M2_14	Standard	12.500	4.07	13944.007	17267.096	10.094	12.8	2.3	NO		NO	bb
10	10	190712M2_15	Standard	12.500	4.07	11781.346	14728.360	9.999	12.7	1.3	NO		NO	bb

Compound name: 13C8-PFOS
Response Factor: 1.01663
RRF SD: 0.043342, Relative SD: 4.2633
Response type: Internal Std (Ref 77), 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	190712M2_6	Standard	12.500	4.61	2972.283	3020.678	12.300	12.1	-3.2	NO		NO	bb
2	2	190712M2_7	Standard	12.500	4.61	2979.653	3112.057	11.968	11.8	-5.8	NO		NO	bb
3	3	190712M2_8	Standard	12.500	4.61	2962.104	2989.618	12.385	12.2	-2.5	NO		NO	bb
4	4	190712M2_9	Standard	12.500	4.60	3382.259	3200.260	13.211	13.0	4.0	NO		NO	bb
5	5	190712M2_10	Standard	12.500	4.61	3037.856	2997.381	12.669	12.5	-0.3	NO		NO	bb
6	6	190712M2_11	Standard	12.500	4.60	3050.850	2907.157	13.118	12.9	3.2	NO		NO	bb
7	7	190712M2_12	Standard	12.500	4.61	2935.979	3008.507	12.199	12.0	-4.0	NO		NO	bb
8	8	190712M2_13	Standard	12.500	4.61	2846.372	2589.390	13.741	13.5	8.1	NO		NO	bb
9	9	190712M2_14	Standard	12.500	4.61	2514.789	2430.183	12.935	12.7	1.8	NO		NO	bd
10	10	190712M2_15	Standard	12.500	4.61	2175.448	2166.090	12.554	12.3	-1.2	NO		NO	bb

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Compound name: 13C2-PFDA
Response Factor: 0.808008
RRF SD: 0.0289749, Relative SD: 3.58597
Response type: Internal Std (Ref 78), 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 190712M2_6	Standard	12.500	4.89	17047.721	22253.029	9.576	11.9	-5.2	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.90	17841.223	22203.232	10.044	12.4	-0.6	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.90	18656.340	22428.795	10.398	12.9	2.9	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.89	19772.314	24396.598	10.131	12.5	0.3	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.90	18107.758	22359.881	10.123	12.5	0.2	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.90	17124.600	22333.814	9.584	11.9	-5.1	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.90	16425.102	21019.059	9.768	12.1	-3.3	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.90	16912.354	20558.068	10.283	12.7	1.8	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.90	14407.154	17146.861	10.503	13.0	4.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.90	13012.556	15357.892	10.591	13.1	4.9	NO		NO	bb

Compound name: 13C2-8:2 FTS
Response Factor: 0.59493
RRF SD: 0.0430724, Relative SD: 7.2399
Response type: Internal Std (Ref 77), 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 190712M2_6	Standard	12.500	4.87	1760.670	3020.678	7.286	12.2	-2.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.87	1777.674	3112.057	7.140	12.0	-4.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.87	1910.545	2989.618	7.988	13.4	7.4	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.87	2112.955	3200.260	8.253	13.9	11.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.87	1922.851	2997.381	8.019	13.5	7.8	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.87	1743.825	2907.157	7.498	12.6	0.8	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.87	1570.813	3008.507	6.527	11.0	-12.2	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.87	1544.820	2589.390	7.457	12.5	0.3	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.87	1330.954	2430.183	6.846	11.5	-7.9	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.87	1274.003	2166.090	7.352	12.4	-1.1	NO		NO	bb

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Compound name: d3-N-MeFOSAA
Response Factor: 0.139569
RRF SD: 0.00746924, Relative SD: 5.35166
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	12.500	5.05	3140.943	22850.191	1.718	12.3	-1.5	NO		NO	bb
2	2 190712M2_7	Standard	12.500	5.05	3131.604	22565.707	1.735	12.4	-0.6	NO		NO	bb
3	3 190712M2_8	Standard	12.500	5.05	3164.304	24429.031	1.619	11.6	-7.2	NO		NO	bb
4	4 190712M2_9	Standard	12.500	5.05	3540.984	25104.756	1.763	12.6	1.1	NO		NO	bb
5	5 190712M2_10	Standard	12.500	5.05	3220.702	23524.727	1.711	12.3	-1.9	NO		NO	bb
6	6 190712M2_11	Standard	12.500	5.05	3173.772	23132.238	1.715	12.3	-1.7	NO		NO	bb
7	7 190712M2_12	Standard	12.500	5.05	3016.586	21827.463	1.728	12.4	-1.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	5.05	2868.771	20687.432	1.733	12.4	-0.6	NO		NO	bb
9	9 190712M2_14	Standard	12.500	5.05	2496.669	17977.869	1.736	12.4	-0.5	NO		NO	bb
10	10 190712M2_15	Standard	12.500	5.05	2558.889	16091.949	1.988	14.2	13.9	NO		NO	bb

Compound name: 13C2-PFUdA
Response Factor: 1.05062
RRF SD: 0.0350714, Relative SD: 3.33817
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	12.500	5.23	22627.100	22850.191	12.378	11.8	-5.7	NO		NO	bb
2	2 190712M2_7	Standard	12.500	5.23	24092.484	22565.707	13.346	12.7	1.6	NO		NO	bb
3	3 190712M2_8	Standard	12.500	5.23	24449.457	24429.031	12.510	11.9	-4.7	NO		NO	bb
4	4 190712M2_9	Standard	12.500	5.23	27236.840	25104.756	13.562	12.9	3.3	NO		NO	bb
5	5 190712M2_10	Standard	12.500	5.23	25159.160	23524.727	13.368	12.7	1.8	NO		NO	bb
6	6 190712M2_11	Standard	12.500	5.23	24154.344	23132.238	13.052	12.4	-0.6	NO		NO	bb
7	7 190712M2_12	Standard	12.500	5.23	23002.064	21827.463	13.173	12.5	0.3	NO		NO	bb
8	8 190712M2_13	Standard	12.500	5.23	21352.746	20687.432	12.902	12.3	-1.8	NO		NO	bb
9	9 190712M2_14	Standard	12.500	5.23	19808.254	17977.869	13.773	13.1	4.9	NO		NO	bb
10	10 190712M2_15	Standard	12.500	5.23	17074.875	16091.949	13.264	12.6	1.0	NO		NO	bb

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Compound name: d5-N-EtFOSAA
Response Factor: 0.167659
RRF SD: 0.00522348, Relative SD: 3.11554
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	12.500	5.21	3754.324	22850.191	2.054	12.2	-2.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	5.21	3927.580	22565.707	2.176	13.0	3.8	NO		NO	bb
3	3 190712M2_8	Standard	12.500	5.21	3851.082	24429.031	1.971	11.8	-6.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	5.21	4298.146	25104.756	2.140	12.8	2.1	NO		NO	bb
5	5 190712M2_10	Standard	12.500	5.21	4017.538	23524.727	2.135	12.7	1.9	NO		NO	bb
6	6 190712M2_11	Standard	12.500	5.21	3963.581	23132.238	2.142	12.8	2.2	NO		NO	bb
7	7 190712M2_12	Standard	12.500	5.21	3704.807	21827.463	2.122	12.7	1.2	NO		NO	bb
8	8 190712M2_13	Standard	12.500	5.21	3486.810	20687.432	2.107	12.6	0.5	NO		NO	bb
9	9 190712M2_14	Standard	12.500	5.21	2885.221	17977.869	2.006	12.0	-4.3	NO		NO	bb
10	10 190712M2_15	Standard	12.500	5.21	2711.365	16091.949	2.106	12.6	0.5	NO		NO	bb

Compound name: 13C2-PFDoA
Response Factor: 1.04071
RRF SD: 0.0499176, Relative SD: 4.7965
Response type: Internal Std (Ref 78), 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 190712M2_6	Standard	12.500	5.52	21827.584	22253.029	12.261	11.8	-5.7	NO		NO	bb
2	2 190712M2_7	Standard	12.500	5.52	22589.061	22203.232	12.717	12.2	-2.2	NO		NO	bb
3	3 190712M2_8	Standard	12.500	5.52	22921.080	22428.795	12.774	12.3	-1.8	NO		NO	bb
4	4 190712M2_9	Standard	12.500	5.52	24988.051	24396.598	12.803	12.3	-1.6	NO		NO	bb
5	5 190712M2_10	Standard	12.500	5.52	23146.453	22359.881	12.940	12.4	-0.5	NO		NO	bb
6	6 190712M2_11	Standard	12.500	5.52	22535.000	22333.814	12.613	12.1	-3.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	5.52	21772.752	21019.059	12.948	12.4	-0.5	NO		NO	bb
8	8 190712M2_13	Standard	12.500	5.52	21188.383	20558.068	12.883	12.4	-1.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	5.52	18767.543	17146.861	13.681	13.1	5.2	NO		NO	bb
10	10 190712M2_15	Standard	12.500	5.52	17775.680	15357.892	14.468	13.9	11.2	NO		NO	bb

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Compound name: d3-N-MeFOSA
Response Factor: 0.0377105
RRF SD: 0.00528961, Relative SD: 14.0269
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	150.000	5.69	9270.478	22850.191	5.071	134.5	-10.3	NO		NO	bb
2	2 190712M2_7	Standard	150.000	5.69	9596.727	22565.707	5.316	141.0	-6.0	NO		NO	bb
3	3 190712M2_8	Standard	150.000	5.69	9964.387	24429.031	5.099	135.2	-9.9	NO		NO	bb
4	4 190712M2_9	Standard	150.000	5.69	10643.908	25104.756	5.300	140.5	-6.3	NO		NO	bb
5	5 190712M2_10	Standard	150.000	5.69	9850.780	23524.727	5.234	138.8	-7.5	NO		NO	bb
6	6 190712M2_11	Standard	150.000	5.69	9862.311	23132.238	5.329	141.3	-5.8	NO		NO	bb
7	7 190712M2_12	Standard	150.000	5.69	9523.072	21827.463	5.454	144.6	-3.6	NO		NO	bb
8	8 190712M2_13	Standard	150.000	5.69	9494.082	20687.432	5.737	152.1	1.4	NO		NO	bb
9	9 190712M2_14	Standard	150.000	5.69	9202.735	17977.869	6.399	169.7	13.1	NO		NO	bb
10	10 190712M2_15	Standard	150.000	5.69	9819.486	16091.949	7.628	202.3	34.8	NO		NO	bb

Compound name: 13C2-PFTeDA
Response Factor: 0.690011
RRF SD: 0.0233735, Relative SD: 3.38741
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	12.500	5.99	15139.587	22850.191	8.282	12.0	-4.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	5.99	15161.746	22565.707	8.399	12.2	-2.6	NO		NO	bb
3	3 190712M2_8	Standard	12.500	5.99	16127.418	24429.031	8.252	12.0	-4.3	NO		NO	bb
4	4 190712M2_9	Standard	12.500	5.99	17316.654	25104.756	8.622	12.5	-0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	5.99	16085.099	23524.727	8.547	12.4	-0.9	NO		NO	bb
6	6 190712M2_11	Standard	12.500	5.99	15841.613	23132.238	8.560	12.4	-0.8	NO		NO	bb
7	7 190712M2_12	Standard	12.500	5.99	14974.800	21827.463	8.576	12.4	-0.6	NO		NO	bb
8	8 190712M2_13	Standard	12.500	5.99	14973.014	20687.432	9.047	13.1	4.9	NO		NO	bb
9	9 190712M2_14	Standard	12.500	6.00	12804.417	17977.869	8.903	12.9	3.2	NO		NO	bb
10	10 190712M2_15	Standard	12.500	6.00	11667.836	16091.949	9.063	13.1	5.1	NO		NO	bb

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Compound name: d5-N-ETFOSA
Response Factor: 0.0533406
RRF SD: 0.00384533, Relative SD: 7.20901
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	150.000	6.11	13789.952	22850.191	7.544	141.4	-5.7	NO		NO	bb
2	2 190712M2_7	Standard	150.000	6.11	14292.511	22565.707	7.917	148.4	-1.0	NO		NO	bb
3	3 190712M2_8	Standard	150.000	6.11	14300.545	24429.031	7.317	137.2	-8.5	NO		NO	bb
4	4 190712M2_9	Standard	150.000	6.11	15698.592	25104.756	7.817	146.5	-2.3	NO		NO	bb
5	5 190712M2_10	Standard	150.000	6.11	14789.742	23524.727	7.859	147.3	-1.8	NO		NO	bb
6	6 190712M2_11	Standard	150.000	6.11	14185.052	23132.238	7.665	143.7	-4.2	NO		NO	bb
7	7 190712M2_12	Standard	150.000	6.11	13893.367	21827.463	7.956	149.2	-0.6	NO		NO	bb
8	8 190712M2_13	Standard	150.000	6.11	13394.135	20687.432	8.093	151.7	1.2	NO		NO	bb
9	9 190712M2_14	Standard	150.000	6.11	12157.304	17977.869	8.453	158.5	5.6	NO		NO	bb
10	10 190712M2_15	Standard	150.000	6.12	12088.109	16091.949	9.390	176.0	17.4	NO		NO	bb

Compound name: 13C2-PFHxDA
Response Factor: 0.899449
RRF SD: 0.0691258, Relative SD: 7.68535
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	5.000	6.35	7736.784	22850.191	4.232	4.7	-5.9	NO		NO	bb
2	2 190712M2_7	Standard	5.000	6.35	8031.846	22565.707	4.449	4.9	-1.1	NO		NO	bb
3	3 190712M2_8	Standard	5.000	6.35	8085.707	24429.031	4.137	4.6	-8.0	NO		NO	bb
4	4 190712M2_9	Standard	5.000	6.35	8837.436	25104.756	4.400	4.9	-2.2	NO		NO	bb
5	5 190712M2_10	Standard	5.000	6.35	8122.378	23524.727	4.316	4.8	-4.0	NO		NO	bb
6	6 190712M2_11	Standard	5.000	6.35	8149.342	23132.238	4.404	4.9	-2.1	NO		NO	bb
7	7 190712M2_12	Standard	5.000	6.35	7833.486	21827.463	4.486	5.0	-0.2	NO		NO	bb
8	8 190712M2_13	Standard	5.000	6.35	7221.900	20687.432	4.364	4.9	-3.0	NO		NO	bb
9	9 190712M2_14	Standard	5.000	6.35	7007.512	17977.869	4.872	5.4	8.3	NO		NO	bb
10	10 190712M2_15	Standard	5.000	6.35	6838.119	16091.949	5.312	5.9	18.1	NO		NO	bb

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Compound name: d7-N-MeFOSE
Response Factor: 0.0348196
RRF SD: 0.00484289, Relative SD: 13.9085
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	150.000	6.28	8501.867	22850.191	4.651	133.6	-11.0	NO		NO	bb
2	2 190712M2_7	Standard	150.000	6.28	8975.147	22565.707	4.972	142.8	-4.8	NO		NO	bb
3	3 190712M2_8	Standard	150.000	6.27	9314.944	24429.031	4.766	136.9	-8.7	NO		NO	bb
4	4 190712M2_9	Standard	150.000	6.28	9663.702	25104.756	4.812	138.2	-7.9	NO		NO	bb
5	5 190712M2_10	Standard	150.000	6.28	9103.208	23524.727	4.837	138.9	-7.4	NO		NO	bb
6	6 190712M2_11	Standard	150.000	6.27	8988.615	23132.238	4.857	139.5	-7.0	NO		NO	bb
7	7 190712M2_12	Standard	150.000	6.27	9051.299	21827.463	5.183	148.9	-0.8	NO		NO	bb
8	8 190712M2_13	Standard	150.000	6.27	8613.932	20687.432	5.205	149.5	-0.3	NO		NO	bb
9	9 190712M2_14	Standard	150.000	6.27	8541.824	17977.869	5.939	170.6	13.7	NO		NO	bb
10	10 190712M2_15	Standard	150.000	6.28	9020.852	16091.949	7.007	201.2	34.2	NO		NO	bb

Compound name: d9-N-EtFOSE
Response Factor: 0.0329002
RRF SD: 0.00467909, Relative SD: 14.2221
Response type: Internal Std (Ref 79), 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 190712M2_6	Standard	150.000	6.43	8049.390	22850.191	4.403	133.8	-10.8	NO		NO	bb
2	2 190712M2_7	Standard	150.000	6.43	8351.787	22565.707	4.626	140.6	-6.3	NO		NO	bb
3	3 190712M2_8	Standard	150.000	6.43	8505.161	24429.031	4.352	132.3	-11.8	NO		NO	bb
4	4 190712M2_9	Standard	150.000	6.43	9396.786	25104.756	4.679	142.2	-5.2	NO		NO	bb
5	5 190712M2_10	Standard	150.000	6.43	8485.407	23524.727	4.509	137.0	-8.6	NO		NO	bb
6	6 190712M2_11	Standard	150.000	6.43	8481.641	23132.238	4.583	139.3	-7.1	NO		NO	bb
7	7 190712M2_12	Standard	150.000	6.43	8363.979	21827.463	4.790	145.6	-2.9	NO		NO	bb
8	8 190712M2_13	Standard	150.000	6.43	8505.054	20687.432	5.139	156.2	4.1	NO		NO	bb
9	9 190712M2_14	Standard	150.000	6.43	8176.127	17977.869	5.685	172.8	15.2	NO		NO	bb
10	10 190712M2_15	Standard	150.000	6.43	8476.127	16091.949	6.584	200.1	33.4	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 72), 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 190712M2_6	Standard	12.500	1.14	5538.102	5538.102	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	1.15	5557.770	5557.770	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	1.14	5772.425	5772.425	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	1.14	6414.388	6414.388	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	1.15	5944.043	5944.043	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	1.15	5801.056	5801.056	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	1.14	5810.840	5810.840	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	1.15	5814.471	5814.471	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	1.14	5704.754	5704.754	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	1.15	5615.494	5615.494	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 73), 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 190712M2_6	Standard	12.500	2.92	20187.811	20187.811	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	2.92	20042.258	20042.258	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	2.92	20693.125	20693.125	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	2.92	21459.996	21459.996	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	2.92	20133.777	20133.777	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	2.92	20274.980	20274.980	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	2.92	19365.455	19365.455	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	2.92	19302.855	19302.855	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	2.92	17168.412	17168.412	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	2.92	15540.355	15540.355	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

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Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 74), 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 190712M2_6	Standard	12.500	3.70	1140.059	1140.059	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	3.70	1183.238	1183.238	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	3.70	1201.364	1201.364	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	3.70	1278.431	1278.431	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	3.70	1226.969	1226.969	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	3.70	1157.986	1157.986	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	3.70	1072.143	1072.143	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	3.70	1192.504	1192.504	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	3.70	957.621	957.621	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	3.70	909.726	909.726	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 75), 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 190712M2_6	Standard	12.500	4.07	23340.748	23340.748	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.07	22776.100	22776.100	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.07	24039.371	24039.371	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.07	25395.973	25395.973	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.07	23494.541	23494.541	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.07	23253.861	23253.861	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.07	22242.154	22242.154	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.07	20253.340	20253.340	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.07	17267.096	17267.096	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.07	14728.360	14728.360	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 76), 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 190712M2_6	Standard	12.500	4.52	18529.576	18529.576	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.52	18378.943	18378.943	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.52	18681.502	18681.502	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.52	19367.885	19367.885	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.52	19030.867	19030.867	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.52	18064.176	18064.176	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.52	17213.973	17213.973	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.52	16225.691	16225.691	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.52	15475.788	15475.788	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.52	13320.776	13320.776	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 77), 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 190712M2_6	Standard	12.500	4.60	3020.678	3020.678	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.61	3112.057	3112.057	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.61	2989.618	2989.618	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.61	3200.260	3200.260	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.61	2997.381	2997.381	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.61	2907.157	2907.157	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.61	3008.507	3008.507	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.61	2589.390	2589.390	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.61	2430.183	2430.183	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.61	2166.090	2166.090	12.500	12.5	0.0	NO		NO	bb

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
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Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 78), 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 190712M2_6	Standard	12.500	4.89	22253.029	22253.029	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	4.90	22203.232	22203.232	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	4.90	22428.795	22428.795	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	4.89	24396.598	24396.598	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	4.90	22359.881	22359.881	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	4.89	22333.814	22333.814	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	4.90	21019.059	21019.059	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	4.90	20558.068	20558.068	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	4.90	17146.861	17146.861	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	4.90	15357.892	15357.892	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 79), 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 190712M2_6	Standard	12.500	5.23	22850.191	22850.191	12.500	12.5	0.0	NO		NO	bb
2	2 190712M2_7	Standard	12.500	5.23	22565.707	22565.707	12.500	12.5	0.0	NO		NO	bb
3	3 190712M2_8	Standard	12.500	5.23	24429.031	24429.031	12.500	12.5	0.0	NO		NO	bb
4	4 190712M2_9	Standard	12.500	5.23	25104.756	25104.756	12.500	12.5	0.0	NO		NO	bb
5	5 190712M2_10	Standard	12.500	5.23	23524.727	23524.727	12.500	12.5	0.0	NO		NO	bb
6	6 190712M2_11	Standard	12.500	5.23	23132.238	23132.238	12.500	12.5	0.0	NO		NO	bb
7	7 190712M2_12	Standard	12.500	5.23	21827.463	21827.463	12.500	12.5	0.0	NO		NO	bb
8	8 190712M2_13	Standard	12.500	5.23	20687.432	20687.432	12.500	12.5	0.0	NO		NO	bb
9	9 190712M2_14	Standard	12.500	5.23	17977.869	17977.869	12.500	12.5	0.0	NO		NO	bb
10	10 190712M2_15	Standard	12.500	5.23	16091.949	16091.949	12.500	12.5	0.0	NO		NO	bb

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Dataset: Untitled

Last Altered: Sunday, July 14, 2019 13:51:41 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:54:09 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	190712M2_5	IPA	12-Jul-19	18:13:51
2	2	190712M2_6	ST190712M2-1 PFC CS-2 19G1101	12-Jul-19	18:24:24
3	3	190712M2_7	ST190712M2-2 PFC CS-1 19G1102	12-Jul-19	18:35:02
4	4	190712M2_8	ST190712M2-3 PFC CS0 19G1103	12-Jul-19	18:45:35
5	5	190712M2_9	ST190712M2-4 PFC CS1 19G1104	12-Jul-19	18:56:14
6	6	190712M2_10	ST190712M2-5 PFC CS2 19G1105	12-Jul-19	19:06:47
7	7	190712M2_11	ST190712M2-6 PFC CS3 19G1106	12-Jul-19	19:17:24
8	8	190712M2_12	ST190712M2-7 PFC CS4 19G1107	12-Jul-19	19:27:57
9	9	190712M2_13	ST190712M2-8 PFC CS5 19G1108	12-Jul-19	19:38:36
10	10	190712M2_14	ST190712M2-9 PFC CS6 19G1109	12-Jul-19	19:49:09
11	11	190712M2_15	ST190712M2-10 PFC CS7 19G1110	12-Jul-19	19:59:47
12	12	190712M2_16	IB	12-Jul-19	20:10:19
13	13	190712M2_17	ST190712M2-1 PFC ICV 19G1111	12-Jul-19	20:20:58
14	14	190712M2_18	IPA	12-Jul-19	20:31:30

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:50:49 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Name: 190712M2_6, Date: 12-Jul-2019, Time: 18:24:24, ID: ST190712M2-1 PFC CS-2 19G1101, Description: PFC CS-2 19G1101

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9997	NO	
2	2	PFPrS	49	0.9998	NO	
3	3	3:3 FTCA	48	0.9997	NO	
4	4	PFPeA	48	0.9998	NO	
5	5	PFBS	49	0.9997	NO	
6	6	4:2 FTS	51	0.9990	NO	
7	7	PFHxA	52	0.9994	NO	
8	8	PFPeS	49	0.9931	NO	
9	9	HFPO-DA	50	0.9986	NO	
10	10	5:3 FTCA	53	0.9999	NO	
11	11	PFHpA	53	0.9999	NO	
12	12	ADONA	53	0.9986	NO	
13	13	L-PFHxS	54	0.9998	NO	
14	15	6:2 FTS	55	0.9998	NO	
15	16	L-PFOA	58	0.9999	NO	
16	18	PFecHS	58	1.0000	NO	
17	19	PFHpS	59	0.9998	NO	
18	20	7:3 FTCA	56	0.9993	NO	
19	21	PFNA	56	0.9999	NO	
20	22	PFOSA	57	0.9994	NO	
21	23	L-PFOS	59	0.9991	NO	
22	25	9Cl-PF30NS	59	0.9998	NO	
23	26	PFDA	60	0.9985	NO	
24	27	8:2 FTS	61	0.9991	NO	
25	28	PFNS	59	0.9991	NO	
26	29	L-MeFOSAA	62	0.9991	NO	

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Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:51:01 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Name: 190712M2_6, Date: 12-Jul-2019, Time: 18:24:24, ID: ST190712M2-1 PFC CS-2 19G1101, Description: PFC CS-2 19G1101

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	64	0.9969	NO	
2	33	PFUdA	63	0.9992	NO	
3	34	PFDS	61	0.9951	NO	
4	35	11Cl-PF30UdS	65	0.9989	NO	
5	36	10:2 FTS	61	0.9991	NO	
6	37	PFDoA	65	1.0000	NO	
7	38	N-MeFOSA	66	0.9998	NO	
8	39	PFTrDA	65	0.9999	NO	
9	40	PFDoS	67	0.9996	NO	
10	41	PFTeDA	67	0.9991	NO	
11	42	N-EtFOSA	68	0.9994	NO	
12	43	PFHxDA	69	0.9999	NO	
13	44	PFODA	69	0.9958	NO	
14	45	N-MeFOSE	70	0.9994	NO	
15	46	N-EtFOSE	71	0.9999	NO	
16	47	13C3-PFBA	72		NO	2.045
17	48	13C3-PFPeA	73		NO	9.549
18	49	13C3-PFBS	74		NO	5.338
19	50	13C3-HFPO-DA	73		NO	10.541
20	51	13C2-4:2 FTS	74		NO	11.172
21	52	13C2-PFHxA	73		NO	3.674
22	53	13C4-PFHpA	73		NO	5.237
23	54	13C3-PFHxS	74		NO	7.396
24	55	13C2-6:2 FTS	77		NO	5.849
25	56	13C5-PFNA	76		NO	2.767
26	57	13C8-PFOSA	79		NO	6.282
27	58	13C2-PFOA	75		NO	2.701
28	59	13C8-PFOS	77		NO	4.263
29	60	13C2-PFDA	78		NO	3.586
30	61	13C2-8:2 FTS	77		NO	7.240
31	62	d3-N-MeFOSAA	79		NO	5.352
32	63	13C2-PFUdA	79		NO	3.338

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:51:01 Pacific Daylight Time

Name: 190712M2_6, Date: 12-Jul-2019, Time: 18:24:24, ID: ST190712M2-1 PFC CS-2 19G1101, Description: PFC CS-2 19G1101

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	d5-N-EtFOSAA	79		NO	3.116
34	65	13C2-PFDoA	78		NO	4.796
35	66	d3-N-MeFOSA	79		NO	14.027
36	67	13C2-PFTeDA	79		NO	3.387
37	68	d5-N-ETFOSA	79		NO	7.209
38	69	13C2-PFHxDA	79		NO	7.685
39	70	d7-N-MeFOSE	79		NO	13.909
40	71	d9-N-EtFOSE	79		NO	14.222
41	72	13C4-PFBA	72		NO	0.000
42	73	13C5-PFHxA	73		NO	0.000
43	74	18O2-PFHxS	74		NO	0.000
44	75	13C8-PFOA	75		NO	0.000
45	76	13C9-PFNA	76		NO	0.000
46	77	13C4-PFOS	77		NO	0.000
47	78	13C6-PFDA	78		NO	0.000
48	79	13C7-PFUdA	79		NO	0.000

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:34:47 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:39:17 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:32:00

Name: 190712M2_11, Date: 12-Jul-2019, Time: 19:17:24, ID: ST190712M2-6 PFC CS3 19G1106, Description: PFC CS3 19G1106

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.15	1.15			
2	PFPrS	1.51	1.51	2.203	2.203	NO
3	3:3 FTCA	1.99	1.97	2.262	2.262	NO
4	PFPeA	2.12	2.13			
5	PFBS	2.41	2.41	2.651	2.651	NO
6	4:2 FTS	2.84	2.84	1.640	1.640	NO
7	PFHxA	2.92	2.92	16.017	16.017	NO
8	PFPeS	3.13	3.13	1.629	1.629	NO
9	HFPO-DA	3.13	3.14	2.019	2.019	NO
10	5:3 FTCA	3.47	3.47	1.525	1.525	NO
11	PFHpA	3.54	3.54	13.035	13.035	NO
12	ADONA	3.66	3.66	3.566	3.566	NO
13	L-PFHxS	3.70	3.70	2.006	2.006	NO
14	6:2 FTS	4.02	4.01	2.313	2.313	NO
15	L-PFOA	4.07	4.07	3.445	3.445	NO
16	PFecHS	4.09	4.09	0.837	0.837	NO
17	PFHpS	4.19	4.19	2.130	2.130	NO
18	7:3 FTCA	4.51	4.50	1.640	1.640	NO
19	PFNA	4.52	4.52	4.796	4.796	NO
20	PFOSA	4.58	4.58	23.999	23.999	NO
21	L-PFOS	4.60	4.61	2.158	2.158	NO
22	9Cl-PF30NS	4.82	4.82	15.768	15.768	NO
23	PFDA	4.90	4.90	6.144	6.144	NO
24	8:2 FTS	4.87	4.87	1.086	1.086	NO
25	PFNS	4.96	4.96	1.845	1.845	NO
26	L-MeFOSAA	5.05	5.05	2.467	2.467	NO

Vista Analytical Laboratory

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:34:47 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:39:29 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:32:00

Name: 190712M2_11, Date: 12-Jul-2019, Time: 19:17:24, ID: ST190712M2-6 PFC CS3 19G1106, Description: PFC CS3 19G1106

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.21	5.22	1.556	1.556	NO
2	PFUdA	5.23	5.23	10.922	10.922	NO
3	PFDS	5.28	5.28	1.789	1.789	NO
4	11Cl-PF30UdS	5.45	5.45	4.429	4.429	NO
5	10:2 FTS	5.50	5.50	1.535	1.535	NO
6	PFDoA	5.52	5.52	7.896	7.896	NO
7	N-MeFOSA	5.66	5.66	1.448	1.448	NO
8	PFTrDA	5.77	5.77	26.533	26.533	NO
9	PFDoS	5.80	5.80	1.894	1.894	NO
10	PFTeDA	5.99	5.99	13.147	13.147	NO
11	N-EtFOSA	6.09	6.09	1.573	1.573	NO
12	PFHxDA	6.35	6.35	41.713	41.713	NO
13	PFODA	6.60	6.60			
14	N-MeFOSE	6.28	6.28			
15	N-EtFOSE	6.44	6.44			

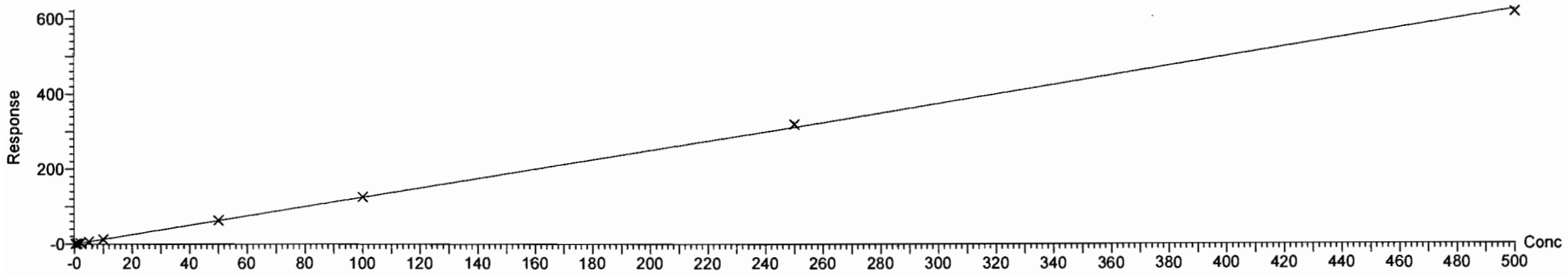
Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

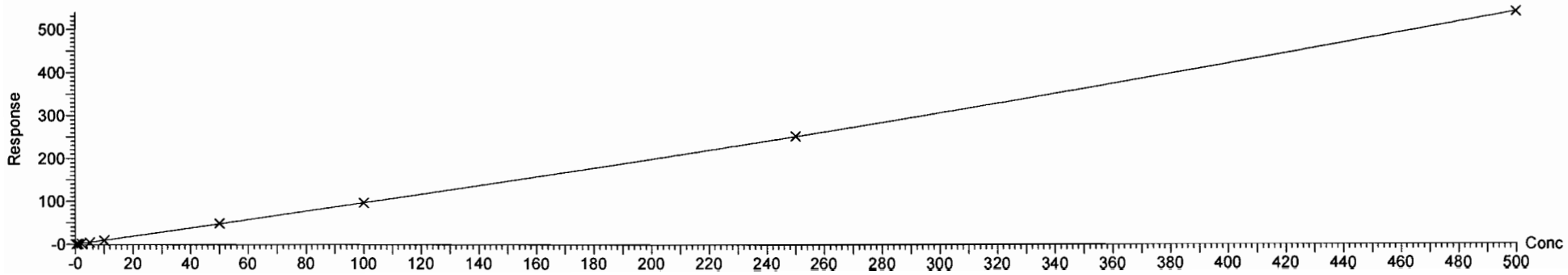
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Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Compound name: PFBA
Correlation coefficient: r = 0.999852, r^2 = 0.999704
Calibration curve: 1.24734 * x + -0.0353972
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



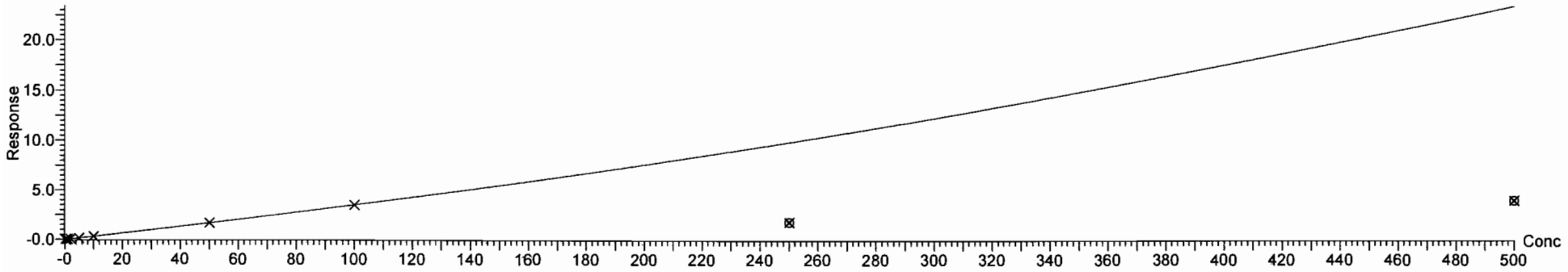
Compound name: PFPrS
Coefficient of Determination: R^2 = 0.999806
Calibration curve: 0.000283057 * x^2 + 0.936439 * x + -0.135279
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



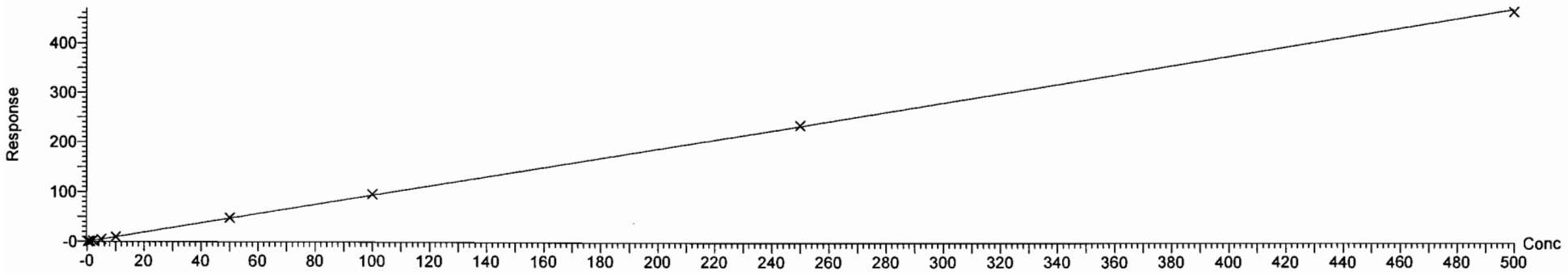
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999737
Calibration curve: 2.87032e-005 * x^2 + 0.0324429 * x + -0.00531914
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



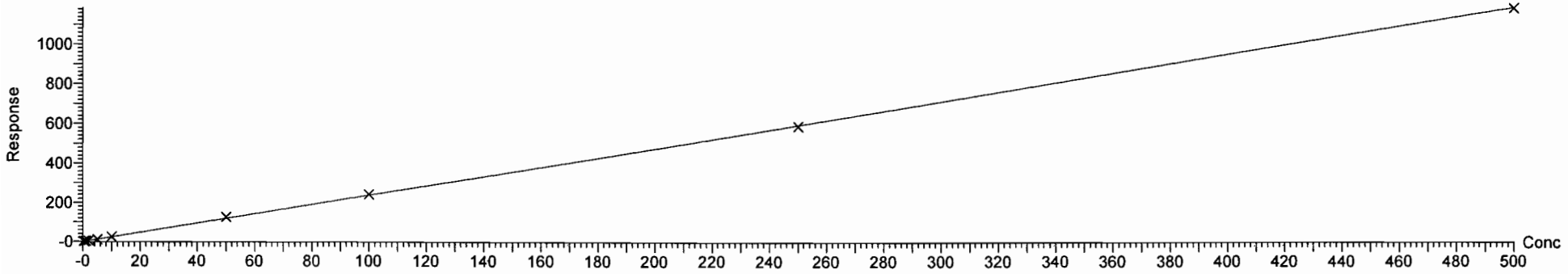
Compound name: PFPeA
Correlation coefficient: r = 0.999910, r^2 = 0.999820
Calibration curve: 0.937411 * x + -0.00202089
Response type: Internal Std (Ref 48), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



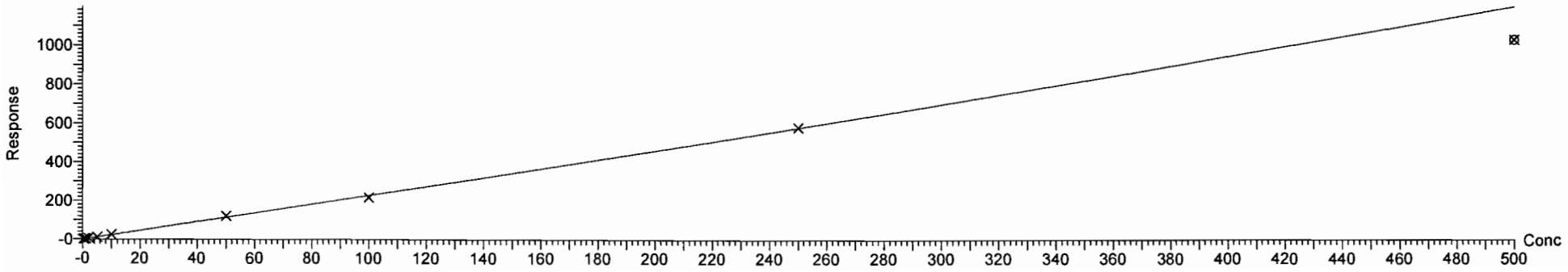
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFBS
Correlation coefficient: r = 0.999843, r^2 = 0.999687
Calibration curve: 2.37276 * x + -0.156245
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



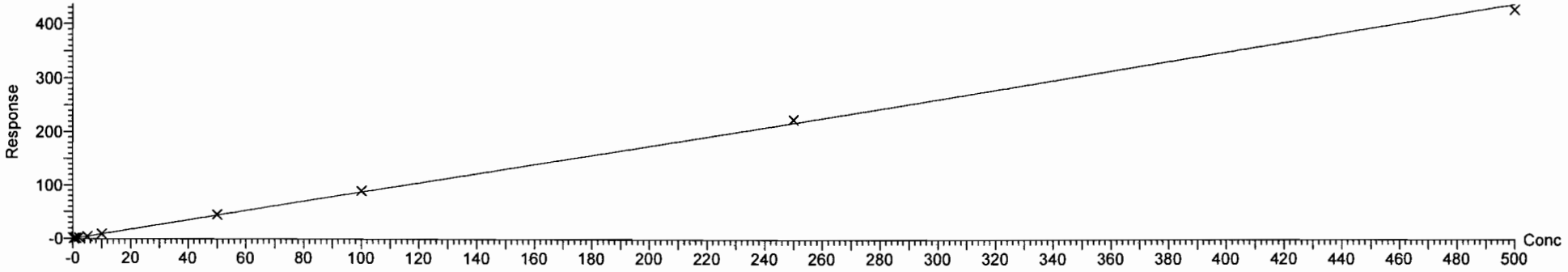
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.998954
Calibration curve: 0.000308893 * x^2 + 2.23604 * x + -0.0376249
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



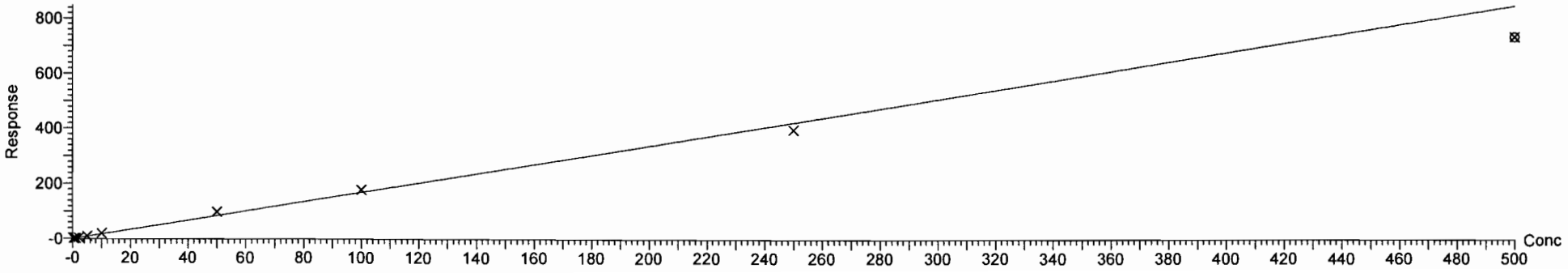
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFHxA
Correlation coefficient: r = 0.999691, r^2 = 0.999382
Calibration curve: 0.873244 * x + 0.0275135
Response type: Internal Std (Ref 52), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



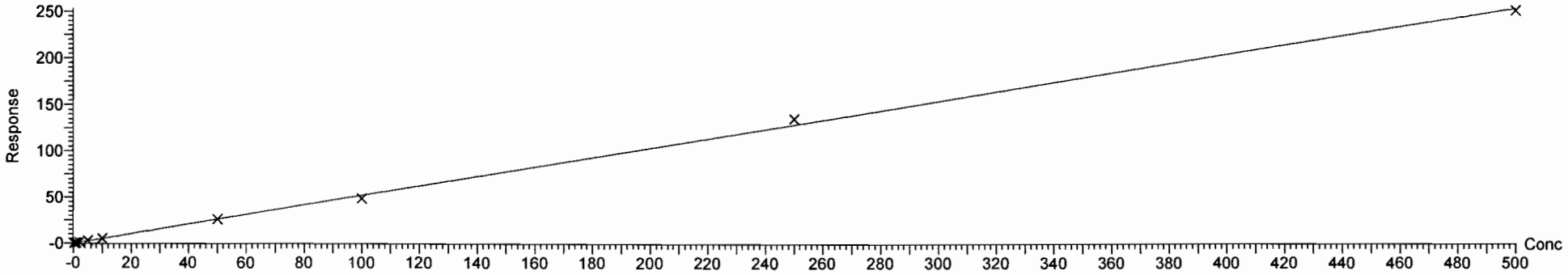
Compound name: PFPeS
Correlation coefficient: r = 0.996561, r^2 = 0.993135
Calibration curve: 1.69347 * x + 0.0925013
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



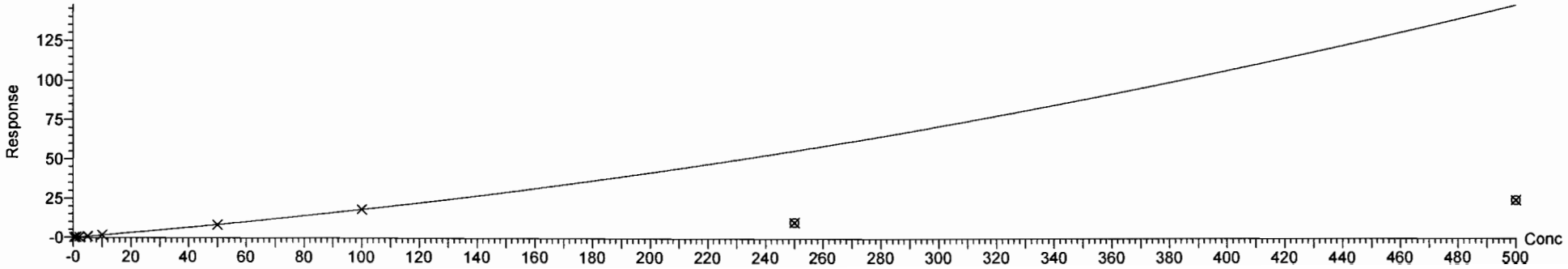
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998577
Calibration curve: -3.60857e-005 * x^2 + 0.525117 * x + -0.051754
Response type: Internal Std (Ref 50), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



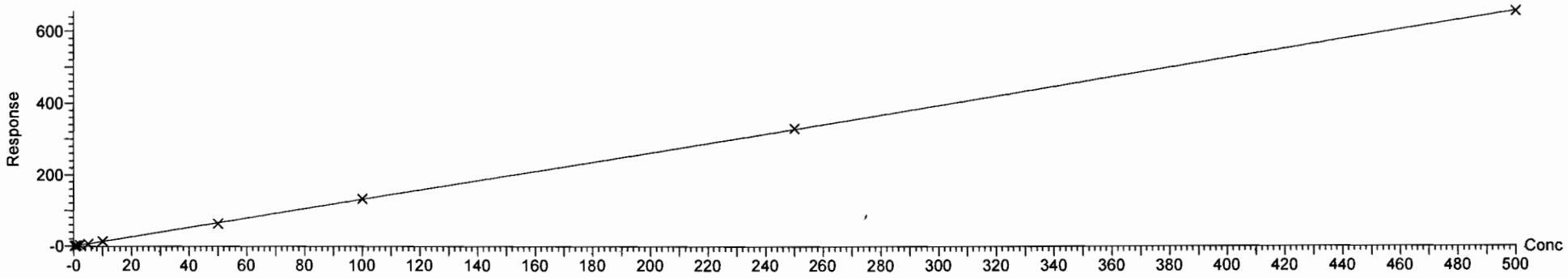
Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999853
Calibration curve: 0.000284581 * x^2 + 0.152498 * x + -0.00490294
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



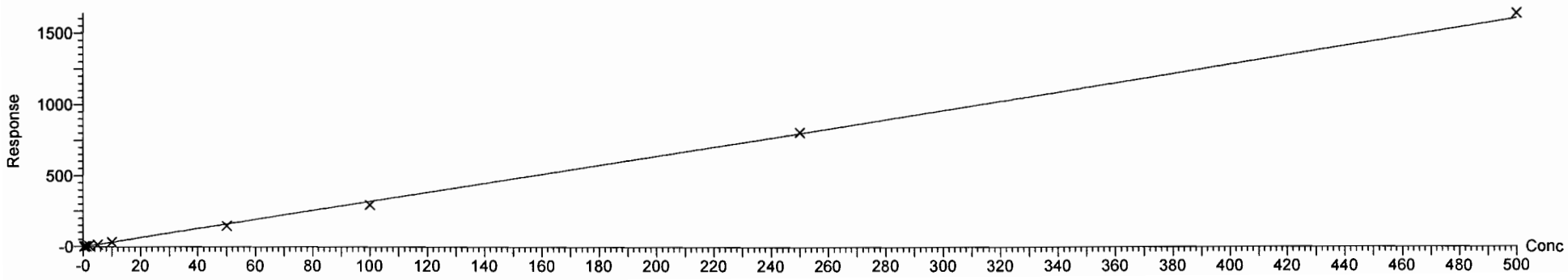
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFHpA
Correlation coefficient: r = 0.999931, r^2 = 0.999863
Calibration curve: 1.3101 * x + -0.0413598
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



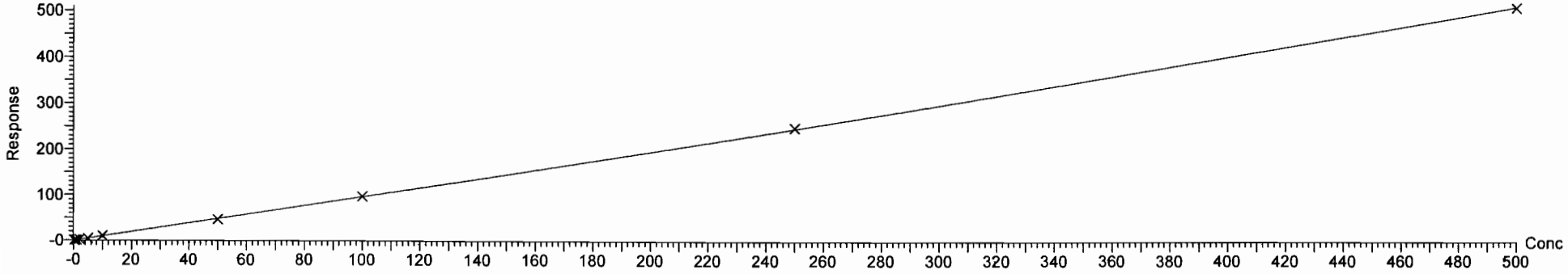
Compound name: ADONA
Correlation coefficient: r = 0.999288, r^2 = 0.998576
Calibration curve: 3.20131 * x + -0.268884
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



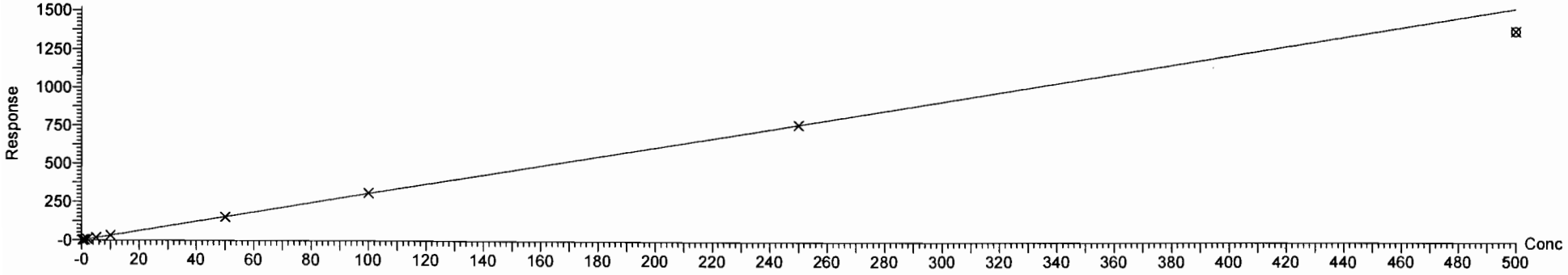
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999823
Calibration curve: 0.000138177 * x^2 + 0.948867 * x + -0.0687586
Response type: Internal Std (Ref 54), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



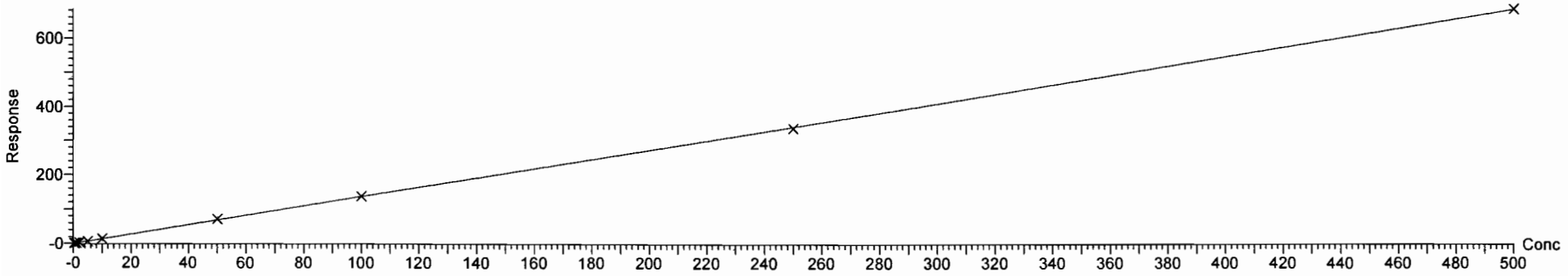
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999832
Calibration curve: -4.8036e-005 * x^2 + 3.06357 * x + -0.156613
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



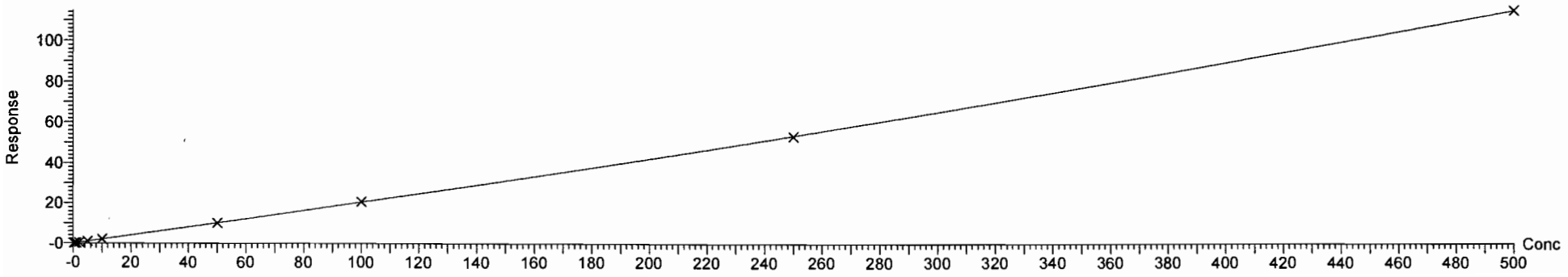
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: L-PFOA
Correlation coefficient: r = 0.999945, r^2 = 0.999890
Calibration curve: 1.36486 * x + 0.0739172
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



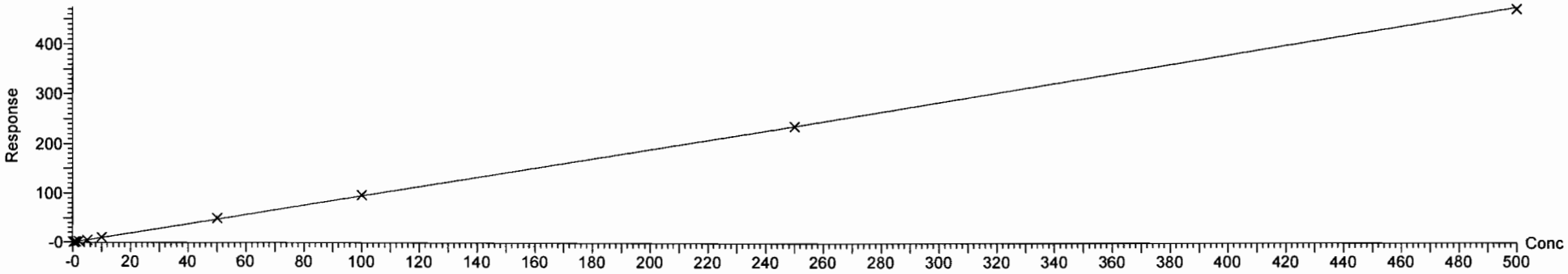
Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999965
Calibration curve: 6.23843e-005 * x^2 + 0.198261 * x + -0.0178896
Response type: Internal Std (Ref 58), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



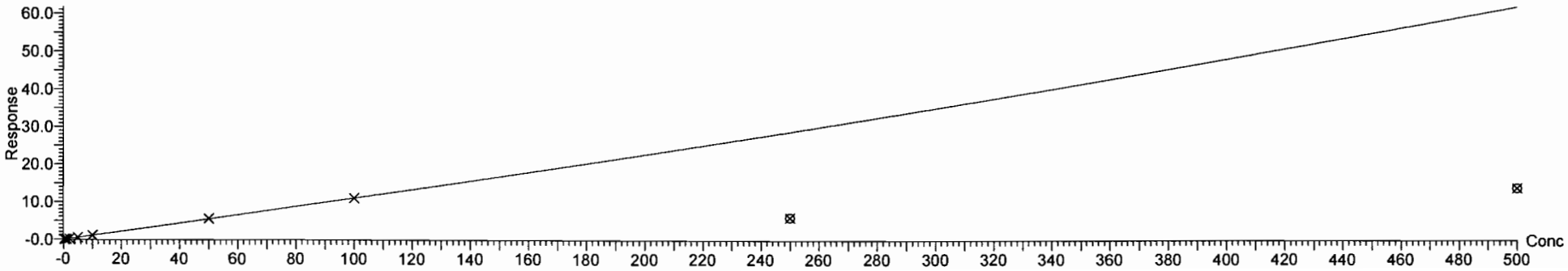
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFHpS
Correlation coefficient: r = 0.999877, r^2 = 0.999755
Calibration curve: 0.947743 * x + -0.026999
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



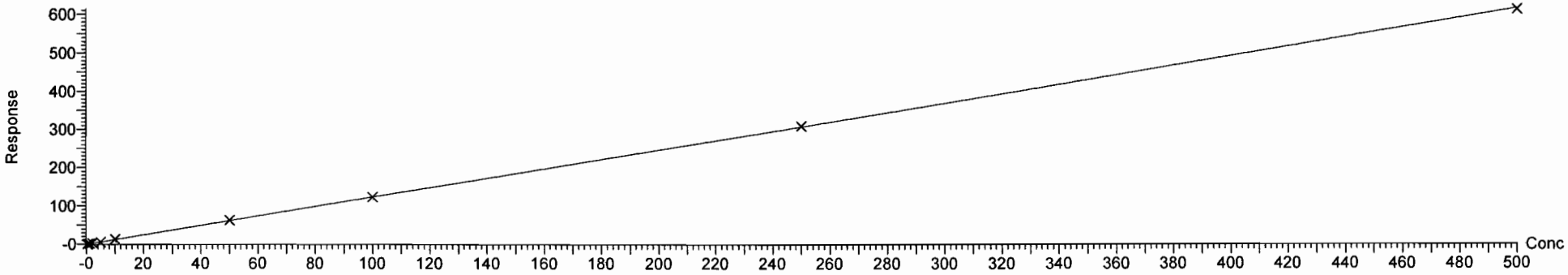
Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999265
Calibration curve: 3.2948e-005 * x^2 + 0.106989 * x + -0.0203978
Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



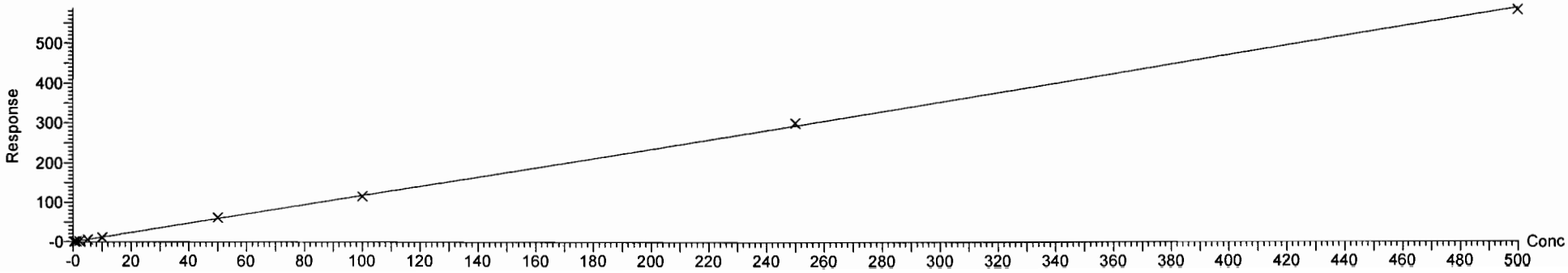
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFNA
Correlation coefficient: r = 0.999957, r^2 = 0.999913
Calibration curve: 1.22879 * x + -0.0175663
Response type: Internal Std (Ref 56), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



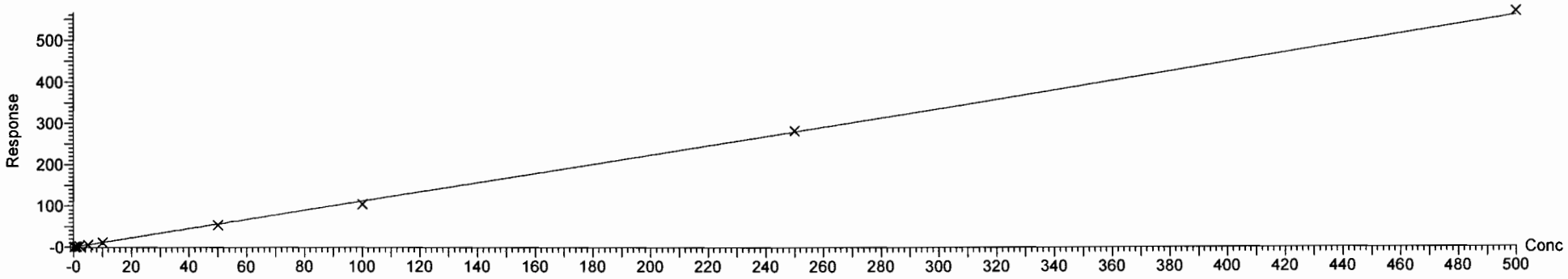
Compound name: PFOSA
Correlation coefficient: r = 0.999717, r^2 = 0.999434
Calibration curve: 1.17513 * x + -0.106628
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



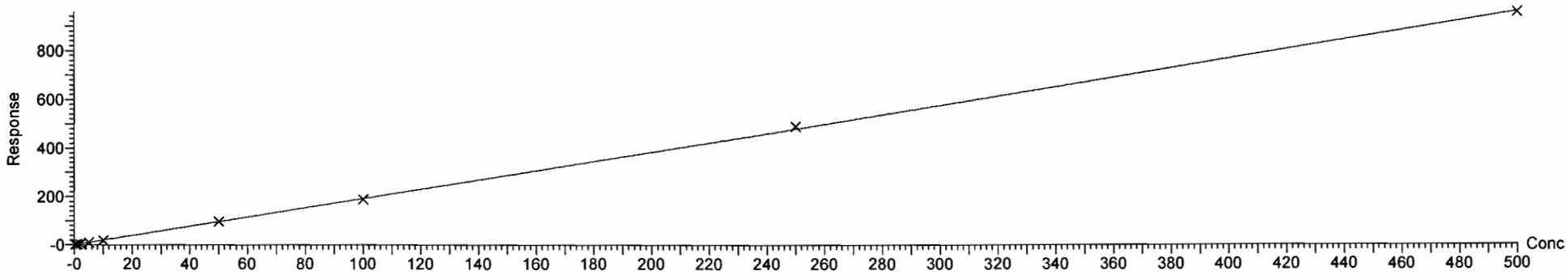
Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: L-PFOS
Correlation coefficient: r = 0.999549, r^2 = 0.999099
Calibration curve: 1.1152 * x + -0.160592
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



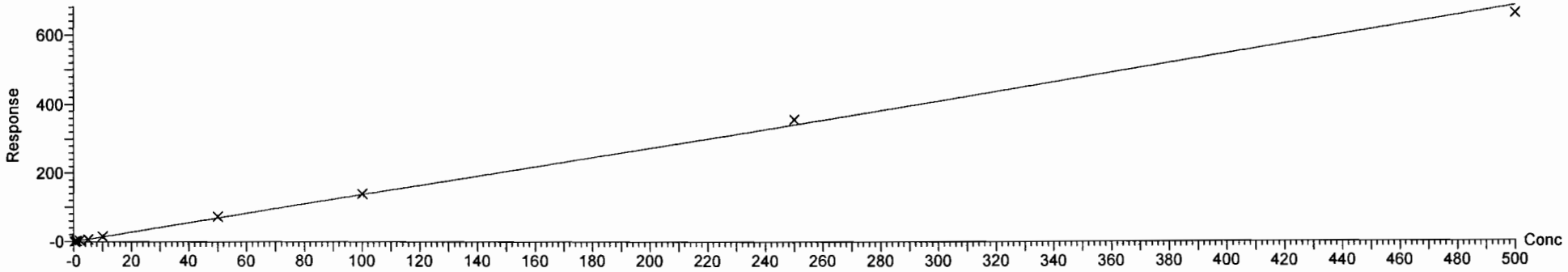
Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999757
Calibration curve: -1.64188e-005 * x^2 + 1.92142 * x + -0.163446
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



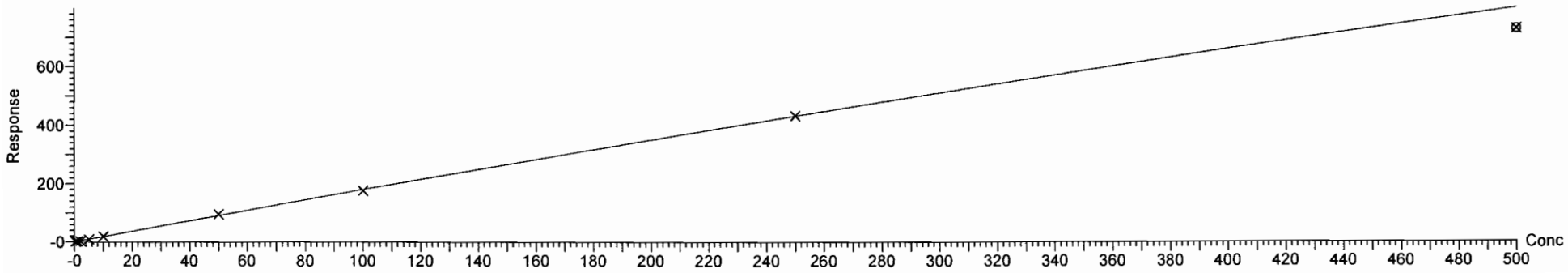
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFDA
Correlation coefficient: r = 0.999262, r^2 = 0.998524
Calibration curve: 1.36294 * x + 0.0573661
Response type: Internal Std (Ref 60), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



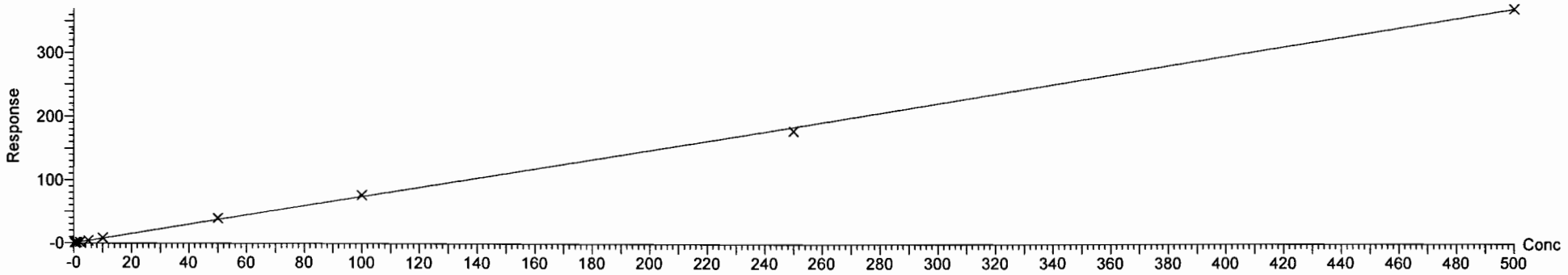
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.999124
Calibration curve: -0.000508701 * x^2 + 1.8517 * x + -0.11439
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



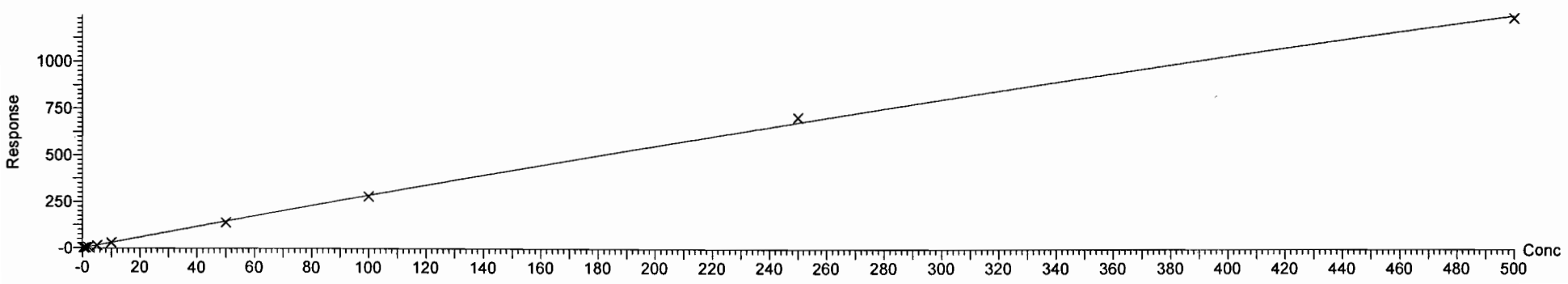
Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:50 Pacific Daylight Time

Compound name: PFNS
Correlation coefficient: r = 0.999570, r^2 = 0.999140
Calibration curve: 0.737712 * x + 0.034269
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999147
Calibration curve: -0.000920396 * x^2 + 2.94574 * x + -0.277912
Response type: Internal Std (Ref 62), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



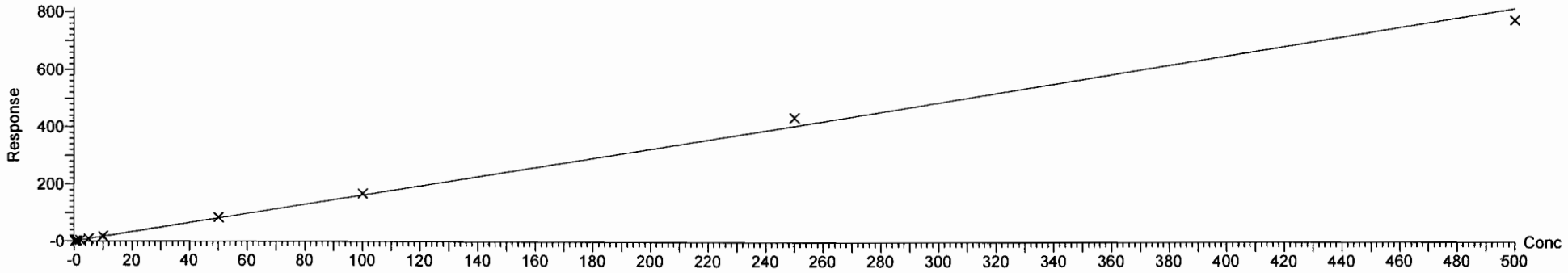
Vista Analytical Laboratory Q1

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

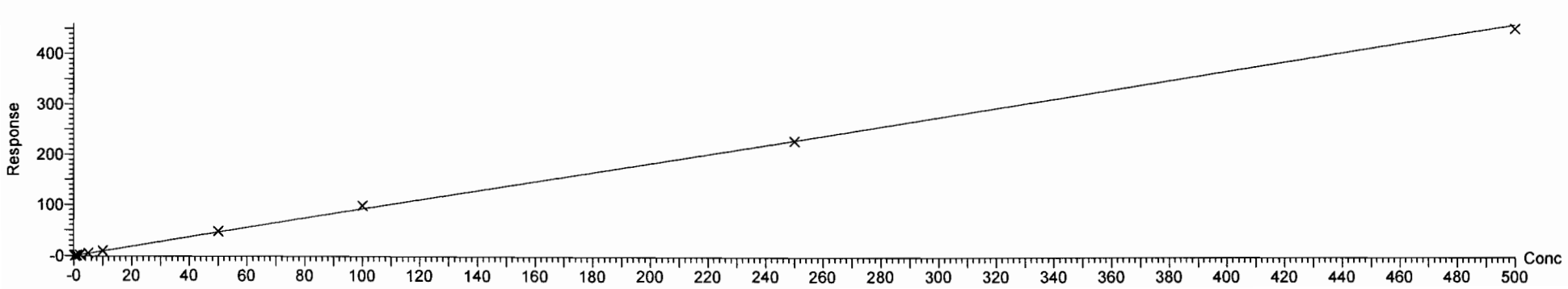
Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:48:08

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.998470, r^2 = 0.996943
Calibration curve: 1.62608 * x + 0.0226238
Response type: Internal Std (Ref 64), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



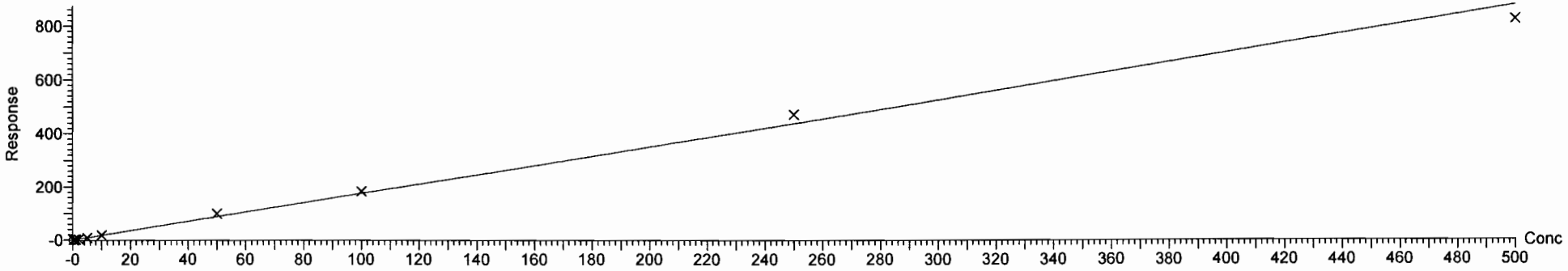
Compound name: PFUdA
Correlation coefficient: r = 0.999588, r^2 = 0.999177
Calibration curve: 0.918609 * x + 0.0387869
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



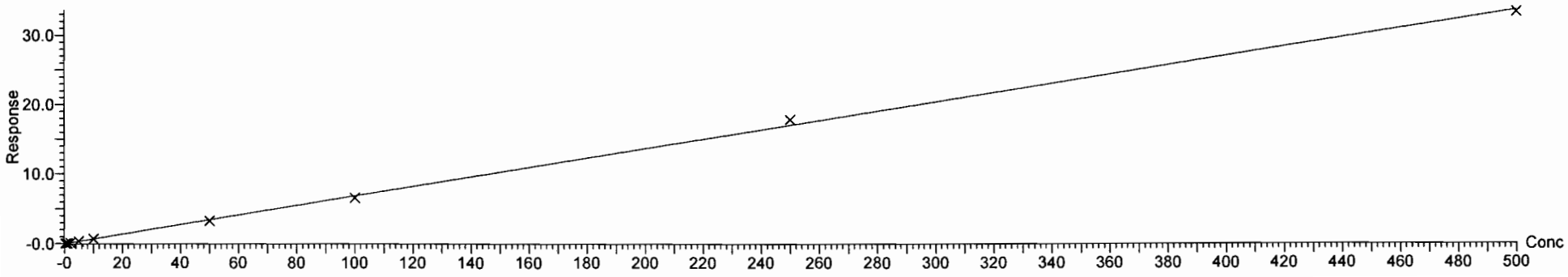
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: PFDS
Correlation coefficient: r = 0.997550, r^2 = 0.995106
Calibration curve: 1.74852 * x + 0.127653
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



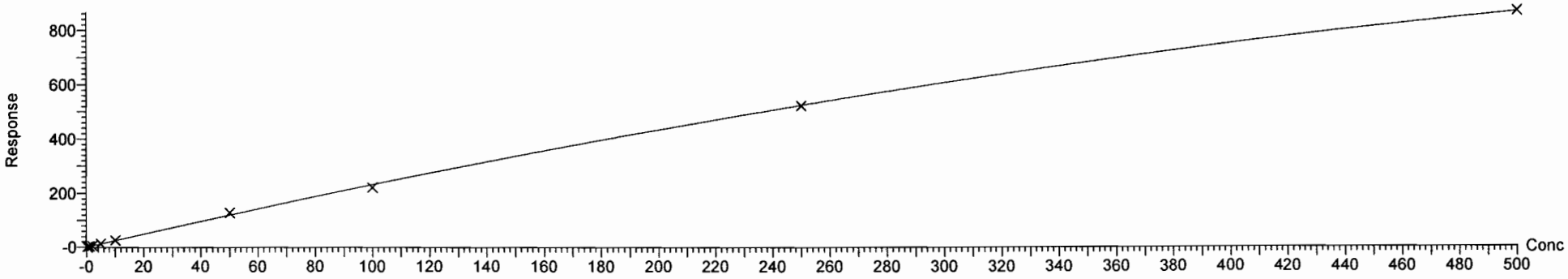
Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.998877
Calibration curve: -3.59269e-006 * x^2 + 0.0688991 * x + -0.00478901
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



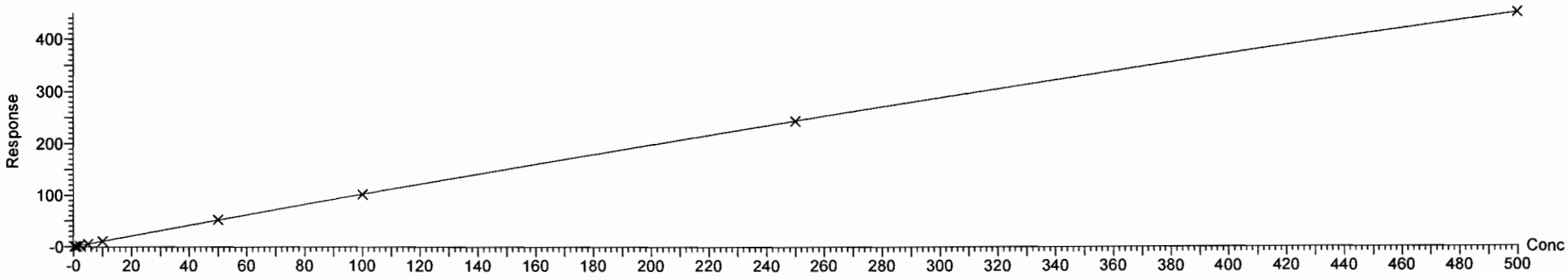
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999126
Calibration curve: -0.00146773 * x^2 + 2.46 * x + 0.0547691
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



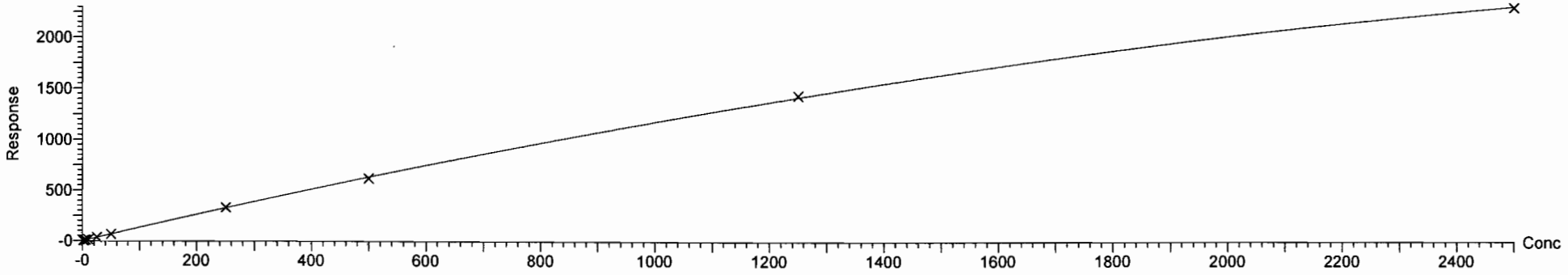
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999981
Calibration curve: -0.000303859 * x^2 + 1.04937 * x + -0.00738853
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



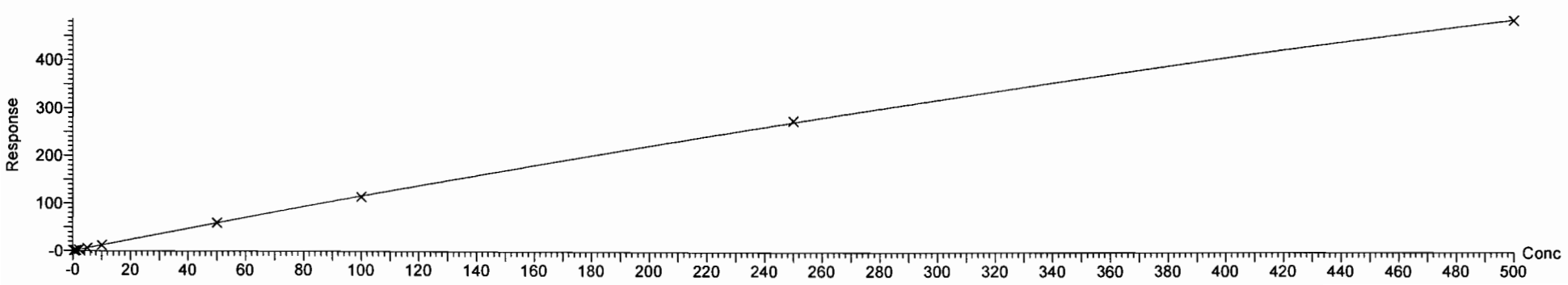
Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999823
Calibration curve: -0.000171568 * x^2 + 1.34961 * x + -0.35958
Response type: Internal Std (Ref 66), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999906
Calibration curve: -0.000467463 * x^2 + 1.20461 * x + -0.0179675
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

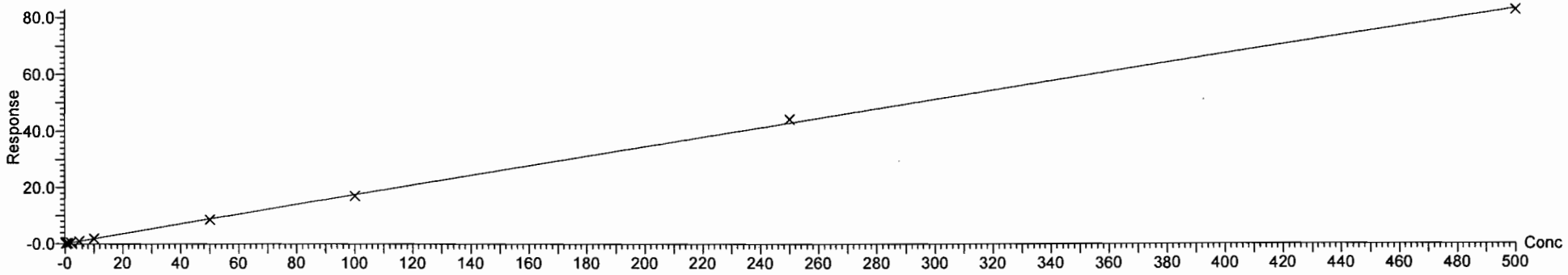


Vista Analytical Laboratory Q1

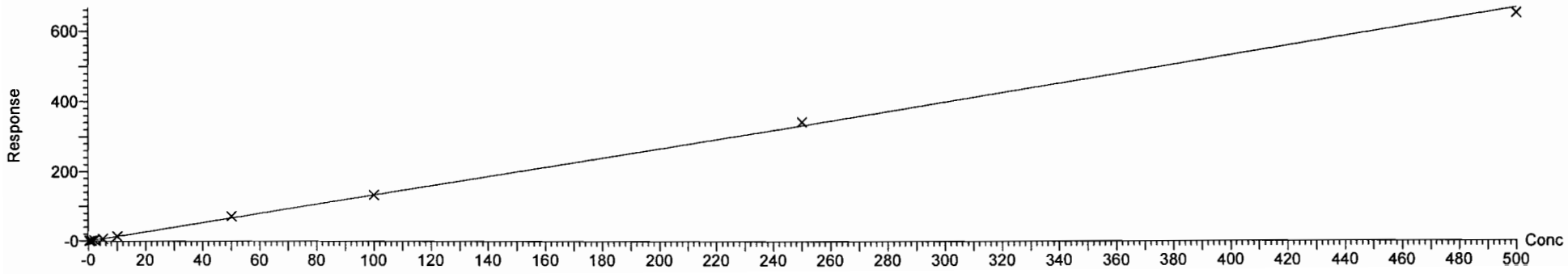
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999567
Calibration curve: -2.24391e-005 * x^2 + 0.176956 * x + -0.0107261
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



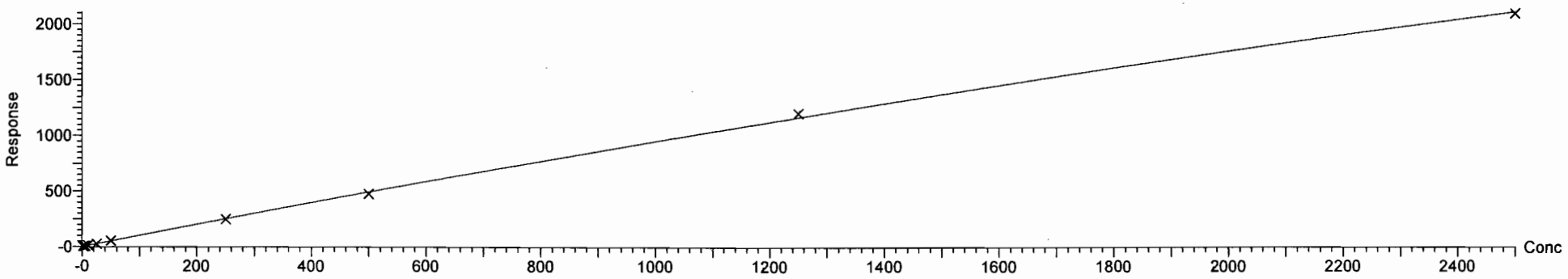
Compound name: PFTeDA
Correlation coefficient: r = 0.999546, r^2 = 0.999093
Calibration curve: 1.33064 * x + 0.0105238
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



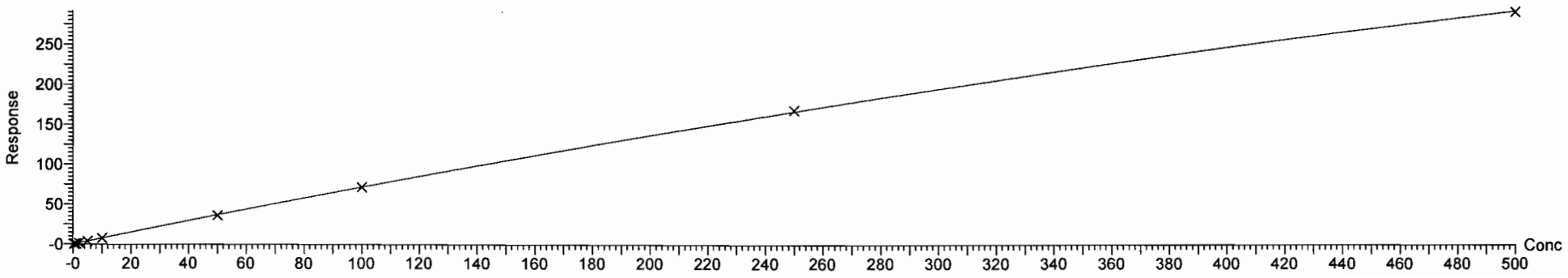
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999426
Calibration curve: -7.21463e-005 * x^2 + 1.02352 * x + -0.257314
Response type: Internal Std (Ref 68), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



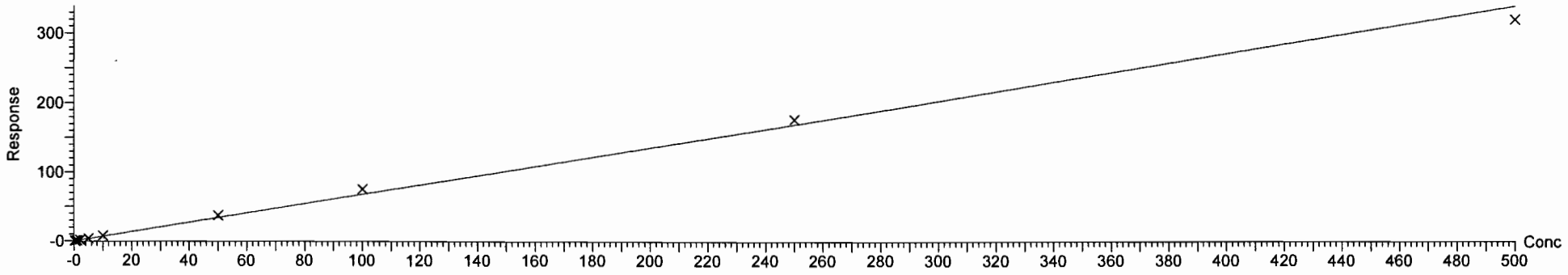
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999903
Calibration curve: -0.000336432 * x^2 + 0.750379 * x + 0.0191383
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



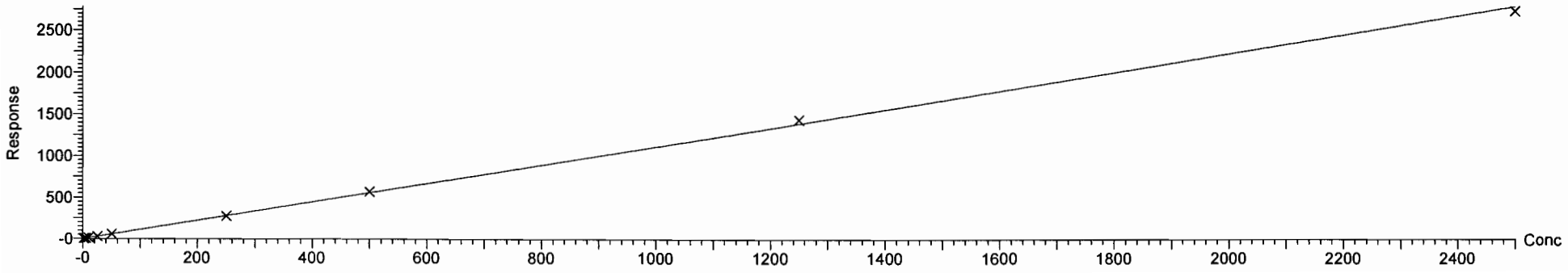
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Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: PFODA
Correlation coefficient: r = 0.997921, r^2 = 0.995847
Calibration curve: 0.67714 * x + 0.0513513
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



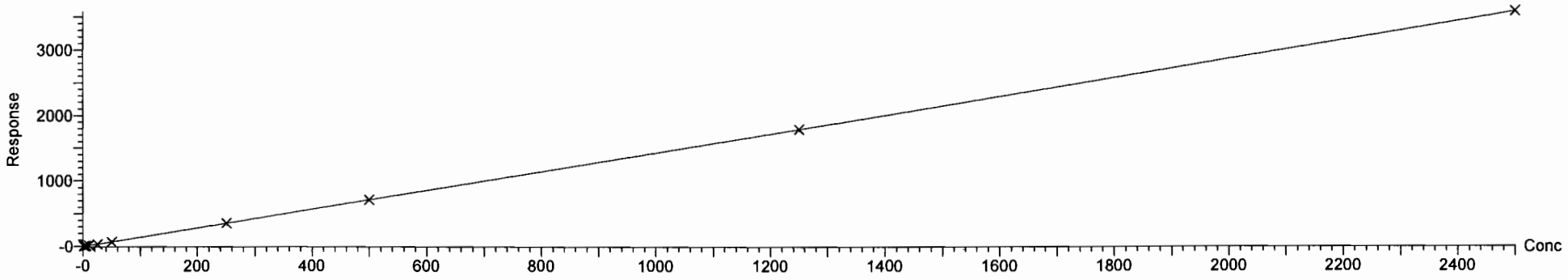
Compound name: N-MeFOSE
Correlation coefficient: r = 0.999687, r^2 = 0.999374
Calibration curve: 1.11151 * x + -0.31262
Response type: Internal Std (Ref 70), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-crv.qld

Last Altered: Sunday, July 14, 2019 13:48:08 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:48:58 Pacific Daylight Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999975, r^2 = 0.999950
Calibration curve: 1.42969 * x + -0.1022
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



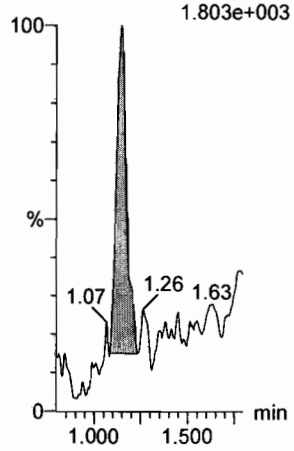
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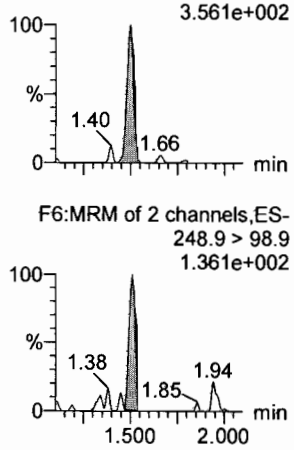
Method: F:\Projects\PFAS.PRO\MethDB\PFAS_FULL_80C_071219.mdb 14 Jul 2019 13:34:45
Calibration: F:\Projects\PFAS.PRO\CurveDB\C18_VAL-PFAS_Q4_07-12-19.cdb 14 Jul 2019 13:32:00

Name: 190712M2_6, Date: 12-Jul-2019, Time: 18:24:24, ID: ST190712M2-1 PFC CS-2 19G1101, Description: PFC CS-2 19G1101

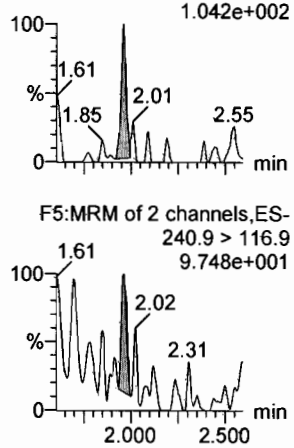
PFBA



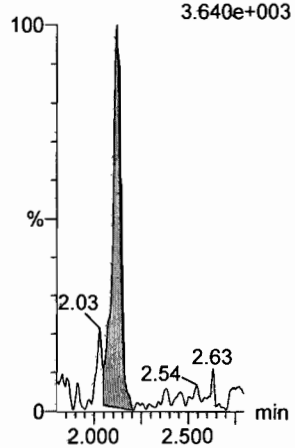
PFPrS



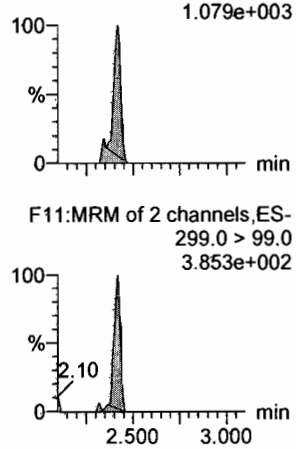
3:3 FTCA



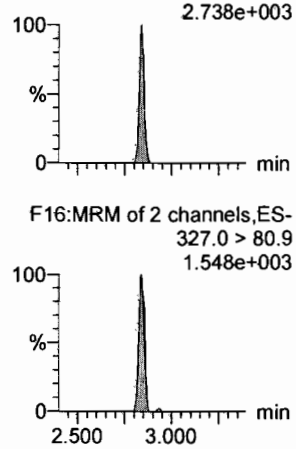
PFPeA



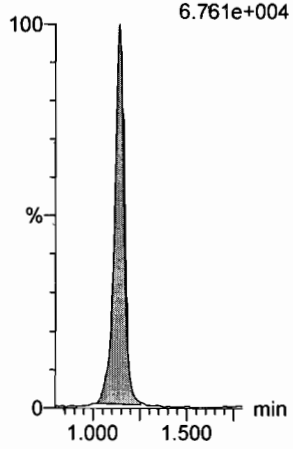
PFBS



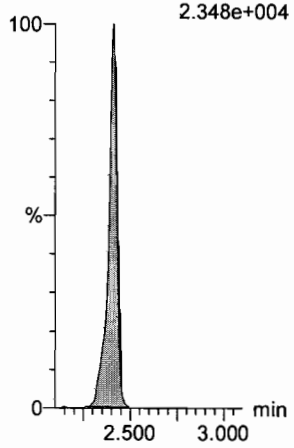
4:2 FTS



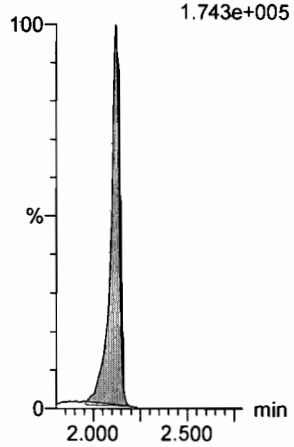
13C3-PFBA



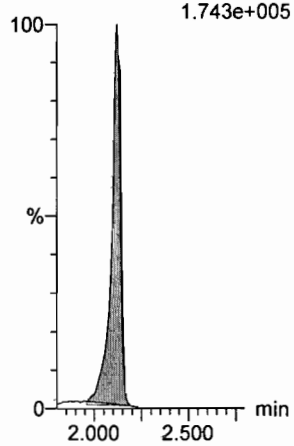
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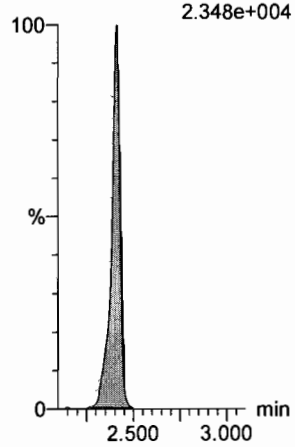
13C3-PFPeA



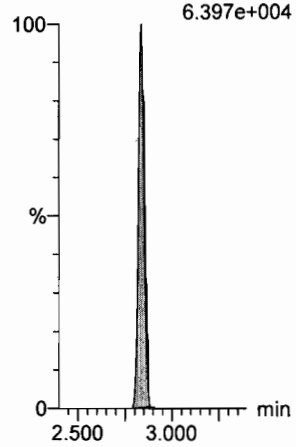
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

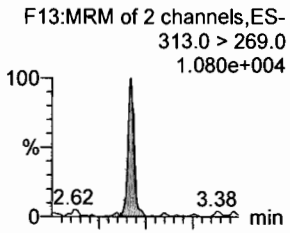


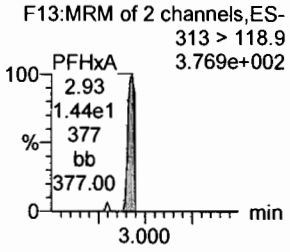
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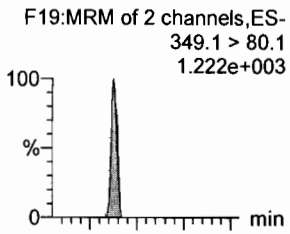
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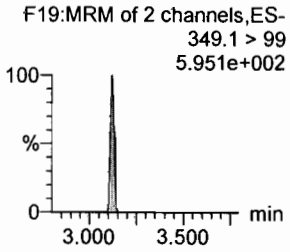
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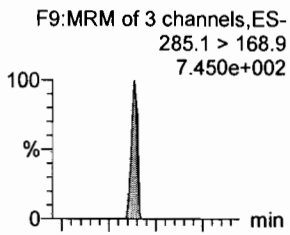


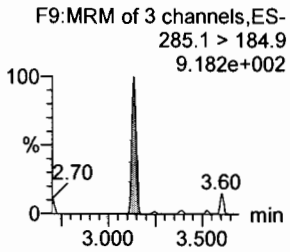
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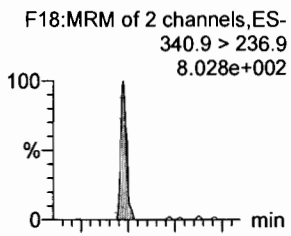


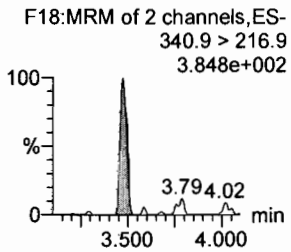
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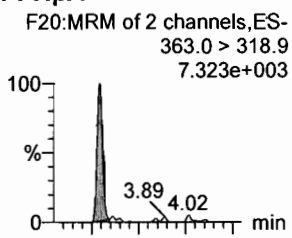


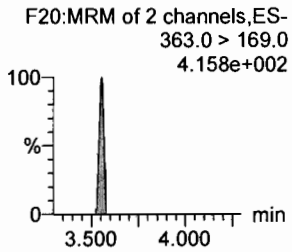
5:3 FTCA



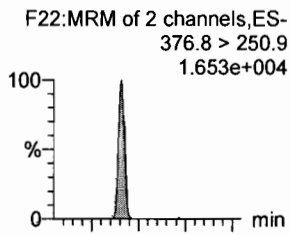


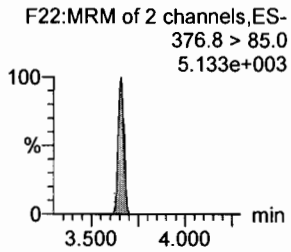
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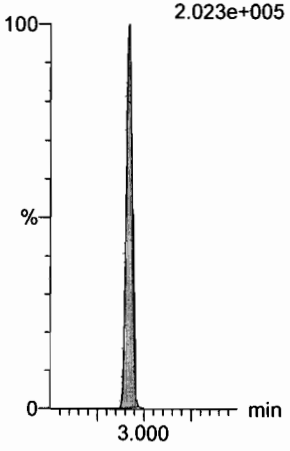


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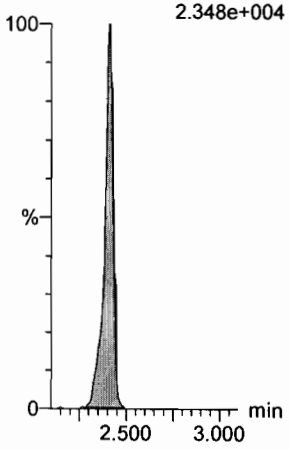




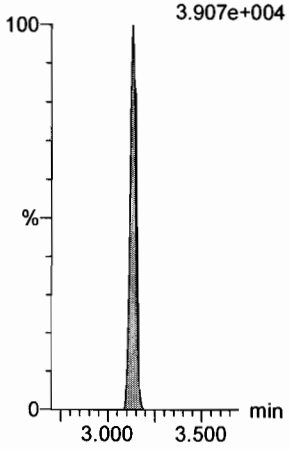
13C2-PFHxA



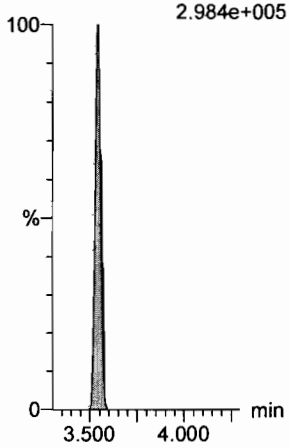
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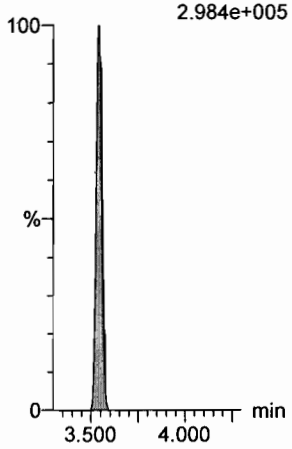
13C3-HFPO-DA



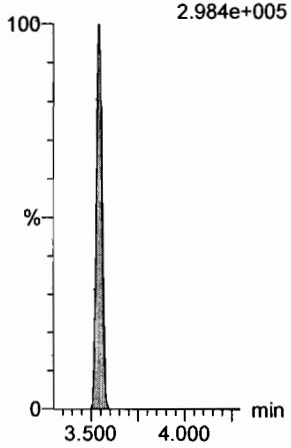
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

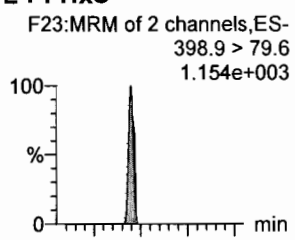


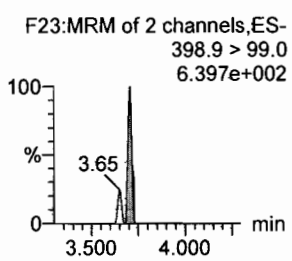
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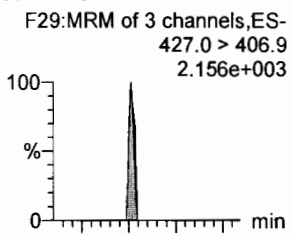
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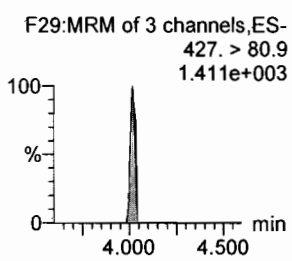
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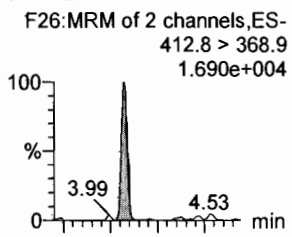


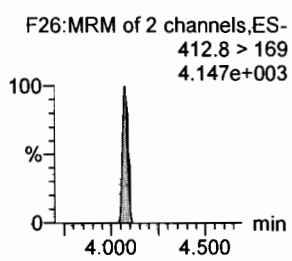
6:2 FTS



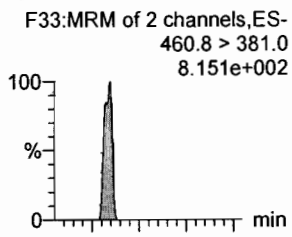


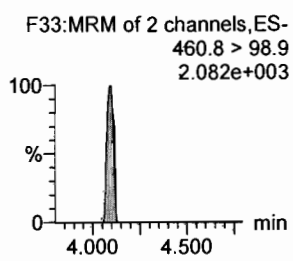
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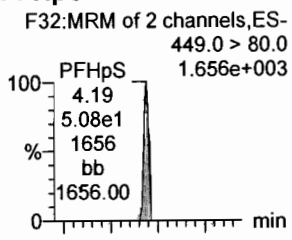


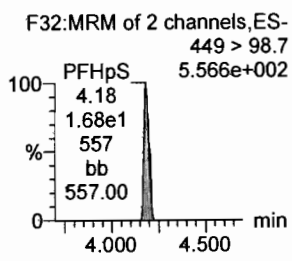
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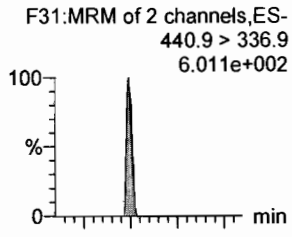


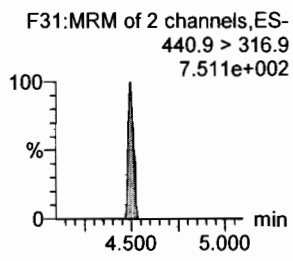
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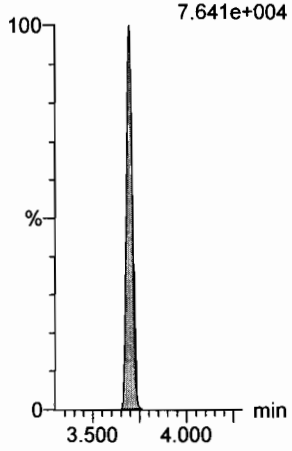


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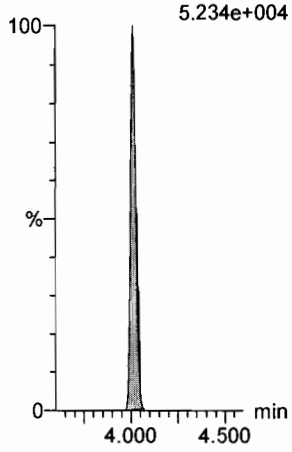




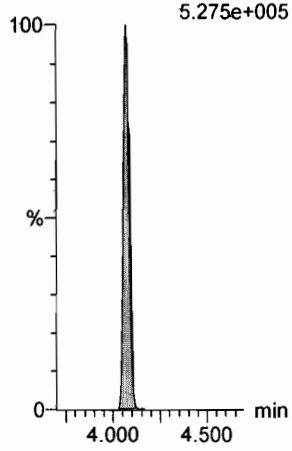
13C3-PFHxS



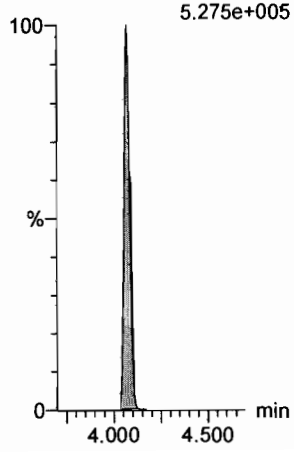
13C2-6:2 FTS



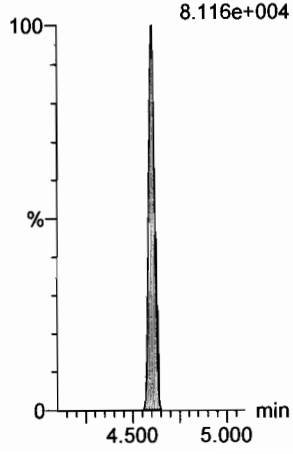
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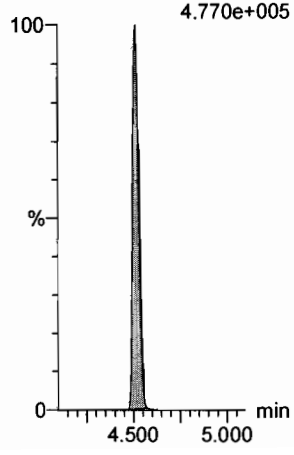
13C2-PFOA



13C8-PFOS



13C5-PFNA

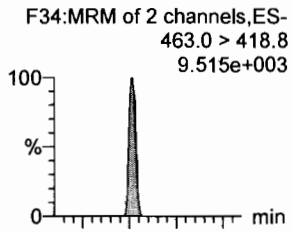


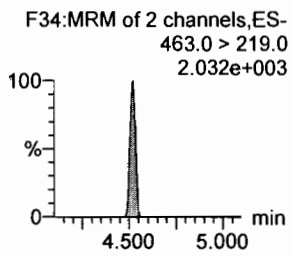
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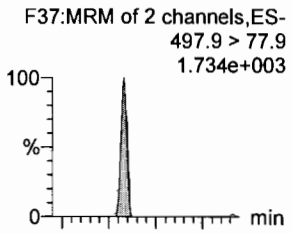
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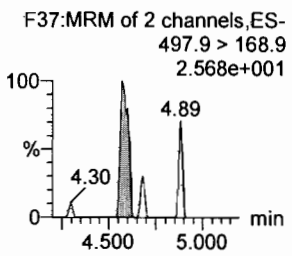
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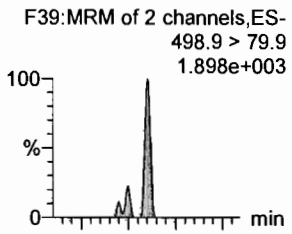


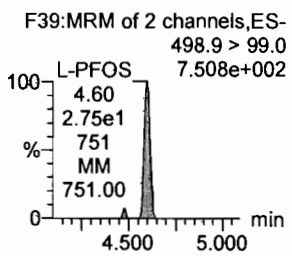
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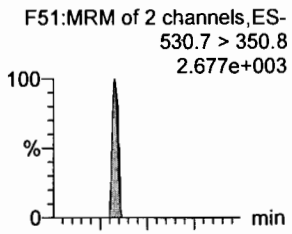


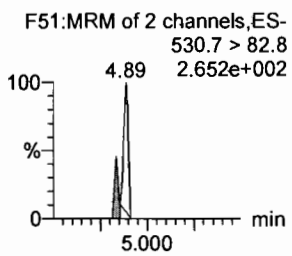
L-PFOS



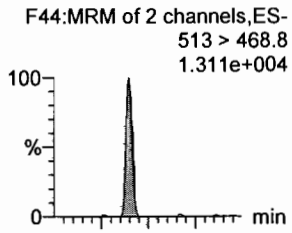


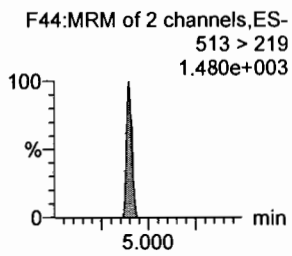
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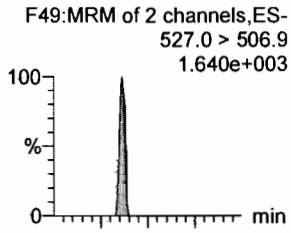


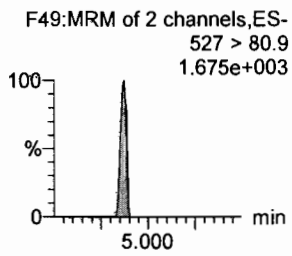
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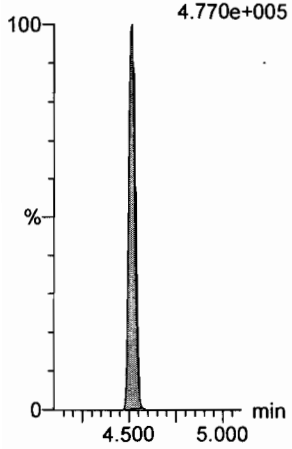


8:2 FTS

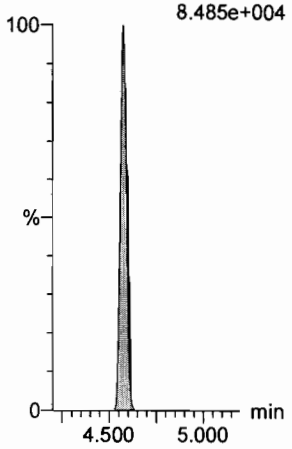




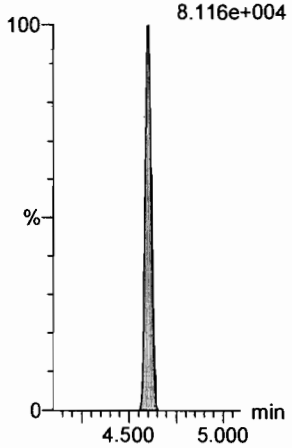
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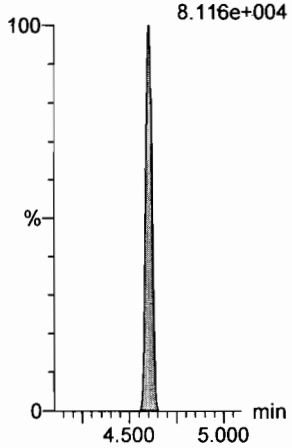
13C8-PFOSA



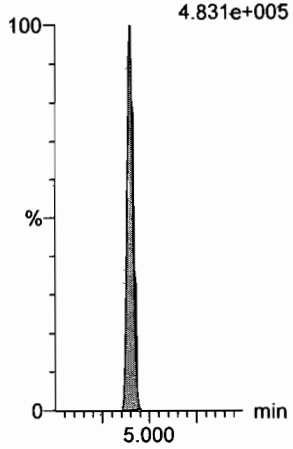
13C8-PFOS



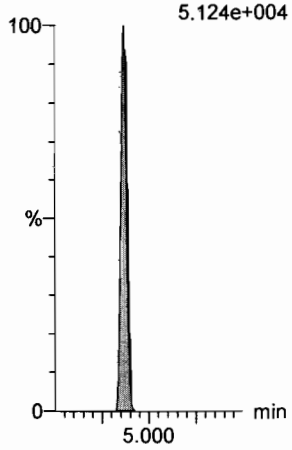
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

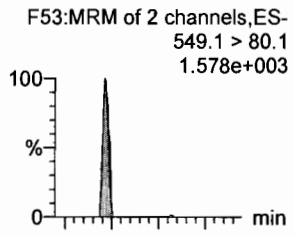


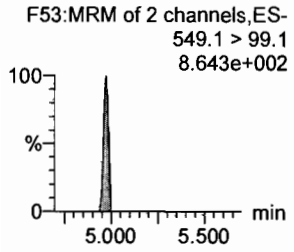
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Printed: Sunday, July 14, 2019 13:35:08 Pacific Daylight Time

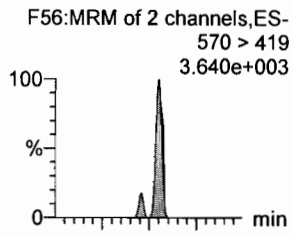
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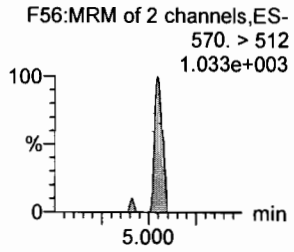
PFNS



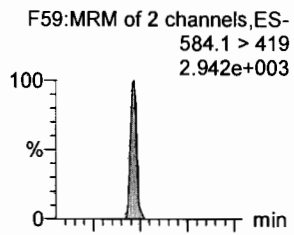


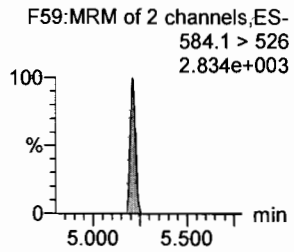
L-MeFOSAA



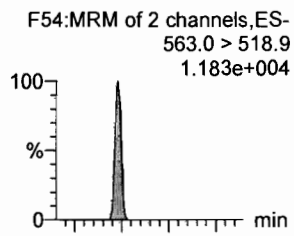


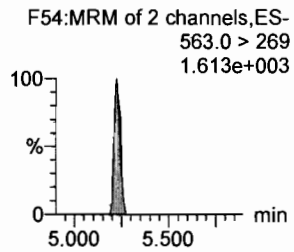
L-EtFOSAA



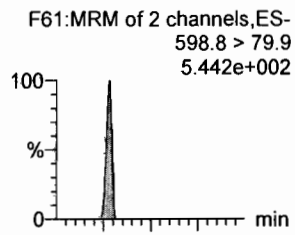


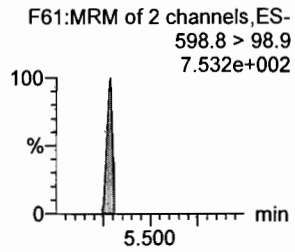
PFUdA



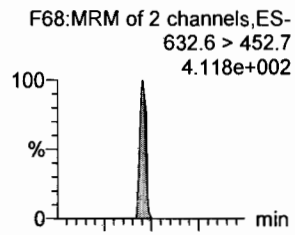


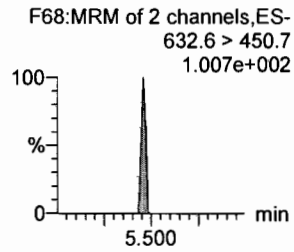
PFDS



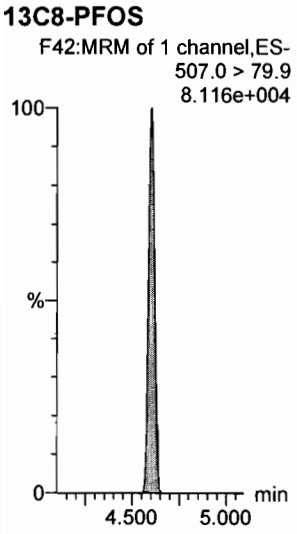


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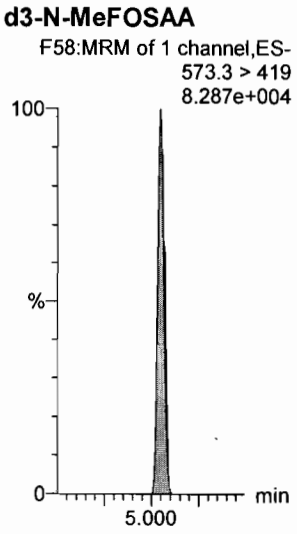




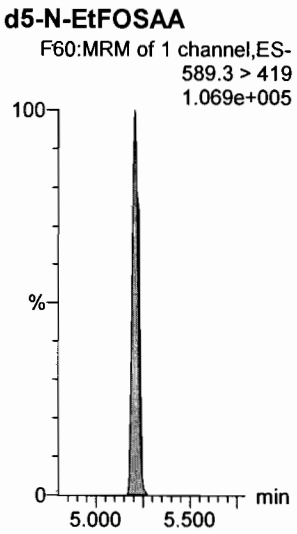
13C8-PFOS



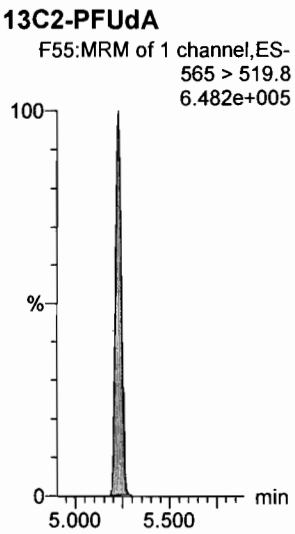
d3-N-MeFOSAA



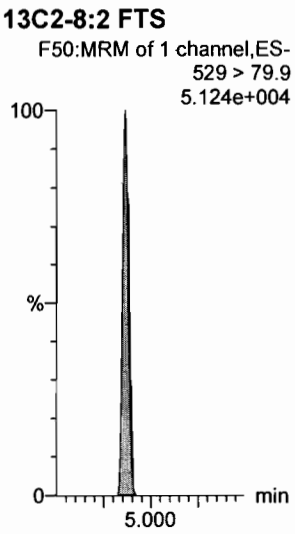
d5-N-EtFOSAA



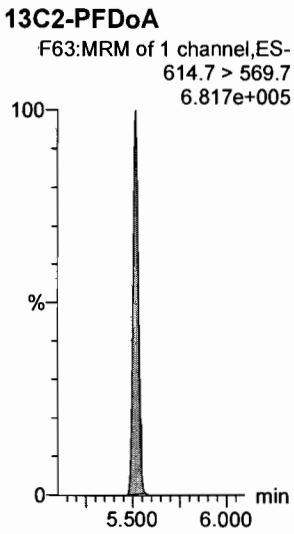
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

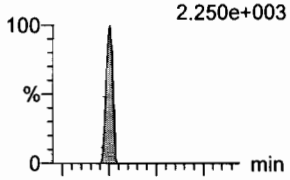


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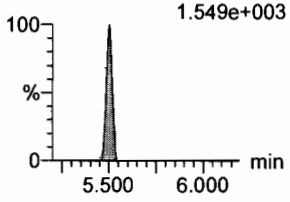
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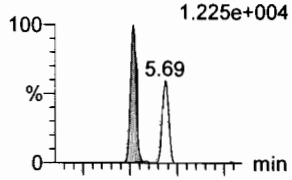
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
2.250e+003



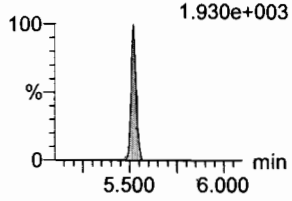
F66:MRM of 2 channels,ES-
627.0 > 80.9
1.549e+003



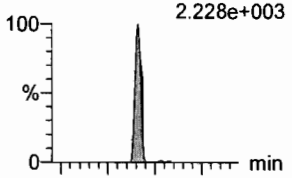
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
1.225e+004



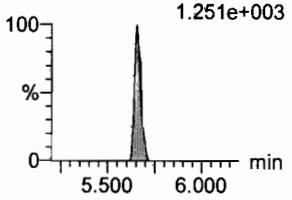
F62:MRM of 4 channels,ES-
612.9 > 318.8
1.930e+003



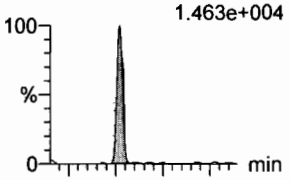
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
2.228e+003



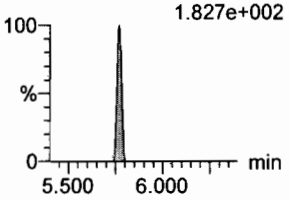
F43:MRM of 2 channels,ES-
512.1 > 219
1.251e+003



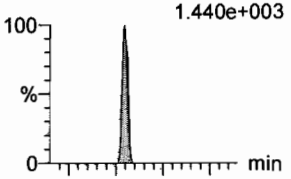
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
1.463e+004



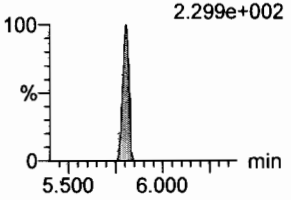
F70:MRM of 2 channels,ES-
662.9 > 319
1.827e+002



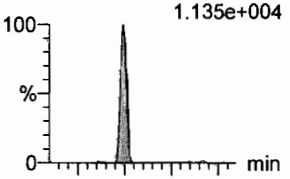
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
1.440e+003



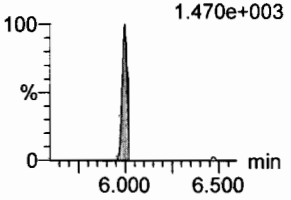
F71:MRM of 2 channels,ES-
698.8 > 98.9
2.299e+002



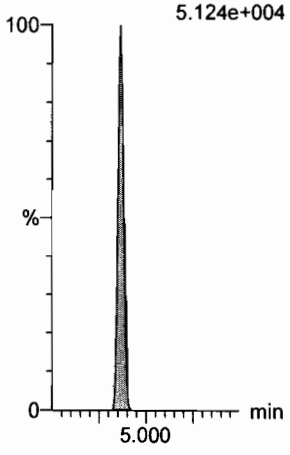
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
1.135e+004



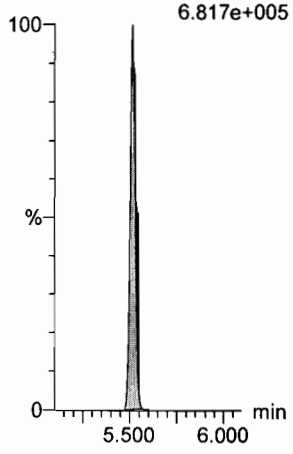
F72:MRM of 2 channels,ES-
713. > 369.0
1.470e+003



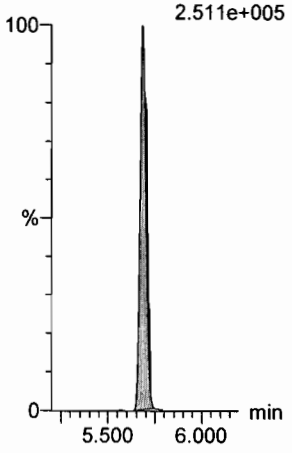
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
5.124e+004



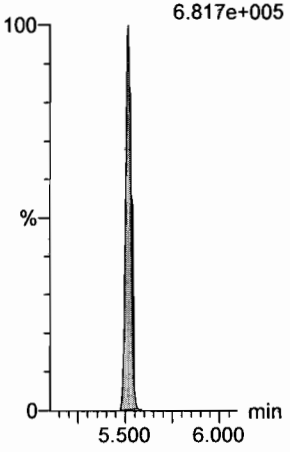
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.817e+005



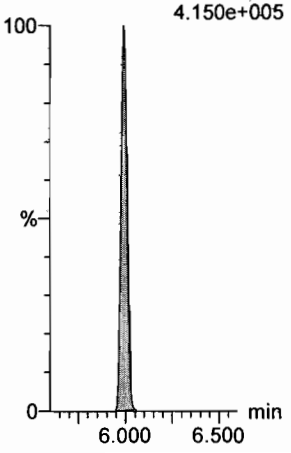
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.511e+005



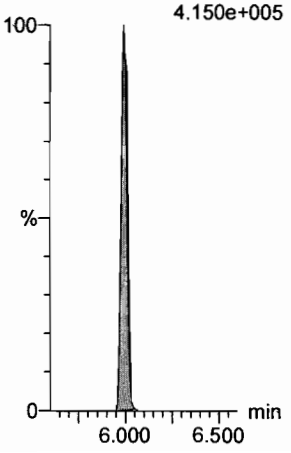
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.817e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.150e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.150e+005

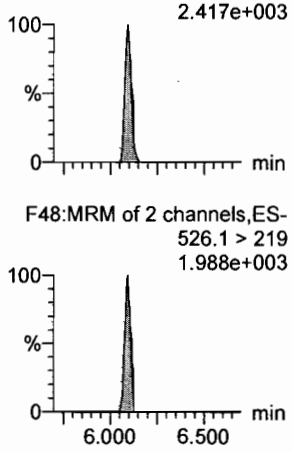


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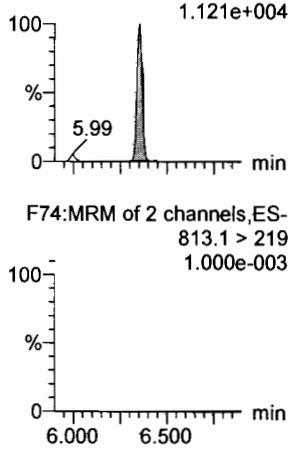
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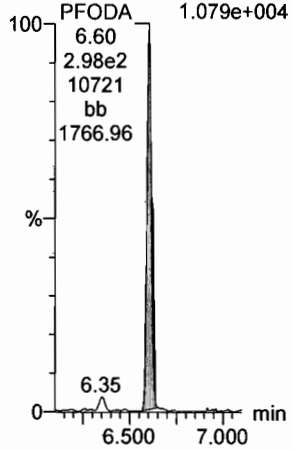
N-EtFOSA



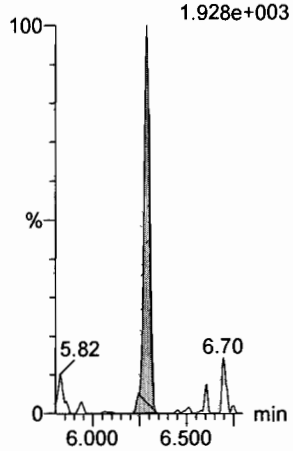
PFHxDA



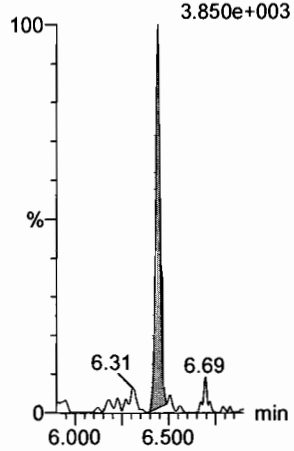
PFODA



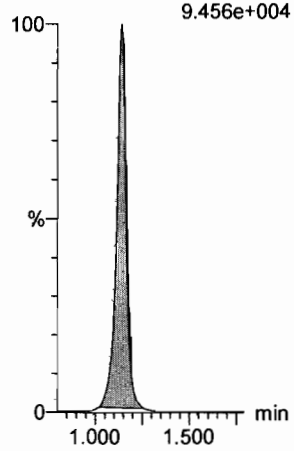
N-MeFOSE



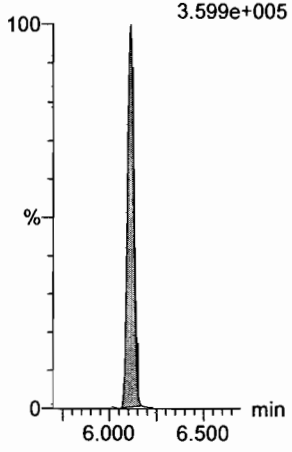
N-EtFOSE



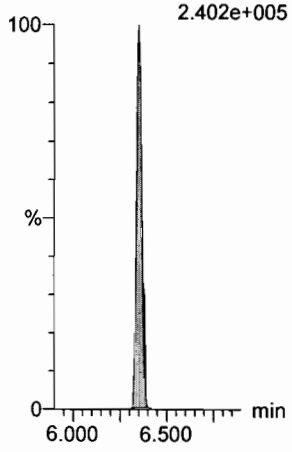
13C4-PFBA



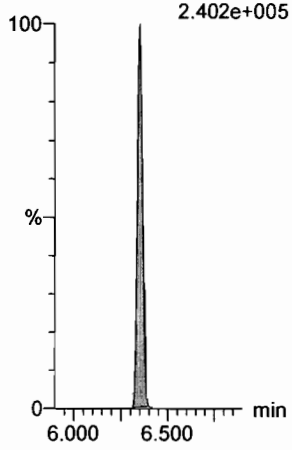
d5-N-ETFOSA



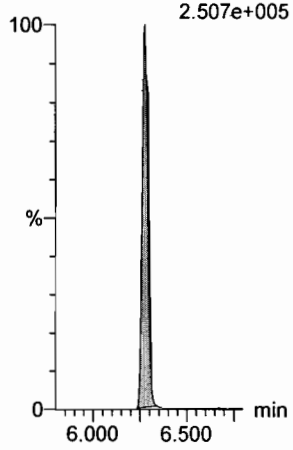
13C2-PFHxDA



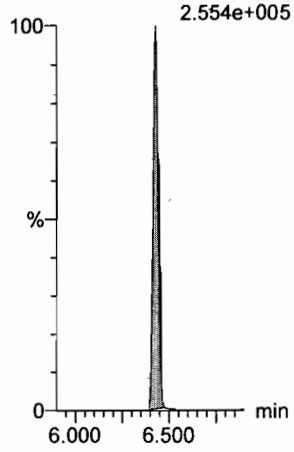
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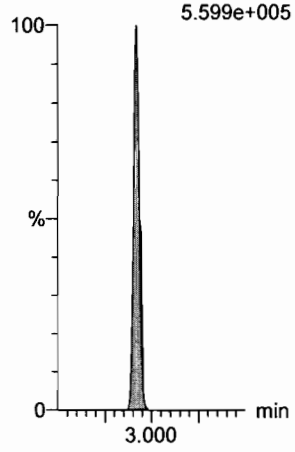
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

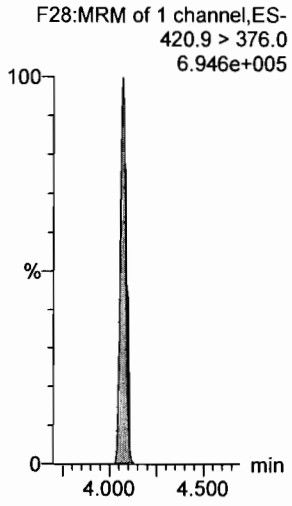


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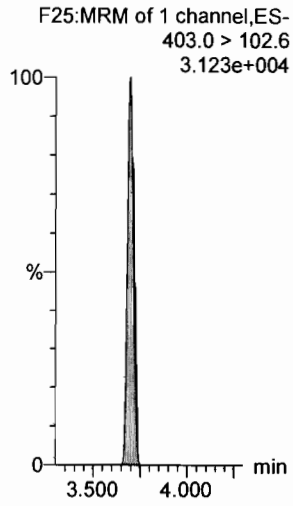
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Printed: Sunday, July 14, 2019 13:35:08 Pacific Daylight Time

Name: 190712M2_6, Date: 12-Jul-2019, Time: 18:24:24, ID: ST190712M2-1 PFC CS-2 19G1101, Description: PFC CS-2 19G1101

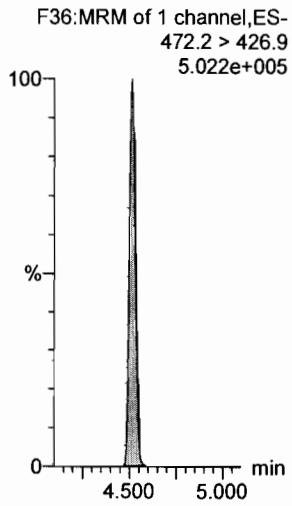
13C8-PFOA



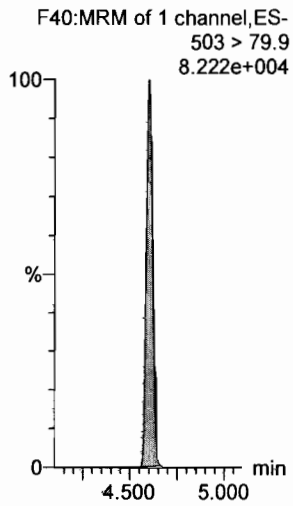
18O2-PFHxS



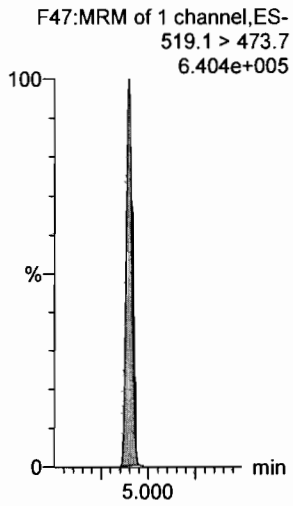
13C9-PFNA



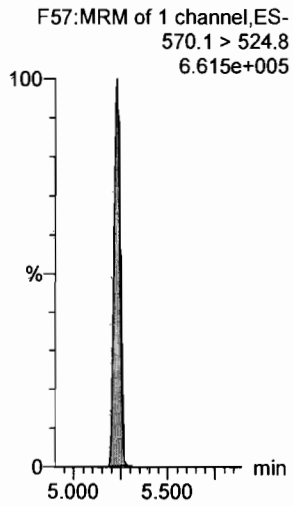
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13C6-PFDA



13C7-PFUdA

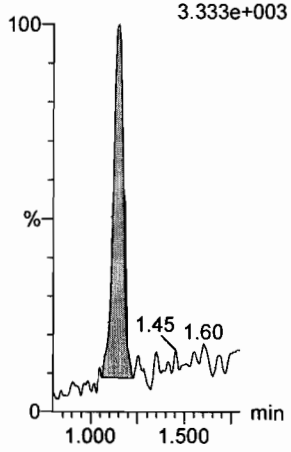


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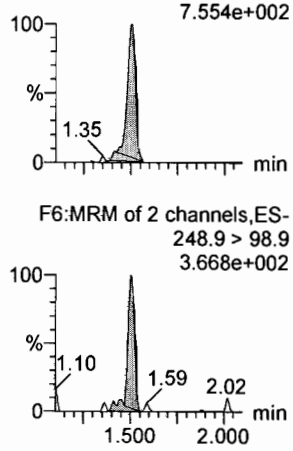
Last Altered: Sunday, July 14, 2019 12:48:33 Pacific Daylight Time
Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_7, Date: 12-Jul-2019, Time: 18:35:02, ID: ST190712M2-2 PFC CS-1 19G1102, Description: PFC CS-1 19G1102

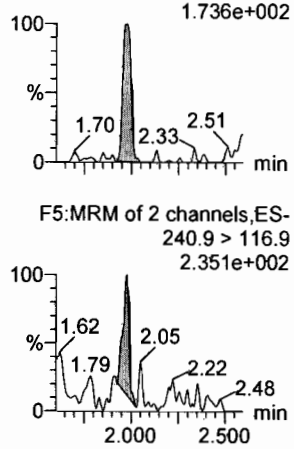
PFBA



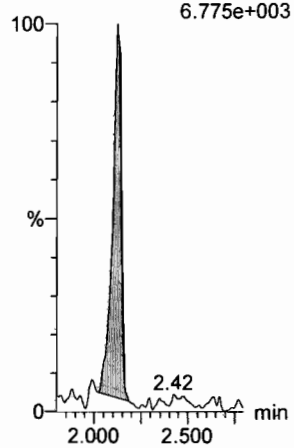
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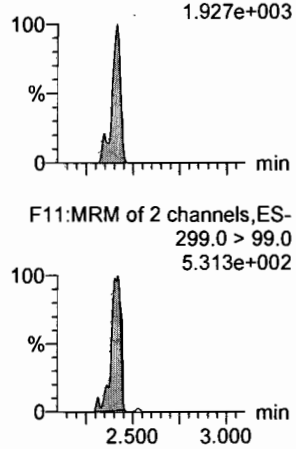
3:3 FTCA



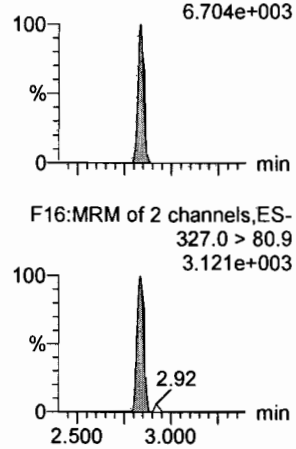
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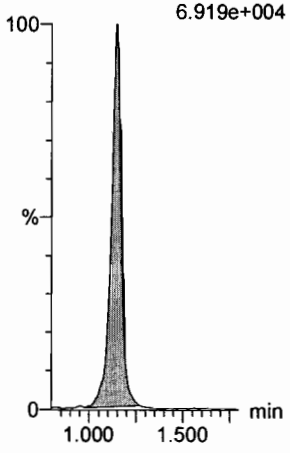
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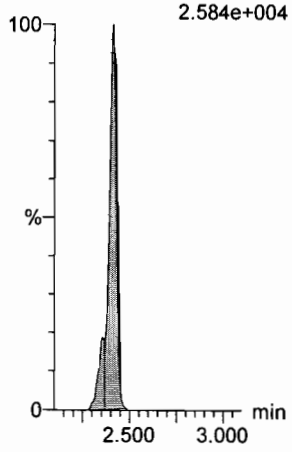
4:2 FTS



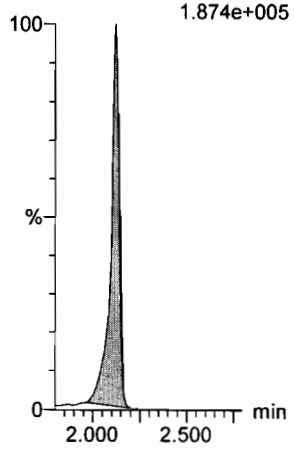
13C3-PFBA



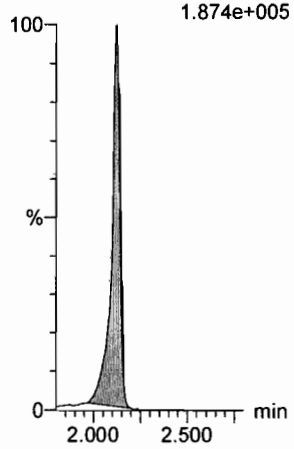
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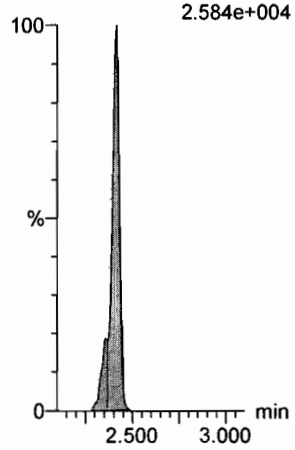
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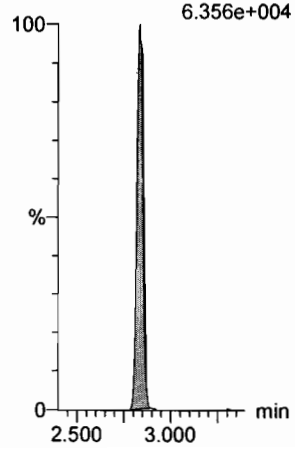
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

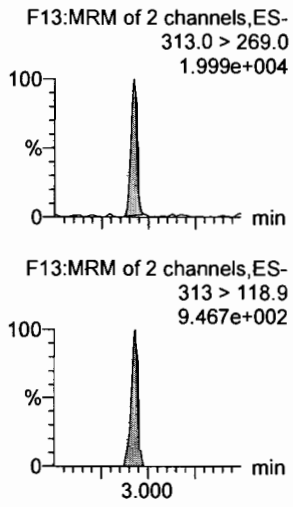


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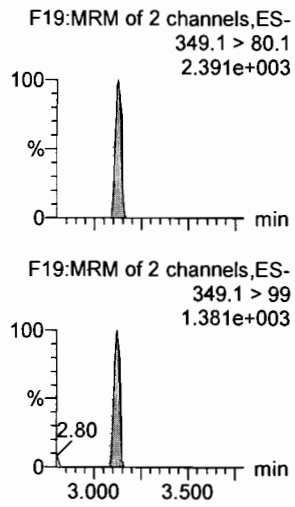
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Name: 190712M2_7, Date: 12-Jul-2019, Time: 18:35:02, ID: ST190712M2-2 PFC CS-1 19G1102, Description: PFC CS-1 19G1102

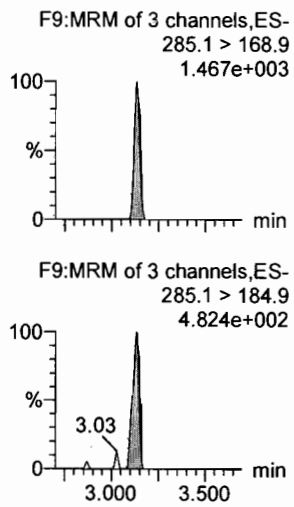
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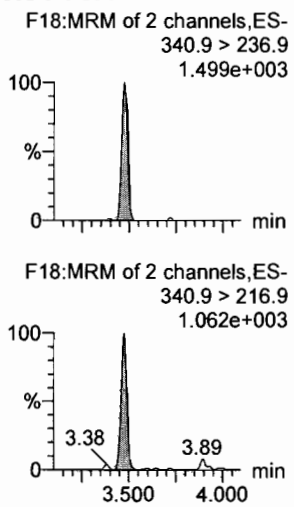
PFPeS



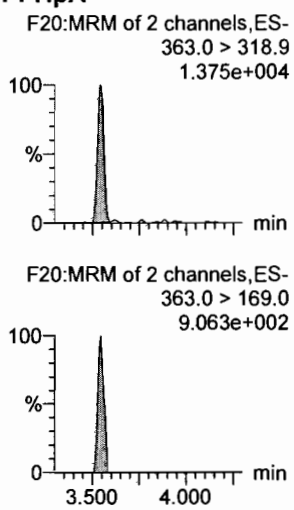
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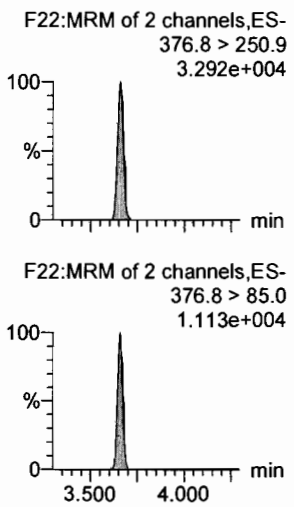
5:3 FTCA



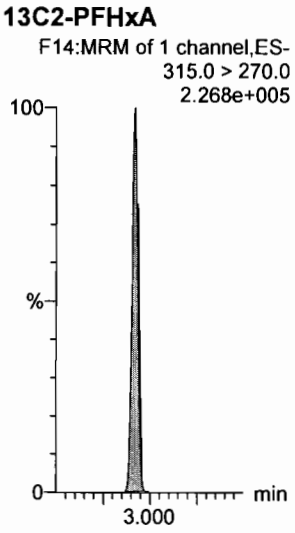
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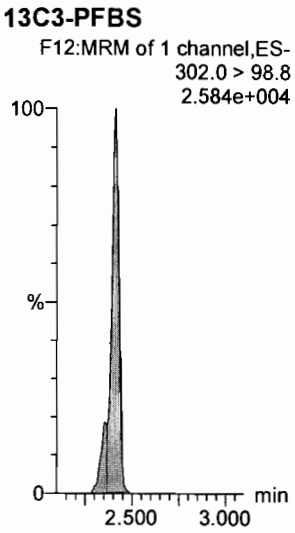
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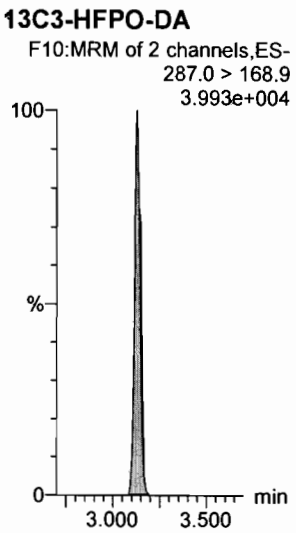
13C2-PFHxA



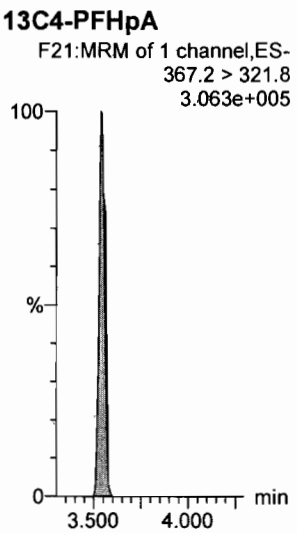
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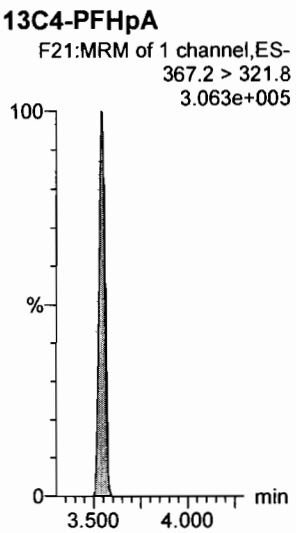
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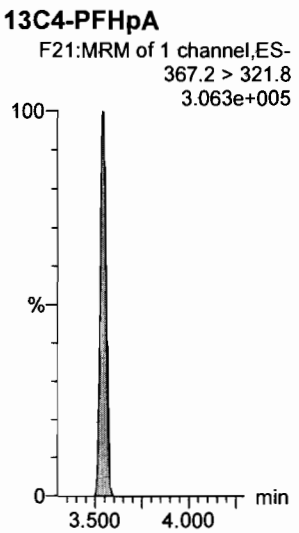
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13C4-PFHpA



13C4-PFHpA

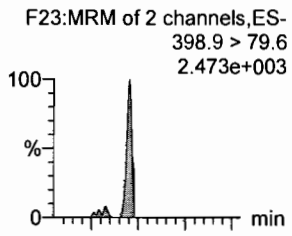


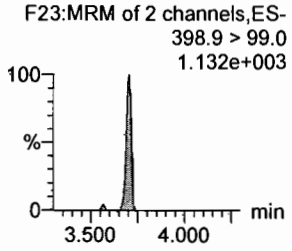
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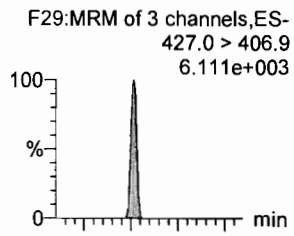
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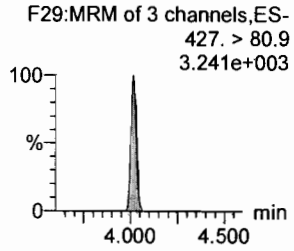
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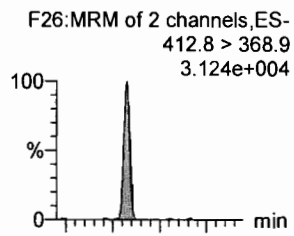


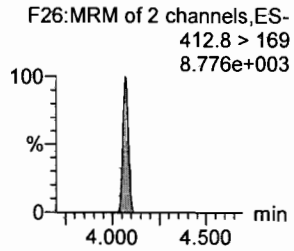
6:2 FTS



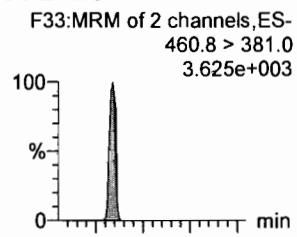


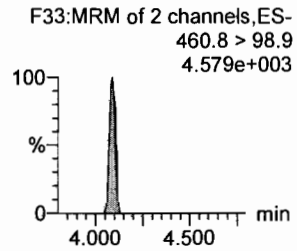
L-PFOA



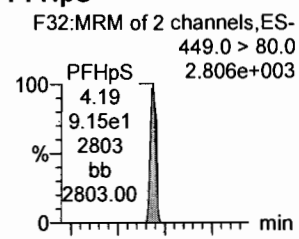


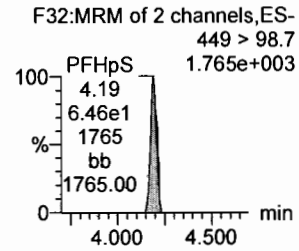
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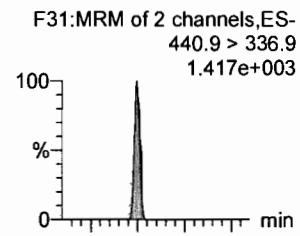


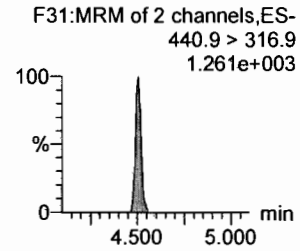
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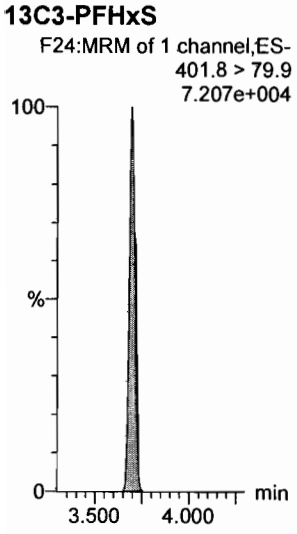


7:3 FTCA

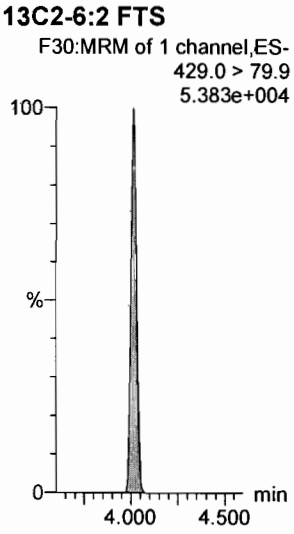




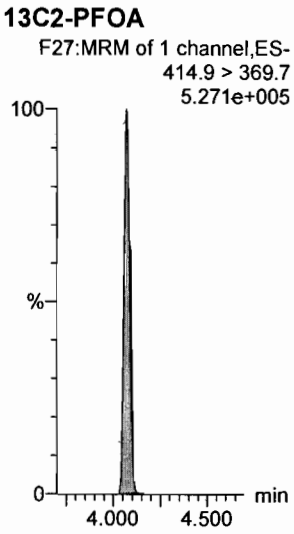
13C3-PFHxS



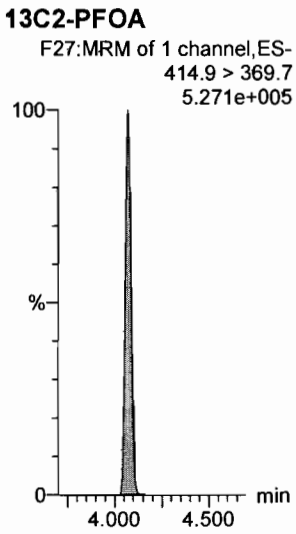
13C2-6:2 FTS



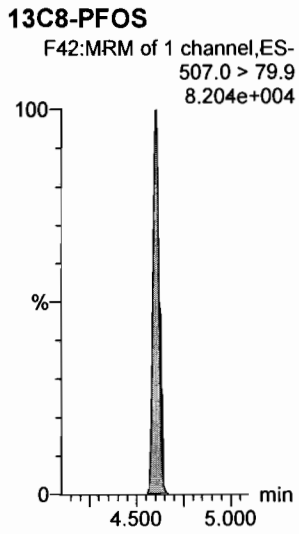
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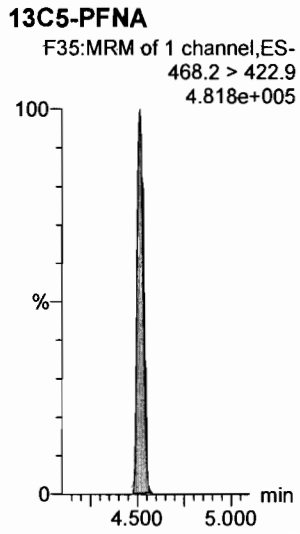
13C2-PFOA



13C8-PFOS



13C5-PFNA

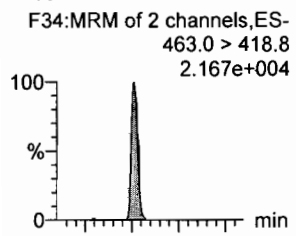


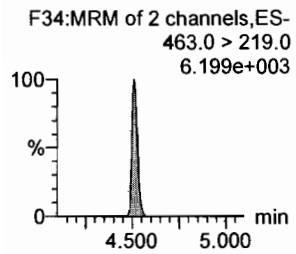
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

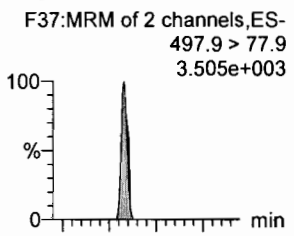
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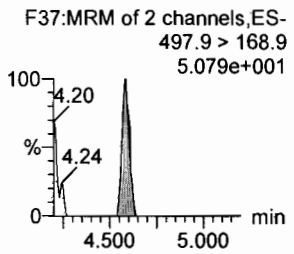
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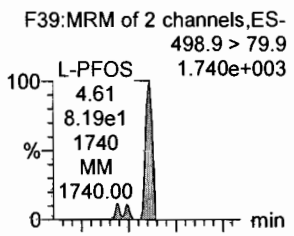


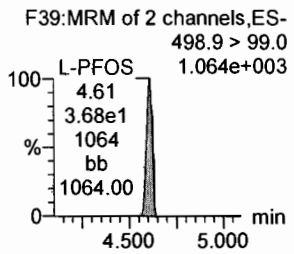
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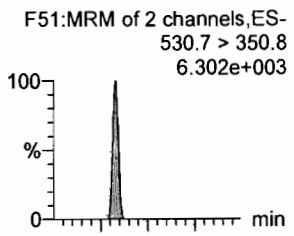


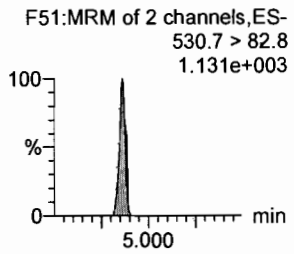
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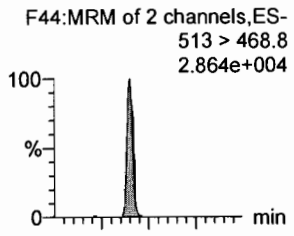


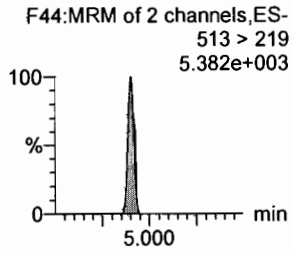
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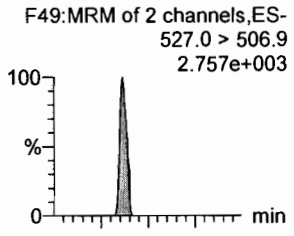


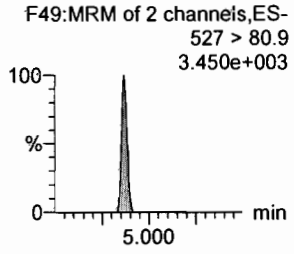
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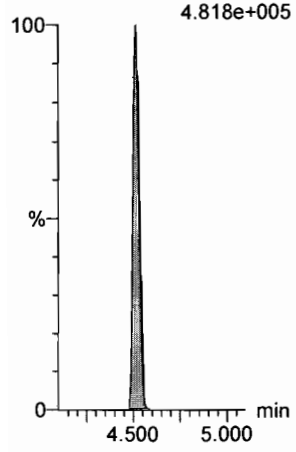


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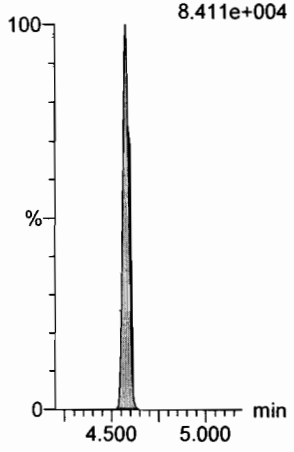




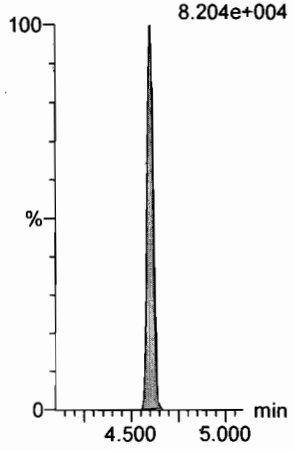
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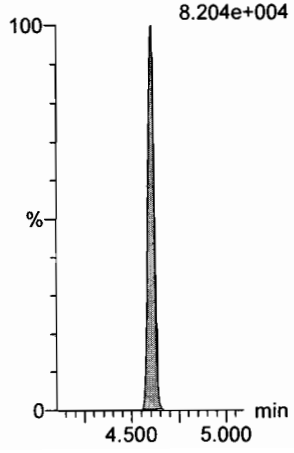
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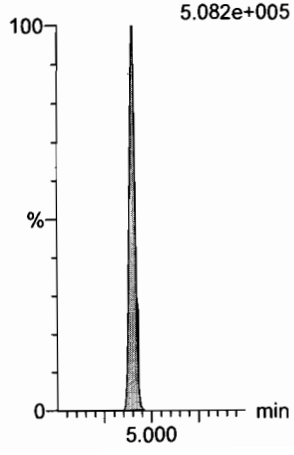
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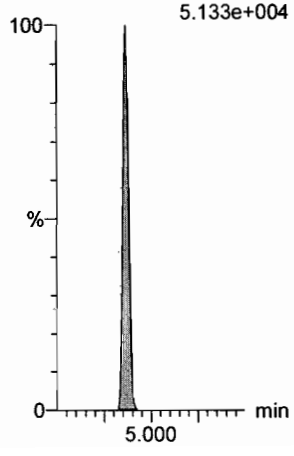
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13C2-PFDA



13C2-8:2 FTS

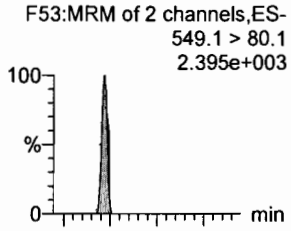


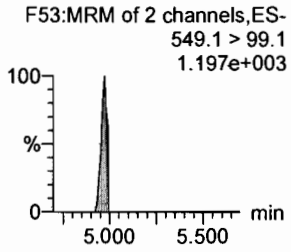
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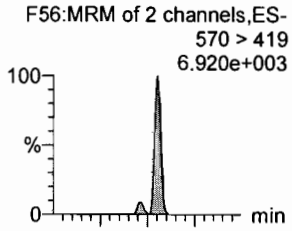
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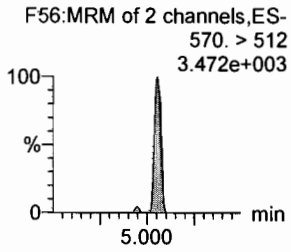
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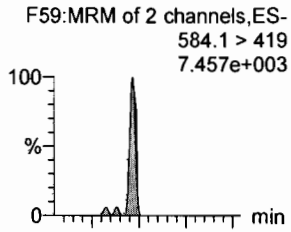


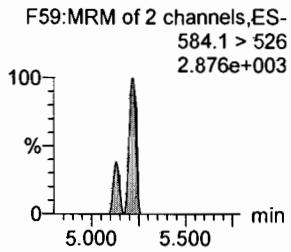
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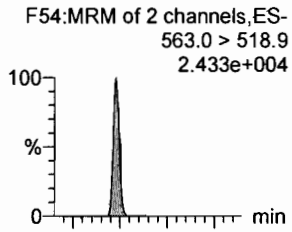


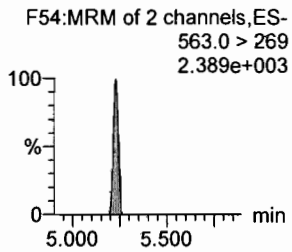
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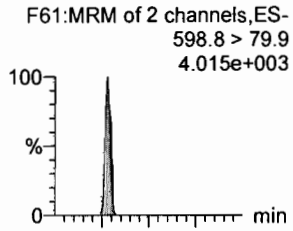


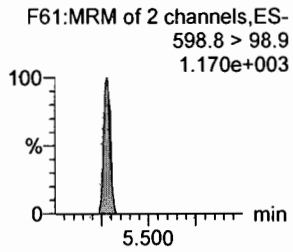
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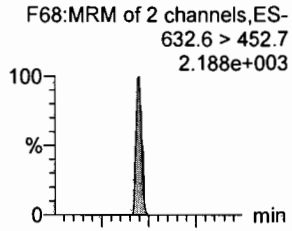


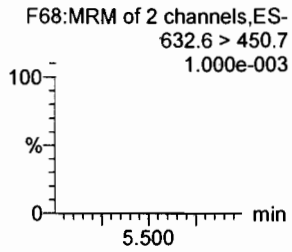
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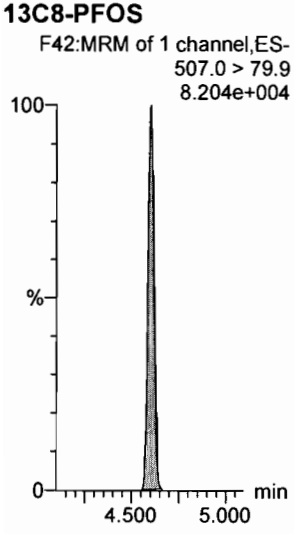


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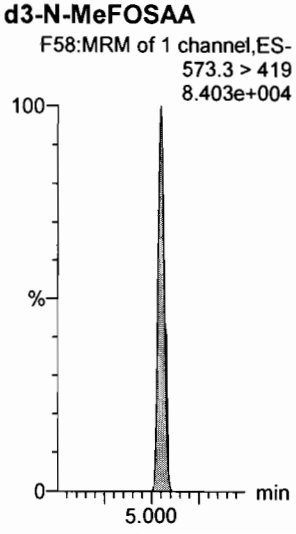




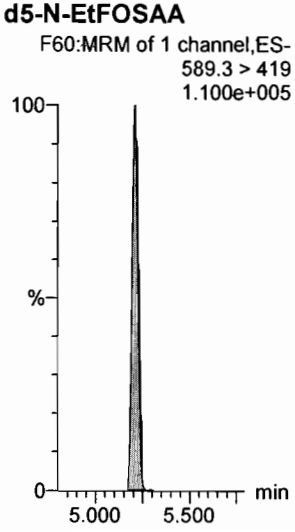
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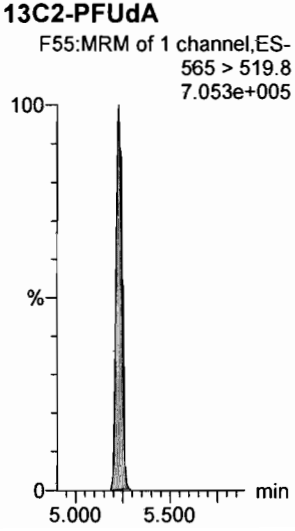
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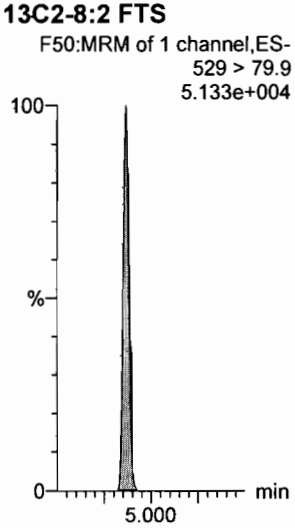
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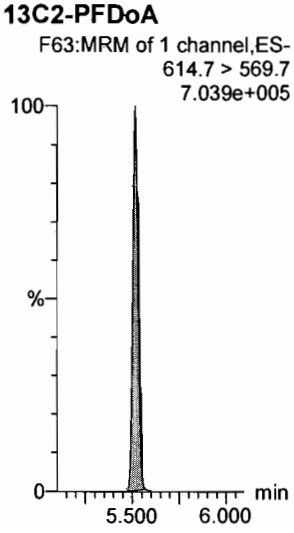
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

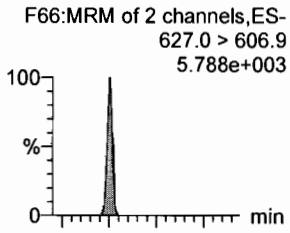


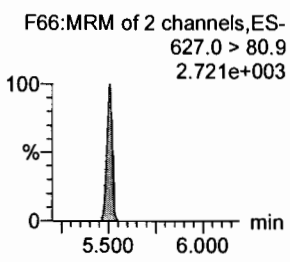
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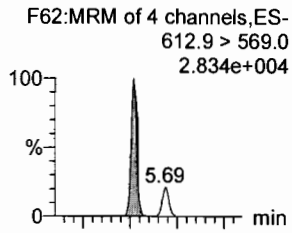
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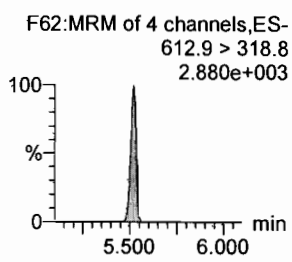
10:2 FTS



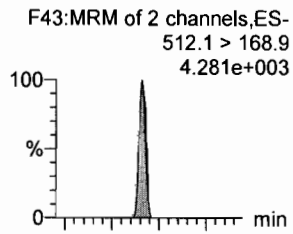


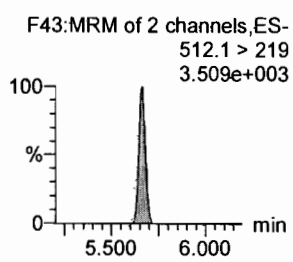
PFDoA



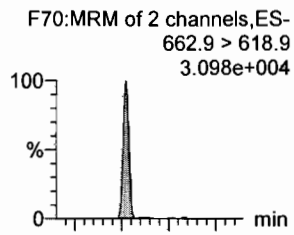


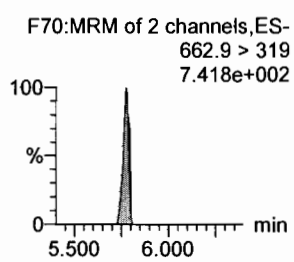
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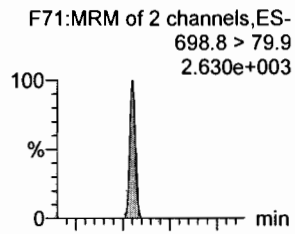


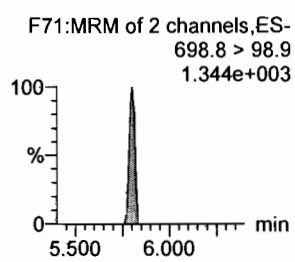
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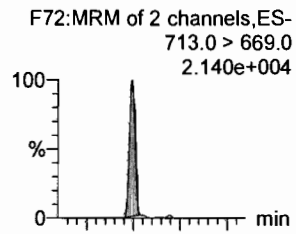


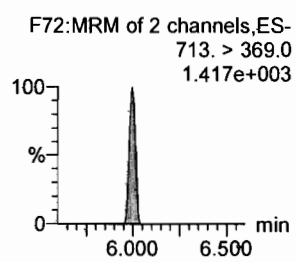
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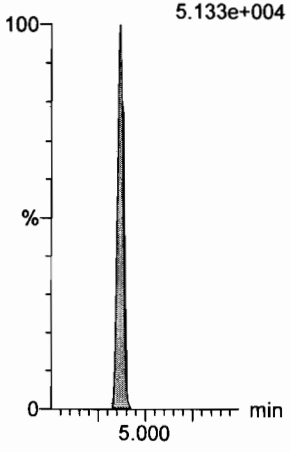


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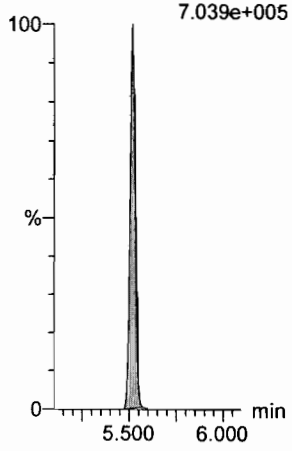




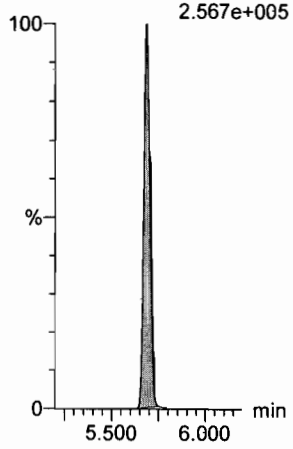
13C2-8:2 FTS



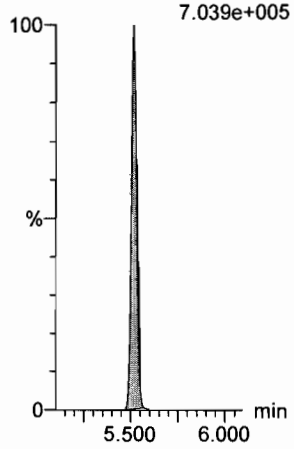
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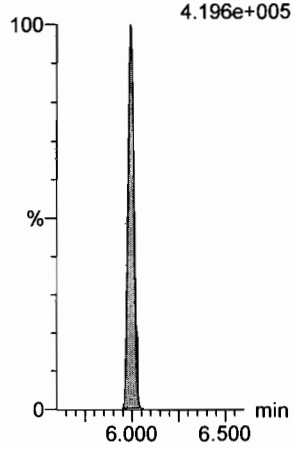
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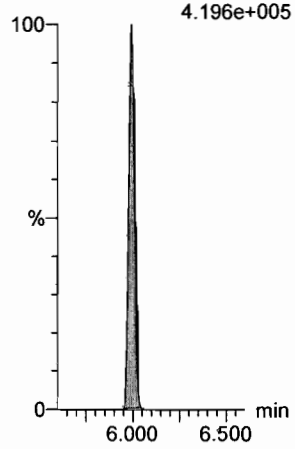
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13C2-PFTeDA



13C2-PFTeDA

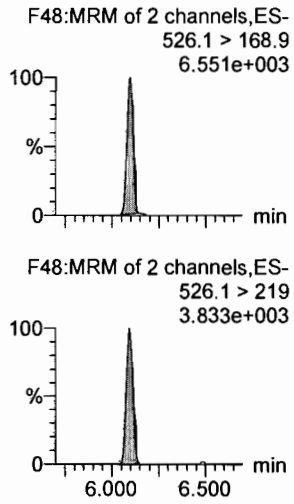


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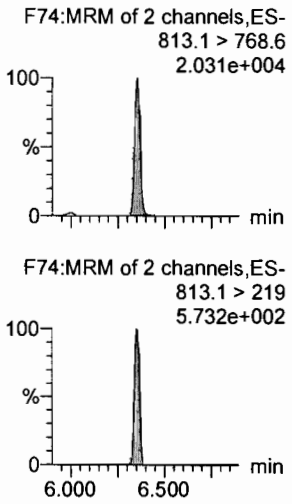
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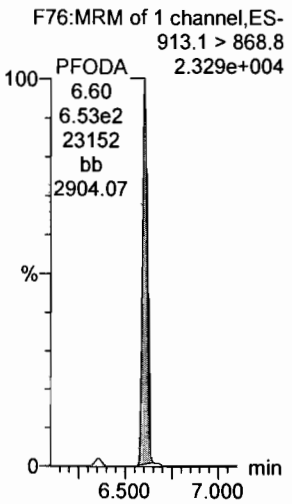
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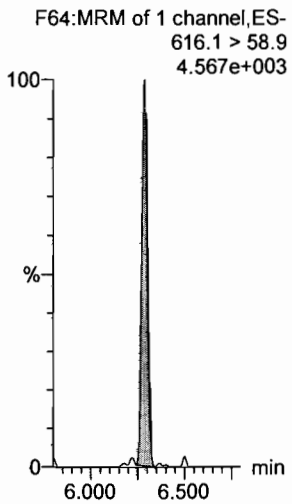
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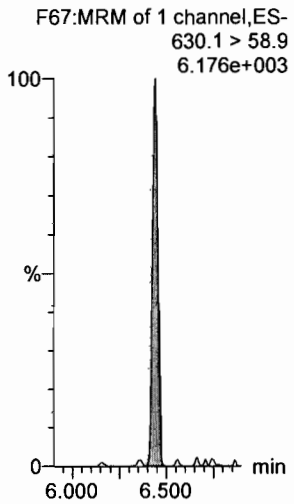
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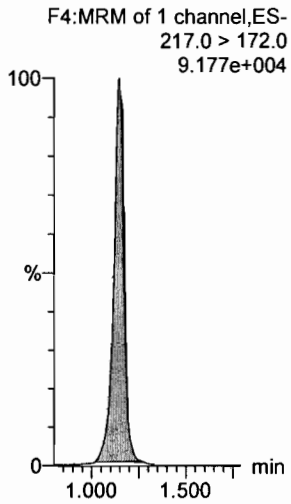
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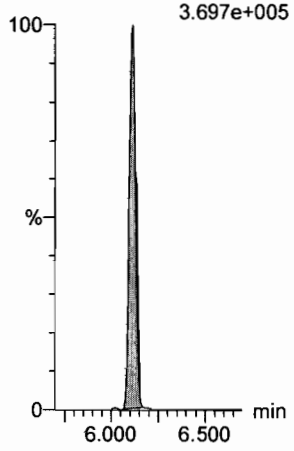
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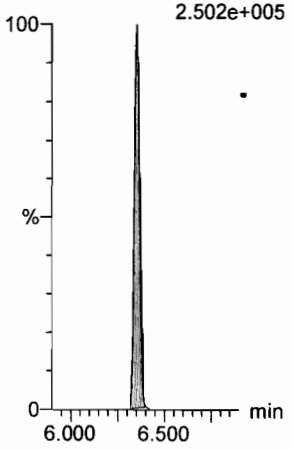
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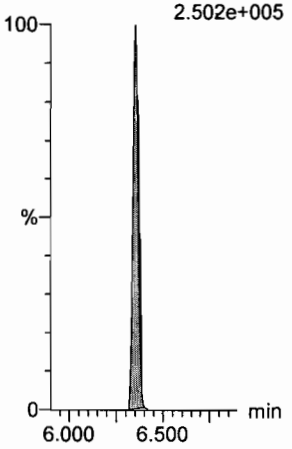
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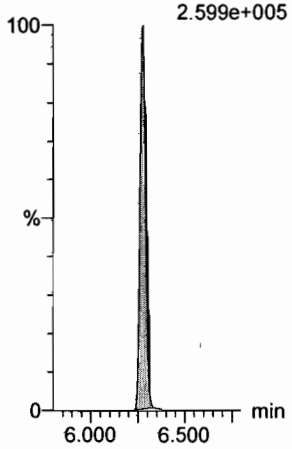
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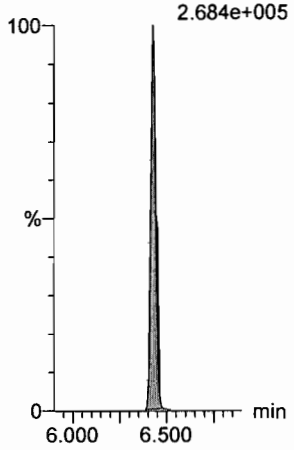
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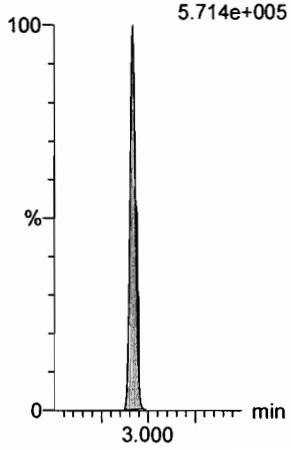
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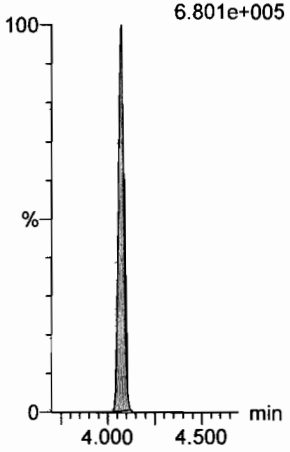


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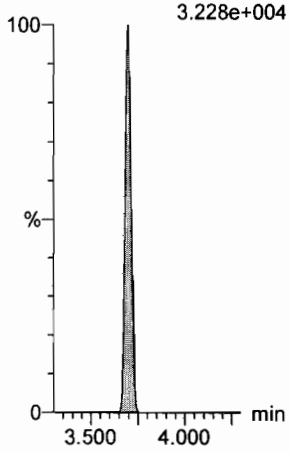
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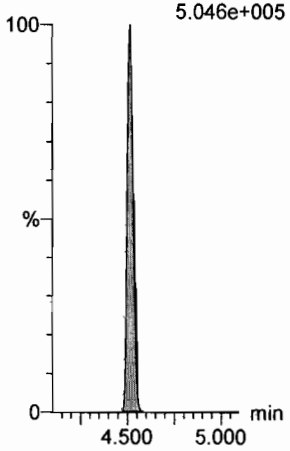
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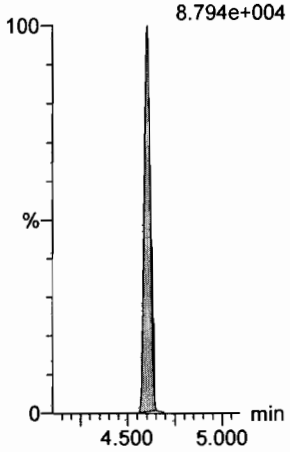
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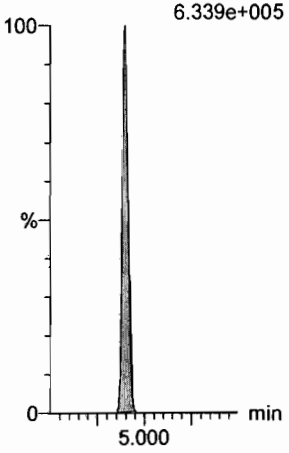
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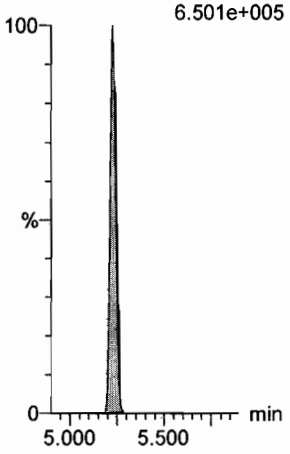
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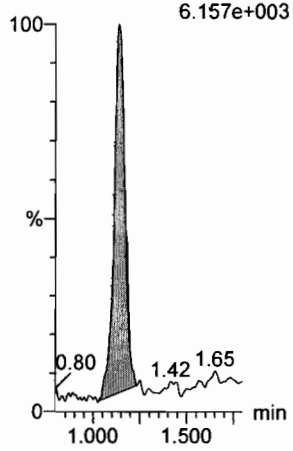


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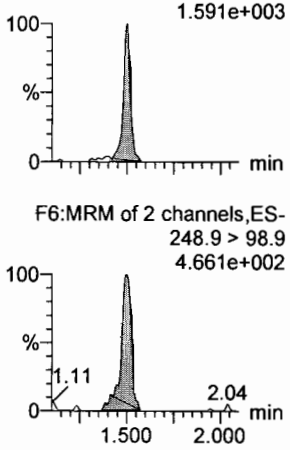
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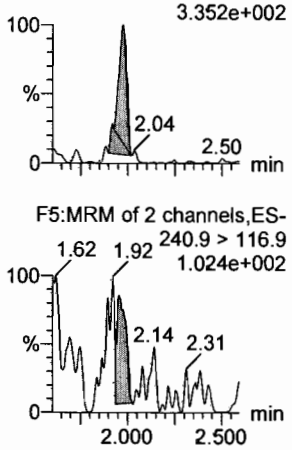
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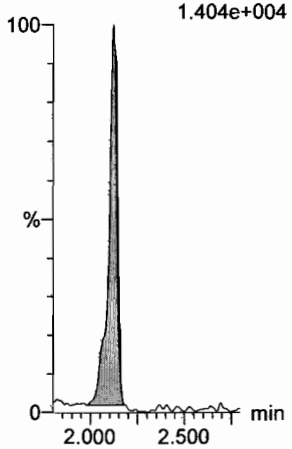
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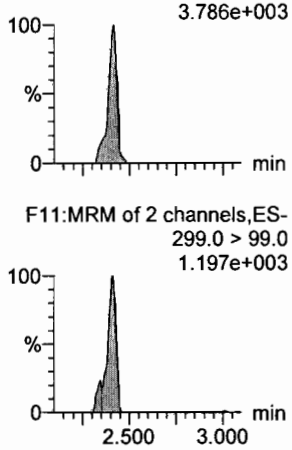
3:3 FTCA



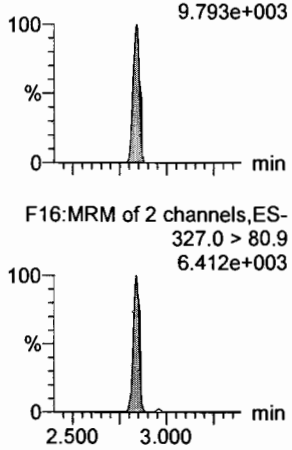
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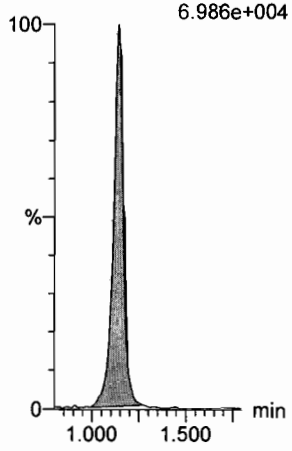
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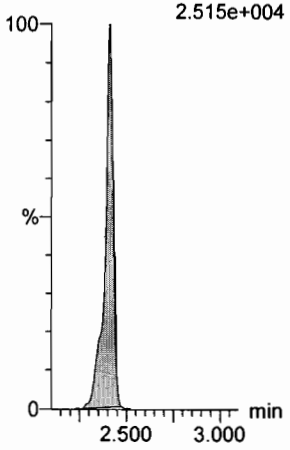
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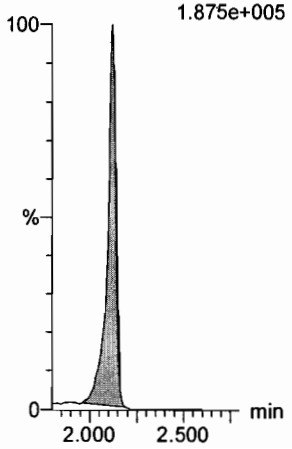
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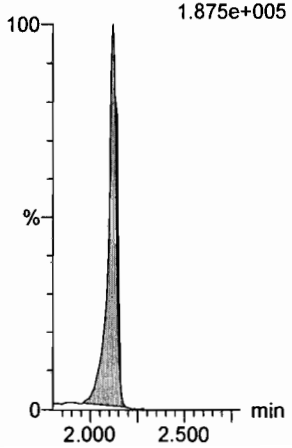
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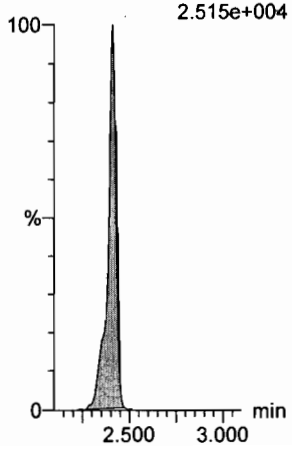
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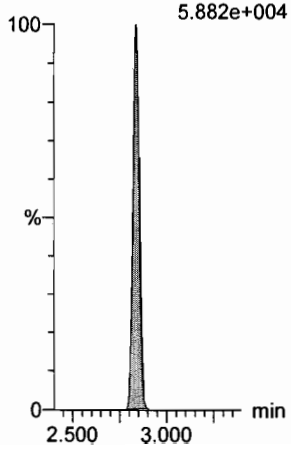
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13C3-PFBS



13C2-4:2 FTS

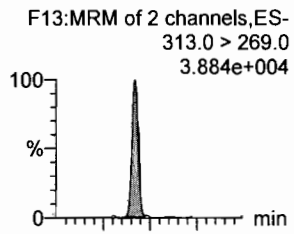


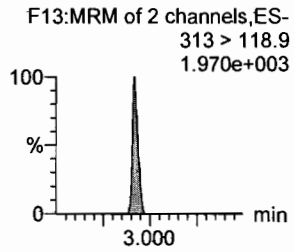
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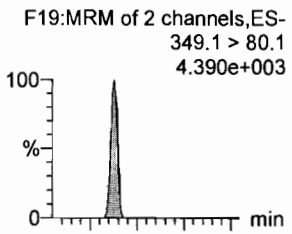
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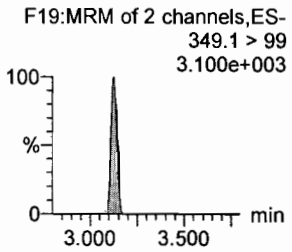
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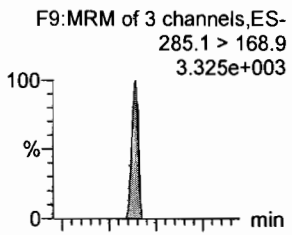


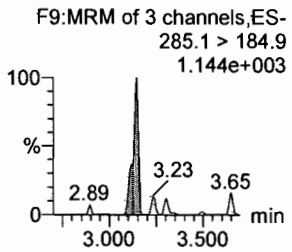
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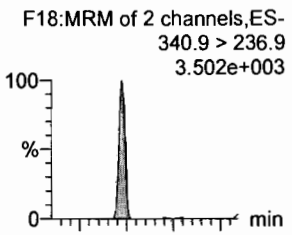


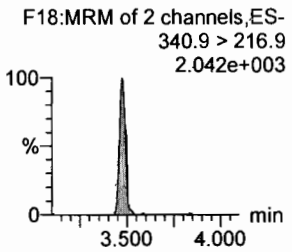
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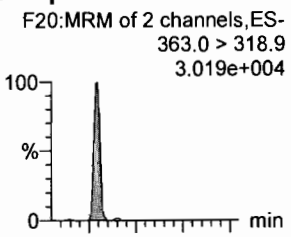


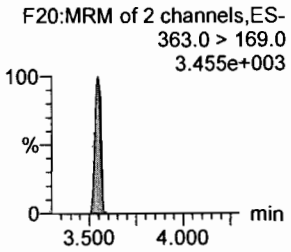
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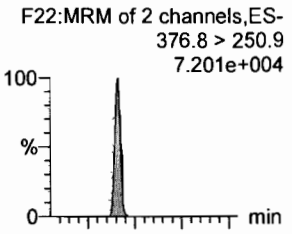


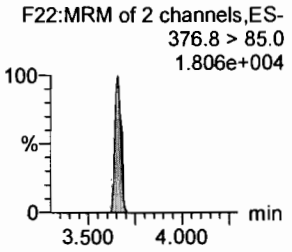
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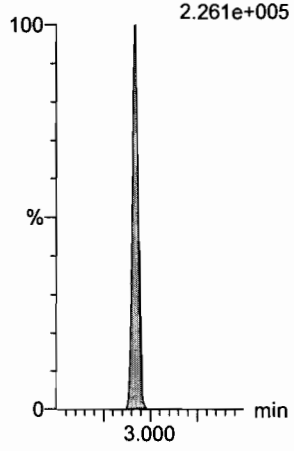


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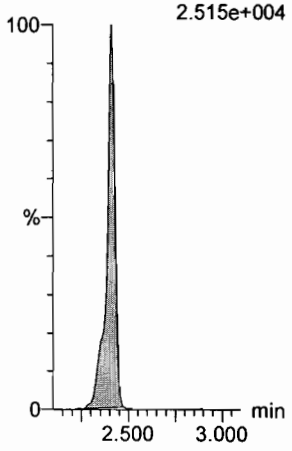




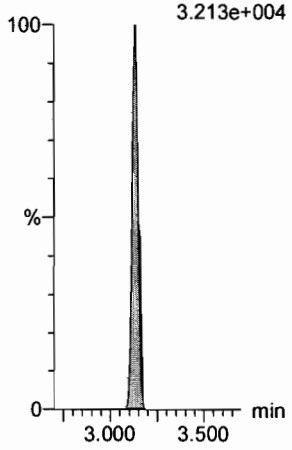
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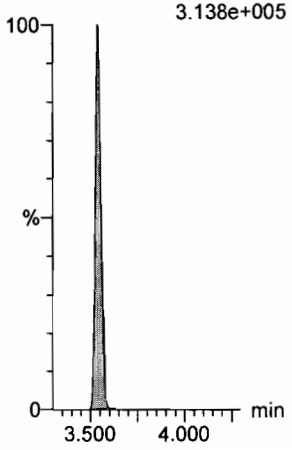
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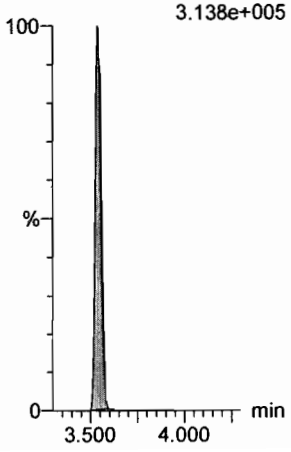
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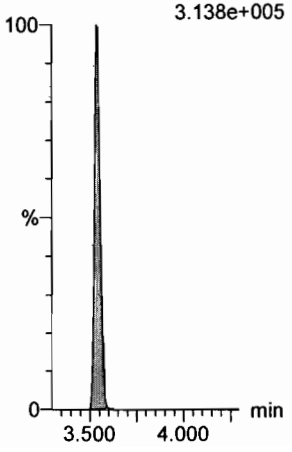
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13C4-PFHpA



13C4-PFHpA

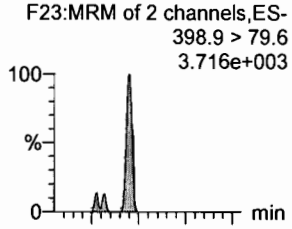


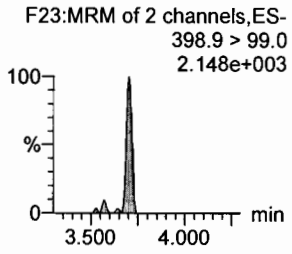
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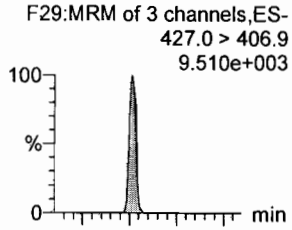
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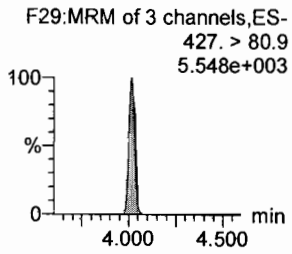
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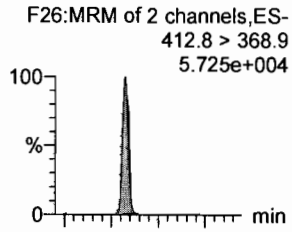


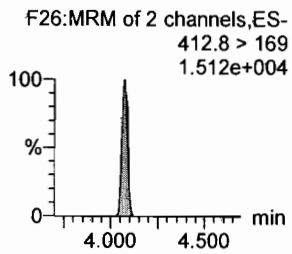
6:2 FTS



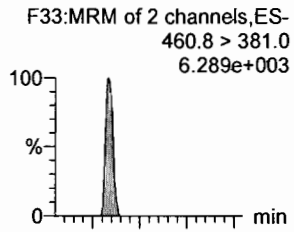


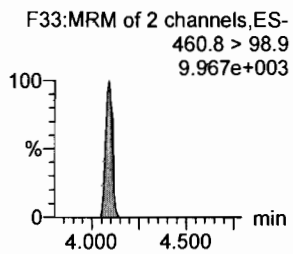
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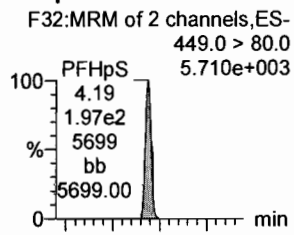


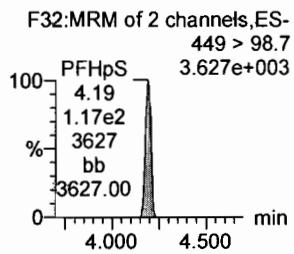
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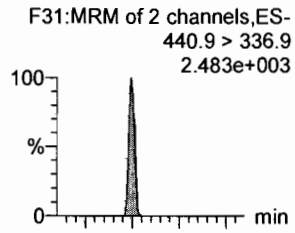


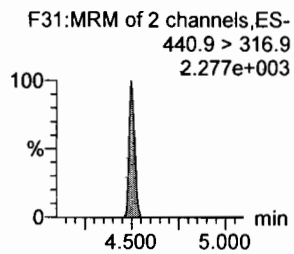
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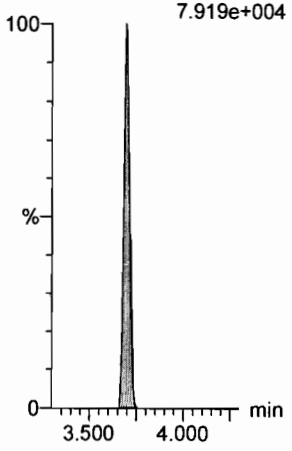


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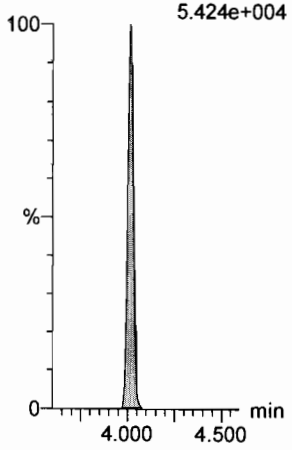




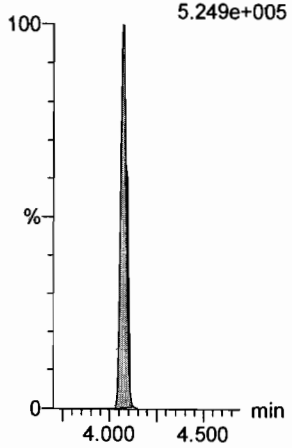
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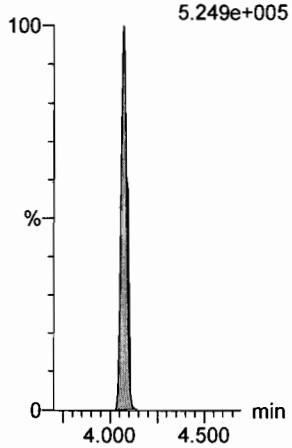
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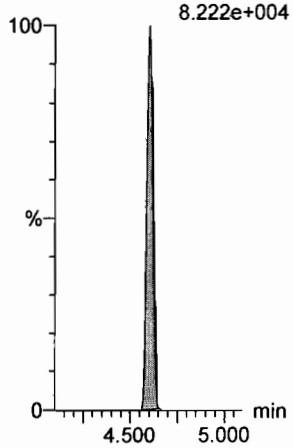
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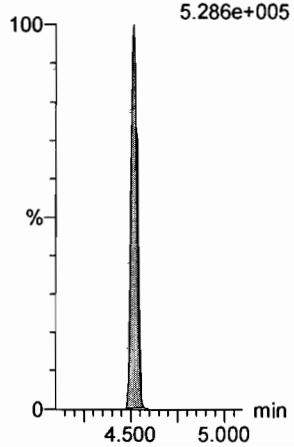
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13C8-PFOS



13C5-PFNA

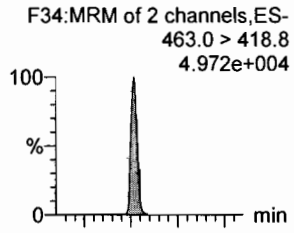


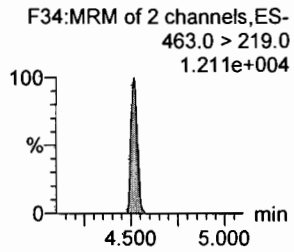
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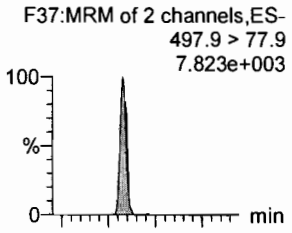
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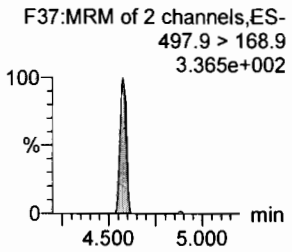
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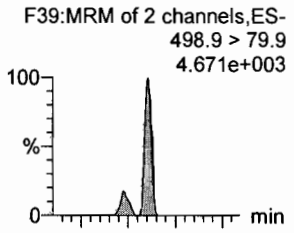


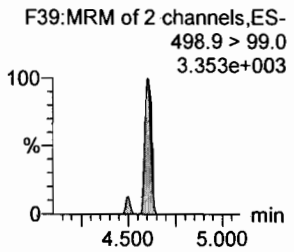
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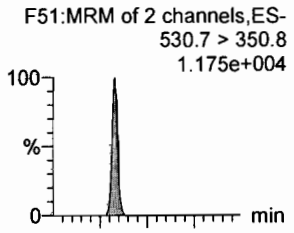


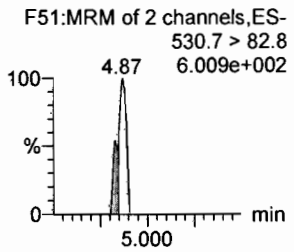
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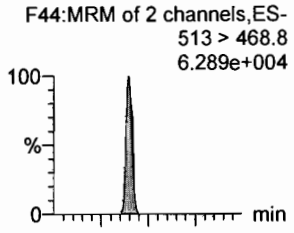


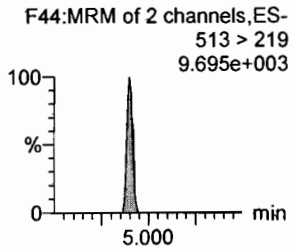
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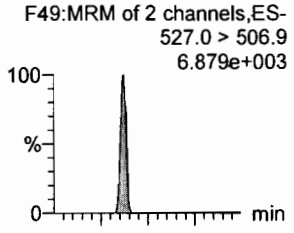


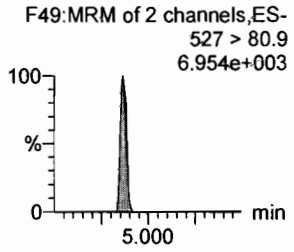
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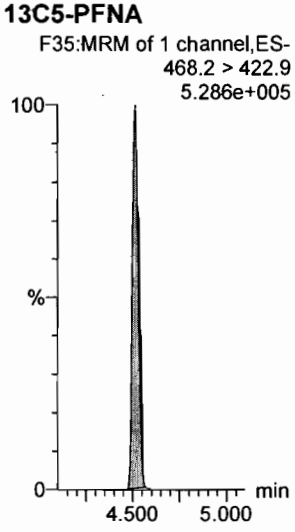


8:2 FTS

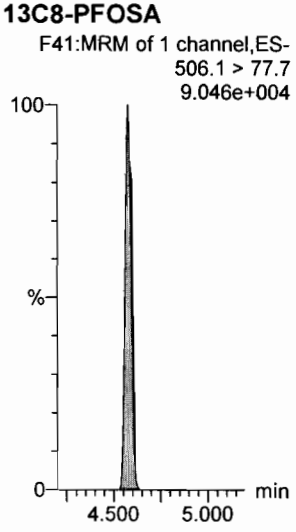




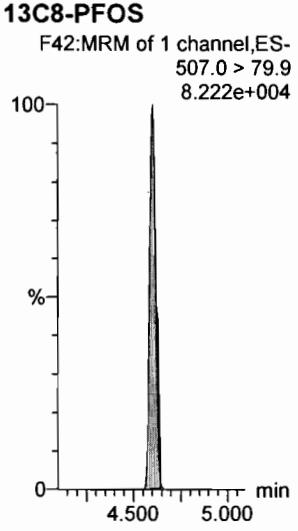
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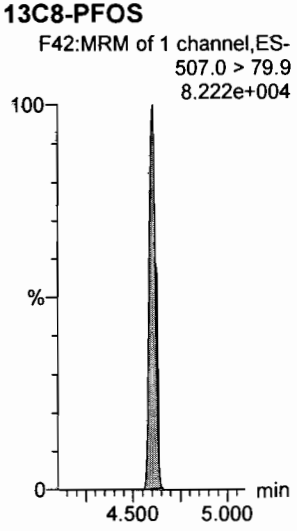
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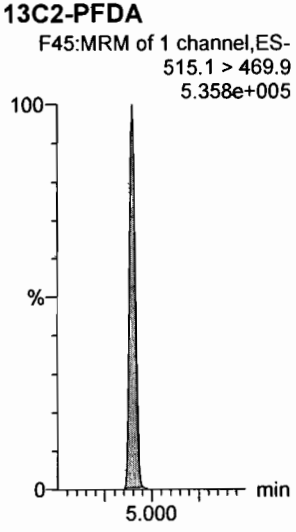
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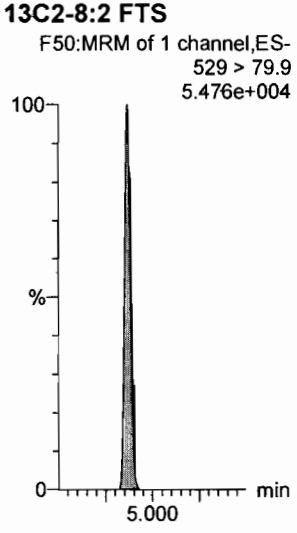
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

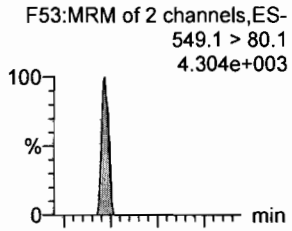


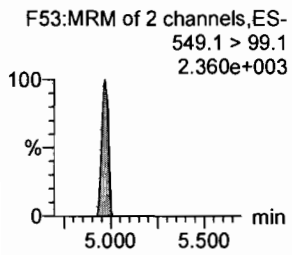
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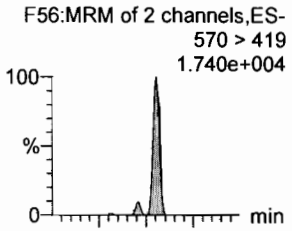
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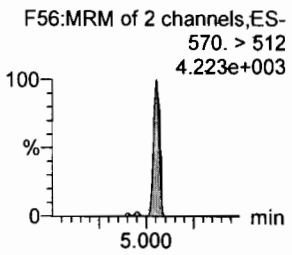
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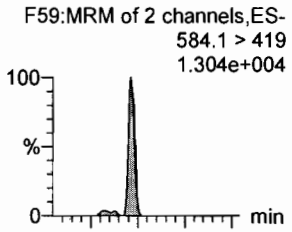


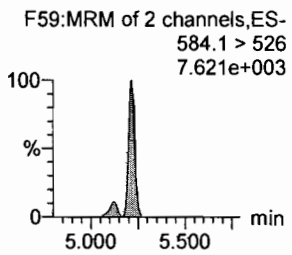
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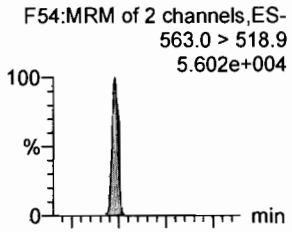


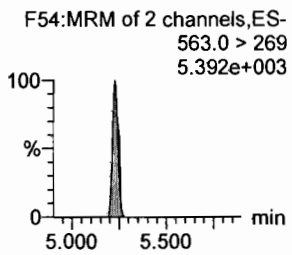
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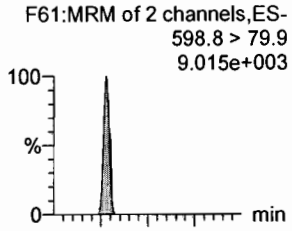


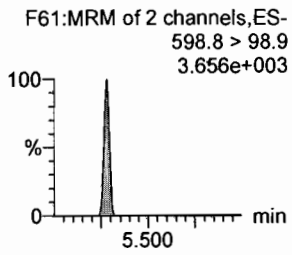
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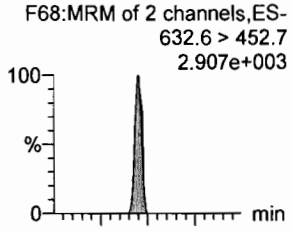


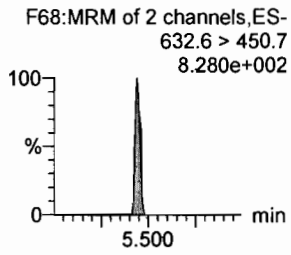
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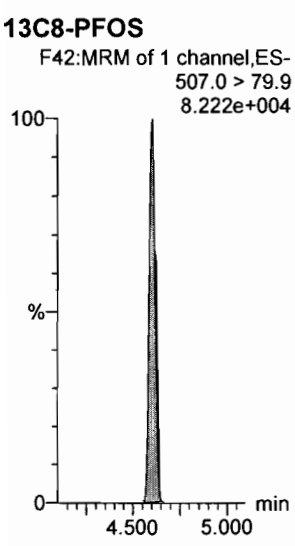


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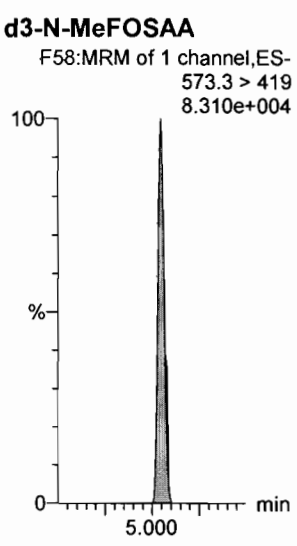




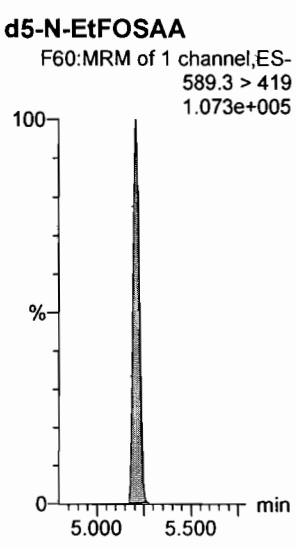
13C8-PFOS



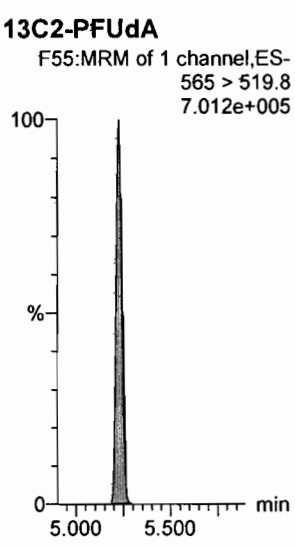
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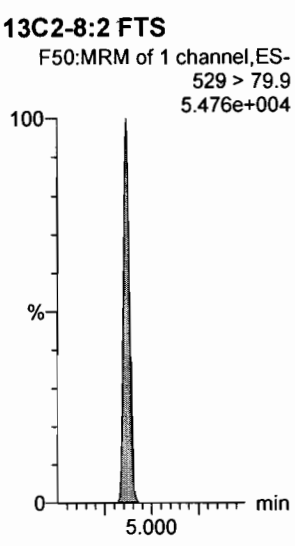
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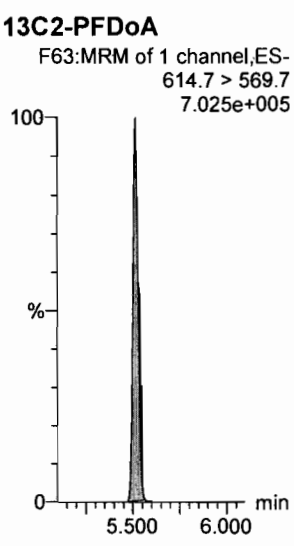
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13C2-8:2 FTS



13C2-PFDoA

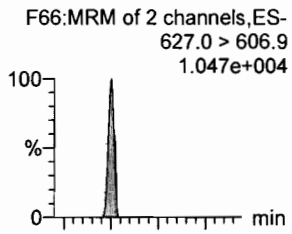


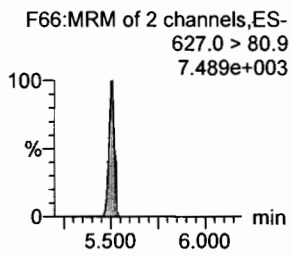
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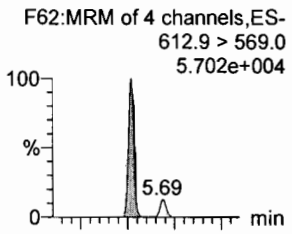
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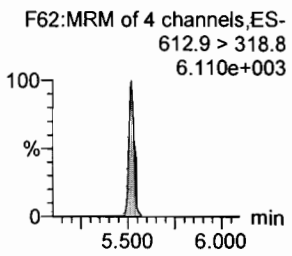
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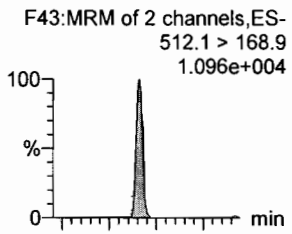


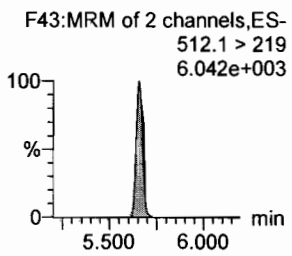
PFDoA



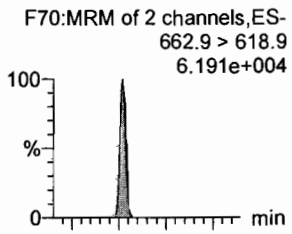


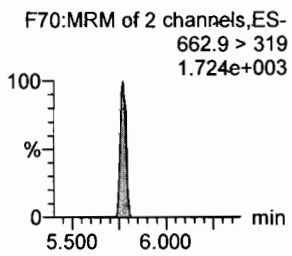
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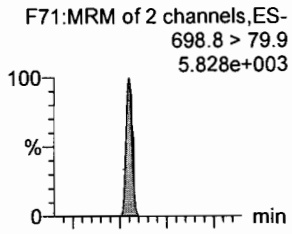


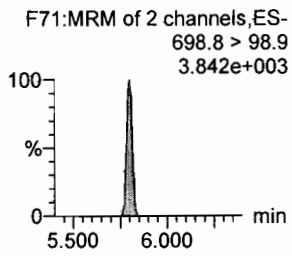
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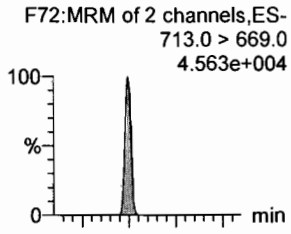


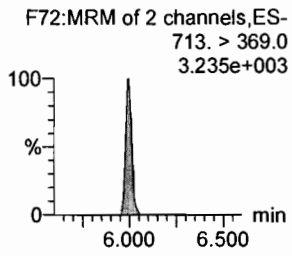
PFDoS



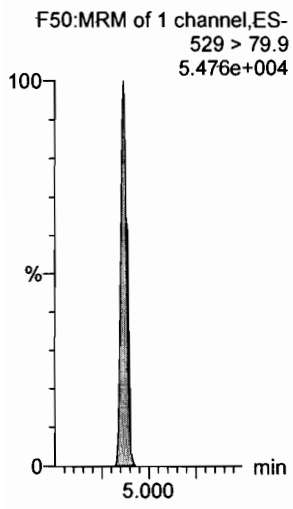


PFTeDA

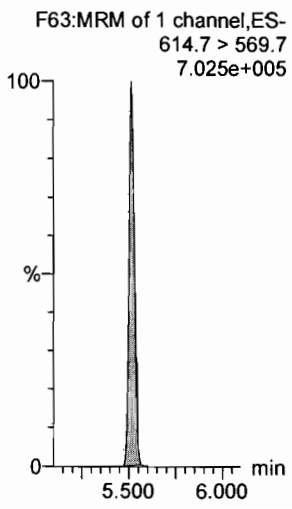




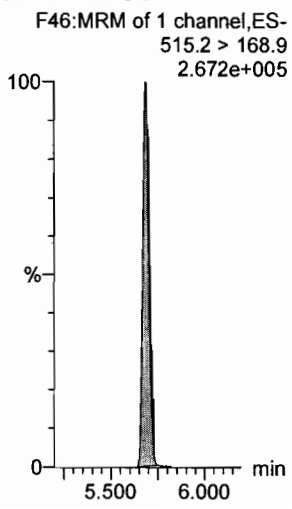
13C2-8:2 FTS



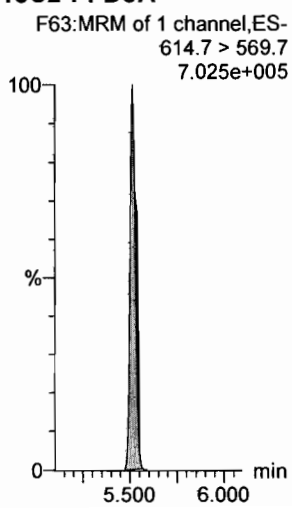
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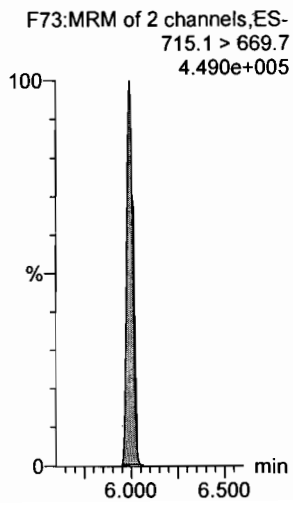
d3-N-MeFOSA



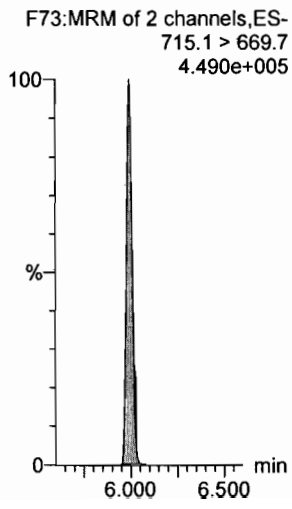
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13C2-PFTeDA



13C2-PFTeDA

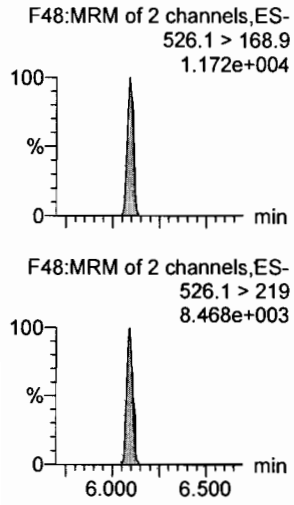


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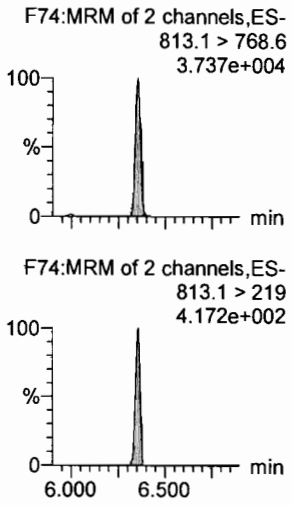
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_8, Date: 12-Jul-2019, Time: 18:45:35, ID: ST190712M2-3 PFC CS0 19G1103, Description: PFC CS0 19G1103

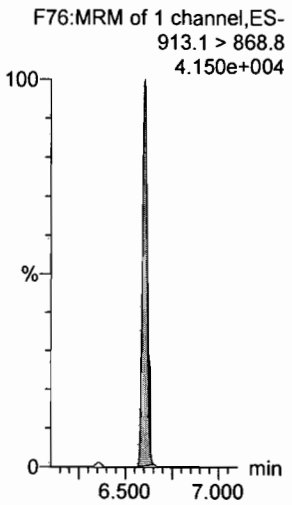
N-EtFOSA



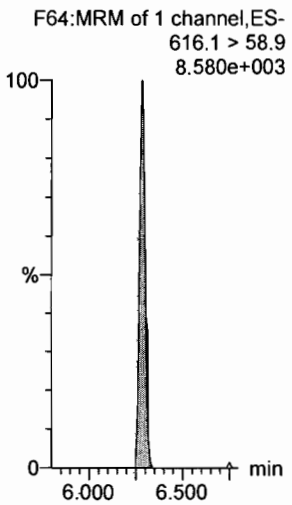
PFHxDA



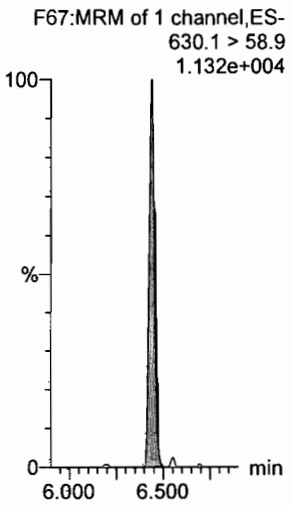
PFODA



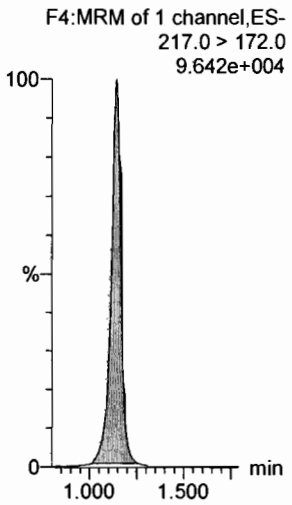
N-MeFOSE



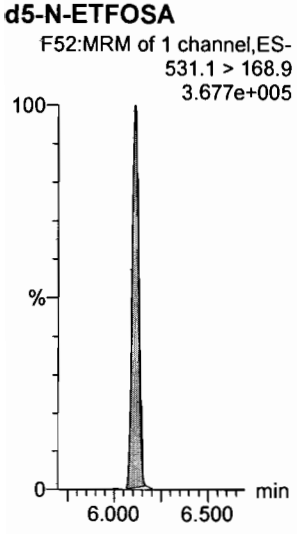
N-EtFOSE



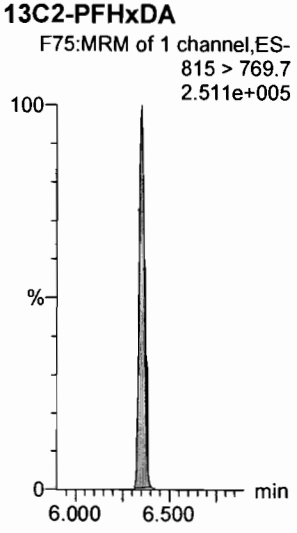
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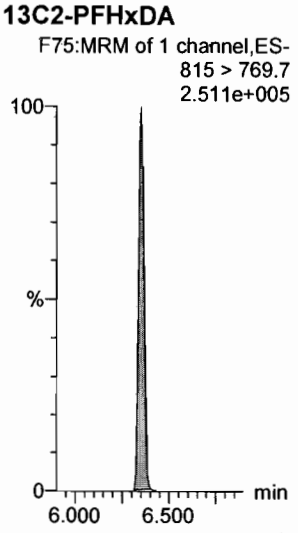
d5-N-ETFOSA



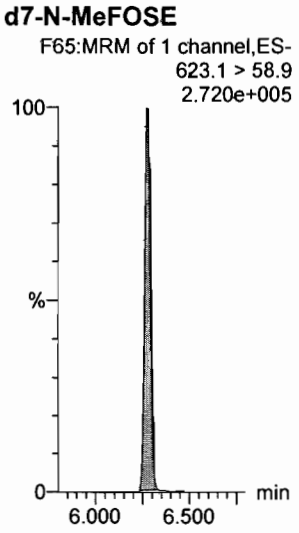
13C2-PFHxDA



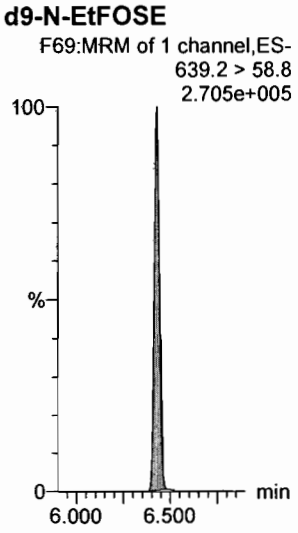
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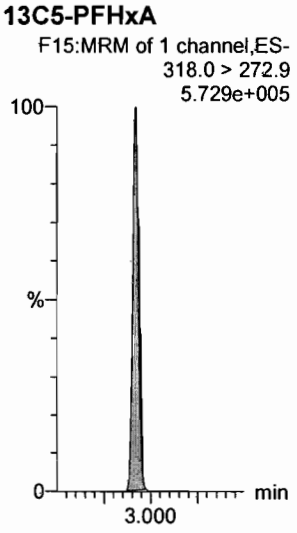
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

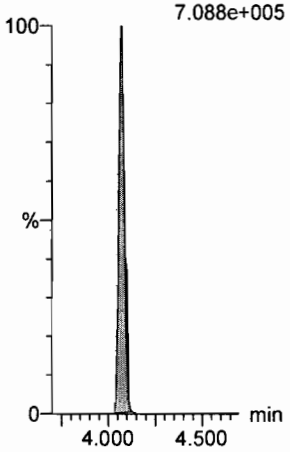


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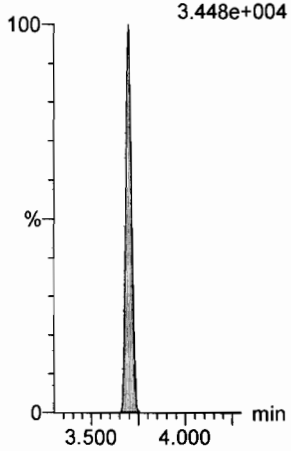
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Name: 190712M2_8, Date: 12-Jul-2019, Time: 18:45:35, ID: ST190712M2-3 PFC CS0 19G1103, Description: PFC CS0 19G1103

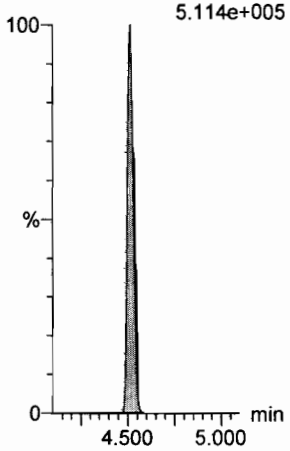
13C8-PFOA



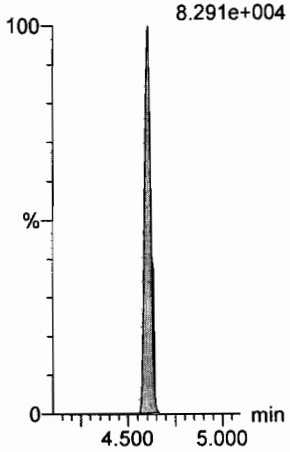
18O2-PFHxS



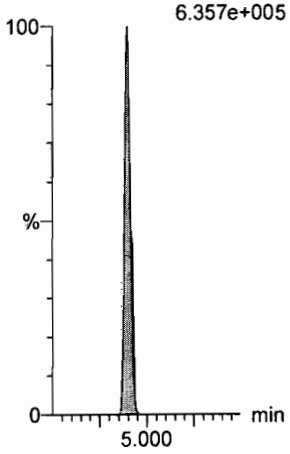
13C9-PFNA



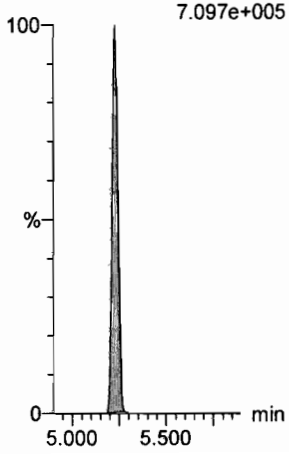
13C4-PFOS



13C6-PFDA



13C7-PFUdA

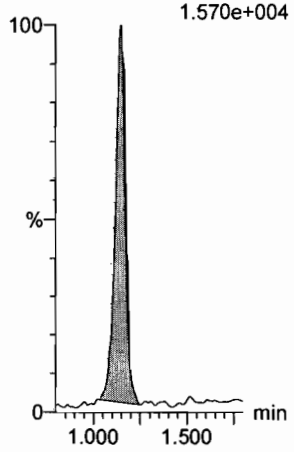


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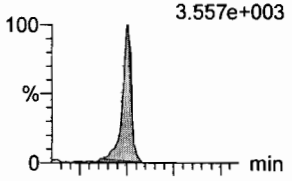
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Name: 190712M2_9, Date: 12-Jul-2019, Time: 18:56:14, ID: ST190712M2-4 PFC CS1 19G1104, Description: PFC CS1 19G1104

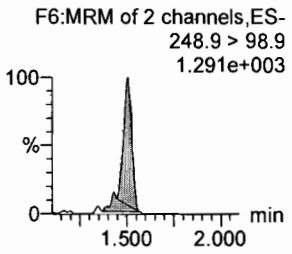
PFBA
F2:MRM of 1 channel,ES-
213.0 > 168.8
1.570e+004



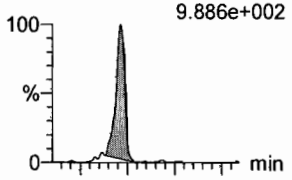
PFPrS
F6:MRM of 2 channels,ES-
248.9 > 79.9
3.557e+003



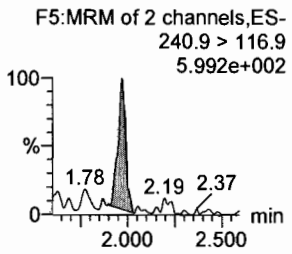
F6:MRM of 2 channels,ES-
248.9 > 98.9
1.291e+003



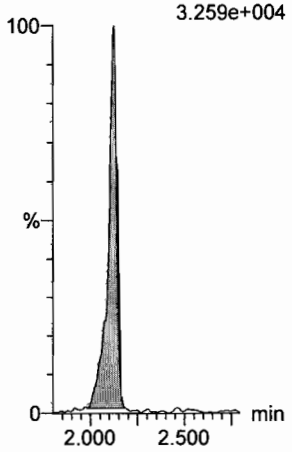
3:3 FTCA
F5:MRM of 2 channels,ES-
240.9 > 176.9
9.886e+002



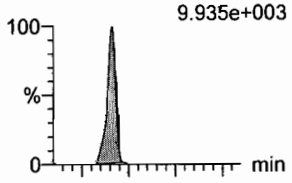
F5:MRM of 2 channels,ES-
240.9 > 116.9
5.992e+002



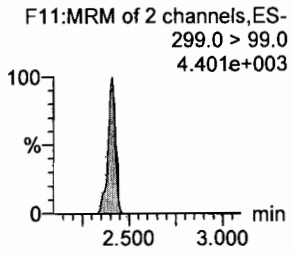
PFPeA
F7:MRM of 1 channel,ES-
263.1 > 218.9
3.259e+004



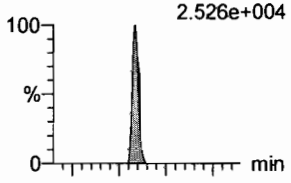
PFBS
F11:MRM of 2 channels,ES-
299.0 > 79.7
9.935e+003



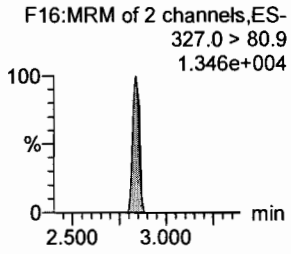
F11:MRM of 2 channels,ES-
299.0 > 99.0
4.401e+003



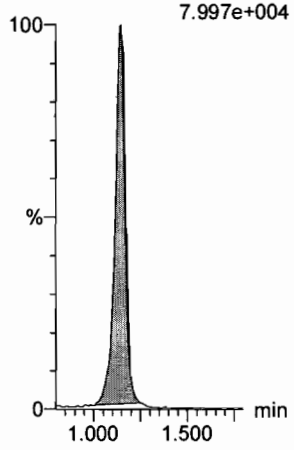
4:2 FTS
F16:MRM of 2 channels,ES-
327.0 > 306.9
2.526e+004



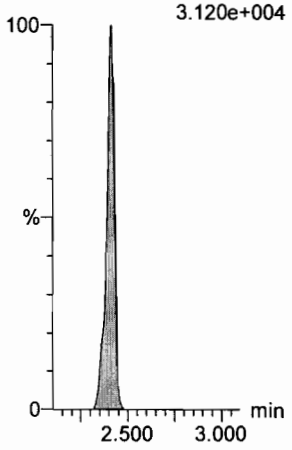
F16:MRM of 2 channels,ES-
327.0 > 80.9
1.346e+004



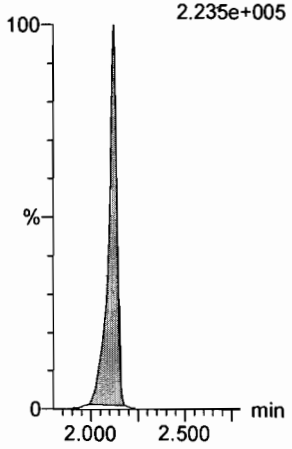
13C3-PFBA
F3:MRM of 1 channel,ES-
216.1 > 171.8
7.997e+004



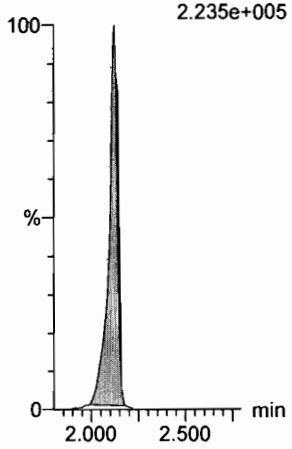
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
3.120e+004



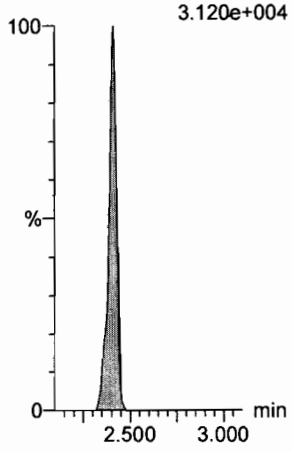
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
2.235e+005



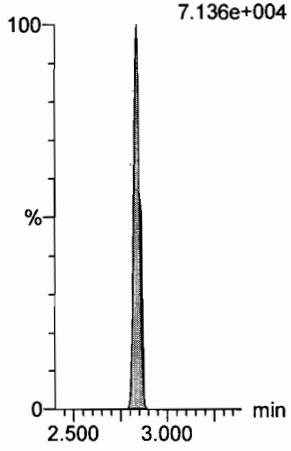
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
2.235e+005



13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
3.120e+004



13C2-4:2 FTS
F17:MRM of 2 channels,ES-
329.0 > 79.9
7.136e+004

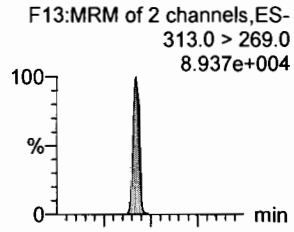


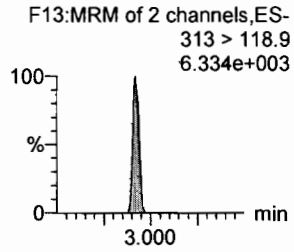
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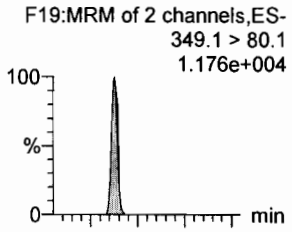
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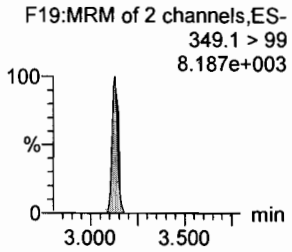
PFHxA



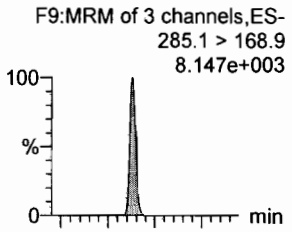


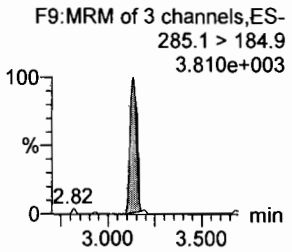
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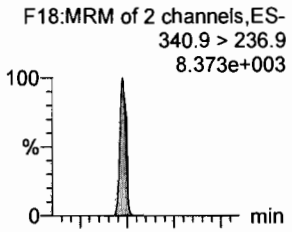


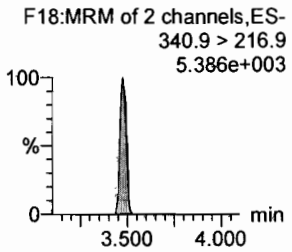
HFPO-DA



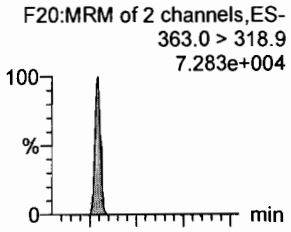


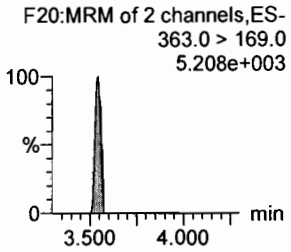
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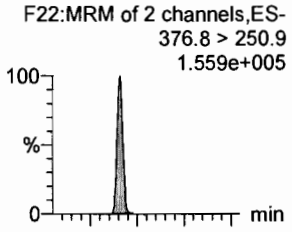


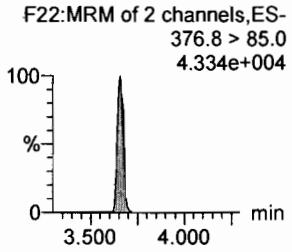
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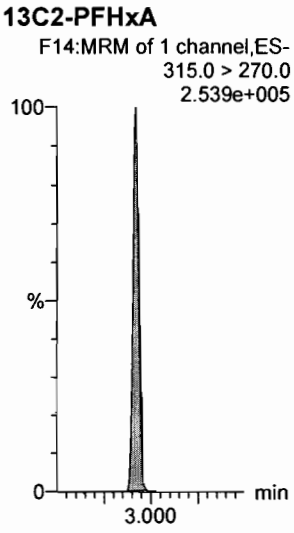


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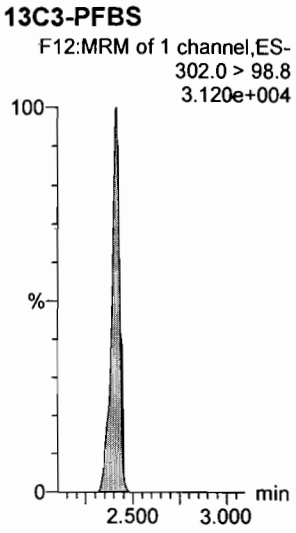




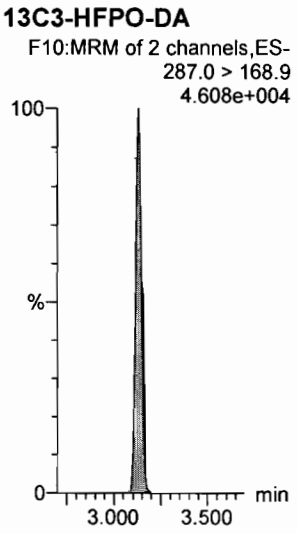
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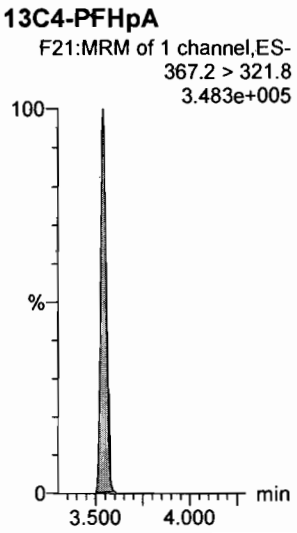
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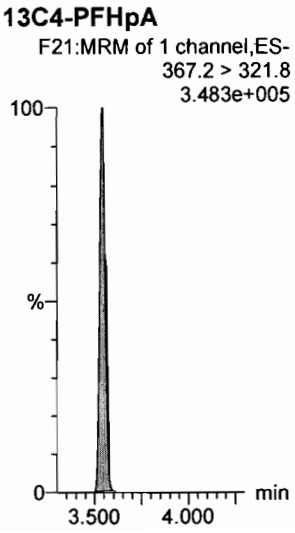
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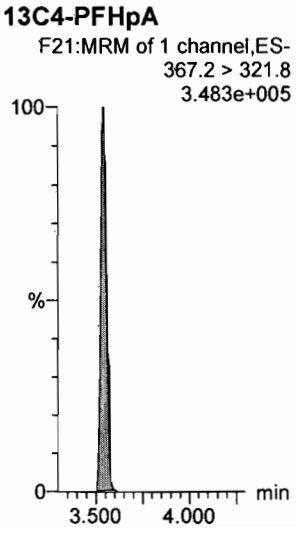
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13C4-PFHpA



13C4-PFHpA

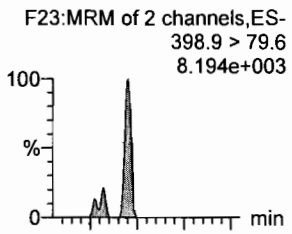


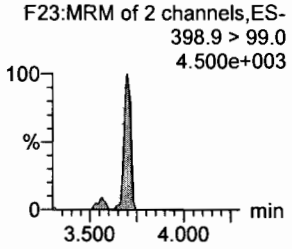
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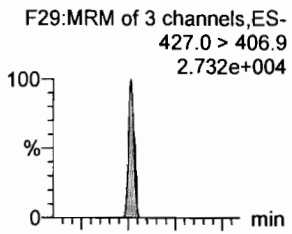
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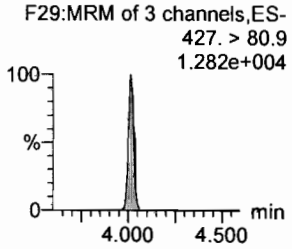
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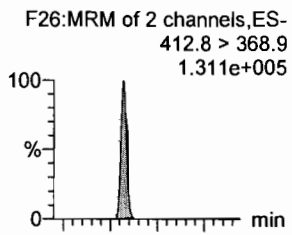


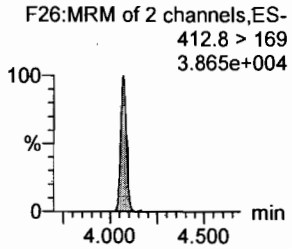
6:2 FTS



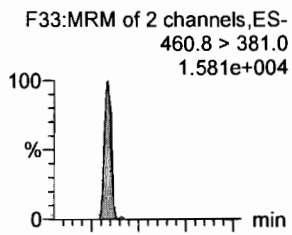


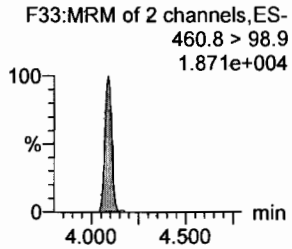
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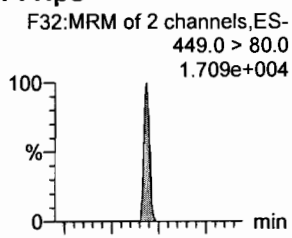


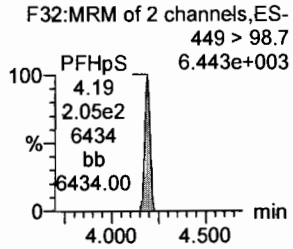
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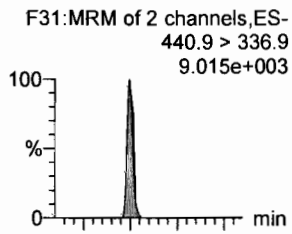


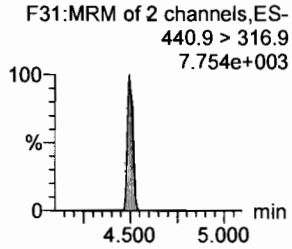
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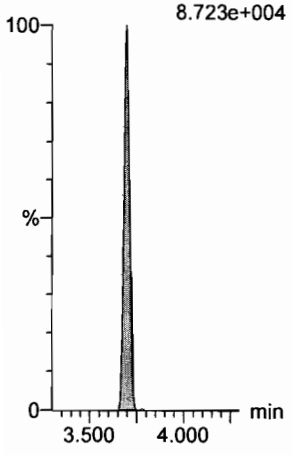


7:3 FTCA

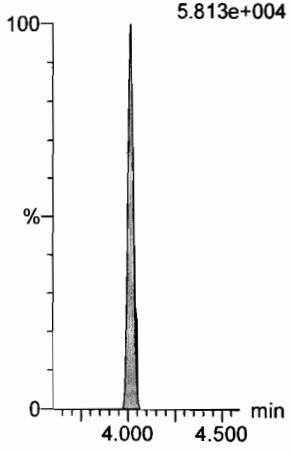




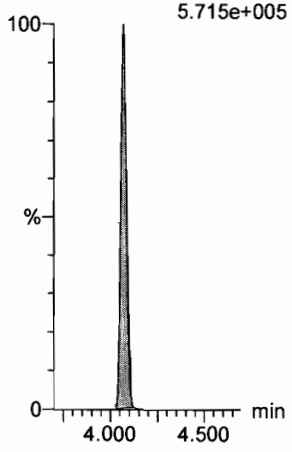
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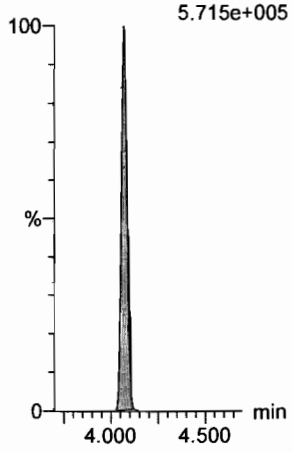
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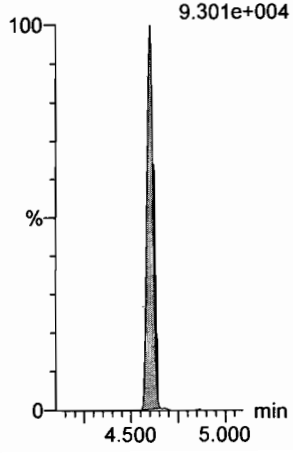
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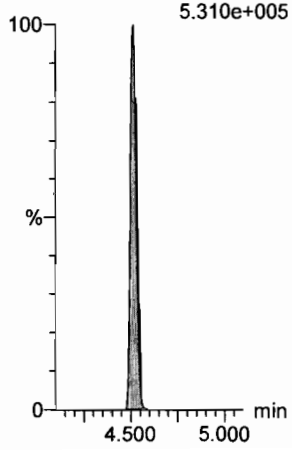
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13C8-PFOS



13C5-PFNA

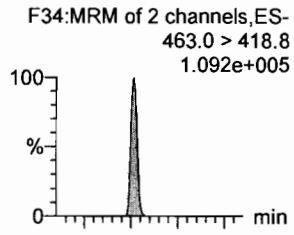


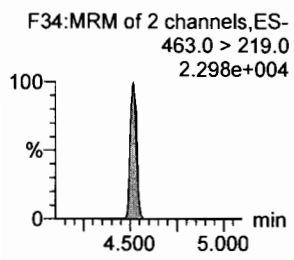
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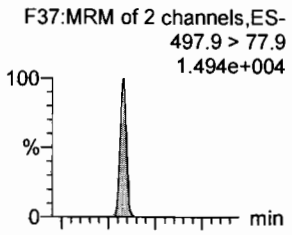
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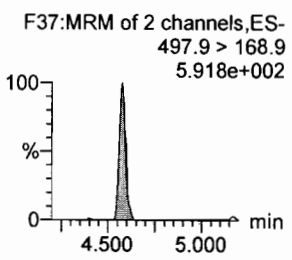
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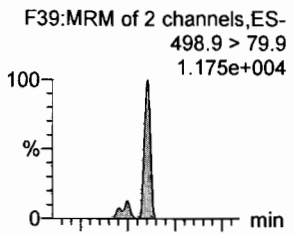


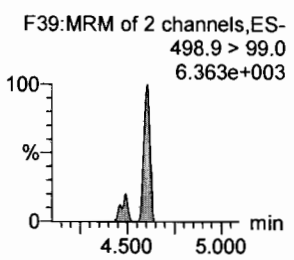
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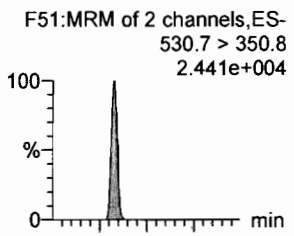


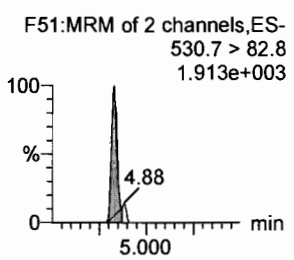
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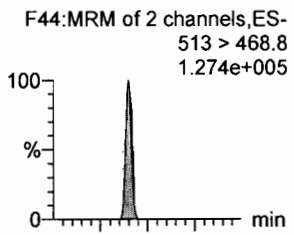


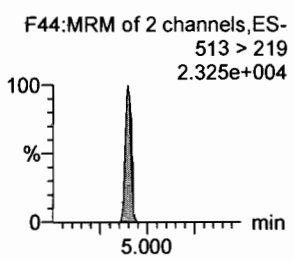
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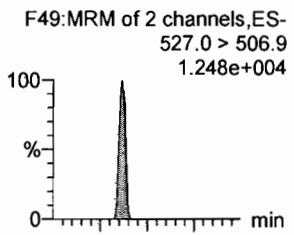


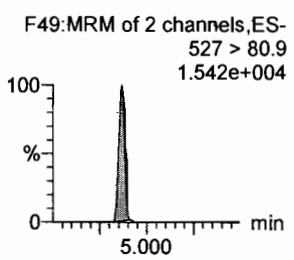
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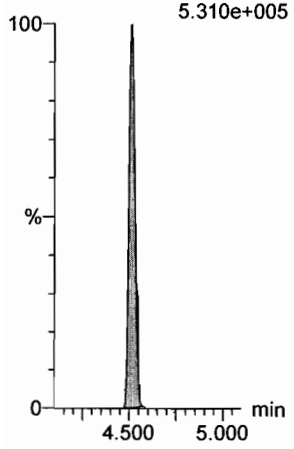


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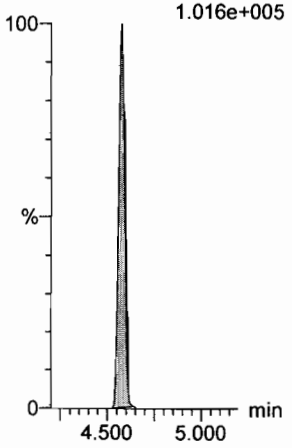




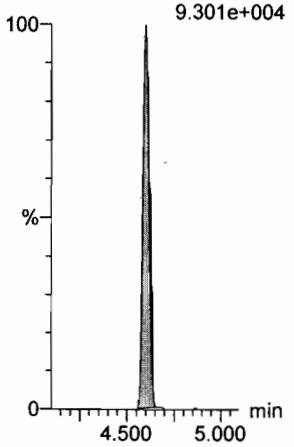
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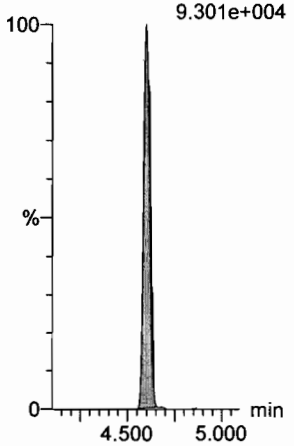
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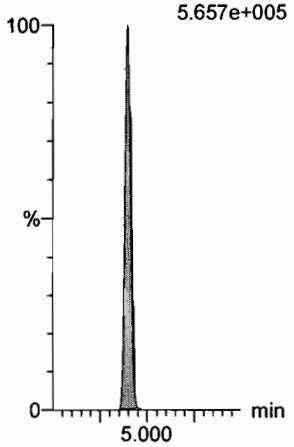
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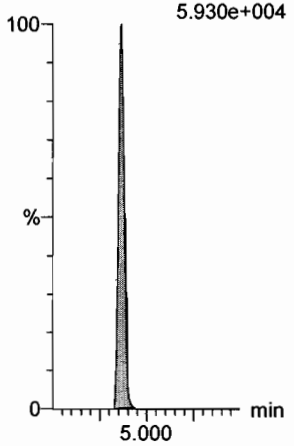
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

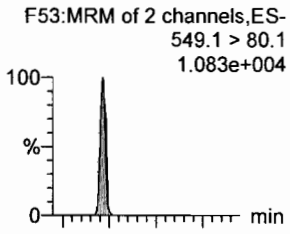


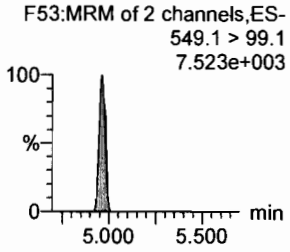
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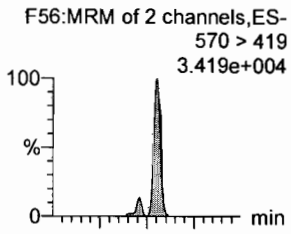
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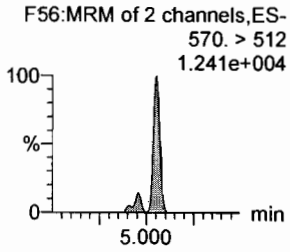
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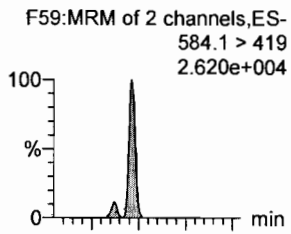


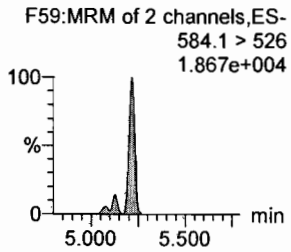
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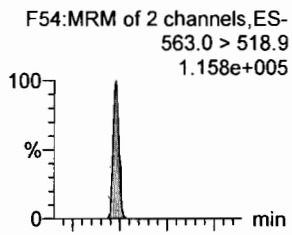


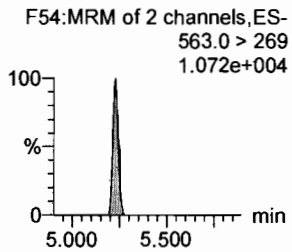
L-EtFOSAA



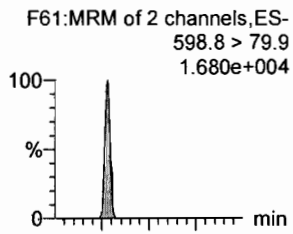


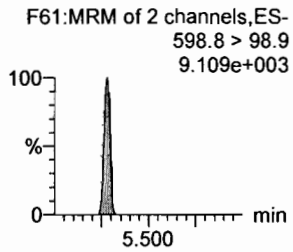
PFUdA



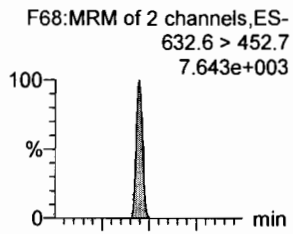


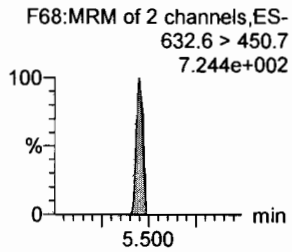
PFDS



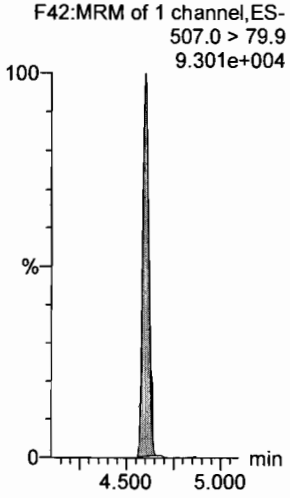


11Cl-PF30UdS

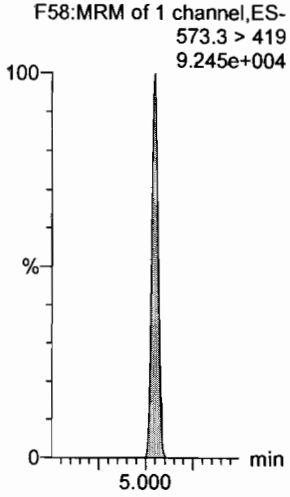




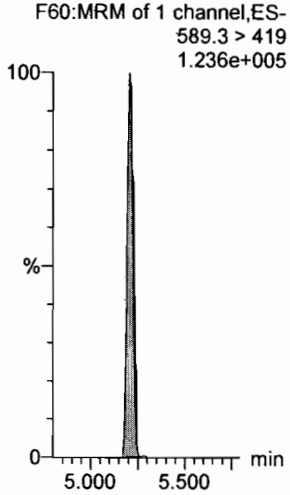
13C8-PFOS



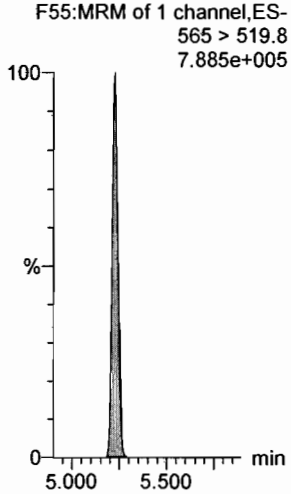
d3-N-MeFOSAA



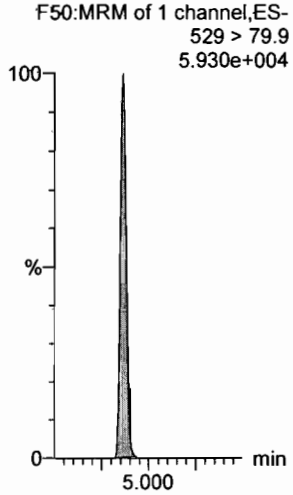
d5-N-EtFOSAA



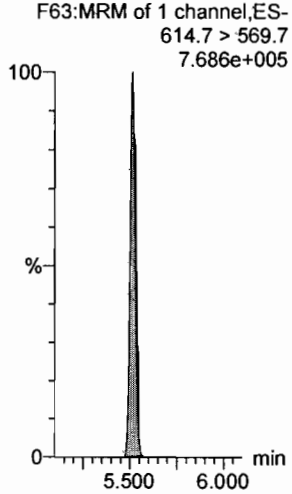
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

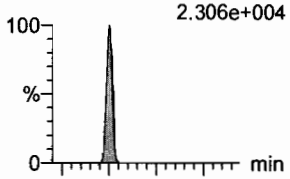


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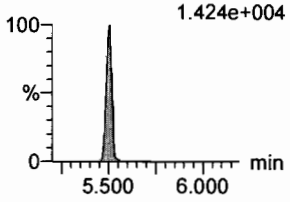
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_9, Date: 12-Jul-2019, Time: 18:56:14, ID: ST190712M2-4 PFC CS1 19G1104, Description: PFC CS1 19G1104

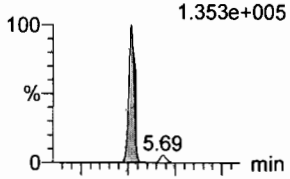
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
2.306e+004



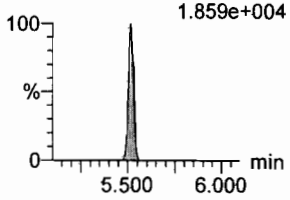
F66:MRM of 2 channels,ES-
627.0 > 80.9
1.424e+004



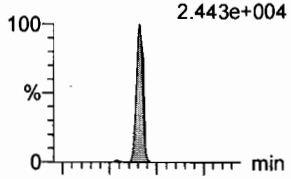
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
1.353e+005



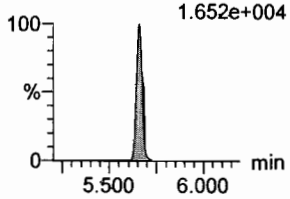
F62:MRM of 4 channels,ES-
612.9 > 318.8
1.859e+004



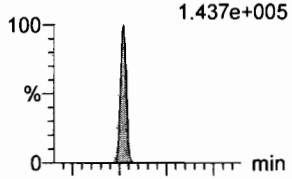
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
2.443e+004



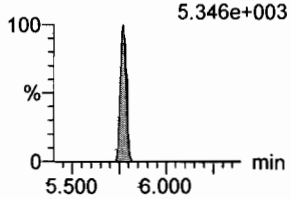
F43:MRM of 2 channels,ES-
512.1 > 219
1.652e+004



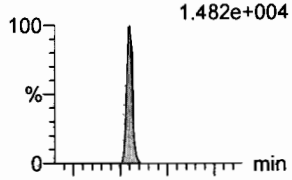
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
1.437e+005



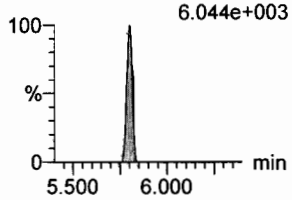
F70:MRM of 2 channels,ES-
662.9 > 319
5.346e+003



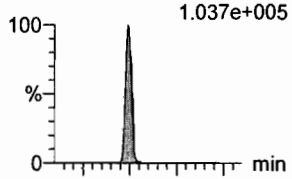
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
1.482e+004



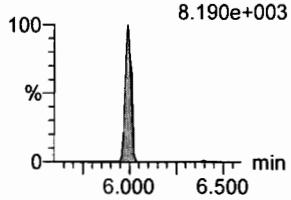
F71:MRM of 2 channels,ES-
698.8 > 98.9
6.044e+003



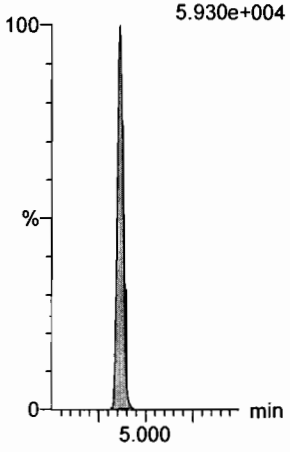
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
1.037e+005



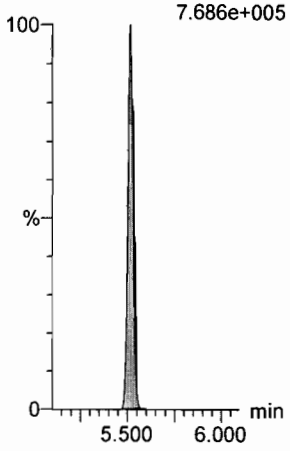
F72:MRM of 2 channels,ES-
713. > 369.0
8.190e+003



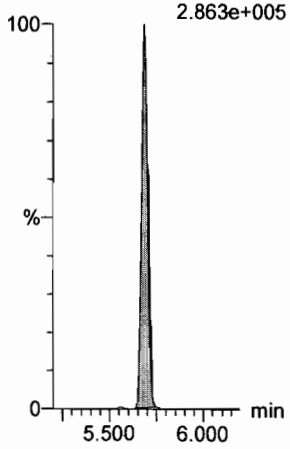
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
5.930e+004



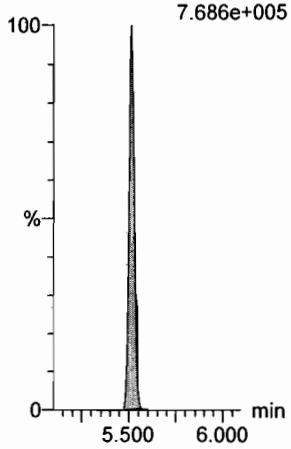
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
7.686e+005



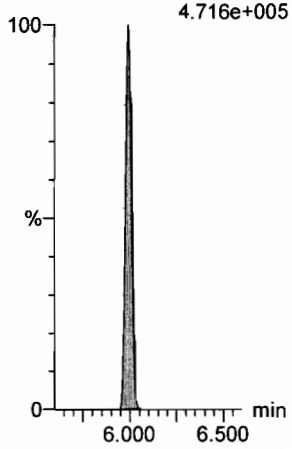
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.863e+005



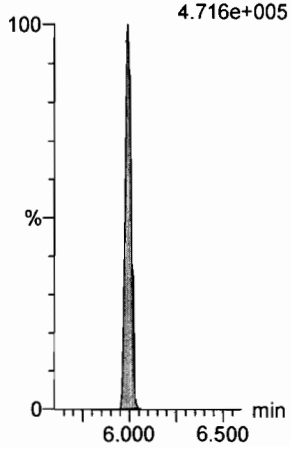
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
7.686e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.716e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.716e+005

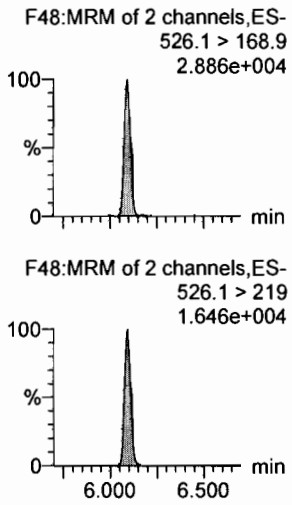


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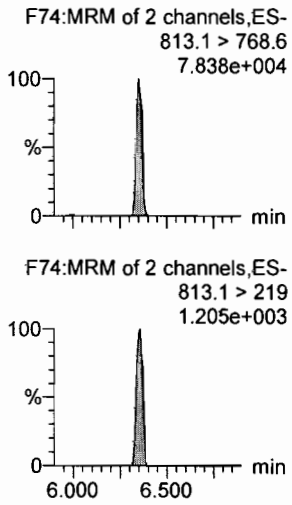
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Name: 190712M2_9, Date: 12-Jul-2019, Time: 18:56:14, ID: ST190712M2-4 PFC CS1 19G1104, Description: PFC CS1 19G1104

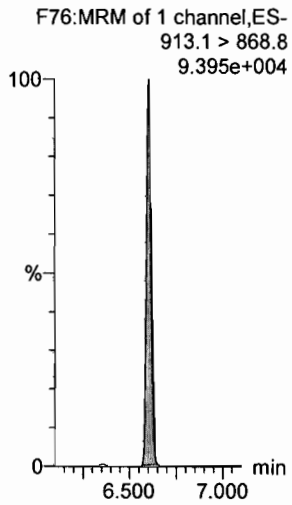
N-EtFOSA



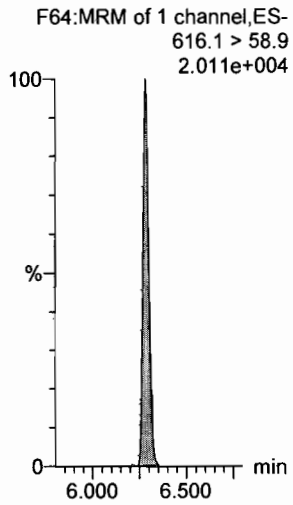
PFHxDA



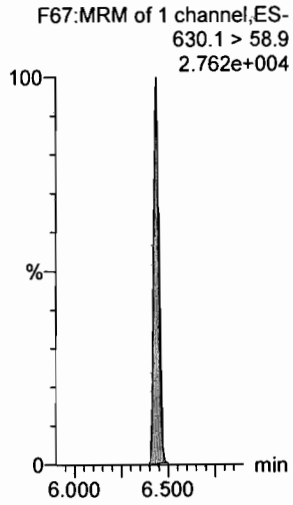
PFODA



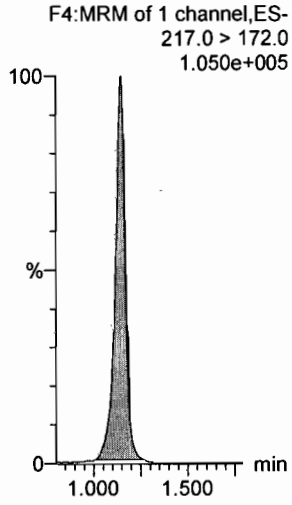
N-MeFOSE



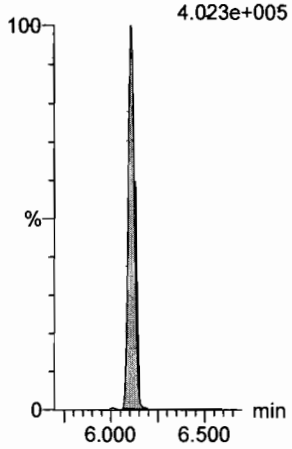
N-EtFOSE



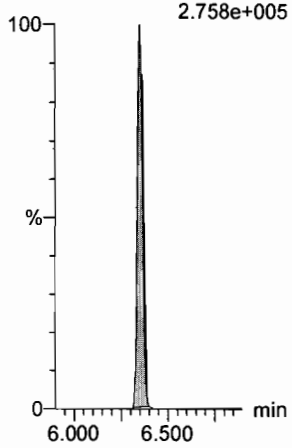
13C4-PFBA



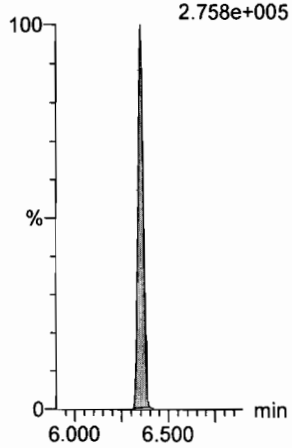
d5-N-ETFOSA



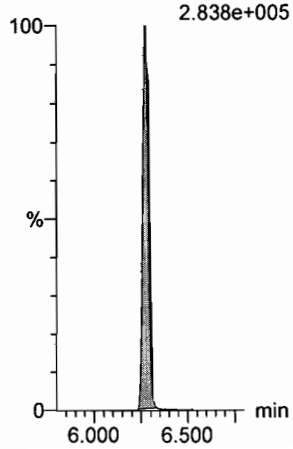
13C2-PFHxDA



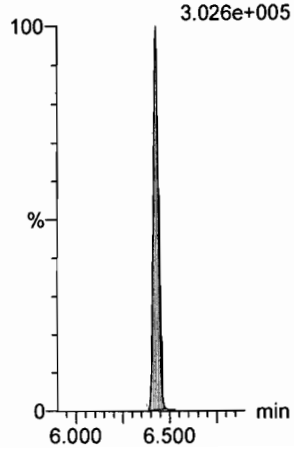
13C2-PFHxDA



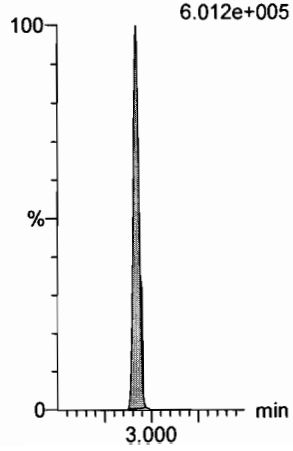
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

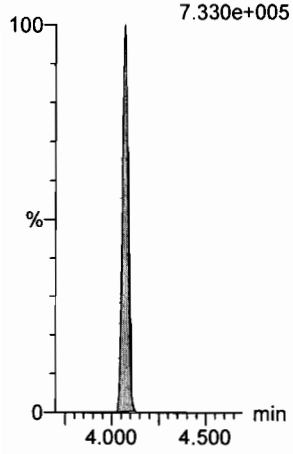


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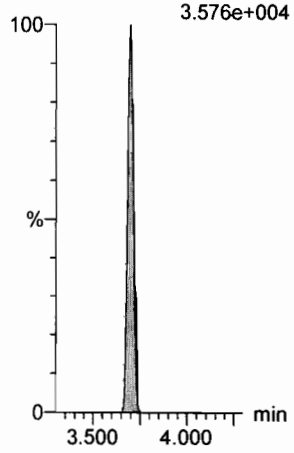
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Name: 190712M2_9, Date: 12-Jul-2019, Time: 18:56:14, ID: ST190712M2-4 PFC CS1 19G1104, Description: PFC CS1 19G1104

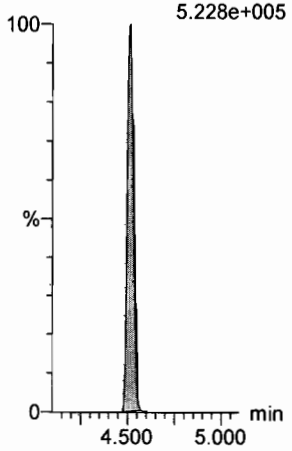
13C8-PFOA



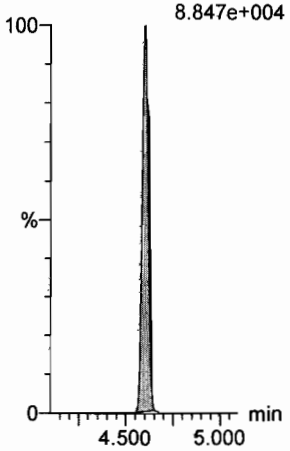
18O2-PFHxS



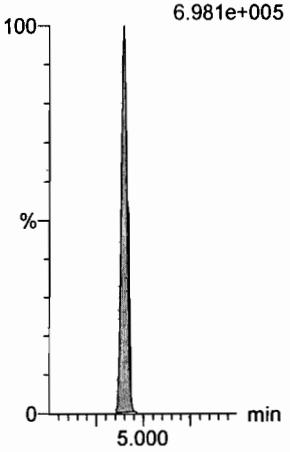
13C9-PFNA



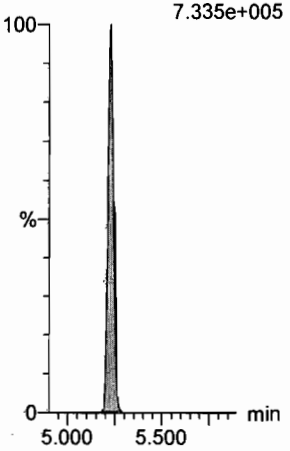
13C4-PFOS



13C6-PFDA



13C7-PFUdA

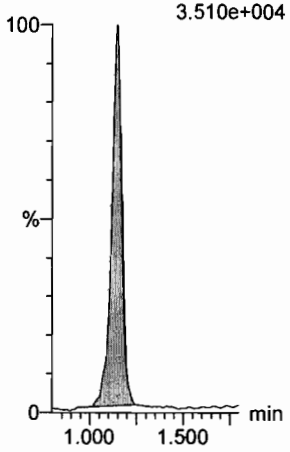


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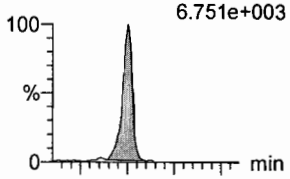
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Name: 190712M2_10, Date: 12-Jul-2019, Time: 19:06:47, ID: ST190712M2-5 PFC CS2 19G1105, Description: PFC CS2 19G1105

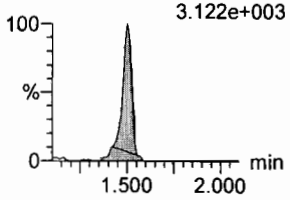
PFBA
F2:MRM of 1 channel,ES-
213.0 > 168.8
3.510e+004



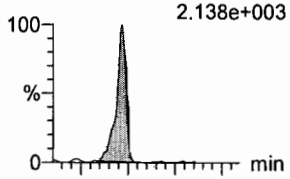
PFPrS
F6:MRM of 2 channels,ES-
248.9 > 79.9
6.751e+003



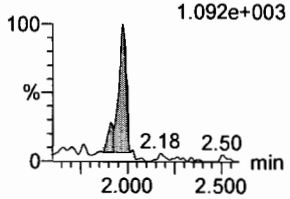
F6:MRM of 2 channels,ES-
248.9 > 98.9
3.122e+003



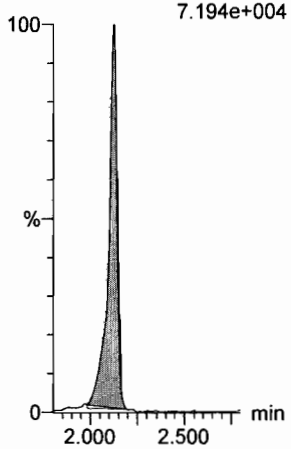
3:3 FTCA
F5:MRM of 2 channels,ES-
240.9 > 176.9
2.138e+003



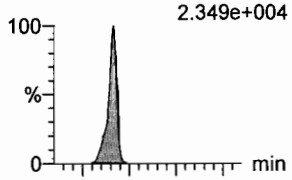
F5:MRM of 2 channels,ES-
240.9 > 116.9
1.092e+003



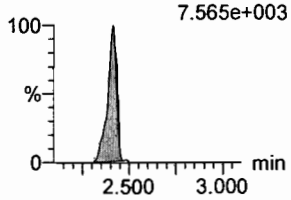
PFPeA
F7:MRM of 1 channel,ES-
263.1 > 218.9
7.194e+004



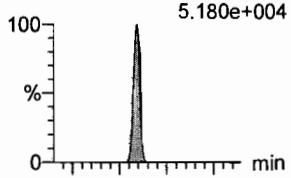
PFBS
F11:MRM of 2 channels,ES-
299.0 > 79.7
2.349e+004



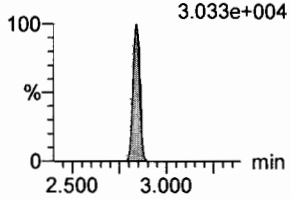
F11:MRM of 2 channels,ES-
299.0 > 99.0
7.565e+003



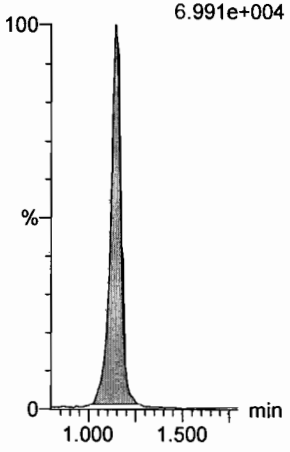
4:2 FTS
F16:MRM of 2 channels,ES-
327.0 > 306.9
5.180e+004



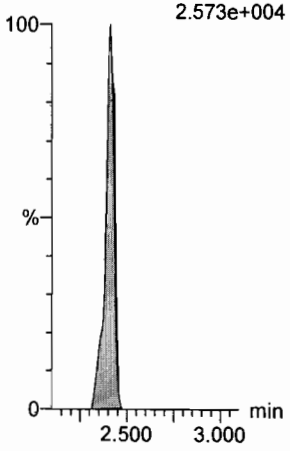
F16:MRM of 2 channels,ES-
327.0 > 80.9
3.033e+004



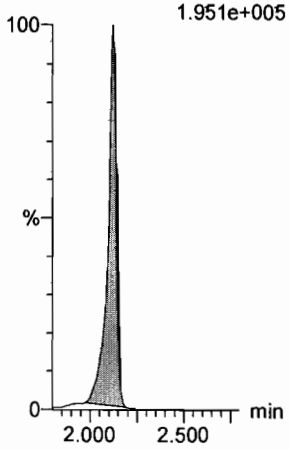
13C3-PFBA
F3:MRM of 1 channel,ES-
216.1 > 171.8
6.991e+004



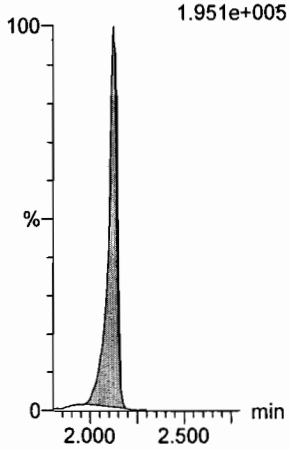
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.573e+004



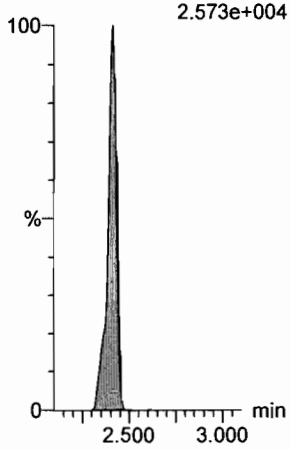
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.951e+005



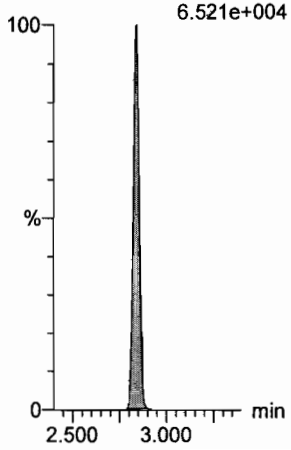
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.951e+005



13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.573e+004



13C2-4:2 FTS
F17:MRM of 2 channels,ES-
329.0 > 79.9
6.521e+004

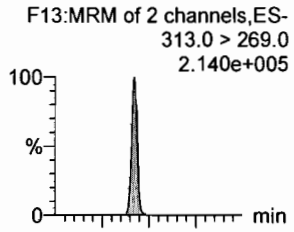


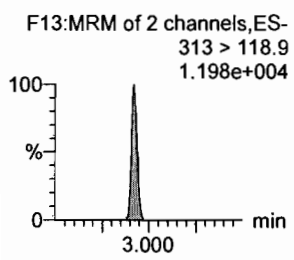
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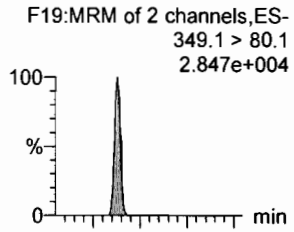
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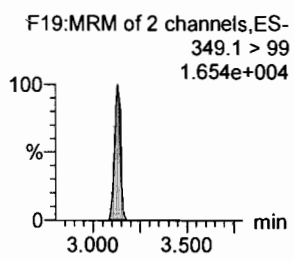
PFHxA



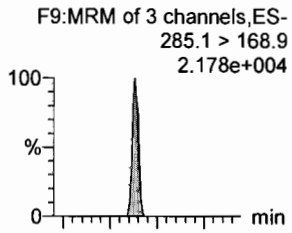


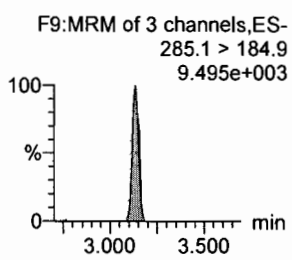
PFPeS



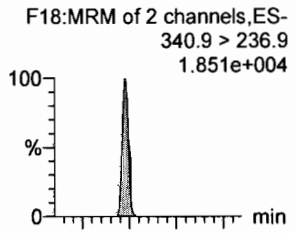


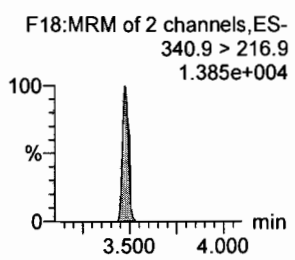
HFPO-DA



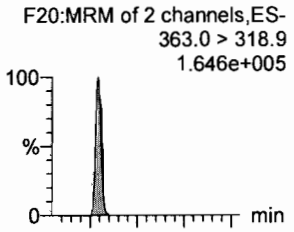


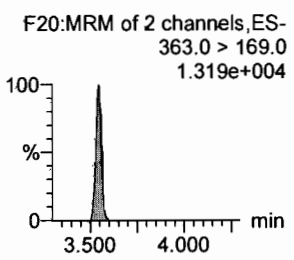
5:3 FTCA



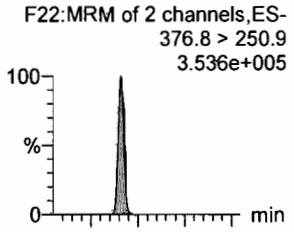


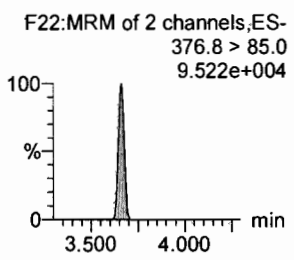
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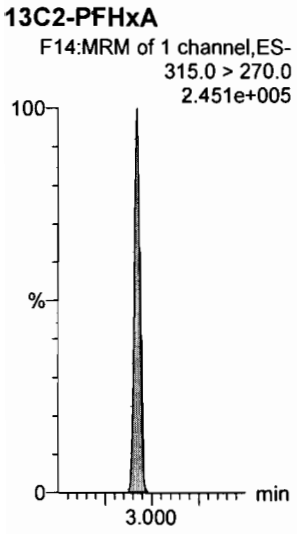


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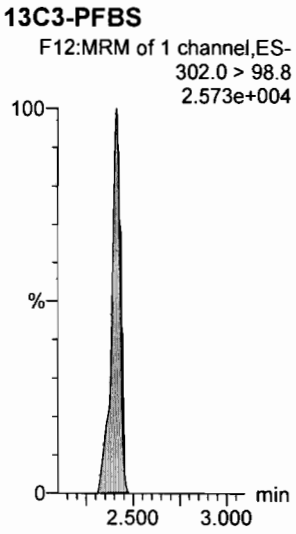




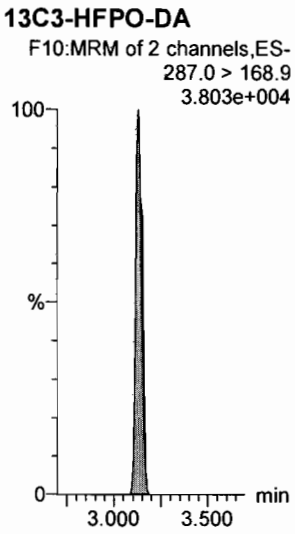
13C2-PFHxA



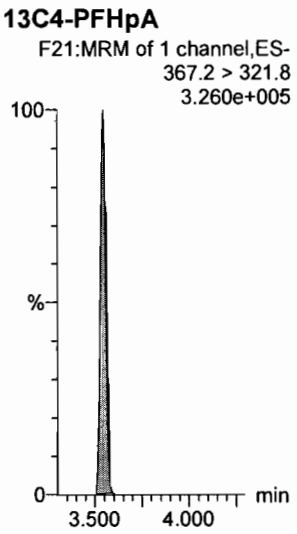
13C3-PFBS



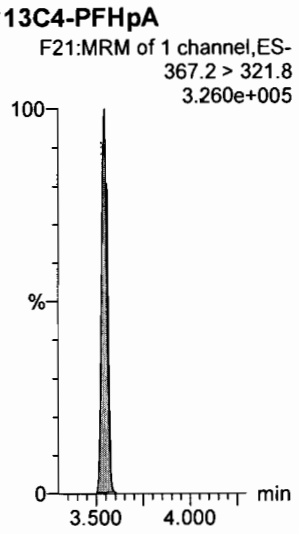
13C3-HFPO-DA



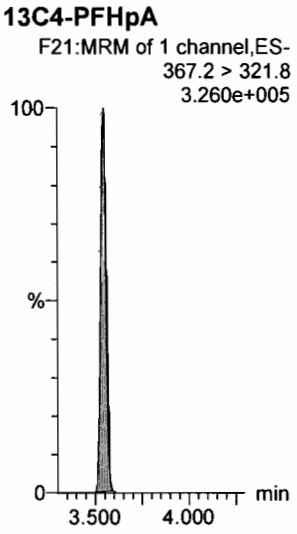
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

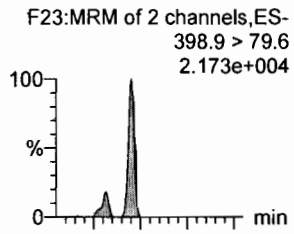


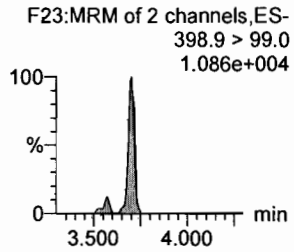
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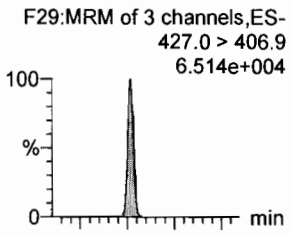
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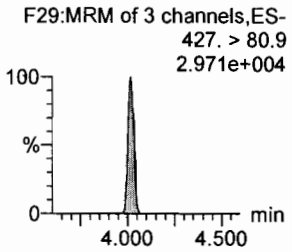
L-PFHxS



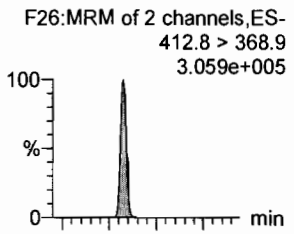


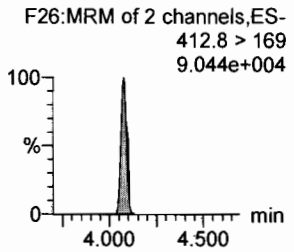
6:2 FTS



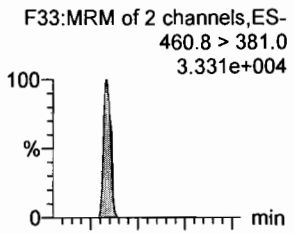


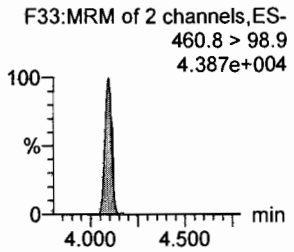
L-PFOA



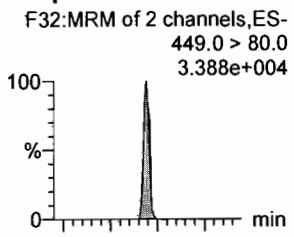


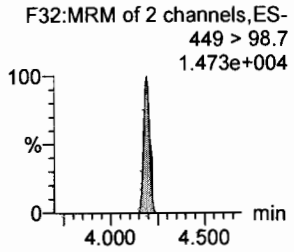
PFEChS



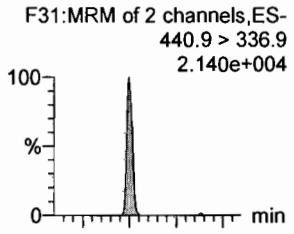


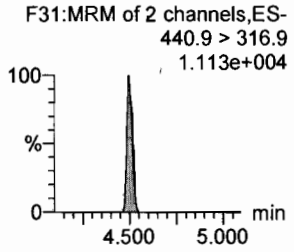
PFHpS



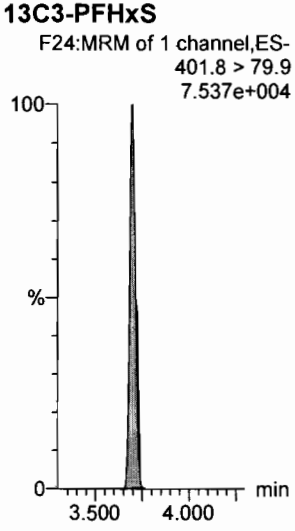


7:3 FTCA

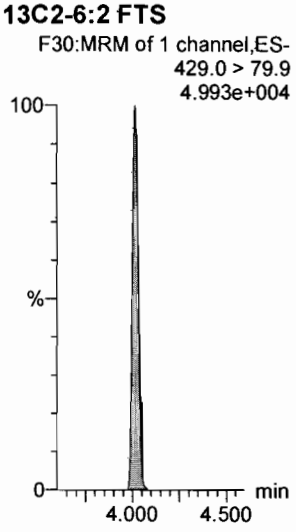




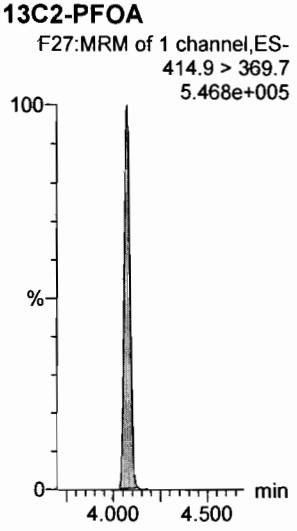
13C3-PFHxS



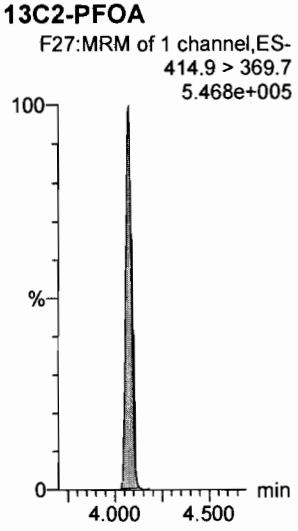
13C2-6:2 FTS



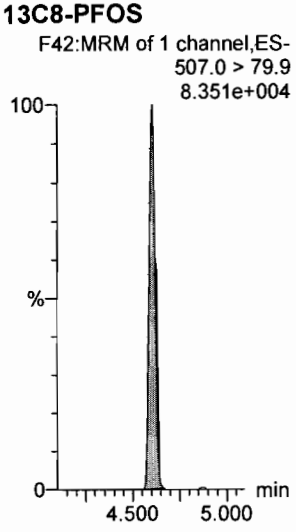
13C2-PFOA



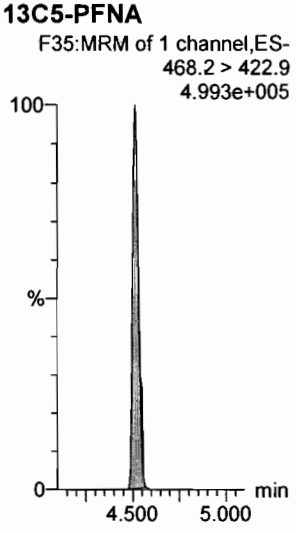
13C2-PFOA



13C8-PFOS



13C5-PFNA

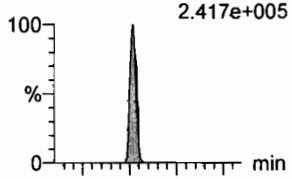


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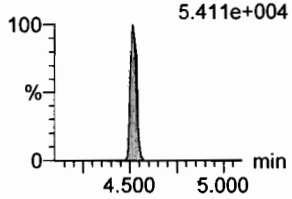
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Printed: Sunday, July 14, 2019 13:35:08 Pacific Daylight Time

Name: 190712M2_10, Date: 12-Jul-2019, Time: 19:06:47, ID: ST190712M2-5 PFC CS2 19G1105, Description: PFC CS2 19G1105

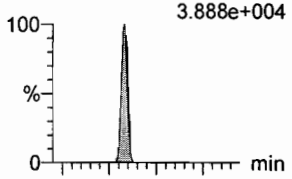
PFNA
F34:MRM of 2 channels,ES-
463.0 > 418.8
2.417e+005



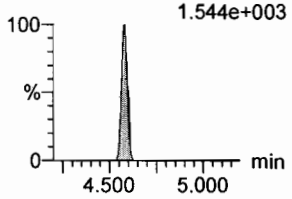
F34:MRM of 2 channels,ES-
463.0 > 219.0
5.411e+004



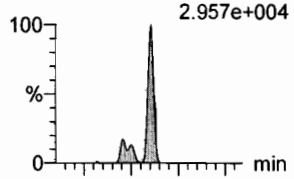
PFOSA
F37:MRM of 2 channels,ES-
497.9 > 77.9
3.888e+004



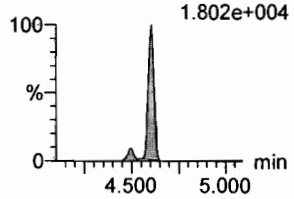
F37:MRM of 2 channels,ES-
497.9 > 168.9
1.544e+003



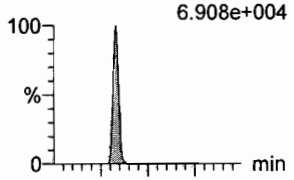
L-PFOS
F39:MRM of 2 channels,ES-
498.9 > 79.9
2.957e+004



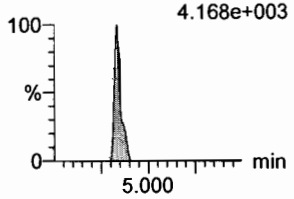
F39:MRM of 2 channels,ES-
498.9 > 99.0
1.802e+004



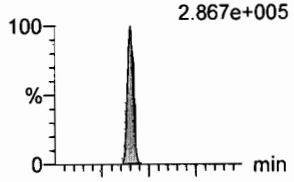
9CI-PF30NS
F51:MRM of 2 channels,ES-
530.7 > 350.8
6.908e+004



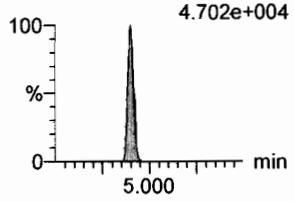
F51:MRM of 2 channels,ES-
530.7 > 82.8
4.168e+003



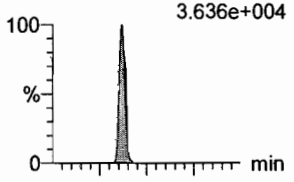
PFDA
F44:MRM of 2 channels,ES-
513 > 468.8
2.867e+005



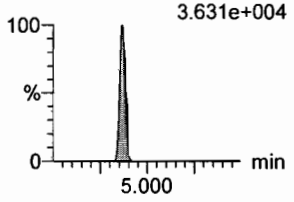
F44:MRM of 2 channels,ES-
513 > 219
4.702e+004



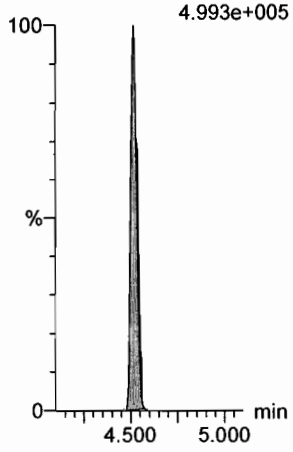
8:2 FTS
F49:MRM of 2 channels,ES-
527.0 > 506.9
3.636e+004



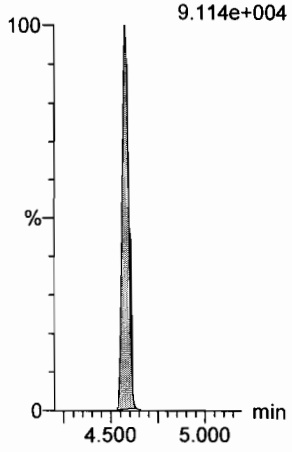
F49:MRM of 2 channels,ES-
527 > 80.9
3.631e+004



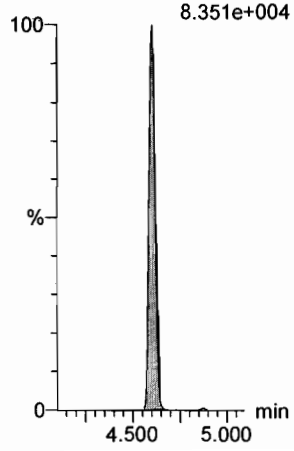
13C5-PFNA
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.993e+005



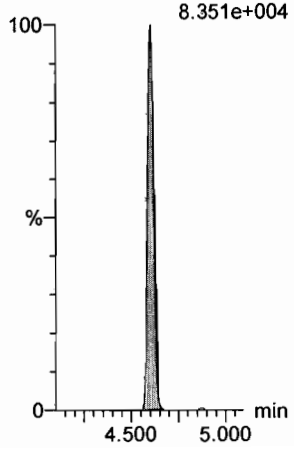
13C8-PFOSA
F41:MRM of 1 channel,ES-
506.1 > 77.7
9.114e+004



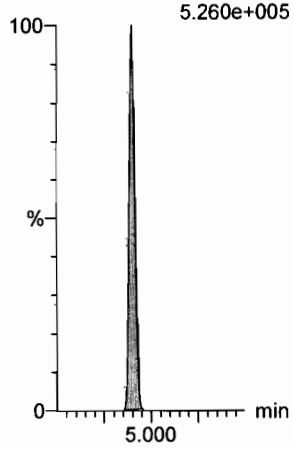
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
8.351e+004



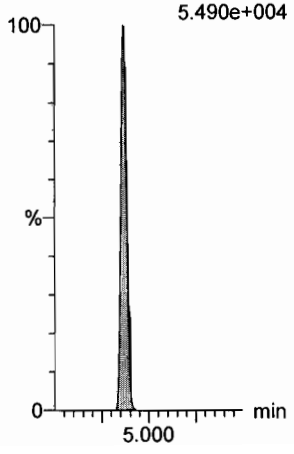
13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
8.351e+004



13C2-PFDA
F45:MRM of 1 channel,ES-
515.1 > 469.9
5.260e+005



13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
5.490e+004

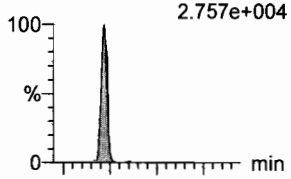


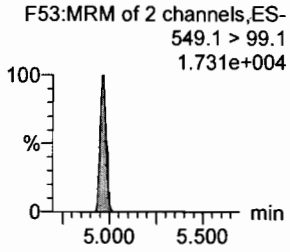
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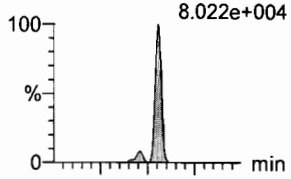
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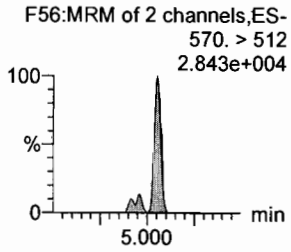
PFNS



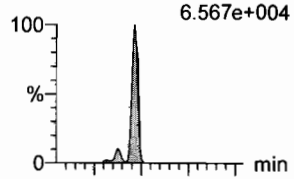


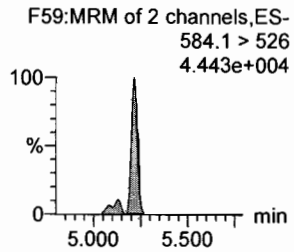
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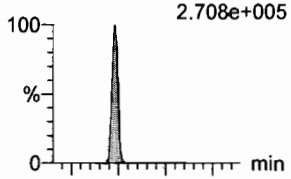


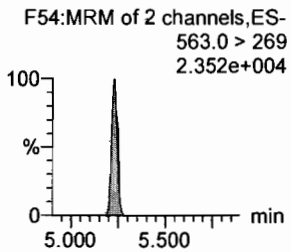
L-EtFOSAA



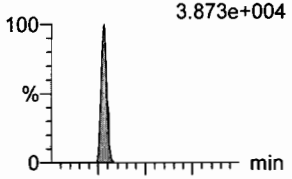


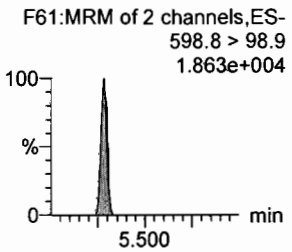
PFUdA



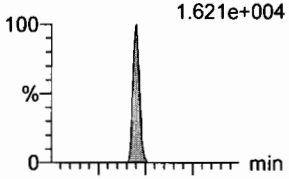


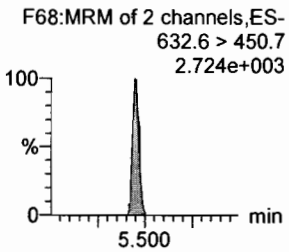
PFDS



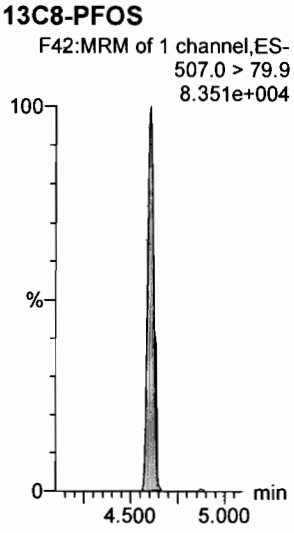


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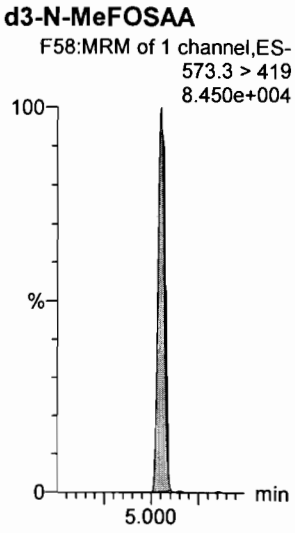




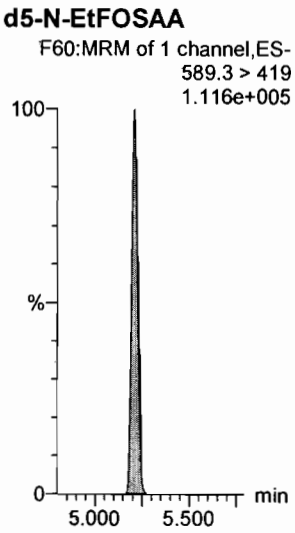
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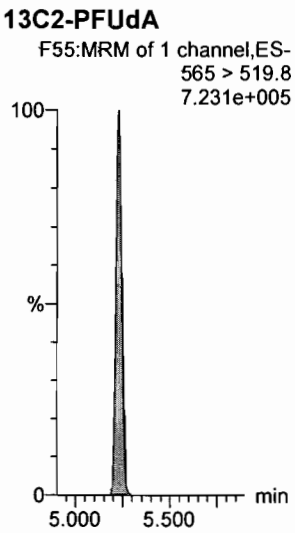
d3-N-MeFOSAA



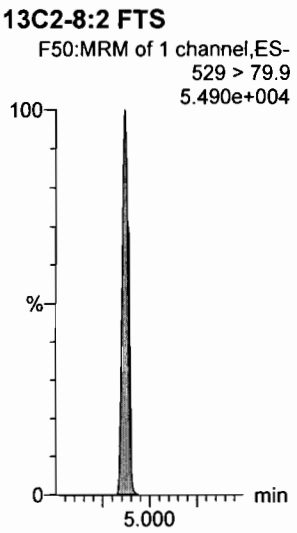
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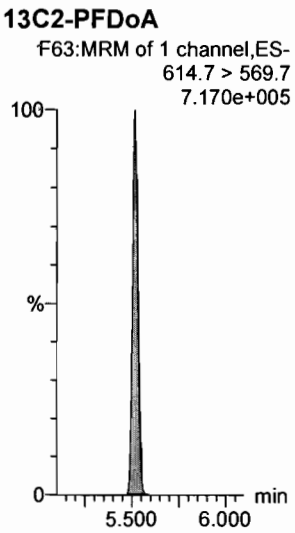
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

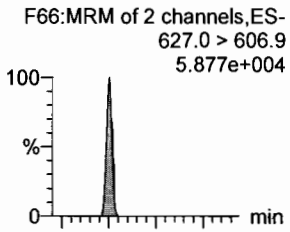


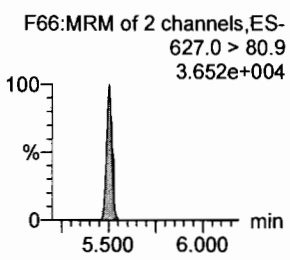
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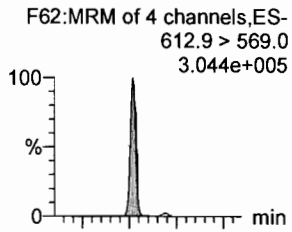
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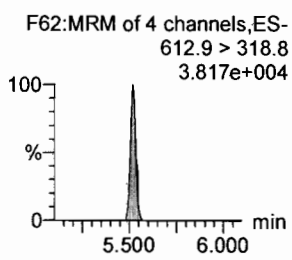
10:2 FTS



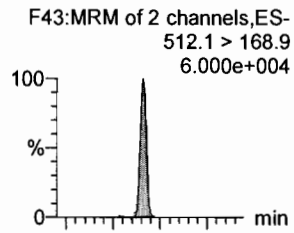


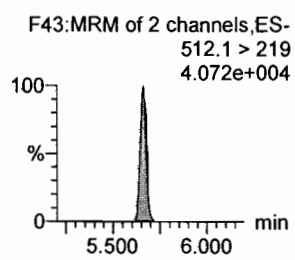
PFDoA



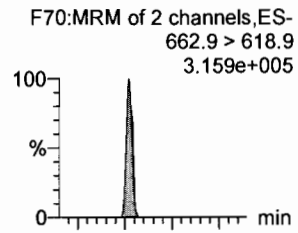


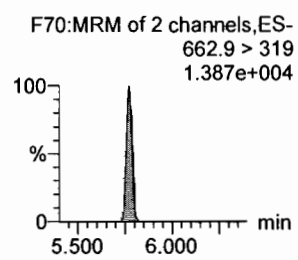
N-MeFOSA



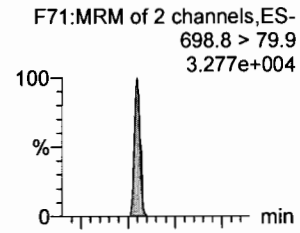


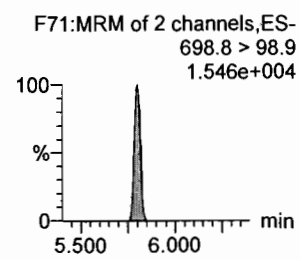
PFTrDA



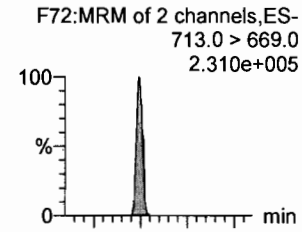


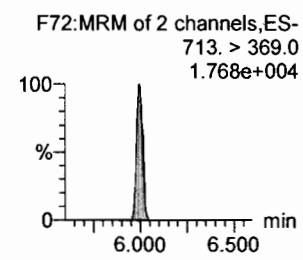
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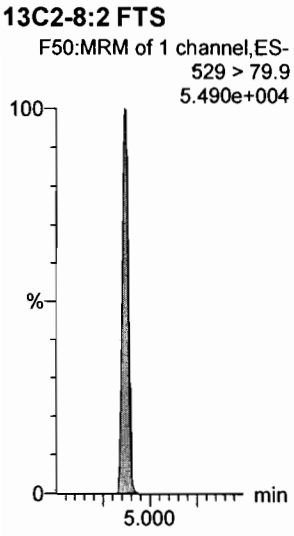


PFTeDA

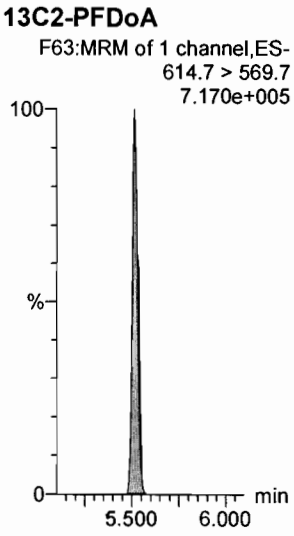




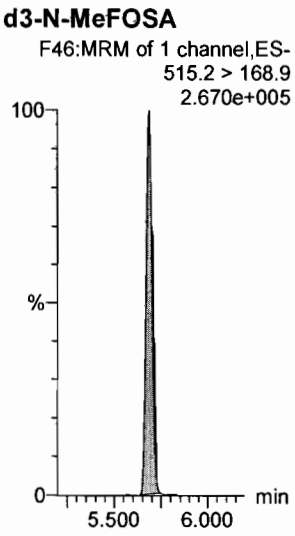
13C2-8:2 FTS



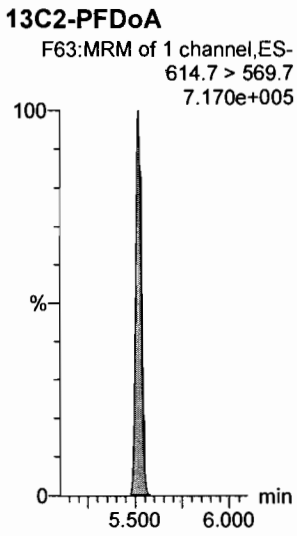
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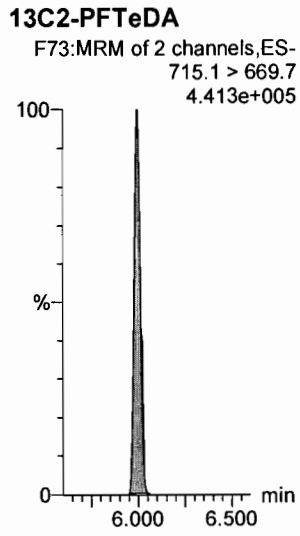
d3-N-MeFOSA



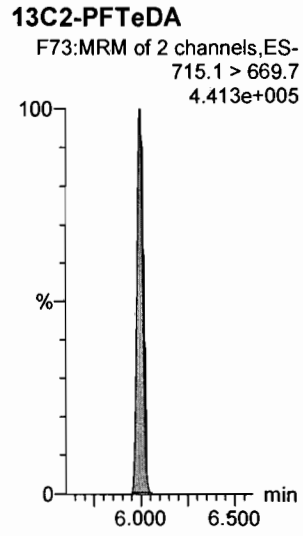
13C2-PFDoA



13C2-PFTeDA



13C2-PFTeDA

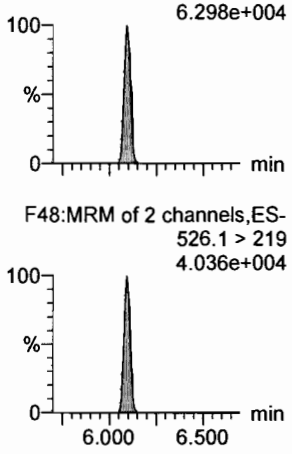


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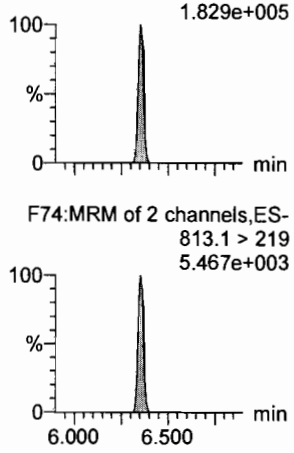
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Name: 190712M2_10, Date: 12-Jul-2019, Time: 19:06:47, ID: ST190712M2-5 PFC CS2 19G1105, Description: PFC CS2 19G1105

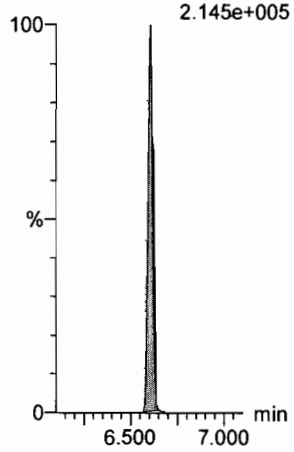
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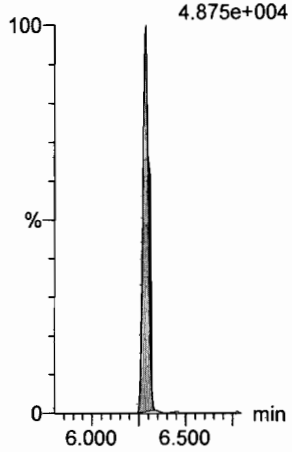
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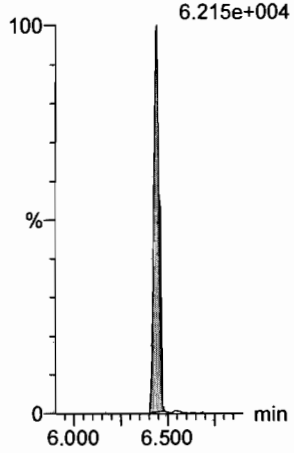
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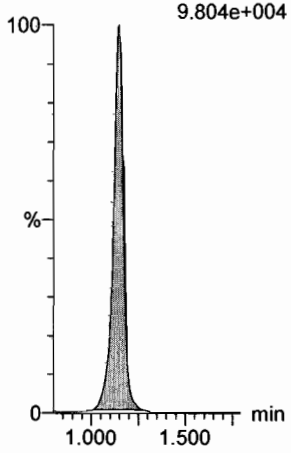
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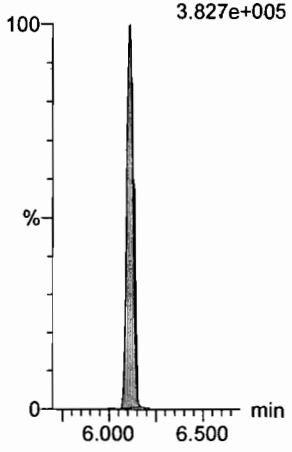
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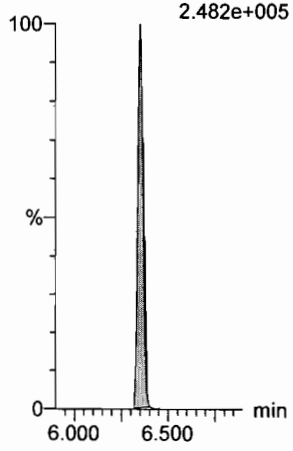
13C4-PFBA



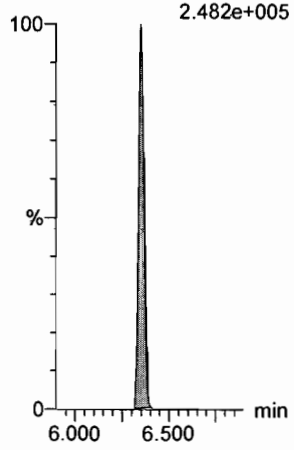
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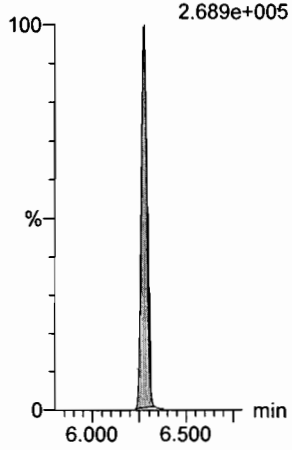
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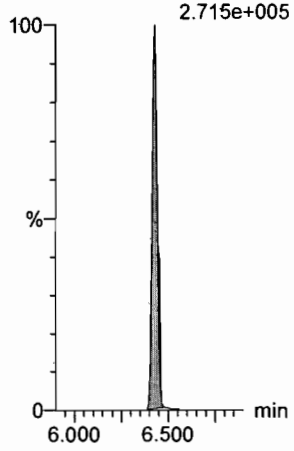
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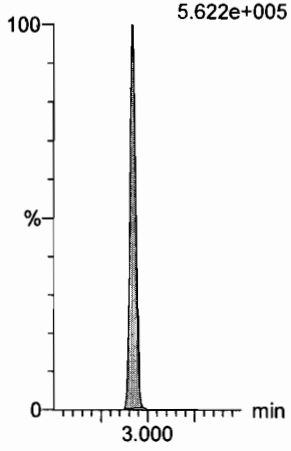
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d9-N-EtFOSE



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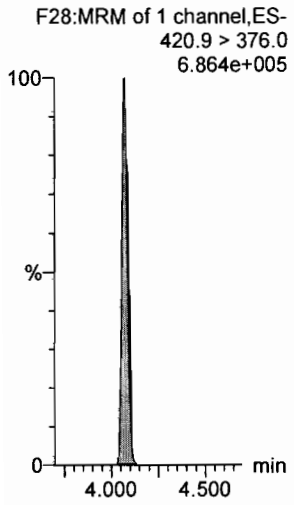


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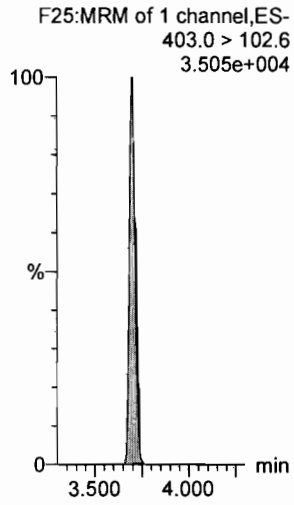
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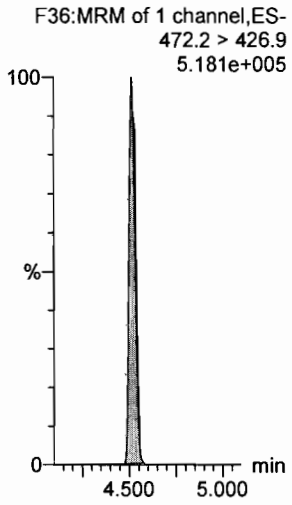
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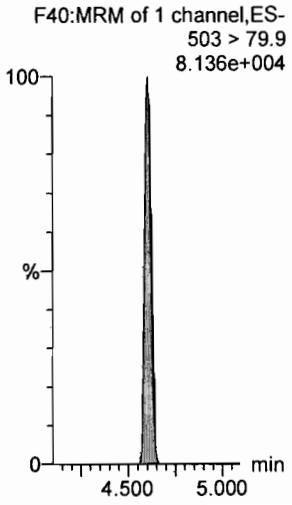
18O2-PFHxS



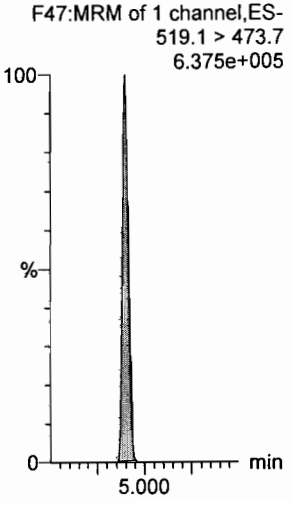
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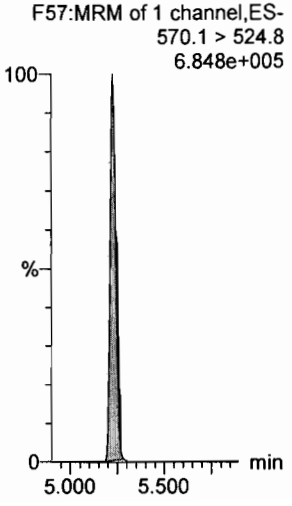
13C4-PFOS



13C6-PFDA



13C7-PFUdA

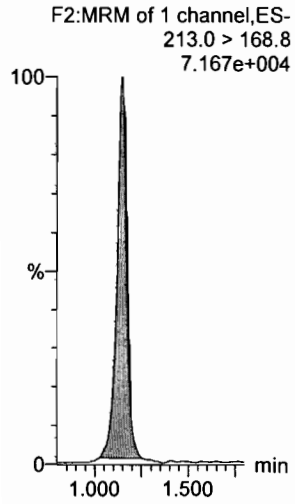


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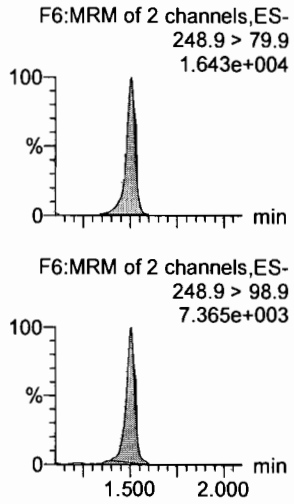
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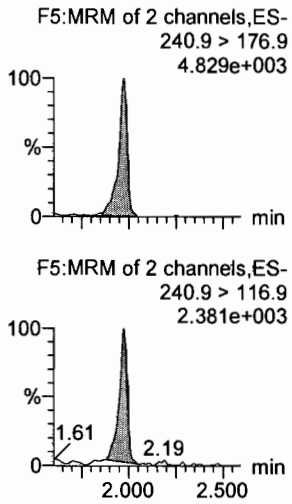
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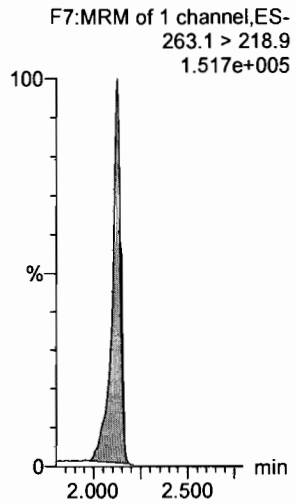
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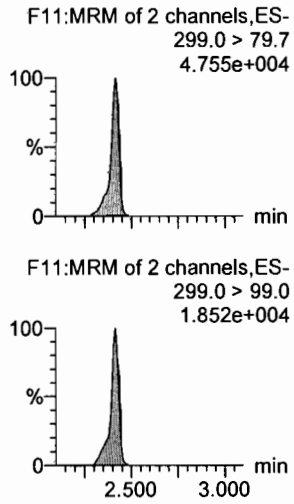
3:3 FTCA



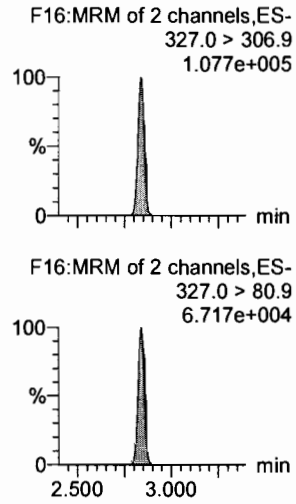
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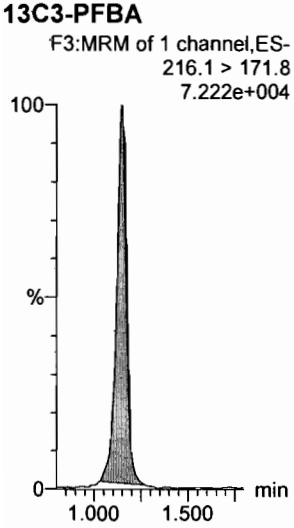
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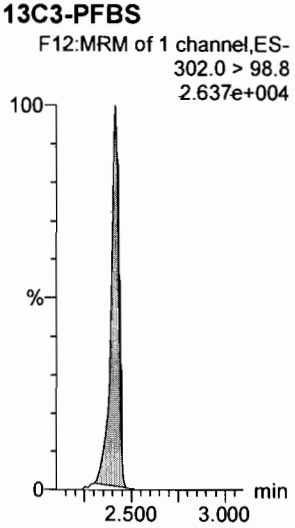
4:2 FTS



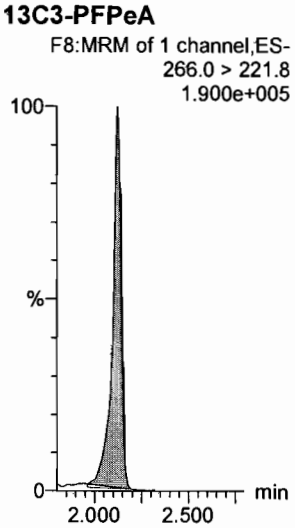
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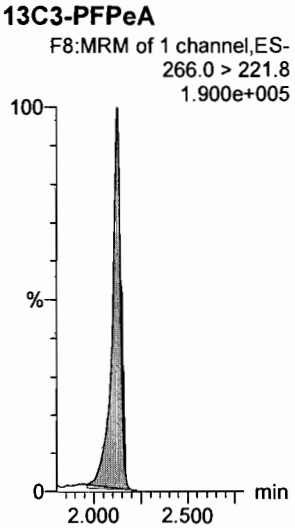
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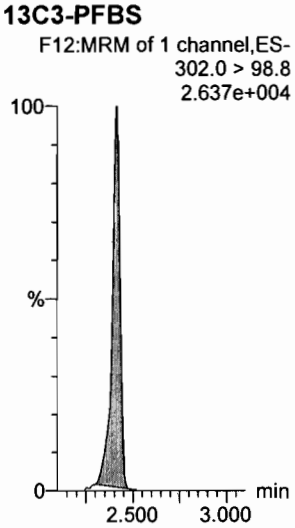
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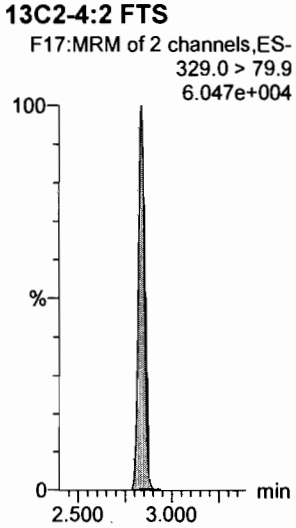
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

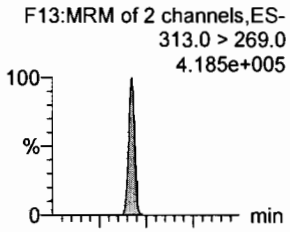


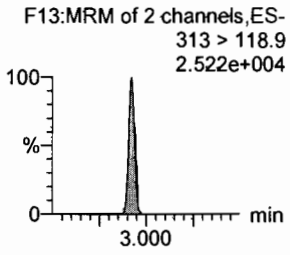
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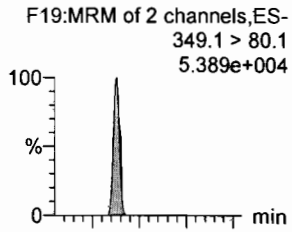
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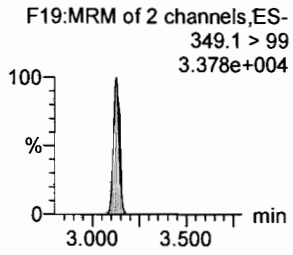
PFHxA



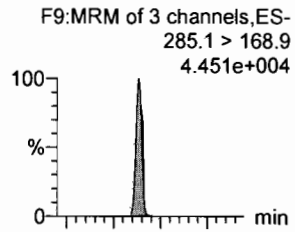


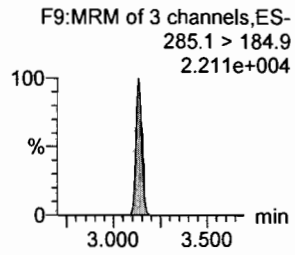
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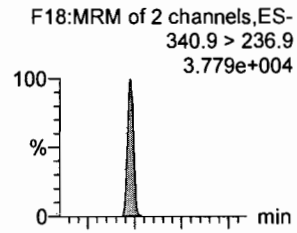


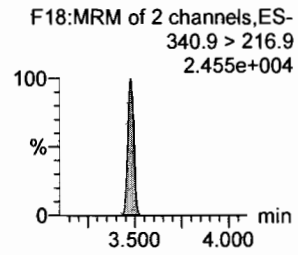
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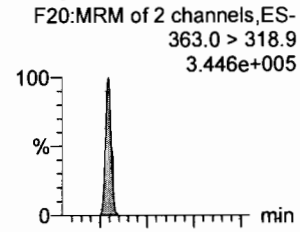


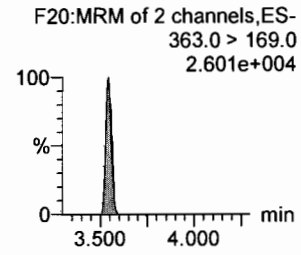
5:3 FTCA



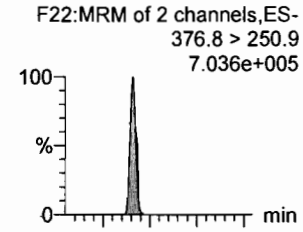


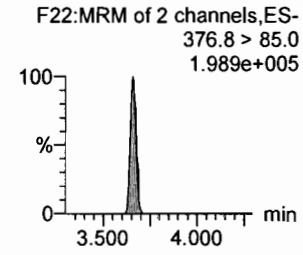
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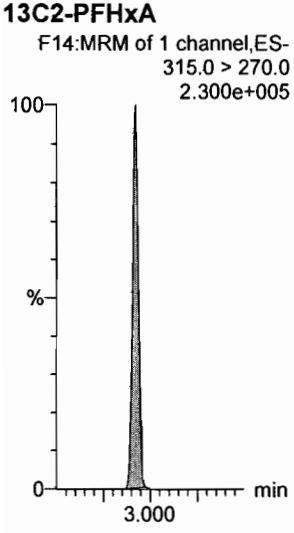


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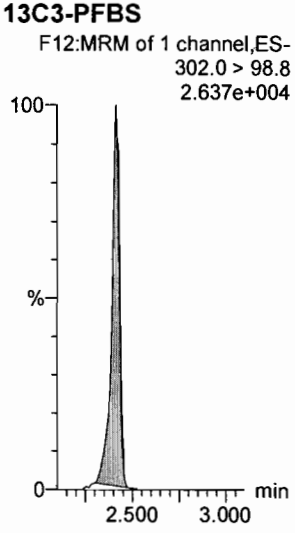




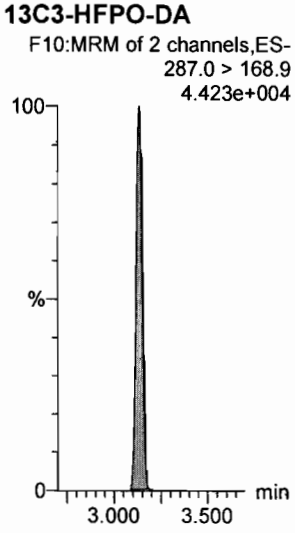
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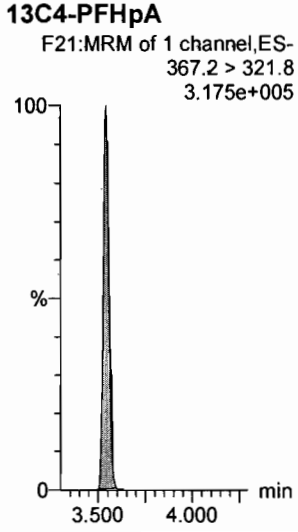
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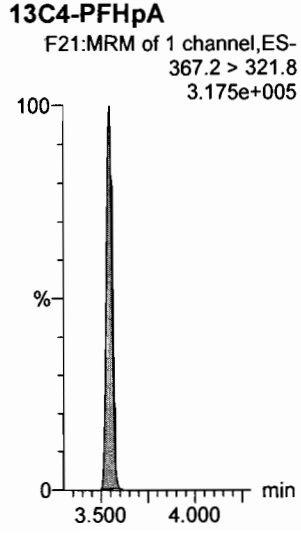
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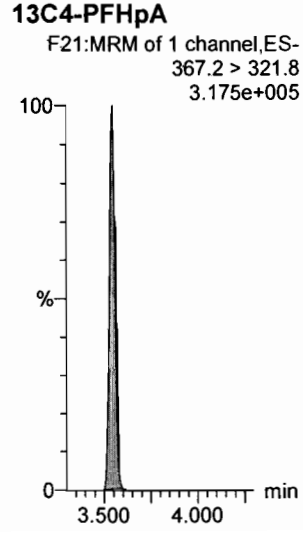
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13C4-PFHpA



13C4-PFHpA

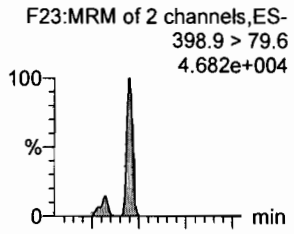


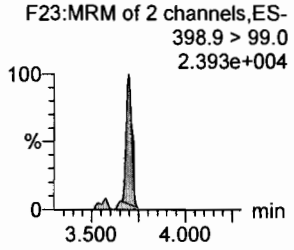
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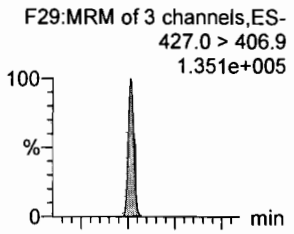
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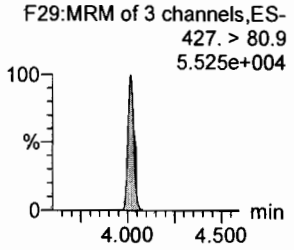
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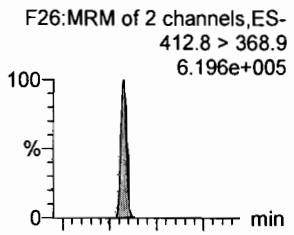


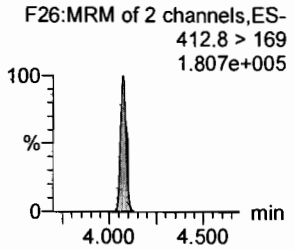
6:2 FTS



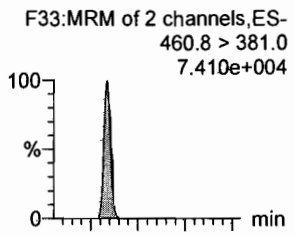


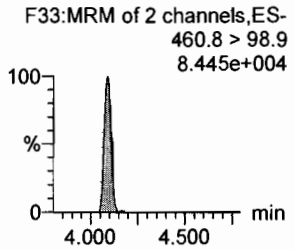
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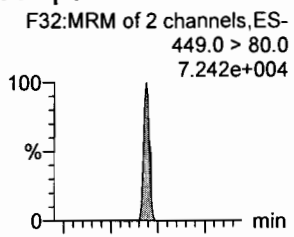


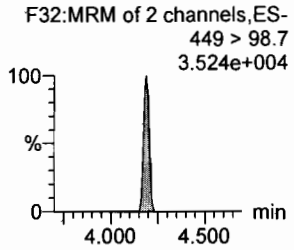
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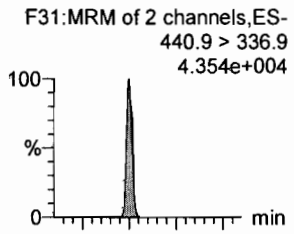


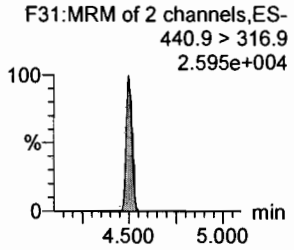
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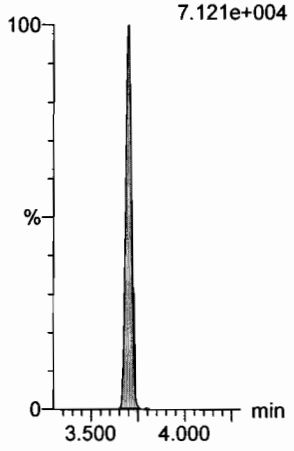


7:3 FTCA

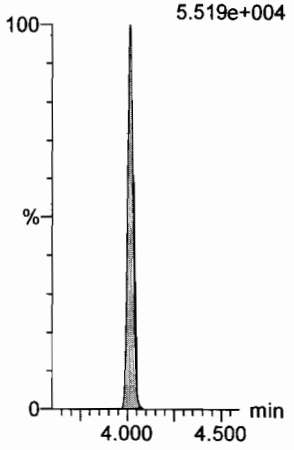




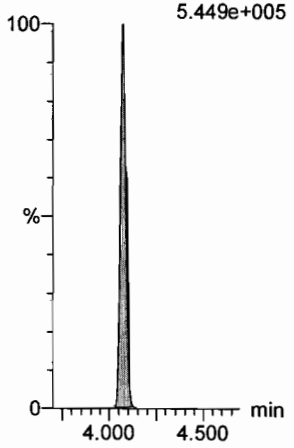
13C3-PFHxS



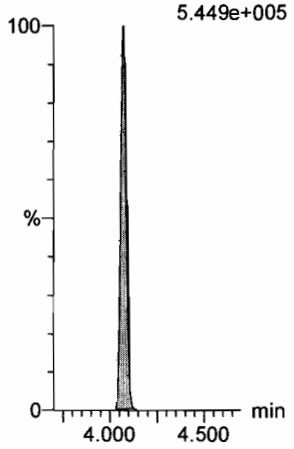
13C2-6:2 FTS



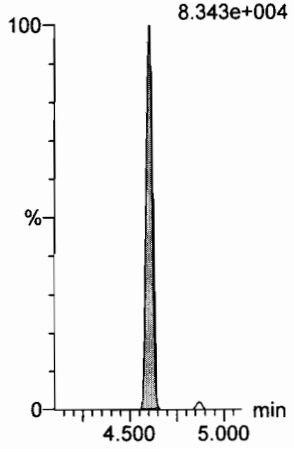
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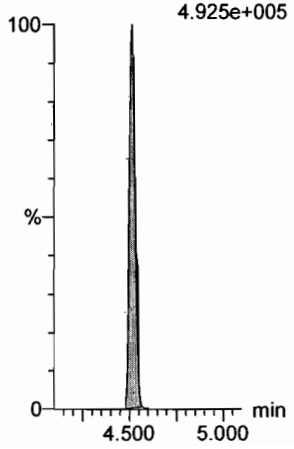
13C2-PFOA



13C8-PFOS



13C5-PFNA

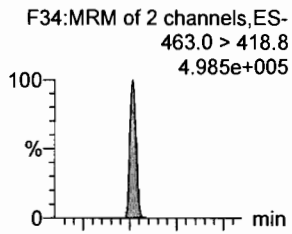


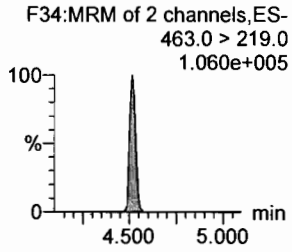
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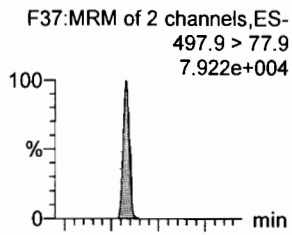
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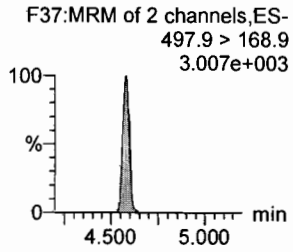
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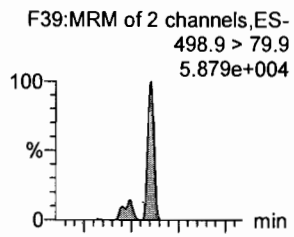


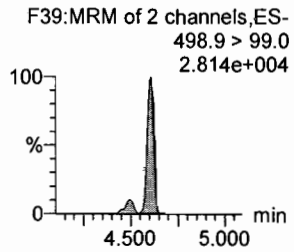
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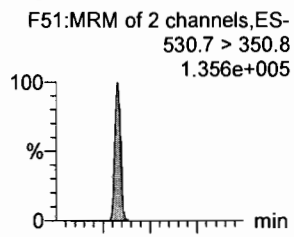


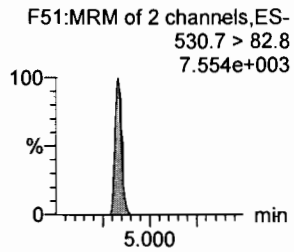
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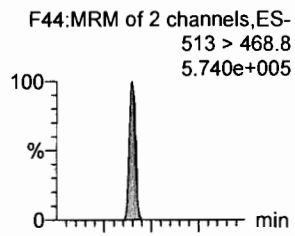


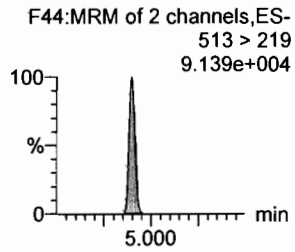
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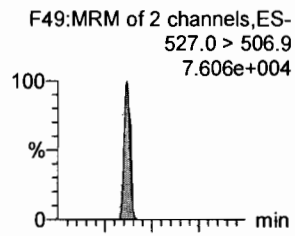


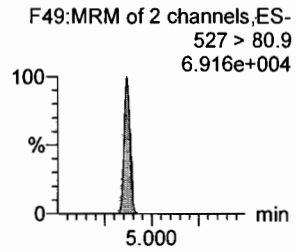
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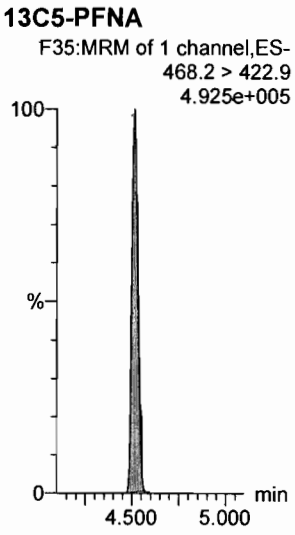


8:2 FTS

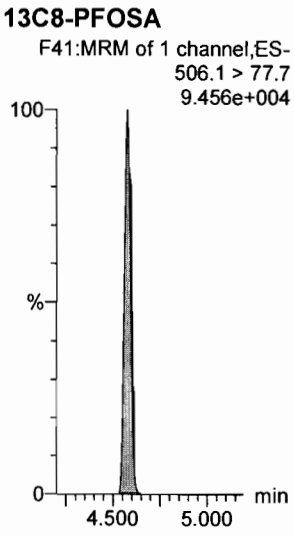




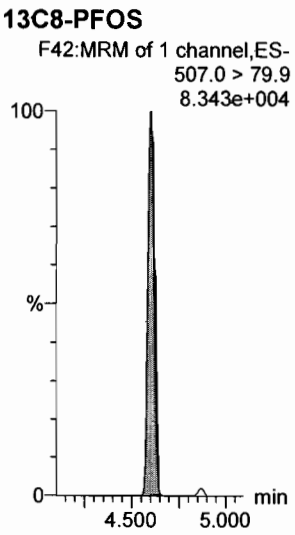
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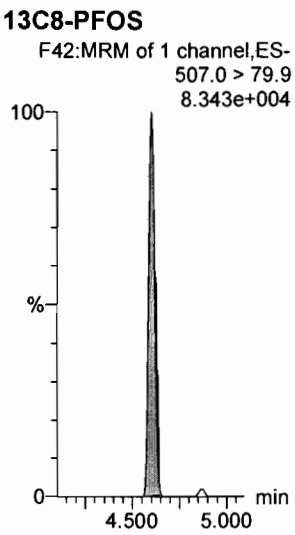
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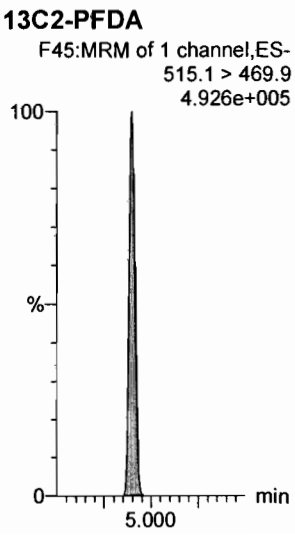
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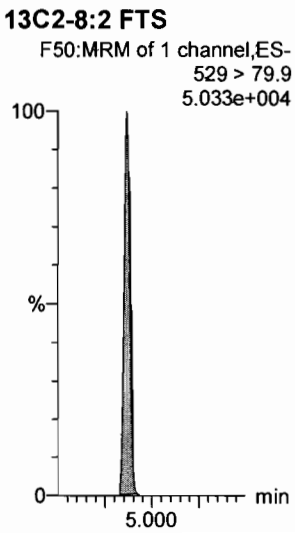
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

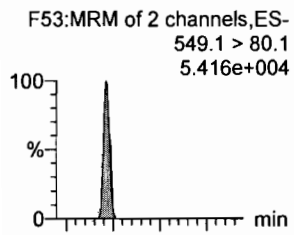


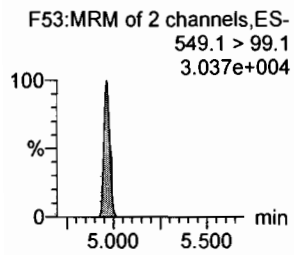
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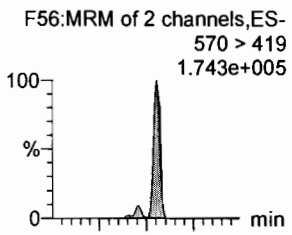
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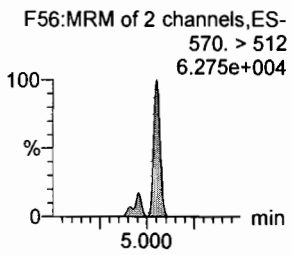
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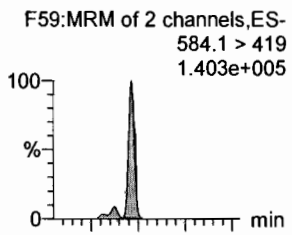


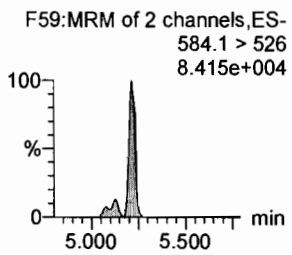
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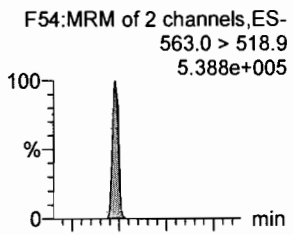


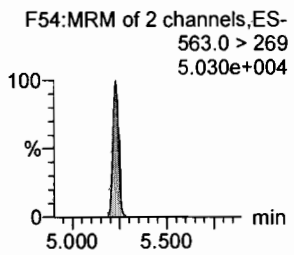
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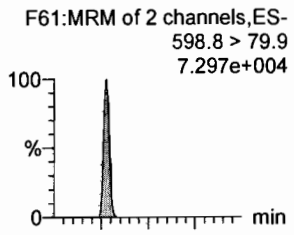


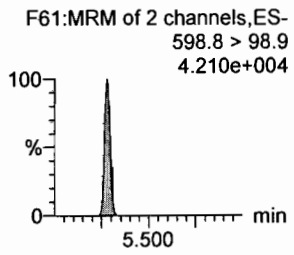
PFUdA



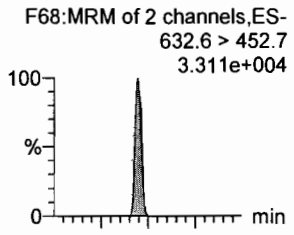


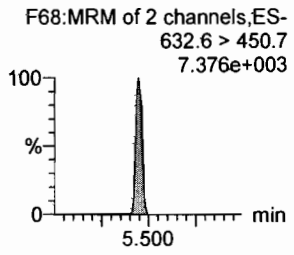
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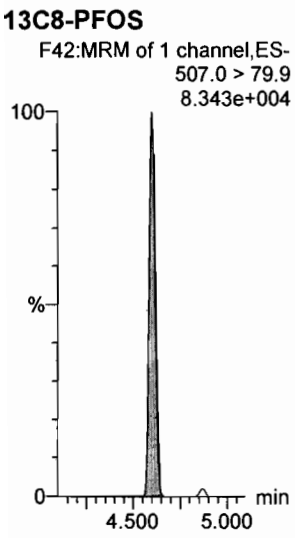


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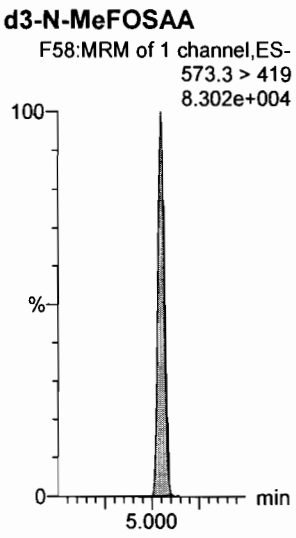




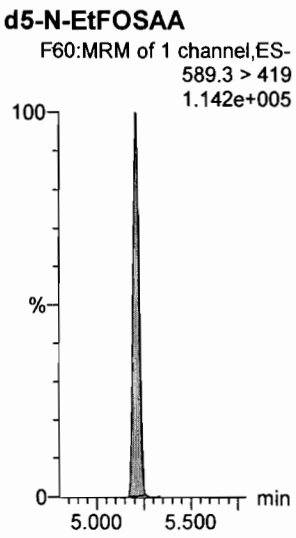
13C8-PFOS



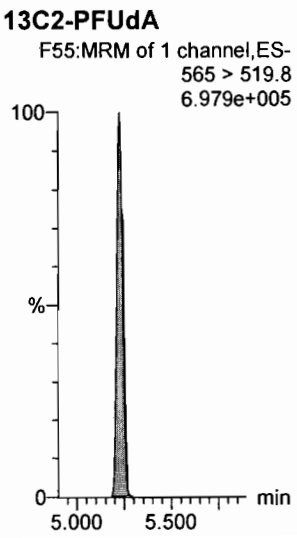
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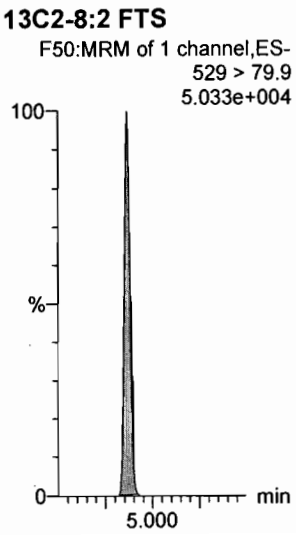
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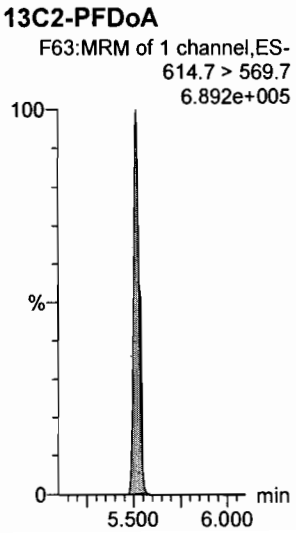
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13C2-8:2 FTS



13C2-PFDoA

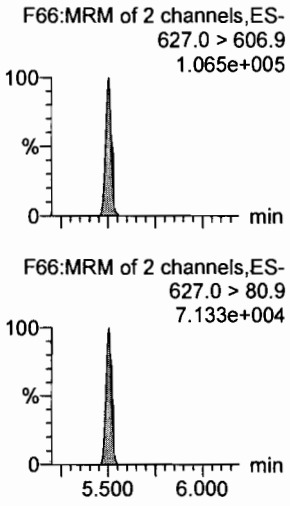


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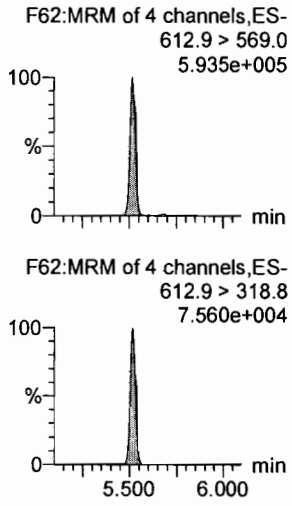
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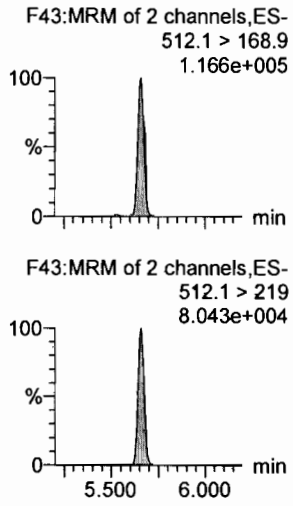
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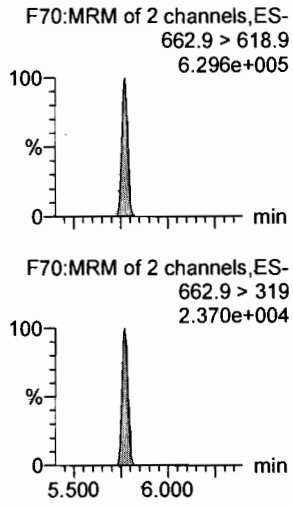
PFDoA



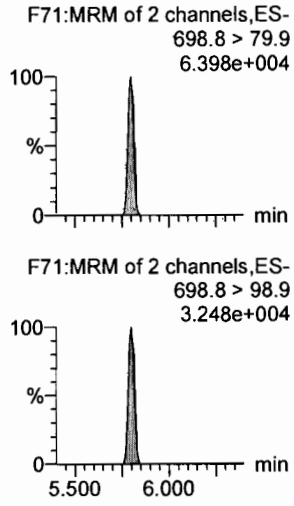
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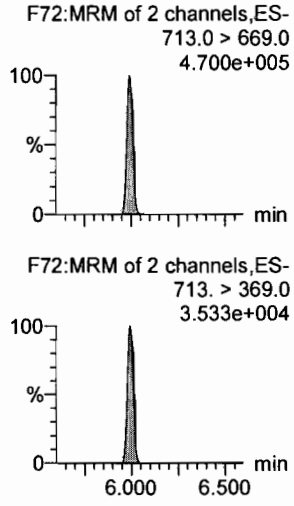
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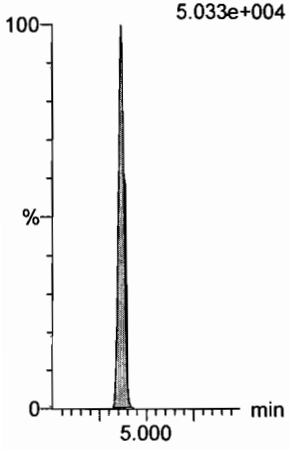
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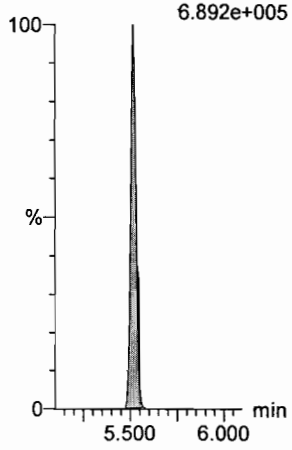
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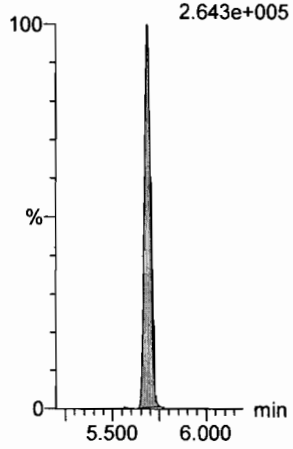
13C2-8:2 FTS



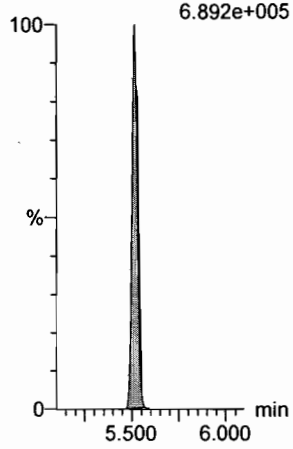
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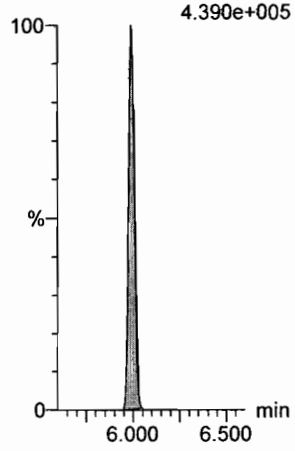
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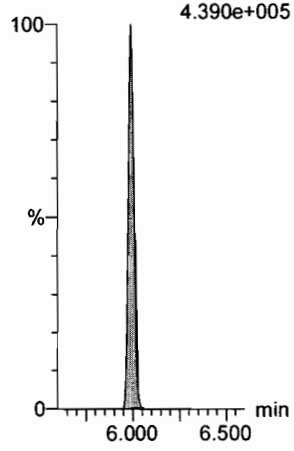
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13C2-PFTeDA



13C2-PFTeDA

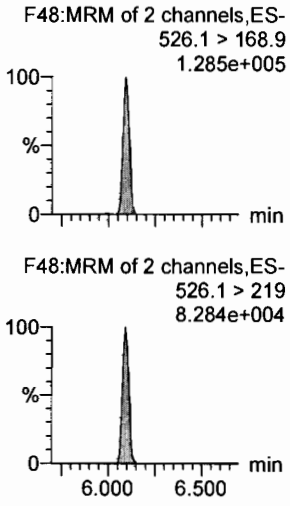


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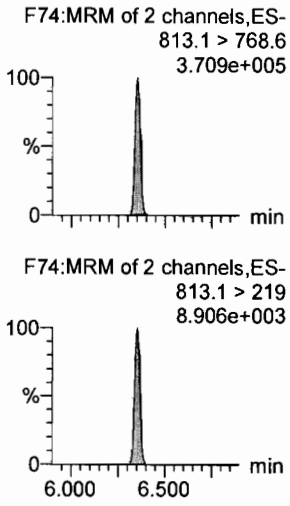
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Name: 190712M2_11, Date: 12-Jul-2019, Time: 19:17:24, ID: ST190712M2-6 PFC CS3 19G1106, Description: PFC CS3 19G1106

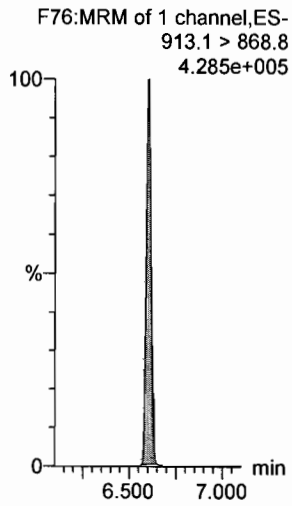
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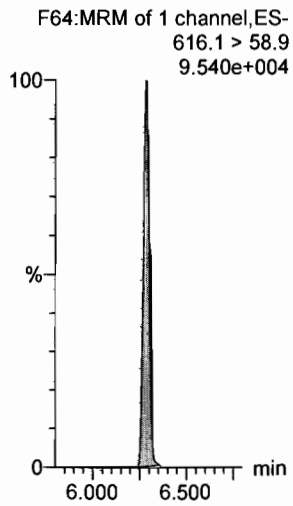
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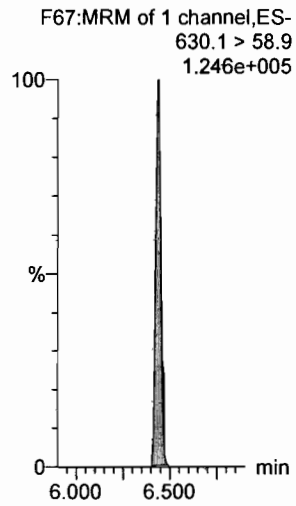
PFODA



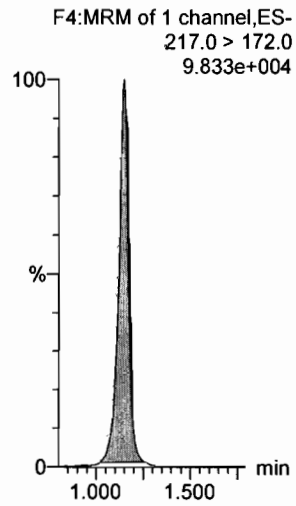
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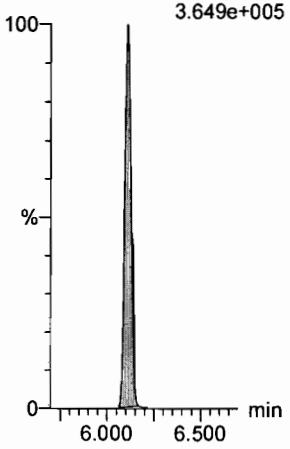
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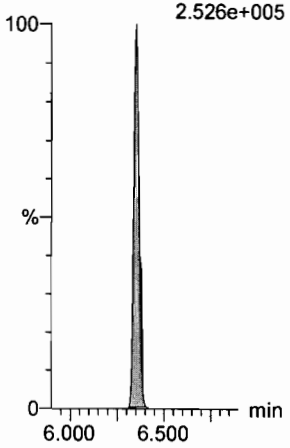
13C4-PFBA



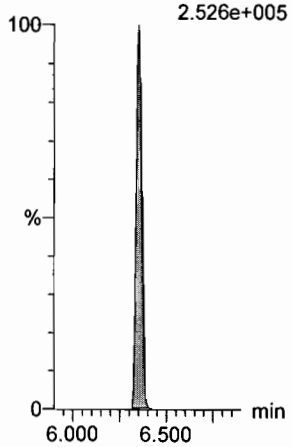
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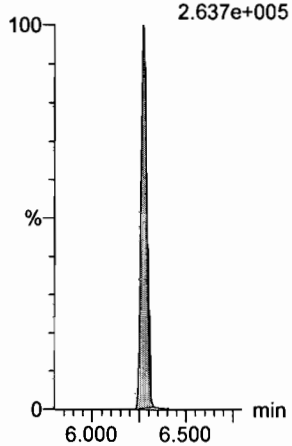
13C2-PFHxDA



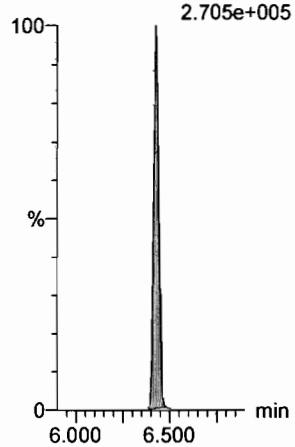
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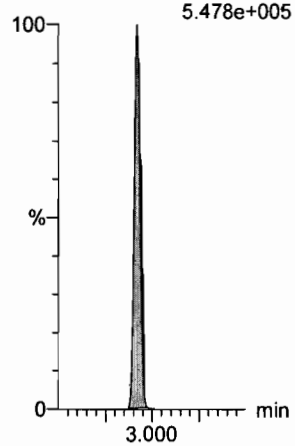
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d9-N-EtFOSE



13C5-PFHxA

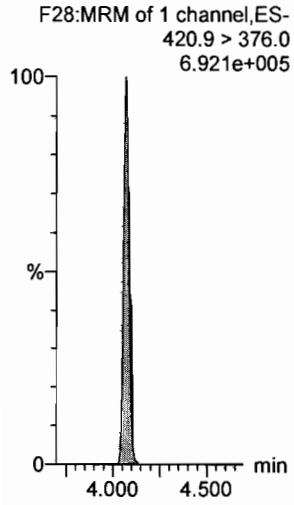


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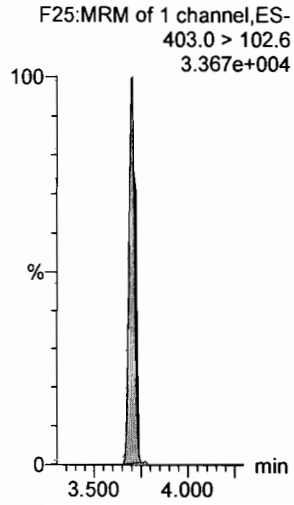
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Name: 190712M2_11, Date: 12-Jul-2019, Time: 19:17:24, ID: ST190712M2-6 PFC CS3 19G1106, Description: PFC CS3 19G1106

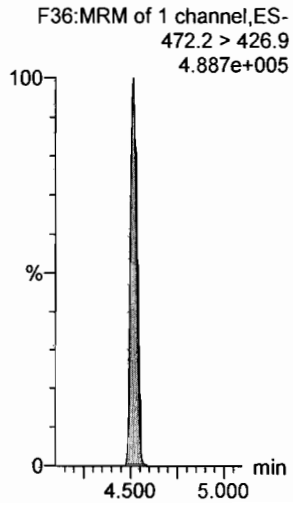
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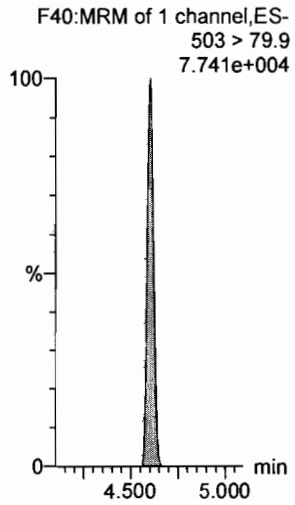
18O2-PFHxS



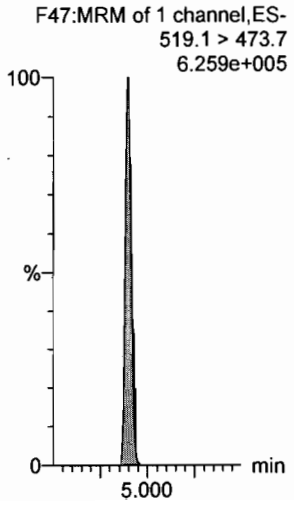
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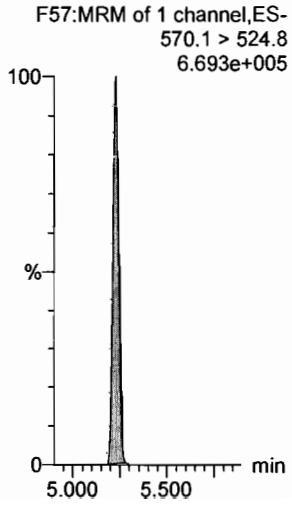
13C4-PFOS



13C6-PFDA



13C7-PFUdA

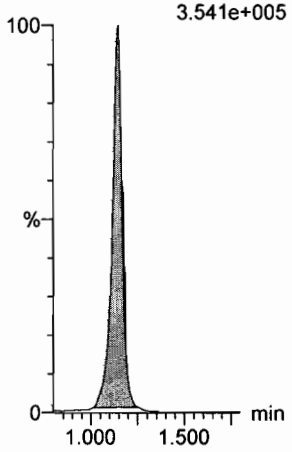


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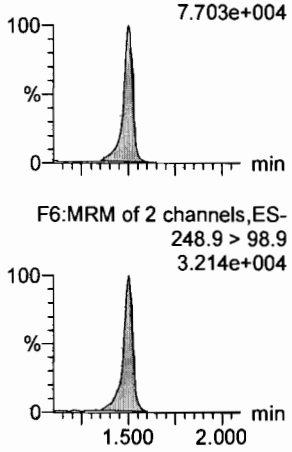
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Name: 190712M2_12, Date: 12-Jul-2019, Time: 19:27:57, ID: ST190712M2-7 PFC CS4 19G1107, Description: PFC CS4 19G1107

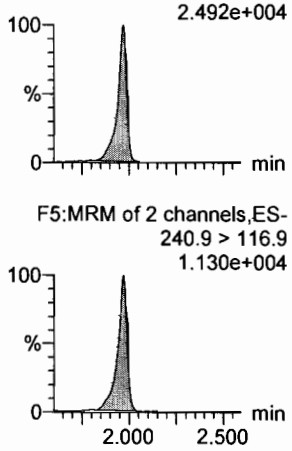
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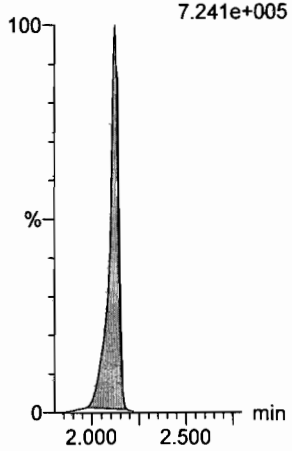
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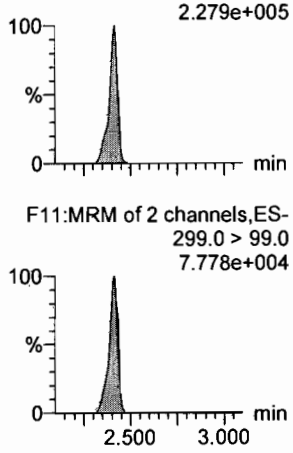
3:3 FTCA



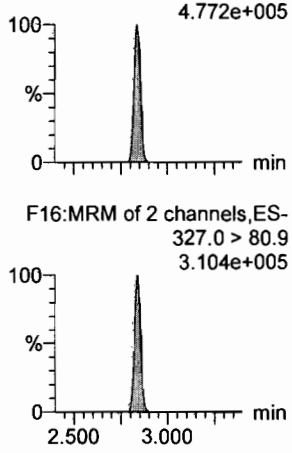
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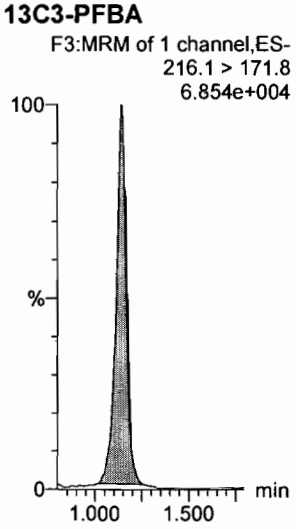
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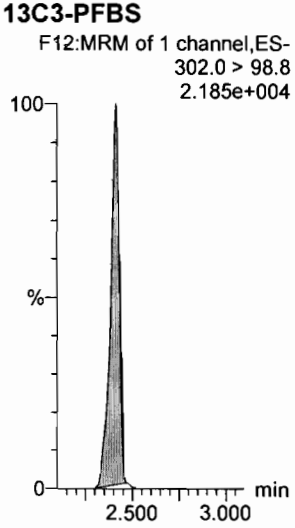
4:2 FTS



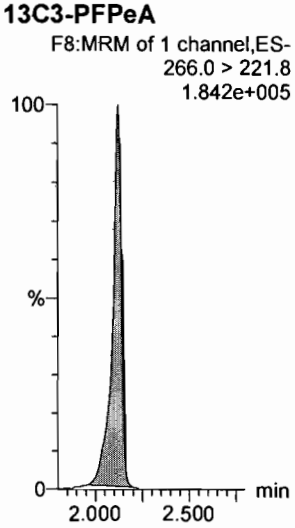
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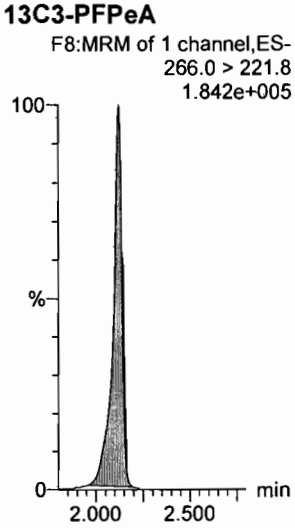
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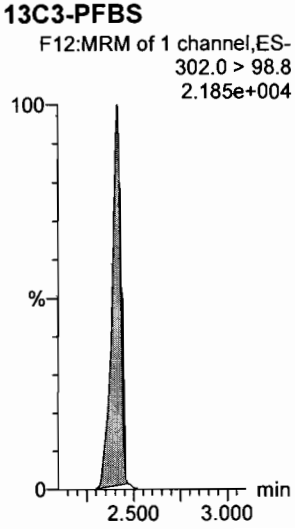
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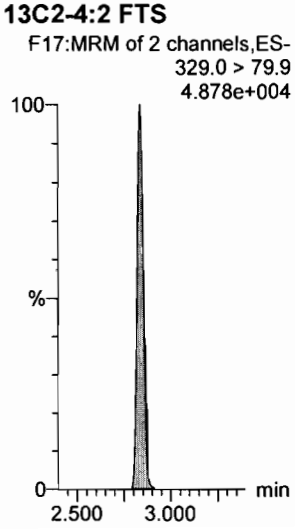
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

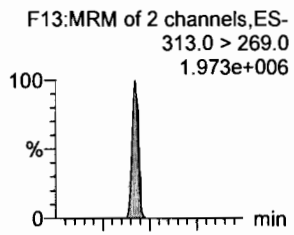


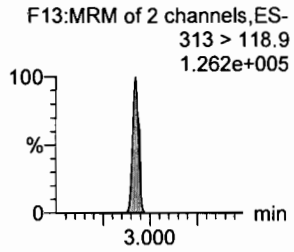
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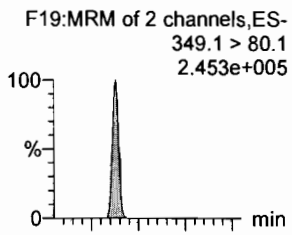
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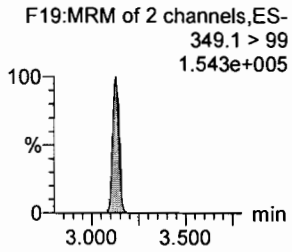
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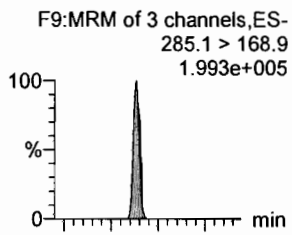


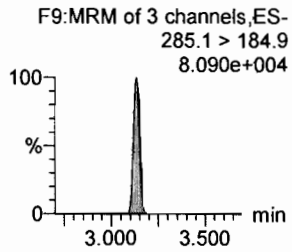
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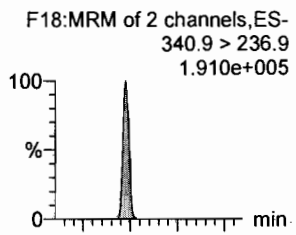


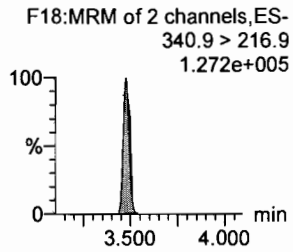
HFPO-DA



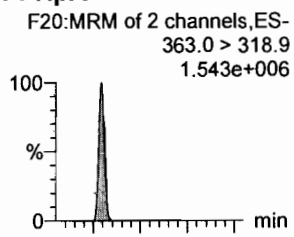


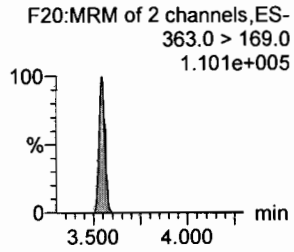
5:3 FTCA



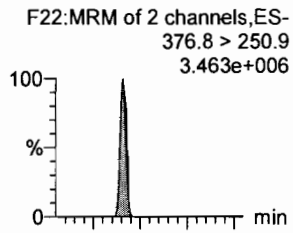


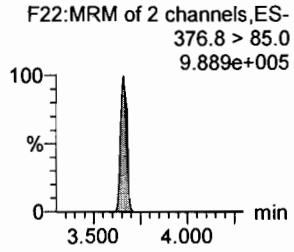
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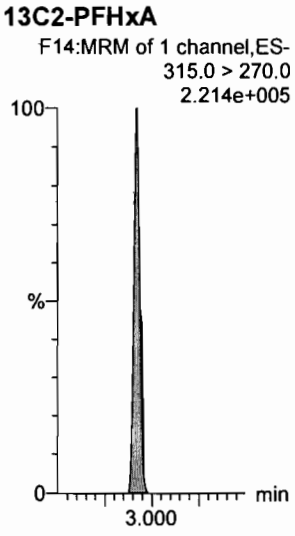


ADONA

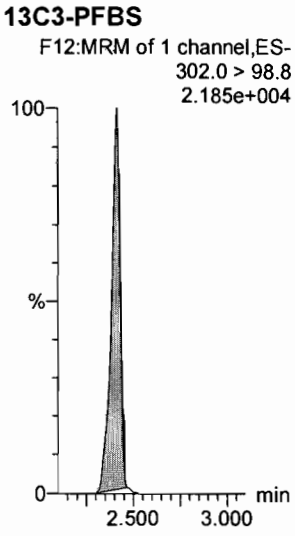




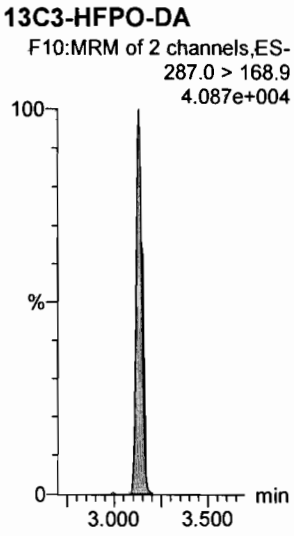
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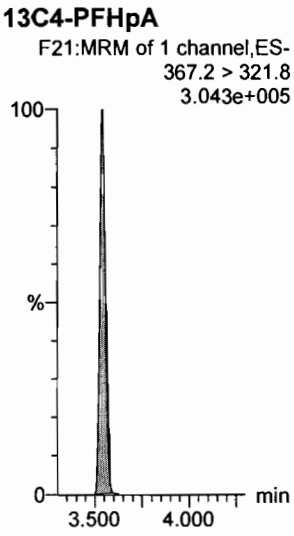
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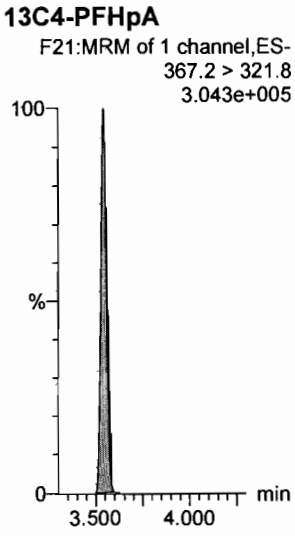
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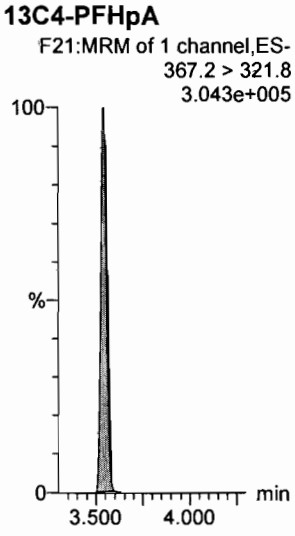
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13C4-PFHpA



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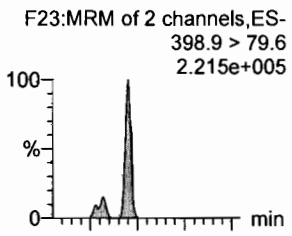


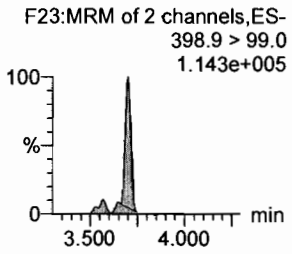
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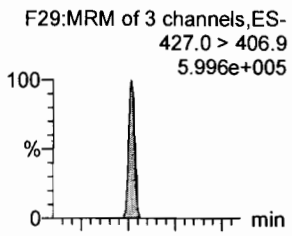
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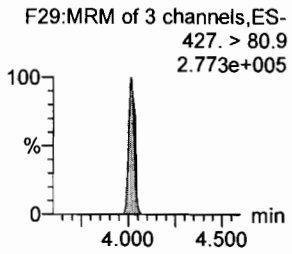
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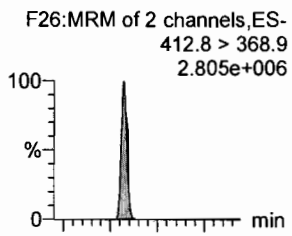


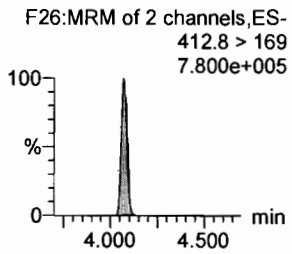
6:2 FTS



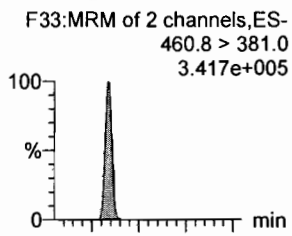


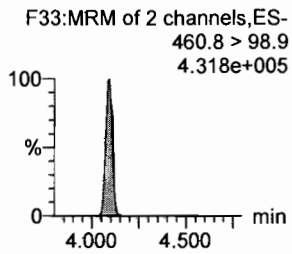
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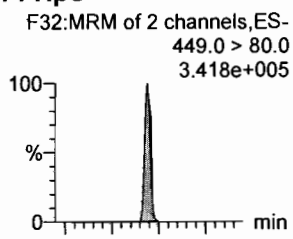


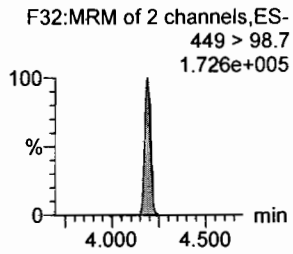
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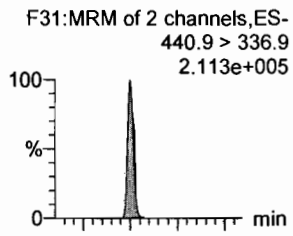


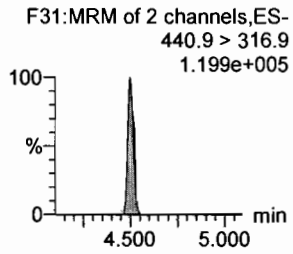
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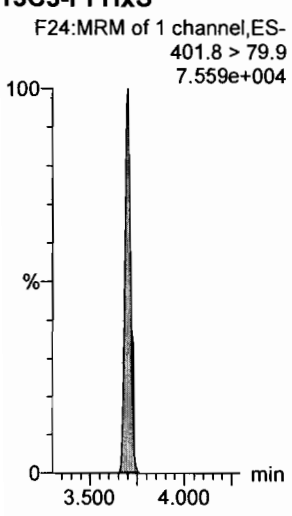


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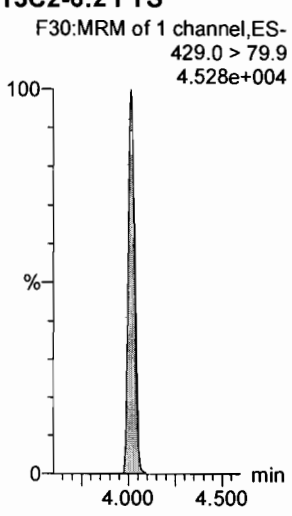




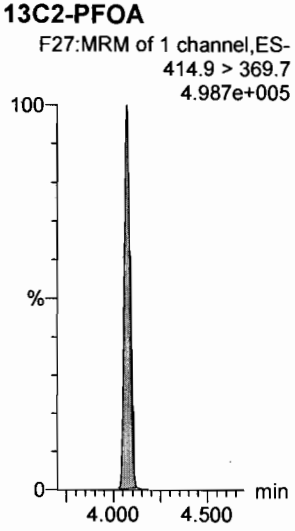
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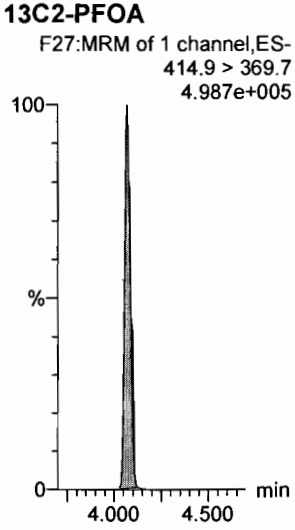
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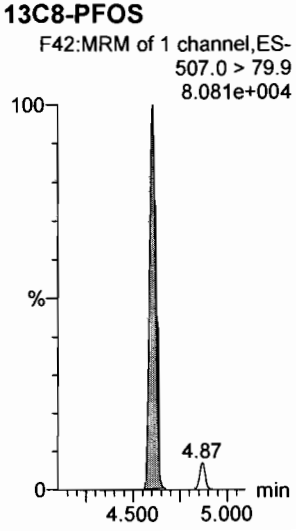
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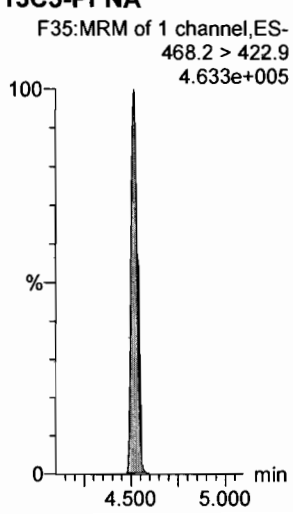
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13C8-PFOS



13C5-PFNA

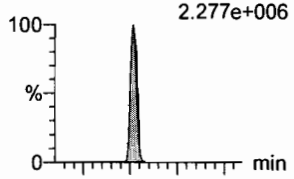


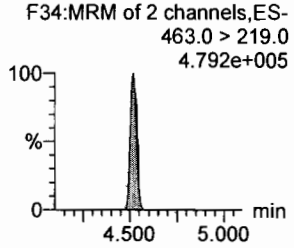
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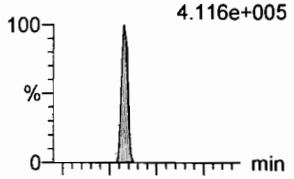
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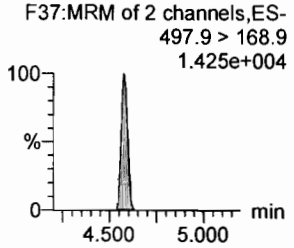
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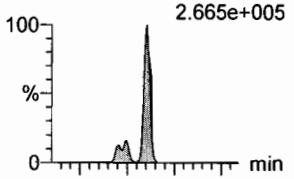


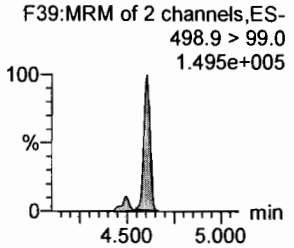
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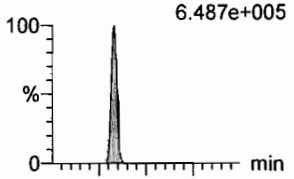


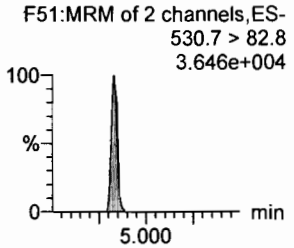
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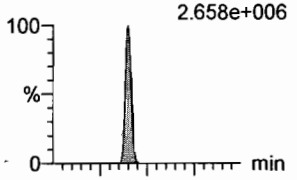


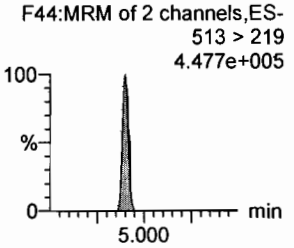
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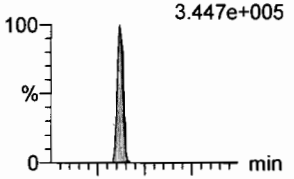


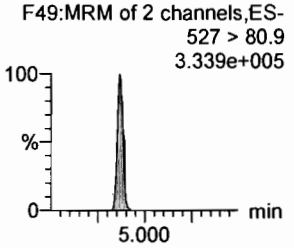
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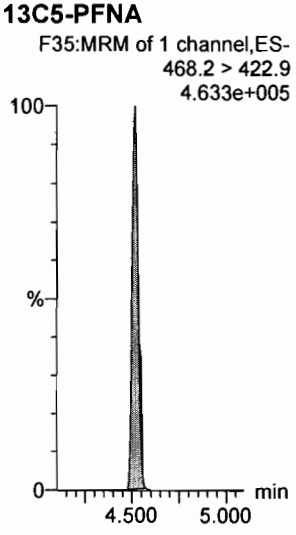


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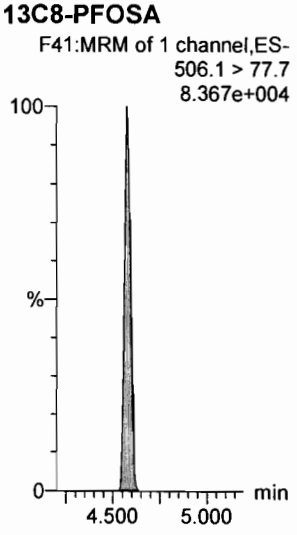




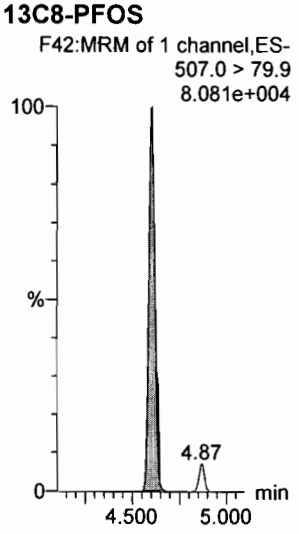
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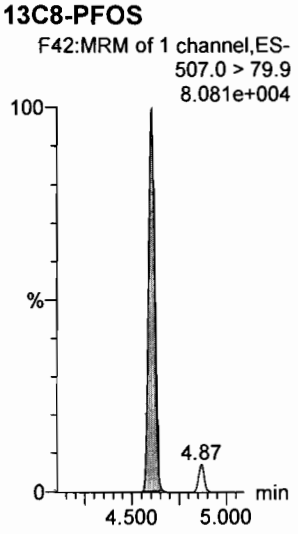
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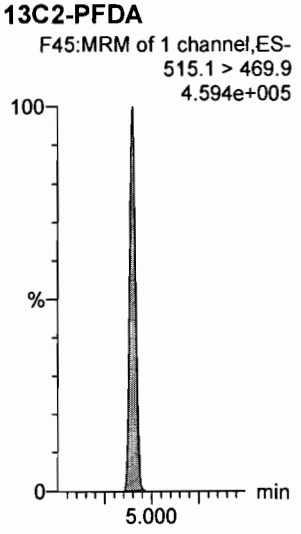
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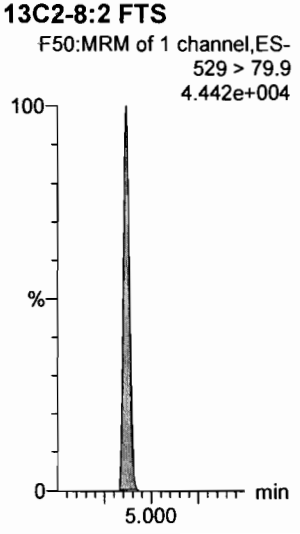
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13C2-PFDA



13C2-8:2 FTS

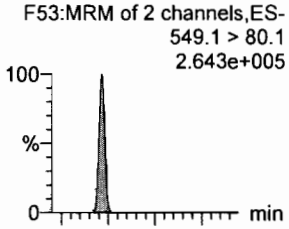


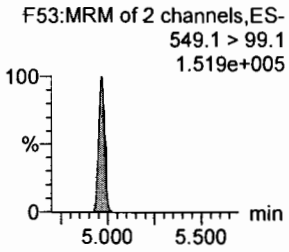
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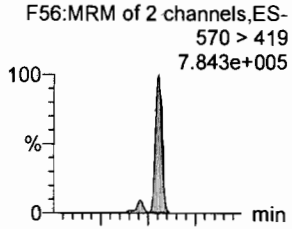
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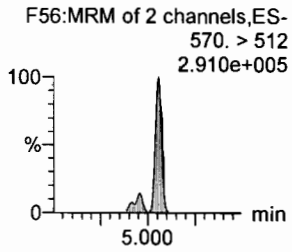
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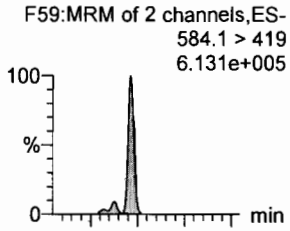


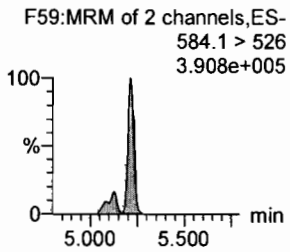
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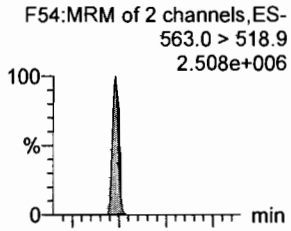


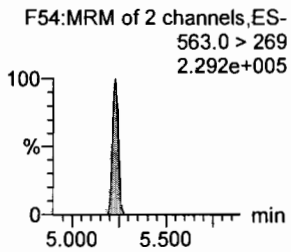
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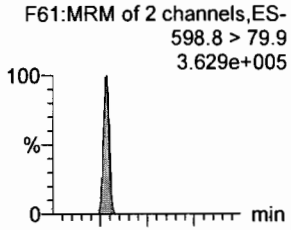


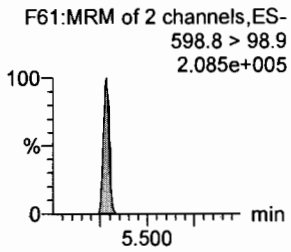
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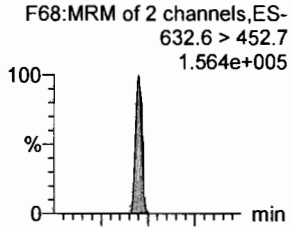


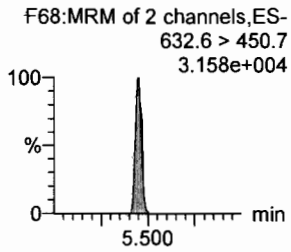
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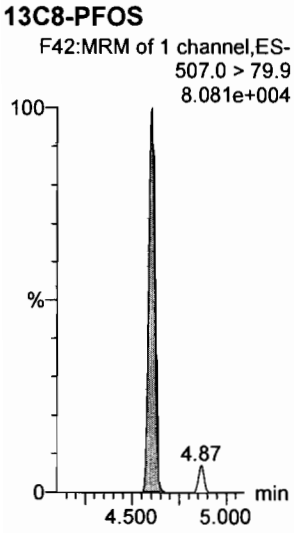


11Cl-PF30UdS

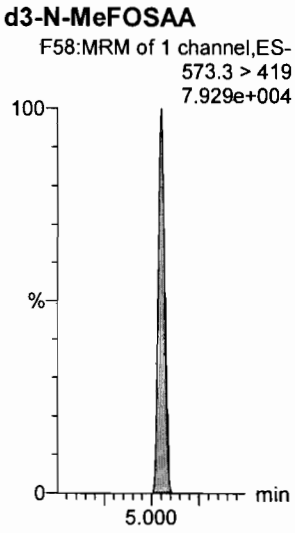




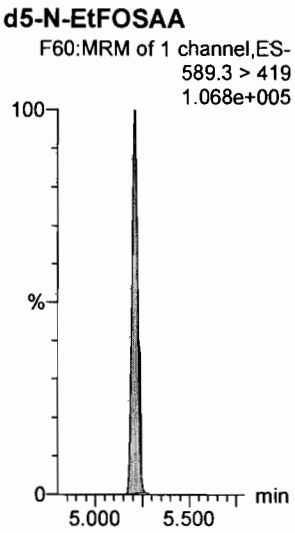
13C8-PFOS



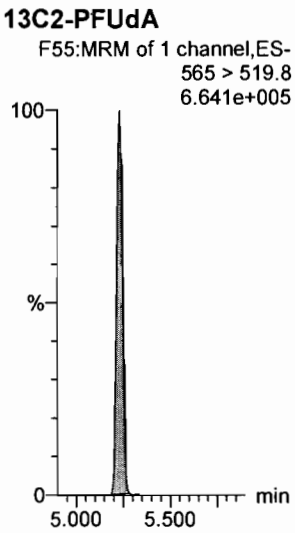
d3-N-MeFOSAA



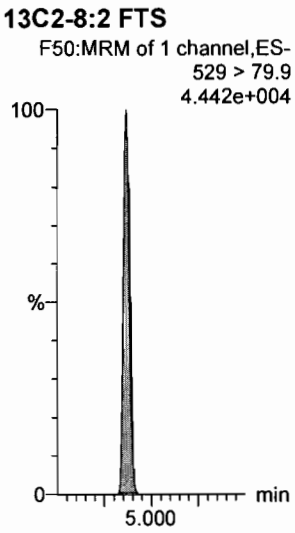
d5-N-EtFOSAA



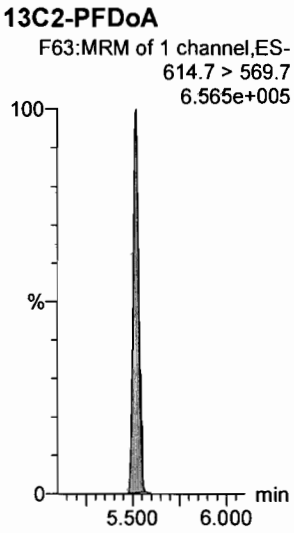
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

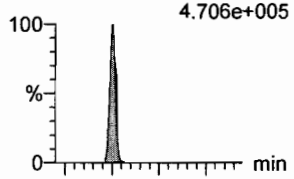


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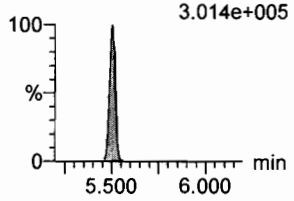
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_12, Date: 12-Jul-2019, Time: 19:27:57, ID: ST190712M2-7 PFC CS4 19G1107, Description: PFC CS4 19G1107

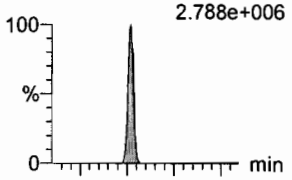
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
4.706e+005



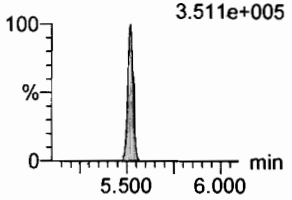
F66:MRM of 2 channels,ES-
627.0 > 80.9
3.014e+005



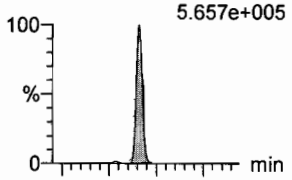
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
2.788e+006



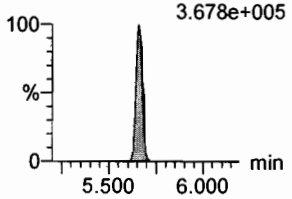
F62:MRM of 4 channels,ES-
612.9 > 318.8
3.511e+005



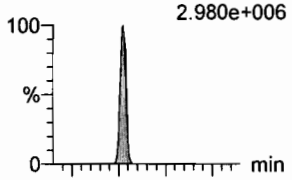
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
5.657e+005



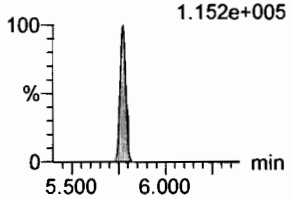
F43:MRM of 2 channels,ES-
512.1 > 219
3.678e+005



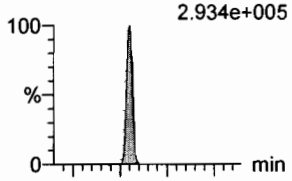
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
2.980e+006



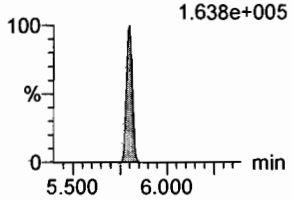
F70:MRM of 2 channels,ES-
662.9 > 319
1.152e+005



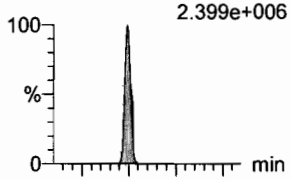
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
2.934e+005



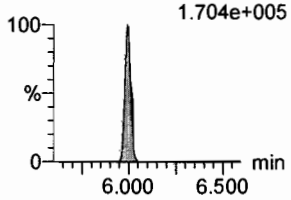
F71:MRM of 2 channels,ES-
698.8 > 98.9
1.638e+005



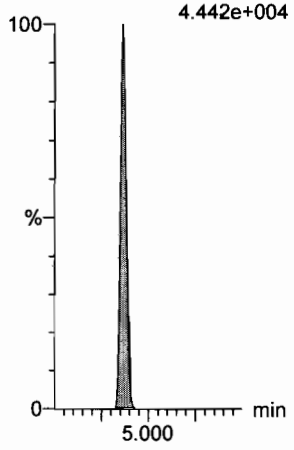
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
2.399e+006



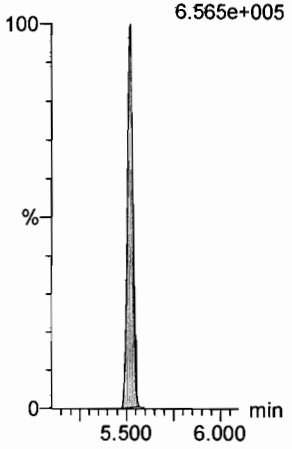
F72:MRM of 2 channels,ES-
713. > 369.0
1.704e+005



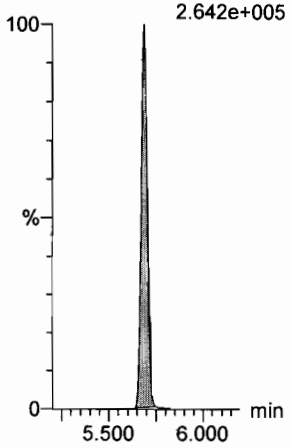
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
4.442e+004



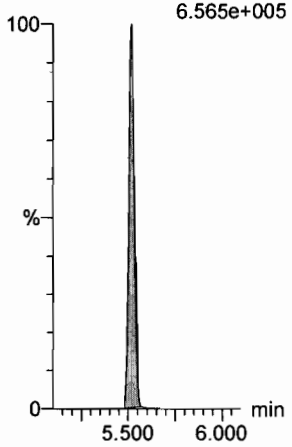
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.565e+005



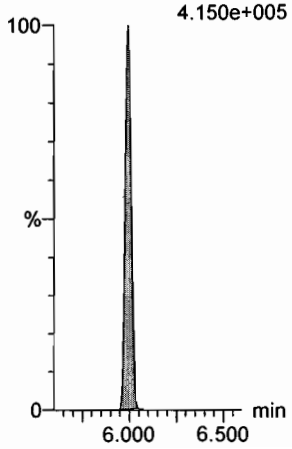
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.642e+005



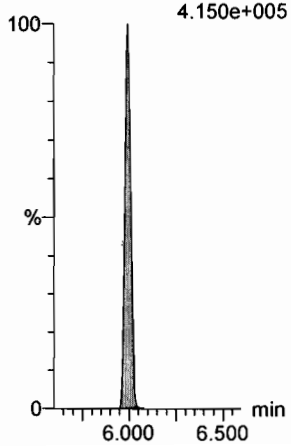
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.565e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.150e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.150e+005

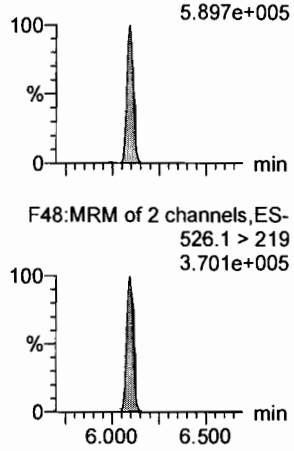


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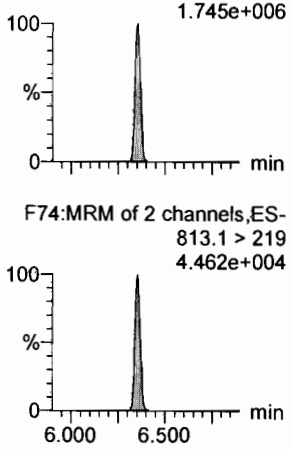
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_12, Date: 12-Jul-2019, Time: 19:27:57, ID: ST190712M2-7 PFC CS4 19G1107, Description: PFC CS4 19G1107

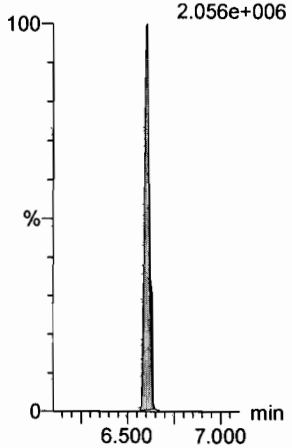
N-EtFOSA



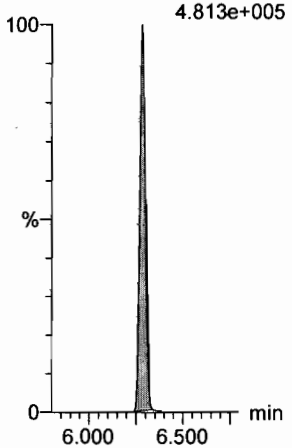
PFHxDA



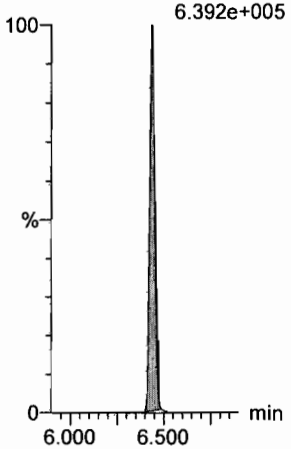
PFODA



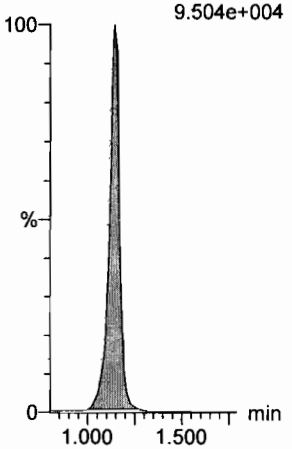
N-MeFOSE



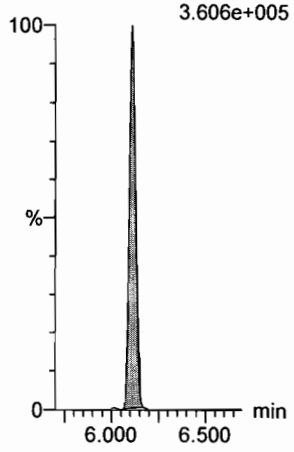
N-EtFOSE



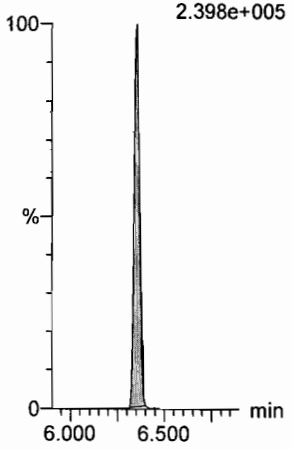
13C4-PFBA



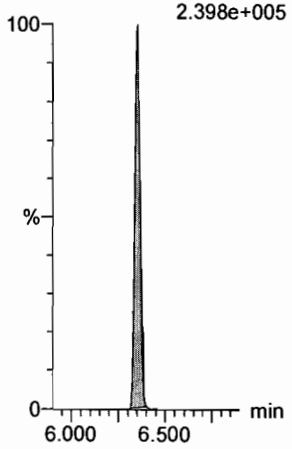
d5-N-ETFOSA



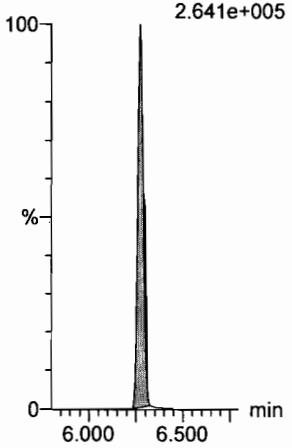
13C2-PFHxDA



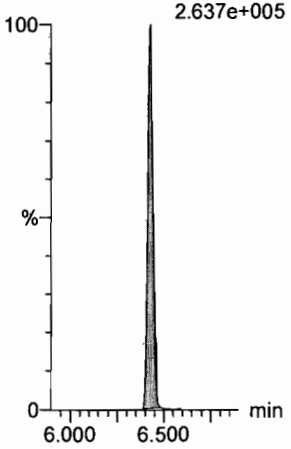
13C2-PFHxDA



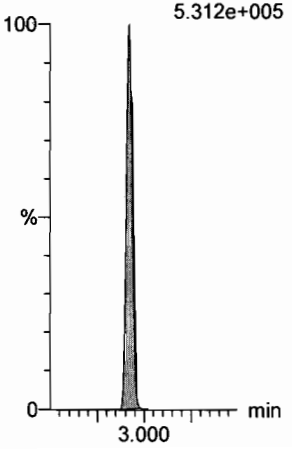
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

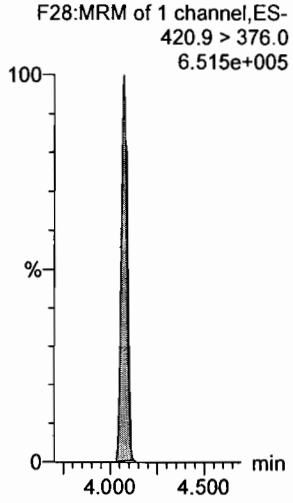


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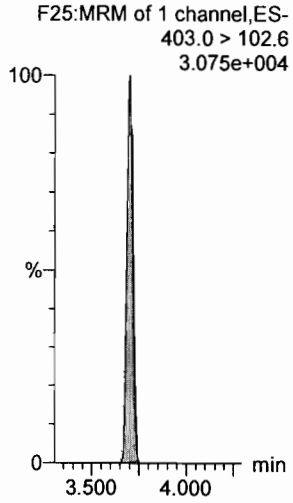
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Name: 190712M2_12, Date: 12-Jul-2019, Time: 19:27:57, ID: ST190712M2-7 PFC CS4 19G1107, Description: PFC CS4 19G1107

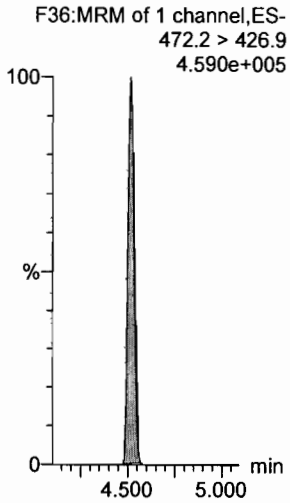
13C8-PFOA



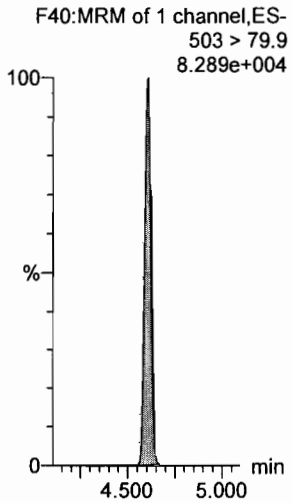
18O2-PFHxS



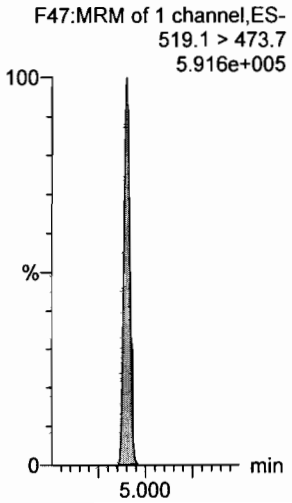
13C9-PFNA



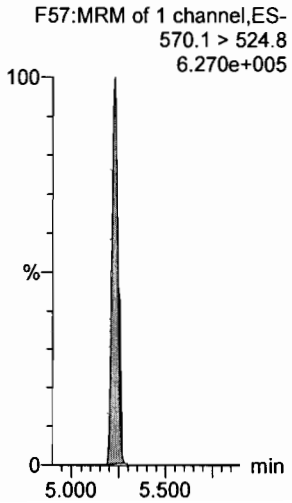
13C4-PFOS



13C6-PFDA



13C7-PFUdA

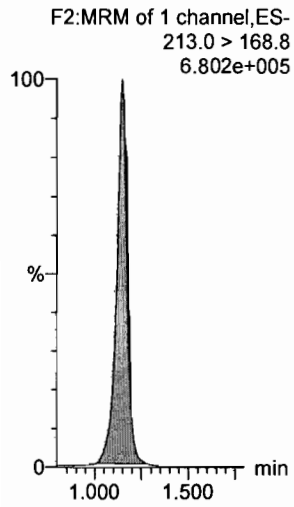


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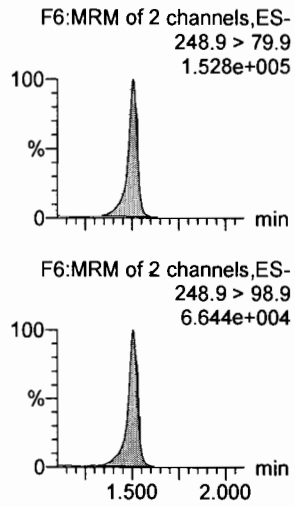
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Name: 190712M2_13, Date: 12-Jul-2019, Time: 19:38:36, ID: ST190712M2-8 PFC CS5 19G1108, Description: PFC CS5 19G1108

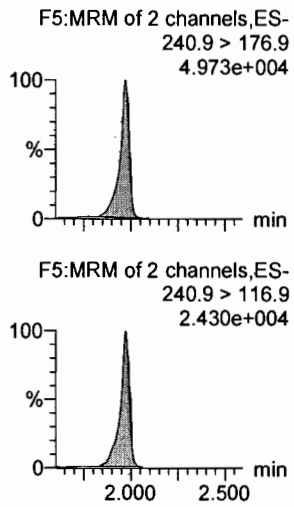
PFBA



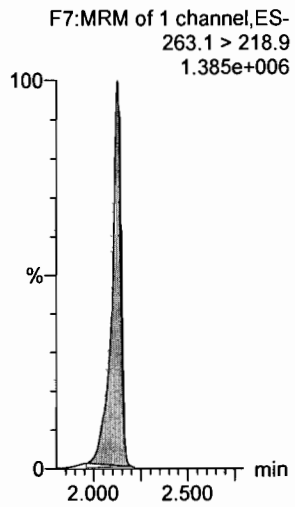
PFPrS



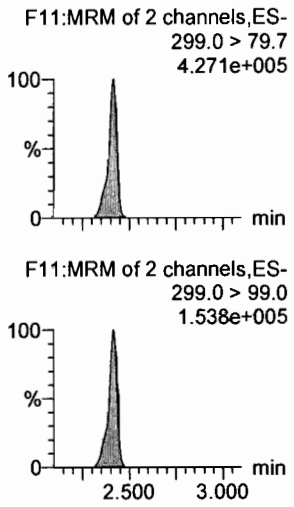
3:3 FTCA



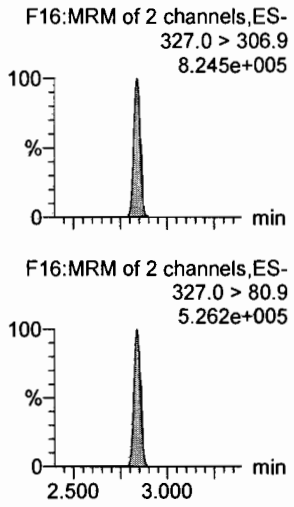
PFPeA



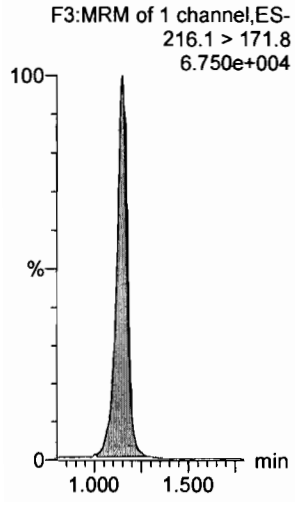
PFBS



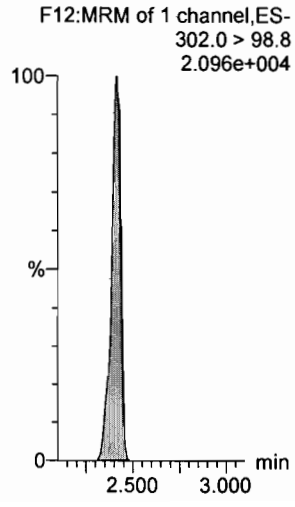
4:2 FTS



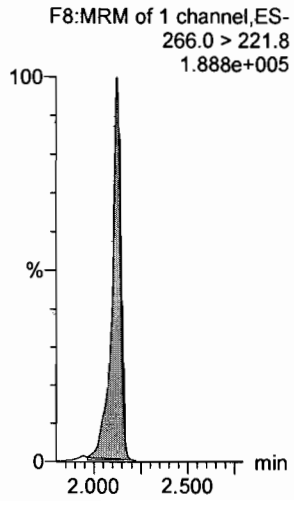
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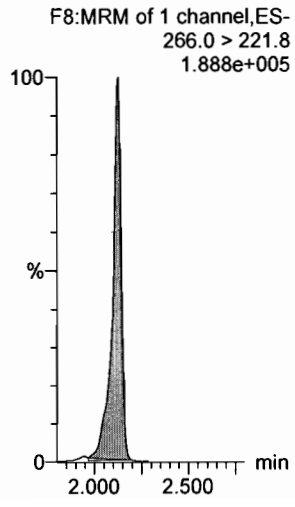
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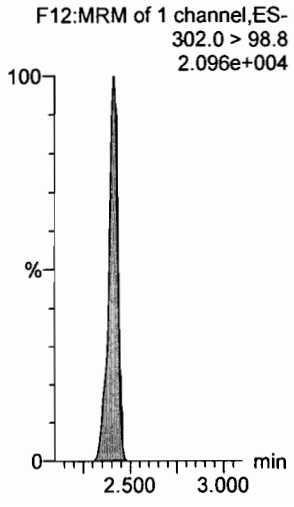
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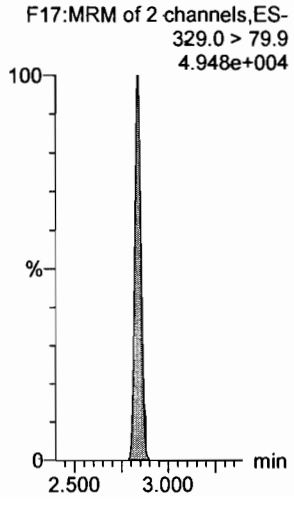
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13C3-PFBS



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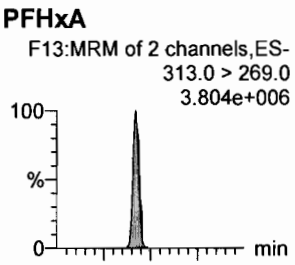


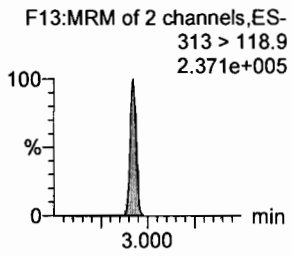
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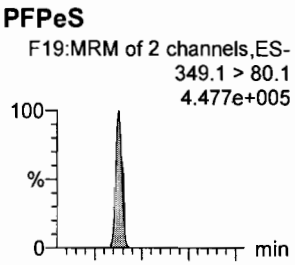
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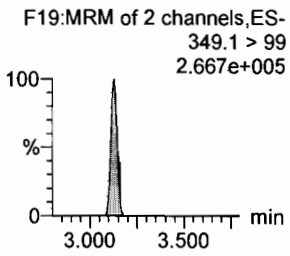
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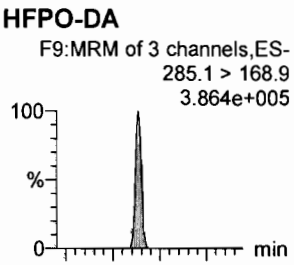


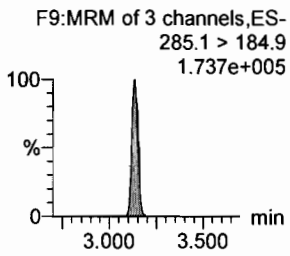
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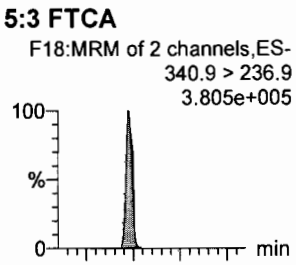


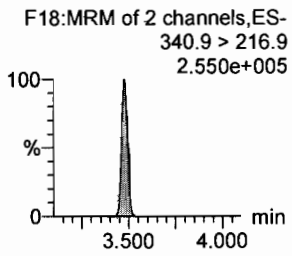
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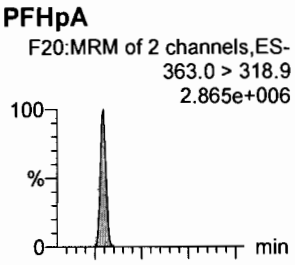


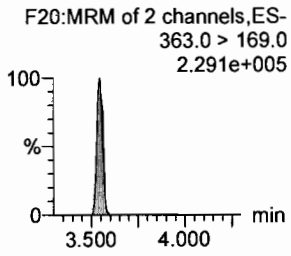
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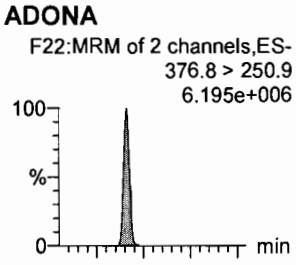


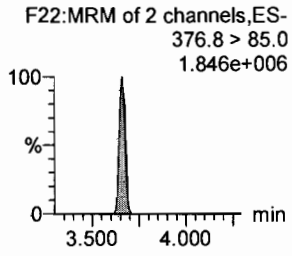
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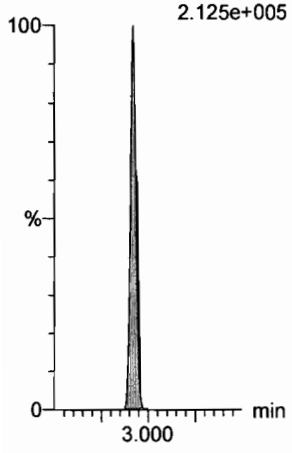


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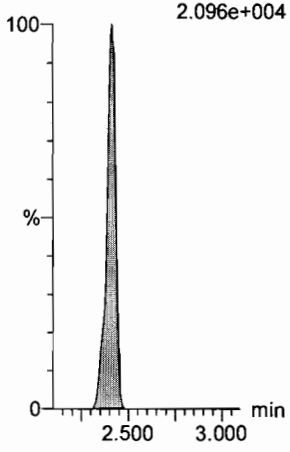




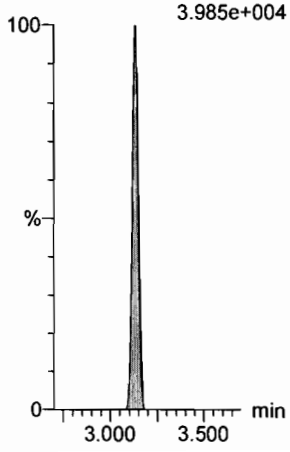
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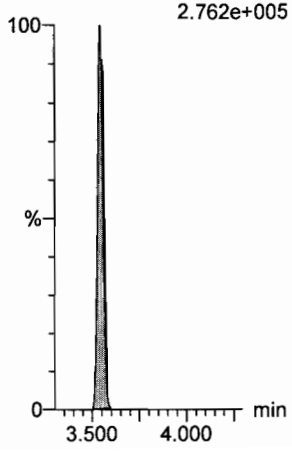
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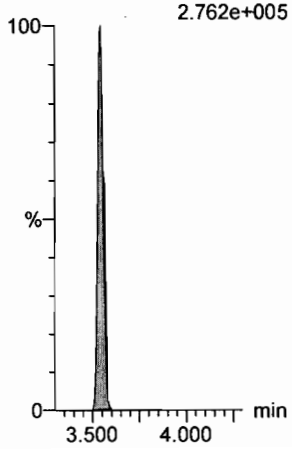
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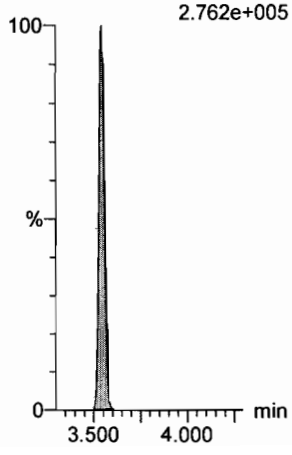
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

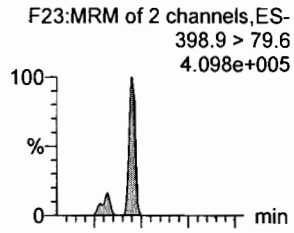


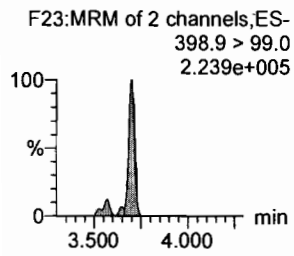
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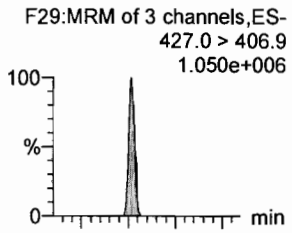
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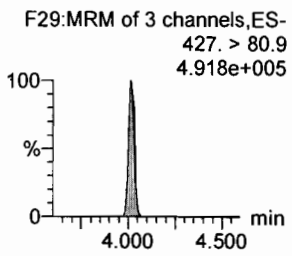
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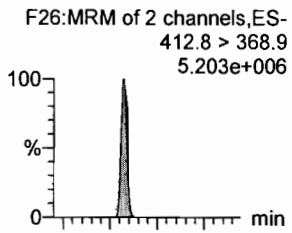


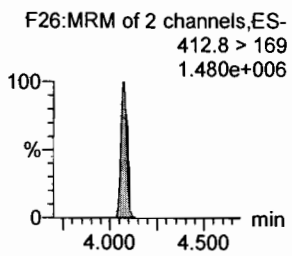
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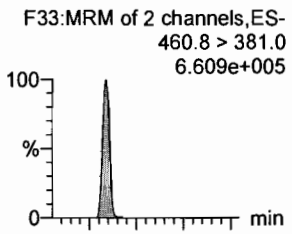


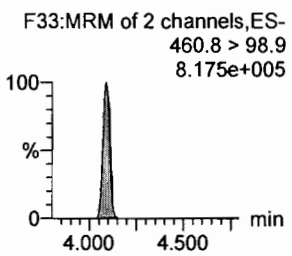
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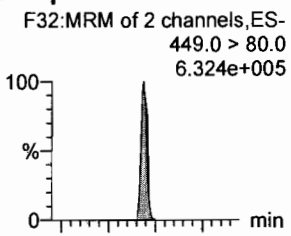


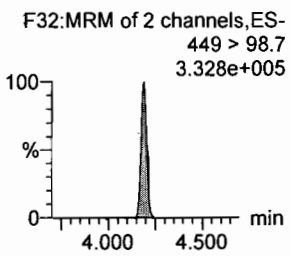
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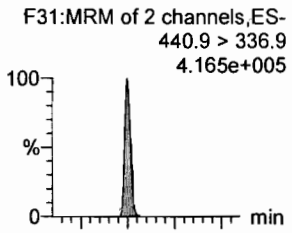


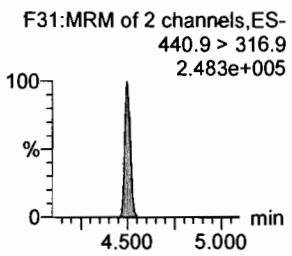
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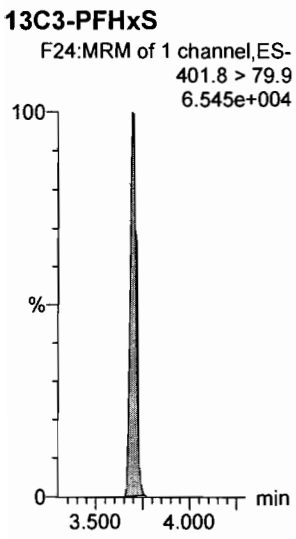


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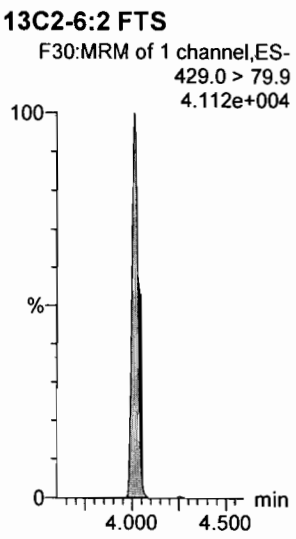




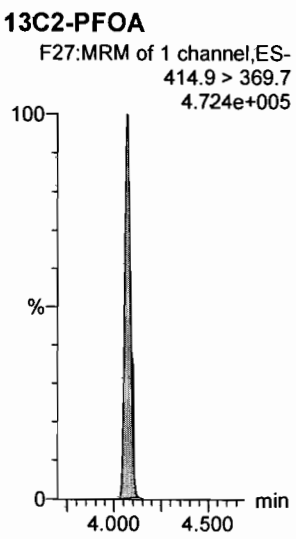
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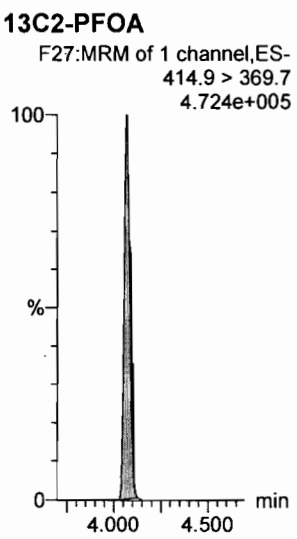
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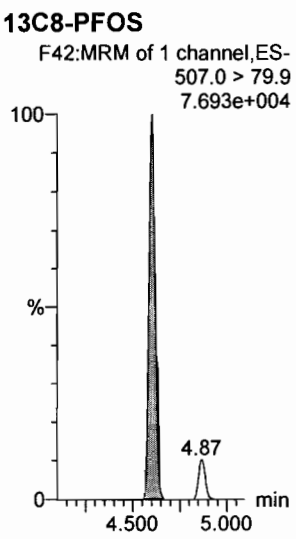
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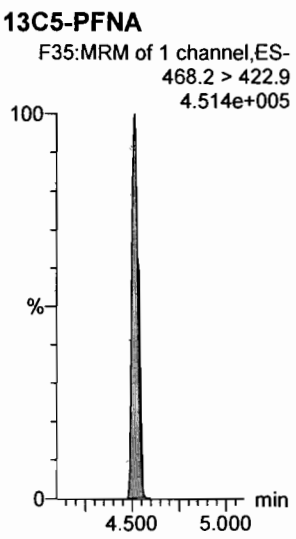
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13C8-PFOS



13C5-PFNA

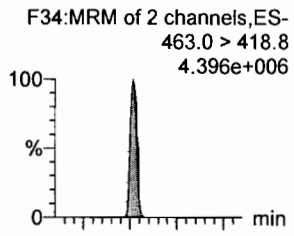


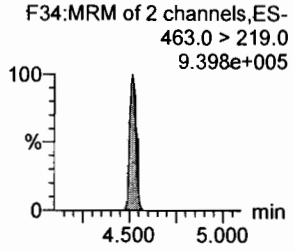
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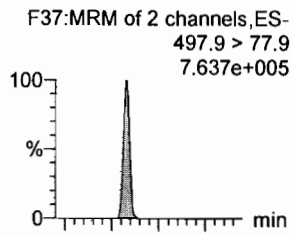
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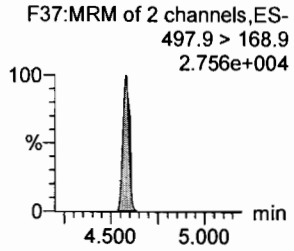
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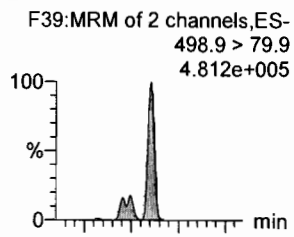


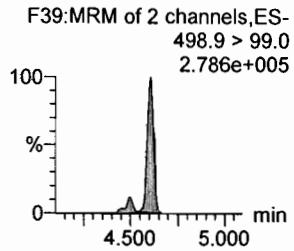
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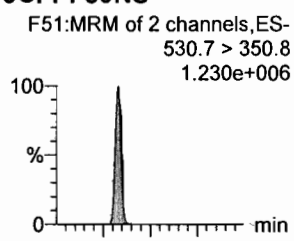


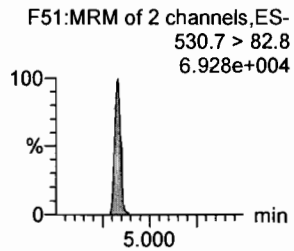
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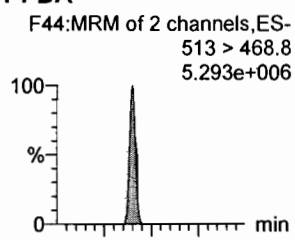


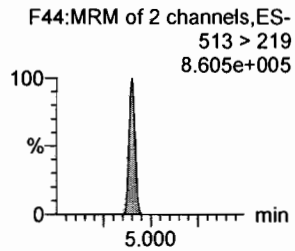
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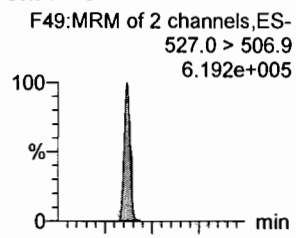


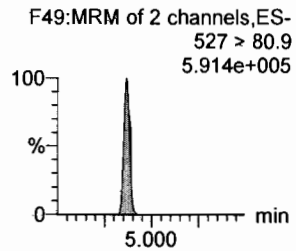
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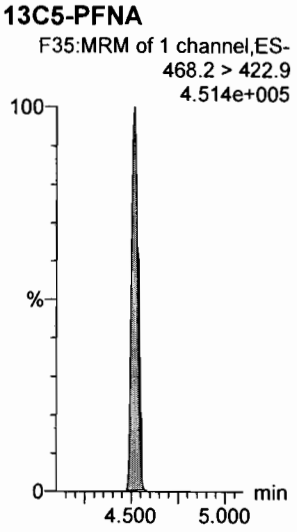


8:2 FTS

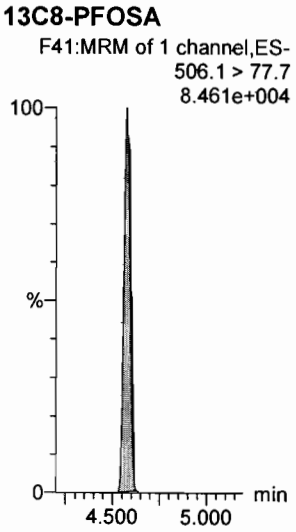




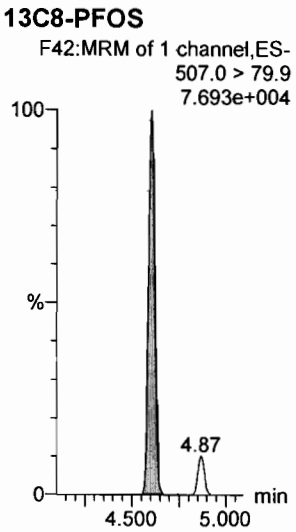
13C5-PFNA



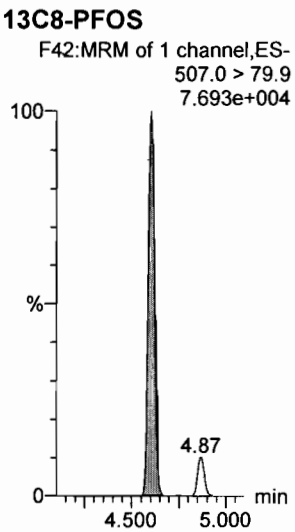
13C8-PFOSA



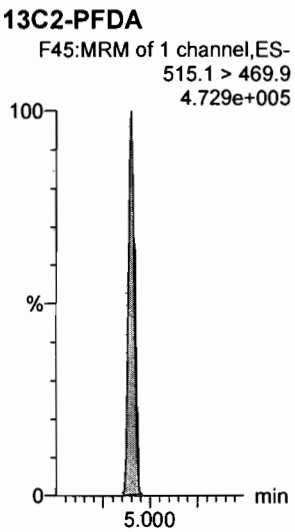
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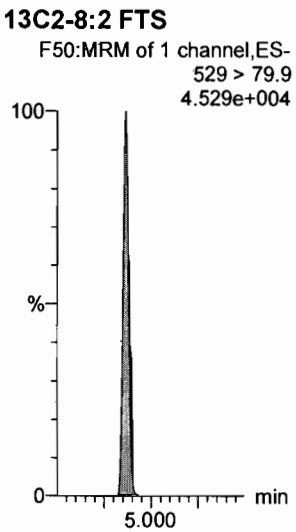
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

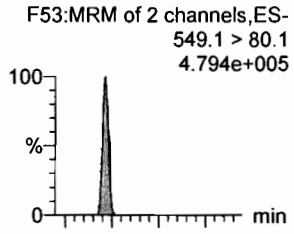


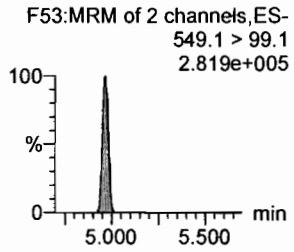
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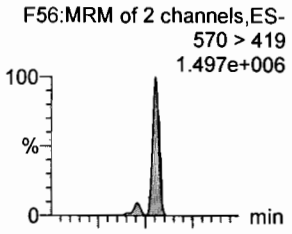
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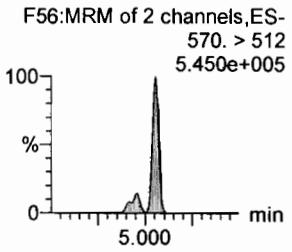
PFNS



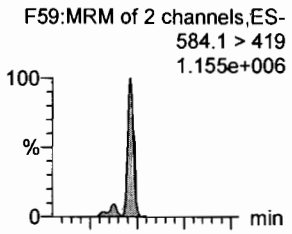


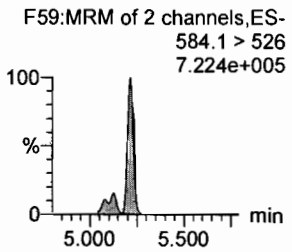
L-MeFOSAA



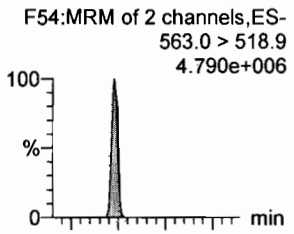


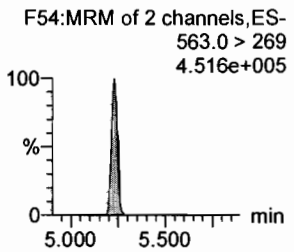
L-EtFOSAA



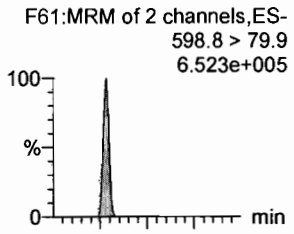


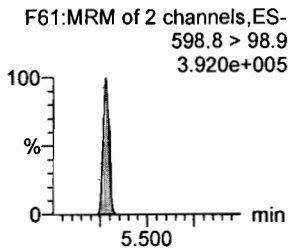
PFUdA



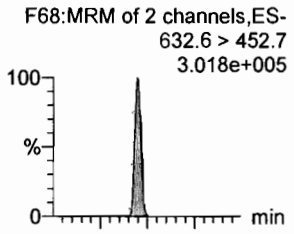


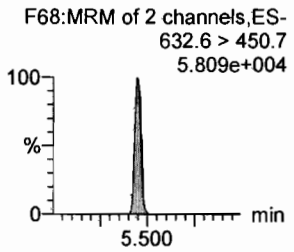
PFDS



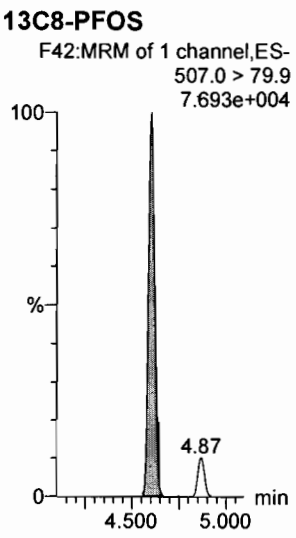


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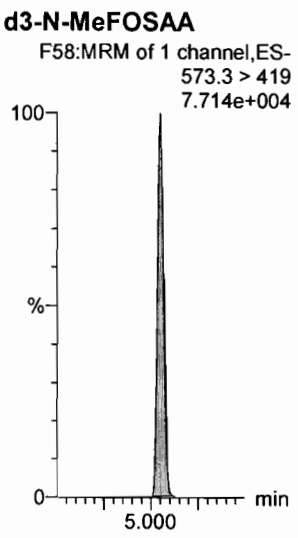




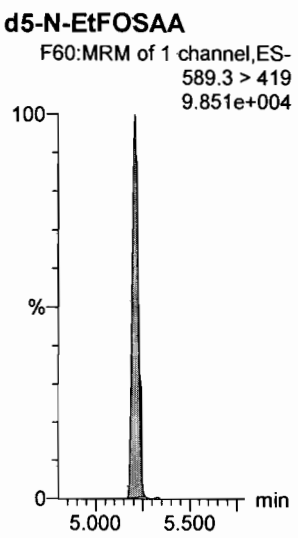
13C8-PFOS



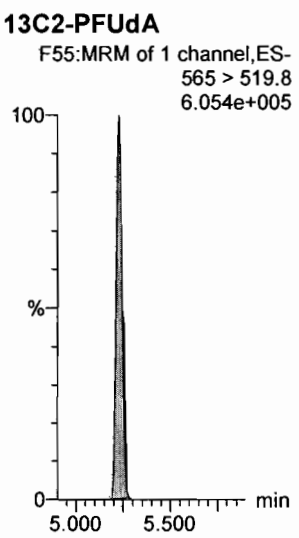
d3-N-MeFOSAA



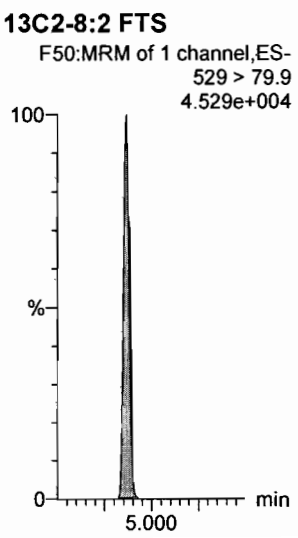
d5-N-EtFOSAA



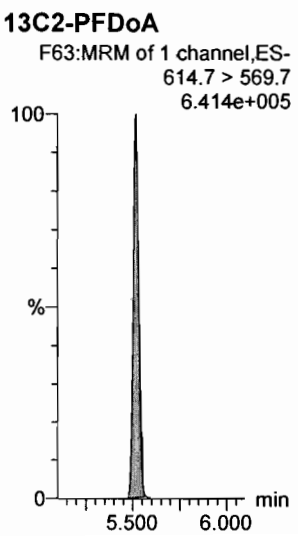
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

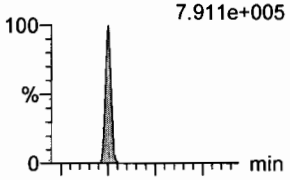


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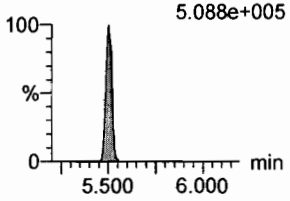
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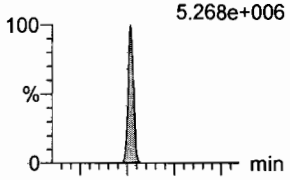
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
7.911e+005



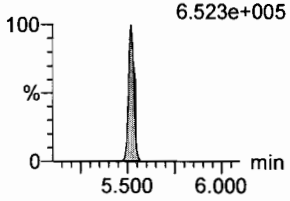
F66:MRM of 2 channels,ES-
627.0 > 80.9
5.088e+005



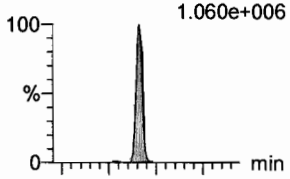
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
5.268e+006



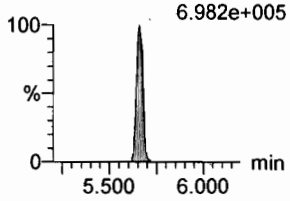
F62:MRM of 4 channels,ES-
612.9 > 318.8
6.523e+005



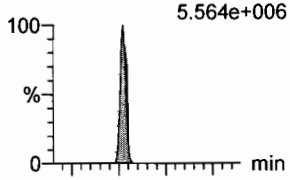
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
1.060e+006



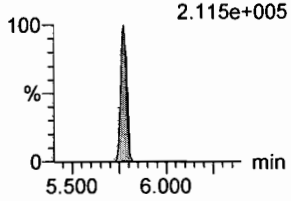
F43:MRM of 2 channels,ES-
512.1 > 219
6.982e+005



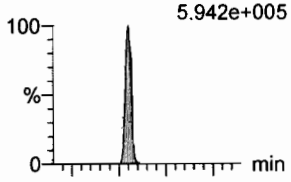
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
5.564e+006



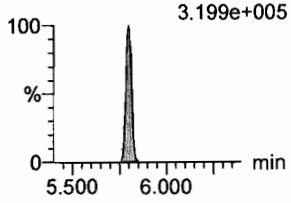
F70:MRM of 2 channels,ES-
662.9 > 319
2.115e+005



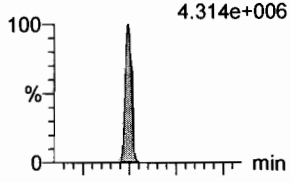
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
5.942e+005



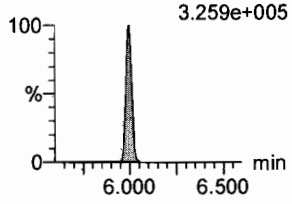
F71:MRM of 2 channels,ES-
698.8 > 98.9
3.199e+005



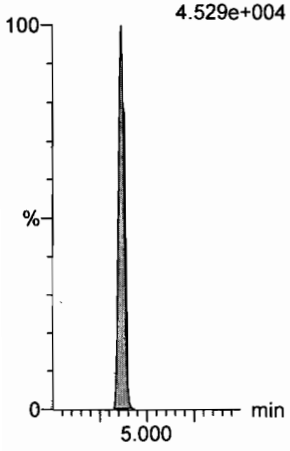
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
4.314e+006



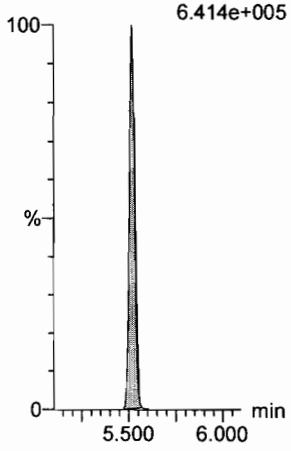
F72:MRM of 2 channels,ES-
713. > 369.0
3.259e+005



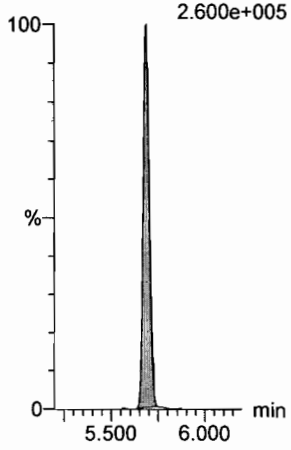
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
4.529e+004



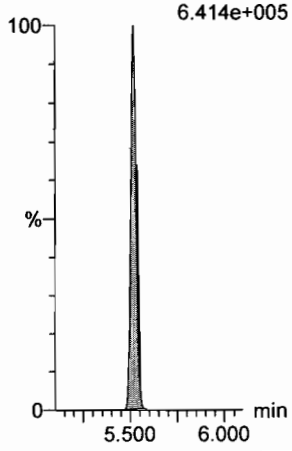
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.414e+005



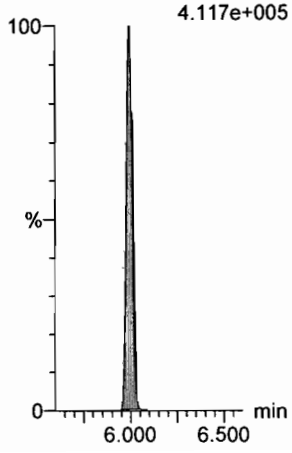
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.600e+005



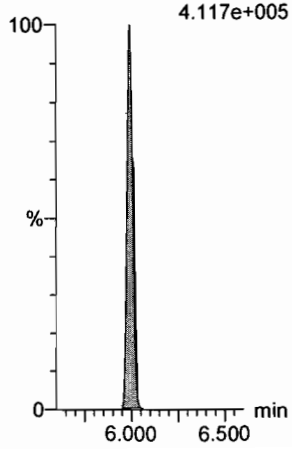
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.414e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.117e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.117e+005

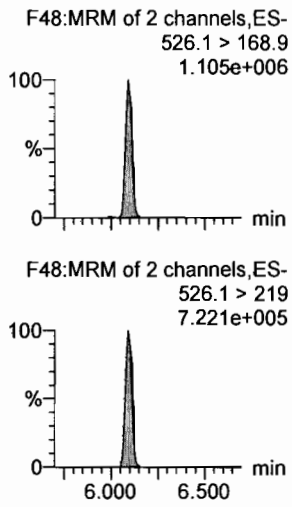


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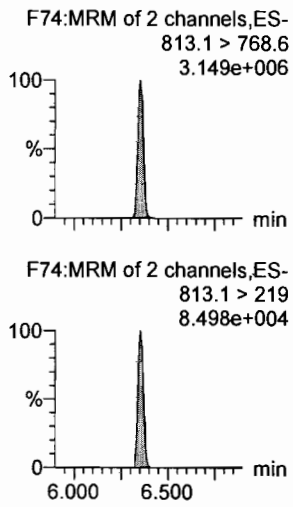
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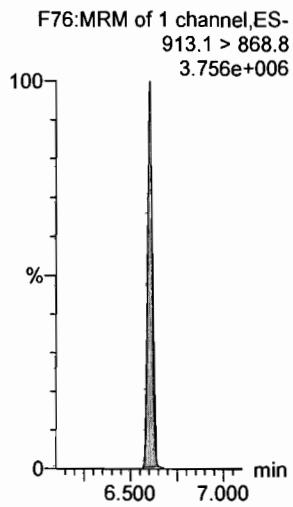
N-EtFOSA



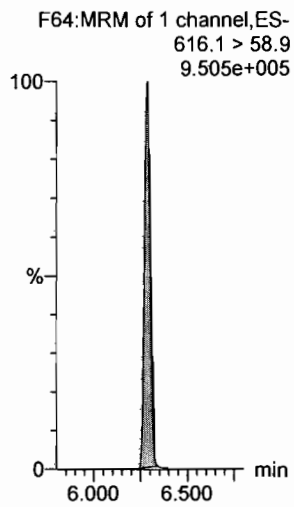
PFHxDA



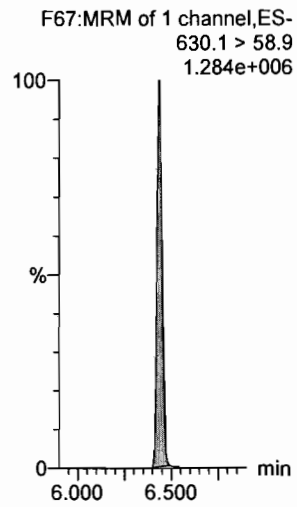
PFODA



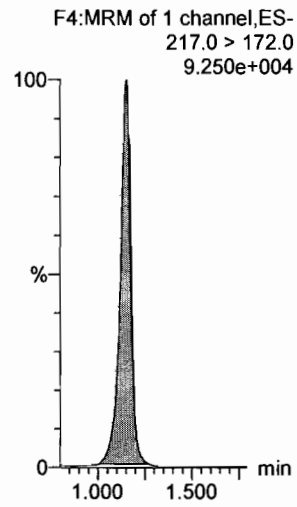
N-MeFOSE



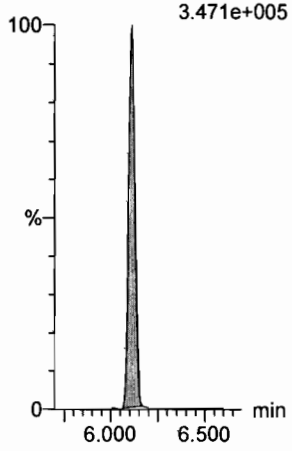
N-EtFOSE



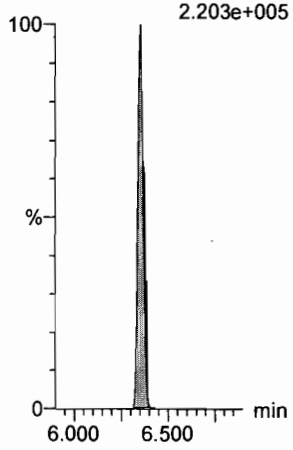
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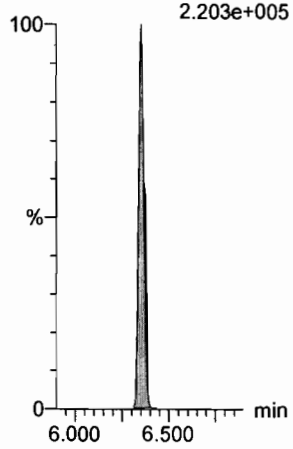
d5-N-ETFOSA



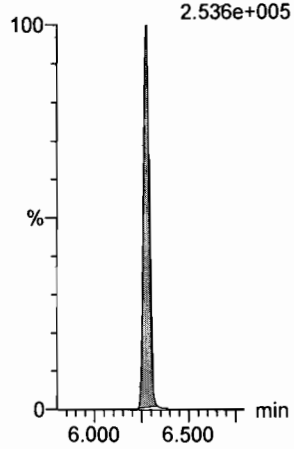
13C2-PFHxDA



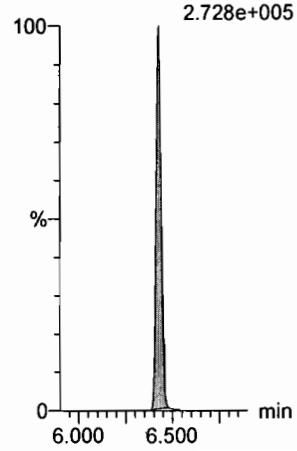
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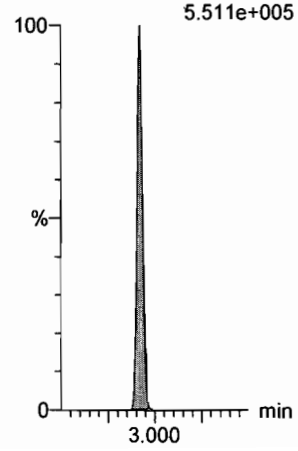
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

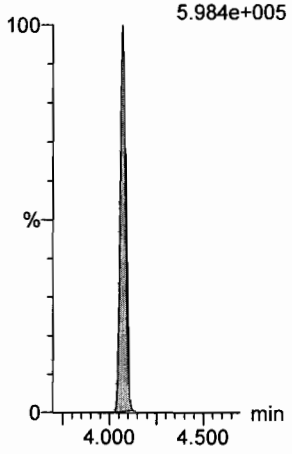


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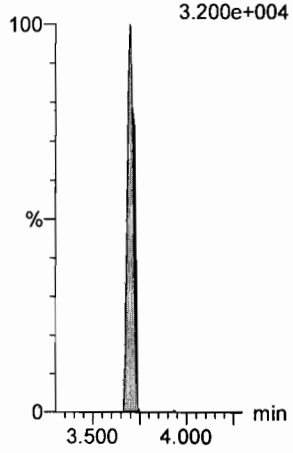
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Name: 190712M2_13, Date: 12-Jul-2019, Time: 19:38:36, ID: ST190712M2-8 PFC CS5 19G1108, Description: PFC CS5 19G1108

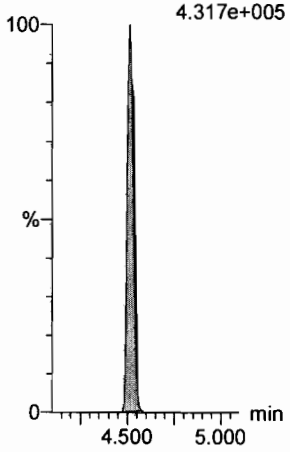
13C8-PFOA



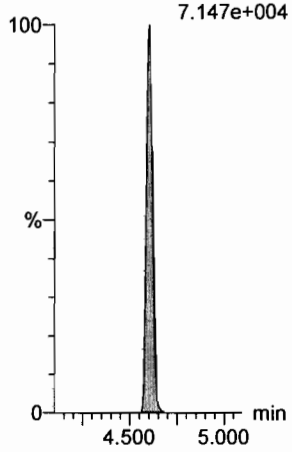
18O2-PFHxS



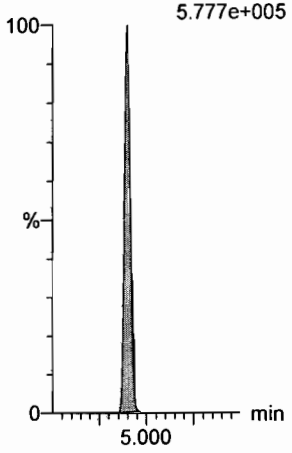
13C9-PFNA



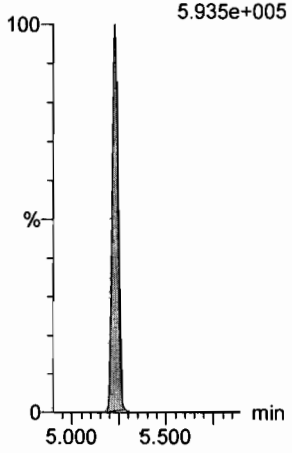
13C4-PFOS



13C6-PFDA



13C7-PFUdA

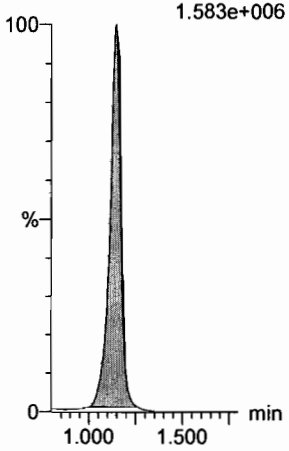


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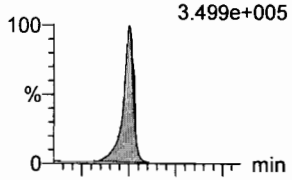
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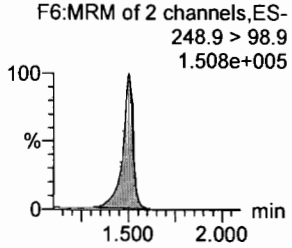
PFBA
F2:MRM of 1 channel,ES-
213.0 > 168.8
1.583e+006



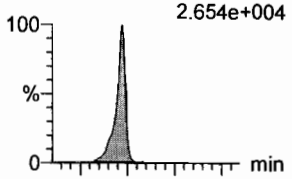
PFPrS
F6:MRM of 2 channels,ES-
248.9 > 79.9
3.499e+005



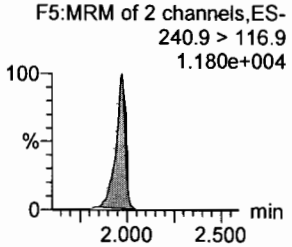
F6:MRM of 2 channels,ES-
248.9 > 98.9
1.508e+005



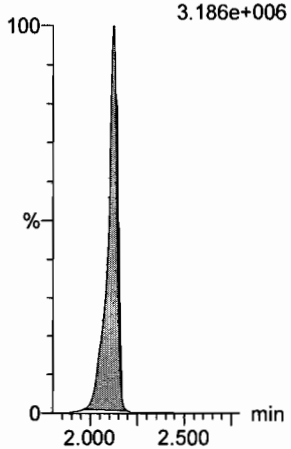
3:3 FTCA
F5:MRM of 2 channels,ES-
240.9 > 176.9
2.654e+004



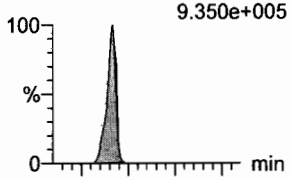
F5:MRM of 2 channels,ES-
240.9 > 116.9
1.180e+004



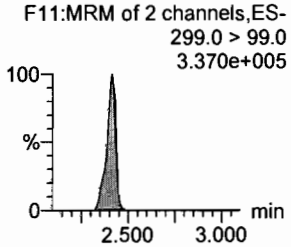
PFPeA
F7:MRM of 1 channel,ES-
263.1 > 218.9
3.186e+006



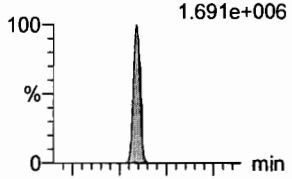
PFBS
F11:MRM of 2 channels,ES-
299.0 > 79.7
9.350e+005



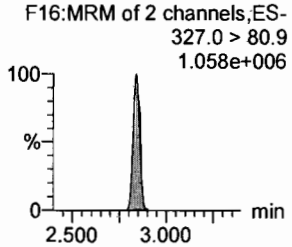
F11:MRM of 2 channels,ES-
299.0 > 99.0
3.370e+005



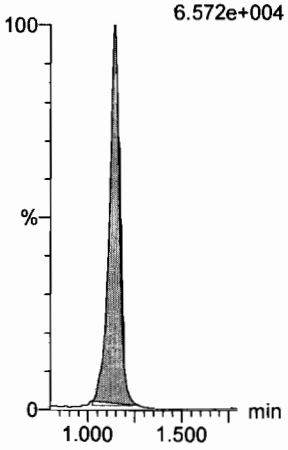
4:2 FTS
F16:MRM of 2 channels,ES-
327.0 > 306.9
1.691e+006



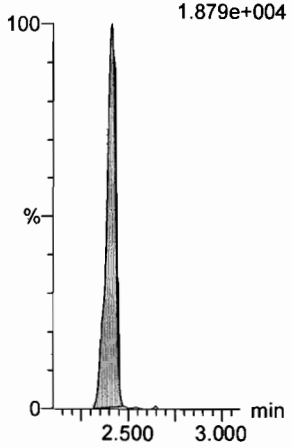
F16:MRM of 2 channels,ES-
327.0 > 80.9
1.058e+006



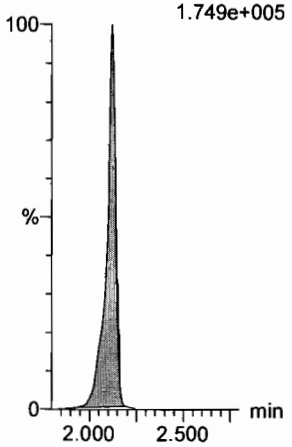
13C3-PFBA
F3:MRM of 1 channel,ES-
216.1 > 171.8
6.572e+004



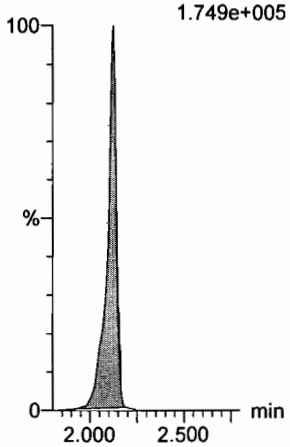
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.879e+004



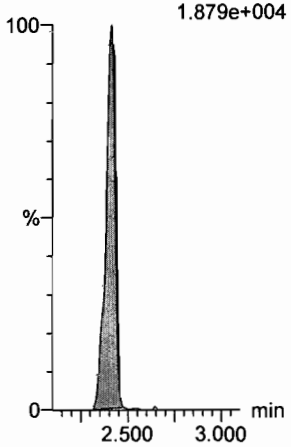
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.749e+005



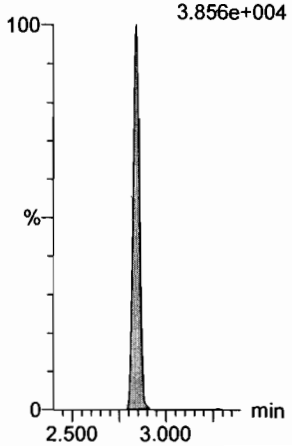
13C3-PFPeA
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.749e+005



13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.879e+004



13C2-4:2 FTS
F17:MRM of 2 channels,ES-
329.0 > 79.9
3.856e+004

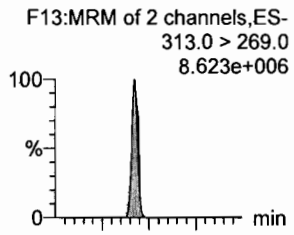


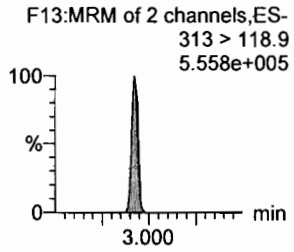
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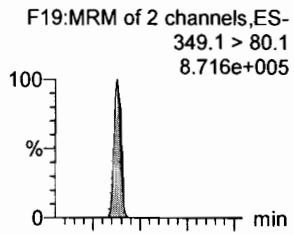
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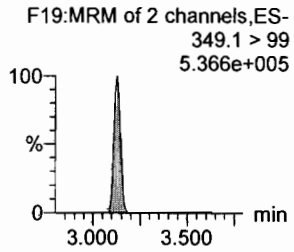
PFHxA



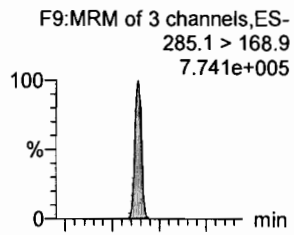


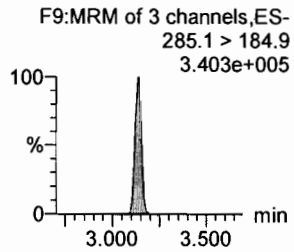
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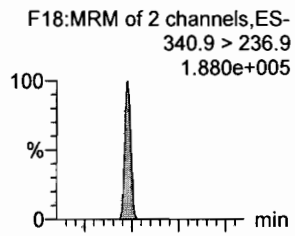


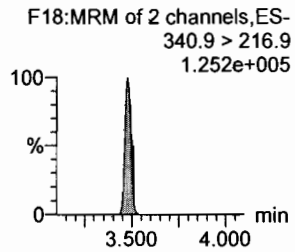
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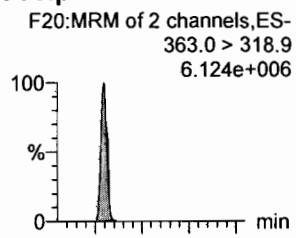


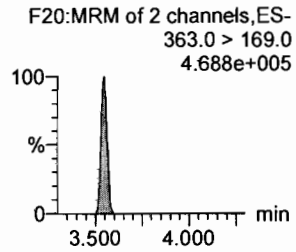
5:3 FTCA



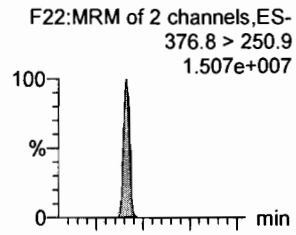


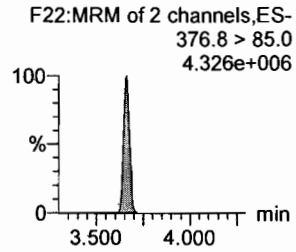
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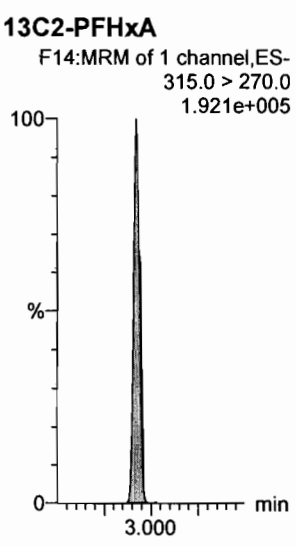


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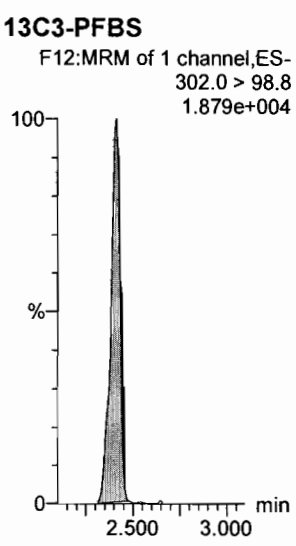




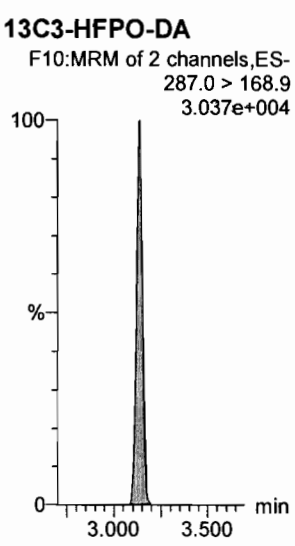
13C2-PFHxA



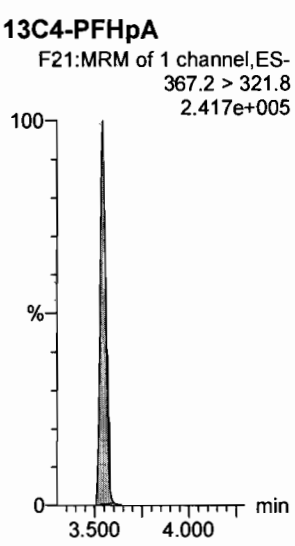
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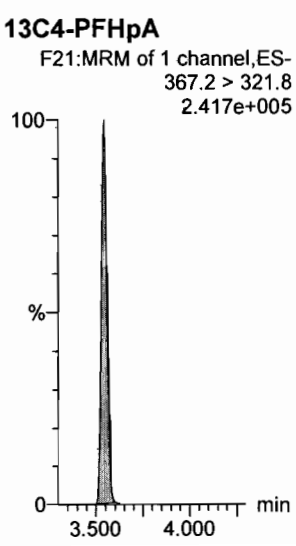
13C3-HFPO-DA



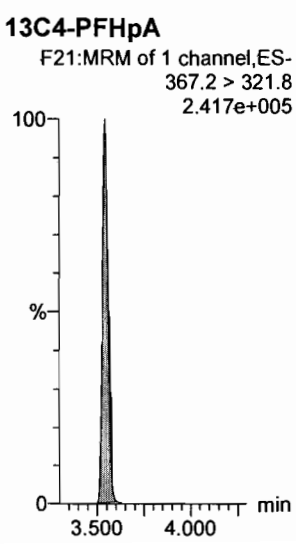
13C4-PFHpA



13C4-PFHpA



13C4-PFHpA

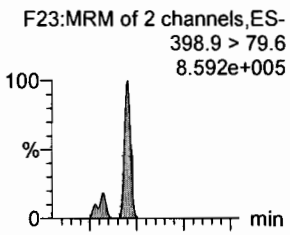


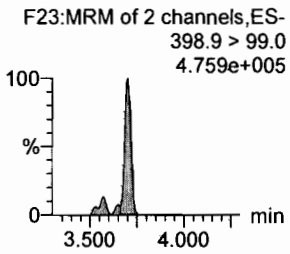
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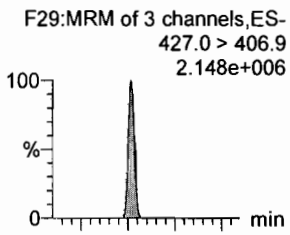
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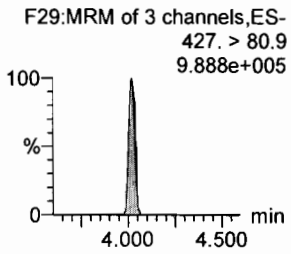
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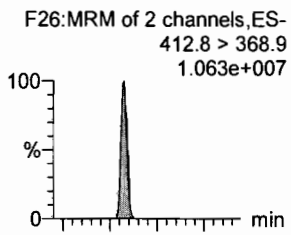


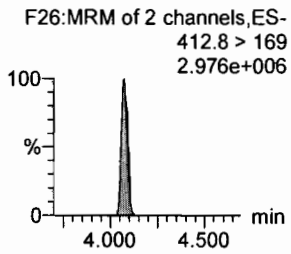
6:2 FTS



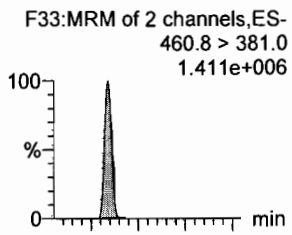


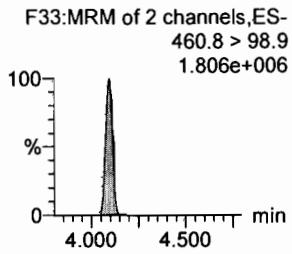
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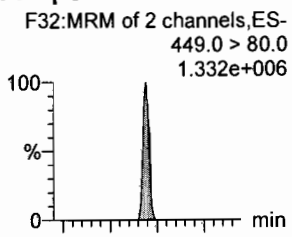


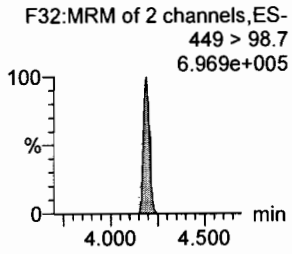
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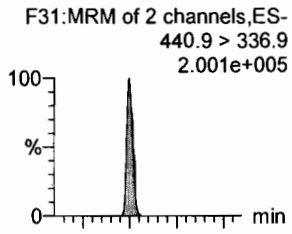


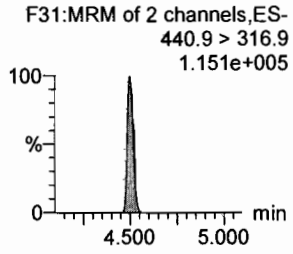
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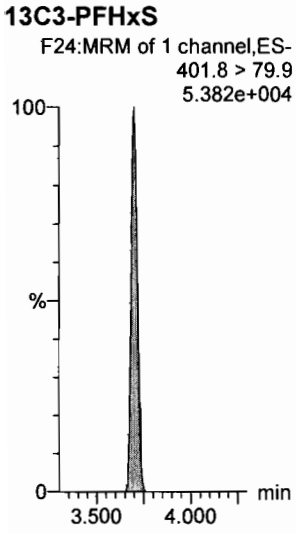


7:3 FTCA

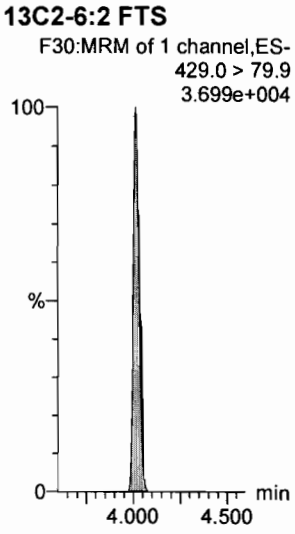




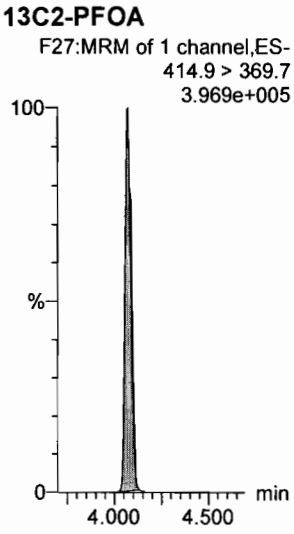
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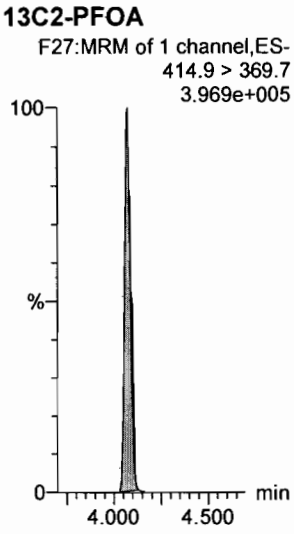
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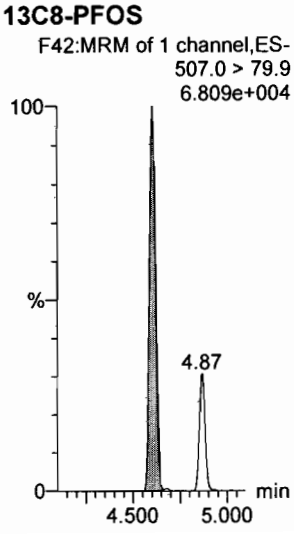
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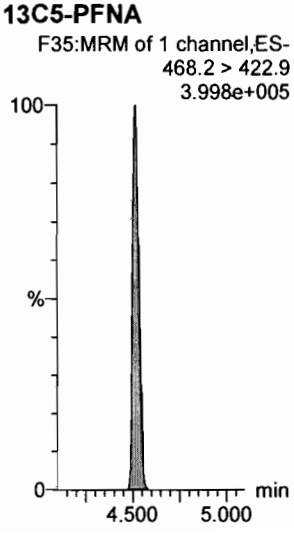
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13C8-PFOS



13C5-PFNA

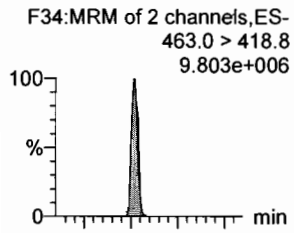


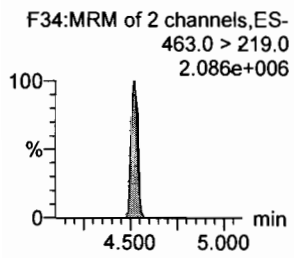
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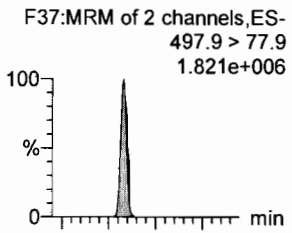
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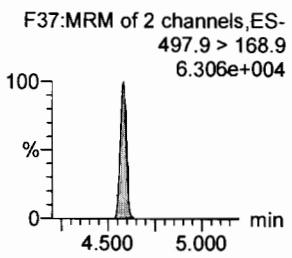
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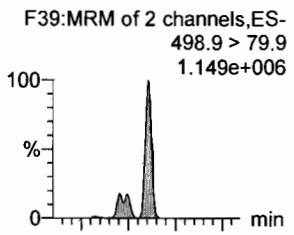


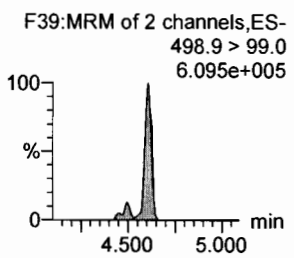
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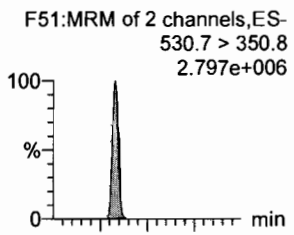


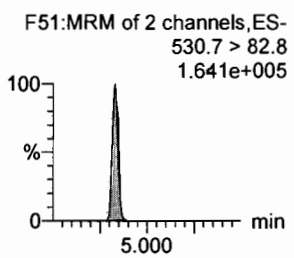
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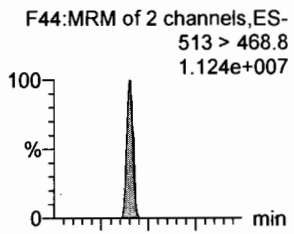


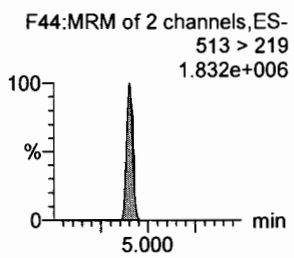
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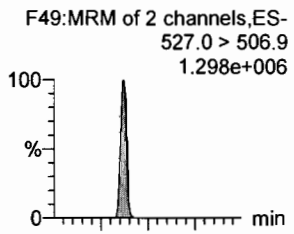


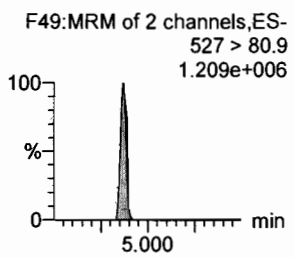
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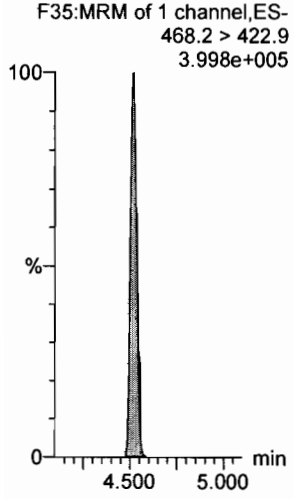


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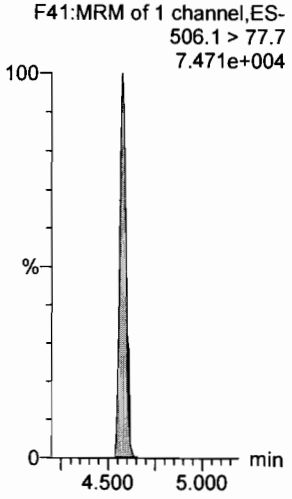




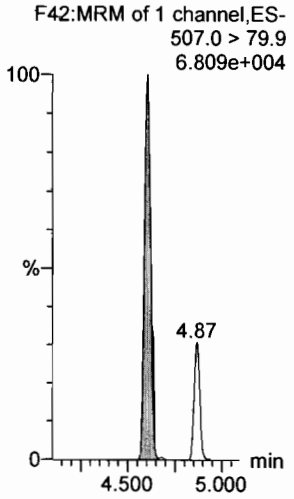
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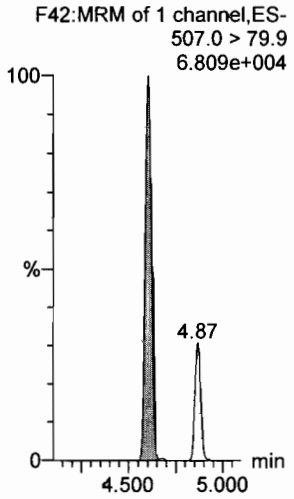
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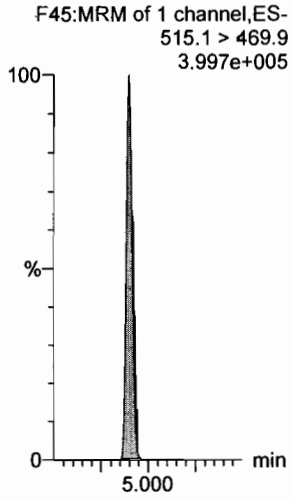
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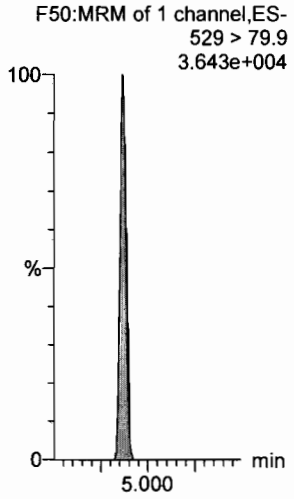
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13C2-PFDA



13C2-8:2 FTS

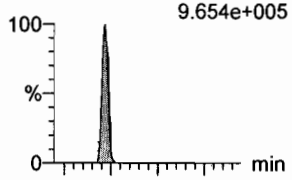


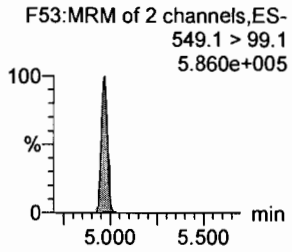
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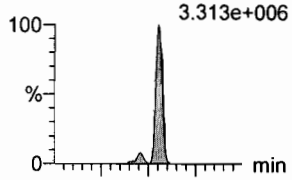
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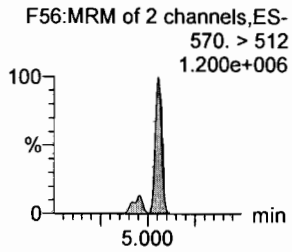
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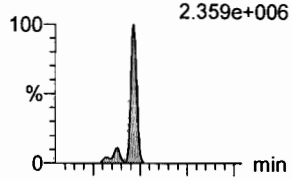


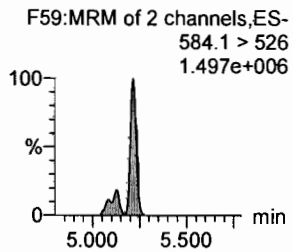
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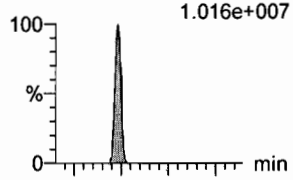


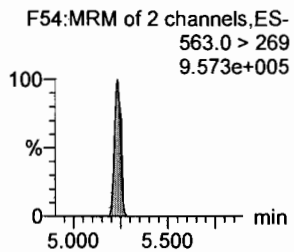
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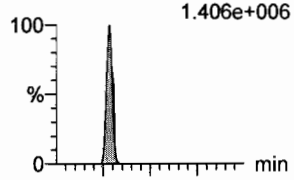


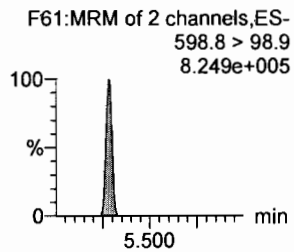
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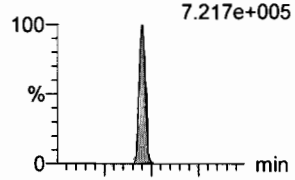


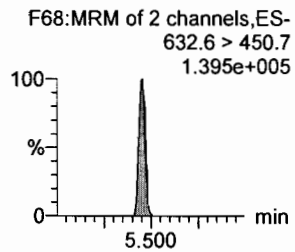
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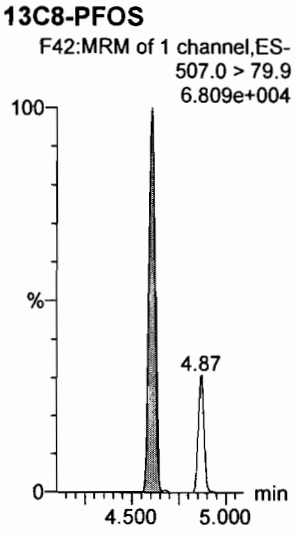


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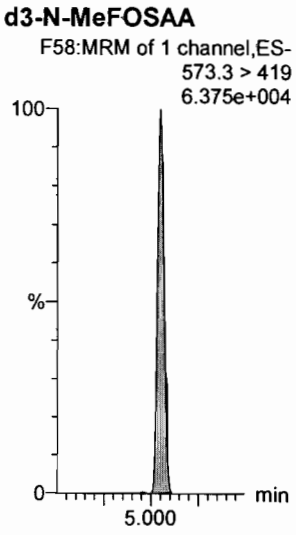




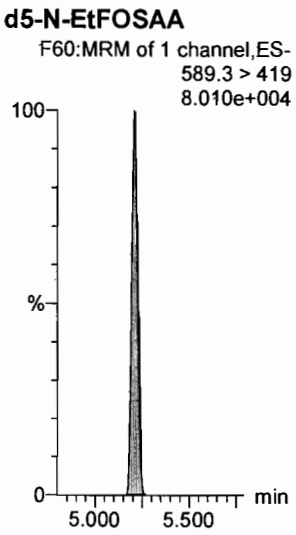
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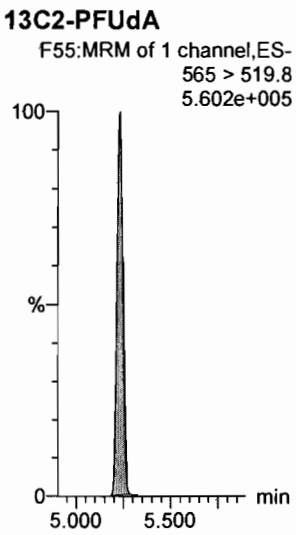
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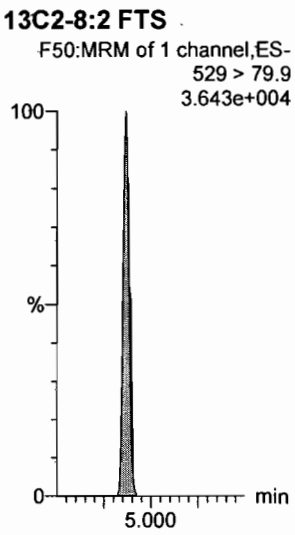
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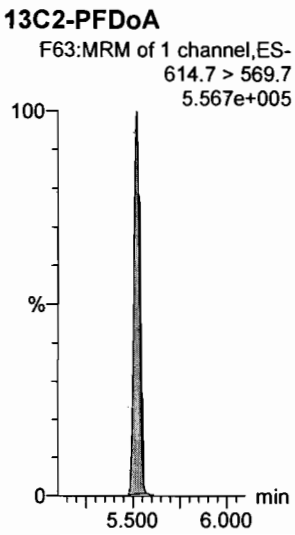
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13C2-8:2 FTS



13C2-PFDoA

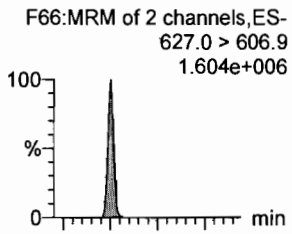


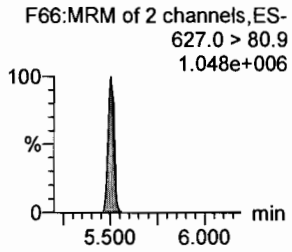
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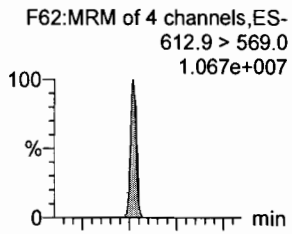
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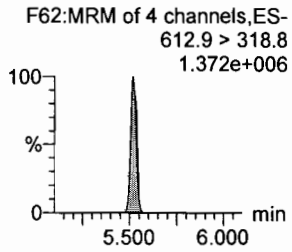
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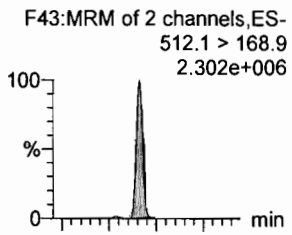


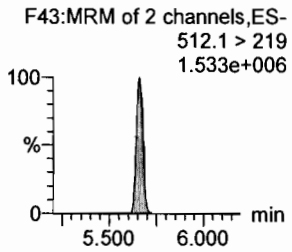
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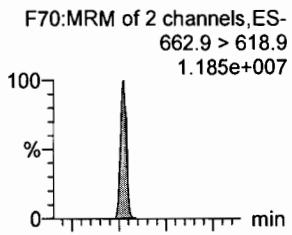


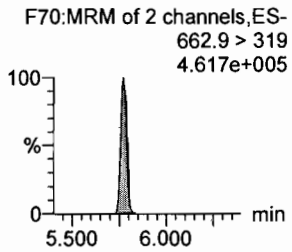
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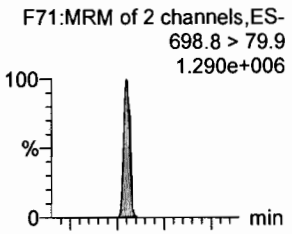


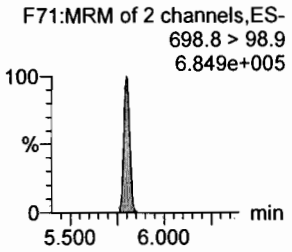
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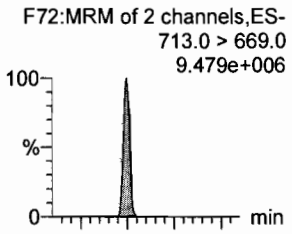


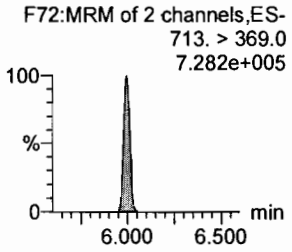
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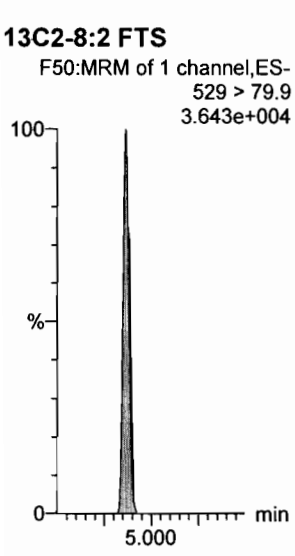


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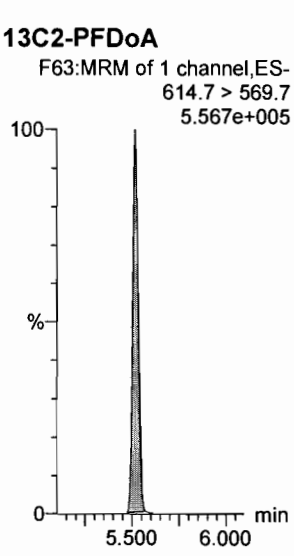




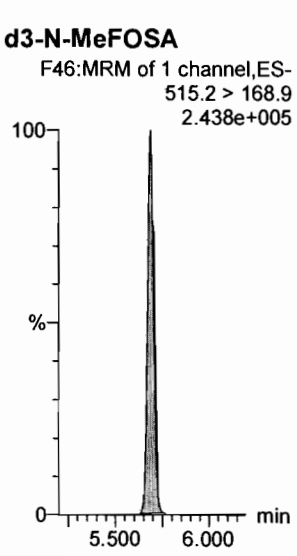
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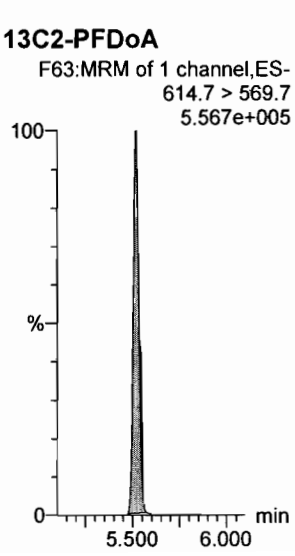
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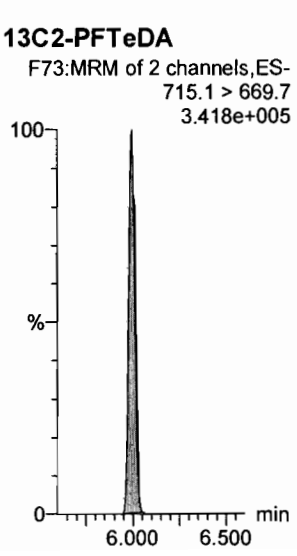
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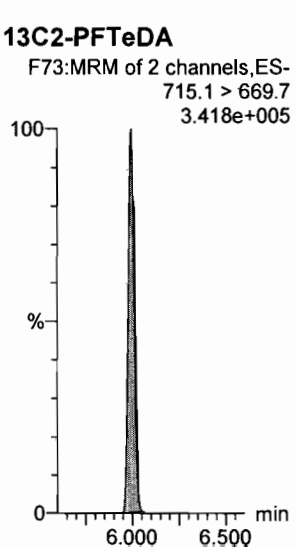
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13C2-PFTeDA



13C2-PFTeDA

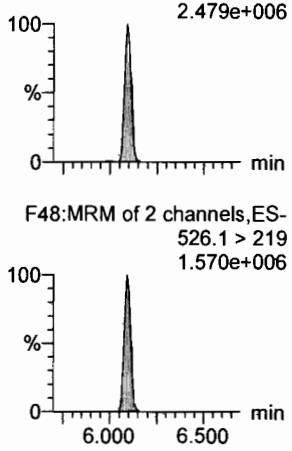


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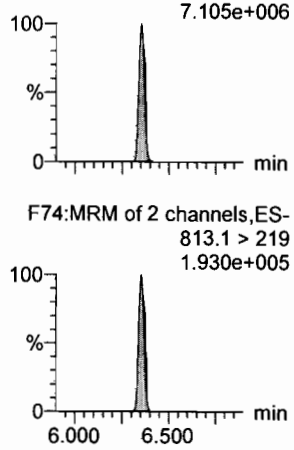
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Name: 190712M2_14, Date: 12-Jul-2019, Time: 19:49:09, ID: ST190712M2-9 PFC CS6 19G1109, Description: PFC CS6 19G1109

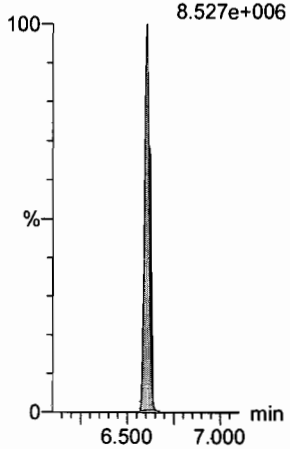
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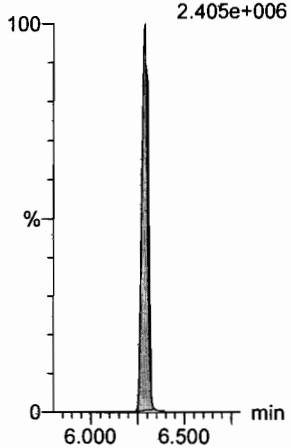
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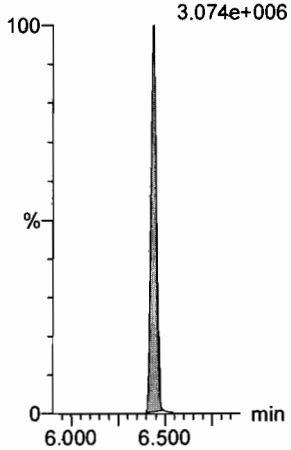
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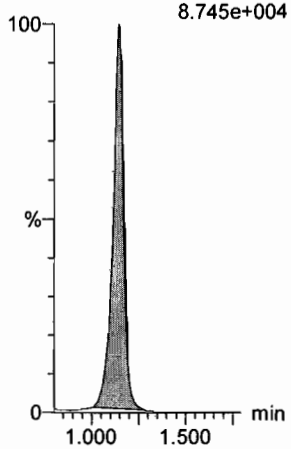
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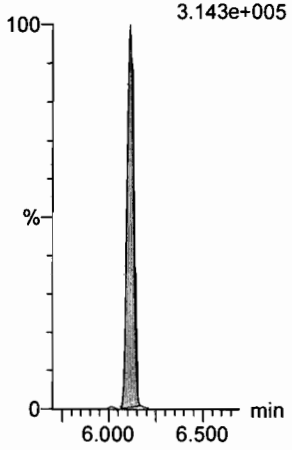
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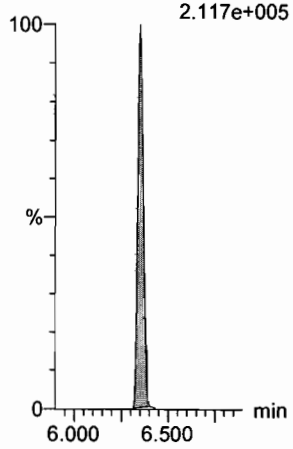
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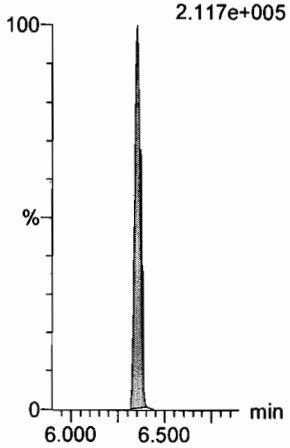
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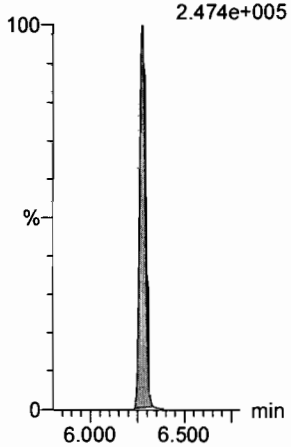
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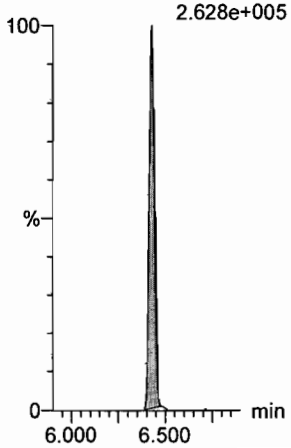
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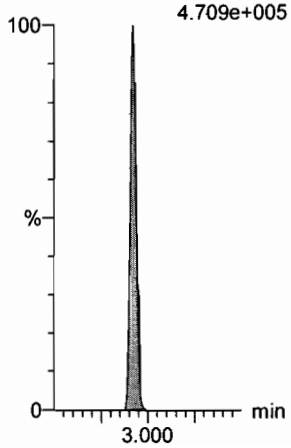
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d9-N-EtFOSE



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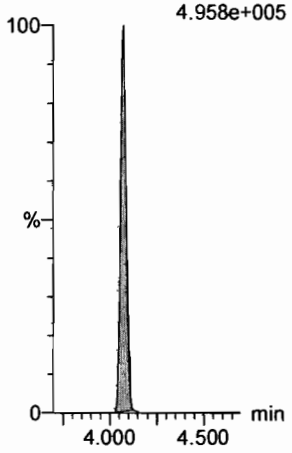


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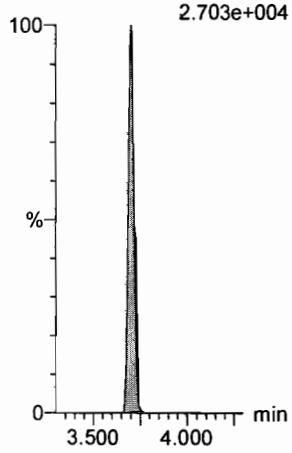
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Name: 190712M2_14, Date: 12-Jul-2019, Time: 19:49:09, ID: ST190712M2-9 PFC CS6 19G1109, Description: PFC CS6 19G1109

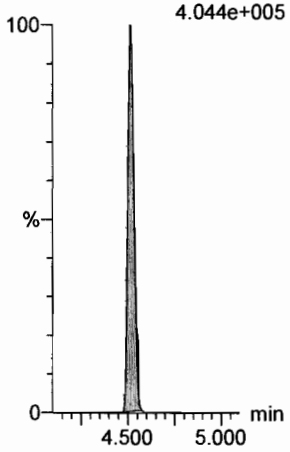
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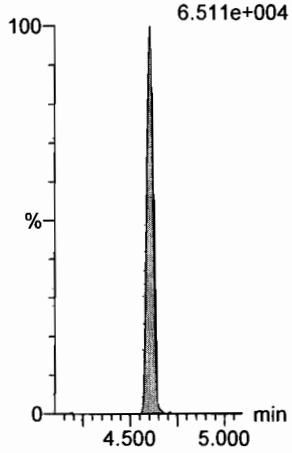
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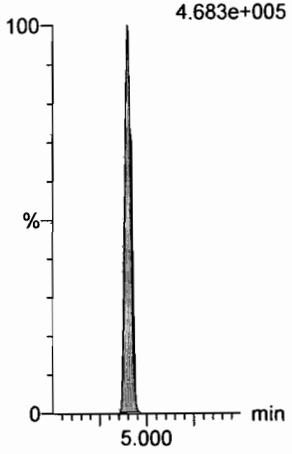
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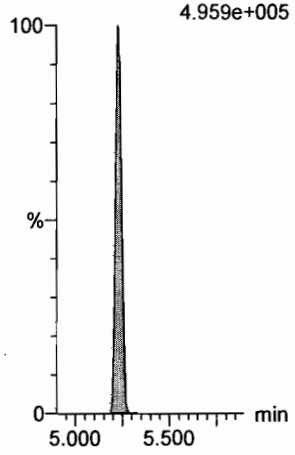
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13C6-PFDA



13C7-PFUdA

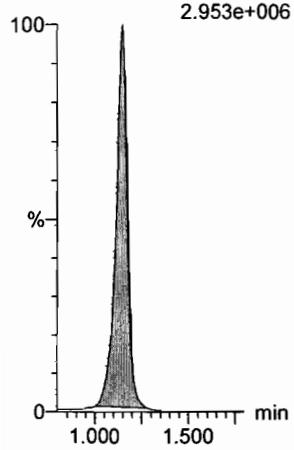


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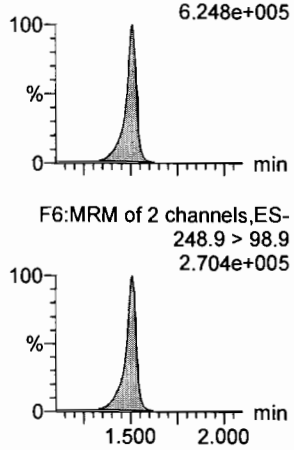
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Name: 190712M2_15, Date: 12-Jul-2019, Time: 19:59:47, ID: ST190712M2-10 PFC CS7 19G1110, Description: PFC CS7 19G1110

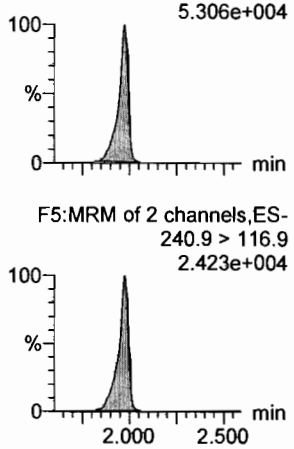
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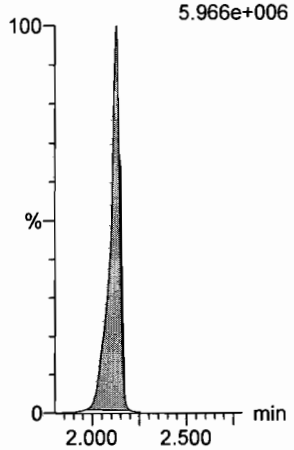
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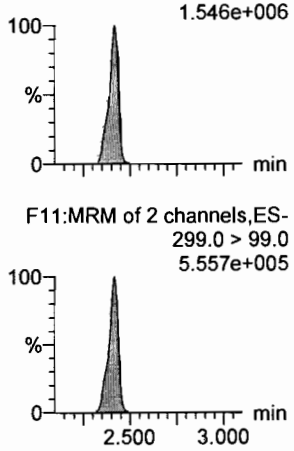
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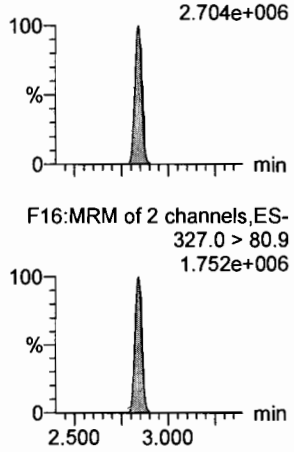
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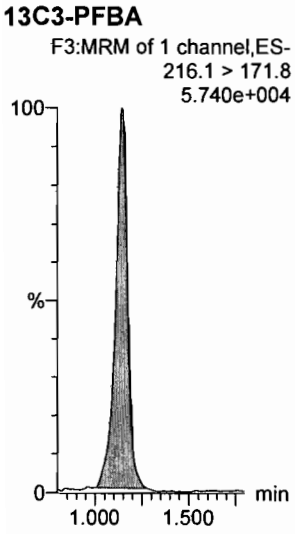
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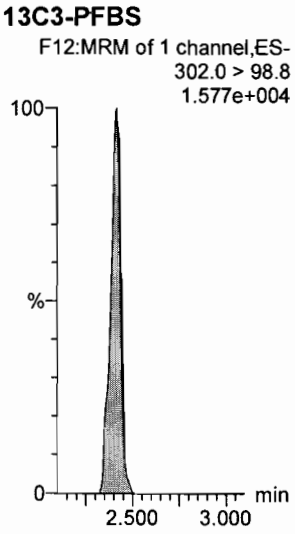
4:2 FTS



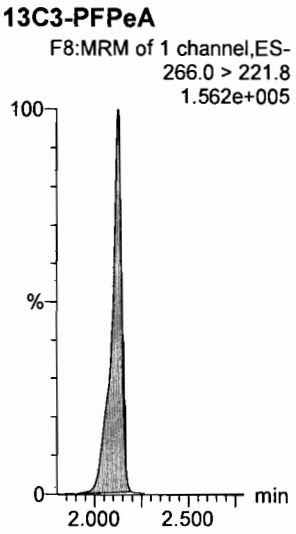
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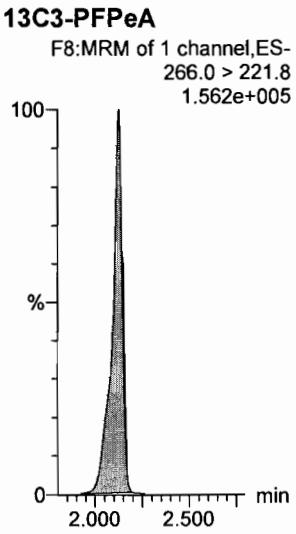
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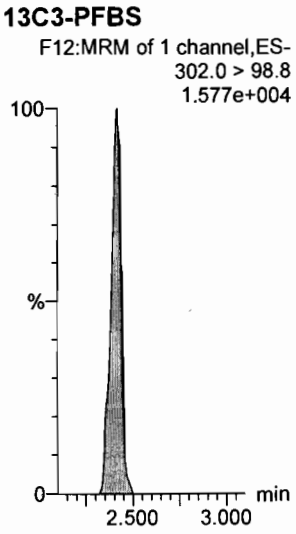
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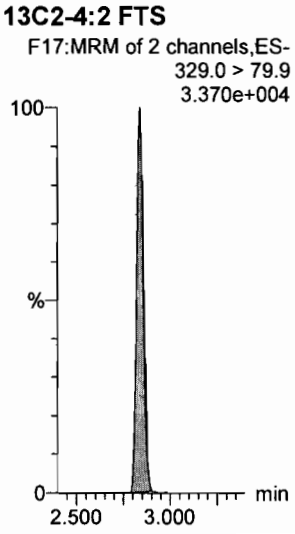
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13C3-PFBS



13C2-4:2 FTS

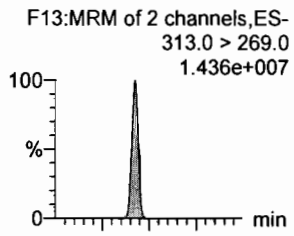


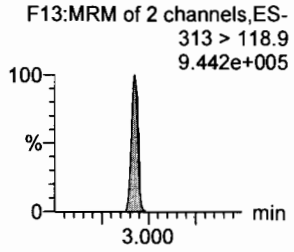
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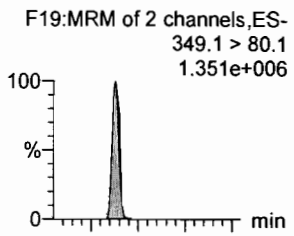
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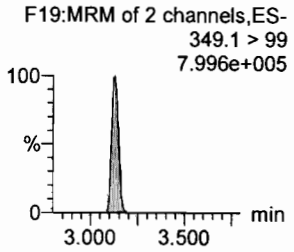
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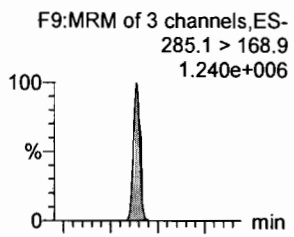


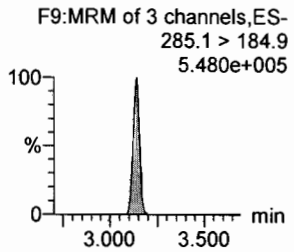
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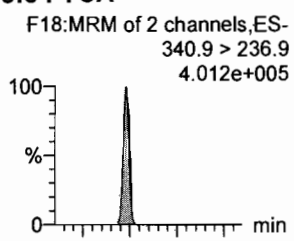


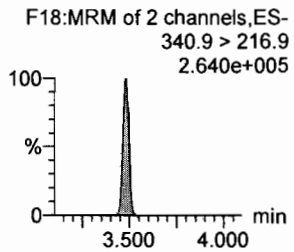
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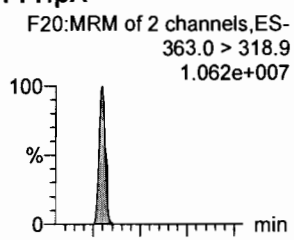


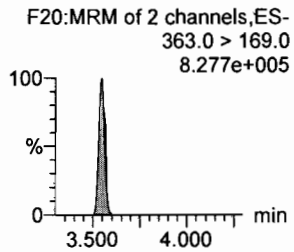
5:3 FTCA



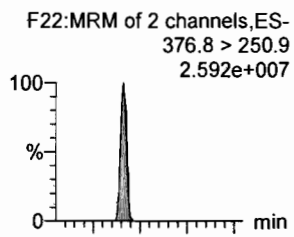


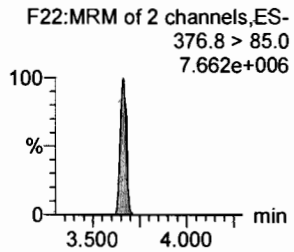
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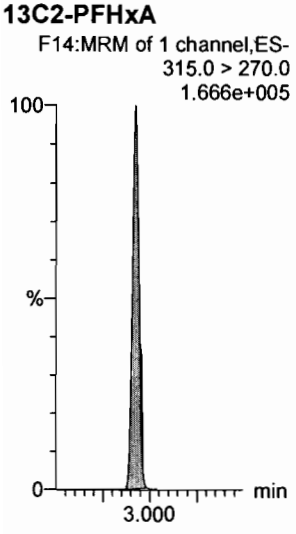


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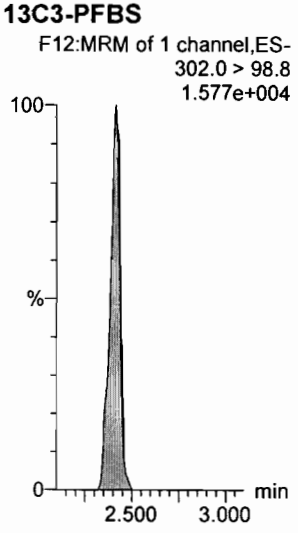




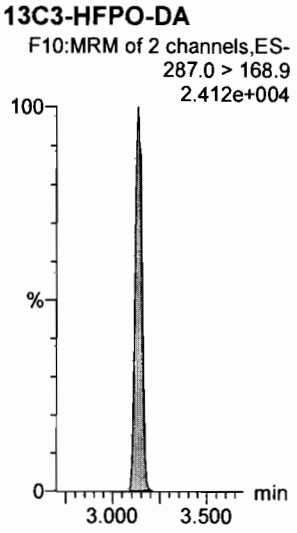
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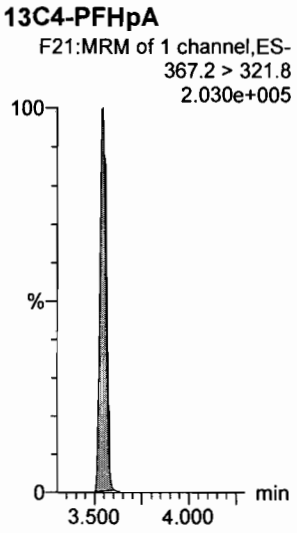
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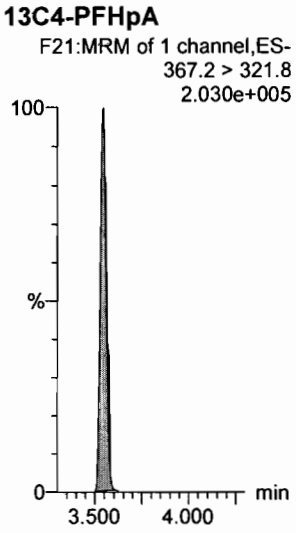
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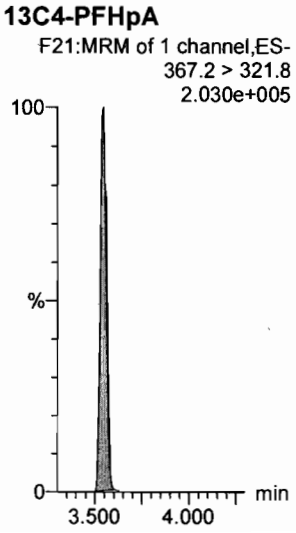
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13C4-PFHpA



13C4-PFHpA

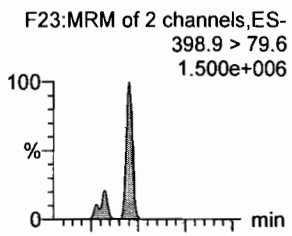


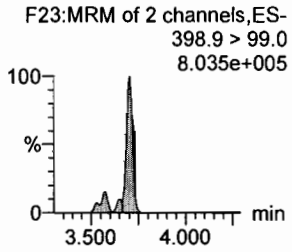
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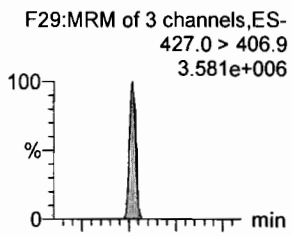
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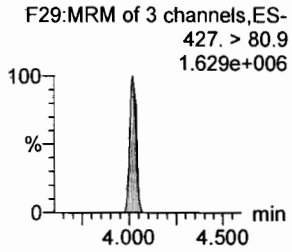
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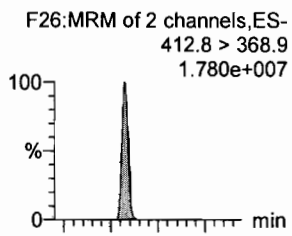


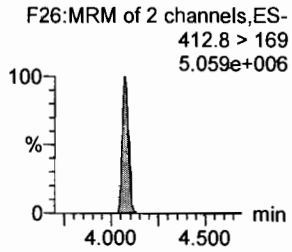
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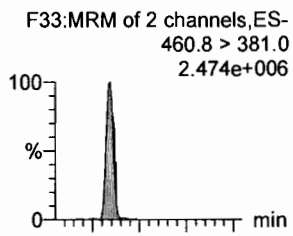


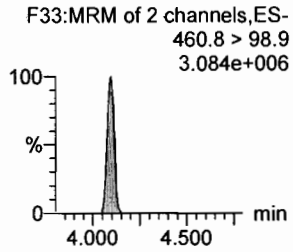
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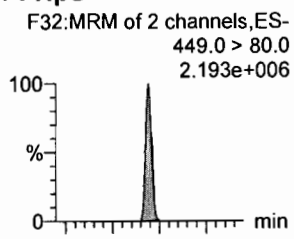


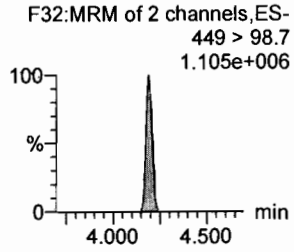
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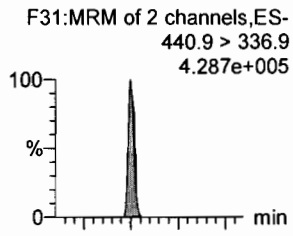


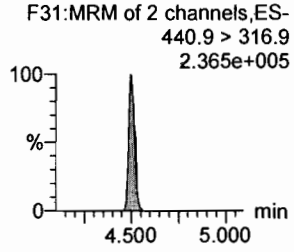
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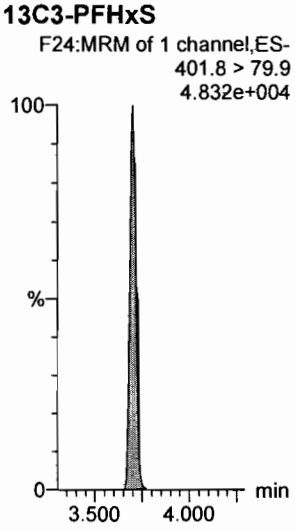


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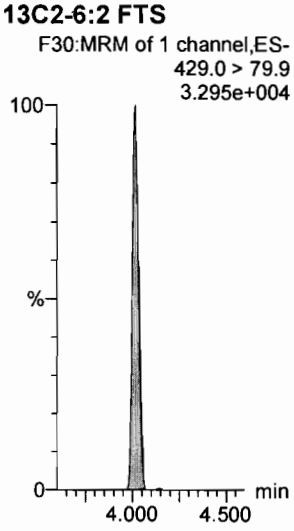




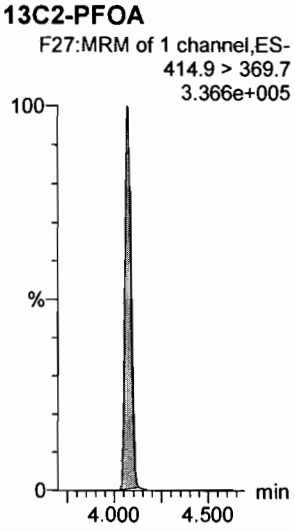
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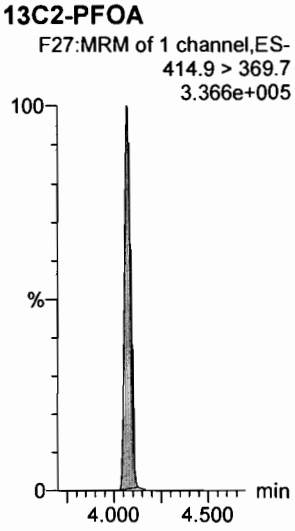
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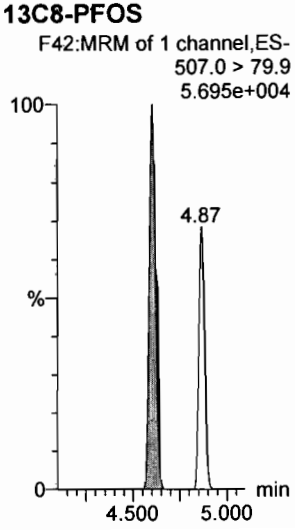
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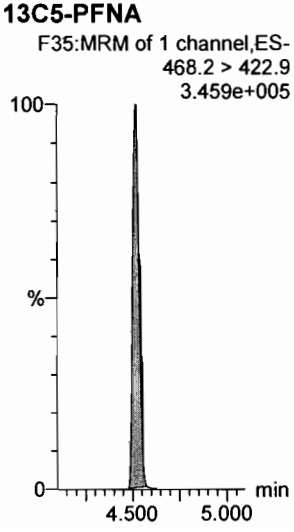
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13C8-PFOS



13C5-PFNA

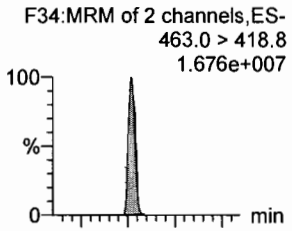


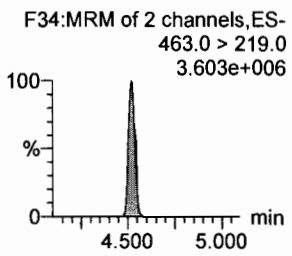
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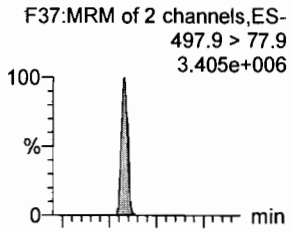
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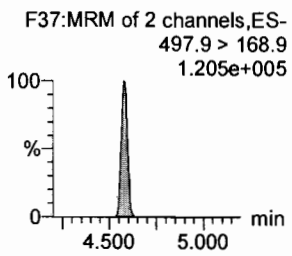
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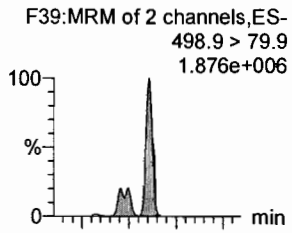


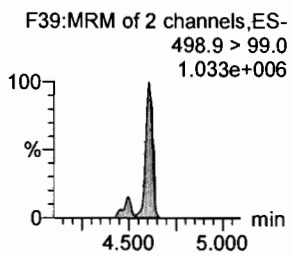
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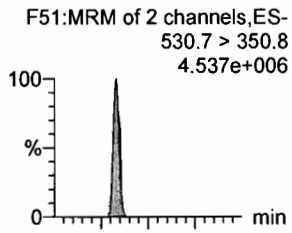


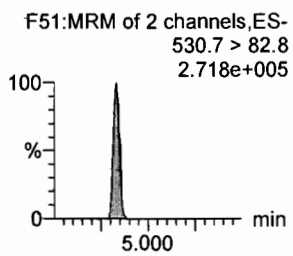
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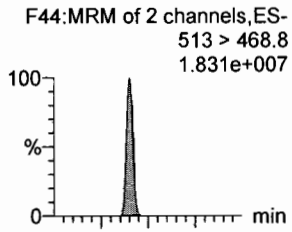


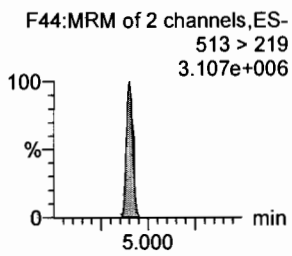
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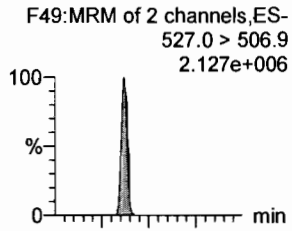


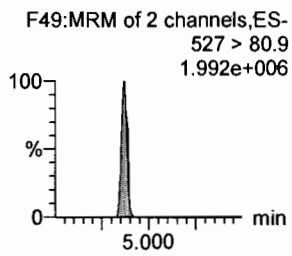
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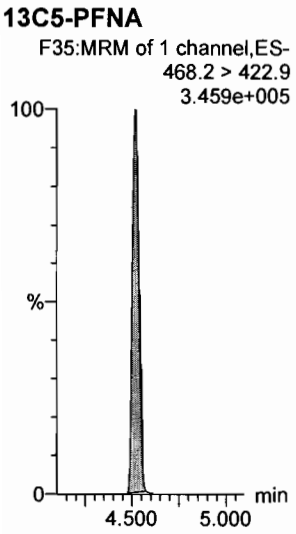


8:2 FTS

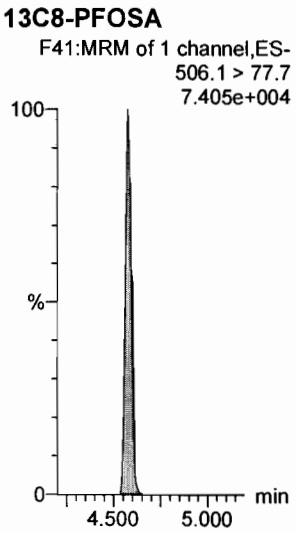




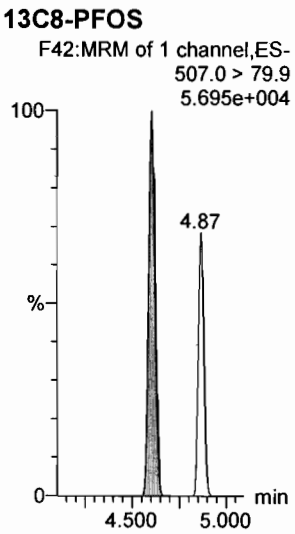
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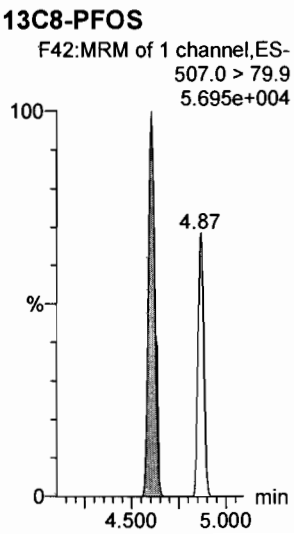
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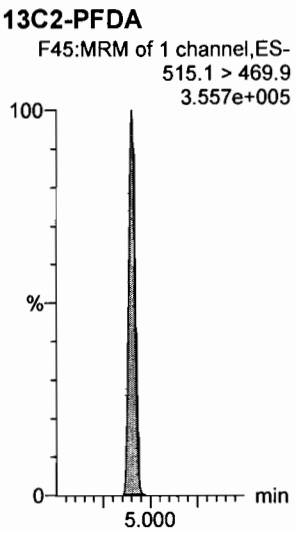
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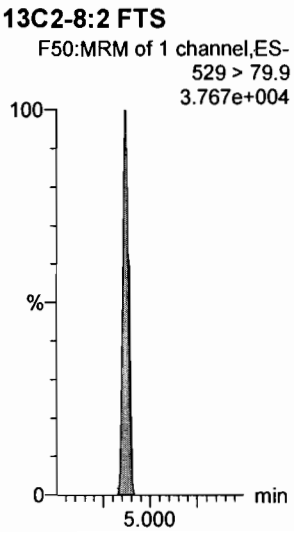
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13C2-PFDA



13C2-8:2 FTS

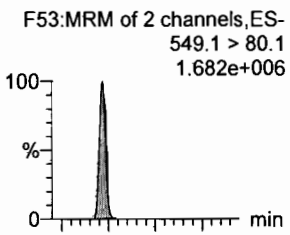


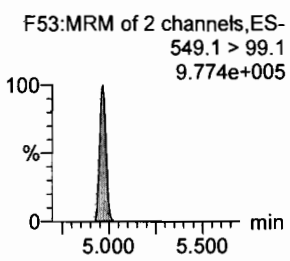
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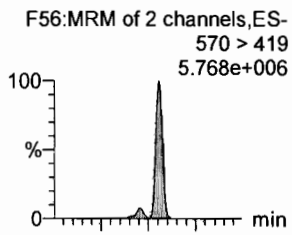
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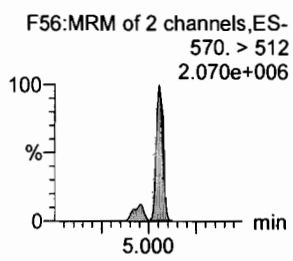
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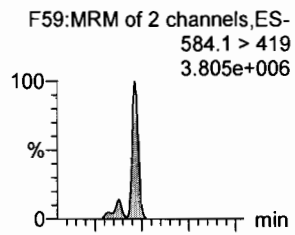


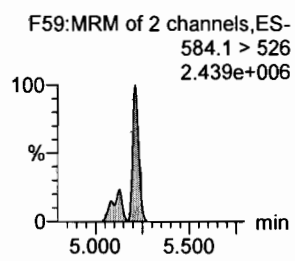
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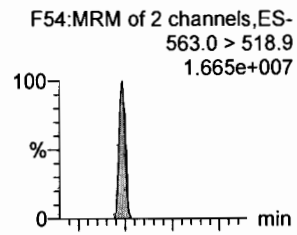


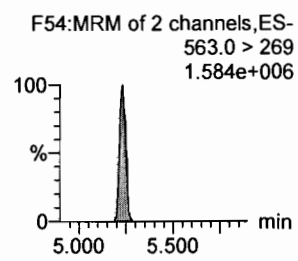
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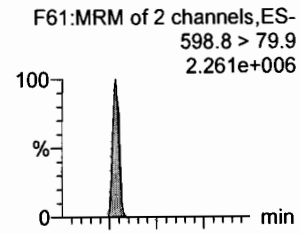


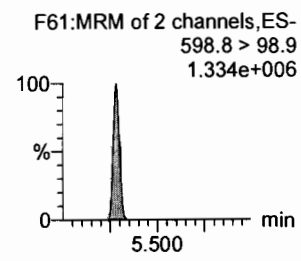
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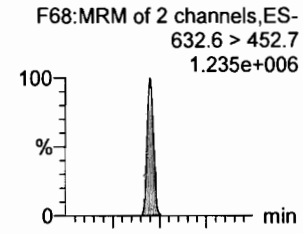


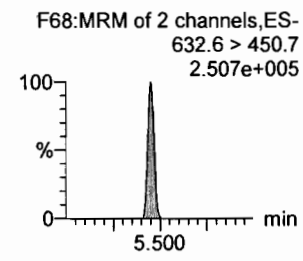
PFDS



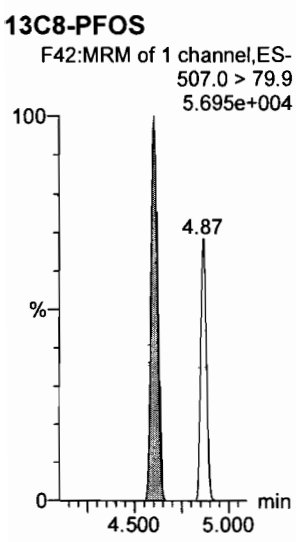


11Cl-PF30UdS

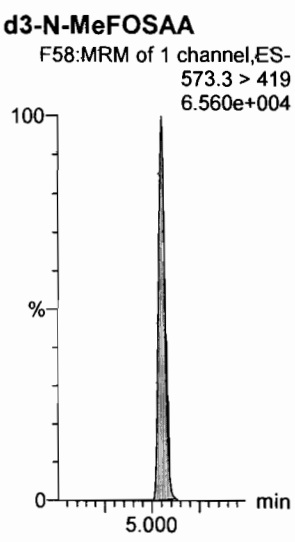




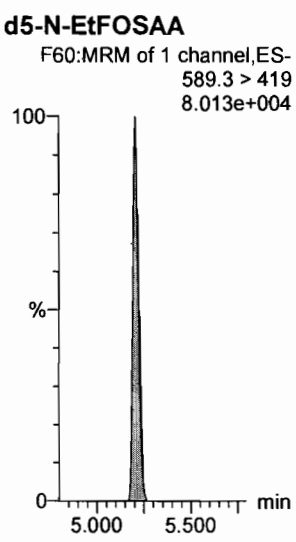
13C8-PFOS



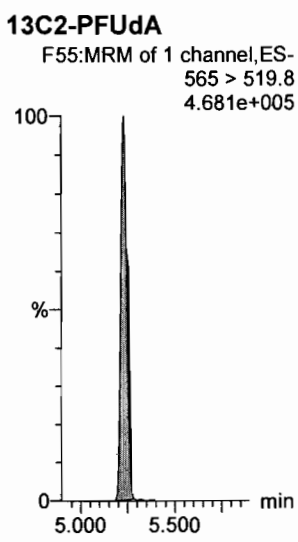
d3-N-MeFOSAA



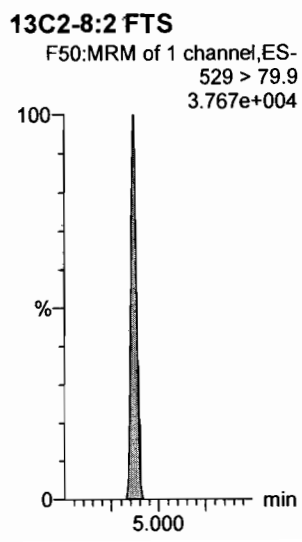
d5-N-EtFOSAA



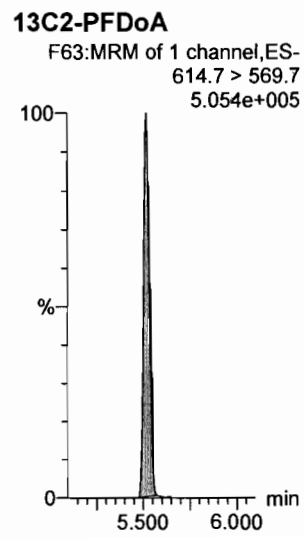
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

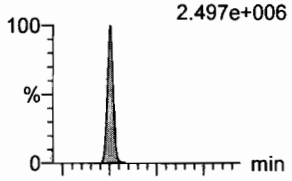


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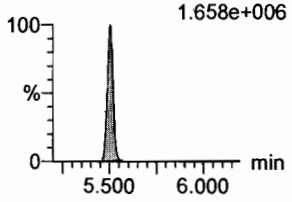
Last Altered: Sunday, July 14, 2019 12:48:33 Pacific Daylight Time
Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_15, Date: 12-Jul-2019, Time: 19:59:47, ID: ST190712M2-10 PFC CS7 19G1110, Description: PFC CS7 19G1110

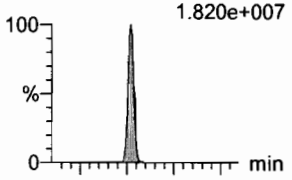
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
2.497e+006



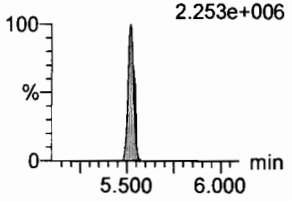
F66:MRM of 2 channels,ES-
627.0 > 80.9
1.658e+006



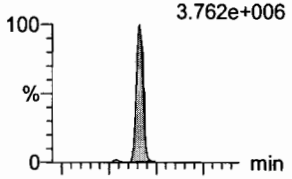
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
1.820e+007



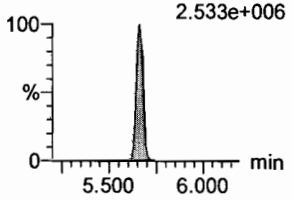
F62:MRM of 4 channels,ES-
612.9 > 318.8
2.253e+006



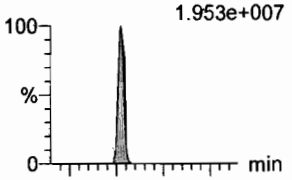
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
3.762e+006



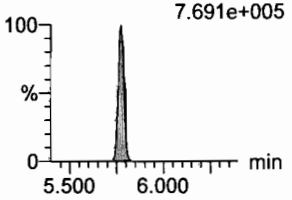
F43:MRM of 2 channels,ES-
512.1 > 219
2.533e+006



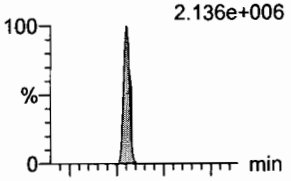
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
1.953e+007



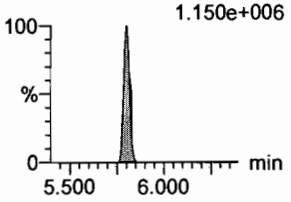
F70:MRM of 2 channels,ES-
662.9 > 319
7.691e+005



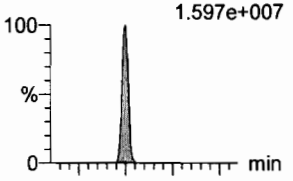
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
2.136e+006



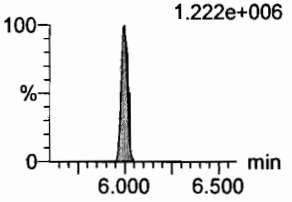
F71:MRM of 2 channels,ES-
698.8 > 98.9
1.150e+006



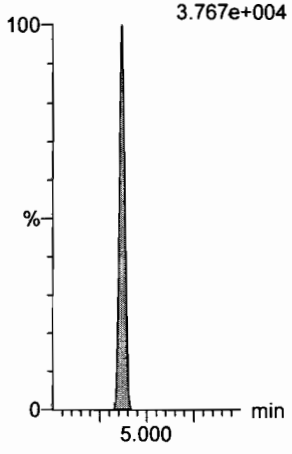
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
1.597e+007



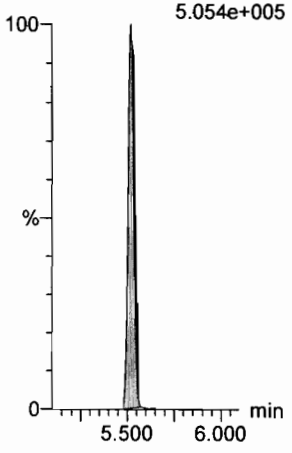
F72:MRM of 2 channels,ES-
713. > 369.0
1.222e+006



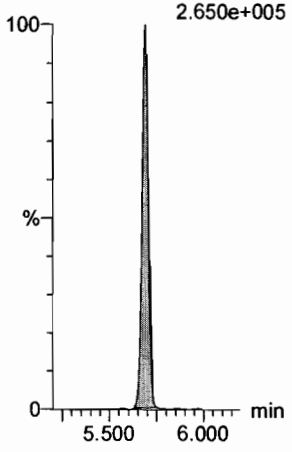
13C2-8:2 FTS
F50:MRM of 1 channel,ES-
529 > 79.9
3.767e+004



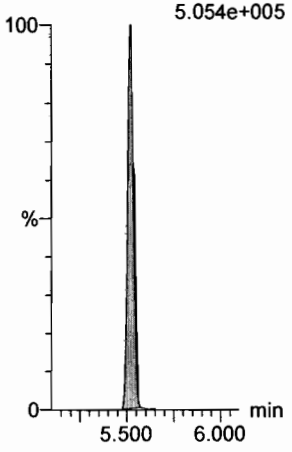
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.054e+005



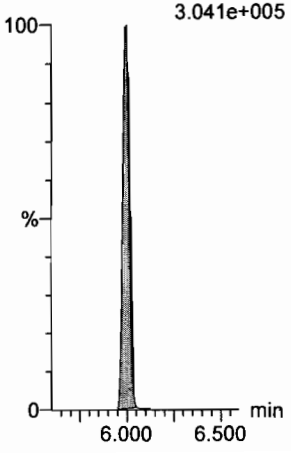
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.650e+005



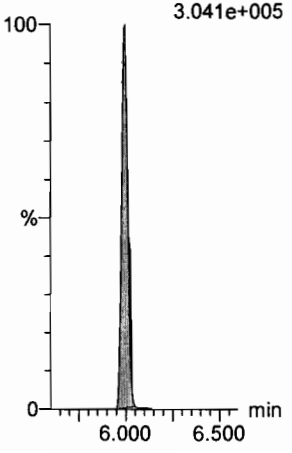
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.054e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.041e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
3.041e+005

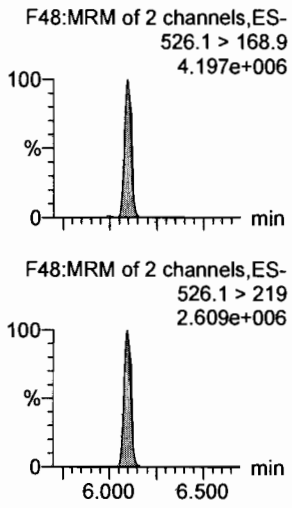


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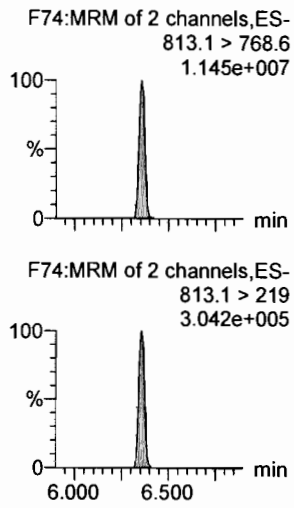
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_15, Date: 12-Jul-2019, Time: 19:59:47, ID: ST190712M2-10 PFC CS7 19G1110, Description: PFC CS7 19G1110

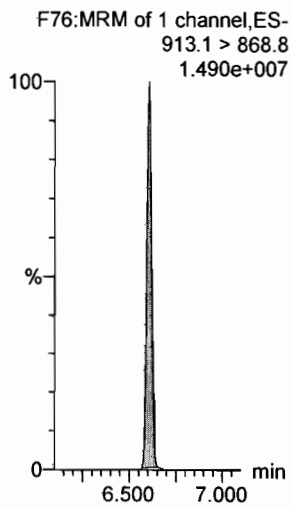
N-EtFOSA



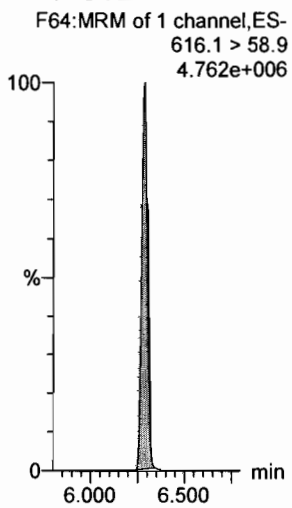
PFHxDA



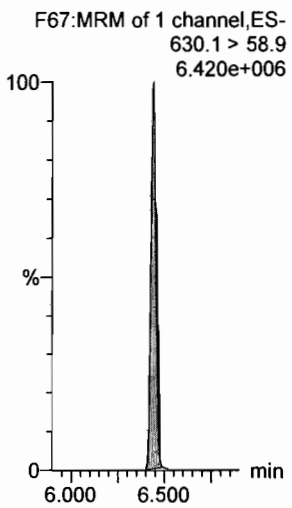
PFODA



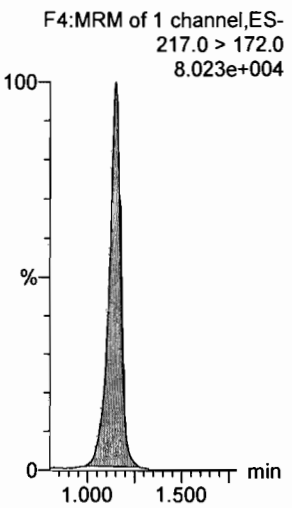
N-MeFOSE



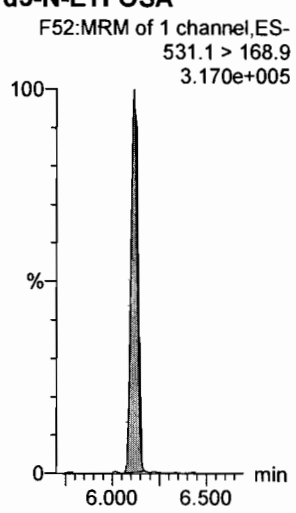
N-EtFOSE



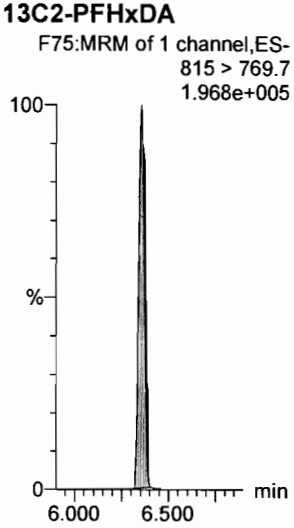
13C4-PFBA



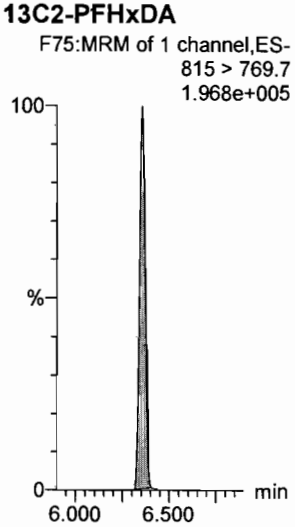
d5-N-ETFOSA



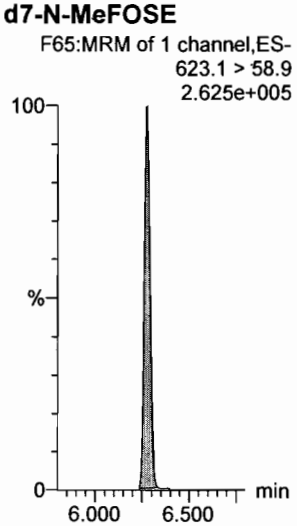
13C2-PFHxDA



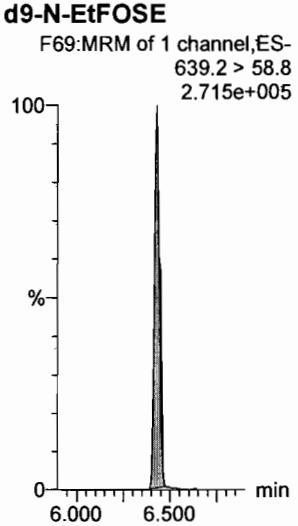
13C2-PFHxDA



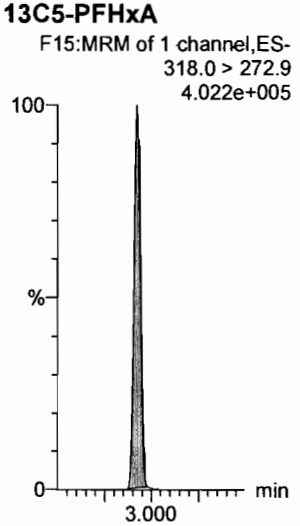
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

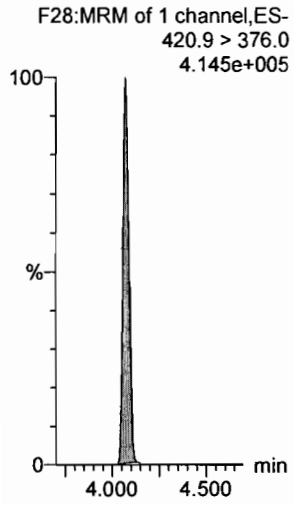


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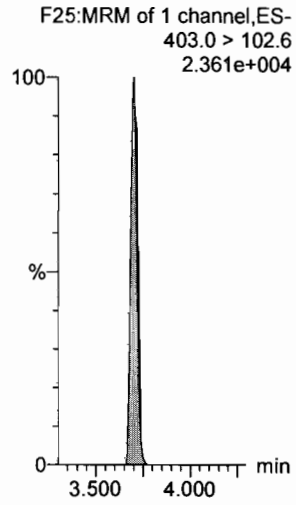
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Printed: Sunday, July 14, 2019 12:49:18 Pacific Daylight Time

Name: 190712M2_15, Date: 12-Jul-2019, Time: 19:59:47, ID: ST190712M2-10 PFC CS7 19G1110, Description: PFC CS7 19G1110

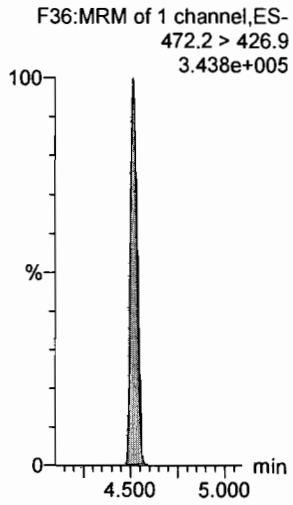
13C8-PFOA



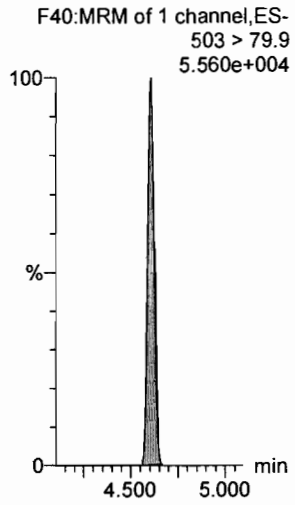
18O2-PFHxS



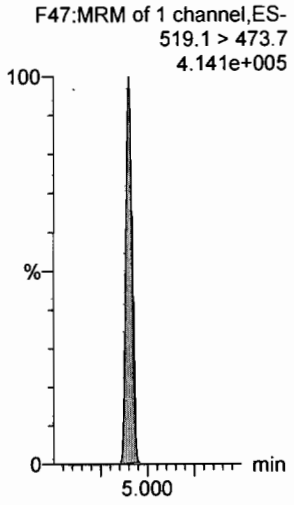
13C9-PFNA



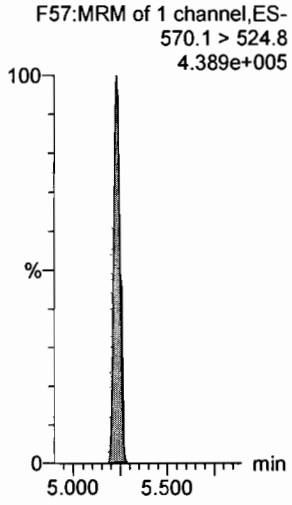
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-ICV.qld

Last Altered: Sunday, July 14, 2019 13:56:24 Pacific Daylight Time
Printed: Sunday, July 14, 2019 13:56:35 Pacific Daylight Time

(A) Not in ICV.

JAL 7/14/19

Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	3174.936	4417.138	1.00	1.15	8.985	7.2	72.3	NO		
2	2	PFPrS	248.9 > 79.9		1350.074	1.00				(A) J	NO		
3	3	3:3 FTCA	240.9 > 176.9		9893.418	1.00					NO		
4	4	PFPeA	263.1 > 218.9	5899.407	9893.418	1.00	2.13	7.454	8.0	79.5	NO		
5	5	PFBS	299.0 > 79.7	1573.665	1350.074	1.00	2.42	14.570	6.2	70.2	NO	2.867	NO
6	6	4:2 FTS	327.0 > 306.9	2727.108	2267.896	1.00	2.84	15.031	6.7	71.9	NO	1.639	NO
7	47	13C3-PFBA	216.1 > 171.8	4417.138	5929.987	1.00	1.15	9.311	12.7	101.7	NO		
8	49	13C3-PFBS	302.0 > 98.8	1350.074	1100.823	1.00	2.42	15.330	14.3	114.3	NO		
9	48	13C3-PFPeA	266.0 > 221.8	9893.418	21375.551	1.00	2.13	5.785	11.4	90.9	NO		
10	48	13C3-PFPeA	266.0 > 221.8	9893.418	21375.551	1.00	2.13	5.785	11.4	90.9	NO		
11	49	13C3-PFBS	302.0 > 98.8	1350.074	1100.823	1.00	2.42	15.330	14.3	114.3	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2267.896	1100.823	1.00	2.84	25.752	14.5	116.1	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0	12191.234	8522.689	1.00	2.92	7.152	8.2	81.6	NO	16.344	NO
15	8	PFPeS	349.1>80.1	1374.236	1350.074	1.00	3.13	12.724	7.5	74.6	NO	1.527	NO
16	9	HFPO-DA	285.1 > 168.9		1521.545	1.00				(A) J	NO		
17	10	5:3 FTCA	340.9 > 236.9		10909.852	1.00					NO		
18	11	PFHpA	363.0 > 318.9	8626.849	10909.852	1.00	3.55	9.884	7.6	75.8	NO	13.469	NO
19	12	ADONA	376.8 > 250.9		10909.852	1.00				(A)	NO		
20	52	13C2-PFHxA	315.0 > 270.0	8522.689	21375.551	1.00	2.92	4.984	4.9	98.8	NO		
21	49	13C3-PFBS	302.0 > 98.8	1350.074	1100.823	1.00	2.42	15.330	14.3	114.3	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1521.545	21375.551	1.00	3.14	0.890	5.2	103.1	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10909.852	21375.551	1.00	3.55	6.380	12.5	99.7	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10909.852	21375.551	1.00	3.55	6.380	12.5	99.7	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10909.852	21375.551	1.00	3.55	6.380	12.5	99.7	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6	1319.443	2662.245	1.00	3.70	6.195	6.6	72.3	NO	1.895	NO
28	15	6:2 FTS	427.0 > 406.9	3123.353	1924.070	1.00	4.02	20.291	6.7	70.1	NO	2.039	NO
29	16	L-PFOA	412.8 > 368.9	16048.698	19367.639	1.00	4.08	10.358	7.5	75.3	NO	3.714	NO
30	18	PFecHS	460.8 > 381.0		19367.639	1.00				(A)	NO		
31	19	PFHpS	449.0 > 80.0	1713.956	3100.681	1.00	4.19	6.910	7.3	76.9	NO	1.889	NO
32	20	7:3 FTCA	440.9 > 336.9		19036.250	1.00				(K)	NO		
33	54	13C3-PFHxS	401.8 > 79.9	2662.245	1100.823	1.00	3.70	30.230	13.8	110.1	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1924.070	3393.012	1.00	4.02	7.088	12.0	96.2	NO		

AM 7/14/19

Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-ICV.qld

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Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
35	58	13C2-PFOA	414.9 > 369.7	19367.639	23917.555	1.00	4.07	10.122	12.8	102.6	NO		
36	58	13C2-PFOA	414.9 > 369.7	19367.639	23917.555	1.00	4.07	10.122	12.8	102.6	NO		
37	59	13C8-PFOS	507.0 > 79.9	3100.681	3393.012	1.00	4.61	11.423	11.2	89.9	NO		
38	56	13C5-PFNA	468.2 > 422.9	19036.250	18853.758	1.00	4.52	12.621	12.7	101.9	NO		
39	-1												
40	21	PFNA	463.0 > 418.8	14312.479	19036.250	1.00	4.52	9.398	7.7	76.6	NO	4.707	NO
41	22	PFOSA	497.9 > 77.9	2222.687	3354.028	1.00	4.58	8.284	7.1	71.4	NO	26.893	NO
42	23	L-PFOS	498.9 > 79.9	1773.082	3100.681	1.00	4.61	7.148	6.6	70.9	NO	1.714	NO
43	25	9Cl-PF30NS	530.7 > 350.8		3100.681	1.00				(A)	NO		
44	26	PFDA	513 > 468.8	15588.342	18208.189	1.00	4.90	10.701	7.8	78.1	NO	5.832	NO
45	27	8:2 FTS	527.0 > 506.9	1789.624	1812.892	1.00	4.87	12.340	6.7	70.2	NO	1.001	NO
46	56	13C5-PFNA	468.2 > 422.9	19036.250	18853.758	1.00	4.52	12.621	12.7	101.9	NO		
47	57	13C8-PFOSA	506.1 > 77.7	3354.028	23721.395	1.00	4.58	1.767	11.9	95.2	NO		
48	59	13C8-PFOS	507.0 > 79.9	3100.681	3393.012	1.00	4.61	11.423	11.2	89.9	NO		
49	59	13C8-PFOS	507.0 > 79.9	3100.681	3393.012	1.00	4.61	11.423	11.2	89.9	NO		
50	60	13C2-PFDA	515.1 > 469.9	18208.189	23042.811	1.00	4.90	9.877	12.2	97.8	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1812.892	3393.012	1.00	4.87	6.679	11.2	89.8	NO		
52	-1												
53	28	PFNS	549.1 > 80.1	1291.899	3100.681	1.00	4.97	5.208	7.0	73.1	NO	1.760	NO
54	29	L-MeFOSAA	570 > 419	5972.378	3275.990	1.00	5.05	22.788	7.8	78.5	NO	2.903	NO
55	31	L-EtFOSAA	584.1 > 419	4708.494	3751.342	1.00	5.22	15.689	9.6	96.3	NO	1.483	NO
56	33	PFUdA	563.0 > 518.9	14237.970	25600.602	1.00	5.23	6.952	7.5	75.3	NO	11.431	NO
57	34	PFDS	598.8 > 79.9	1771.953	1812.892	1.00	5.28	12.218	6.9	71.7	NO	1.675	NO
58	35	11Cl-PF30UdS	632.6 > 452.7		23184.693	1.00				(A)	NO		
59	59	13C8-PFOS	507.0 > 79.9	3100.681	3393.012	1.00	4.61	11.423	11.2	89.9	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	3275.990	23721.395	1.00	5.05	1.726	12.4	98.9	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	3751.342	23721.395	1.00	5.21	1.977	11.8	94.3	NO		
62	63	13C2-PFUdA	565 > 519.8	25600.602	23721.395	1.00	5.23	13.490	12.8	102.7	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1812.892	3393.012	1.00	4.87	6.679	11.2	89.8	NO		
64	65	13C2-PFDoA	614.7 > 569.7	23184.693	23042.811	1.00	5.52	12.577	12.1	96.7	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1812.892	1.00				(B)	NO		
67	37	PFDoA	612.9 > 569.0	14984.275	23184.693	1.00	5.52	8.079	7.7	77.2	NO	7.836	NO
68	38	N-MeFOSA	512.1 > 168.9		9974.212	1.00				(N)	NO		

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Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
69	39	PFTrDA	662.9 > 618.9	16554.318	23184.693	1.00	5.77	8.925	7.4	74.5	NO	26.130	NO
70	40	PFDoS	698.8 > 79.9		15991.654	1.00					NO		
71	41	PFTeDA	713.0 > 669.0	13753.114	15991.654	1.00	5.99	10.750	8.1	80.7	NO	13.669	NO
72	65	13C2-PFDoA	614.7 > 569.7	23184.693	23042.811	1.00	5.52	12.577	12.1	96.7	NO		
73	65	13C2-PFDoA	614.7 > 569.7	23184.693	23042.811	1.00	5.52	12.577	12.1	96.7	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	9974.212	23721.395	1.00	5.69	5.256	139.4	92.9	NO		
75	65	13C2-PFDoA	614.7 > 569.7	23184.693	23042.811	1.00	5.52	12.577	12.1	96.7	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	15991.654	23721.395	1.00	5.99	8.427	12.2	97.7	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	15991.654	23721.395	1.00	5.99	8.427	12.2	97.7	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9		14522.269	1.00					NO		
80	43	PFHxDA	813.1 > 768.6		8172.161	1.00					NO		
81	44	PFODA	913.1 > 868.8		8172.161	1.00					NO		
82	45	N-MeFOSE	616.1 > 58.9		9169.378	1.00					NO		
83	46	N-EtFOSE	630.1 > 58.9		8644.078	1.00					NO		
84	72	13C4-PFBA	217.0 > 172.0	5929.987	5929.987	1.00	1.15	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	14522.269	23721.395	1.00	6.11	7.653	143.5	95.6	NO		
86	69	13C2-PFHxDA	815 > 769.7	8172.161	23721.395	1.00	6.35	4.306	4.8	95.8	NO		
87	69	13C2-PFHxDA	815 > 769.7	8172.161	23721.395	1.00	6.35	4.306	4.8	95.8	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	9169.378	23721.395	1.00	6.27	4.832	138.8	92.5	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	8644.078	23721.395	1.00	6.43	4.555	138.4	92.3	NO		
90	73	13C5-PFHxA	318.0 > 272.9	21375.551	21375.551	1.00	2.92	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	23917.555	23917.555	1.00	4.07	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1100.823	1100.823	1.00	3.70	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	18853.758	18853.758	1.00	4.52	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	3393.012	3393.012	1.00	4.61	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	23042.811	23042.811	1.00	4.90	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	23721.395	23721.395	1.00	5.23	12.500	12.5	100.0	NO		

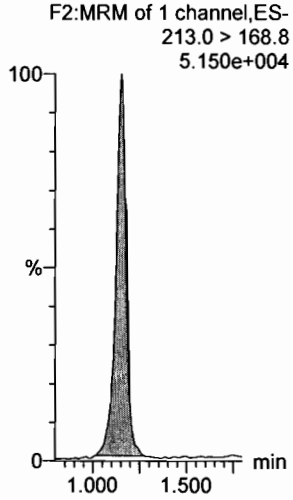
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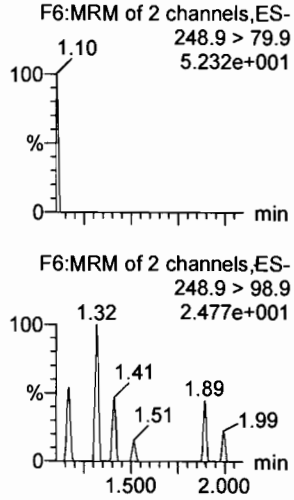
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Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

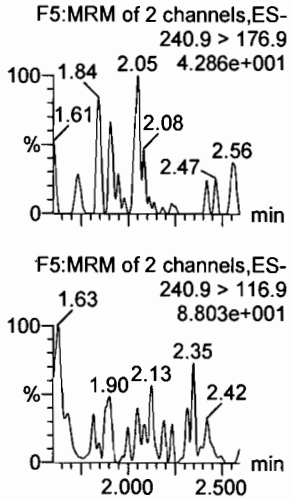
PFBA



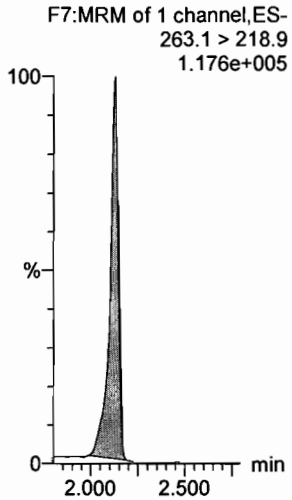
PFPrS



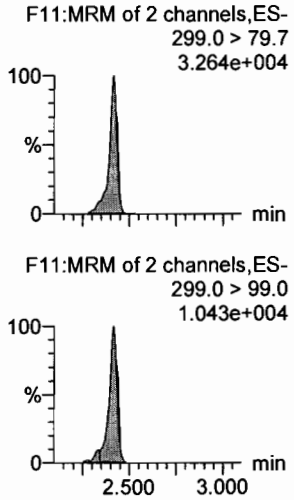
3:3 FTCA



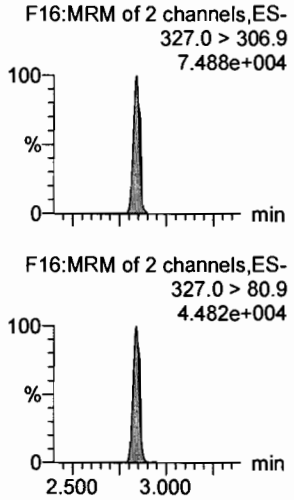
PFPeA



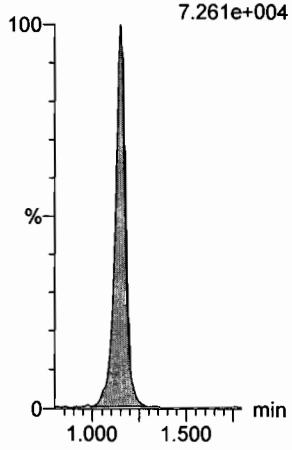
PFBS



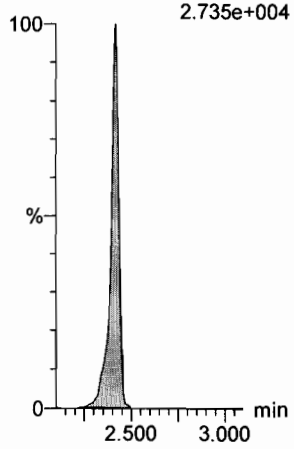
4:2 FTS



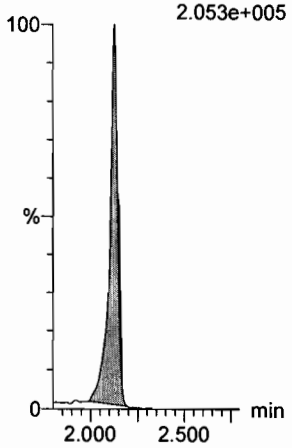
13C3-PFBA



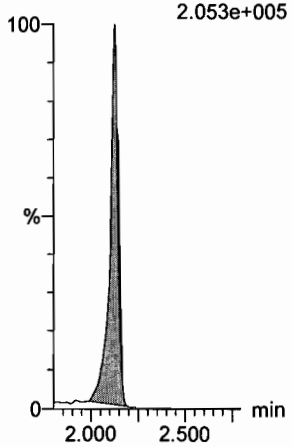
13C3-PFBS



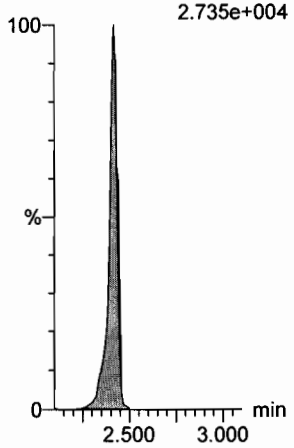
13C3-PFPeA



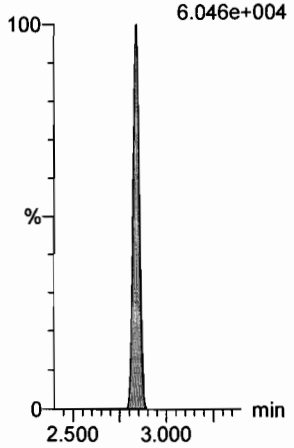
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS

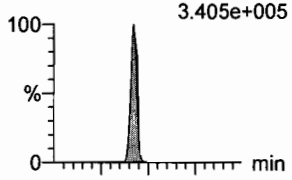


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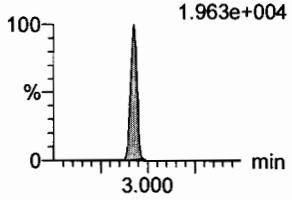
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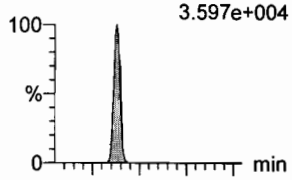
PFHxA
F13:MRM of 2 channels,ES-
313.0 > 269.0
3.405e+005



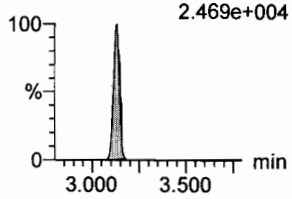
F13:MRM of 2 channels,ES-
313 > 118.9
1.963e+004



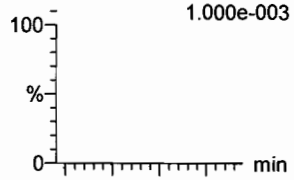
PFPeS
F19:MRM of 2 channels,ES-
349.1 > 80.1
3.597e+004



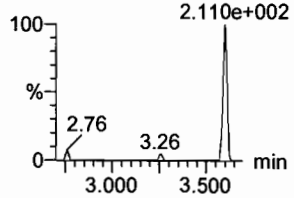
F19:MRM of 2 channels,ES-
349.1 > 99
2.469e+004



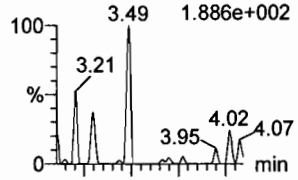
HFPO-DA
F9:MRM of 3 channels,ES-
285.1 > 168.9
1.000e-003



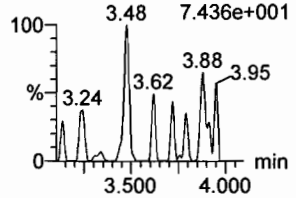
F9:MRM of 3 channels,ES-
285.1 > 184.9
2.110e+002



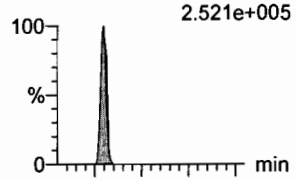
5:3 FTCA
F18:MRM of 2 channels,ES-
340.9 > 236.9
1.886e+002



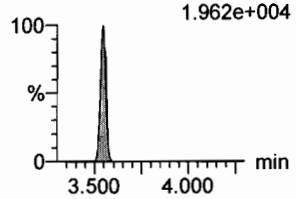
F18:MRM of 2 channels,ES-
340.9 > 216.9
7.436e+001



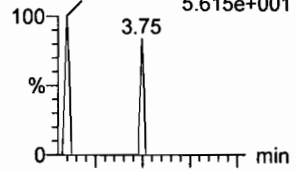
PFHpA
F20:MRM of 2 channels,ES-
363.0 > 318.9
2.521e+005



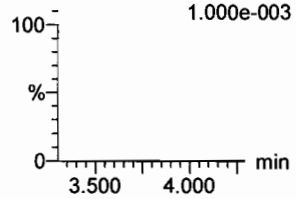
F20:MRM of 2 channels,ES-
363.0 > 169.0
1.962e+004



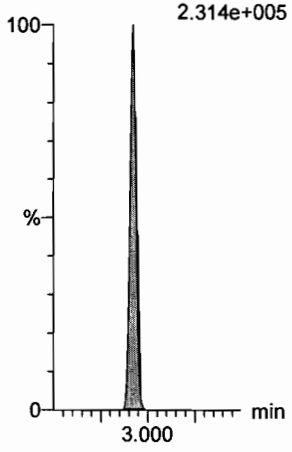
ADONA
F22:MRM of 2 channels,ES-
376.8 > 250.9
5.615e+001



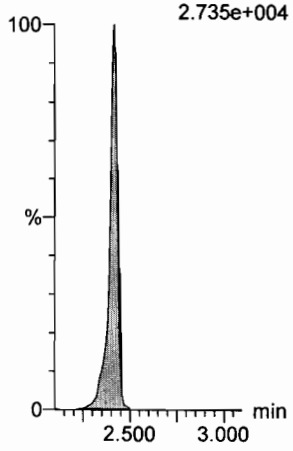
F22:MRM of 2 channels,ES-
376.8 > 85.0
1.000e-003



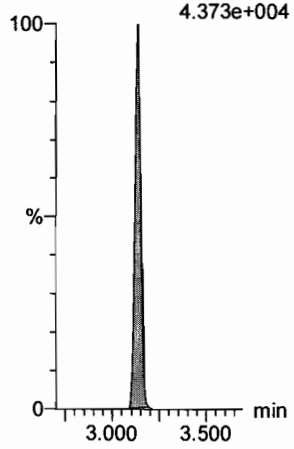
13C2-PFHxA
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.314e+005



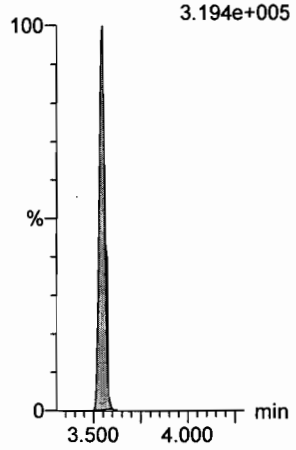
13C3-PFBS
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.735e+004



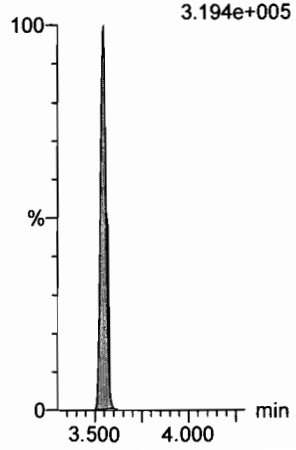
13C3-HFPO-DA
F10:MRM of 2 channels,ES-
287.0 > 168.9
4.373e+004



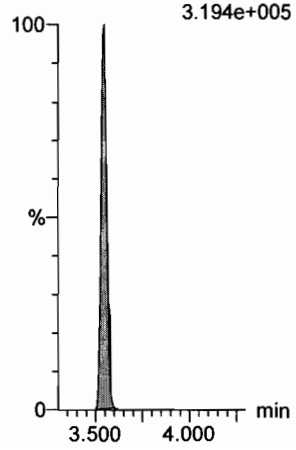
13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.194e+005



13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.194e+005



13C4-PFHpA
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.194e+005

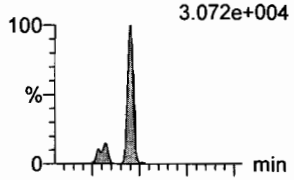


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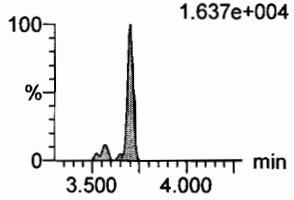
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Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

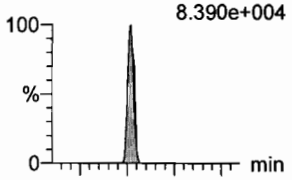
L-PFHxS
F23:MRM of 2 channels,ES-
398.9 > 79.6
3.072e+004



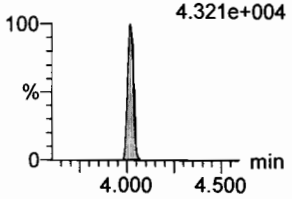
F23:MRM of 2 channels,ES-
398.9 > 99.0
1.637e+004



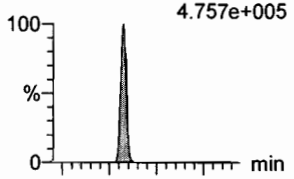
6:2 FTS
F29:MRM of 3 channels,ES-
427.0 > 406.9
8.390e+004



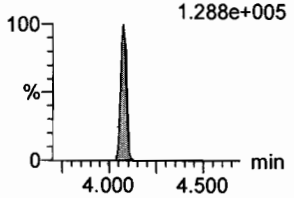
F29:MRM of 3 channels,ES-
427. > 80.9
4.321e+004



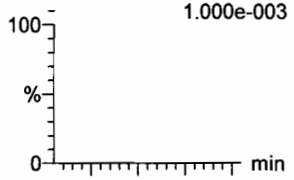
L-PFOA
F26:MRM of 2 channels,ES-
412.8 > 368.9
4.757e+005



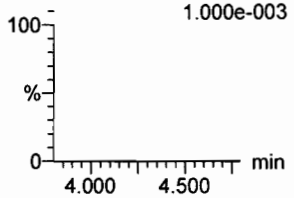
F26:MRM of 2 channels,ES-
412.8 > 169
1.288e+005



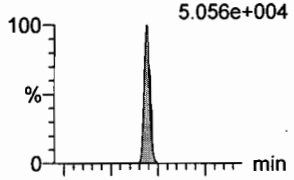
PFEChS
F33:MRM of 2 channels,ES-
460.8 > 381.0
1.000e-003



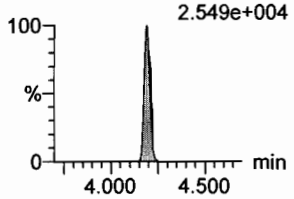
F33:MRM of 2 channels,ES-
460.8 > 98.9
1.000e-003



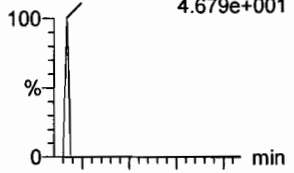
PFHpS
F32:MRM of 2 channels,ES-
449.0 > 80.0
5.056e+004



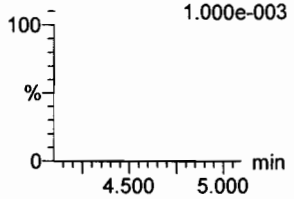
F32:MRM of 2 channels,ES-
449 > 98.7
2.549e+004



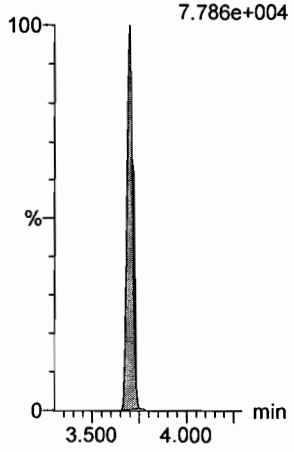
7:3 FTCA
F31:MRM of 2 channels,ES-
440.9 > 336.9
4.679e+001



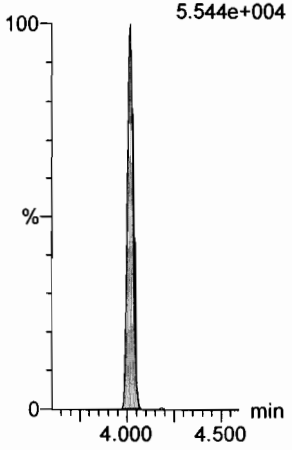
F31:MRM of 2 channels,ES-
440.9 > 316.9
1.000e-003



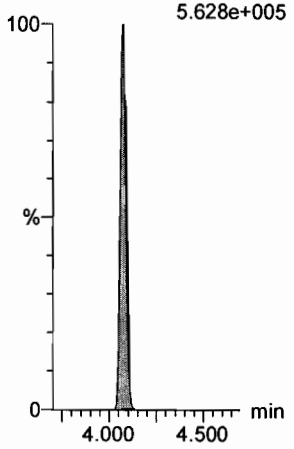
13C3-PFHxS
F24:MRM of 1 channel,ES-
401.8 > 79.9
7.786e+004



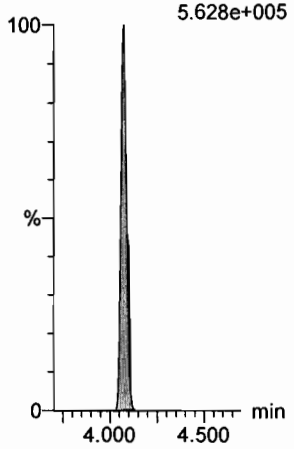
13C2-6:2 FTS
F30:MRM of 1 channel,ES-
429.0 > 79.9
5.544e+004



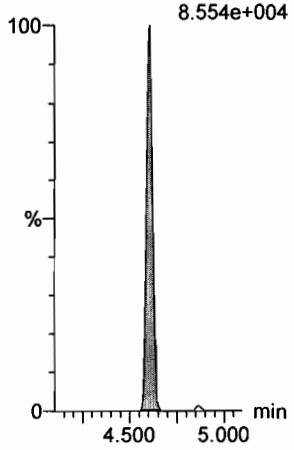
13C2-PFOA
F27:MRM of 1 channel,ES-
414.9 > 369.7
5.628e+005



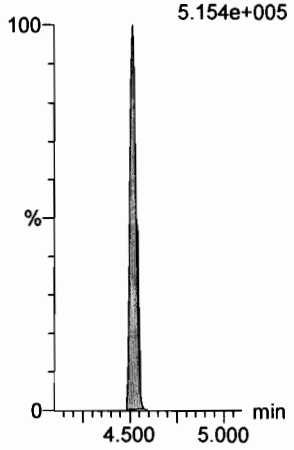
13C2-PFOA
F27:MRM of 1 channel,ES-
414.9 > 369.7
5.628e+005



13C8-PFOS
F42:MRM of 1 channel,ES-
507.0 > 79.9
8.554e+004



13C5-PFNA
F35:MRM of 1 channel,ES-
468.2 > 422.9
5.154e+005

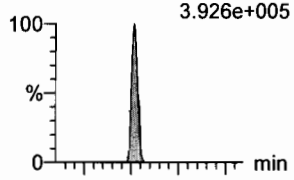


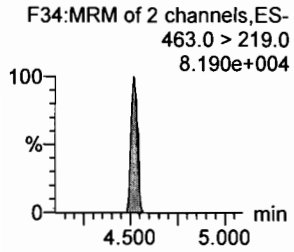
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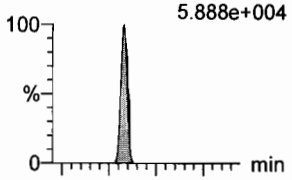
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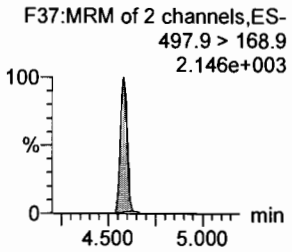
PFNA



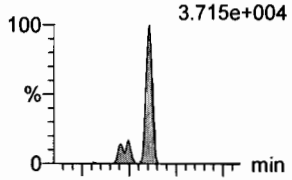


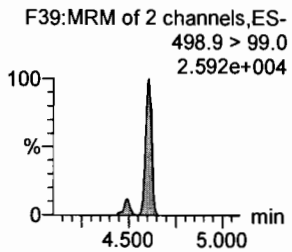
PFOSA



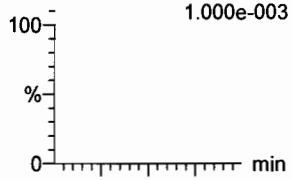


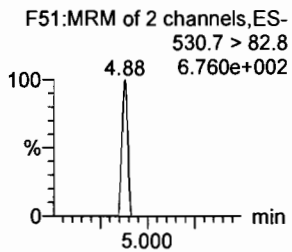
L-PFOS



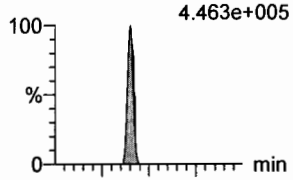


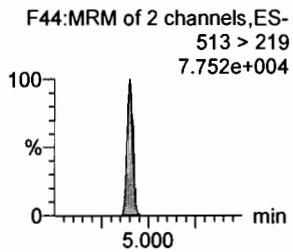
9Cl-PF30NS



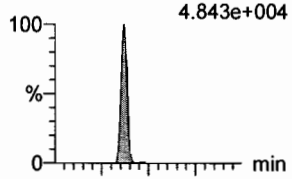


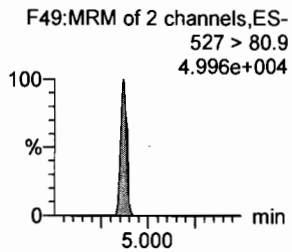
PFDA



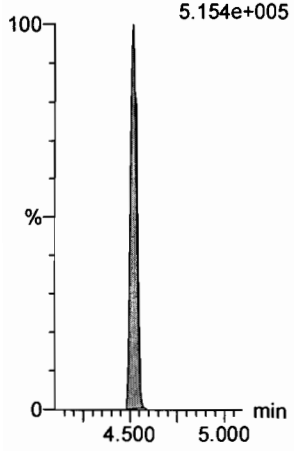


8:2 FTS

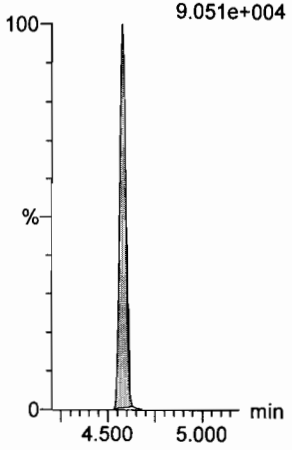




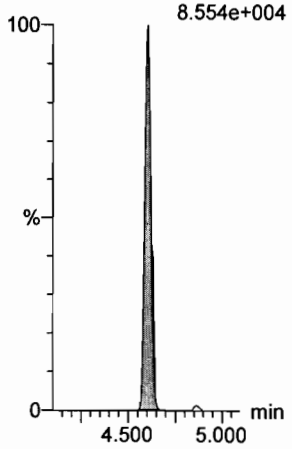
13C5-PFNA



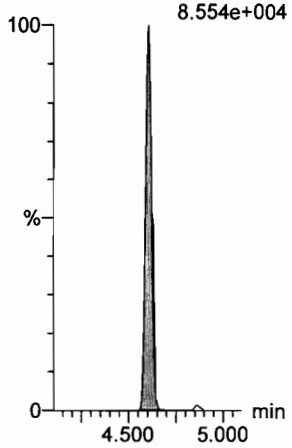
13C8-PFOSA



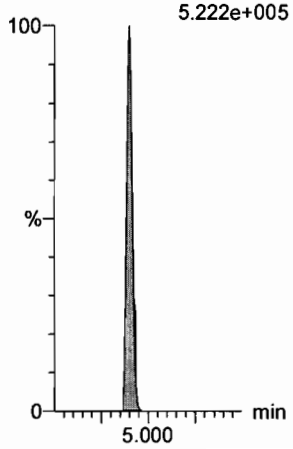
13C8-PFOS



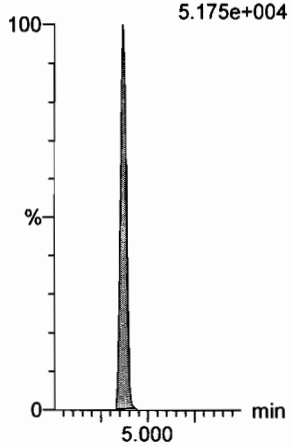
13C8-PFOS



13C2-PFDA



13C2-8:2 FTS

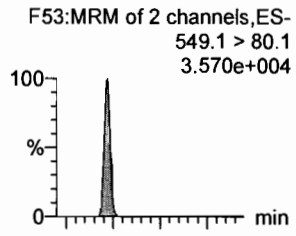


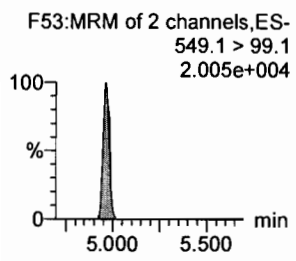
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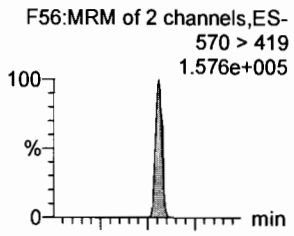
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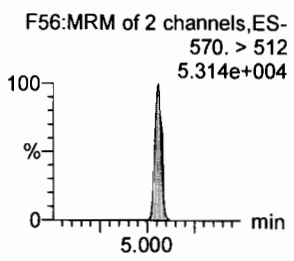
PFNS



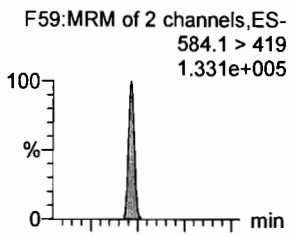


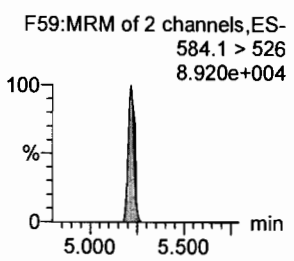
L-MeFOSAA



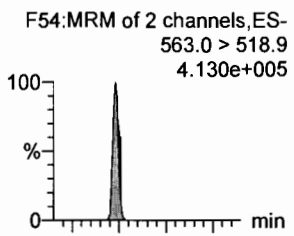


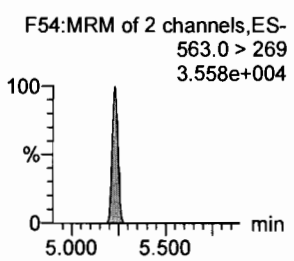
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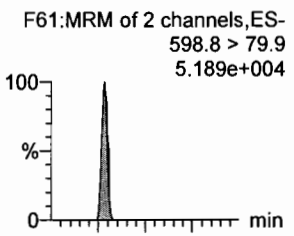


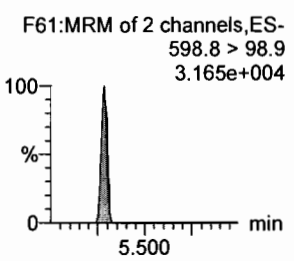
PFUdA



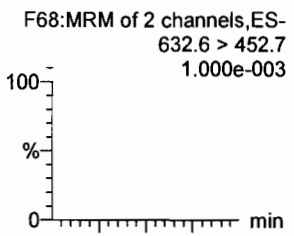


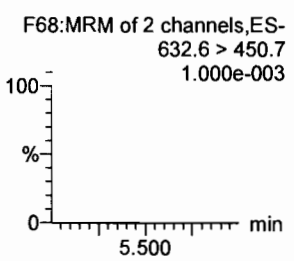
PFDS



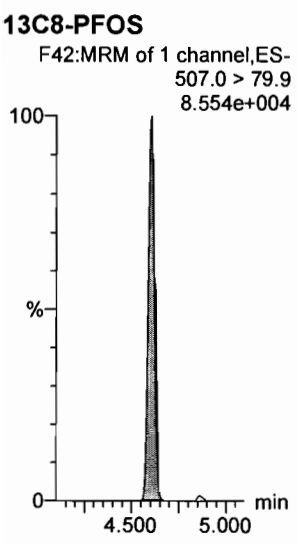


11Cl-PF30UdS

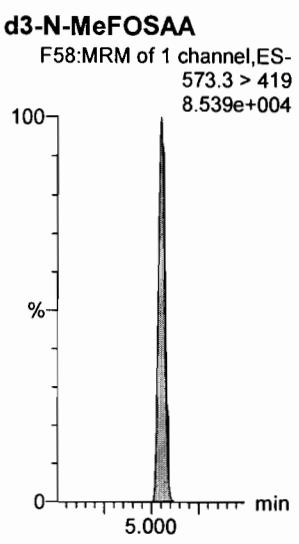




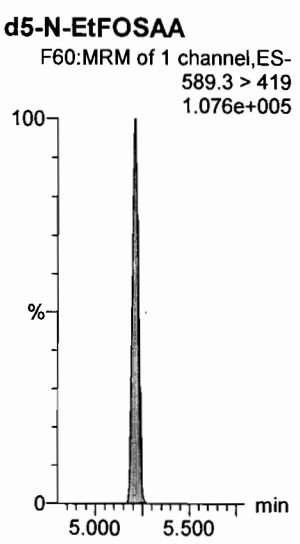
13C8-PFOS



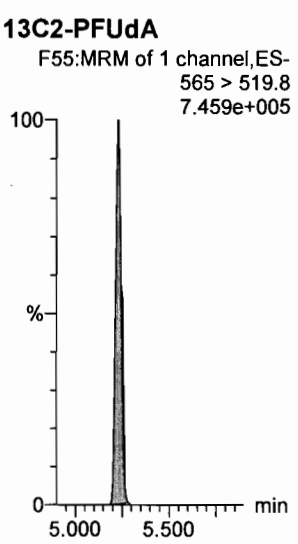
d3-N-MeFOSAA



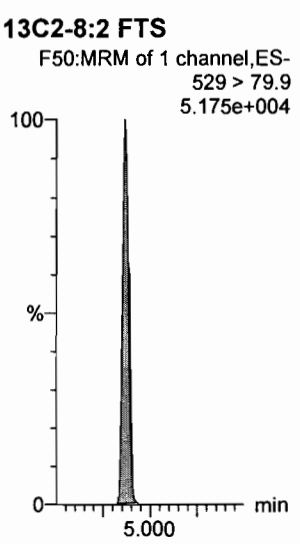
d5-N-EtFOSAA



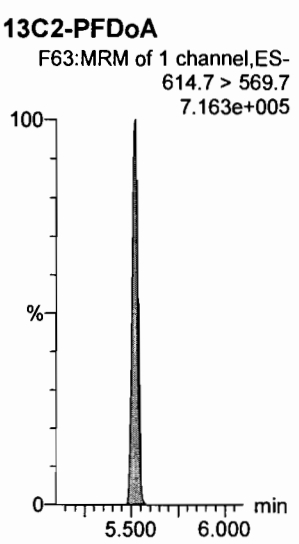
13C2-PFUdA



13C2-8:2 FTS



13C2-PFDoA

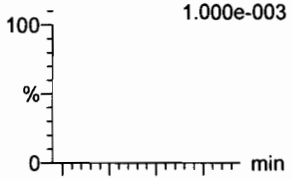


Dataset: F:\Projects\PFAS.PRO\Results\190712M2\190712m2-ICV.qld

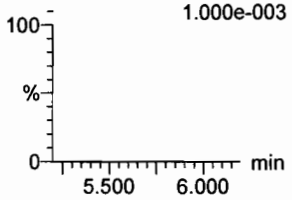
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Printed: Sunday, July 14, 2019 13:56:35 Pacific Daylight Time

Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

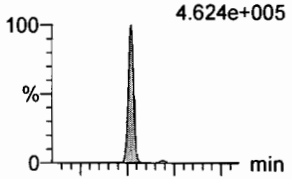
10:2 FTS
F66:MRM of 2 channels,ES-
627.0 > 606.9
1.000e-003



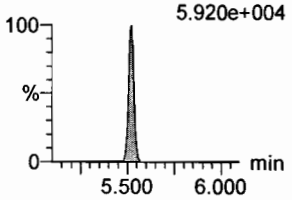
F66:MRM of 2 channels,ES-
627.0 > 80.9
1.000e-003



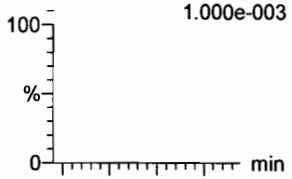
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
4.624e+005



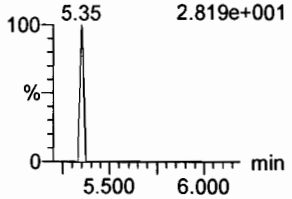
F62:MRM of 4 channels,ES-
612.9 > 318.8
5.920e+004



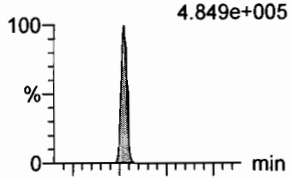
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
1.000e-003



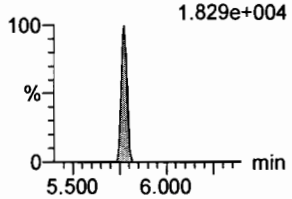
F43:MRM of 2 channels,ES-
512.1 > 219
5.35 2.819e+001



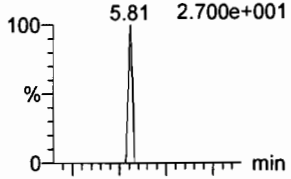
PFTrDA
F70:MRM of 2 channels,ES-
662.9 > 618.9
4.849e+005



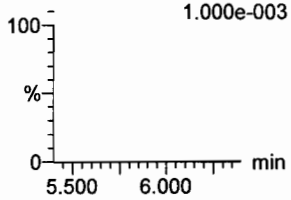
F70:MRM of 2 channels,ES-
662.9 > 319
1.829e+004



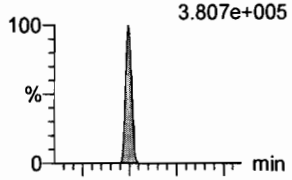
PFDoS
F71:MRM of 2 channels,ES-
698.8 > 79.9
5.81 2.700e+001



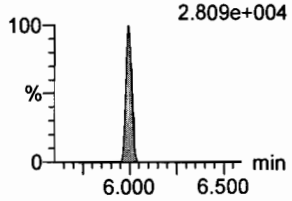
F71:MRM of 2 channels,ES-
698.8 > 98.9
1.000e-003



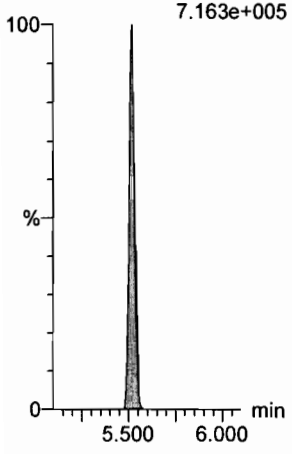
PFTeDA
F72:MRM of 2 channels,ES-
713.0 > 669.0
3.807e+005



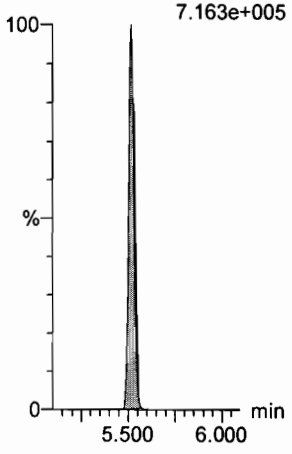
F72:MRM of 2 channels,ES-
713. > 369.0
2.809e+004



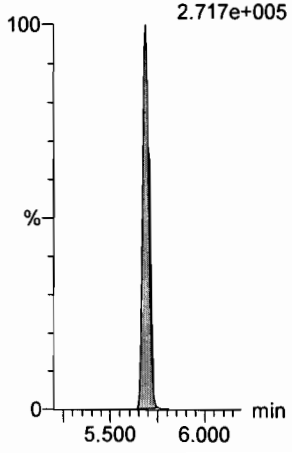
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
7.163e+005



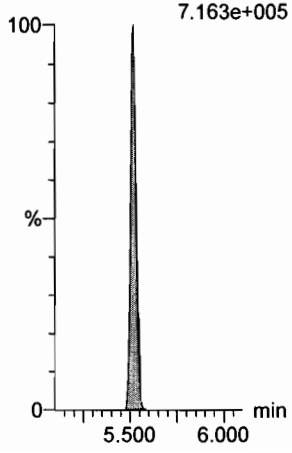
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
7.163e+005



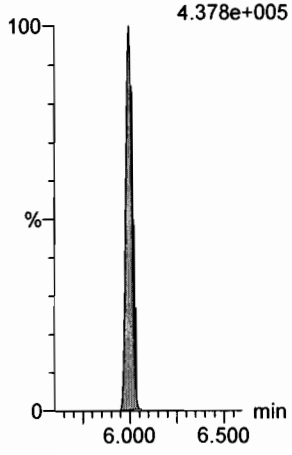
d3-N-MeFOSA
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.717e+005



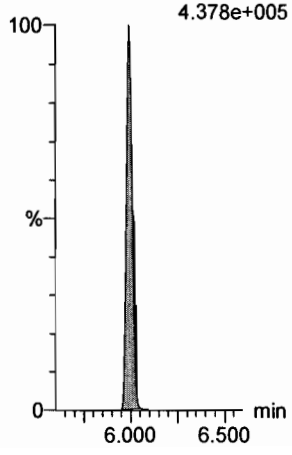
13C2-PFDoA
F63:MRM of 1 channel,ES-
614.7 > 569.7
7.163e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.378e+005



13C2-PFTeDA
F73:MRM of 2 channels,ES-
715.1 > 669.7
4.378e+005

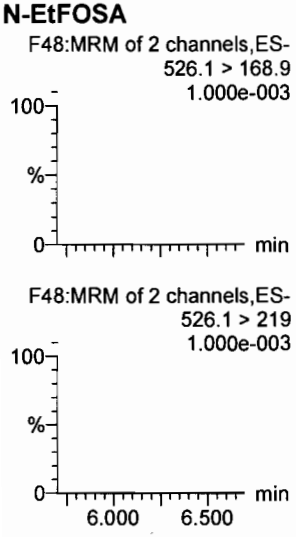


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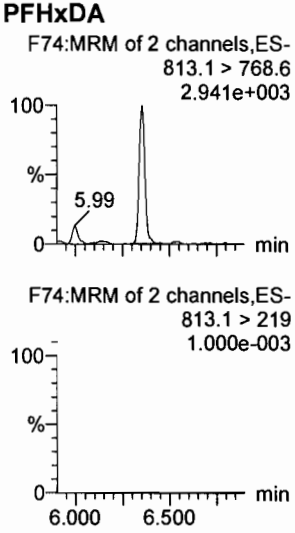
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Printed: Sunday, July 14, 2019 13:56:35 Pacific Daylight Time

Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

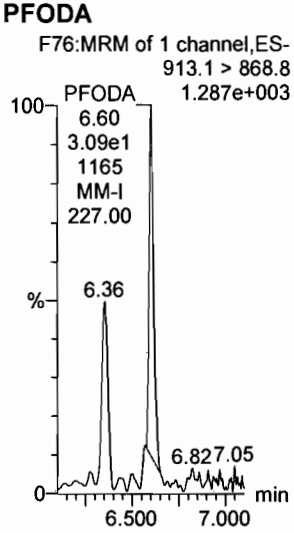
N-EtFOSA



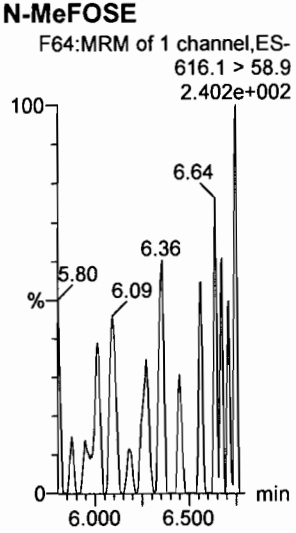
PFHxDA



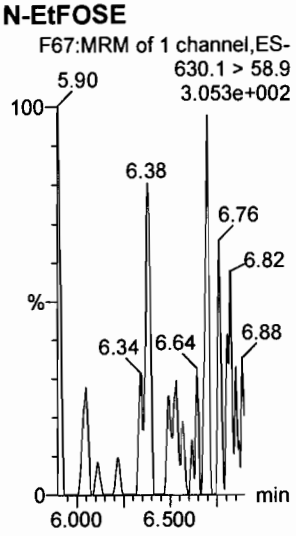
PFODA



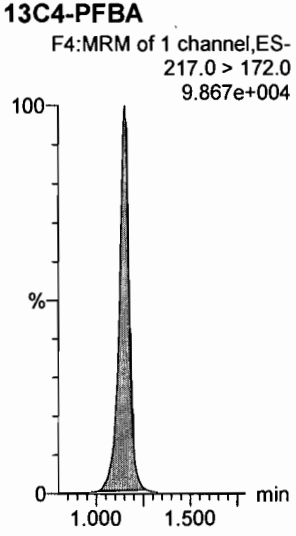
N-MeFOSE



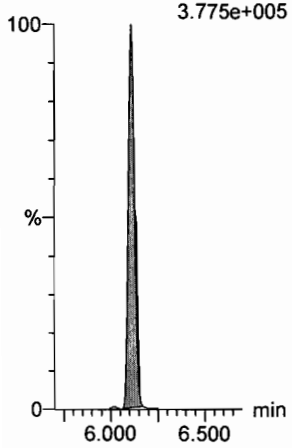
N-EtFOSE



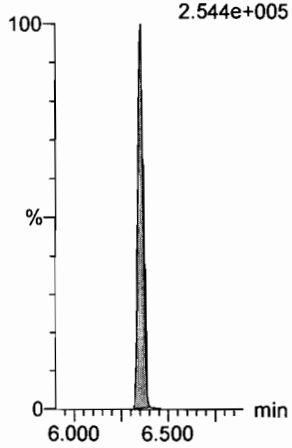
13C4-PFBA



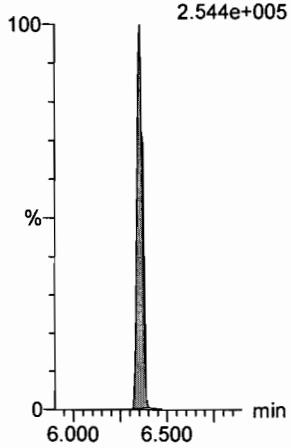
d5-N-ETFOSA



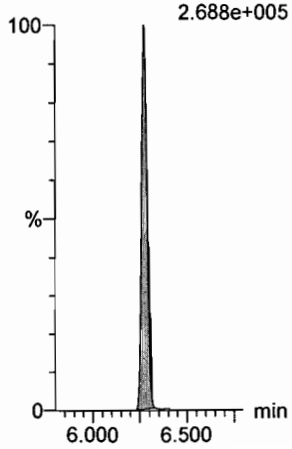
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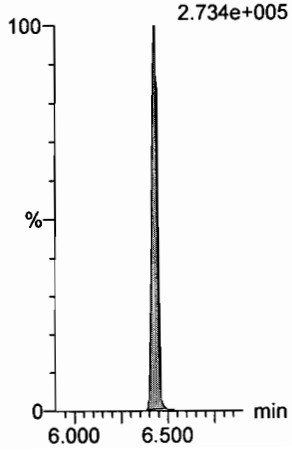
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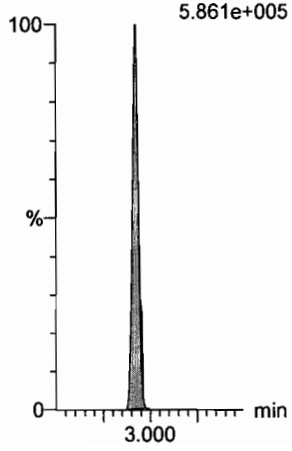
d7-N-MeFOSE



d9-N-EtFOSE



13C5-PFHxA

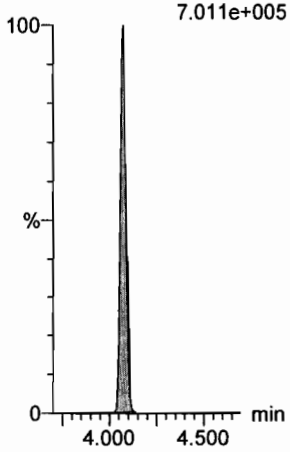


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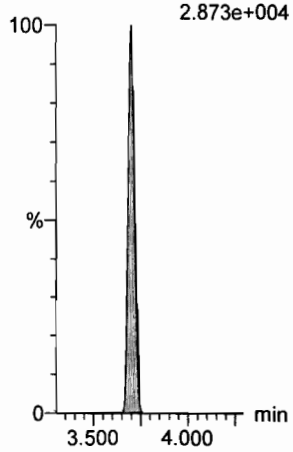
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Printed: Sunday, July 14, 2019 13:56:35 Pacific Daylight Time

Name: 190712M2_17, Date: 12-Jul-2019, Time: 20:20:58, ID: ST190712M2-1 PFC ICV 19G1111, Description: PFC ICV 19G1111

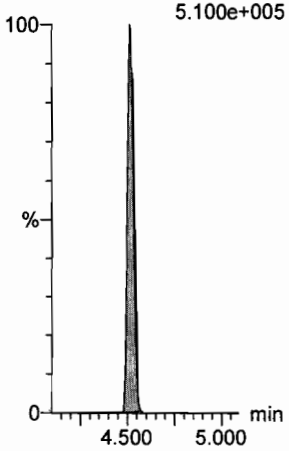
13C8-PFOA



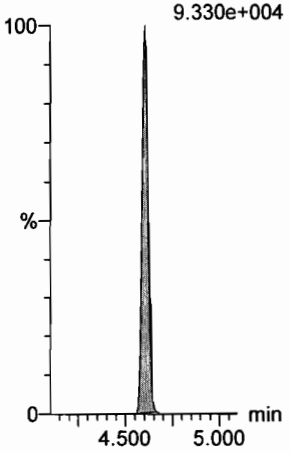
18O2-PFHxS



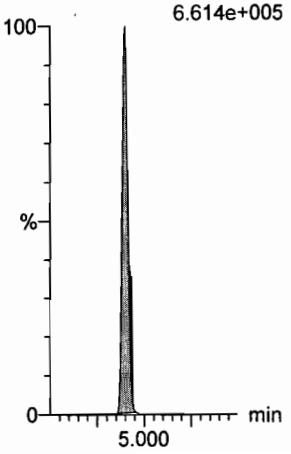
13C9-PFNA



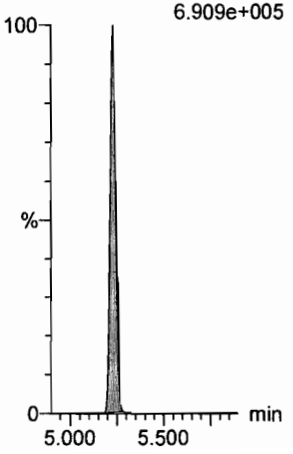
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Sunday, July 14, 2019 14:16:51 Pacific Daylight Time
Printed: Sunday, July 14, 2019 14:17:01 Pacific Daylight Time

Name: 190712M2_16, Date: 12-Jul-2019, Time: 20:10:19, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8		4173.636	1.00					NO		
2	2	PFPrS	248.9 > 79.9		1222.156	1.00					NO		
3	3	3:3 FTCA	240.9 > 176.9		9804.081	1.00					NO		
4	4	PFPeA	263.1 > 218.9	11.035	9804.081	1.00	2.24	0.014	0.0		NO		
5	5	PFBS	299.0 > 79.7		1222.156	1.00					NO		
6	6	4:2 FTS	327.0 > 306.9		2280.306	1.00					NO		
7	47	13C3-PFBA	216.1 > 171.8	4173.636	5790.426	1.00	1.15	9.010	12.3	98.4	NO		
8	49	13C3-PFBS	302.0 > 98.8	1222.156	1220.520	1.00	2.41	12.517	11.7	93.3	NO		
9	48	13C3-PFPeA	266.0 > 221.8	9804.081	21048.615	1.00	2.12	5.822	11.4	91.5	NO		
10	48	13C3-PFPeA	266.0 > 221.8	9804.081	21048.615	1.00	2.12	5.822	11.4	91.5	NO		
11	49	13C3-PFBS	302.0 > 98.8	1222.156	1220.520	1.00	2.41	12.517	11.7	93.3	NO		
12	51	13C2-4:2 FTS	329.0 >79.9	2280.306	1220.520	1.00	2.84	23.354	13.2	105.3	NO		
13	-1												
14	7	PFHxA	313.0 > 269.0	17.552	8087.008	1.00	2.59	0.011			NO		
15	8	PFPeS	349.1>80.1		1222.156	1.00					NO		
16	9	HFPO-DA	285.1 > 168.9		1405.317	1.00					NO		
17	10	5:3 FTCA	340.9 > 236.9		10229.816	1.00					NO		
18	11	PFHpA	363.0 > 318.9	7.659	10229.816	1.00	3.65	0.009	0.0		NO		
19	12	ADONA	376.8 > 250.9	6.238	10229.816	1.00	3.62	0.008	0.1		NO		
20	52	13C2-PFHxA	315.0 > 270.0	8087.008	21048.615	1.00	2.92	4.803	4.8	95.2	NO		
21	49	13C3-PFBS	302.0 > 98.8	1222.156	1220.520	1.00	2.41	12.517	11.7	93.3	NO		
22	50	13C3-HFPO-DA	287.0 > 168.9	1405.317	21048.615	1.00	3.13	0.835	4.8	96.7	NO		
23	53	13C4-PFHpA	367.2 > 321.8	10229.816	21048.615	1.00	3.54	6.075	11.9	94.9	NO		
24	53	13C4-PFHpA	367.2 > 321.8	10229.816	21048.615	1.00	3.54	6.075	11.9	94.9	NO		
25	53	13C4-PFHpA	367.2 > 321.8	10229.816	21048.615	1.00	3.54	6.075	11.9	94.9	NO		
26	-1												
27	13	L-PFHxS	398.9 > 79.6		2601.329	1.00					NO		
28	15	6:2 FTS	427.0 > 406.9		1841.255	1.00					NO		
29	16	L-PFOA	412.8 > 368.9	83.169	19226.945	1.00	4.08	0.054			NO	8.804	YES
30	18	PFecHS	460.8 > 381.0		19226.945	1.00					NO		
31	19	PFHpS	449.0 > 80.0		3146.803	1.00					NO		
32	20	7:3 FTCA	440.9 > 336.9		18604.988	1.00					NO		
33	54	13C3-PFHxS	401.8 > 79.9	2601.329	1220.520	1.00	3.70	26.642	12.1	97.0	NO		
34	55	13C2-6:2 FTS	429.0 >79.9	1841.255	3295.869	1.00	4.01	6.983	11.8	94.8	NO		
35	58	13C2-PFOA	414.9 > 369.7	19226.945	24432.520	1.00	4.07	9.837	12.5	99.7	NO		
36	58	13C2-PFOA	414.9 > 369.7	19226.945	24432.520	1.00	4.07	9.837	12.5	99.7	NO		

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Last Altered: Sunday, July 14, 2019 14:16:51 Pacific Daylight Time
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Name: 190712M2_16, Date: 12-Jul-2019, Time: 20:10:19, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	59	13C8-PFOS	507.0 > 79.9	3146.803	3295.869	1.00	4.61	11.935	11.7	93.9	NO		
38	56	13C5-PFNA	468.2 > 422.9	18604.988	18849.861	1.00	4.52	12.338	12.5	99.6	NO		
39	-1												
40	21	PFNA	463.0 > 418.8	6.723	18604.988	1.00	4.52	0.005	0.0		NO		
41	22	PFOSA	497.9 > 77.9	7.646	3315.525	1.00	4.59	0.029	0.1		NO		
42	23	L-PFOS	498.9 > 79.9		3146.803	1.00					NO		
43	25	9Cl-PF30NS	530.7 > 350.8		3146.803	1.00					NO		
44	26	PFDA	513 > 468.8	14.191	17795.330	1.00	4.90	0.010			NO		
45	27	8:2 FTS	527.0 > 506.9		1869.147	1.00					NO		
46	56	13C5-PFNA	468.2 > 422.9	18604.988	18849.861	1.00	4.52	12.338	12.5	99.6	NO		
47	57	13C8-PFOSA	506.1 > 77.7	3315.525	23794.031	1.00	4.58	1.742	11.7	93.9	NO		
48	59	13C8-PFOS	507.0 > 79.9	3146.803	3295.869	1.00	4.61	11.935	11.7	93.9	NO		
49	59	13C8-PFOS	507.0 > 79.9	3146.803	3295.869	1.00	4.61	11.935	11.7	93.9	NO		
50	60	13C2-PFDA	515.1 > 469.9	17795.330	23467.289	1.00	4.90	9.479	11.7	93.8	NO		
51	61	13C2-8:2 FTS	529 > 79.9	1869.147	3295.869	1.00	4.87	7.089	11.9	95.3	NO		
52	-1												
53	28	PFNS	549.1 > 80.1		3146.803	1.00					NO		
54	29	L-MeFOSAA	570 > 419		3195.779	1.00					NO		
55	31	L-EtFOSAA	584.1 > 419		4118.317	1.00					NO		
56	33	PFUdA	563.0 > 518.9	54.767	25384.857	1.00	5.23	0.027			NO		
57	34	PFDS	598.8 > 79.9		1869.147	1.00					NO		
58	35	11Cl-PF30UdS	632.6 > 452.7		22540.199	1.00					NO		
59	59	13C8-PFOS	507.0 > 79.9	3146.803	3295.869	1.00	4.61	11.935	11.7	93.9	NO		
60	62	d3-N-MeFOSAA	573.3 > 419	3195.779	23794.031	1.00	5.05	1.679	12.0	96.2	NO		
61	64	d5-N-EtFOSAA	589.3 > 419	4118.317	23794.031	1.00	5.21	2.164	12.9	103.2	NO		
62	63	13C2-PFUdA	565 > 519.8	25384.857	23794.031	1.00	5.23	13.336	12.7	101.5	NO		
63	61	13C2-8:2 FTS	529 > 79.9	1869.147	3295.869	1.00	4.87	7.089	11.9	95.3	NO		
64	65	13C2-PFDoA	614.7 > 569.7	22540.199	23467.289	1.00	5.52	12.006	11.5	92.3	NO		
65	-1												
66	36	10:2 FTS	627.0 > 606.9		1869.147	1.00					NO		
67	37	PFDoA	612.9 > 569.0	268.500	22540.199	1.00	5.69	0.149	0.1		NO		
68	38	N-MeFOSA	512.1 > 168.9		9949.627	1.00					NO		
69	39	PFTrDA	662.9 > 618.9	37.146	22540.199	1.00	5.77	0.021	0.0		NO		
70	40	PFDoS	698.8 > 79.9		15188.654	1.00					NO		
71	41	PFTeDA	713.0 > 669.0	27.475	15188.654	1.00	5.99	0.023	0.0		NO		
72	65	13C2-PFDoA	614.7 > 569.7	22540.199	23467.289	1.00	5.52	12.006	11.5	92.3	NO		

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Name: 190712M2_16, Date: 12-Jul-2019, Time: 20:10:19, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	65	13C2-PFDoA	614.7 > 569.7	22540.199	23467.289	1.00	5.52	12.006	11.5	92.3	NO		
74	66	d3-N-MeFOSA	515.2 > 168.9	9949.627	23794.031	1.00	5.69	5.227	138.6	92.4	NO		
75	65	13C2-PFDoA	614.7 > 569.7	22540.199	23467.289	1.00	5.52	12.006	11.5	92.3	NO		
76	67	13C2-PFTeDA	715.1 > 669.7	15188.654	23794.031	1.00	5.99	7.979	11.6	92.5	NO		
77	67	13C2-PFTeDA	715.1 > 669.7	15188.654	23794.031	1.00	5.99	7.979	11.6	92.5	NO		
78	-1												
79	42	N-EtFOSA	526.1 > 168.9	5.304	14783.158	1.00	5.94	0.054	0.3		NO		
80	43	PFHxDA	813.1 > 768.6	143.623	8398.202	1.00	6.35	0.086	0.1		NO		
81	44	PFODA	913.1 > 868.8	63.851	8398.202	1.00	6.60	0.038			NO		
82	45	N-MeFOSE	616.1 > 58.9	9.383	8771.513	1.00	6.25	0.160	0.4		NO		
83	46	N-EtFOSE	630.1 > 58.9	16.287	8658.264	1.00	6.57	0.282	0.3		NO		
84	72	13C4-PFBA	217.0 > 172.0	5790.426	5790.426	1.00	1.15	12.500	12.5	100.0	NO		
85	68	d5-N-ETFOSA	531.1 > 168.9	14783.158	23794.031	1.00	6.12	7.766	145.6	97.1	NO		
86	69	13C2-PFHxDA	815 > 769.7	8398.202	23794.031	1.00	6.35	4.412	4.9	98.1	NO		
87	69	13C2-PFHxDA	815 > 769.7	8398.202	23794.031	1.00	6.35	4.412	4.9	98.1	NO		
88	70	d7-N-MeFOSE	623.1 > 58.9	8771.513	23794.031	1.00	6.28	4.608	132.3	88.2	NO		
89	71	d9-N-EtFOSE	639.2 > 58.8	8658.264	23794.031	1.00	6.43	4.549	138.3	92.2	NO		
90	73	13C5-PFHxA	318.0 > 272.9	21048.615	21048.615	1.00	2.92	12.500	12.5	100.0	NO		
91	-1												
92	75	13C8-PFOA	420.9 > 376.0	24432.520	24432.520	1.00	4.07	12.500	12.5	100.0	NO		
93	74	18O2-PFHxS	403.0 > 102.6	1220.520	1220.520	1.00	3.70	12.500	12.5	100.0	NO		
94	76	13C9-PFNA	472.2 > 426.9	18849.861	18849.861	1.00	4.52	12.500	12.5	100.0	NO		
95	77	13C4-PFOS	503 > 79.9	3295.869	3295.869	1.00	4.61	12.500	12.5	100.0	NO		
96	78	13C6-PFDA	519.1 > 473.7	23467.289	23467.289	1.00	4.90	12.500	12.5	100.0	NO		
97	79	13C7-PFUdA	570.1 > 524.8	23794.031	23794.031	1.00	5.23	12.500	12.5	100.0	NO		

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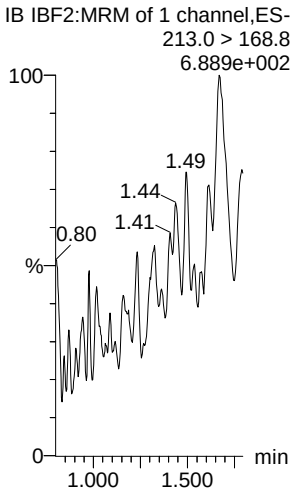
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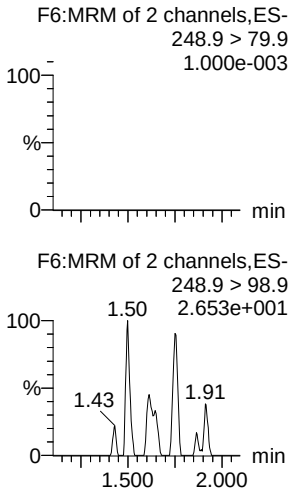
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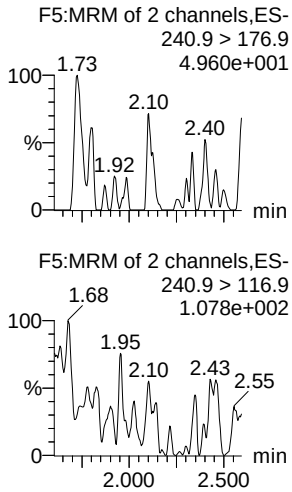
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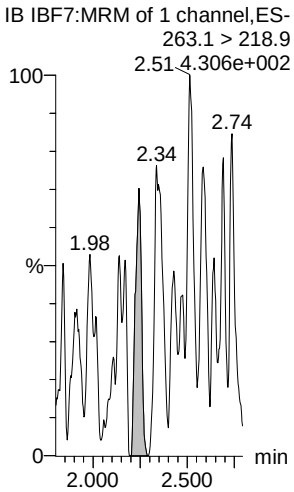
PFPrS



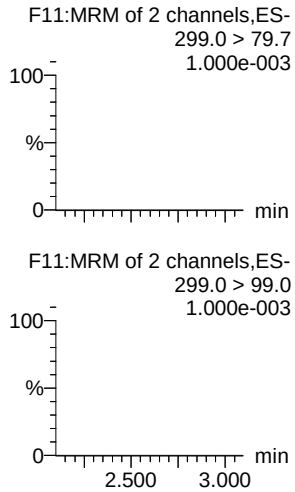
3:3 FTCA



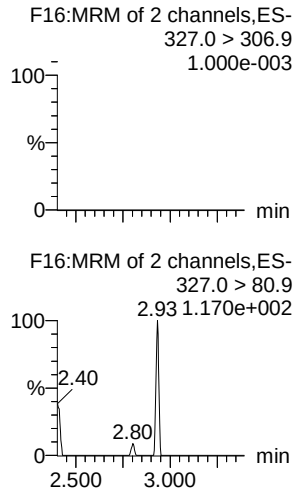
PFPeA



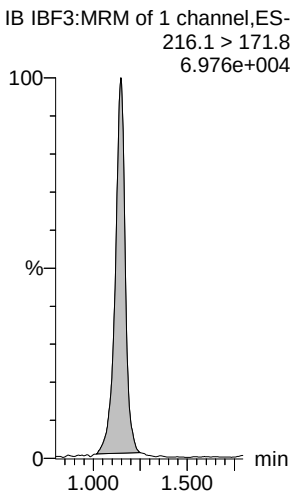
PFBS



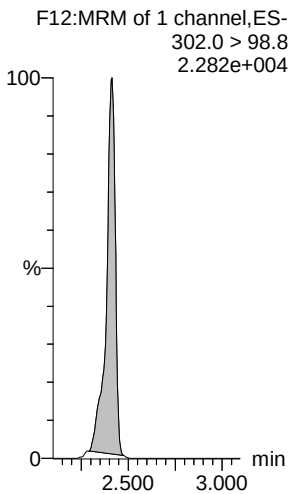
4:2 FTS



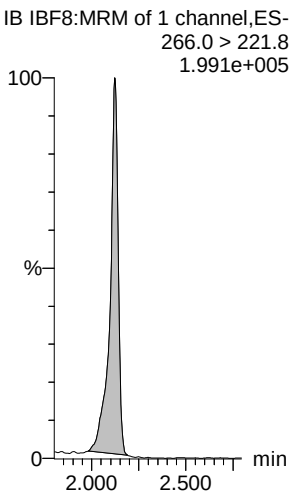
13C3-PFBA



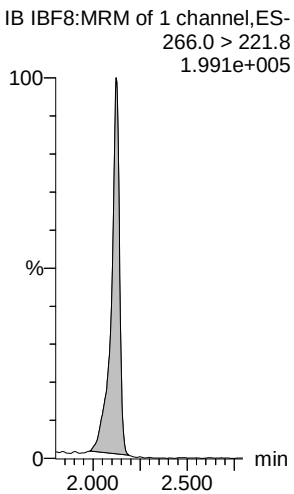
13C3-PFBS



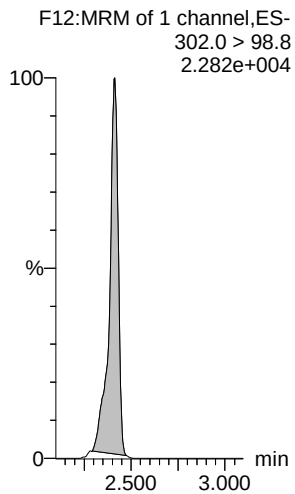
13C3-PFPeA



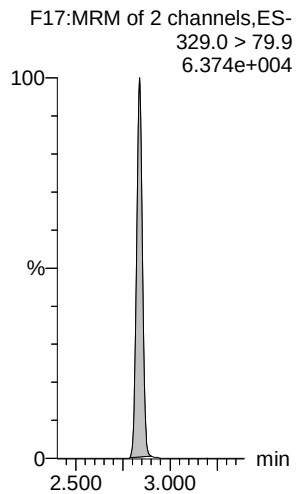
13C3-PFPeA



13C3-PFBS



13C2-4:2 FTS



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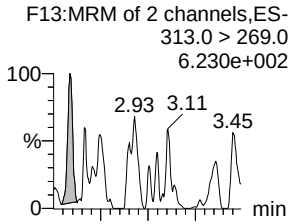
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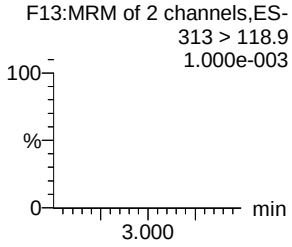
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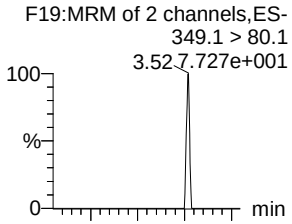
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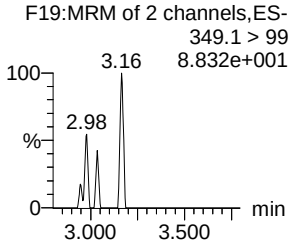
PFHxA



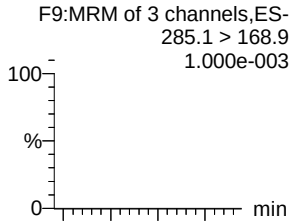


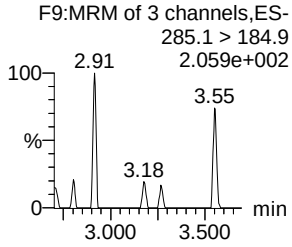
PFPeS



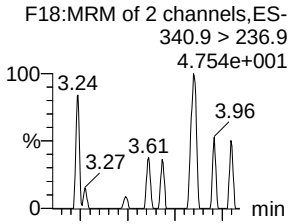


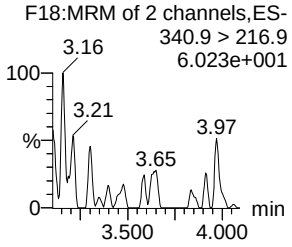
HFPO-DA



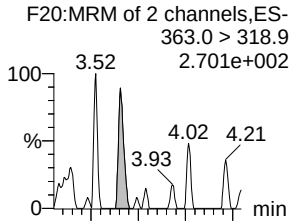


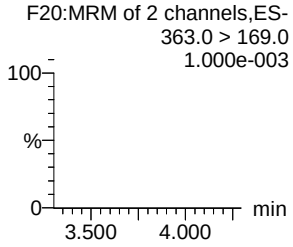
5:3 FTCA



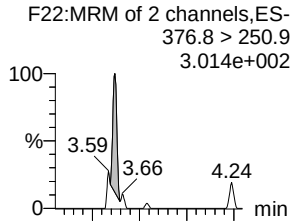


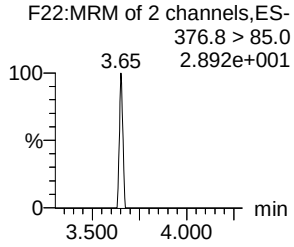
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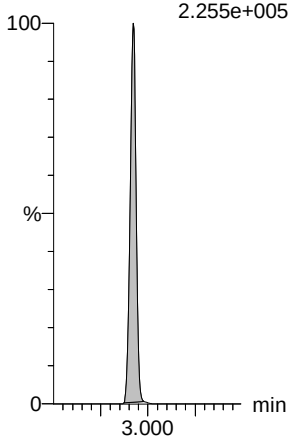


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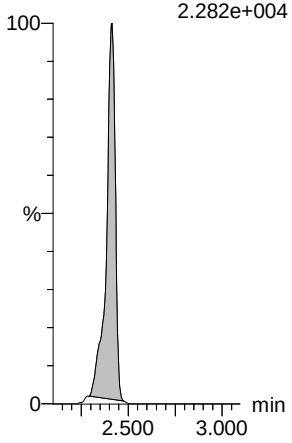




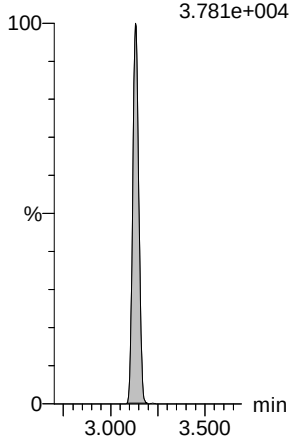
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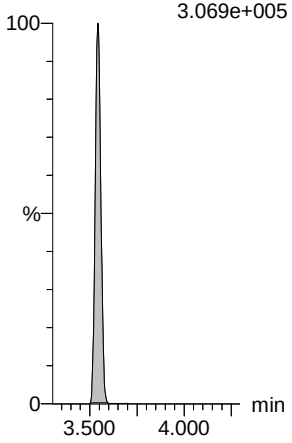
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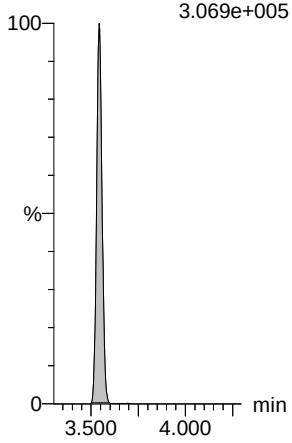
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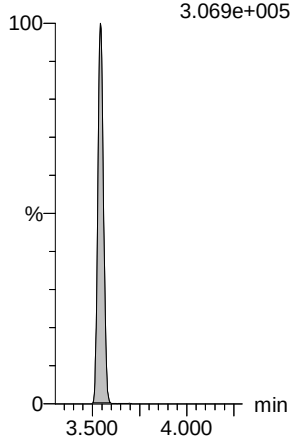
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13C4-PFHpA



13C4-PFHpA



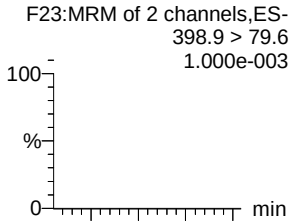
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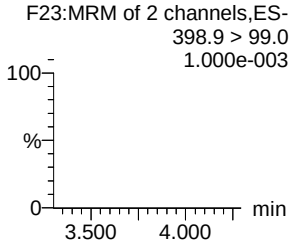
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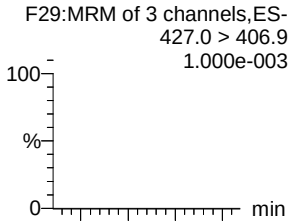
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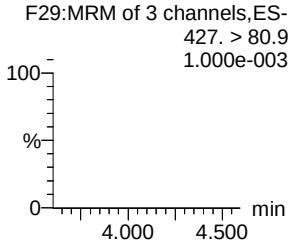
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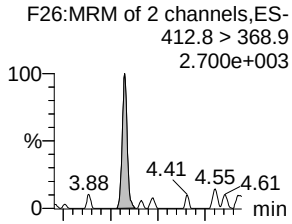


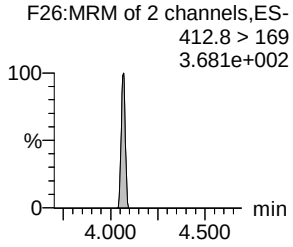
6:2 FTS



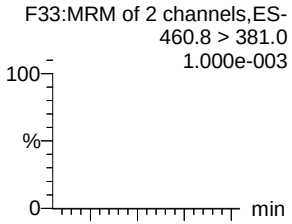


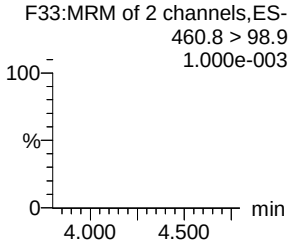
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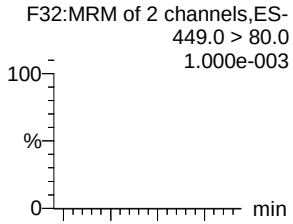


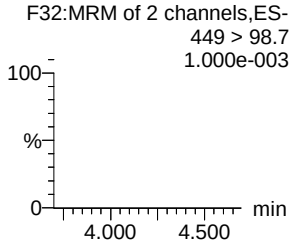
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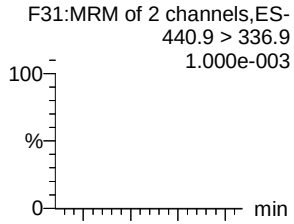


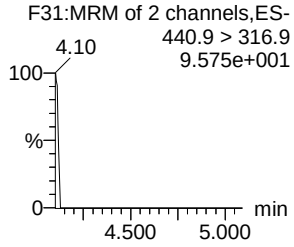
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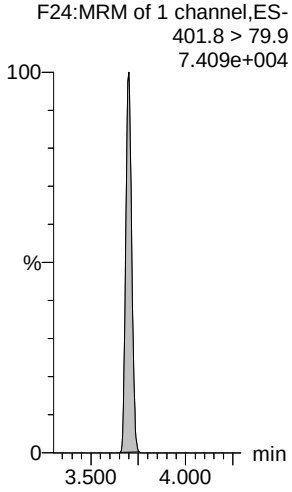


7:3 FTCA

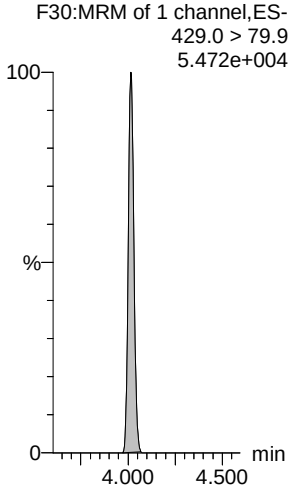




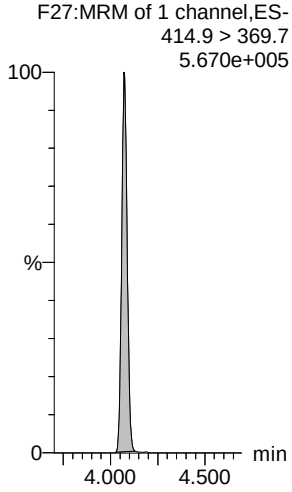
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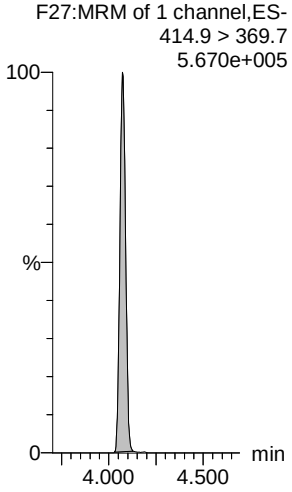
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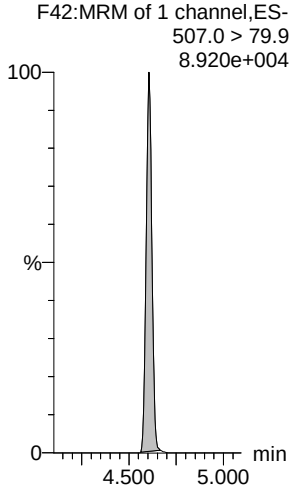
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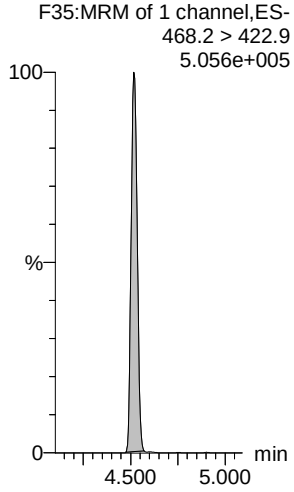
13C2-PFOA



13C8-PFOS



13C5-PFNA



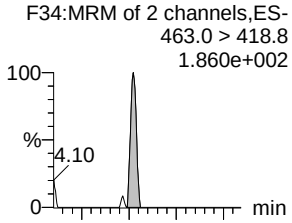
Vista Analytical Laboratory

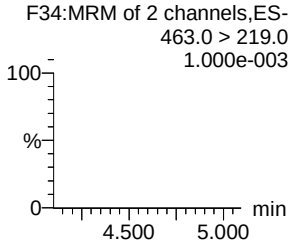
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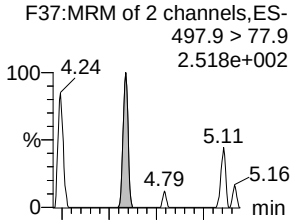
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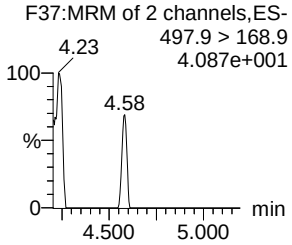
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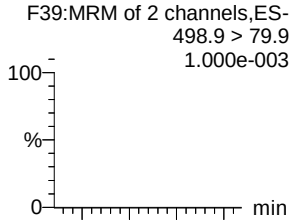


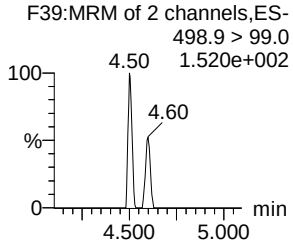
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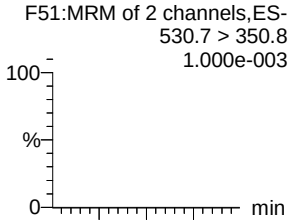


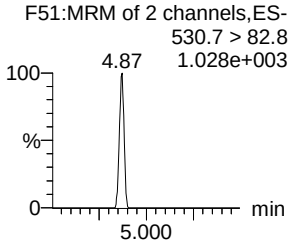
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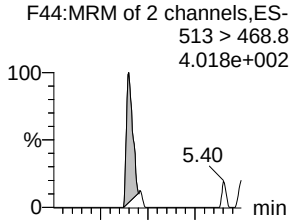


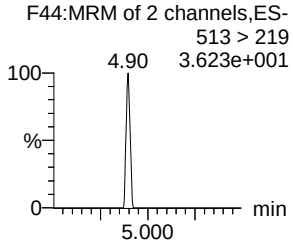
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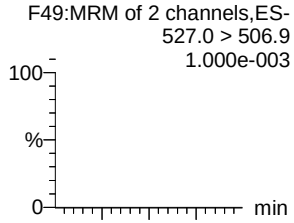


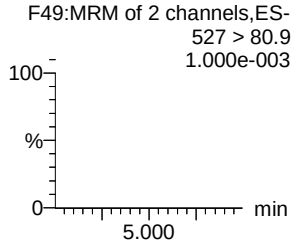
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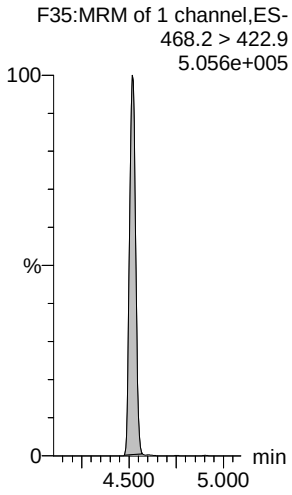


8:2 FTS

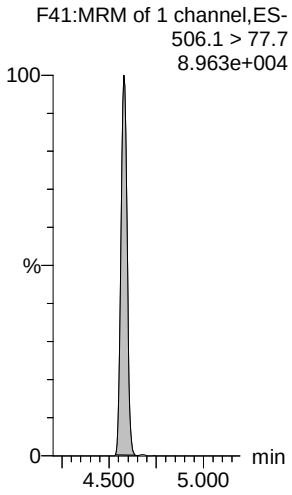




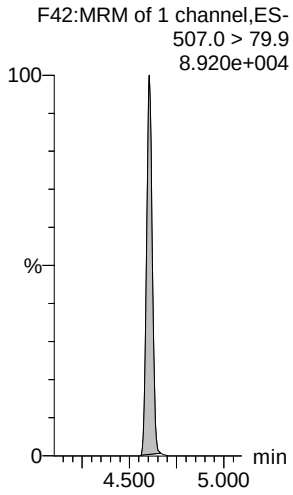
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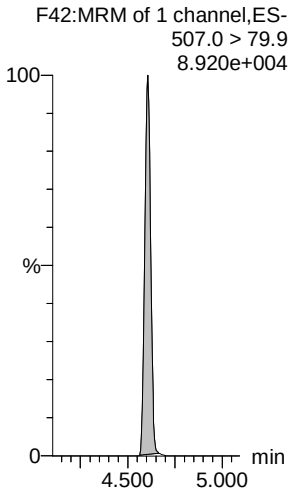
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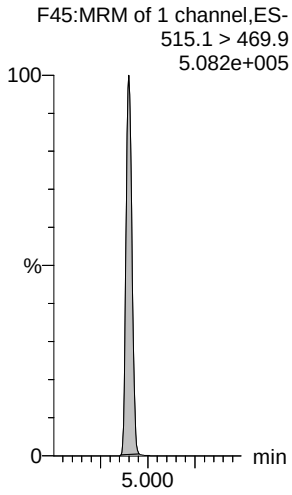
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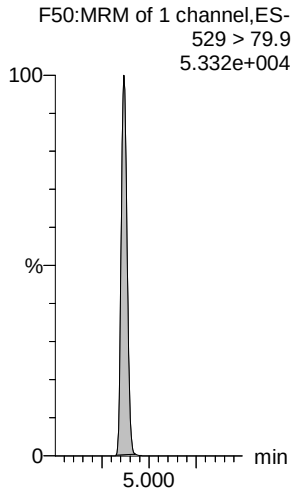
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13C2-PFDA



13C2-8:2 FTS



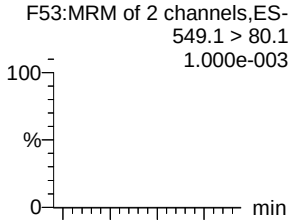
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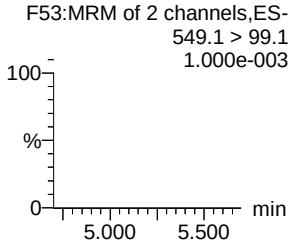
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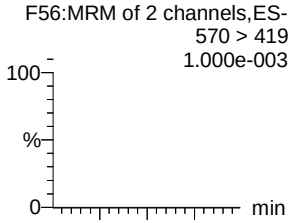
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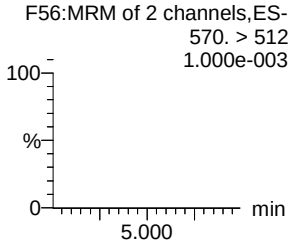
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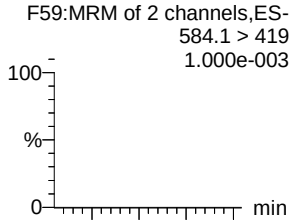


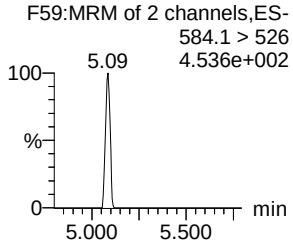
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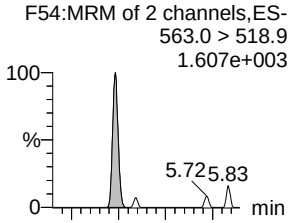


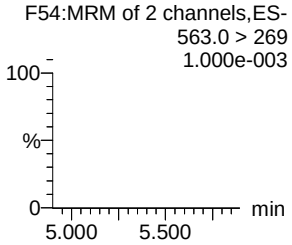
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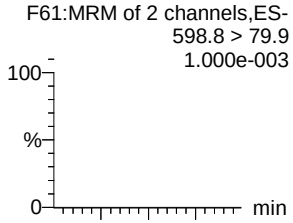


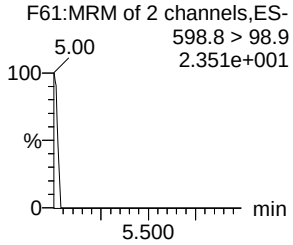
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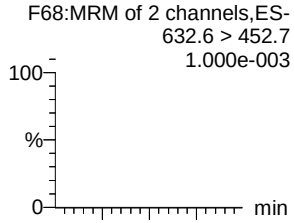


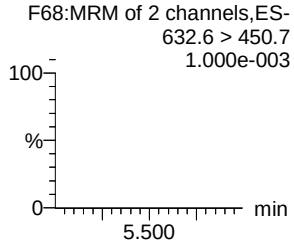
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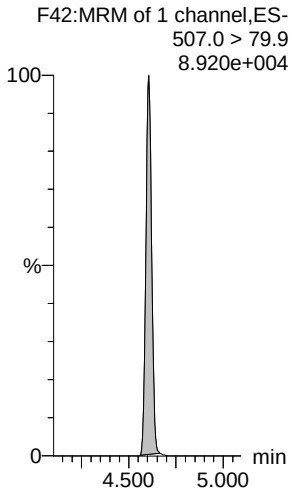


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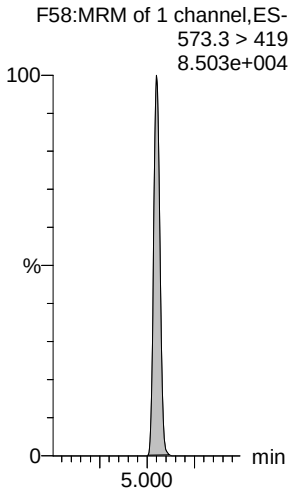




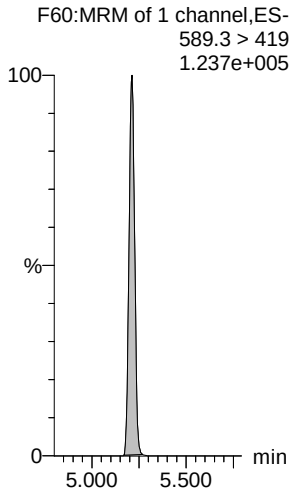
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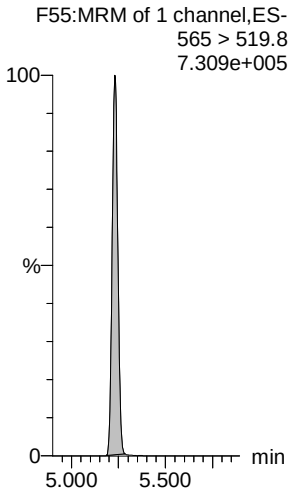
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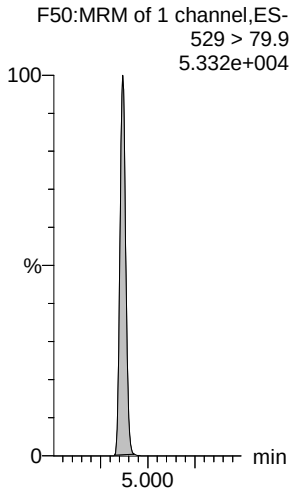
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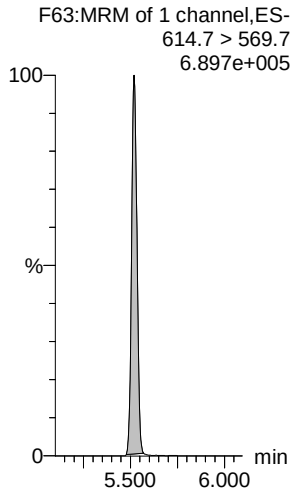
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13C2-8:2 FTS



13C2-PFDoA



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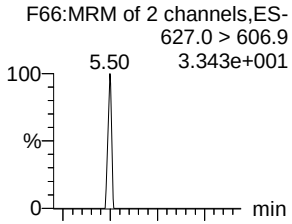
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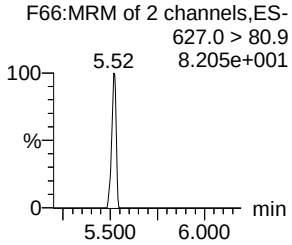
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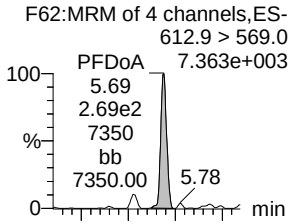
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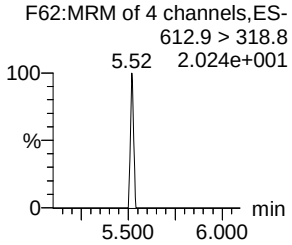
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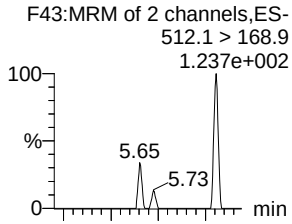


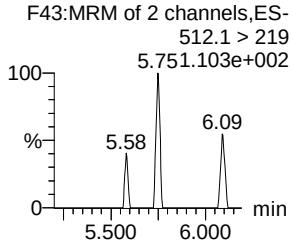
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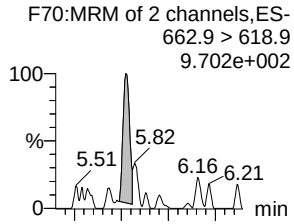


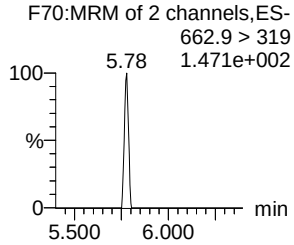
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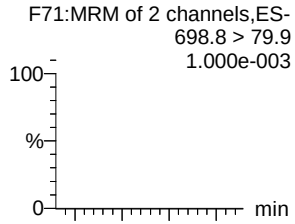


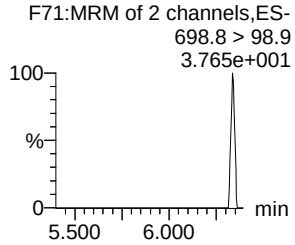
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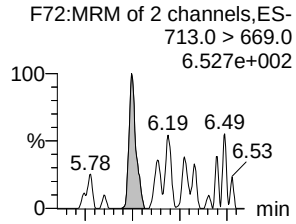


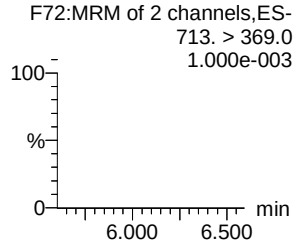
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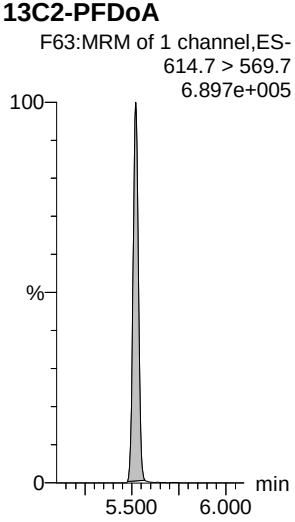


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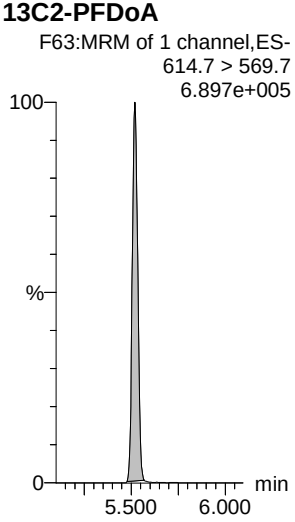




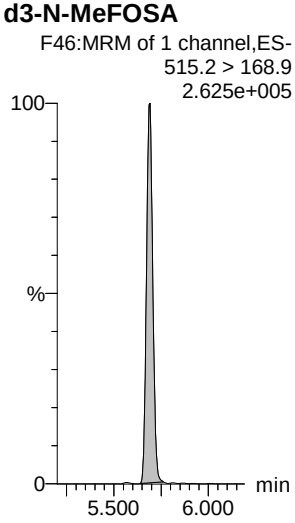
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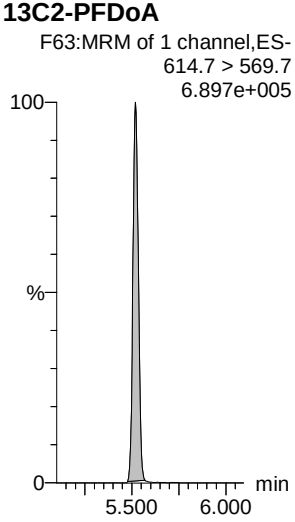
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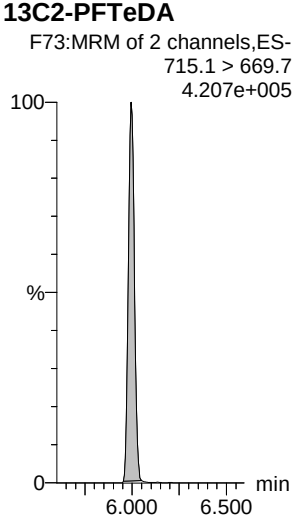
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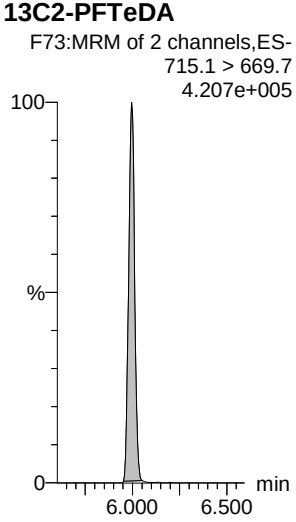
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13C2-PFTeDA



13C2-PFTeDA



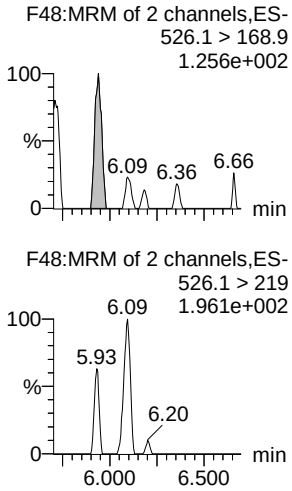
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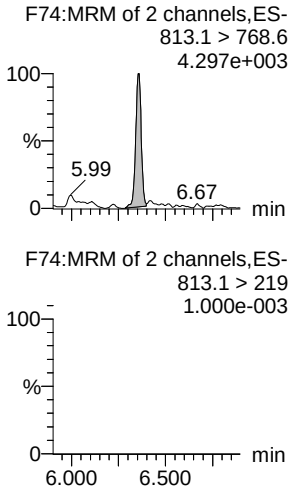
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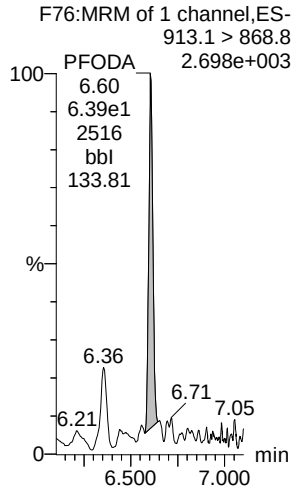
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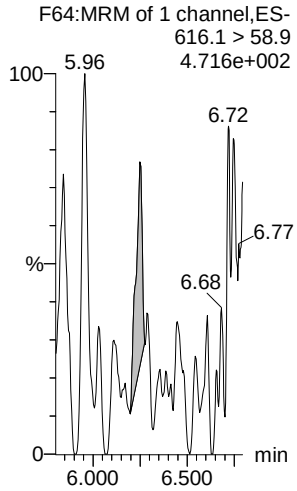
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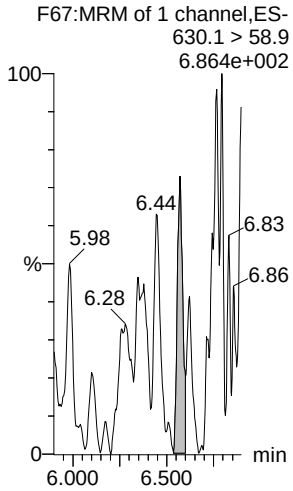
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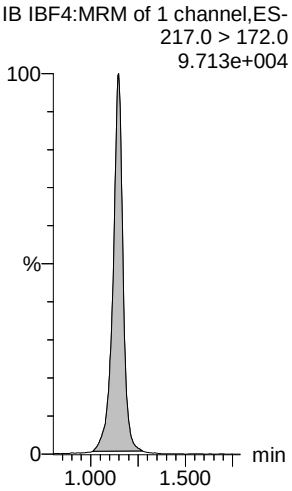
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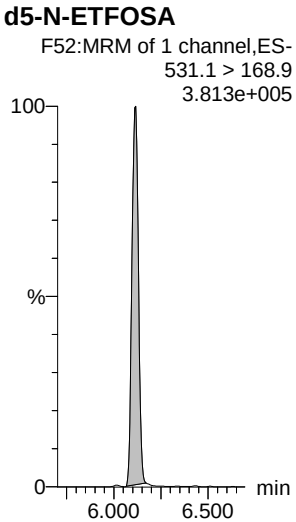
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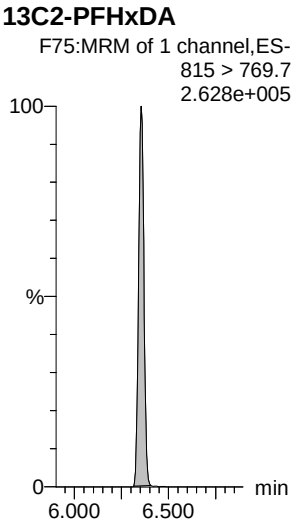
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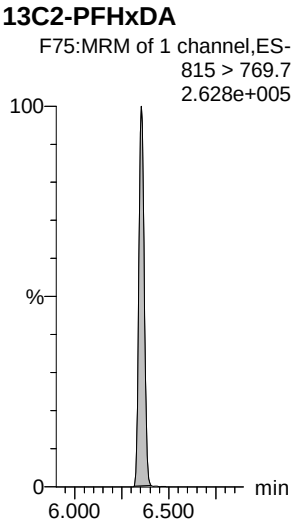
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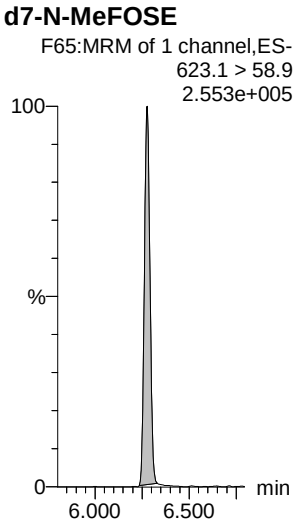
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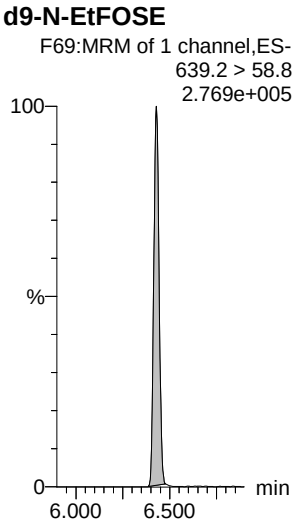
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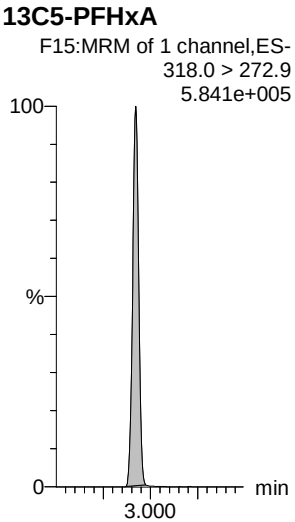
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d9-N-EtFOSE



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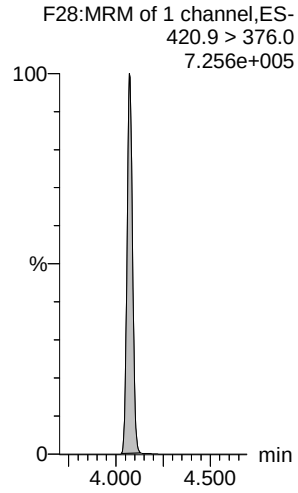
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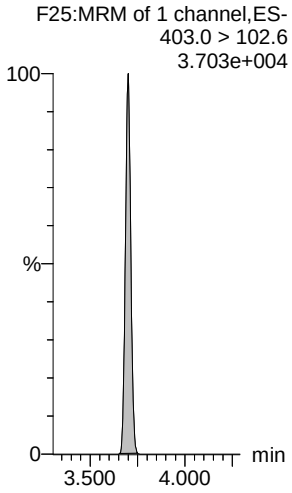
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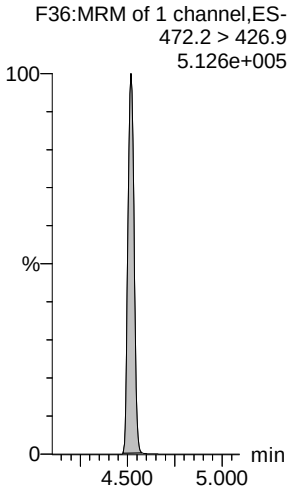
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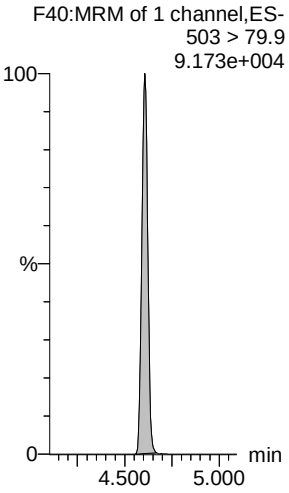
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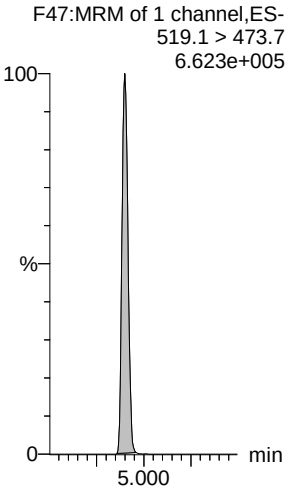
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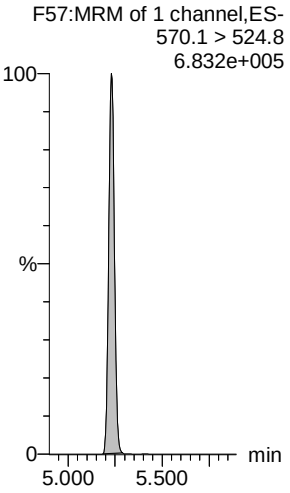
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13C6-PFDA



13C7-PFUdA



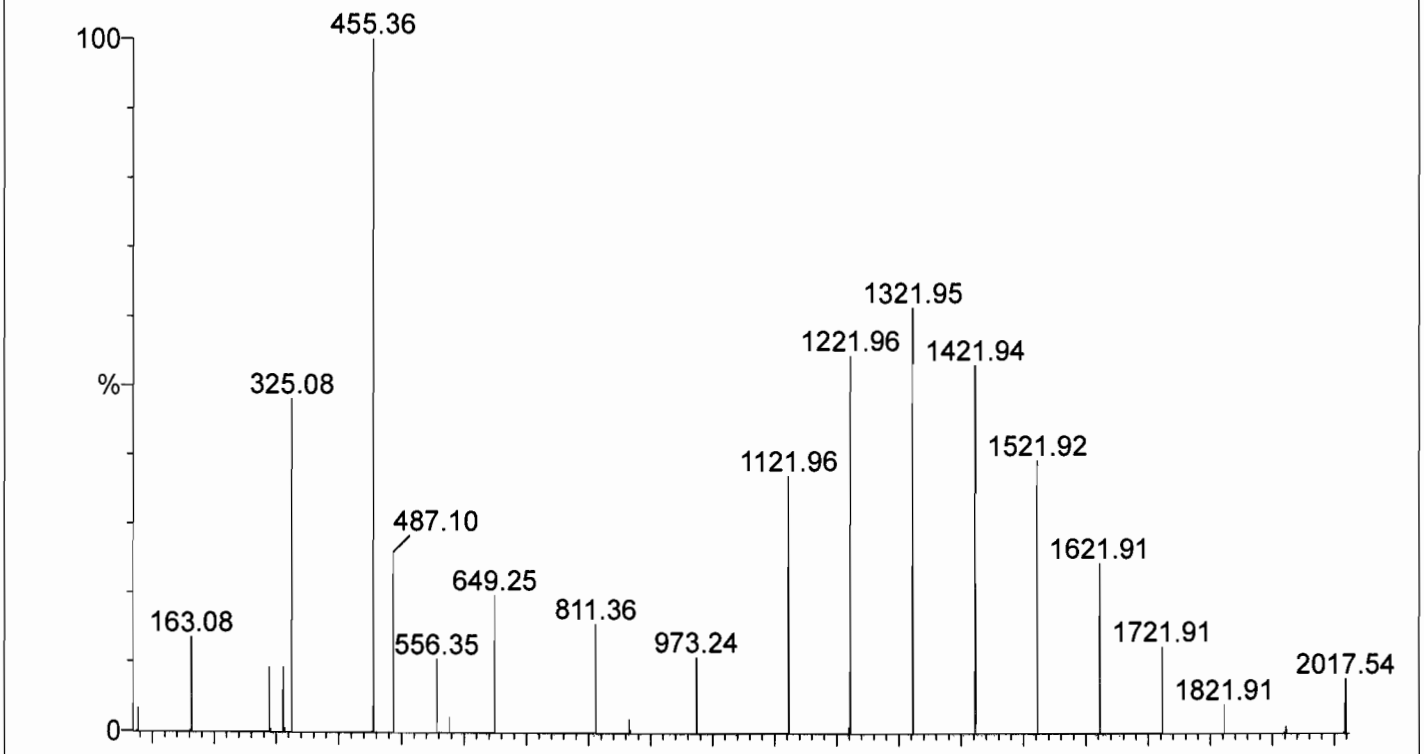
TUNE CHECKS

Q4 Tune check 07-07-19

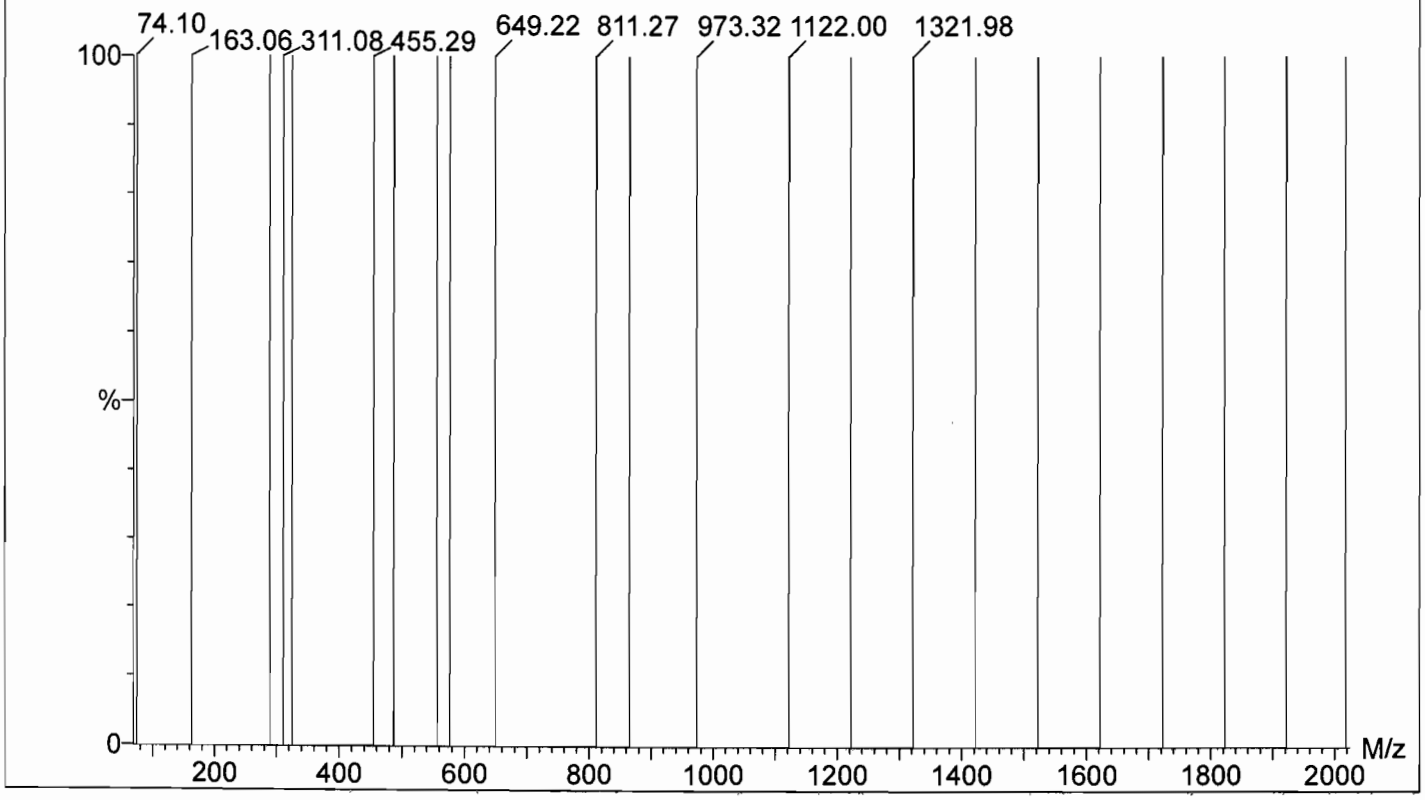
Calibration Verification Report - MS1 Static 20190702 **Page 1 of 6**

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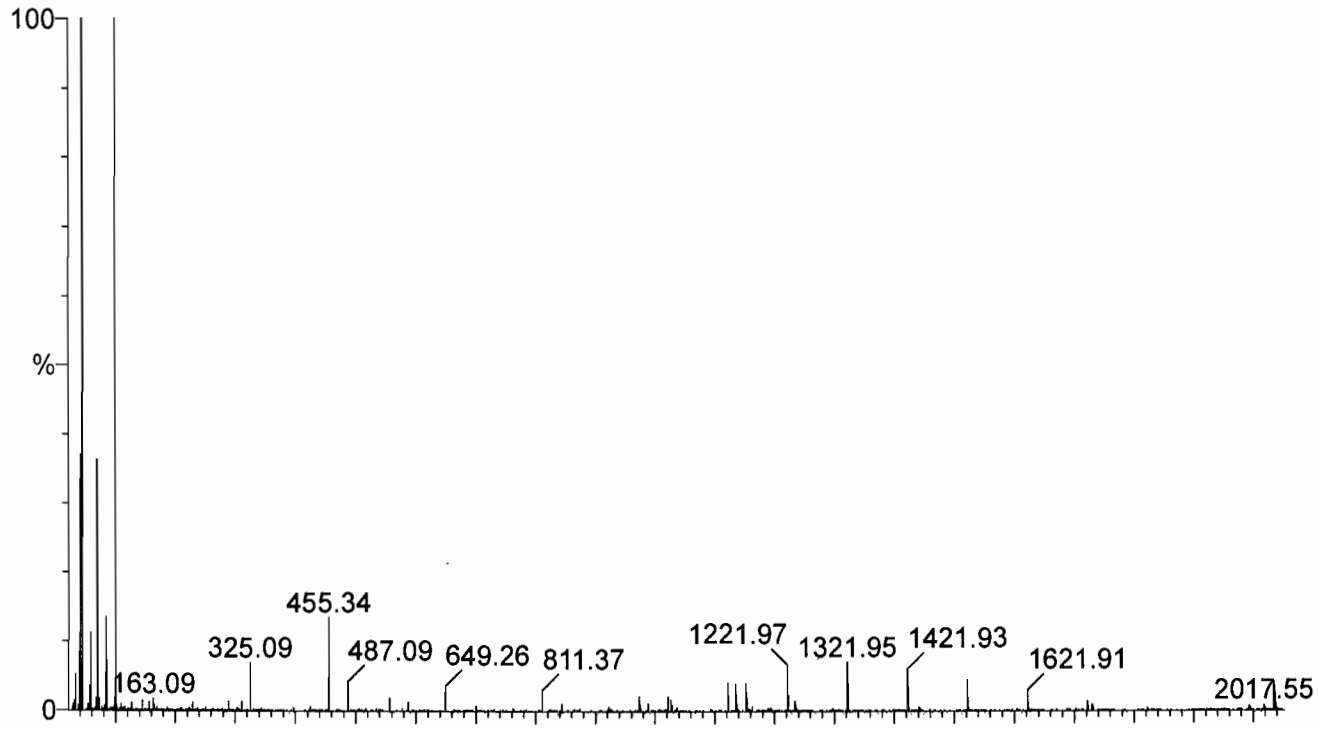
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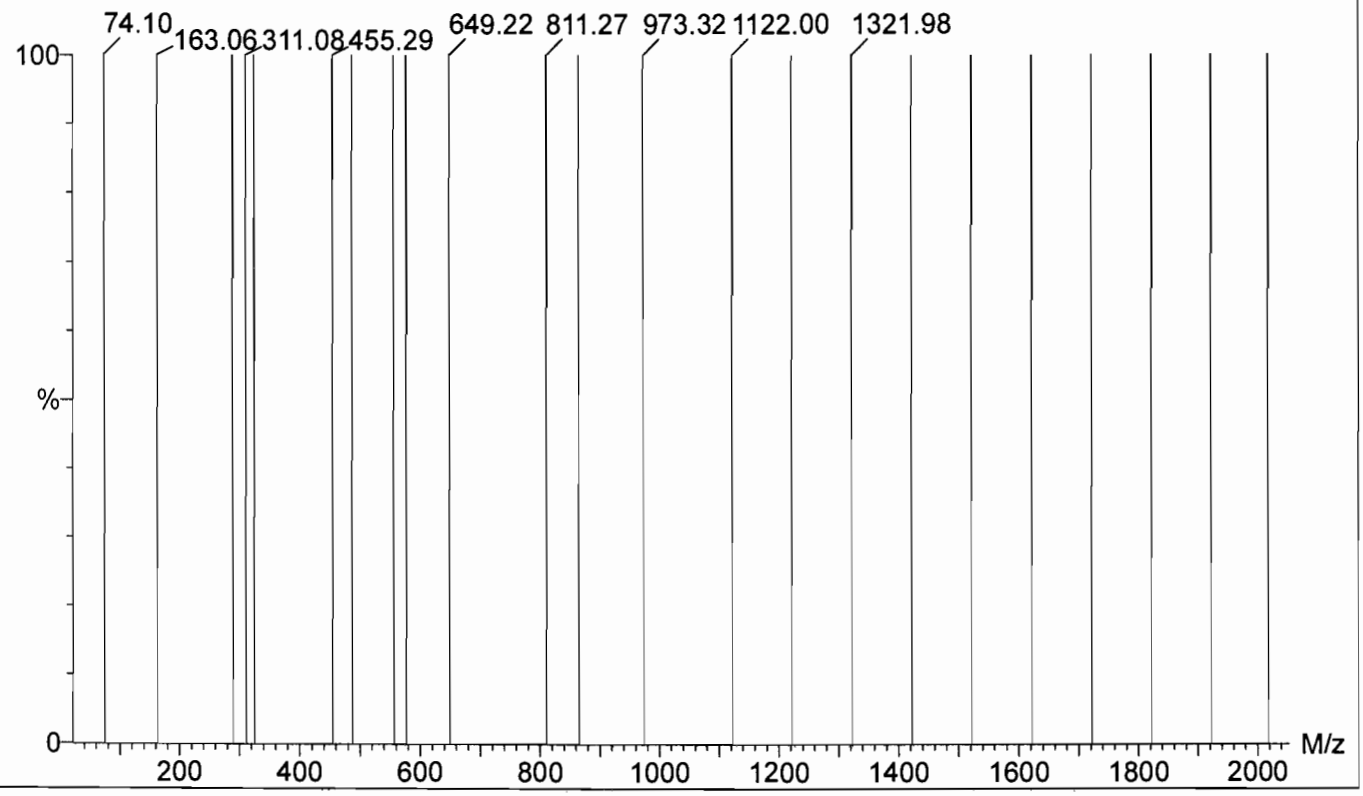
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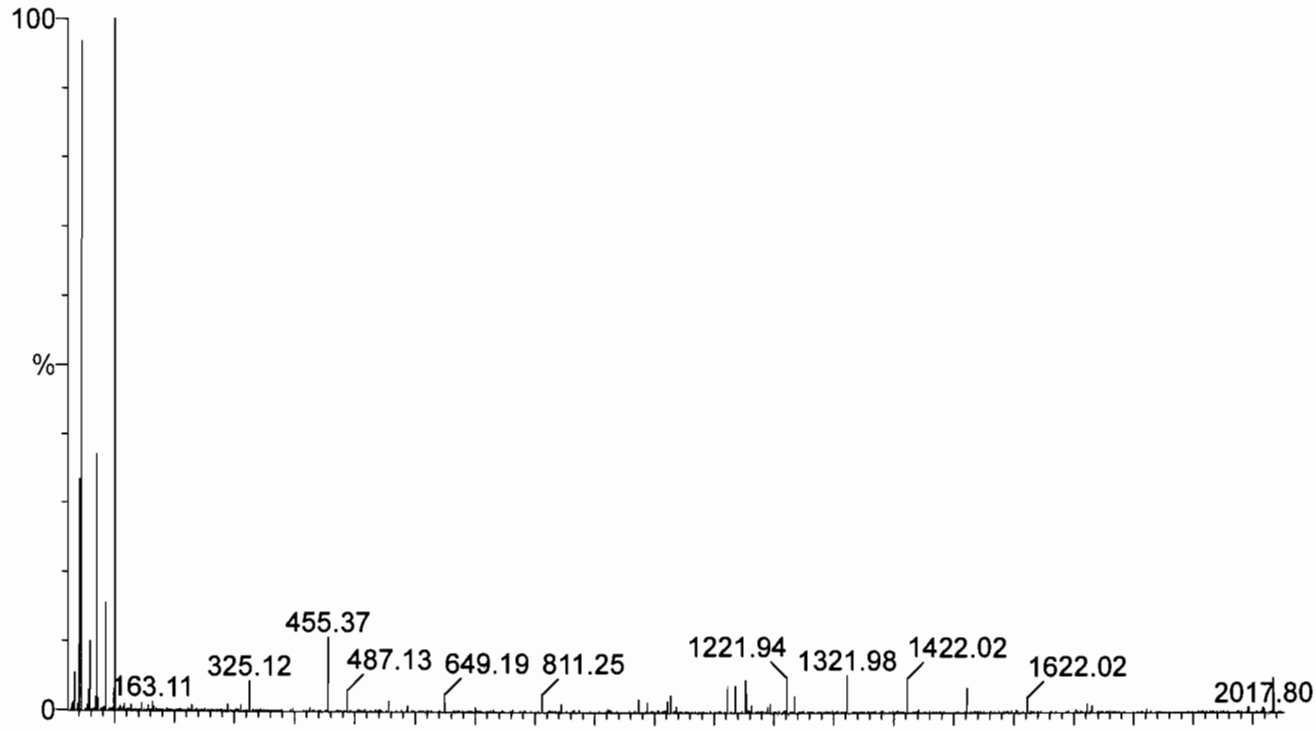
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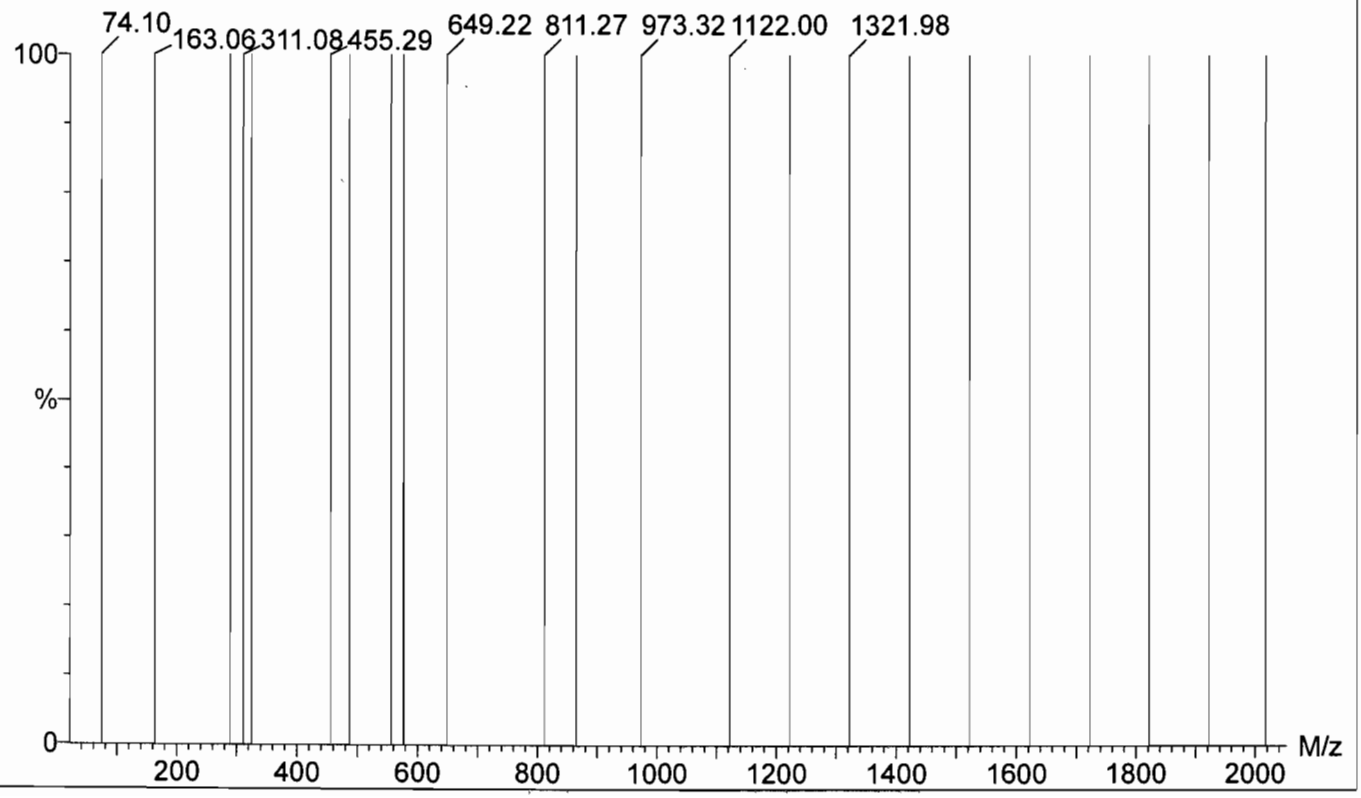
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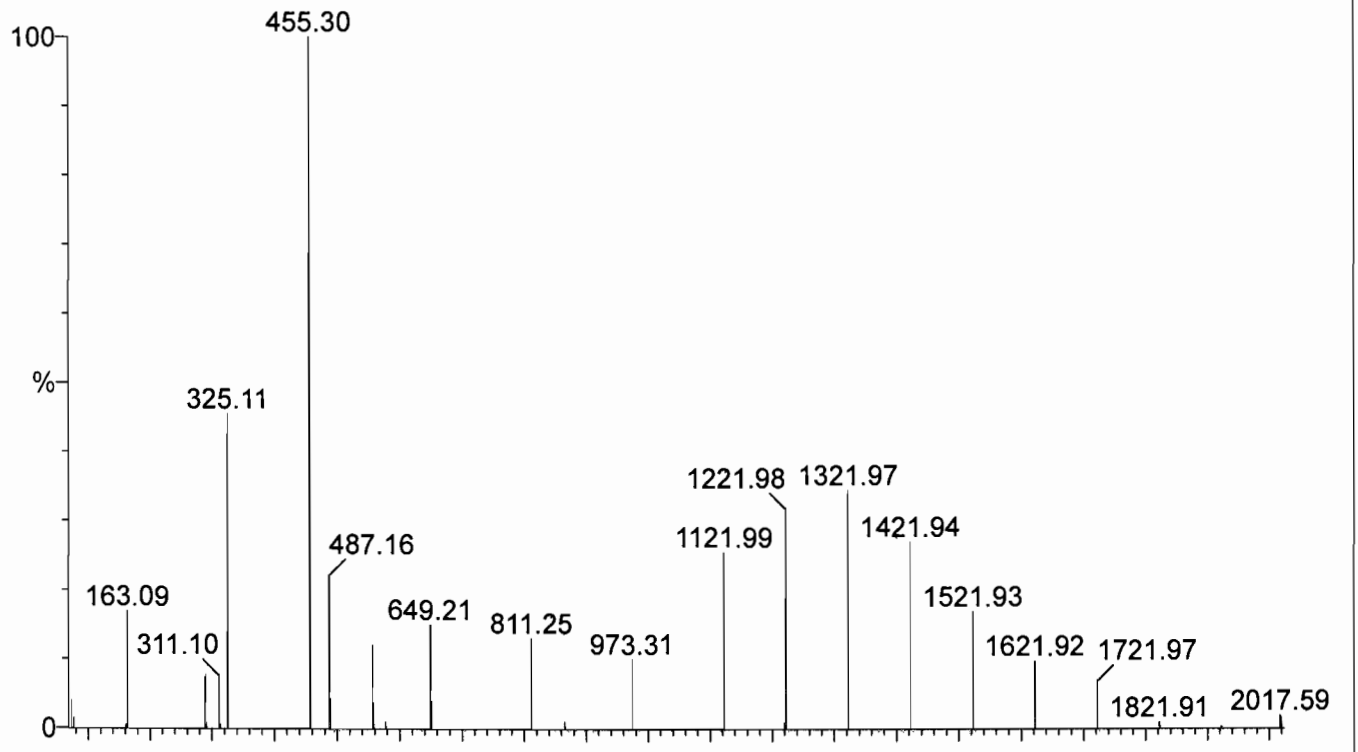
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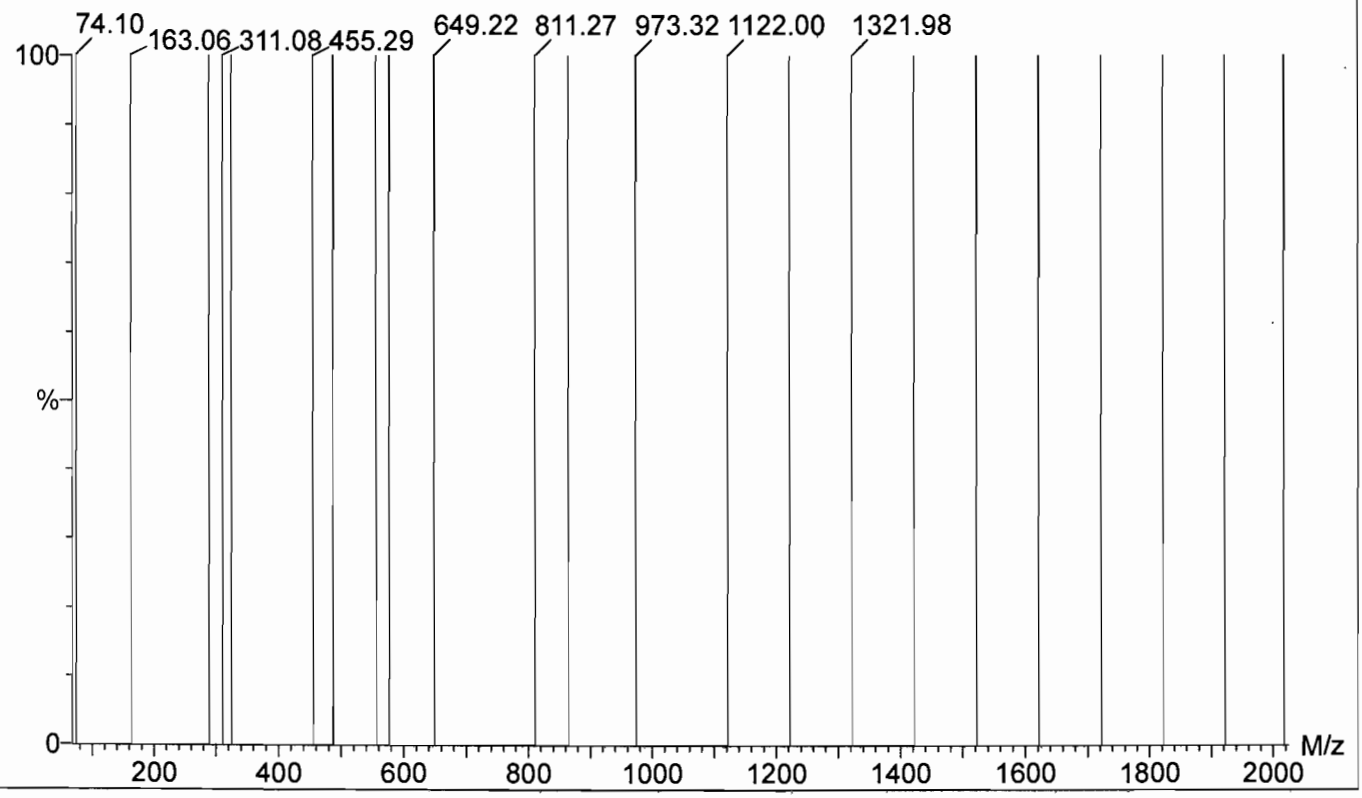
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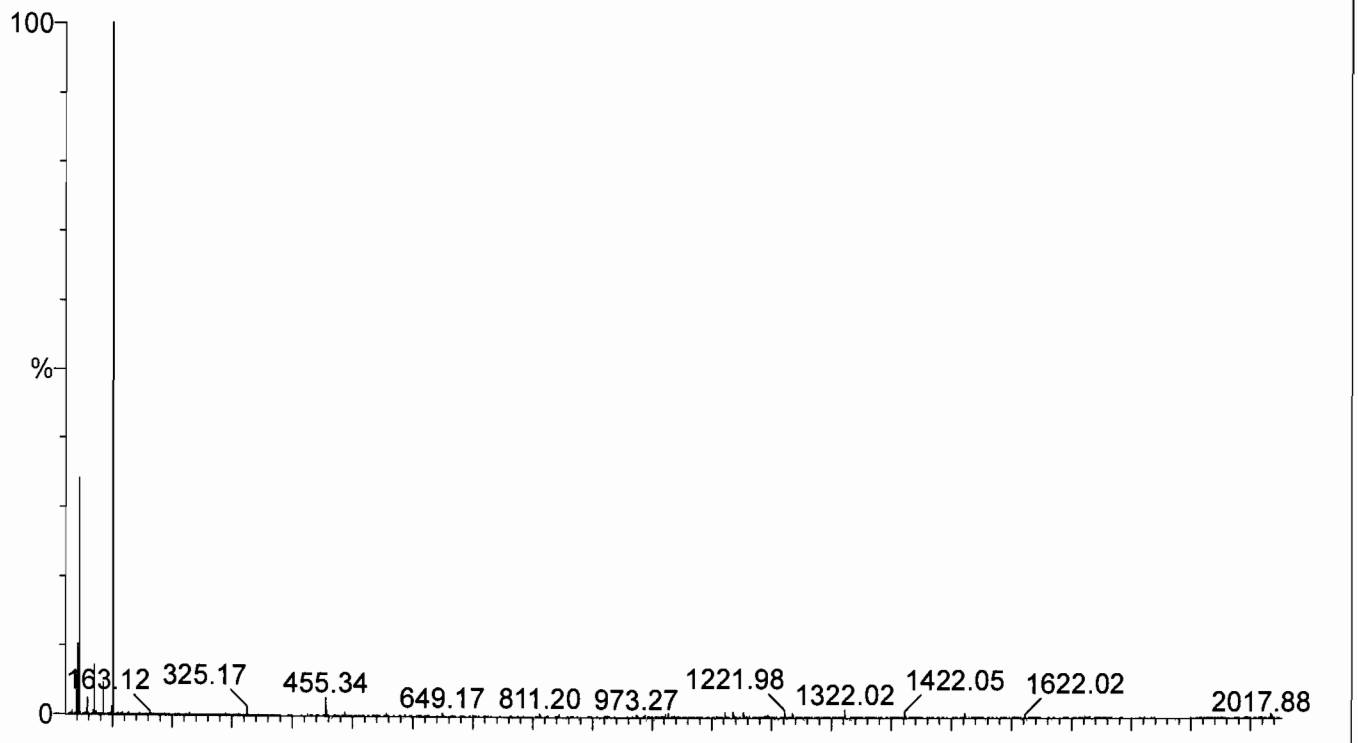
Data file: STATMS2V - Calibrated 22 matches of 23 tested references



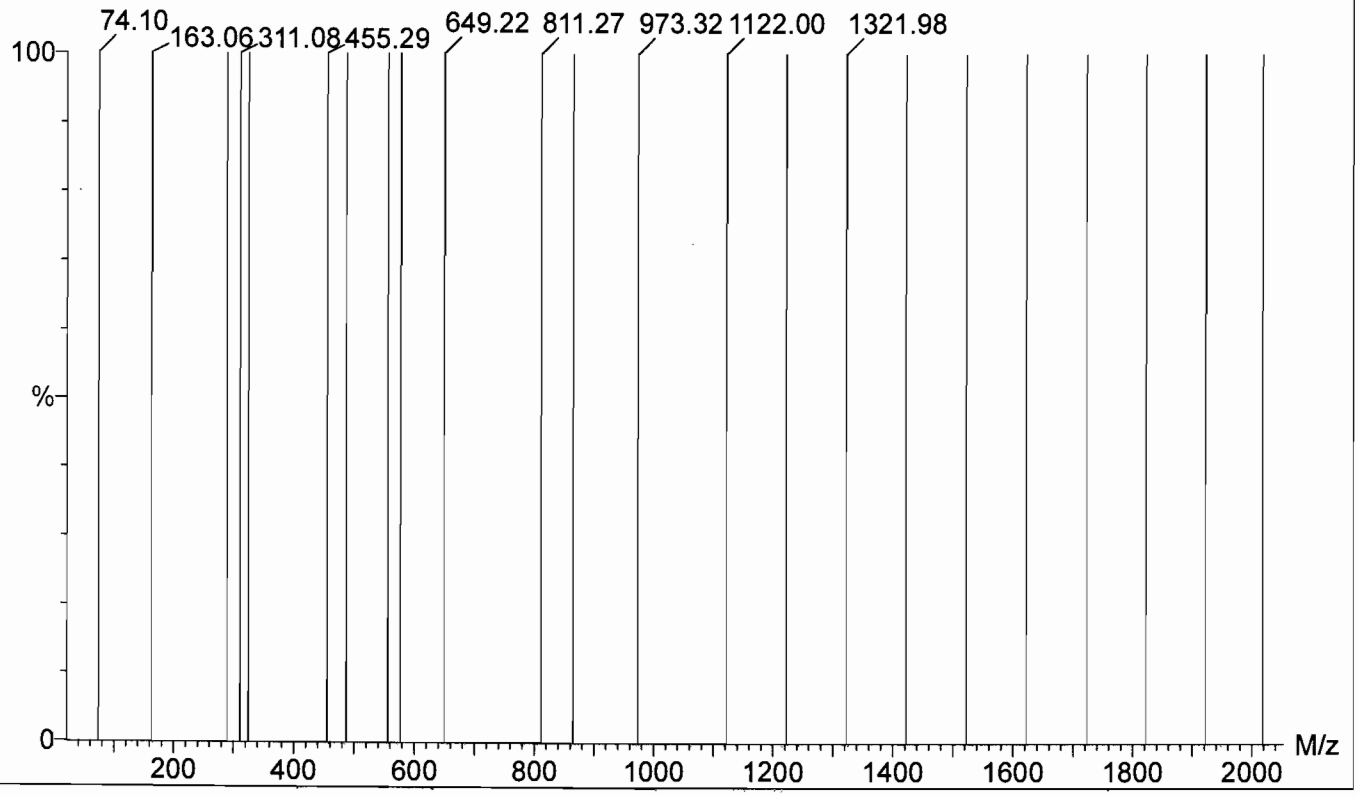
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0262 amu



Data file: SCNMS2V - Calibrated 21 matches of 23 tested references



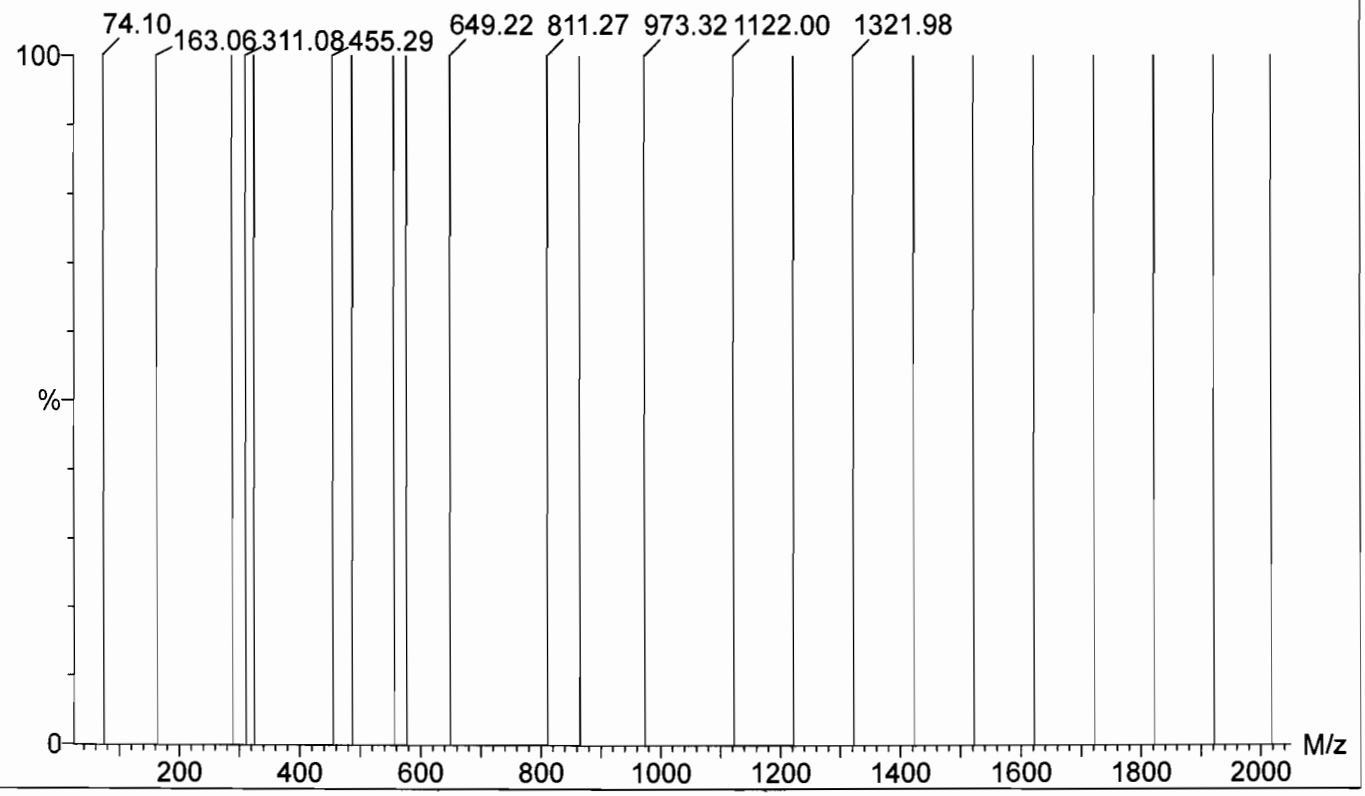
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0581 amu



Data file: FASTMS2V - Calibrated 21 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.11 amu



Q4(M) 07-08-19

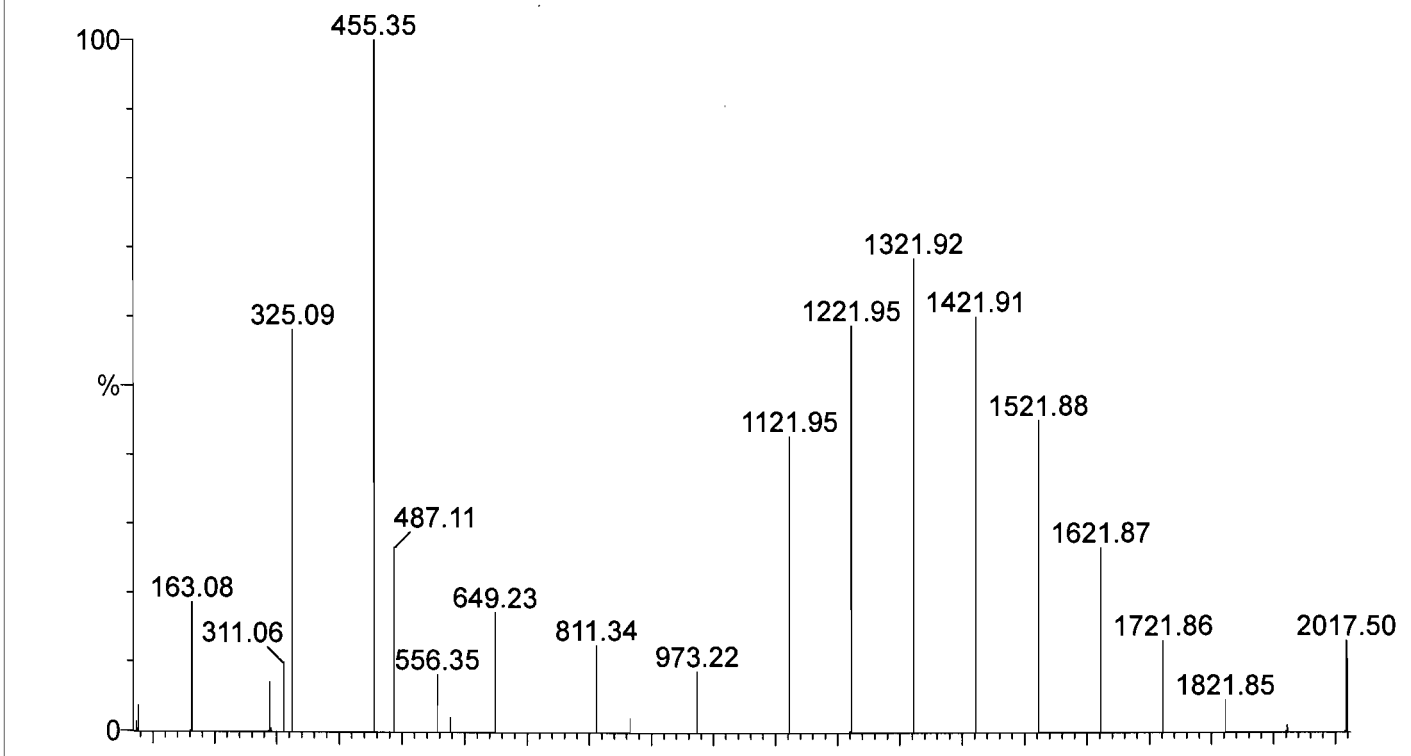
07/03/19 Cecil 7/8/19

Calibration Verification Report - MS1 Static

Printed: **Mon Jul 08 09:00:56 2019**

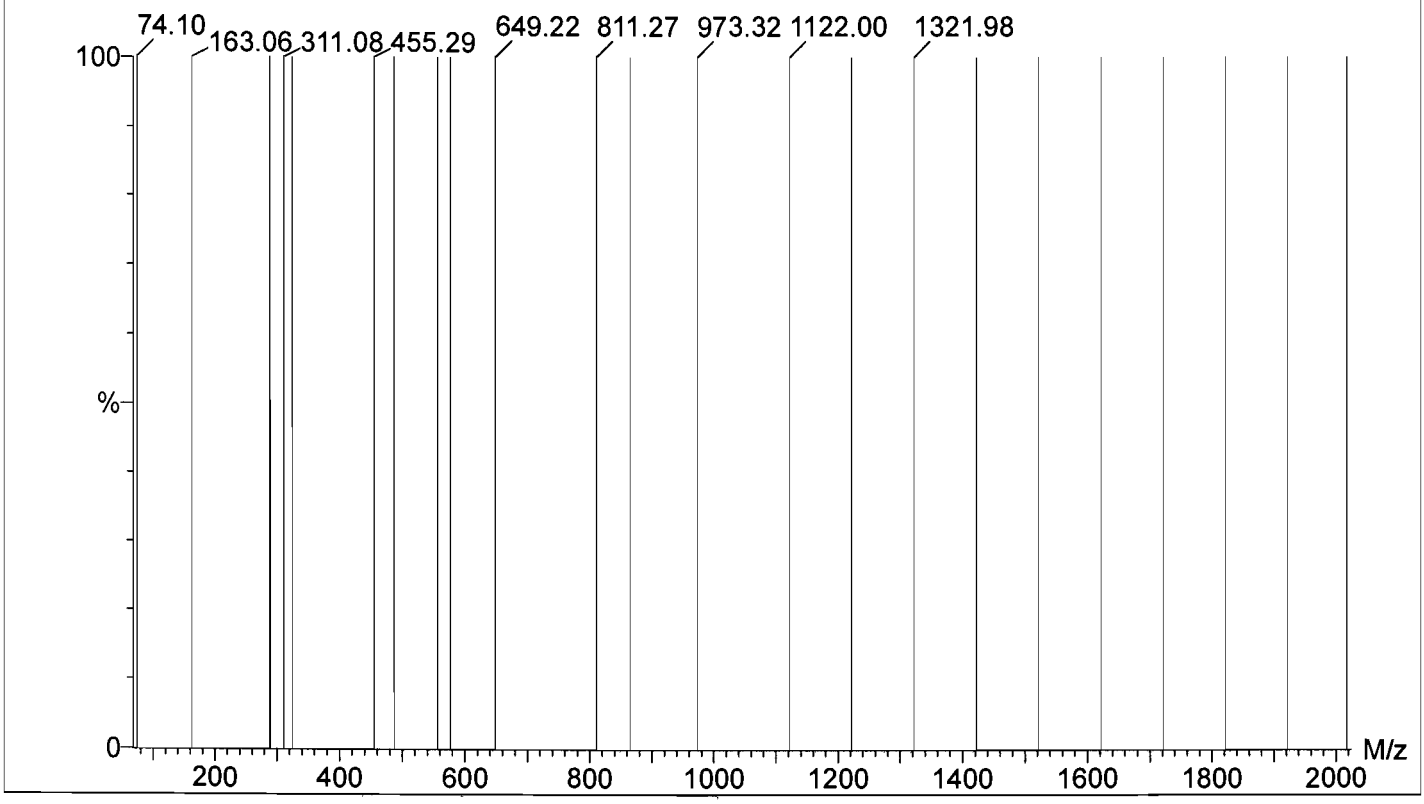
Data file: STATMS1V - Calibrated

23 matches of 23 tested references

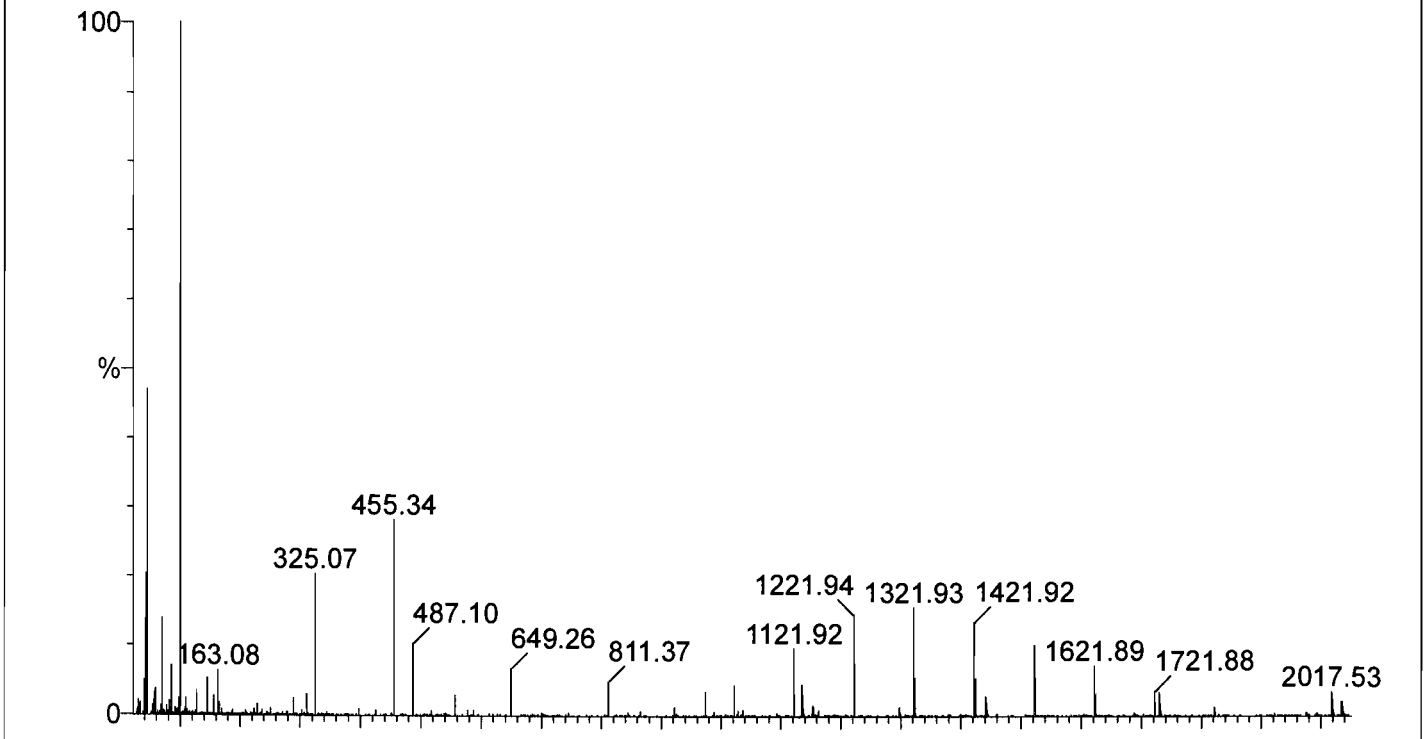


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

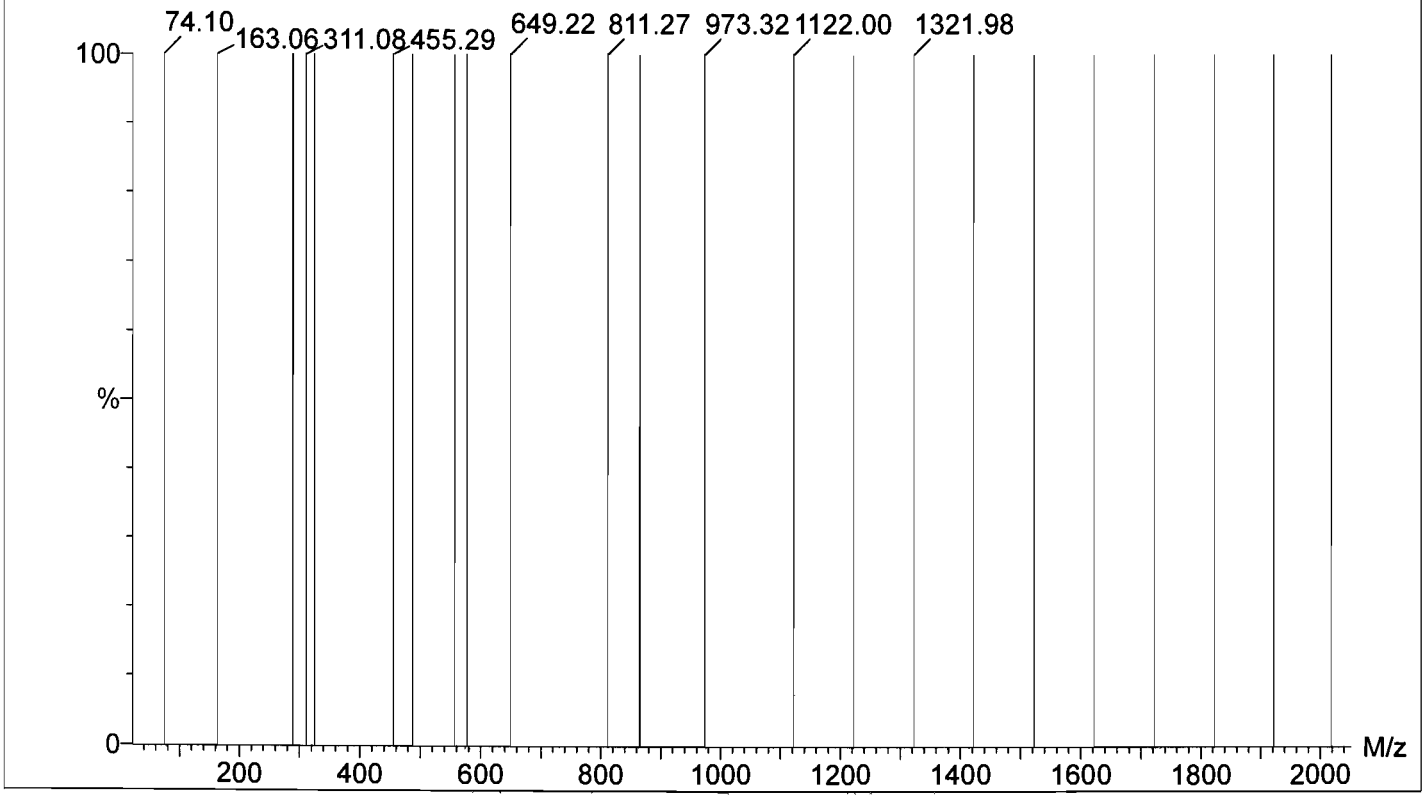
Mean residual = 0.0608 amu



Data file: SCNMS1V - Calibrated 23 matches of 23 tested references

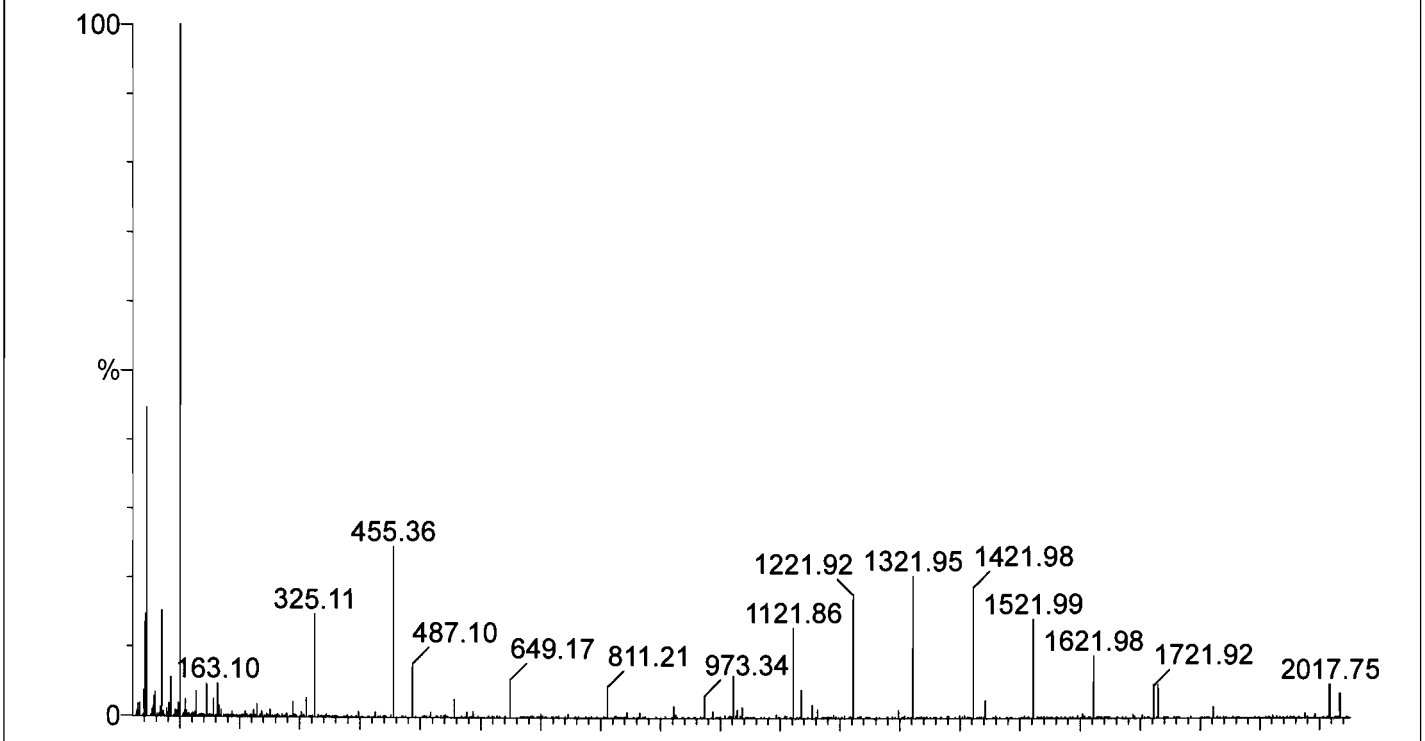


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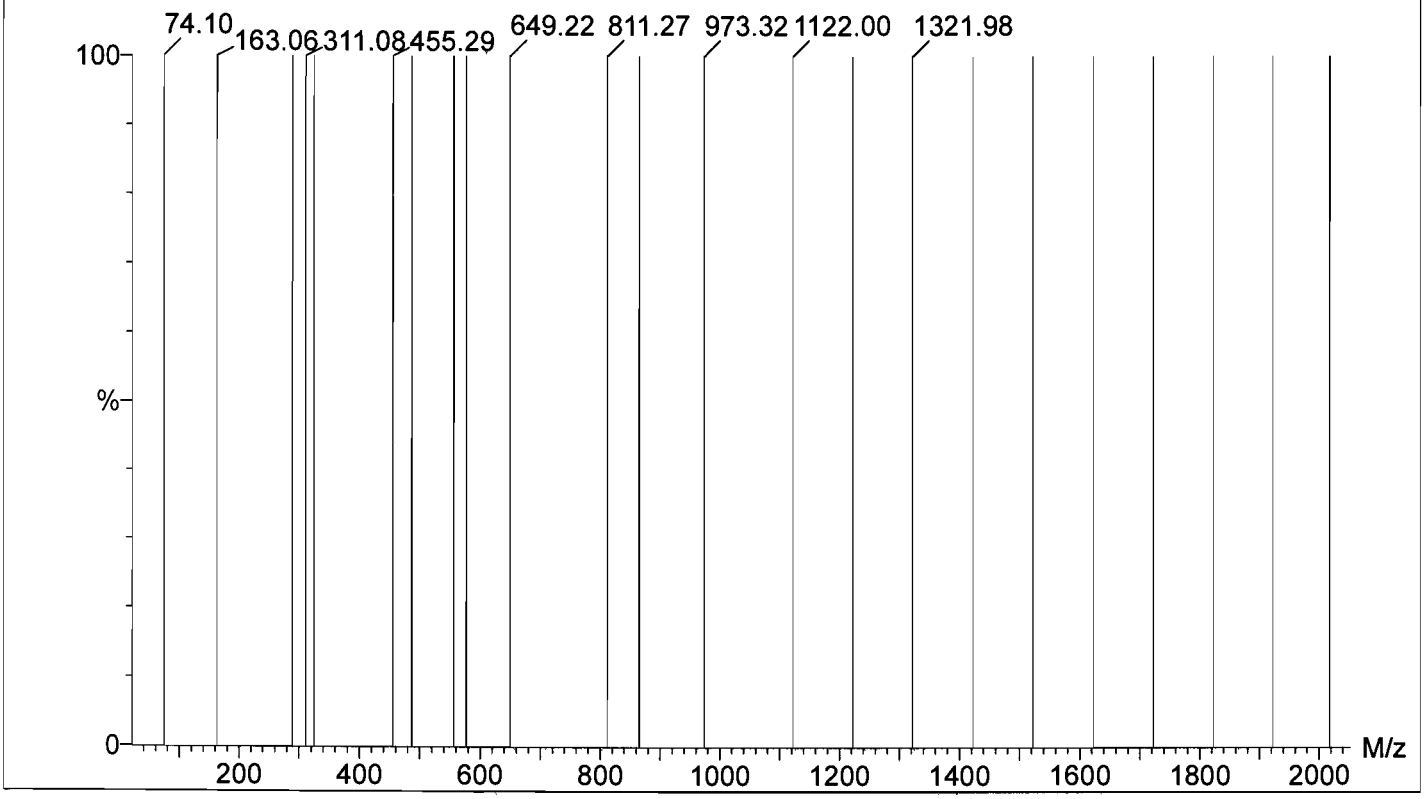


Printed: **Mon Jul 08 09:03:16 2019**

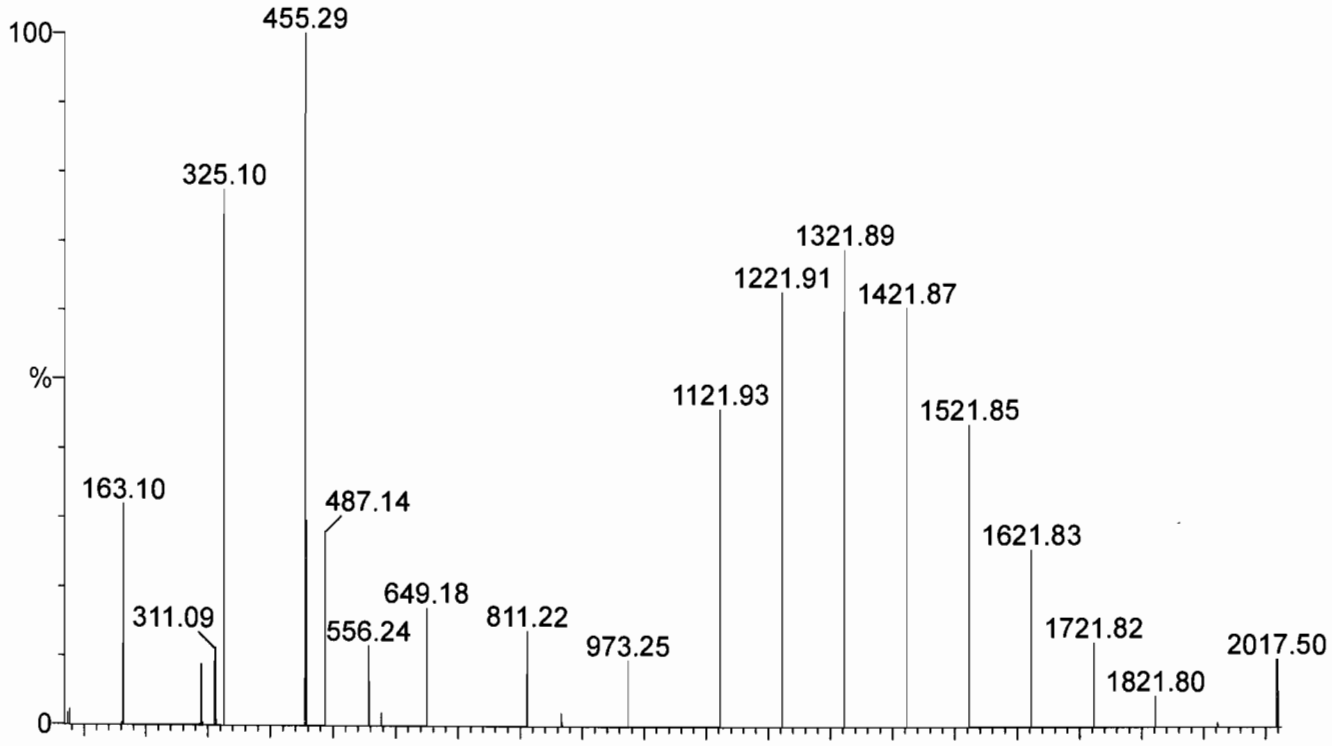
Data file: FASTMS1V - Calibrated 23 matches of 23 tested references



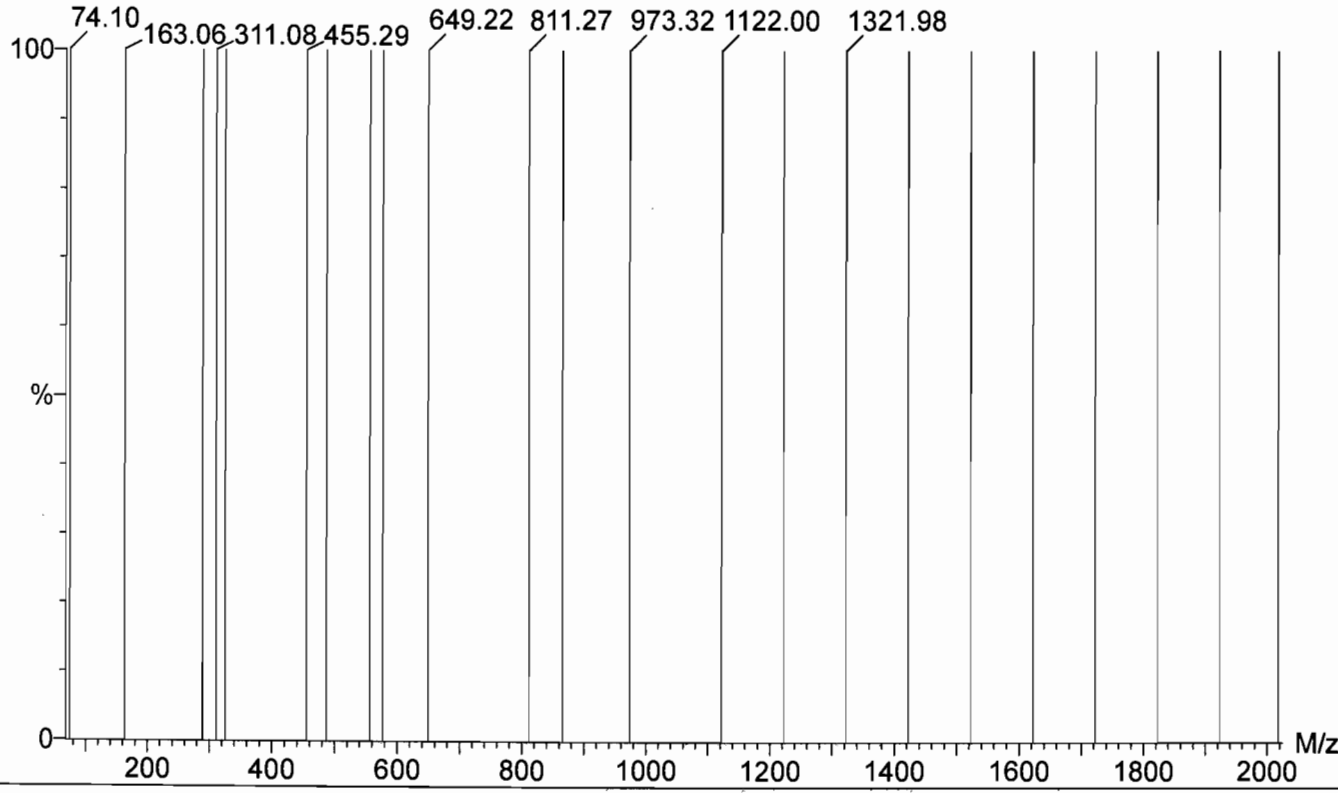
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.063 amu



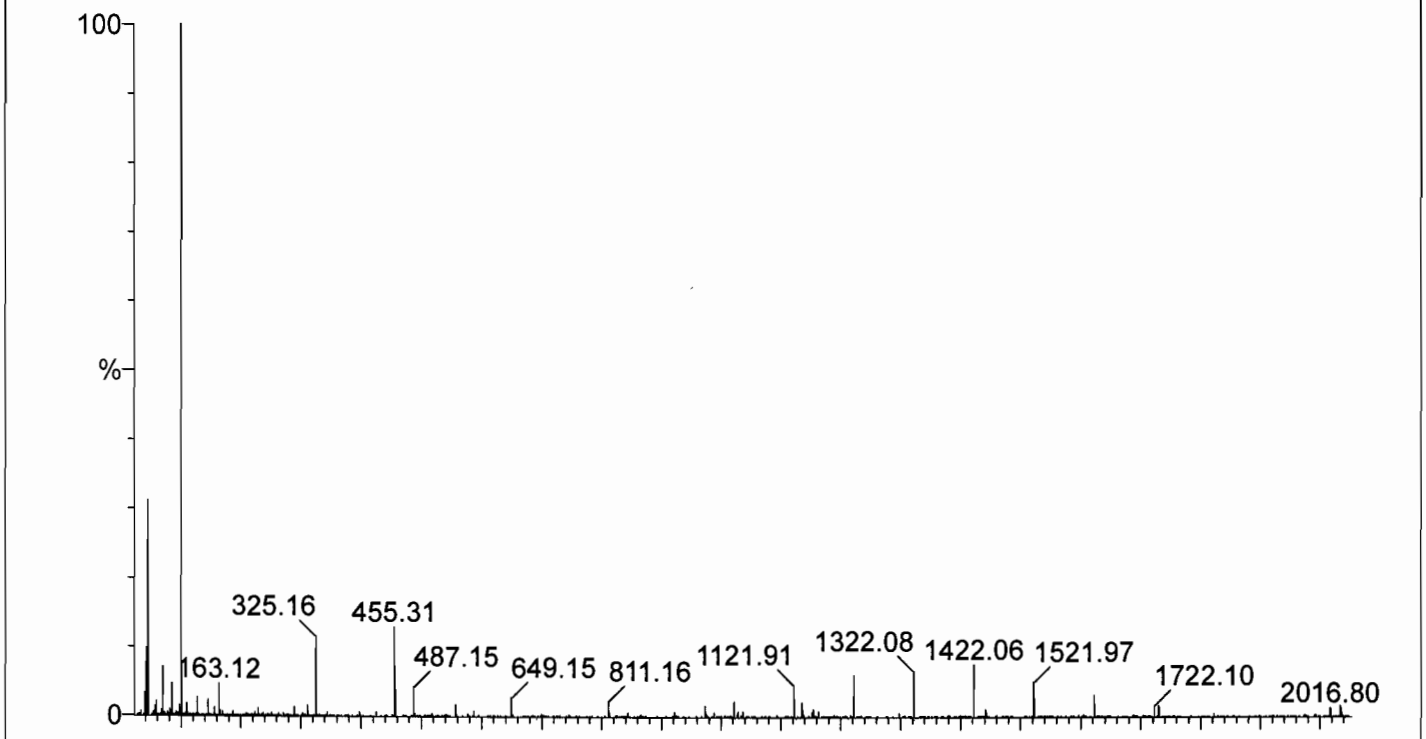
Data file: STATMS2V - Calibrated 22 matches of 23 tested references



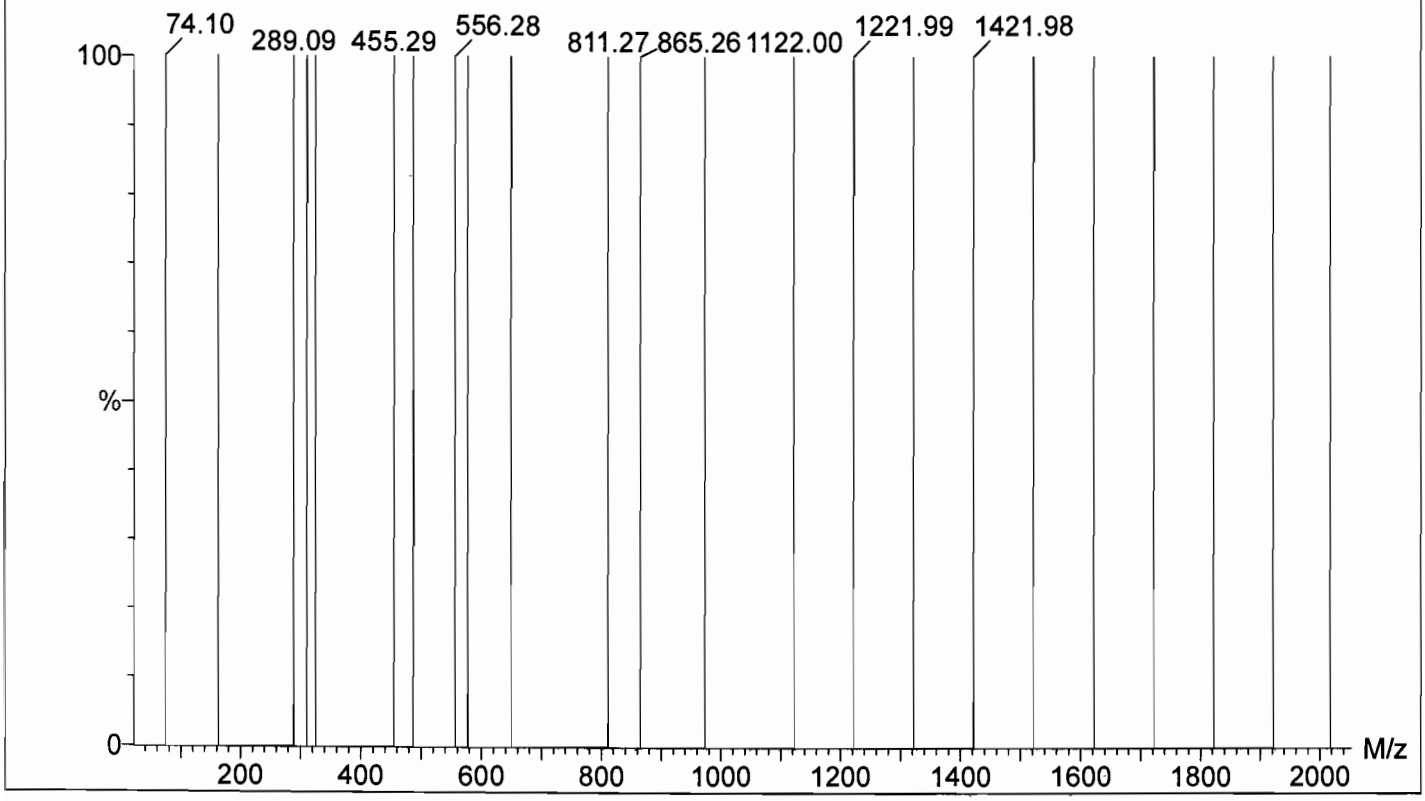
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0718 amu



Data file: SCNMS2V - Calibrated 23 matches of 23 tested references

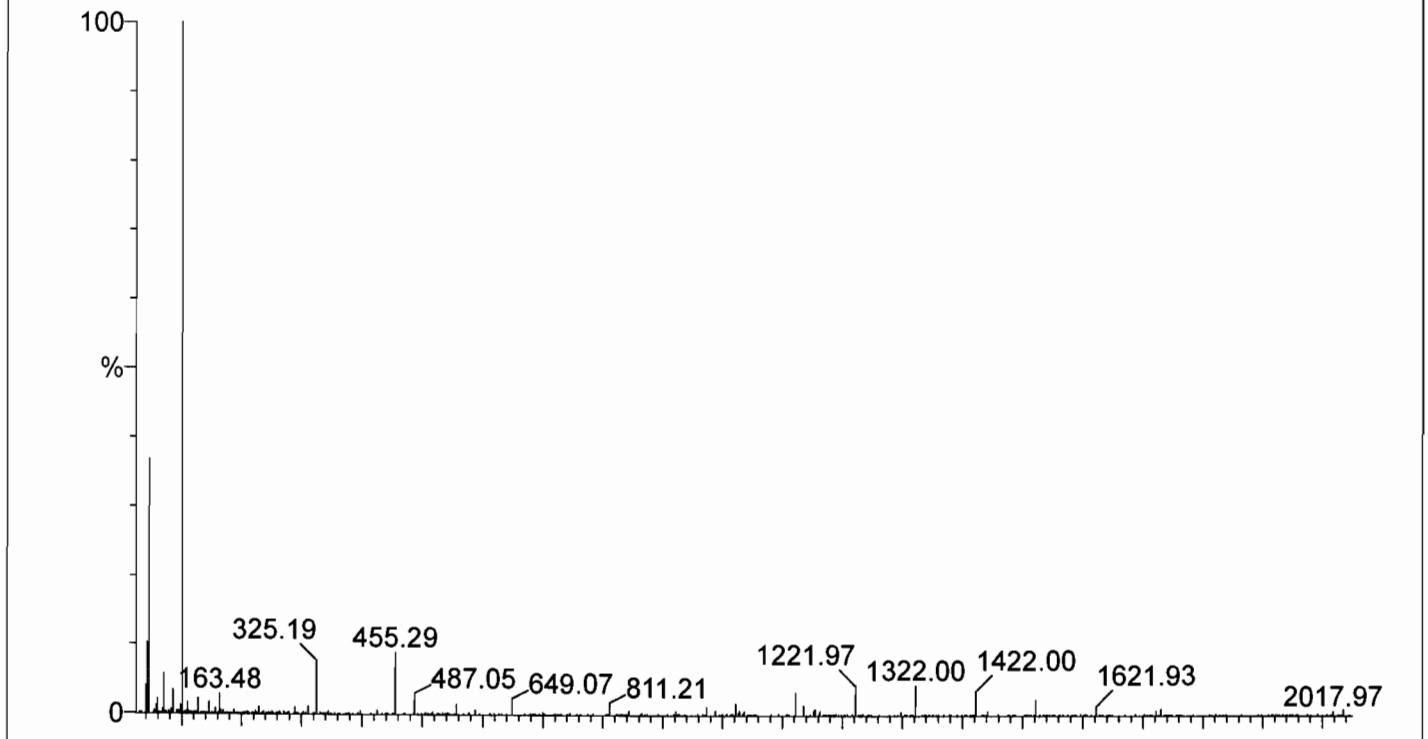


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.117 amu

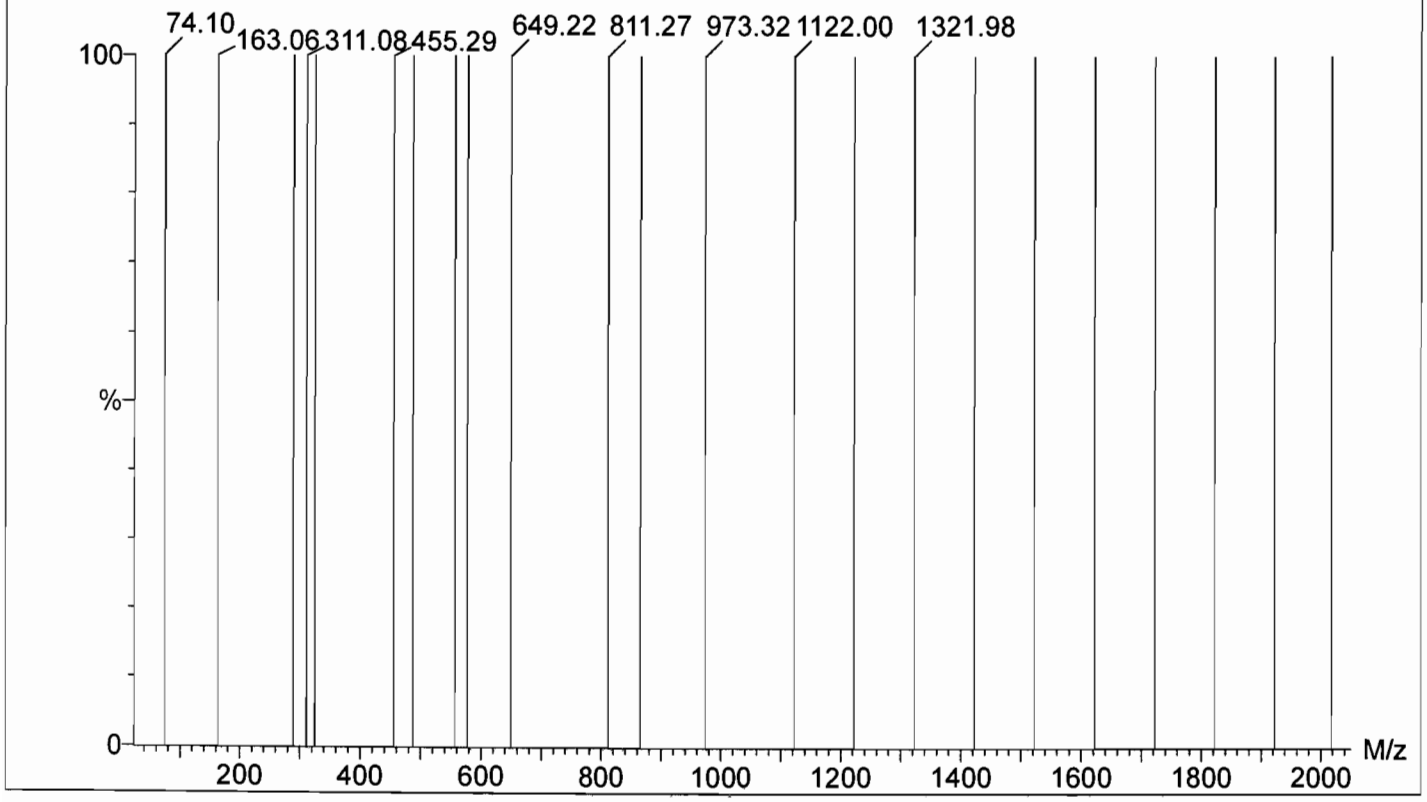


Printed: **Mon Jul 08 09:06:58 2019**

Data file: FASTMS2V - Calibrated 23 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.112 amu



Q4(M) 07-09-19

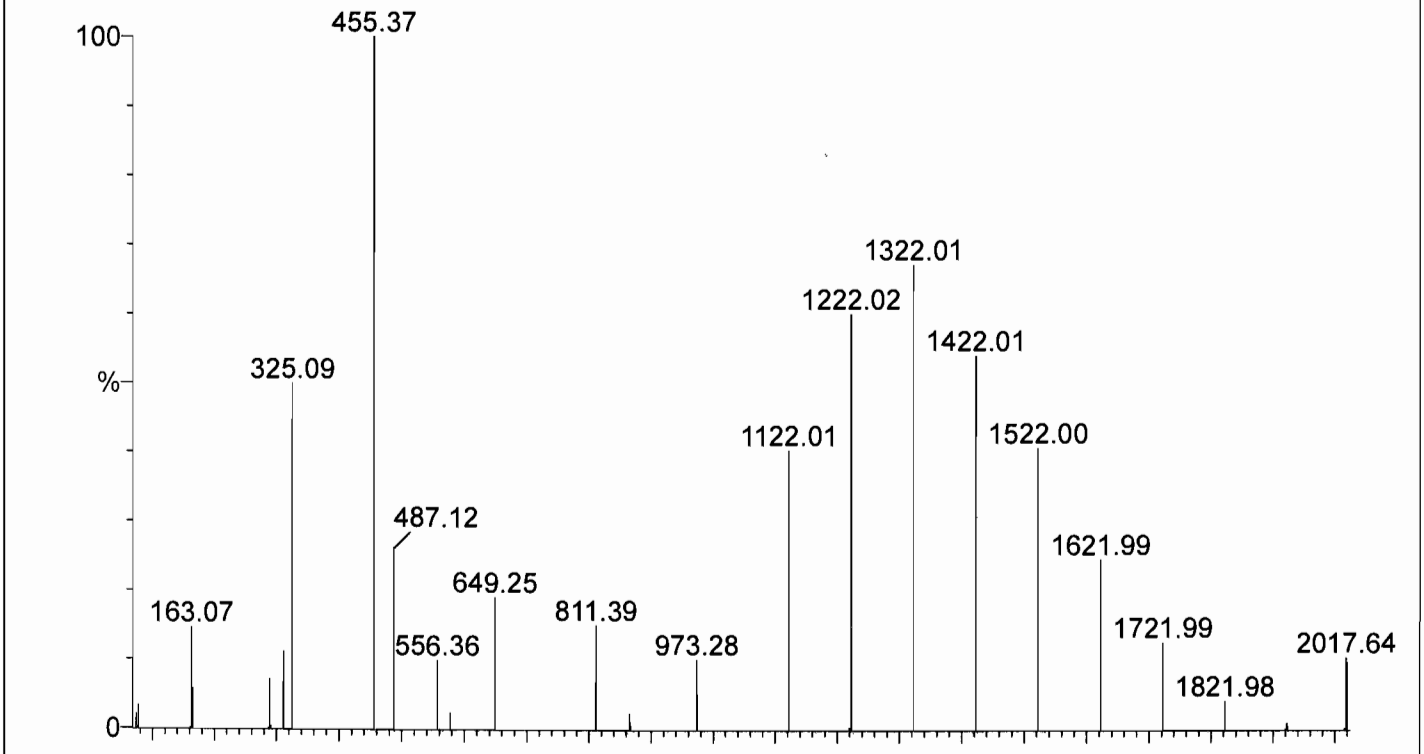
07/03/18 CAH 7/9/19

Calibration Verification Report - MS1 Static

Printed: **Tue Jul 09 07:34:33 2019**

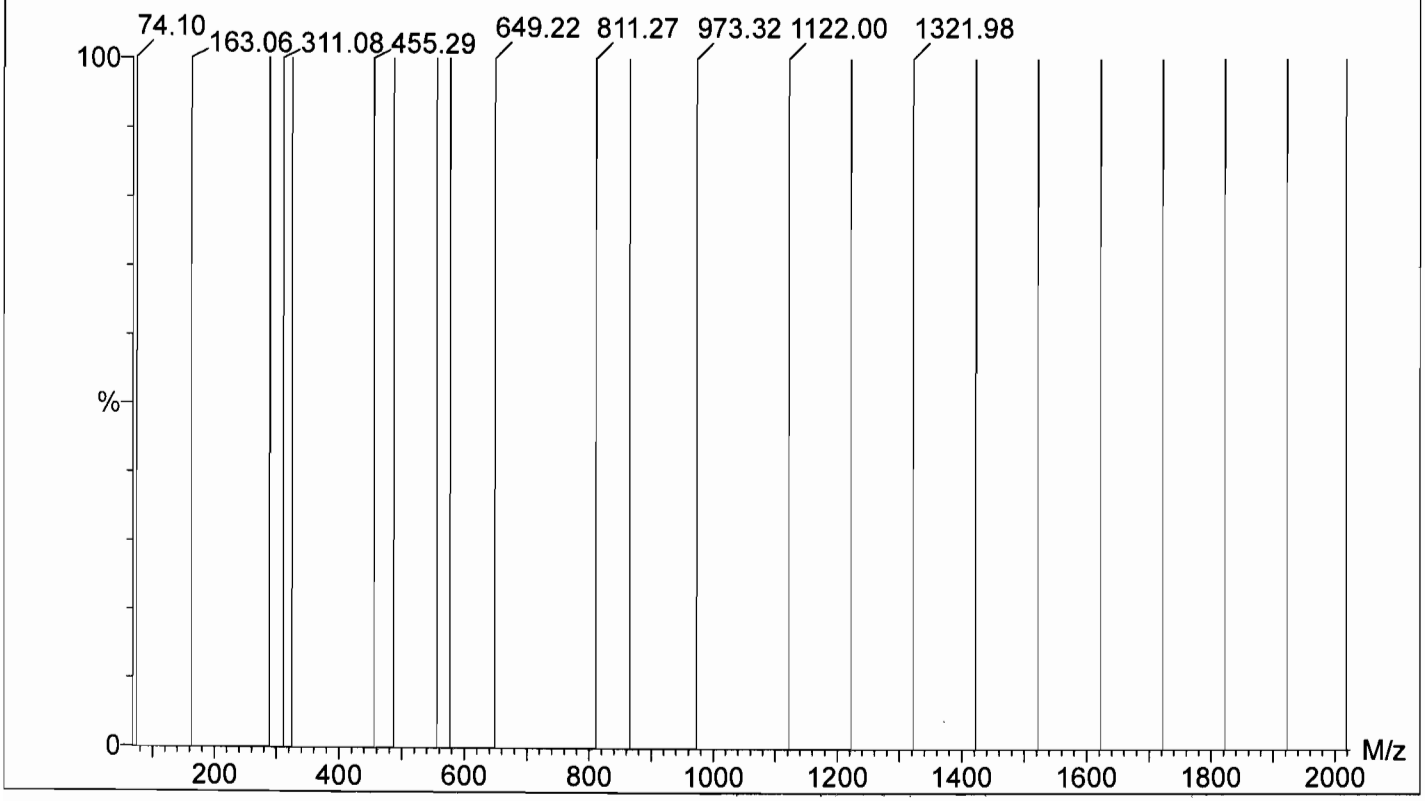
Data file: STATMS1V - Calibrated

23 matches of 23 tested references

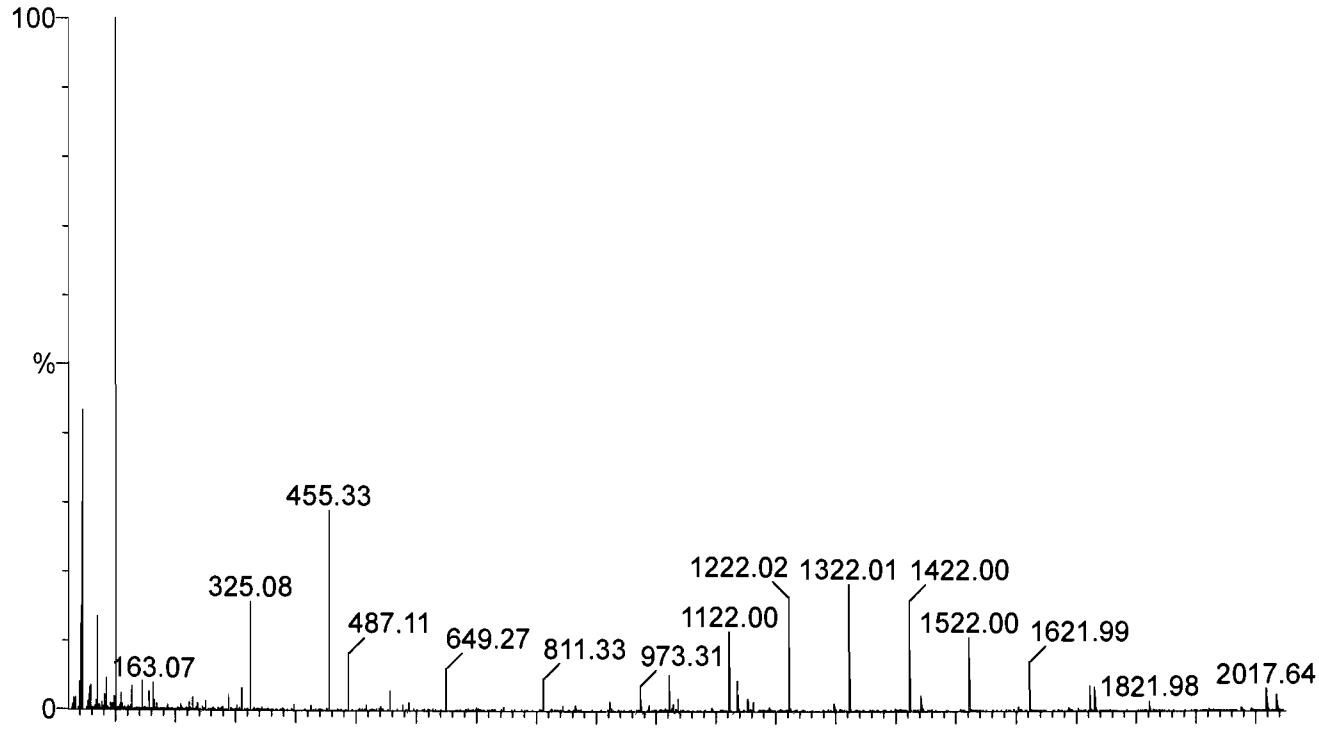


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

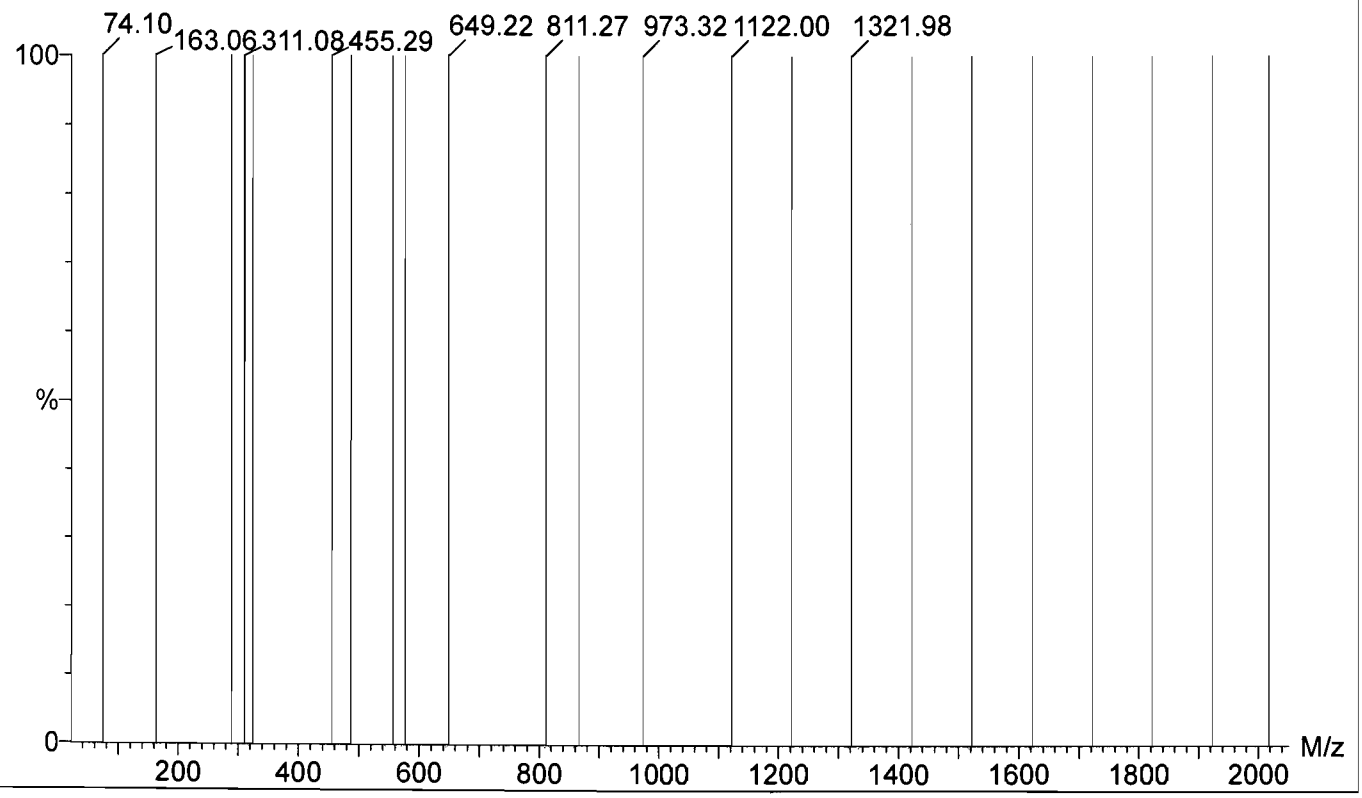
Mean residual = 0.0405 amu



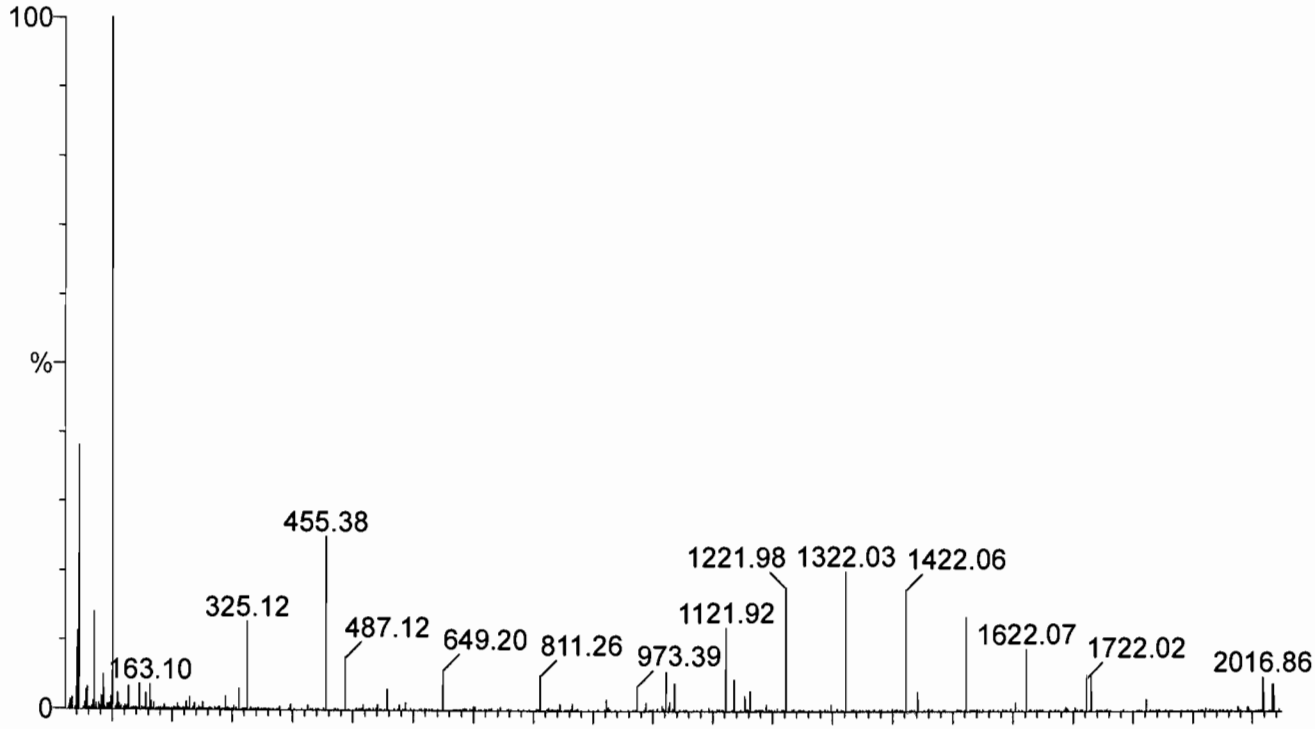
Data file: SCNMS1V - Calibrated 23 matches of 23 tested references



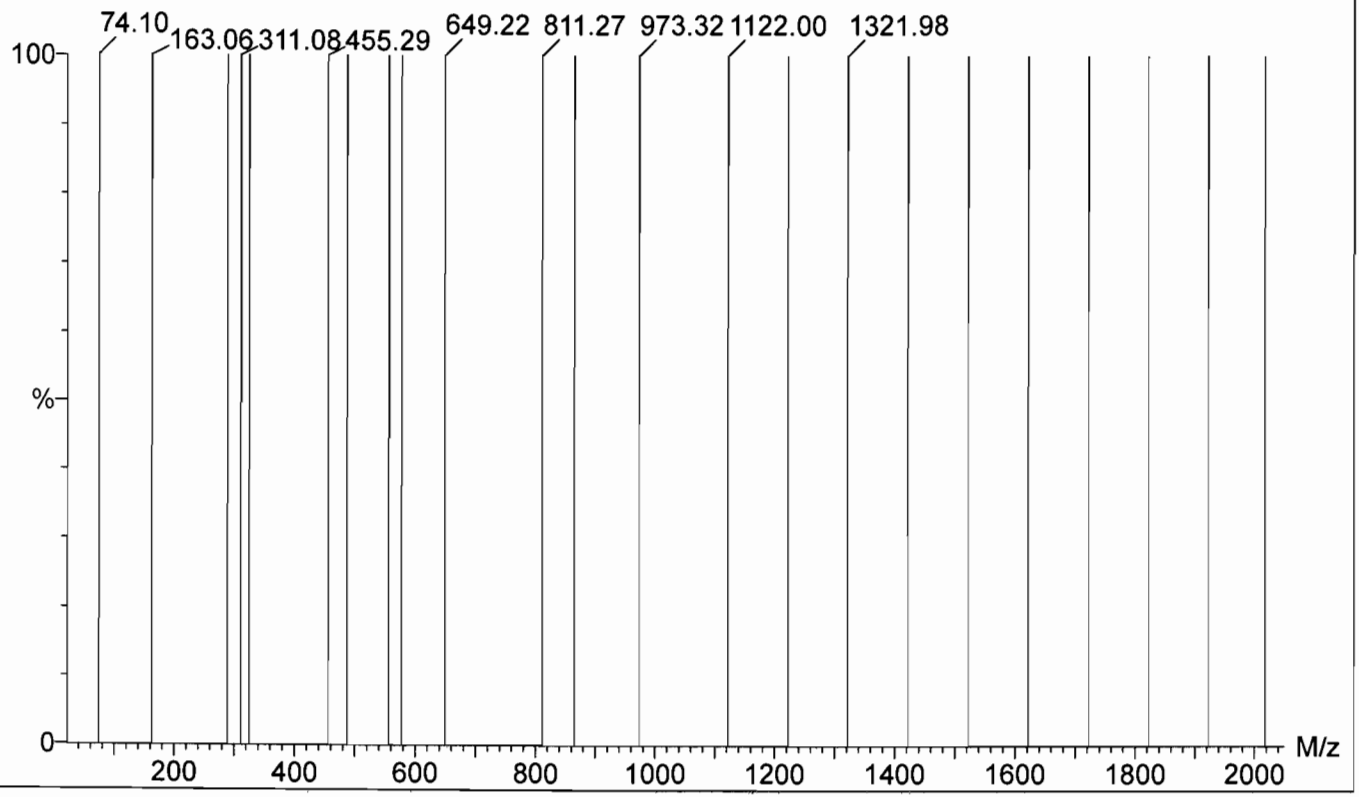
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0356 amu



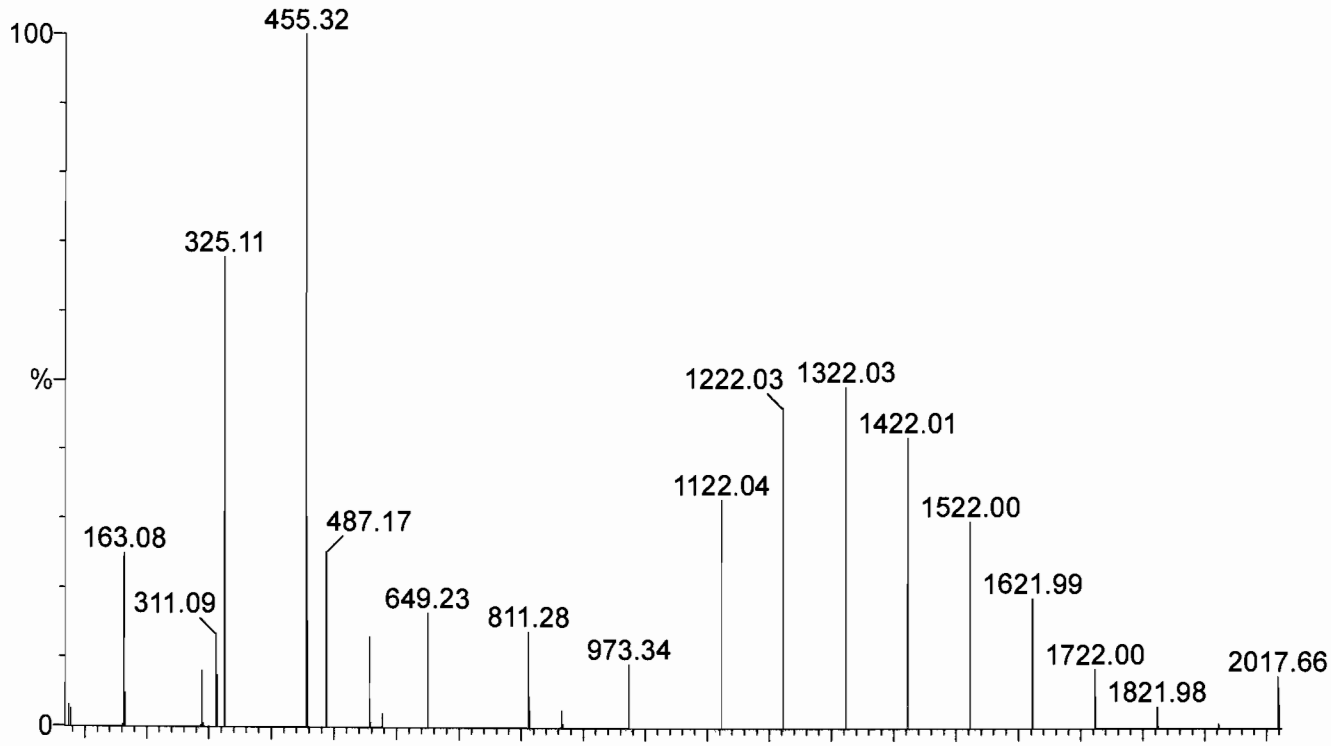
Data file: FASTMS1V - Calibrated 22 matches of 23 tested references



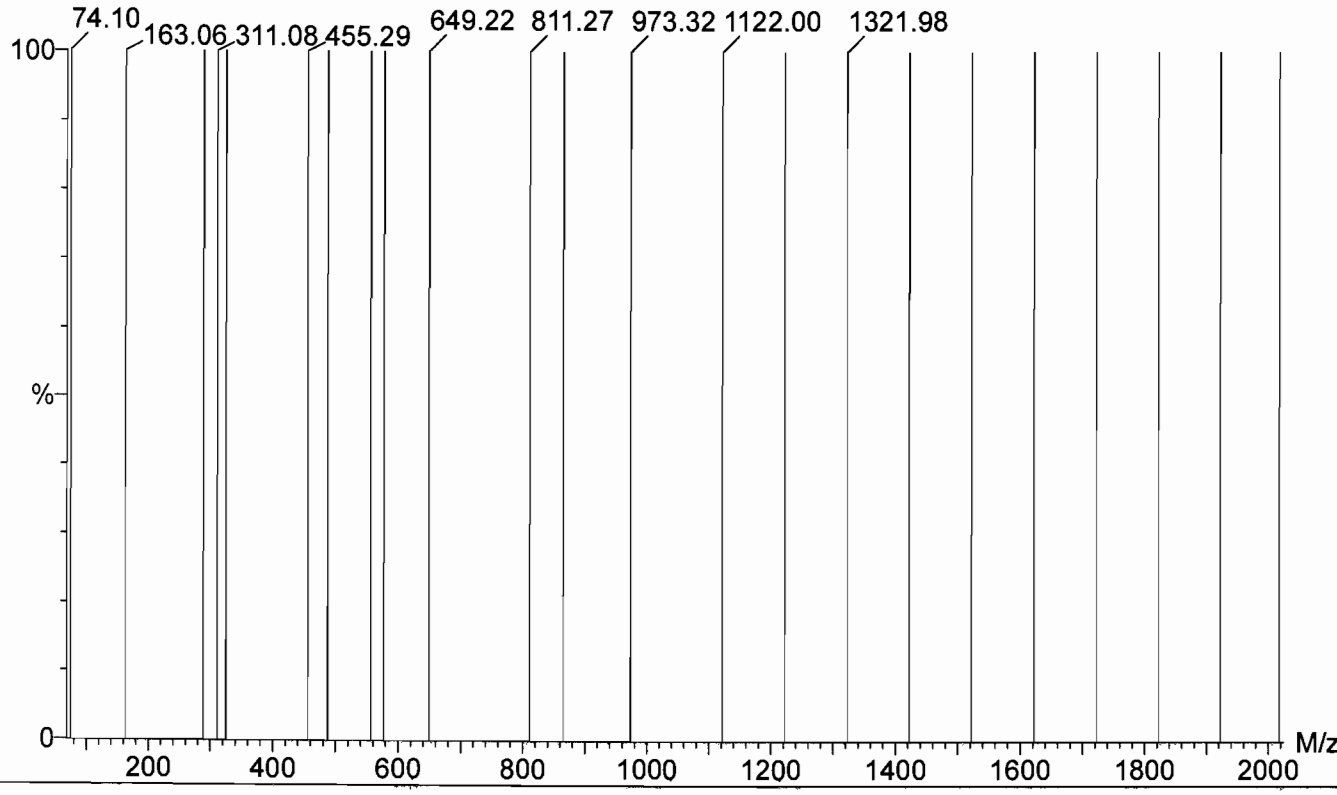
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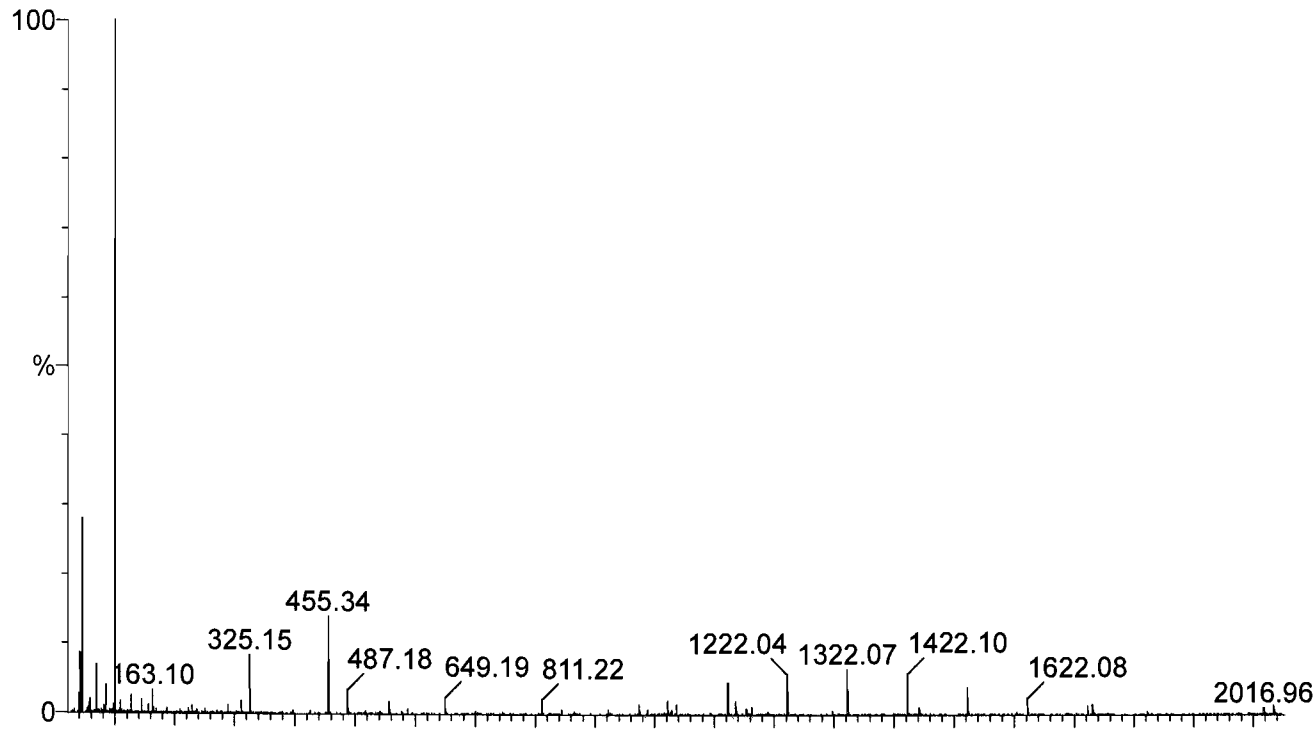
Data file: STATMS2V - Calibrated 22 matches of 23 tested references



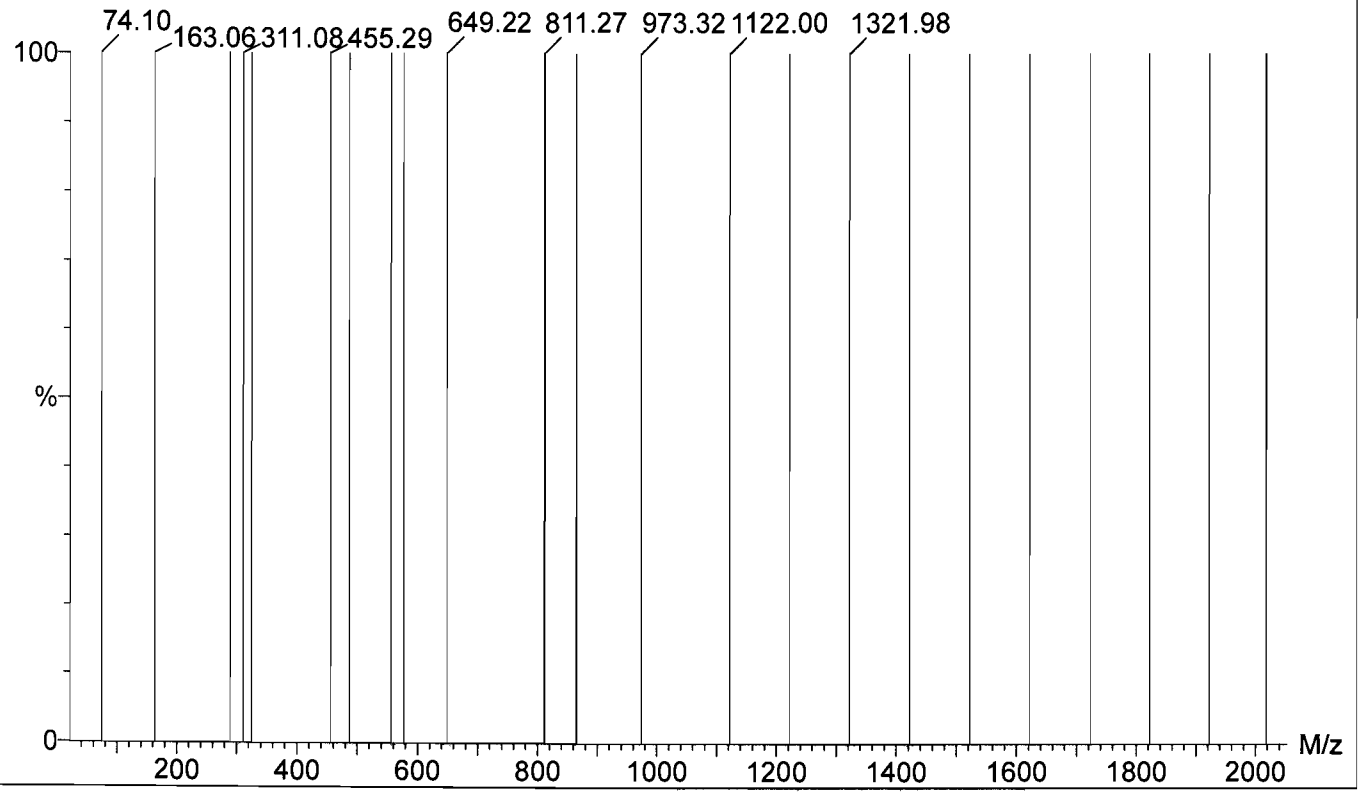
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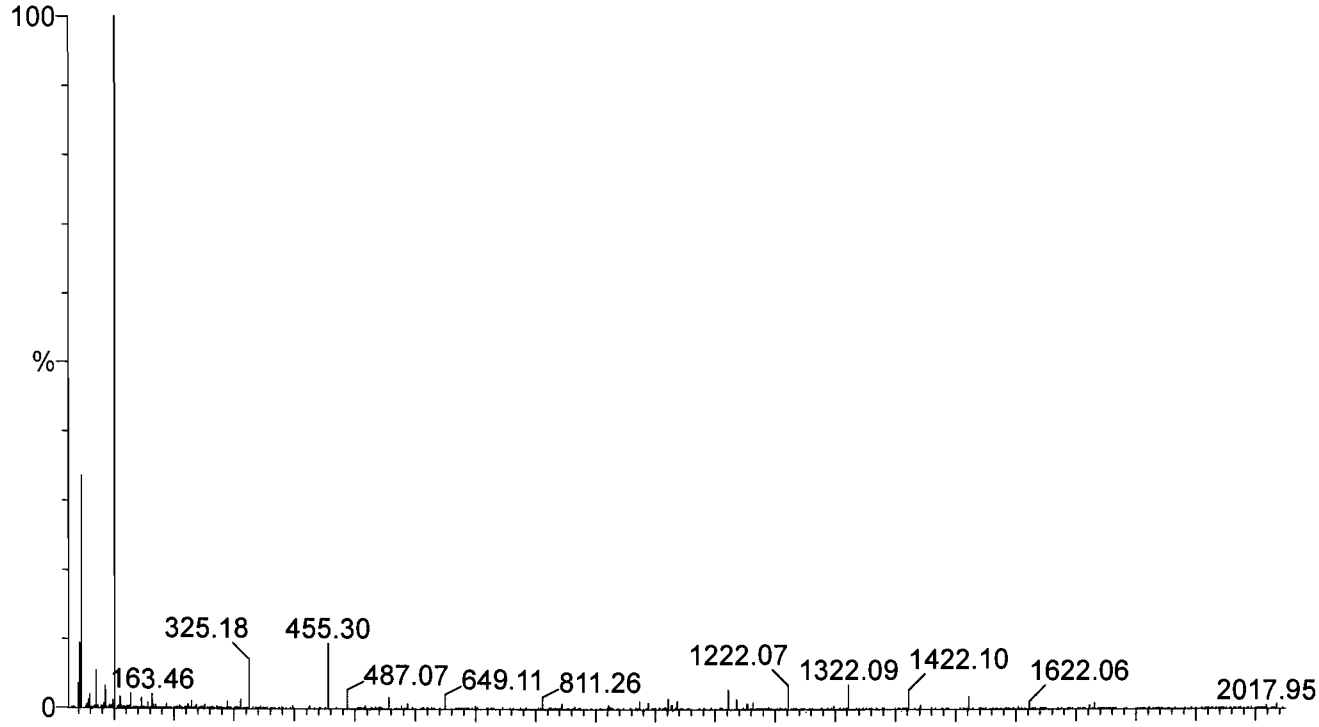
Data file: SCNMS2V - Calibrated 23 matches of 23 tested references



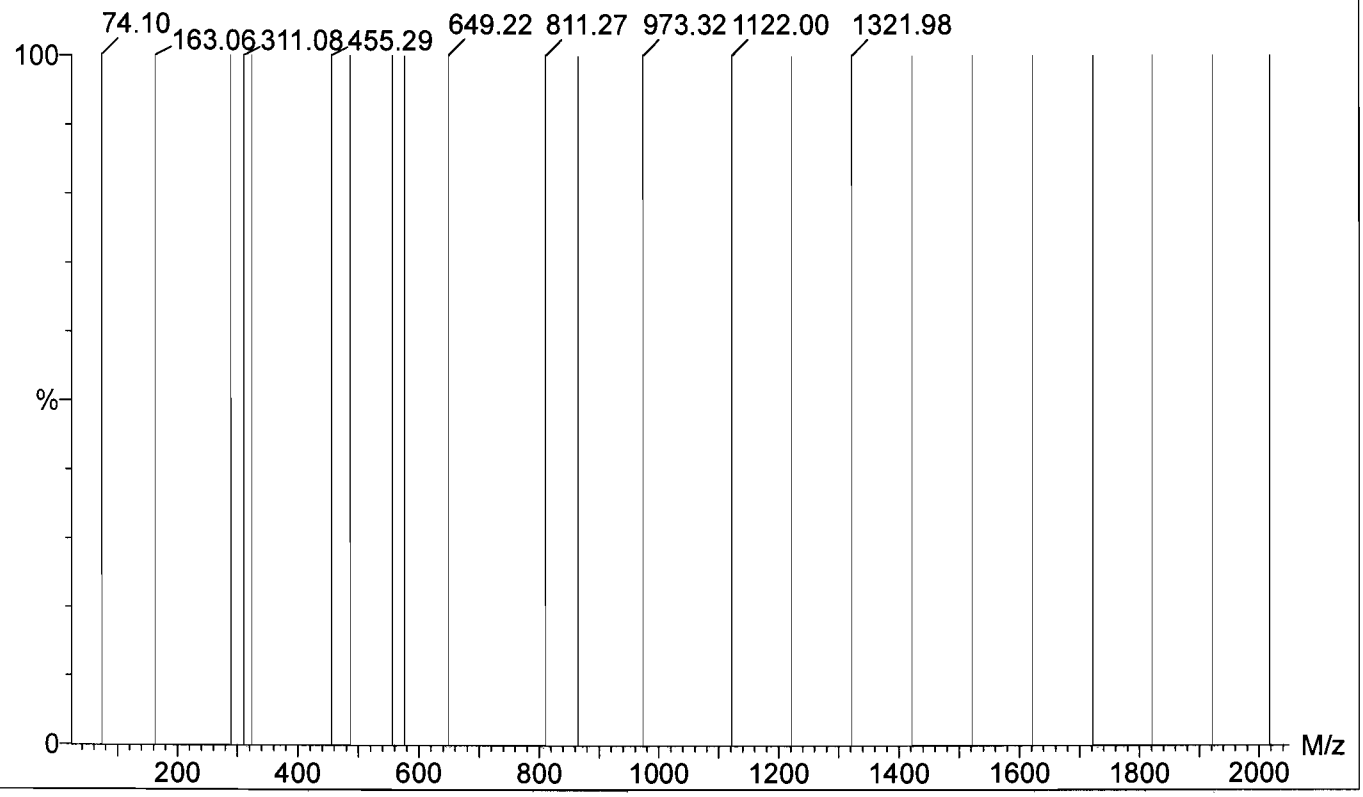
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Data file: FASTMS2V - Calibrated 22 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.104 amu



Q4_07-12-19

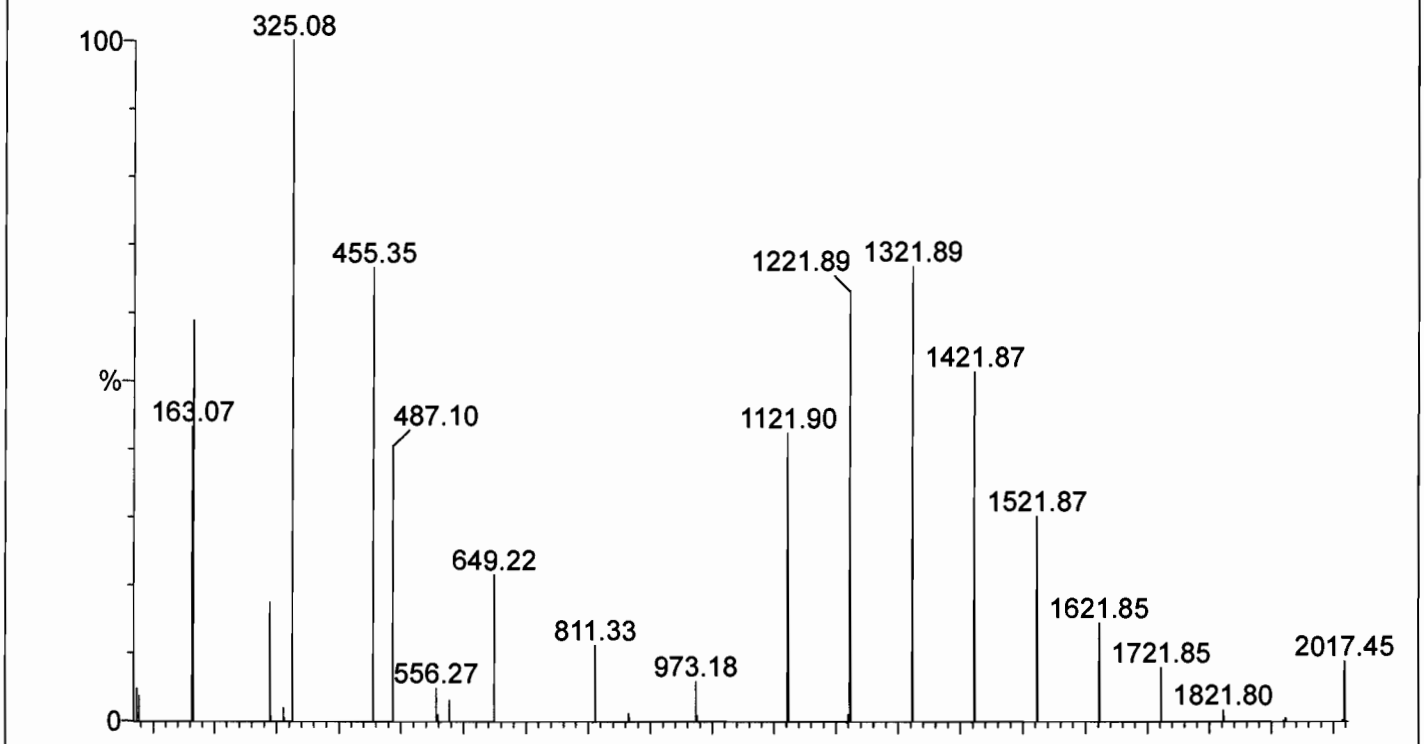
07/03/19 Cal 7/9/19

Calibration Verification Report - MS1 Static

Printed: **Fri Jul 12 10:05:31 2019**

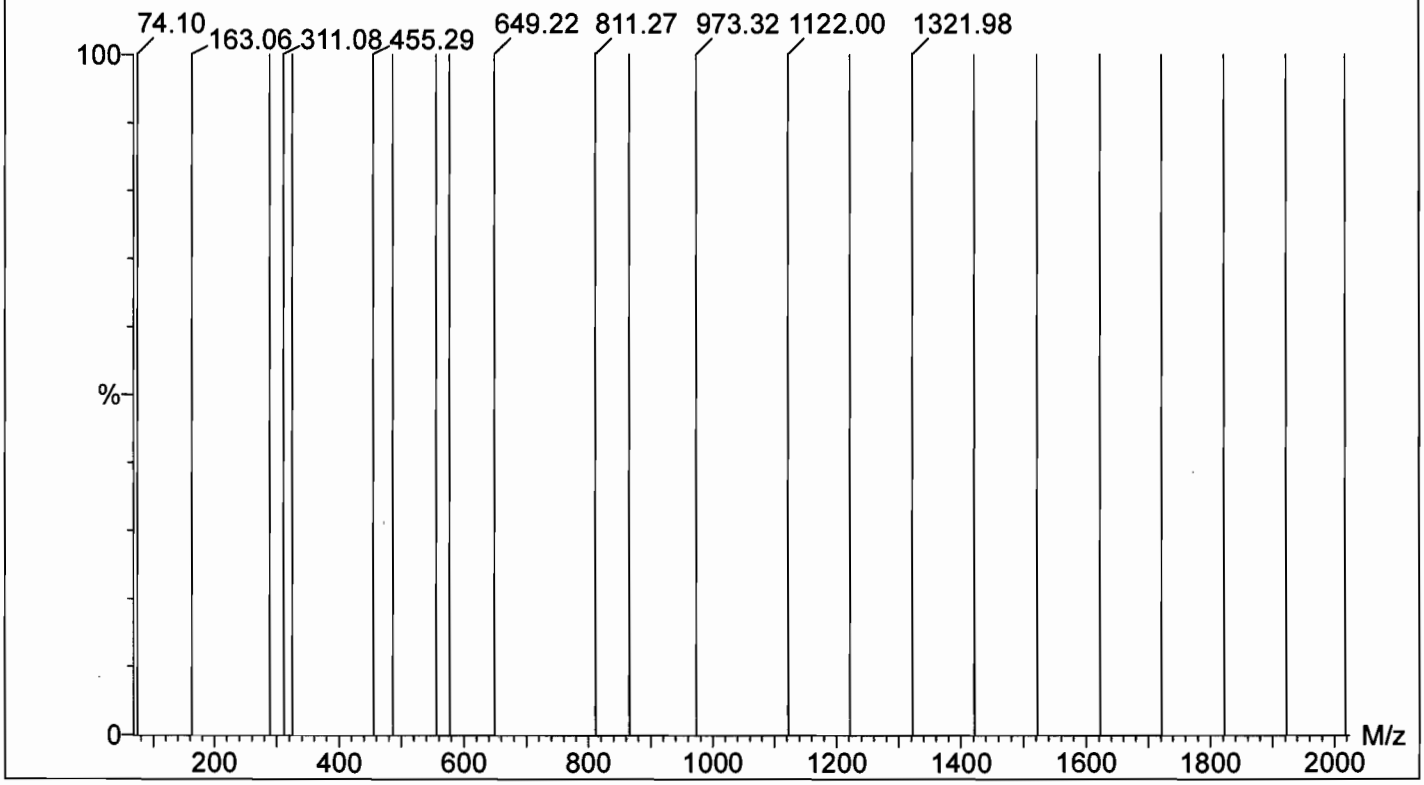
Data file: STATMS1V - Calibrated

22 matches of 23 tested references

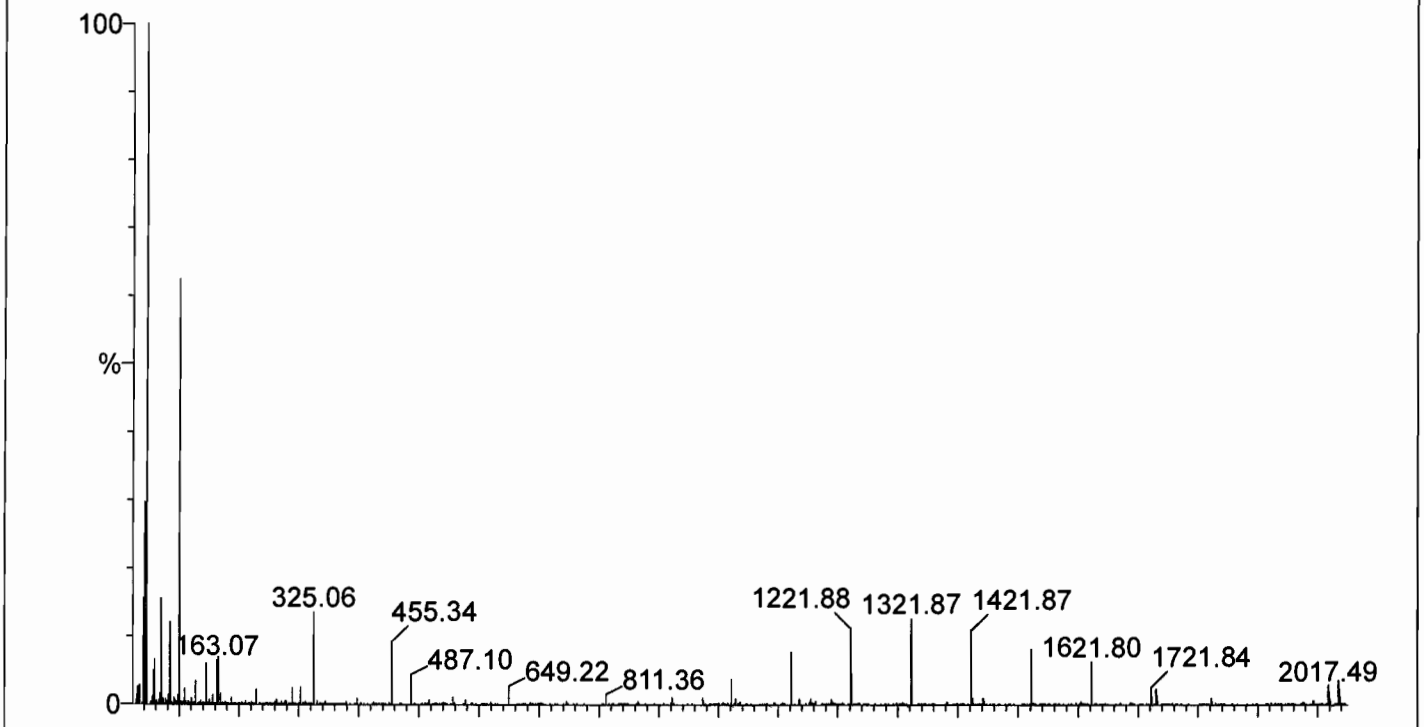


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

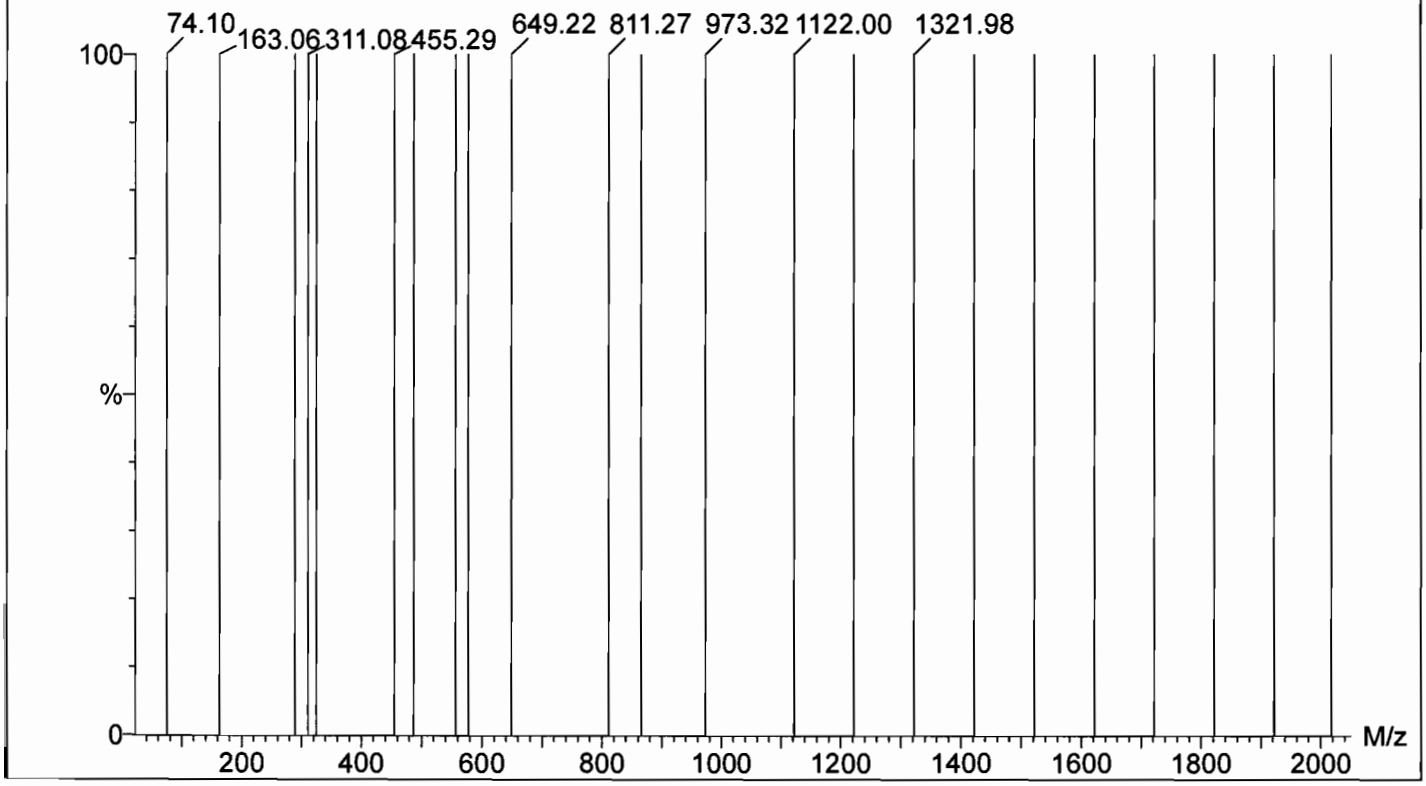
Mean residual = 0.0841 amu



Data file: SCNMS1V - Calibrated 23 matches of 23 tested references

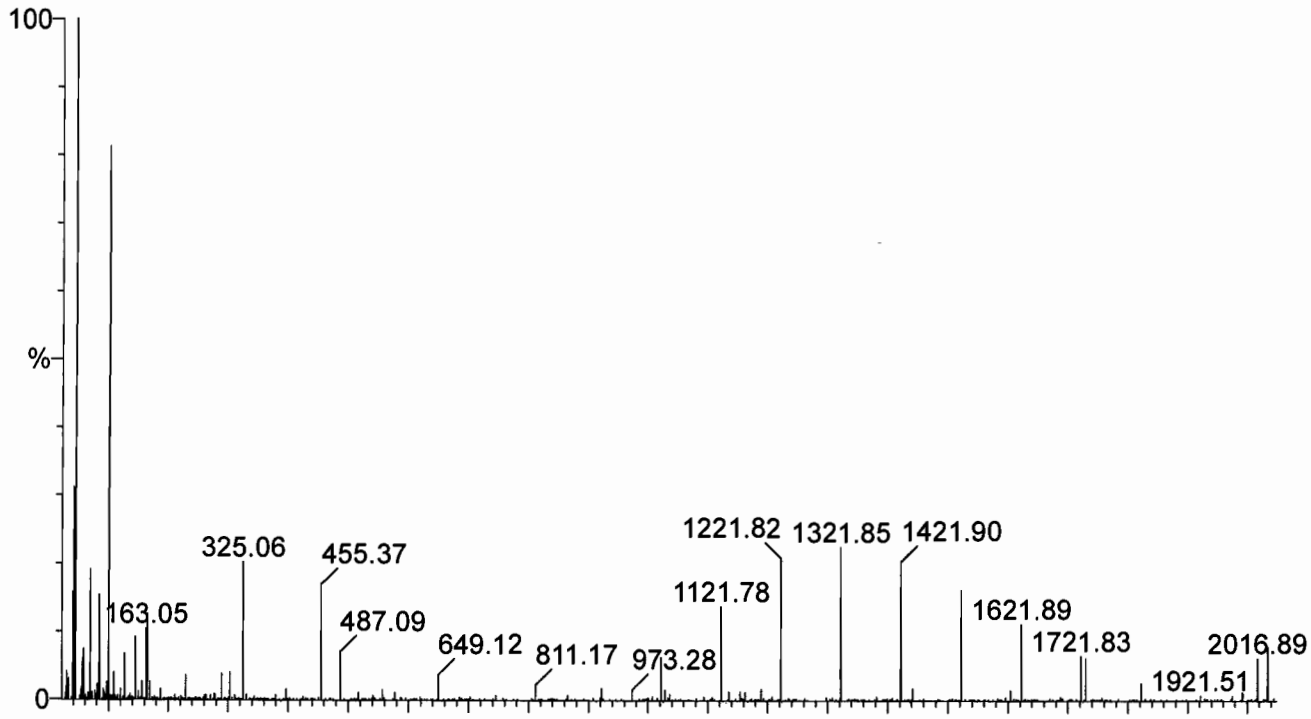


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0782 amu

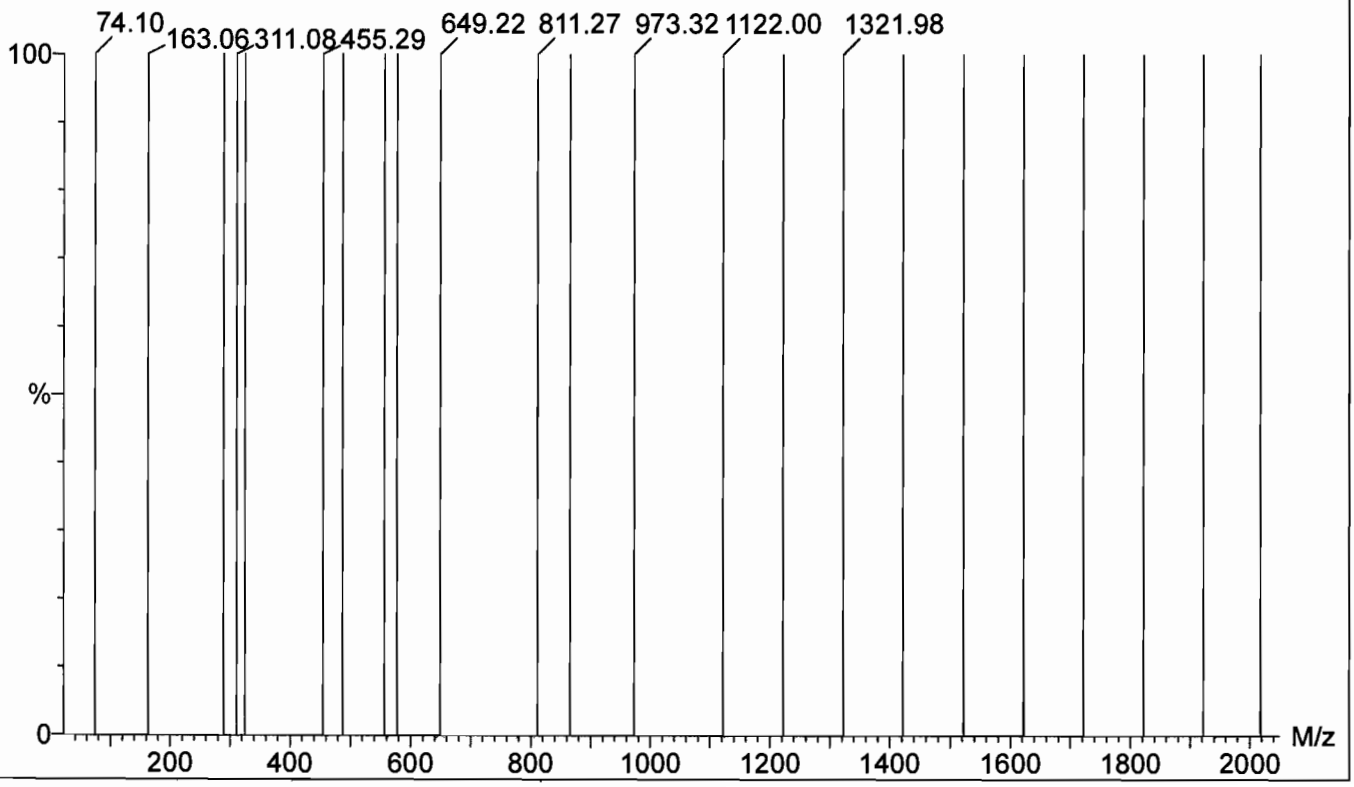


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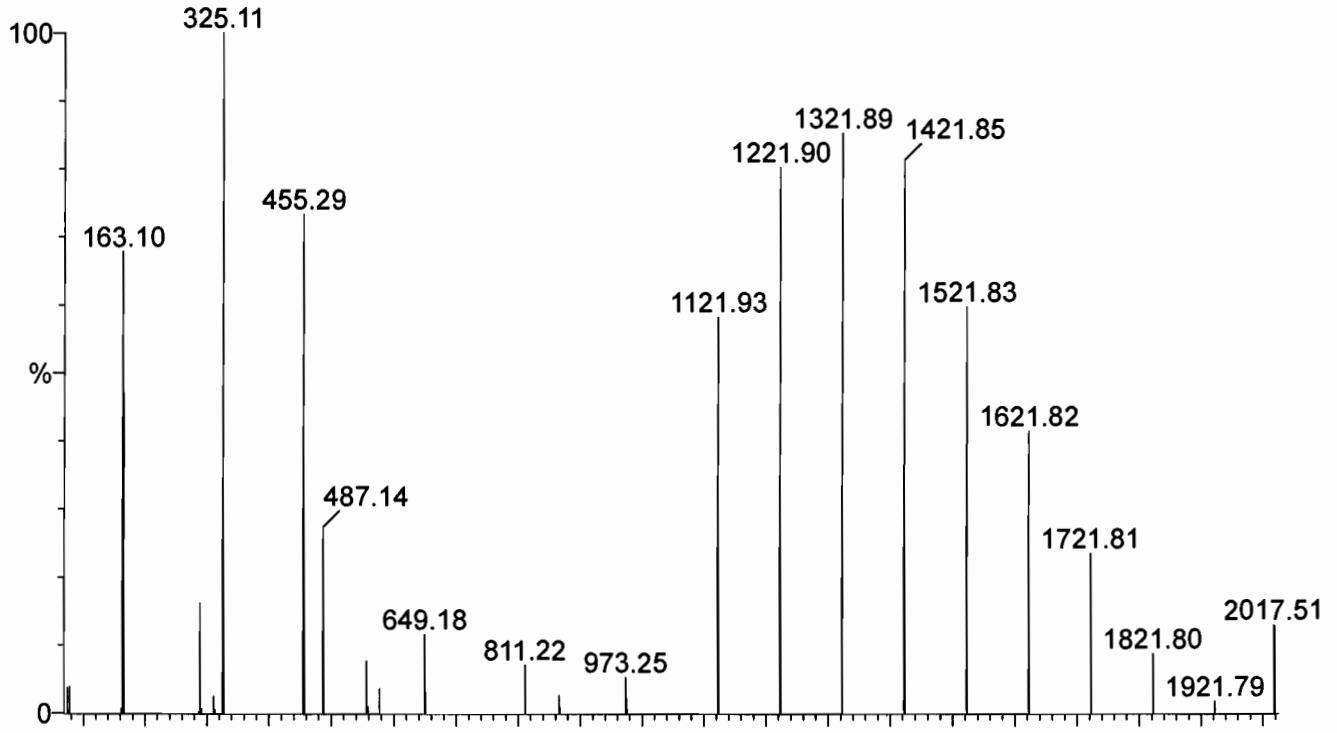
Data file: FASTMS1V - Calibrated 22 matches of 23 tested references



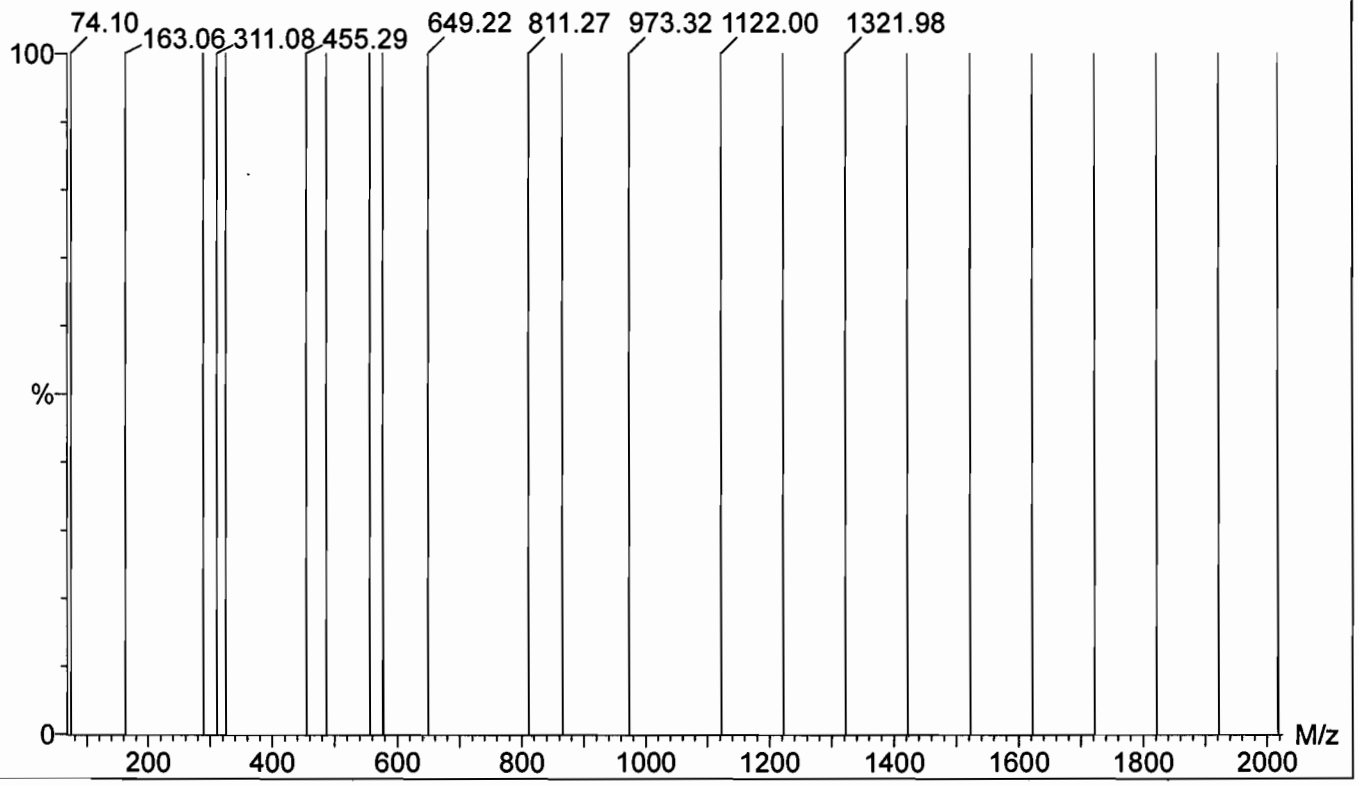
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Data file: STATMS2V - Calibrated 23 matches of 23 tested references

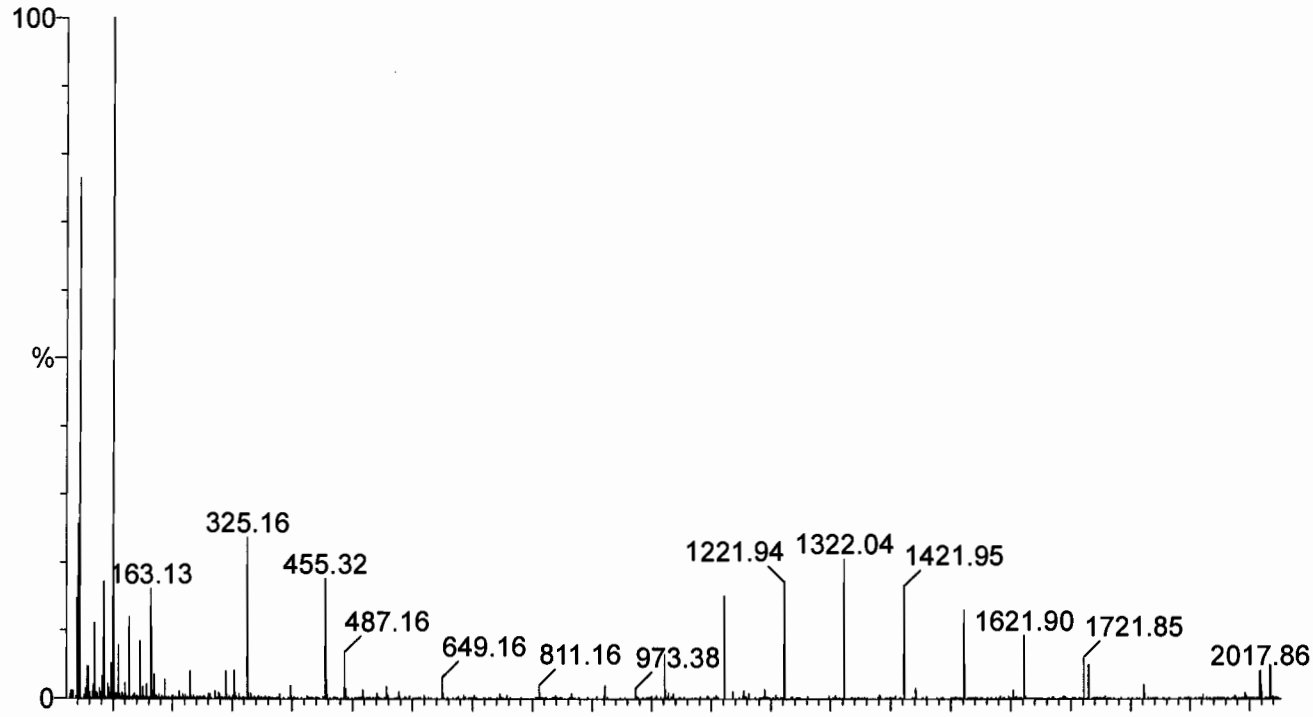


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0721 amu

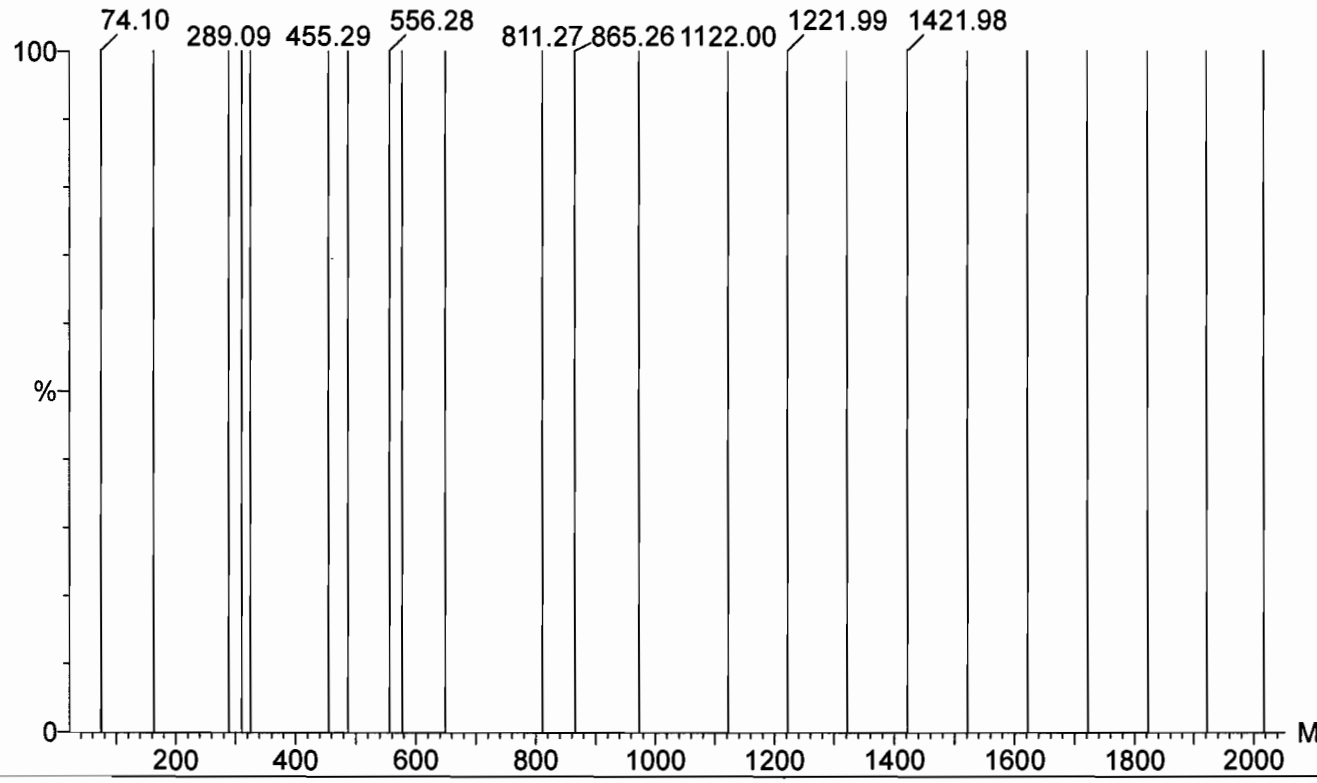


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Data file: SCNMS2V - Calibrated 23 matches of 23 tested references

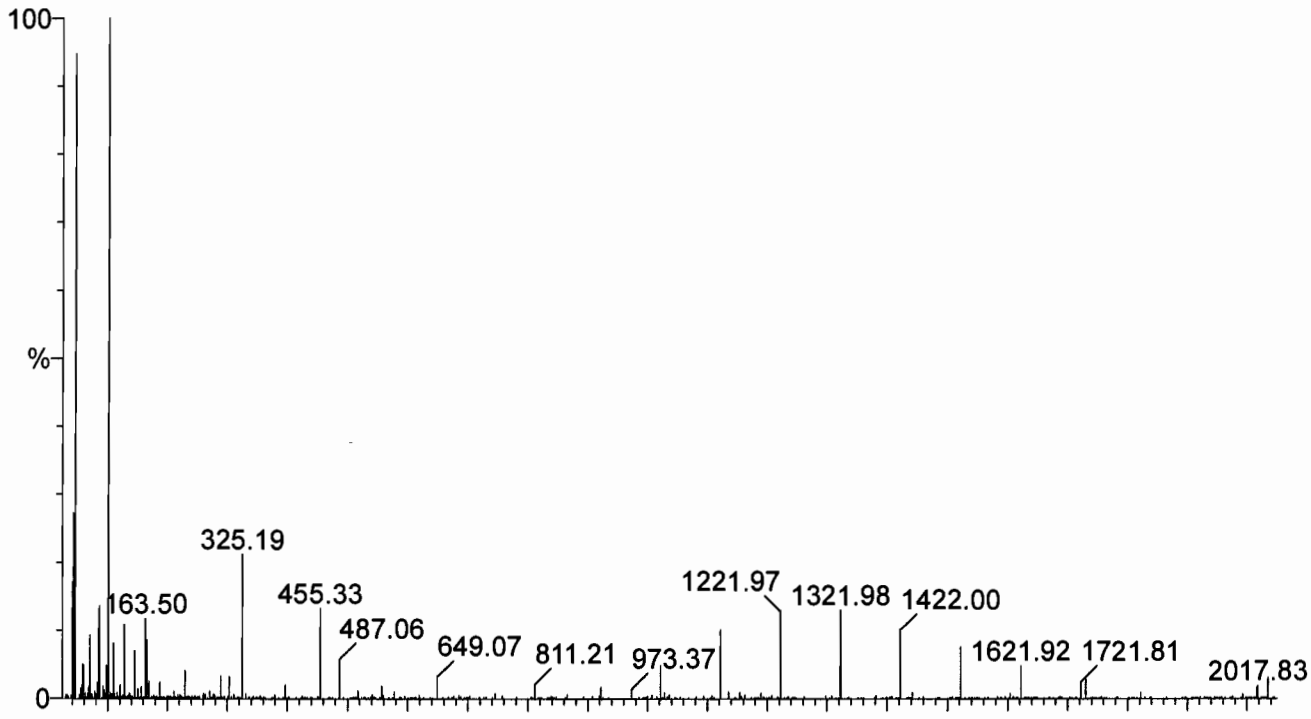


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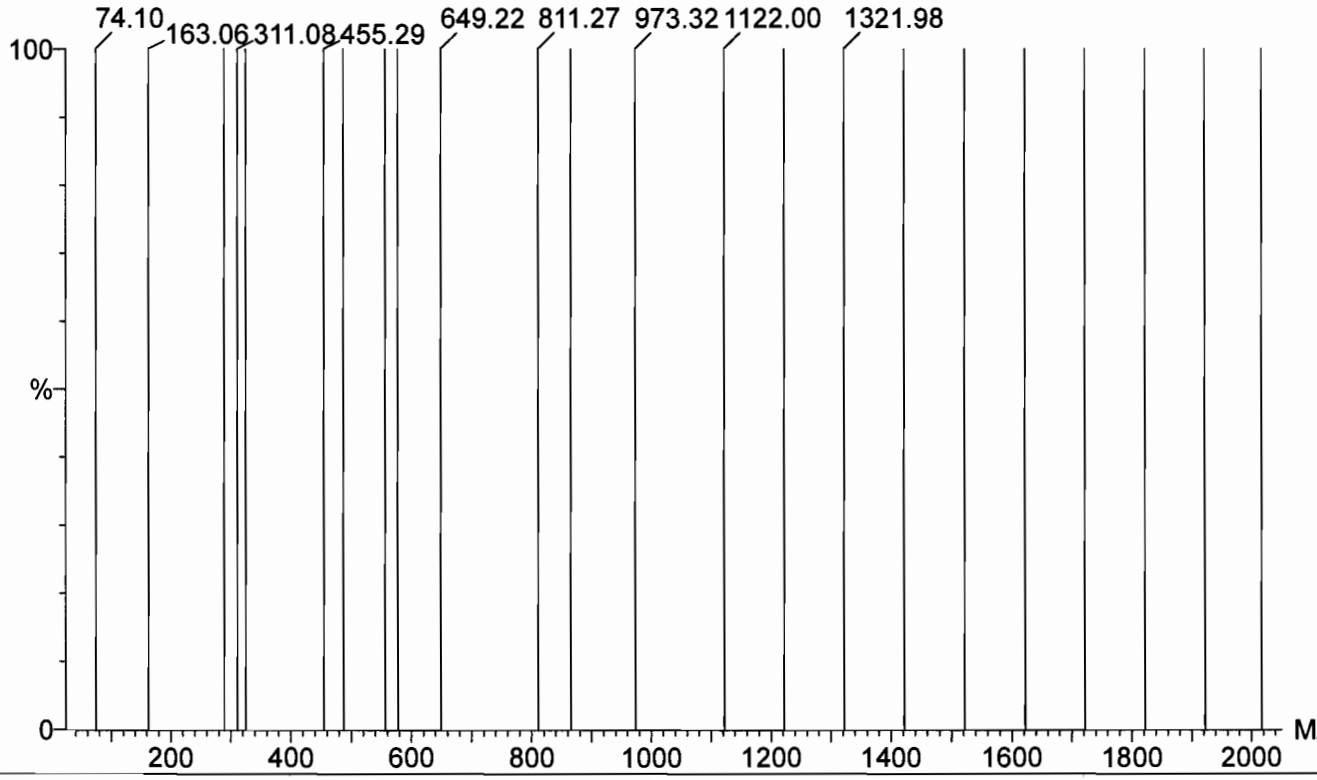


Printed: **Fri Jul 12 10:11:34 2019**

Data file: FASTMS2V - Calibrated 23 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.123 amu



STANDARDS

Analytical Standard Record

Vista Analytical Laboratory

19E2201

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
18L2001	13C2-4:2 FTS	20-Dec-18	** Vendor **	01-Sep-22	1.07
18L2002	13C2-6:2 FTS	20-Dec-18	** Vendor **	22-Nov-23	1.05
18L2003	13C2-8:2 FTS	20-Dec-18	** Vendor **	24-Jan-23	1.04
18L2004	13C3-PFBA	20-Dec-18	** Vendor **	14-Dec-22	1
18L2005	13C2-PFDA	20-Dec-18	** Vendor **	06-Dec-23	1
18L2006	13C2-PFUdA	20-Dec-18	** Vendor **	11-May-23	1
18L2007	13C2-PFTeDA	20-Dec-18	** Vendor **	30-Nov-22	1
18L2008	13C5-PFNA	20-Dec-18	** Vendor **	14-Dec-22	1
18L2009	13C2-PFDoA	20-Dec-18	** Vendor **	16-Feb-23	1
18L2010	13C4-PFHpA	20-Dec-18	** Vendor **	06-Jul-23	1
18L2011	13C2-PFOA	20-Dec-18	** Vendor **	10-Oct-23	1
18L2012	13C3-PFPeA	20-Dec-18	** Vendor **	20-Apr-22	1
18L2013	13C8-FOSA-I	20-Dec-18	** Vendor **	10-Oct-23	1
18L2014	d3-N-Me-FOSAA	20-Dec-18	** Vendor **	23-Aug-23	1
18L2015	d5-N-EtFOSAA	20-Dec-18	** Vendor **	23-Aug-23	1
18L2016	13C3-PFBS	20-Dec-18	** Vendor **	10-Dec-23	1.075
18L2017	13C8-PFOS	20-Dec-18	** Vendor **	20-Sep-23	1.045
18L2019	13C2-PFHxA	20-Dec-18	** Vendor **	22-May-23	0.4
18L2020	13C2-PFHxDA	20-Dec-18	** Vendor **	11-Oct-23	0.4
18L2027	13C3-PFHxS	20-Dec-18	** Vendor **	20-Jun-23	1.06
18L2077	13C3-HFPO-DA	20-Dec-18	** Vendor **	24-Oct-21	1

Description:	PFC - IS	Expires:	28-May-21
Standard Type:	Reagent	Prepared:	28-May-19
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	28-May-19 09:02 by GRB

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-PFTeDA		1.25	ug/mL
13C2-4:2 FTS		1.25	ug/mL
13C3-HFPO-DA		1.25	ug/mL
d5-EtFOSAA		1.25	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

19E2201

Description:	PFC - IS	Expires:	28-May-21
Standard Type:	Reagent	Prepared:	28-May-19
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	28-May-19 09:02 by GRB

Analyte	CAS Number	Concentration	Units
13C3-PFBS		1.25	ug/mL
13C3-PFHxS		1.25	ug/mL
13C3-PFPeA		1.25	ug/mL
13C4-PFHpA		1.25	ug/mL
13C5-PFNA		1.25	ug/mL
13C8-PFOS		1.25	ug/mL
13C8-PFOSA		1.25	ug/mL
d3-MeFOSAA		1.25	ug/mL
13C2-PFUnA		1.25	ug/mL

18L2001

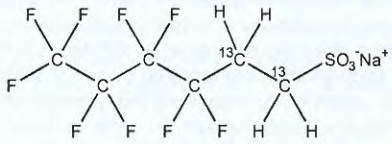
WELLINGTON LABORATORIES

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).

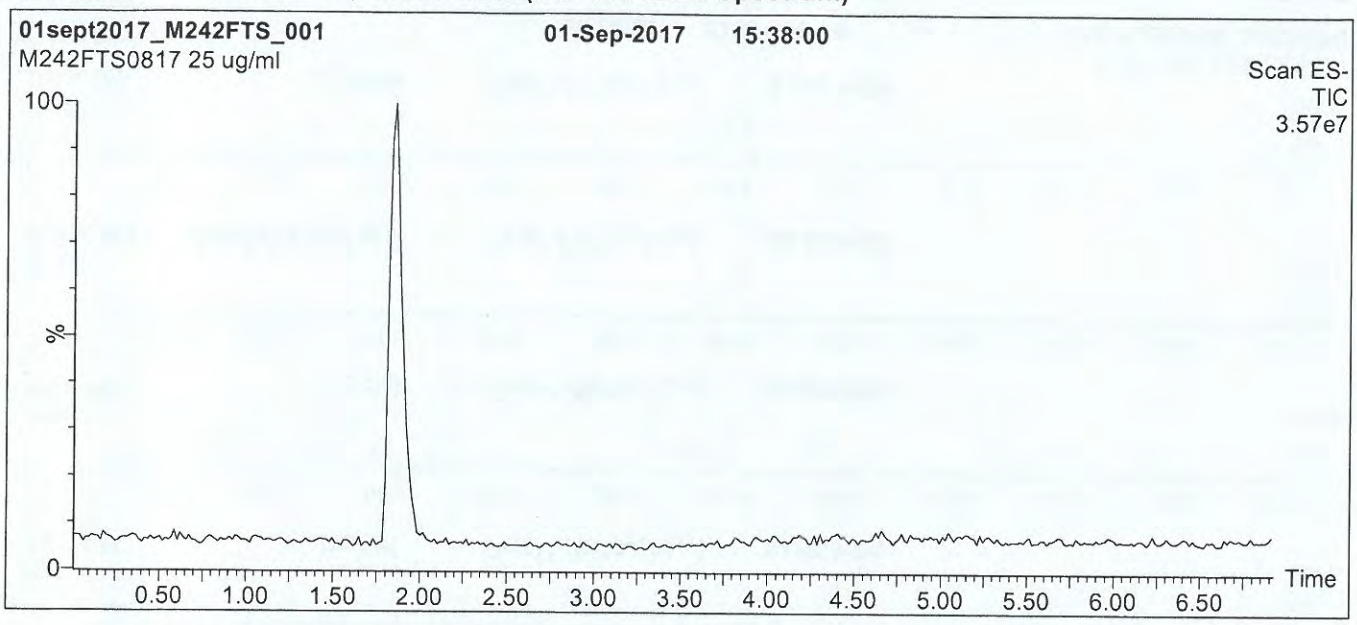
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

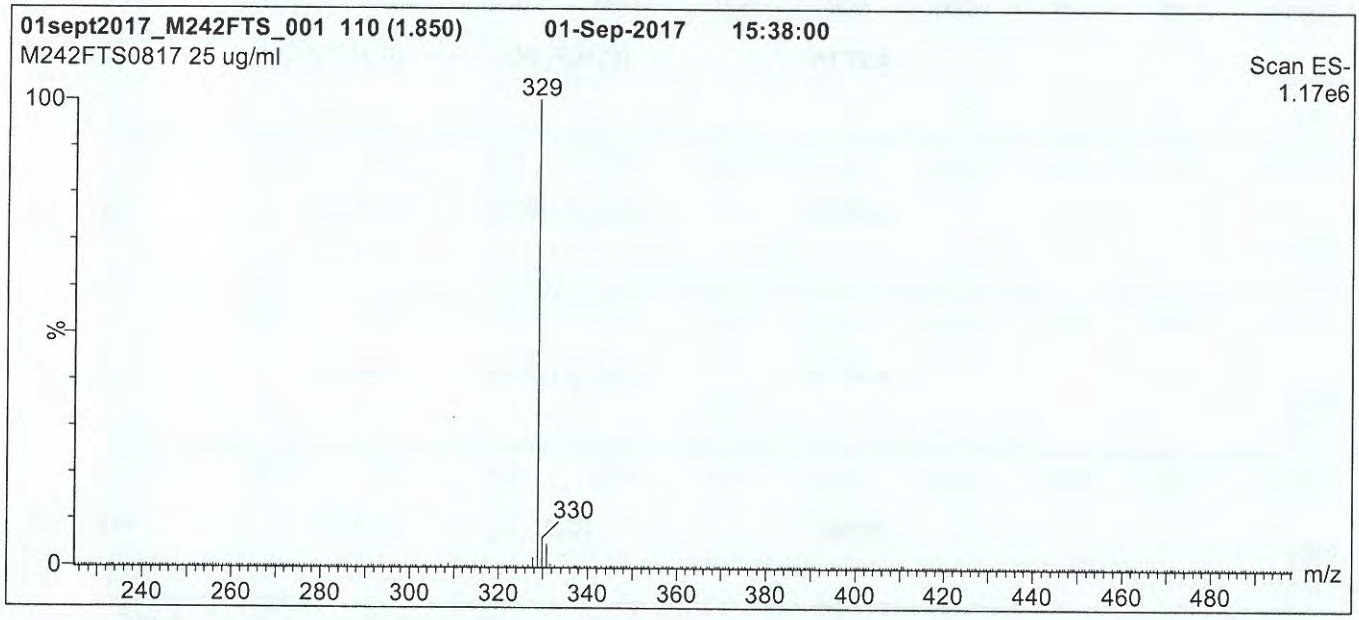
Certified By: _____ **Date:** 09/29/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

18L2001

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

18L2001

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).

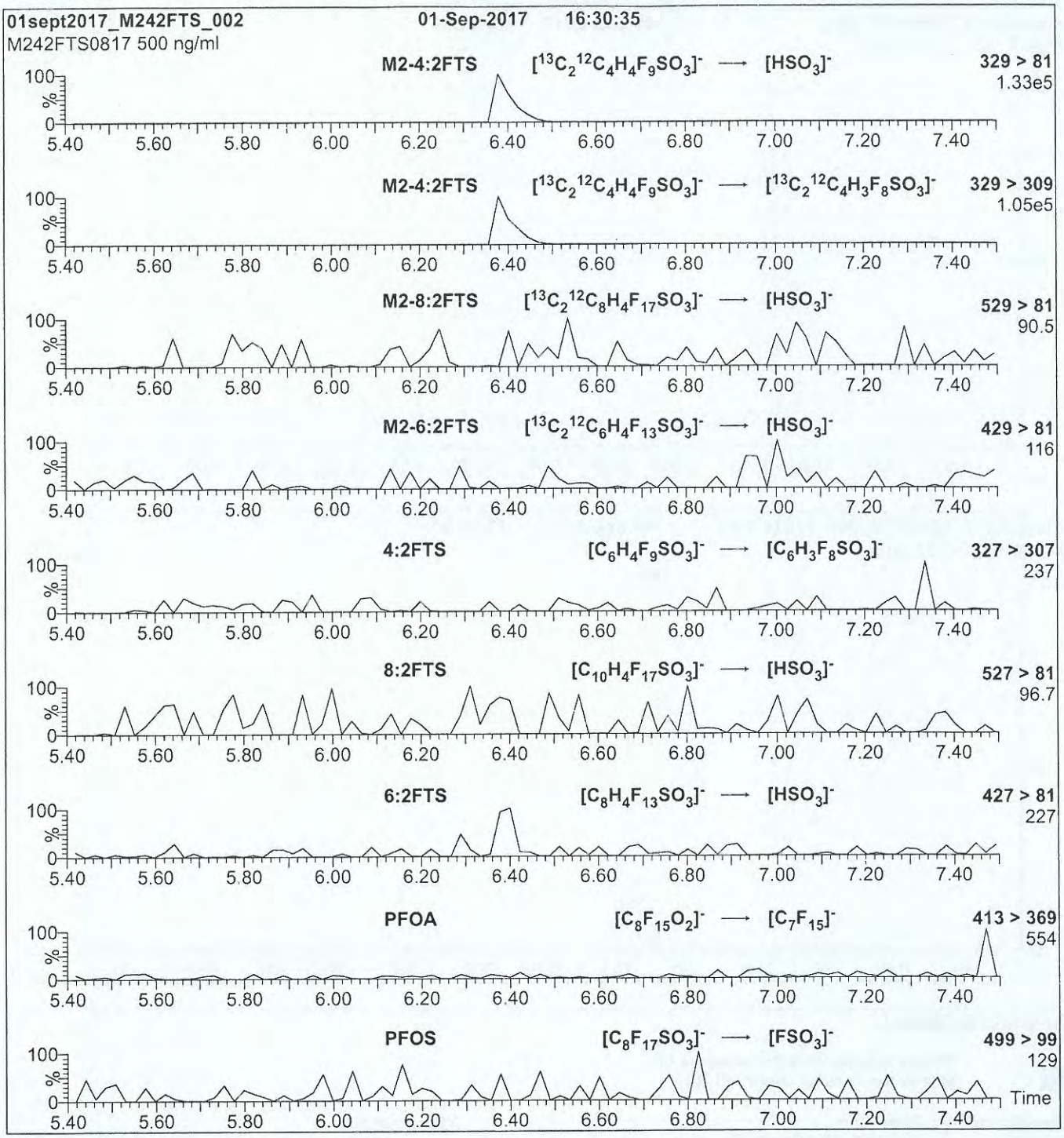
CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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1812001

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

18L2002

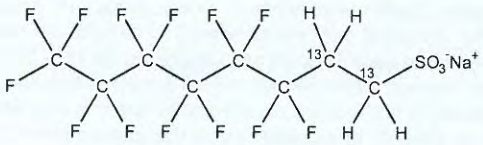
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS1118

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)	11/22/2018		
EXPIRY DATE: (mm/dd/yyyy)	11/22/2023		
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).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/26/2018 (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

18L2002

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

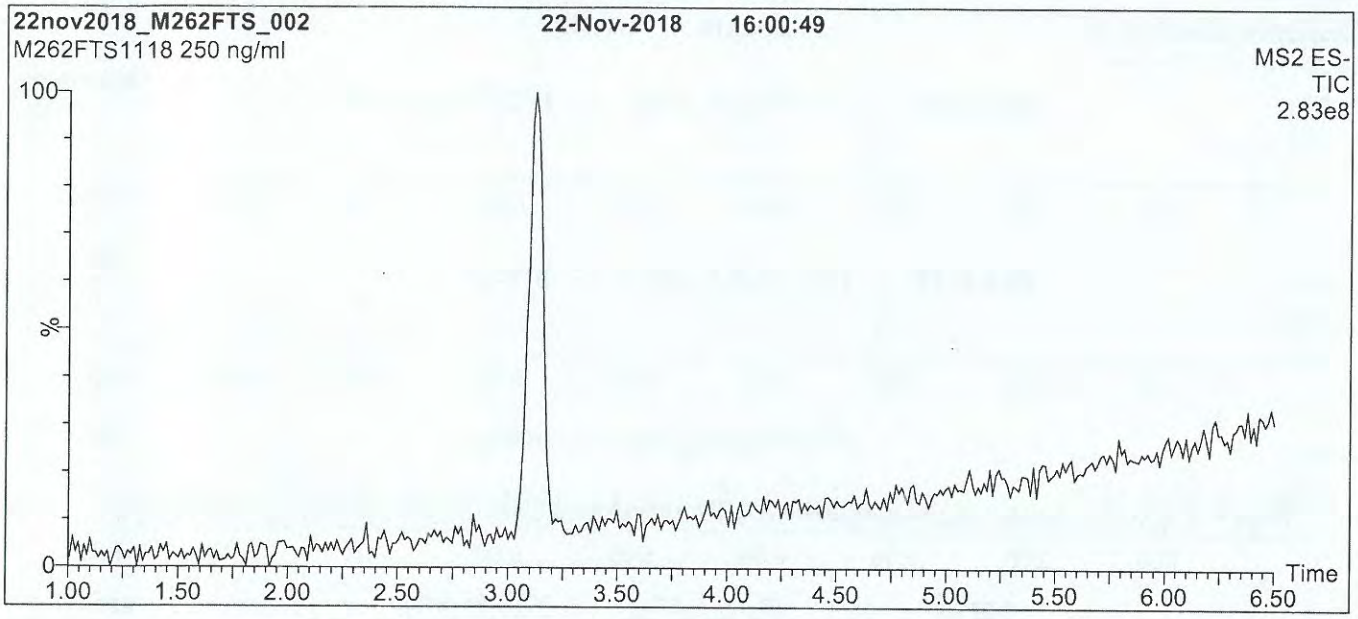
CALA Testing Accreditation No. A1226

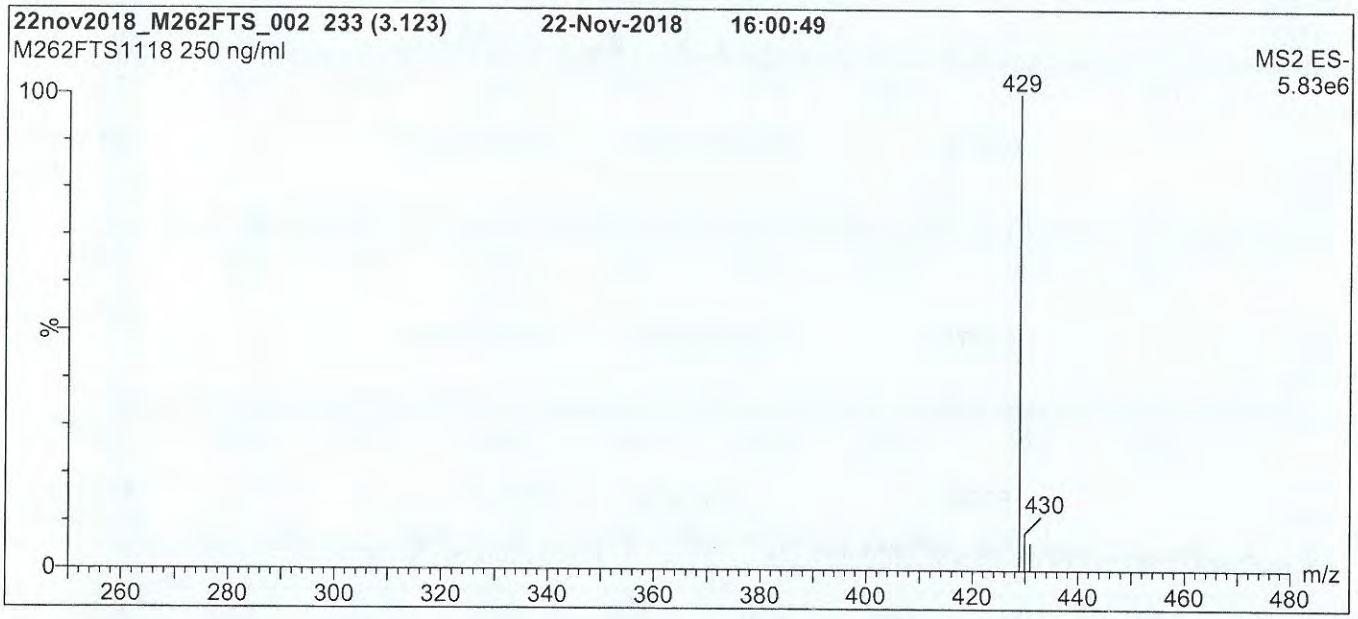
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2002

Figure 1: **M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

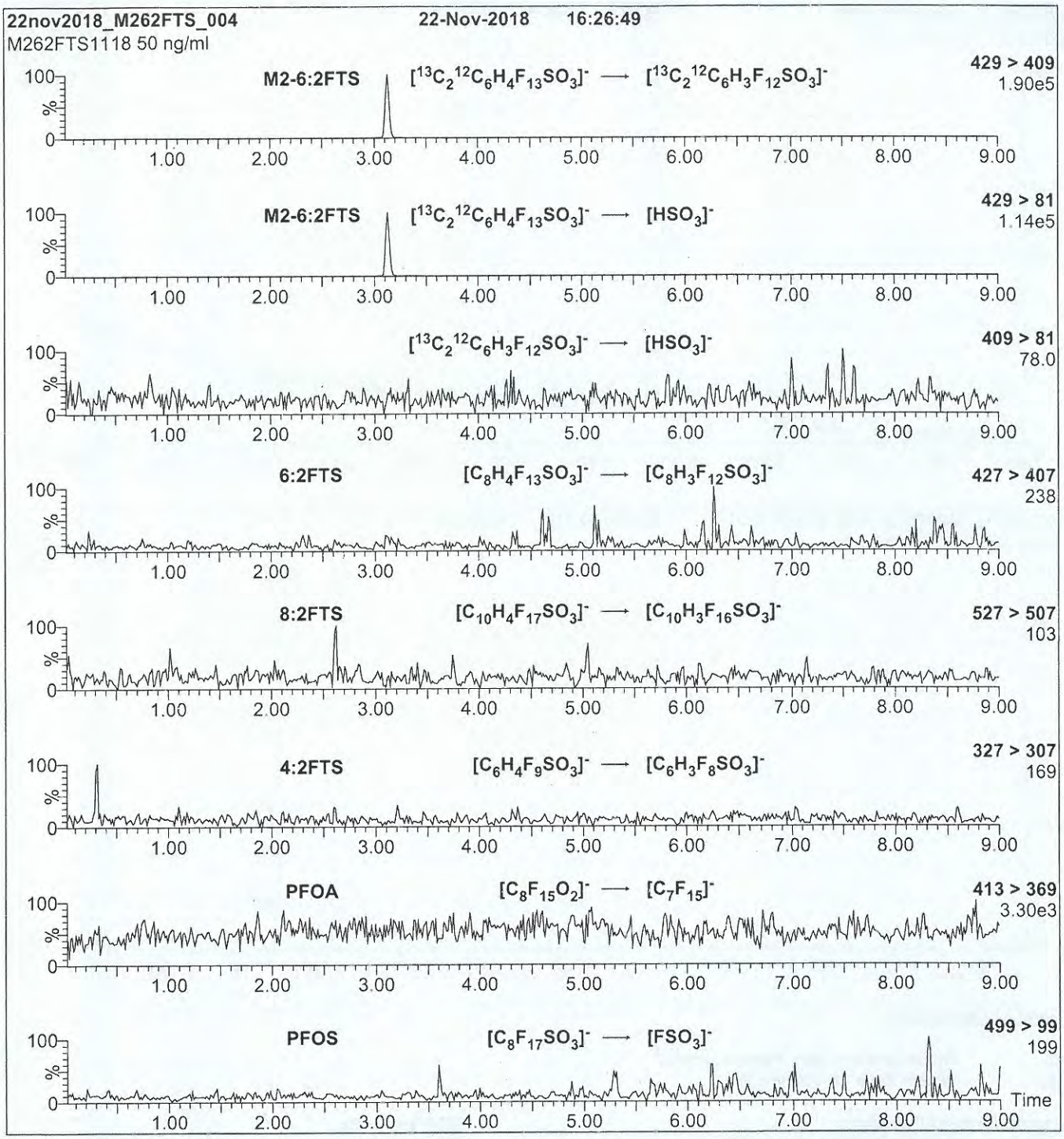
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812002

Figure 2: **M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 20

18L2003

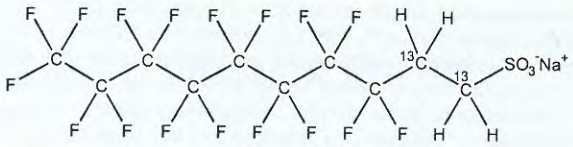
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS0118

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)	01/24/2018		
EXPIRY DATE: (mm/dd/yyyy)	01/24/2023		
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:** 01/26/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-01-22

18L2003

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.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. 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:

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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.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

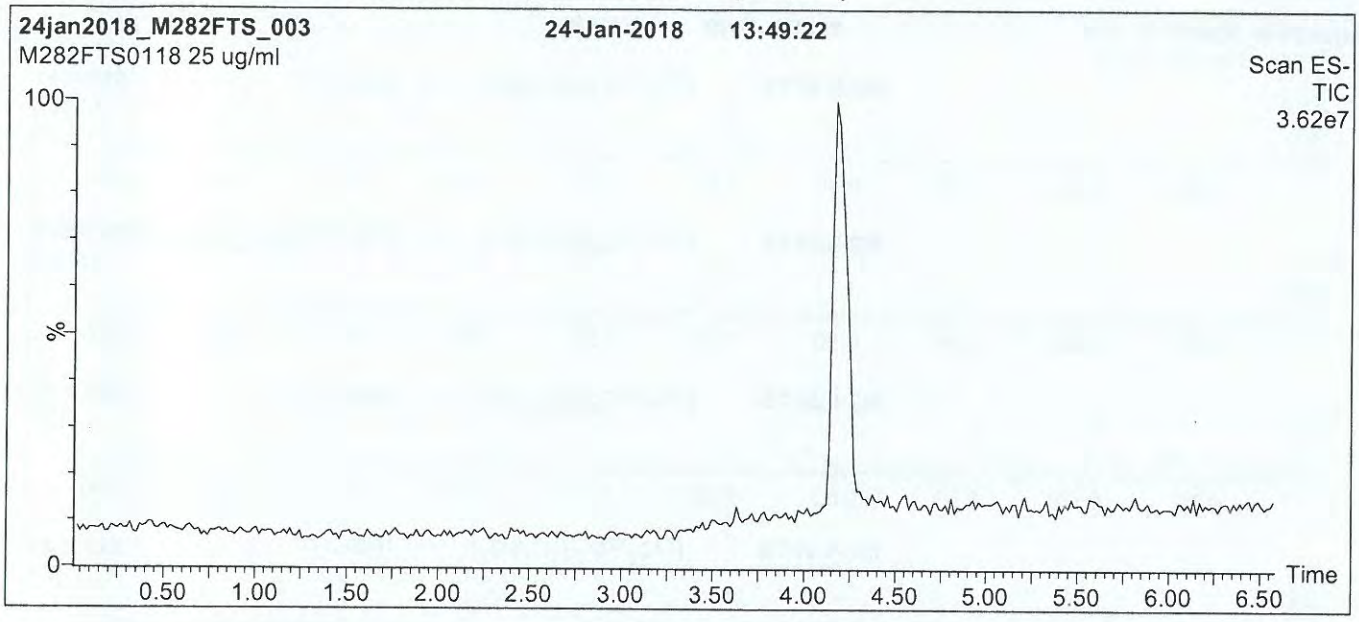
CALA Testing Accreditation No. A 1226

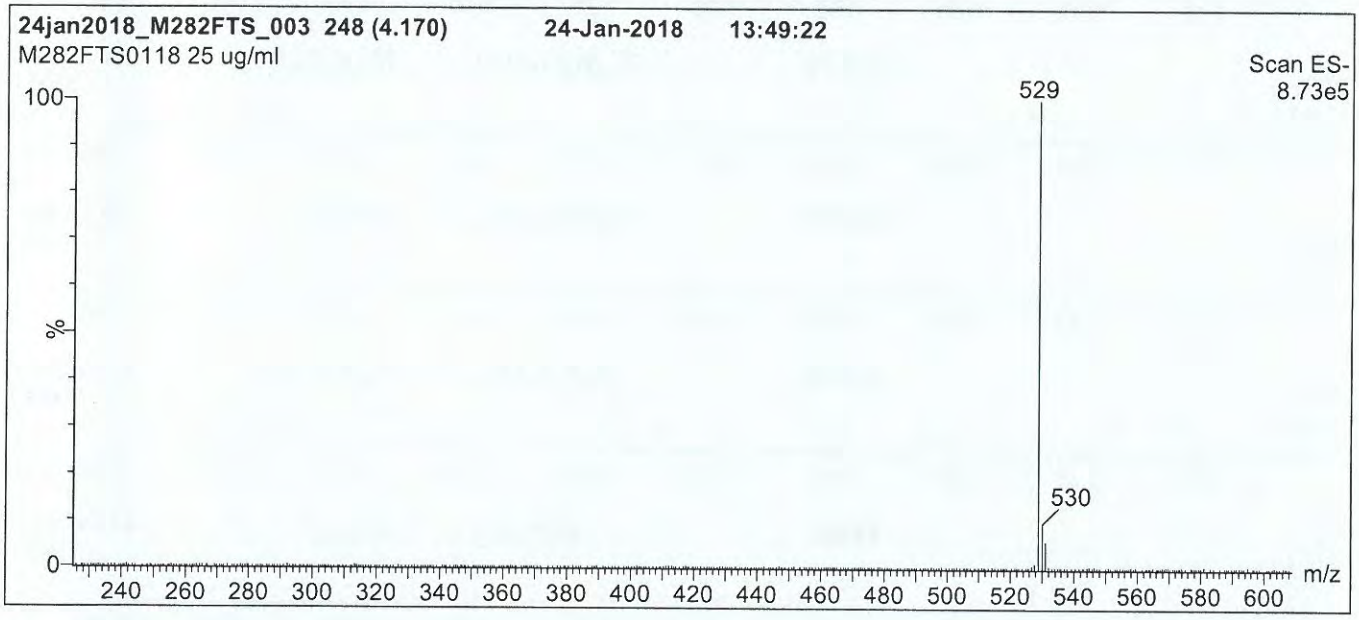
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2003

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: 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

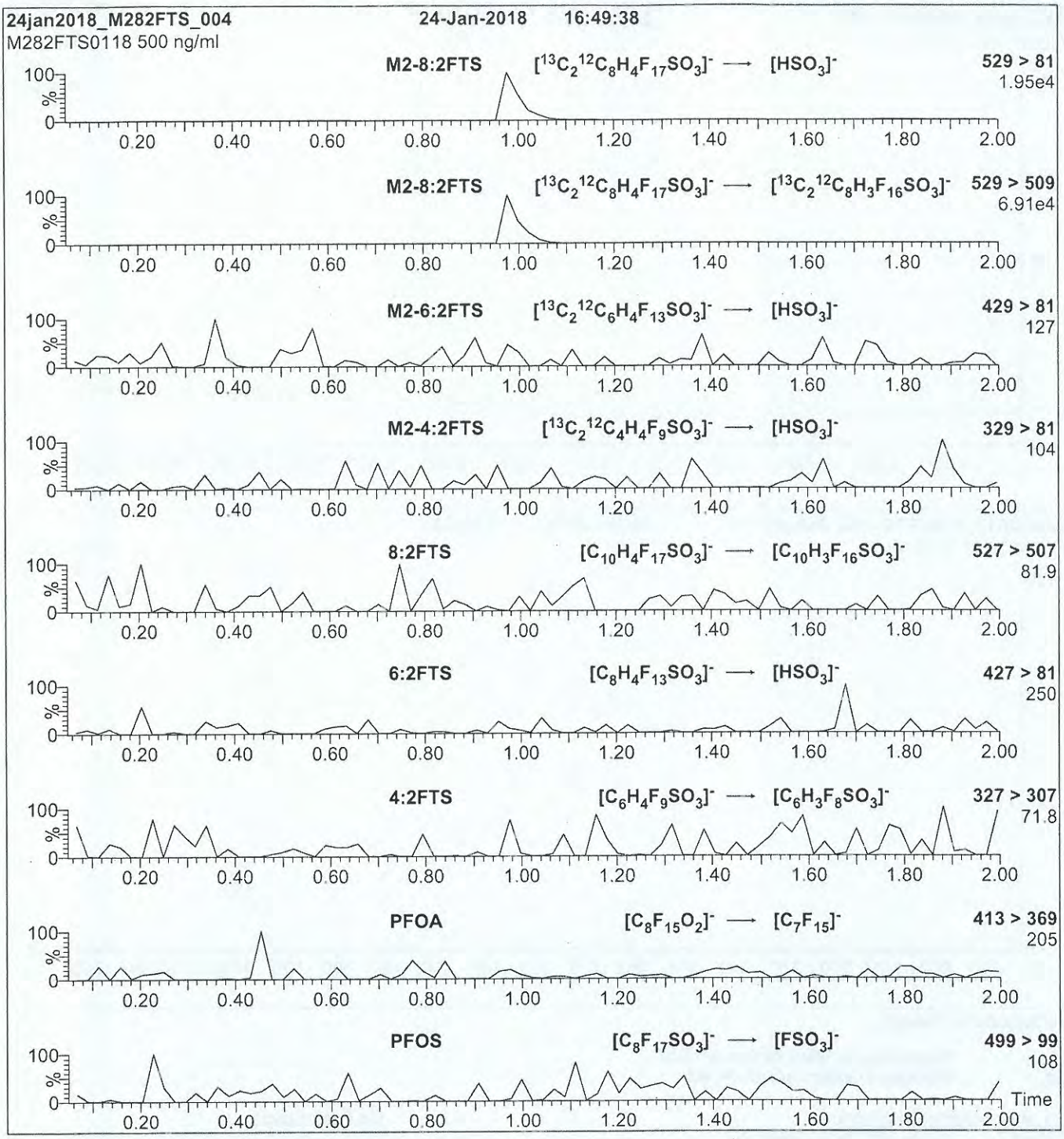
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source:Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 30.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1812003

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) = 3.43e-3
Collision Energy (eV) = 25

18L2004

WELLINGTON LABORATORIES

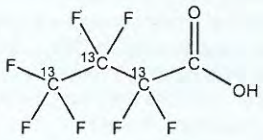
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFBA
COMPOUND: Perfluoro-n-[2,3,4-$^{13}C_3$]butanoic acid

LOT NUMBER: M3PFBA1217

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)	12/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	12/14/2022		
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 ~ 0.2% 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: _____ **Date:** 12/22/2017 (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

18L2004

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).

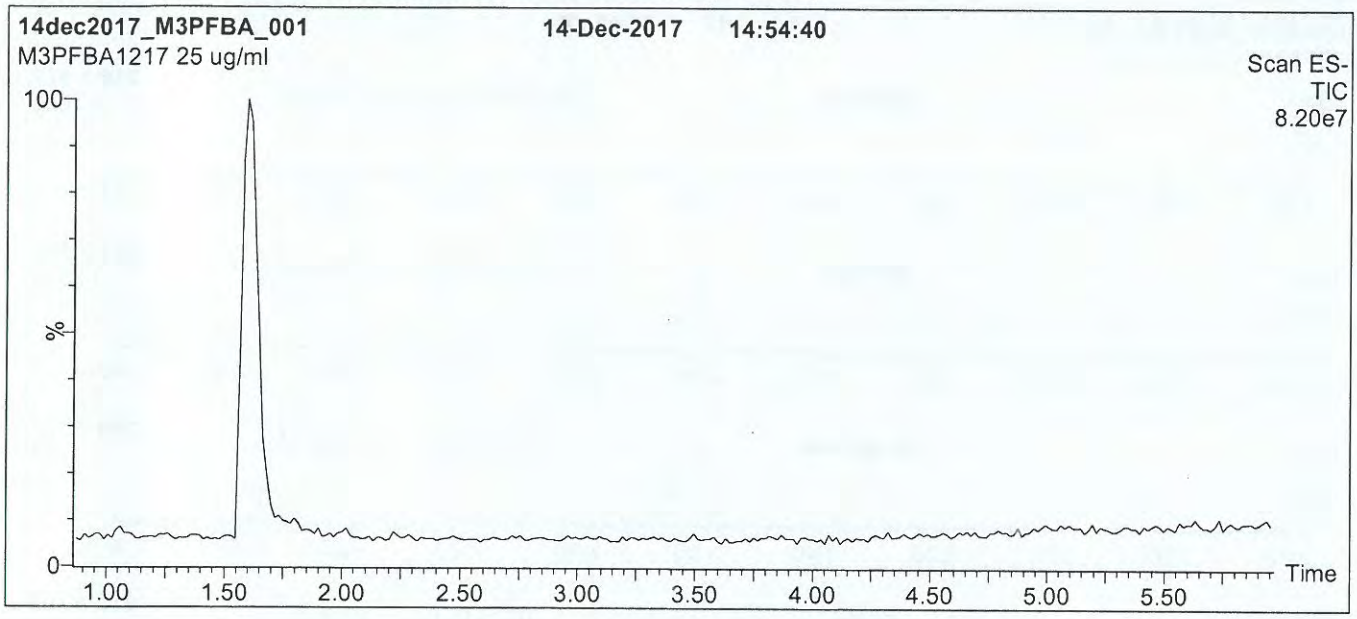
CALA Testing Accreditation No. A 1226

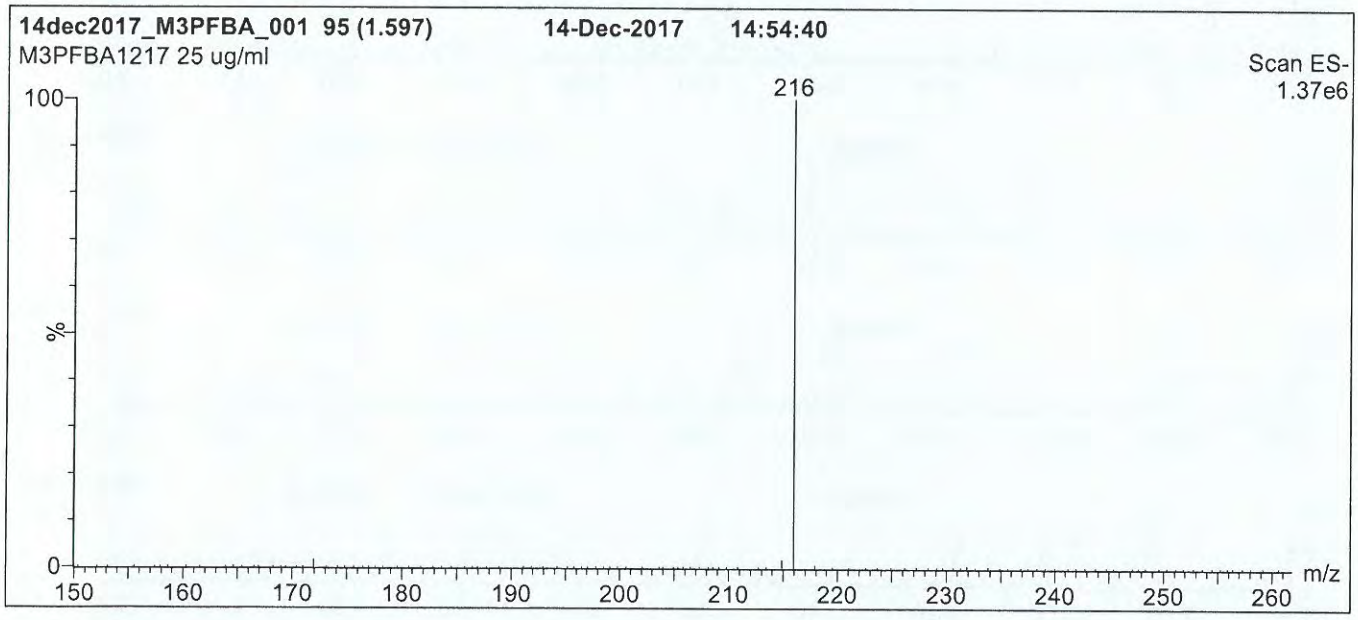
ANAB ACCREDITED Accreditation No. AR-1523 REFERENCE MATERIAL PRODUCER

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

1812004

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

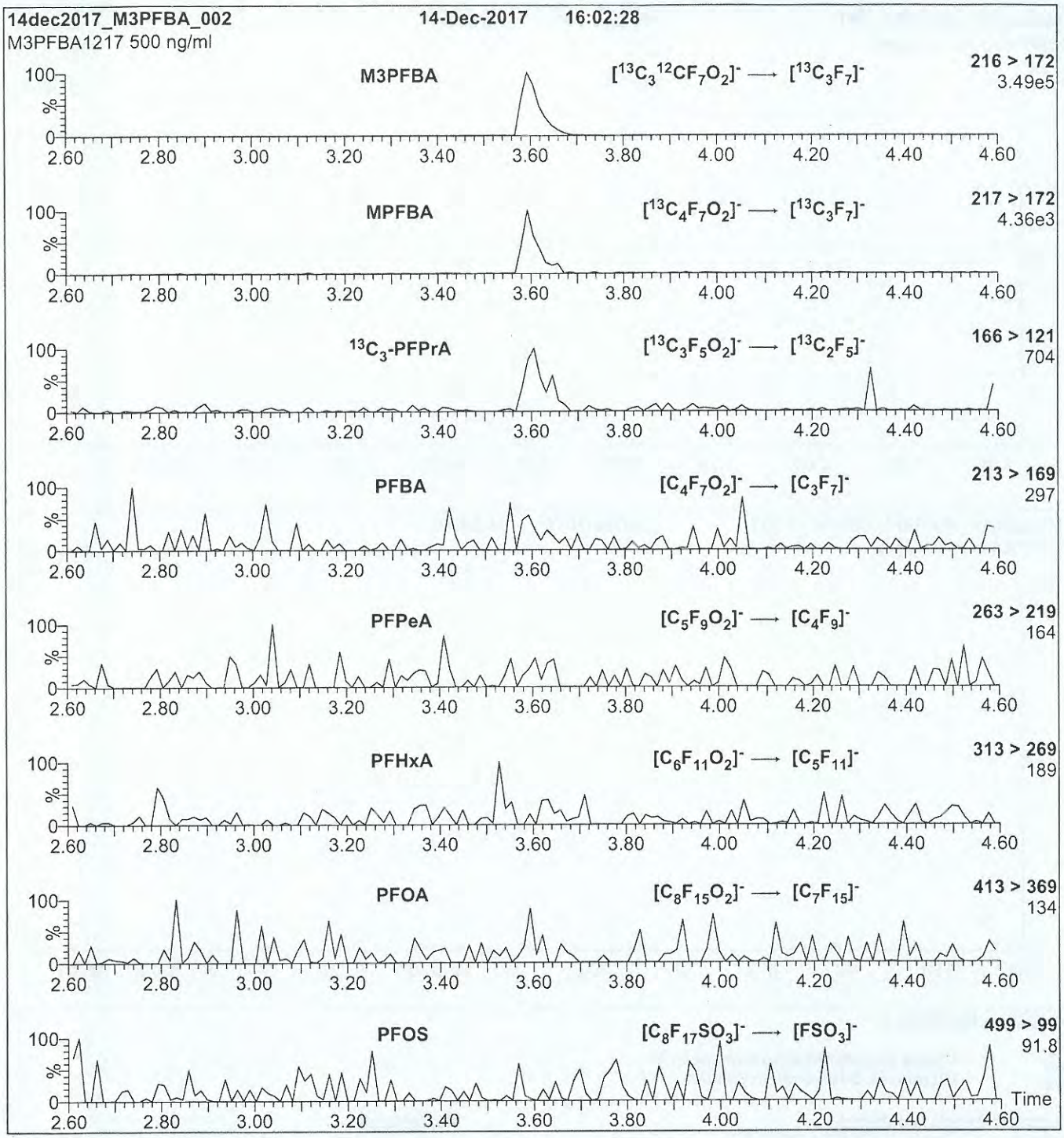
MS Parameters

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

18L2004

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

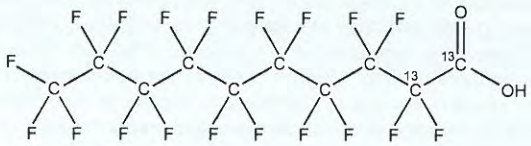
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

18L2005

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFDA	**LOT NUMBER:**	MPFDA1218
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8HF_{19}O_2$	**MOLECULAR WEIGHT:**	516.07
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)	12/06/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/06/2023		
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:** 12/10/2018 (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

1812005

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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:

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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.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

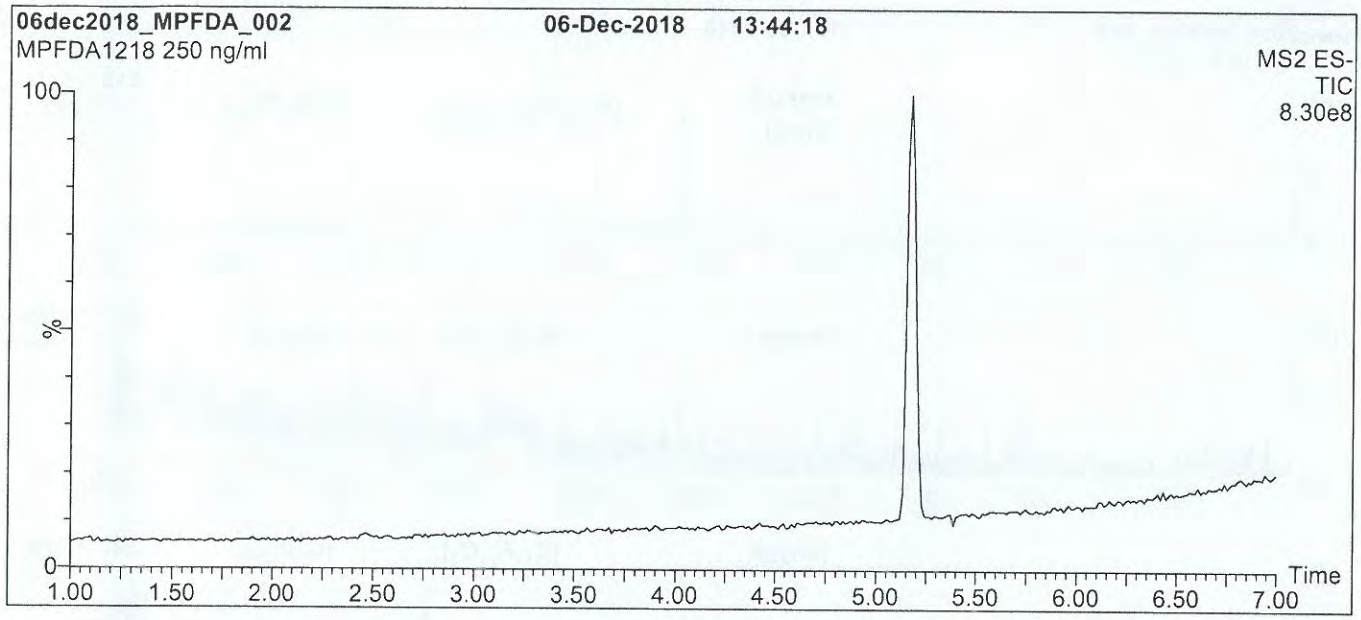
CALA Testing Accreditation No. A 1226

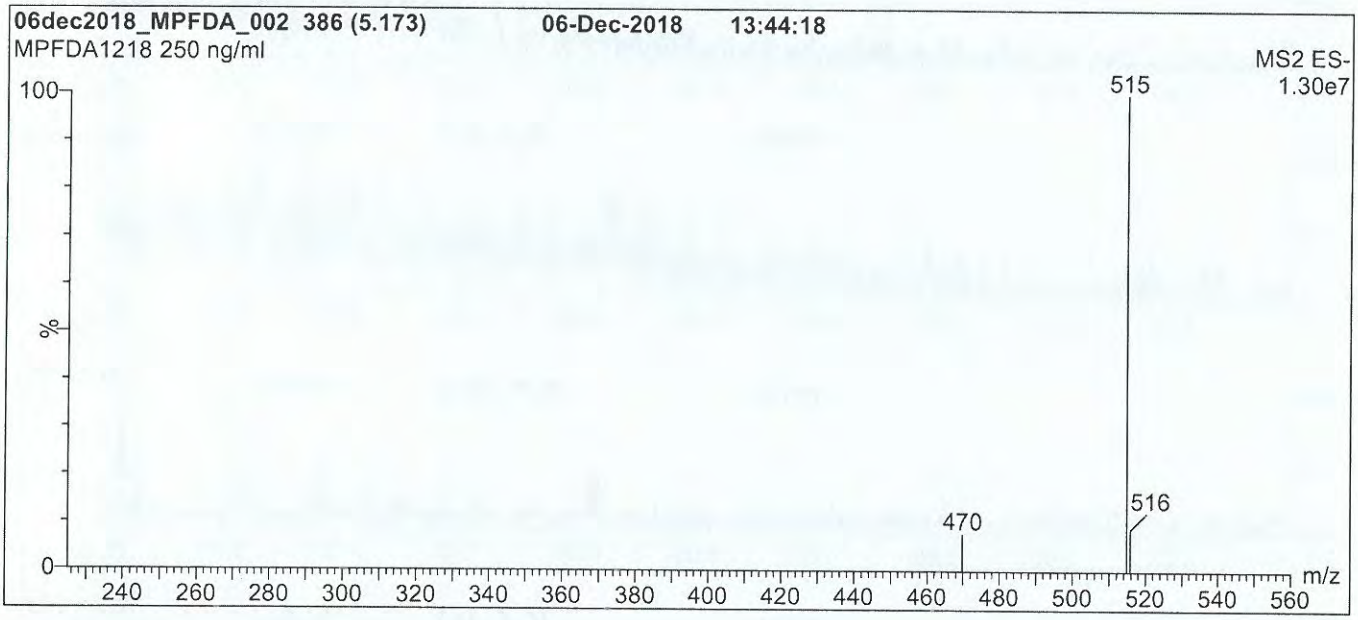
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

1812005

Figure 1: **MPFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

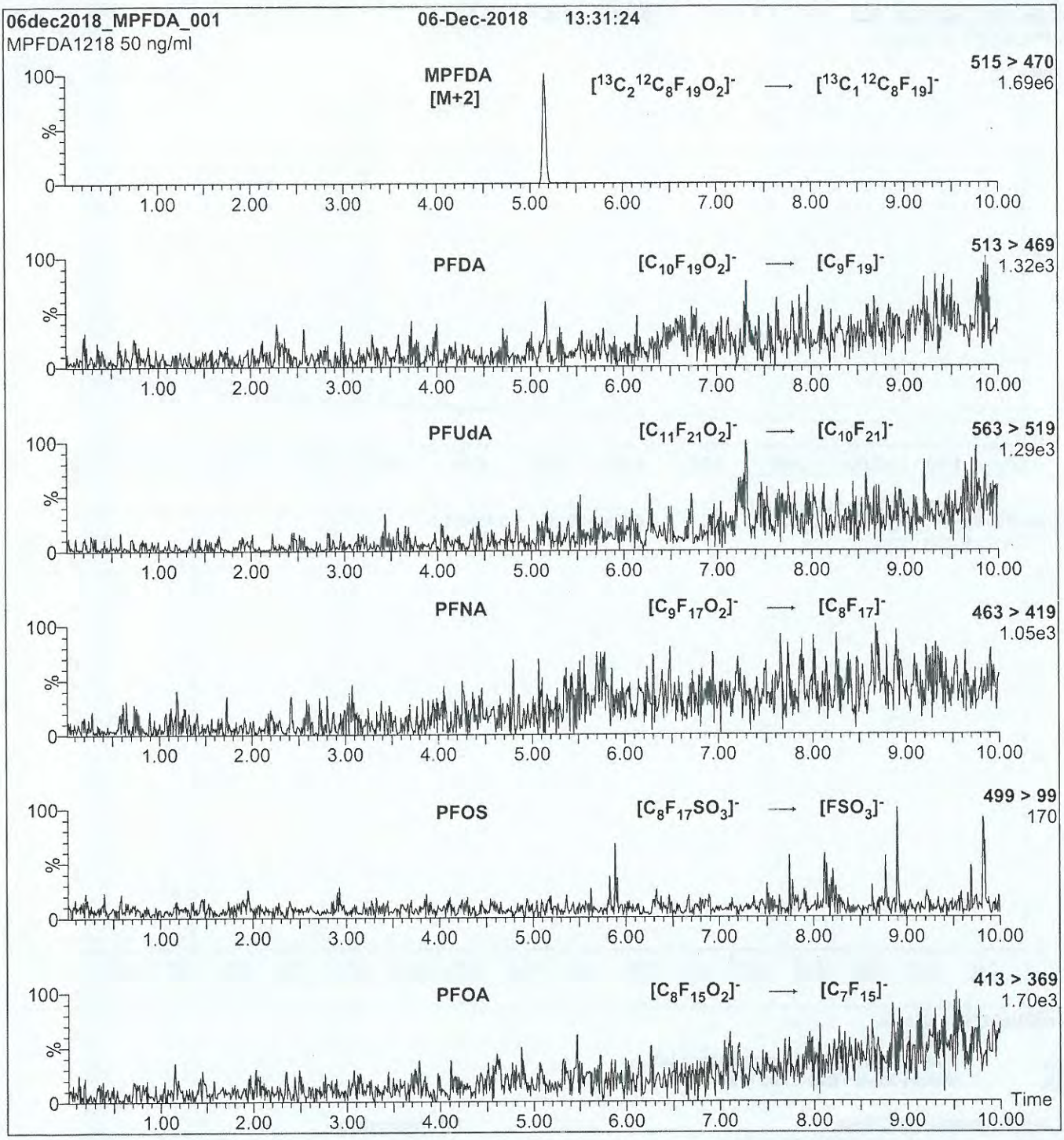
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812005

Figure 2: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

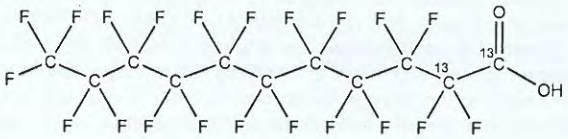
Collision Gas (mbar) = 3.27e-3
Collision Energy (eV) = 10

18L2006

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFUdA	**LOT NUMBER:**	MPFUdA0518
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)	05/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	05/11/2023		
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: _____ **Date:** 05/25/2018 (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

1812006

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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:

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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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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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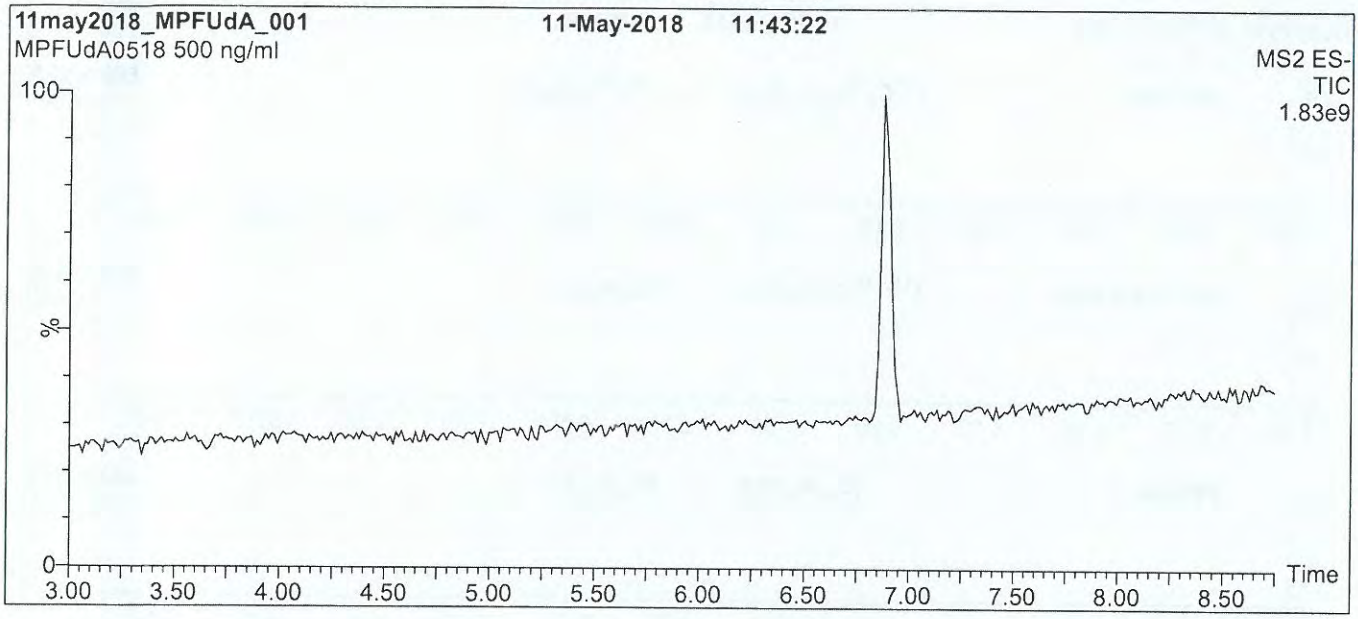
CALA Testing Accreditation No. A 1226

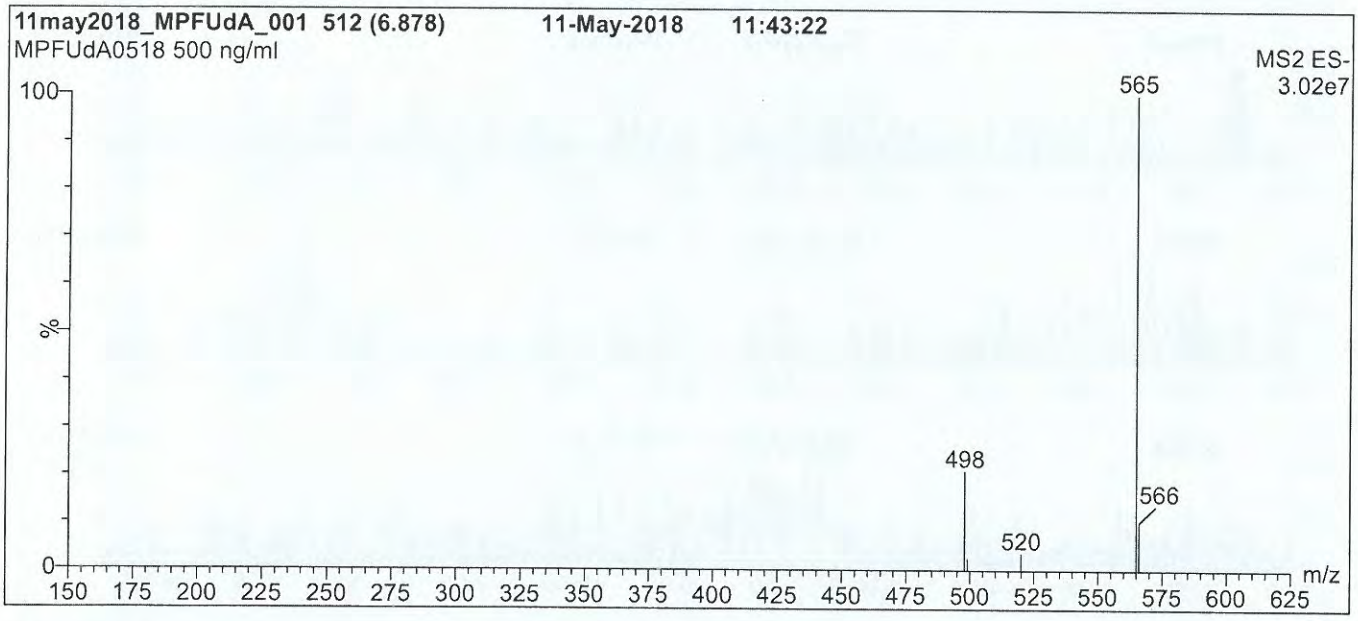
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2006

Figure 1: **MPFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

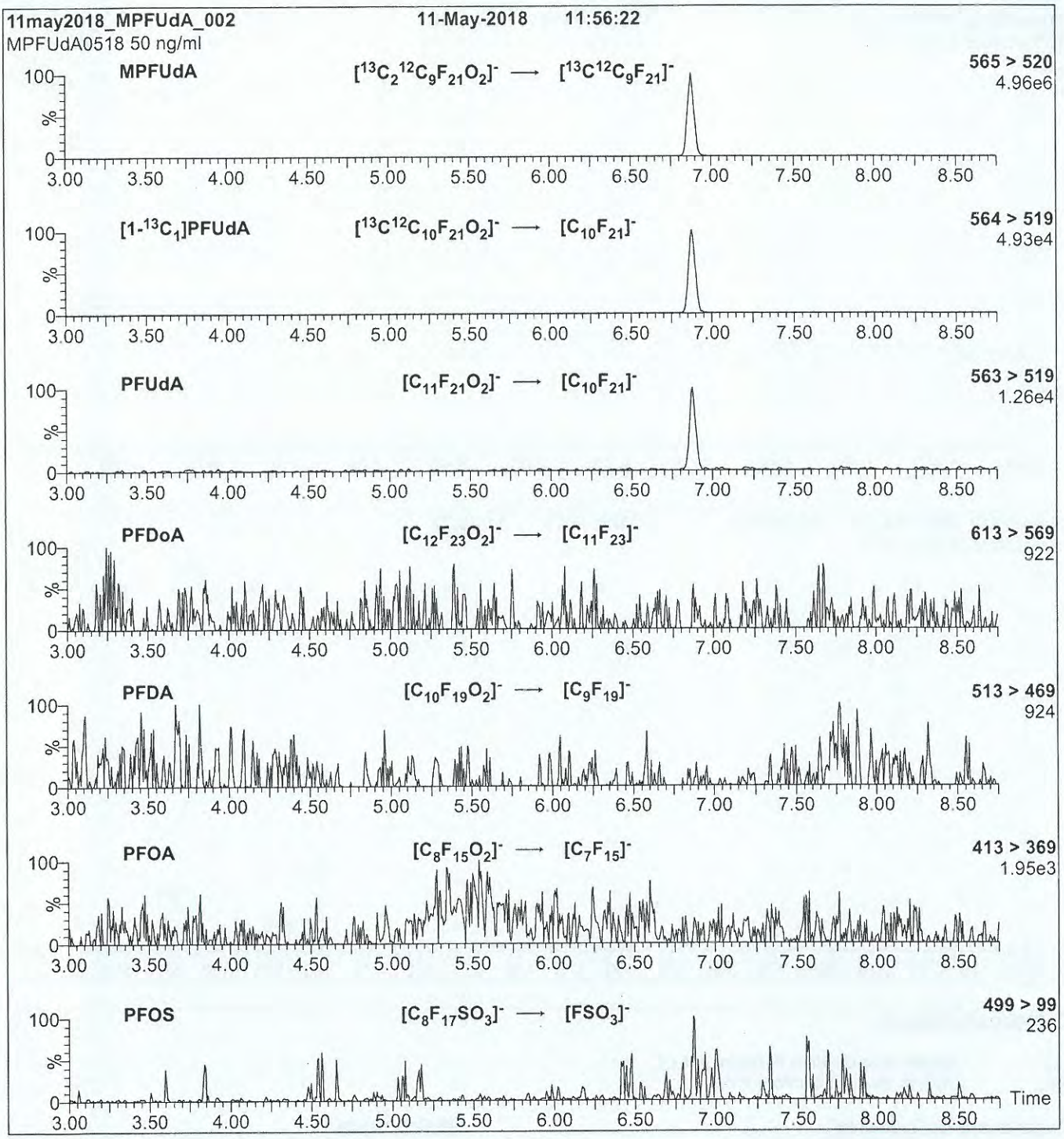
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

18L2006

Figure 2: **MPFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFUdA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.51e-3
Collision Energy (eV) = 12

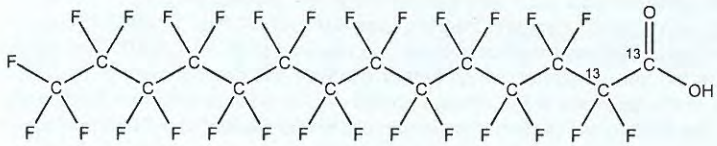
18L2007

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		
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:** 12/01/2017 (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

1812007

INTENDED USE:

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HAZARDS:

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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).

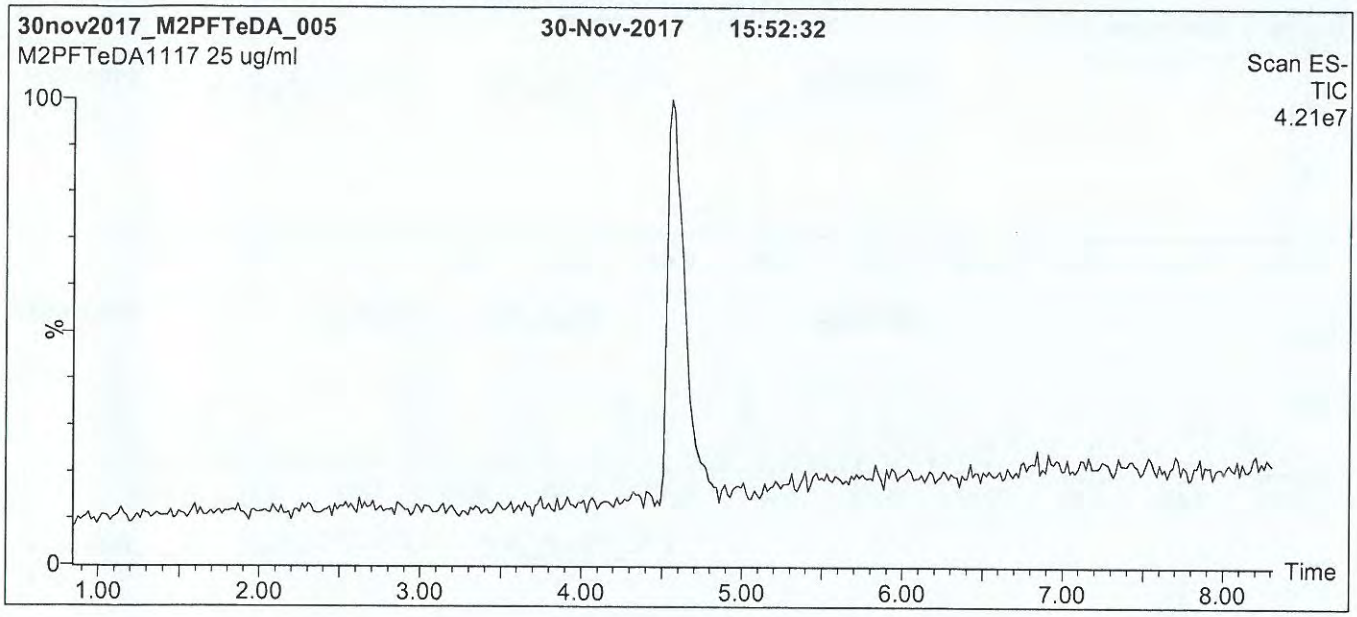
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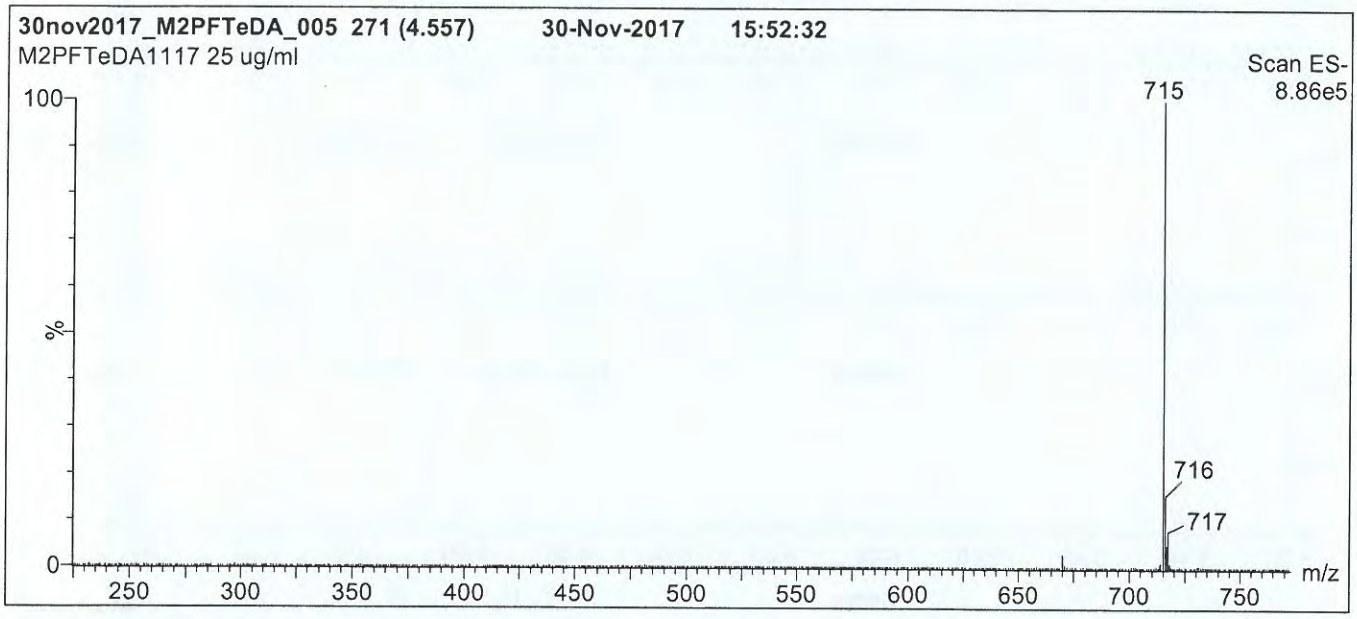
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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1862007

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

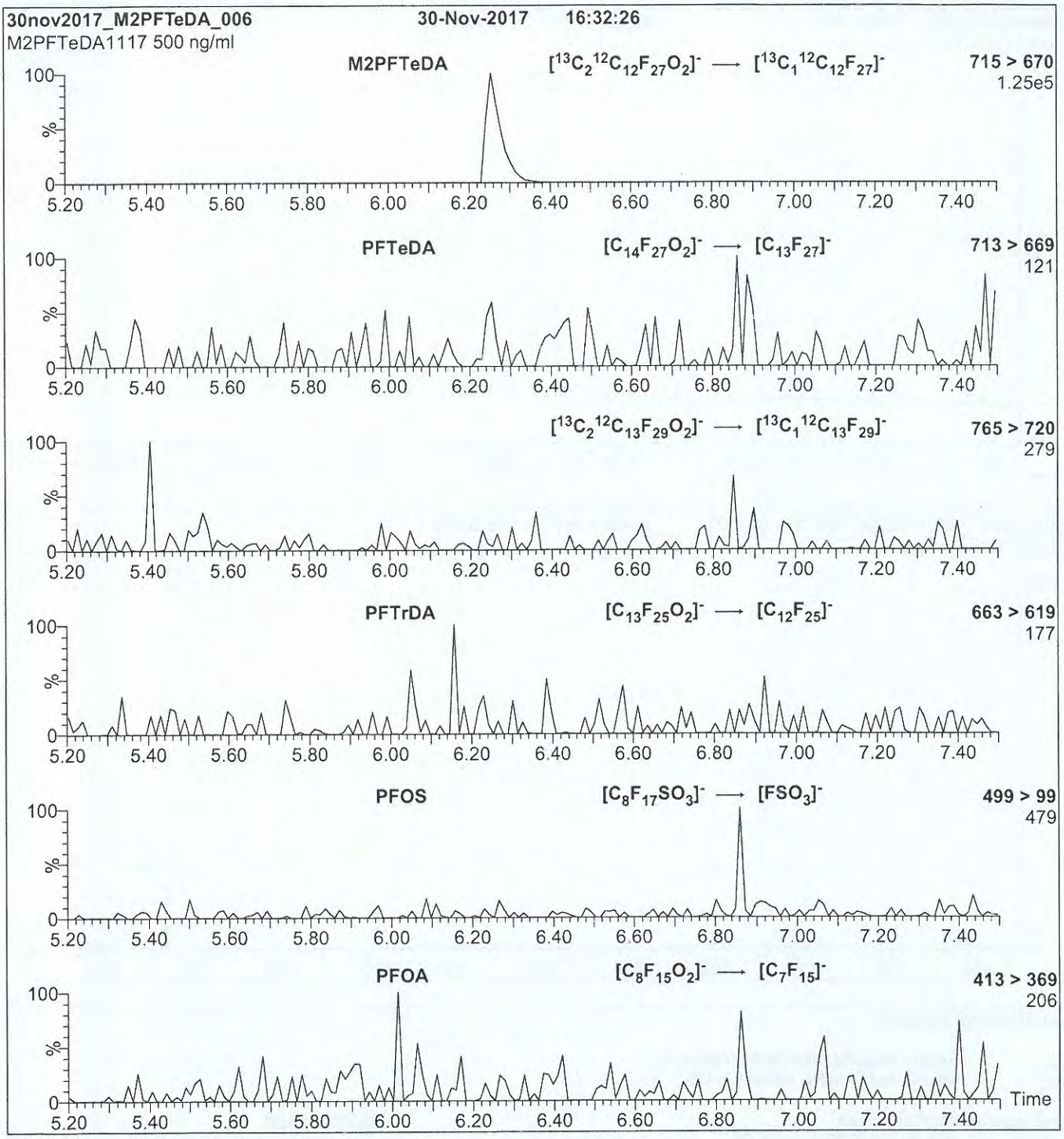
MS Parameters

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

18L2007

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

1812008

WELLINGTON LABORATORIES

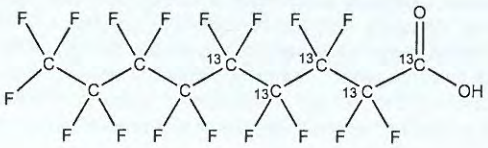
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFNA
COMPOUND: Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]nonanoic acid

LOT NUMBER: MPFNA1217

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)	12/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	12/14/2022		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/19/2017 (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

1812008

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.

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QUALITY MANAGEMENT:

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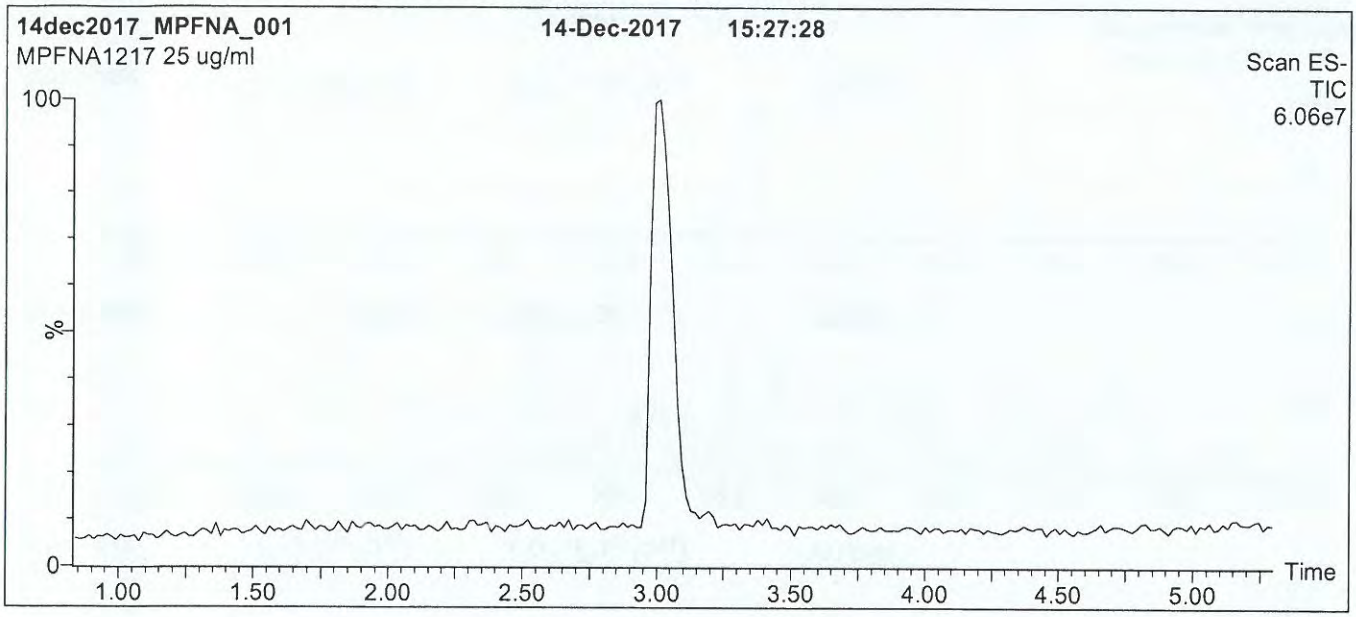
CALA Testing Accreditation No. A 1226

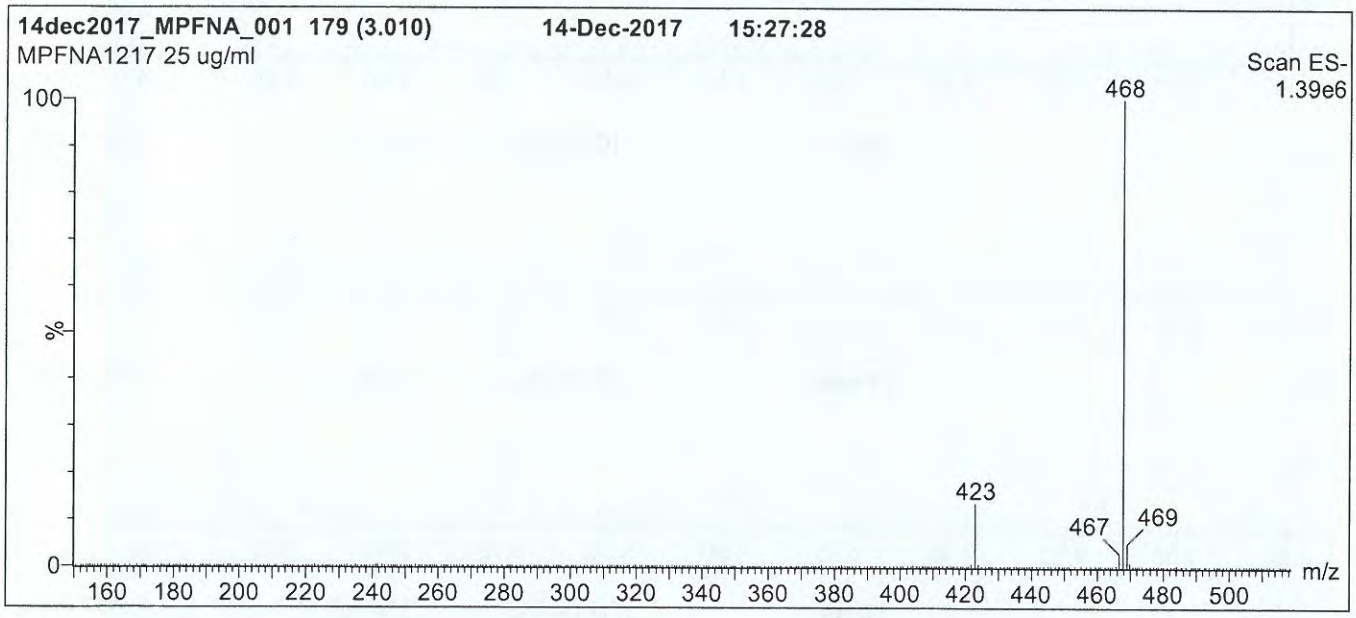
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

1812008

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: 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

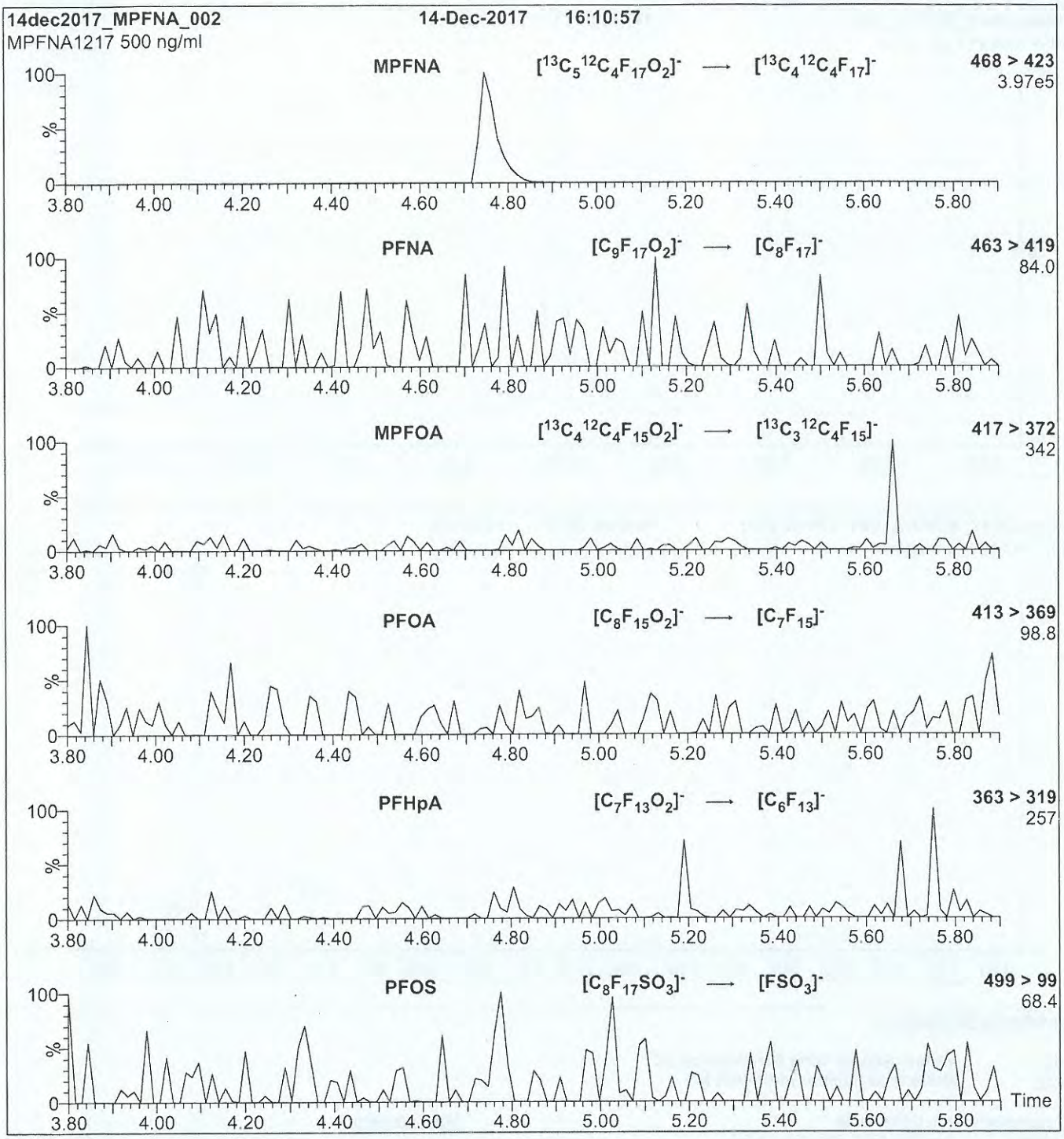
MS Parameters

Experiment: Full Scan (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

18L2008

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

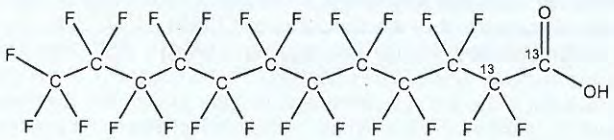
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 11

18L2009

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFDoA	**LOT NUMBER:**	MPFDoA0218
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid		
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)	02/16/2018		
EXPIRY DATE: (mm/dd/yyyy)	02/16/2023		
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:** 02/23/2018 (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

18L2009

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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.

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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:

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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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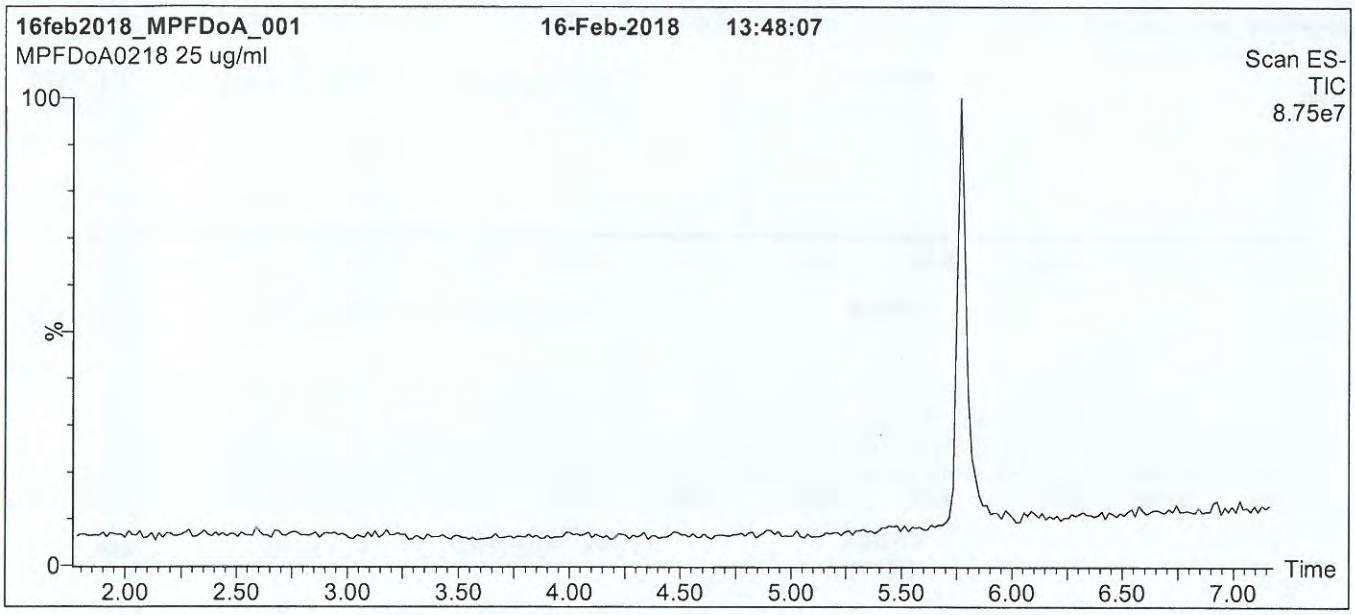
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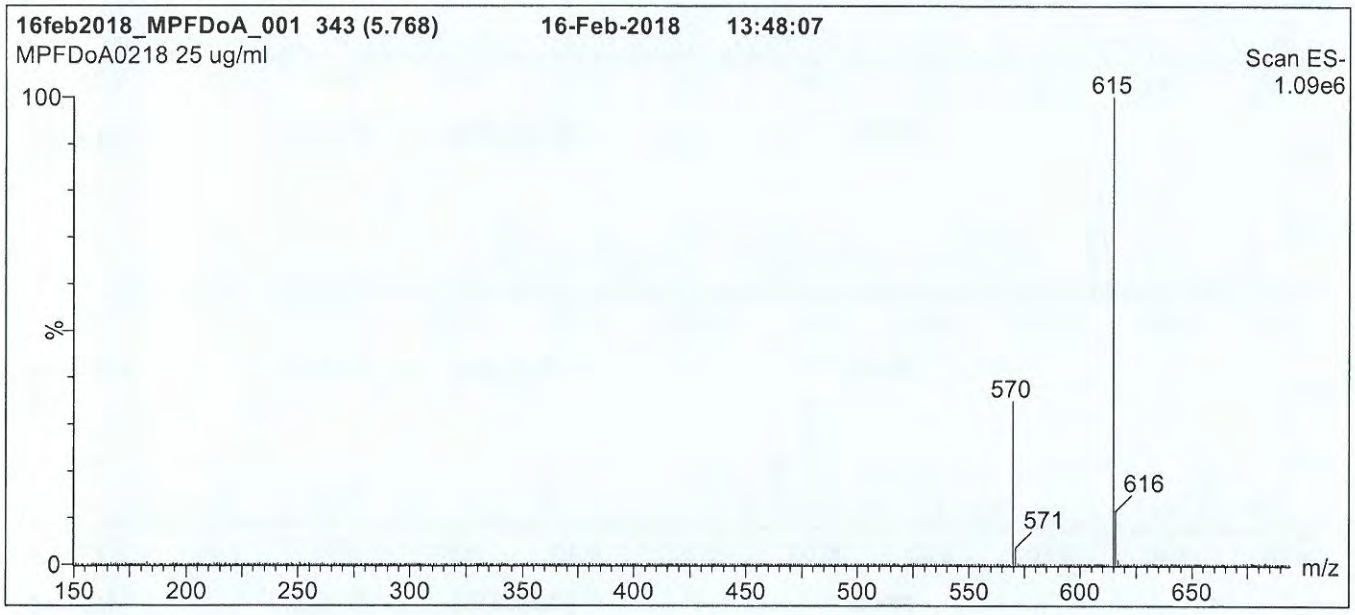
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1862009

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: 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

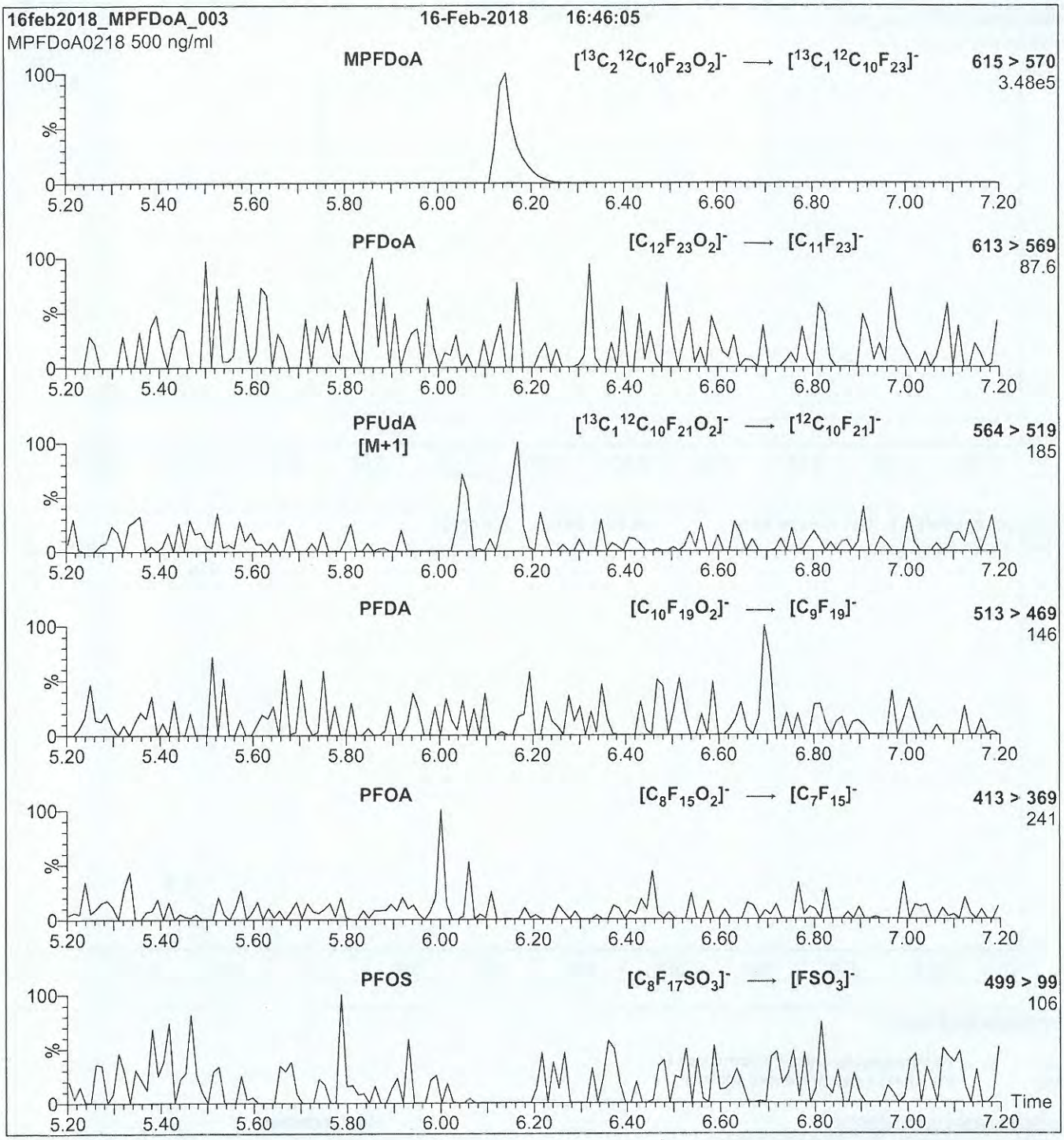
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 20.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18L2009

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

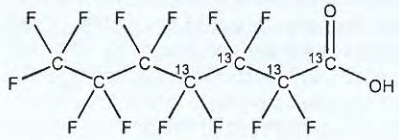
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 13

18L2010

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M4PFHpA	**LOT NUMBER:**	M4PFHpA0618
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)	07/06/2018		
EXPIRY DATE: (mm/dd/yyyy)	07/06/2023		
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 ~ 0.04% of perfluoro-n-heptanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/09/2018 (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

18L2010

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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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

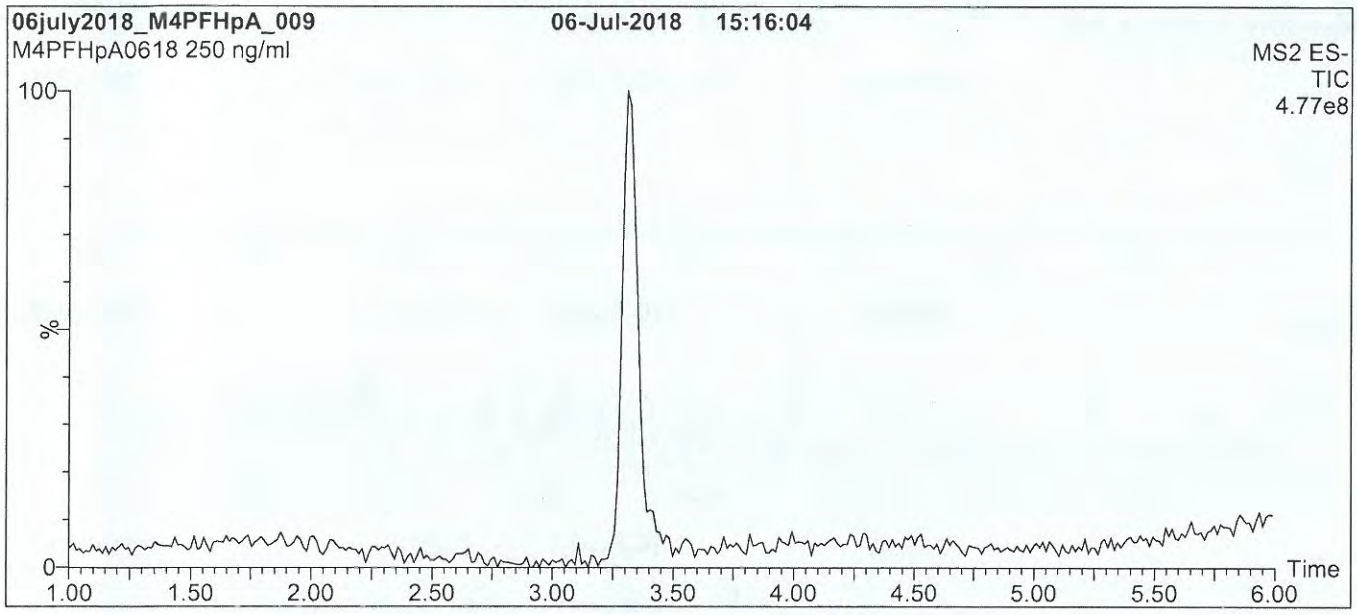
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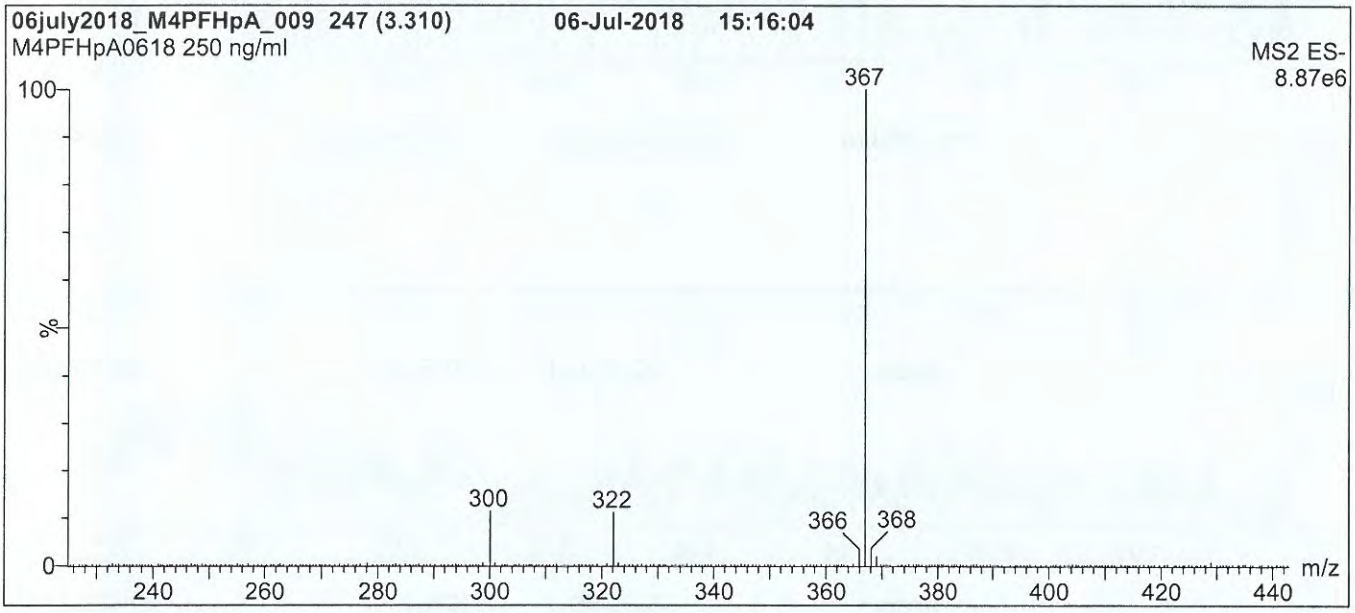
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2010

Figure 1: **M4PFHpA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

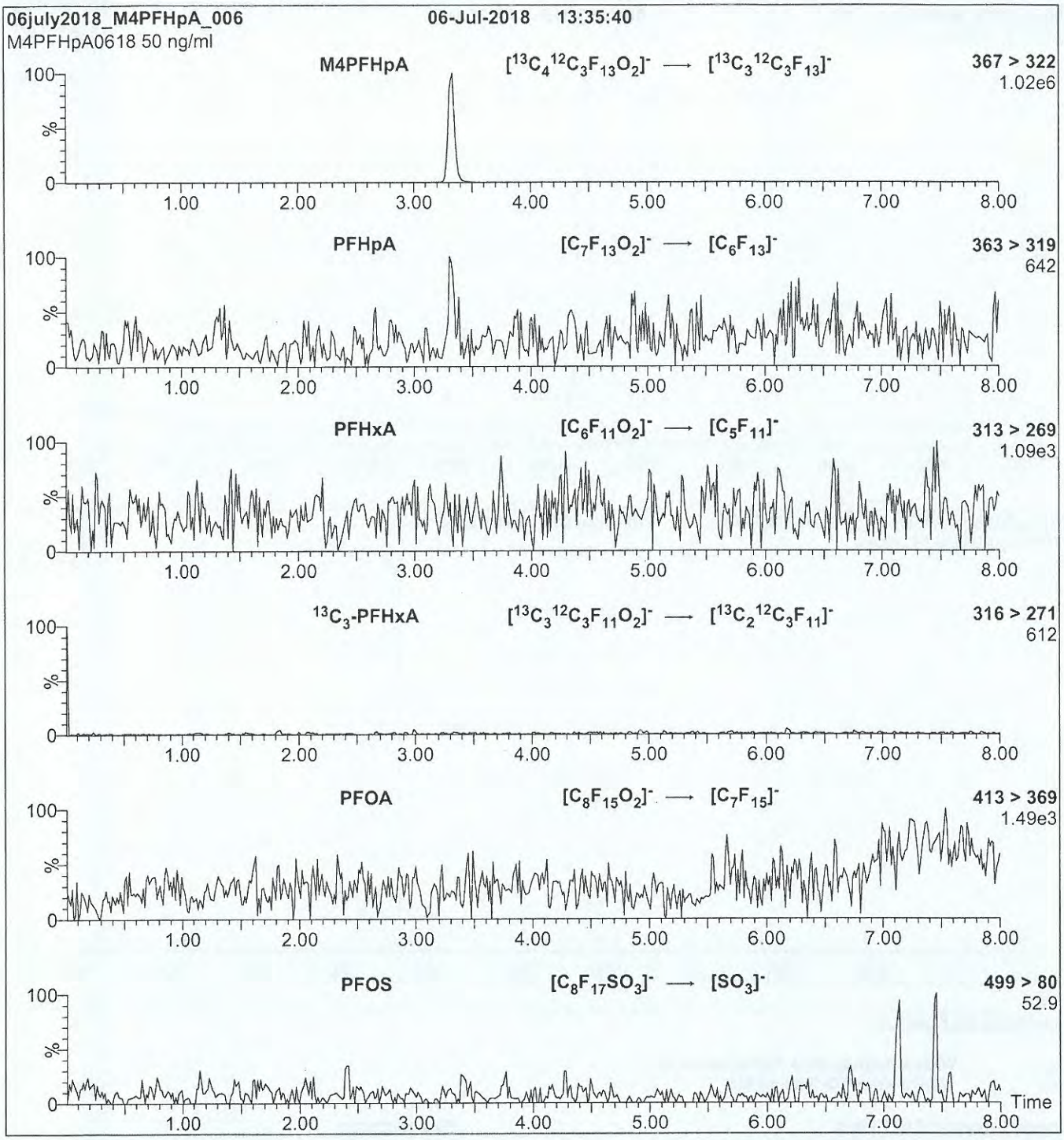
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1862010

Figure 2: **M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

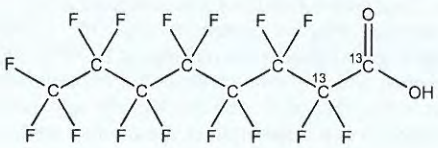
Collision Gas (mbar) = 3.89e-3
Collision Energy (eV) = 8

18L2011

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M2PFOA	**LOT NUMBER:**	M2PFOA1018
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid		
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)	10/10/2018		
EXPIRY DATE: (mm/dd/yyyy)	10/10/2023		
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-[$^{13}C_1$]heptanoic acid ($^{13}C_1$-PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/17/2018 (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

18L2011

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

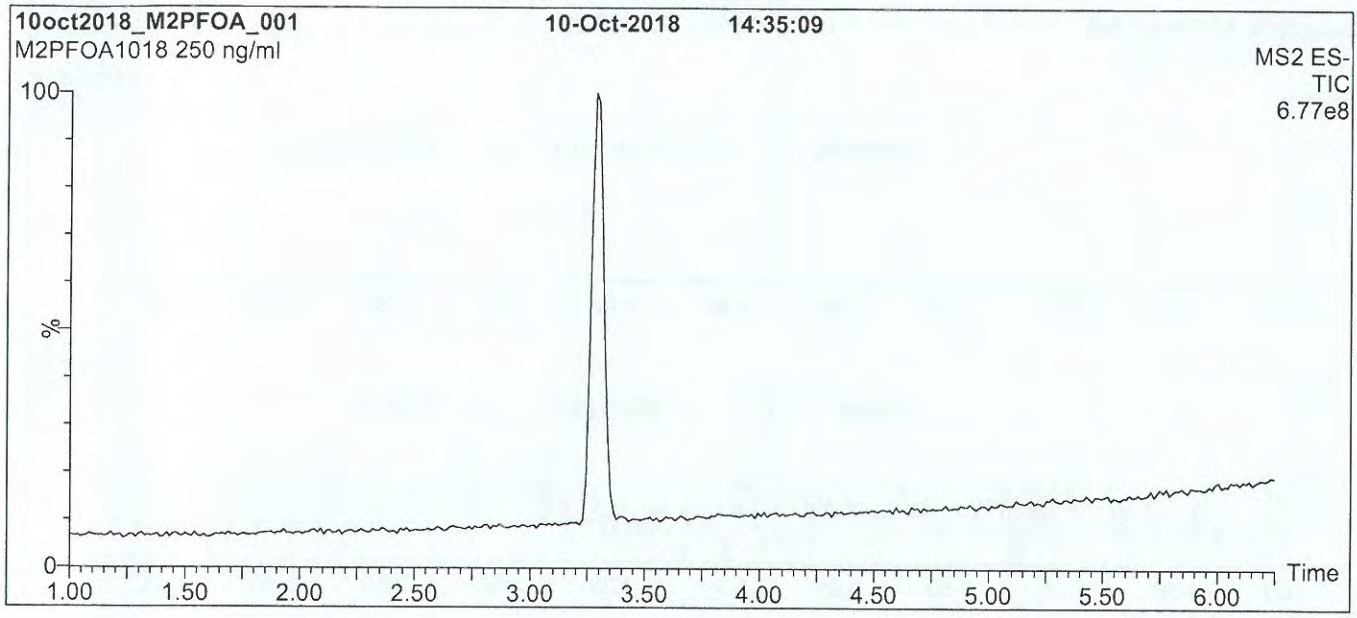
CALA Testing Accreditation No. A1226

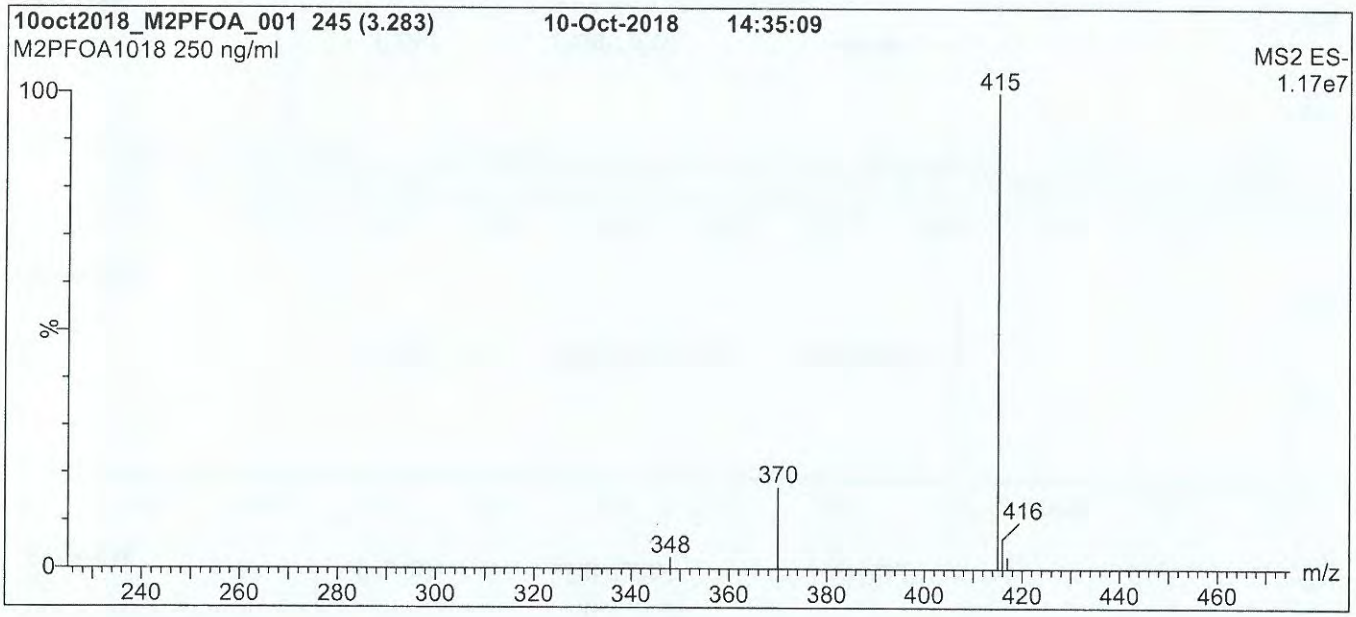
ANAB ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER

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18L2011

Figure 1: **M2PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

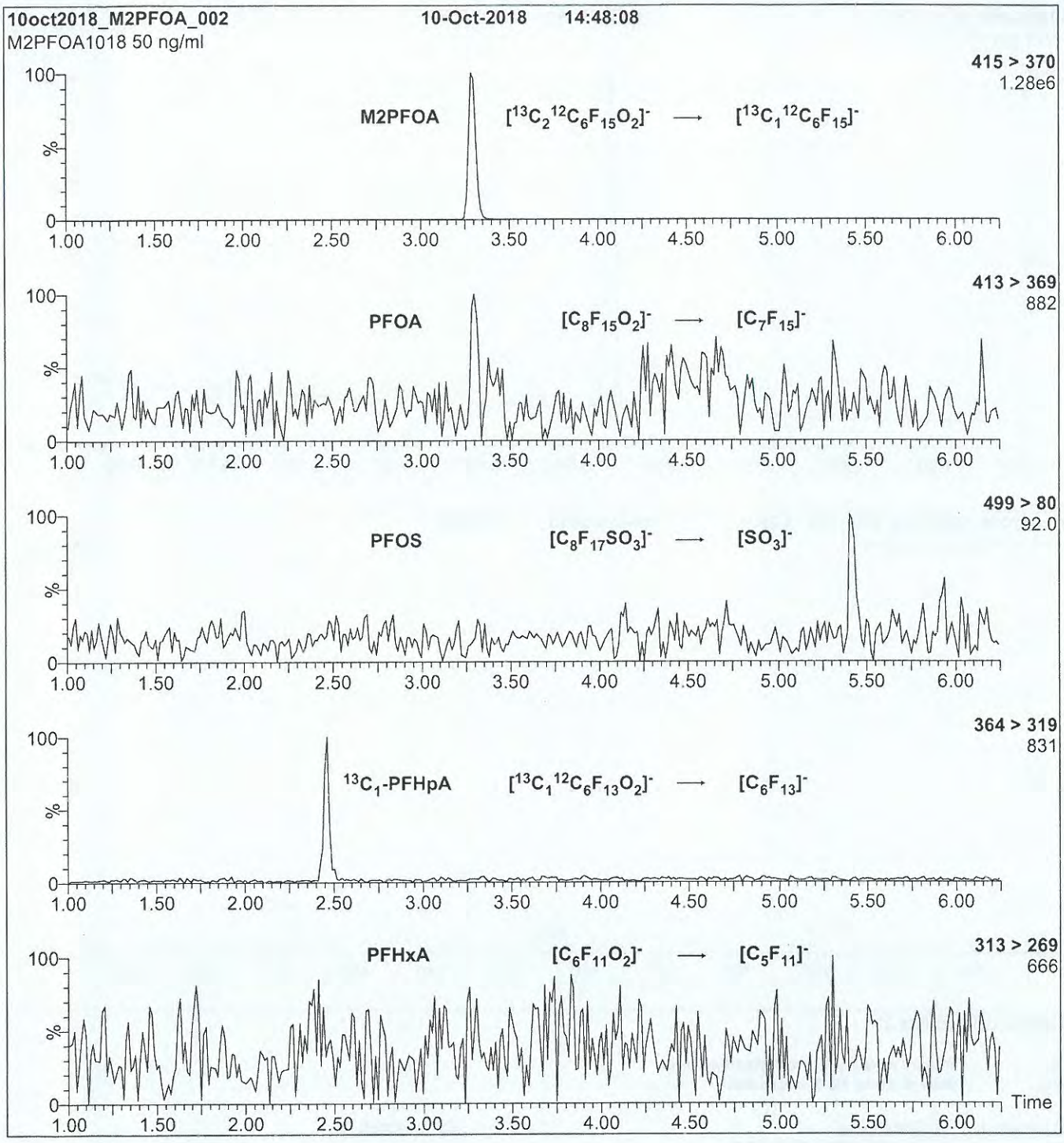
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812011

Figure 2: **M2PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFOA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

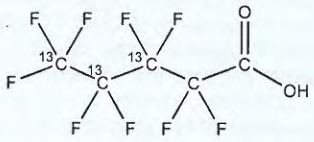
Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 8

1812012

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFPeA	**LOT NUMBER:**	M3PFPeA0417
COMPOUND:	Perfluoro-n-[3,4,5-$^{13}C_3$]pentanoic acid		
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

18L2012

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).

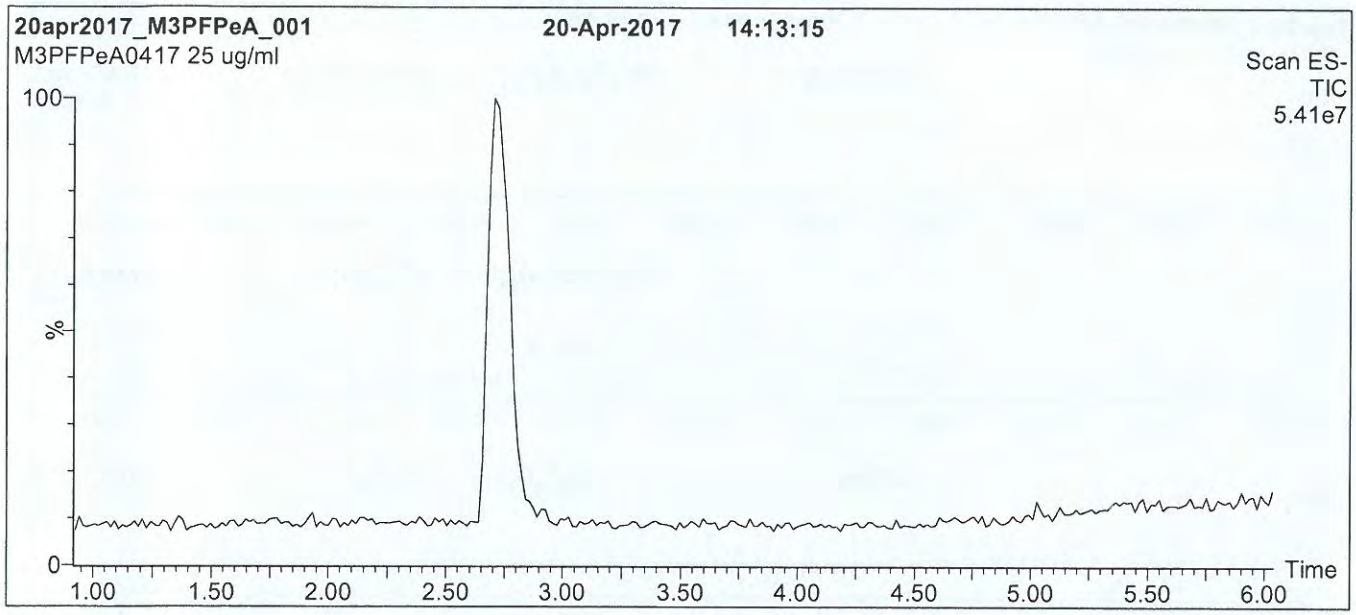
CALA Testing Accreditation No. A 1226

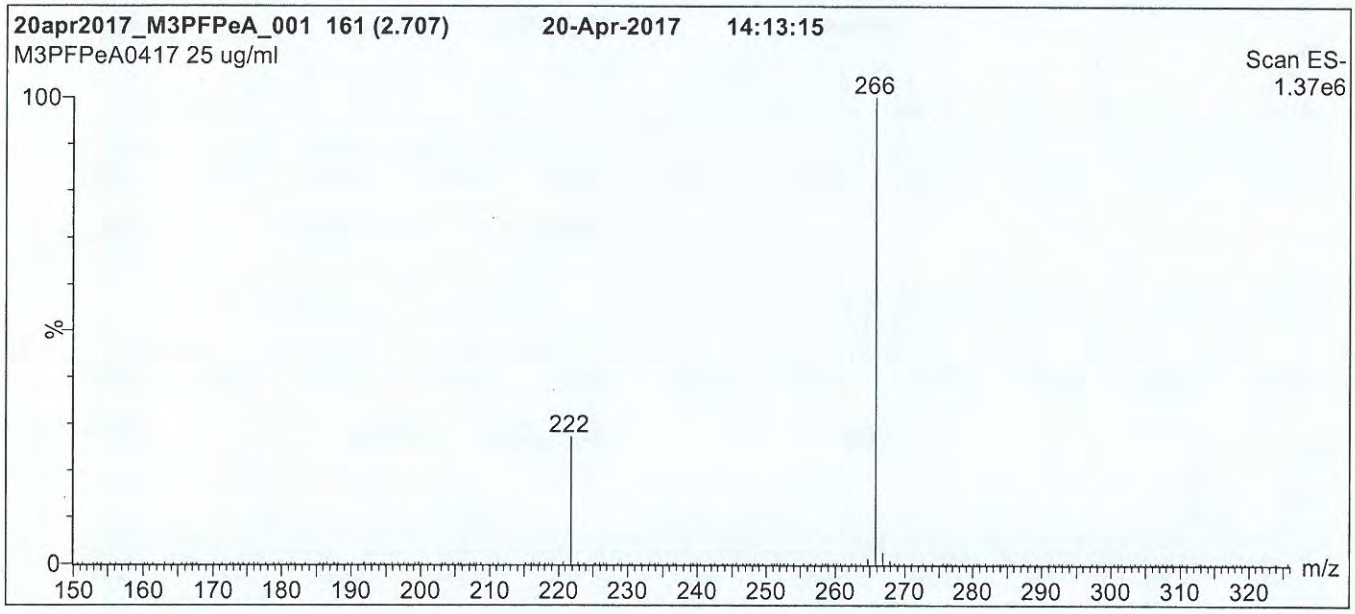
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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18L2012

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

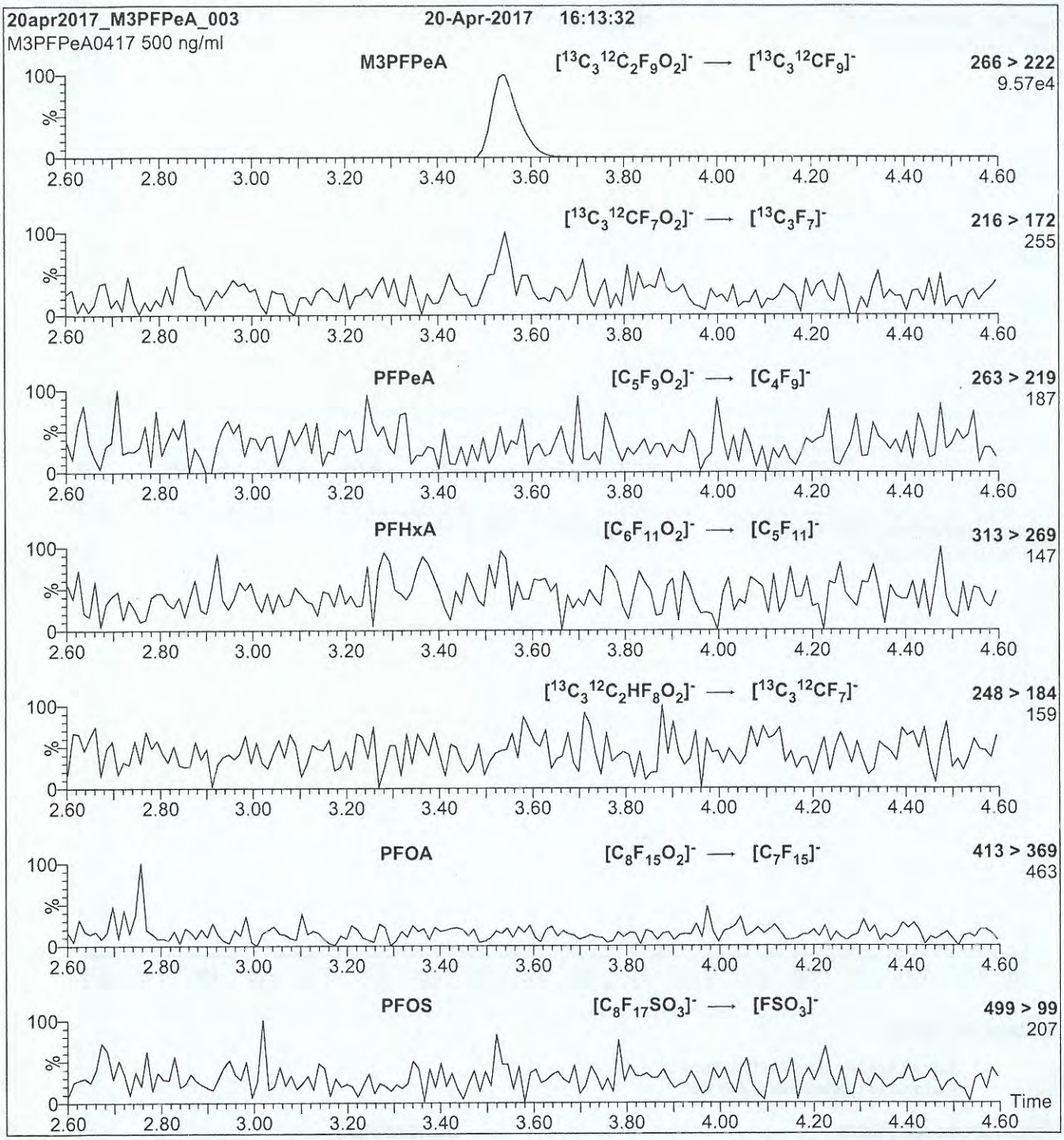
MS Parameters

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

18L2012

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

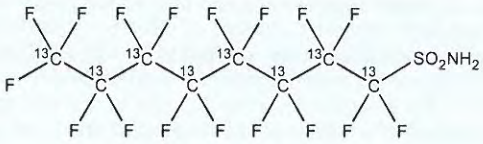
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 9

18L2013

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8FOSA-I	**LOT NUMBER:**	M8FOSA1018I
COMPOUND:	Perfluoro-1-[$^{13}C_8$]octanesulfonamide		
STRUCTURE:		**CAS #:**	1365803-60-6



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)	10/10/2018		
EXPIRY DATE: (mm/dd/yyyy)	10/10/2023		
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, ~ 0.5% of perfluoro-n-[$^{13}C_8$]octanoic acid (M8PFOA), and ~ 0.02% of perfluoro-1-[$^{13}C_7$]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/15/2018 (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

18L2013

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.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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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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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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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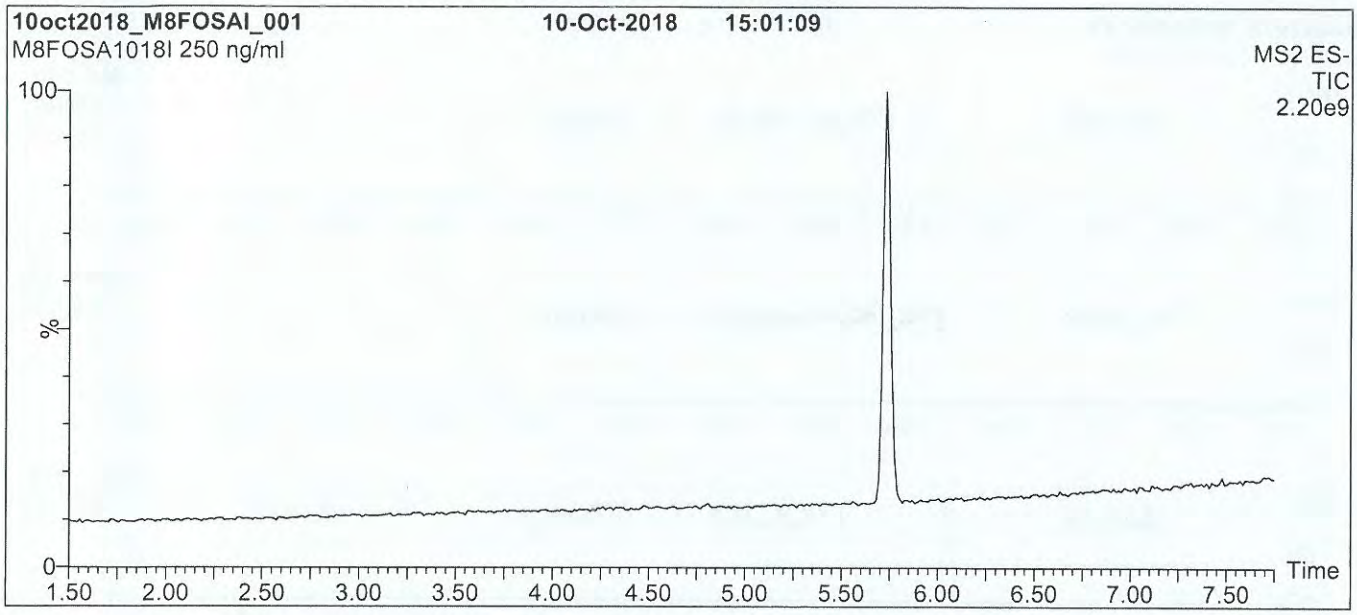
CALA Testing Accreditation No. A1226

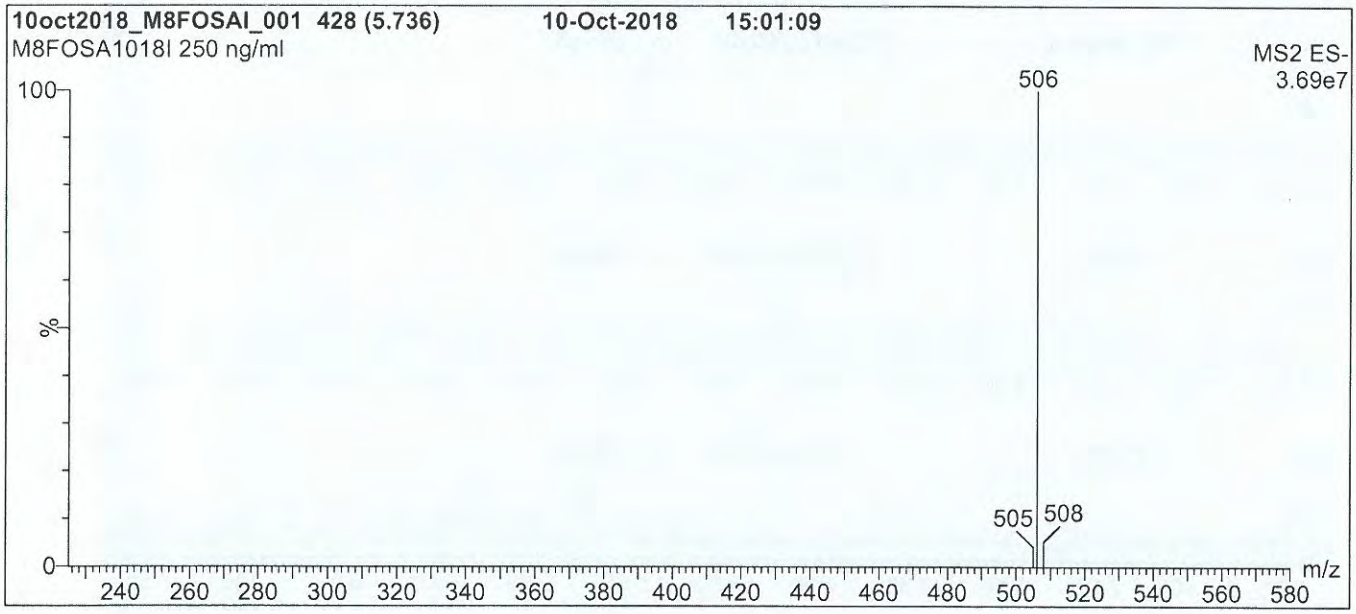
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2013

Figure 1: **M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

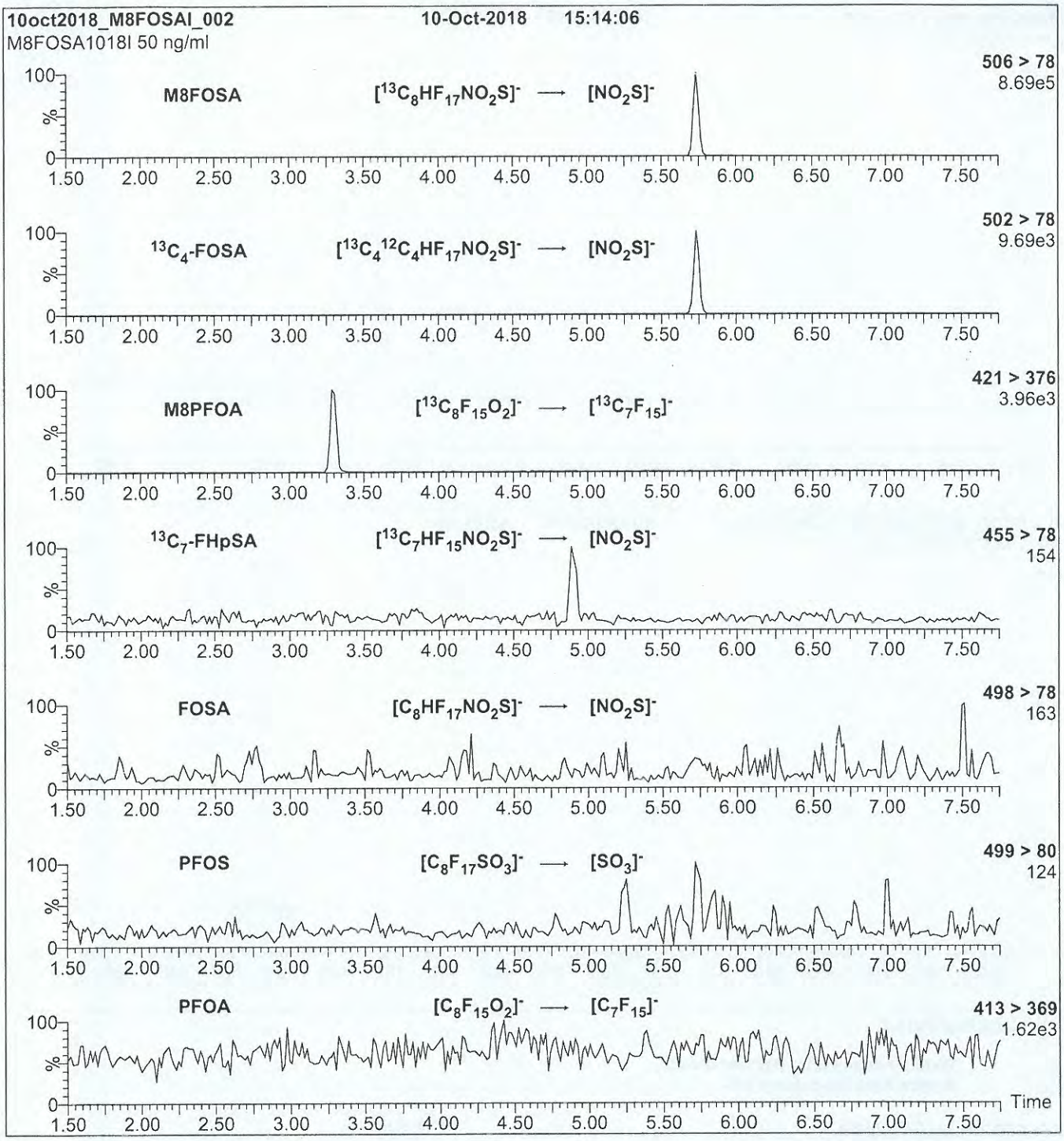
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2013

Figure 2: **M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 30

18L2014

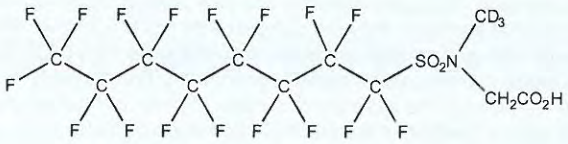
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA0818

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)	08/23/2018		
EXPIRY DATE: (mm/dd/yyyy)	08/23/2023		
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:** 08/24/2018 (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

18L2014

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

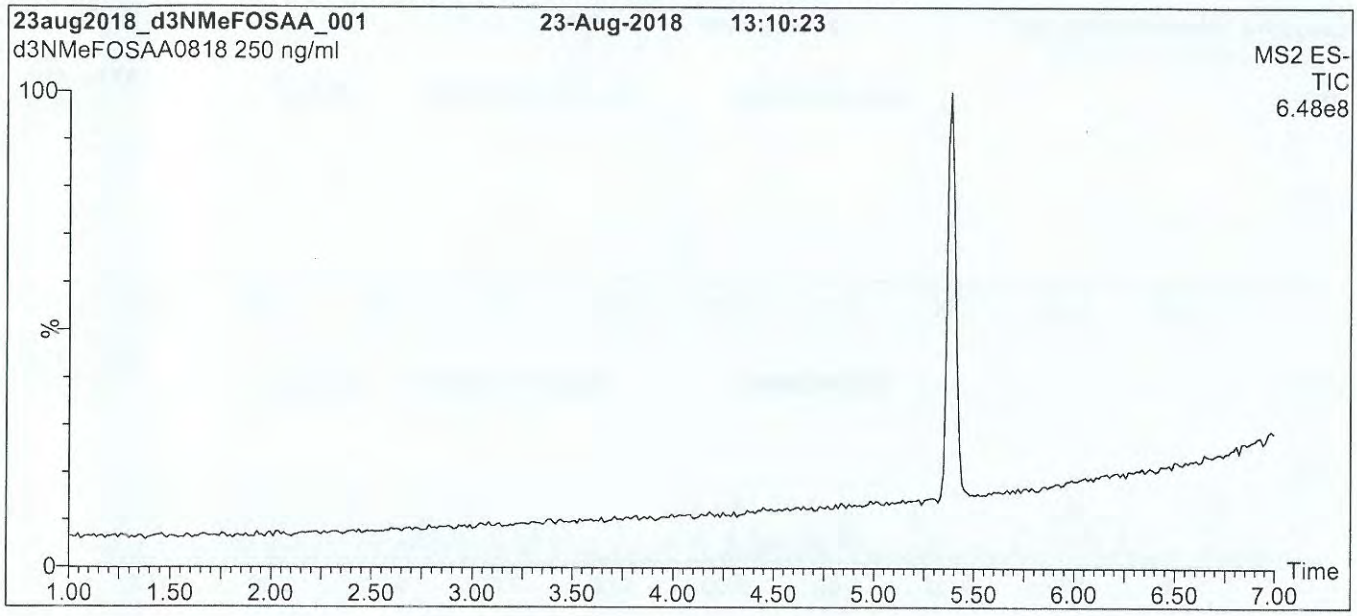
CALA Testing Accreditation No. A 1226

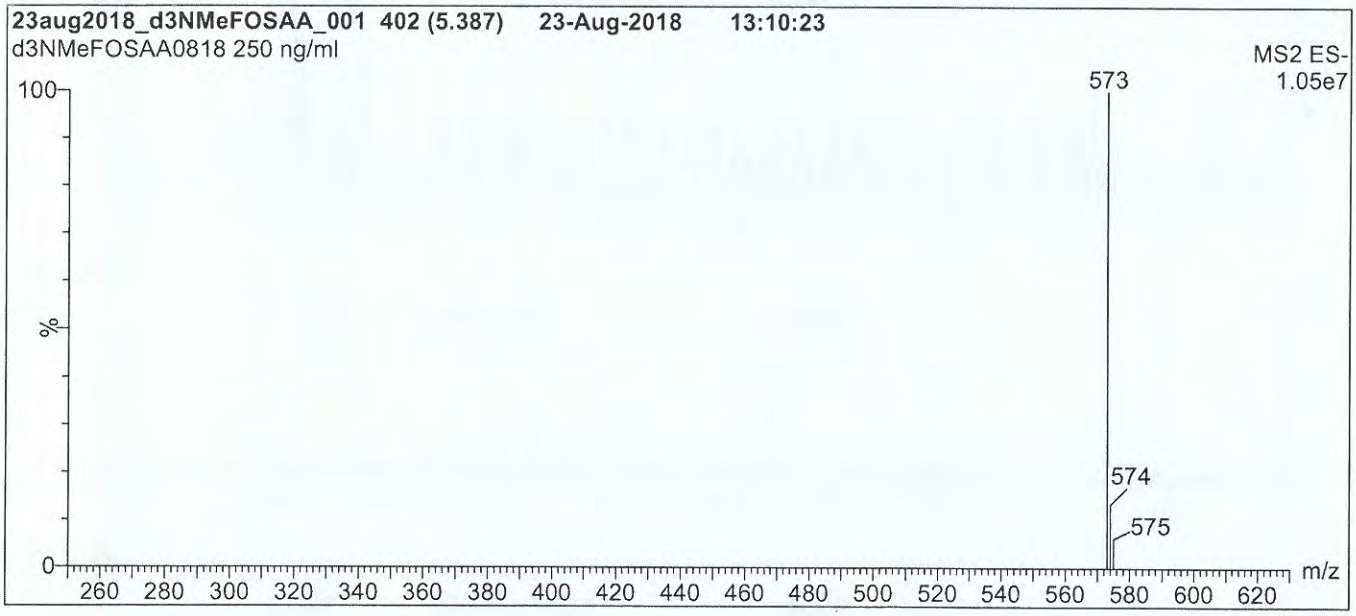
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

18L2014

Figure 1: **d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

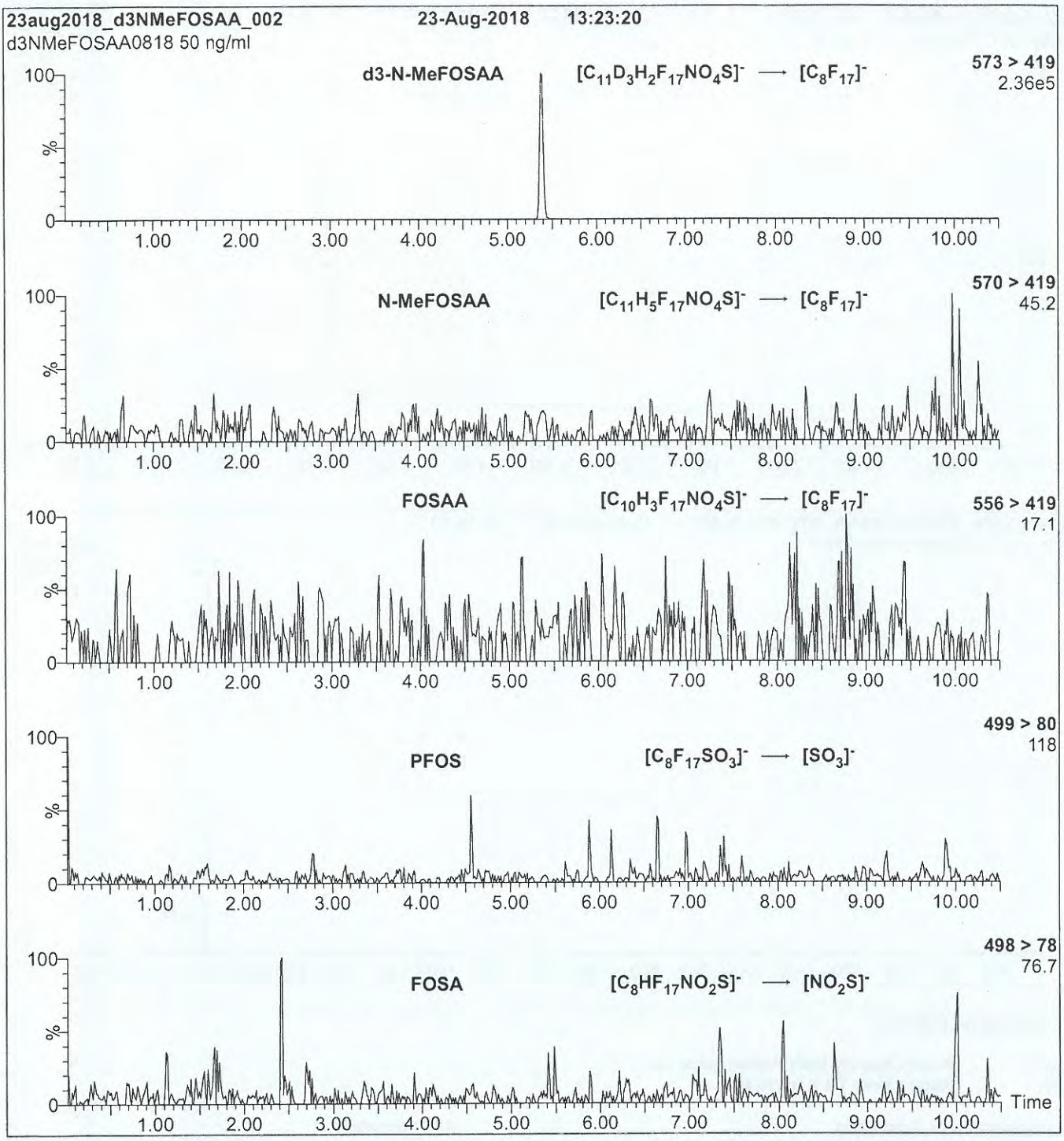
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2014

Figure 2: **d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d3-N-MeFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

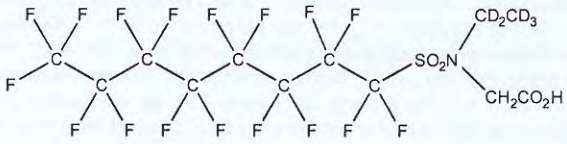
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 18

18L2015

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	d5-N-EtFOSAA	**LOT NUMBER:**	d5NEtFOSAA0818
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)	08/23/2018		
EXPIRY DATE: (mm/dd/yyyy)	08/23/2023		
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:** 08/28/2018 (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

18L2015

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.

HANDLING:

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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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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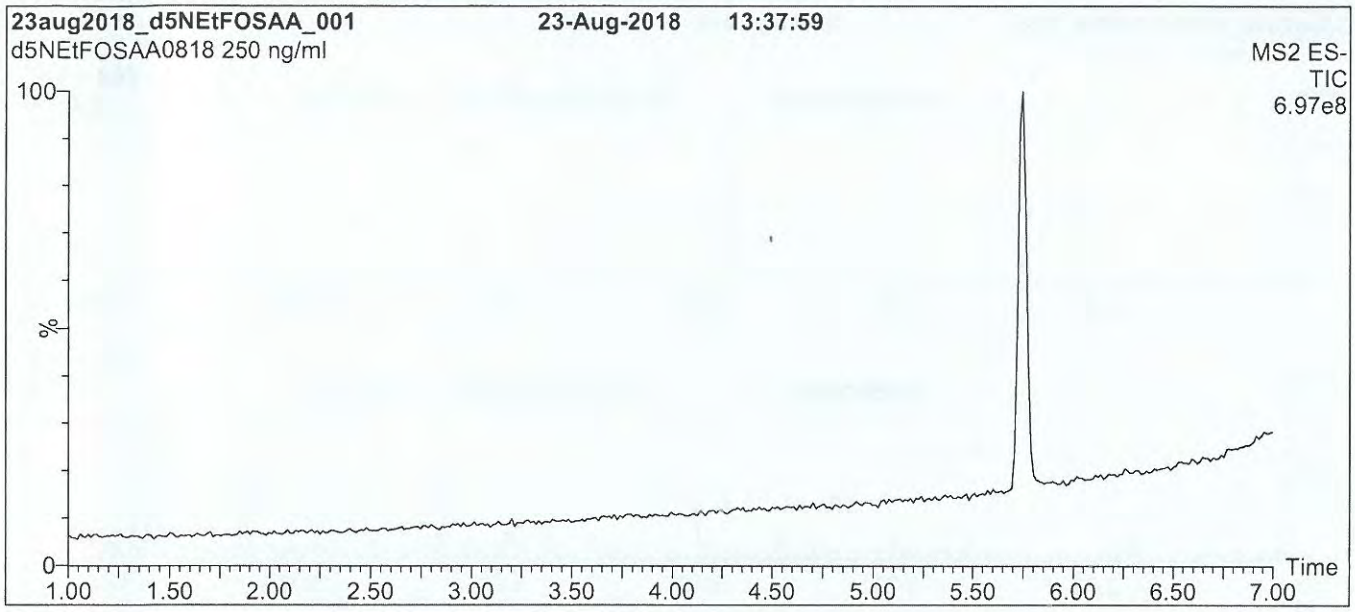
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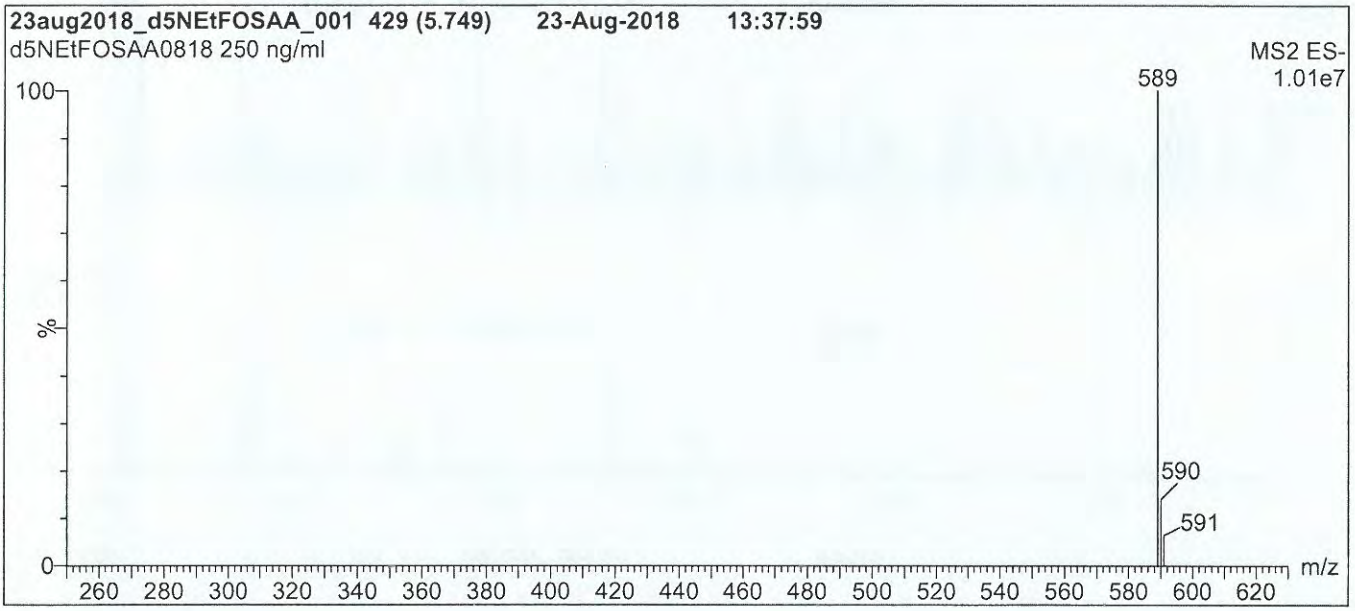
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1862015

Figure 1: **d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

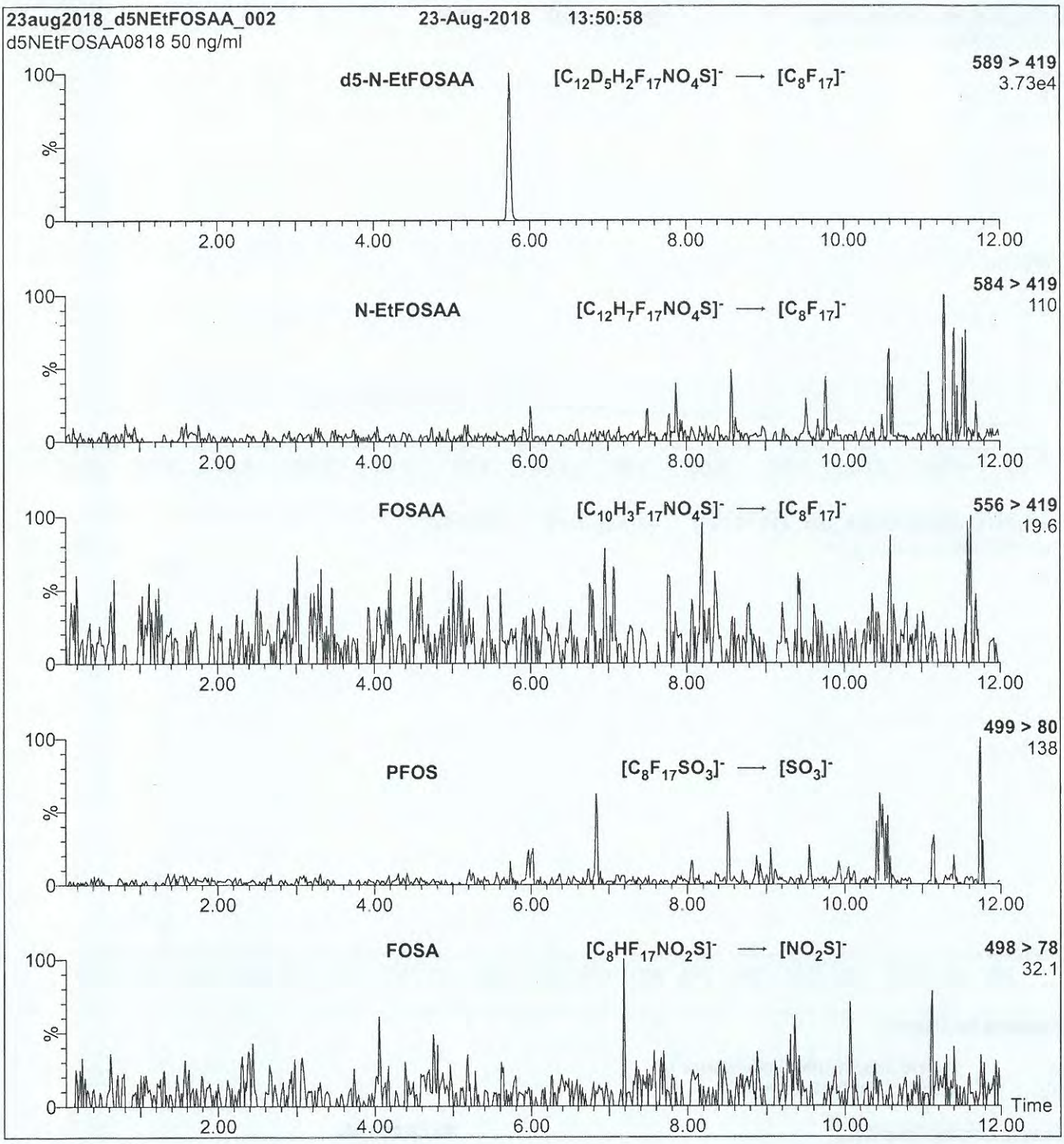
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2015

Figure 2: **d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d5-N-EtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 18

18L2016

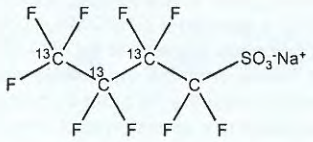
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS1218

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)	12/10/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/10/2023		
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:** 12/13/2018 (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

18L2016

INTENDED USE:

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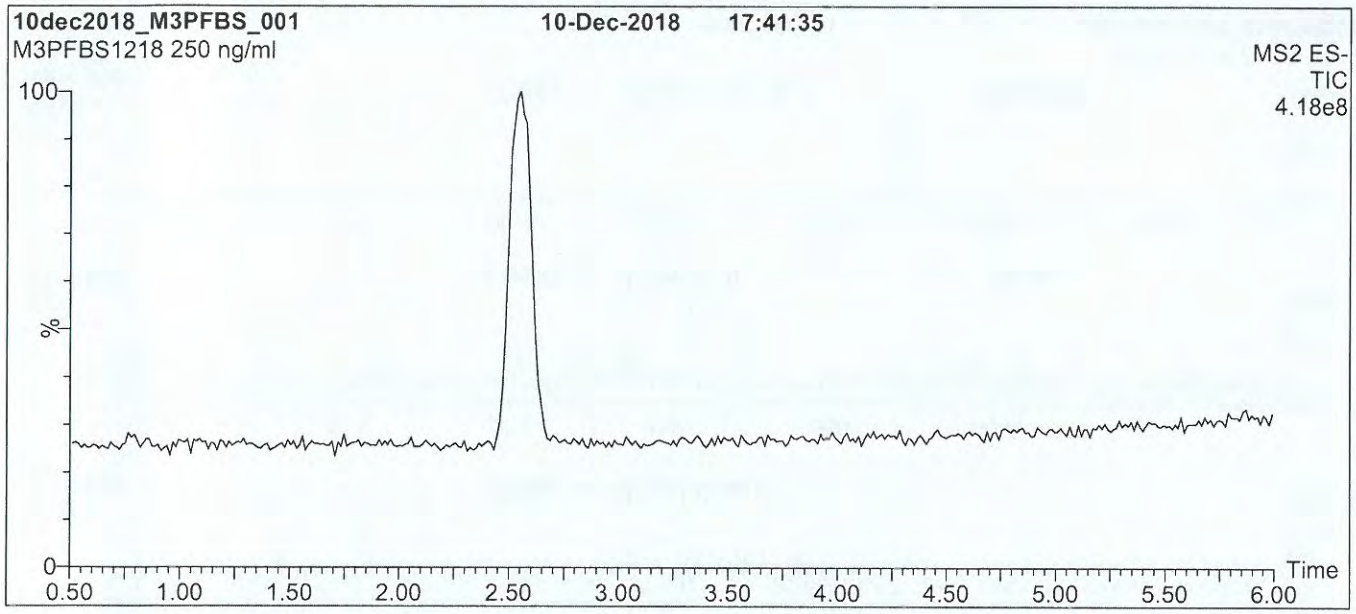
CALA Testing Accreditation No. A 1226

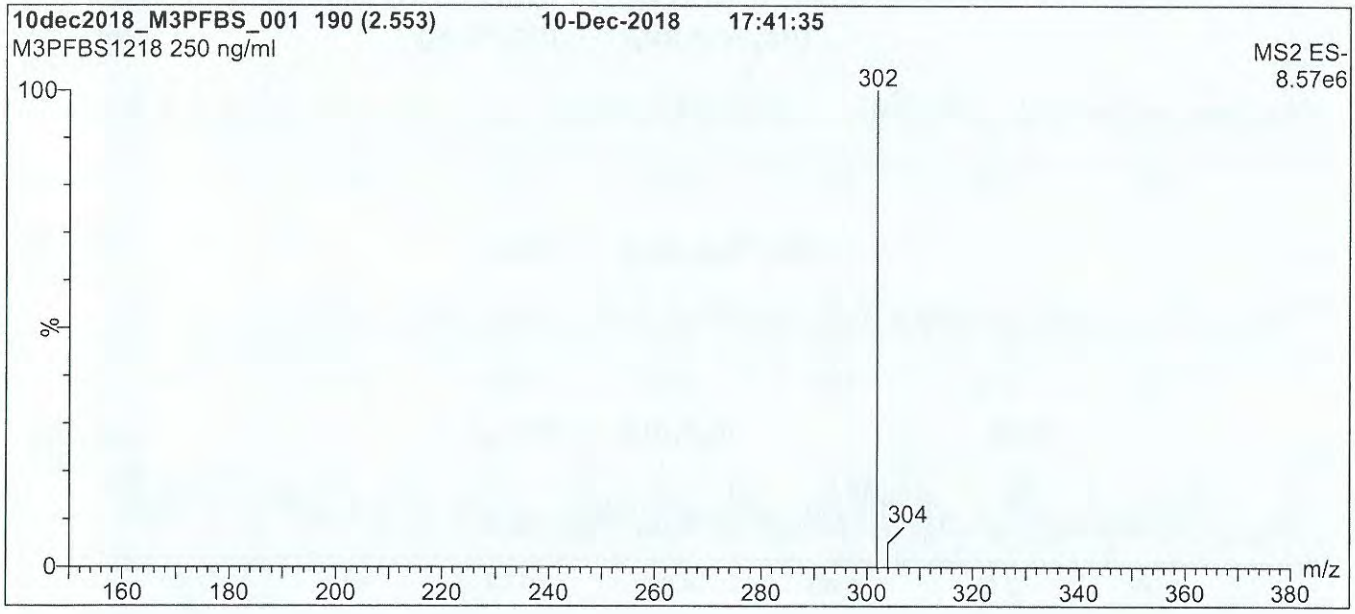
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2016

Figure 1: **M3PFBS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

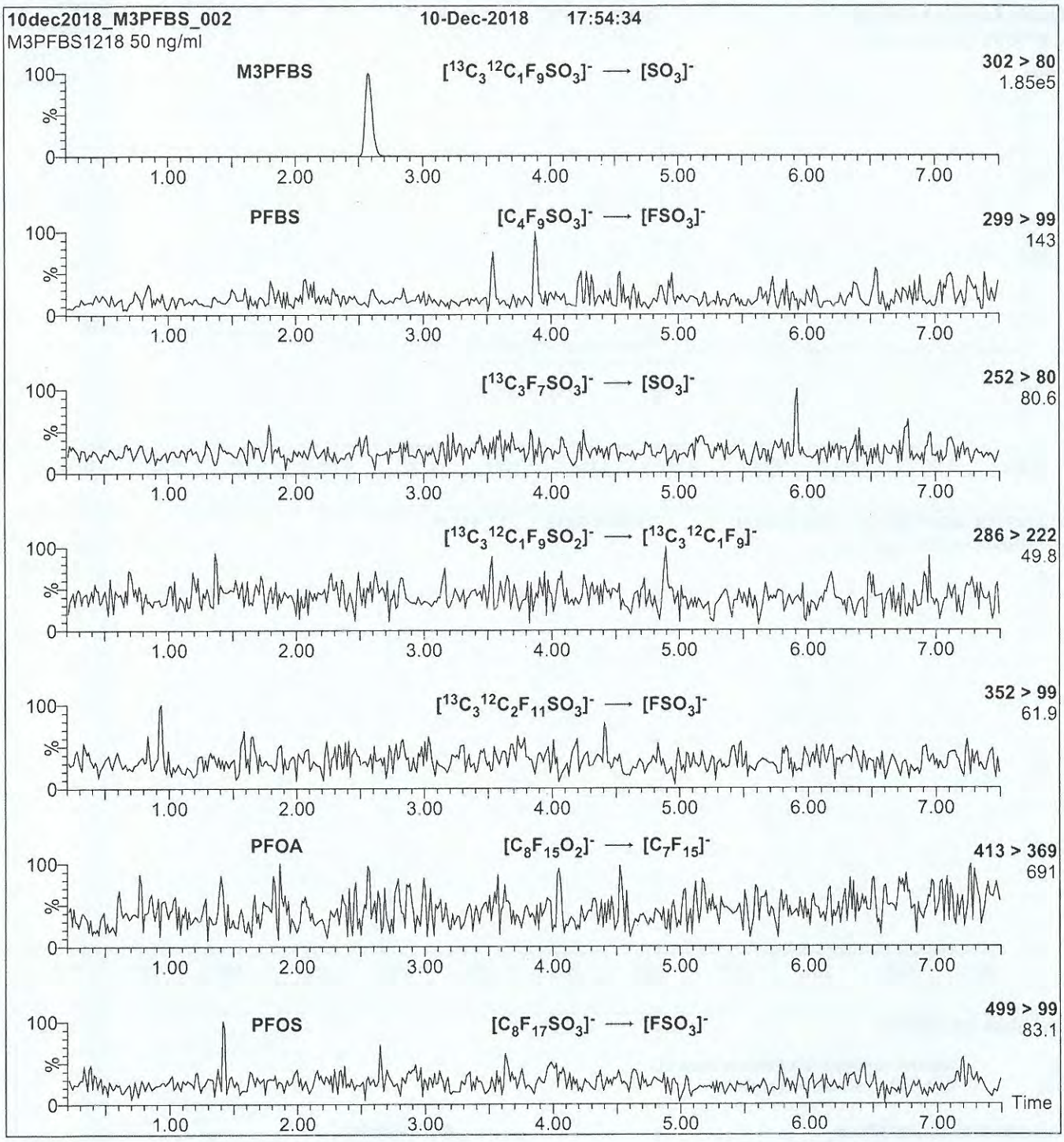
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2016

Figure 2: **M3PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFBS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

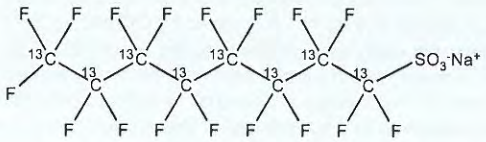
Collision Gas (mbar) = 2.90e-3
Collision Energy (eV) = 30

1812017

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8PFOS	**LOT NUMBER:**	M8PFOS0918
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)	09/20/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/20/2023		
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 sodium perfluoro-1-[$^{13}C_7$]heptanesulfonate ($^{13}C_7$-PFHpS) and ~ 1.0% of sodium perfluoro-1-[$^{13}C_4$]octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/24/2018 (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

18L2017

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

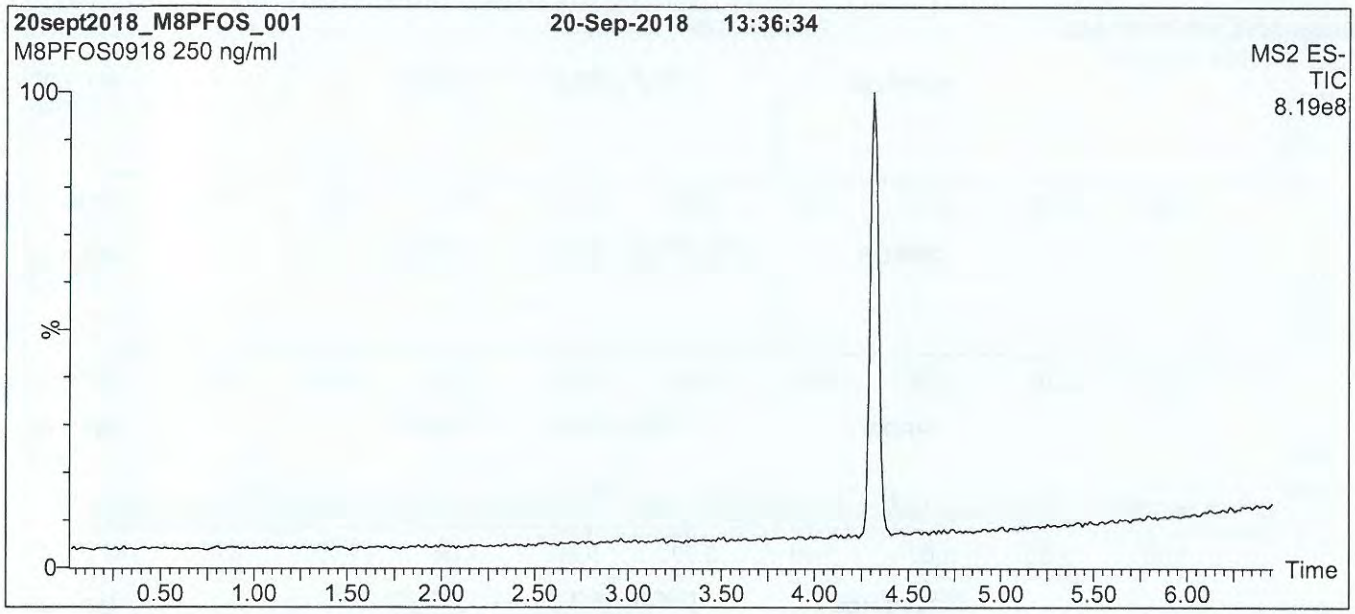
CALA Testing Accreditation No. A 1226

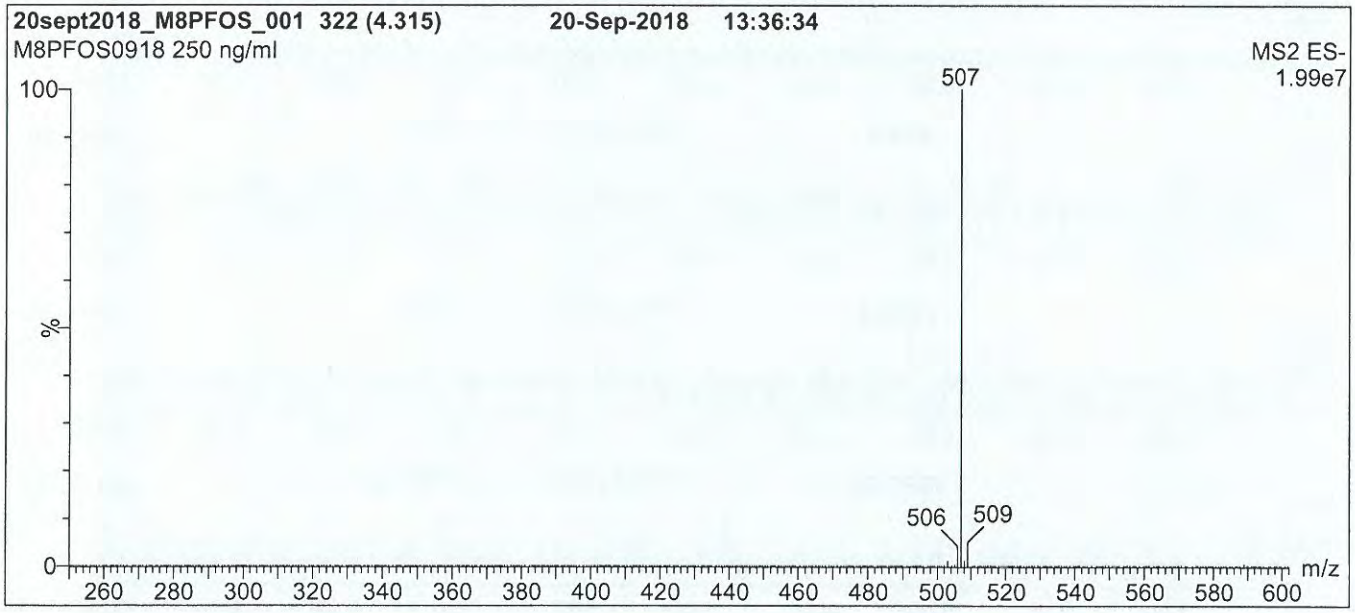
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

1812017

Figure 1: **M8PFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

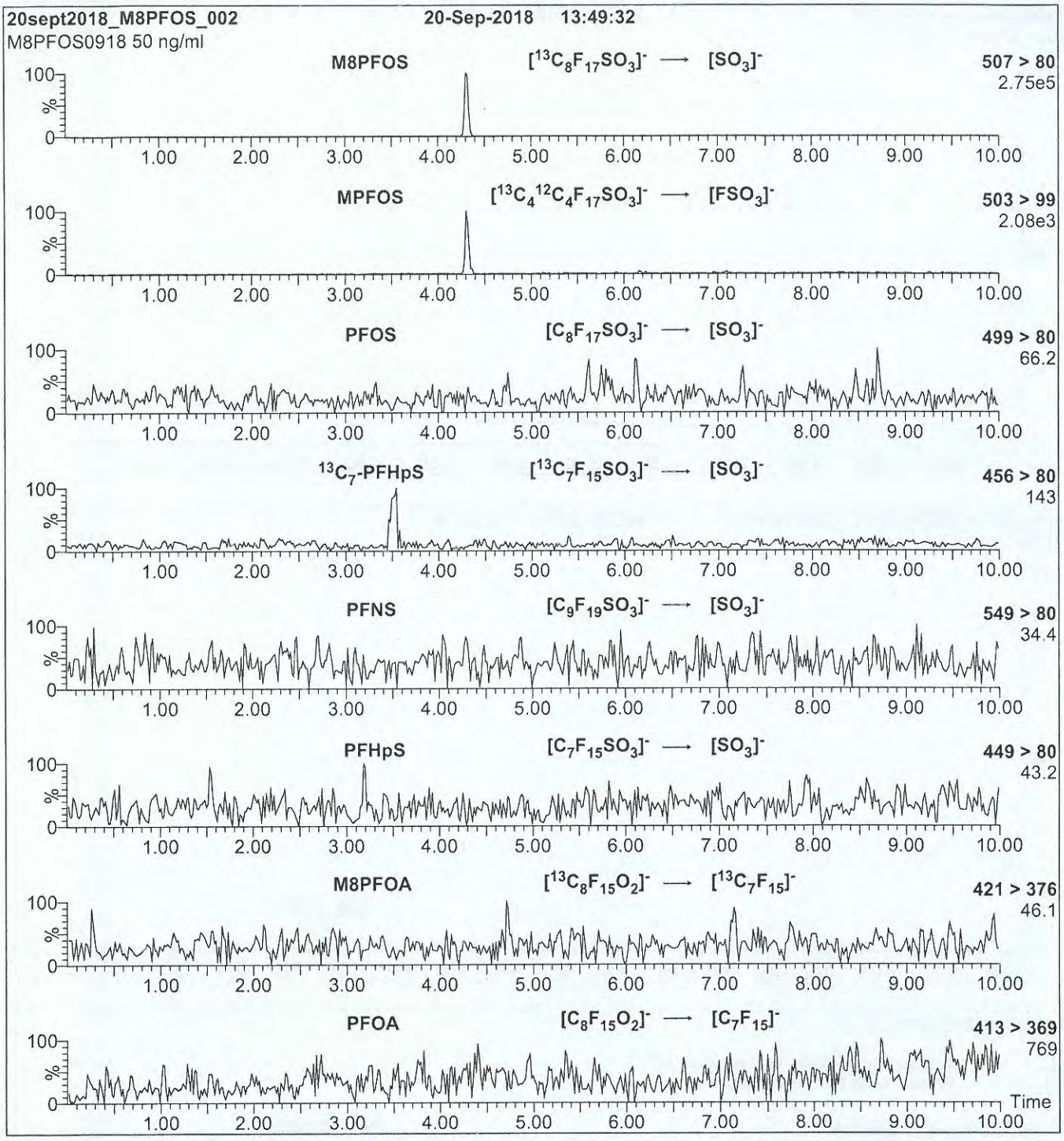
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2017

Figure 2: **M8PFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8PFOS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

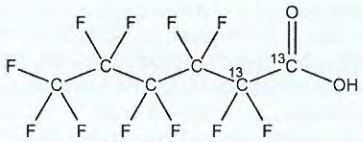
Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 42

18L2019

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFHxA	**LOT NUMBER:**	MPFHxA0518
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 ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	05/22/2018		
EXPIRY DATE: (mm/dd/yyyy)	05/22/2023		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/30/2018 (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

18L2019

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.

HANDLING:

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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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

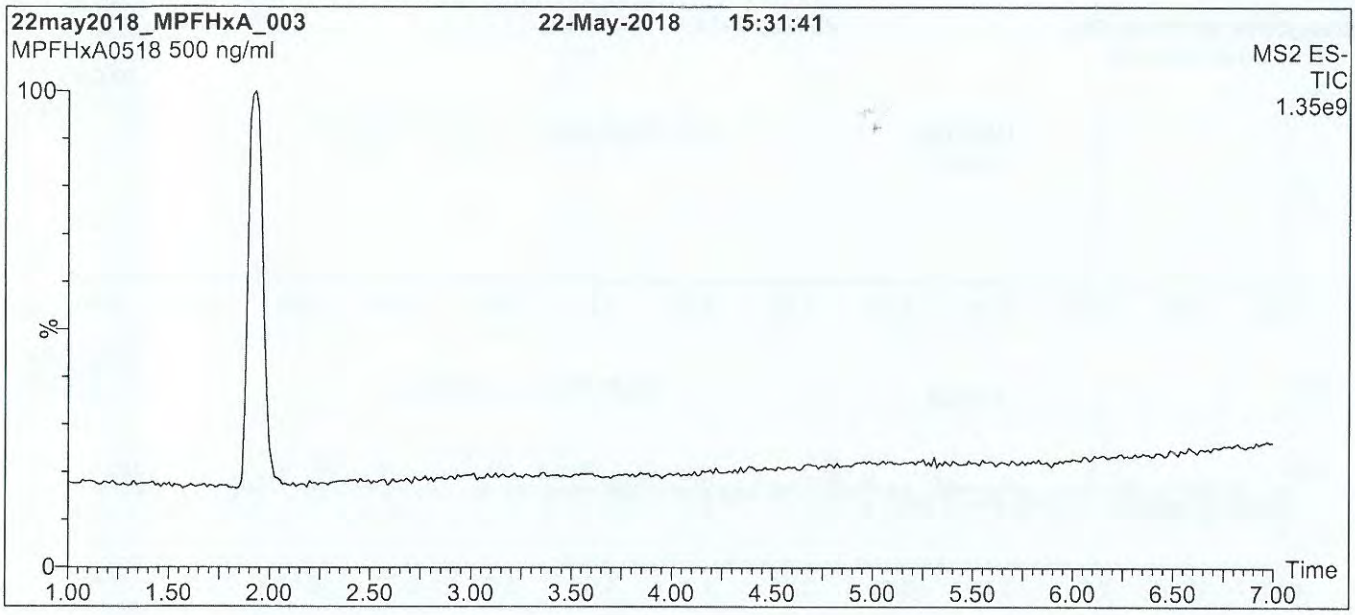
CALA Testing Accreditation No. A 1226

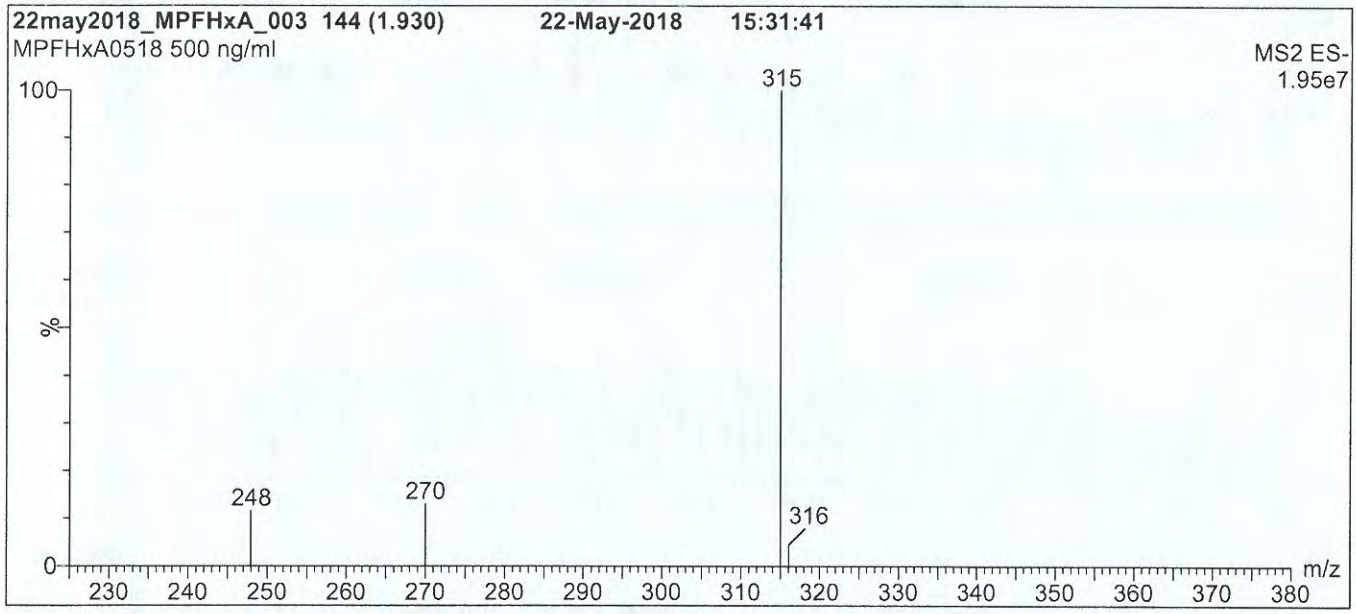
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

18L2019

Figure 1: **MPFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

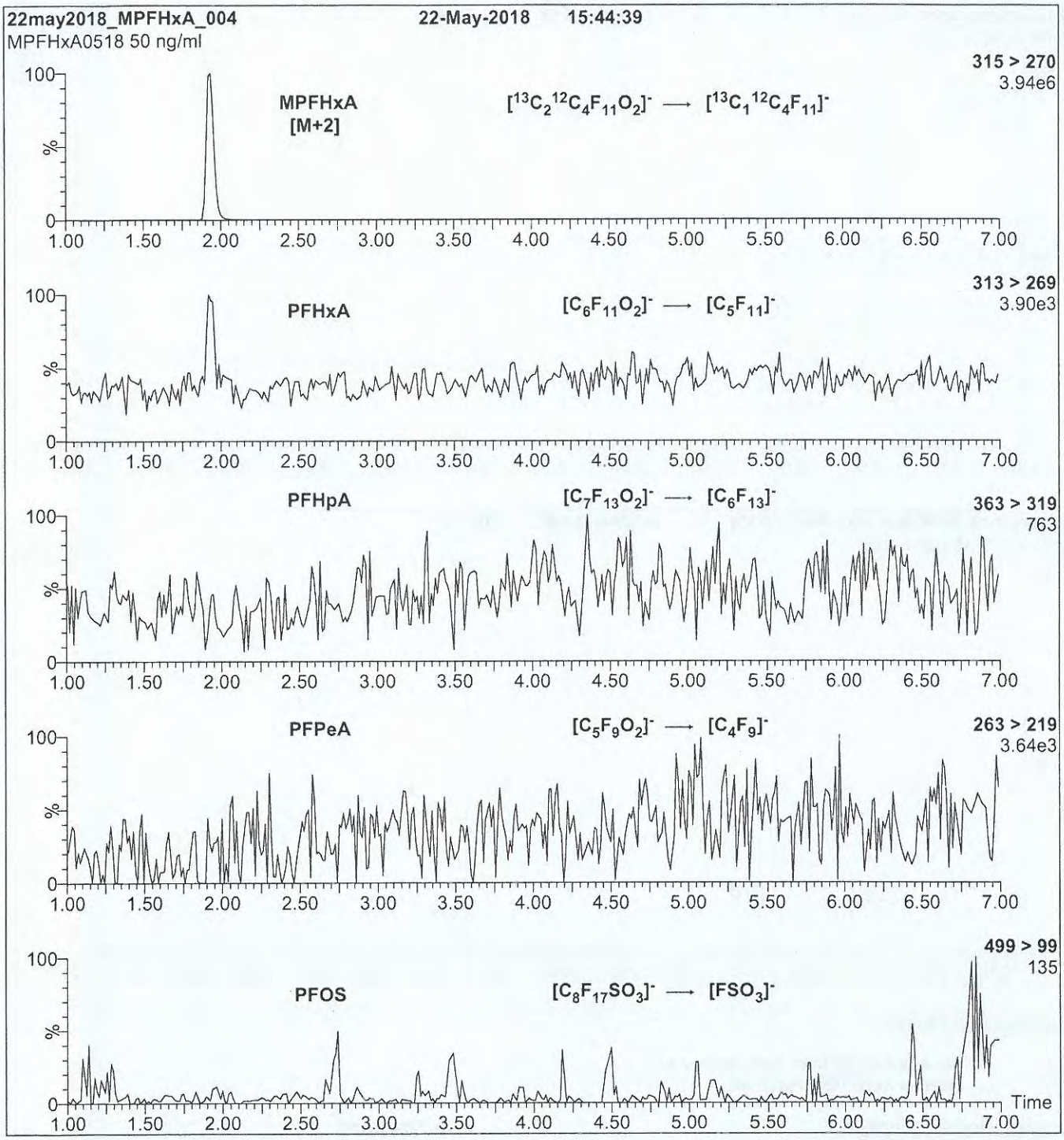
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

18L2019

Figure 2: **MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

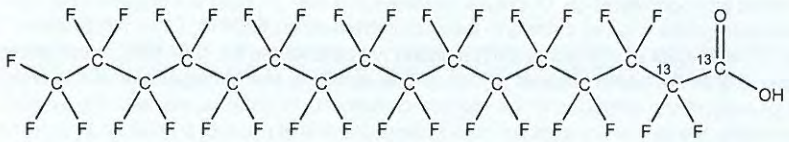
Collision Gas (mbar) = 3.55e-3
Collision Energy (eV) = 8

1812020

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M2PFHxDA	**LOT NUMBER:**	M2PFHxDA1018
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]hexadecanoic acid		
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)	10/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2023		
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 and ~ 0.2% of perfluoro-n-[$^{13}C_1$]pentadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/19/2018 (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

18L2020

INTENDED USE:

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HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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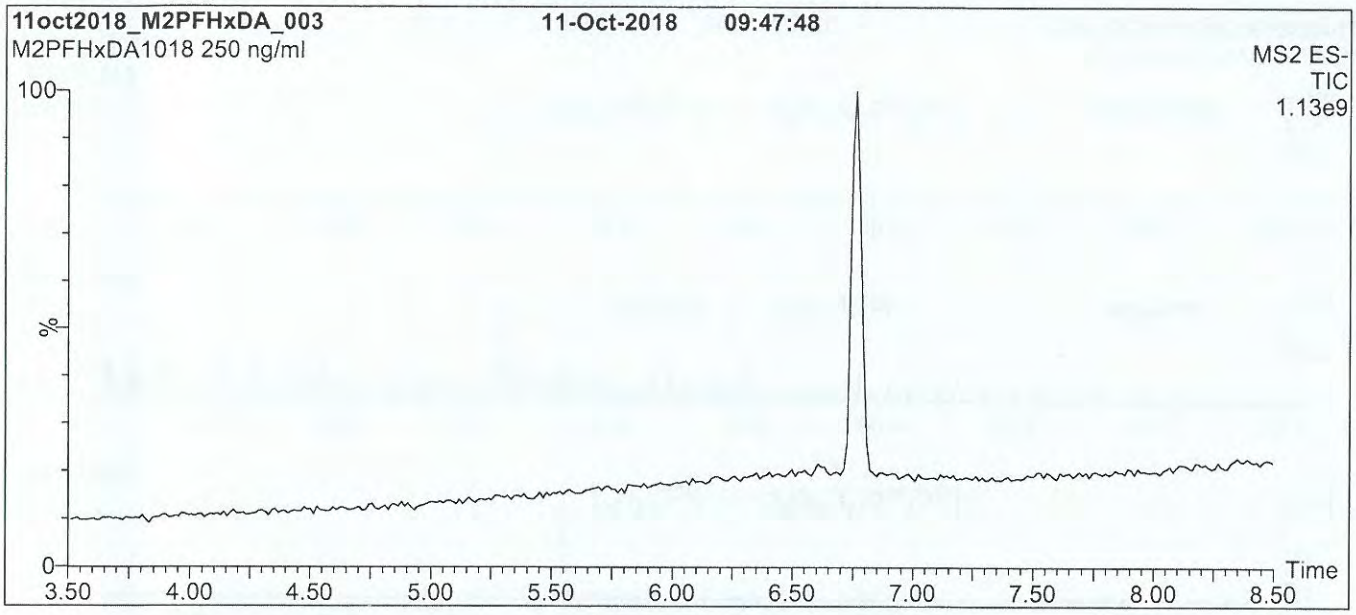
CALA Testing Accreditation No. A1226

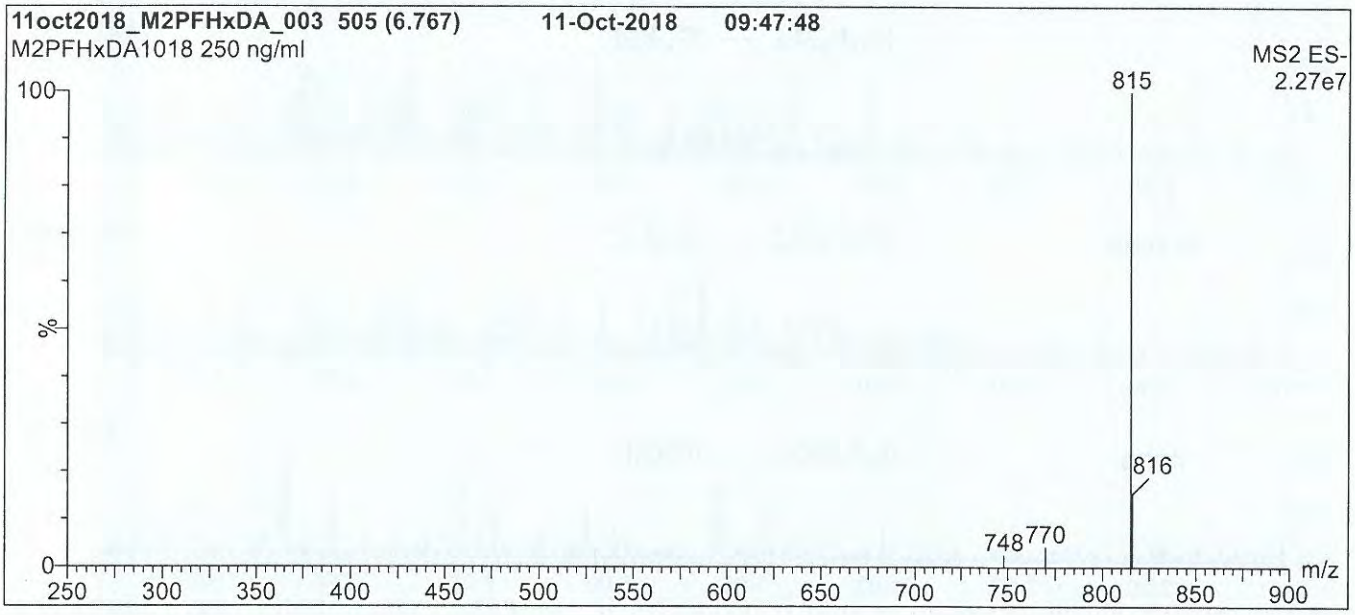
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2020

Figure 1: **M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

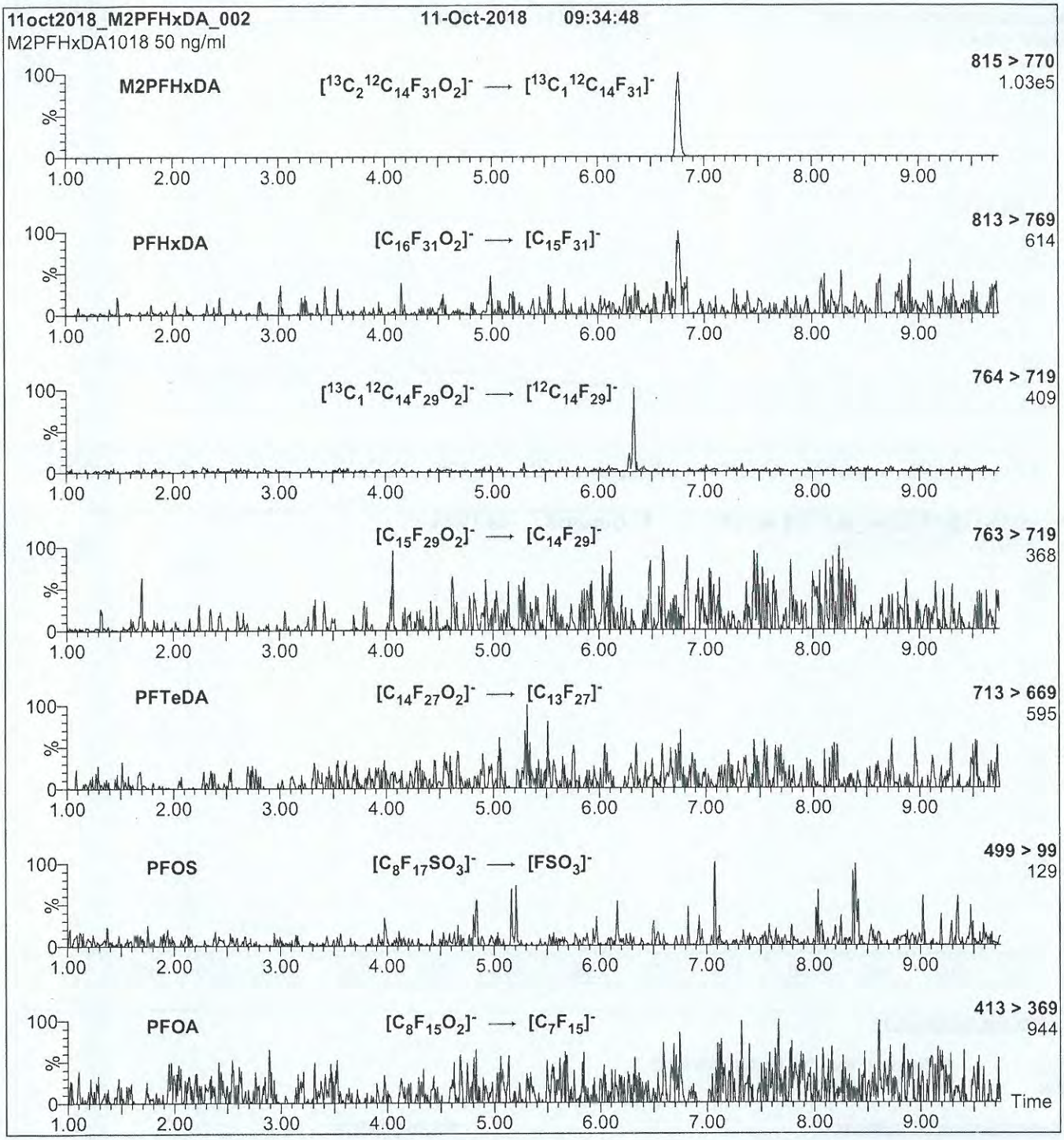
MS Parameters

Experiment: Full Scan (250 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2020

Figure 2: **M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFHxDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 15

1812027

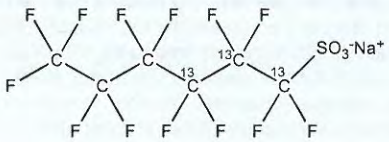
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFHxS **LOT NUMBER:** M3PFHxS0618

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) **SOLVENT(S):** Methanol
47.3 ± 2.4 µg/ml (M3PFHxS anion)

CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ^{13}C ($1,2,3\text{-}^{13}C_3$)

LAST TESTED: (mm/dd/yyyy) 06/20/2018

EXPIRY DATE: (mm/dd/yyyy) 06/20/2023

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 ~ 0.1% perfluoro-1-[1,2-$^{13}C_2$]pentanesulfonate, ~ 0.1% perfluoro-1-octanesulfonate, and ~ 0.05% of perfluoro-1-hexanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/29/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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1812027

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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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

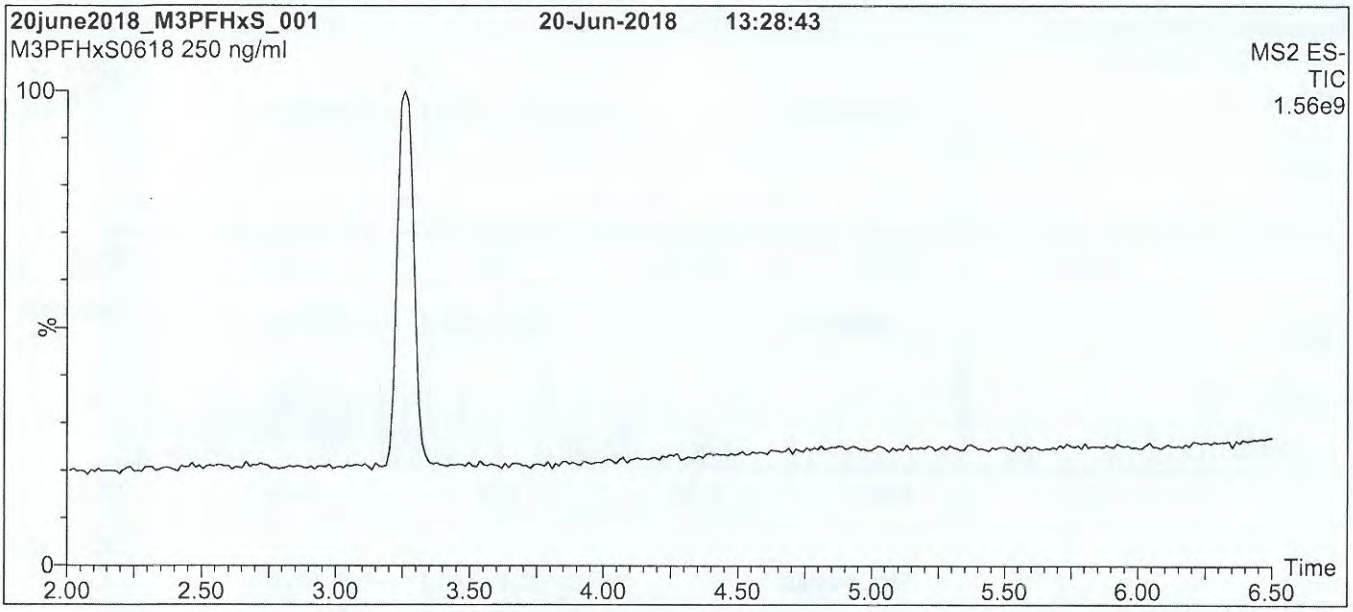
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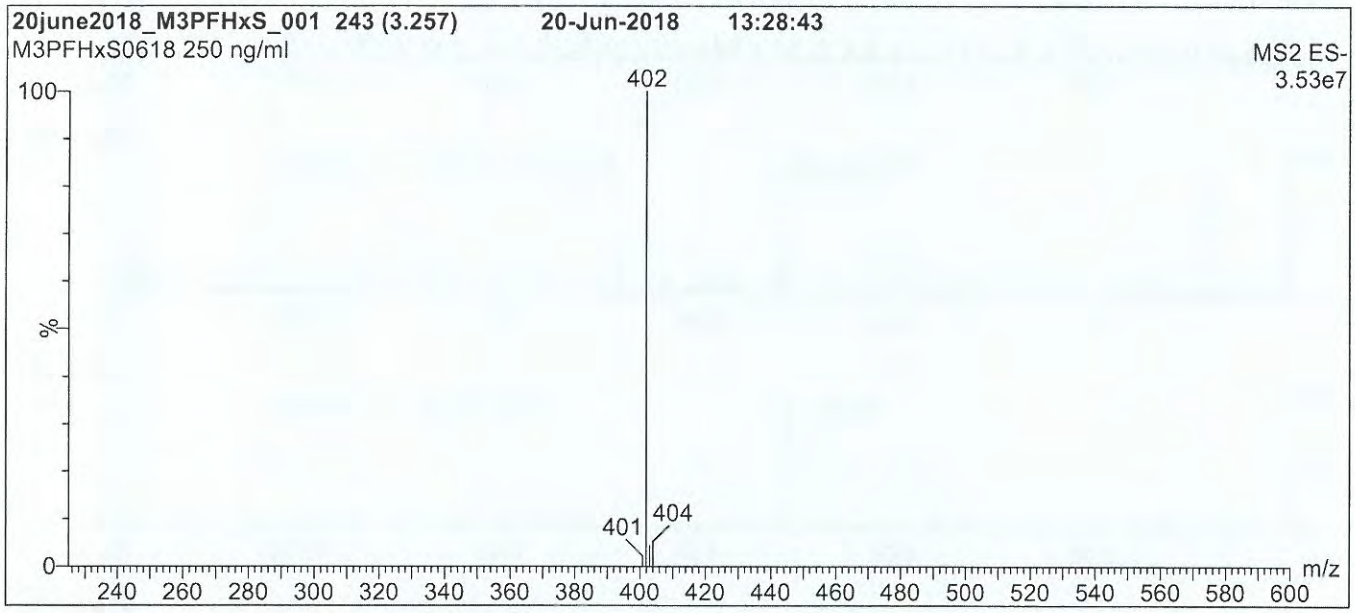
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

1812027

Figure 1: **M3PFHxS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

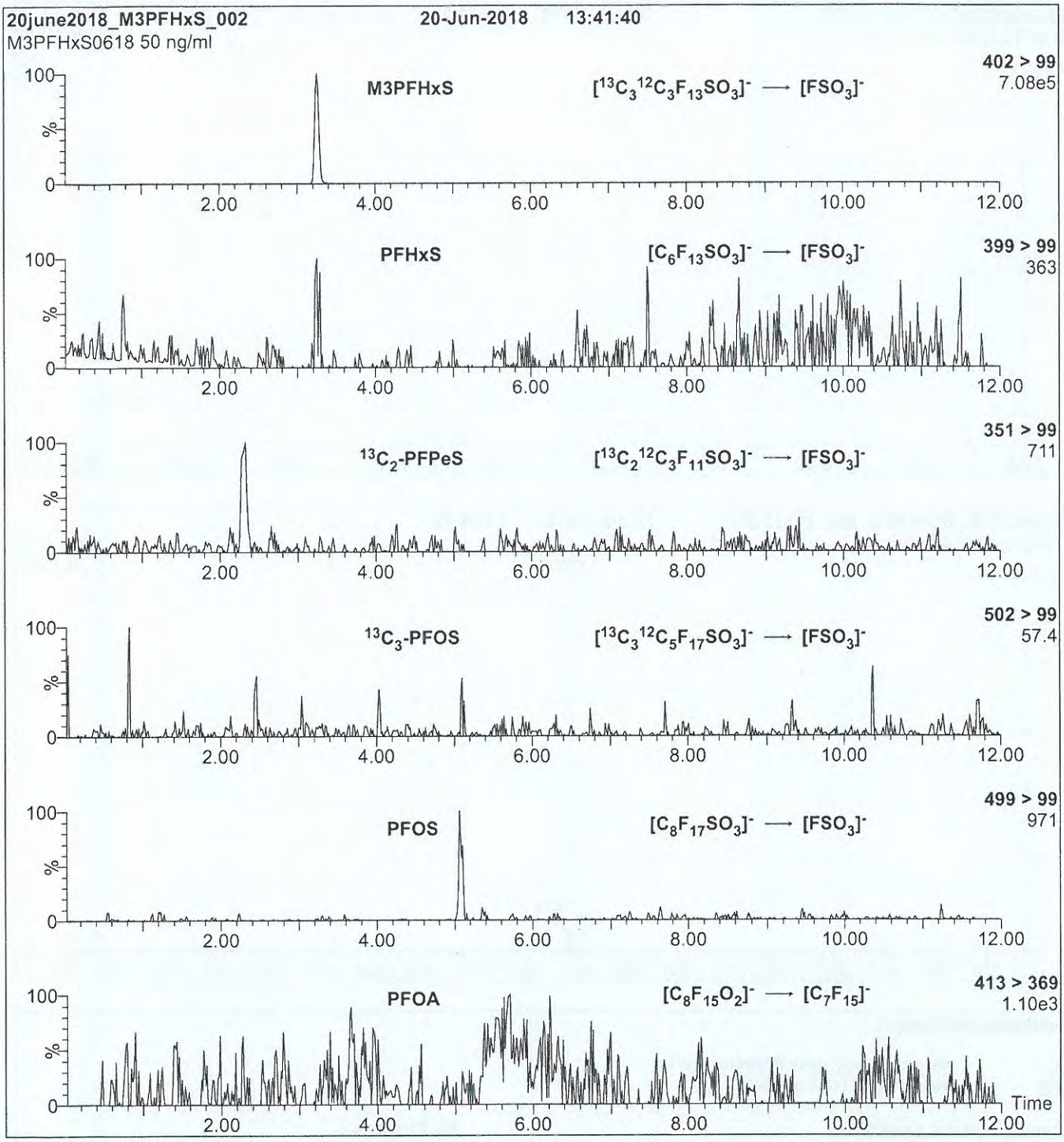
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

18L2027

Figure 2: **M3PFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFHxS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 36

18L2077

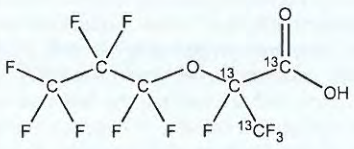
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA1018

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-$^{13}C_3$-propanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3HF_{11}O_3$	**MOLECULAR WEIGHT:**	333.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	10/24/2018		
EXPIRY DATE: (mm/dd/yyyy)	10/24/2021		
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 ~ 1.9% of the linear M3HFPO-DA isomer.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/31/2018 (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

18L2077

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.

HANDLING:

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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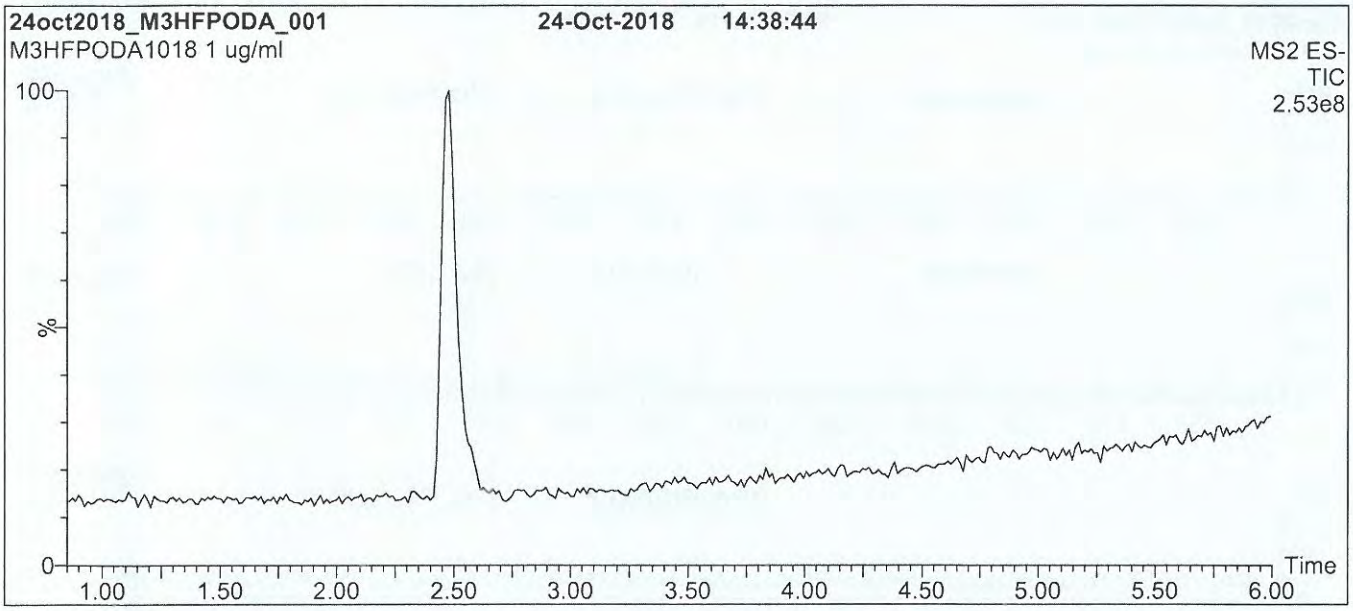
CALA Testing Accreditation No. A 1226

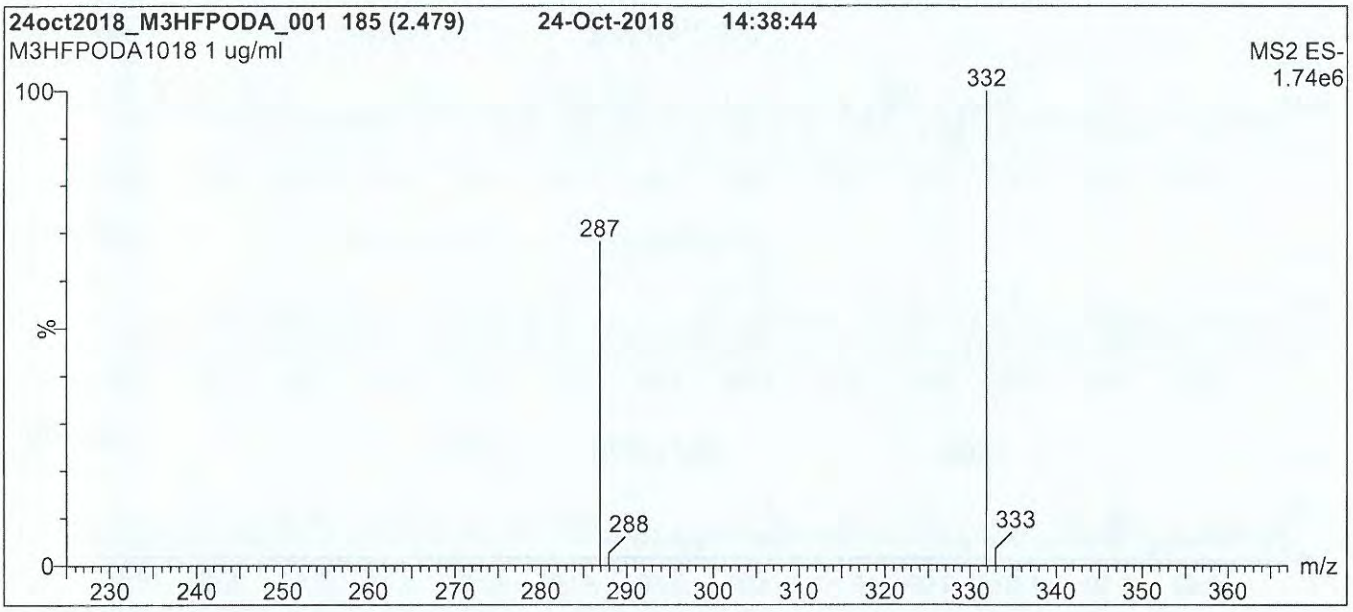
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2077

Figure 1: **M3HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

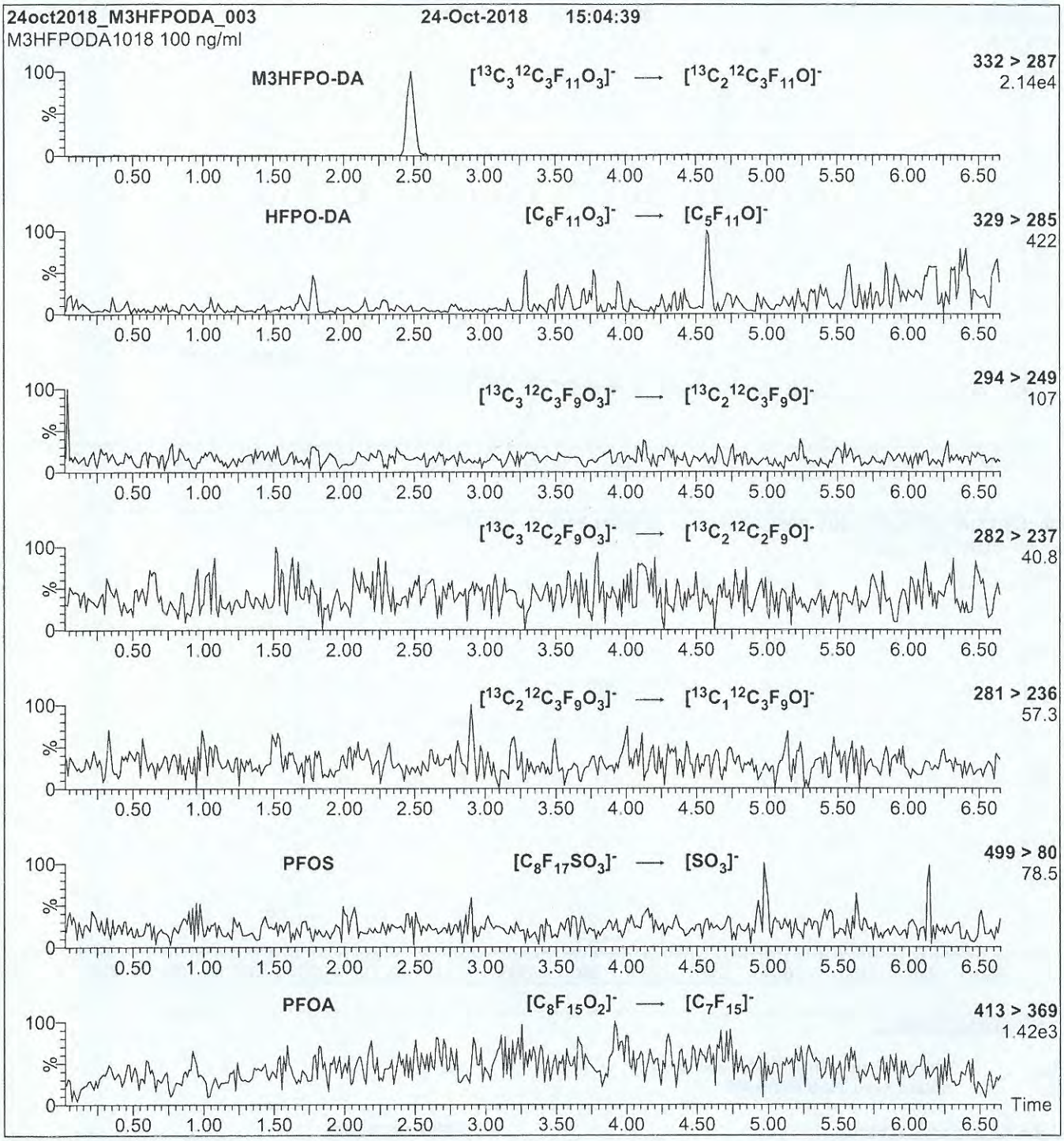
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (l/hr) = 1000

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Figure 2: **M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3HFPO-DA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.02e-3
Collision Energy (eV) = 6

Analytical Standard Record

Vista Analytical Laboratory

19E2204

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
18C0911	PFECHS	09-Mar-18	** Vendor **	20-Feb-22	0.435
18L2034	PFDoA	20-Dec-18	** Vendor **	18-Apr-23	0.4
18L2035	PFBA	20-Dec-18	** Vendor **	28-Nov-23	0.4
18L2036	PFPeA	20-Dec-18	** Vendor **	16-Feb-23	0.4
18L2037	PFHxA	20-Dec-18	** Vendor **	18-May-23	0.4
18L2038	PFDA	20-Dec-18	** Vendor **	12-Nov-23	0.4
18L2039	PFUdA	20-Dec-18	** Vendor **	23-Aug-23	0.4
18L2040	PFTrDA	20-Dec-18	** Vendor **	16-Feb-23	0.4
18L2041	PFHpA	20-Dec-18	** Vendor **	12-Jul-23	0.4
18L2042	PFOA	20-Dec-18	** Vendor **	23-Aug-23	0.4
18L2043	PFNA	20-Dec-18	** Vendor **	16-Feb-23	0.4
18L2044	PFTeDA	20-Dec-18	** Vendor **	23-Aug-23	0.4
18L2045	PFHxDA	20-Dec-18	** Vendor **	13-Jul-22	0.4
18L2046	PFODA	20-Dec-18	** Vendor **	13-Jul-22	0.4
18L2047	L-PFBS	20-Dec-18	** Vendor **	04-May-23	0.454
18L2048	L-PFPeS	20-Dec-18	** Vendor **	12-Jul-23	0.428
18L2049	L-PFHpS	20-Dec-18	** Vendor **	04-May-23	0.42
18L2050	L-PFNS	20-Dec-18	** Vendor **	13-Jul-23	0.418
18L2051	L-PFDS	20-Dec-18	** Vendor **	05-Oct-23	0.415
18L2052	br-PFHxSK	20-Dec-18	** Vendor **	02-Oct-23	0.44
18L2053	br-PFOSK anion	20-Dec-18	** Vendor **	18-Apr-23	0.431
18L2054	4:2 FTS	20-Dec-18	** Vendor **	03-Jul-23	0.43
18L2055	6:2FTS	20-Dec-18	** Vendor **	03-Apr-23	0.422
18L2056	8:2FTS	20-Dec-18	** Vendor **	28-Nov-23	0.418
18L2057	FOSA-I	20-Dec-18	** Vendor **	20-Jun-23	0.4
18L2058	br-NMeFOSAA	20-Dec-18	** Vendor **	17-Jan-23	0.4
18L2059	br-NEtFOSAA	20-Dec-18	** Vendor **	26-Jul-23	0.4
18L2060	N-MeFOSA-M	20-Dec-18	** Vendor **	31-May-23	2
18L2061	N-EtFOSA-M	20-Dec-18	** Vendor **	31-May-23	2
18L2062	N-MeFOSE-M	20-Dec-18	** Vendor **	17-May-23	2
18L2063	N-EtFOSE-M	20-Dec-18	** Vendor **	04-Jun-23	2
18L2071	HFPO-DA	20-Dec-18	** Vendor **	24-Oct-21	0.4
18L2072	11Cl-PF3OUdS	20-Dec-18	** Vendor **	23-Nov-23	0.425
18L2073	9Cl-PF3ONS	20-Dec-18	** Vendor **	22-Nov-23	0.43
18L2074	NaDONA	20-Dec-18	** Vendor **	26-Mar-23	0.4
18L2076	L-PFPrS	20-Dec-18	** Vendor **	14-Dec-22	0.438
18L2078	10:2FTS	20-Dec-18	** Vendor **	13-Jul-21	0.415
19B0712	L-PFDoS	07-Feb-19	** Vendor **	30-Sep-21	0.415

Analytical Standard Record

Vista Analytical Laboratory

19E2204

Description:	PFC NS Stock	Expires:	29-May-21
Standard Type:	Analyte Spike	Prepared:	29-May-19
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	28-May-19 09:03 by GRB

Analyte	CAS Number	Concentration	Units
L-PFHpA		1	ug/mL
10:2 FTS	120226-60-0	1	ug/mL
L-MeFOSA	31506-32-8	5	ug/mL
L-MeFOSAA	2355-31-9	0.76	ug/mL
L-MeFOSE	24448-09-7	5	ug/mL
L-PFBA		1	ug/mL
L-PFBS		1	ug/mL
L-PFDA		1	ug/mL
L-PFDoA		1	ug/mL
L-EtFOSAA	2991-50-6	0.776	ug/mL
L-PFDS		1	ug/mL
L-EtFOSA	4151-50-2	5	ug/mL
L-PFHpS		1	ug/mL
L-PFHxA		1	ug/mL
L-PFHxDA		1	ug/mL
L-PFHxS		0.812	ug/mL
L-PFNA		1	ug/mL
L-PFNS	68259-12-1	1	ug/mL
L-PFOA		1	ug/mL
L-PFODA		1	ug/mL
L-PFDoS		1	ug/mL
EtFOSAA	2991-50-6	1	ug/mL
4:2 FTS	757124-72-4	1	ug/mL
6:2 FTS	27619-97-2	1	ug/mL
8:2 FTS	39108-34-4	1	ug/mL
ADONA	919005-14-4	1	ug/mL
Br-EtFOSAA		0.224	ug/mL
Br-MeFOSAA		0.24	ug/mL
Br-PFHxS	3871-99-6	0.189	ug/mL
Br-PFOS	2795-39-3	0.211	ug/mL
L-EtFOSE	1691-99-2	5	ug/mL
EtFOSA	4151-50-2	5	ug/mL
L-PFPeA		1	ug/mL
EtFOSE	1691-99-2	5	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

19E2204

Description:	PFC NS Stock	Expires:	29-May-21
Standard Type:	Analyte Spike	Prepared:	29-May-19
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	28-May-19 09:03 by GRB

Analyte	CAS Number	Concentration	Units
F-53B Major (9Cl-PF3ONS)	756426-58-1	1	ug/mL
F-53B Minor (11Cl-PF3OUdS)	763051-92-9	1	ug/mL
F-53B Total		2	ug/mL
HFPO-DA (GenX)	13252-13-6	1	ug/mL
L-4:2 FTS	75124-72-4	1	ug/mL
L-6:2 FTS		1	ug/mL
L-8:2FTS		1	ug/mL
cis-PFECHS		0.668	ug/mL
Total 6:2 FTS		1	ug/mL
PFOA	335-67-1	1	ug/mL
PFODA	16517-11-6	1	ug/mL
PFOS	1763-23-1	1	ug/mL
PFOSA	754-91-6	1	ug/mL
PFPeA	2706-90-3	1	ug/mL
PFPeS	2706-91-4	1	ug/mL
PFPrS	423-41-6	1	ug/mL
PFTeDA	376-06-7	1	ug/mL
L-PFOS		0.789	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFHxS	355-46-4	1	ug/mL
Total EtFOSAA		1	ug/mL
Total MeFOSAA		1	ug/mL
Total PFDS		1	ug/mL
Total PFHpS		1	ug/mL
Total PFHxS		1	ug/mL
Total PFOA		1	ug/mL
Total PFOS		1	ug/mL
Total PFUnA		1	ug/mL
PFTrDA	72629-94-8	1	ug/mL
PFDA	335-76-2	1	ug/mL
trans-PFECHS		0.335	ug/mL
L-PFPeS	2706-91-4	1	ug/mL
L-PFTeDA		1	ug/mL
L-PFTrDA		1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

19E2204

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PFDoA	307-55-1	1	ug/mL
PFDoS	79780-39-5	1	ug/mL
PFDS	335-77-3	1	ug/mL
PFecHS	646-83-3	1	ug/mL
PFHpA	375-85-9	1	ug/mL
PFHpS	375-92-8	1	ug/mL
PFHxA	307-24-4	1	ug/mL
PFHxDA	67905-19-5	1	ug/mL
L-PFOSA		1	ug/mL
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18C0911

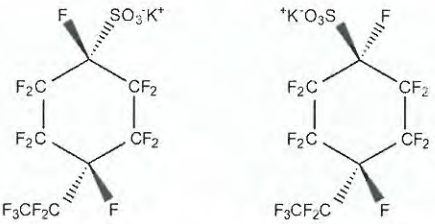
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS0217

COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:



cis-isomer *trans*-isomer

CAS #: 67584-42-3

MOLECULAR FORMULA:	$C_8F_{15}SO_3K$	**MOLECULAR WEIGHT:**	500.22
CONCENTRATION:	50.0 ± 2.5 µg/ml (K salt)	**SOLVENT(S):**	Methanol
	46.1 ± 2.3 µg/ml (PFECHS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	02/20/2017		
EXPIRY DATE: (mm/dd/yyyy)	02/20/2022		
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 a mixture of the *cis*/*trans* isomers of PFECHS at a ratio of 2:3 (*cis*:*trans*).
- Contains ~ 1.5% of other isomeric impurities.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/15/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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18C0911

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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).

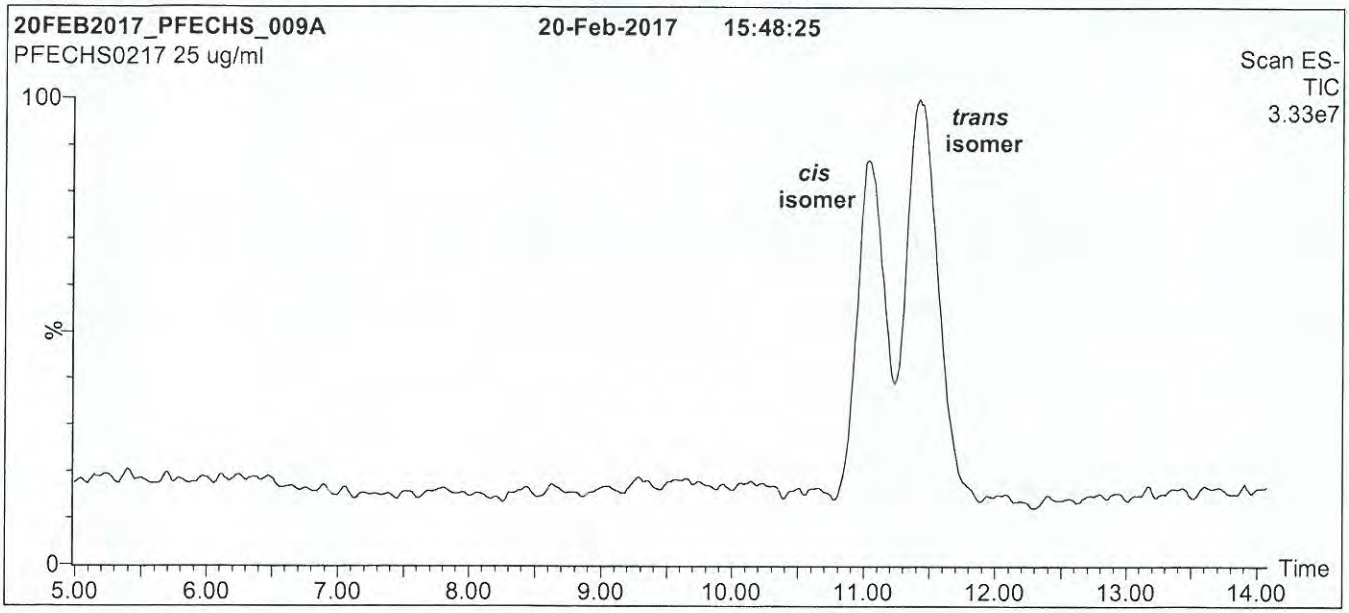
CALA

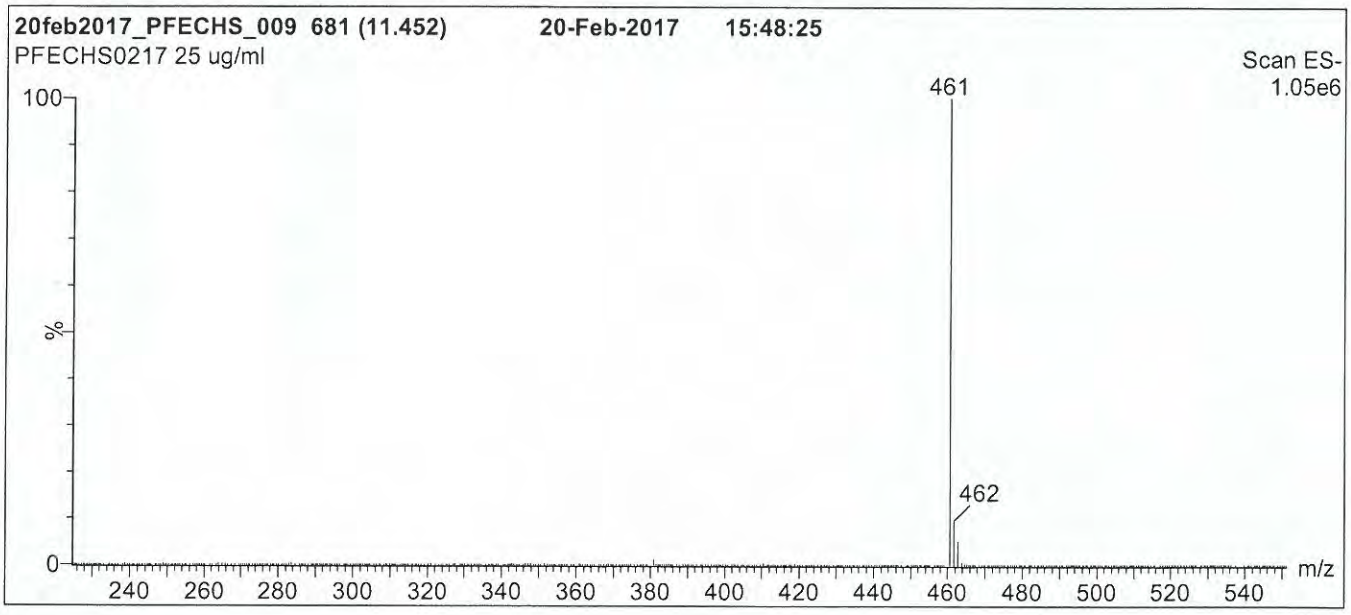
ANAB ACCREDITED

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

1801911

Figure 1: **PFECHS; 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 CSH Fluoro-Phenyl
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 35% (80:20 MeOH:ACN) / 65% H_2O
(both with 10 mM NH_4OAc buffer)
Hold for 13 min. Ramp to 50% organic over 1.5 min and hold for 2.5 min. Ramp to 80% organic over 1 min and hold for 1 min before returning to initial conditions in 0.5 min.
Time: 20 min

Flow: 300 µl/min

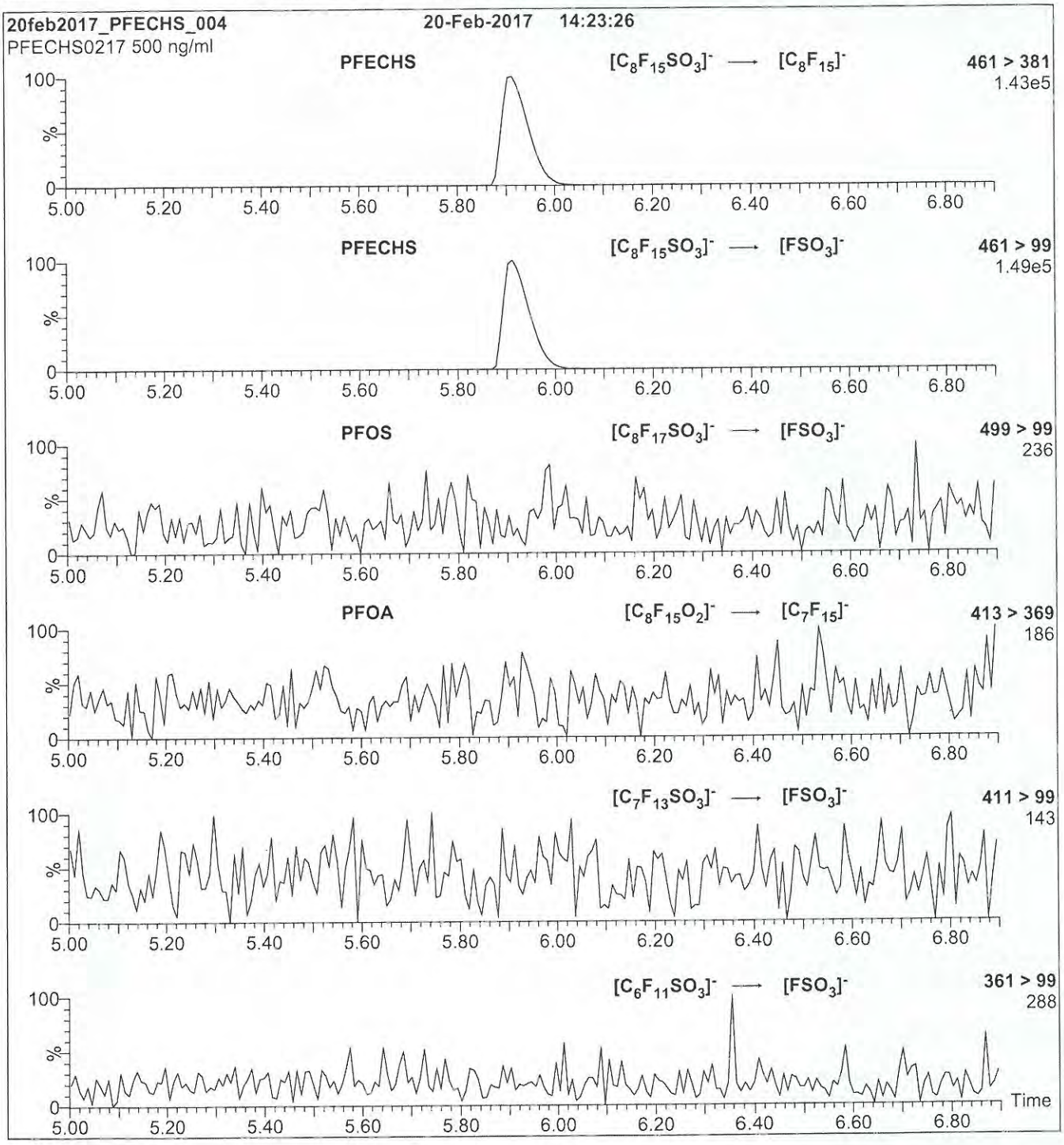
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.50
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

18C0911

Figure 2: **PFECHS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml PFECHS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

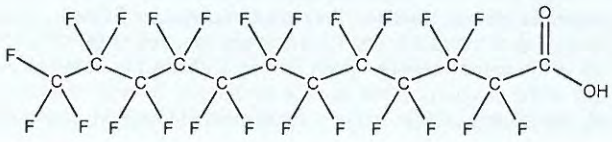
Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 25

18L2034

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFDoA	**LOT NUMBER:**	PFDoA0418
COMPOUND:	Perfluoro-n-dodecanoic acid		
STRUCTURE:		**CAS #:**	307-55-1



MOLECULAR FORMULA:	$C_{12}HF_{23}O_2$	**MOLECULAR WEIGHT:**	614.10
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	04/18/2018		
EXPIRY DATE: (mm/dd/yyyy)	04/18/2023		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS Data (Mass Spectrum)
Figure 3: 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:** 04/24/2018 (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

1812034

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.

HANDLING:

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.

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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:

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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 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

18L2034

Figure 1: **PFDoA; LC/MS Data (SIR)**

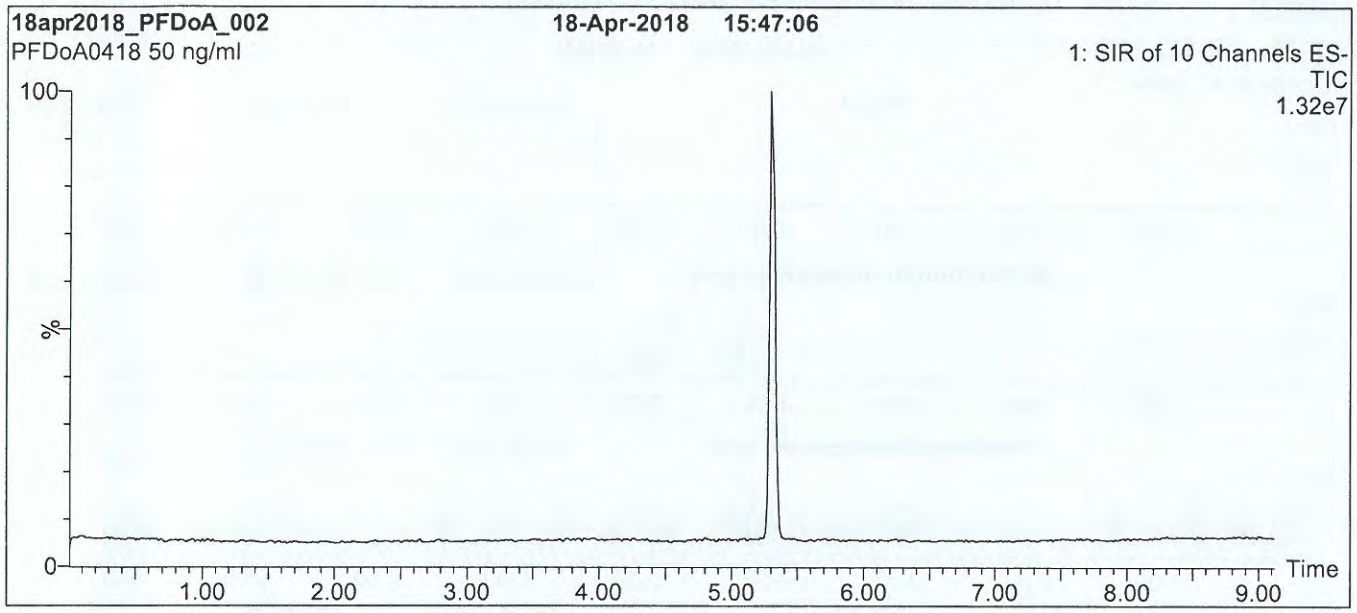
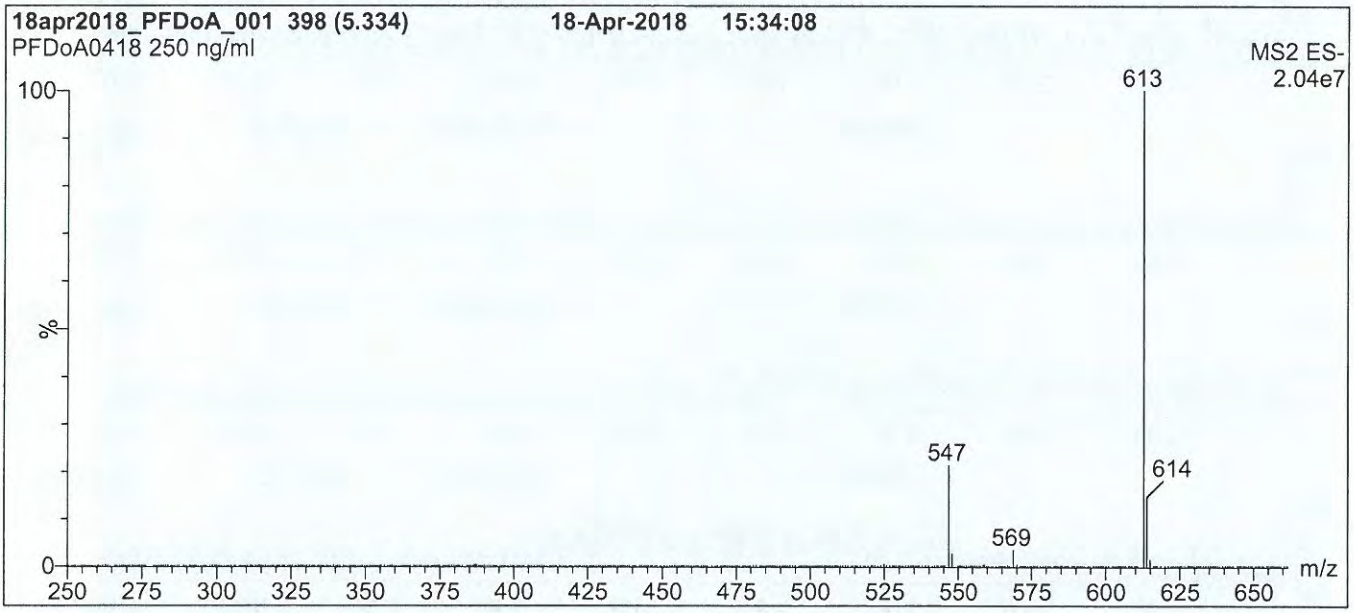


Figure 2: **PFDoA; LC/MS Data (Mass Spectrum)**



Conditions for Figures 1 & 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 85% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

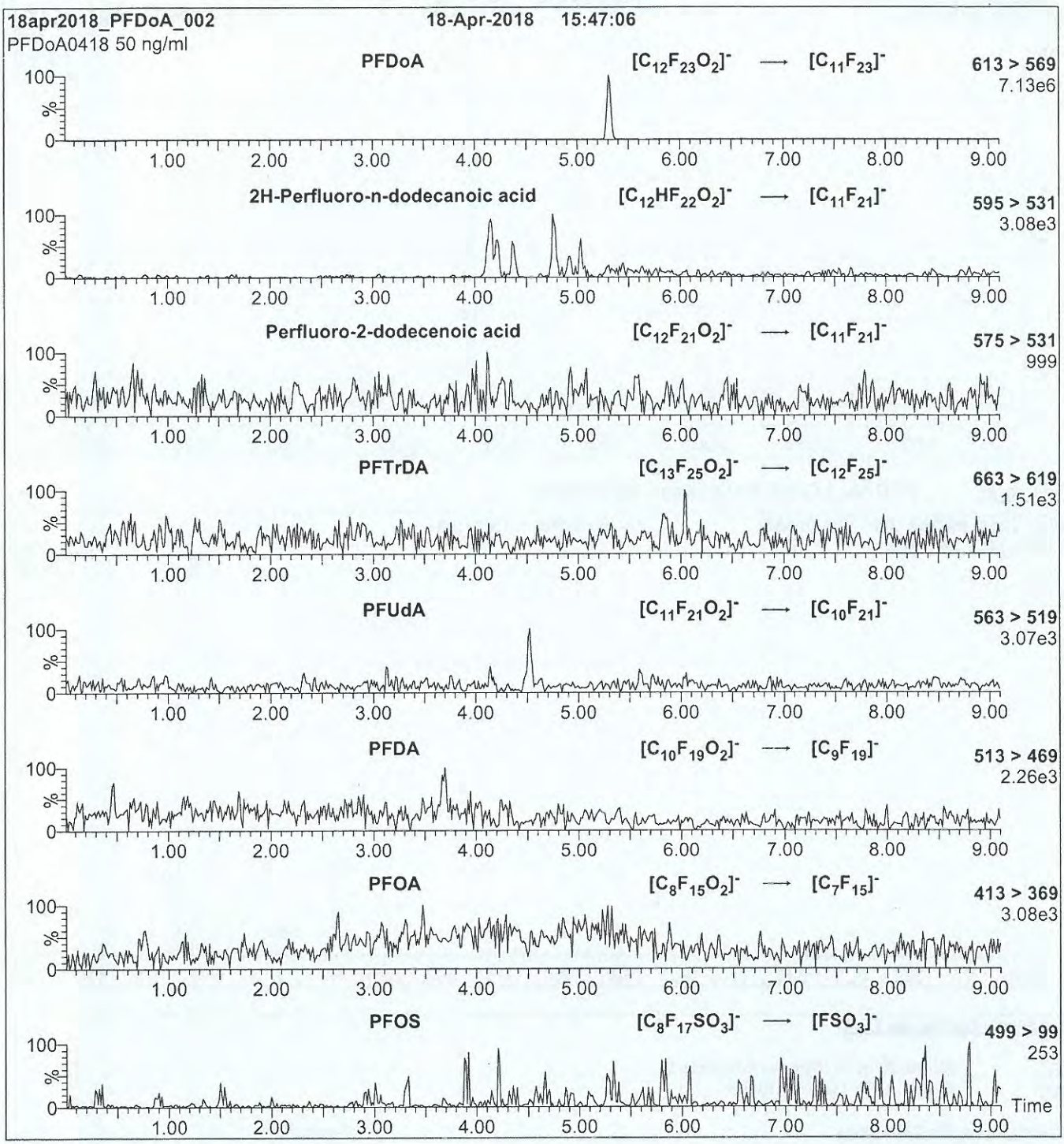
Flow: 300 µl/min

MS Parameters

Experiments: SIR of 10 channels
Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5 (variable for SIR (2-12))
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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Figure 3: **PFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (PFDoA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.47e-3

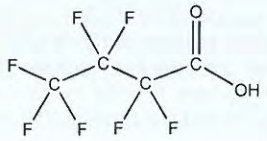
Collision Energy (eV) = 12

1812035

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	PFBA	**LOT NUMBER:**	PFBA1118
COMPOUND:	Perfluoro-n-butanoic acid		
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)	11/28/2018		
EXPIRY DATE: (mm/dd/yyyy)	11/28/2023		
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:** 11/29/2018 (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

1802035

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

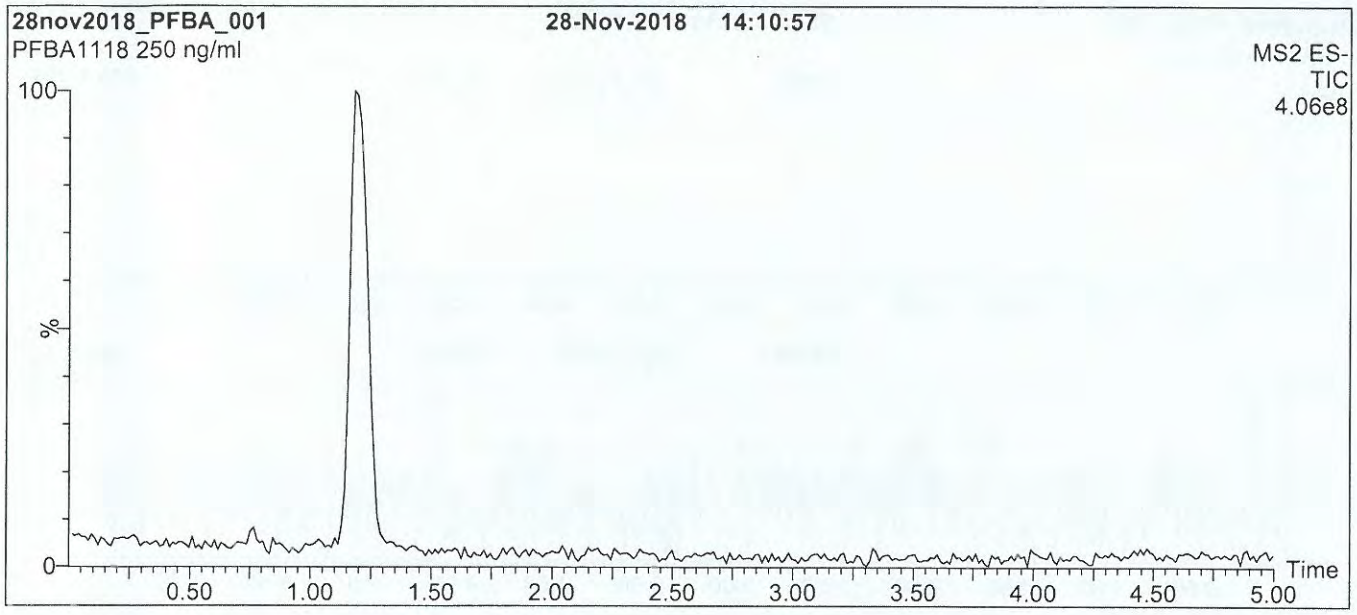
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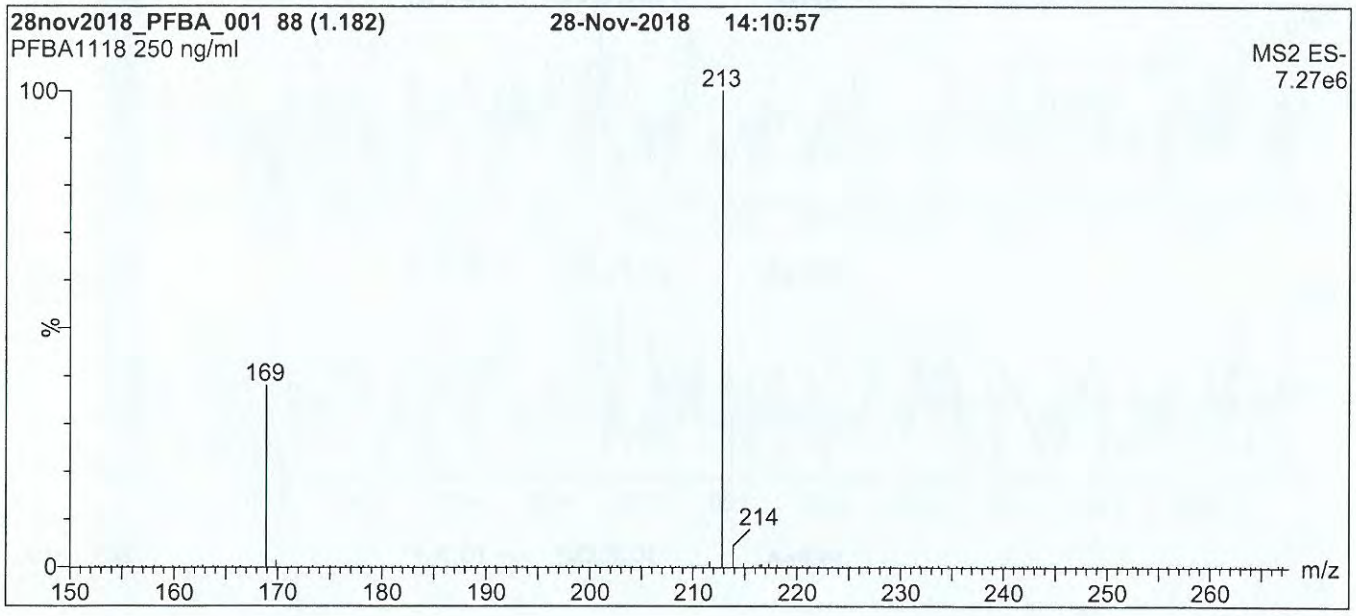
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

1862035

Figure 1: **PFBA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

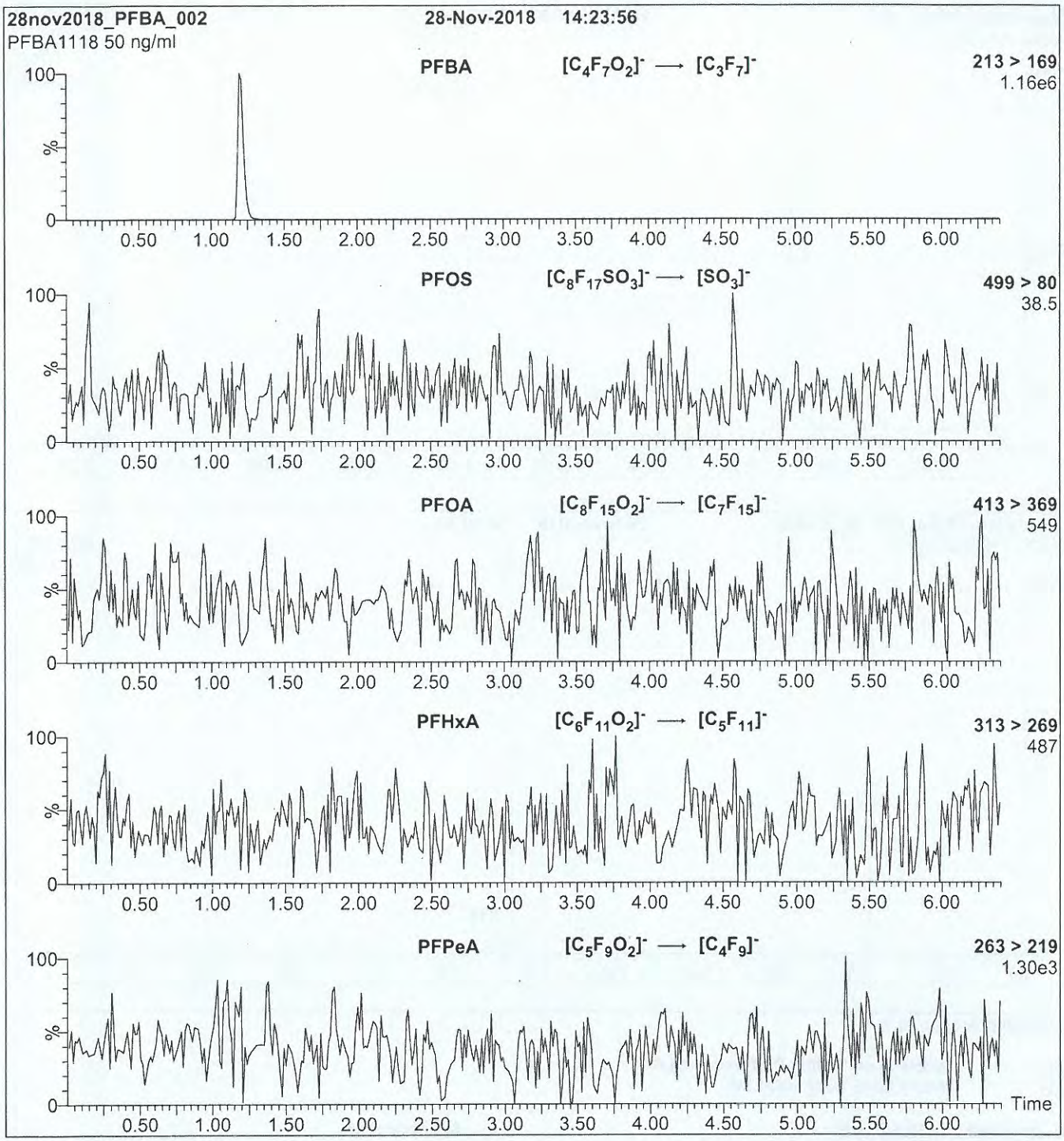
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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Figure 2: **PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFBA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

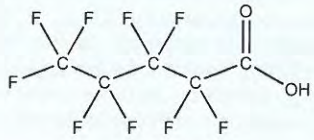
Collision Gas (mbar) = 2.79e-3
Collision Energy (eV) = 8

18L2036

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFPeA	**LOT NUMBER:**	PFPeA0218
COMPOUND:	Perfluoro-n-pentanoic acid		
STRUCTURE:		**CAS #:**	2706-90-3



MOLECULAR FORMULA:	$C_5HF_9O_2$	**MOLECULAR WEIGHT:**	264.05
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	02/16/2018		
EXPIRY DATE: (mm/dd/yyyy)	02/16/2023		
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:** 02/20/2018 (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

1812036

INTENDED USE:

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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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

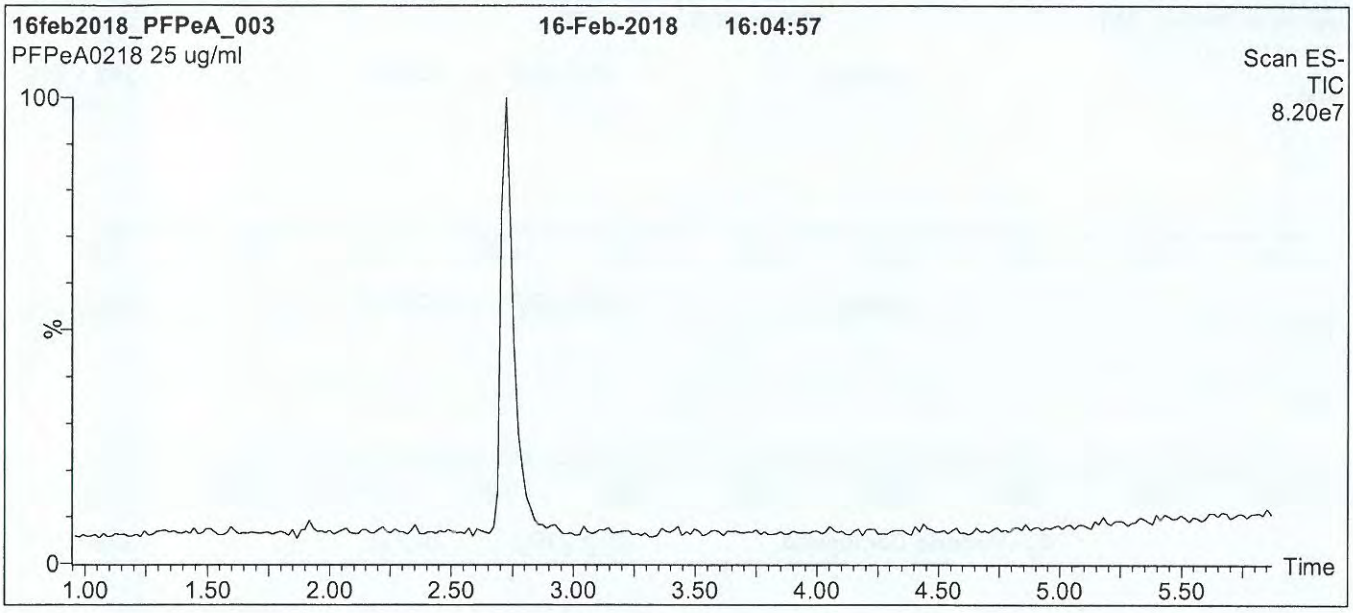
CALA Testing Accreditation No. A 1226

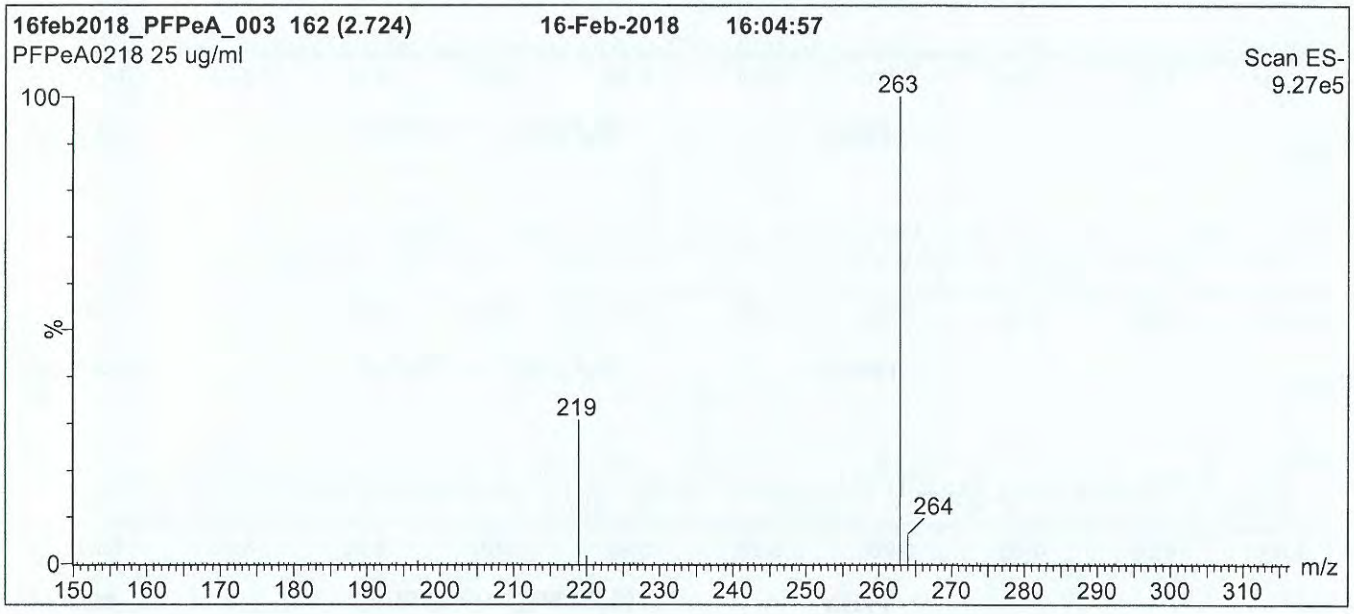
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2036

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

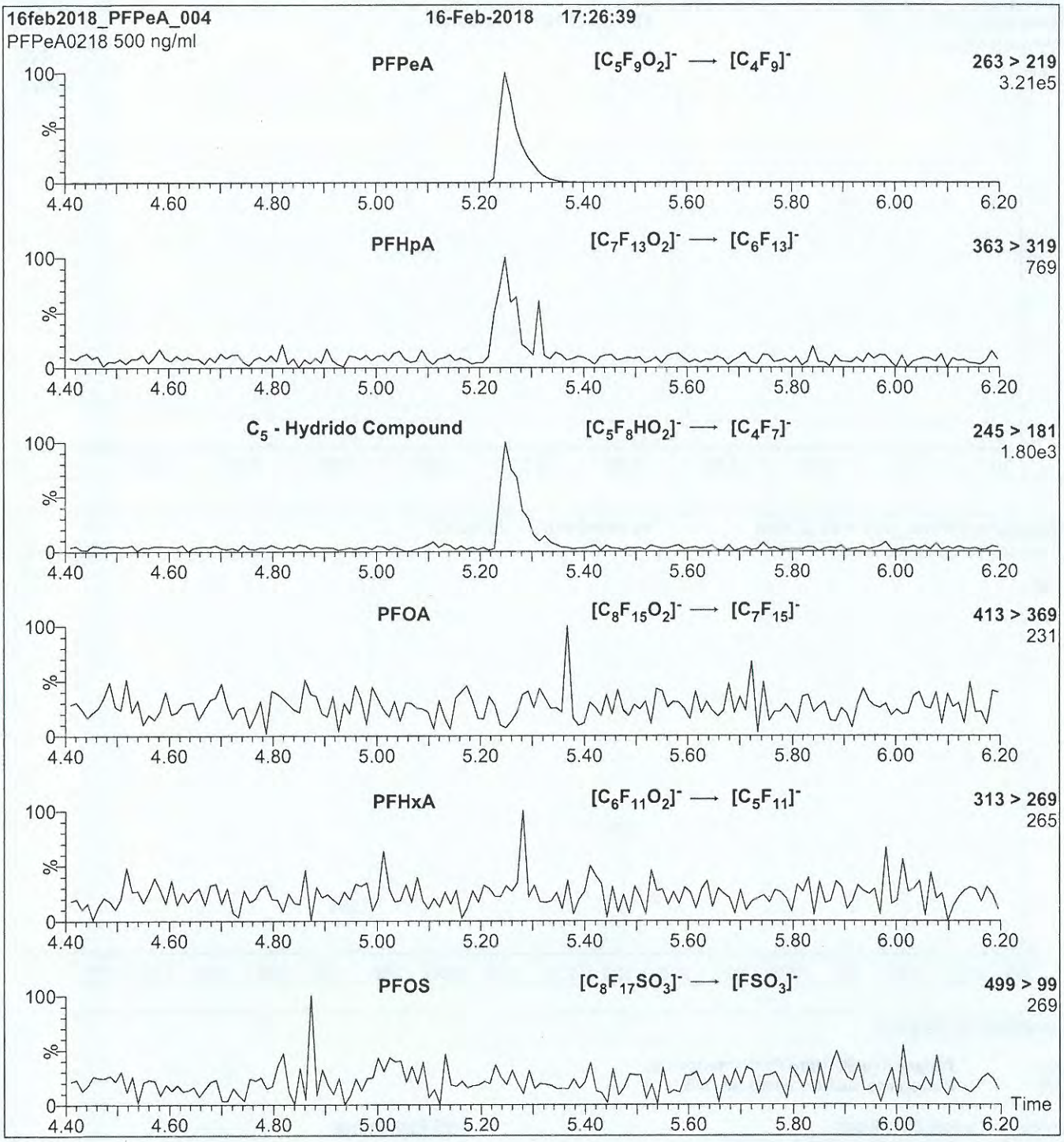
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

1812036

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) = 3.28e-3
Collision Energy (eV) = 9

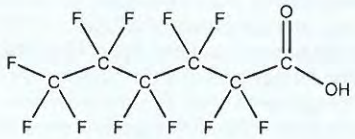
18L2037

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHxA
COMPOUND: Perfluoro-n-hexanoic acid
LOT NUMBER: PFHxA0518

STRUCTURE:
CAS #: 307-24-4



MOLECULAR FORMULA: $C_6HF_{11}O_2$
MOLECULAR WEIGHT: 314.05
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/18/2018
EXPIRY DATE: (mm/dd/yyyy) 05/18/2023
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:** 05/30/2018 (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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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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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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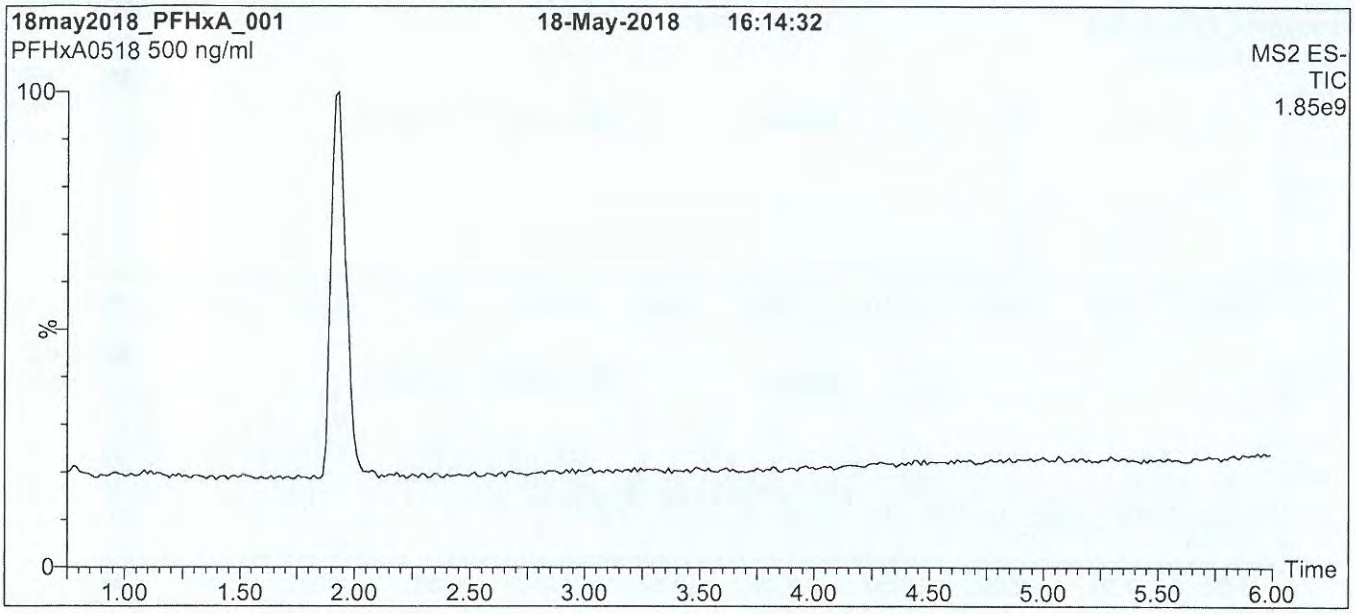
CALA Testing Accreditation No. A 1226

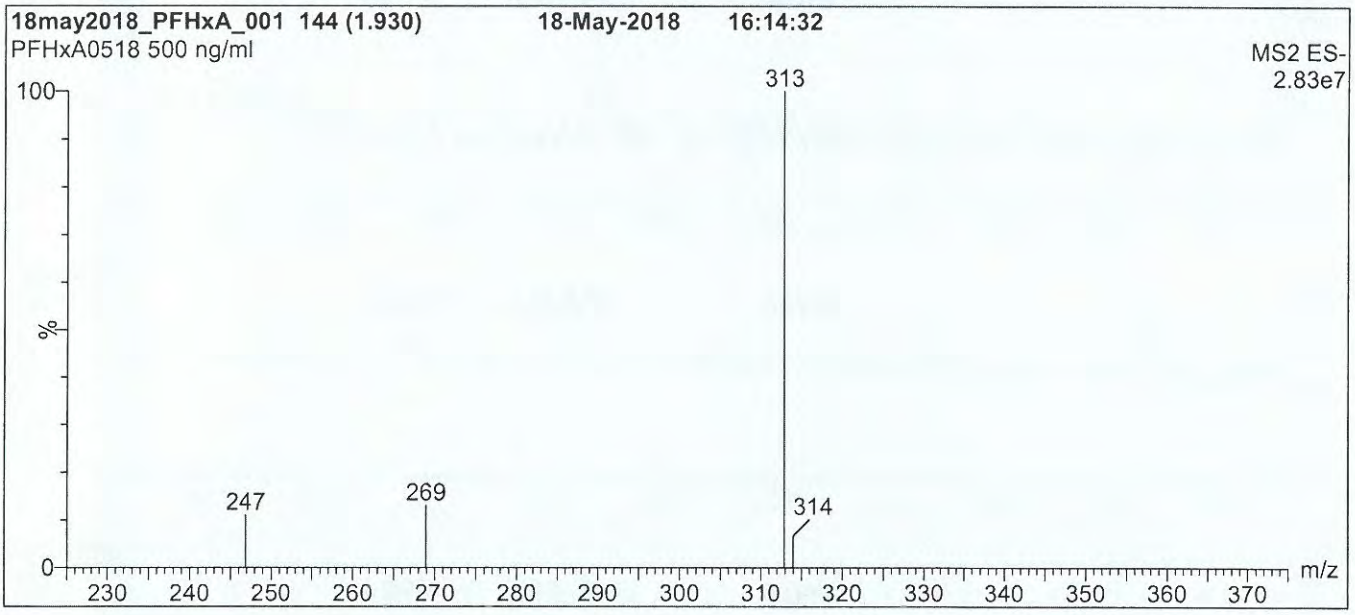
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812037

Figure 1: **PFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

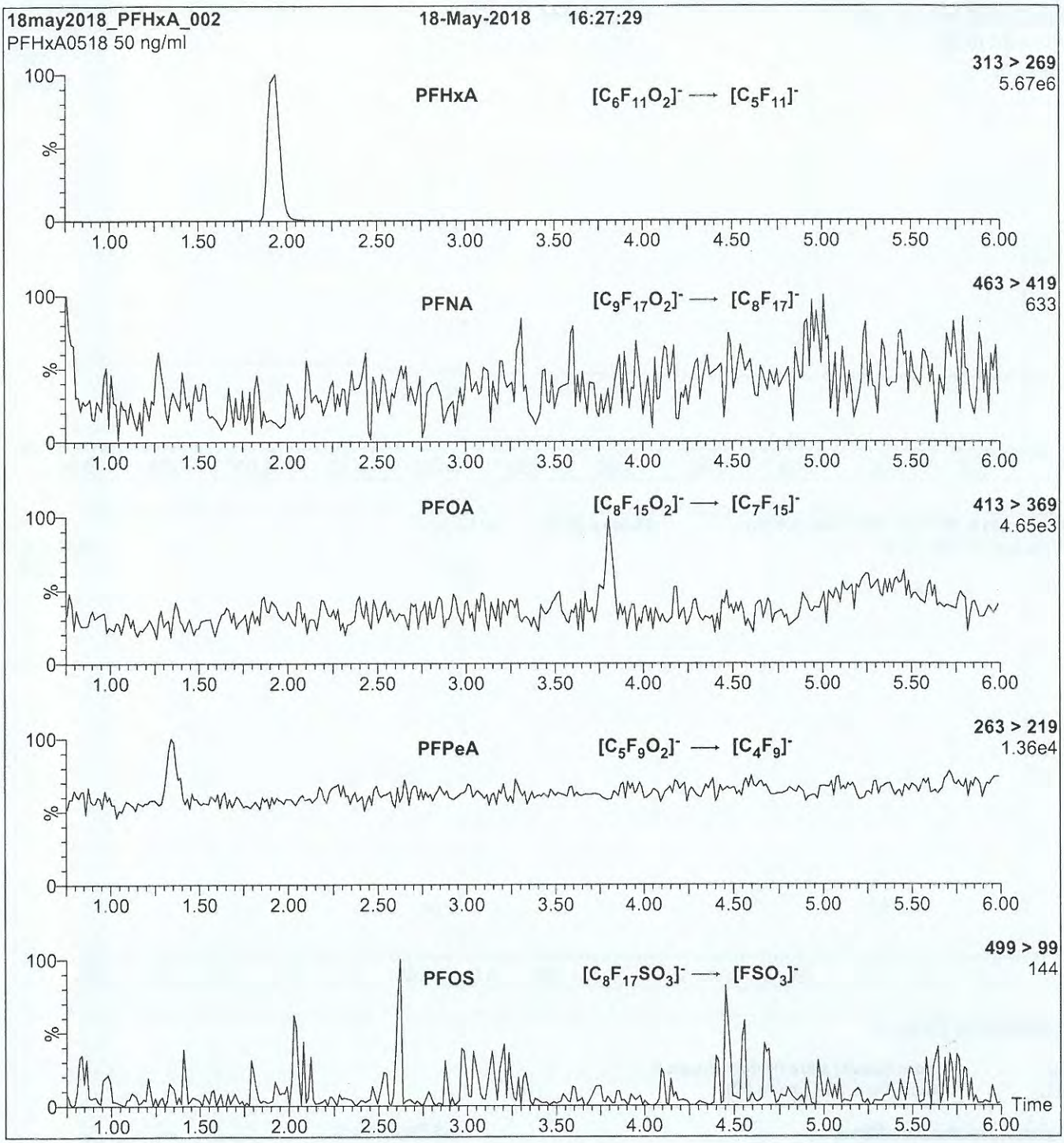
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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Figure 2: **PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3
Collision Energy (eV) = 8

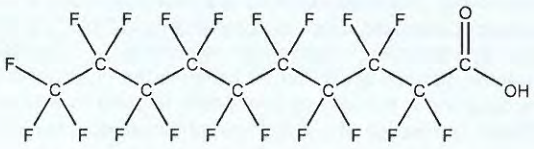
1812038

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFDA
COMPOUND: Perfluoro-n-decanoic acid
LOT NUMBER: PFDA1118

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) 11/12/2018
EXPIRY DATE: (mm/dd/yyyy) 11/12/2023
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:** 11/15/2018 (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

18L2038

INTENDED USE:

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HANDLING:

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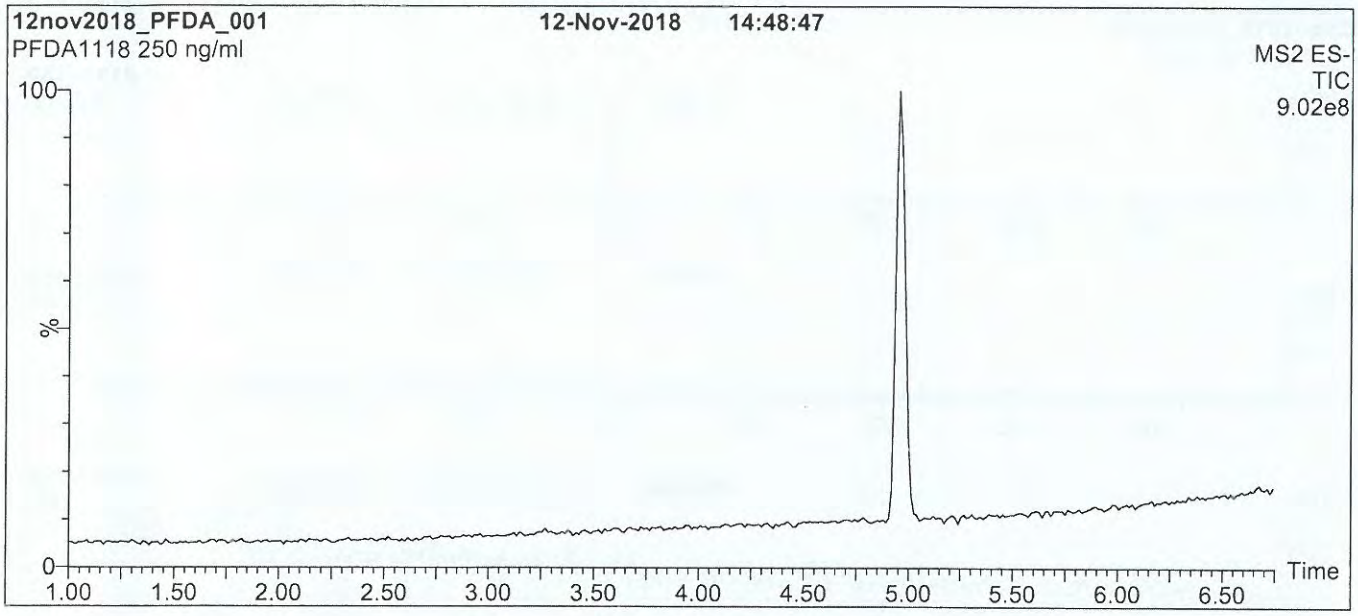
CALA Testing Accreditation No. A 1226

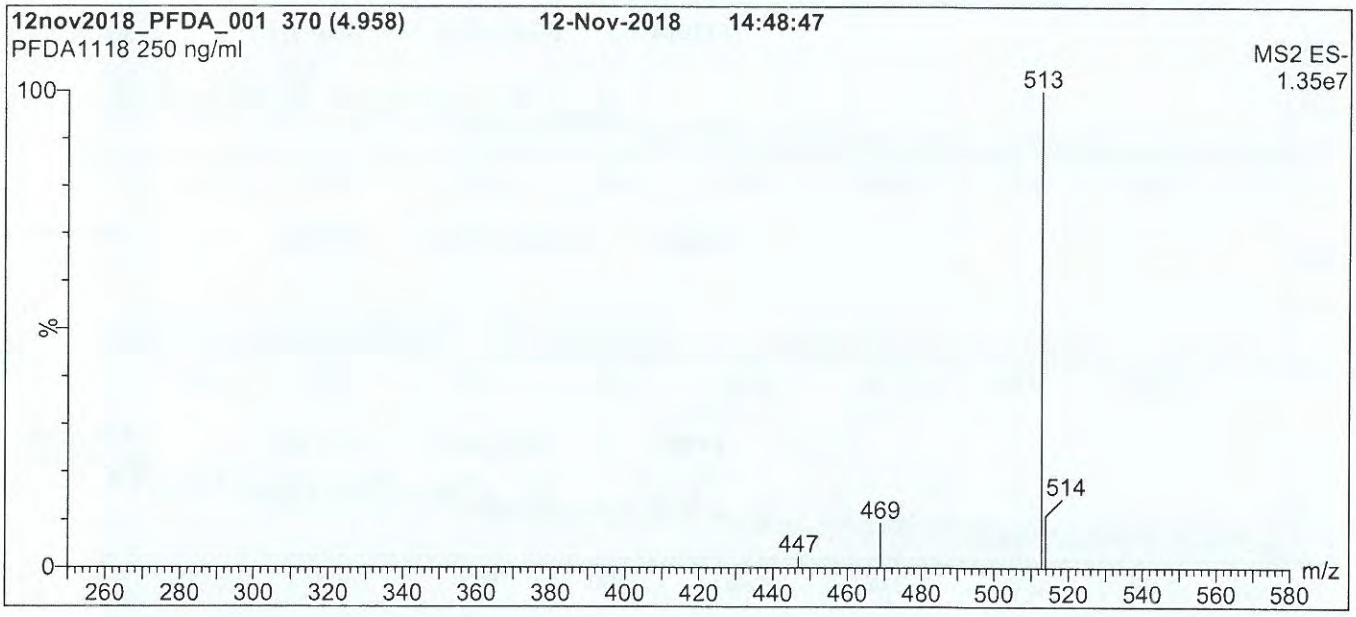
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1812038

Figure 1: **PFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

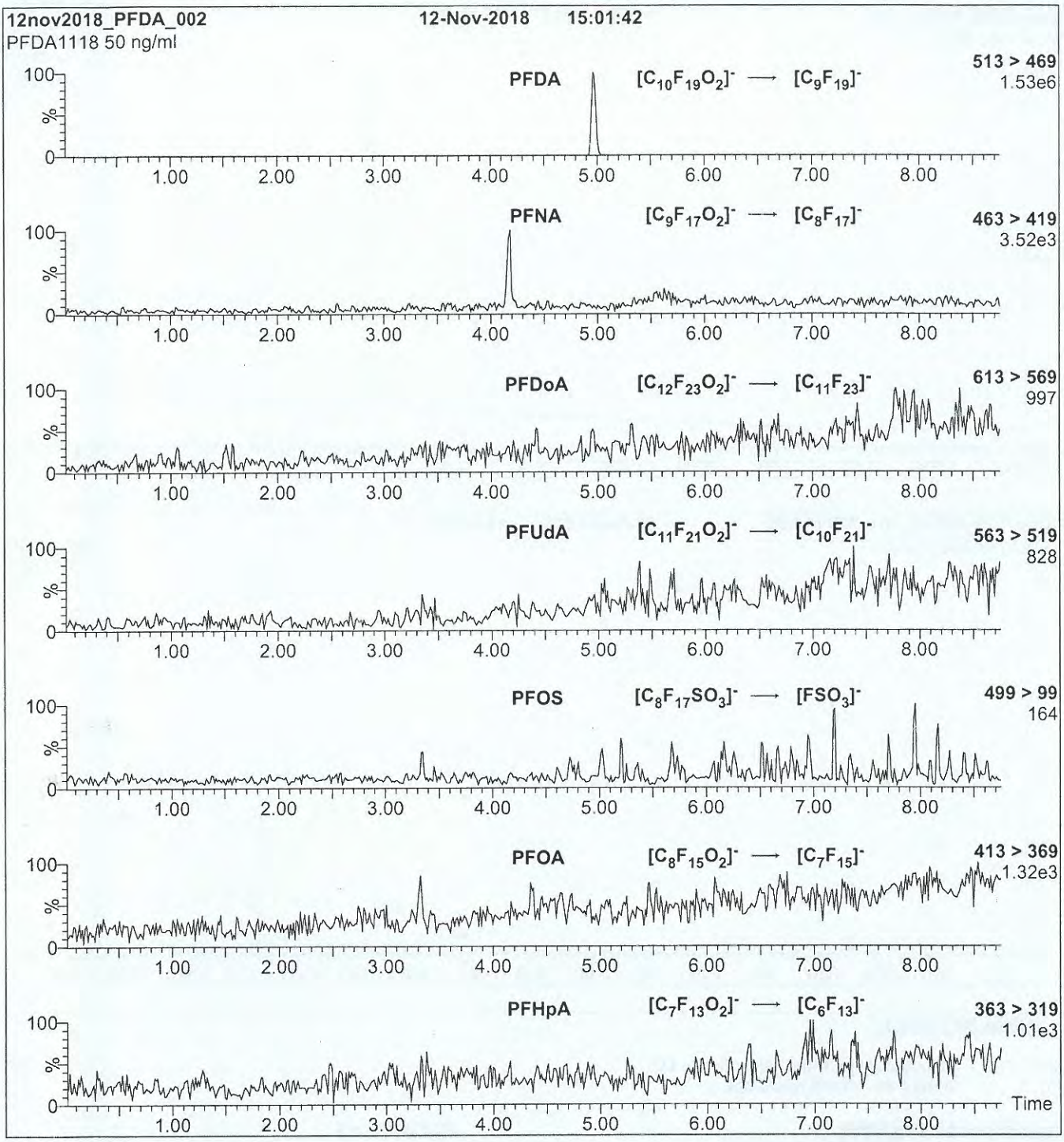
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812038

Figure 2: **PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.04e-3
Collision Energy (eV) = 10

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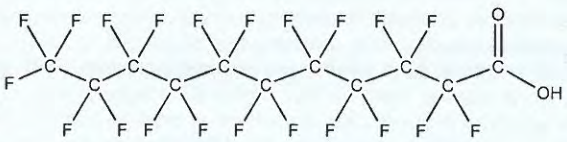
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFUdA
COMPOUND: Perfluoro-n-undecanoic acid

LOT NUMBER: PFUdA0818

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) 08/23/2018
EXPIRY DATE: (mm/dd/yyyy) 08/23/2023
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:** 08/24/2018 (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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INTENDED USE:

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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.

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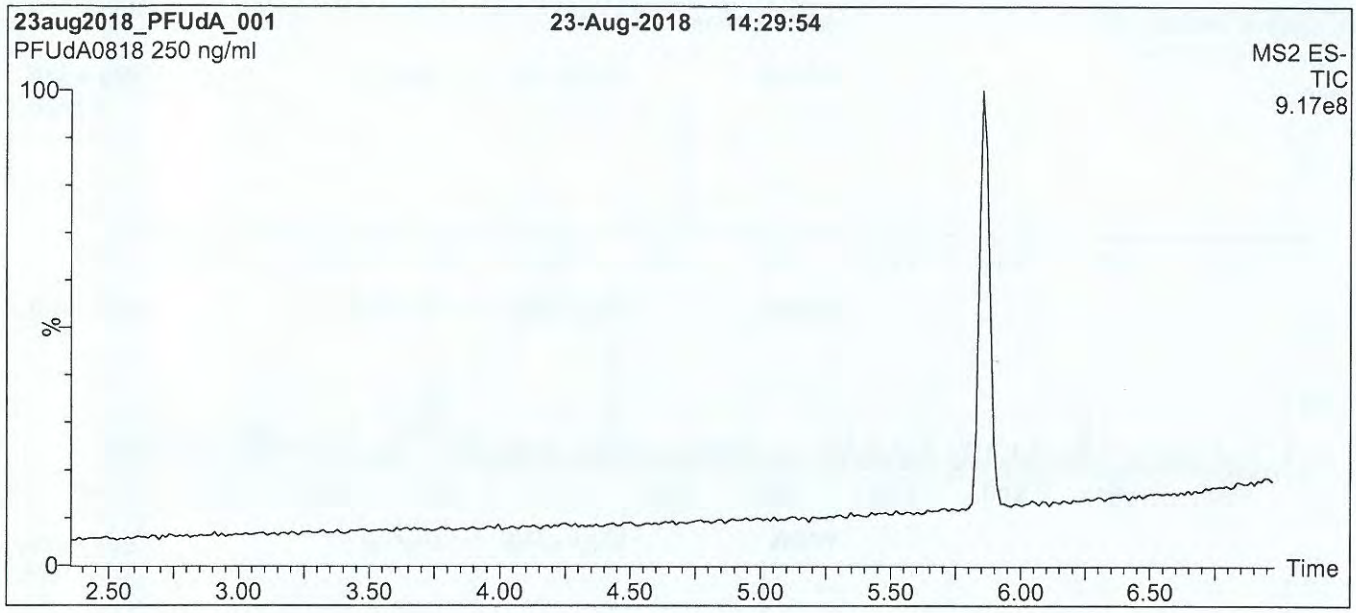
CALA Testing Accreditation No. A 1226

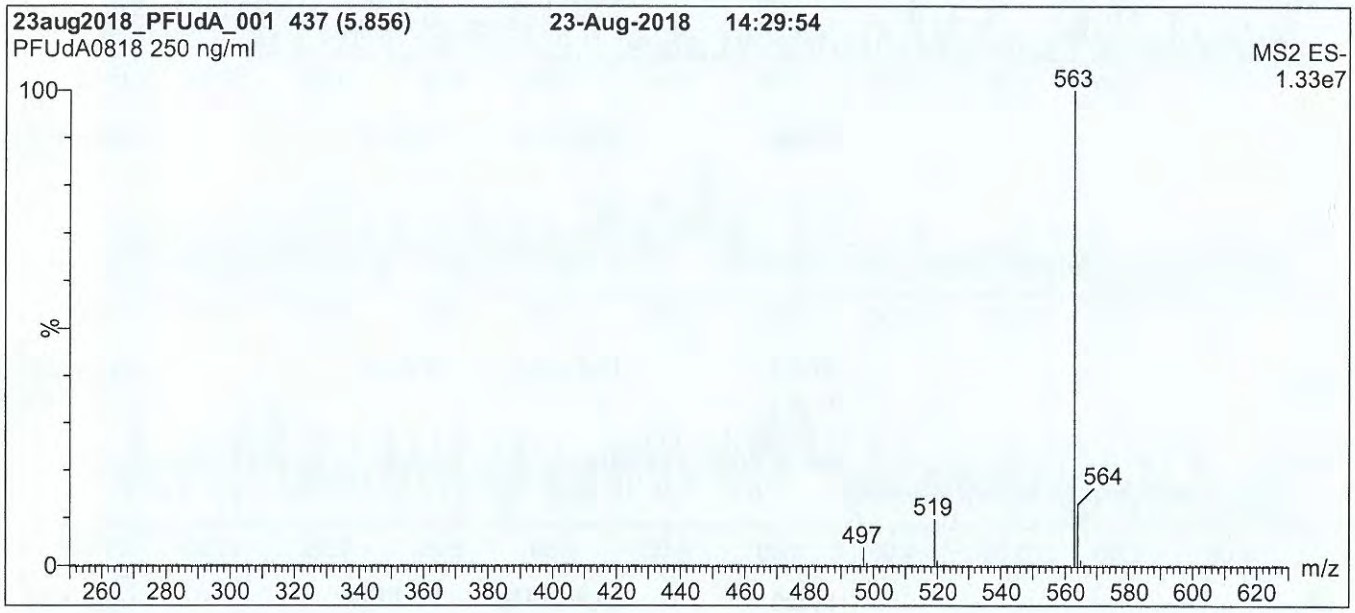
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18L2039

Figure 1: **PFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

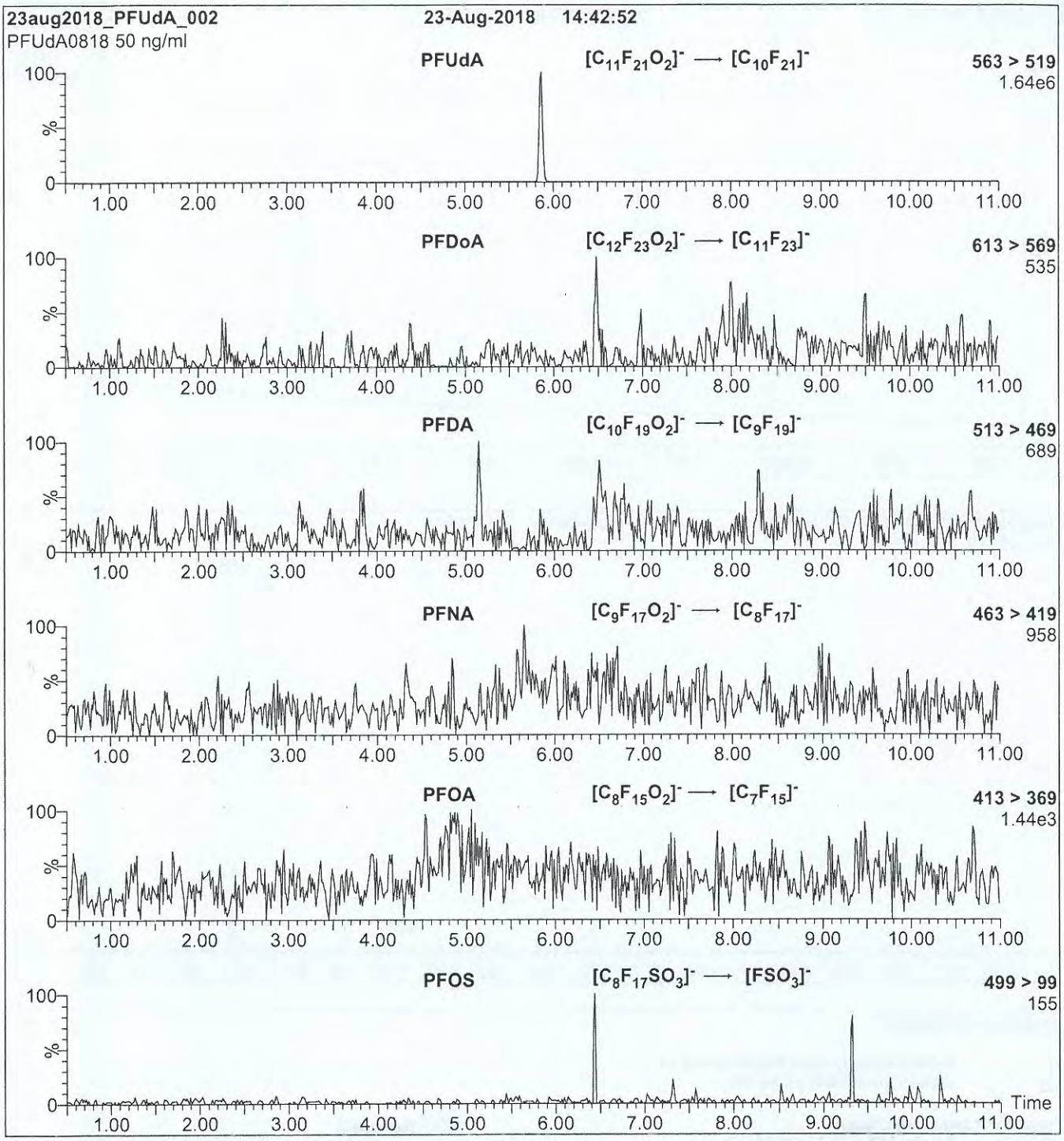
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812039

Figure 2: **PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFUdA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 12

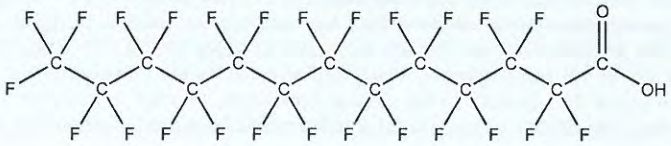
18L2040

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFTrDA
COMPOUND: Perfluoro-n-tridecanoic acid
LOT NUMBER: PFTrDA0218

STRUCTURE:
CAS #: 72629-94-8



MOLECULAR FORMULA: $C_{13}HF_{25}O_2$
MOLECULAR WEIGHT: 664.11
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/16/2018
EXPIRY DATE: (mm/dd/yyyy) 02/16/2023
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: _____ **Date:** 02/20/2018 (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

1812040

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

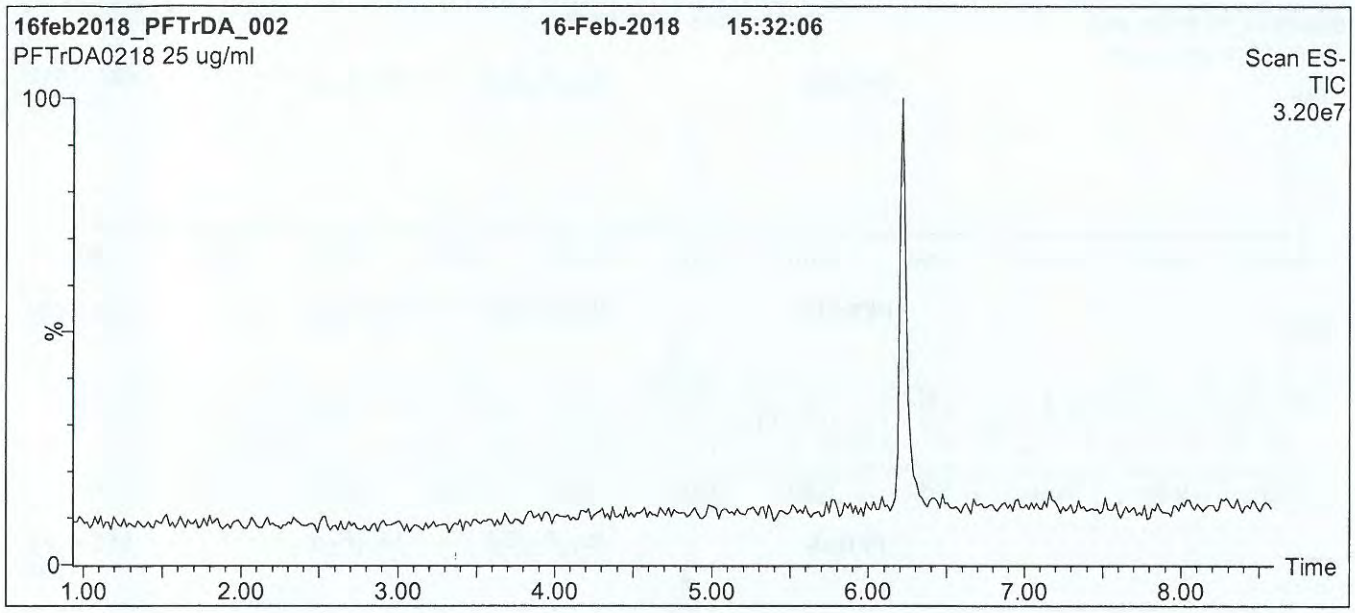
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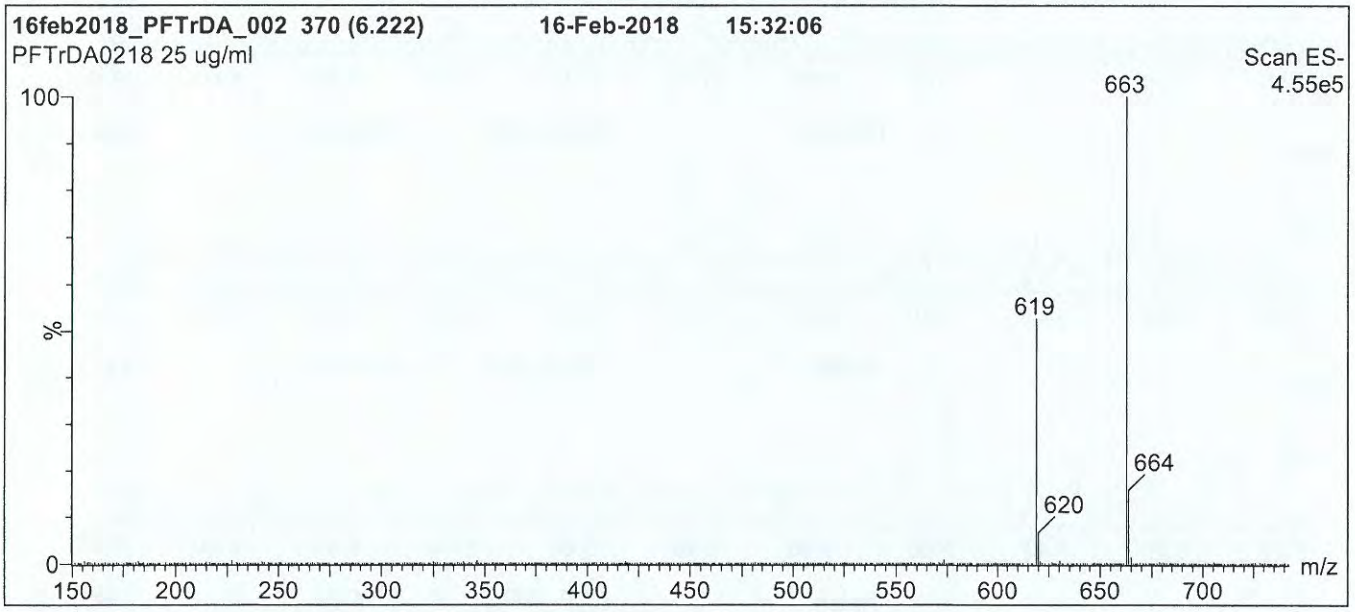
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

18L2040

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: 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

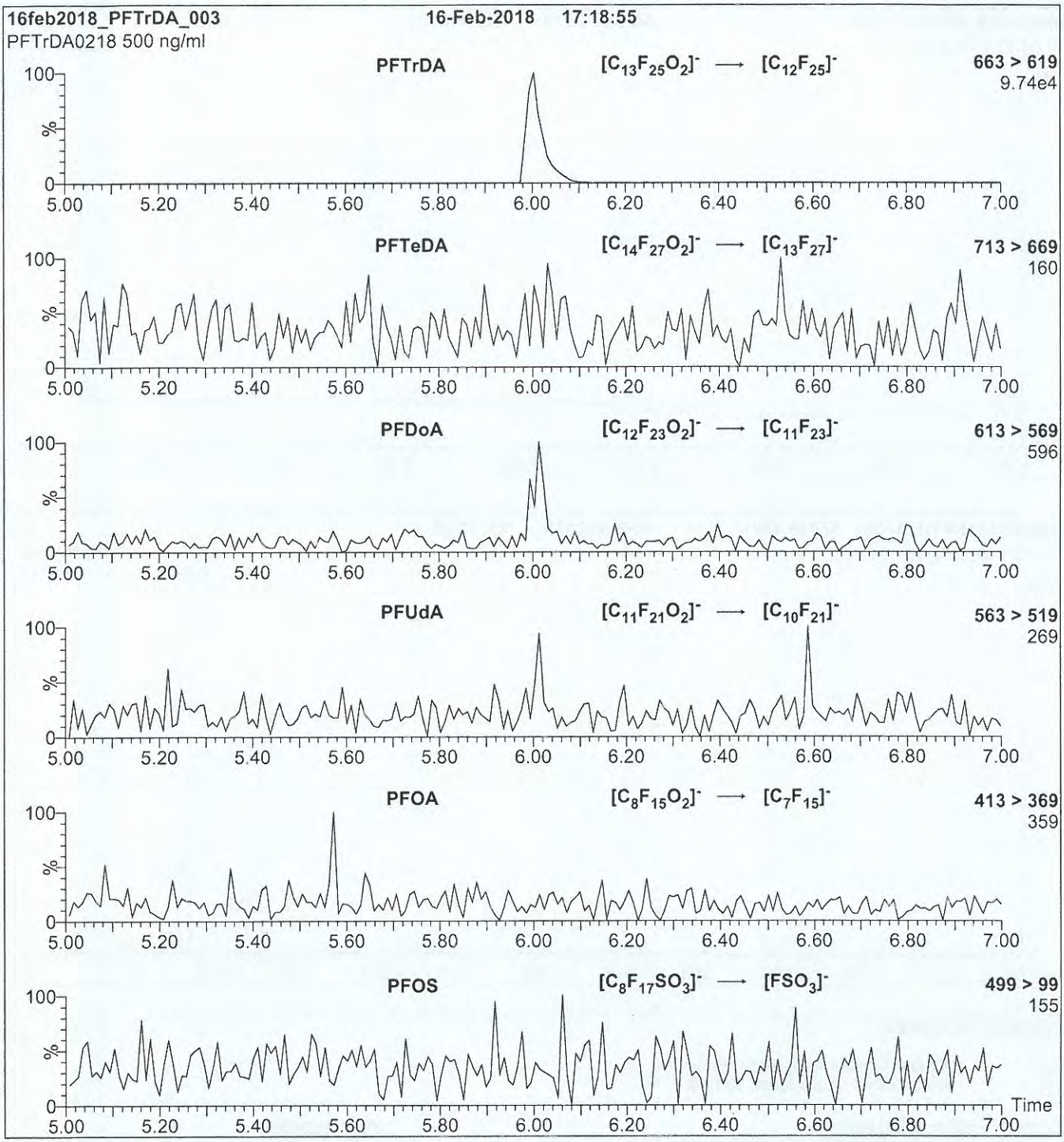
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 22.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 650

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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) = 3.43e-3
Collision Energy (eV) = 15

1812041

WELLINGTON LABORATORIES

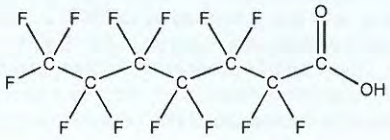
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHpA
COMPOUND: Perfluoro-n-heptanoic acid

LOT NUMBER: PFHpA0718

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) 07/12/2018
EXPIRY DATE: (mm/dd/yyyy) 07/12/2023
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:** 07/18/2018 (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

1812041

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.

HANDLING:

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:

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

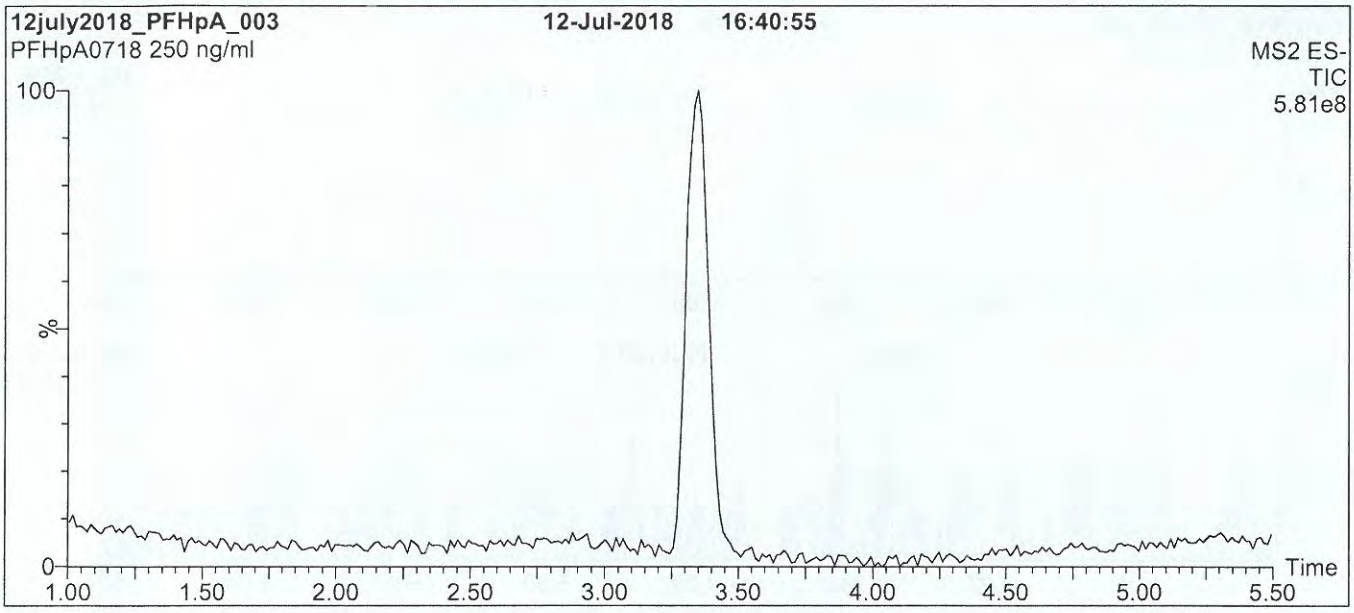
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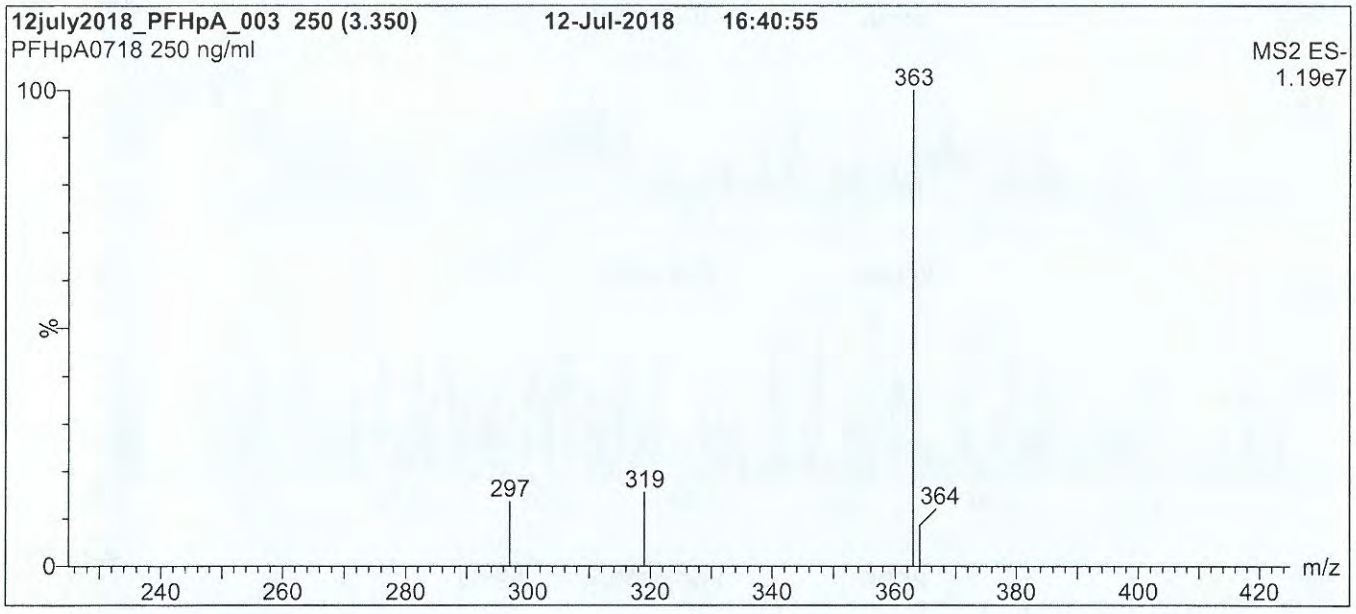
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2041

Figure 1: **PFHpA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

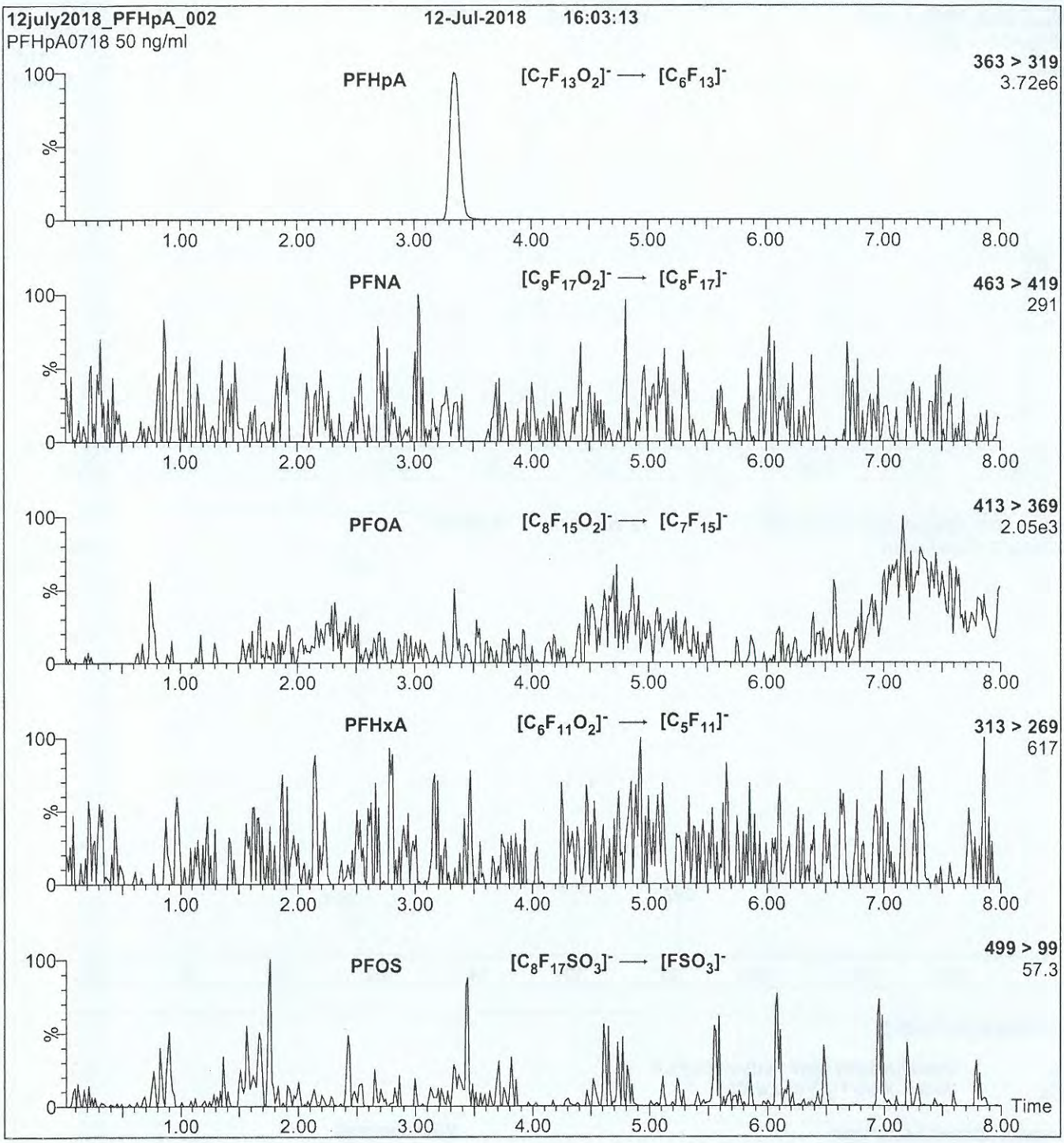
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2041

Figure 2: **PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 8

18L2042

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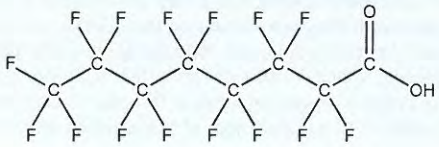
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFOA
COMPOUND: Perfluoro-n-octanoic acid

LOT NUMBER: PFOA0818

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) 08/23/2018
EXPIRY DATE: (mm/dd/yyyy) 08/23/2023
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:** 08/24/2018 (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

1812042

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.

HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

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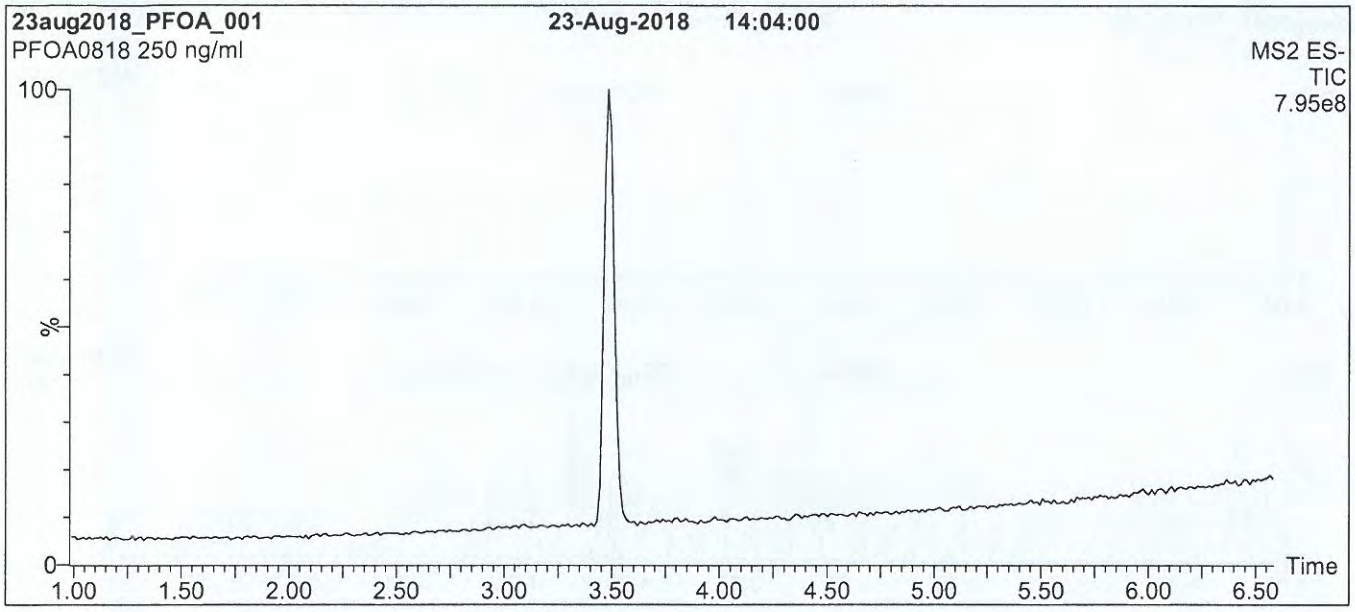
CALA Testing Accreditation No. A1226

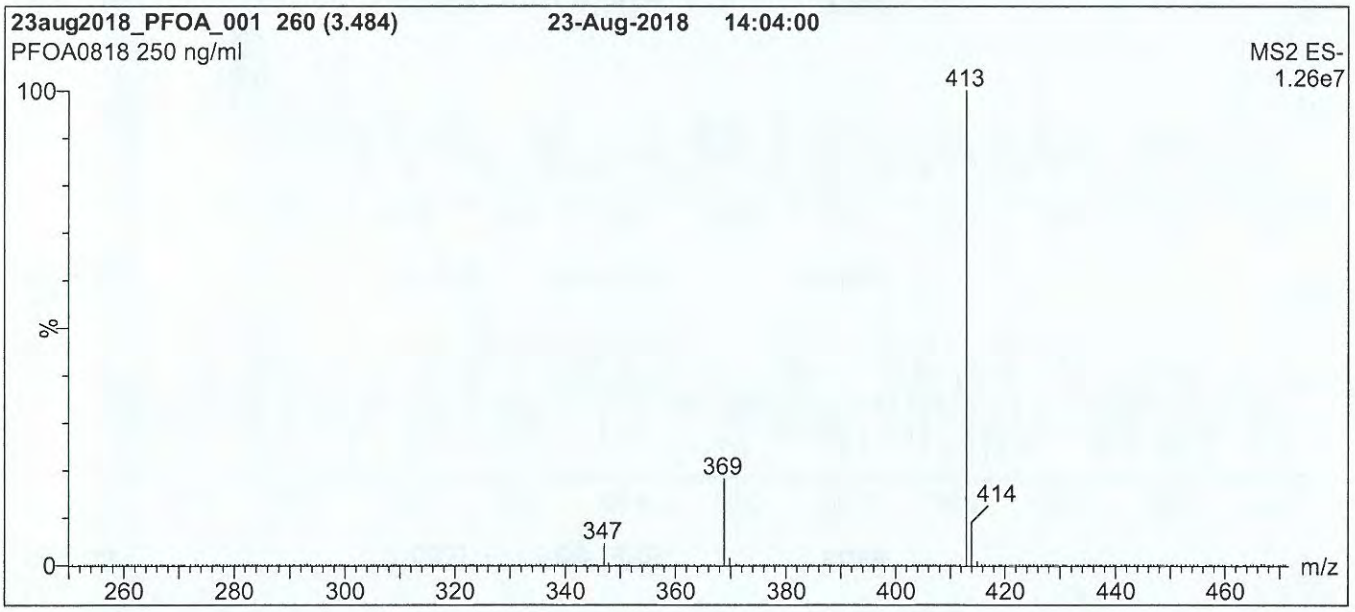
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2042

Figure 1: **PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

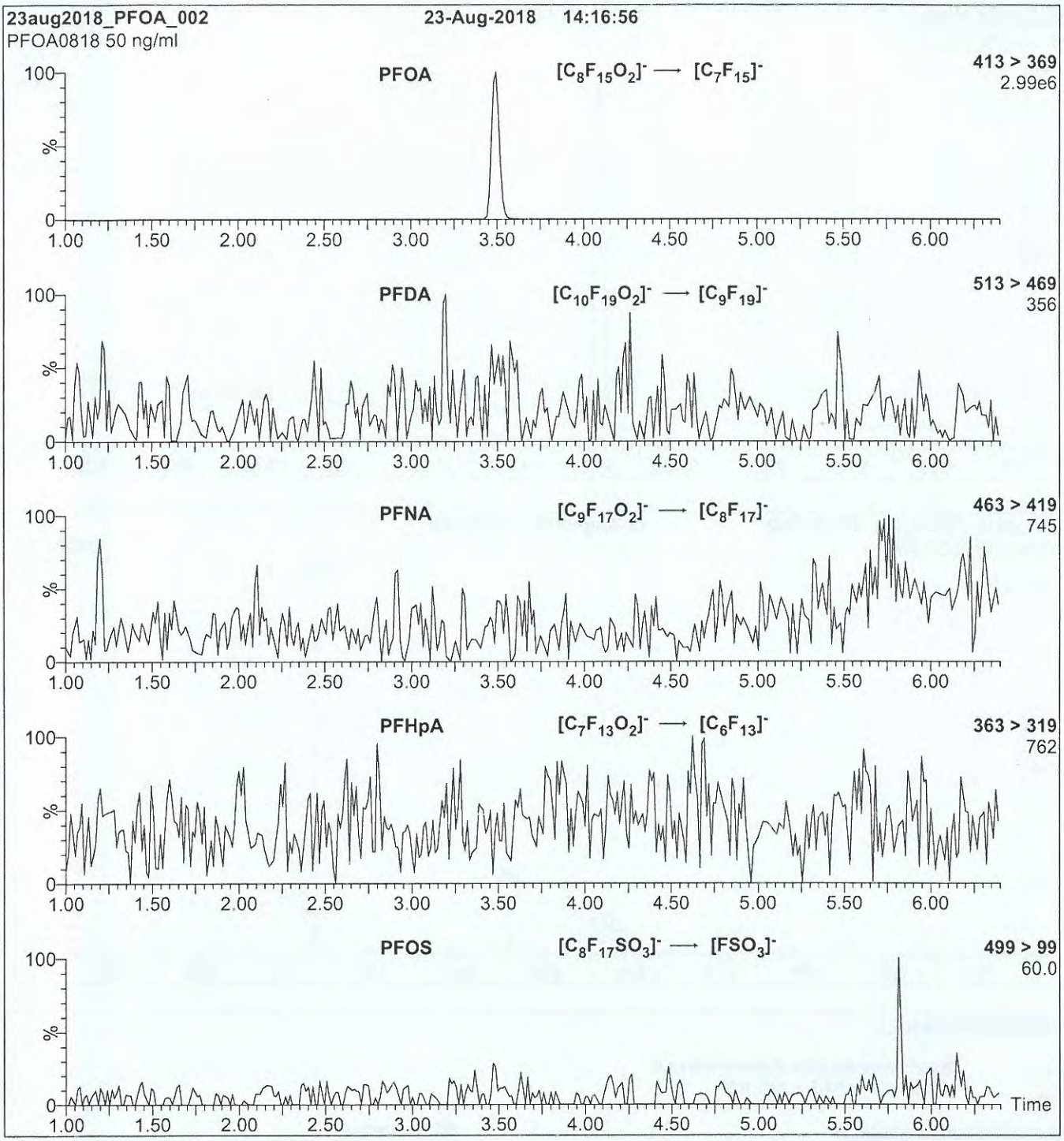
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812042

Figure 2: **PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFOA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 8

1812043

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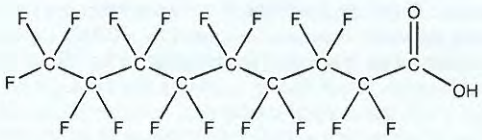
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFNA
COMPOUND: Perfluoro-n-nonanoic acid

LOT NUMBER: PFNA0218

STRUCTURE:

CAS #: 375-95-1



MOLECULAR FORMULA: $C_9HF_{17}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

MOLECULAR WEIGHT: 464.08
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/16/2018
EXPIRY DATE: (mm/dd/yyyy) 02/16/2023
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-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUdA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 02/20/2018 (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

18L2043

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.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

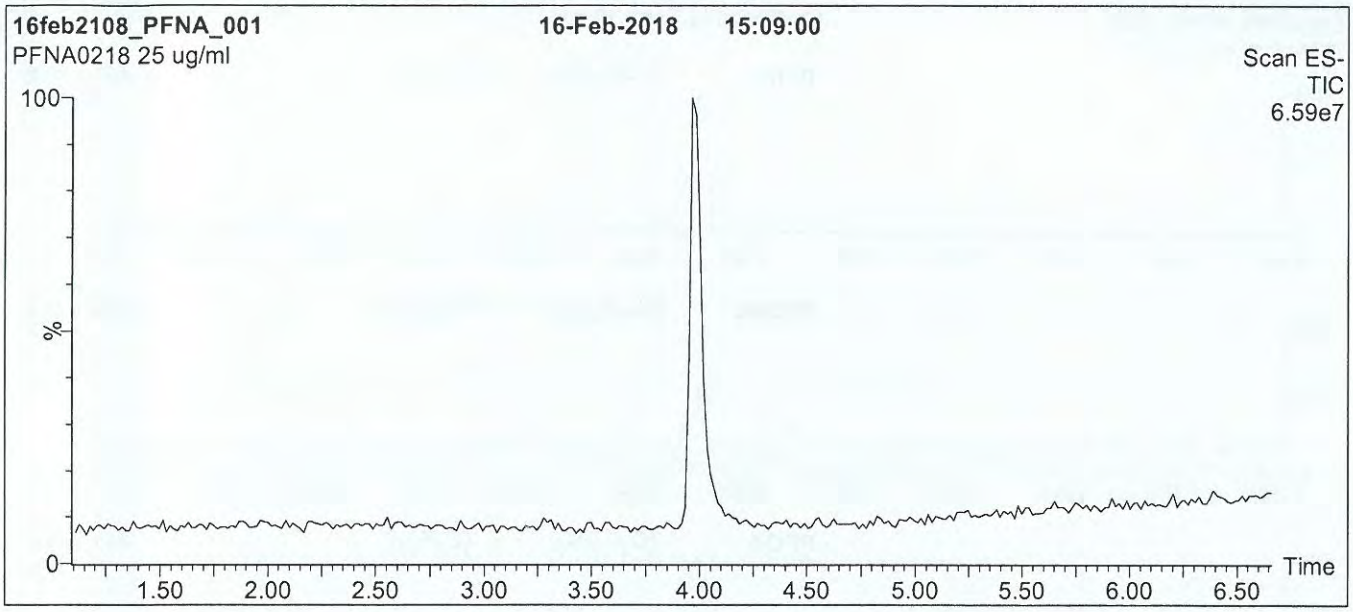
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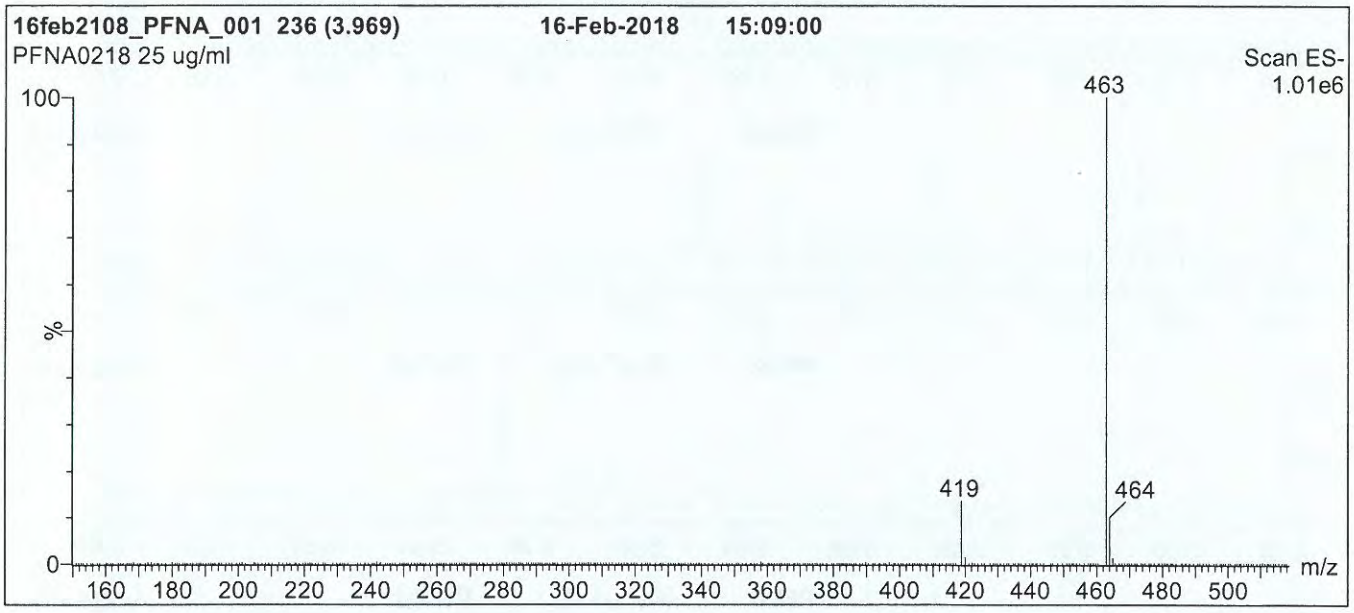
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

18L2043

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
2 min before returning to initial conditions in 0.5 min.
Time: 10 min

Flow: 300 µl/min

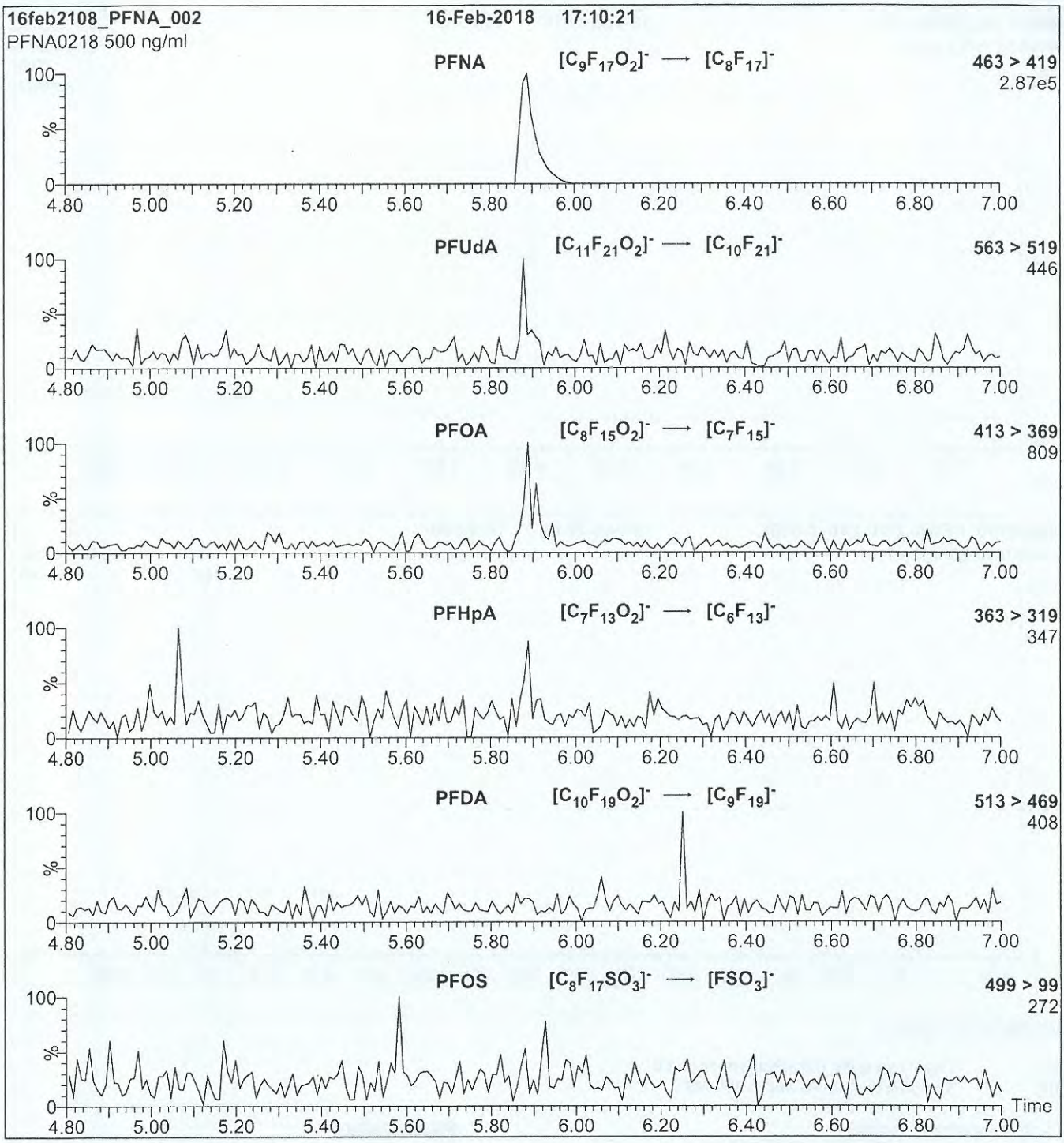
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1812043

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

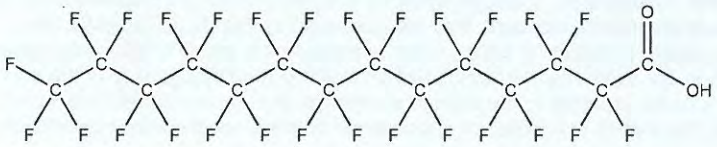
18L2044

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFTeDA
COMPOUND: Perfluoro-n-tetradecanoic acid
LOT NUMBER: PFTeDA0818

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) 08/23/2018
EXPIRY DATE: (mm/dd/yyyy) 08/23/2023
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 PFDoA ($C_{12}HF_{23}O_2$), ~ 0.1% of PFTrDA ($C_{13}HF_{25}O_2$), and ~ 0.1% of PFPeDA ($C_{15}HF_{29}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/05/2018 (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

18L2044

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.

HANDLING:

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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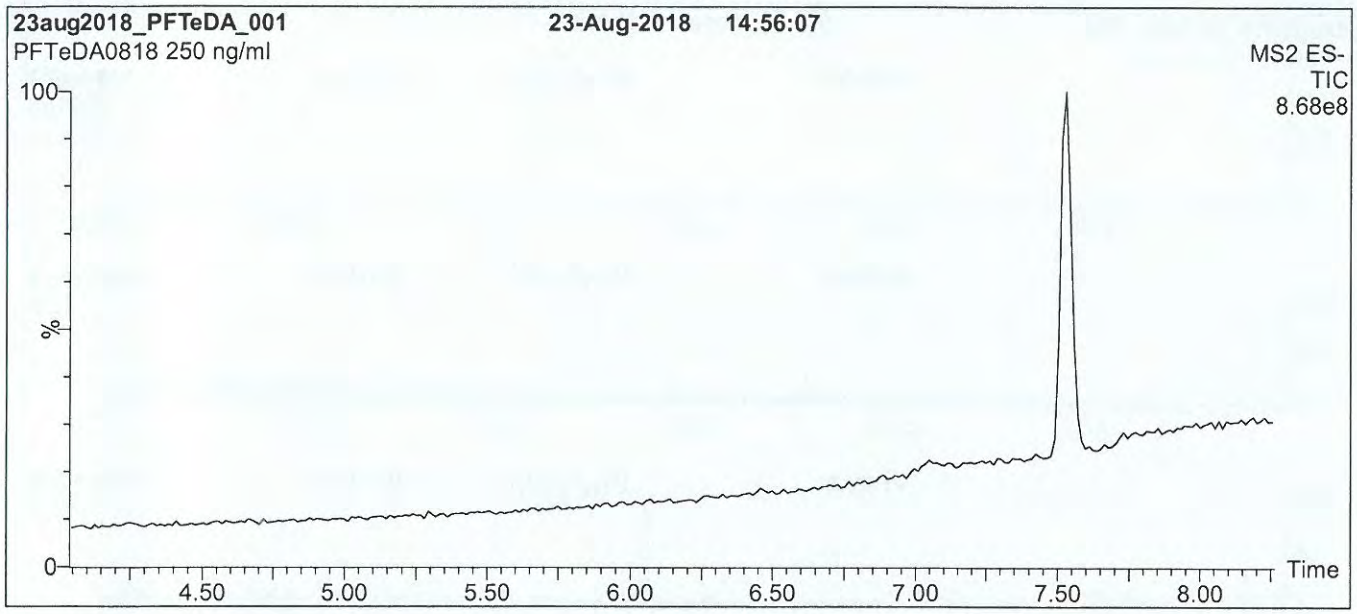
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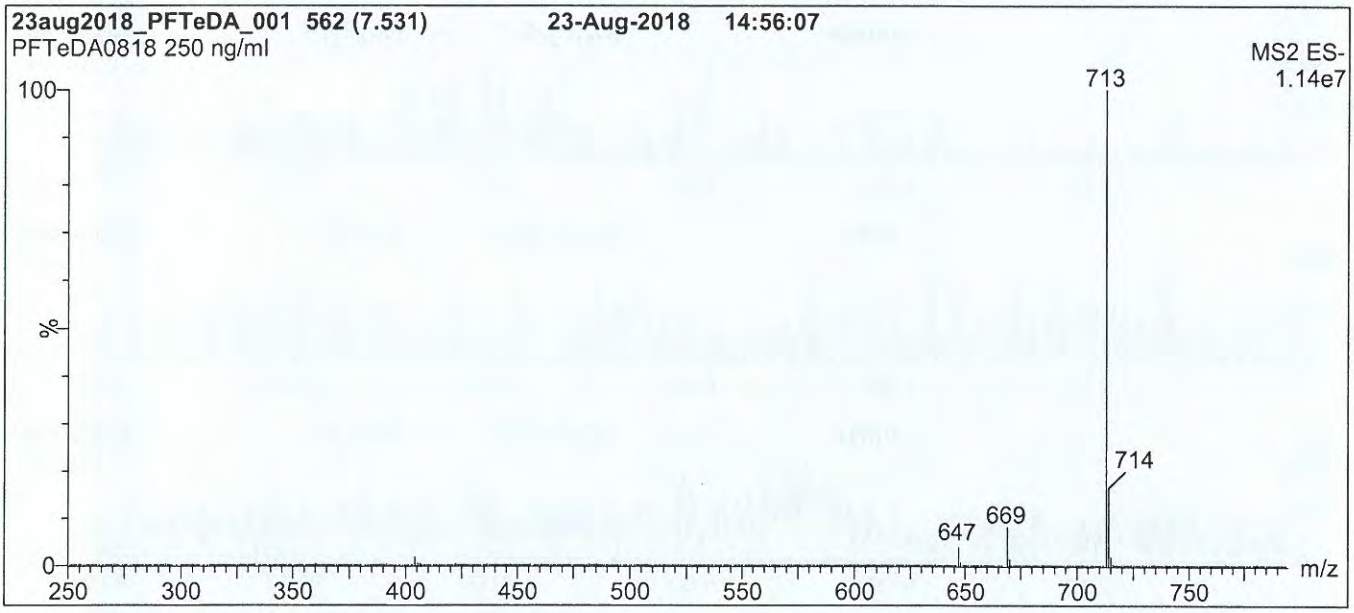
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812044

Figure 1: **PFTeDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

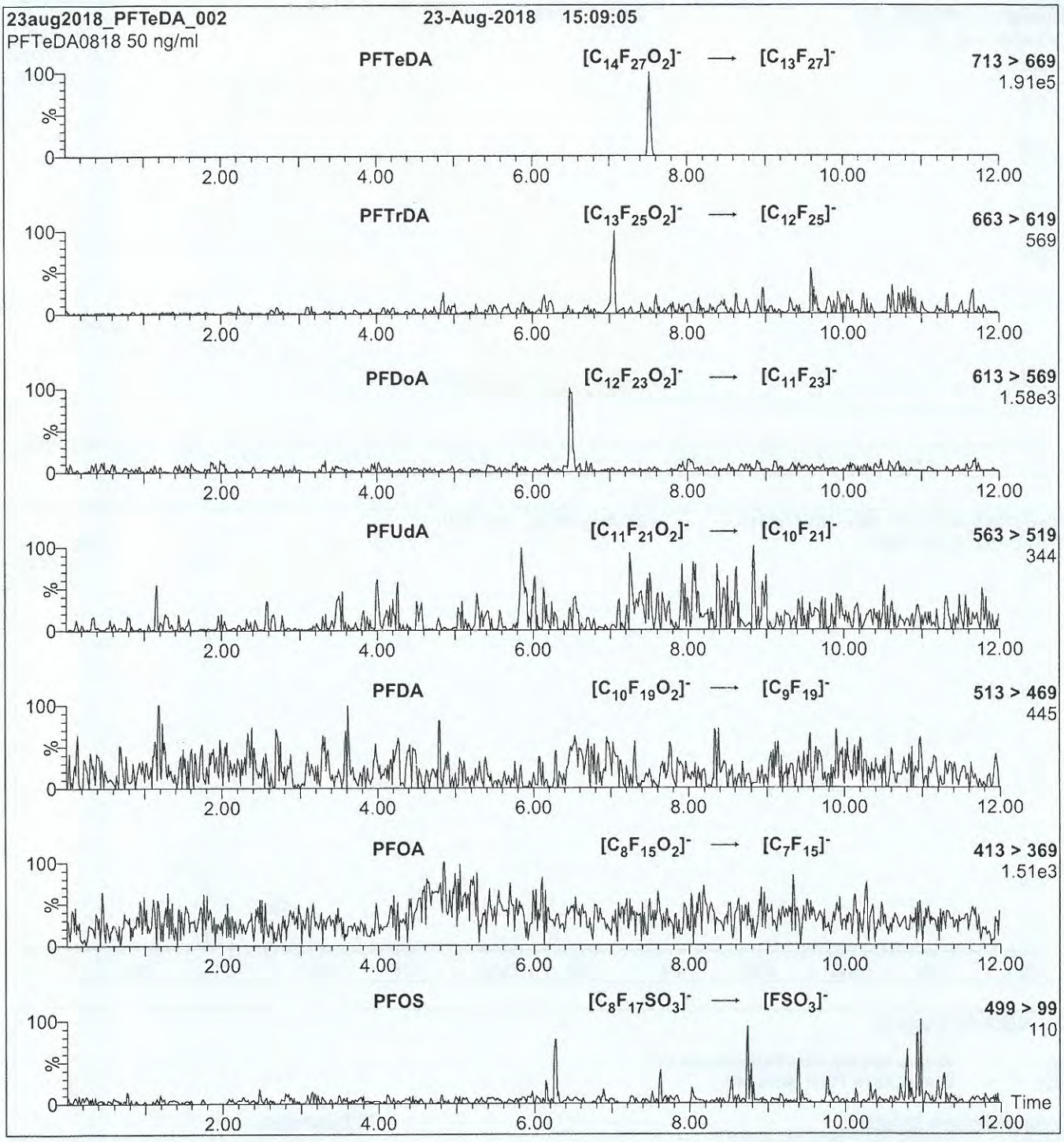
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2044

Figure 2: **PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFTeDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 12

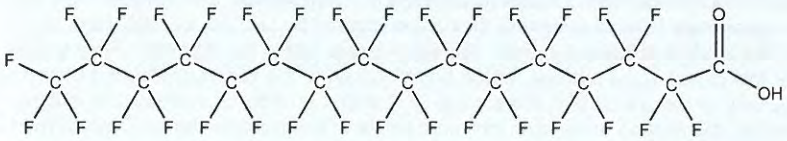
1812045

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFHxDA
COMPOUND: Perfluoro-n-hexadecanoic acid
LOT NUMBER: PFHxDA0717

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) 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:** 08/04/2017 (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

1812045

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:

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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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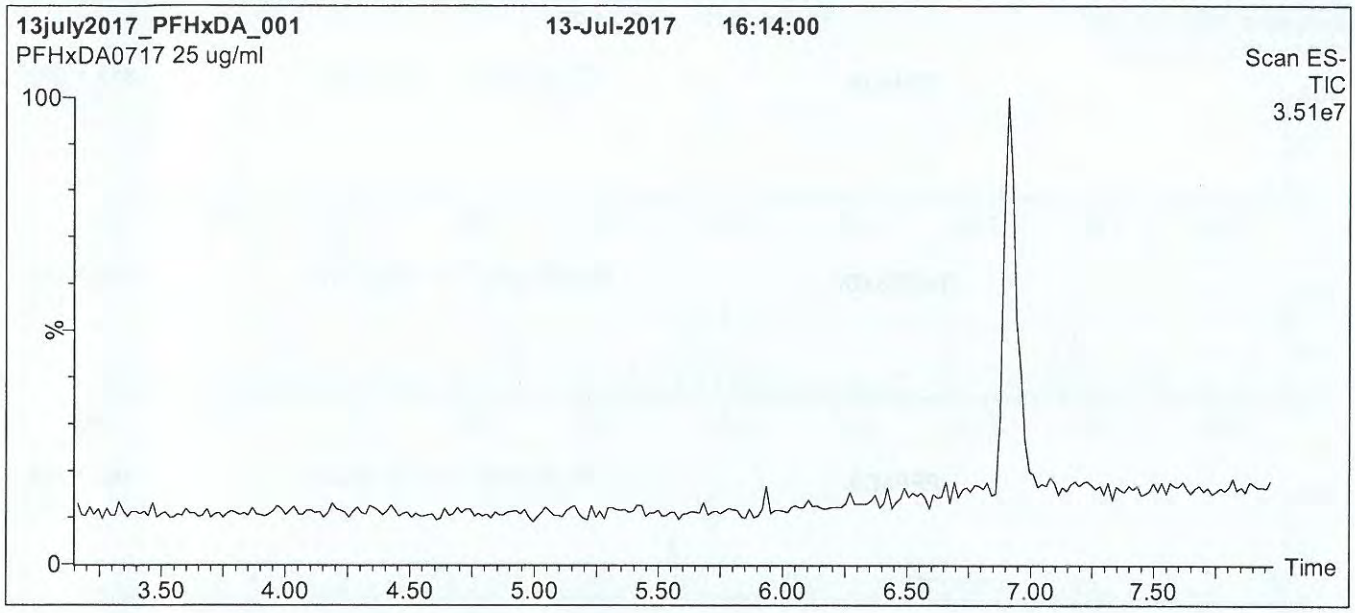
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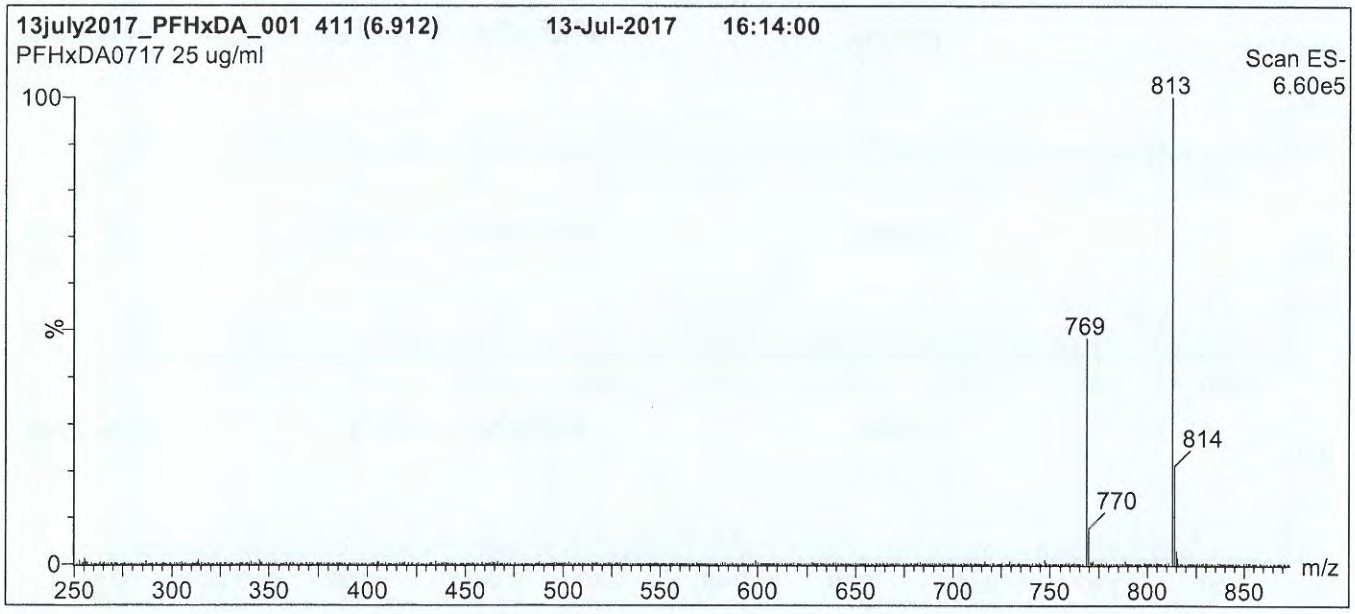
ANAB ACCREDITED PRODUCER REFERENCE MATERIAL PRODUCER

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18L2045

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: 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

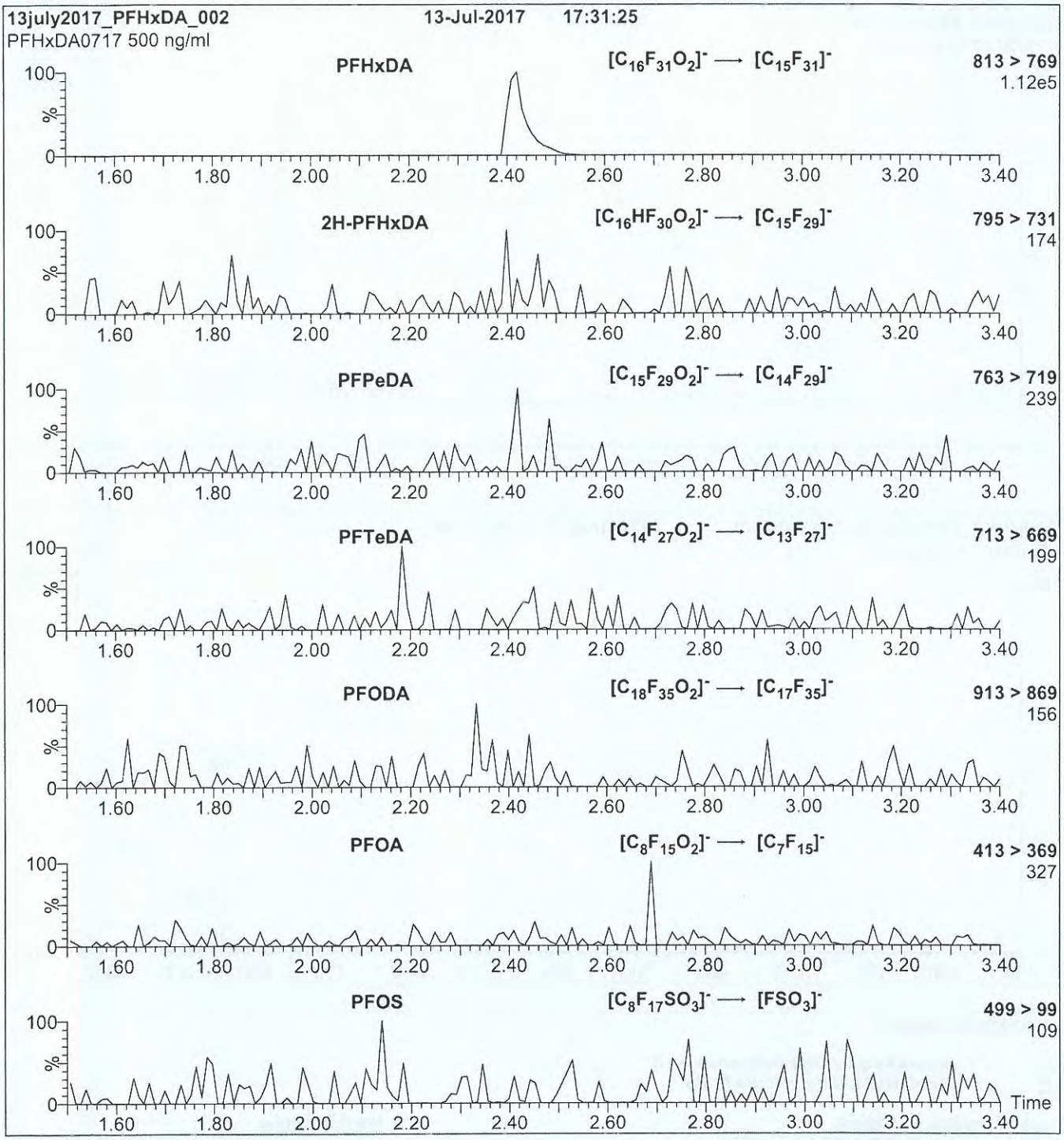
MS Parameters

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

1812045

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) = 3.13e-3
Collision Energy (eV) = 15

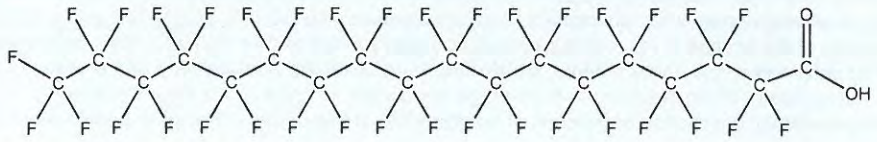
18L2046

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

18L2046

INTENDED USE:

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HAZARDS:

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QUALITY MANAGEMENT:

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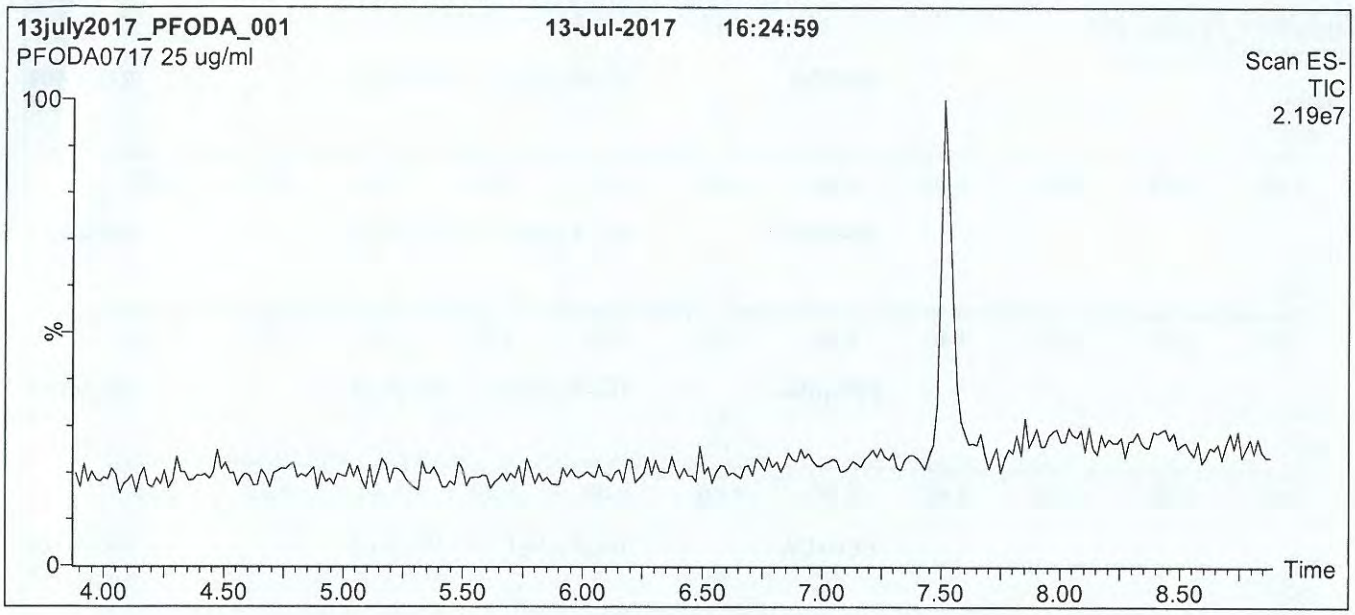
CALA Testing Accreditation No. A 1226

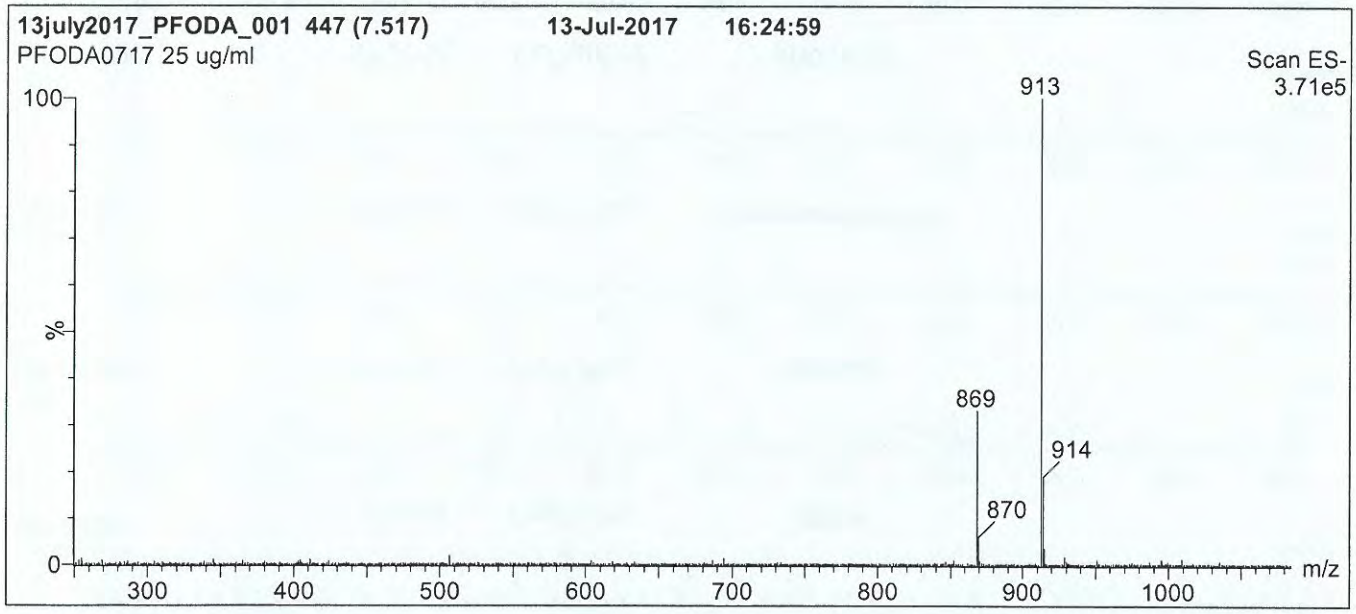
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812046

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

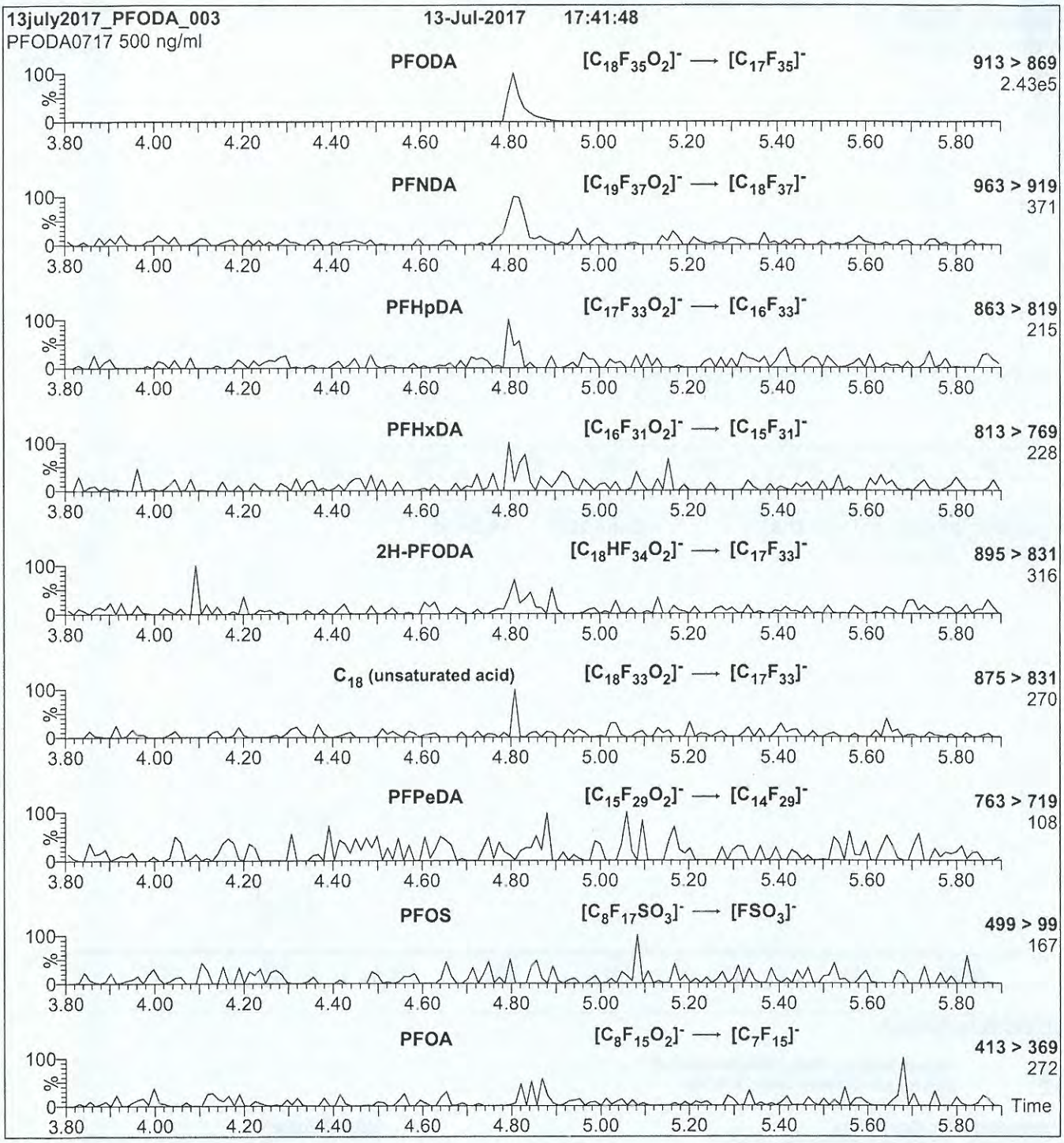
MS Parameters

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

18L2046

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

1812047

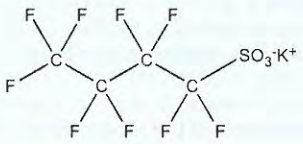
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFBS
LOT NUMBER: LPFBS0418
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)	05/04/2018		
EXPIRY DATE: (mm/dd/yyyy)	05/04/2023		
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:** 05/25/2018 (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

1812047

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

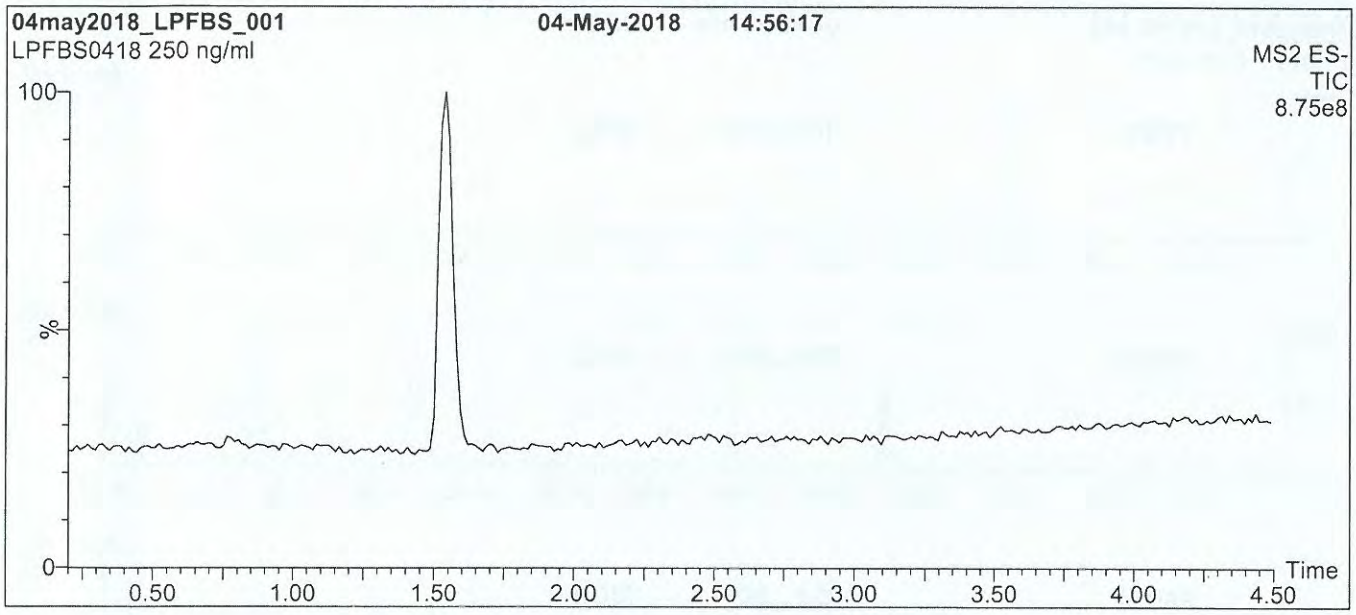
CALA Testing Accreditation No. A1226

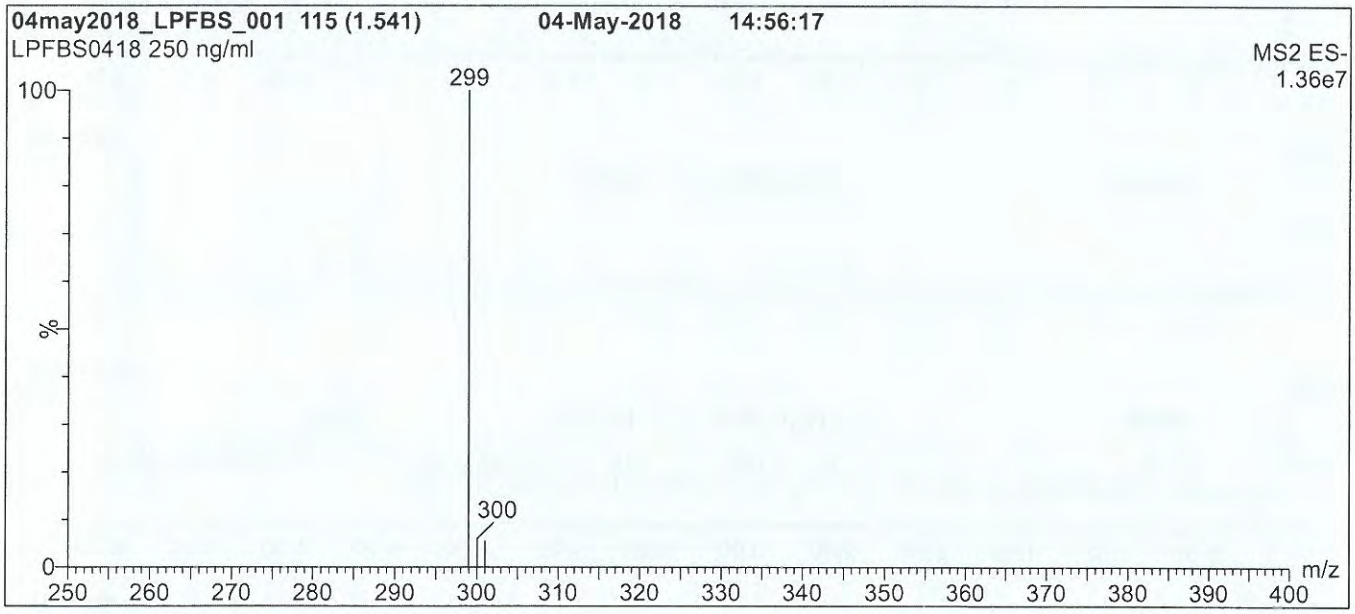
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2047

Figure 1: **L-PFBS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

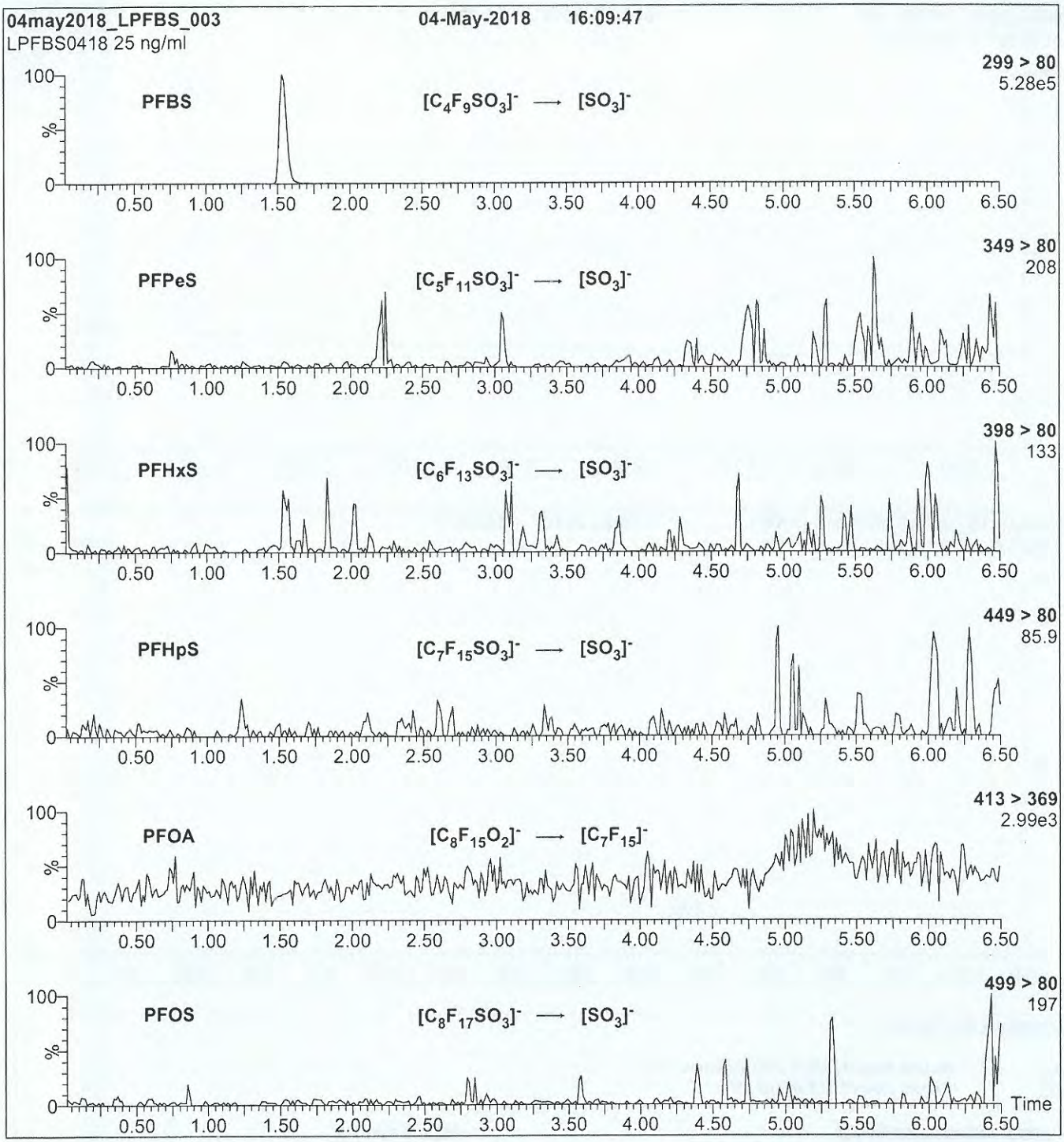
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812047

Figure 2: **L-PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFBS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

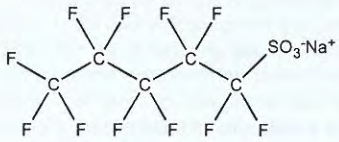
Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 30

1812048

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	L-PFPeS	**LOT NUMBER:**	LPFPeS0718
COMPOUND:	Sodium perfluoro-1-pentanesulfonate		
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)	07/12/2018		
EXPIRY DATE: (mm/dd/yyyy)	07/12/2023		
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:** 07/18/2018 (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

1812048

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. 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:

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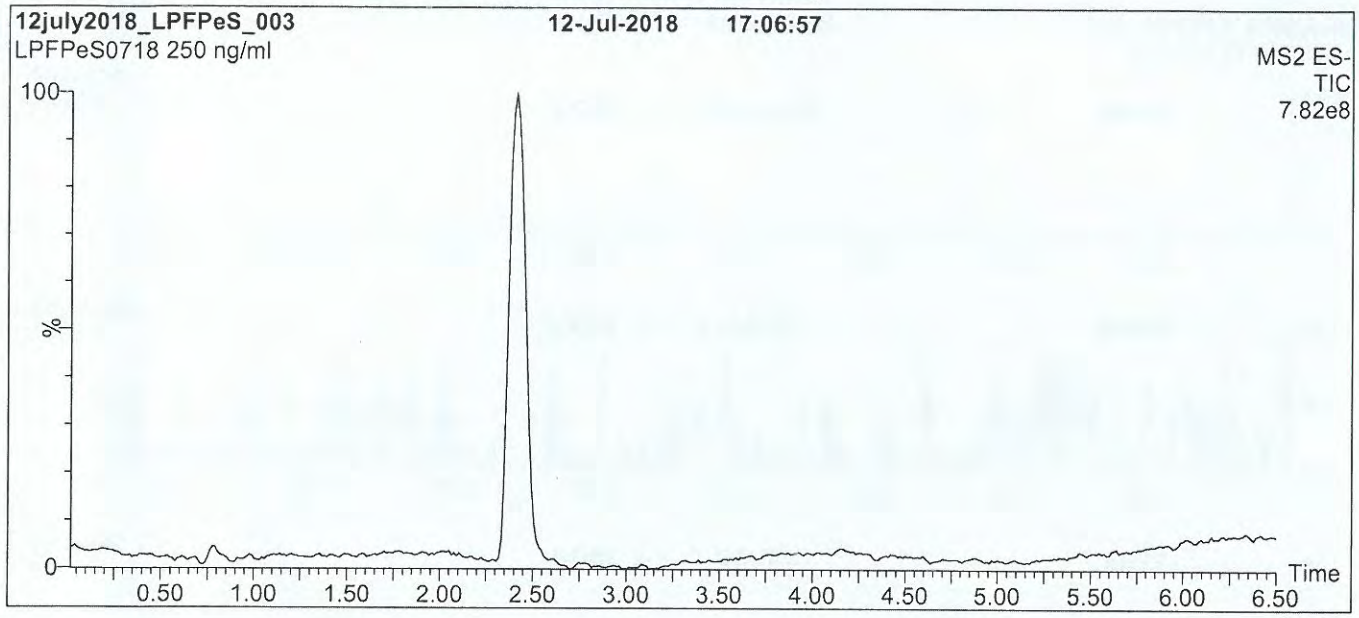
CALA Testing Accreditation No. A 1226

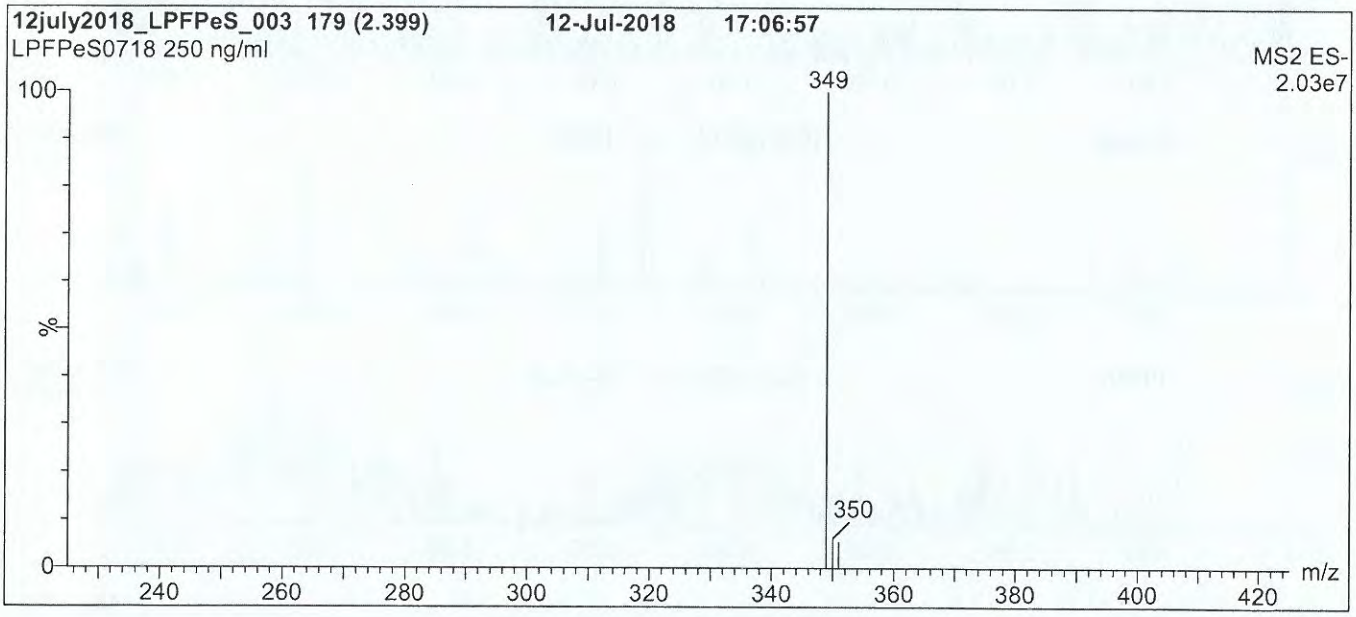
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18L2048

Figure 1: **L-PFPeS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

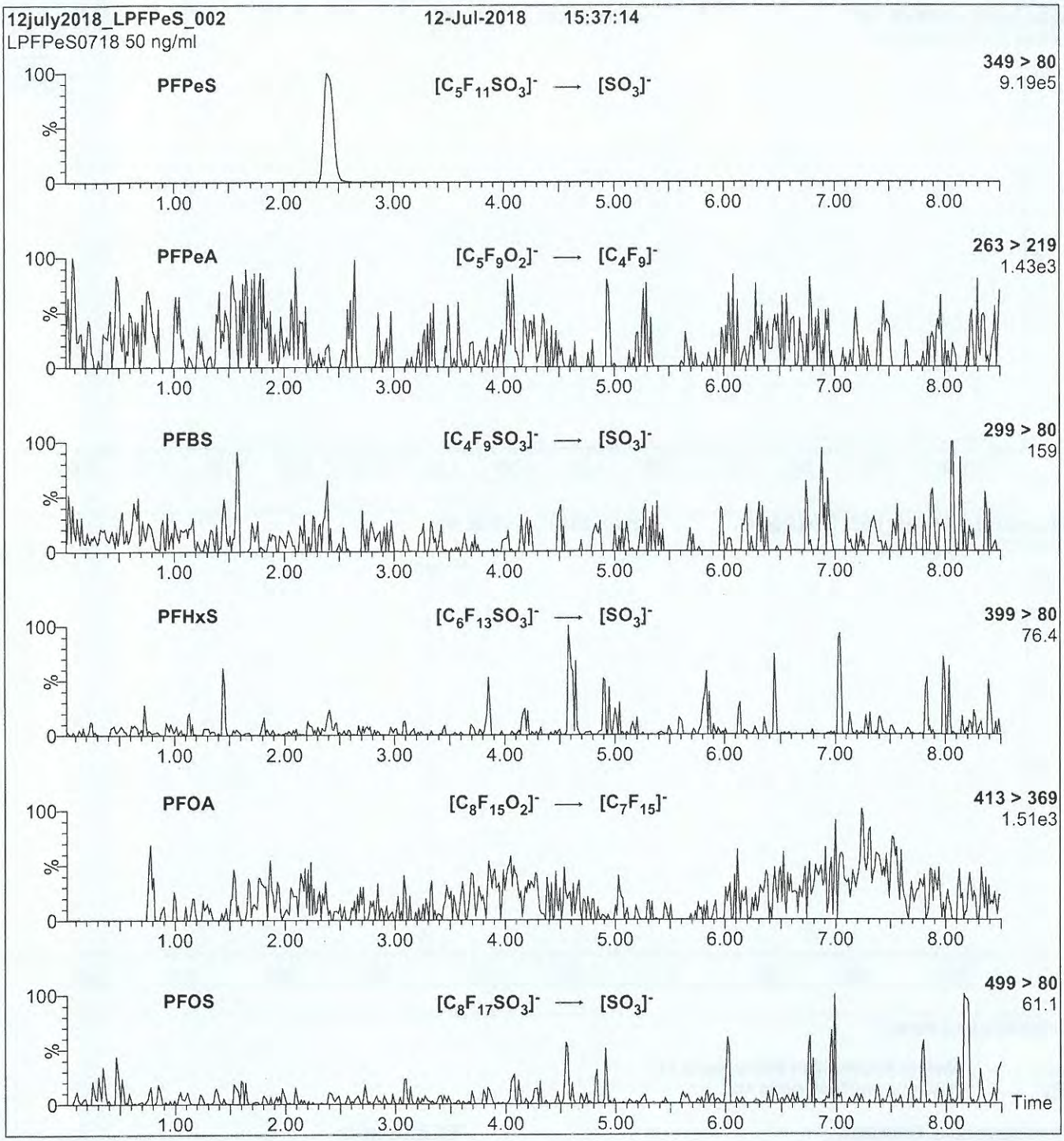
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812048

Figure 2: **L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFPeS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 32

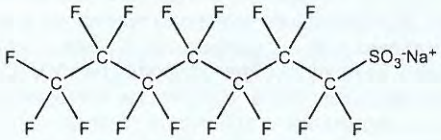
18L2049

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFHpS
COMPOUND: Sodium perfluoro-1-heptanesulfonate
LOT NUMBER: LPFHpS0418

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)	05/04/2018		
EXPIRY DATE: (mm/dd/yyyy)	05/04/2023		
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: _____ **Date:** 05/17/2018 (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

1812049

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where x is expressed as a relative standard uncertainty of the individual parameter.

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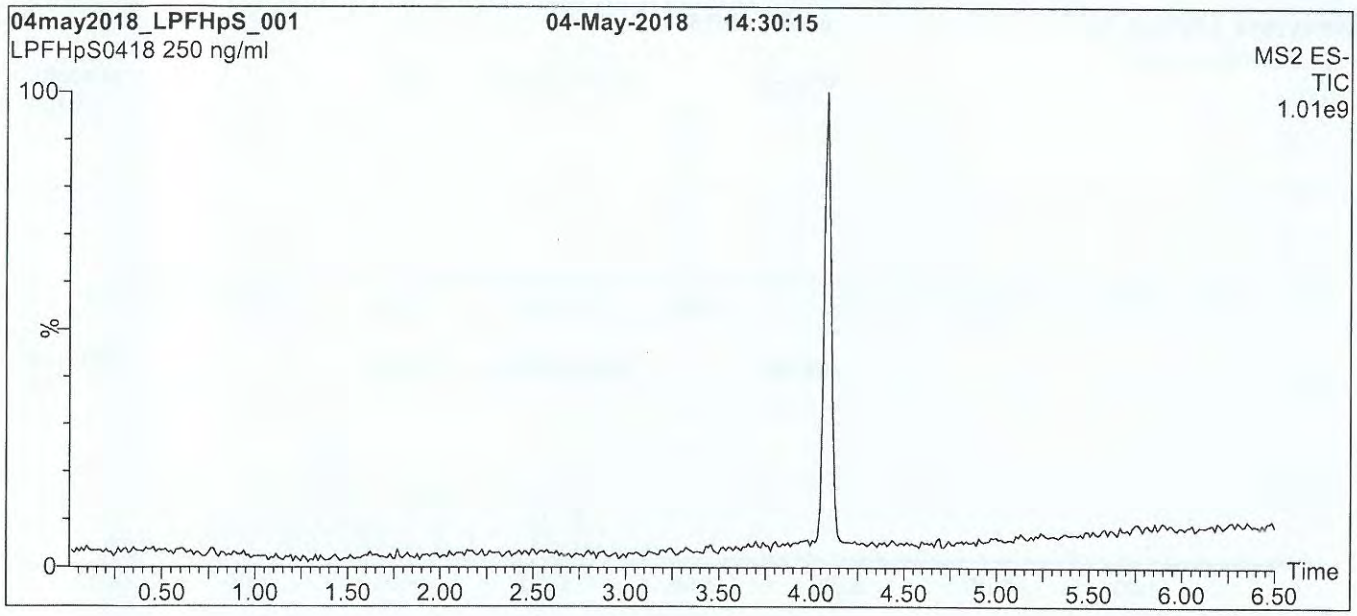
CALA Testing Accreditation No. A1226

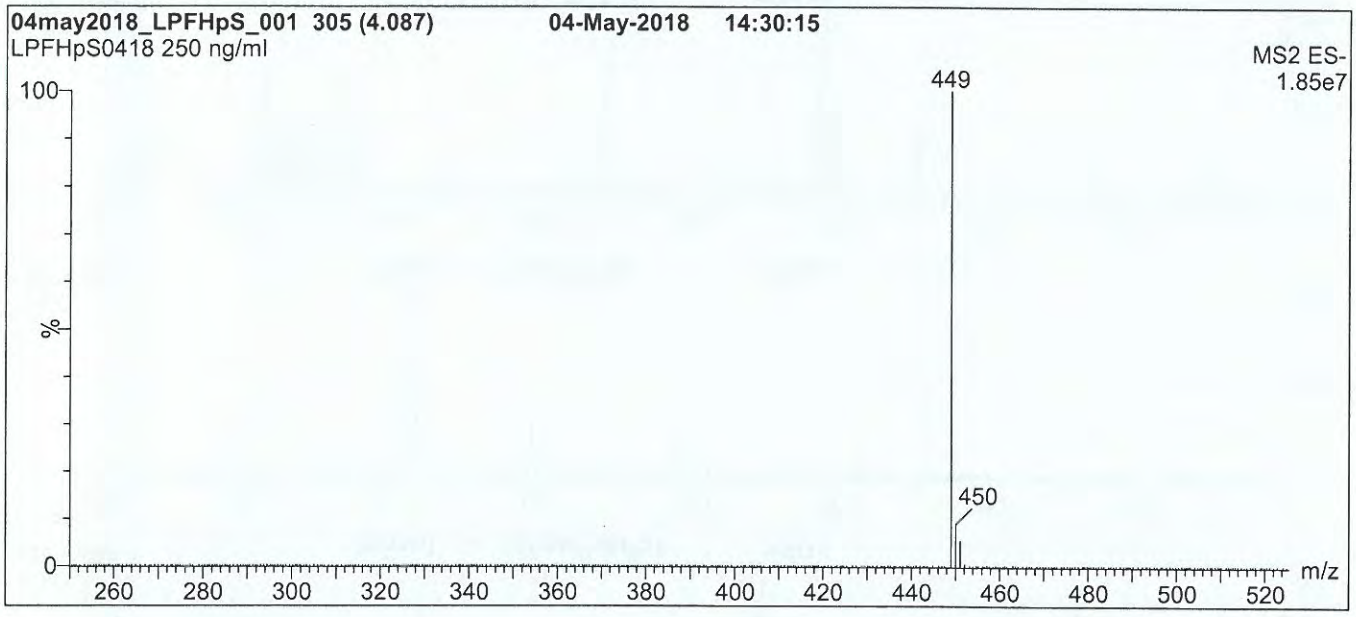
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18L2049

Figure 1: **L-PFHpS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

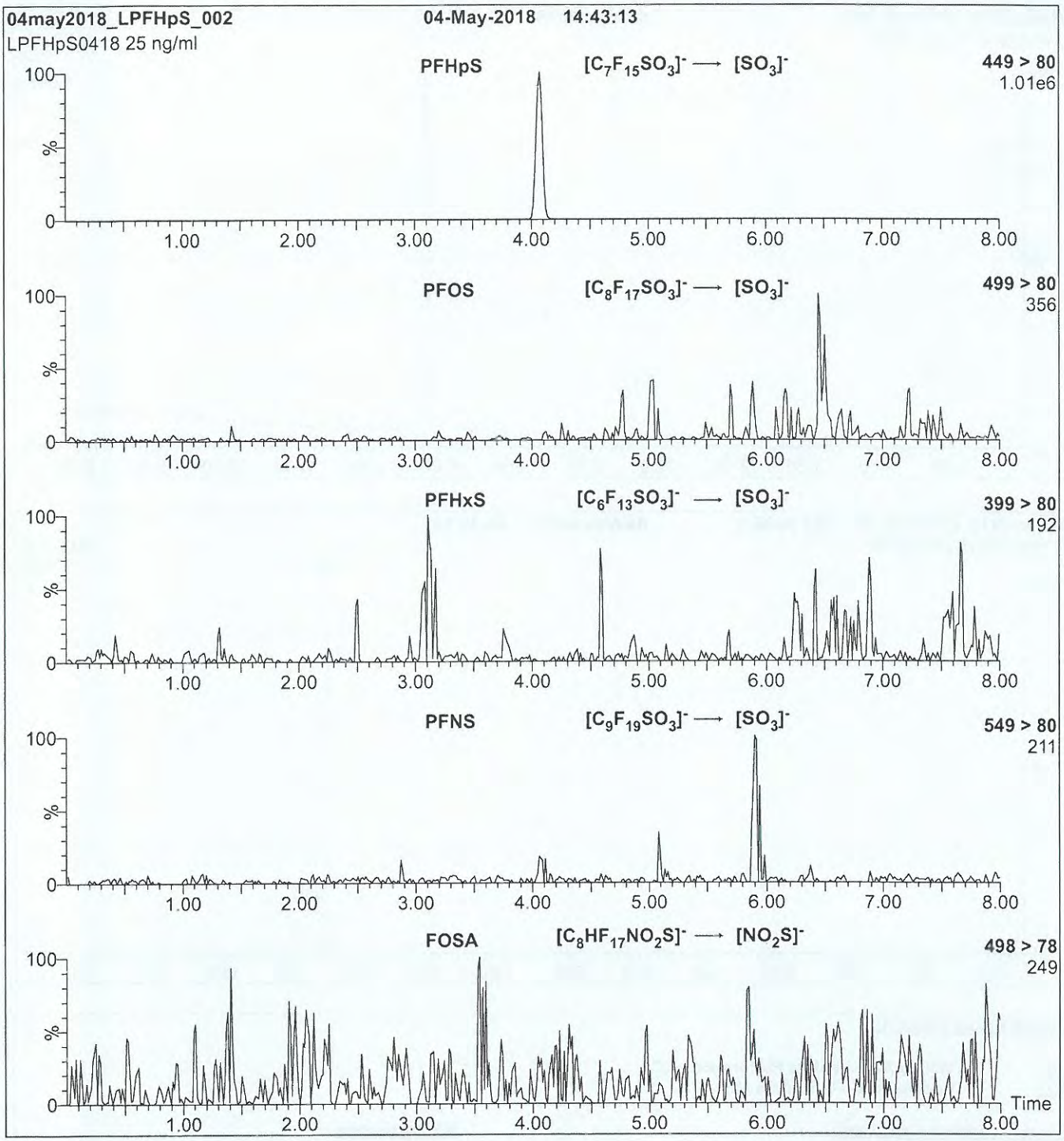
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

18L2049

Figure 2: **L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFHpS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

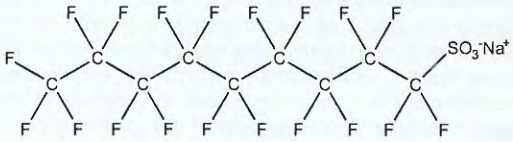
MS Parameters
Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 42

18L2050

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	L-PFNS	**LOT NUMBER:**	LPFNS0718
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)	07/13/2018		
EXPIRY DATE: (mm/dd/yyyy)	07/13/2023		
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:** 07/18/2018 (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

18L2050

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

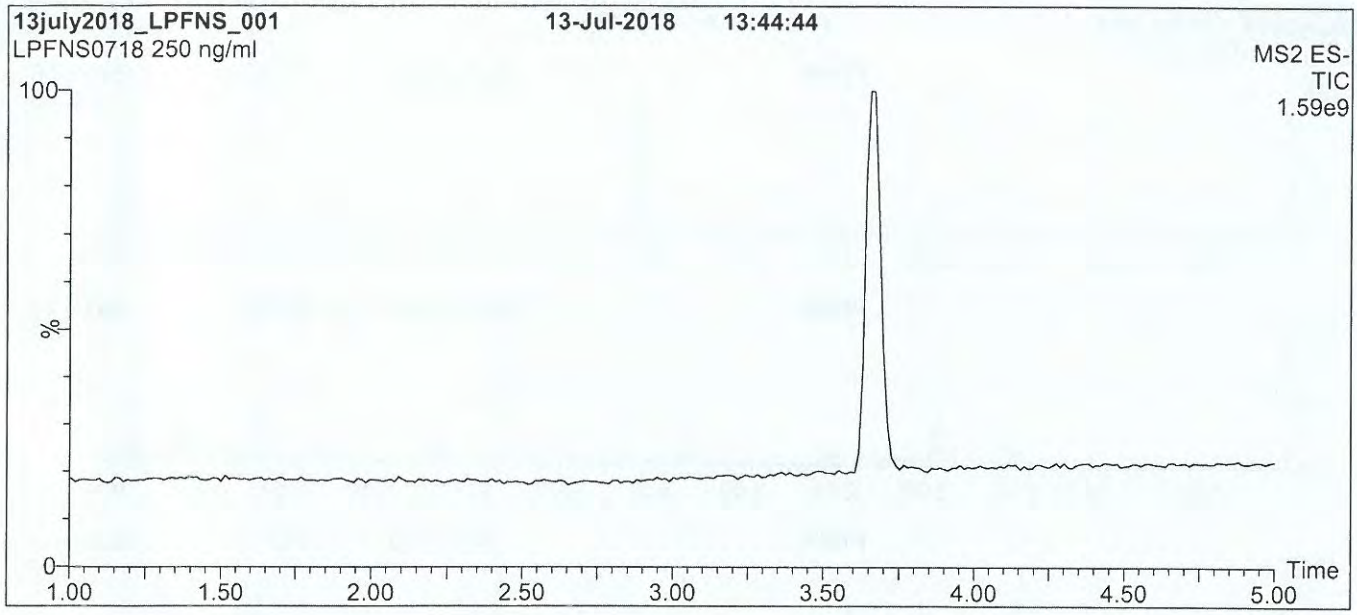
CALA Testing Accreditation No. A 1226

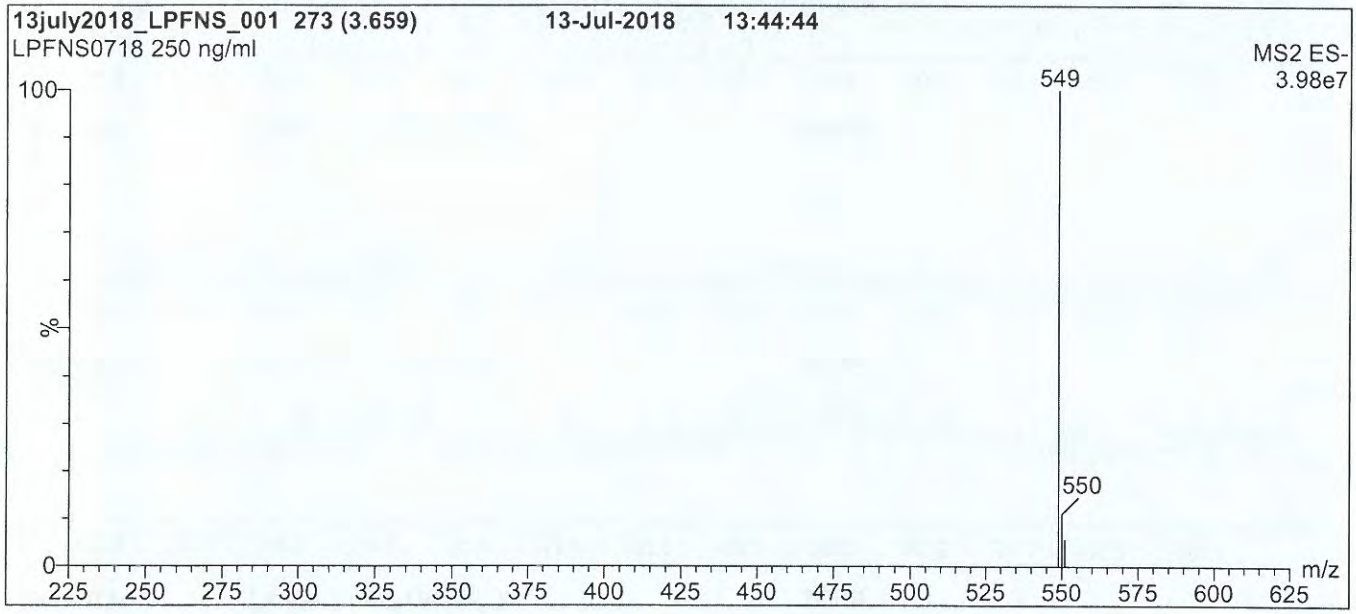
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812050

Figure 1: **L-PFNS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

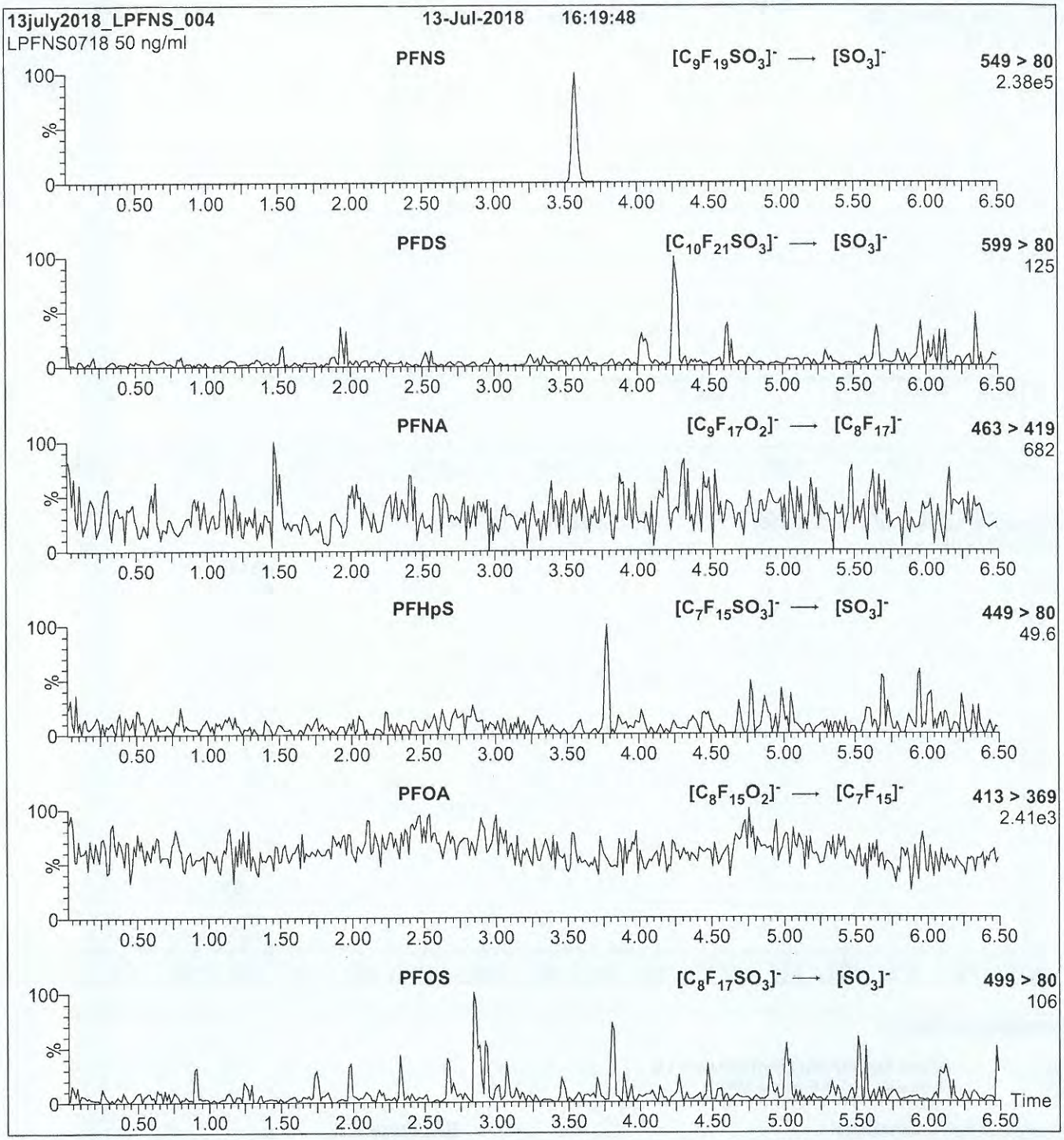
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812050

Figure 2: **L-PFNS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFNS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 64

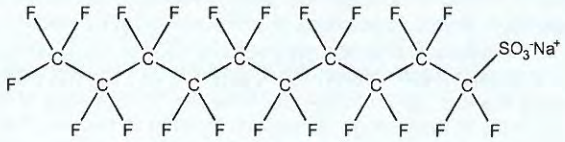
1812057

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFDS
LOT NUMBER: LPFDS1018
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)	10/05/2018		
EXPIRY DATE: (mm/dd/yyyy)	10/05/2023		
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: _____ **Date:** 10/09/2018 (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

1862057

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

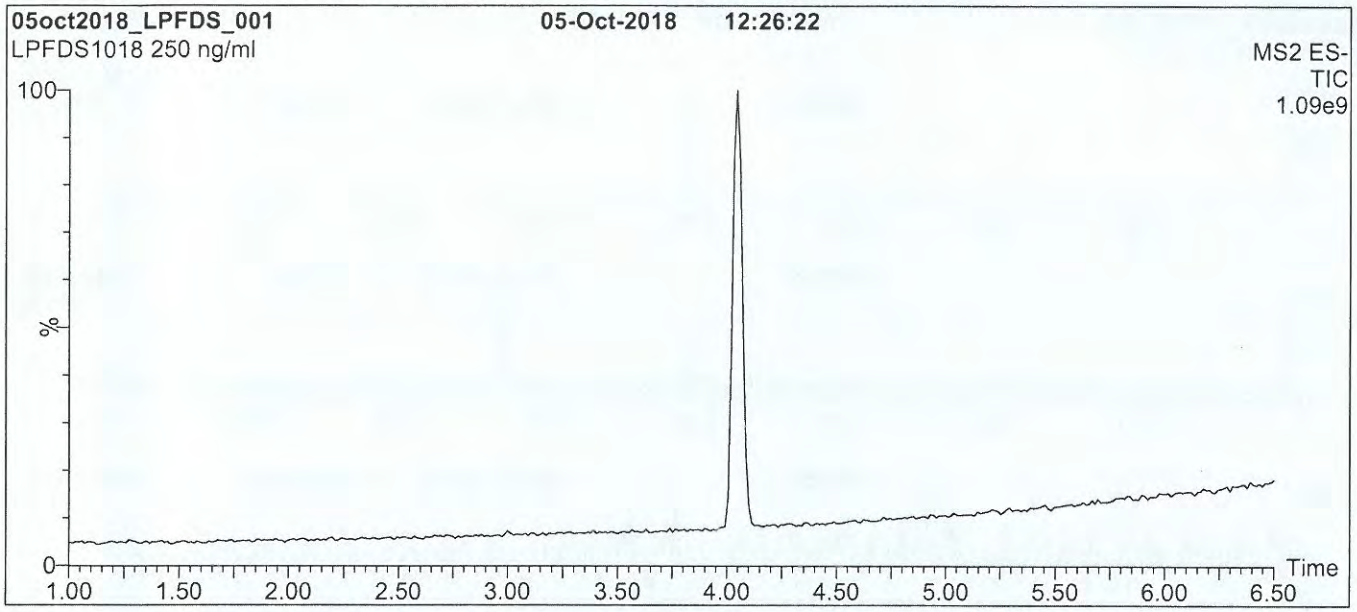
CALA Testing Accreditation No. A 1226

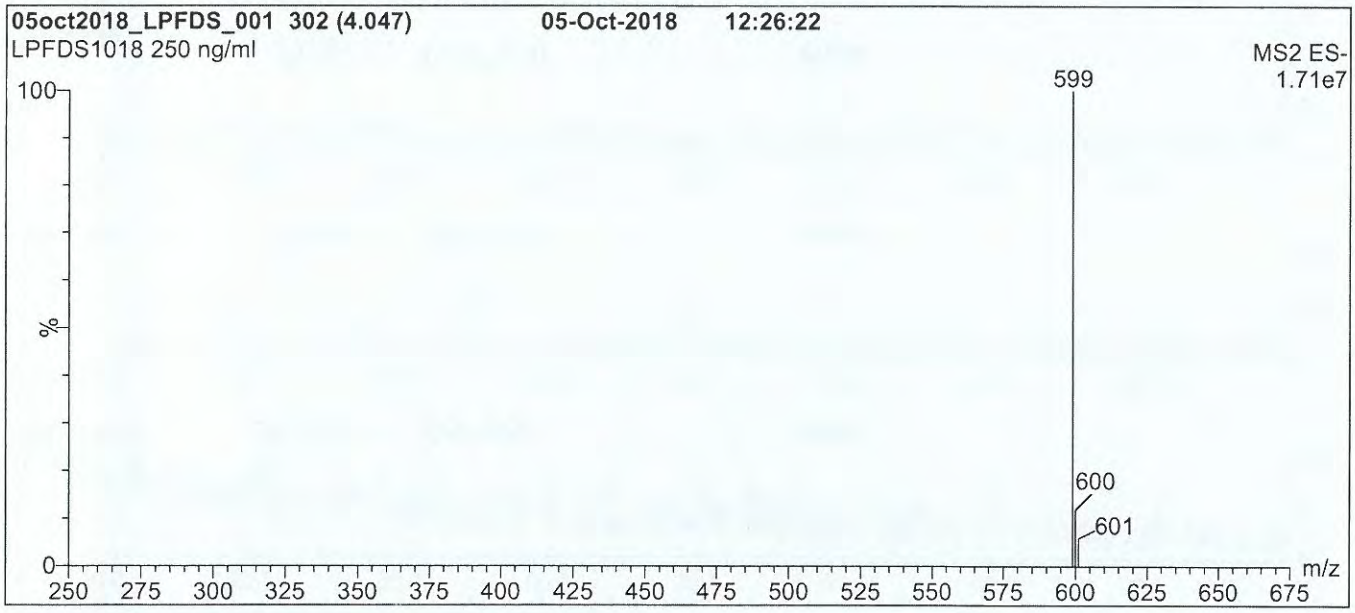
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2051

Figure 1: **L-PFDS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

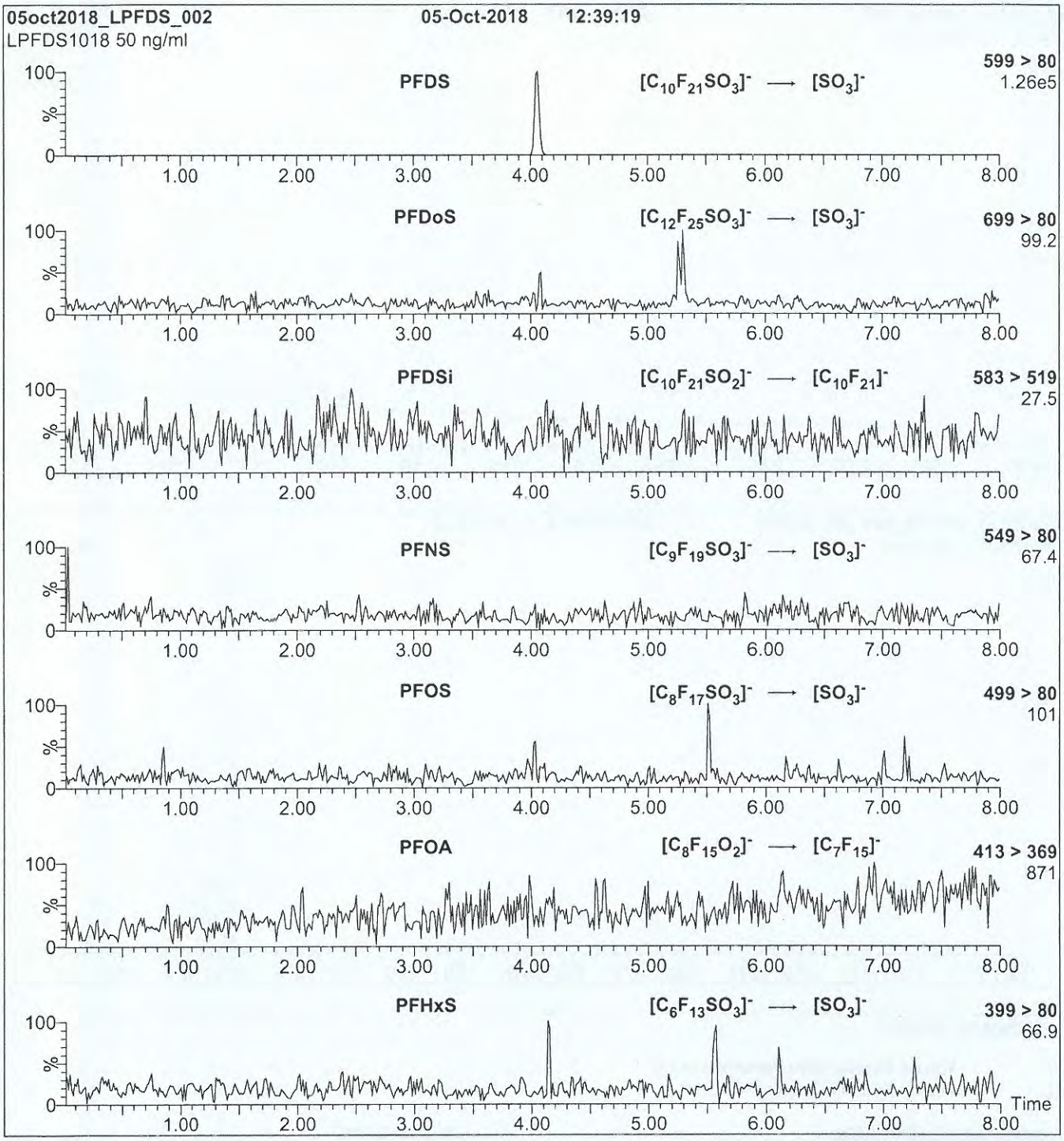
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1862057

Figure 2: **L-PFDS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 56

1812052

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFHxSK

Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFHxSK
LOT NUMBER:	brPFHxSK1018
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)	10/01/2018
LAST TESTED: (mm/dd/yyyy)	10/02/2018
EXPIRY DATE: (mm/dd/yyyy)	10/02/2023
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 ~ 0.3% of perfluoro-n-hexanoic acid and ~ 0.15% of perfluoro-1-pentanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

1812052

INTENDED USE:

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HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This 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:

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$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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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 Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812052

Table A: **br-PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

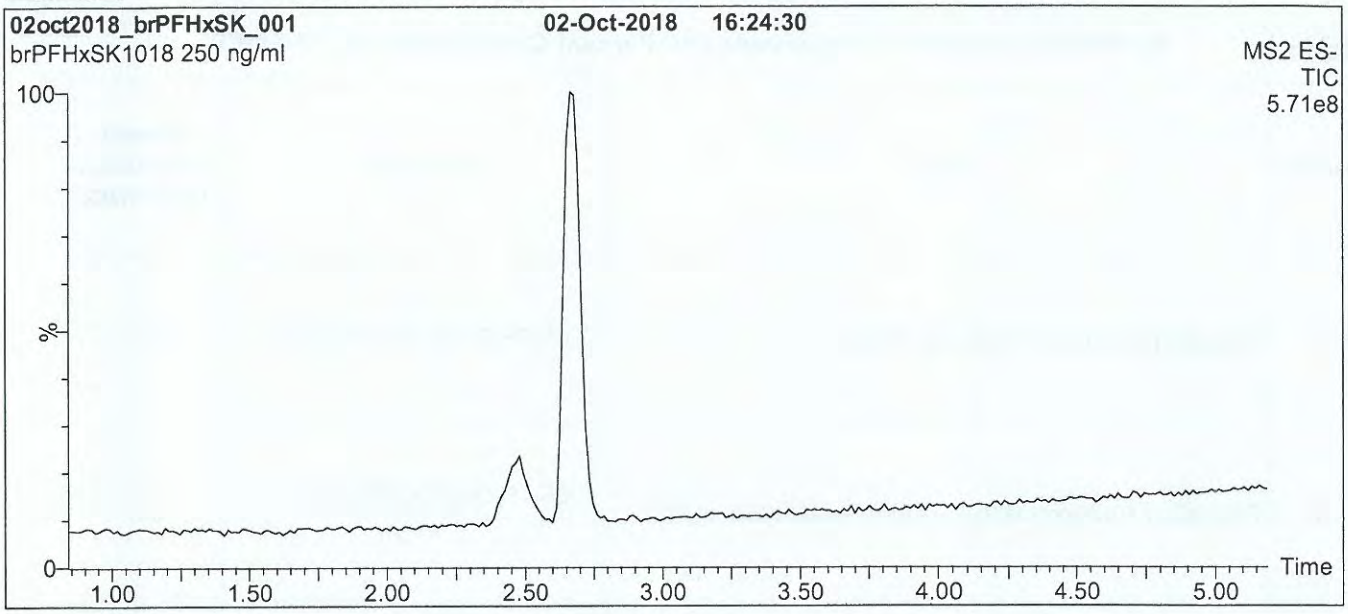
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	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

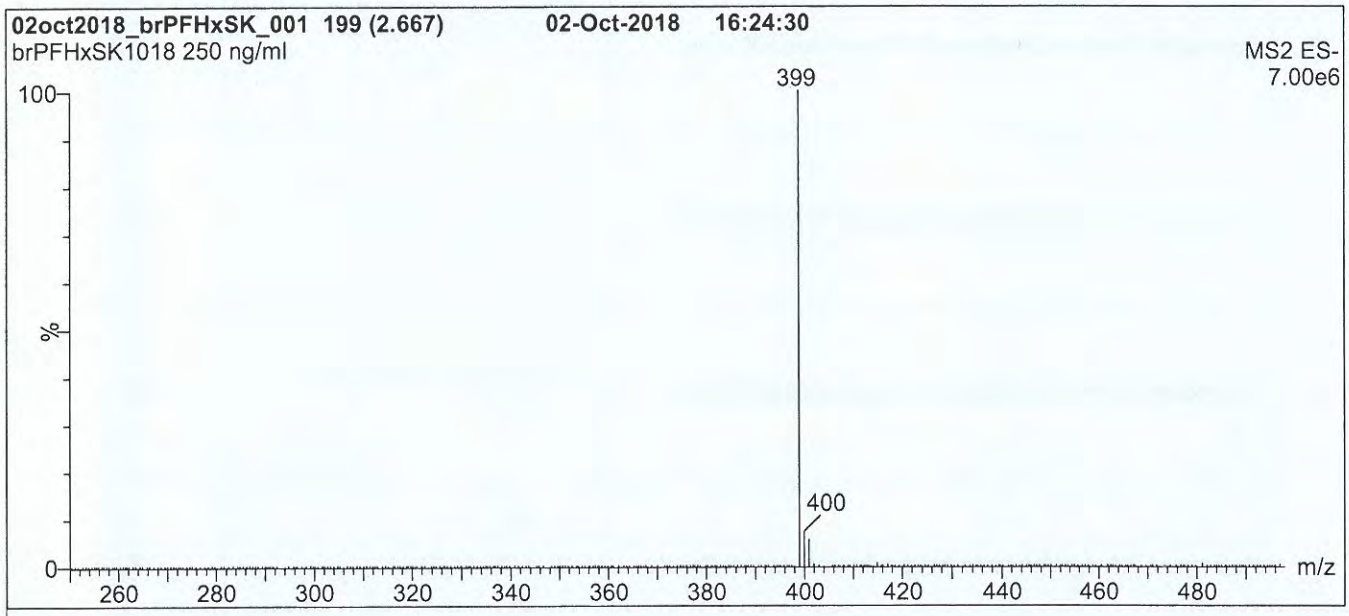
* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By: _____ **Date:** 10/05/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

18L2052

Figure 1: **br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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. Hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

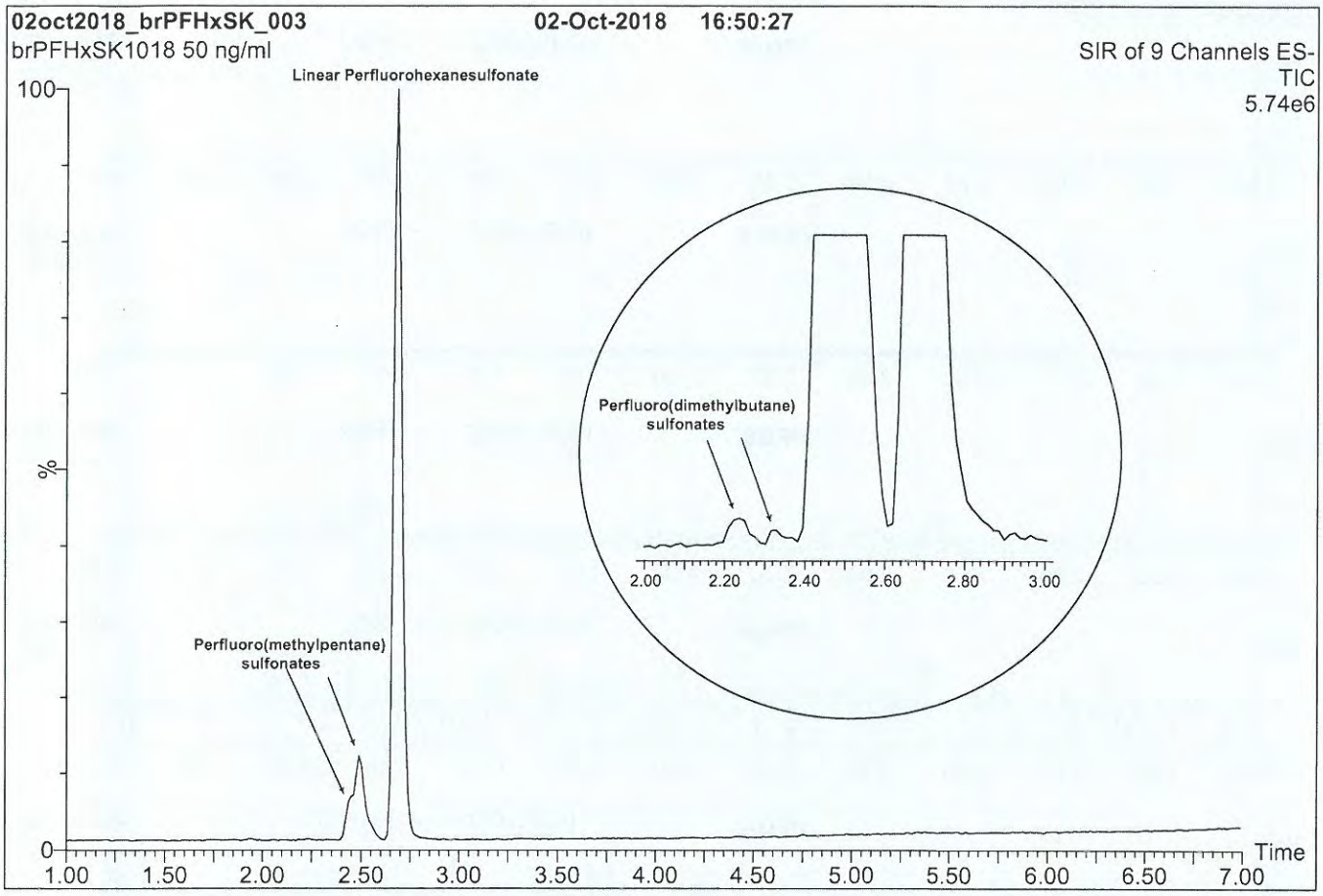
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812052

Figure 2: **br-PFHxSK; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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. Hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

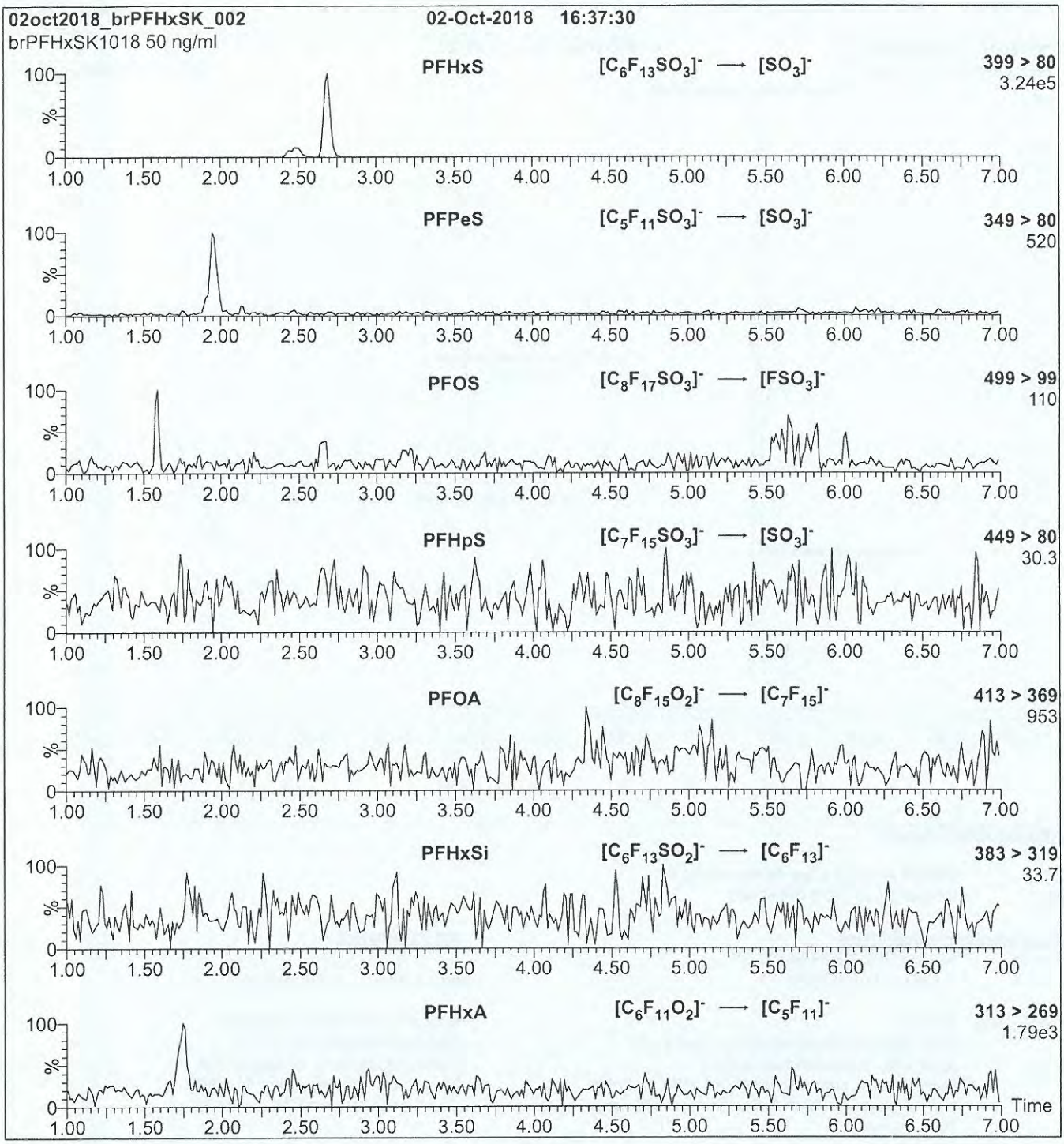
MS Parameters

Experiment: SIR (9 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2 - 6)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

1812052

Figure 3: **br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (br-PFHxSK)

Mobile phase: Same as Figures 1 and 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.87e-3
Collision Energy (eV) = 42

1812053

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFOSK
LOT NUMBER:	brPFOSK0418
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)	04/09/2018
LAST TESTED: (mm/dd/yyyy)	04/18/2018
EXPIRY DATE: (mm/dd/yyyy)	04/18/2023
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

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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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This 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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LIMITED WARRANTY:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Table A: **br-PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

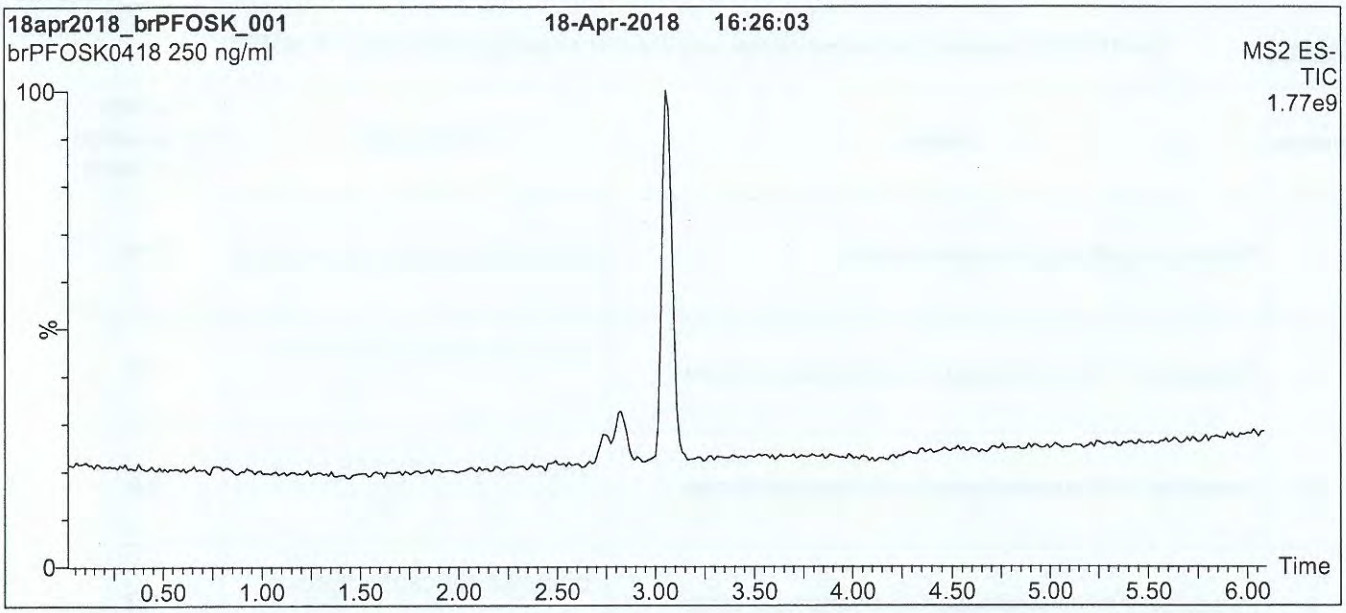
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	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	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07

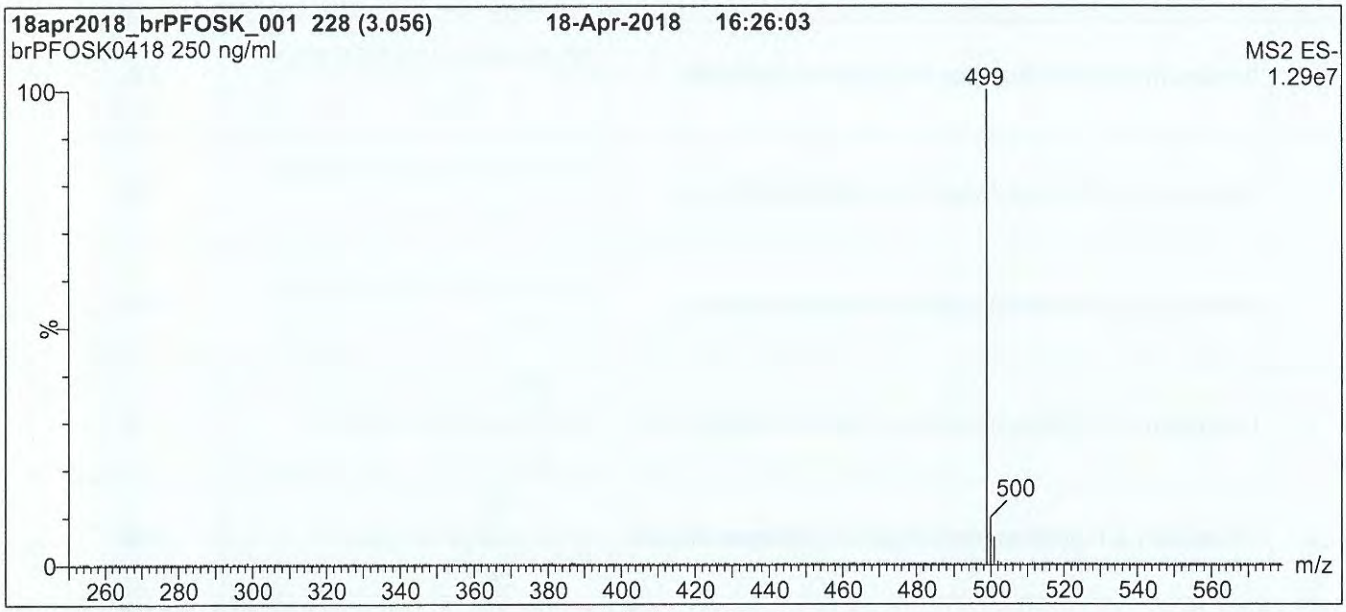
* Percent of total perfluorooctanesulfonate isomers only. Isomers are labelled in Figure 2.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 04/23/2018
(mm/dd/yyyy)
B.G. Chittim, General Manager

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Figure 1: **br-PFOSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 85% organic over 7 min and hold for 3 min.
Return to initial conditions over 0.75 min.
Time: 12 min

Flow: 300 µl/min

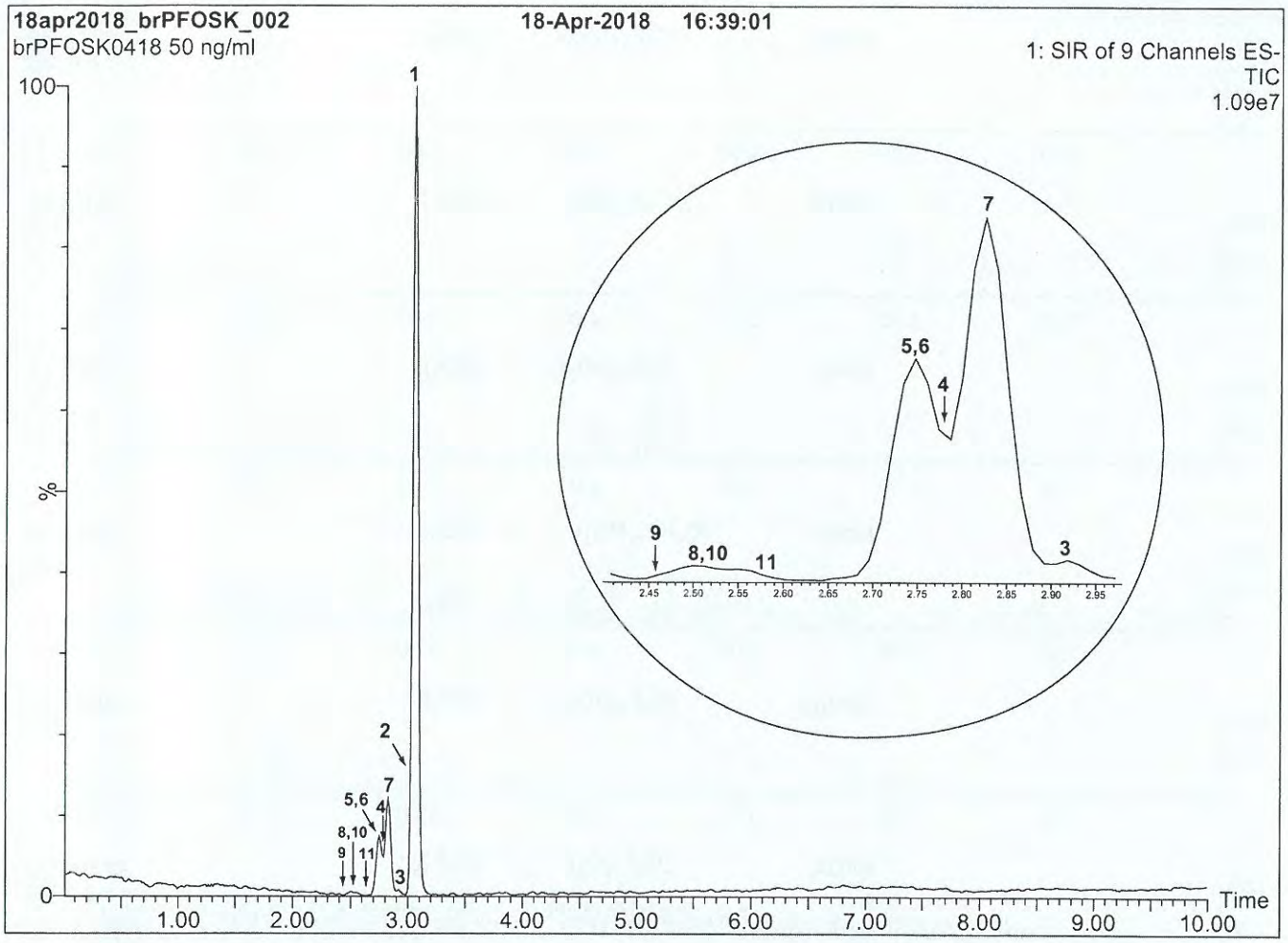
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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Figure 2: **br-PFOSK; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18} (1.7 µm, 2.1 x 100 mm)

Injection: 50 ng/ml of br-PFOSK

Mobile Phase: Gradient
60% (80:20 MeOH:ACN) / 40% H_2O (both with 10 mM NH_4OAc buffer)
Ramp to 85% organic over 7 min and hold for 3 min.
Return to initial conditions over 0.75 min.
Time: 12 min

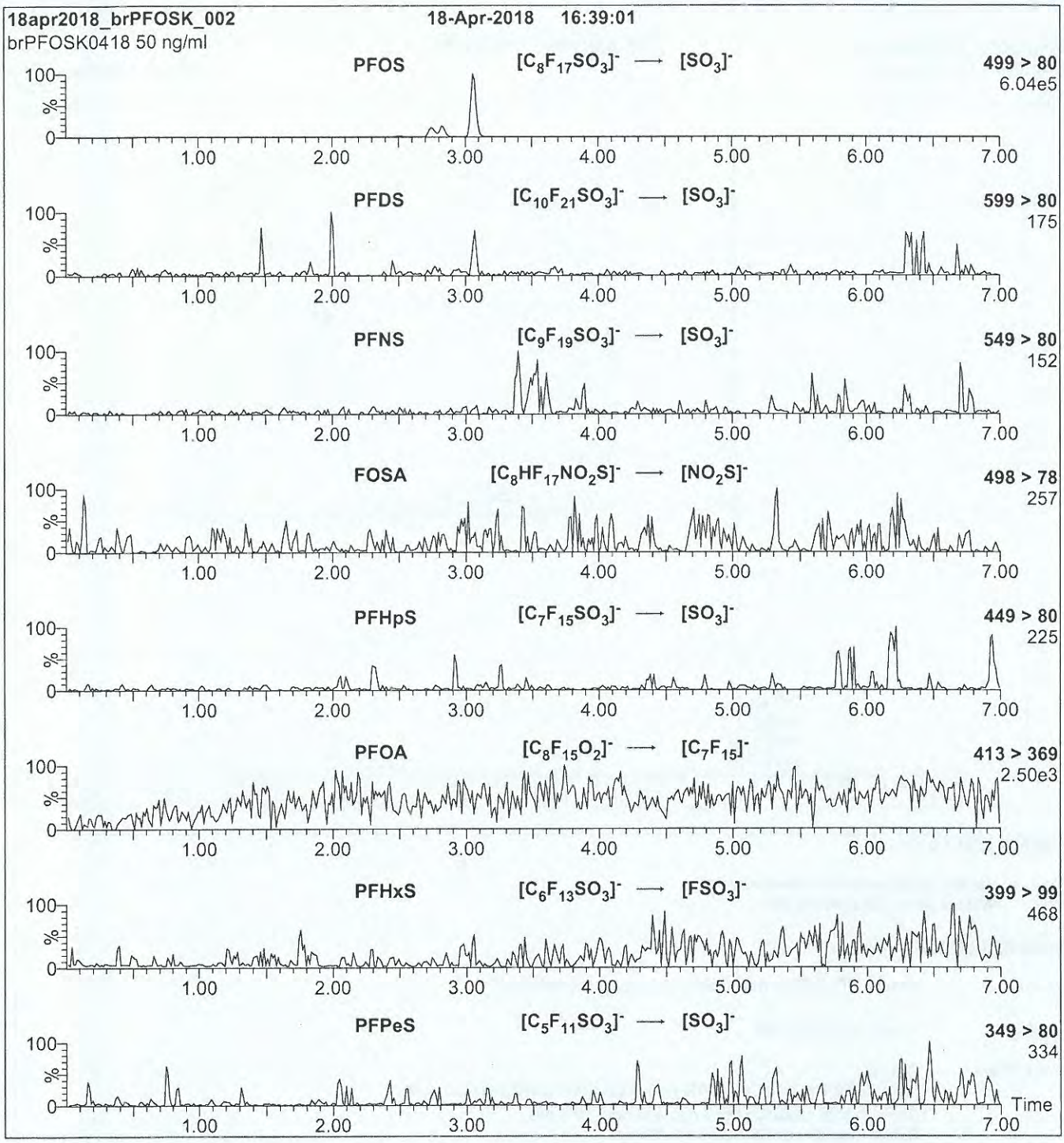
Flow: 300 µl/min

MS Conditions:

SIR (ES^-)
Source = 150 °C
Desolvation = 500 °C
Cone Voltage = 2 - 20V (variable)

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Figure 3: **br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (br-PFOSK)

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 64

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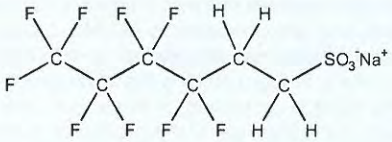
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 4:2FTS **LOT NUMBER:** 42FTS0718

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)	07/03/2018		
EXPIRY DATE: (mm/dd/yyyy)	07/03/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS Data (Mass Spectrum)
Figure 3: 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:** 07/05/2018 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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INTENDED USE:

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HANDLING:

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HOMOGENEITY:

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UNCERTAINTY:

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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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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 Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: 4:2FTS; LC/MS Data (SIR)

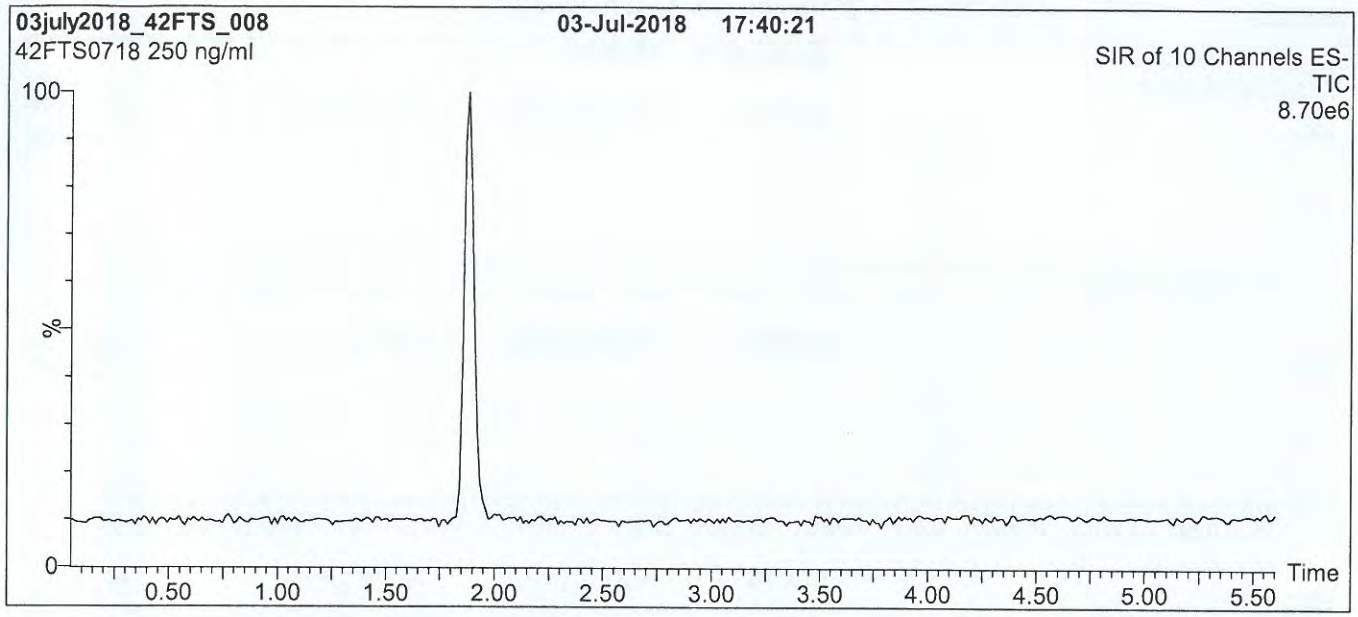
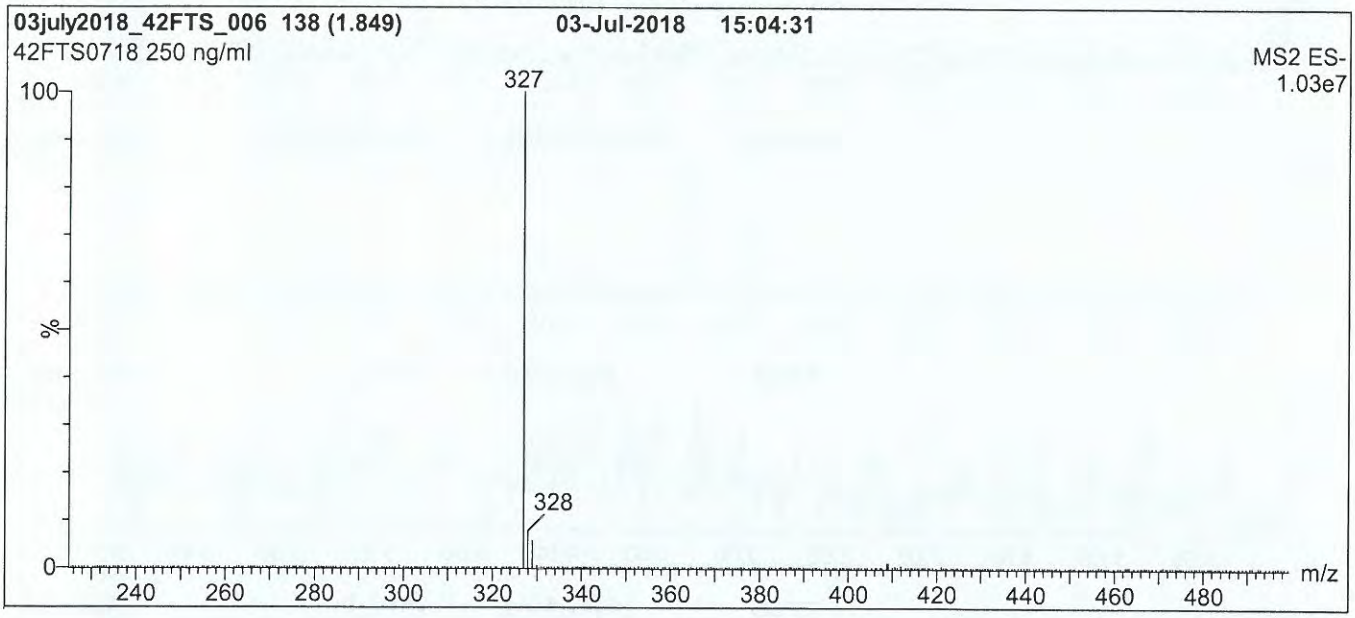


Figure 2: 4:2FTS; LC/MS Data (Mass Spectrum)



Conditions for Figures 1 & 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

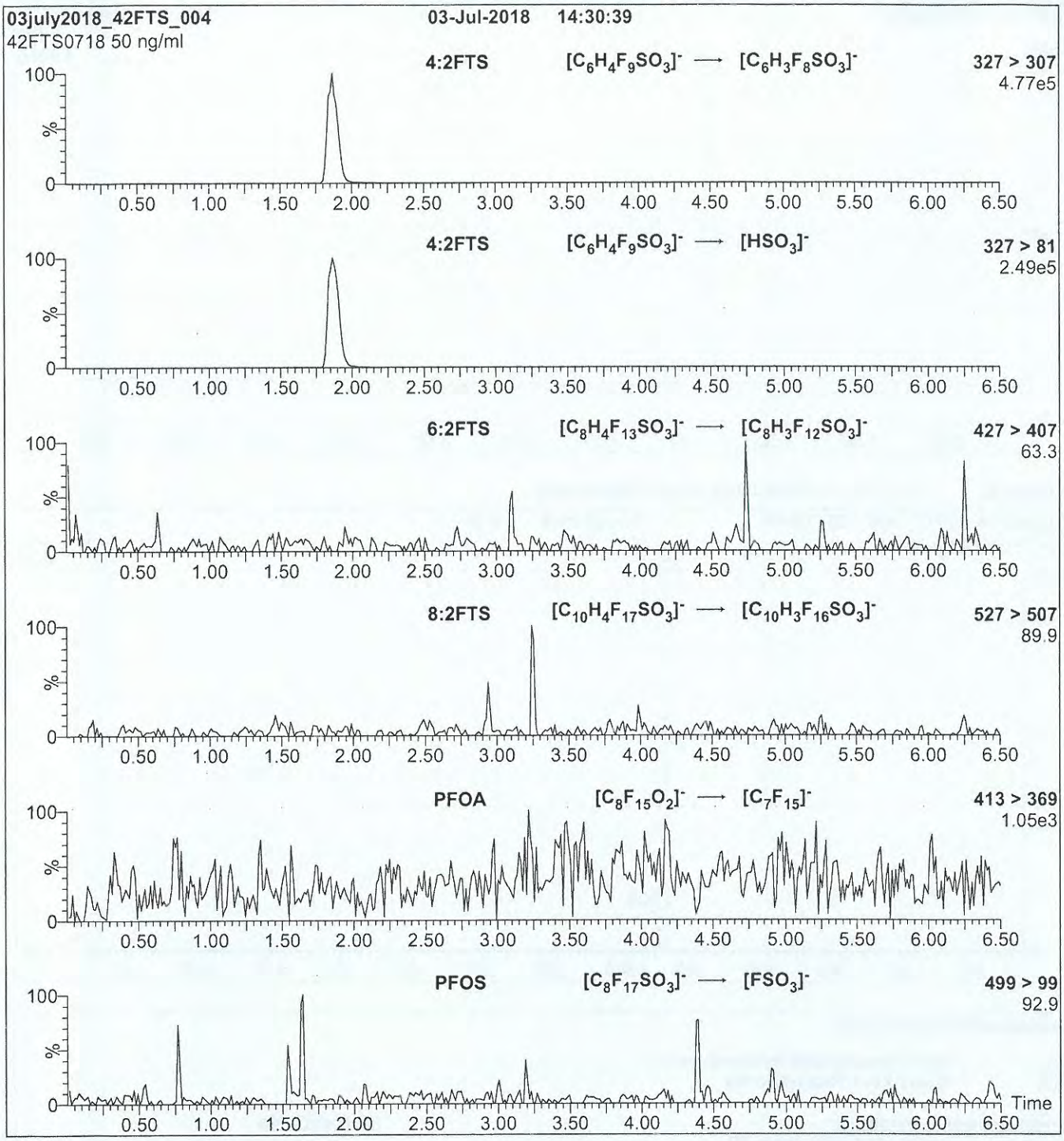
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25 (variable for SIR (2-20))
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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Figure 3: **4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (4:2FTS)

Mobile phase: Same as Figures 1 & 2

Flow: 300 µl/min

MS Parameters
Collision Gas (mbar) = 3.55e-3
Collision Energy (eV) = 18

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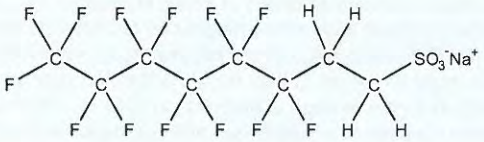
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 6:2FTS **LOT NUMBER:** 62FTS0418

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)	04/03/2018			
EXPIRY DATE: (mm/dd/yyyy)	04/03/2023			
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 ~ 0.3% of sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2FTS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/09/2018 (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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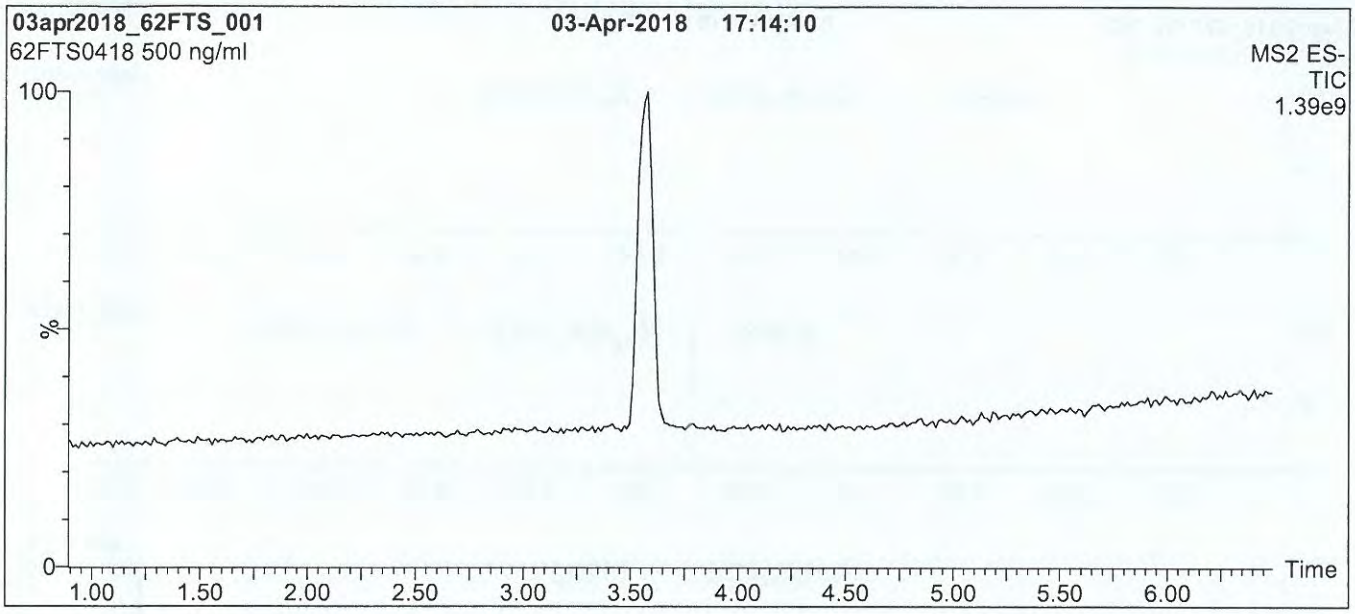
CALA Testing Accreditation No. A 1226

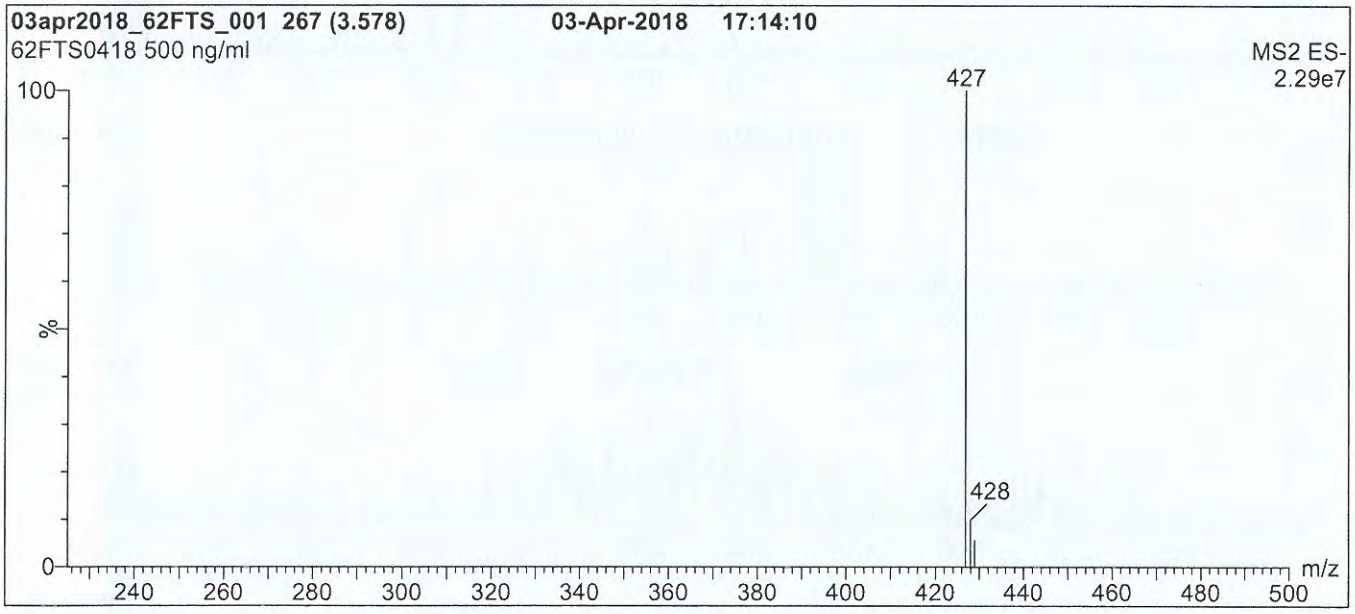
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1901857

Figure 1: **6:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

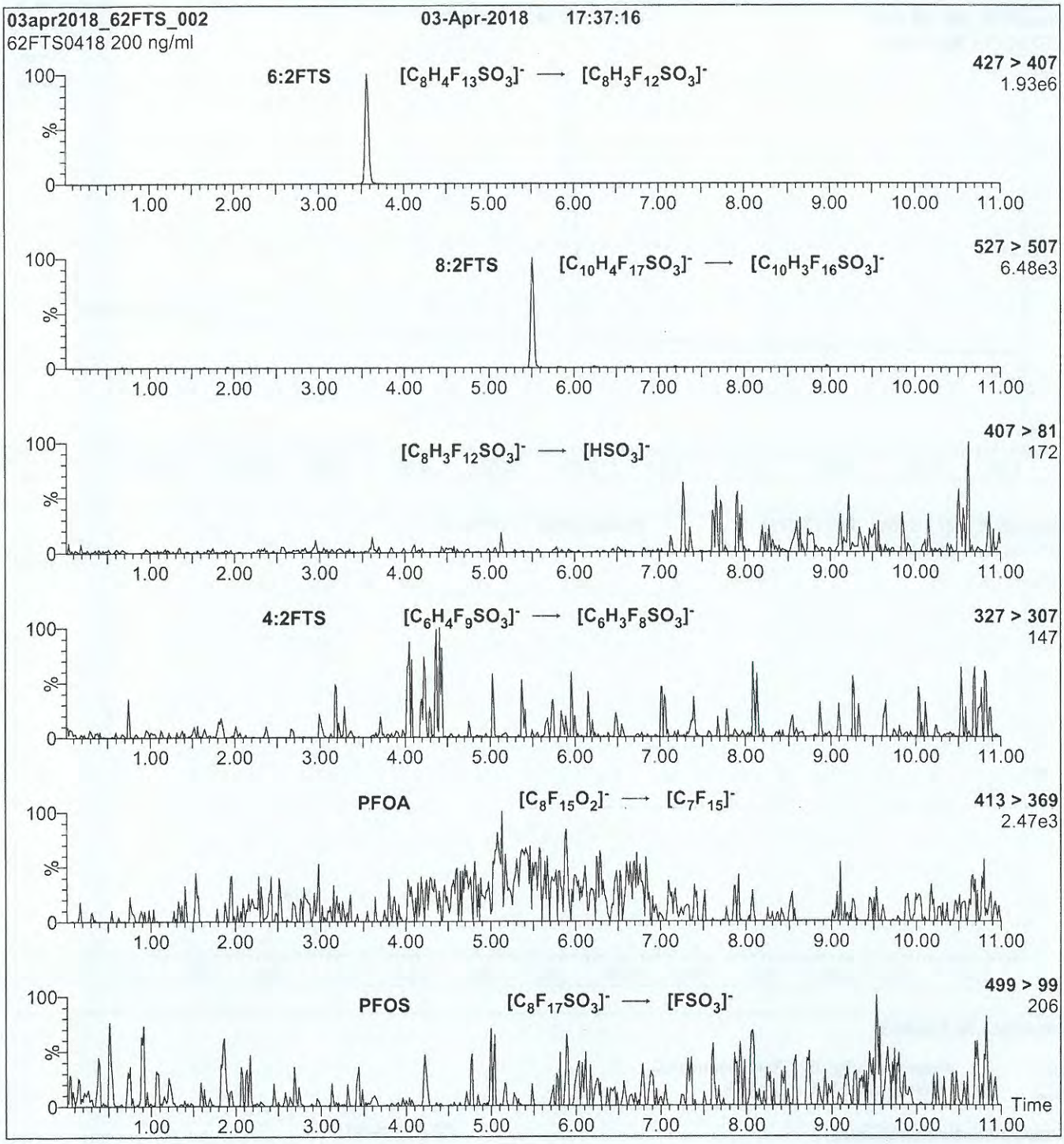
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812055

Figure 2: **6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 20

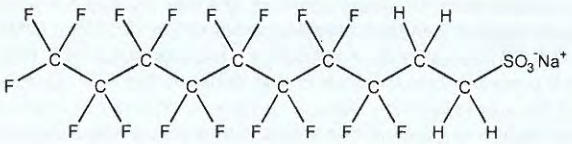
1812056

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS1118
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)	11/28/2018			
EXPIRY DATE: (mm/dd/yyyy)	11/28/2023			
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:** 11/29/2018 (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

1812056

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.

HANDLING:

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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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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

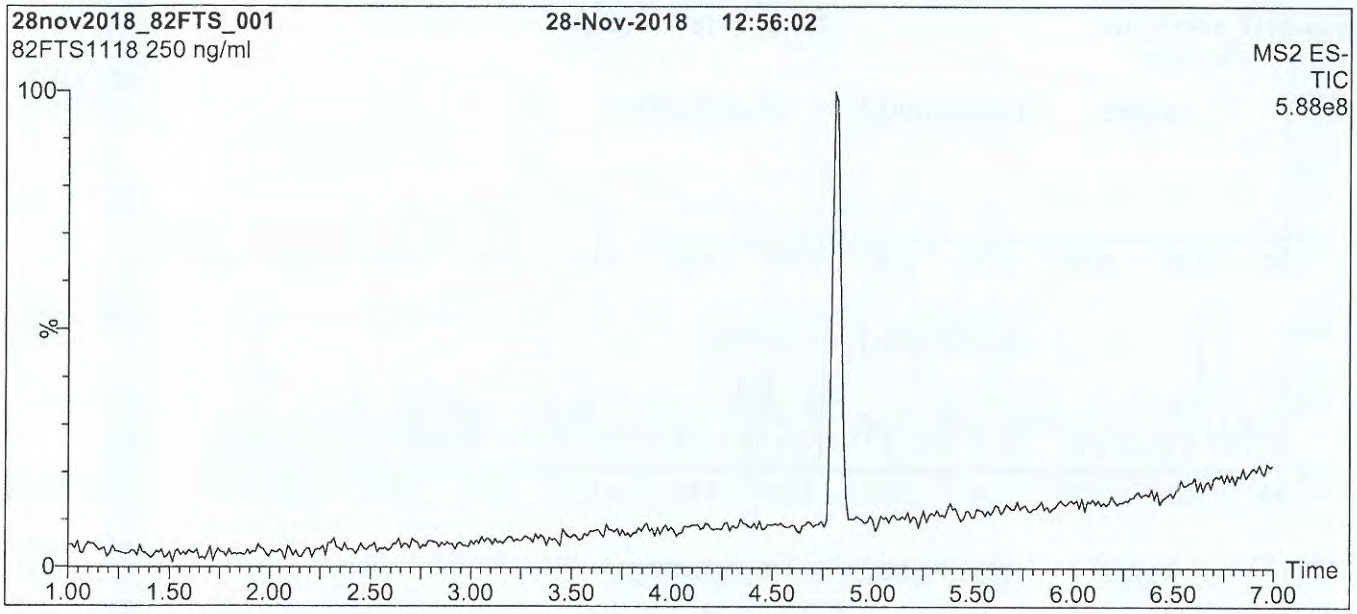
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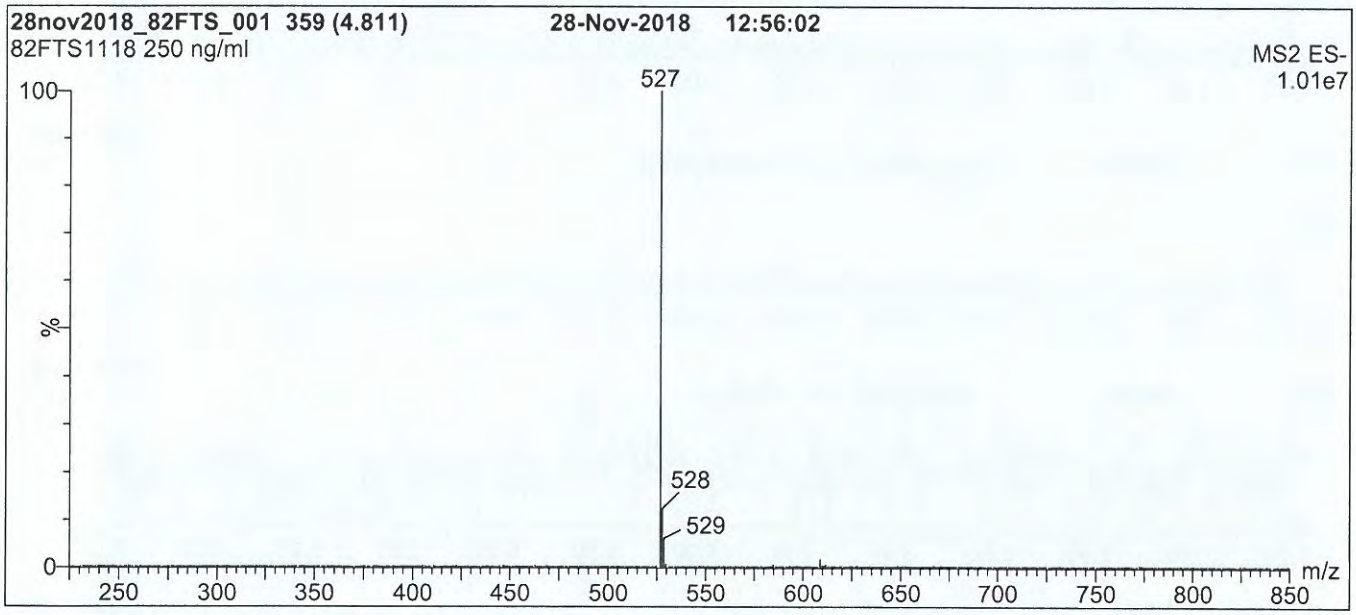
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812056

Figure 1: **8:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

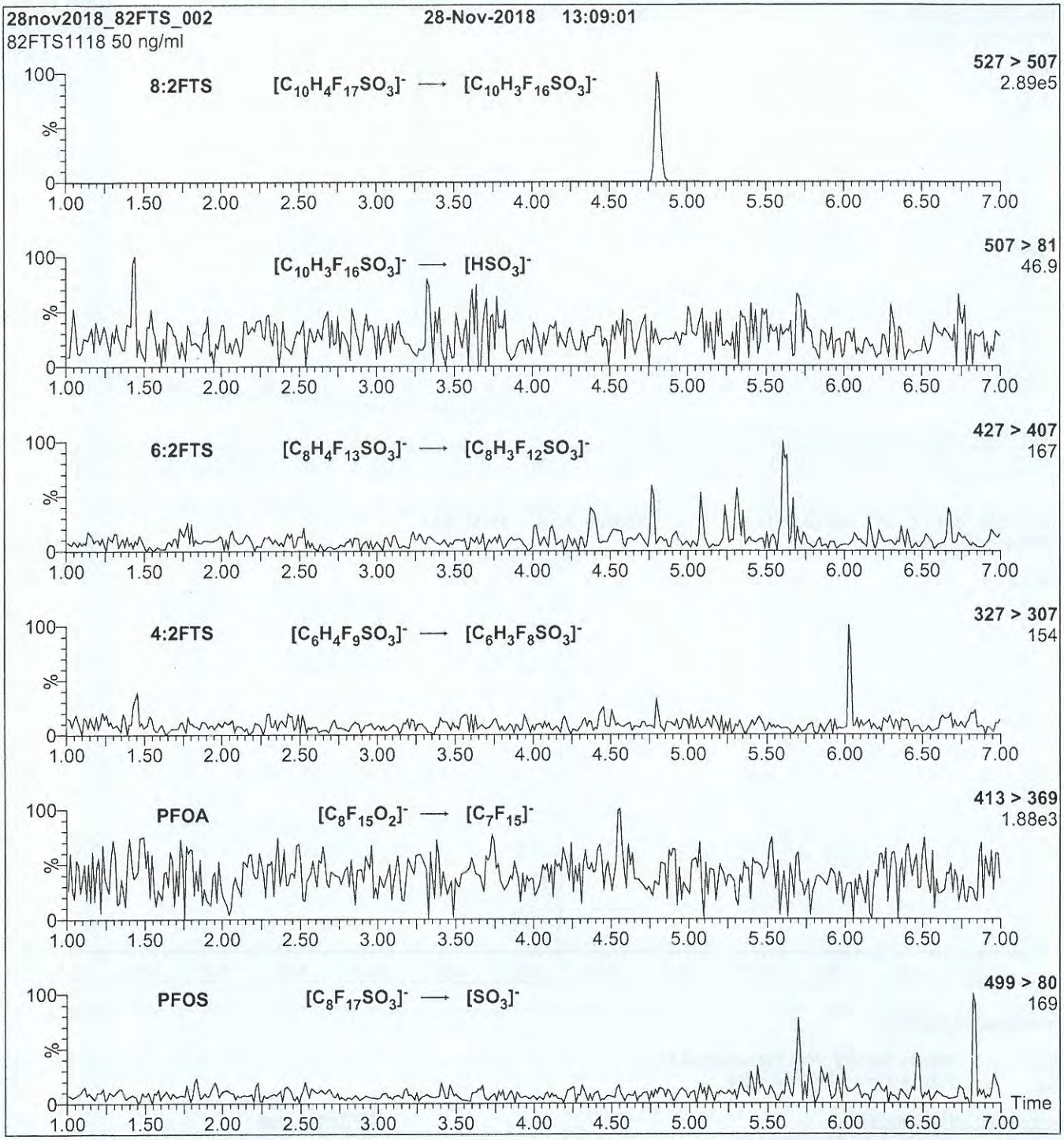
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812056

Figure 2: **8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

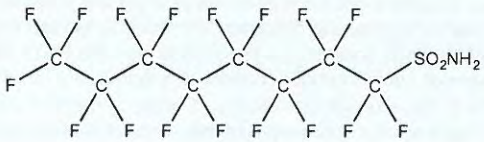
Collision Gas (mbar) = 2.74e-3
Collision Energy (eV) = 26

1812057

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FOSA-I	**LOT NUMBER:**	FOSA0618I
COMPOUND:	Perfluoro-1-octanesulfonamide		
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)	06/20/2018		
EXPIRY DATE: (mm/dd/yyyy)	06/20/2023		
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:** 06/25/2018 (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

1812057

INTENDED USE:

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HANDLING:

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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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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

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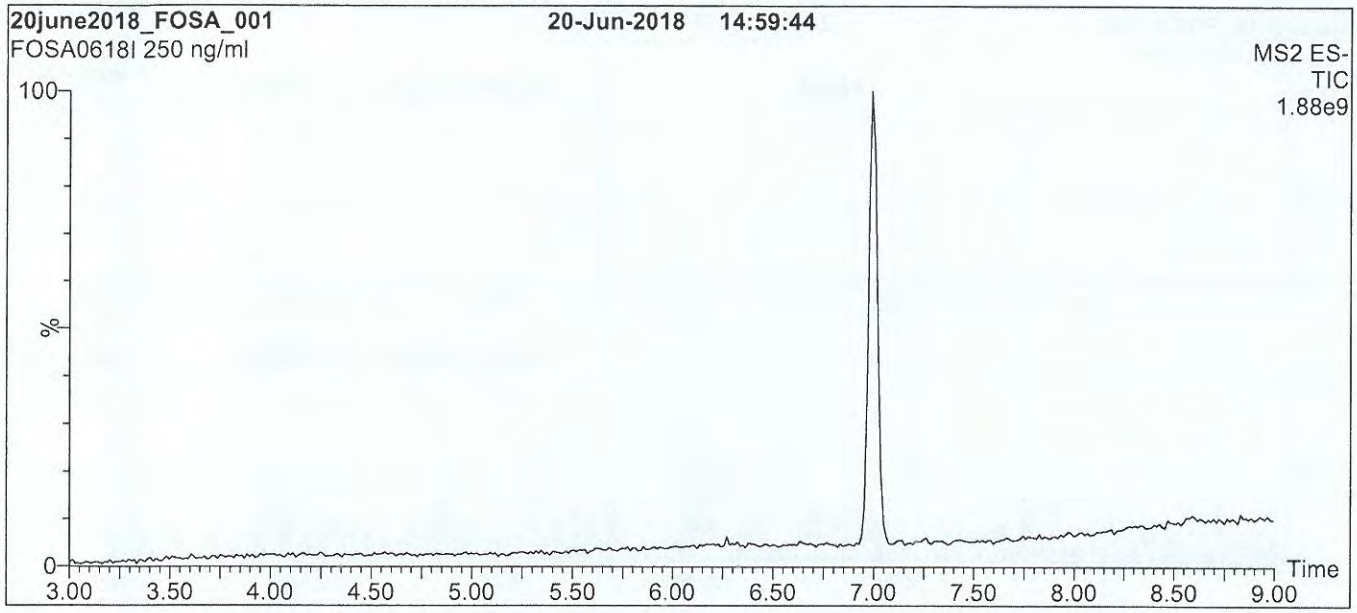
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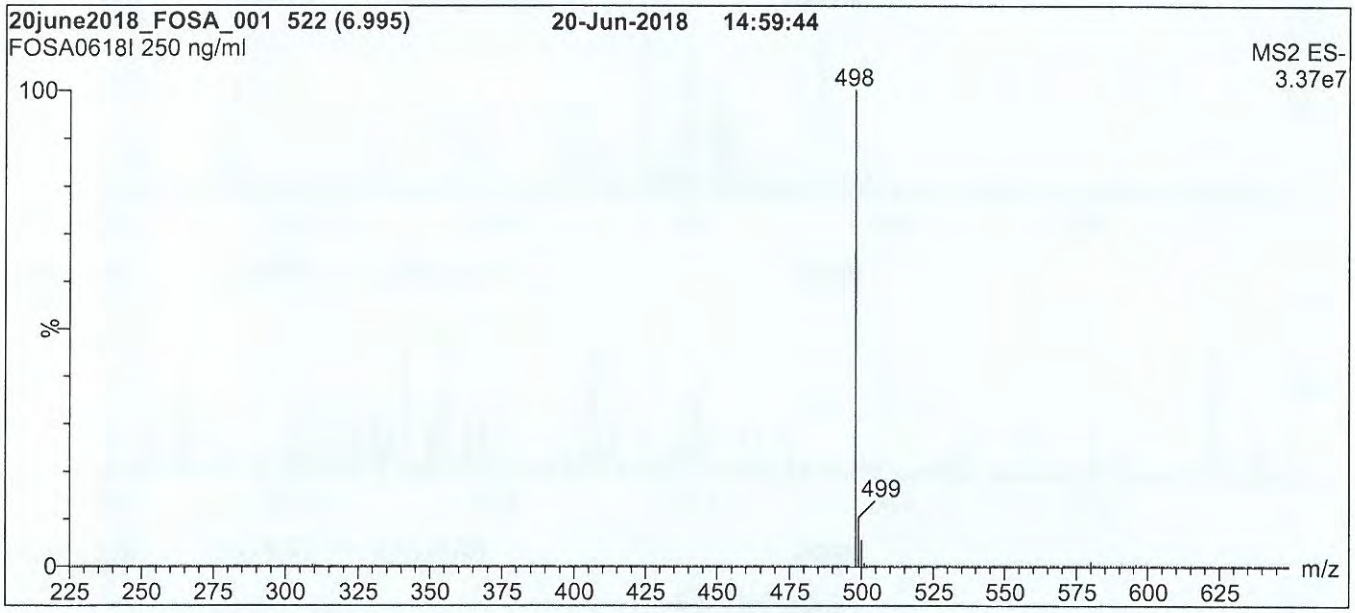
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812057

Figure 1: **FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

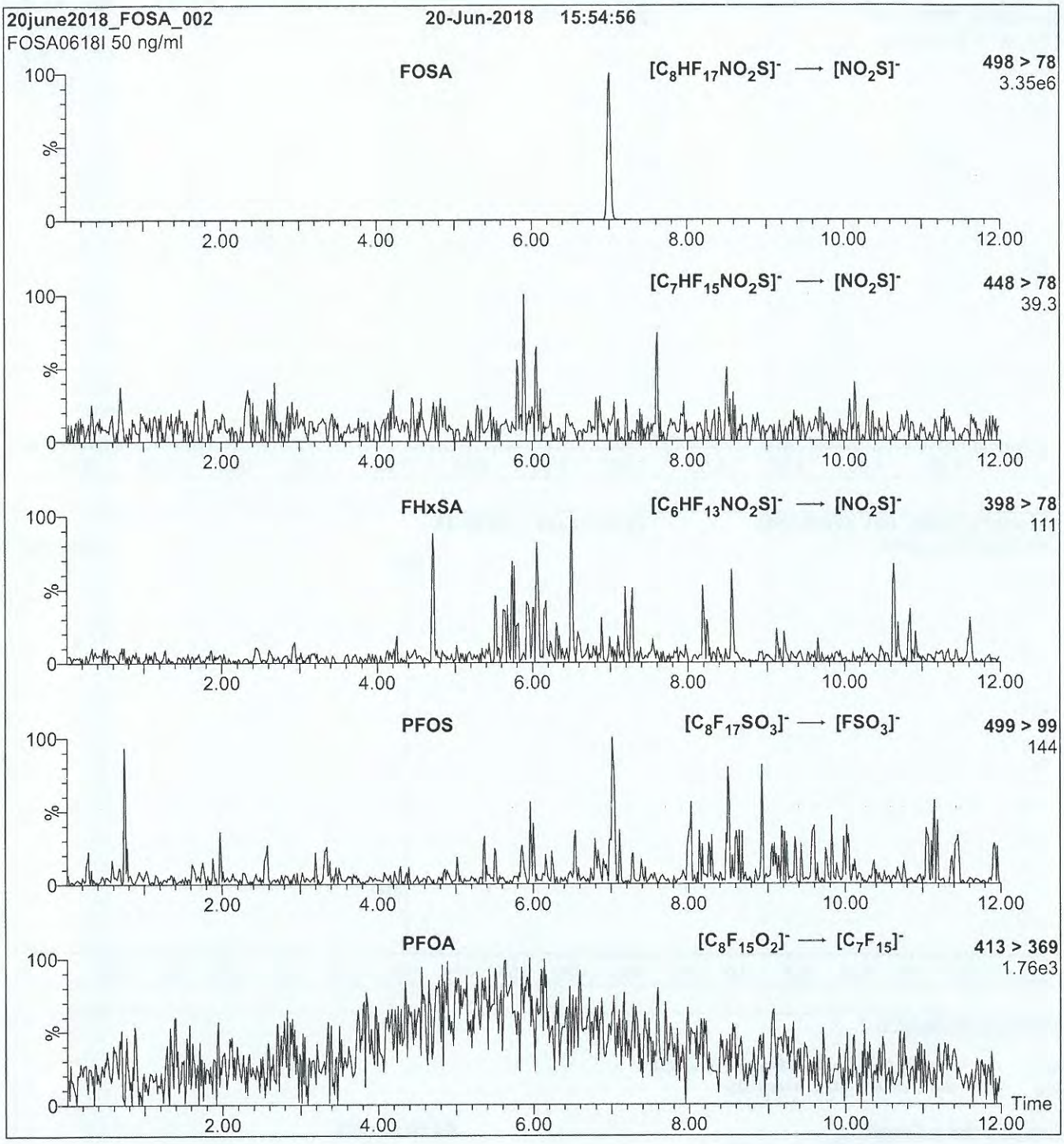
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1862057

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 30

1812058

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSAA

N-Methylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-NMeFOSAA
LOT NUMBER:	brNMeFOSAA0118
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2018
LAST TESTED: (mm/dd/yyyy)	01/17/2018
EXPIRY DATE: (mm/dd/yyyy)	01/17/2023
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamidoacetic acid (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 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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18L2058

INTENDED USE:

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HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1862058

Table A: **br-NMeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2
7	Other Unidentified Isomers		1.1

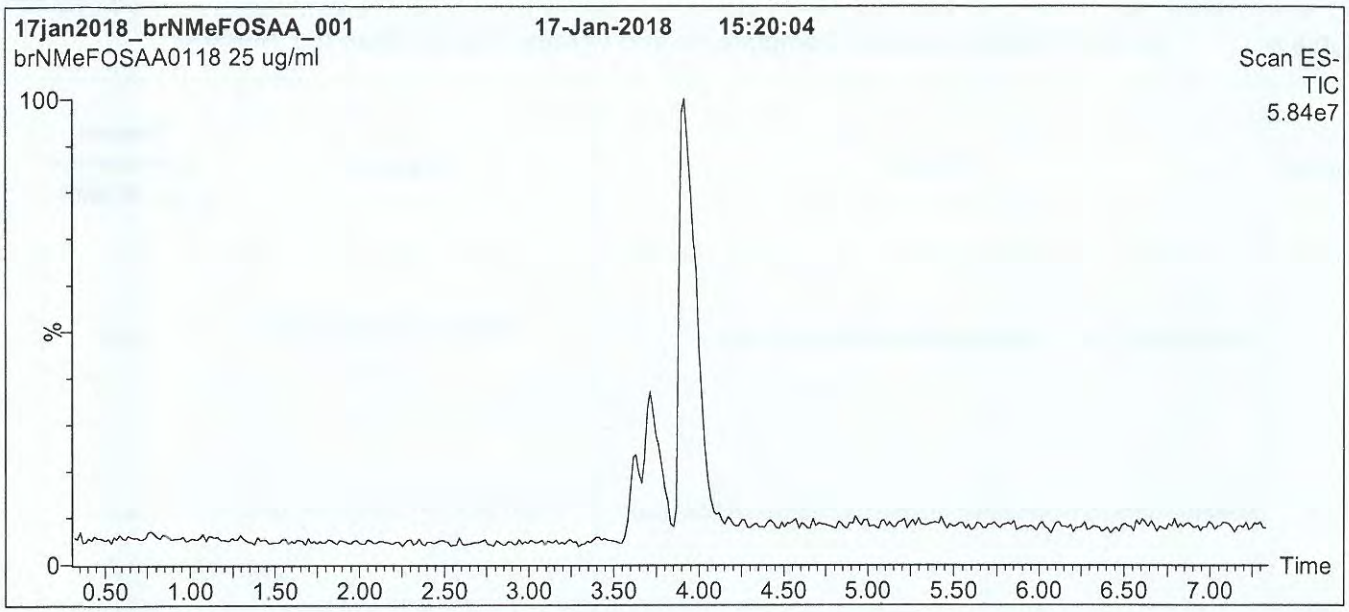
* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

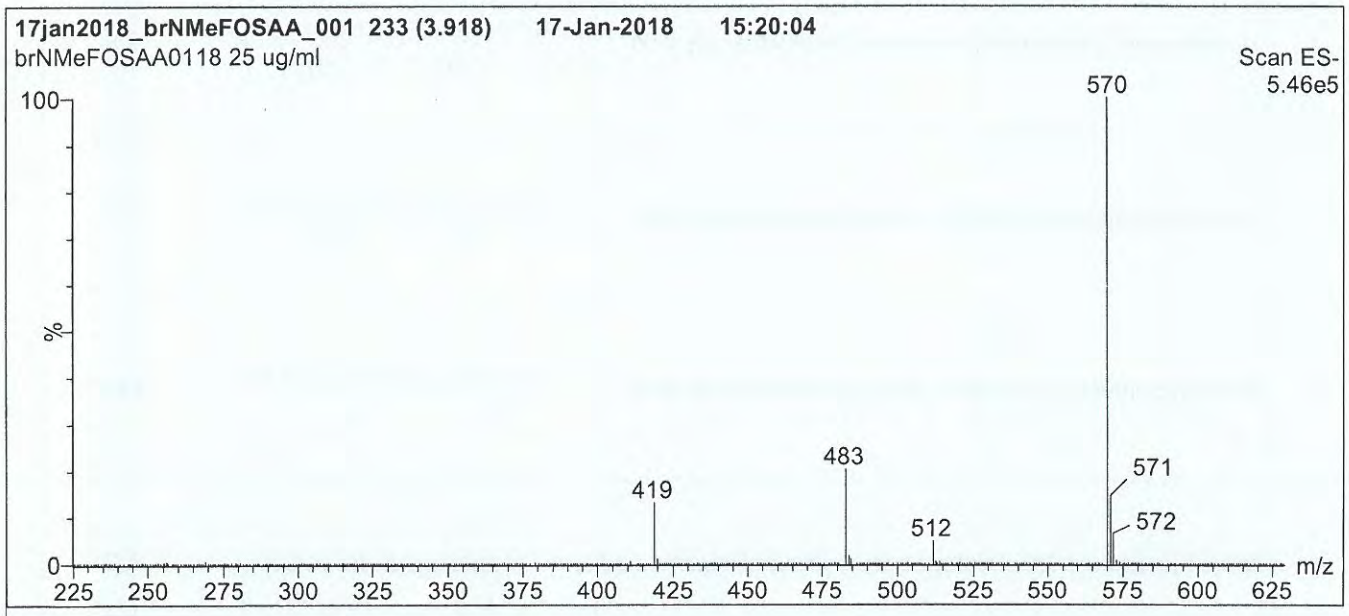
Certified By: _____ **Date:** 03/22/2018 (mm/dd/yyyy)

B.G. Chittim, General Manager

18L2058

Figure 1: **br-NMeFOSAA; 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

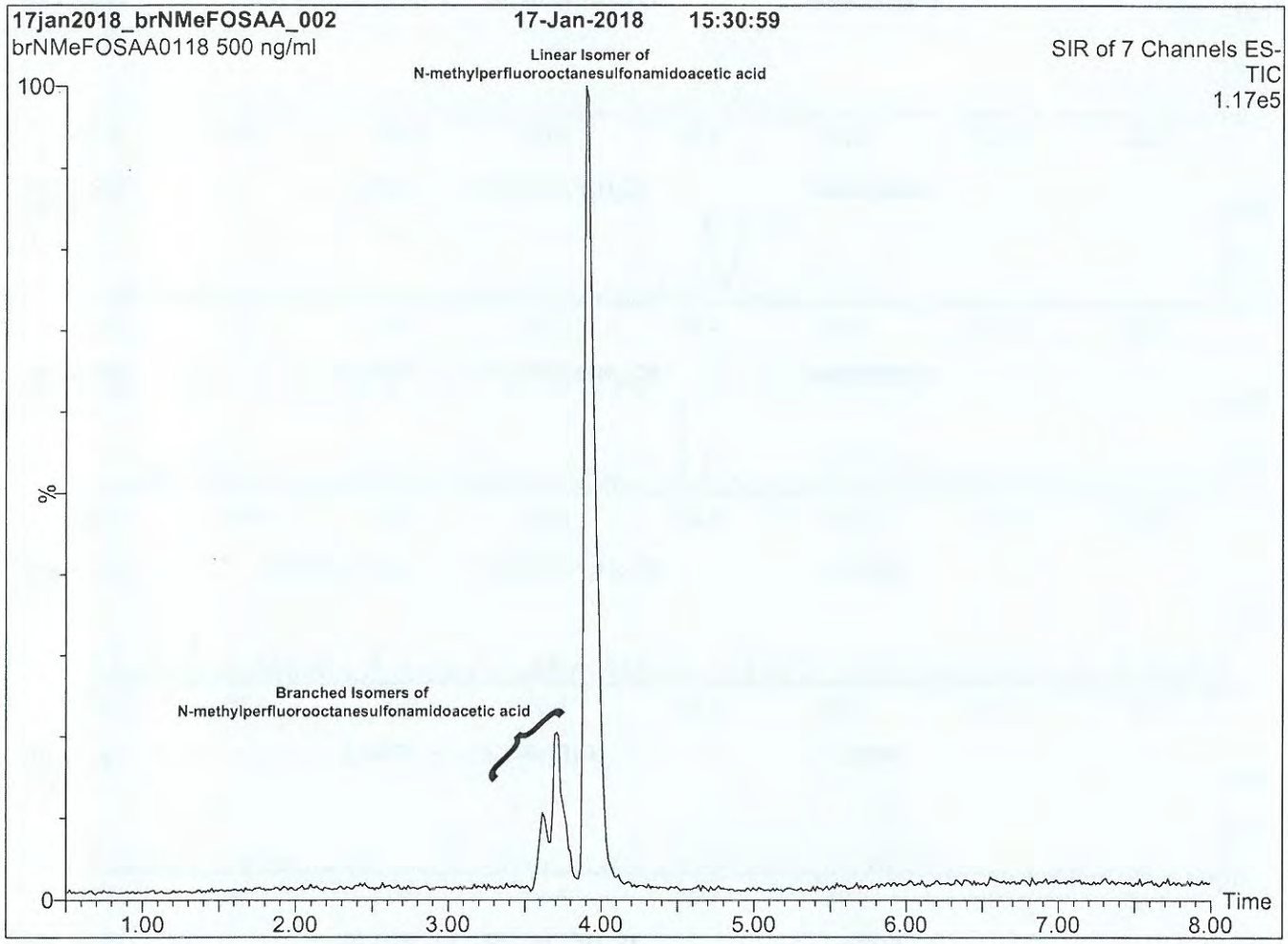
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1812058

Figure 2: **br-NMeFOSAA; 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: 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

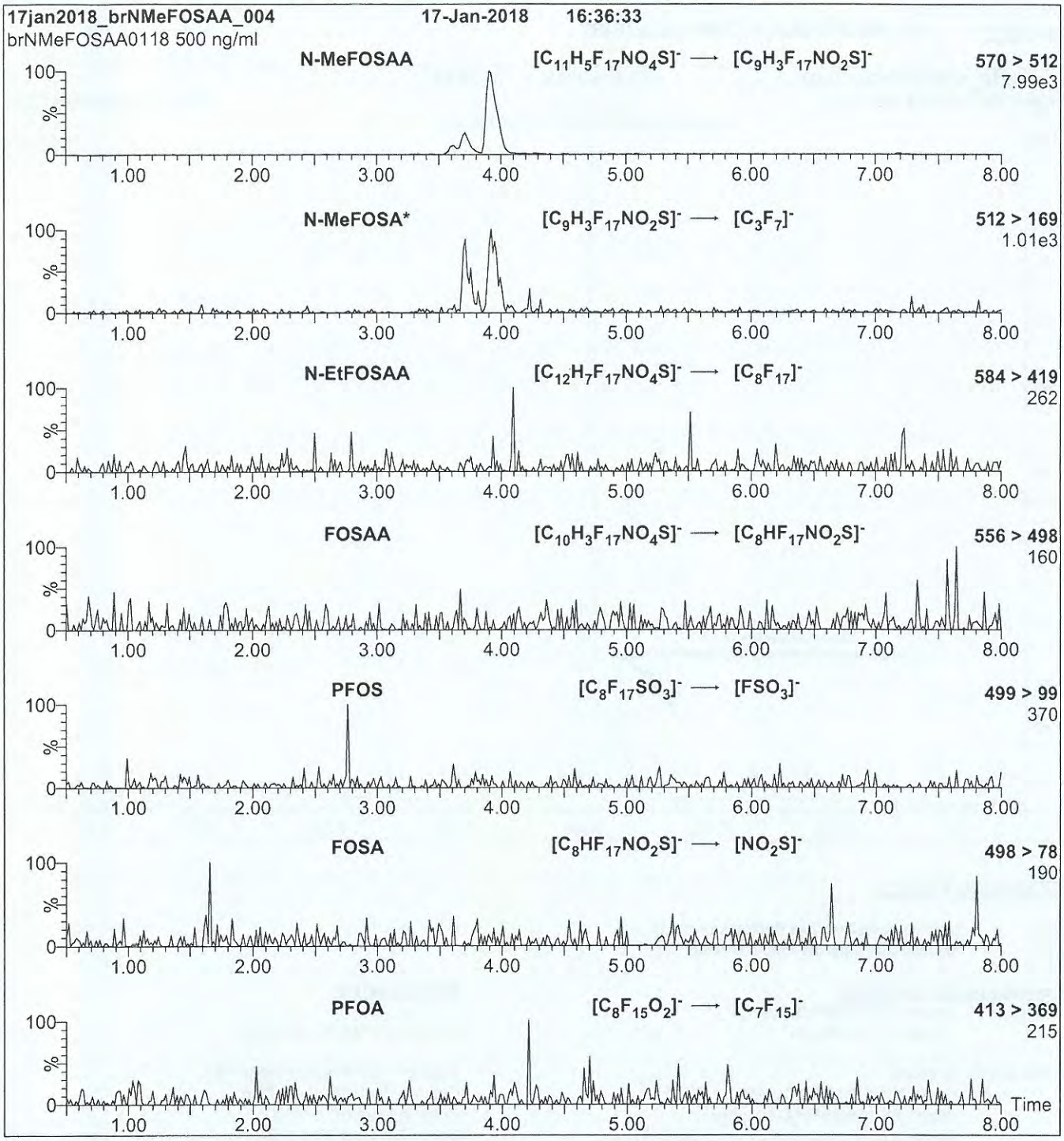
MS Parameters

Experiment: SIR (7 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15-60
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1812058

Figure 3: **br-NMeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



***Note**: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 11-40 (variable)

1812059

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSAA

N-Ethylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-NEtFOSAA
LOT NUMBER:	brNEtFOSAA0718
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/25/2018
LAST TESTED: (mm/dd/yyyy)	07/26/2018
EXPIRY DATE: (mm/dd/yyyy)	07/26/2023
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamidoacetic acid (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 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.
- Contains ~ 0.6% of perfluoro-n-octanoic acid.

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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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1862059

Table A: **br-NEtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	0.3
9	Other Unidentified Isomers		1.3

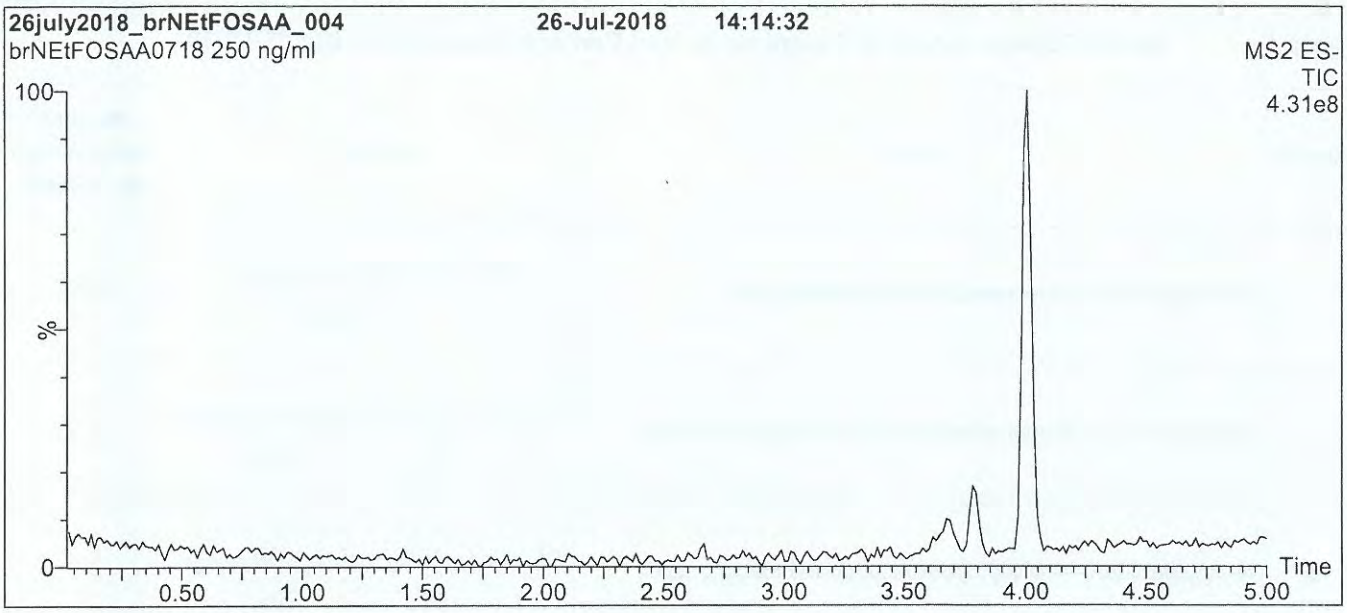
* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

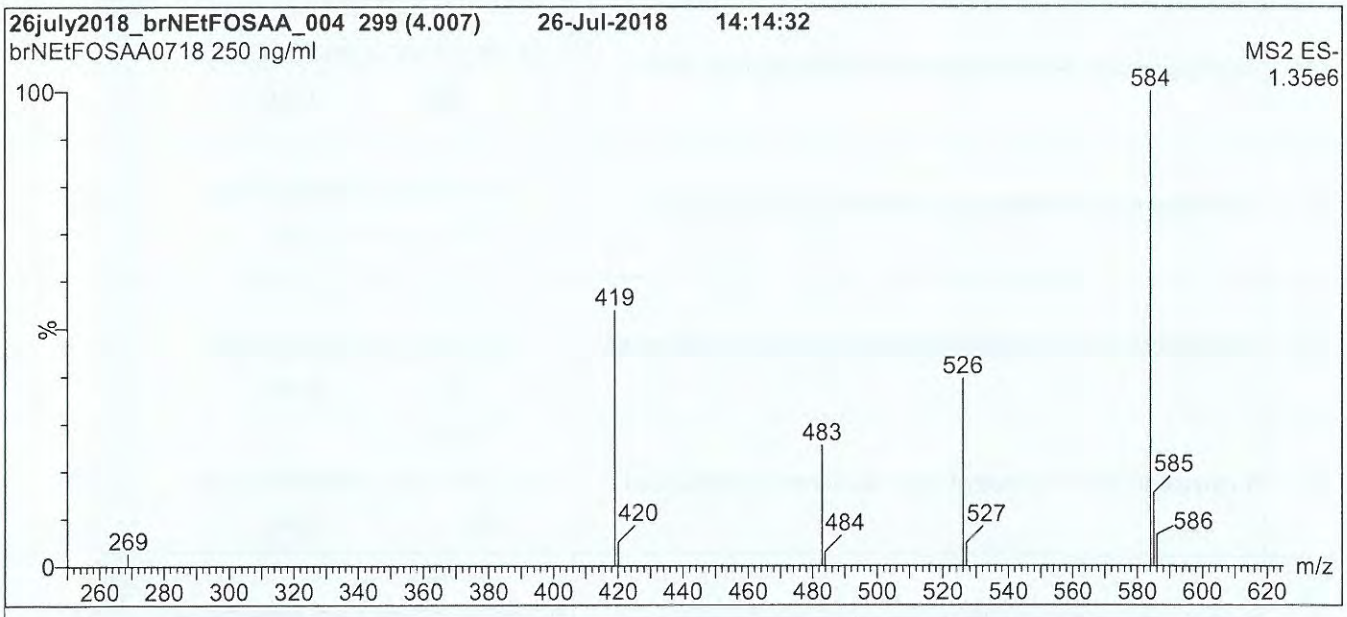
Certified By: _____ **Date:** 07/27/2018 (mm/dd/yyyy)

B.G. Chittim, General Manager

1812059

Figure 1: **br-NEtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

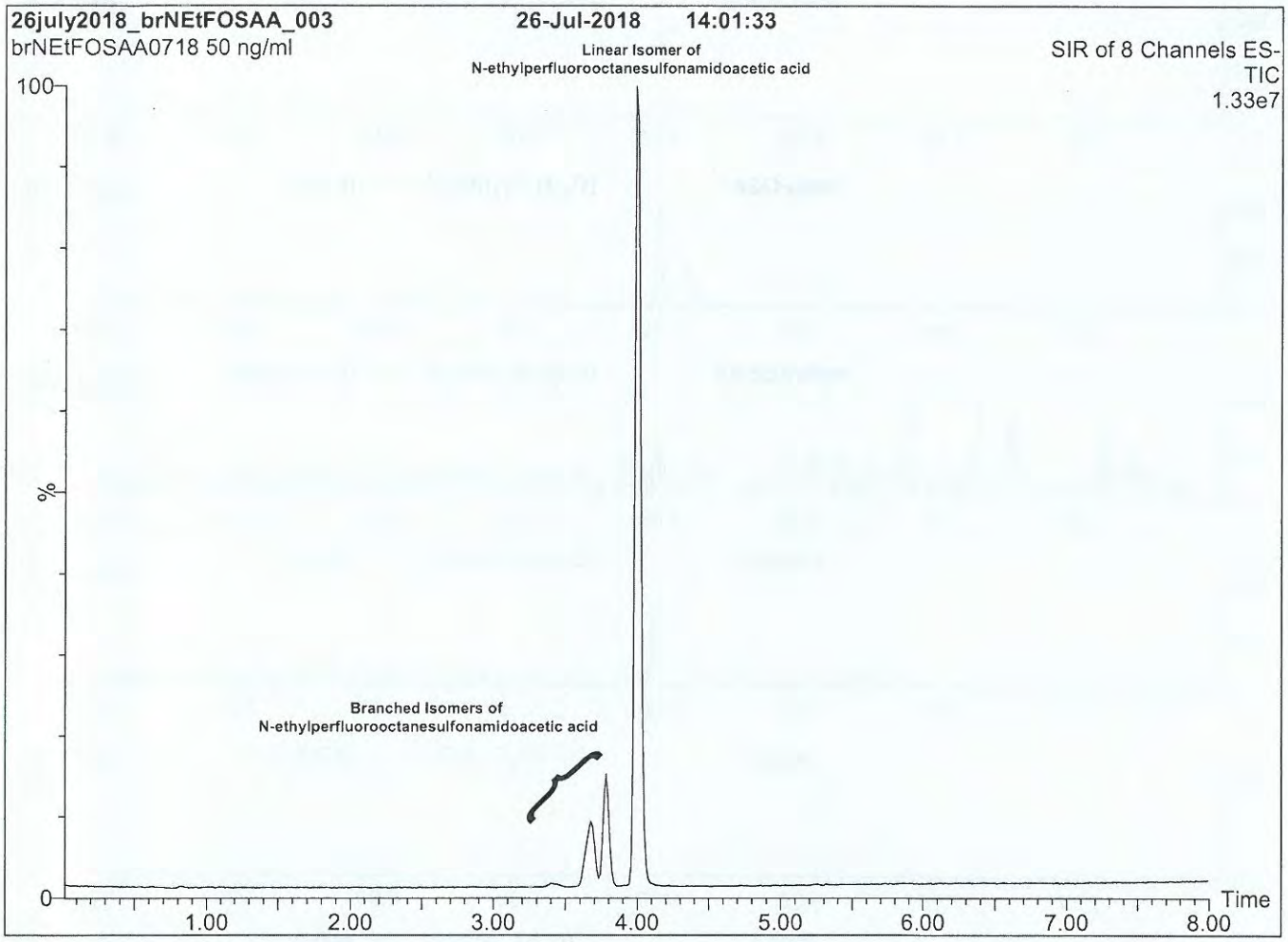
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 64
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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Figure 2: **br-NEtFOSAA; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

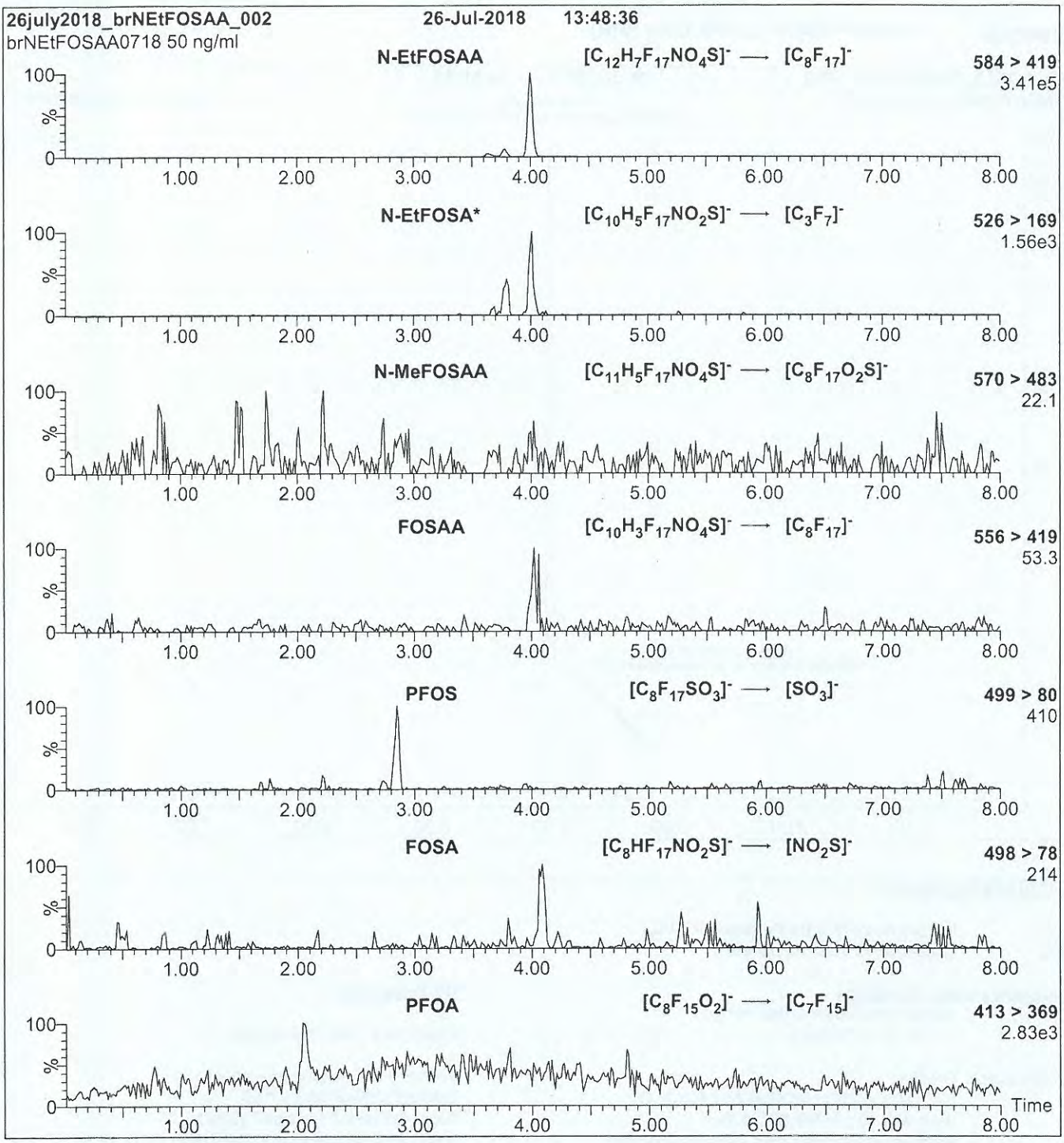
MS Parameters

Experiment: SIR (8 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = variable (2-64)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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Figure 3: **br-NEtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



*Note: N-EtFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column (br-NEtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

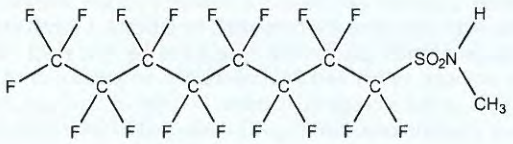
Collision Gas (mbar) = 3.76e-3
Collision Energy (eV) = 18

1812060

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-MeFOSA-M	**LOT NUMBER:**	NMeFOSA0518M
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)	05/31/2018		
EXPIRY DATE: (mm/dd/yyyy)	05/31/2023		
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:** 06/07/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

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18L2060

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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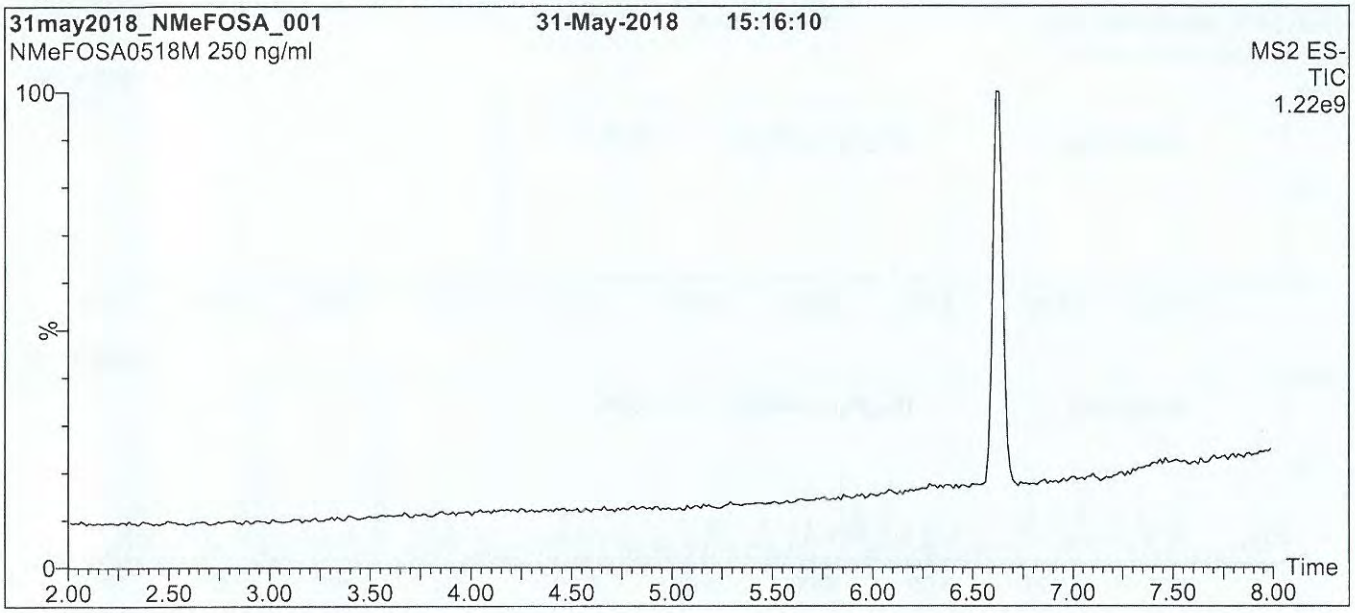
CALA Testing Accreditation No. A 1226

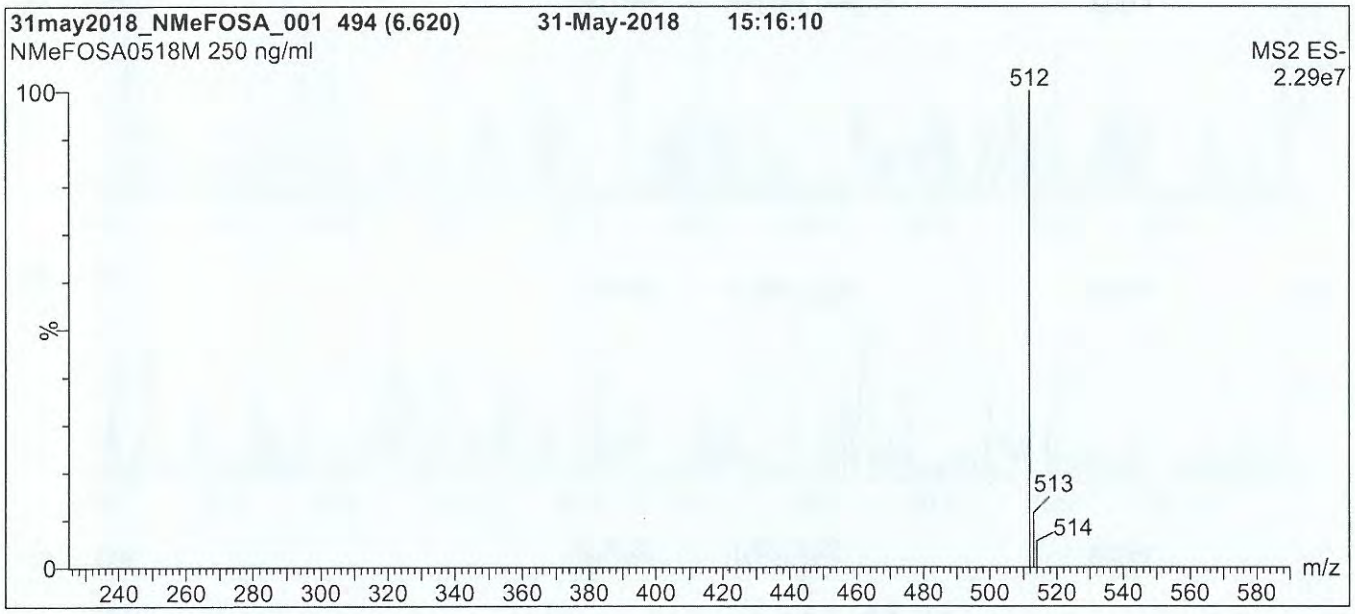
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

1812000

Figure 1: **N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH C_{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 85% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

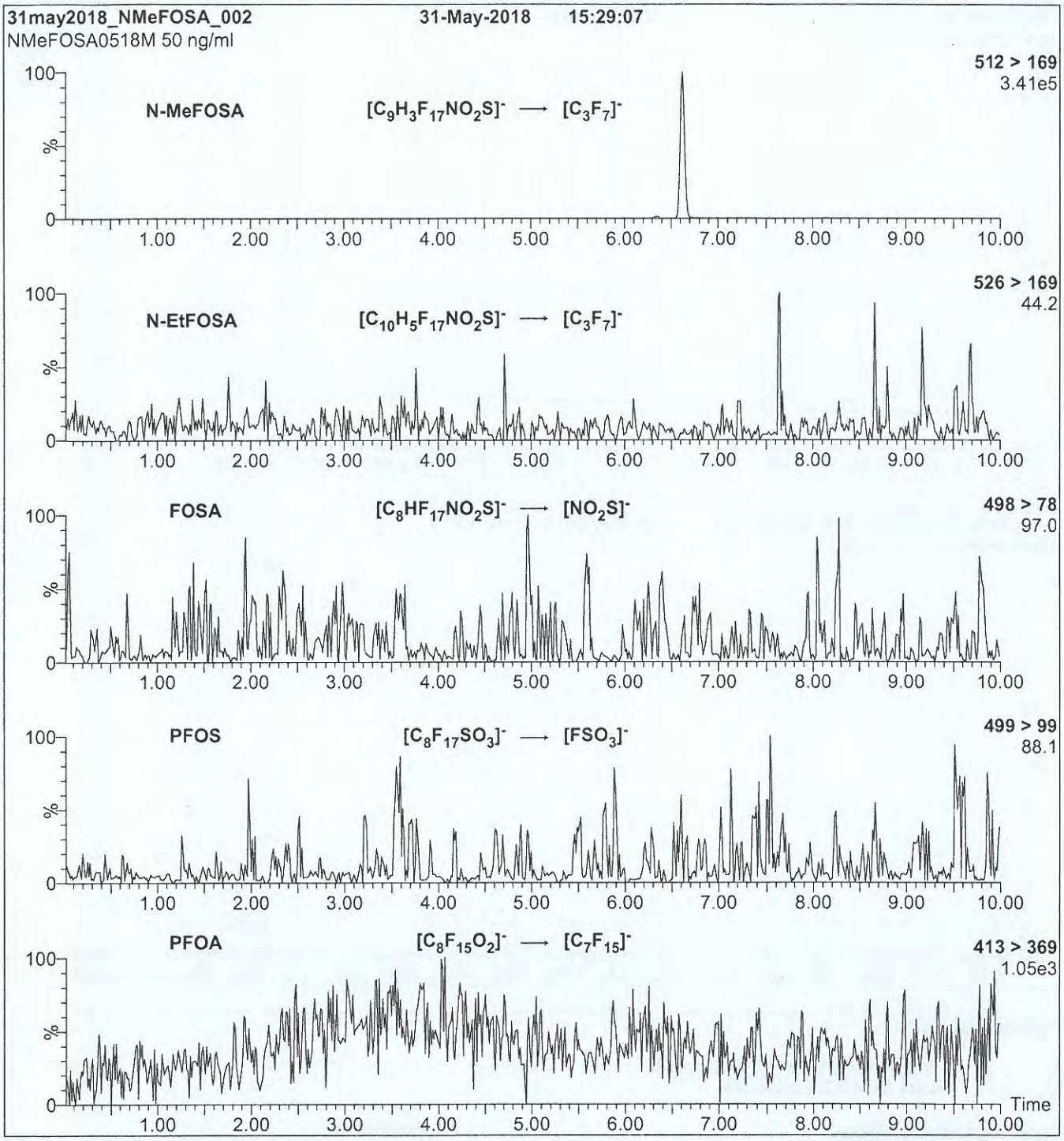
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812060

Figure 2: **N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

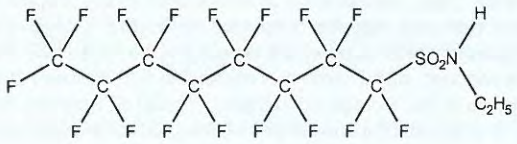
Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 24

1812061

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-EtFOSA-M	**LOT NUMBER:**	NEtFOSA0518M
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)	05/31/2018		
EXPIRY DATE: (mm/dd/yyyy)	05/31/2023		
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 ~ 0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/12/2018 (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

1820601

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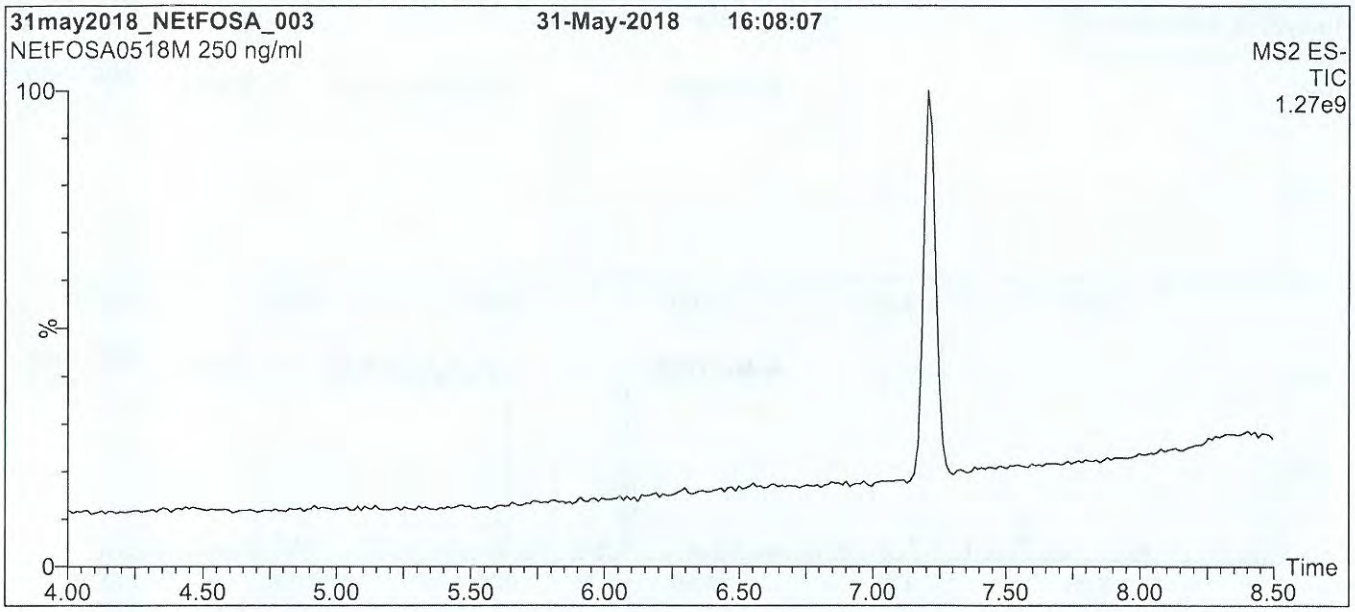
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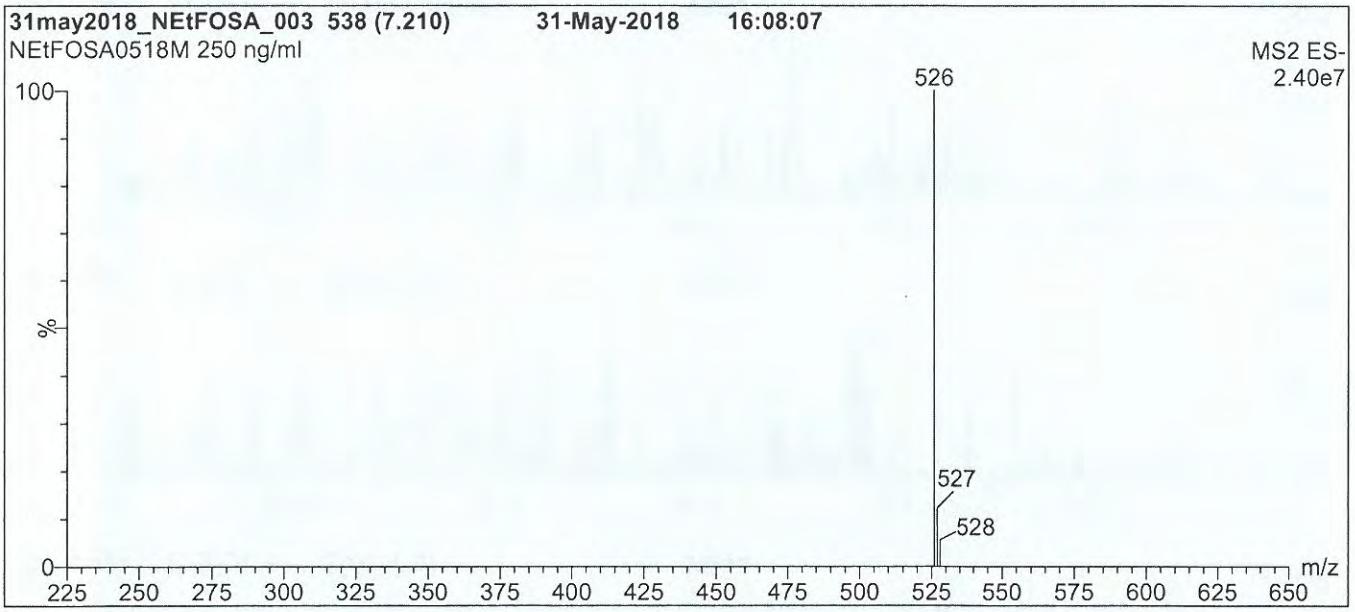
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812061

Figure 1: **N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH C_{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 85% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

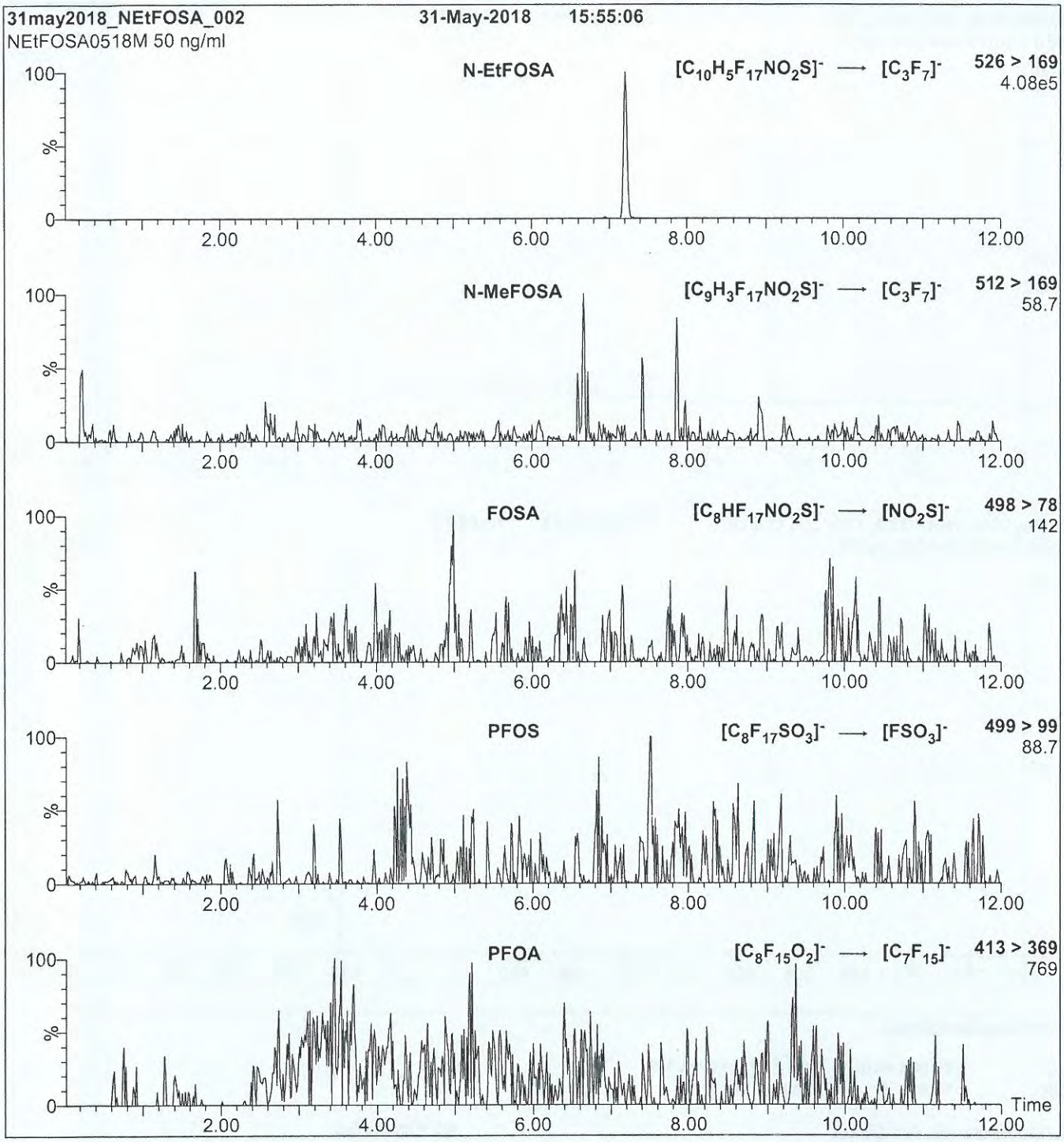
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812061

Figure 2: **N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 24

18L2062

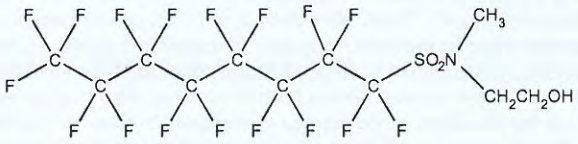
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0418M

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)	05/17/2018 (HRGC/LRMS) 05/03/2018 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	05/17/2023		
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:** 05/25/2018 (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

1812062

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

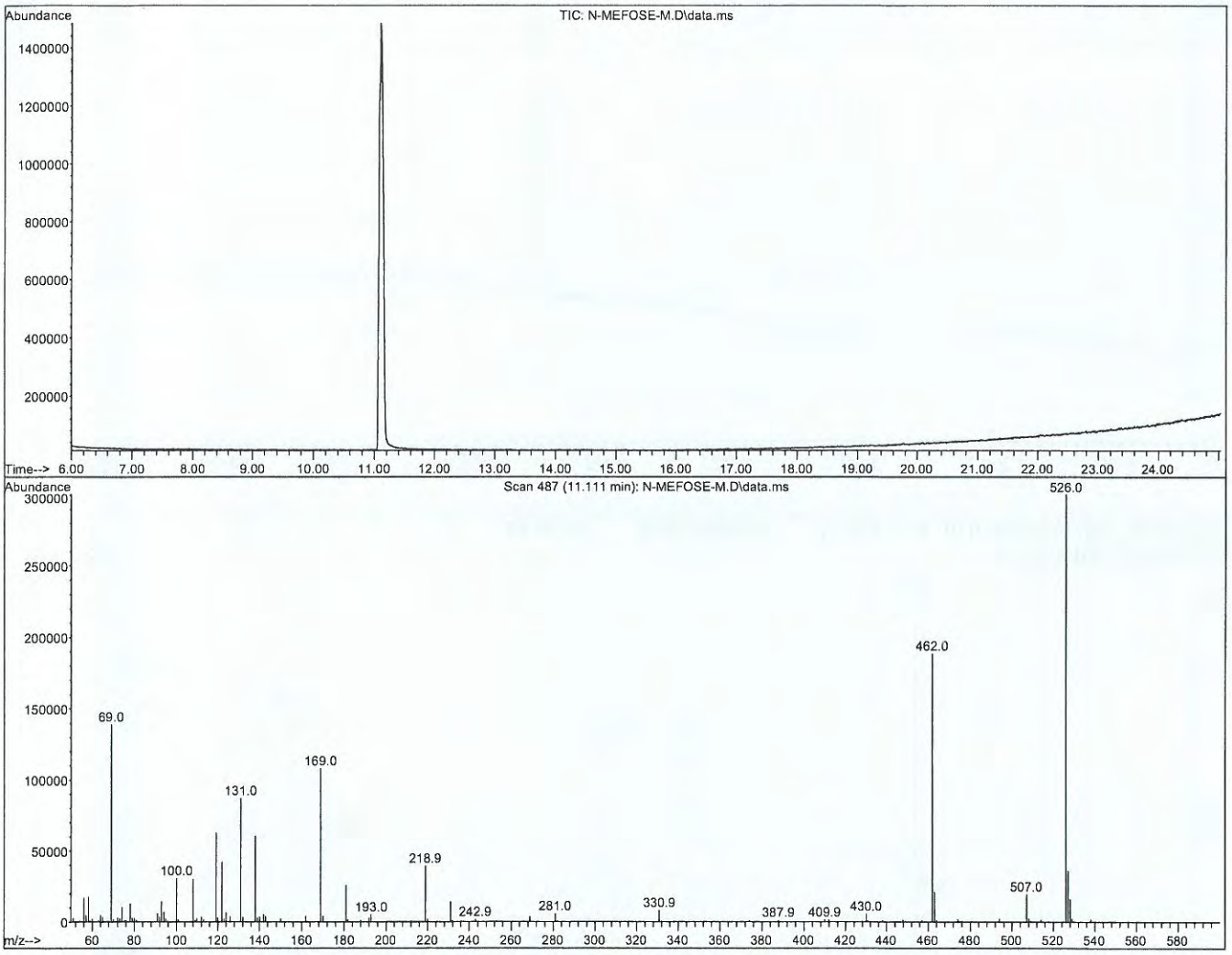
CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2062

Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)**



HRGC/LRMS:

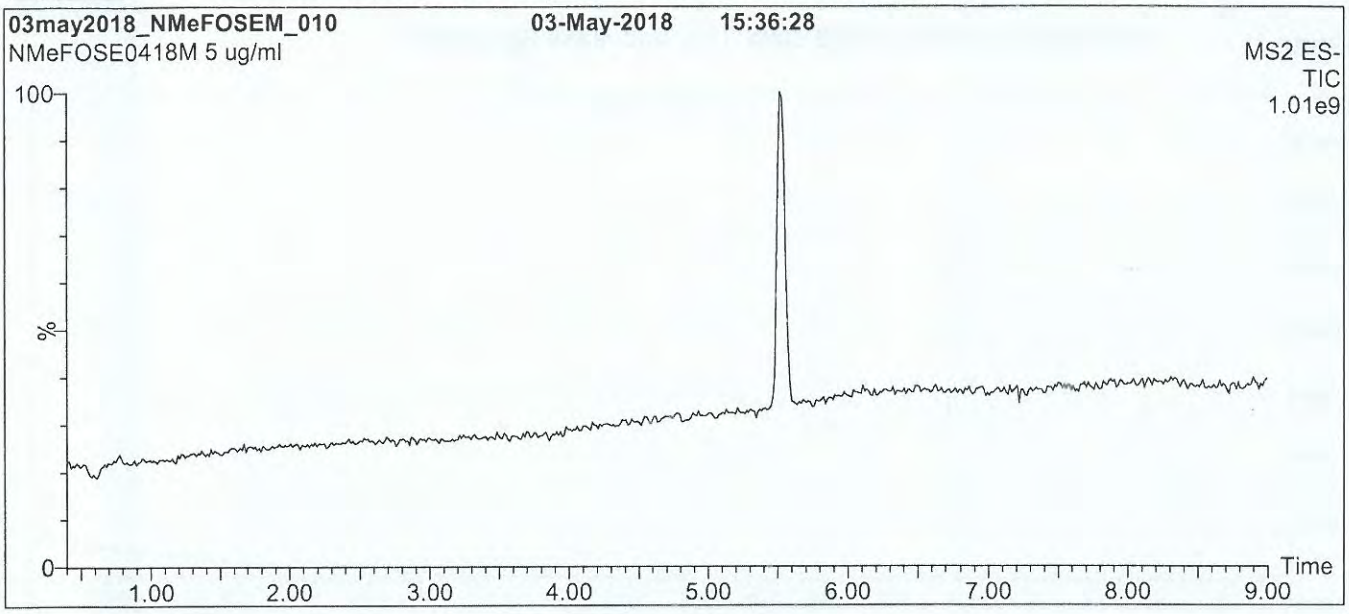
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

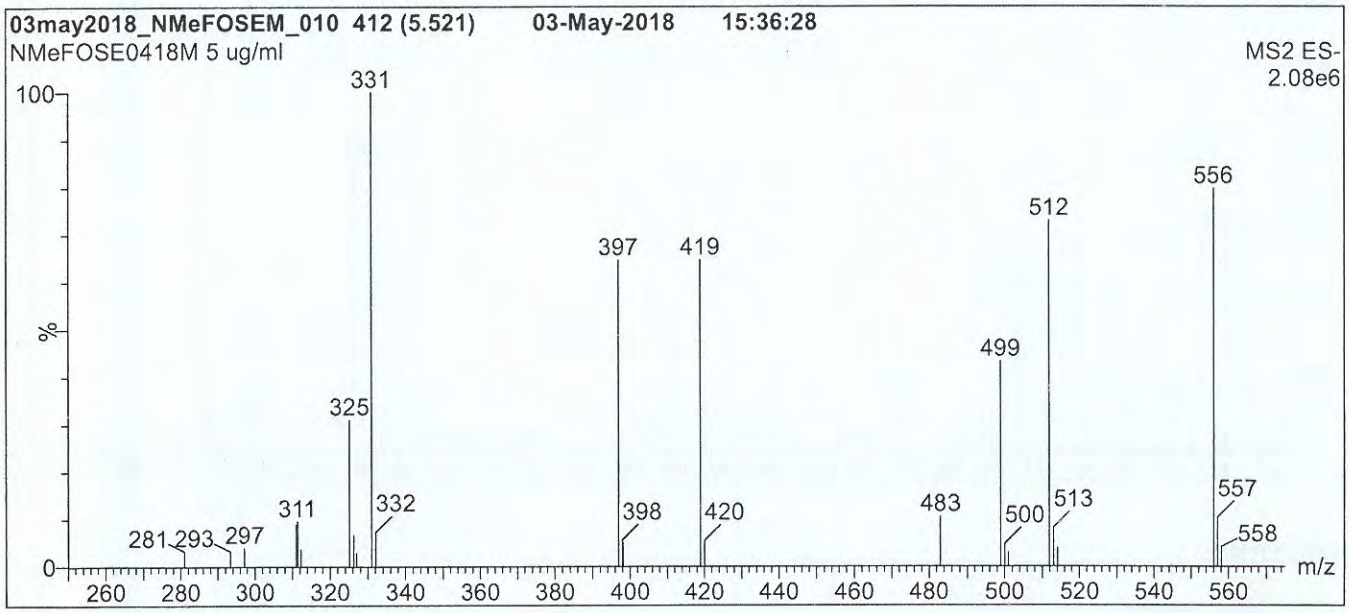
Chromatographic Conditions:

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)

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Figure 2: **N-MeFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% MeOH / 35% H_2O
Ramp to 85% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

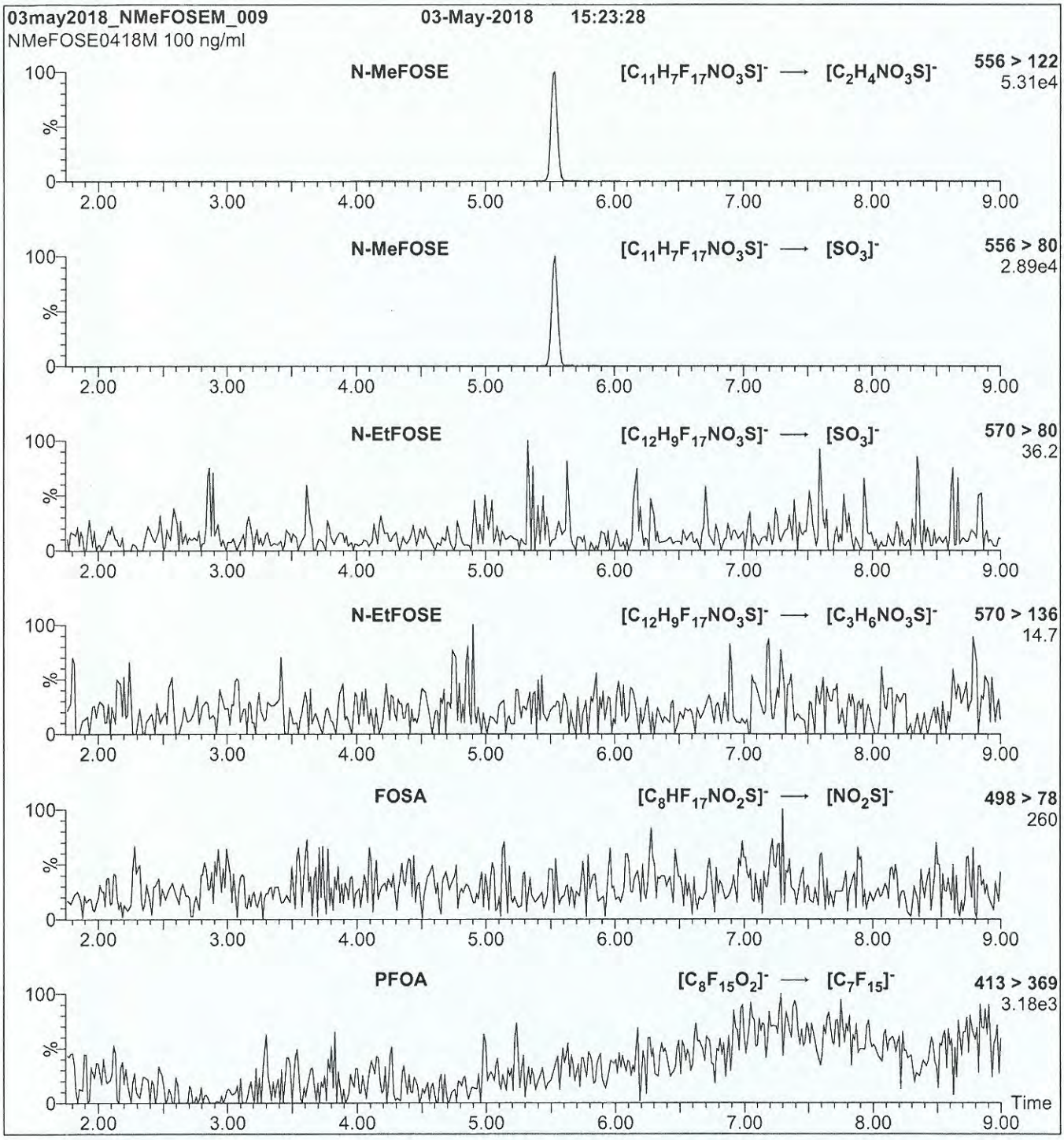
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (l/hr) = 750

1802062

Figure 3: **N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 36

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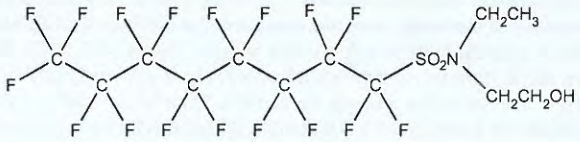
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0518M

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)	06/04/2018 (HRGC/LRMS) 05/30/2018 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	06/04/2023		
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:** 06/04/2018 (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

1812063

INTENDED USE:

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HANDLING:

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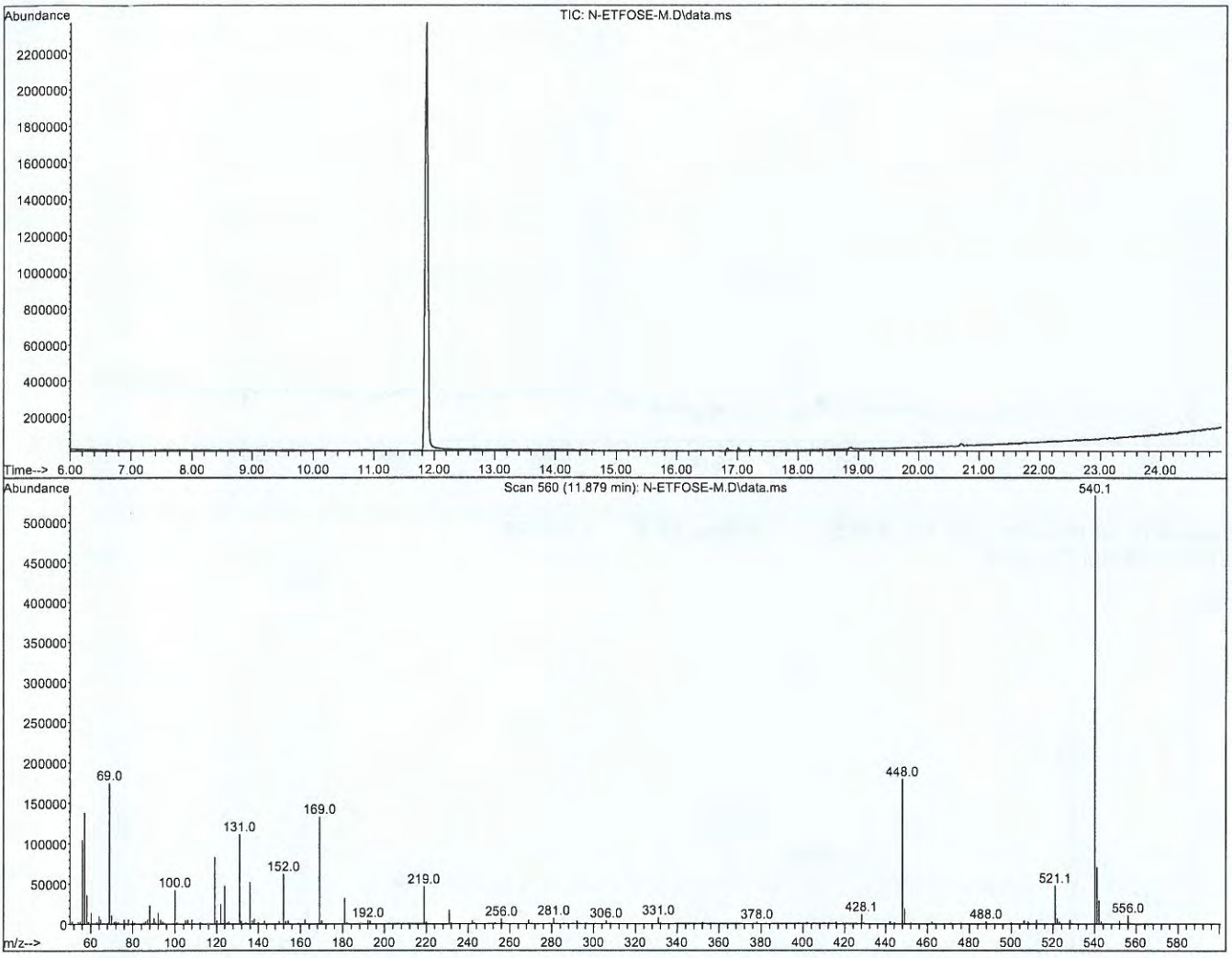
CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812063

Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (TIC and Mass Spectrum)**



HRGC/LRMS:

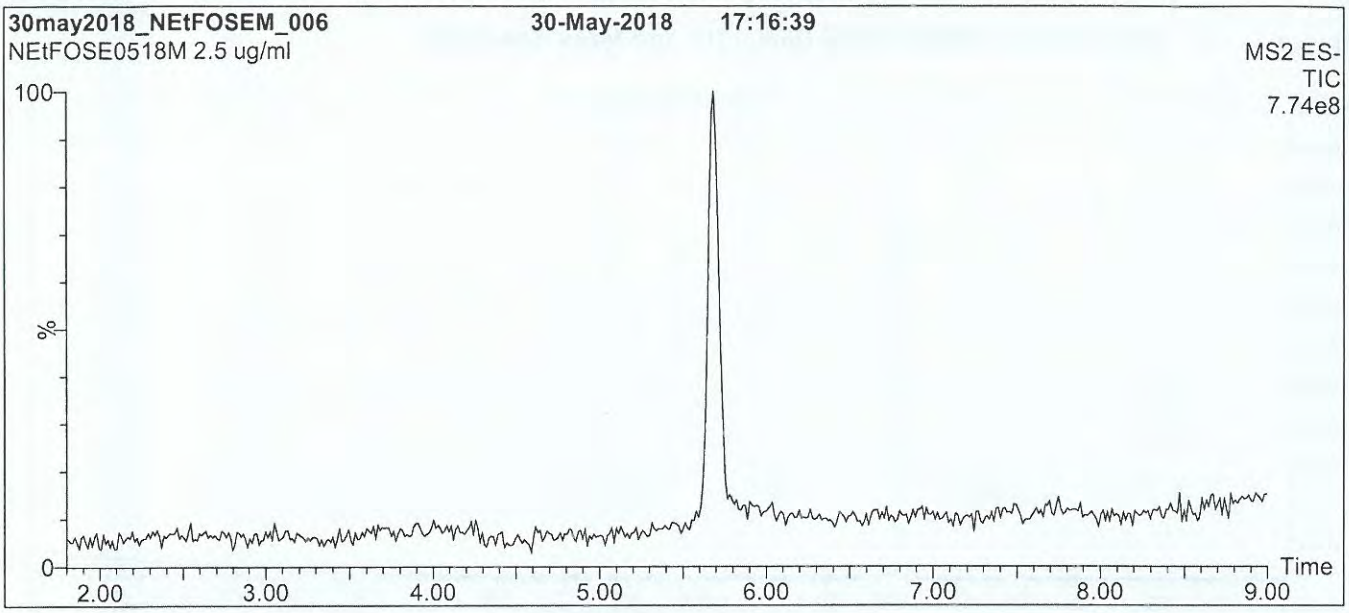
Agilent 7890A (HRGC)
Agilent 5975C (LRMS)

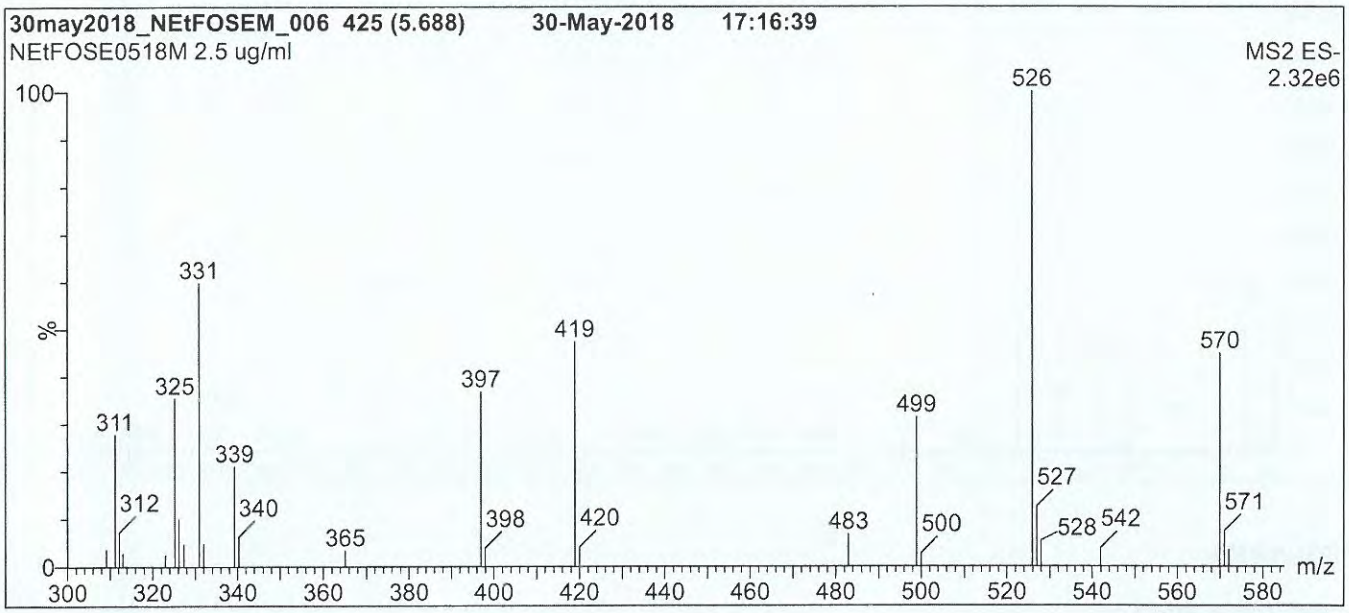
Chromatographic Conditions:

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)

1812063

Figure 2: **N-EtFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH C_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 70% MeOH / 30% H_2O
Ramp to 85% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

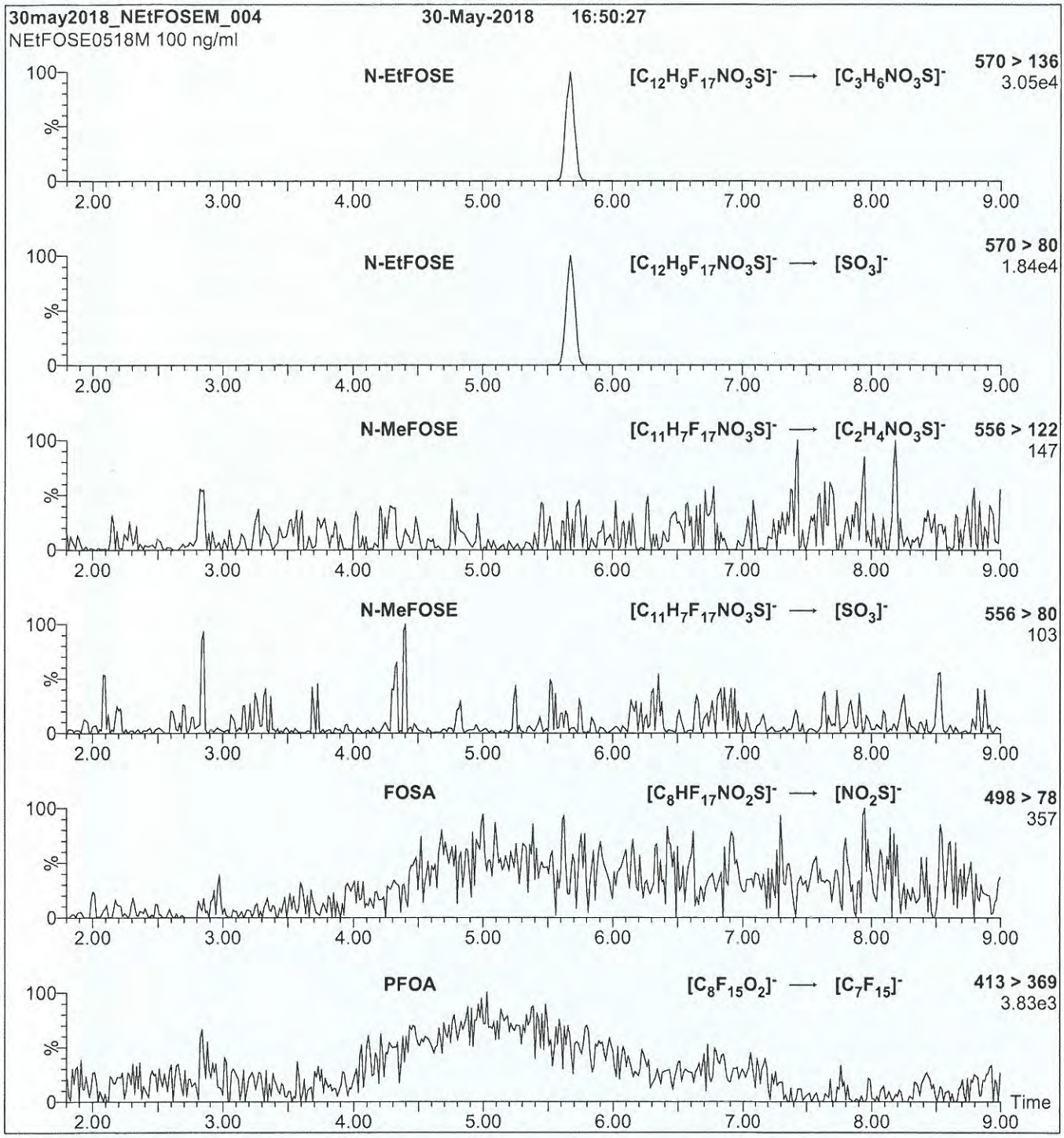
MS Parameters

Experiment: Full Scan (300 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (l/hr) = 750

18L2063

Figure 3: **N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 32

18L2071

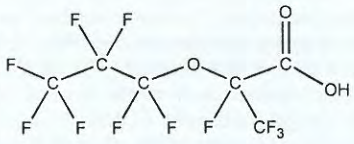
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: HFPO-DA **LOT NUMBER:** HFPODA1018

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

STRUCTURE: **CAS #:** 13252-13-6



MOLECULAR FORMULA: $C_6HF_{11}O_3$ **MOLECULAR WEIGHT:** 330.05

CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 10/24/2018

EXPIRY DATE: (mm/dd/yyyy) 10/24/2021

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.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/29/2018 (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

1812071

INTENDED USE:

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HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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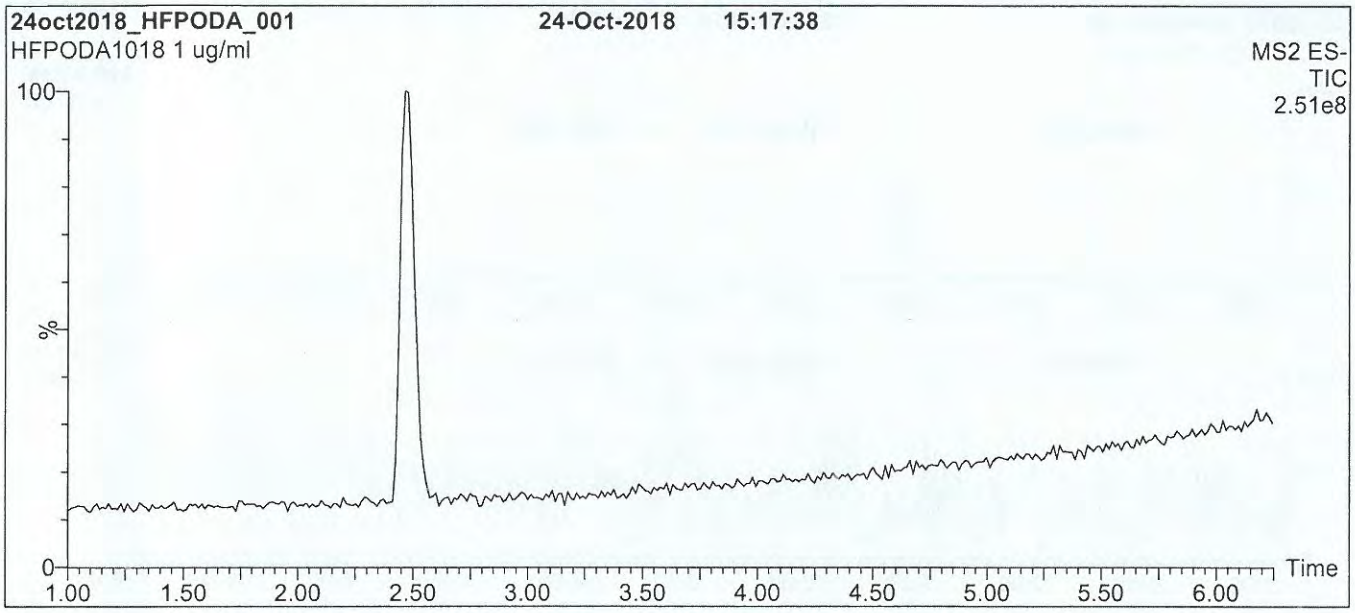
CALA Testing Accreditation No. A 1226

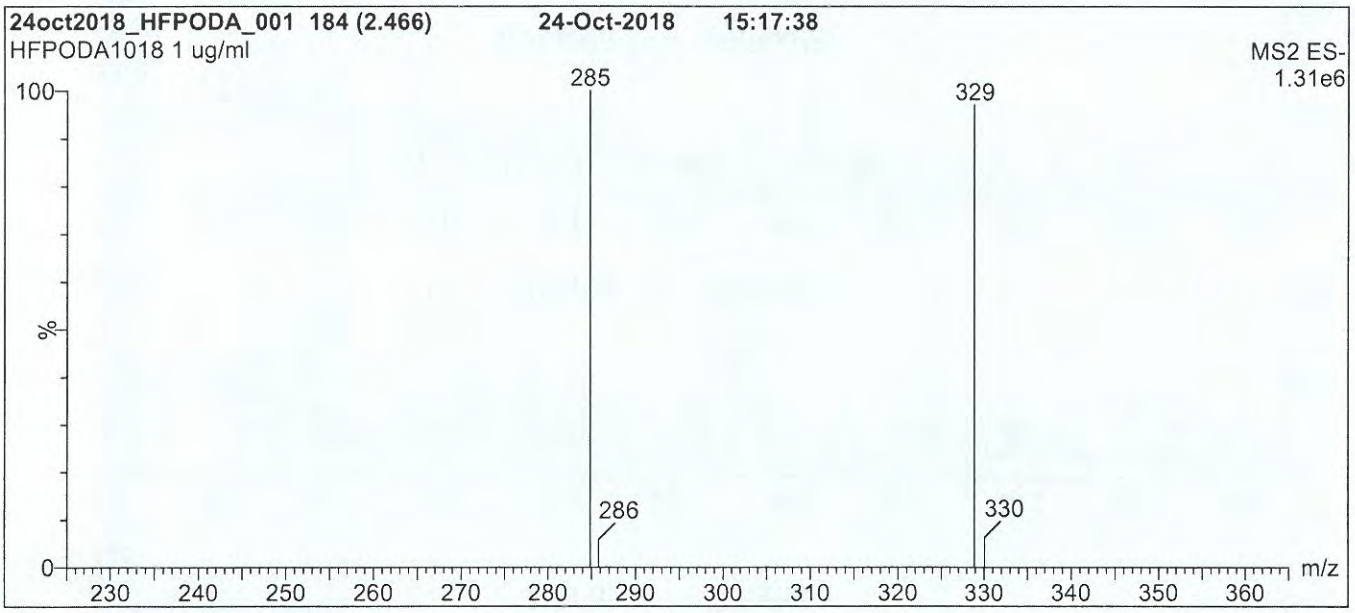
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812071

Figure 1: **HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

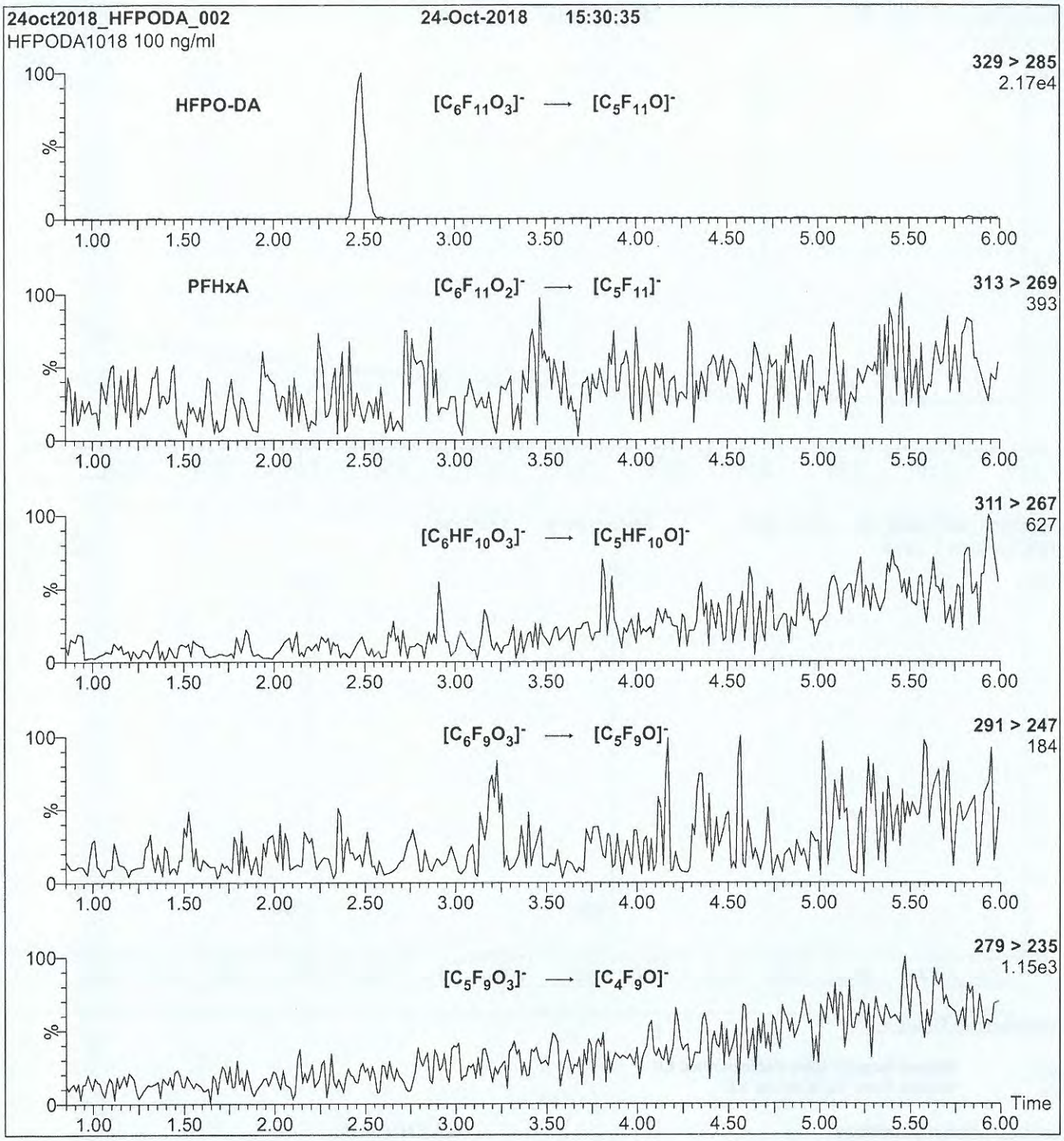
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (l/hr) = 1000

1812071

Figure 2: **HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (HFPO-DA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.02e-3
Collision Energy (eV) = 6

1812072

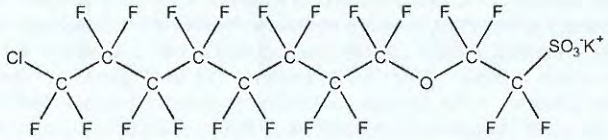
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 11Cl-PF3OUdS **LOT NUMBER:** 11ClPF3OUdS1118

COMPOUND: Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate

STRUCTURE: **CAS #:** 83329-89-9



MOLECULAR FORMULA:	$C_{10}F_{20}ClSO_4K$	**MOLECULAR WEIGHT:**	670.69
CONCENTRATION:	50.0 ± 2.5 µg/ml (K Salt)	**SOLVENT(S):**	Methanol
	47.1 ± 2.4 µg/ml (11Cl-PF3OUdS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/23/2018		
EXPIRY DATE: (mm/dd/yyyy)	11/23/2023		
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.
- This compound is a minor component of the commercial formulation known as F-53B.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/28/2018 (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

1812072

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

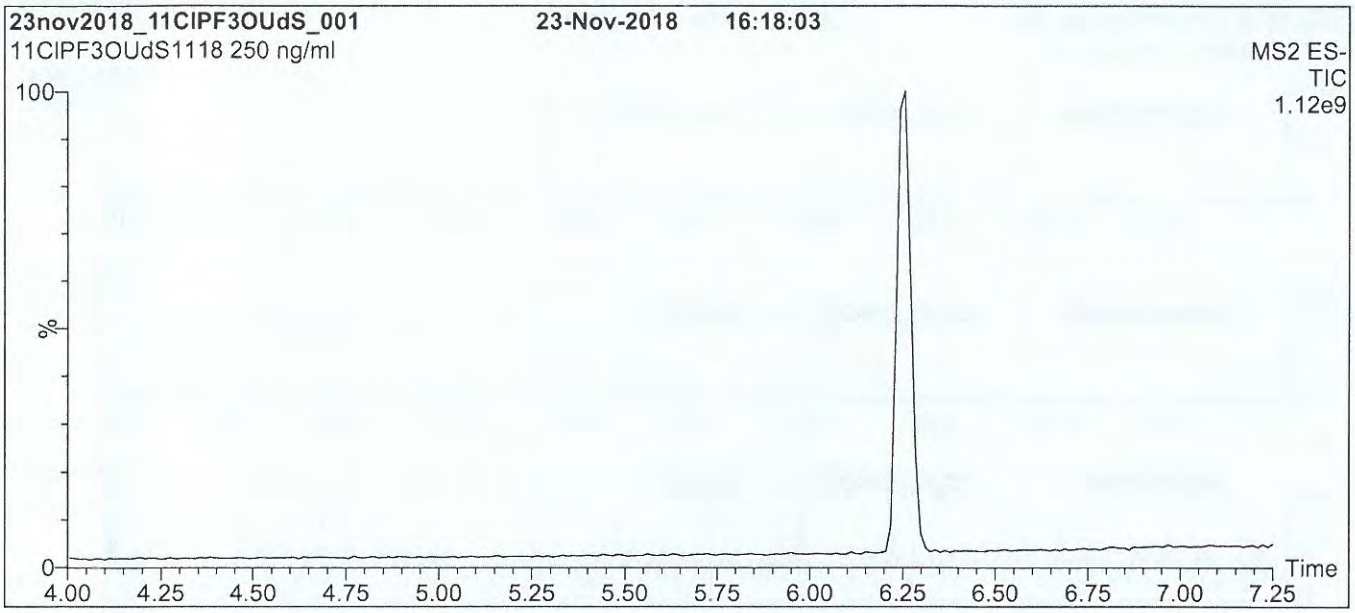
CALA Testing Accreditation No. A 1226

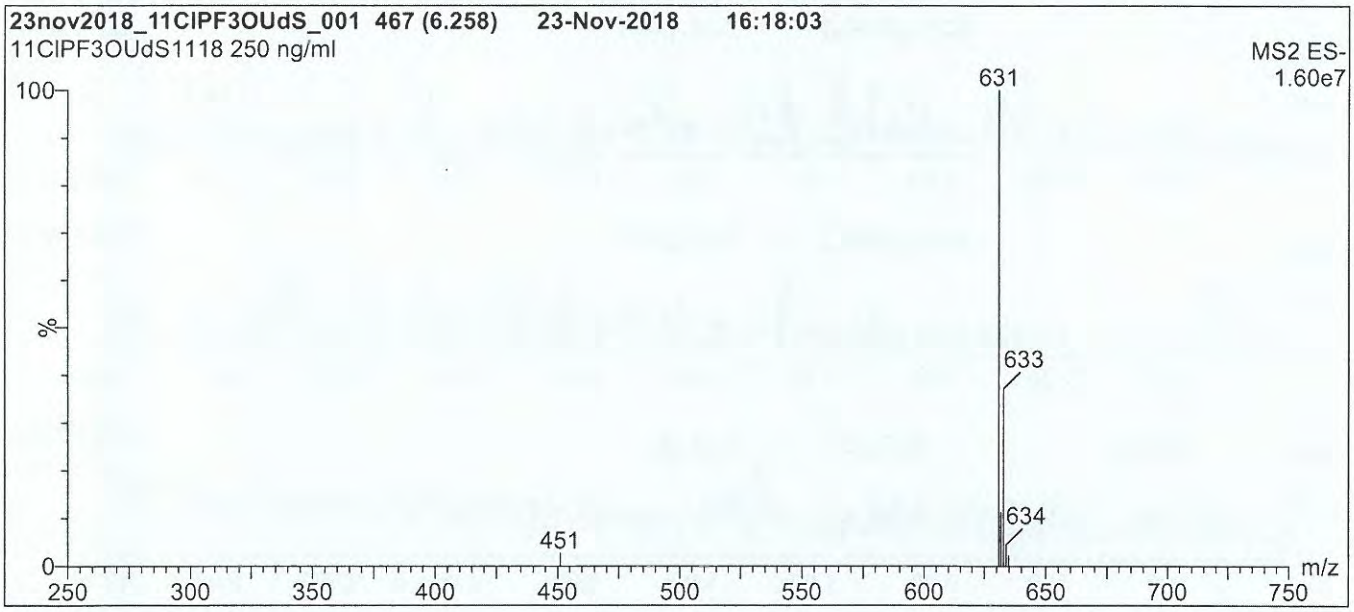
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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1812072

Figure 1: **11Cl-PF3OUdS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

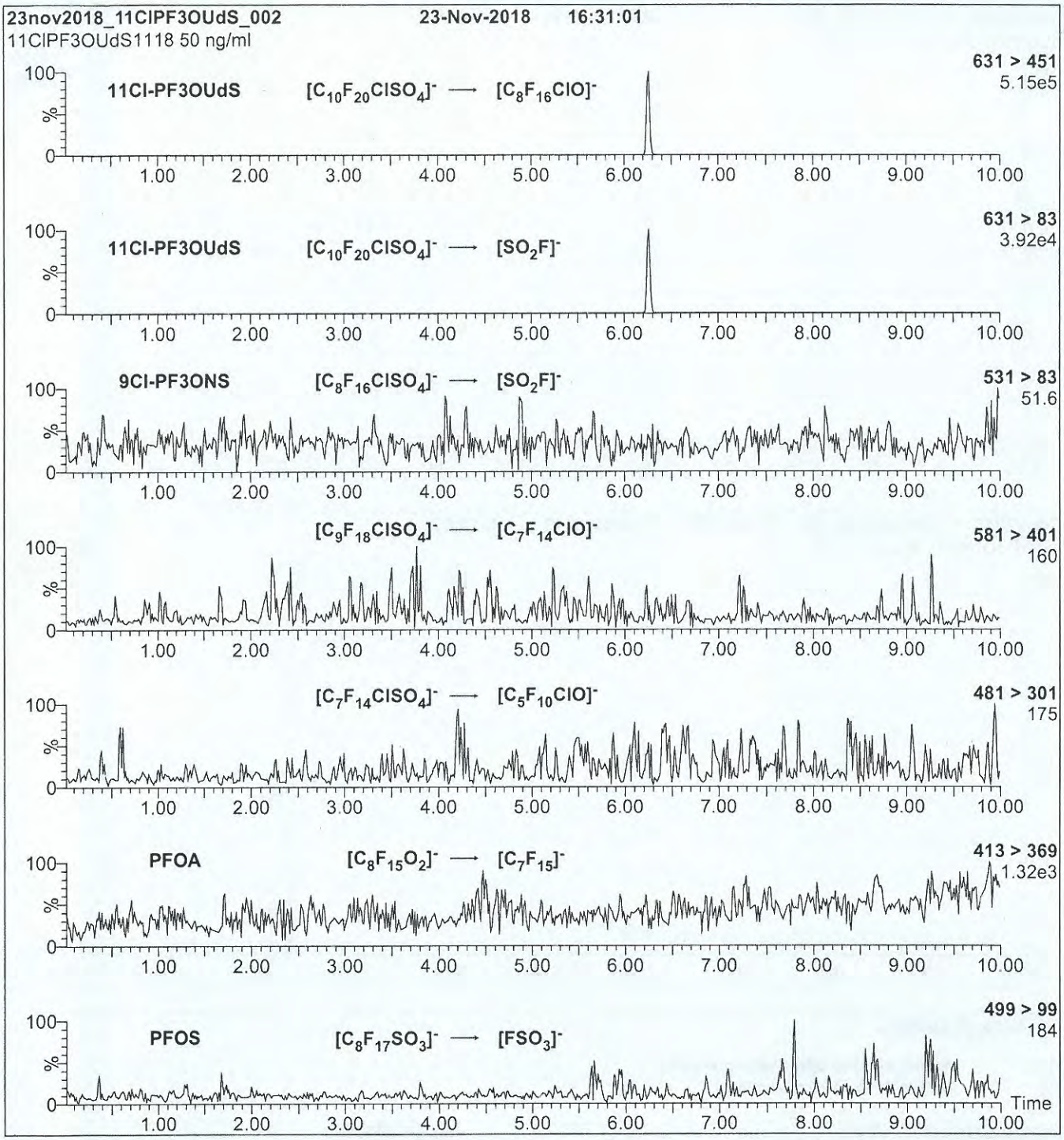
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 70.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

18L2072

Figure 2: **11Cl-PF3OUdS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (11Cl-PF3OUdS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

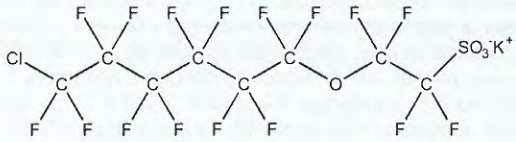
Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 24

18L2073

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	9Cl-PF3ONS	**LOT NUMBER:**	9ClPF3ONS1118
COMPOUND:	Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate		
STRUCTURE:		**CAS #:**	73606-19-6



MOLECULAR FORMULA:	$C_8F_{16}ClSO_4K$	**MOLECULAR WEIGHT:**	570.67
CONCENTRATION:	50.0 ± 2.5 µg/ml (K Salt) 46.6 ± 2.3 µg/ml (9Cl-PF3ONS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/22/2018		
EXPIRY DATE: (mm/dd/yyyy)	11/22/2023		
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.
- This compound is the major component of the commercial formulation known as F-53B.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/23/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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1812073

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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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where x is expressed as a relative standard uncertainty of the individual parameter.

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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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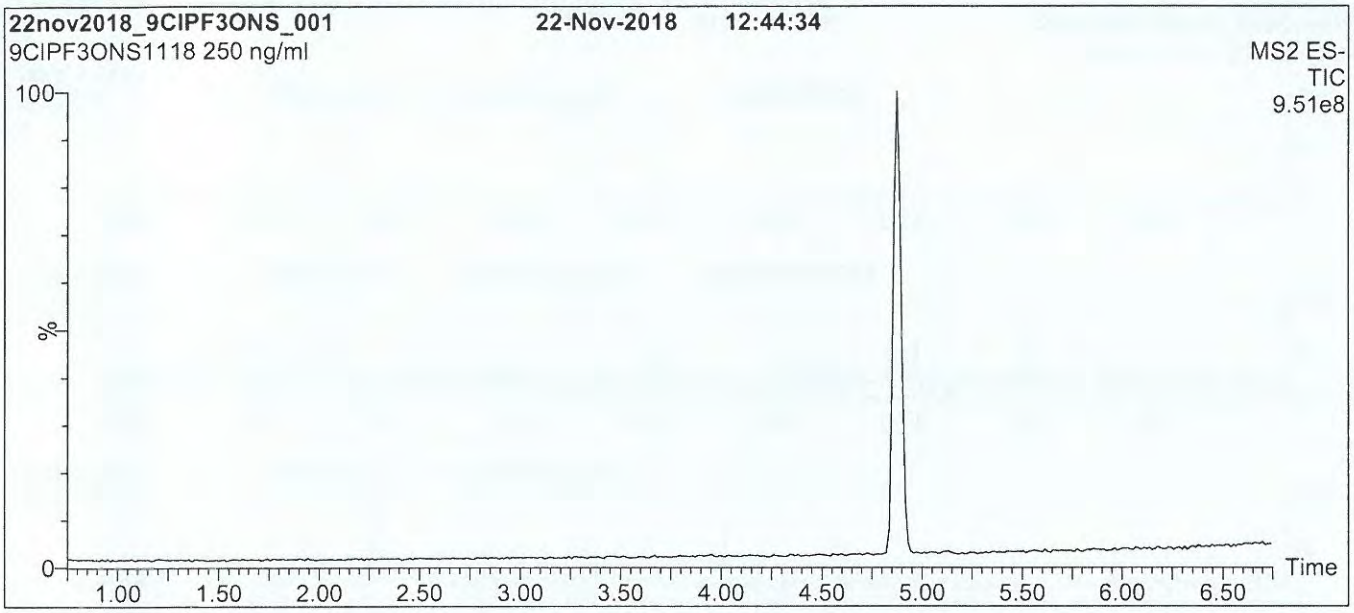
CALA Testing Accreditation No. A 1226

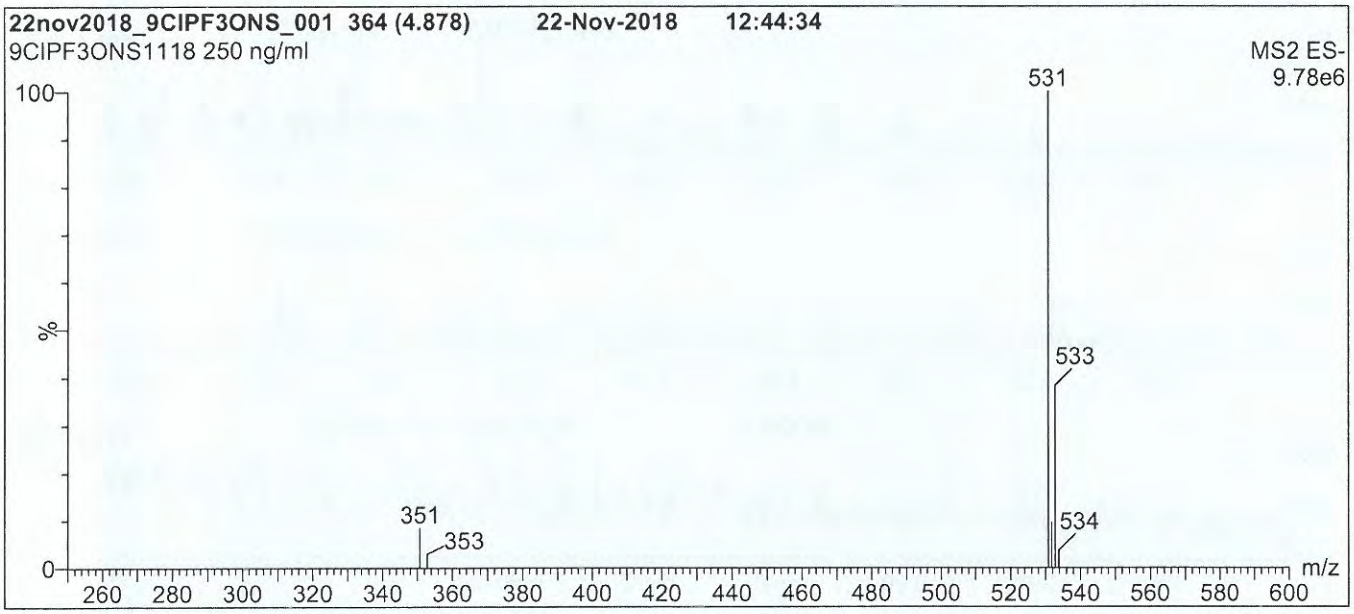
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1812073

Figure 1: **9Cl-PF3ONS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

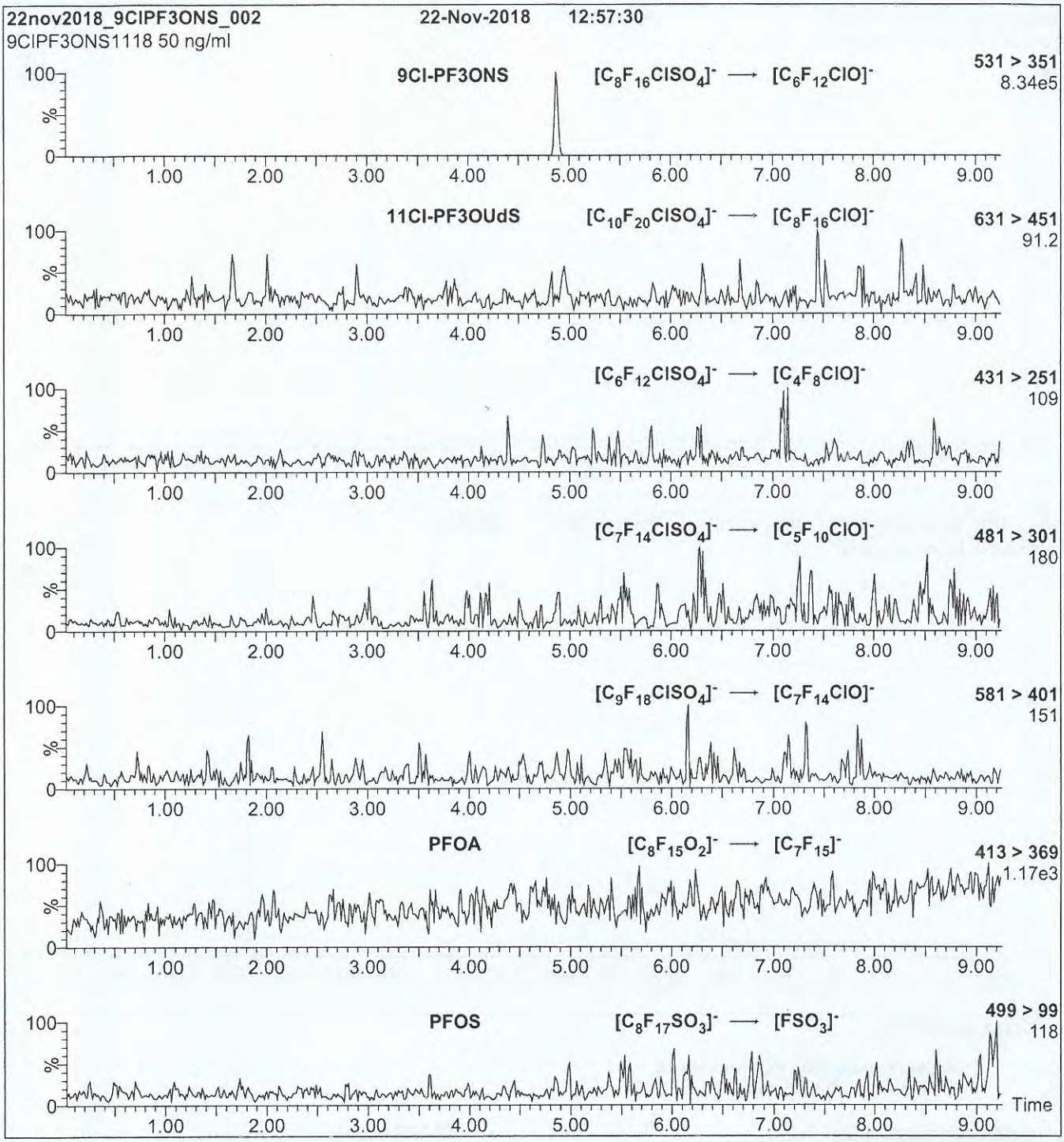
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 70.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812073

Figure 2: **9Cl-PF3ONS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (9Cl-PF3ONS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 20

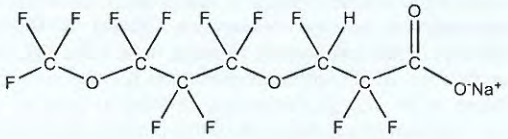
18L2074

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: NaDONA
LOT NUMBER: NaDONA0318
COMPOUND: Sodium dodecafluoro-3H-4,8-dioxanonanoate

STRUCTURE:



CAS #: 958445-44-8 (ammonium salt)

MOLECULAR FORMULA:	$C_7HF_{12}O_4Na$	**MOLECULAR WEIGHT:**	400.05
CONCENTRATION:	50 ± 2.5 µg/ml (Na Salt)	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/26/2018		
EXPIRY DATE: (mm/dd/yyyy)	03/26/2023		
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.
- Product is commercially known as ADONA.
- 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:** 03/27/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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1812074

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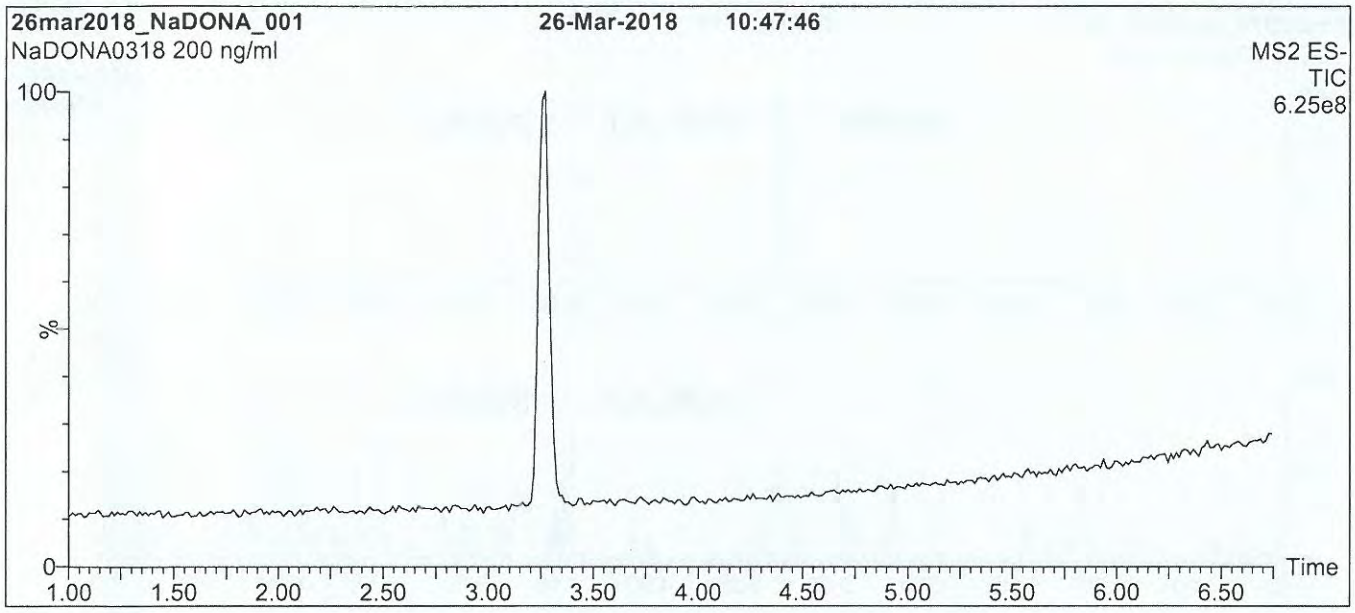
CALA Testing Accreditation No. A 1226

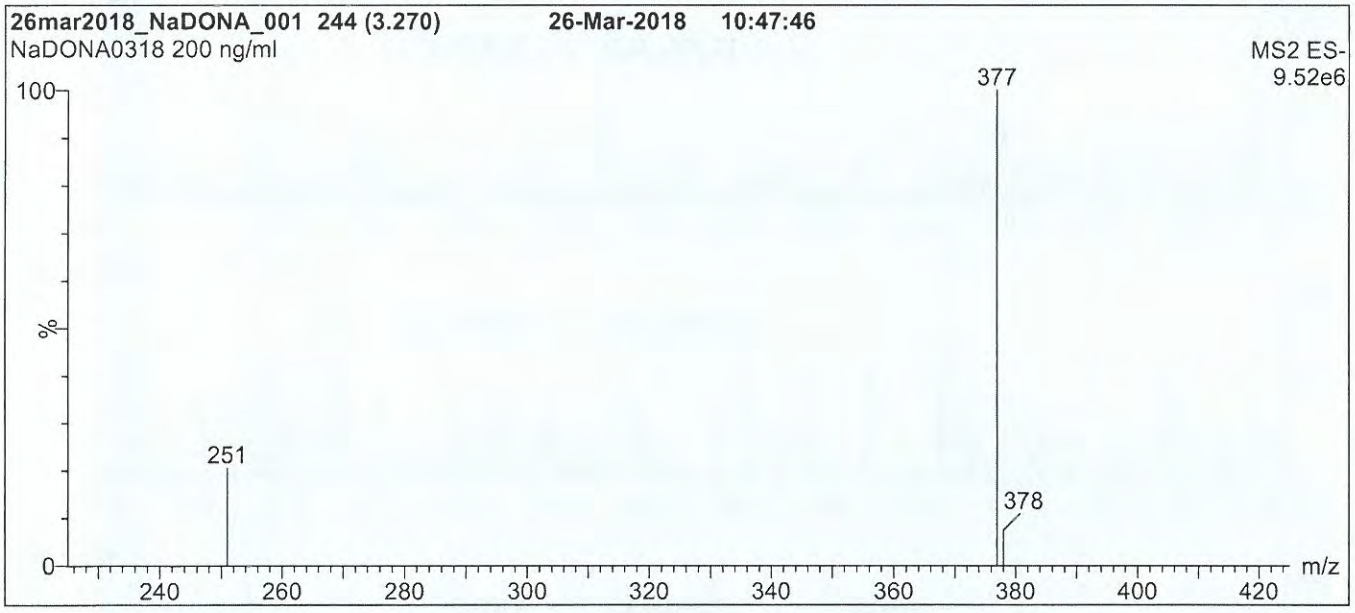
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18L2074

Figure 1: **NaDONA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

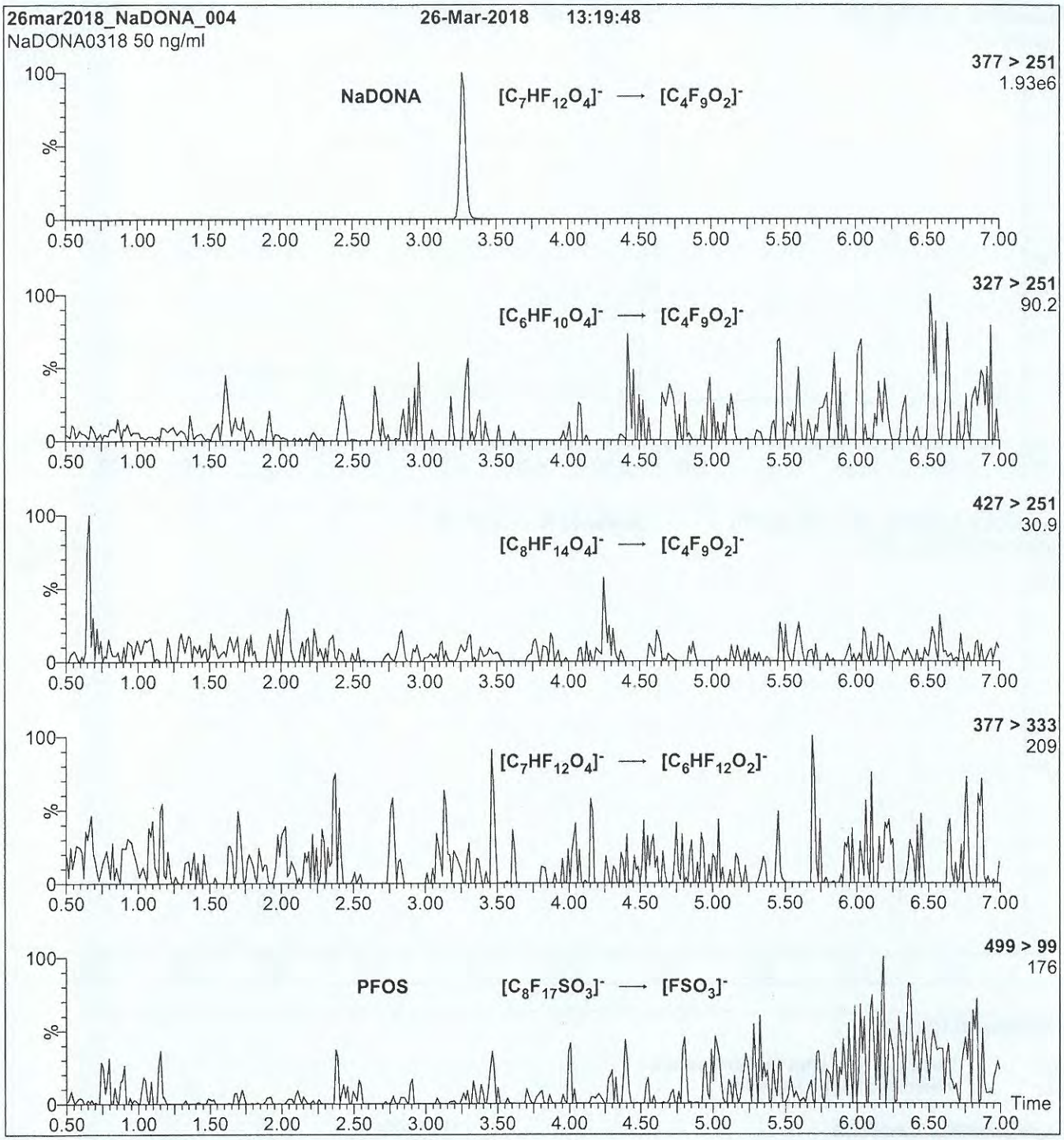
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.70
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812074

Figure 2: **NaDONA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (NaDONA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

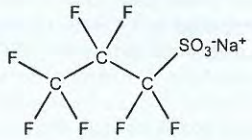
Collision Gas (mbar) = 3.65e-3
Collision Energy (eV) = 10

18L2076

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	L-PFPrS	**LOT NUMBER:**	LPFPrS1217
COMPOUND:	Sodium perfluoro-1-propanesulfonate		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$C_3F_7SO_3Na$	**MOLECULAR WEIGHT:**	272.07
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 45.8 ± 2.3 µg/ml (PFPrS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	12/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	12/14/2022		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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1812076

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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,...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 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).

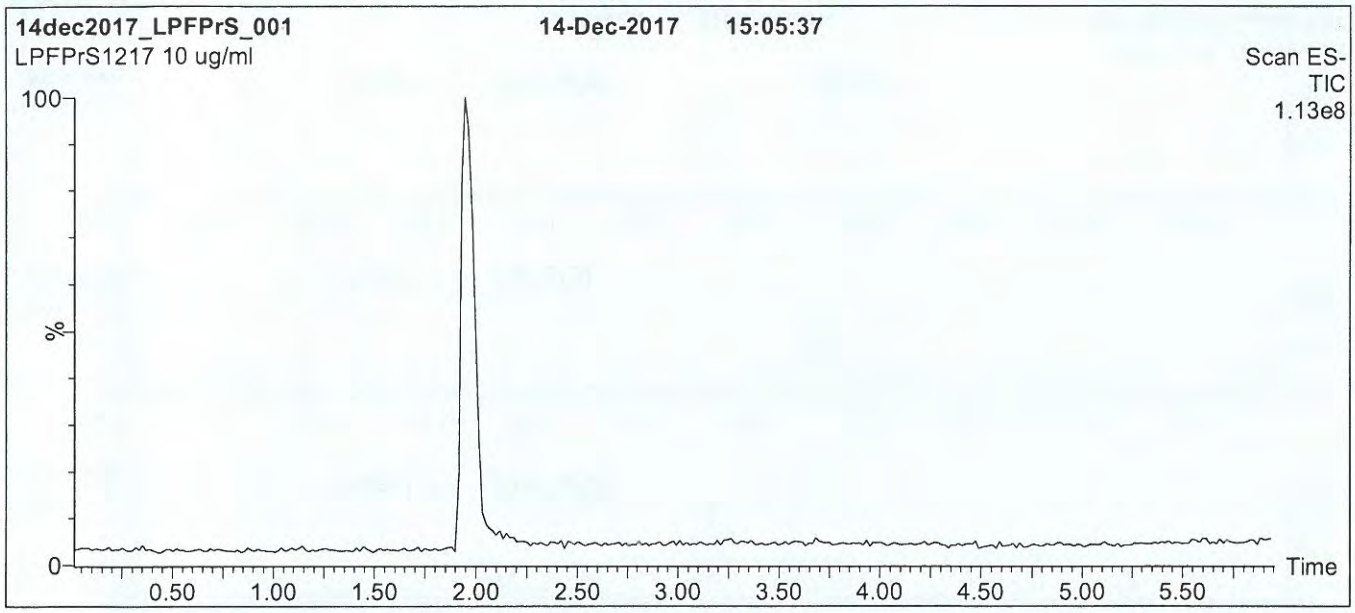
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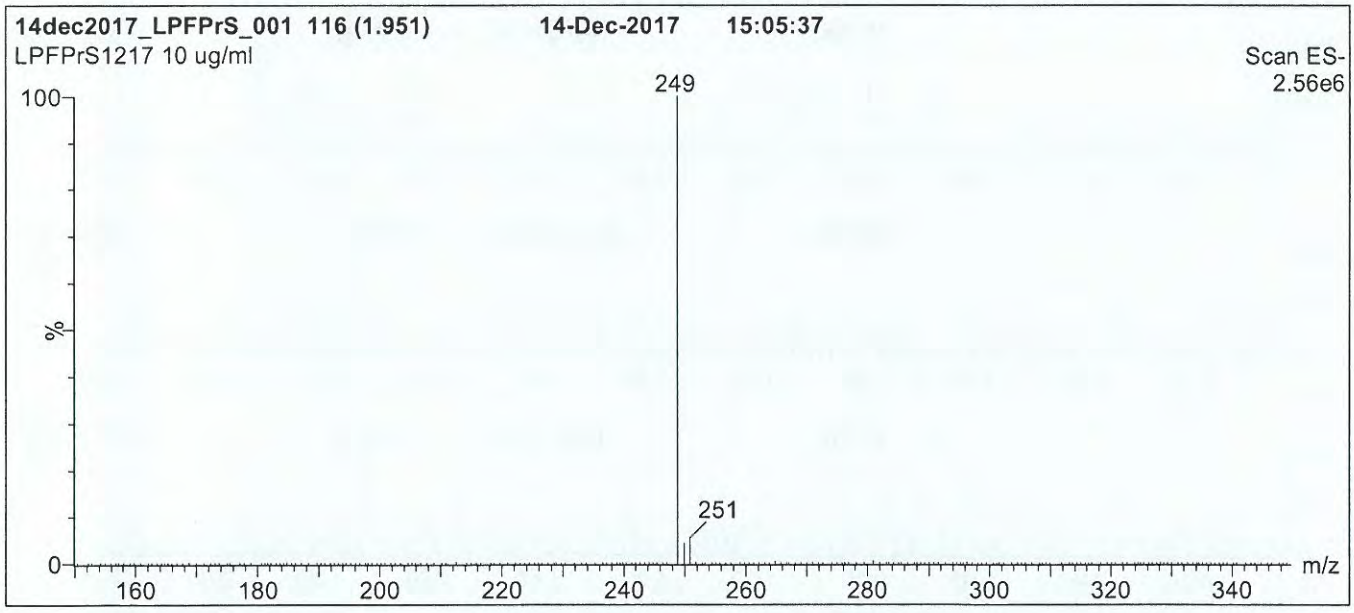
ANAB ACCREDITED Reference Material Producer

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

1812076

Figure 1: **L-PFPrS; 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 over 0.5 min.
Time: 10 min

Flow: 300 µl/min

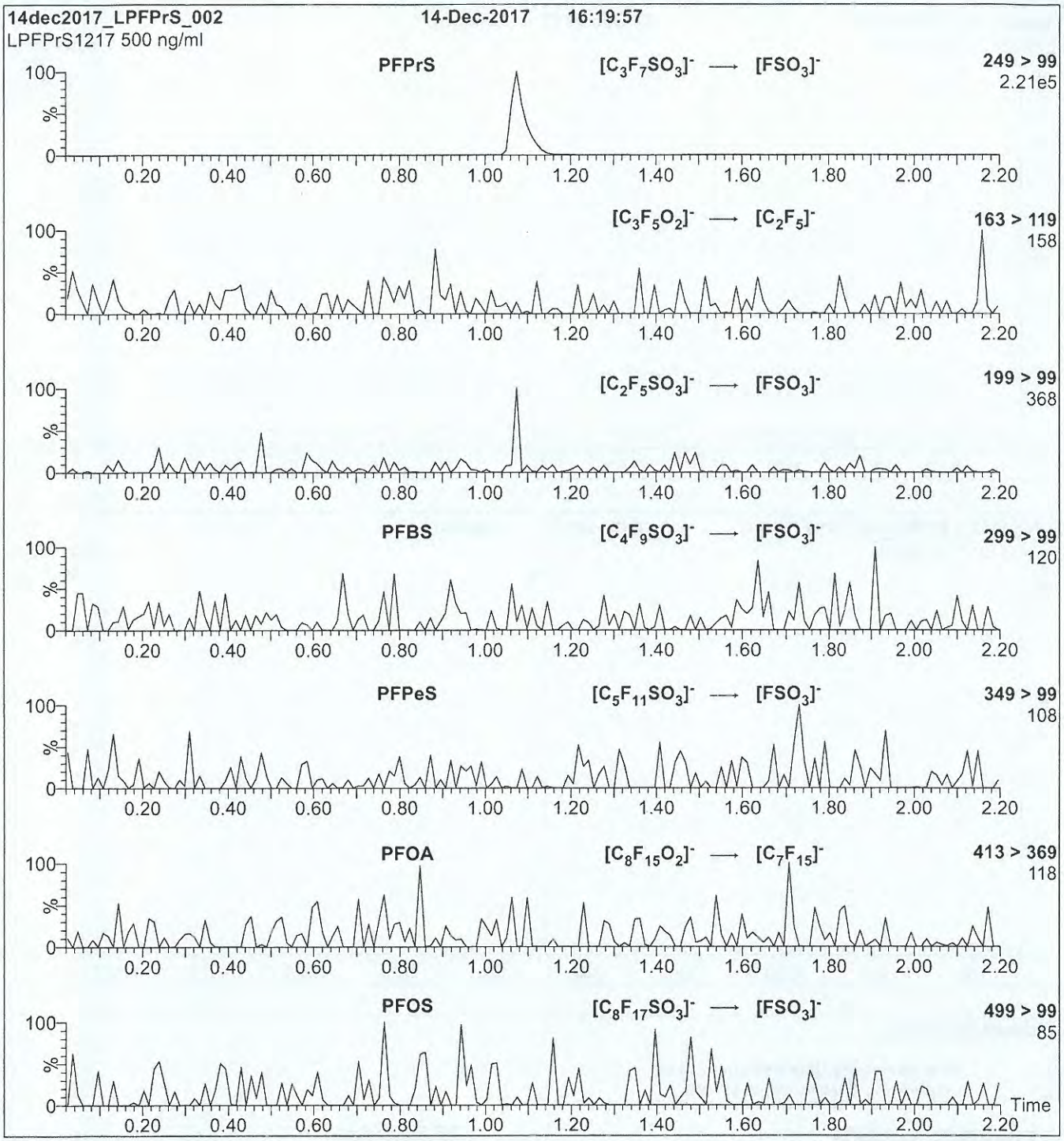
MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

1812076

Figure 2: **L-PFPrS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFPrS)

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) = 25

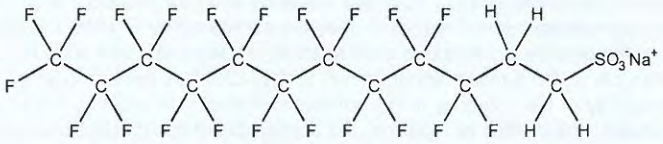
18L2078

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0718
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$C_{12}H_4F_{21}SO_3Na$		**MOLECULAR WEIGHT:**	650.18
CONCENTRATION:	50.0 ± 2.5 µg/ml	(Na salt)	**SOLVENT(S):**	Methanol
	48.2 ± 2.4 µg/ml	(10:2FTS anion)		
CHEMICAL PURITY:	>98%			
LAST TESTED: (mm/dd/yyyy)	07/13/2018			
EXPIRY DATE: (mm/dd/yyyy)	07/13/2021			
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: _____ **Date:** 07/16/2018 (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

18L2078

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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.

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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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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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

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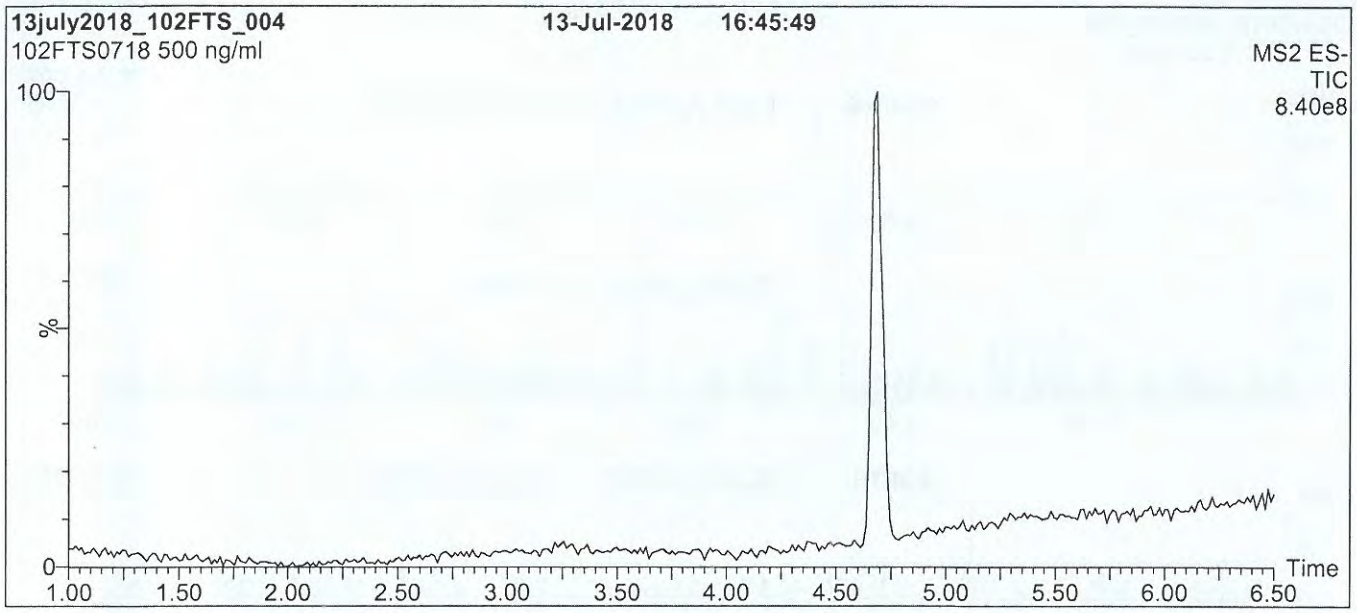
CALA Testing Accreditation No. A 1226

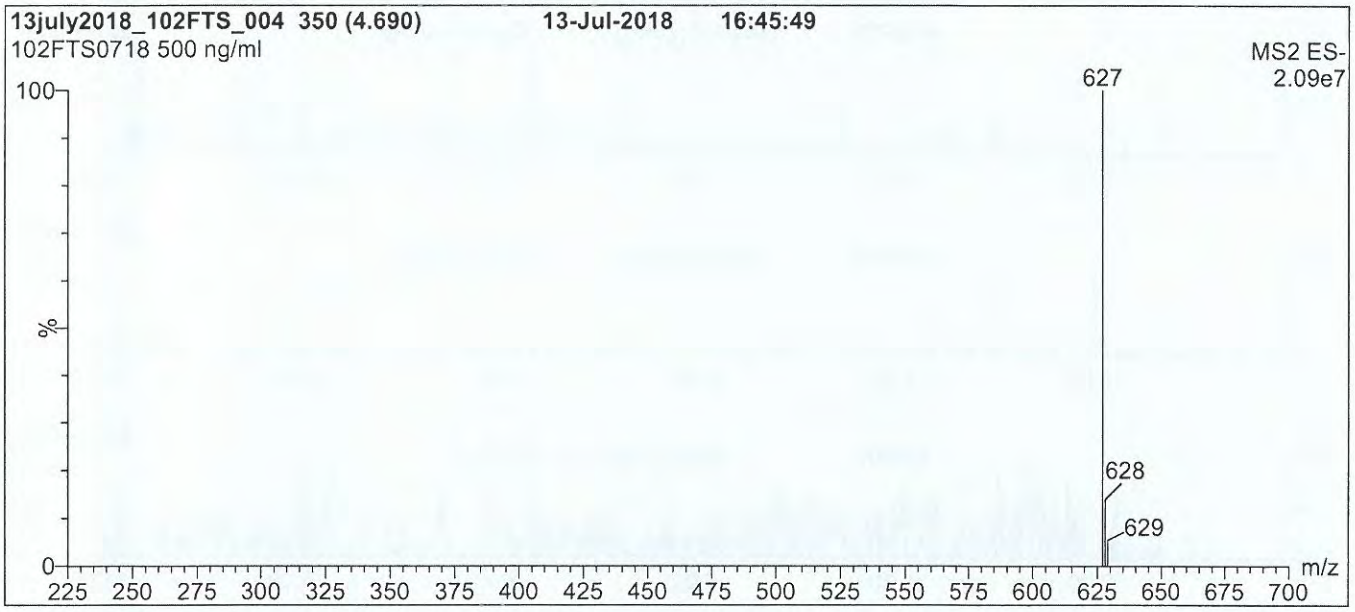
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

18L2078

Figure 1: **10:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

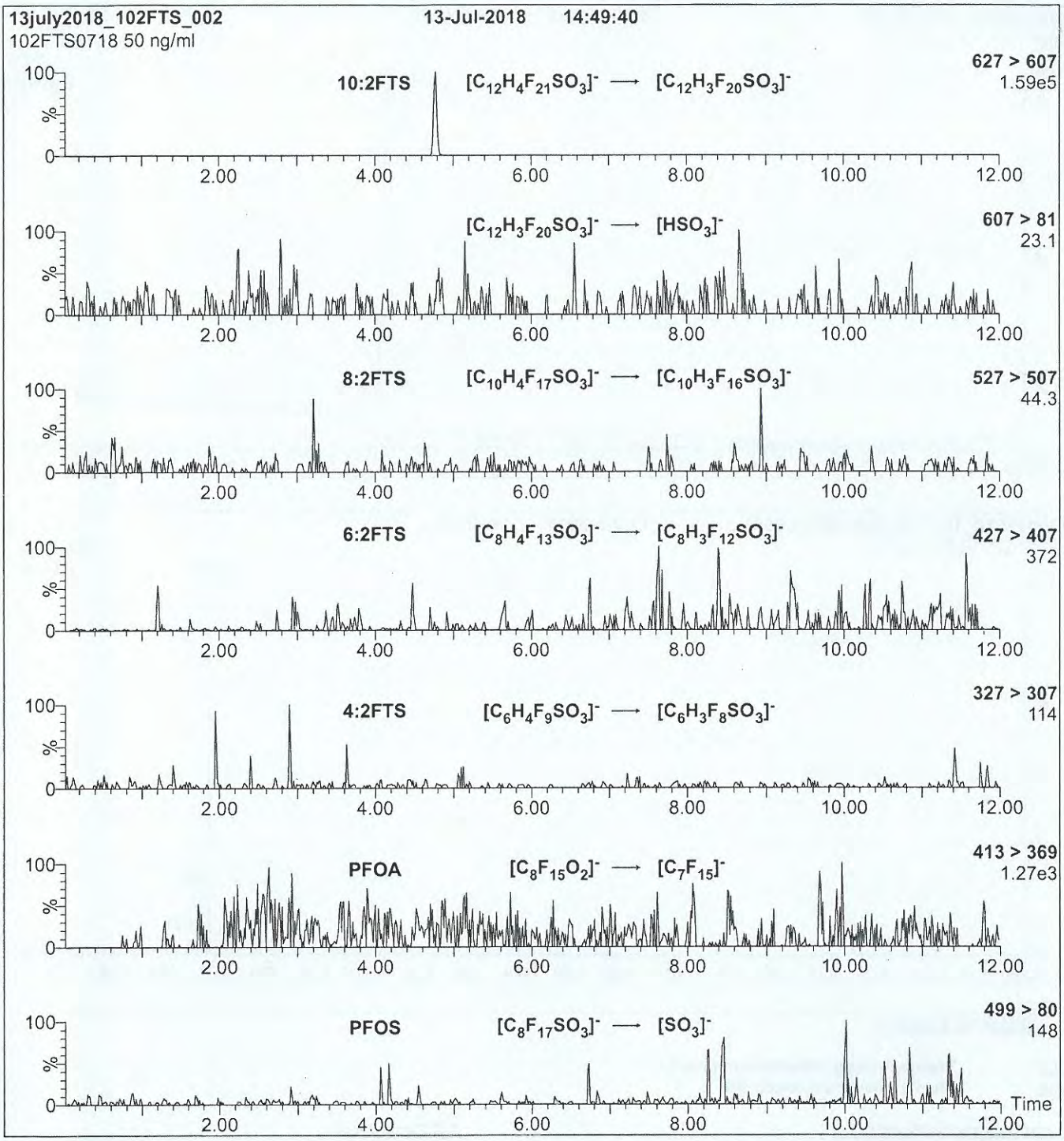
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812078

Figure 2: **10:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (10:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 25

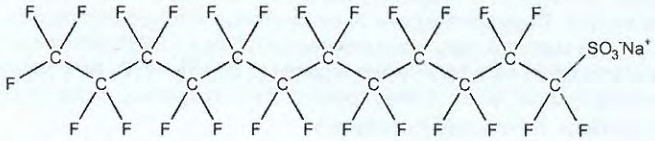
19B0712

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFDoS
LOT NUMBER: LPFDoS0916
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

STRUCTURE:
CAS #: Not available



MOLECULAR FORMULA:	$C_{12}F_{25}SO_3Na$	**MOLECULAR WEIGHT:**	722.14
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 48.4 ± 2.4 µg/ml (PFDoS anion)	**SOLVENT(S):**	Methanol
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 ~ 0.7% of sodium perfluoro-1-tetradecanesulfonate and ~ 0.7% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 10/17/2016 (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

19B0712

INTENDED USE:

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HAZARDS:

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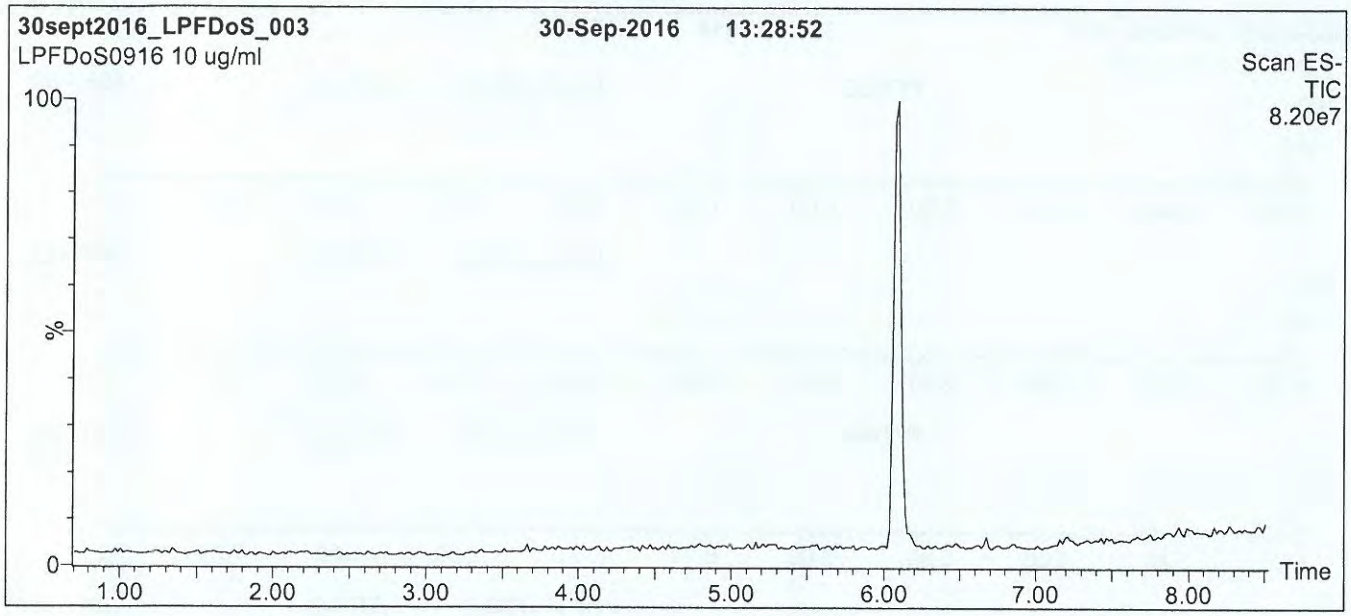
CALA Testing Accreditation No. A 1226

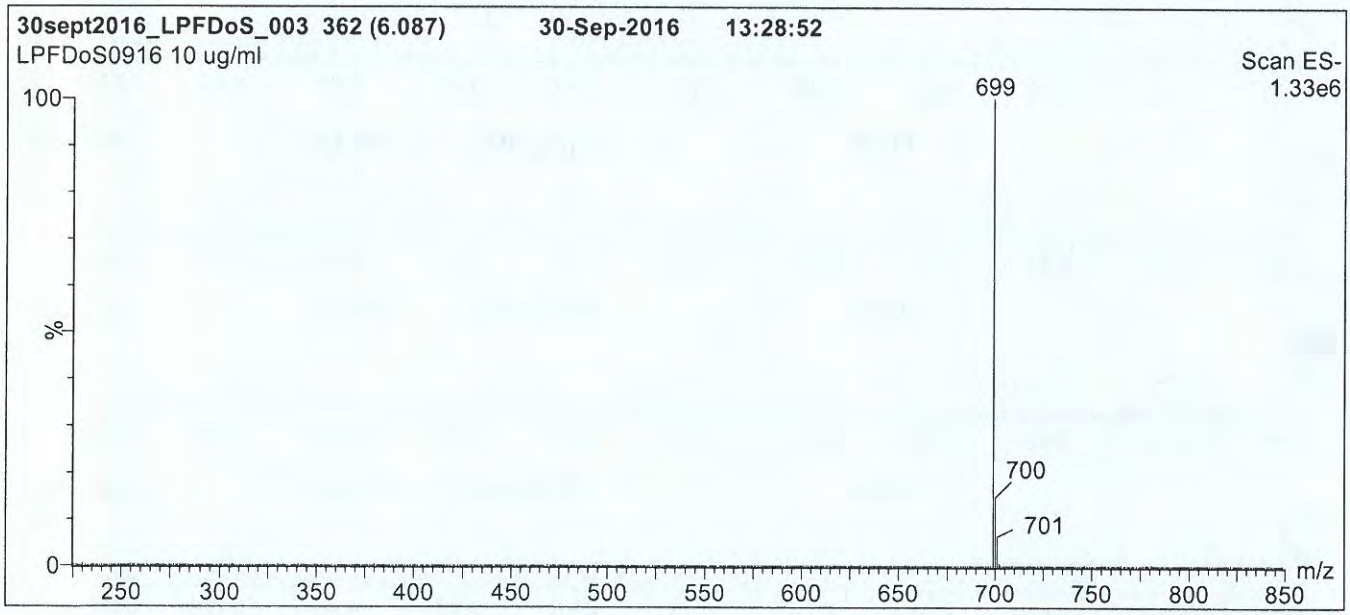
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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19B0712

Figure 1: **L-PFDoS; 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

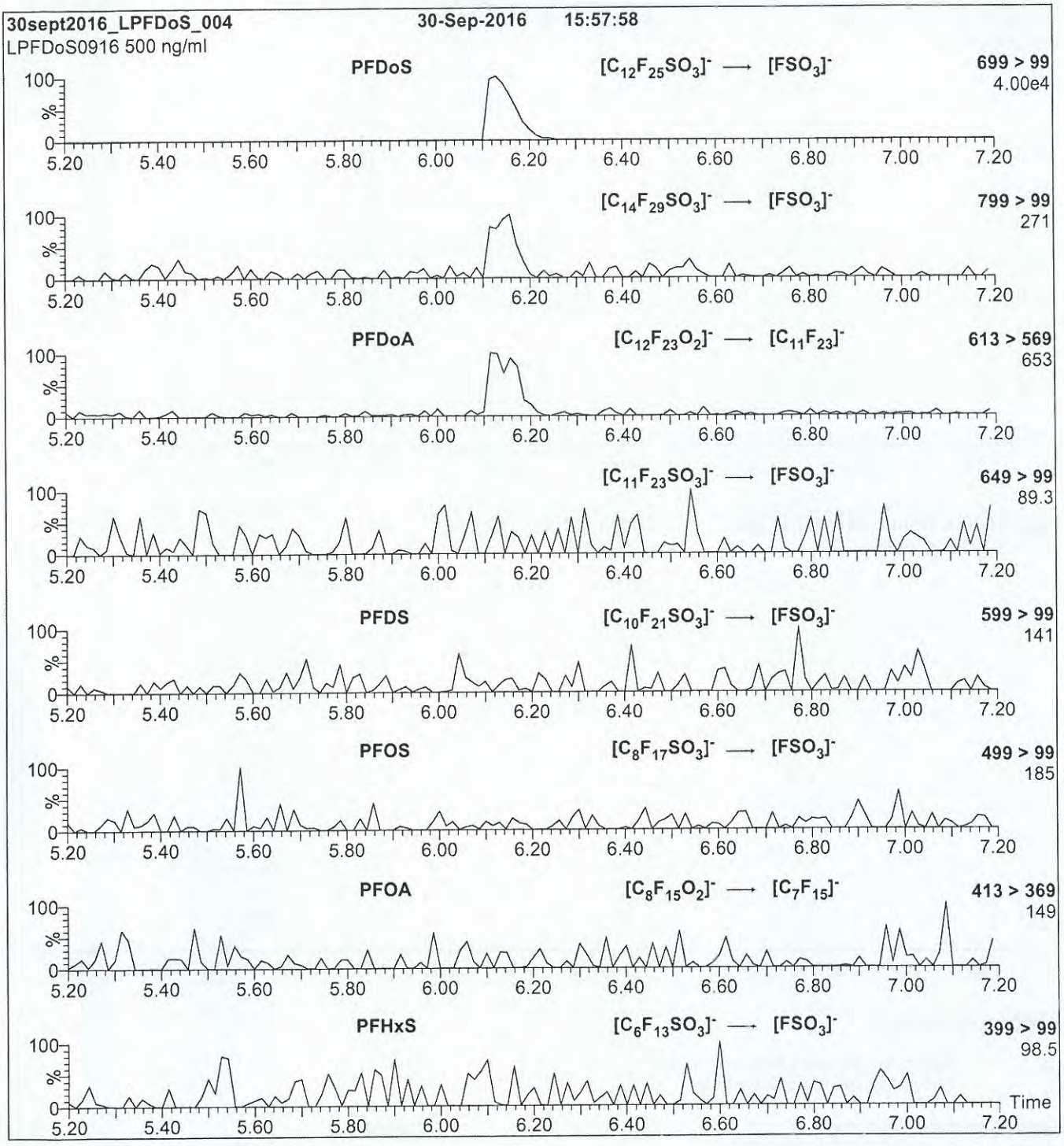
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 80.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

19B0712

Figure 2: **L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFDoS)

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) = 50

Analytical Standard Record

Vista Analytical Laboratory

19E2202

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
18L2018	18O2-PFHxS	20-Dec-18	** Vendor **	22-Mar-23	1.06
18L2021	13C2-FOUEA	20-Dec-18	** Vendor **	14-Nov-19	1
18L2022	13C4-PFBA	20-Dec-18	** Vendor **	16-Feb-23	1
18L2023	13C6-PFDA	20-Dec-18	** Vendor **	20-Sep-23	1
18L2024	13C9-PFNA	20-Dec-18	** Vendor **	23-May-22	1
18L2025	13C7-PFUdA	20-Dec-18	** Vendor **	20-Sep-23	1
18L2026	13C5-PFHxA	20-Dec-18	** Vendor **	27-Sep-23	1
18L2028	13C4-PFOS	20-Dec-18	** Vendor **	11-Sep-23	1.05
18L2029	13C8-PFOA	20-Dec-18	** Vendor **	29-Jun-23	1.02

Description:	PFC-RS	Expires:	14-Nov-19
Standard Type:	Reagent	Prepared:	23-May-19
Solvent:	MeOH	Prepared By:	Giana R. Bilotta
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	28-May-19 09:02 by GRB

Expiration date set to expiration date of standard being used to create this one. GRB 05/22/19
18L2021 13C2-FOUEA EXP. 11/14/19

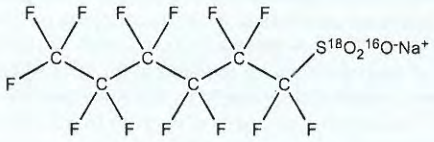
Analyte	CAS Number	Concentration	Units
18O2-PFHxS		1.25	ug/mL
13C9-PFNA		1.25	ug/mL
13C8-PFOA		1.25	ug/mL
13C7-PFUnA		1.25	ug/mL
13C6-PFDA		1.25	ug/mL
13C5-PFHxA		1.25	ug/mL
13C4-PFOS		1.25	ug/mL
13C4-PFBA		1.25	ug/mL
13C2-FOUEA		1.25	ug/mL

18L2018

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFHxS	**LOT NUMBER:**	MPFHxS0318
COMPOUND:	Sodium perfluoro-1-hexane[$^{18}O_2$]sulfonate		
STRUCTURE:		**CAS #:**	1585941-14-5



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)	03/22/2018		
EXPIRY DATE: (mm/dd/yyyy)	03/22/2023		
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) and ~ 0.3% of sodium perfluoro-1-heptane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFHpS).
- 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: _____ **Date:** 06/07/2018 (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

18L2018

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HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

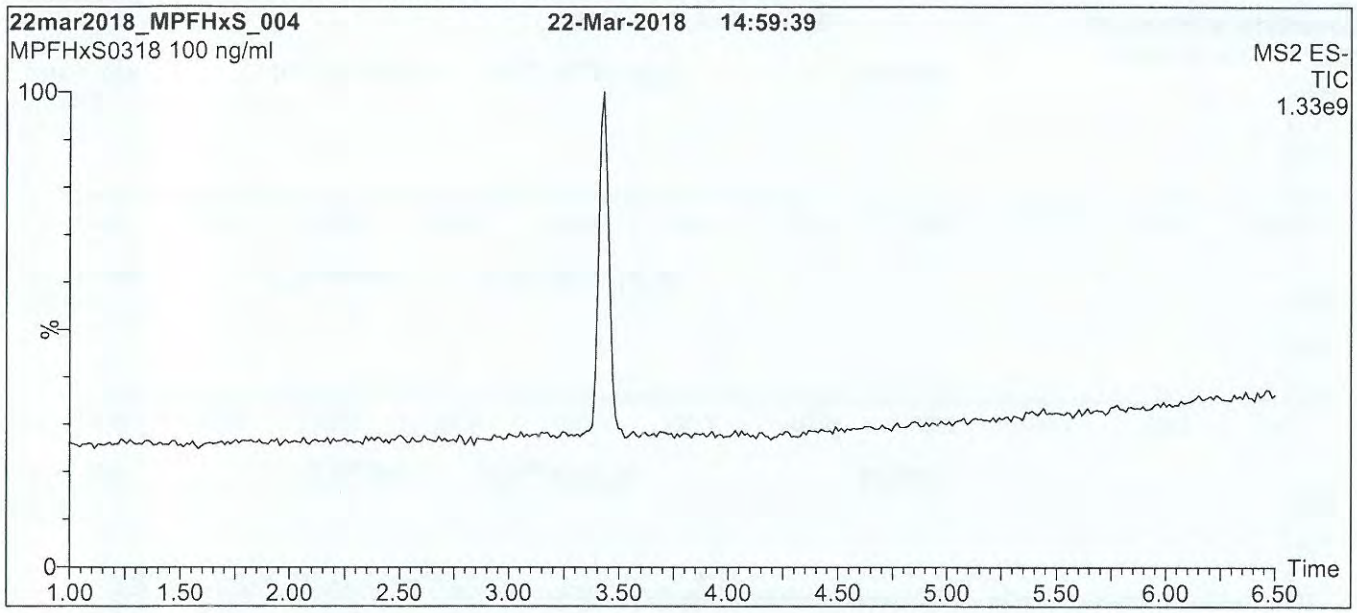
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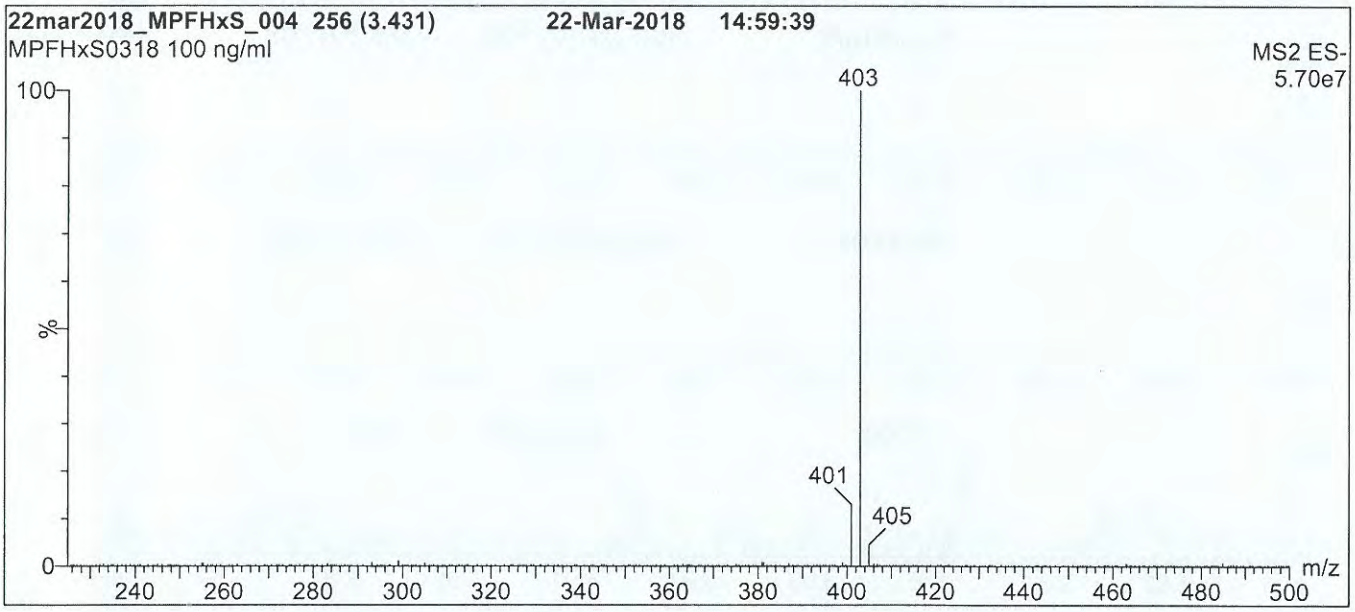
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

18L2018

Figure 1: **MPFHxS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 7 min and hold for 3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

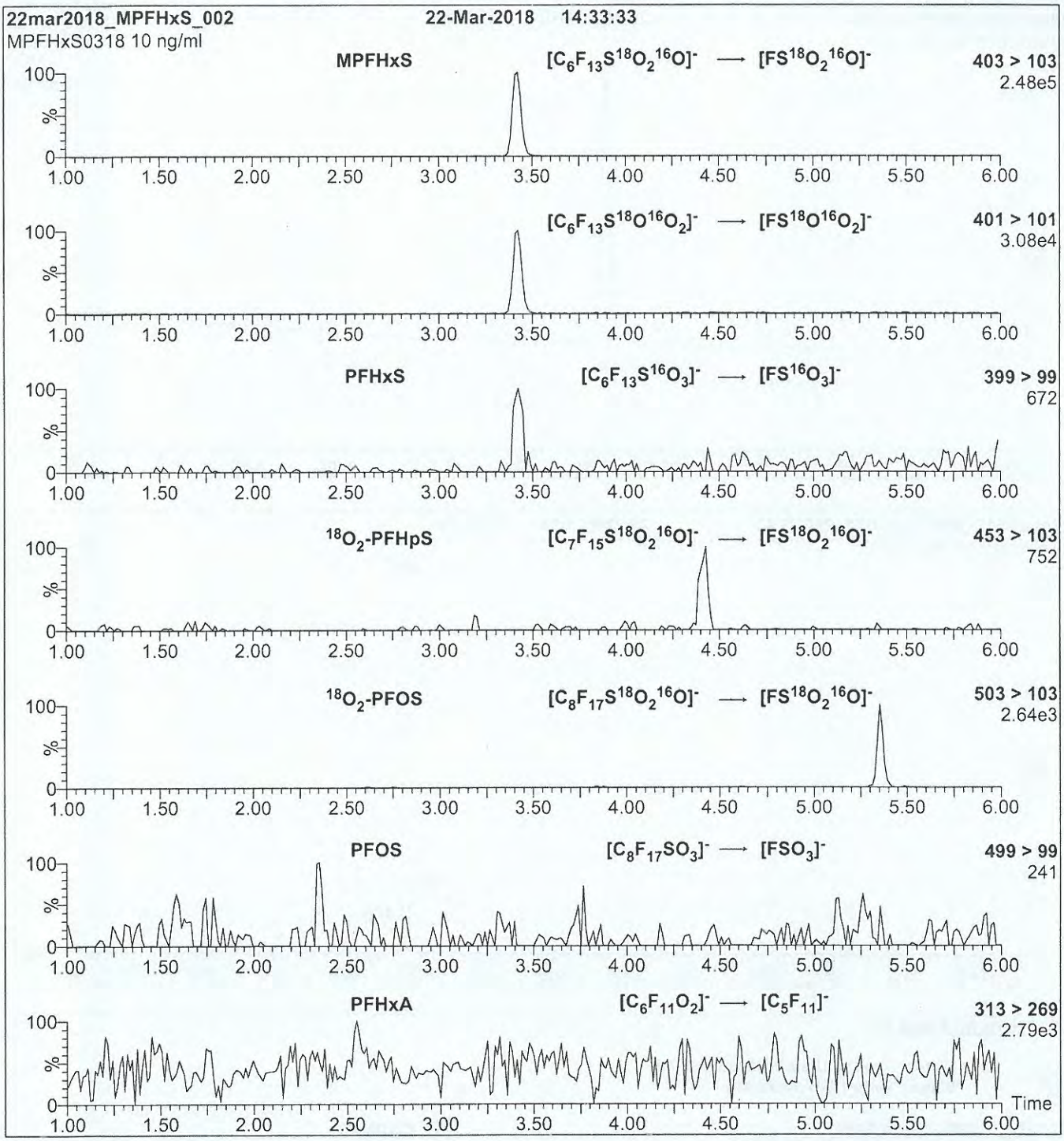
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 5.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

18L2018

Figure 2: **MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.64e-3

Collision Energy (eV) = 32

18L2021

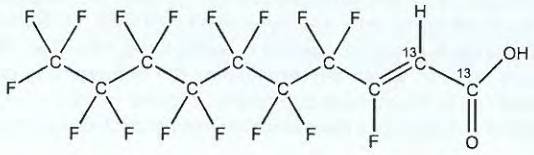
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFOUEA
LOT NUMBER: MFOUEA1117
COMPOUND: 2H-Perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/15/2017 (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

18L2021

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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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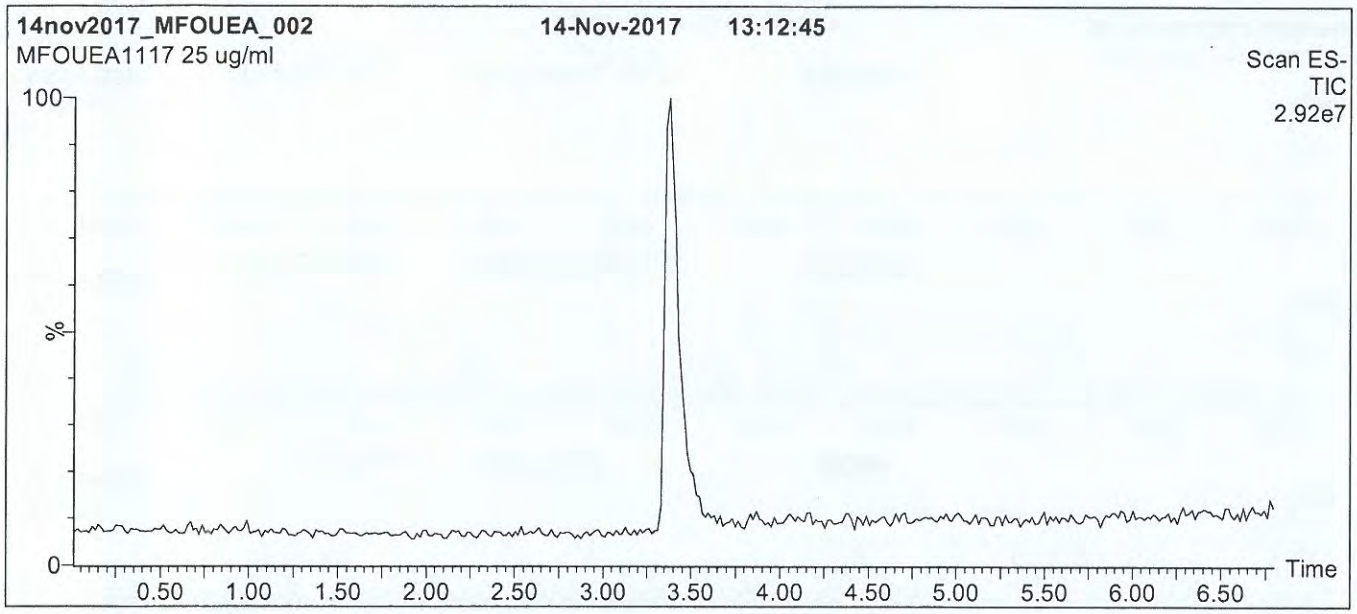
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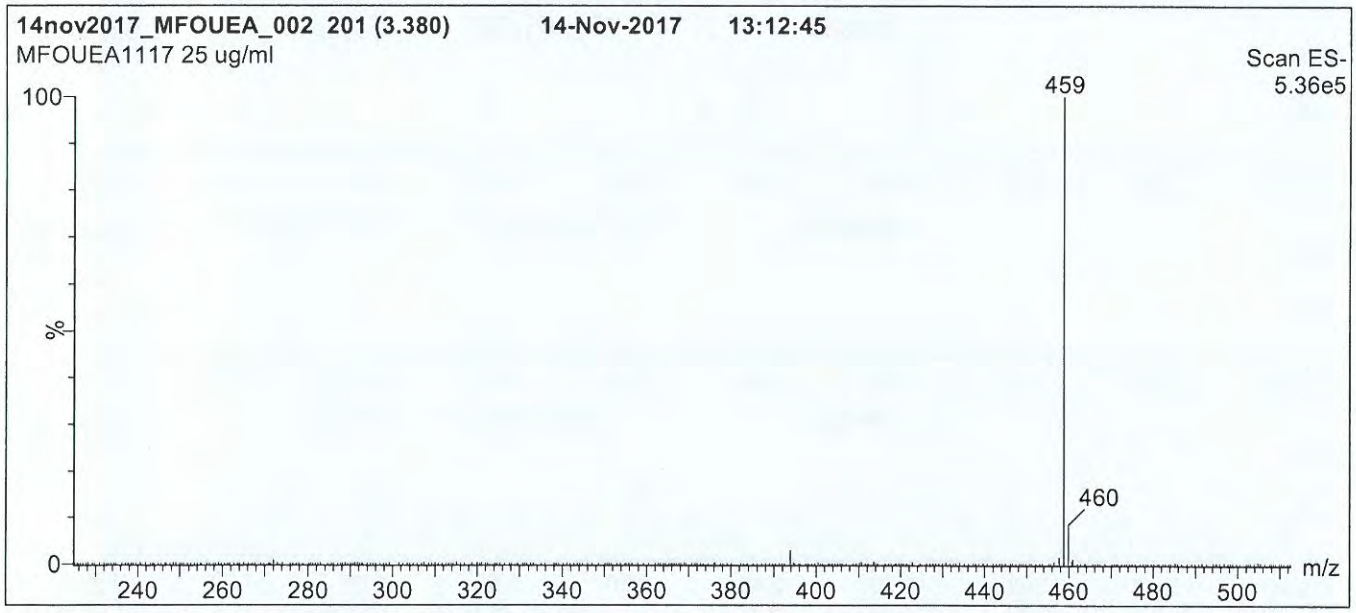
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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18L2021

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

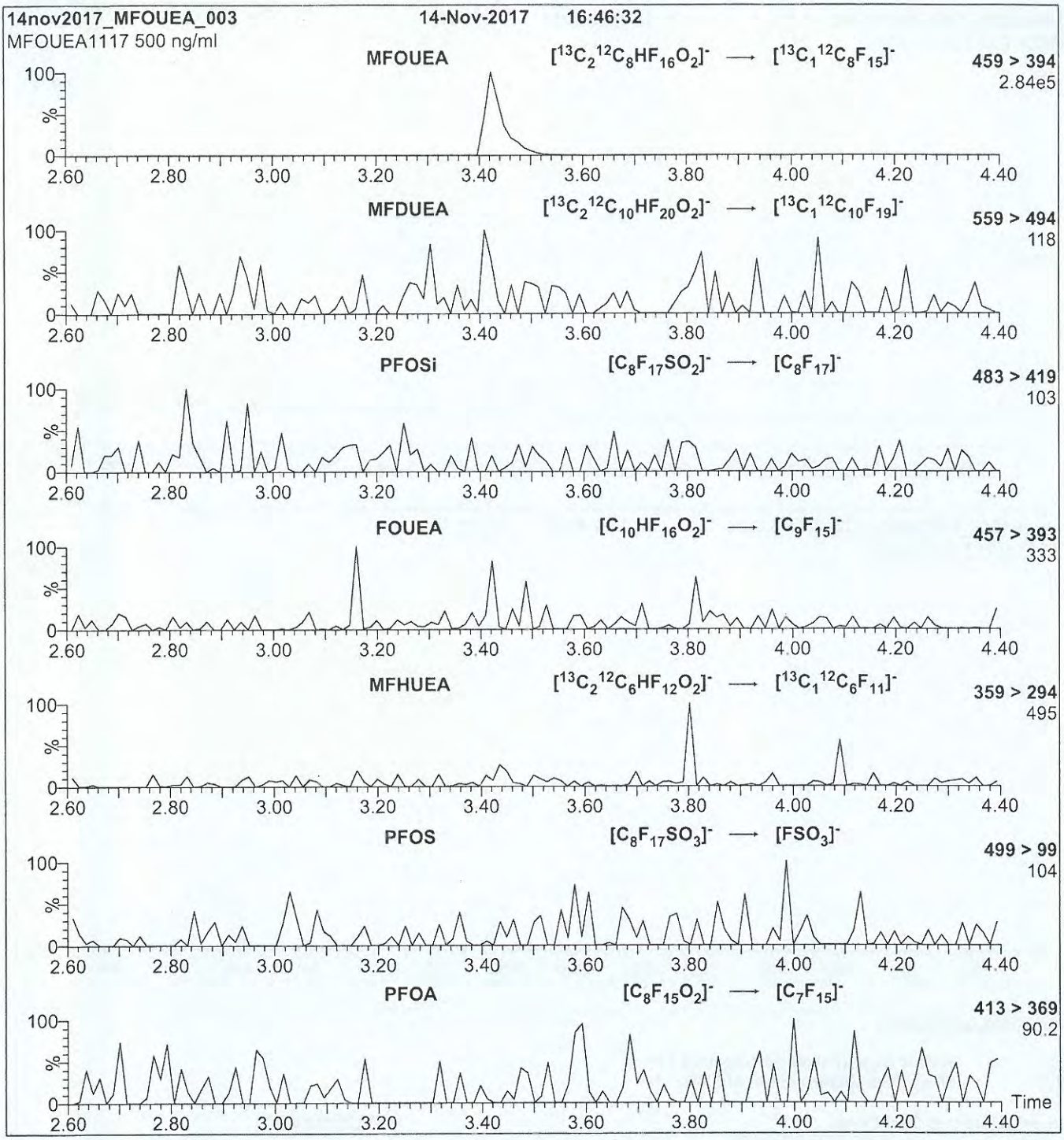
MS Parameters

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

1/8/2021

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

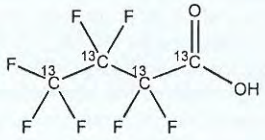
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 21

18L2022

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	MPFBA	**LOT NUMBER:**	MPFBA0218
COMPOUND:	Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid		
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)	02/16/2018		
EXPIRY DATE: (mm/dd/yyyy)	02/16/2023		
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:** 02/22/2018 (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

18L2022

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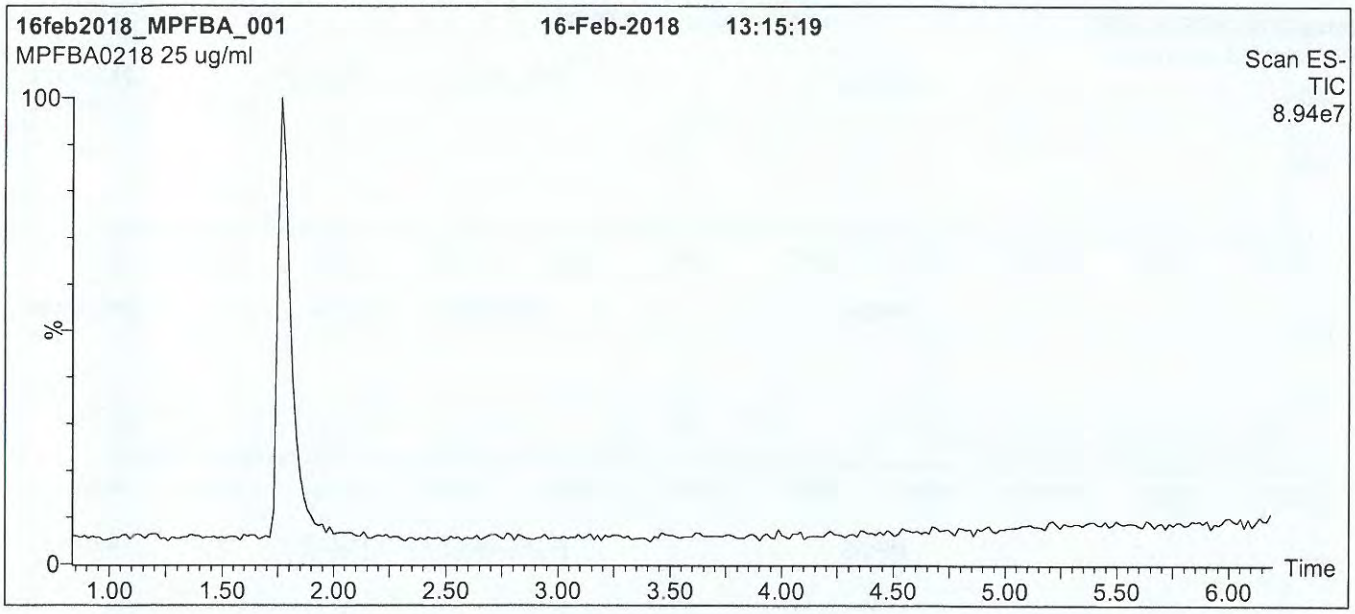
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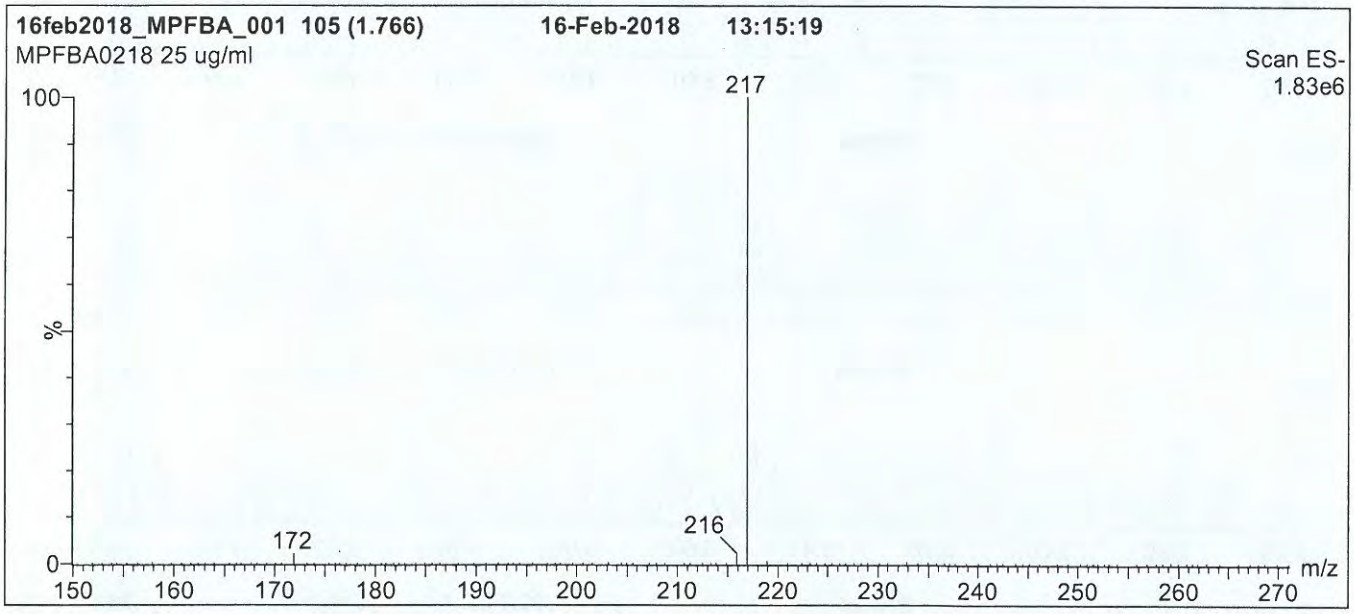
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2022

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

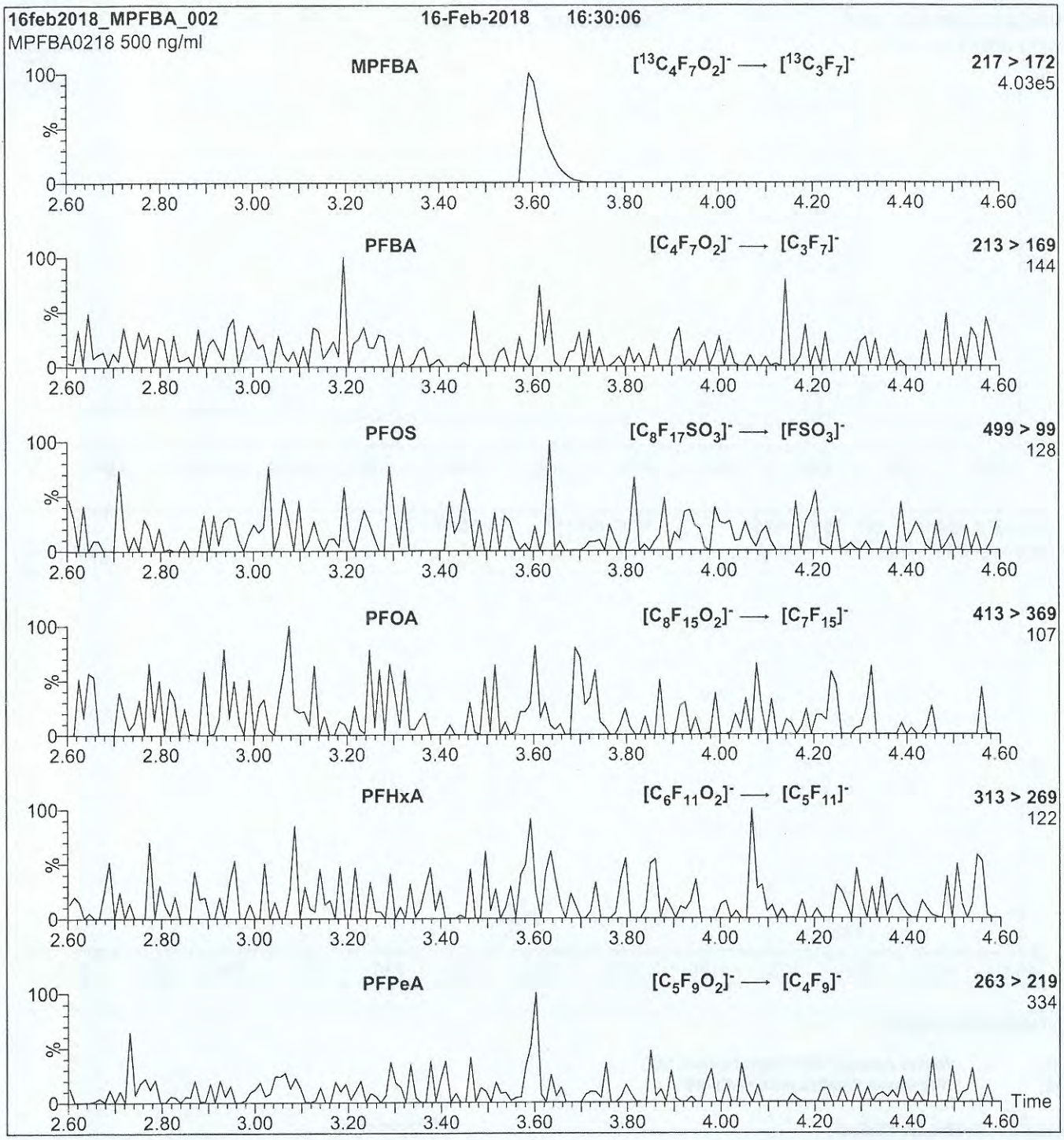
MS Parameters

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

1812022

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) = 3.31e-3
Collision Energy (eV) = 10

18L2023

WELLINGTON LABORATORIES

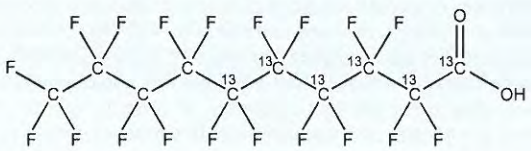
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M6PFDA
COMPOUND: Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid

LOT NUMBER: M6PFDA0918

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)	09/20/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/20/2023		
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:** 10/03/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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18L2023

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

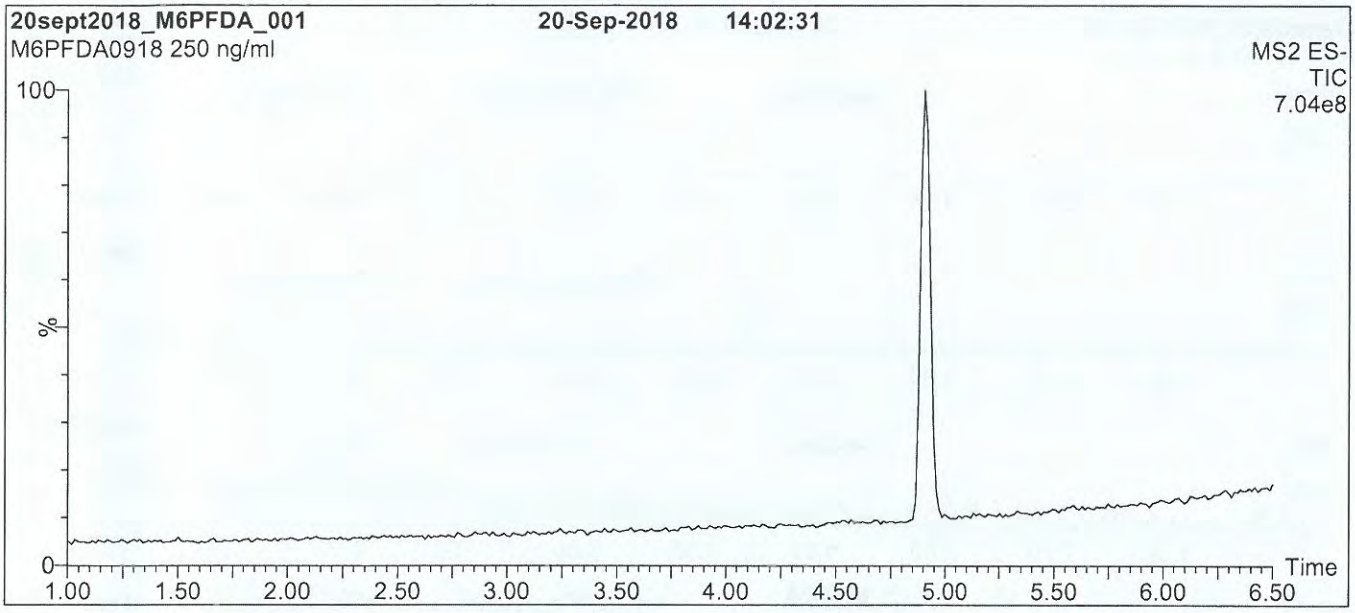
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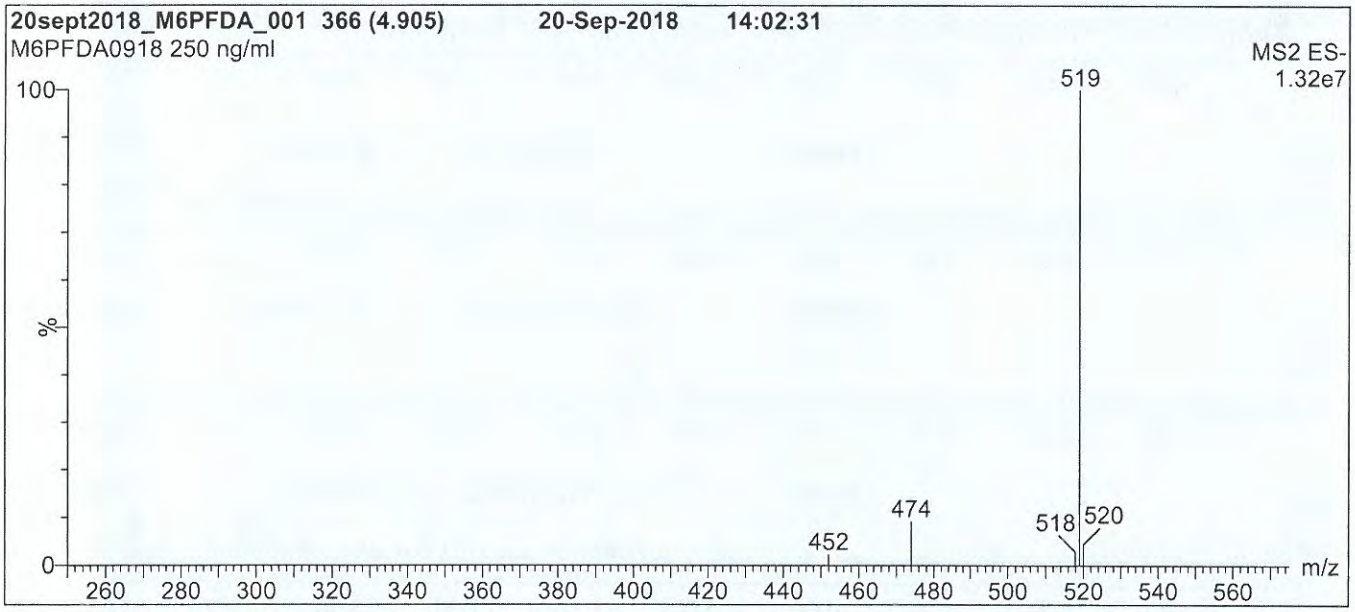
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2023

Figure 1: **M6PFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

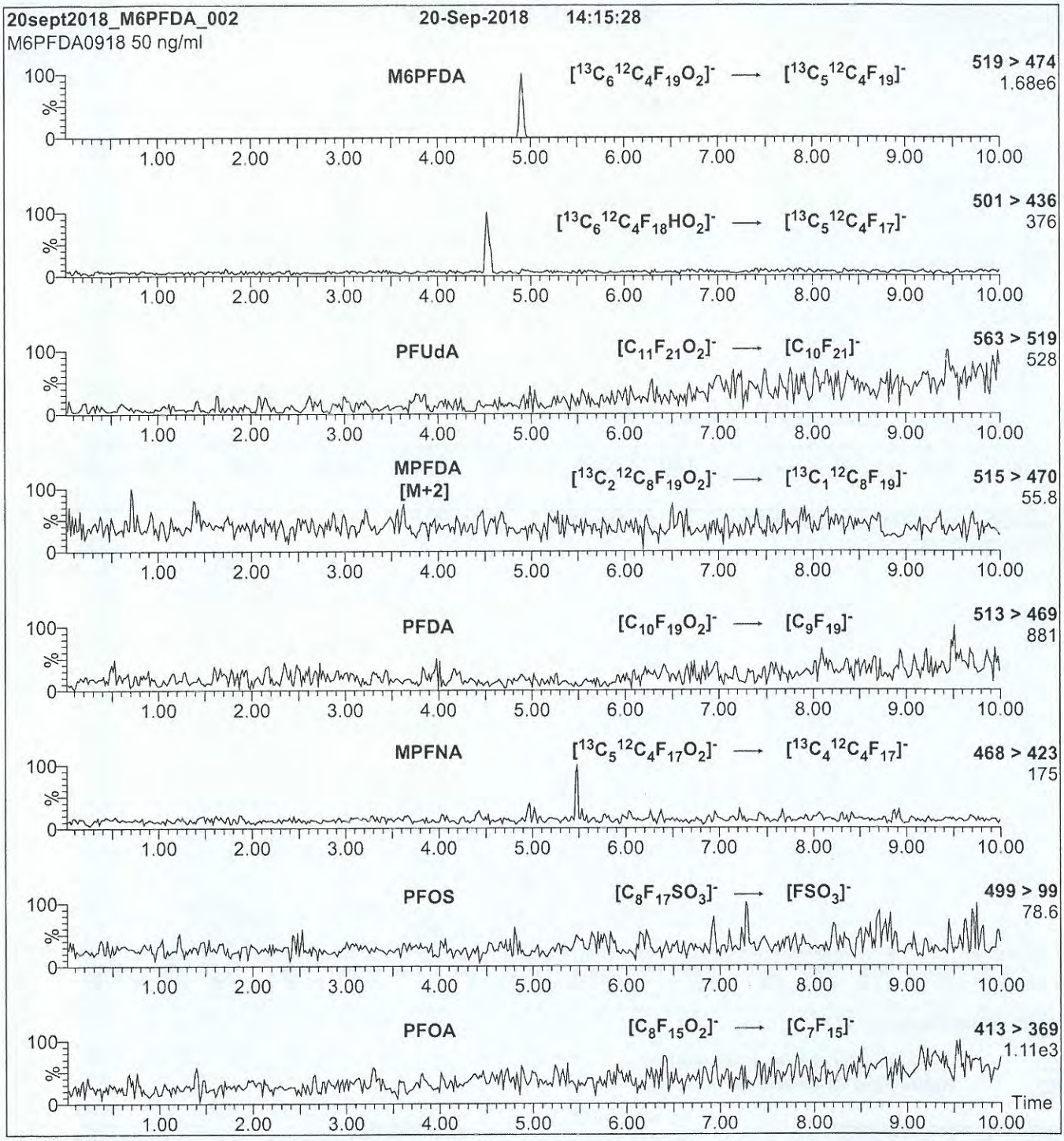
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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Figure 2: **M6PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M6PFDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 10

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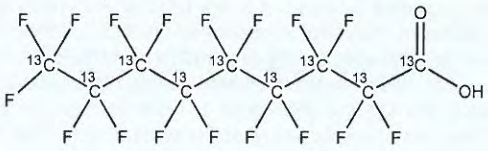
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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

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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:

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QUALITY MANAGEMENT:

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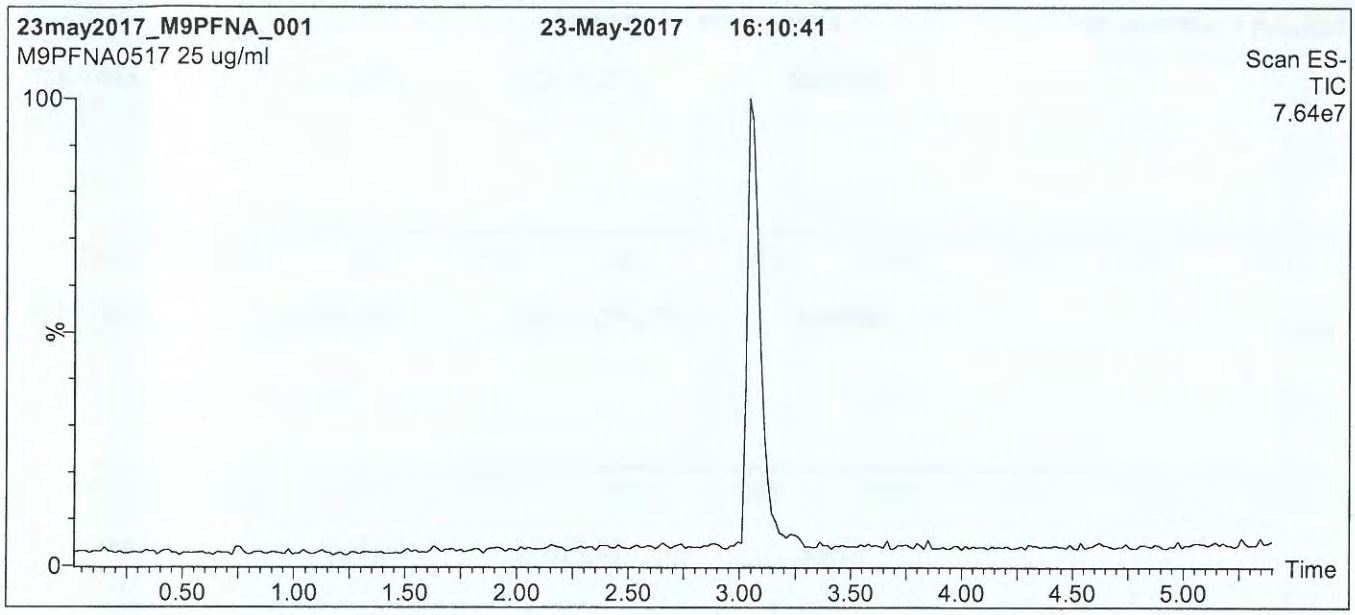
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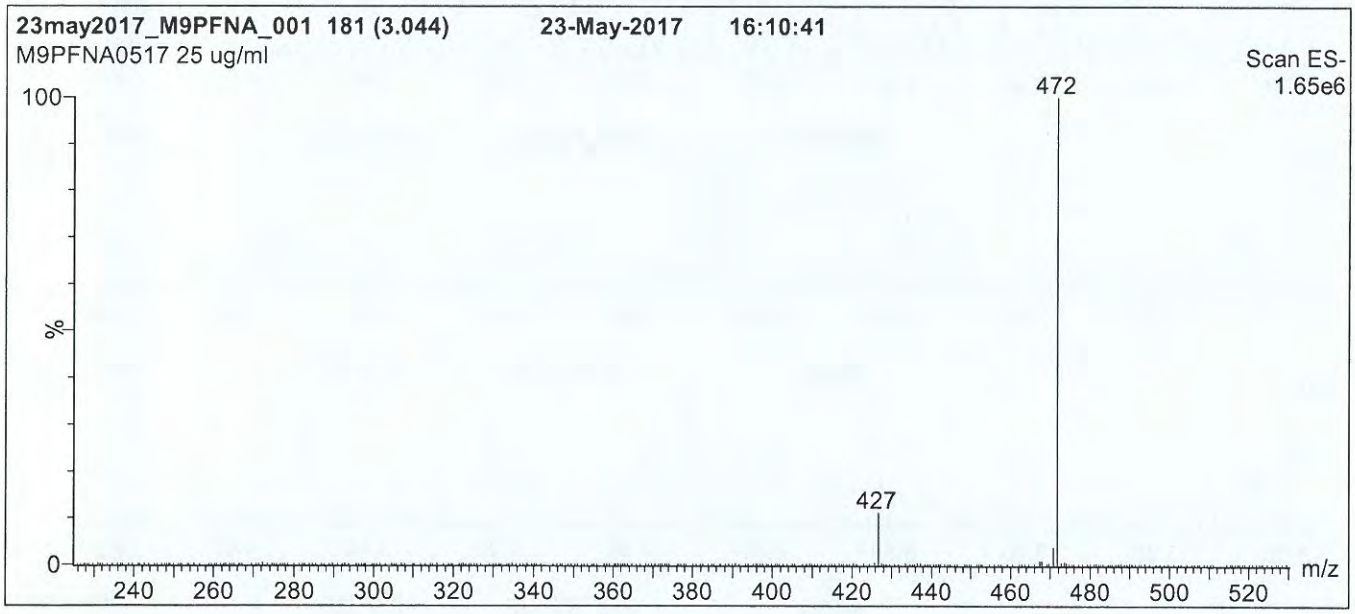
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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18L2024

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

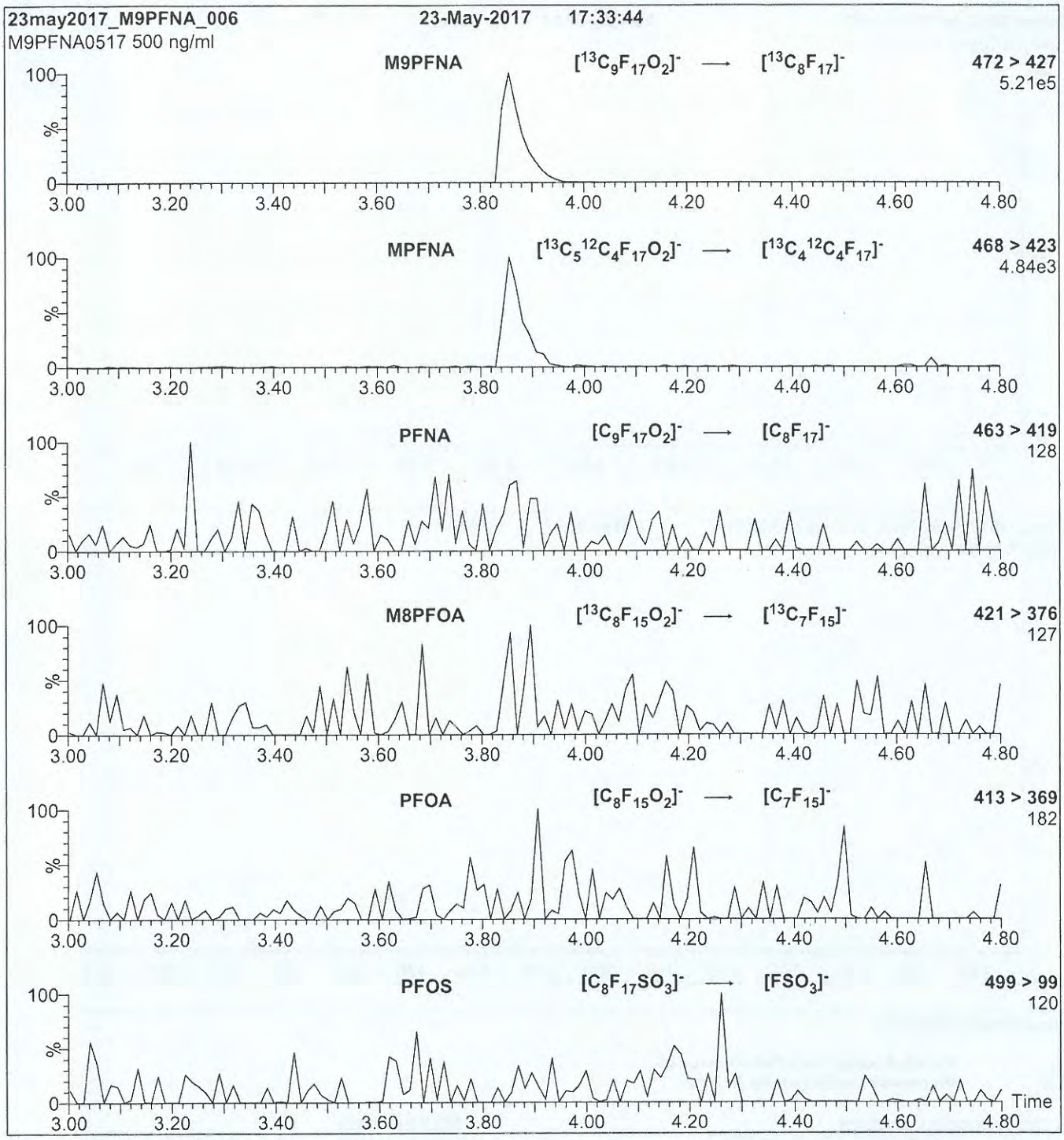
MS Parameters

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

18L2024

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

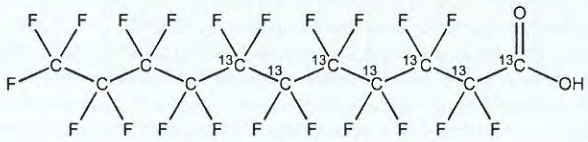
Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 11

18L2025

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M7PFUdA	**LOT NUMBER:**	M7PFUdA0918
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 (1,2,3,4,5,6,7-$^{13}C_7$)
LAST TESTED: (mm/dd/yyyy)	09/20/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/20/2023		
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:** 09/27/2018 (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

18L2025

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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.

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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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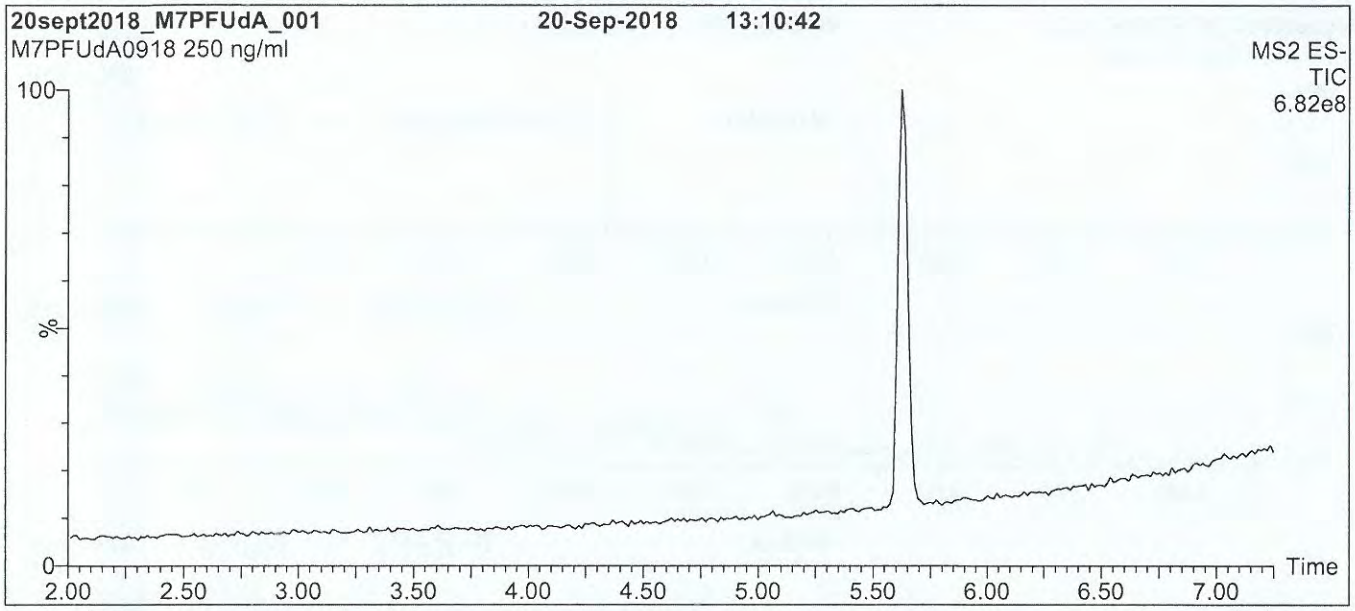
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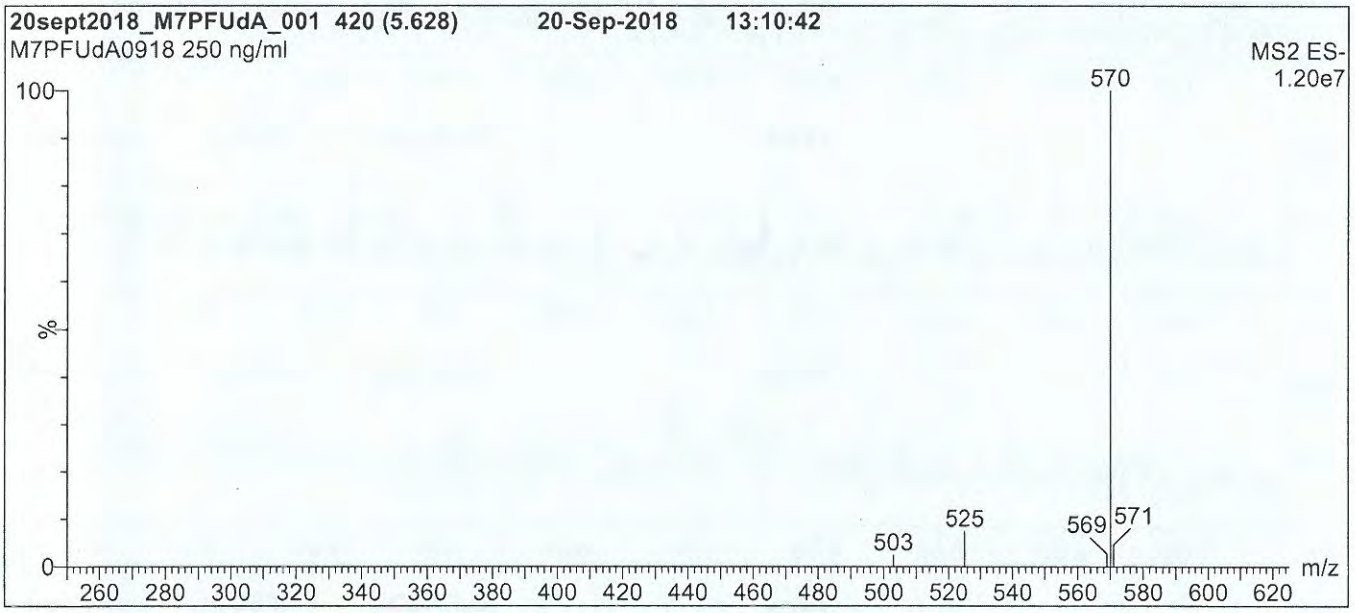
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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18L2025

Figure 1: **M7PFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

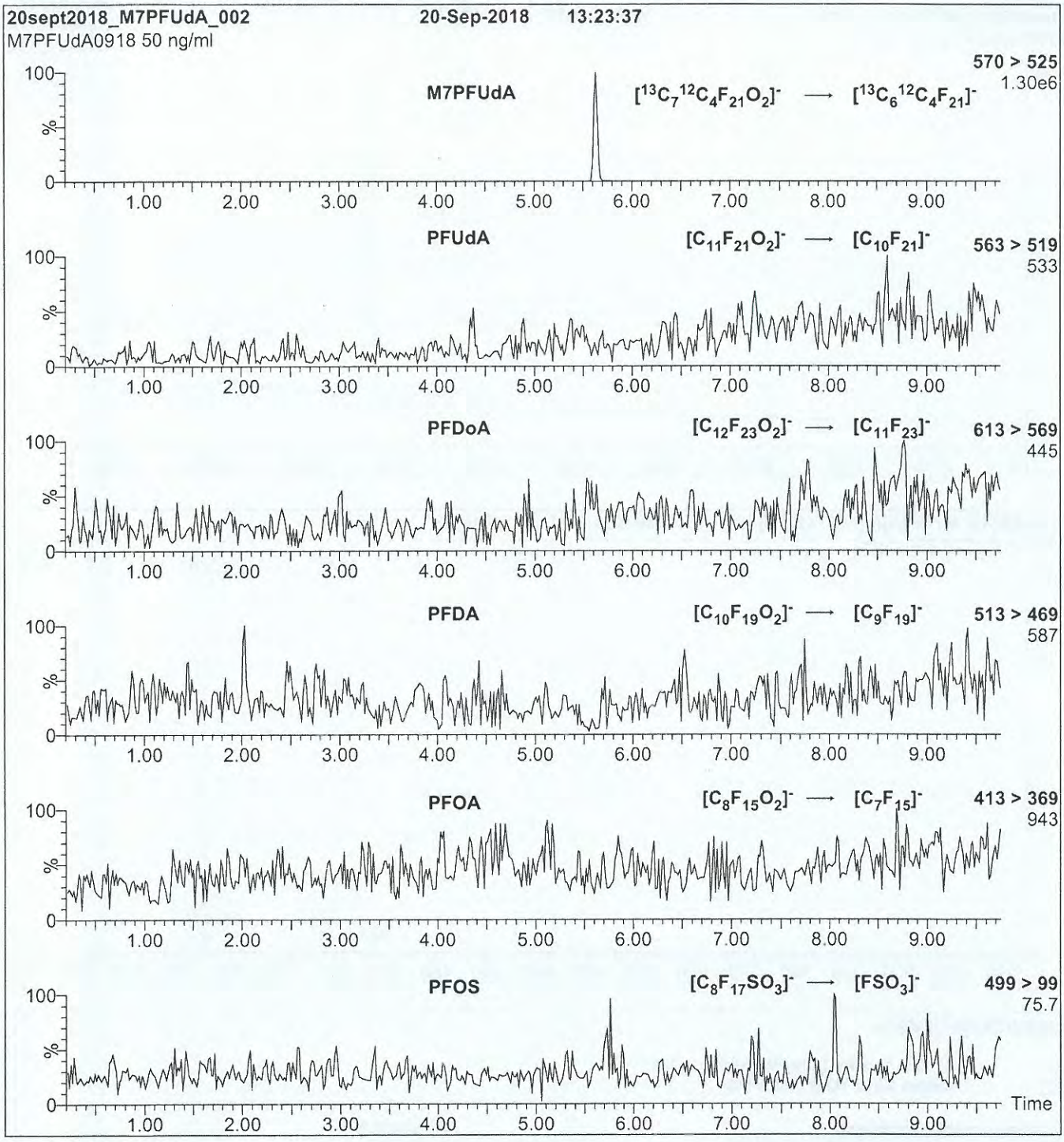
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

18L2025

Figure 2: **M7PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M7PFUdA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

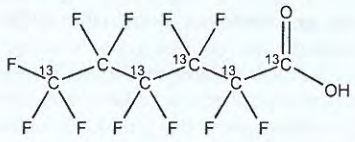
Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 12

18L2026

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M5PFHxA	**LOT NUMBER:**	M5PFHxA0918
COMPOUND:	Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid		
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)	09/27/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/27/2023		
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:** 10/01/2018 (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

18L2026

INTENDED USE:

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HANDLING:

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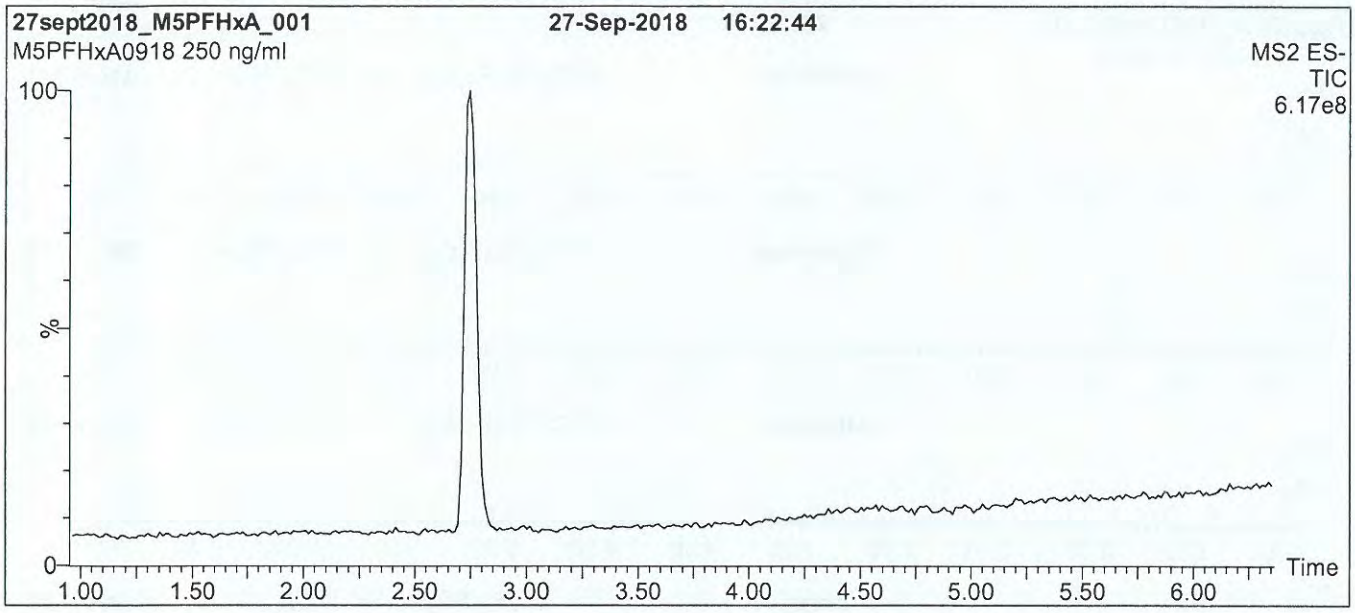
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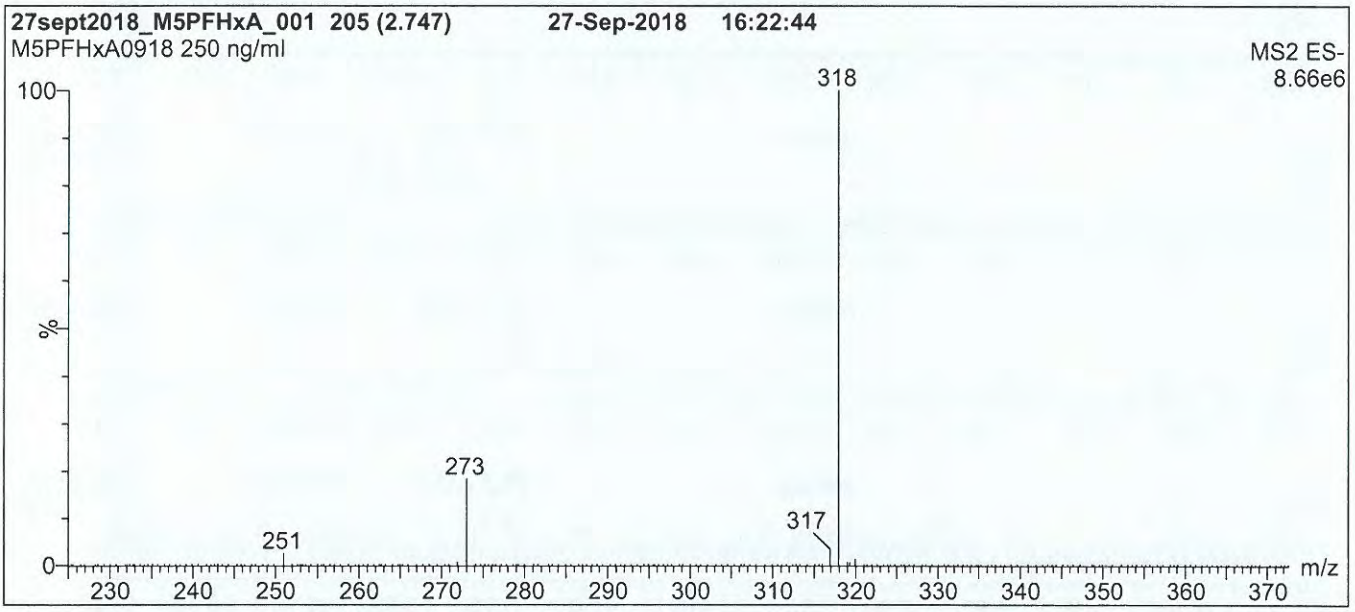
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18L2026

Figure 1: **M5PFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

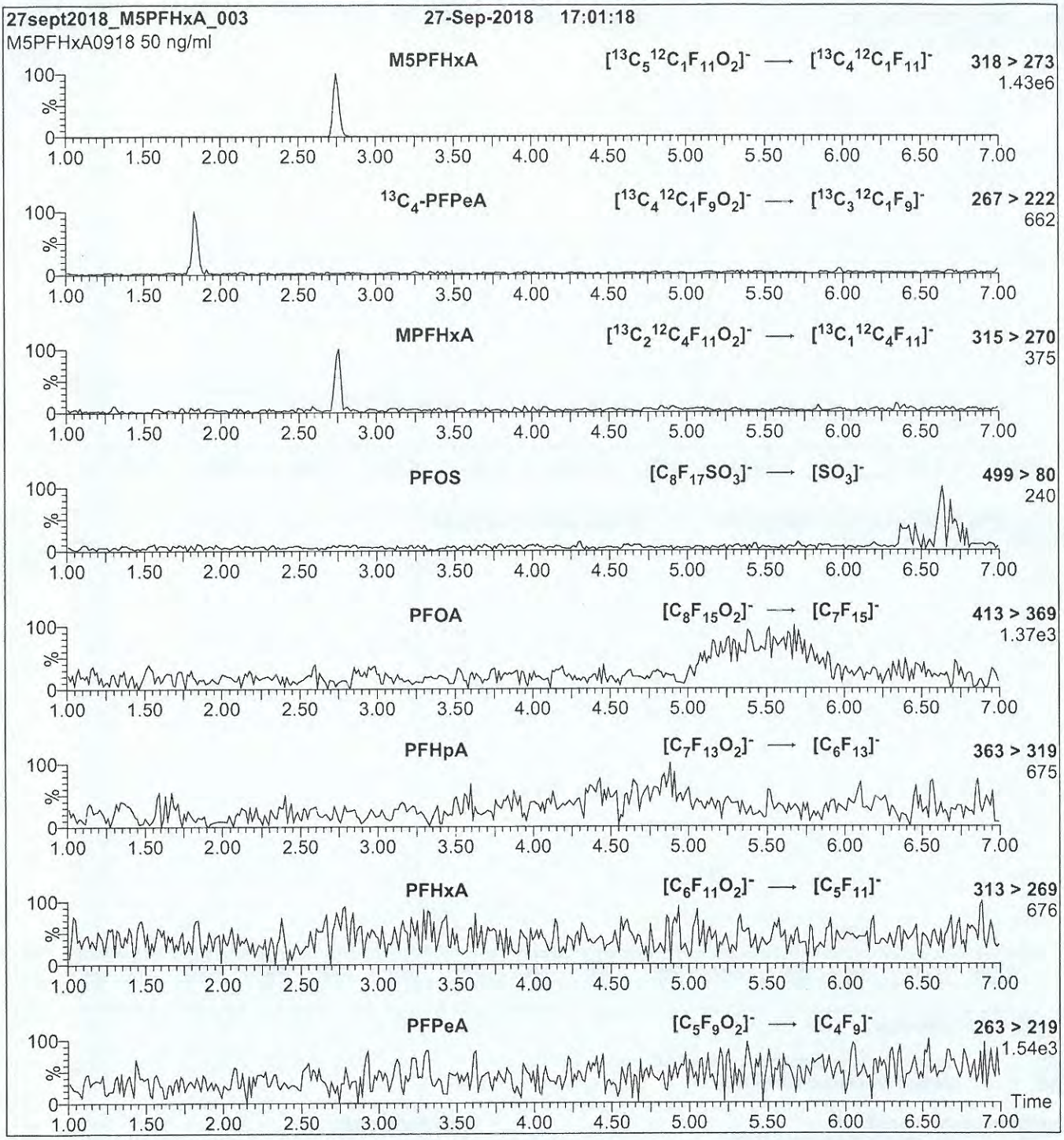
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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Figure 2: **M5PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M5PFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 8

18L2028

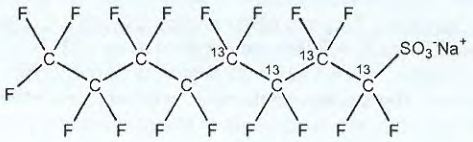
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0918

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 ($1,2,3,4\text{-}^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	09/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/11/2023		
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% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/14/2018 (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

18L2028

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.

HANDLING:

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:

Our products are synthesized using single-product unambiguous routes whenever possible. 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. 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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

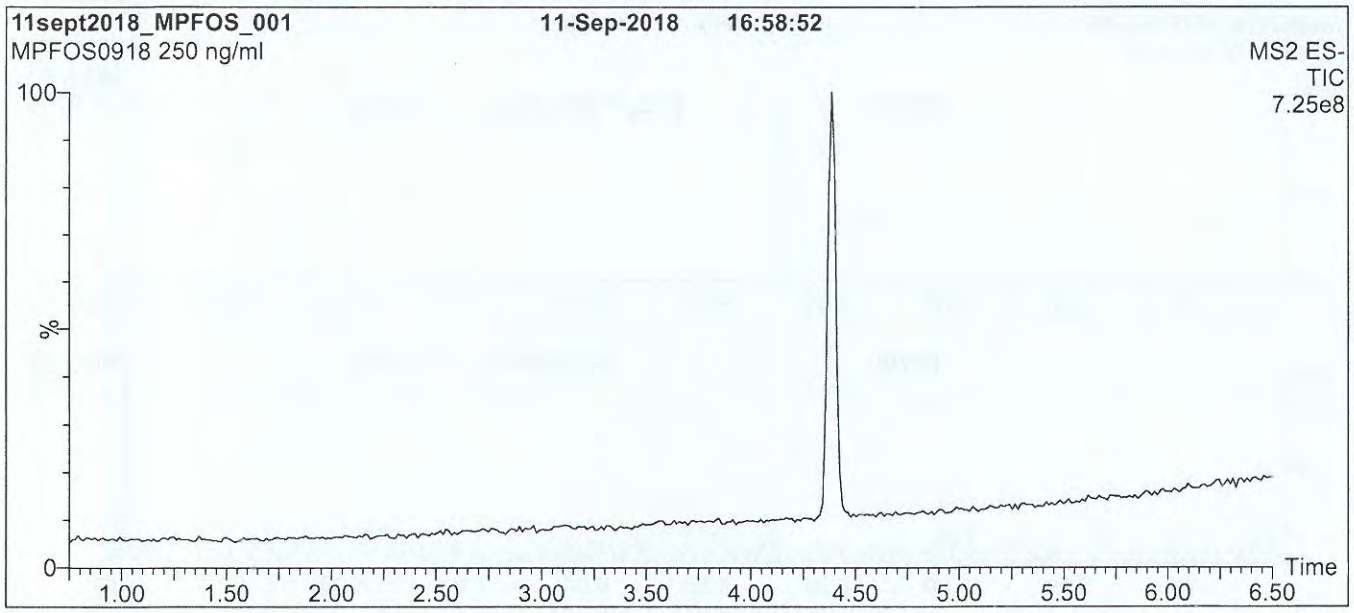
CALA Testing Accreditation No. A 1226

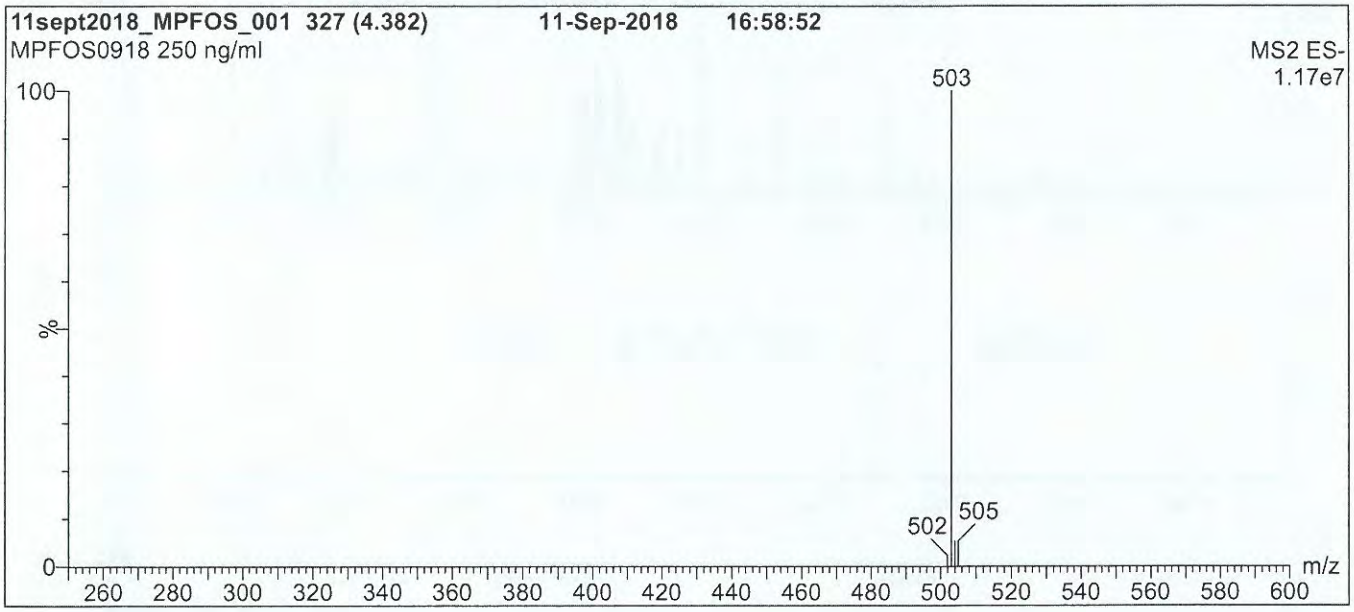
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18L2028

Figure 1: **MPFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

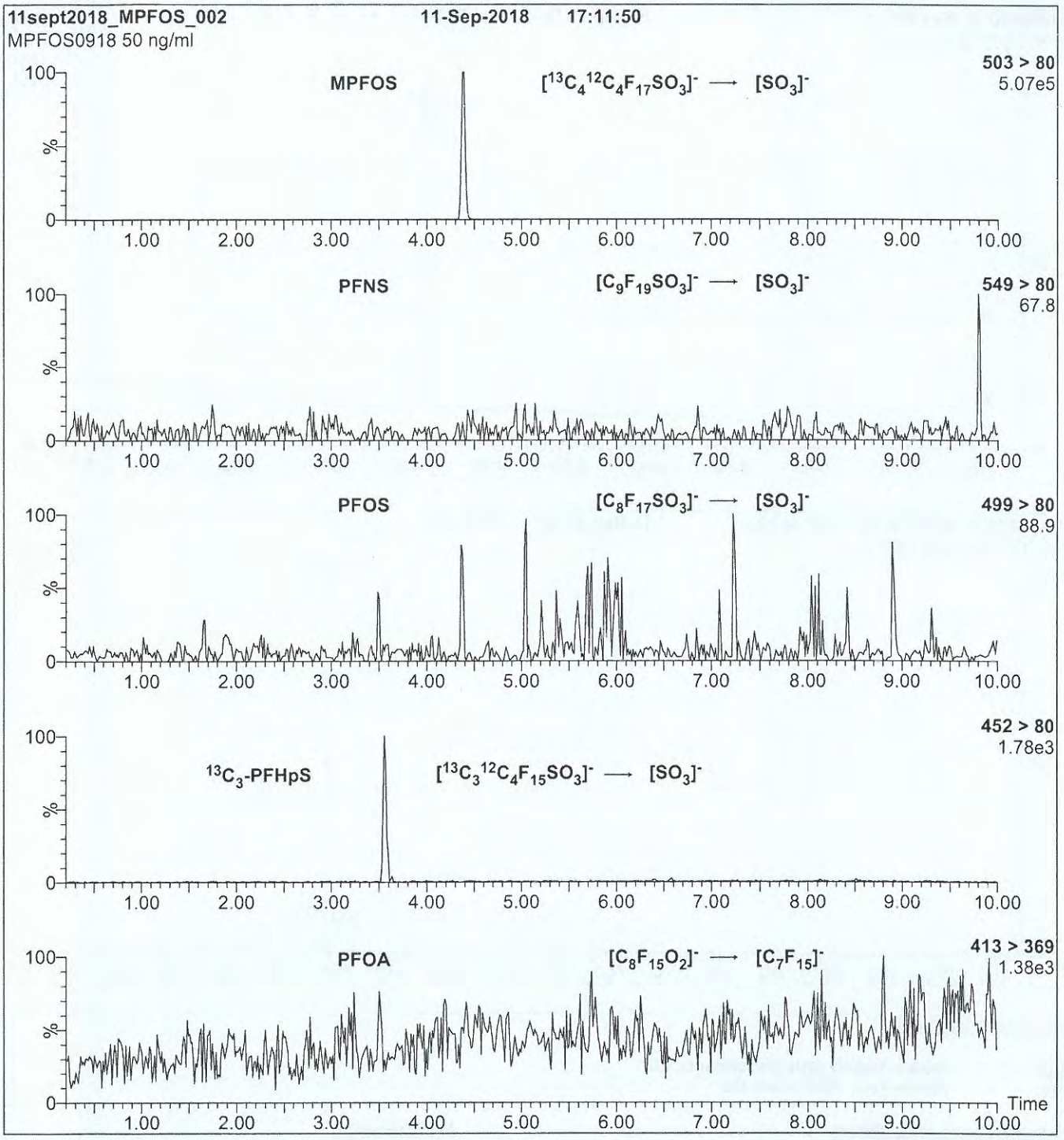
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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Figure 2: **MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.99e-3
Collision Energy (eV) = 42

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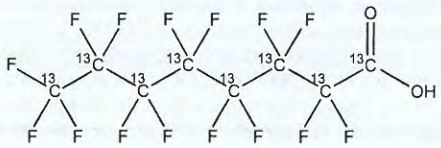
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOA
COMPOUND: Perfluoro-n-[$^{13}C_8$]octanoic acid

LOT NUMBER: M8PFOA0618

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)	06/29/2018		
EXPIRY DATE: (mm/dd/yyyy)	06/29/2023		
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 ~ 1.9% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/03/2018 (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

1812029

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where x is expressed as a relative standard uncertainty of the individual parameter.

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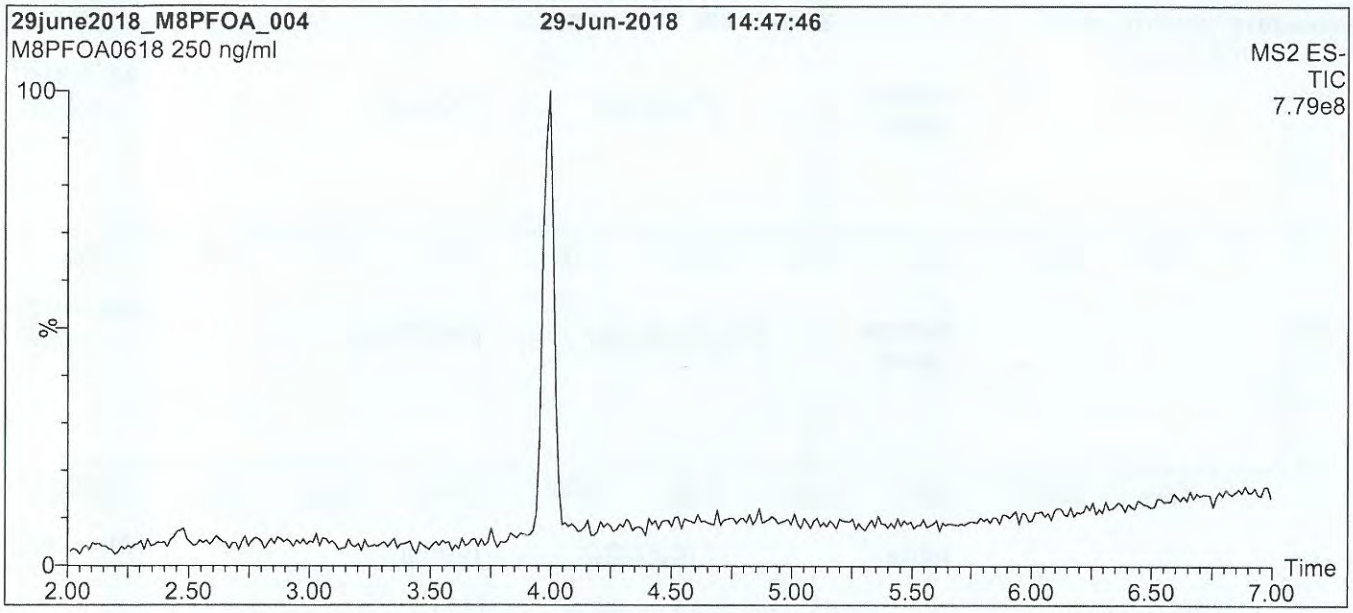
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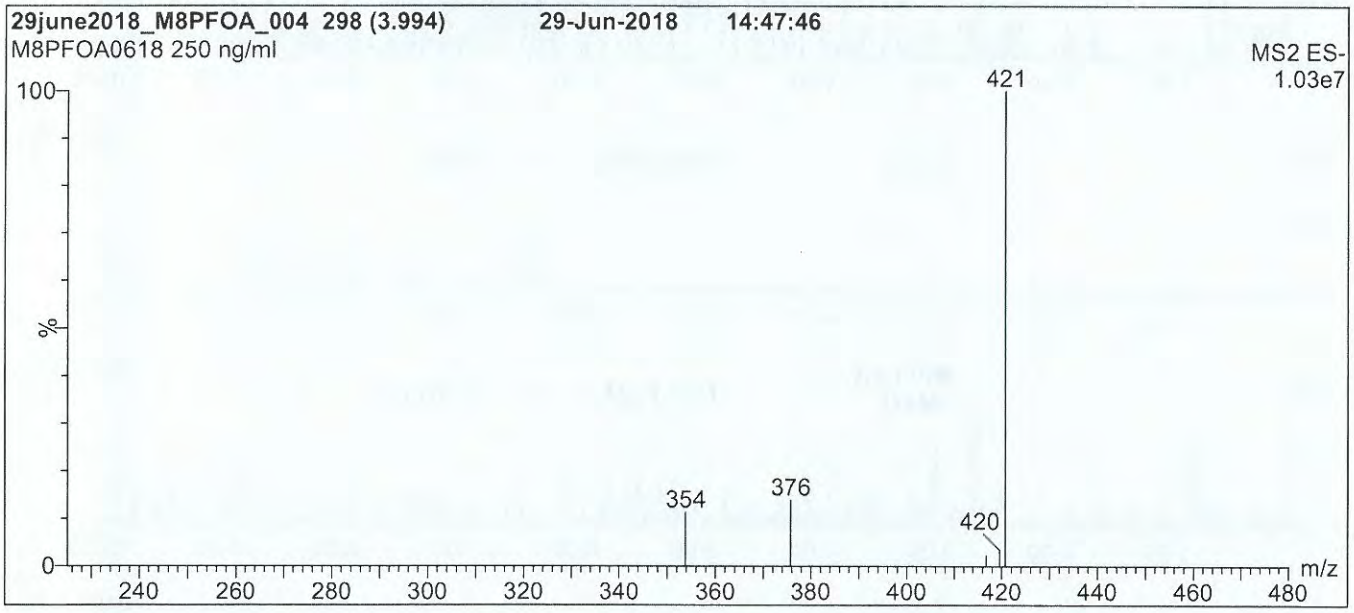
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1812029

Figure 1: **M8PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

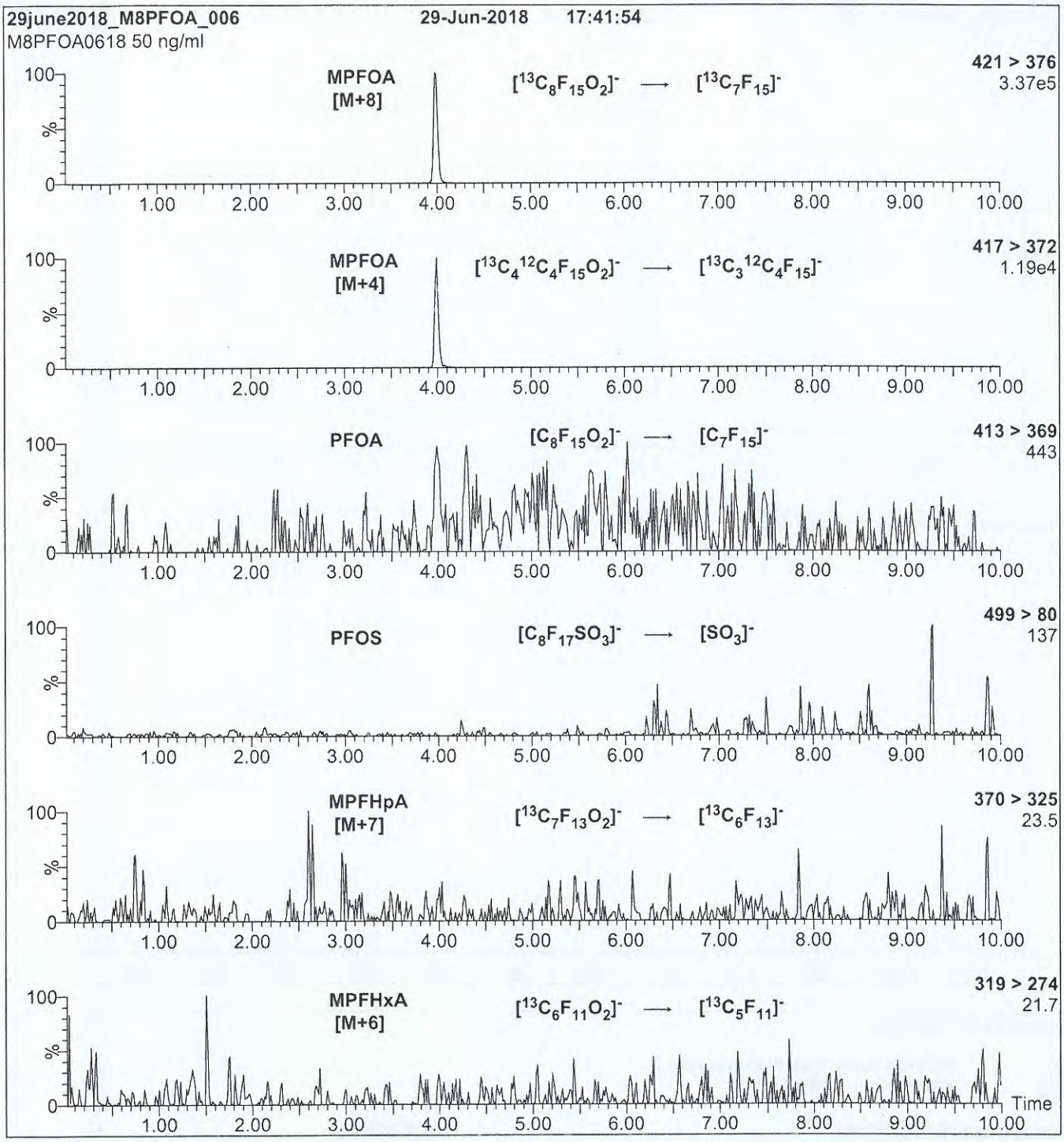
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 14.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

1812029

Figure 2: **M8PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8PFOA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 8

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"SAOA-B05-GW","537 MOD","RES","1901857-01","Vista","375-95-
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1","PFOA","1.01","ug/kg","J","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
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1","PFNA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","1763-23-
1","PFOS","16.0","ug/kg","","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","335-76-
2","PFDA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","2355-31-
9","NMeFOSAA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","2991-50-
6","NEtFOSAA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","2058-94-
8","PFUnA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","307-55-
1","PFDoA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","72629-94-
8","PFTrDA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","376-06-
7","PFTeDA","0.995","ug/kg","U","0.995","CRDL","","TRG","","","1.99","CRDL","YES","0.841"
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C3-PFBS","13C3-
PFBS","109","%R","","","CRDL","","IS","109","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C2-PFHxA","13C2-
PFHxA","86.0","%R","","","CRDL","","IS","86.0","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C4-PFHpA","13C4-
PFHpA","89.6","%R","","","CRDL","","IS","89.6","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C3-PFHxS","13C3-
PFHxS","106","%R","","","CRDL","","IS","106","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C2-PFOA","13C2-
PFOA","85.6","%R","","","CRDL","","IS","85.6","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C5-PFNA","13C5-
PFNA","75.7","%R","","","CRDL","","IS","75.7","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C8-PFOS","13C8-
PFOS","88.2","%R","","","CRDL","","IS","88.2","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C2-PFDA","13C2-
PFDA","67.2","%R","","","CRDL","","IS","67.2","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","d3-MeFOSAA","d3-
MeFOSAA","80.1","%R","","","CRDL","","IS","80.1","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","d5-EtFOSAA","d5-
EtFOSAA","80.1","%R","","","CRDL","","IS","80.1","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C2-PFUnA","13C2-
PFUnA","70.2","%R","","","CRDL","","IS","70.2","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C2-PFDoA","13C2-
PFDoA","74.8","%R","","","CRDL","","IS","74.8","","","CRDL","",""
"SAOA-B09-SO-1-1.5","537 MOD","RES","1901857-02","Vista","13C2-PFTeDA","13C2-

PFTeDA","82.8","%R","","","CRDL","","IS","82.8","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","375-73-
5","PFBS","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","307-24-
4","PFHxA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","375-85-
9","PFHpA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","355-46-
4","PFHxS","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","335-67-
1","PFOA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","375-95-
1","PFNA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","1763-23-
1","PFOS","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","335-76-
2","PFDA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","2355-31-
9","NMeFOSAA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","2991-50-
6","NEtFOSAA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","2058-94-
8","PFUnA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","307-55-
1","PFDoA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","72629-94-
8","PFTrDA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","376-06-
7","PFTeDA","0.987","ug/kg","U","0.987","CRDL","","TRG","","","1.97","CRDL","YES","0.834"
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C3-PFBS","13C3-
PFBS","96.8","%R","","","CRDL","","IS","96.8","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C2-PFHxA","13C2-
PFHxA","84.6","%R","","","CRDL","","IS","84.6","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C4-PFHpA","13C4-
PFHpA","89.1","%R","","","CRDL","","IS","89.1","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C3-PFHxS","13C3-
PFHxS","91.8","%R","","","CRDL","","IS","91.8","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C2-PFOA","13C2-
PFOA","79.6","%R","","","CRDL","","IS","79.6","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C5-PFNA","13C5-
PFNA","71.4","%R","","","CRDL","","IS","71.4","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C8-PFOS","13C8-
PFOS","84.2","%R","","","CRDL","","IS","84.2","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C2-PFDA","13C2-
PFDA","62.3","%R","","","CRDL","","IS","62.3","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","d3-MeFOSAA","d3-
MeFOSAA","56.8","%R","","","CRDL","","IS","56.8","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","d5-EtFOSAA","d5-
EtFOSAA","59.4","%R","","","CRDL","","IS","59.4","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C2-PFUnA","13C2-
PFUnA","55.3","%R","","","CRDL","","IS","55.3","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C2-PFDoA","13C2-
PFDoA","54.4","%R","","","CRDL","","IS","54.4","","","CRDL","",""
"SAOA-B09-SO-20-20.5","537 MOD","RES","1901857-03","Vista","13C2-PFTeDA","13C2-

PFTeDA","66.7","%R","","","CRDL","","IS","66.7","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","375-73-
5","PFBS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","307-24-
4","PFHxA","0.00441","ug/L","J","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","375-85-
9","PFHpA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","355-46-
4","PFHxS","0.0154","ug/L","","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","335-67-
1","PFOA","0.00601","ug/L","J","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","375-95-
1","PFNA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","1763-23-
1","PFOS","0.0108","ug/L","Q","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","335-76-
2","PFDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","2355-31-
9","NMeFOSAA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","2991-50-
6","NEtFOSAA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","2058-94-
8","PFUnA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","307-55-
1","PFDoA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","72629-94-
8","PFTrDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","376-06-
7","PFTeDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00851","CRDL","YES","0.00291"
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C3-PFBS","13C3-
PFBS","100","%R","","","CRDL","","IS","100","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C2-PFHxA","13C2-
PFHxA","91.4","%R","","","CRDL","","IS","91.4","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C4-PFHpA","13C4-
PFHpA","97.8","%R","","","CRDL","","IS","97.8","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C3-PFHxS","13C3-
PFHxS","95.7","%R","","","CRDL","","IS","95.7","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C2-PFOA","13C2-
PFOA","92.8","%R","","","CRDL","","IS","92.8","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C5-PFNA","13C5-
PFNA","86.1","%R","","","CRDL","","IS","86.1","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C8-PFOS","13C8-
PFOS","95.7","%R","","","CRDL","","IS","95.7","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C2-PFDA","13C2-
PFDA","76.4","%R","","","CRDL","","IS","76.4","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","d3-MeFOSAA","d3-
MeFOSAA","76.9","%R","","","CRDL","","IS","76.9","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","d5-EtFOSAA","d5-
EtFOSAA","66.4","%R","","","CRDL","","IS","66.4","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C2-PFUnA","13C2-
PFUnA","68.6","%R","","","CRDL","","IS","68.6","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C2-PFDoA","13C2-
PFDoA","65.4","%R","","","CRDL","","IS","65.4","","","CRDL","",""
"SAOA-B09-GW","537 MOD","RES","1901857-04","Vista","13C2-PFTeDA","13C2-

PFTeDA","51.8","%R","","","CRDL","","IS","51.8","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","375-73-
5","PFBS","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","307-24-
4","PFHxA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","375-85-
9","PFHpA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","355-46-
4","PFHxS","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","335-67-
1","PFOA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","375-95-
1","PFNA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","1763-23-
1","PFOS","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","335-76-
2","PFDA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","2355-31-
9","NMeFOSAA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","2991-50-
6","NEtFOSAA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","2058-94-
8","PFUnA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","307-55-
1","PFDoA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","72629-94-
8","PFTrDA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","376-06-
7","PFTeDA","0.00417","ug/L","U","0.00417","CRDL","","TRG","","","0.00832","CRDL","YES","0.00285"
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C3-PFBS","13C3-
PFBS","102","%R","","","CRDL","","IS","102","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C2-PFHxA","13C2-
PFHxA","95.8","%R","","","CRDL","","IS","95.8","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C4-PFHpA","13C4-
PFHpA","103","%R","","","CRDL","","IS","103","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C3-PFHxS","13C3-
PFHxS","87.6","%R","","","CRDL","","IS","87.6","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C2-PFOA","13C2-
PFOA","97.5","%R","","","CRDL","","IS","97.5","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C5-PFNA","13C5-
PFNA","81.1","%R","","","CRDL","","IS","81.1","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C8-PFOS","13C8-
PFOS","96.2","%R","","","CRDL","","IS","96.2","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C2-PFDA","13C2-
PFDA","70.3","%R","","","CRDL","","IS","70.3","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","d3-MeFOSAA","d3-
MeFOSAA","65.0","%R","","","CRDL","","IS","65.0","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","d5-EtFOSAA","d5-
EtFOSAA","68.8","%R","","","CRDL","","IS","68.8","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C2-PFUnA","13C2-
PFUnA","58.3","%R","","","CRDL","","IS","58.3","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C2-PFDoA","13C2-
PFDoA","59.6","%R","","","CRDL","","IS","59.6","","","CRDL","",""
"FRB-06262019","537 MOD","RES","1901857-05","Vista","13C2-PFTeDA","13C2-

PFTeDA","80.8","%R","","","CRDL","","IS","80.8","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","375-73-
5","PFBS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","307-24-
4","PFHxA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","375-85-
9","PFHpA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","355-46-
4","PFHxS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","335-67-
1","PFOA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","375-95-
1","PFNA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","1763-23-
1","PFOS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","335-76-
2","PFDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","2355-31-
9","NMeFOSAA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","2991-50-
6","NEtFOSAA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","2058-94-
8","PFUnA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","307-55-
1","PFDoA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","72629-94-
8","PFTrDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","376-06-
7","PFTeDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00846","CRDL","YES","0.00290"
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C3-PFBS","13C3-
PFBS","107","%R","","","CRDL","","IS","107","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C2-PFHxA","13C2-
PFHxA","94.9","%R","","","CRDL","","IS","94.9","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C4-PFHpA","13C4-
PFHpA","99.6","%R","","","CRDL","","IS","99.6","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C3-PFHxS","13C3-
PFHxS","95.0","%R","","","CRDL","","IS","95.0","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C2-PFOA","13C2-
PFOA","96.9","%R","","","CRDL","","IS","96.9","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C5-PFNA","13C5-
PFNA","85.7","%R","","","CRDL","","IS","85.7","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C8-PFOS","13C8-
PFOS","96.1","%R","","","CRDL","","IS","96.1","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C2-PFDA","13C2-
PFDA","75.2","%R","","","CRDL","","IS","75.2","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","d3-MeFOSAA","d3-
MeFOSAA","52.3","%R","","","CRDL","","IS","52.3","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","d5-EtFOSAA","d5-
EtFOSAA","54.1","%R","","","CRDL","","IS","54.1","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C2-PFUnA","13C2-
PFUnA","57.8","%R","","","CRDL","","IS","57.8","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C2-PFDoA","13C2-
PFDoA","51.7","%R","","","CRDL","","IS","51.7","","","CRDL","",""
"EB-06262019","537 MOD","RES","1901857-06","Vista","13C2-PFTeDA","13C2-

PFTeDA","68.3","%R","","","CRDL","","IS","68.3","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","375-73-
5","PFBS","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","307-24-
4","PFHxA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","375-85-
9","PFHpA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","355-46-
4","PFHxS","1.41","ug/kg","J","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","335-67-
1","PFOA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","375-95-
1","PFNA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","1763-23-
1","PFOS","6.92","ug/kg","","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","335-76-
2","PFDA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","2355-31-
9","NMeFOSAA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","2991-50-
6","NEtFOSAA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","2058-94-
8","PFUnA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","307-55-
1","PFDoA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","72629-94-
8","PFTrDA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","376-06-
7","PFTeDA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.01","CRDL","YES","0.847"
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C3-PFBS","13C3-
PFBS","92.7","%R","","","CRDL","","IS","92.7","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C2-PFHxA","13C2-
PFHxA","91.6","%R","","","CRDL","","IS","91.6","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C4-PFHpA","13C4-
PFHpA","93.0","%R","","","CRDL","","IS","93.0","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C3-PFHxS","13C3-
PFHxS","87.1","%R","","","CRDL","","IS","87.1","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C2-PFOA","13C2-
PFOA","88.1","%R","","","CRDL","","IS","88.1","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C5-PFNA","13C5-
PFNA","76.7","%R","","","CRDL","","IS","76.7","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C8-PFOS","13C8-
PFOS","88.6","%R","","","CRDL","","IS","88.6","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C2-PFDA","13C2-
PFDA","63.9","%R","","","CRDL","","IS","63.9","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","d3-MeFOSAA","d3-
MeFOSAA","70.0","%R","","","CRDL","","IS","70.0","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","d5-EtFOSAA","d5-
EtFOSAA","66.4","%R","","","CRDL","","IS","66.4","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C2-PFUnA","13C2-
PFUnA","70.7","%R","","","CRDL","","IS","70.7","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C2-PFDoA","13C2-
PFDoA","69.1","%R","","","CRDL","","IS","69.1","","","CRDL","",""
"SAOA-B11-SO-1-1.5","537 MOD","RES","1901857-07","Vista","13C2-PFTeDA","13C2-

PFTeDA","72.2","%R","","","CRDL","","IS","72.2","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","375-73-
5","PFBS","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","307-24-
4","PFHxA","4.55","ug/kg","","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","375-85-
9","PFHpA","2.05","ug/kg","","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","355-46-
4","PFHxS","9.60","ug/kg","","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","335-67-
1","PFOA","3.08","ug/kg","","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","375-95-
1","PFNA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","1763-23-
1","PFOS","2.80","ug/kg","","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","335-76-
2","PFDA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","2355-31-
9","NMeFOSAA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","2991-50-
6","NEtFOSAA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","2058-94-
8","PFUnA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","307-55-
1","PFDoA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","72629-94-
8","PFTrDA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","376-06-
7","PFTeDA","0.970","ug/kg","U","0.970","CRDL","","TRG","","","1.94","CRDL","YES","0.819"
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C3-PFBS","13C3-
PFBS","95.0","%R","","","CRDL","","IS","95.0","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C2-PFHxA","13C2-
PFHxA","90.9","%R","","","CRDL","","IS","90.9","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C4-PFHpA","13C4-
PFHpA","93.1","%R","","","CRDL","","IS","93.1","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C3-PFHxS","13C3-
PFHxS","96.6","%R","","","CRDL","","IS","96.6","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C2-PFOA","13C2-
PFOA","84.3","%R","","","CRDL","","IS","84.3","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C5-PFNA","13C5-
PFNA","74.5","%R","","","CRDL","","IS","74.5","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C8-PFOS","13C8-
PFOS","78.4","%R","","","CRDL","","IS","78.4","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C2-PFDA","13C2-
PFDA","61.4","%R","","","CRDL","","IS","61.4","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","d3-MeFOSAA","d3-
MeFOSAA","64.7","%R","","","CRDL","","IS","64.7","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","d5-EtFOSAA","d5-
EtFOSAA","58.7","%R","","","CRDL","","IS","58.7","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C2-PFUnA","13C2-
PFUnA","56.8","%R","","","CRDL","","IS","56.8","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C2-PFDoA","13C2-
PFDoA","59.1","%R","","","CRDL","","IS","59.1","","","CRDL","",""
"SAOA-B11-SO-20-20.5","537 MOD","RES","1901857-08","Vista","13C2-PFTeDA","13C2-

PFTeDA","74.2","%R","","","CRDL","","IS","74.2","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","375-73-
5","PFBS","0.00465","ug/L","J","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","307-24-
4","PFHxA","0.00695","ug/L","J","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","375-85-
9","PFHpA","0.00412","ug/L","J","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","355-46-
4","PFHxS","0.0501","ug/L","","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","335-67-
1","PFOA","0.0612","ug/L","","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","375-95-
1","PFNA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","1763-23-
1","PFOS","0.00941","ug/L","","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","335-76-
2","PFDA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","2355-31-
9","NMeFOSAA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","2991-50-
6","NEtFOSAA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","2058-94-
8","PFUnA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","307-55-
1","PFDoA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","72629-94-
8","PFTrDA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","376-06-
7","PFTeDA","0.00403","ug/L","U","0.00403","CRDL","","TRG","","","0.00809","CRDL","YES","0.00277"
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C3-PFBS","13C3-
PFBS","90.0","%R","","","CRDL","","IS","90.0","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C2-PFHxA","13C2-
PFHxA","94.7","%R","","","CRDL","","IS","94.7","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C4-PFHpA","13C4-
PFHpA","93.0","%R","","","CRDL","","IS","93.0","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C3-PFHxS","13C3-
PFHxS","84.9","%R","","","CRDL","","IS","84.9","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C2-PFOA","13C2-
PFOA","91.9","%R","","","CRDL","","IS","91.9","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C5-PFNA","13C5-
PFNA","84.6","%R","","","CRDL","","IS","84.6","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C8-PFOS","13C8-
PFOS","90.9","%R","","","CRDL","","IS","90.9","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C2-PFDA","13C2-
PFDA","71.0","%R","","","CRDL","","IS","71.0","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","d3-MeFOSAA","d3-
MeFOSAA","67.0","%R","","","CRDL","","IS","67.0","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","d5-EtFOSAA","d5-
EtFOSAA","61.7","%R","","","CRDL","","IS","61.7","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C2-PFUnA","13C2-
PFUnA","65.4","%R","","","CRDL","","IS","65.4","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C2-PFDoA","13C2-
PFDoA","62.9","%R","","","CRDL","","IS","62.9","","","CRDL","",""
"SAOA-B11-GW","537 MOD","RES","1901857-09","Vista","13C2-PFTeDA","13C2-

PFTeDA","47.2","%R","H","","CRDL","","IS","47.2","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","375-73-
5","PFBS","0.958","ug/kg","U","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","307-24-
4","PFHxA","9.94","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","375-85-
9","PFHpA","3.52","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","355-46-4","PFHxS","0.955","ug/kg","J,
Q","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","335-67-
1","PFOA","10.9","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","375-95-
1","PFNA","6.22","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","1763-23-
1","PFOS","19.9","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","335-76-
2","PFDA","7.29","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","2355-31-
9","NMeFOSAA","0.958","ug/kg","U","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","2991-50-
6","NEtFOSAA","0.958","ug/kg","U","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","2058-94-
8","PFUnA","1.97","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","307-55-
1","PFDoA","1.94","ug/kg","","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","72629-94-
8","PFTrDA","0.958","ug/kg","U","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","376-06-
7","PFTeDA","0.958","ug/kg","U","0.958","CRDL","","TRG","","","1.92","CRDL","YES","0.810"
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C3-PFBS","13C3-
PFBS","99.5","%R","","","CRDL","","IS","99.5","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C2-PFHxA","13C2-
PFHxA","89.4","%R","","","CRDL","","IS","89.4","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C4-PFHpA","13C4-
PFHpA","95.3","%R","","","CRDL","","IS","95.3","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C3-PFHxS","13C3-
PFHxS","94.8","%R","","","CRDL","","IS","94.8","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C2-PFOA","13C2-
PFOA","86.9","%R","","","CRDL","","IS","86.9","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C5-PFNA","13C5-
PFNA","78.6","%R","","","CRDL","","IS","78.6","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C8-PFOS","13C8-
PFOS","83.3","%R","","","CRDL","","IS","83.3","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C2-PFDA","13C2-
PFDA","69.0","%R","","","CRDL","","IS","69.0","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","d3-MeFOSAA","d3-
MeFOSAA","59.5","%R","","","CRDL","","IS","59.5","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","d5-EtFOSAA","d5-
EtFOSAA","63.4","%R","","","CRDL","","IS","63.4","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C2-PFUnA","13C2-
PFUnA","63.6","%R","","","CRDL","","IS","63.6","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C2-PFDoA","13C2-
PFDoA","69.1","%R","","","CRDL","","IS","69.1","","","CRDL","",""
"SAOA-B08-SO-1-1.5","537 MOD","RES","1901857-10","Vista","13C2-PFTeDA","13C2-

PFTeDA","69.6","%R","","","CRDL","","IS","69.6","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","375-73-
5","PFBS","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","307-24-
4","PFHxA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","375-85-
9","PFHpA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","355-46-
4","PFHxS","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","335-67-
1","PFOA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","375-95-
1","PFNA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","1763-23-
1","PFOS","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","335-76-
2","PFDA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","2355-31-
9","NMeFOSAA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","2991-50-
6","NEtFOSAA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","2058-94-
8","PFUnA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","307-55-
1","PFDoA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","72629-94-
8","PFTrDA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","376-06-
7","PFTeDA","0.00427","ug/L","U","0.00427","CRDL","","TRG","","","0.00852","CRDL","YES","0.00292"
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C3-PFBS","13C3-
PFBS","110","%R","","","CRDL","","IS","110","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C2-PFHxA","13C2-
PFHxA","94.2","%R","","","CRDL","","IS","94.2","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C4-PFHpA","13C4-
PFHpA","98.7","%R","","","CRDL","","IS","98.7","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C3-PFHxS","13C3-
PFHxS","93.3","%R","","","CRDL","","IS","93.3","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C2-PFOA","13C2-
PFOA","95.1","%R","","","CRDL","","IS","95.1","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C5-PFNA","13C5-
PFNA","87.3","%R","","","CRDL","","IS","87.3","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C8-PFOS","13C8-
PFOS","91.5","%R","","","CRDL","","IS","91.5","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C2-PFDA","13C2-
PFDA","77.4","%R","","","CRDL","","IS","77.4","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","d3-MeFOSAA","d3-
MeFOSAA","61.4","%R","","","CRDL","","IS","61.4","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","d5-EtFOSAA","d5-
EtFOSAA","74.8","%R","","","CRDL","","IS","74.8","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C2-PFUnA","13C2-
PFUnA","60.6","%R","","","CRDL","","IS","60.6","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C2-PFDoA","13C2-
PFDoA","62.0","%R","","","CRDL","","IS","62.0","","","CRDL","",""
"EB-06272019","537 MOD","RES","1901857-11","Vista","13C2-PFTeDA","13C2-

PFTeDA","81.4","%R","","","CRDL","","IS","81.4","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","375-73-
5","PFBS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","307-24-
4","PFHxA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","375-85-
9","PFHpA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","355-46-
4","PFHxS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","335-67-
1","PFOA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","375-95-
1","PFNA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","1763-23-
1","PFOS","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","335-76-
2","PFDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","2355-31-
9","NMeFOSAA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","2991-50-
6","NEtFOSAA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","2058-94-
8","PFUnA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","307-55-
1","PFDoA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","72629-94-
8","PFTrDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","376-06-
7","PFTeDA","0.00424","ug/L","U","0.00424","CRDL","","TRG","","","0.00850","CRDL","YES","0.00291"
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C3-PFBS","13C3-
PFBS","109","%R","","","CRDL","","IS","109","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C2-PFHxA","13C2-
PFHxA","99.2","%R","","","CRDL","","IS","99.2","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C4-PFHpA","13C4-
PFHpA","98.2","%R","","","CRDL","","IS","98.2","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C3-PFHxS","13C3-
PFHxS","95.9","%R","","","CRDL","","IS","95.9","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C2-PFOA","13C2-
PFOA","101","%R","","","CRDL","","IS","101","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C5-PFNA","13C5-
PFNA","85.6","%R","","","CRDL","","IS","85.6","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C8-PFOS","13C8-
PFOS","95.1","%R","","","CRDL","","IS","95.1","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C2-PFDA","13C2-
PFDA","70.0","%R","","","CRDL","","IS","70.0","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","d3-MeFOSAA","d3-
MeFOSAA","54.4","%R","","","CRDL","","IS","54.4","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","d5-EtFOSAA","d5-
EtFOSAA","54.5","%R","","","CRDL","","IS","54.5","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C2-PFUnA","13C2-
PFUnA","56.3","%R","","","CRDL","","IS","56.3","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C2-PFDoA","13C2-
PFDoA","54.5","%R","","","CRDL","","IS","54.5","","","CRDL","",""
"FRB-06272019","537 MOD","RES","1901857-12","Vista","13C2-PFTeDA","13C2-

PFTeDA","67.5","%R","","","CRDL","","IS","67.5","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","375-73-
5","PFBS","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","307-24-
4","PFHxA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","375-85-
9","PFHpA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","355-46-
4","PFHxS","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","335-67-
1","PFOA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","375-95-
1","PFNA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","1763-23-
1","PFOS","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","335-76-
2","PFDA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","2355-31-
9","NMeFOSAA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","2991-50-
6","NEtFOSAA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","2058-94-
8","PFUnA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","307-55-
1","PFDoA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","72629-94-
8","PFTrDA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","376-06-
7","PFTeDA","0.00200","ug/L","U","0.00200","CRDL","","TRG","","","0.00400","CRDL","YES","0.00137"
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C3-PFBS","13C3-
PFBS","111","%R","","","CRDL","","IS","111","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C2-PFHxA","13C2-
PFHxA","96.7","%R","","","CRDL","","IS","96.7","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C4-PFHpA","13C4-
PFHpA","89.2","%R","","","CRDL","","IS","89.2","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C3-PFHxS","13C3-
PFHxS","104","%R","","","CRDL","","IS","104","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C2-PFOA","13C2-
PFOA","89.4","%R","","","CRDL","","IS","89.4","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C5-PFNA","13C5-
PFNA","76.1","%R","","","CRDL","","IS","76.1","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C8-PFOS","13C8-
PFOS","86.9","%R","","","CRDL","","IS","86.9","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C2-PFDA","13C2-
PFDA","70.3","%R","","","CRDL","","IS","70.3","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","d3-MeFOSAA","d3-
MeFOSAA","65.7","%R","","","CRDL","","IS","65.7","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","d5-EtFOSAA","d5-
EtFOSAA","66.4","%R","","","CRDL","","IS","66.4","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C2-PFUnA","13C2-
PFUnA","68.4","%R","","","CRDL","","IS","68.4","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C2-PFDoA","13C2-
PFDoA","56.2","%R","","","CRDL","","IS","56.2","","","CRDL","",""
"B9G0050-BLK1","537 MOD","RES","B9G0050-BLK1","Vista","13C2-PFTeDA","13C2-

PFTeDA","39.8","%R","H","","CRDL","","IS","39.8","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","375-73-
5","PFBS","0.0443","ug/L","","0.00200","CRDL","","SPK","111","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","307-24-
4","PFHxA","0.0455","ug/L","","0.00200","CRDL","","SPK","114","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","375-85-
9","PFHpA","0.0406","ug/L","","0.00200","CRDL","","SPK","102","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","355-46-
4","PFHxS","0.0510","ug/L","","0.00200","CRDL","","SPK","127","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","335-67-
1","PFOA","0.0418","ug/L","","0.00200","CRDL","","SPK","104","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","375-95-
1","PFNA","0.0417","ug/L","","0.00200","CRDL","","SPK","104","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","1763-23-
1","PFOS","0.0378","ug/L","","0.00200","CRDL","","SPK","94.4","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","335-76-
2","PFDA","0.0442","ug/L","","0.00200","CRDL","","SPK","110","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","2355-31-
9","NMeFOSAA","0.0415","ug/L","","0.00200","CRDL","","SPK","104","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","2991-50-
6","NEtFOSAA","0.0417","ug/L","","0.00200","CRDL","","SPK","104","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","2058-94-
8","PFUnA","0.0437","ug/L","","0.00200","CRDL","","SPK","109","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","307-55-
1","PFDoA","0.0440","ug/L","","0.00200","CRDL","","SPK","110","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","72629-94-
8","PFTrDA","0.0376","ug/L","","0.00200","CRDL","","SPK","94.1","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","376-06-
7","PFTeDA","0.0443","ug/L","","0.00200","CRDL","","SPK","111","","0.00400","CRDL","YES","0.00137"
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C3-PFBS","13C3-
PFBS","112","%R","","","CRDL","","IS","112","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C2-PFHxA","13C2-
PFHxA","92.0","%R","","","CRDL","","IS","92.0","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C4-PFHpA","13C4-
PFHpA","101","%R","","","CRDL","","IS","101","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C3-PFHxS","13C3-
PFHxS","93.7","%R","","","CRDL","","IS","93.7","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C2-PFOA","13C2-
PFOA","88.1","%R","","","CRDL","","IS","88.1","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C5-PFNA","13C5-
PFNA","73.3","%R","","","CRDL","","IS","73.3","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C8-PFOS","13C8-
PFOS","75.4","%R","","","CRDL","","IS","75.4","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C2-PFDA","13C2-
PFDA","69.5","%R","","","CRDL","","IS","69.5","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","d3-MeFOSAA","d3-
MeFOSAA","64.0","%R","","","CRDL","","IS","64.0","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","d5-EtFOSAA","d5-
EtFOSAA","62.7","%R","","","CRDL","","IS","62.7","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C2-PFUnA","13C2-
PFUnA","57.7","%R","","","CRDL","","IS","57.7","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C2-PFDoA","13C2-
PFDoA","46.4","%R","H","","CRDL","","IS","46.4","","","CRDL","",""
"B9G0050-BS1","537 MOD","RES","B9G0050-BS1","Vista","13C2-PFTeDA","13C2-

PFTeDA","37.9","%R","H","","CRDL","","IS","37.9","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","375-73-
5","PFBS","0.0455","ug/L","","0.00200","CRDL","","SPK","114","2.83","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","307-24-
4","PFHxA","0.0438","ug/L","","0.00200","CRDL","","SPK","110","3.68","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","375-85-
9","PFHpA","0.0435","ug/L","","0.00200","CRDL","","SPK","109","6.95","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","355-46-
4","PFHxS","0.0466","ug/L","","0.00200","CRDL","","SPK","116","8.95","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","335-67-
1","PFOA","0.0425","ug/L","","0.00200","CRDL","","SPK","106","1.84","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","375-95-
1","PFNA","0.0428","ug/L","","0.00200","CRDL","","SPK","107","2.76","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","1763-23-
1","PFOS","0.0434","ug/L","","0.00200","CRDL","","SPK","109","13.9","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","335-76-
2","PFDA","0.0449","ug/L","","0.00200","CRDL","","SPK","112","1.48","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","2355-31-
9","NMeFOSAA","0.0423","ug/L","","0.00200","CRDL","","SPK","106","1.91","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","2991-50-
6","NEtFOSAA","0.0429","ug/L","","0.00200","CRDL","","SPK","107","2.89","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","2058-94-
8","PFUnA","0.0466","ug/L","","0.00200","CRDL","","SPK","117","6.44","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","307-55-
1","PFDoA","0.0446","ug/L","","0.00200","CRDL","","SPK","111","1.28","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","72629-94-
8","PFTrDA","0.0376","ug/L","","0.00200","CRDL","","SPK","93.9","0.216","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","376-06-
7","PFTeDA","0.0421","ug/L","","0.00200","CRDL","","SPK","105","5.13","0.00400","CRDL","YES","0.00137"
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C3-PFBS","13C3-
PFBS","103","%R","","","CRDL","","IS","103","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C2-PFHxA","13C2-
PFHxA","95.7","%R","","","CRDL","","IS","95.7","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C4-PFHpA","13C4-
PFHpA","92.8","%R","","","CRDL","","IS","92.8","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C3-PFHxS","13C3-
PFHxS","93.7","%R","","","CRDL","","IS","93.7","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C2-PFOA","13C2-
PFOA","92.9","%R","","","CRDL","","IS","92.9","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C5-PFNA","13C5-
PFNA","79.6","%R","","","CRDL","","IS","79.6","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C8-PFOS","13C8-
PFOS","82.0","%R","","","CRDL","","IS","82.0","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C2-PFDA","13C2-
PFDA","74.9","%R","","","CRDL","","IS","74.9","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","d3-MeFOSAA","d3-
MeFOSAA","67.1","%R","","","CRDL","","IS","67.1","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","d5-EtFOSAA","d5-
EtFOSAA","67.2","%R","","","CRDL","","IS","67.2","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C2-PFUnA","13C2-
PFUnA","60.8","%R","","","CRDL","","IS","60.8","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C2-PFDoA","13C2-
PFDoA","51.6","%R","","","CRDL","","IS","51.6","","","CRDL","",""
"B9G0050-BSD1","537 MOD","RES","B9G0050-BSD1","Vista","13C2-PFTeDA","13C2-

PFTeDA","41.7","%R","H","","CRDL","","IS","41.7","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","375-73-
5","PFBS","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","307-24-
4","PFHxA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","375-85-
9","PFHpA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","355-46-
4","PFHxS","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","335-67-
1","PFOA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","375-95-
1","PFNA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","1763-23-
1","PFOS","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","335-76-
2","PFDA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","2355-31-
9","NMeFOSAA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","2991-50-
6","NEtFOSAA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","2058-94-
8","PFUnA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","307-55-
1","PFDoA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","72629-94-
8","PFTrDA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","376-06-
7","PFTeDA","1.00","ug/kg","U","1.00","CRDL","","TRG","","","2.00","CRDL","YES","0.845"
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C3-PFBS","13C3-
PFBS","92.1","%R","","","CRDL","","IS","92.1","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C2-PFHxA","13C2-
PFHxA","92.8","%R","","","CRDL","","IS","92.8","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C4-PFHpA","13C4-
PFHpA","92.2","%R","","","CRDL","","IS","92.2","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C3-PFHxS","13C3-
PFHxS","89.0","%R","","","CRDL","","IS","89.0","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C2-PFOA","13C2-
PFOA","81.4","%R","","","CRDL","","IS","81.4","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C5-PFNA","13C5-
PFNA","81.9","%R","","","CRDL","","IS","81.9","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C8-PFOS","13C8-
PFOS","76.8","%R","","","CRDL","","IS","76.8","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C2-PFDA","13C2-
PFDA","65.9","%R","","","CRDL","","IS","65.9","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","d3-MeFOSAA","d3-
MeFOSAA","55.4","%R","","","CRDL","","IS","55.4","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","d5-EtFOSAA","d5-
EtFOSAA","47.3","%R","H","","CRDL","","IS","47.3","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C2-PFUnA","13C2-
PFUnA","56.8","%R","","","CRDL","","IS","56.8","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C2-PFDoA","13C2-
PFDoA","55.4","%R","","","CRDL","","IS","55.4","","","CRDL","",""
"B9G0116-BLK1","537 MOD","RES","B9G0116-BLK1","Vista","13C2-PFTeDA","13C2-

PFTeDA","67.3","%R","","","CRDL","","IS","67.3","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","375-73-
5","PFBS","10.4","ug/kg","","1.00","CRDL","","SPK","104","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","307-24-
4","PFHxA","11.4","ug/kg","","1.00","CRDL","","SPK","114","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","375-85-
9","PFHpA","10.8","ug/kg","","1.00","CRDL","","SPK","108","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","355-46-
4","PFHxS","10.3","ug/kg","","1.00","CRDL","","SPK","103","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","335-67-
1","PFOA","10.8","ug/kg","","1.00","CRDL","","SPK","108","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","375-95-
1","PFNA","11.1","ug/kg","","1.00","CRDL","","SPK","111","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","1763-23-
1","PFOS","10.5","ug/kg","","1.00","CRDL","","SPK","105","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","335-76-
2","PFDA","11.5","ug/kg","","1.00","CRDL","","SPK","115","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","2355-31-
9","NMeFOSAA","9.66","ug/kg","","1.00","CRDL","","SPK","96.6","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","2991-50-
6","NEtFOSAA","13.4","ug/kg","H","1.00","CRDL","","SPK","134","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","2058-94-
8","PFUnA","11.7","ug/kg","","1.00","CRDL","","SPK","117","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","307-55-
1","PFDoA","11.5","ug/kg","","1.00","CRDL","","SPK","115","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","72629-94-
8","PFTrDA","12.3","ug/kg","","1.00","CRDL","","SPK","123","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","376-06-
7","PFTeDA","11.6","ug/kg","","1.00","CRDL","","SPK","116","","2.00","CRDL","YES","0.845"
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C3-PFBS","13C3-
PFBS","95.4","%R","","","CRDL","","IS","95.4","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C2-PFHxA","13C2-
PFHxA","90.3","%R","","","CRDL","","IS","90.3","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C4-PFHpA","13C4-
PFHpA","90.3","%R","","","CRDL","","IS","90.3","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C3-PFHxS","13C3-
PFHxS","99.5","%R","","","CRDL","","IS","99.5","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C2-PFOA","13C2-
PFOA","89.8","%R","","","CRDL","","IS","89.8","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C5-PFNA","13C5-
PFNA","80.3","%R","","","CRDL","","IS","80.3","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C8-PFOS","13C8-
PFOS","82.0","%R","","","CRDL","","IS","82.0","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C2-PFDA","13C2-
PFDA","67.0","%R","","","CRDL","","IS","67.0","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","d3-MeFOSAA","d3-
MeFOSAA","54.5","%R","","","CRDL","","IS","54.5","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","d5-EtFOSAA","d5-
EtFOSAA","45.5","%R","H","","CRDL","","IS","45.5","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C2-PFUnA","13C2-
PFUnA","56.4","%R","","","CRDL","","IS","56.4","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C2-PFDoA","13C2-
PFDoA","54.8","%R","","","CRDL","","IS","54.8","","","CRDL","",""
"B9G0116-BS1","537 MOD","RES","B9G0116-BS1","Vista","13C2-PFTeDA","13C2-

PFTeDA","67.8","%R","","","CRDL","","IS","67.8","","","CRDL","",""
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MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
16:41","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B09-SO-1-1.5","06/26/2019 10:55","SO","1901857-02","","","","537
MOD","Gen Prep","RES","07/10/2019 15:58","07/12/2019
21:56","Vista","COA","DRY","","1","","","","0.53","B9G0116","B9G0116","S9G0029","S9G0029","1901857","06/28/
2019 09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B09-SO-20-20.5","06/26/2019 11:40","SO","1901857-03","","","","537
MOD","Gen Prep","RES","07/10/2019 15:58","07/12/2019
22:06","Vista","COA","DRY","","1","","","","1.61","B9G0116","B9G0116","S9G0029","S9G0029","1901857","06/28/
2019 09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B09-GW","06/26/2019 15:15","AQ","1901857-04","","","","537
MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
16:51","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","FRB-06262019","06/26/2019 17:35","AQ","1901857-05","","","","537
MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
17:02","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","EB-06262019","06/26/2019 17:45","AQ","1901857-06","","","","537
MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
17:12","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B11-SO-1-1.5","06/27/2019 08:25","SO","1901857-07","","","","537
MOD","Gen Prep","RES","07/10/2019 15:58","07/12/2019
22:17","Vista","COA","DRY","","1","","","","0.25","B9G0116","B9G0116","S9G0029","S9G0029","1901857","06/28/
2019 09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B11-SO-20-20.5","06/27/2019 09:25","SO","1901857-08","","","","537
MOD","Gen Prep","RES","07/10/2019 15:58","07/12/2019
22:28","Vista","COA","DRY","","1","","","","1.79","B9G0116","B9G0116","S9G0029","S9G0029","1901857","06/28/
2019 09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B11-GW","06/27/2019 11:05","AQ","1901857-09","","","","537
MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
17:23","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","SAOA-B08-SO-1-1.5","06/27/2019 14:40","SO","1901857-10","","","","537
MOD","Gen Prep","RES","07/10/2019 15:58","07/12/2019
22:38","Vista","COA","DRY","","1","","","","1.55","B9G0116","B9G0116","S9G0029","S9G0029","1901857","06/28/
2019 09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","EB-06272019","06/27/2019 15:00","AQ","1901857-11","","","","537
MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
17:34","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","FRB-06272019","06/27/2019 15:05","AQ","1901857-12","","","","537
MOD","Gen Prep","RES","07/04/2019 07:28","07/08/2019
17:44","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","06/28/2019
09:07","07/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","B9G0050-BLK1","","AQ","B9G0050-BLK1","MB","","","537 MOD","Gen
Prep","RES","07/04/2019 07:28","07/08/2019
16:30","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","","07/15/2019
00:00"
"4663.3803","CTO 17F3803 Yuma","B9G0050-BS1","","AQ","B9G0050-BS1","LCS","","","537 MOD","Gen

Prep","RES","07/04/2019 07:28","07/08/2019
16:09","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","","07/15/2019
00:00"
"4663.3803","CTO 17F3803 Yuma","B9G0050-BSD1","","AQ","B9G0050-BSD1","LCSD","","","537 MOD","Gen
Prep","RES","07/04/2019 07:28","07/08/2019
16:20","Vista","COA","","","1","","","","","B9G0050","B9G0050","S9G0013","S9G0013","1901857","","07/15/2019
00:00"
"4663.3803","CTO 17F3803 Yuma","B9G0116-BLK1","","SO","B9G0116-BLK1","MB","","","537 MOD","Gen
Prep","RES","07/10/2019 15:58","07/12/2019
21:45","Vista","COA","DRY","","1","","","","100.00","B9G0116","B9G0116","S9G0029","S9G0029","1901857","","0
7/15/2019 00:00"
"4663.3803","CTO 17F3803 Yuma","B9G0116-BS1","","SO","B9G0116-BS1","LCS","","","537 MOD","Gen
Prep","RES","07/10/2019 15:58","07/12/2019
21:13","Vista","COA","DRY","","1","","","","100.00","B9G0116","B9G0116","S9G0029","S9G0029","1901857","","0
7/15/2019 00:00"

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Tetra Tech EC, Inc.
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
ATTN: Ms. Lisa Bienkowski
Lisa.Bienkowski@tetratech.com

August 22, 2019

SUBJECT: Revised MCAS Yuma, CTO 17F3803, Data Validation

Dear Ms. Bienkowski,

Enclosed are the revised validation reports for the fraction listed below. These SDGs were received on July 23, 2019. Attachment 1 is a summary of the samples that were reviewed for each analysis.

- A: Updated the validation references. Corrected the LCS/OPR section.
- B: Updated the validation references. Removed the PFTrDA OPR qualifier since the compound recovered within laboratory limits.
- C: Updated the validation references. Corrected the LCS/OPR section. Corrected the 13C2-PFTeDA concentration listed in the "Labeled Compounds" section.
- D: Updated the validation references. Added the field blank qualifier to sample SAOA-B08-GW for PFDA. Corrected the LCS/OPR section.
- E: Updated the validation references.

LDC Project #45580_RV1:

SDG #	Fraction
1901705, 1901766, 1901857 1901920, 1901922	Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under Stage 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Site Inspection for Per- and Polyfluoroalkyl Substances, Marine Corps Air Station Yuma, Arizona; May 2019,
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1; 2017
- USEPA National Functional Guidelines for Superfund Organic Methods Data Review; January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

Stage 4

LDC #45580 (Tetra Tech-EC, Inc.-Irvine, CA / MCAS Yuma, CTO 3803)

PO# 1164819

LDC	SDG#	DATE REC'D	(3) DATE DUE	PFAs (537)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	1901705	07/23/19	08/13/19	6	13																																
B	1901766	07/23/19	08/13/19	7	3																																
C	1901857	07/23/19	08/13/19	7	5																																
D	1901920	07/23/19	08/13/19	11	9																																
E	1901922	07/23/19	08/13/19	2	0																																
Total	T/CR			33	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation).

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: August 22, 2019

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1901705

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
NAOA-B05-SO	1901705-01	Soil	06/18/19
FRB-06182019	1901705-02	Water	06/18/19
NAOA-B10-SO-20-20.5	1901705-03	Soil	06/19/19
NAOA-B10-SO-0.5-1	1901705-04	Soil	06/19/19
NAOA-B11-SO-0.5-1	1901705-05	Soil	06/19/19
NAOA-B11-SO-20-20.5	1901705-06	Soil	06/19/19
NAOA-B15-SO-0.5-1	1901705-07	Soil	06/19/19
EB-06192019	1901705-08	Water	06/19/19
NAOA-B15-SO-20-20.5	1901705-09	Soil	06/19/19
NAOA-B12-SO-0.5-1	1901705-10	Soil	06/20/19
NAOA-B12-SO-20-20.5	1901705-11	Soil	06/20/19
NAOA-B13-SO-0.5-1	1901705-12	Soil	06/20/19
NAOA-B13-SO-20-20.5	1901705-13	Soil	06/20/19
NAOA-B14-SO-0.5-1	1901705-14	Soil	06/20/19
NAOA-B14-SO-20-20.5	1901705-15	Soil	06/20/19
FRB-06192019	1901705-16	Water	06/19/19
EB-06202019	1901705-17	Water	06/20/19
FRB-06202019	1901705-18	Water	06/20/19
NAOA-B07-GW	1901705-19	Water	06/20/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Site Inspection for Per- and Polyfluoroalkyl Substances, Marine Corps Air Station Yuma, Arizona (May 2019), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples EB-GW-06202019 (from SDG 1901766), EB-06192019, and EB-06202019 were identified as equipment blanks. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples In This SDG
EB-06202019	06/20/19	PFOS	0.0582 ug/L	NAOA-B12-SO-0.5-1 NAOA-B13-SO-0.5-1 NAOA-B14-SO-0.5-1

Samples FRB-06182019, FRB-06192019, and FRB-06202019 were identified as field reagent blanks. No contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples/Ongoing Precision Recovery

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
B9F0278-BS1/BSD1 (All soil samples in SDG 1901705)	PFTrDA	-	131 (60-130)	NA	-

NA (Not Applicable): The percent recovery demonstrates a high bias and the affected compound was not detected in the associated samples. Sample qualification was not necessary.

Relative percent differences (RPD) were within QC limits.

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

OPR ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
B9F0253-BS1	PFTrDA	56.4 (60-130)	All water samples in SDG 1901705	UJ (all non-detects)	P

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
NAOA-B05-SO	13C2-PFDoA	44.9 (50-150)	PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects)	P
NAOA-B10-SO-20-20.5	d5-EtFOSAA 13C2-PFUnA 13C2-PFDoA	49.1 (50-150) 47.8 (50-150) 46.9 (50-150)	EtFOSAA PFUnA PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P
NAOA-B12-SO-20-20.5	13C5-PFNA 13C2-PFDA d3-MeFOSAA d5-EtFOSAA 13C2-PFUnA 13C2-PFDoA 13C2-PFTeDA	47.6 (50-150) 38.0 (50-150) 40.7 (50-150) 41.4 (50-150) 33.4 (50-150) 33.8 (50-150) 40.3 (50-150)	PFNA PFDA MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA PFTeDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P
NAOA-B11-SO-0.5-1	d3-MeFOSAA d5-EtFOSAA 13C2-PFUnA 13C2-PFDoA	43.3 (50-150) 47.5 (50-150) 45.9 (50-150) 40.9 (50-150)	MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P
NAOA-B14-SO-0.5-1	d3-MeFOSAA	49.2 (50-150)	MeFOSAA	UJ (all non-detects)	P
NAOA-B07-GW	13C2-PFTeDA	25.8 (50-150)	PFTeDA	UJ (all non-detects)	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
NAOA-B10-SO-20-20.5 NAOA-B10-SO-0.5-1 NAOA-B11-SO-20-20.5 NAOA-B15-SO-0.5-1 NAOA-B15-SO-20-20.5 NAOA-B12-SO-0.5-1 NAOA-B12-SO-20-20.5 NAOA-B13-SO-0.5-1	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to OPR %R, labeled compound %R, and results below the LOQ, data were qualified as estimated in seventeen samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 1901705

Sample	Compound	Flag	A or P	Reason
FRB-06182019 EB-06192019 FRB-06192019 EB-06202019 FRB-06202019 NAOA-B07-GW	PFTrDA	UJ (all non-detects)	P	Ongoing precision and recovery (%R)
NAOA-B05-SO	PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
NAOA-B10-SO-20-20.5	EtFOSAA PFUnA PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
NAOA-B12-SO-20-20.5	PFNA PFDA MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA PFTeDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
NAOA-B11-SO-0.5-1	MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
NAOA-B14-SO-0.5-1	MeFOSAA	UJ (all non-detects)	P	Labeled compounds (%R)
NAOA-B07-GW	PFTeDA	UJ (all non-detects)	P	Labeled compounds (%R)
NAOA-B10-SO-20-20.5 NAOA-B10-SO-0.5-1 NAOA-B11-SO-20-20.5 NAOA-B15-SO-0.5-1 NAOA-B15-SO-20-20.5 NAOA-B12-SO-0.5-1 NAOA-B12-SO-20-20.5 NAOA-B13-SO-0.5-1	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 1901705

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 1901705

No Sample Data Qualified in this SDG

LDC #: 45580A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/12/19
SDG #: 1901705 Stage 4 Page: 1 of 2
Laboratory: Vista Analytical Laboratory Reviewer: SVG
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)(M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	✓ Individual ≤ 30% ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	*FRB = 2, 16, 18 EB = *8, 17, *EB-GW-06202019 (1901766)
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	SW	LCS/D, OPR
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
* ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
SB=Source blank
OTHER:
FRB = Field Reagent Blank

	Client ID	Lab ID	Matrix	Date
1	NAOA-B05-SO	1901705-01	Soil	06/18/19
2	FRB-06182019	1901705-02	Water	06/18/19
3	NAOA-B10-SO-20-20.5	1901705-03	Soil	06/19/19
4	NAOA-B10-SO-0.5-1	1901705-04	Soil	06/19/19
5	NAOA-B11-SO-0.5-1	1901705-05	Soil	06/19/19
6	NAOA-B11-SO-20-20.5	1901705-06	Soil	06/19/19
7	NAOA-B15-SO-0.5-1	1901705-07	Soil	06/19/19
8	EB-06192019	1901705-08	Water	06/19/19
9	NAOA-B15-SO-20-20.5	1901705-09	Soil	06/19/19
10	NAOA-B12-SO-0.5-1	1901705-10	Soil	06/20/19
11	NAOA-B12-SO-20-20.5	1901705-11	Soil	06/20/19
12	NAOA-B13-SO-0.5-1	1901705-12	Soil	06/20/19
13	NAOA-B13-SO-20-20.5	1901705-13	Soil	06/20/19
14	NAOA-B14-SO-0.5-1	1901705-14	Soil	06/20/19
15	NAOA-B14-SO-20-20.5	1901705-15	Soil	06/20/19

1x/5x
1x/5x

LDC #: 45580A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/12/19
SDG #: 1901705 Stage 4 Page: 2 of 2
Laboratory: Vista Analytical Laboratory Reviewer: SV6
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

	Client ID	Lab ID	Matrix	Date
16	FRB-06192019	1901705-16	Water	06/19/19
17	EB-06202019	1901705-17	Water	06/20/19
18	FRB-06202019	1901705-18	Water	06/20/19
19	NAOA-B07-GW	1901705-19	Water	06/20/19
20				
21				
22				
23				
24				

Notes:

1	BQF0278-BLK1						
2	BQF0253- ↓						

LDC #: 45580 A96

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Method: LCMS (EPA Method 537M)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤30%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzedin this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch in this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

LDC #: 45580A96

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?.			✓	
XI. Labeled Compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Was m/z 499 to m/z 80 transition used as the quantitation transition for PFOS?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Perfluorinated Alkyl Acids (EPA Method 537)

A. PFBA	375-22-4
B. PFPeA	2706-90-3
C. PFBS	375-73-5
D. PFHxA	307-24-4
E. PFHpA	375-85-9
F. PFHxS	355-46-4
G. PFOA	335-67-1
H. PFHpS	375-92-8
I. PFNA	375-95-1
J. PFOSA	754-91-6
K. PFOS	1763-23-1
L. PFDA	335-76-2
M. PFUnA	2058-94-8
N. PFDS	335-77-3
O. PFDoA	307-55-1
P. MeFOSA	31506-32-8
Q. PFTrDA	72629-94-8
R. PFTeDA	376-06-7
S. EtFOSA	4151-50-2
T. MeFOSE	24448-09-7
U. EtFOSE	1691-99-2
V. MeFOSAA	2355-31-9
W. EtFOSAA	2991-50-6

Notes:_____

LDC #: 45580A96

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/kg

Sampling date: 06/20/19

Field blank type: (circle one) Trip Blank/Field Blank / Rinsate / Other: EB Associated Samples: ~~10~~ ~~15~~ ~~19~~ 10,12,14 (>5x)

Compound	Blank ID	Sample Identification								
	17	(5x)		~~19~~						
>LOQ K	0.0582	0.291		~~0.118~~ J						

Blank units: _____ **Associated sample units:** _____

Sampling date: _____

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

LDC #: 45580A96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: JVG
2nd Reviewer: Q

METHOD: LC/MS PFCs (EPA Method 537)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	B9F0278-BS1/BSD1	Q	( )	131 (70-130)	( )	All S, MB1 (ND)	J det/p
			( )	(60)	( )		
			( )	( )	( )		
	B9F0253-BS1	Q	56.4 (70-130)	( )	( )	All W, MB2 (ND)	J/UJ/p
	(ORR)		(60)	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 45380 A96

VALIDATION FINDINGS WORKSHEET
Labeled Compound

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compounds within -50 to +150% of the associated calibration standard?

#	Date	Sample ID	Labeled Compound	%R	Limits (%)	Qualifications
		1 (ND)	13C2-O	44.9	50-150	J/UJ/P (qual O, R) Q
		3 (ND)	d5-W	49.1		W
			13C2-M	47.8		M
			13C2-O	46.9		O, Q
		11 (ND)	13C5-I	47.6		I
			13C2-L	38.0		L
			d3-V	40.7		V
			d5-W	41.4		W
			13C2-M	33.4		M
			13C2-O	33.8		O, Q
			13C2-R	40.3		R, R
		5 (ND)	d3-V	43.3		V
			d5-W	47.5		W
			13C2-M	45.9		M
			13C2-O	40.9		O, Q
		14 (ND)	d3-V	49.2		V
		19	13C2-R	25.8		R, R

LDC#: 45580A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/1/2019	SCN945	PFOA	0.25	0.03318	3.125
			0.5	0.05895	6.250
	190701M1-CRV		1	0.11824	12.500
		13C2-PFOA	2	0.21986	25.000
			5	0.57756	62.500
			10	1.11263	125.000
			50	5.66807	625.000
			100	11.64186	1250.000
			250	27.00102	3125.000
			500	58.36004	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.117761	0.031497
Std Err of Y Est		
R Squared	0.999111	0.998858
Degrees of Freedom		
X Coefficient(s)	0.00922723	1.425390
Std Err of Coef.		
Correlation Coefficient	0.999555	
Coefficient of Determination (r^2)	0.999111	0.998858

LDC #_45580A96_

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/1/2019	SCN945	PFOS	0.25	0.0123	0.02	0.00040
			0.5	0.0295	0.04	0.0016
	190701M1-CRV	13C8-PFOS	1	0.0651	0.08	0.0064
			2	0.1540	0.16	0.0256
			5	0.3969	0.40	0.1600
			10	0.9108	0.80	0.6400
			50	4.3887	4.00	16.0000
			100	9.6322	8.00	64.0000
			250	22.4459	20.00	400.0000
			500	45.9623	40.00	1600.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.00905*	*c*	*-0.0827669*
Std Err of Y Est				
R Squared		*0.9998336*		*0.9992030*
Degrees of Freedom				
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.1286105*	*0.0004752*	*1.0321200*	*0.00169096*
Std Err of Coef.				
Correlation Coefficient		*0.999917*		
Coefficient of Determination (r^2)		*0.999834*		

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/8/2019	SCN945	PFOA	0.25	0.03026	3.125
			0.5	0.05635	6.250
	190707M2-CRV		1	0.12819	12.500
		13C2-PFOA	2	0.23652	25.000
			5	0.56342	62.500
			10	1.13496	125.000
			50	5.69897	625.000
			100	11.70763	1250.000
			250	27.83374	3125.000
			500	58.24964	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.064747	0.024985
Std Err of Y Est		
R Squared	0.999685	0.999567
Degrees of Freedom		
X Coefficient(s)	0.00925494	1.437000
Std Err of Coef.		
Correlation Coefficient	0.999843	
Coefficient of Determination (r^2)	0.999685	0.999567

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/8/2019	SCN945	PFOS	0.25	0.01762	3.125
			0.5	0.03271	6.250
			1	0.07312	12.500
	190707M2-CRV	13C8-PFOS	2	0.16106	25.000
			5	0.42655	62.500
			10	0.82050	125.000
			50	4.47916	625.000
			100	9.43586	1250.000
			250	20.96613	3125.000
			500	47.95613	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.206548	-0.104113
Std Err of Y Est		
R Squared	0.997431	0.996565
Degrees of Freedom		
X Coefficient(s)	0.00752625	1.149010
Std Err of Coef.		
Correlation Coefficient	0.998715	
Coefficient of Determination (r^2)	0.997431	0.996565

LDC #: 45580A96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BQF0278-BS1/BSD1

Compound	Spike Added (ng/L)		Spike Concentration (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	10.0	10.0	10.7	10.9	107	107	109	109	1.95	1.85
PFOS	↓	↓								

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 45580A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Conc	Reported	Recalculated	Reported % R	Recalculated % R
1	190702M2-4 ISC	7/2/2019	PFOA	(13C2-PFOA)	1.000	0.960	0.960	96.0	96.0
			PFOS	(13C8-PFOS)	1.000	0.936	0.936	93.6	93.6
2	190707M2-14 ICV	7/7/2019	PFOA	(13C2-PFOA)	10.000	7.882	7.882	78.8	78.8
			PFOS	(13C8-PFOS)	9.240	7.150	7.150	77.4	77.4

LDC #: 45580#96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

(Y) N N/A Were all reported results recalculated and verified for all level IV samples?

Y (N) N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 4 , PFOS :

Conc. = $\frac{\left[\left(\left(\frac{9800}{2100}\right)(12.5)\right)-(-0.104113)\right](1\ mL)}{(1.14901)(1.07\ g)(0.946)}$

= 50.24 ng/kg

#	Sample ID	Compound	Reported Concentration (ng/kg)	Calculated Concentration ( )	Qualification
			50.2		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: August 22, 2019

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1901766

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EB-GW-06202019	1901766-01	Water	06/20/19
SAOA-B06-GW	1901766-02	Water	06/24/19
FRB-06242019	1901766-03	Water	06/24/19
SAOA-B07-GW	1901766-04	Water	06/25/19
SAOA-B04-SO-5-5.5	1901766-05	Soil	06/25/19
SAOA-B04-SO-20-20.5	1901766-06	Soil	06/25/19
SAOA-B04-SO-47-47.5	1901766-07	Soil	06/25/19
SAOA-B04-GW	1901766-08	Water	06/25/19
EB-06252019	1901766-09	Water	06/25/19
FRB-06252019	1901766-10	Water	06/25/19
SAOA-B06-GWMS	1901766-02MS	Water	06/24/19
SAOA-B06-GWMSD	1901766-02MSD	Water	06/24/19
SAOA-B04-SO-5-5.5MS	1901766-05MS	Soil	06/25/19
SAOA-B04-SO-5-5.5MSD	1901766-05MSD	Soil	06/25/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Site Inspection for Per- and Polyfluoroalkyl Substances, Marine Corps Air Station Yuma, Arizona (May 2019), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples EB-GW-06202019 and EB-06252019 were identified as equipment blanks. No contaminants were found.

Samples FRB-06242019 and FRB-06252019 were identified as field reagent blanks. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
SAOA-B04-SO-5-5.5MS/MSD (SAOA-B04-SO-5-5.5)	PFHxA	139 (70-130)	-	J (all detects)	A
	PFHpA	140 (70-130)	-	J (all detects)	
	PFHxS	152 (70-130)	-	J (all detects)	
	PFOA	140 (70-130)	-	J (all detects)	

For SAOA-B04-SO-5-5.5MS/MSD, no data were qualified for PFOS percent recoveries (%R) and relative percent differences (RPD) outside the QC limits since the MS/MSD was analyzed at greater than or equal to a 5X dilution.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
SAOA-B04-SO-5-5.5MS/MSD (SAOA-B04-SO-5-5.5)	PFHxA	59.2 (≤30)	J (all detects)	A
	PFHpA	45.1 (≤30)	J (all detects)	
	PFHxS	68.3 (≤30)	J (all detects)	
	PFOA	38.2 (≤30)	J (all detects)	

VIII. Laboratory Control Samples/Ongoing Precision Recovery

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
SAOA-B06-GW	13C2-PFTeDA	38.4 (50-150)	PFTeDA	UJ (all non-detects)	P
SAOA-B04-SO-20-20.5	13C2-PFDA d3-MeFOSAA d5-EtFOSAA 13C2-PFUnA 13C2-PFDoA 13C2-PFTeDA	48.6 (50-150) 48.2 (50-150) 46.7 (50-150) 41.1 (50-150) 41.0 (50-150) 36.6 (50-150)	PFDA MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA PFTeDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P
SAOA-B04-GW	13C2-PFTeDA	26.5 (50-150)	PFTeDA	UJ (all non-detects)	P
FRB-06252019	d3-MeFOSAA	43.8 (50-150)	MeFOSAA	UJ (all non-detects)	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
SAOA-B07-GW SAOA-B04-SO-5-5.5 SAOA-B04-SO-20-20.5 SAOA-B04-GW	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and RPD, labeled compound %R, and results below the LOQ, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 1901766

Sample	Compound	Flag	A or P	Reason
SAOA-B04-SO-5-5.5	PFHxA PFHpA PFHxS PFOA	J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
SAOA-B04-SO-5-5.5	PFHxA PFHpA PFHxS PFOA	J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
SAOA-B06-GW	PFTeDA	UJ (all non-detects)	P	Labeled compounds (%R)
SAOA-B04-SO-20-20.5	PFDA MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA PFTeDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
SAOA-B04-GW	PFTeDA	UJ (all non-detects)	P	Labeled compounds (%R)
FRB-06252019	MeFOSAA	UJ (all non-detects)	P	Labeled compounds (%R)
SAOA-B07-GW SAOA-B04-SO-5-5.5 SAOA-B04-SO-20-20.5 SAOA-B04-GW	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 1901766

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 1901766

No Sample Data Qualified in this SDG

LDC #: 45580B96 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/12/19
SDG #: 1901766 Stage 4 Page: 1 of 1
Laboratory: Vista Analytical Laboratory Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	r² Individual ≤30% ICV≤30%
IV.	Continuing calibration/ISC	A	CCV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 1, 9 FRB = 3, 10
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	ASW	LCS/D, OPR
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER: FRB= Field Reagent Blank

	Client ID	Lab ID	Matrix	Date
1	EB-GW-06202019	1901766-01	Water	06/20/19
2	SAOA-B06-GW	1901766-02	Water	06/24/19
3	FRB-06242019	1901766-03	Water	06/24/19
4	SAOA-B07-GW	1901766-04	Water	06/25/19
5	SAOA-B04-SO-5-5.5	1901766-05	Soil	06/25/19
6	SAOA-B04-SO-20-20.5	1901766-06	Soil	06/25/19
7	SAOA-B04-SO-47-47.5	1901766-07	Soil	06/25/19
8	SAOA-B04-GW	1901766-08	Water	06/25/19
9	EB-06252019	1901766-09	Water	06/25/19
10	FRB-06252019	1901766-10	Water	06/25/19
11	SAOA-B06-GWMS	1901766-02MS	Water	06/24/19
12	SAOA-B06-GWMSD	1901766-02MSD	Water	06/24/19
13	SAOA-B04-SO-5-5.5MS	1901766-05MS	Soil	06/25/19
14	SAOA-B04-SO-5-5.5MSD	1901766-05MSD	Soil	06/25/19
15	B9F0253-BLK1			
-2	B9F0280-BLK1			

LDC #: 45580 B96

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Method: LCMS (EPA Method 537M)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤30%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzedin this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch in this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

Validation Area	Yes	No	NA	Findings/Comments
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?.			✓	
XI. Labeled Compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	✓			
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Was m/z 499 to m/z 80 transition used as the quantitation transition for PFOS?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Perfluorinated Alkyl Acids (EPA Method 537)

A. PFBA	375-22-4
B. PFPeA	2706-90-3
C. PFBS	375-73-5
D. PFHxA	307-24-4
E. PFHpA	375-85-9
F. PFHxS	355-46-4
G. PFOA	335-67-1
H. PFHpS	375-92-8
I. PFNA	375-95-1
J. PFOSA	754-91-6
K. PFOS	1763-23-1
L. PFDA	335-76-2
M. PFUnA	2058-94-8
N. PFDS	335-77-3
O. PFDoA	307-55-1
P. MeFOSA	31506-32-8
Q. PFTrDA	72629-94-8
R. PFTeDA	376-06-7
S. EtFOSA	4151-50-2
T. MeFOSE	24448-09-7
U. EtFOSE	1691-99-2
V. MeFOSAA	2355-31-9
W. EtFOSAA	2991-50-6

Notes:_____

LDC #: 45580 B96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed in this SDG?

Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		13/14	D	139 (70-130)	( )	( )	5 (det)	J det/A
			E	140 ( )	( )	( )		
			F	152 ( )	( )	( )		
			G	140 ( )	( )	( )		
	(5x)		K	321 ( )	-98.5 (70-130)	( )		NA (dil)
			D	( )	( )	59.2 (30)	(det)	J det/A
			E	( )	( )	45.1 ( )		
			F	( )	( )	68.3 ( )		
			G	( )	( )	38.2 ( )		
			K	( )	( )	271 ( )		NA (dil)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 45580 B96

VALIDATION FINDINGS WORKSHEET
Labeled Compound

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compounds within -50 to +150% of the associated calibration standard?

#	Date	Sample ID	Labeled Compound	%R	Limits (%)	Qualifications
		2 (ND)	13C2 - R	38.4	50 - 150	J / UJ / P (qual R)
		6 (ND)	13C2 - L	48.6		(qual L)
			d3 - V	48.2		V
			d5 - W	46.7		W
			13C2 - M	41.1		M
			13C2 - O	41.0		O, Q
			13C2 - R	36.6		R
		8 (ND)	13C2 - R	26.5		(qual R)
		10 (ND)	d3 - V	43.8		(qual V)
		11	13C2 - R	25.7		NQ (QC)
		12	13C2 - R	33.4		

LDC#: 45580B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/1/2019	SCN945	PFOA	0.25	0.03318	3.125
			0.5	0.05895	6.250
	190701M1-CRV		1	0.11824	12.500
		13C2-PFOA	2	0.21986	25.000
			5	0.57756	62.500
			10	1.11263	125.000
			50	5.66807	625.000
			100	11.64186	1250.000
			250	27.00102	3125.000
			500	58.36004	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.117761	0.031497
Std Err of Y Est		
R Squared	0.999111	0.998858
Degrees of Freedom		
X Coefficient(s)	0.00922723	1.425390
Std Err of Coef.		
Correlation Coefficient	0.999555	
Coefficient of Determination (r^2)	0.999111	0.998858

LDC #_45580B96_

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer:_JVG_
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/1/2019	SCN945	PFOS	0.25	0.0123	0.02	0.00040
			0.5	0.0295	0.04	0.0016
	190701M1-CRV	13C8-PFOS	1	0.0651	0.08	0.0064
			2	0.1540	0.16	0.0256
			5	0.3969	0.40	0.1600
			10	0.9108	0.80	0.6400
			50	4.3887	4.00	16.0000
			100	9.6322	8.00	64.0000
			250	22.4459	20.00	400.0000
			500	45.9623	40.00	1600.0000

Regression Output	**Calculated**		***Reported WQR***	
Constant	*c*	*0.00905*	*c*	*-0.0827669*
Std Err of Y Est				
R Squared		*0.9998336*		*0.9992030*
Degrees of Freedom				
	m1	*m2*	*m1*	*m2*
X Coefficient(s)	*1.1286105*	*0.0004752*	*1.0321200*	*0.00169096*
Std Err of Coef.				
Correlation Coefficient		*0.999917*		
Coefficient of Determination (r^2)		*0.999834*		

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/10/2019	SCN945	PFOA	0.25	0.04424	3.125
			0.5	0.06626	6.250
			1	0.16054	12.500
		13C2-PFOA	2	0.28982	25.000
			5	0.76540	62.500
			10	1.42501	125.000
			50	7.42635	625.000
			100	14.79889	1250.000

Regression Output	Calculated	Reported WLR
Constant	-0.001555	0.038532
Std Err of Y Est		
R Squared	0.999983	0.999749
Degrees of Freedom		
X Coefficient(s)	0.01184661	1.848290
Std Err of Coef.		
Correlation Coefficient	0.999992	
Coefficient of Determination (r^2)	0.999983	0.999749

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/10/2019	SCN945	PFOS	0.25	0.00818	3.125
			0.5	0.03295	6.250
	190710M2-CRV		1	0.10211	12.500
		13C8-PFOS	2	0.14330	25.000
			5	0.43202	62.500
			10	0.82840	125.000
			50	5.02607	625.000
			100	10.45259	1250.000

Regression Output	Calculated	Reported WLR
Constant	-0.076994	-0.175183
Std Err of Y Est		
R Squared	0.999354	0.995937
Degrees of Freedom		
X Coefficient(s)	0.00836341	1.269460
Std Err of Coef.		
Correlation Coefficient	0.999677	
Coefficient of Determination (r^2)	0.999354	0.995937

LDC # 45580B96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Conc	Reported	Recalculated	Reported % R	Recalculated % R
1	190702M2-4	7/2/2019	PFOA	(13C2-PFOA)	1.000	0.960	0.960	96.0	96.0
	ISC		PFOS	(13C8-PFOS)	1.000	0.936	0.936	93.6	93.6
2	190710M2-17	7/10/2019	PFOA	(13C2-PFOA)	10.000	7.241	7.241	72.4	72.4
	ICV		PFOS	(13C8-PFOS)	9.240	7.763	7.763	84.0	84.0
3	090712M1-2	7/12/2019	PFOA	(13C2-PFOA)	1.000	0.909	0.909	90.9	90.9
			PFOS	(13C8-PFOS)	1.000	0.983	0.983	98.3	98.3

LDC #: 45580 B96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537Mod)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 11/12

Compound	Spike Added (ug/L)		Sample Conc (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
PFOA	0.0847	0.0876	0.177	0.276	0.290	117	117	129	129	9.76	9.76
PFOS	↓	↓	0.0677	0.159	0.165	108	108	112	112	3.64	3.64

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

% RPD based on % R

LDC #: 45580 B96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B9F0280-BS1

Compound	Spike Added (ng/kg)		Spike Concentration (ng/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	10.0	NA	10.3	NA	103	103				
PFOS	↓	↓	10.5	↓	105	105				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 45580 B96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 5 , PFOS :

Conc. = $\frac{\left[\left(\frac{11500}{1190} \times 12.5\right) - (-0.175183)\right](1ml)}{(1.26996)(1.08g)(0.967)}$

= 91.1 ug/kg

#	Sample ID	Compound	Reported Concentration (ug/kg)	Calculated Concentration ( )	Qualification
			91.1		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: August 22, 2019

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1901857

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
SAOA-B05-GW	1901857-01	Water	06/26/19
SAOA-B09-SO-1-1.5	1901857-02	Soil	06/26/19
SAOA-B09-SO-20-20.5	1901857-03	Soil	06/26/19
SAOA-B09-GW	1901857-04	Water	06/26/19
FRB-06262019	1901857-05	Water	06/26/19
EB-06262019	1901857-06	Water	06/26/19
SAOA-B11-SO-1-1.5	1901857-07	Soil	06/27/19
SAOA-B11-SO-20-20.5	1901857-08	Soil	06/27/19
SAOA-B11-GW	1901857-09	Water	06/27/19
SAOA-B08-SO-1-1.5	1901857-10	Soil	06/27/19
EB-06272019	1901857-11	Water	06/27/19
FRB-06272019	1901857-12	Water	06/27/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Site Inspection for Per- and Polyfluoroalkyl Substances, Marine Corps Air Station Yuma, Arizona (May 2019), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples EB-06272019-GW (from SDG 1901920), EB-06262019, and EB-06272019 were identified as equipment blanks. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples In This SDG
EB-06272019-GW	06/27/19	PFOS PFDA	0.0103 ug/L 0.00428 ug/L	SAOA-B11-GW

Samples FRB-06262019 and FRB-06272019 were identified as field reagent blanks. No contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SAOA-B11-GW	PFOS	0.00941 ug/L	0.00941J ug/L

Sample results were qualified as follows:

- If sample concentration was < 5X the blank concentration and the sample was <limit of quantitation (LOQ), the sample result was qualified as nondetect (U).
- If sample concentration was < 5X the blank concentration and the sample was >LOQ, the sample result was qualified as estimated (J).

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples/Ongoing Precision Recovery

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

OPR ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
B9G0116-BS1	EtFOSAA	137 (70-130)	SAOA-B09-SO-1-1.5 SAOA-B09-SO-20-20.5 SAOA-B11-SO-1-1.5 SAOA-B11-SO-20-20.5 SAOA-B08-SO-1-1.5	NA	-

NA (Not Applicable): The percent recovery demonstrates a high bias and the affected compound was not detected in the associated samples. Sample qualification was not necessary.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
SAOA-B05-GW	d5-EtFOSAA 13C2-PFUnA 13C2-PFDoA 13C2-PFTeDA	49.4 (50-150) 43.1 (50-150) 35.9 (50-150) 17.0 (50-150)	EtFOSAA PFUnA PFDoA PFTrDA PFTeDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P
SAOA-B11-GW	13C2-PFTeDA	47.2 (50-150)	PFTeDA	UJ (all non-detects)	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
SAOA-B09-SO-1-1.5 SAOA-B09-GW SAOA-B11-SO-1-1.5 SAOA-B11-GW SAOA-B08-SO-1-1.5	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to labeled compound %R and results below the LOQ, data were qualified as estimated in six samples.

Due to equipment blank contamination, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 1901857

Sample	Compound	Flag	A or P	Reason
SAOA-B05-GW	EtFOSAA PFUnA PFDoA PFTrDA PFTeDA	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
SAOA-B11-GW	PFTeDA	UJ (all non-detects)	P	Labeled compounds (%R)
SAOA-B09-SO-1-1.5 SAOA-B09-GW SAOA-B11-SO-1-1.5 SAOA-B11-GW SAOA-B08-SO-1-1.5	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 1901857

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 1901857

Sample	Compound	Modified Final Concentration	A or P
SAOA-B11-GW	PFOS	0.00941J ug/L	A

LDC #: 45580C96 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/12/19
SDG #: 1901857 Stage 4 Page: 1 of 1
Laboratory: Vista Analytical Laboratory Reviewer: JV6
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537(M))

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r² Individual ≤ 30% ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	*FRB = 5, 12 EB = *6, *11, EB-06272019-GW (1901920)
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	SW	LCS/D OPR
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER: FRB = Field Reagent Blank

	Client ID	Lab ID	Matrix	Date
1	SAOA-B05-GW	1901857-01	Water	06/26/19
2	SAOA-B09-SO-1-1.5	1901857-02	Soil	06/26/19
3	SAOA-B09-SO-20-20.5	1901857-03	Soil	06/26/19
4	SAOA-B09-GW	1901857-04	Water	06/26/19
5	FRB-06262019	1901857-05	Water	06/26/19
6	EB-06262019	1901857-06	Water	06/26/19
7	SAOA-B11-SO-1-1.5	1901857-07	Soil	06/27/19
8	SAOA-B11-SO-20-20.5	1901857-08	Soil	06/27/19
9	SAOA-B11-GW	1901857-09	Water	06/27/19
10	SAOA-B08-SO-1-1.5	1901857-10	Soil	06/27/19
11	EB-06272019	1901857-11	Water	06/27/19
12	FRB-06272019	1901857-12	Water	06/27/19
13				
14	1. B9G0050-BLK1			
15	2. B9G0116-1			

LDC #: 45580C96

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Method: LCMS (EPA Method 537M)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤30%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzedin this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch in this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

LDC #: 45580C96

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?.			✓	
XI. Labeled Compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Was m/z 499 to m/z 80 transition used as the quantitation transition for PFOS?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Perfluorinated Alkyl Acids (EPA Method 537)

A. PFBA	375-22-4
B. PFPeA	2706-90-3
C. PFBS	375-73-5
D. PFHxA	307-24-4
E. PFHpA	375-85-9
F. PFHxS	355-46-4
G. PFOA	335-67-1
H. PFHpS	375-92-8
I. PFNA	375-95-1
J. PFOSA	754-91-6
K. PFOS	1763-23-1
L. PFDA	335-76-2
M. PFUnA	2058-94-8
N. PFDS	335-77-3
O. PFDoA	307-55-1
P. MeFOSA	31506-32-8
Q. PFTrDA	72629-94-8
R. PFTeDA	376-06-7
S. EtFOSA	4151-50-2
T. MeFOSE	24448-09-7
U. EtFOSE	1691-99-2
V. MeFOSAA	2355-31-9
W. EtFOSAA	2991-50-6

Notes: _____

LDC #: 45580 C96

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537M)

(Y) N N/A Were field blanks identified in this SDG?
Y/N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ng/L
Sampling date: 06/27/19
Field blank type: (circle one) Trip Blank/Field Blank / Rinsate / Other: _____ Associated Samples: 9

Compound	Blank ID	Sample Identification								
EB-06272019-GW		9								
>LOQ K	0.0103		0.00941 J							
<LOQ L	0.00428									

Blank units: _____ **Associated sample units:** _____
Sampling date: _____
Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

LDC #: 45580C96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	BG0116-BS1 (COPR)	W	137 (70-130)	( )	( )	2,3,7,8,16, MB2 (ND)	J dets / P
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 45580 C96

VALIDATION FINDINGS WORKSHEET
Labeled Compound

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compounds within -50 to +150% of the associated calibration standard?

#	Date	Sample ID	Labeled Compound	%R	Limits (%)	Qualifications
		1 (ND)	d5-W	99.4	50-150	J/UJ/P (qual W)
		↓	13C2-M	43.1	↓	M
			13C2-O	35.9		O,Q
			13C2-R	17.0		R,
		9 (ND)	13C2-R	47.2		R,
		BG0050-BLK1	13C2-R	39.8		R
		BG0116-BLK1	13C2-R	47.3	↓	R

LDC#: 45580C96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/8/2019	SCN945	PFOA	0.25	0.03026	3.125
			0.5	0.05635	6.250
			1	0.12819	12.500
		13C2-PFOA	2	0.23652	25.000
			5	0.56342	62.500
			10	1.13496	125.000
			50	5.69897	625.000
			100	11.70763	1250.000
			250	27.83374	3125.000
			500	58.24964	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.064747	0.024985
Std Err of Y Est		
R Squared	0.999685	0.999567
Degrees of Freedom		
X Coefficient(s)	0.00925494	1.437000
Std Err of Coef.		
Correlation Coefficient	0.999843	
Coefficient of Determination (r^2)	0.999685	0.999567

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/8/2019	SCN945	PFOS	0.25	0.01762	3.125
			0.5	0.03271	6.250
			1	0.07312	12.500
		13C8-PFOS	2	0.16106	25.000
			5	0.42655	62.500
			10	0.82050	125.000
			50	4.47916	625.000
			100	9.43586	1250.000
			250	20.96613	3125.000
			500	47.95613	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.206548	-0.104113
Std Err of Y Est		
R Squared	0.997431	0.996565
Degrees of Freedom		
X Coefficient(s)	0.00752625	1.149010
Std Err of Coef.		
Correlation Coefficient	0.998715	
Coefficient of Determination (r^2)	0.997431	0.996565

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/12/2019	SCN945	PFOA	0.25	0.03226	3.125
			0.5	0.06127	6.250
			1	0.11149	12.500
		13C2-PFOA	2	0.22345	25.000
			5	0.55250	62.500
			10	1.13393	125.000
			50	5.63506	625.000
			100	10.95602	1250.000
			250	26.97489	3125.000
			500	54.69562	6250.000

Regression Output	Calculated	Reported WLR
Constant	0.014494	0.073917
Std Err of Y Est		
R Squared	0.999962	0.999890
Degrees of Freedom		
X Coefficient(s)	0.00872764	1.364860
Std Err of Coef.		
Correlation Coefficient	0.999981	
Coefficient of Determination (r^2)	0.999962	0.999890

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/12/2019	SCN945	PFOS	0.25	0.02715	3.125
			0.5	0.02748	6.250
			1	0.07680	12.500
		13C8-PFOS	2	0.14878	25.000
			5	0.44086	62.500
			10	0.85959	125.000
			50	4.21093	625.000
			100	8.30061	1250.000
			250	22.46399	3125.000
			500	45.30008	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.133686	-0.160592
Std Err of Y Est		
R Squared	0.999751	0.999099
Degrees of Freedom		
X Coefficient(s)	0.00724403	1.115200
Std Err of Coef.		
Correlation Coefficient	0.999876	
Coefficient of Determination (r^2)	0.999751	0.999099

LDC # 45580C96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Conc	Reported	Recalculated	Reported % R	Recalculated % R
1	090708M3_2	7/8/2020	PFOA	(13C2-PFOA)	1.000	1.033	1.033	103.3	103.3
			PFOS	(13C8-PFOS)	1.000	0.998	0.998	99.8	99.8
2	190712M2_17 ICV	7/12/2019	PFOA	(13C2-PFOA)	10.000	7.535	7.535	75.3	75.3
			PFOS	(13C8-PFOS)	9.240	6.554	6.554	70.9	70.9

LDC #: 45580 C96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B9G0050-BS1/BSD1

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.040	0.040	0.0418	0.0425	104	104	106	106	1.84	1.7
PFOS	↓	↓	0.0378	0.0434	94.4	94.4	109	109	13.9	13.6

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 45580C96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2, PFOS:

Conc. $= \frac{\left[\left(\left(\frac{5630}{2550}\right)(12.5)\right) - (-0.160592)\right]}{(1.1152)} = 16.10$

final conc. $= \frac{(16.10)(1\ mL)}{(1.0\ g)(0.995)}$

$= 16.0\ ug/kg$

#	Sample ID	Compound	Reported Concentration (ug/kg)	Calculated Concentration ( )	Qualification
			16.0		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: August 22, 2019

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1901920

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
SAOA-B08-SO-30-30.5	1901920-01	Soil	06/27/19
SAOA-B08-GW	1901920-02	Water	06/27/19
EB-06272019-GW	1901920-03	Water	06/27/19
FRB-06282019	1901920-04	Water	06/28/19
SAOA-B12-GW	1901920-05	Water	06/28/19
SAOA-B12-GW-D	1901920-06	Water	06/28/19
NAOA-B08-SO-1-1.5	1901920-07	Soil	07/01/19
NAOA-B08-SO-20-20.5	1901920-08	Soil	07/01/19
NAOA-B09-SO-1-1.5	1901920-09	Soil	07/01/19
NAOA-B09-SO-20-20.5	1901920-10	Soil	07/01/19
NAOA-B02-GW	1901920-11	Water	07/01/19
EB-07012019	1901920-12	Water	07/01/19
NAOA-B01-SO-1-1.5	1901920-13	Soil	07/01/19
FRB-07012019	1901920-14	Water	07/01/19
NAOA-B01-SO-20-20.5	1901920-15	Soil	07/01/19
NAOA-B01-GW	1901920-16	Water	07/02/19
NAOA-B01-GW-D	1901920-17	Water	07/02/19
CAOA-B02-SO-0.5-1	1901920-18	Soil	07/02/19
CAOA-B02-SO-20-20.5	1901920-19	Soil	07/02/19
EB-07022019	1901920-20	Water	07/02/19
CAOA-B02-SO-0.5-1MS	1901920-18MS	Soil	07/02/19
CAOA-B02-SO-0.5-1MSD	1901920-18MSD	Soil	07/02/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Site Inspection for Per- and Polyfluoroalkyl Substances, Marine Corps Air Station Yuma, Arizona (May 2019), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples EB-06272019-GW, EB-07012019, and EB-07022019 were identified as equipment blanks. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples in this SDG
EB-06272019-GW	06/27/19	PFOS PFDA	0.0103 ug/L 0.00428 ug/L	SAOA-B08-GW

Samples FRB-06272019 (from SDG 1901857), FRB-06282019, and FRB-07012019 were identified as field reagent blanks. No contaminants were found.

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X for contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
SAOA-B08-GW	PFDA	0.00298 ug/L	0.00298U ug/L

Sample results were qualified as follows:

- If sample concentration was < 5X the blank concentration and the sample was <limit of quantitation (LOQ), the sample result was qualified as nondetect (U).
- If sample concentration was < 5X the blank concentration and the sample was >LOQ, the sample result was qualified as estimated (J).

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
CAOA-B02-SO-0.5-1MS/MSD (CAOA-B02-SO-0.5-1)	PFHxA	-	138 (70-130)	J (all detects)	A

Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples/Ongoing Precision Recovery

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

OPR ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
B9G0116-BS1	EtFOSAA	134 (70-130)	SAOA-B08-SO-30-30.5 NAOA-B08-SO-1-1.5 NAOA-B08-SO-20-20.5 NAOA-B09-SO-1-1.5 NAOA-B09-SO-20-20.5 NAOA-B01-SO-1-1.5 NAOA-B01-SO-20-20.5 CAOA-B02-SO-0.5-1 CAOA-B02-SO-20-20.5	NA	-

NA (Not Applicable): The percent recovery demonstrates a high bias and the affected compound was not detected in the associated samples. Sample qualification was not necessary.

IX. Field Duplicates

Samples SAOA-B12-GW and SAOA-B12-GW-D and samples NAOA-B01-GW and NAOA-B01-GW-D were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SAOA-B12-GW	SAOA-B12-GW-D			
PFBS	0.00758	0.00664	Not calculable	-	-
PFHxA	0.0178	0.0203	Not calculable	-	-
PFHpA	0.00410U	0.00361	Not calculable	-	-
PFHxS	0.00478	0.0157	Not calculable	-	-
PFOA	0.00410U	0.00635	Not calculable	-	-
PFNA	0.00410U	0.00302	Not calculable	-	-
PFOS	0.0127	0.0904	Not calculable	-	-
PFDA	0.00410U	0.00407	Not calculable	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	NAOA-B01-GW	NAOA-B01-GW-D			
PFBS	0.0823	0.170	70 (≤30)	J (all detects)	A
PFHxA	0.176	0.613	111 (≤30)	J (all detects)	A
PFHpA	0.0307	0.0573	60 (≤30)	J (all detects)	A

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	NAOA-B01-GW	NAOA-B01-GW-D			
PFHxS	0.167	0.120	33 (≤30)	J (all detects)	A
PFOA	0.00628	0.00362U	Not calculable	-	-
PFOS	0.0664	0.0447	39 (≤30)	J (all detects)	A

Not calculable = One or both results were less than 5x the limit of quantitation.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
SAOA-B08-GW	13C2-PFTeDA	44.1 (50-150)	PFTeDA	UJ (all non-detects)	P
SAOA-B12-GW-D	13C2-PFTeDA	30.7 (50-150)	PFTeDA	UJ (all non-detects)	P
NAOA-B02-GW	13C2-PFTeDA	45.7 (50-150)	PFTeDA	UJ (all non-detects)	P
NAOA-B01-GW	13C2-PFTeDA	47.7 (50-150)	PFTeDA	UJ (all non-detects)	P
NAOA-B01-GW-D	13C2-PFTeDA	39.8 (50-150)	PFTeDA	UJ (all non-detects)	P
CAOA-B02-SO-20-20.5	13C2-PFDoA	46.3 (50-150)	PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects)	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
SAOA-B08-GW EB-06272019-GW SAOA-B12-GW SAOA-B12-GW-D NAOA-B09-SO-1-1.5 NAOA-B02-GW NAOA-B01-SO-1-1.5 NAOA-B01-GW CAOA-B02-SO-0.5-1 CAOA-B02-SO-20-20.5	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R, field duplicate RPD, labeled compound %R, and results below the LOQ, data were qualified as estimated in eleven samples.

Due to equipment blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 1901920

Sample	Compound	Flag	A or P	Reason
CAOA-B02-SO-0.5-1	PFHxA	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
NAOA-B01-GW NAOA-B01-GW-D	PFBS PFHxA PFHpA PFHxS PFOS	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Field duplicates (RPD)
SAOA-B08-GW SAOA-B12-GW-D NAOA-B02-GW NAOA-B01-GW NAOA-B01-GW-D	PFTeDA	UJ (all non-detects)	P	Labeled compounds (%R)
CAOA-B02-SO-20-20.5	PFDoA PFTrDA	UJ (all non-detects) UJ (all non-detects)	P	Labeled compounds (%R)
SAOA-B08-GW EB-06272019-GW SAOA-B12-GW SAOA-B12-GW-D NAOA-B09-SO-1-1.5 NAOA-B02-GW NAOA-B01-SO-1-1.5 NAOA-B01-GW CAOA-B02-SO-0.5-1 CAOA-B02-SO-20-20.5	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 1901920

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 1901920

Sample	Compound	Modified Final Concentration	A or P
SAOA-B08-GW	PFDA	0.00298U ug/L	A

LDC #: 45580D96 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/12/19
SDG #: 1901920 Stage 4 Page: 1 of 2
Laboratory: Vista Analytical Laboratory Reviewer: SVG
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r² Individual ≤ 30% ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	EB = 3, 12*, 20 FRB = 4, 14*, FRB-06272019 (1901857)
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	SW	LCS/D
IX.	Field duplicates	SW	D = 16/17, 5/6
X.	Labeled Compounds	SW	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER: FRB = Field Reagent Blank

	Client ID	Lab ID	Matrix	Date
1	SAOA-B08-SO-30-30.5	1901920-01	Soil	06/27/19
2	SAOA-B08-GW	1901920-02	Water	06/27/19
3	EB-06272019-GW	1901920-03	Water	06/27/19
4	FRB-06282019	1901920-04	Water	06/28/19
5	SAOA-B12-GW D	1901920-05	Water	06/28/19
6	SAOA-B12-GW-D D	1901920-06	Water	06/28/19
7	NAOA-B08-SO-1-1.5	1901920-07	Soil	07/01/19
8	NAOA-B08-SO-20-20.5	1901920-08	Soil	07/01/19
9	NAOA-B09-SO-1-1.5	1901920-09	Soil	07/01/19
10	NAOA-B09-SO-20-20.5	1901920-10	Soil	07/01/19
11	NAOA-B02-GW	1901920-11	Water	07/01/19
12	EB-07012019	1901920-12	Water	07/01/19
13	NAOA-B01-SO-1-1.5	1901920-13	Soil	07/01/19
14	FRB-07012019	1901920-14	Water	07/01/19
15	NAOA-B01-SO-20-20.5	1901920-15	Soil	07/01/19

LDC #: 45580D96 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/12/19
SDG #: 1901920 Stage 4 Page: 2 of 2
Laboratory: Vista Analytical Laboratory Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

	Client ID	Lab ID	Matrix	Date
16	NAOA-B01-GW	1901920-16	Water	07/02/19
17	NAOA-B01-GW-D	1901920-17	Water	07/02/19
18	CAOA-B02-SO-0.5-1	1901920-18	Soil	07/02/19
19	CAOA-B02-SO-20-20.5	1901920-19	Soil	07/02/19
20	EB-07022019	1901920-20	Water	07/02/19
21	CAOA-B02-SO-0.5-1MS	1901920-18MS	Soil	07/02/19
22	CAOA-B02-SO-0.5-1MSD	1901920-18MSD	Soil	07/02/19
23				
24				
25				
26				
27				

Notes:

1	BQG0116-BLK1						
2	BQG0062-1						

LDC #: 45580 D96

VALIDATION FINDINGS CHECKLIST

Reviewer: JVG
2nd Reviewer:

Method: LCMS (EPA Method 537M)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤30%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzedin this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch in this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		

Validation Area	Yes	No	NA	Findings/Comments
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?.	✓			
XI. Labeled Compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	✓	-		
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Was m/z 499 to m/z 80 transition used as the quantitation transition for PFOS?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Perfluorinated Alkyl Acids (EPA Method 537)

A. PFBA	375-22-4
B. PFPeA	2706-90-3
C. PFBS	375-73-5
D. PFHxA	307-24-4
E. PFHpA	375-85-9
F. PFHxS	355-46-4
G. PFOA	335-67-1
H. PFHpS	375-92-8
I. PFNA	375-95-1
J. PFOSA	754-91-6
K. PFOS	1763-23-1
L. PFDA	335-76-2
M. PFUnA	2058-94-8
N. PFDS	335-77-3
O. PFDoA	307-55-1
P. MeFOSA	31506-32-8
Q. PFTrDA	72629-94-8
R. PFTeDA	376-06-7
S. EtFOSA	4151-50-2
T. MeFOSE	24448-09-7
U. EtFOSE	1691-99-2
V. MeFOSAA	2355-31-9
W. EtFOSAA	2991-50-6

Notes:_____

LDC #: 45580 D9G

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537)

(Y) N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ng/L **Associated sample units:** ng/L

>5x or <LOQ

Sampling date: 06/27/19

Field blank type: (circle one) Trip Blank/Field Blank / Rinsate / Other: EB Associated Samples: 2 (either < or > 5x)

Compound	Blank ID	Sample Identification								
	3		32							
>LOQ K	0.0103		0.144 J	a						
<LOQ L	0.00428		0.00298 U							

Blank units: _____ **Associated sample units:** _____

Sampling date: _____

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification								

LDC #: 45580D 96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JVG
2nd Reviewer: O

METHOD: LC/MS PFCs (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed in this SDG?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		21/22	D	( )	138 (70-130)	( )	18 (Det)	J dets/A
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC #: 45580 D96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	B9G0116-BS1 (OPR)	W	134 (70-130)	( )	( )	1, 7-10, 13, 15, 18,	J dets/P
			( )	( )	( )	19, MB1 (ND)	
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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LDC#: 45580D96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JVG
2nd Reviewer:

METHOD: LCMS PFAS (EPA Method 537M)
Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤30%)	Qualifications (Parent only)
	5	6		
C	0.00758	0.00664	NC	
D	0.0178	0.0203	NC	
E	0.00410U	0.00361	NC	
F	0.00478	0.0157	NC	
G	0.00410U	0.00635	NC	
I	0.00410U	0.00302	NC	
K	0.0127	0.0904	NC	
L	0.00410U	0.00407	NC	

Compound	Concentration (ug/L)		RPD (≤30%)	Qualifications (Parent only)
	16	17		
C	0.0823	0.170	70	Jdets/A
D	0.176	0.613	111	Jdets/A
E	0.0307	0.0573	60	Jdets/A
F	0.167	0.120	33	Jdets/A
G	0.00628	0.00362U	NC	
K	0.0664	0.0447	39	Jdets/A

NC (<5XLOQ)

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LDC #: 45580B96

VALIDATION FINDINGS WORKSHEET
Labeled Compound

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all labeled compounds within -50 to +150% of the associated calibration standard?

#	Date	Sample ID	Labeled Compound	%R	Limits (%)	Qualifications
		2 (ND)	13C2-R	44.1	50-150	J/UJ (all R)
		6		30.7		
		11		45.7		
		16		47.7		
		17		39.8		
		19	13C2-O	46.3		(all O, R)
		BG0062-BLK1	13C2-R	46.6		R
		BG0116-BLK1	d5-W	47.3		W

LDC#: 45580D96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/10/2019	SCN945	PFOA	0.25	0.04424	3.125
			0.5	0.06626	6.250
			1	0.16054	12.500
		13C2-PFOA	2	0.28982	25.000
			5	0.76540	62.500
			10	1.42501	125.000
			50	7.42635	625.000
			100	14.79889	1250.000

Regression Output	Calculated	Reported WLR
Constant	-0.001555	0.038532
Std Err of Y Est		
R Squared	0.999983	0.999749
Degrees of Freedom		
X Coefficient(s)	0.01184661	1.848290
Std Err of Coef.		
Correlation Coefficient	0.999992	
Coefficient of Determination (r^2)	0.999983	0.999749

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/10/2019	SCN945	PFOS	0.25	0.00818	3.125
			0.5	0.03295	6.250
	190710M2-CRV		1	0.10211	12.500
		13C8-PFOS	2	0.14330	25.000
			5	0.43202	62.500
			10	0.82840	125.000
			50	5.02607	625.000
			100	10.45259	1250.000

Regression Output	Calculated	Reported WLR
Constant	-0.076994	-0.175183
Std Err of Y Est		
R Squared	0.999354	0.995937
Degrees of Freedom		
X Coefficient(s)	0.00836341	1.269460
Std Err of Coef.		
Correlation Coefficient	0.999677	
Coefficient of Determination (r^2)	0.999354	0.995937

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/12/2019	SCN945	PFOA	0.25	0.03226	3.125
			0.5	0.06127	6.250
	190712M-CRV		1	0.11149	12.500
		13C2-PFOA	2	0.22345	25.000
			5	0.55250	62.500
			10	1.13393	125.000
			50	5.63506	625.000
			100	10.95602	1250.000
			250	26.97489	3125.000
			500	54.69562	6250.000

Regression Output	Calculated	Reported WLR
Constant	0.014494	0.073917
Std Err of Y Est		
R Squared	0.999962	0.999890
Degrees of Freedom		
X Coefficient(s)	0.00872764	1.364860
Std Err of Coef.		
Correlation Coefficient	0.999981	
Coefficient of Determination (r^2)	0.999962	0.999890

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/12/2019	SCN945	PFOS	0.25	0.02715	3.125
			0.5	0.02748	6.250
			1	0.07680	12.500
	190712M-CRV	13C8-PFOS	2	0.14878	25.000
			5	0.44086	62.500
			10	0.85959	125.000
			50	4.21093	625.000
			100	8.30061	1250.000
			250	22.46399	3125.000
			500	45.30008	6250.000

Regression Output	Calculated	Reported WLR
Constant	-0.133686	-0.160592
Std Err of Y Est		
R Squared	0.999751	0.999099
Degrees of Freedom		
X Coefficient(s)	0.00724403	1.115200
Std Err of Coef.		
Correlation Coefficient	0.999876	
Coefficient of Determination (r^2)	0.999751	0.999099

LDC # 45580D96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Conc	Reported	Recalculated	Reported % R	Recalculated % R
1	190711M3-32	7/12/2019	PFOA	(13C2-PFOA)	1.000	0.937	0.937	93.7	93.7
			PFOS	(13C8-PFOS)	1.000	1.090	1.090	109.0	109.0
2	190712M2-17 ICV	7/12/2019	PFOA	(13C2-PFOA)	10.000	7.535	7.535	75.3	75.3
			PFOS	(13C8-PFOS)	9.240	6.554	6.554	70.9	70.9
3	190712M2-35 CCV	7/12/2019	PFOA	(13C2-PFOA)	10.000	10.172	10.172	101.7	101.7
			PFOS	(13C8-PFOS)	10.000	9.410	9.410	94.1	94.1

LDC #: 45580 D96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537Mod)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 21/22

Compound	Spike Added (ng/kg)		Sample Conc (ng/kg)	Spiked Sample Concentration (ng/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
PFOA	9.97	9.73	1.56	13.7	12.7	122	122	115	115	5.91	5.91
PFOS	↓	↓	8.16	19.2	19.1	111	111	112	112	0.89%	0.90

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

% RPD based on %R

LDC #: 45580 D96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 890116-351

Compound	Spike Added (ng/kg)		Spike Concentration (ng/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	10.0	NA	10.8	NA	108	108				
PFOS	"	"	10.5	"	105	105				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 45580 D96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #7 , PFOS :

Conc. = $\frac{\left[\left(\left(\frac{6780}{2770}\right)(12.5)\right) - (-0.160592)\right](1\,ml)}{(1.1152)(1.03g)(0.985)}$

= 27.2 ng/kg

#	Sample ID	Compound	Reported Concentration (ng/kg)	Calculated Concentration ( )	Qualification
			27.2		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS Yuma, CTO 17F3803

LDC Report Date: August 22, 2019

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 1901922

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FRB-07022019	1901922-01	Water	07/02/19
CAOA-B02-GW	1901922-02	Water	07/02/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Site Inspection for Per- and Polyfluoroalkyl Substances, Marine Corps Air Station Yuma, Arizona (May 2019), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample FRB-07022019 was identified as a field reagent blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

XI. Compound Quantitation

All compound quantitations met validation criteria.

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
CAOA-B02-GW	All compounds reported below the LOQ.	J (all detects)	A

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results below the LOQ, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 1901922

Sample	Compound	Flag	A or P	Reason
CAOA-B02-GW	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 1901922

No Sample Data Qualified in this SDG

MCAS Yuma, CTO 17F3803
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 1901922

No Sample Data Qualified in this SDG

LDC #: 45580E96 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/12/19
SDG #: 1901922 Stage 4 Page: 1 of 1
Laboratory: Vista Analytical Laboratory Reviewer: JV6
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	rr Individual ≤ 30% ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FRB = 1
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank FRB = Field Reagent Blank

	Client ID	Lab ID	Matrix	Date
1	FRB-07022019	1901922-01	Water	07/02/19
2	CAOA-B02-GW	1901922-02	Water	07/02/19
3				
4				
5				
6				
7				
8				
9				
10				

Notes:

	860062-Blk1						

LDC #: 45580E96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: JVG
2nd Reviewer:

Method: LCMS (EPA Method 537M)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤30%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard except the lowest point (50-150%)?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 30%?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzedin this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch in this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

Validation Area	Yes	No	NA	Findings/Comments
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?.			✓	
XI. Labeled Compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	✓	✓		
XII. Compound quantitation				
Did the laboratory reporting limits (RL) meet the QAPP RLs?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Was m/z 499 to m/z 80 transition used as the quantitation transition for PFOS?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

LDC #: 45580 E96

VALIDATION FINDINGS WORKSHEET
Labeled Compound

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were all labeled compounds within -50 to +150% of the associated calibration standard?

#	Date	Sample ID	Labeled Compound	%R	Limits (%)	Qualifications
		B9G0062-BLK1	13C2-PFTeDA	46.6	50-150	J/UJ/P

LDC#: 45580E96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
711/19	SCN945	PFOA	0.25	0.04424	3.125
			0.5	0.06626	6.250
			1	0.16054	12.500
		13C2-PFOA	2	0.28982	25.000
			5	0.76540	62.500
			10	1.42501	125.000
			50	7.42635	625.000
			100	14.79889	1250.000

Regression Output	Calculated	Reported WLR
Constant	-0.001555	0.038532
Std Err of Y Est		
R Squared	0.999983	0.999749
Degrees of Freedom		
X Coefficient(s)	0.01184661	1.848290
Std Err of Coef.		
Correlation Coefficient	0.999992	
Coefficient of Determination (r^2)	0.999983	0.999749

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: LC/MS PFCs (EPA Method 537Mod)

Calibration Date	System	Compound	Standard	(Y) Area ratio	(X) Conc ratio
7/11/2019	SCN945	PFOS	0.25	0.00818	3.125
			0.5	0.03295	6.250
			1	0.10211	12.500
		13C8-PFOS	2	0.14330	25.000
			5	0.43202	62.500
			10	0.82840	125.000
			50	5.02607	625.000
			100	10.45259	1250.000

Regression Output	Calculated	Reported WLR
Constant	-0.076994	-0.175183
Std Err of Y Est		
R Squared	0.999354	0.995937
Degrees of Freedom		
X Coefficient(s)	0.00836341	1.269460
Std Err of Coef.		
Correlation Coefficient	0.999677	
Coefficient of Determination (r^2)	0.999354	0.995937

LDC # 45580E96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: JVG
2nd Reviewer:

METHOD: LC/MS PFCs (EPA Method 537Mod)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Conc	Reported	Recalculated	Reported % R	Recalculated % R
1	190711M3_32	7/11/2019	PFOA (13C2-PFOA)	10.000	10.329	10.329	103.3	103.3
			PFOS (13C8-PFOS)	10.000	10.227	10.227	102.3	102.3

LDC #: 45580E96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: JVG

2nd Reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BJG0062-BS1/BSD1

Compound	Spike Added (ug/L)		Spike Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.080	0.080	~~0.0857~~ 0.0880	0.0846	109	109	106	106	2.89	2.80
PFOS	1	1	0.0880	0.0817	110	110	102	102	7.33	7.42

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 45580 E96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JVG
2nd reviewer:

METHOD: LC/MS PFAS (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 7, PFOS:

Conc. = $\frac{\left[\left(\frac{2550}{1250}\right)(12.5) - (-0.17518)\right]}{(1.26946)} = 20.225$

final conc. = $\frac{(20.225)(12)}{(0.1205)(1000)} = 0.1678$

≈ 0.168 ng/L

#	Sample ID	Compound	Reported Concentration (ng/L)	Calculated Concentration ( )	Qualification
			0.168		

LOCATION-NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIC_DESC	COLLECT_DATE
SAOA-B05	SITE 00019	YUMA_MCAS	BH	BOREHOLE	1901857	438958.728	602268.602	Perfluoroalkyl Compounds	SAOA-B05-GW	WG	GROUNDWATER	6/26/2019
SAOA-B09	SITE 00019	YUMA_MCAS	BH	BOREHOLE	1901857	436080.655	600301.768	Perfluoroalkyl Compounds	SAOA-B09-GW	WG	GROUNDWATER	6/26/2019
SAOA-B11	SITE 00019	YUMA_MCAS	BH	BOREHOLE	1901857	433686.173	600518.299	Perfluoroalkyl Compounds	SAOA-B11-GW	WG	GROUNDWATER	6/27/2019