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NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, Sample Location Report, SDG 2000333

MCAS
El Toro, CA
April 2021

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

March 03, 2020

Vista Work Order No. 2000333

Ms. Kimberly Shiroodi
KMEA
2423 Hoover Avenue
National City, CA 91950

Dear Ms. Shiroodi,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on February 18, 2020 under your Project Name 'MCAS El Toro and Tustin, PFAS'.

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. 2000333
Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

PFAS Isotope Dilution Method

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (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.

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

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2000333-01	EB02-20200217	17-Feb-20 07:00	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-02	18-GW-18BGMP10E-20200217	17-Feb-20 08:05	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-03	18-GW-18BGMP10F-20200217	17-Feb-20 08:40	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-04	18-GW-18BGMP08C-20200217	17-Feb-20 10:20	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-05	24-GW-18BGMP08D-20200217	17-Feb-20 10:55	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-06	24-GW-18BGMP08E-20200217	17-Feb-20 11:30	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-07	24-GW-18PS1-20200217	17-Feb-20 14:00	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-08	DUP01-20200217	17-Feb-20 14:05	18-Feb-20 09:30	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

Vista Project: 2000333

Client Project: MCAS El Toro and Tustin, PFAS

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Aqueous

Laboratory Data

Lab Sample: B0B0155-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		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFHxA	307-24-4	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
HFPO-DA	13252-13-6	ND	0.00241	0.00300	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFHpA	375-85-9	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
ADONA	919005-14-4	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFHxS	355-46-4	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFOA	335-67-1	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFNA	375-95-1	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFOS	1763-23-1	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFDA	335-76-2	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
MeFOSAA	2355-31-9	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
EtFOSAA	2991-50-6	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFUnA	2058-94-8	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFDoA	307-55-1	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFTrDA	72629-94-8	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
PFTeDA	376-06-7	ND	0.00137	0.00200	0.00400		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	122	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C3-HFPO-DA	IS	103	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C2-PFHxA	IS	103	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C4-PFHpA	IS	112	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C3-PFHxS	IS	136	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C5-PFNA	IS	107	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C2-PFOA	IS	105	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C8-PFOS	IS	115	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C2-PFDA	IS	115	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
d3-MeFOSAA	IS	95.8	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C2-PFUnA	IS	94.6	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
d5-EtFOSAA	IS	97.4	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C2-PFDoA	IS	104	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	1
13C2-PFTeDA	IS	96.2	50 - 150		B0B0155	26-Feb-20	0.250 L	28-Feb-20 21:55	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:	KMEA	Lab Sample:	B0B0155-BS1/B0B0155-BSD1
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0B0155
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	26-Feb-20
		Column:	BEH C18

Analyte	CAS Number	LCS (ug/L)	LCS Spike	LCS % Rec	LCS Quals	LCSD (ug/L)	LCSD Spike	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	375-73-5	0.0435	0.0400	109		0.0396	0.0400	99.0	9.48		72-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFHxA	307-24-4	0.0428	0.0400	107		0.0424	0.0400	106	0.794		72-129	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
HFPO-DA	13252-13-6	0.0419	0.0400	105		0.0403	0.0400	101	3.88		70-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFHpA	375-85-9	0.0433	0.0400	108		0.0408	0.0400	102	5.91		72-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
ADONA	919005-14-4	0.0424	0.0400	106		0.0424	0.0400	106	0.0341		70-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFHxS	355-46-4	0.0423	0.0400	106		0.0331	0.0400	82.8	24.3		68-131	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFOA	335-67-1	0.0399	0.0400	99.7		0.0363	0.0400	90.8	9.37		71-133	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFNA	375-95-1	0.0441	0.0400	110		0.0414	0.0400	103	6.40		69-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFOS	1763-23-1	0.0396	0.0400	99.0		0.0405	0.0400	101	2.27		65-140	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
9Cl-PF3ONS	756426-58-1	0.0358	0.0400	89.6		0.0397	0.0400	99.2	10.2		70-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFDA	335-76-2	0.0396	0.0400	99.0		0.0421	0.0400	105	6.03		71-129	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
MeFOSAA	2355-31-9	0.0403	0.0400	101		0.0358	0.0400	89.4	11.8		65-136	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
EtFOSAA	2991-50-6	0.0375	0.0400	93.8		0.0367	0.0400	91.7	2.27		61-135	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFUnA	2058-94-8	0.0406	0.0400	102		0.0403	0.0400	101	0.793		69-133	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
11Cl-PF3OUdS	763051-92-9	0.0435	0.0400	109		0.0443	0.0400	111	1.71		70-130	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFDoA	307-55-1	0.0377	0.0400	94.3		0.0407	0.0400	102	7.62		72-134	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFTrDA	72629-94-8	0.0376	0.0400	93.9	Q	0.0403	0.0400	101	6.87		65-144	30	28-Feb-20 22:06	1	28-Feb-20 22:16	1
PFTeDA	376-06-7	0.0392	0.0400	98.1		0.0378	0.0400	94.5	3.67		71-132	30	28-Feb-20 22:06	1	28-Feb-20 22:16	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		130		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C3-HFPO-DA	IS	96.7		109		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C2-PFHxA	IS	96.8		100		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C4-PFHpA	IS	95.5		108		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C3-PFHxS	IS	108		135		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C5-PFNA	IS	98.1		116		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C2-PFOA	IS	91.4		101		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C8-PFOS	IS	107		109		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C2-PFDA	IS	108		100		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
d3-MeFOSAA	IS	84.3		103		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C2-PFUnA	IS	91.2		90.6		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
d5-EtFOSAA	IS	79.1		90.7		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1
13C2-PFDoA	IS	88.5		96.4		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1

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

Name:	KMEA	Lab Sample:	B0B0155-BS1/B0B0155-BSD1	Date Extracted:	26-Feb-20
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0B0155	Column:	BEH C18
Matrix:	Aqueous	Samp Size:	0.250/0.250 L		

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFTeDA	IS	85.1		96.0		50-150	28-Feb-20 22:06	1	28-Feb-20 22:16	1

Vista Analytical Laboratory

Sample ID: EB02-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Blank Water
Date Collected: 17-Feb-20 07:00

Laboratory Data

Lab Sample: 2000333-01
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFHxA	307-24-4	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
HFPO-DA	13252-13-6	ND	0.00243	0.00302	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFHpA	375-85-9	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
ADONA	919005-14-4	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFHxS	355-46-4	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFOA	335-67-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFNA	375-95-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFOS	1763-23-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
9Cl-PF3ONS	756426-58-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFDA	335-76-2	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
MeFOSAA	2355-31-9	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
EtFOSAA	2991-50-6	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFUnA	2058-94-8	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
11Cl-PF3OUdS	763051-92-9	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFDoA	307-55-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFTrDA	72629-94-8	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
PFTeDA	376-06-7	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	116	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C3-HFPO-DA	IS	105	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C2-PFHxA	IS	102	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C4-PFHpA	IS	111	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C3-PFHxS	IS	128	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C5-PFNA	IS	110	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C2-PFOA	IS	95.9	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C8-PFOS	IS	111	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C2-PFDA	IS	110	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
d3-MeFOSAA	IS	97.7	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C2-PFUnA	IS	105	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
d5-EtFOSAA	IS	87.6	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C2-PFDoA	IS	105	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	1
13C2-PFTeDA	IS	102	50 - 150		B0B0155	26-Feb-20	0.248 L	28-Feb-20 22:27	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: 18-GW-18BGMP10E-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 08:05

Laboratory Data

Lab Sample: 2000333-02
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFHxA	307-24-4	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
HFPO-DA	13252-13-6	ND	0.00235	0.00293	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFHpA	375-85-9	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
ADONA	919005-14-4	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFHxS	355-46-4	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFOA	335-67-1	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFNA	375-95-1	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFOS	1763-23-1	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
9Cl-PF3ONS	756426-58-1	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFDA	335-76-2	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
MeFOSAA	2355-31-9	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
EtFOSAA	2991-50-6	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFUnA	2058-94-8	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
11Cl-PF3OUdS	763051-92-9	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFDoA	307-55-1	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFTrDA	72629-94-8	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
PFTeDA	376-06-7	ND	0.00134	0.00195	0.00390		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	115	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C3-HFPO-DA	IS	99.5	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C2-PFHxA	IS	108	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C4-PFHpA	IS	107	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C3-PFHxS	IS	118	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C5-PFNA	IS	105	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C2-PFOA	IS	98.5	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C8-PFOS	IS	110	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C2-PFDA	IS	104	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
d3-MeFOSAA	IS	115	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C2-PFUnA	IS	99.6	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
d5-EtFOSAA	IS	80.6	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C2-PFDoA	IS	92.0	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	1
13C2-PFTeDA	IS	81.8	50 - 150		B0B0155	26-Feb-20	0.256 L	29-Feb-20 18:13	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: 18-GW-18BGMP10F-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 08:40

Laboratory Data

Lab Sample: 2000333-03
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00151	0.00138	0.00202	0.00403	J	B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFHxA	307-24-4	0.00316	0.00138	0.00202	0.00403	J	B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
HFPO-DA	13252-13-6	ND	0.00243	0.00302	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFHpA	375-85-9	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
ADONA	919005-14-4	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFHxS	355-46-4	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFOA	335-67-1	0.00195	0.00138	0.00202	0.00403	J	B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFNA	375-95-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFOS	1763-23-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
9Cl-PF3ONS	756426-58-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFDA	335-76-2	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
MeFOSAA	2355-31-9	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
EtFOSAA	2991-50-6	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFUnA	2058-94-8	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
11Cl-PF3OUdS	763051-92-9	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFDoA	307-55-1	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFTrDA	72629-94-8	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
PFTeDA	376-06-7	ND	0.00138	0.00202	0.00403		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	108	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C3-HFPO-DA	IS	94.4	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C2-PFHxA	IS	108	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C4-PFHpA	IS	105	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C3-PFHxS	IS	107	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C5-PFNA	IS	102	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C2-PFOA	IS	102	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C8-PFOS	IS	109	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C2-PFDA	IS	106	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
d3-MeFOSAA	IS	118	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C2-PFUnA	IS	104	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
d5-EtFOSAA	IS	96.5	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C2-PFDoA	IS	107	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	1
13C2-PFTeDA	IS	86.9	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 18:23	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: 18-GW-18BGMP08C-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 10:20

Laboratory Data

Lab Sample: 2000333-04
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFHxA	307-24-4	0.00134	0.00133	0.00195	0.00390	J, Q	B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
HFPO-DA	13252-13-6	ND	0.00235	0.00292	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFHpA	375-85-9	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
ADONA	919005-14-4	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFHxS	355-46-4	0.00754	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFOA	335-67-1	0.00151	0.00133	0.00195	0.00390	J, Q	B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFNA	375-95-1	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFOS	1763-23-1	0.00200	0.00133	0.00195	0.00390	J, Q	B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
9Cl-PF3ONS	756426-58-1	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFDA	335-76-2	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
MeFOSAA	2355-31-9	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
EtFOSAA	2991-50-6	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFUnA	2058-94-8	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
11Cl-PF3OUdS	763051-92-9	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFDoA	307-55-1	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFTrDA	72629-94-8	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
PFTeDA	376-06-7	ND	0.00133	0.00195	0.00390		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.7	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C3-HFPO-DA	IS	85.5	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C2-PFHxA	IS	96.7	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C4-PFHpA	IS	102	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C3-PFHxS	IS	105	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C5-PFNA	IS	96.6	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C2-PFOA	IS	96.4	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C8-PFOS	IS	98.7	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C2-PFDA	IS	95.5	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
d3-MeFOSAA	IS	99.4	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C2-PFUnA	IS	95.7	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
d5-EtFOSAA	IS	84.0	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C2-PFDoA	IS	89.1	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	1
13C2-PFTeDA	IS	74.5	50 - 150		B0B0155	26-Feb-20	0.257 L	29-Feb-20 18:34	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: 24-GW-18BGMP08D-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 10:55

Laboratory Data

Lab Sample: 2000333-05
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00205	0.00135	0.00198	0.00395	J	B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFHxA	307-24-4	0.00652	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
HFPO-DA	13252-13-6	ND	0.00238	0.00296	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFHpA	375-85-9	0.00178	0.00135	0.00198	0.00395	J, Q	B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
ADONA	919005-14-4	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFHxS	355-46-4	0.0117	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFOA	335-67-1	0.0123	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFNA	375-95-1	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFOS	1763-23-1	0.00710	0.00135	0.00198	0.00395	Q	B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
9Cl-PF3ONS	756426-58-1	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFDA	335-76-2	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
MeFOSAA	2355-31-9	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
EtFOSAA	2991-50-6	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFUnA	2058-94-8	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
11Cl-PF3OUdS	763051-92-9	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFDoA	307-55-1	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFTrDA	72629-94-8	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
PFTeDA	376-06-7	ND	0.00135	0.00198	0.00395		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	112	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C3-HFPO-DA	IS	94.1	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C2-PFHxA	IS	97.0	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C4-PFHpA	IS	99.5	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C3-PFHxS	IS	109	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C5-PFNA	IS	102	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C2-PFOA	IS	95.3	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C8-PFOS	IS	109	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C2-PFDA	IS	110	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
d3-MeFOSAA	IS	94.5	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C2-PFUnA	IS	104	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
d5-EtFOSAA	IS	89.8	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C2-PFDoA	IS	87.3	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	1
13C2-PFTeDA	IS	86.1	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:44	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: 24-GW-18BGMP08E-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 11:30

Laboratory Data

Lab Sample: 2000333-06
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0266	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFHxA	307-24-4	0.0750	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
HFPO-DA	13252-13-6	ND	0.00238	0.00296	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFHpA	375-85-9	0.0237	0.00135	0.00198	0.00396	Q	B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
ADONA	919005-14-4	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFHxS	355-46-4	0.161	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFOA	335-67-1	0.146	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFNA	375-95-1	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFOS	1763-23-1	0.168	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
9Cl-PF3ONS	756426-58-1	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFDA	335-76-2	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
MeFOSAA	2355-31-9	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
EtFOSAA	2991-50-6	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFUnA	2058-94-8	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
11Cl-PF3OUdS	763051-92-9	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFDoA	307-55-1	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFTrDA	72629-94-8	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
PFTeDA	376-06-7	ND	0.00135	0.00198	0.00396		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	111	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C3-HFPO-DA	IS	104	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C2-PFHxA	IS	105	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C4-PFHpA	IS	107	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C3-PFHxS	IS	100	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C5-PFNA	IS	108	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C2-PFOA	IS	103	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C8-PFOS	IS	115	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C2-PFDA	IS	104	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
d3-MeFOSAA	IS	110	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C2-PFUnA	IS	105	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
d5-EtFOSAA	IS	83.6	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C2-PFDoA	IS	87.3	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	1
13C2-PFTeDA	IS	78.9	50 - 150		B0B0155	26-Feb-20	0.253 L	29-Feb-20 18:55	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: 24-GW-18PS1-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 14:00

Laboratory Data

Lab Sample: 2000333-07
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0277	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFHxA	307-24-4	0.103	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
HFPO-DA	13252-13-6	ND	0.00243	0.00302	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFHpA	375-85-9	0.00883	0.00138	0.00202	0.00404	Q	B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
ADONA	919005-14-4	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFHxS	355-46-4	0.0736	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFOA	335-67-1	0.0323	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFNA	375-95-1	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFOS	1763-23-1	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
9Cl-PF3ONS	756426-58-1	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFDA	335-76-2	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
MeFOSAA	2355-31-9	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
EtFOSAA	2991-50-6	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFUnA	2058-94-8	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
11Cl-PF3OUdS	763051-92-9	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFDoA	307-55-1	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFTrDA	72629-94-8	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
PFTeDA	376-06-7	ND	0.00138	0.00202	0.00404		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	104	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C3-HFPO-DA	IS	95.3	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C2-PFHxA	IS	98.3	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C4-PFHpA	IS	102	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C3-PFHxS	IS	113	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C5-PFNA	IS	95.1	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C2-PFOA	IS	100	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C8-PFOS	IS	109	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C2-PFDA	IS	106	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
d3-MeFOSAA	IS	94.8	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C2-PFUnA	IS	96.9	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
d5-EtFOSAA	IS	79.9	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C2-PFDoA	IS	86.4	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	1
13C2-PFTeDA	IS	82.7	50 - 150		B0B0155	26-Feb-20	0.248 L	29-Feb-20 19:05	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: DUP01-20200217

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 17-Feb-20 14:05

Laboratory Data

Lab Sample: 2000333-08
Date Received: 18-Feb-20 09:30
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0261	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFHxA	307-24-4	0.113	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
HFPO-DA	13252-13-6	ND	0.00242	0.00301	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFHpA	375-85-9	0.00935	0.00138	0.00201	0.00402	Q	B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
ADONA	919005-14-4	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFHxS	355-46-4	0.0690	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFOA	335-67-1	0.0308	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFNA	375-95-1	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFOS	1763-23-1	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
9Cl-PF3ONS	756426-58-1	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFDA	335-76-2	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
MeFOSAA	2355-31-9	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
EtFOSAA	2991-50-6	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFUnA	2058-94-8	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
11Cl-PF3OUdS	763051-92-9	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFDoA	307-55-1	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFTrDA	72629-94-8	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
PFTeDA	376-06-7	ND	0.00138	0.00201	0.00402		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	105	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C3-HFPO-DA	IS	88.3	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C2-PFHxA	IS	94.7	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C4-PFHpA	IS	99.7	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C3-PFHxS	IS	111	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C5-PFNA	IS	97.2	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C2-PFOA	IS	98.3	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C8-PFOS	IS	113	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C2-PFDA	IS	97.0	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
d3-MeFOSAA	IS	101	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C2-PFUnA	IS	96.8	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
d5-EtFOSAA	IS	77.0	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C2-PFDoA	IS	88.6	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1
13C2-PFTeDA	IS	77.7	50 - 150		B0B0155	26-Feb-20	0.249 L	29-Feb-20 19:16	1

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

Results reported to the DL.

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

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
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
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
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

1104 Windfield Way
El Dorado Hills, CA 95762
TEL: 916-673-1520

2000333 1.4°C

CHAIN OF CUSTODY RECORD

DATE: 2/17/2020

Vista PM: Jade White-Dobbs

PAGE: 1 OF 1

LABORATORY CLIENT: KMEA	CLIENT PROJECT NAME / NUMBER: MCAS El Toro and Tustin, PFAS	P.O. NO.: TO 008 Mod 4
ADDRESS: 9210 Sky Park Court, Suite 220	PROJECT CONTACT: Kimberly Shiroodi / Brian Johnson	CONTRACT NO.: N62473-16-D-2405
CITY: San Diego, CA 92123	SAMPLER(S): (SIGNATURE) Lily Rueter	LAB USE ONLY
TEL: (619) 399-5900 / E-Mail: kimberly.shiroodi@woodplc.com / E-MAIL: brian.johnson@woodplc.com		

TURNAROUND TIME

☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Samples potentially contain elevated levels of PFAS
Extra sample volume provided when available (Westbay Wells).

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS
	EB 02 – 20200217	2/17/20	7:00	BW	2		X
	18-GW-18BGMP10E-20200217		8:05	GW	3	IV	X
	18-GW-18BGMP10F-20200217		8:40		3	IV	X
	18-GW-18BGMP08C-20200217		10:20		3	IV	X
	24-GW-18BGMP08D-20200217		10:55		3	IV	X
	24-GW-18BGMP08E-20200217		11:30		3	IV	X
	24-GW-18PS1-20200217		14:00		2	IV	X
	DUP01-20200217	V	14:05	V	2	IV	X
				VK 2-17-20			

Relinquished by: (Signature) Lily Rueter	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 2/17/20	Time: 17:00
Relinquished by: (Signature) FedEx	Received by: (Signature) Connor Mulloy	Date: 02/18/20	Time: 0930
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2000333 TAT 14

Samples Arrival:	**Date/Time** 02/18/20 0930		**Initials:** CM		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None
Temp °C: 1.4 (uncorrected)			**Probe used:** Y / (N)		**Thermometer ID:** IR-4		
Temp °C: 1.4 (corrected)							

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Airbill — Trk # 8037 9176 6854	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / (Client) / Retain / (Return) / Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** ~~02/18/20~~ 02/18/20 1139		**Initials:** CM	**Location:** R-13/WR-2 **Shelf/Rack:** A-4/E-2	
COC Anomaly/Sample Acceptance Form completed?				✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2000333

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2000333-01	A EB02-20200217	☑		17-Feb-20 07:00	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-01	B EB02-20200217	☑		17-Feb-20 07:00	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-02	A 18-GW-18BGMP10E-20200217	☑		17-Feb-20 08:05	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-02	B 18-GW-18BGMP10E-20200217	☑		17-Feb-20 08:05	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-02	C 18-GW-18BGMP10E-20200217	☑		17-Feb-20 08:05	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-03	A 18-GW-18BGMP10F-20200217	☑		17-Feb-20 08:40	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-03	B 18-GW-18BGMP10F-20200217	☑		17-Feb-20 08:40	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-03	C 18-GW-18BGMP10F-20200217	☑		17-Feb-20 08:40	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-04	A 18-GW-18BGMP08C-20200217	☑		17-Feb-20 10:20	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-04	B 18-GW-18BGMP08C-20200217	☑		17-Feb-20 10:20	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-04	C 18-GW-18BGMP08C-20200217	☑		17-Feb-20 10:20	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-05	A 24-GW-18BGMP08D-20200217	☑		17-Feb-20 10:55	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-05	B 24-GW-18BGMP08D-20200217	☑		17-Feb-20 10:55	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-05	C 24-GW-18BGMP08D-20200217	☑		17-Feb-20 10:55	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-06	A 24-GW-18BGMP08E-20200217	☑		17-Feb-20 11:30	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-06	B 24-GW-18BGMP08E-20200217	☑		17-Feb-20 11:30	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-06	C 24-GW-18BGMP08E-20200217	☑		17-Feb-20 11:30	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-07	A 24-GW-18PS-20200217	☑		17-Feb-20 14:00	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-07	B 24-GW-18PS-20200217	☑		17-Feb-20 14:00	☑	HDPE Bottle, 250 mL	Aqueous	
2000333-08	A DUP01-20200217	☑		17-Feb-20 14:05	☑	HDPE Bottle, 125 mL	Aqueous	
2000333-08	B DUP01-20200217	☑		17-Feb-20 14:05	☑	HDPE Bottle, 125 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓★		
Container Type Appropriate for Analysis(es)	✓		
Preservation Documented: Na2S2O3 Trizma (None) Other	✓		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

Comments:

★ Sample Volume 175 mL

(A) "I" changed to "1"

ID NOT changed

MN 3/3/20

Verifed by/Date: CM 02/18/20

March 03, 2020

Vista Work Order No. 2000333

Ms. Kimberly Shiroodi
KMEA
2423 Hoover Avenue
National City, CA 91950

Dear Ms. Shiroodi,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on February 18, 2020 under your Project Name 'MCAS El Toro and Tustin, PFAS'.

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 Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 ph: 916-673-1520 fx: 916-673-0106 www.vista-analytical.com

Vista Work Order No. 2000333
Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

PFAS Isotope Dilution Method

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (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.

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

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2000333-01	EB02-20200217	17-Feb-20 07:00	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-02	18-GW-18BGMP10E-20200217	17-Feb-20 08:05	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-03	18-GW-18BGMP10F-20200217	17-Feb-20 08:40	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-04	18-GW-18BGMP08C-20200217	17-Feb-20 10:20	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-05	24-GW-18BGMP08D-20200217	17-Feb-20 10:55	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-06	24-GW-18BGMP08E-20200217	17-Feb-20 11:30	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-07	24-GW-18PS1-20200217	17-Feb-20 14:00	18-Feb-20 09:30	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000333-08	DUP01-20200217	17-Feb-20 14:05	18-Feb-20 09:30	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

Vista Project: 2000333

Client Project: MCAS El Toro and Tustin, PFAS

ANALYTICAL RESULTS

Vista Analytical Laboratory

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

Client Data
Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Aqueous

Laboratory Data
Lab Sample: B0B0411-BLK4
Column: BEH C48

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	371-73-1	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFHxA	307-25-5	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
HFP6 -DA	43212-43-O	ND	0.00254	0.00300	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFHpA	371-81-9	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
AD6 NA	949001-45-5	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFHxS	311-5O-5	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PF6 A	331-O7-4	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFNA	371-91-4	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PF6 S	47O8-23-4	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
9Cl-PF36 NS	71O52O-18-4	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFDA	331-7O-2	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
MeF6 SAA	2311-34-9	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
EtF6 SAA	2994-10-O	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFUnA	2018-95-8	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
44Cl-PF36 UdS	7O8014-92-9	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFDoA	307-11-4	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFTrDA	72O29-95-8	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
PFTeDA	37O-0O-7	ND	0.00437	0.00200	0.00500		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
43C3-PFBS	IS	422	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C3-HFP6 -DA	IS	403	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C2-PFHxA	IS	403	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C5-PFHpA	IS	442	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C3-PFHxS	IS	43O	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C1-PFNA	IS	407	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C2-PF6 A	IS	401	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C8-PF6 S	IS	441	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C2-PFDA	IS	441	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
d3-MeF6 SAA	IS	91.8	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C2-PFUnA	IS	95.O	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
d1-EtF6 SAA	IS	97.5	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C2-PFDoA	IS	405	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4
43C2-PFTeDA	IS	9Q2	10 - 410		B0B0411	2O-Feb-20	0.210 L	28-Feb-20 24:11	4

DL - Detection Limit
L6 D - Limit of Detection
L6 Q - Limit of quantitation
Results reported to the DL.
When reported, PFHxS, PF6 A, PF6 S, MeF6 SAA and EtF6 SAA include both linear and branched isomers. 6 nly the linear isomer is reported for all other analytes.

Vista Analytical Laboratory

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

Name:	KMEA	Lab Sample:	B0B0411-BS4IB0B0411-BSD4
Project:	MCAS El 5oro and 5ustinzP3AS	QC Batch:	B0B0411
Matrix:	Aqueous	Samp Si. e:	0/210I0/210 L
Date Extracted:	27-3eb-20	Column:	BEH C48

Analyte	CAS Number	LCS (ug/L)	LCS Spike	LCS % Rec	LCS Quals	LCSD (ug/L)	LCSD Spike	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
P3BS	T61-6T-1	0/09T1	0/0900	40,		0/0T, 7	0/0900	, , /0	, /98		62-4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3HxA	T06-29-9	0/0928	0/0900	406		0/0929	0/0900	407	0/6, 9		62-42,	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
H3PO-DA	4T212-4T-7	0/094,	0/0900	401		0/090T	0/0900	404	T/88		60-4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3HpA	T61-81-,	0/09TT	0/0900	408		0/0908	0/0900	402	1/, 4		62-4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
ADONA	, 4, 001-49-9	0/0929	0/0900	407		0/0929	0/0900	407	0/0T94		60-4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3HxS	T11-97-9	0/092T	0/0900	407		0/0TT4	0/0900	82/8	29/T		78-4T4	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3OA	TT1-76-4	0/0T, ,	0/0900	, , /6		0/0T7T	0/0900	, 0/8	, /T6		64-4TT	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3NA	T61-, 1-4	0/0994	0/0900	440		0/0949	0/0900	40T	7/90		7, -4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3OS	467T-2T-4	0/0T, 7	0/0900	, , /0		0/0901	0/0900	404	2/26		71-490	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
, Cl-P3TONS	617927-18-4	0/0T18	0/0900	8, /7		0/0T, 6	0/0900	, , /2	40/2		60-4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3DA	TT1-67-2	0/0T, 7	0/0900	, , /0		0/0924	0/0900	401	7/0T		64-42,	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
Me3OSAA	2T11-T4-,	0/090T	0/0900	404		0/0T18	0/0900	8, /9	44/8		71-4T7	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
Et3OSAA	2, , 4-10-7	0/0T61	0/0900	, T/8		0/0T76	0/0900	, 4/6	2/26		74-4T1	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3UnA	2018-, 9-8	0/0907	0/0900	402		0/090T	0/0900	404	0/6, T		7, -4TT	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
44Cl-P3TOUdS	67T014-, 2-,	0/09T1	0/0900	40,		0/099T	0/0900	444	4/64		60-4T0	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P3DoA	T06-11-4	0/0T66	0/0900	, 9/T		0/0906	0/0900	402	6/72		62-4T9	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P35rDA	6272, -, 9-8	0/0T67	0/0900	, T/,	Q	0/090T	0/0900	404	7/86		71-499	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4
P35eDA	T67-07-6	0/0T, 2	0/0900	, 8/4		0/0T68	0/0900	, 9/1	T/76		64-4T2	T0	28-3eb-20 22:07	4	28-3eb-20 22:47	4

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
4TCT-P3BS	IS	442		4T0		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TCT-H3PO-DA	IS	, 7/6		40,		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC2-P3HxA	IS	, 7/8		400		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC9-P3HpA	IS	, 1/1		408		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TCT-P3HxS	IS	408		4T1		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC1-P3NA	IS	, 8/4		447		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC2-P3OA	IS	, 4/9		404		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC8-P3OS	IS	406		40,		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC2-P3DA	IS	408		400		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
dT-Me3OSAA	IS	89/T		40T		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC2-P3UnA	IS	, 4/2		, 0/7		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
d1-Et3OSAA	IS	6, /4		, 0/6		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4
4TC2-P3DoA	IS	88/1		, 7/9		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4

Vista Analytical Laboratory

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

Name:	KMEA	Lab Sample:	B0B0411-BS4HB0B0411-BSD4		
Project:	MCAS El 5oro and 5ustinzP3AS	QC Batch:	B0B0411	Date Extracted:	27-3eb-20
Matrix:	Aqueous	Samp Si. e:	0/210H0/210 L	Column:	BEH C48

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
4TC2-P35eDA	IS	81/4		, 7/0		10-410	28-3eb-20 22:07	4	28-3eb-20 22:47	4

Vista Analytical Laboratory

Sample ID: EB02-20200217 — **PFAS Isotope Dilution Method**

Client Data

Name: 1 MEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Klan8 k ater
Date Collected: - W7Feb720 0W00

Laboratory Data

Lab Sample: 20004447 0-
Date Received: - H7Feb720 05:40
Column: KEB C- H

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFKS	4W67W476	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFBxA	40W2. 7.	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
BFPO7DA	-42627-473	ND	09002. 4	0900402	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFBpA	4W67H675	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
ADONA	5-50067-. 7.	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFBxS	4667. 37.	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFOA	44673W-	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFNA	4W67567-	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFOS	-W347247-	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
5Cl7PF4ONS	W63. 2376H7-	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFDA	4467W372	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
MeFOSAA	246674-75	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
EtFOSAA	255-76073	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFUnA	206H75. 7H	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
--Cl7PF4OUdS	W3406-75275	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFDoA	40W667-	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFTrDA	W23257 5. 7H	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
PFTeDA	4W37037W	ND	0900-4H	0900202	0900. 04		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
-4C47PFKS	IS	--3	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C47BFPO7DA	IS	-06	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C27PFBxA	IS	-02	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C. 7PFBpA	IS	---	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C47PFBxS	IS	-2H	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C67PFNA	IS	--0	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C27PFOA	IS	5695	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4CH7PFOS	IS	---	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C27PFDA	IS	--0	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
d47MeFOSAA	IS	5W8W	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C27PFUnA	IS	-06	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
d67EtFOSAA	IS	HW8	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C27PFDoA	IS	-06	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-
-4C27PFTeDA	IS	-02	60 7-60		K0K0-66	237Feb720	092. HL	2H7Feb720 22:2W	-

DL 7Detection Limit
LOD 7Limit of Detection
LOQ 7Limit of quantitation
Results reported to the DL9
k hen reported, PFBxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers9 Only the linear isomer is reported for all other analytes9

Vista Analytical Laboratory

Sample ID: 18-GW-18BGMP10E-20200217 — **PFAS Isotope Dilution Method**

Client Data

Name: - MEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: 1 round8 ater
Date Collected: BG7Feb720 0H:0w

Laboratory Data

Lab Sample: 2000444702
Date Received: BH7Feb720 05:40
Column: 3 EK CBH

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PF3 S	4Gw7G47w	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFKxA	40G72. 7.	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
KFPO7DA	B42w27B476	ND	090024w	0900254	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFKpA	4Gw7Hw75	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
ADONA	5B500w7B. 7.	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFKxS	4ww7. 67.	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFOA	44w76G7B	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFNA	4Gw75w7B	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFOS	BG6472 47B	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
5Cl7PF4ONS	Gw6. 267wH7B	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFDA	44w7G672	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
MeFOSAA	24ww74B75	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
EtFOSAA	255B7w076	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFUnA	20wH75. 7H	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
BBCl7PF4OUdS	G640wB7527 5	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFDoA	40G7ww7B	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFTrDA	G26257 5. 7H	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
PFTeDA	4G670 67G	ND	0900B4.	0900B5w	0900450		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
B4C47PF3 S	IS	BBw	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C47KFPO7DA	IS	559w	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C27PFKxA	IS	B0H	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C. 7PFKpA	IS	B0G	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C47PFKxS	IS	BBH	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4Cw7PFNA	IS	B0w	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C27PFOA	IS	5H9w	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4CH7PFOS	IS	BB0	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C27PFDA	IS	B0.	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
d47MeFOSAA	IS	BBw	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C27PFUnA	IS	5596	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
dw7EtFOSAA	IS	H096	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C27PFDoA	IS	5290	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B
B4C27PFTeDA	IS	HB9H	w0 7 Bw0		3 03 0Bww	267Feb720	092w6 L	257Feb720 BH:B4	B

DL 7Detection Limit
LOD 7Limit of Detection
LOQ 7Limit of quantitation
Results reported to the DL9
When reported, PFKxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers9 Only the linear isomer is reported for all other analytes9

Vista Analytical Laboratory

Sample ID: 18-GW-18BGMP10E-20200217 — **PEFS IAotope Dils tion Metuoh**

Client Data

Name: - MEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: 8 roundGater
Date Collected: Hw7Feb720 01:R0

Laboratory Data

Lab Sample: 20004447 04
Date v ecei5ed: Hl 7Feb720 09:40
Column: KEB CHl

Fnalyte	CFS Nsmber	Condc.s (gL/	DL	Lz D	Lz)	) saliQerA	Batdu	Oxtradteh	Samp Sife	Fnalyfeh	Dils tion
PFKS	4w37w473	0.00HBH	0.00H41	0.00202	0.00R04	6	K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFBxA	40w72R7R	0.004HJ	0.00H41	0.00202	0.00R04	6	K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
BFPQ7DA	H42327H47J	ND	0.002R4	0.00402	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFBpA	4w37l379	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
ADQNA	9H900037HR7R	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFBxS	4337RJ7R	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFQA	4437Jw7H	0.00H93	0.00H41	0.00202	0.00R04	6	K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFNA	4w37937H	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFQS	HwJ47247H	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
9Cl7PF4QNS	w3JR2J7317H	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFDA	4437wJ72	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
MeFQSAA	243374H79	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
EtFQSAA	299H7307J	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFOnA	203179R7l	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
HHCl7PF4QOdS	wJ403H79279	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFDoA	40w7337H	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFTrDA	w2J2979R7l	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
PFTeDA	4wJ70J7w	ND	0.00H41	0.00202	0.00R04		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H

Labeleh StanharhA	Type	% Redovery	LimitA	) saliQerA	Batdu	Oxtradteh	Samp Sife	Fnalyfeh	Dils tion
H4C47PFKS	US	HD1	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C47BFPQ7DA	US	9R.R	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C27PFBxA	US	HD1	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4CR7PFBpA	US	HD3	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C47PFBxS	US	HDw	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C37PFNA	US	HD2	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C27PFQA	US	HD2	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C17PFQS	US	HD9	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C27PFDA	US	HDJ	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
d47MeFQSAA	US	HHl	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C27PFOnA	US	HDR	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
d37EtFQSAA	US	9J.3	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C27PFDoA	US	HDw	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H
H4C27PFTeDA	US	1J.9	30 7 HB0		K0K0HB3	2J7Feb720	0.2Rl L	297Feb720 Hl:24	H

DL 7Detection Limit
LQD 7Limit oyDetection
LQf 7Limit oyquantitation
v esults reported to tI e DL.
h I en reported, PFBxS, PFQA, PFQS, MeFQSAA and EtFQSAA include botI linear and brancI ed isomers. QnlWtI e linear isomer is reported yor all otI er anal Wes.

Vista Analytical Laboratory

Sample ID: 18-GW-18BGMP08C-E0E00E12 — **PyFS IAbtbpe Dils tibn Metubh**

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 1R7Feb720 10:20

7aLboatbor Data

Lab Sample: 20004447O-
Date vecei5ed: 187Feb720 09:40
Column: BEH C18

Fnalrte	CFS Ns mLeo	Cbndc.s (g7/	D7	7z D	7z)	) saliQeoA	Batdu	Oxtoadteh	Samp Sife	Fnalrfeh	Dils tibn
PFBS	4R37R473	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFHxA	40R72-7-	0.0014-	0.00144	0.00193	0.00490	J, Q	B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
HFPO7DA	1423271476	ND	0.00243	0.00292	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFHpA	4R378379	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
ADONA	91900371-7-	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFHxS	4337-67-	0.00R3-	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFOA	44376R71	0.00131	0.00144	0.00193	0.00490	J, Q	B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFNA	4R379371	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFOS	1R647247l	0.00200	0.00144	0.00193	0.00490	J, Q	B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
9Cl7PF4ONS	R36-2673871	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFDA	4437R672	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
MeFOSAA	243374179	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
EtFOSAA	299173076	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFUnA	203879-78	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
11Cl7PF4OUdS	R6403179279	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFDoA	40R73371	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFTrDA	R262979-78	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
PFTeDA	4R67067R	ND	0.00144	0.00193	0.00490		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1

7aLeleh StanhaohA	Trpe	% Redbveor	7imitA	) saliQeoA	Batdu	Oxtoadteh	Samp Sife	Fnalrfeh	Dils tibn
14C47PFBS	IS	96.R	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C47HFPO7DA	IS	83.3	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C27PFHxA	IS	96.R	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C-7PFHpA	IS	102	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C47PFHxS	IS	103	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C37PFNA	IS	96.6	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C27PFOA	IS	96.-	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C87PFOS	IS	98.R	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C27PFDA	IS	93.3	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
d47MeFOSAA	IS	99.-	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C27PFUnA	IS	93.R	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
d37EtFOSAA	IS	8-.0	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C27PFDoA	IS	89.1	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1
14C27PFTeDA	IS	R-.3	30 7 130		B0B0133	267Feb720	0.23RL	297Feb720 18:4-	1

DL 7Detection Limit
LOD 7Limit of Detection
LOQ 7Limit of quantitation
vesults 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.

Vista Analytical Laboratory

Sample ID: 24-GW-18BGMP08D-20200217 — **PFAS Isotope Dilution Method**

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 1R7Feb720 10:- -

Laboratory Data

Lab Sample: 20004447O-
Date v ecei5ed: 187Feb720 09:40
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	4R-7R47-	0.0020-	0.0014-	0.00198	0.0049-	3	B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFHxA	40R72676	0.00J-2	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
HFPQ7DA	142-27147J	ND	0.00248	0.0029J	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFHpA	4R-78-79	0.001R8	0.0014-	0.00198	0.0049-	3, O	B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
ADQNA	91900-71676	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFHxS	4- -76J76	0.011R	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFQA	44-7JR71	0.0124	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFNA	4R-79-71	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFQS	1RJ472471	0.00R10	0.0014-	0.00198	0.0049-	O	B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
9Cl7PF4QNS	R-J62J7-871	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFDA	44-7RJ72	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
MeFQSAA	24- -74179	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
EtFQSAA	29917-07J	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFUnA	20-879678	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
11Cl7PF4QUdS	RJ40-179279	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFDoA	40R7- -71	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFTrDA	R2J2979678	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
PFTeDA	4RJ70J7R	ND	0.0014-	0.00198	0.0049-		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
14C47PFBS	IS	112	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C47HFPQ7DA	IS	96.1	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C27PFHxA	IS	9R.0	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C67PFHpA	IS	99.-	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C47PFHxS	IS	109	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C-7PFNA	IS	102	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C27PFQA	IS	9-.4	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C87PFQS	IS	109	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C27PFDA	IS	110	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
d47MeFQSAA	IS	96.-	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C27PFUnA	IS	106	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
d-7EtFQSAA	IS	89.8	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C27PFDoA	IS	8R.4	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1
14C27PFTeDA	IS	8J.1	-071-0		B0B01- -	2J7Feb720	0.2-4 L	297Feb720 18:66	1

DL 7Detection Limit
LQD 7Limit of Detection
LQO 7Limit of quantitation
v esults reported to the DL.

When reported, PFHxS, PFQA, PFQS, MeFQSAA and EtFQSAA include both linear and branched isomers. Qnly the linear isomer is reported for all other analytes.

Sample ID: 24-GW-18BGMP087-2020021L — **PAs S Iurtrpe Dilhtirn Metdrc**

Client Data

Name: 3 MEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: 8 roundGater
Date Collected: Hw7Feb720 HH40

baoryatryF Data

Lab Sample: 20004447 0-
Date Received: Hl7Feb720 05:40
Column: KEB CHl

s nalFte	Cs S Nhmoey	Crn. (gh/)bQ	Db	bED	bEf	f halizieyu	Bat. d	7xtya. tec	Samp SiQe	s nalFQec	Dilhtirn
PFKS	4w. 7w47.	0902- -	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFBxA	40w726 76	090w. 0	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
BFPO7DA	H42. 27H47-	ND	0900241	090025-	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFBpA	4w. 7l. 75	09024w	0900H4.	0900H51	090045-	U	K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
ADONA	5H500. 7H676	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFBxS	4. . 76- 76	09H- H	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFOA	44. 7- w7H	09H6-	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFNA	4w. 75. 7H	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFOS	Hw- 47247H	09H- 1	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
5Cl7PF4ONS	w. - 62- 7. 17H	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFDA	44. 7w- 72	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
MeFOSAA	24. . 74H75	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
EtFOSAA	255H7. 07-	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFI nA	20. 175671	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
HHCl7PF4OI dS	w- 40. H7527 5	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFDoA	40w7. . 7H	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFTrDA	w2- 257567l	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
PFTeDA	4w- 70- 7w	ND	0900H4.	0900H51	090045-		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H

baoelec Stancaycu	TFpe	% Re. rveyF	bimitu	f halizieyu	Bat. d	7xtya. tec	Samp SiQe	s nalFQec	Dilhtirn
H4C47PFKS	hS	HHH	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C47BFPO7DA	hS	HD6	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C27PFBxA	hS	HD.	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C67PFBpA	hS	HDw	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C47PFBxS	hS	HD0	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C. 7PFNA	hS	HD1	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C27PFOA	hS	HD4	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C17PFOS	hS	HH	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C27PFDA	hS	HD6	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
d47MeFOSAA	hS	HH0	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C27PFI nA	hS	HD.	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
d. 7EtFOSAA	hS	149-	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C27PFDoA	hS	1w94	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H
H4C27PFTeDA	hS	wl95	. 0 7 H 0		K0K0H .	2-7Feb720	092. 4 L	257Feb720 Hl:. .	H

DL 7Detection Limit
LOD 7Limit oQDetection
LOU 7Limit oQquantitation
Results reported to tWe DL9
y Wen reported, PFBxS, PFOA, PFOS, MeFOSAA and EtFOSAA include botW linear and brancWed isomers9 Onlf tWe linear isomer is reported Qr all otWer analftes9

Vista Analytical Laboratory

Sample ID: 24-GW-18BS1-2M2MM21P **Bry S IHLtLpe DilAtiLn s etuLh**

Client Data

Name: 3 MEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: 8 roundGater
Date Collected: H-7Feb720 Hw:00

0a7LbatLbo Data

Lab Sample: 20004447 0-
Date Received: Hl7Feb720 05:40
Column: KEB CHl

y nalote	Cy S NAm7eb	CLndc.A(g0/	D0	0z D	0z)	) AaliQebF	Oatdu	Extbadteh	Samp Sife	y nalofeh	DilAtiLn
PFKS	4-. 7-47.	0902--	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFBxA	40-72w7w	09HD4	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
BFPO7DA	H42. 27H476	ND	09002w4	0900402	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFBpA	4-. 71. 75	0900114	0900H41	0900202	0900w0w	U	K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
ADONA	5H500. 7Hw7w	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFBxS	4. . 7w67w	090-46	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFOA	44. 76-7H	090424	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFNA	4-. 75. 7H	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFOS	H-647247H	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
5Cl7PF4ONS	-. 6w267. 17H	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFDA	44. 7-672	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
MeFOSAA	24. . 74H75	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
EtFOSAA	255H7. 076	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFI nA	20. 175w71	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
HHCl7PF4OI dS	-640. H75275	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFDoA	40-7. . 7H	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFTrDA	-262575w71	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
PFTeDA	4-67067-	ND	0900H41	0900202	0900w0w		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H

0a7eleh StanhabhF	Tope	% RedLvebo	0imitF	) AaliQebF	Oatdu	Extbadteh	Samp Sife	y nalofeh	DilAtiLn
H4C47PFKS	hS	H0w	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C47BFPO7DA	hS	5. 94	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C27PFBxA	hS	5194	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4Cw7PFBpA	hS	HD2	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C47PFBxS	hS	HH4	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C. 7PFNA	hS	5. 9H	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C27PFOA	hS	HD0	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C17PFOS	hS	HD5	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C27PFDA	hS	HD6	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
d47MeFOSAA	hS	5w91	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C27PFI nA	hS	5695	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
d. 7EtFOSAA	hS	-595	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C27PFDoA	hS	169w	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H
H4C27PFTeDA	hS	129-	.0 7 H 0		K0K0H.	267Feb720	092wl L	257Feb720 H5:0.	H

DL 7Detection Limit
LOD 7Limit oQDetection
LOU 7Limit oQquantitation
Results reported to tWe DL9
y Wen reported, PFBxS, PFOA, PFOS, MeFOSAA and EtFOSAA include botW linear and brancWed isomers9 Onlf tWe linear isomer is reported Qor all otWer analftes9

Vista Analytical Laboratory

Sample ID: DUP01-20200217 — **PFAS Isotope Dilution Method**

Client Data

Name: 3 MEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: 1 round8 ater
Date Collected: HG7Feb720 Hw:0R

Laboratory Data

Lab Sample: 20004447 0-
Date v ecei5ed: H- 7Feb720 09:40
Column: KEB CH-

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFKS	4GR7G47R	0.026H	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFBxA	40G72w7w	0.HH4	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
BFPO7DA	H42R27H476	ND	0.002w2	0.0040H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFBpA	4GR7- R79	0.0094R	0.00H4-	0.0020H	0.00w02	U	K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
ADONA	9H900R7Hw7w	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFBxS	4RR7w67w	0.0690	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFOA	44R76G7H	0.040-	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFNA	4GR79R7H	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFOS	HG647247H	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
9Cl7PF4ONS	GR6w267R- 7H	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFDA	44R7G672	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
MeFOSAA	24RR74H79	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
EtFOSAA	299H7R076	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFI nA	20R- 79w7-	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
HHCl7PF4OI dS	G640RH79279	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFDoA	40G7RR7H	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFTrDA	G262979w7-	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
PFTeDA	4G670676	ND	0.00H4-	0.0020H	0.00w02		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
H4C47PFKS	hS	HDR	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C47BFPO7DA	hS	- - .4	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C27PFBxA	hS	9wG	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4Cw7PFBpA	hS	99.G	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C47PFBxS	hS	HHH	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4CR7PFNA	hS	9G2	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C27PFOA	hS	9- .4	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C- 7PFOS	hS	HH4	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C27PFDA	hS	9G0	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
d47MeFOSAA	hS	HDH	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C27PFI nA	hS	96.-	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
dR7EtFOSAA	hS	GG0	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C27PFDoA	hS	- - .6	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H
H4C27PFTeDA	hS	GGG	R0 7 HR0		K0K0HRR	267Feb720	0.2w9 L	297Feb720 H9:H6	H

DL 7Detection Limit
LOD 7Limit oQDetection
LOU 7Limit oQquantitation
v esults reported to tWe DL.
y Wen reported, PFBxS, PFOA, PFOS, MeFOSAA and EtFOSAA include botW linear and brancWed isomers. Onlf tWe linear isomer is reported Qor all otWer analf tes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
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
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
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

2000333 1.4°C

Vista Analytical
1104 Windfield Way
El Dorado Hills, CA 95762
TEL: 916-673-1520

CHAIN OF CUSTODY RECORD

DATE: 2/17/2020

Vista PM: Jade White-Dobbs

PAGE: 1 OF 1

LABORATORY CLIENT: KMEA	CLIENT PROJECT NAME / NUMBER: MCAS El Toro and Tustin, PFAS
ADDRESS: 9210 Sky Park Court, Suite 220	P.O. NO.: TO 008 Mod 4
CITY: San Diego, CA 92123	PROJECT CONTACT: Kimberly Shiroodi / Brian Johnson
TEL: (619) 399-5900	E-Mail: kimberly.shiroodi@woodplc.com
E-MAIL: brian.johnson@woodplc.com	SAMPLER(S): (SIGNATURE) Meg Rucker
CONTRACT NO.: N62473-16-D-2405	LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Samples potentially contain elevated levels of PFAS
Extra sample volume provided when available (Westbay wells).

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS
	EB02-20200217	2/17/20	7:00	BW	2		X
	18-GW-18BGMP10E-20200217		8:05	GW	3	IV	X
	18-GW-18BGMP10F-20200217		8:40		3	IV	X
	18-GW-18BGMP08C-20200217		10:20		3	IV	X
	24-GW-18BGMP08D-20200217		10:55		3	IV	X
	24-GW-18BGMP08E-20200217		11:30		3	IV	X
	24-GW-18PS1-20200217		14:00		2	IV	X
	DUP01-20200217	V	14:05	V	2	IV	X
				VK 2-17-20			

Relinquished by: (Signature) Meg Rucker	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 2/17/20	Time: 17:00
Relinquished by: (Signature) Fedex	Received by: (Signature) Conor Mahoney	Date: 02/18/20	Time: 0930
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2000333 TAT 14

Samples Arrival:	**Date/Time** 02/18/20 0930		**Initials:** CM		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None
Temp °C: 1.4 (uncorrected) **Temp °C:** 1.4 (corrected)			**Probe used:** Y / (N)		**Thermometer ID:** IR-4		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Airbill — Trk # 8037 9176 6854	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / (Client) / Retain / (Return)		Dispose	
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** ~~02/18/20~~ 02/18/20 1139	**Initials:** CM	**Location:** R-13/WR-2 **Shelf/Rack:** A-4/E-2
COC Anomaly/Sample Acceptance Form completed?		✓	✓

Comments:

ID.: LR – SLC *Rev No.: 5* *Rev Date: 01/21/2020* *Page:* 1 *of* 1

CoC/Label Reconciliation Report WO# 2000333

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2000333-01	A EB02-20200217		17-Feb-20 07:00	HDPE Bottle, 250 mL	Aqueous	
2000333-01	B EB02-20200217		17-Feb-20 07:00	HDPE Bottle, 250 mL	Aqueous	
2000333-02	A 18-GW-18BGMP10E-20200217		17-Feb-20 08:05	HDPE Bottle, 250 mL	Aqueous	
2000333-02	B 18-GW-18BGMP10E-20200217		17-Feb-20 08:05	HDPE Bottle, 250 mL	Aqueous	
2000333-02	C 18-GW-18BGMP10E-20200217		17-Feb-20 08:05	HDPE Bottle, 250 mL	Aqueous	
2000333-03	A 18-GW-18BGMP10F-20200217		17-Feb-20 08:40	HDPE Bottle, 250 mL	Aqueous	
2000333-03	B 18-GW-18BGMP10F-20200217		17-Feb-20 08:40	HDPE Bottle, 250 mL	Aqueous	
2000333-03	C 18-GW-18BGMP10F-20200217		17-Feb-20 08:40	HDPE Bottle, 250 mL	Aqueous	
2000333-04	A 18-GW-18BGMP08C-20200217		17-Feb-20 10:20	HDPE Bottle, 250 mL	Aqueous	
2000333-04	B 18-GW-18BGMP08C-20200217		17-Feb-20 10:20	HDPE Bottle, 250 mL	Aqueous	
2000333-04	C 18-GW-18BGMP08C-20200217		17-Feb-20 10:20	HDPE Bottle, 250 mL	Aqueous	
2000333-05	A 24-GW-18BGMP08D-20200217		17-Feb-20 10:55	HDPE Bottle, 250 mL	Aqueous	
2000333-05	B 24-GW-18BGMP08D-20200217		17-Feb-20 10:55	HDPE Bottle, 250 mL	Aqueous	
2000333-05	C 24-GW-18BGMP08D-20200217		17-Feb-20 10:55	HDPE Bottle, 250 mL	Aqueous	
2000333-06	A 24-GW-18BGMP08E-20200217		17-Feb-20 11:30	HDPE Bottle, 250 mL	Aqueous	
2000333-06	B 24-GW-18BGMP08E-20200217		17-Feb-20 11:30	HDPE Bottle, 250 mL	Aqueous	
2000333-06	C 24-GW-18BGMP08E-20200217		17-Feb-20 11:30	HDPE Bottle, 250 mL	Aqueous	
2000333-07	A 24-GW-18PS1-20200217		17-Feb-20 14:00	HDPE Bottle, 250 mL	Aqueous	
2000333-07	B 24-GW-18PS1-20200217		17-Feb-20 14:00	HDPE Bottle, 250 mL	Aqueous	
2000333-08	A DUP01-20200217		17-Feb-20 14:05	HDPE Bottle, 125 mL	Aqueous	
2000333-08	B DUP01-20200217		17-Feb-20 14:05	HDPE Bottle, 125 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓★		
Container Type Appropriate for Analysis(es)	✓		
Preservation Documented: Na2S2O3 Trizma None Other	✓		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

Comments:

★ Sample Volume 175 mL

~~A "I" changed to "1"~~

ID NOT changed

[illegible] 3/3/20

Verifed by/Date: CM 02/18/20

EXTRACTION INFORMATION

PRIORITY

Process Sheet

Workorder: 2000333

Prep Expiration: 2020-03-02
Client: KMEA

Workorder Due: 03-Mar-20 00:00

TAT: 14

Method: **537M PFAS DOD QSM 5.3 (LOQ as mRL)**
Matrix: **Aqueous**

Prep Batch: BQB0155

Prep Data Entered: ME 02/27/2020
Date and Initials

Version: 537.1 List of 18
DoD: DoD QSM 5.3

Initial Sequence: SQBW77

LabSampID	A/B	Prep Req	Spike Rec	ClientSampleID	Comments	Location	Container
2000333-01	A	☑	☑	EB02-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-02		☑	☑	18-GW-18BGMP10E-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-03		☑	☑	18-GW-18BGMP10F-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-04		☑	☑	18-GW-18BGMP08C-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-05		☑	☑	24-GW-18BGMP08D-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-06		☑	☑	24-GW-18BGMP08E-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-07		☑	☑	24-GW-18PS1-20200217		R-13 A-4	HDPE Bottle, 250 mL
2000333-08		☑	☑	DUP01-20200217		R-13 A-4	HDPE Bottle, 125 mL

Potentially elevated levels - isolate samples.
Instrument - start w/ dils.
02/18/20

Pre-Prep Check Out: CHT 02/20/20
Pre-Prep Check In: CHT 02/20/20

Prep Check Out: HP 02/26/20
Prep Check In: N/A

Prep Reconciled Initals/Date: CHT 02/20/20
Spike Reconciled Initals/Date: HP 02/26/20
VialBoxID: Tots

Page 1 of 3

Matrix: Aqueous

Method: 537M PFAS DOD QSM 5.3 (LOQ as mRL)

Vista Internal Chain-of-Custody

B0B0155

Vista Analytical Laboratory

	Location		L2	R13	L2	R12	R12	L2	R12	L4	
	Reason		Prep	R9	R4	R2	R9	R6	R9	R9	
	Initials		CHH	CHH	HP	HP	HP	ME	HP	QM	
	Date/Time		02/20/20 1130	02/20/20 1145	02/26/20 7:05	02/26/2020 15:33	02/27/20 15:08	02/27/2020 07:20	02/27/20 15:03	2/28/2020 1713	
Initial Storage	LabNumber	Cont									
R-13 A-4	2000333-01	A	O	O	O	E	E	E	E	E	
R-13 A-4	2000333-02										
R-13 A-4	2000333-03										
R-13 A-4	2000333-04										
R-13 A-4	2000333-05										
R-13 A-4	2000333-06										
R-13 A-4	2000333-07										
R-13 A-4	2000333-08										

HP 02/27/20

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

Matrix: Aqueous

Method: 537M PFAS DOD QSM 5.3 (LOQ as mRL)

PREPARATION BENCH SHEET

B0B0155

Chemist: HP
Prep Date: 02/26/20
Prep Time: 0738
Hood#: 5

Prepared using: ☐ Sonication Shaker ☑ SPE Extraction ☐ Centrifuge ID: _____

Rec Date/Initals:
Date/Initals: CHT 02/20/20
BalanceID: HRNS-1

Cen	VISTA Sample ID	Rec Vial1	Rec Vial2	pH	Chlorine (Cl)	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE and Reconciliation	ENVI-Carb and Reconciliation	RS CHEM/WIT DATE
☐	B0B0155-BLK1	☐	☐	5	0	NA	NA	(0.250)	HP 02/26/20	HP 02/26/20	HP 02/26/20	HP 02/26/20
☐	B0B0155-BS1	☐	☐	5	0	↓	↓	(0.250)	↓	↓	↓	↓
☐	B0B0155-BSD1	☐	☐	5	0	↓	↓	(0.250)	↓	↓	↓	↓
☐	2000333-01	☐	☐	4	0	273.68	25.76	0.24792	↓	↓	↓	↓
☐	2000333-02	☐	☐	5	0	282.40	26.23	0.25617	↓	↓	↓	↓
☐	2000333-03	☐	☐	5	0	274.04	26.05	0.24799	↓	↓	↓	↓
☐	2000333-04	☐	☐	5	0	282.52	25.83	0.25669	↓	↓	↓	↓
☐	2000333-05	☐	☐	5	0	279.48	26.07	0.25341	↓	↓	↓	↓
☐	2000333-06	☐	☐	6	0	278.76	25.93	0.25283	↓	↓	↓	↓
☐	2000333-07	☐	☐	5	0	273.80	26.21	0.24759	↓	↓	↓	↓
☐	2000333-08	☐	☐	5	0	274.66	26.12	0.24854	↓	↓	↓	↓

IS: 20A0801 10mL (V17)
IS SUP: N/A
NS: 20A0803 10mL (V10)
NS SUP: N/A
RS: 20A0804 10mL (V17)

SPE Chem: Strata-XL-AN 10cum 200mg/6mL
SPE Lot#: 518-005894
ENVI-Carb Lot#: B03074
Ele SOLV: MeOH/0.5%NH4OH in MeOH
Final Volume(s) 1 mL

Notes:

Comments: Assume 1 g = 1 mL
Cen = Centrifuged
Rec = Reconcile final vial transfer

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)

Batch: B0B0155

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
2000333-01	0.24792 ✓	N/A	N/A	1000	26-Feb-20 07:38 ✓	HRP ✓			Blank Water	537M PFAS DOD QSM 5.3
2000333-02	0.25617 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
2000333-03	0.24799 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
2000333-04	0.25669 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
2000333-05	0.25341 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
2000333-06	0.25283 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
2000333-07	0.24759 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
2000333-08	0.24854 ✓			1000	26-Feb-20 07:38	HRP			Groundwater	537M PFAS DOD QSM 5.3
B0B0155-BLK1	0.25 ✓			1000	26-Feb-20 07:38	HRP				QC
B0B0155-BS1	0.25 ✓			1000	26-Feb-20 07:38	HRP	20A0803 ✓	10 ✓		QC
B0B0155-BSD1	0.25 ✓			1000	26-Feb-20 07:38	HRP	20A0803 ✓	10 ✓		QC

All bolded data on report verified against written benchsheet by (initial/date) ME 02/27/2020

Printed: 2/27/2020 11:57:32AM
Page 1 of 1

Sample Data – PFAS Isotope Dilution Method

Quantify Sample Report **MassLynx V4.2 SCN982** Page 7 of 8
Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200228P2\200228P2-45.qld

Last Altered: Monday, March 02, 2020 15:53:42 Pacific Standard Time
Printed: Monday, March 02, 2020 15:55:43 Pacific Standard Time

Name: 200228P2-45, Date: 28-Feb-2020, Time: 21:55:30, ID: B0B0155-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		1.46e3	0.250		2.56						YES
2	7	PFHxA	313.0 > 269.0		2.04e4	0.250		3.08						YES
3	9	HFPO-DA	285.1 > 168.9		4.11e3	0.250		3.30						YES
4	11	PFHpA	363.0 > 318.9		1.46e4	0.250		3.68						YES
5	12	ADONA	376.8 > 250.9		1.46e4	0.250		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.46e3		0.250	95.835	2.62	2.56	1460	60.9728	121.9		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	2.04e4		0.250	1583.988	3.08	3.08	20400	51.4092	102.8		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	4.11e3		0.250	320.279	3.35	3.30	4110	51.3018	102.6		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	1.46e4		0.250	1043.640	3.70	3.68	14600	56.0267	112.1		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	1.46e4		0.250	1043.640	3.70	3.68	14600	56.0267	112.1		
11	-1													
12	13	L-PFHxS	398.9 > 79.7		3.58e3	0.250		3.82						YES
13	1...	Total PFHxS	398.9 > 79.7	0.00e0	3.58e3	0.250		3.93		0.000				
14	16	L-PFOA	412.8 > 368.9		2.00e4	0.250		4.19						YES
15	1...	Total PFOA	412.8 > 368.9	0.00e0	2.00e4	0.250		4.60		0.000				
16	21	PFNA	463.0 > 418.8		1.88e4	0.250		4.63						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	3.58e3		0.250	210.930	3.82	3.82	3580	67.8377	135.7		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	3.58e3		0.250	210.930	3.82	3.82	3580	67.8377	135.7		
19	69	13C2-PFOA-EIS	414.9 > 369.7	2.00e4		0.250	1520.439	4.19	4.19	20000	52.6988	105.4		
20	69	13C2-PFOA-EIS	414.9 > 369.7	2.00e4		0.250	1520.439	4.19	4.19	20000	52.6988	105.4		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.88e4		0.250	1397.197	4.63	4.63	18800	53.7141	107.4		
22	-1													
23	23	L-PFOS	498.9 > 79.7		3.91e3	0.250		4.71						YES
24	1...	Total PFOS	498.9 > 79.7	0.00e0	3.91e3	0.250		5.13		0.000				
25	25	9Cl-PF30NS	530.7 > 350.8		3.91e3	0.250		4.92						YES
26	26	PFDA	513 > 468.8		2.25e4	0.250		5.01						YES
27	33	PFUdA	563.0 > 518.9		2.14e4	0.250		5.33						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	3.91e3		0.250	272.664	4.72	4.71	3910	57.3773	114.8		
29	71	13C8-PFOS-EIS	507.0 > 79.7	3.91e3		0.250	272.664	4.72	4.71	3910	57.3773	114.8		
30	71	13C8-PFOS-EIS	507.0 > 79.7	3.91e3		0.250	272.664	4.72	4.71	3910	57.3773	114.8		
31	73	13C2-PFDA-EIS	515.1 > 469.9	2.25e4		0.250	1568.618	5.01	5.01	22500	57.2709	114.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	2.14e4		0.250	1811.110	5.33	5.33	21400	47.2779	94.6		
33	-1													
34	29	L-MeFOSAA	570 > 419		5.03e3	0.250		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	5.03e3	0.250		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		5.81e3	0.250		5.31						YES

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200228P2\200228P2-45.qld

Last Altered: Monday, March 02, 2020 15:53:42 Pacific Standard Time
Printed: Monday, March 02, 2020 15:55:43 Pacific Standard Time

Name: 200228P2-45, Date: 28-Feb-2020, Time: 21:55:30, ID: B0B0155-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	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	5.81e3	0.250		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.95e4	0.250		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	5.03e3		0.250	420.487	5.15	5.15	5030	47.8905	95.8		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	5.03e3		0.250	420.487	5.15	5.15	5030	47.8905	95.8		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	5.81e3		0.250	476.890	5.30	5.31	5810	48.7144	97.4		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	5.81e3		0.250	476.890	5.30	5.31	5810	48.7144	97.4		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.95e4		0.250	1503.152	5.59	5.60	19500	51.9507	103.9		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.95e4	0.250		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.95e4	0.250		5.85						YES
47	41	PFTeDA	713.0 > 669.0		1.89e4	0.250		6.06						YES
48	1...	TDCA	498.3>106.9			0.250		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	1.17e4	1.17e4	0.250	1.000	1.34	1.34	12.5	50.0000	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.95e4		0.250	1503.152	5.59	5.60	19500	51.9507	103.9		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.95e4		0.250	1503.152	5.59	5.60	19500	51.9507	103.9		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.89e4		0.250	1574.744	6.02	6.06	18900	48.1170	96.2		
53	71	13C8-PFOS-EIS	507.0 > 79.7	3.91e3		0.250	272.664	4.72	4.71	3910	57.3773	114.8		
54	1...	13C5-PFHxA	318.0 > 272.9	2.05e4	2.05e4	0.250	1.000	3.06	3.08	12.5	50.0000	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	1.28e3	1.28e3	0.250	1.000	3.81	3.82	12.5	50.0000	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	2.07e4	2.07e4	0.250	1.000	4.18	4.19	12.5	50.0000	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.99e4	1.99e4	0.250	1.000	4.99	5.01	12.5	50.0000	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	2.22e4	2.22e4	0.250	1.000	5.32	5.33	12.5	50.0000	100.0		
60	1...	13C4-PFOS	503 > 79.7	3.88e3	3.88e3	0.250	1.000	4.70	4.72	12.5	50.0000	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.94e4	1.94e4	0.250	1.000	4.62	4.63	12.5	50.0000	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200228P2\200228P2-45.qld

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Printed: Monday, March 02, 2020 15:55:43 Pacific Standard Time

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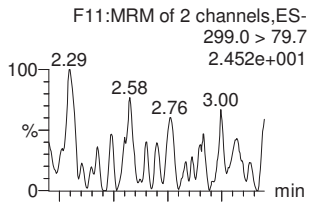

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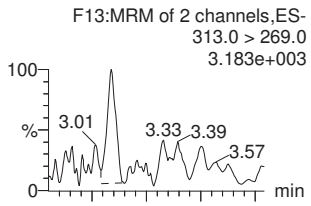

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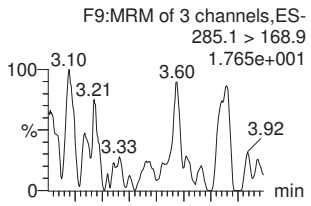

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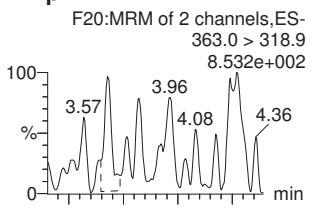

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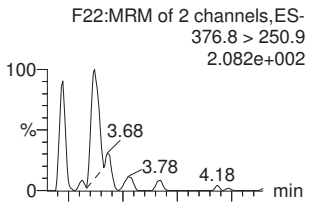

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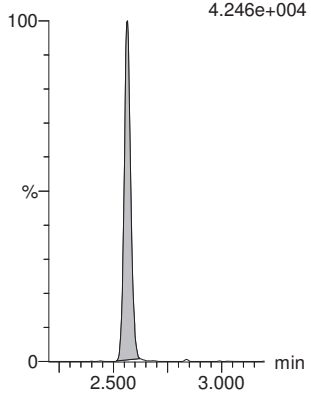

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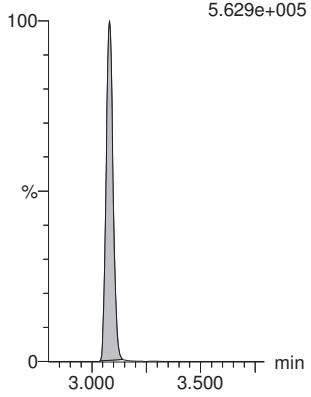

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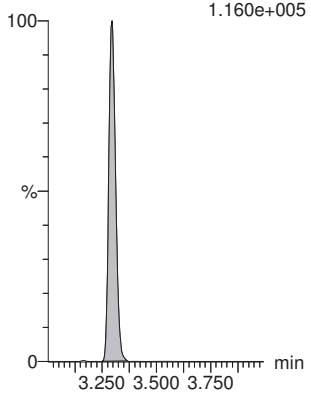

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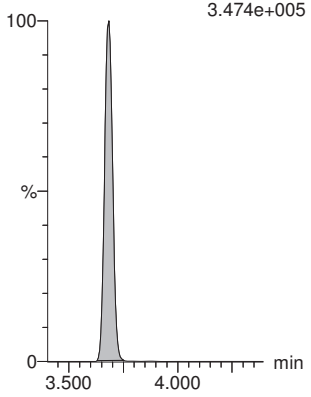

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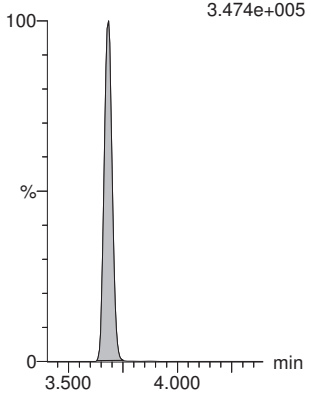

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

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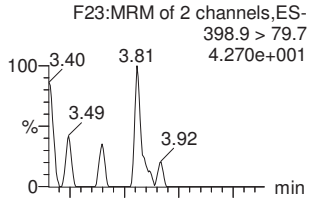

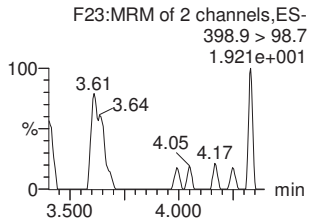

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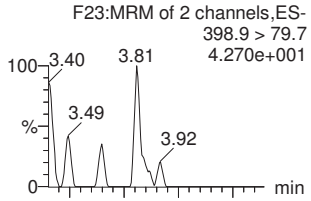

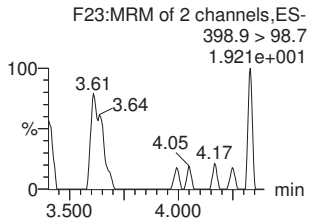

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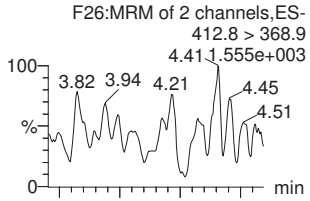

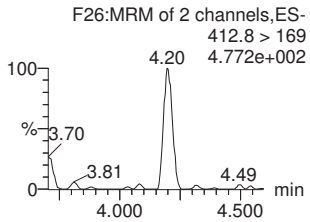

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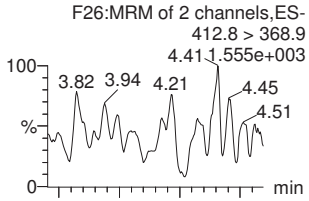

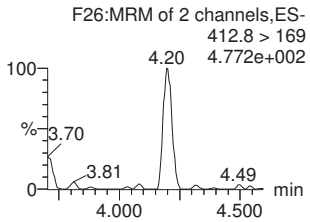

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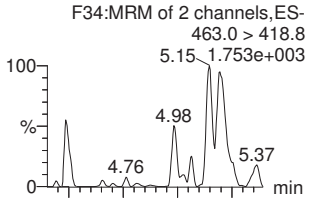

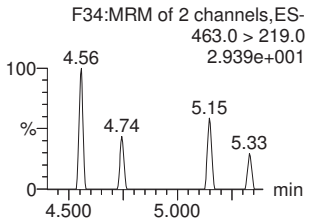

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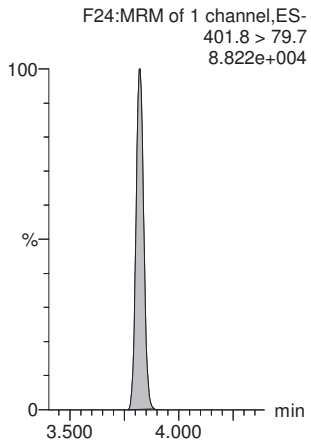

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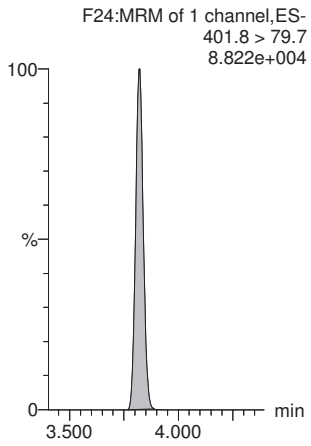

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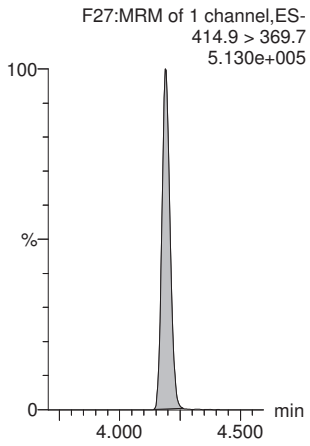

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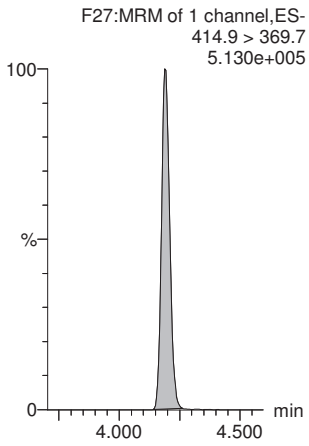

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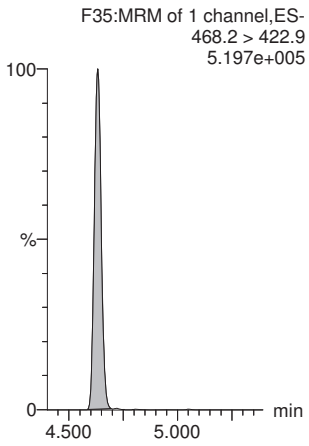

Quantify Sample Report **MassLynx V4.2 SCN982** Page 3 of 8

Vista Analytical Laboratory L18

MM 3/2/2020

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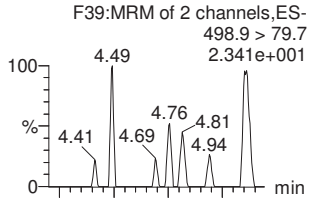

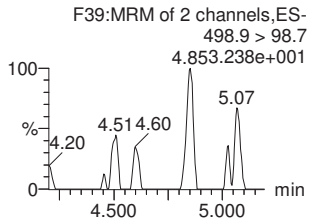

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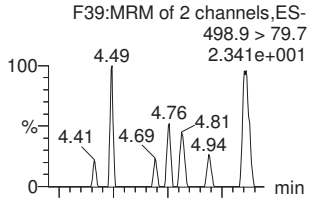

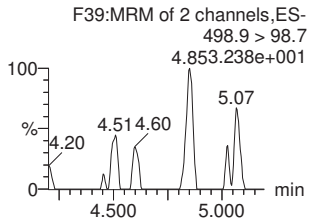

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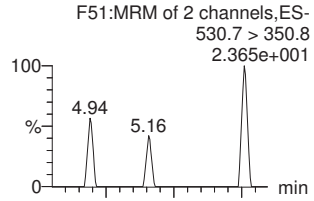

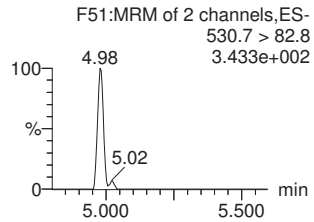

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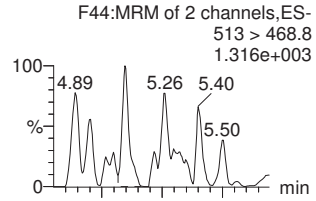

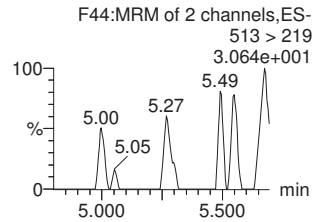

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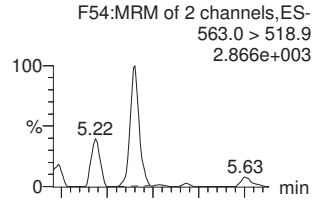

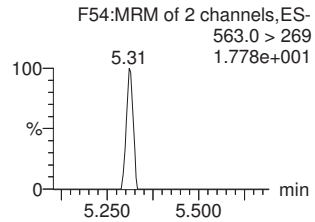

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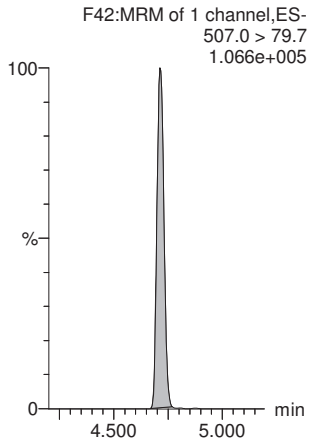

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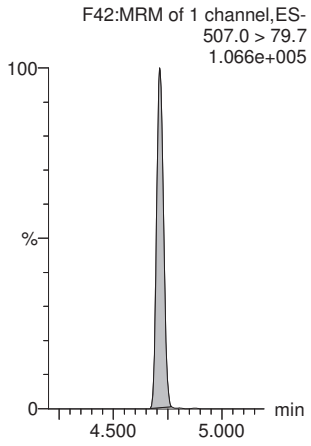

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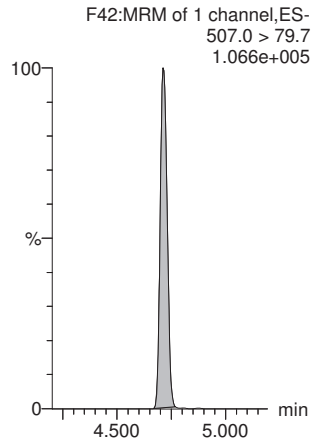

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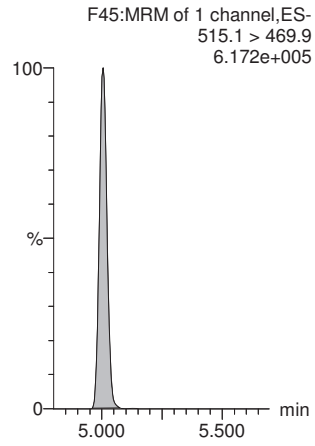

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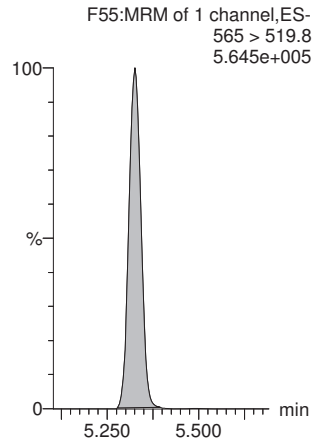

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

MM 3/2/2020

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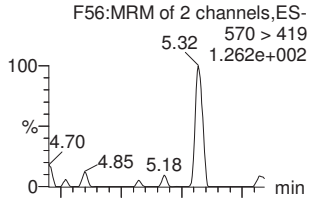

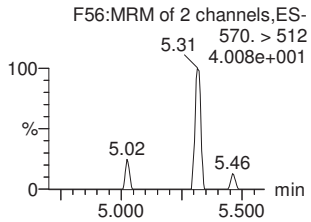

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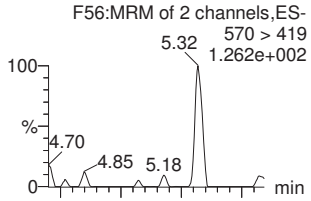
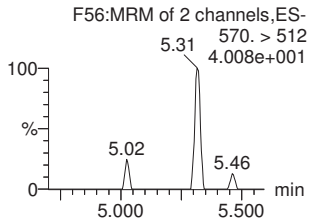
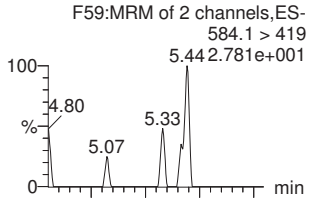
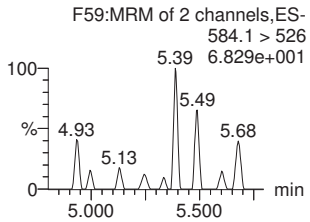


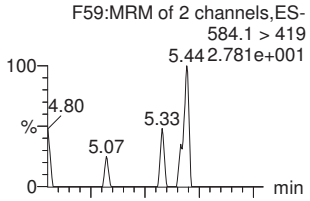


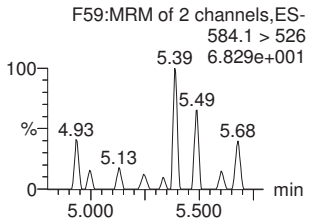
L-EtFOSAA



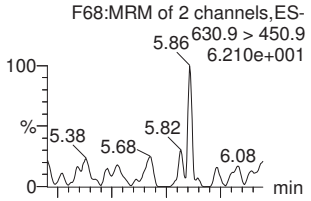


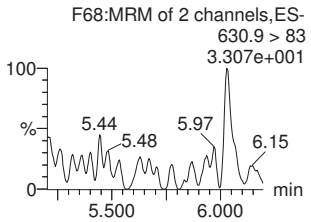
Total N-EtFOSAA



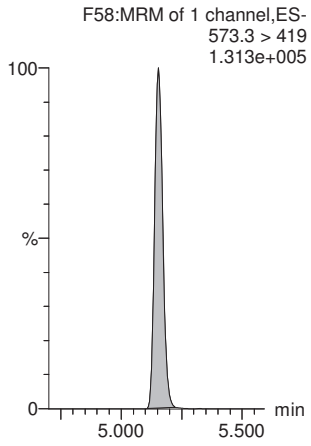


11Cl-PF30UdS





d3-N-MeFOSAA-EIS



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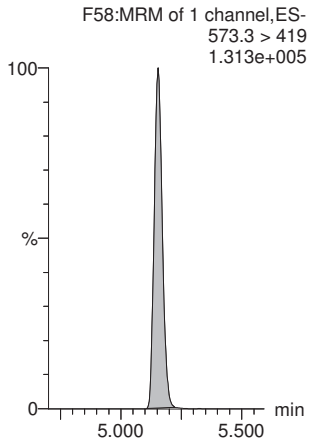
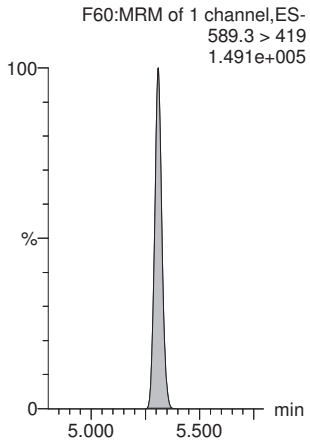


d5-N-EtFOSAA-EIS



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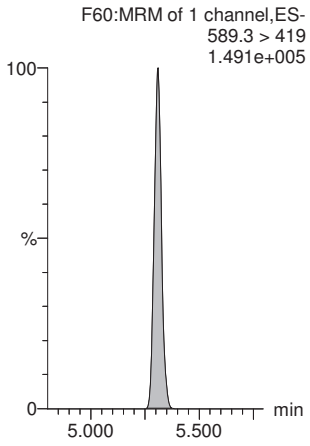
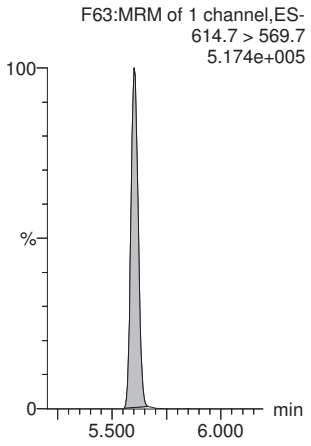


13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN982** Page 5 of 8

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200228P2\200228P2-45.qld

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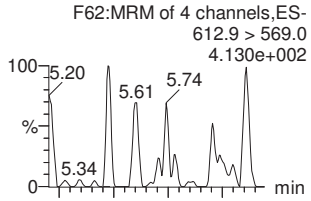
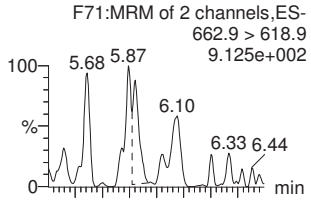
Printed: Monday, March 02, 2020 15:55:43 Pacific Standard Time

Name: 200228P2-45, Date: 28-Feb-2020, Time: 21:55:30, ID: B0B0155-BLK1 Method Blank 0.25, Description: Method Blank

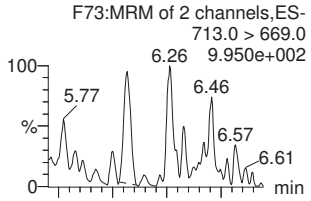
PFDoA



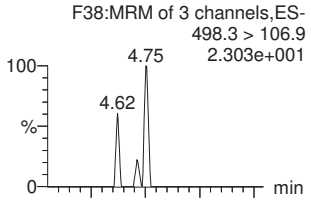
PFTrDA



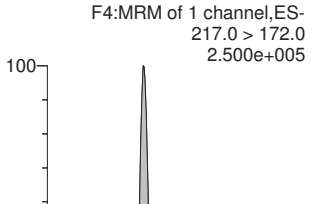
PFTeDA



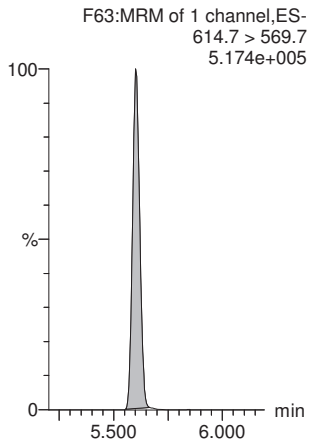
TDCA



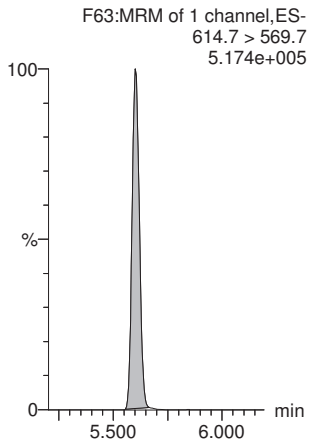
13C4-PFBA



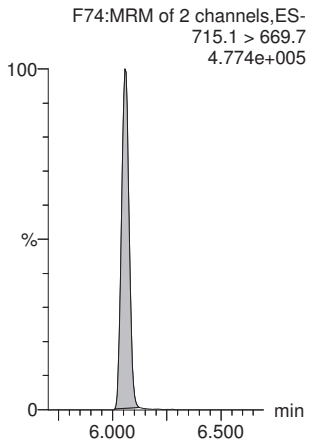
13C2-PFDoA-EIS



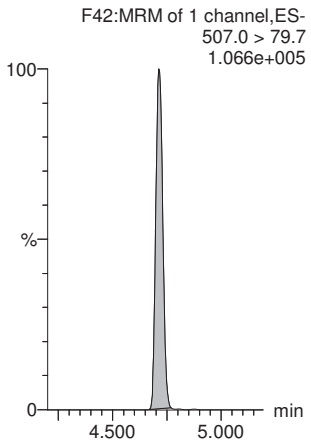
13C2-PFDoA-EIS



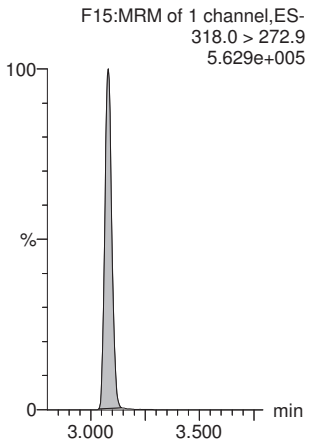
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

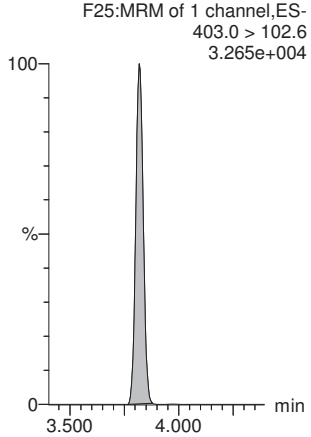
MM 3/2/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200228P2\200228P2-45.qld

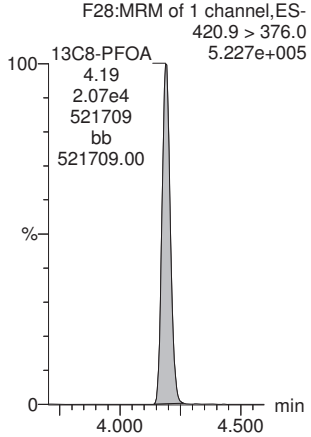
Last Altered: Monday, March 02, 2020 15:53:42 Pacific Standard Time
Printed: Monday, March 02, 2020 15:55:43 Pacific Standard Time

Name: 200228P2-45, Date: 28-Feb-2020, Time: 21:55:30, ID: B0B0155-BLK1 Method Blank 0.25, Description: Method Blank

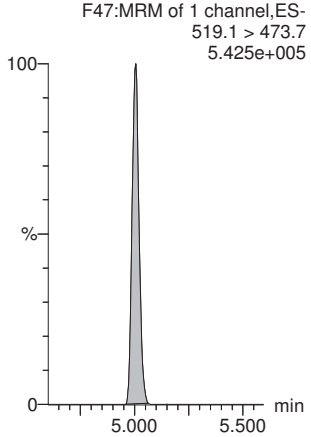
18O2-PFHxS



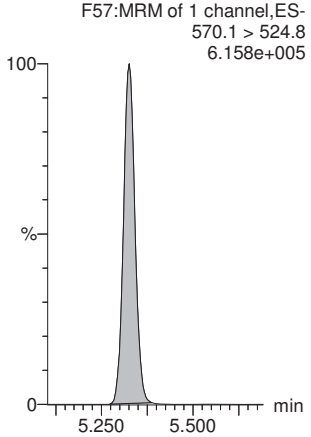
13C8-PFOA



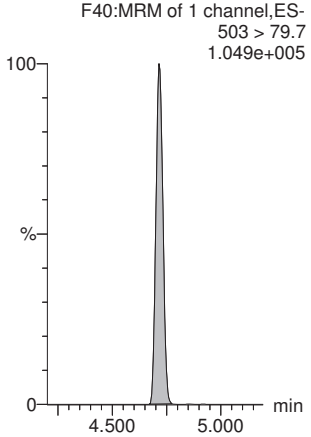
13C6-PFDA



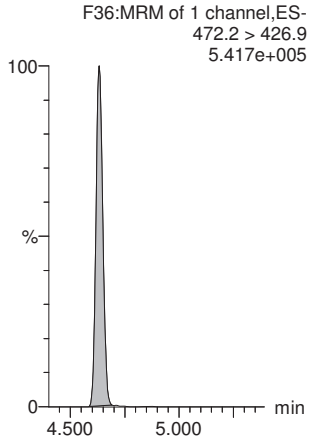
13C7-PFUdA



13C4-PFOS



13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-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	2.73e3	1.34e3	0.250		2.56	2.56	25.5	43.5374	108.8	2.964	NO
2	7	PFHxA	313.0 > 269.0	1.45e4	1.92e4	0.250		3.08	3.08	9.43	42.7530	106.9	17.069	NO
3	9	HFPO-DA	285.1 > 168.9	3.32e3	3.87e3	0.250		3.30	3.29	10.7	41.8733	104.7	2.658	NO
4	11	PFHpA	363.0 > 318.9	1.27e4	1.25e4	0.250		3.68	3.68	12.7	43.2502	108.1	32.926	NO
5	12	ADONA	376.8 > 250.9	2.76e4	1.25e4	0.250		3.77	3.79	27.7	42.3995	106.0	4.161	NO
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.34e3		0.250	95.835	2.63	2.56	1340	56.0436	112.1		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.92e4		0.250	1583.988	3.08	3.08	19200	48.4197	96.8		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.87e3		0.250	320.279	3.35	3.30	3870	48.3280	96.7		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	1.25e4		0.250	1043.640	3.70	3.68	12500	47.7331	95.5		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	1.25e4		0.250	1043.640	3.70	3.68	12500	47.7331	95.5		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.69e3	2.85e3	0.250		3.82	3.82	11.8	42.2613	105.7	2.608	NO
13	1...	Total PFHxS	398.9 > 79.7	2.69e3	2.85e3	0.250		3.93		11.8	42.2613			
14	16	L-PFOA	412.8 > 368.9	1.67e4	1.74e4	0.250		4.19	4.19	12.0	39.8801	99.7	3.064	NO
15	1...	Total PFOA	412.8 > 368.9	1.67e4	1.74e4	0.250		4.60		12.0	39.8801			
16	21	PFNA	463.0 > 418.8	1.61e4	1.71e4	0.250		4.63	4.63	11.8	44.0948	110.2	8.814	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.85e3		0.250	210.930	3.82	3.82	2850	54.1331	108.3		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.85e3		0.250	210.930	3.82	3.82	2850	54.1331	108.3		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.74e4		0.250	1520.439	4.19	4.19	17400	45.6835	91.4		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.74e4		0.250	1520.439	4.19	4.19	17400	45.6835	91.4		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.71e4		0.250	1397.197	4.63	4.63	17100	49.0531	98.1		
22	-1													
23	23	L-PFOS	498.9 > 79.7	2.60e3	3.64e3	0.250		4.72	4.72	8.93	39.6029	99.0	2.894	NO
24	1...	Total PFOS	498.9 > 79.7	2.60e3	3.64e3	0.250		5.13		8.93	39.6029			
25	25	9Cl-PF30NS	530.7 > 350.8	2.45e3	3.64e3	0.250		4.92	4.93	8.42	35.8204	89.6	12.763	NO
26	26	PFDA	513 > 468.8	1.88e4	2.12e4	0.250		5.01	5.01	11.1	39.6038	99.0	11.741	NO
27	33	PFUdA	563.0 > 518.9	1.72e4	2.06e4	0.250		5.33	5.33	10.4	40.6281	101.6	27.126	NO
28	71	13C8-PFOS-EIS	507.0 > 79.7	3.64e3		0.250	272.664	4.71	4.72	3640	53.3837	106.8		
29	71	13C8-PFOS-EIS	507.0 > 79.7	3.64e3		0.250	272.664	4.71	4.72	3640	53.3837	106.8		
30	71	13C8-PFOS-EIS	507.0 > 79.7	3.64e3		0.250	272.664	4.71	4.72	3640	53.3837	106.8		
31	73	13C2-PFDA-EIS	515.1 > 469.9	2.12e4		0.250	1568.618	5.01	5.01	21200	54.0115	108.0		
32	79	13C2-PFUdA-EIS	565 > 519.8	2.06e4		0.250	1811.110	5.33	5.33	20600	45.6005	91.2		
33	-1													
34	29	L-MeFOSAA	570 > 419	4.64e3	4.43e3	0.250		5.15	5.16	13.1	40.2628	100.7	2.285	NO
35	1...	Total N-MeFOSAA	570. > 419	4.64e3	4.43e3	0.250		5.19		13.1	40.2628			
36	31	L-EtFOSAA	584.1 > 419	3.83e3	4.72e3	0.250		5.31	5.31	10.1	37.5157	93.8	1.162	NO

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-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	1...	Total N-EtFOSAA	584.1 > 419	3.83e3	4.72e3	0.250		5.37		10.1	37.5157			
38	35	11Cl-PF30UdS	630.9 > 450.9	6.32e3	1.66e4	0.250		5.53	5.53	4.75	43.5198	108.8	18.679	NO
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	4.43e3		0.250	420.487	5.15	5.15	4430	42.1348	84.3		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	4.43e3		0.250	420.487	5.15	5.15	4430	42.1348	84.3		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	4.72e3		0.250	476.890	5.30	5.31	4720	39.5503	79.1		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	4.72e3		0.250	476.890	5.30	5.31	4720	39.5503	79.1		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.66e4		0.250	1503.152	5.59	5.60	16600	44.2519	88.5		
44	-1													
45	37	PFDoA	612.9 > 569.0	1.47e4	1.66e4	0.250		5.60	5.61	11.0	37.7387	94.3	10.585	NO
46	39	PFTrDA	662.9 > 618.9	1.43e4	1.66e4	0.250		5.85	5.84	10.7	37.5786	93.9	76.599	YES
47	41	PFTeDA	713.0 > 669.0	1.38e4	1.67e4	0.250		6.06	6.06	10.3	39.2294	98.1	18.004	NO
48	1...	TDCA	498.3>106.9			0.250		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	1.09e4	1.09e4	0.250	1.000	1.34	1.35	12.5	50.0000	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.66e4		0.250	1503.152	5.59	5.60	16600	44.2519	88.5		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.66e4		0.250	1503.152	5.59	5.60	16600	44.2519	88.5		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.67e4		0.250	1574.744	6.02	6.06	16700	42.5340	85.1		
53	71	13C8-PFOS-EIS	507.0 > 79.7	3.64e3		0.250	272.664	4.71	4.72	3640	53.3837	106.8		
54	1...	13C5-PFHxA	318.0 > 272.9	1.97e4	1.97e4	0.250	1.000	3.06	3.08	12.5	50.0000	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	1.17e3	1.17e3	0.250	1.000	3.81	3.82	12.5	50.0000	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.87e4	1.87e4	0.250	1.000	4.18	4.19	12.5	50.0000	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.86e4	1.86e4	0.250	1.000	4.99	5.01	12.5	50.0000	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	2.12e4	2.12e4	0.250	1.000	5.32	5.33	12.5	50.0000	100.0		
60	1...	13C4-PFOS	503 > 79.7	3.57e3	3.57e3	0.250	1.000	4.70	4.71	12.5	50.0000	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.81e4	1.81e4	0.250	1.000	4.62	4.63	12.5	50.0000	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

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Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-BS1 OPR 0.25, Description: OPR

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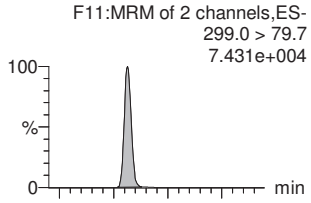

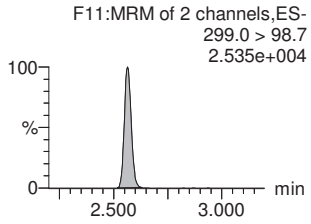

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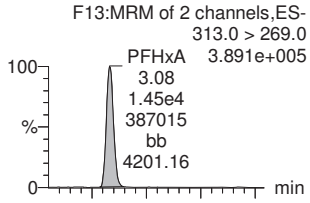

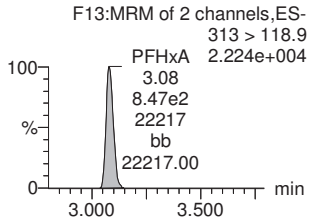

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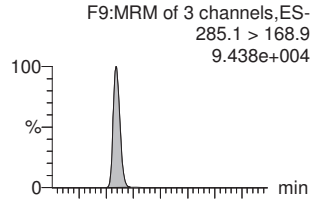

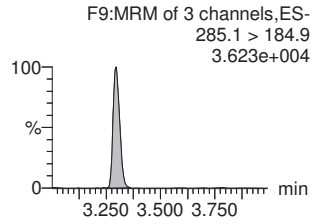

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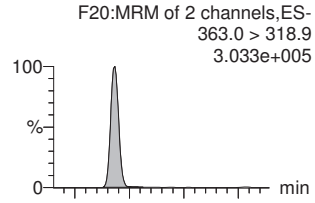

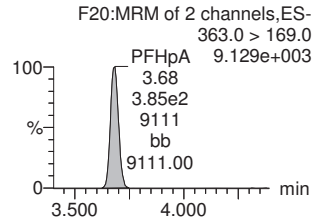

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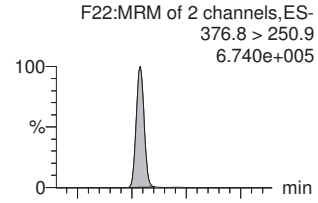

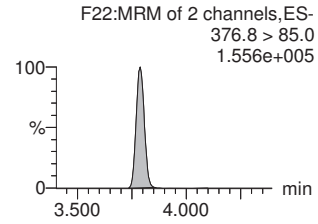

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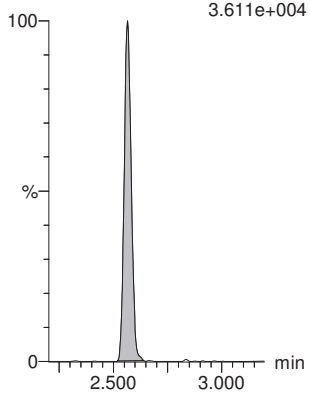

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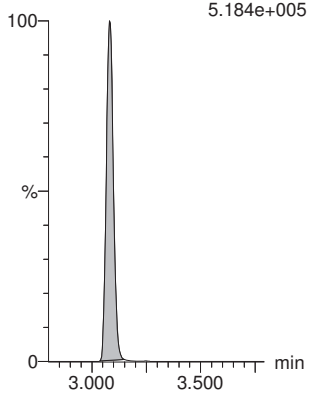

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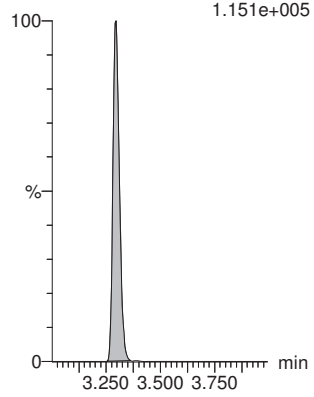

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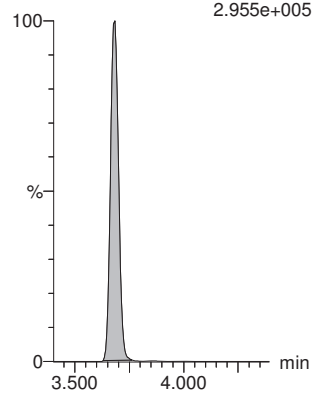

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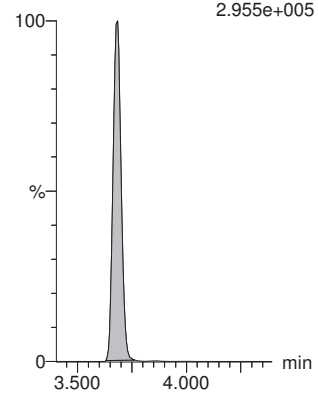

Quantify Sample Report **MassLynx V4.2 SCN982** Page 2 of 8

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-BS1 OPR 0.25, Description: OPR

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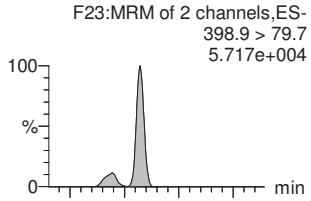

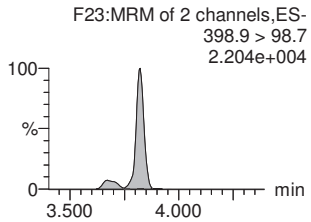

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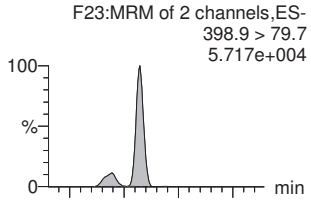

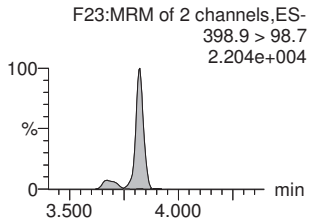

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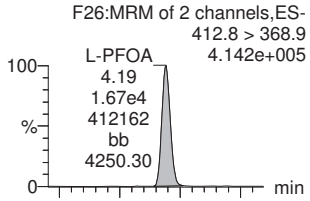

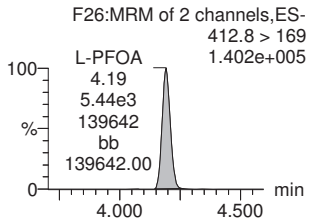

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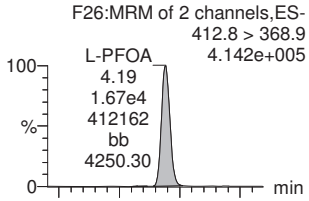

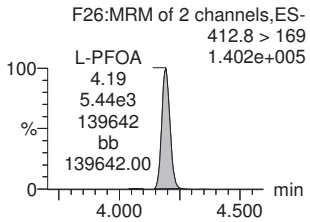

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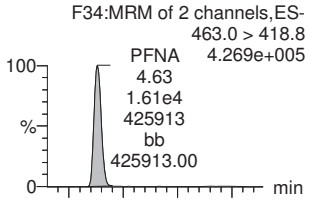

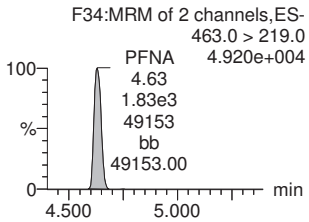

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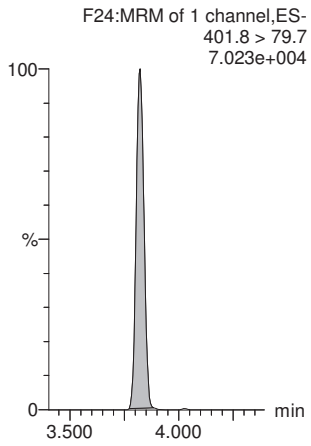

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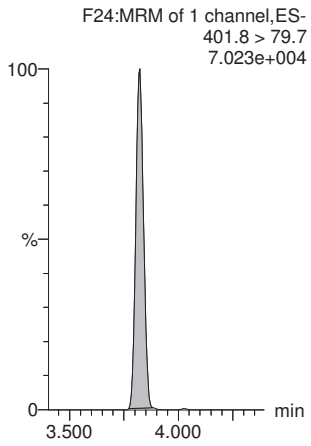

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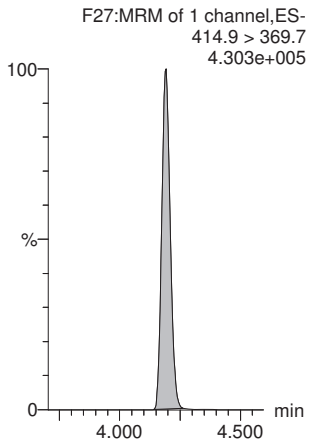

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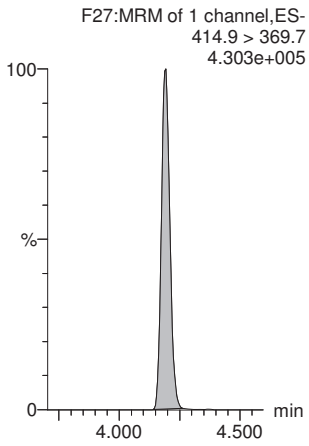

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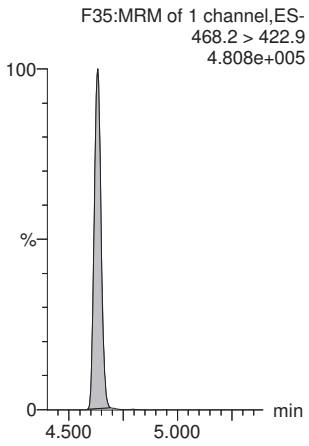

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

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Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-BS1 OPR 0.25, Description: OPR

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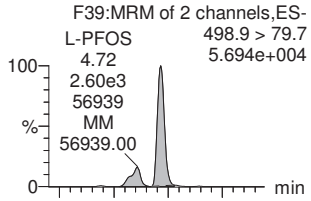

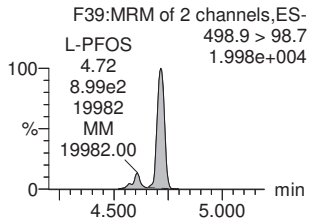

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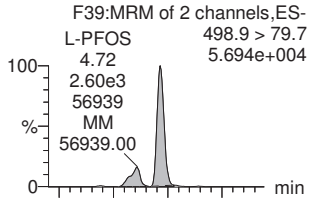

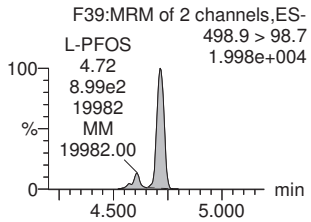

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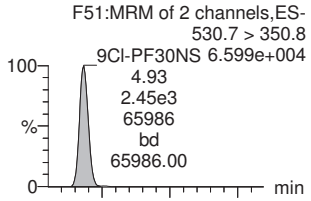

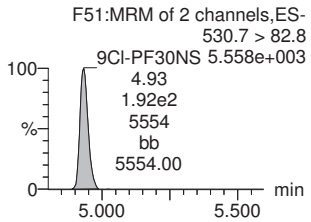

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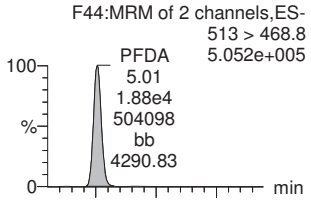

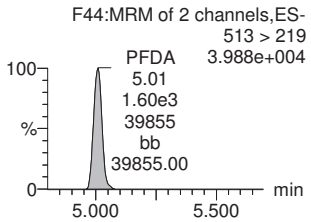

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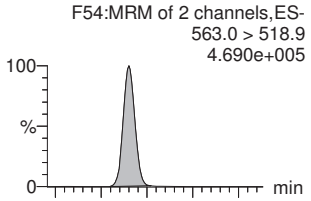

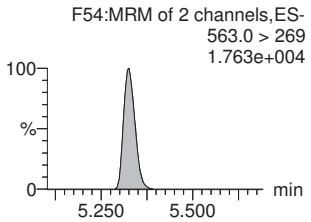

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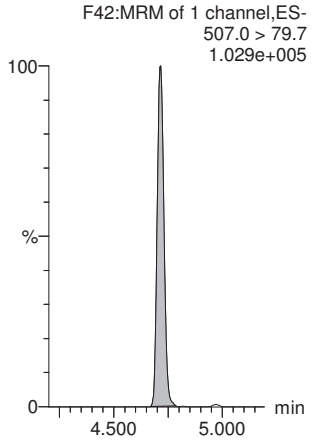

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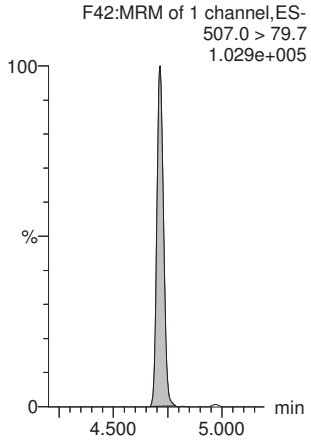

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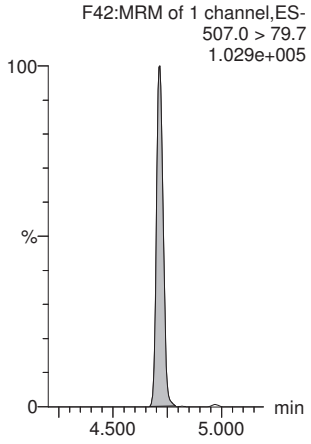

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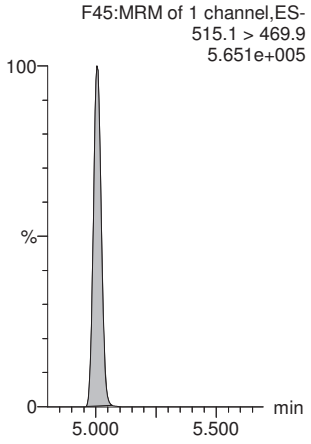

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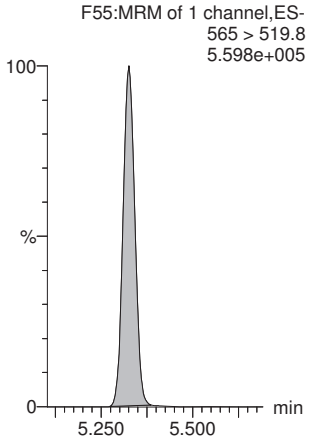

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

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Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-BS1 OPR 0.25, Description: OPR

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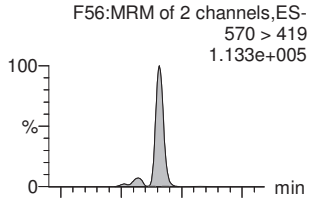

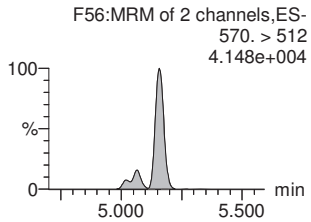

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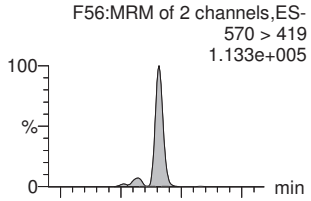

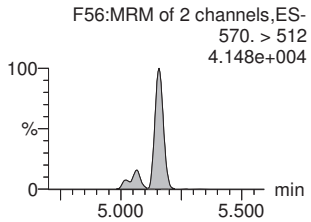

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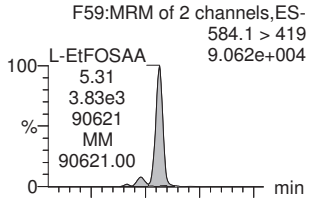

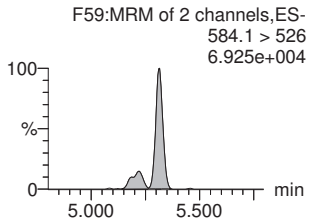

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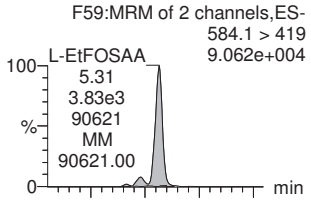
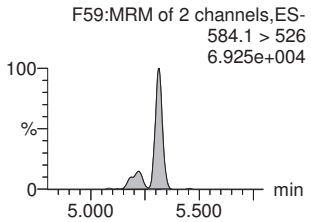
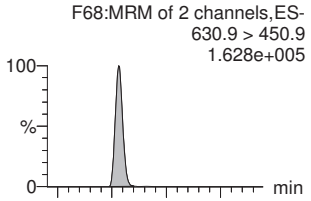
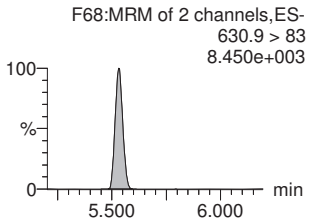


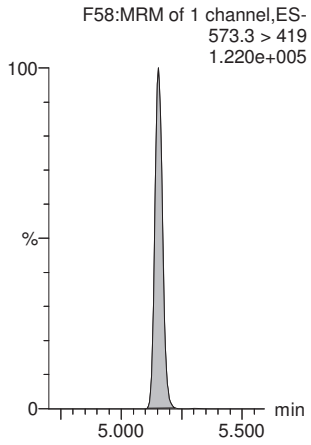


11Cl-PF30UdS

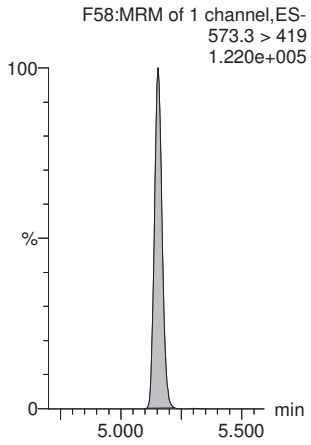




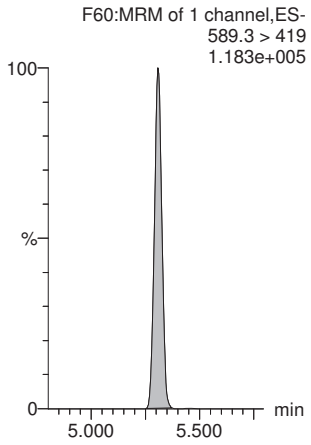
d3-N-MeFOSAA-EIS



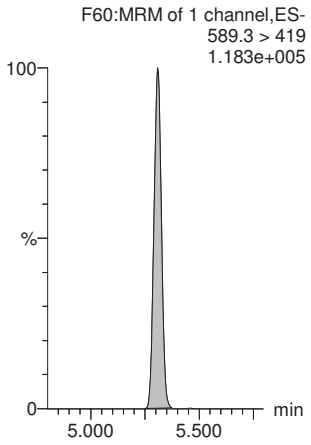
d3-N-MeFOSAA-EIS



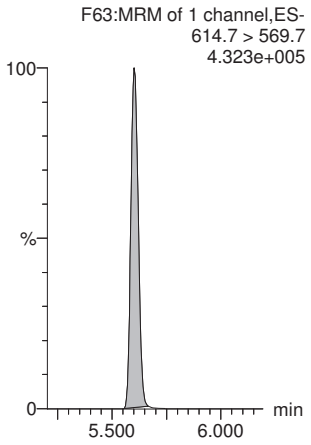
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

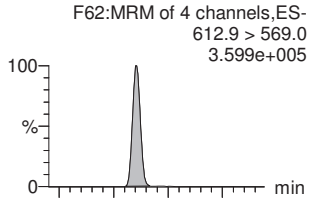
MM 3/2/2020

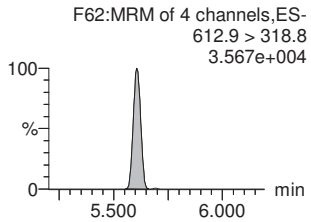
Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

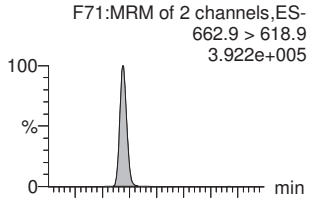
Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-BS1 OPR 0.25, Description: OPR

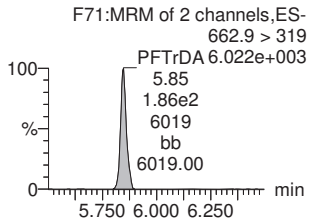
PFDoA



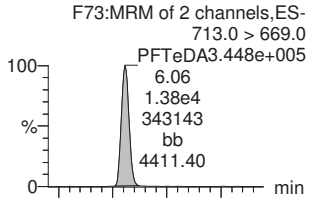


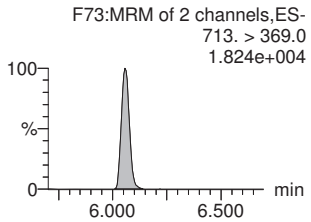
PFTrDA



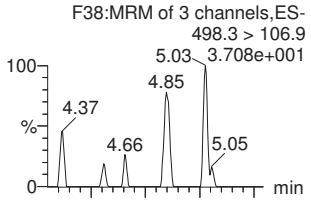


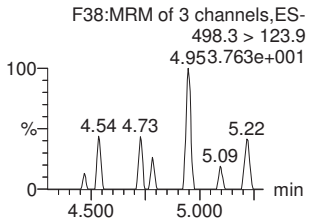
PFTeDA



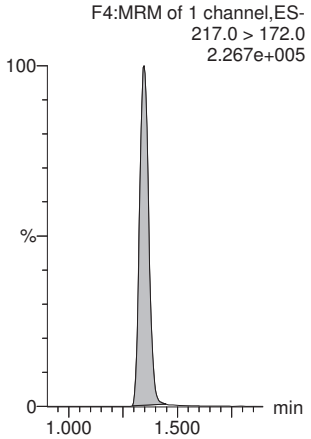


TDCA

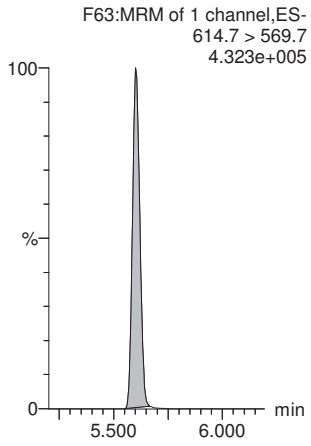




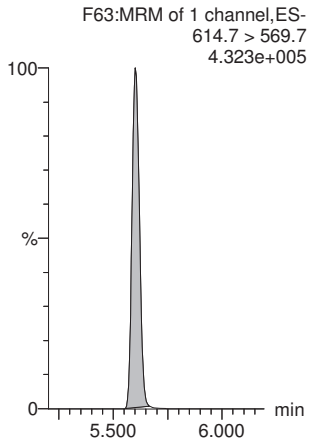
13C4-PFBA



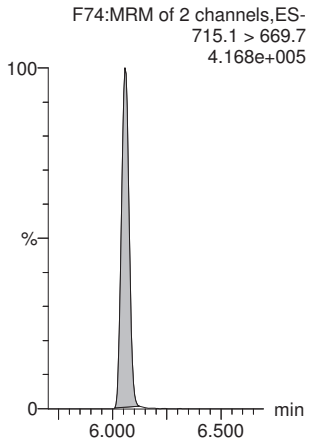
13C2-PFDoA-EIS



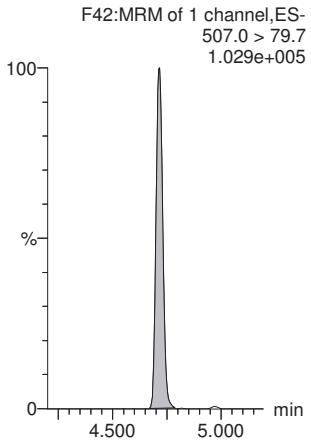
13C2-PFDoA-EIS



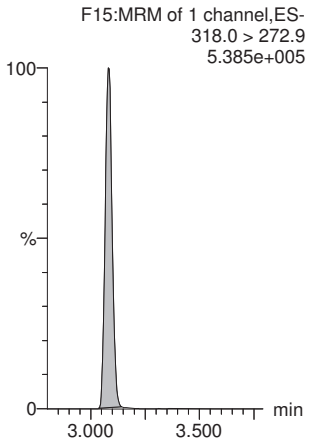
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

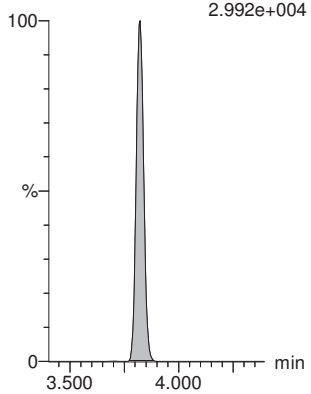
MM 3/2/2020

Dataset: Untitled

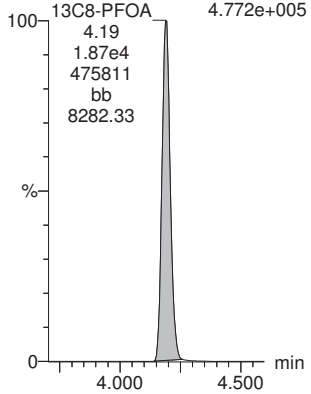
Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:06:37 Pacific Standard Time

Name: 200228P2-46, Date: 28-Feb-2020, Time: 22:06:02, ID: B0B0155-BS1 OPR 0.25, Description: OPR

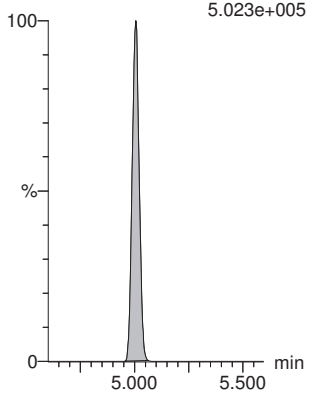
18O2-PFHxS



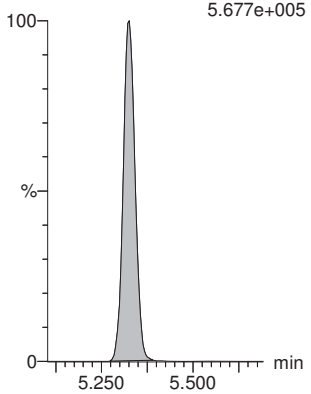
13C8-PFOA



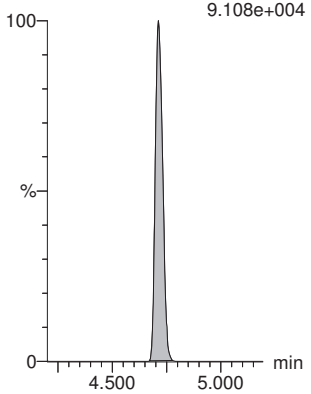
13C6-PFDA



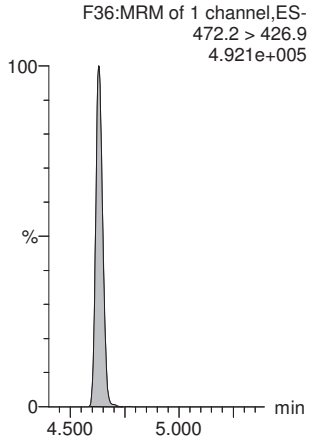
13C7-PFUdA



13C4-PFOS



13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-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	2.88e3	1.56e3	0.250		2.56	2.56	23.2	39.5979	99.0	2.959	NO
2	7	PFHxA	313.0 > 269.0	1.48e4	1.98e4	0.250		3.08	3.08	9.35	42.4150	106.0	20.732	NO
3	9	HFPO-DA	285.1 > 168.9	3.59e3	4.35e3	0.250		3.29	3.29	10.3	40.2809	100.7	2.742	NO
4	11	PFHpA	363.0 > 318.9	1.35e4	1.41e4	0.250		3.68	3.68	12.0	40.7669	101.9	32.675	NO
5	12	ADONA	376.8 > 250.9	3.12e4	1.41e4	0.250		3.77	3.79	27.7	42.4140	106.0	4.219	NO
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.56e3		0.250	95.835	2.62	2.56	1560	64.9104	129.8		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.98e4		0.250	1583.988	3.08	3.08	19800	50.0746	100.1		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	4.35e3		0.250	320.279	3.35	3.29	4350	54.3454	108.7		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	1.41e4		0.250	1043.640	3.70	3.68	14100	53.8621	107.7		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	1.41e4		0.250	1043.640	3.70	3.68	14100	53.8621	107.7		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.63e3	3.57e3	0.250		3.82	3.82	9.22	33.1178	82.8	2.186	NO
13	1...	Total PFHxS	398.9 > 79.7	2.63e3	3.57e3	0.250		3.93		9.22	33.1178			
14	16	L-PFOA	412.8 > 368.9	1.68e4	1.92e4	0.250		4.19	4.19	10.9	36.3099	90.8	2.864	NO
15	1...	Total PFOA	412.8 > 368.9	1.68e4	1.92e4	0.250		4.60		10.9	36.3099			
16	21	PFNA	463.0 > 418.8	1.78e4	2.02e4	0.250		4.63	4.63	11.0	41.3584	103.4	9.241	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	3.57e3		0.250	210.930	3.82	3.82	3570	67.7027	135.4		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	3.57e3		0.250	210.930	3.82	3.82	3570	67.7027	135.4		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.92e4		0.250	1520.439	4.19	4.19	19200	50.4991	101.0		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.92e4		0.250	1520.439	4.19	4.19	19200	50.4991	101.0		
21	65	13C5-PFNA-EIS	468.2 > 422.9	2.02e4		0.250	1397.197	4.63	4.63	20200	57.8741	115.7		
22	-1													
23	23	L-PFOS	498.9 > 79.7	2.71e3	3.71e3	0.250		4.71	4.71	9.14	40.5105	101.3	2.210	NO
24	1...	Total PFOS	498.9 > 79.7	2.71e3	3.71e3	0.250		5.13		9.14	40.5105			
25	25	9Cl-PF30NS	530.7 > 350.8	2.77e3	3.71e3	0.250		4.92	4.93	9.33	39.6687	99.2	22.687	NO
26	26	PFDA	513 > 468.8	1.85e4	1.96e4	0.250		5.01	5.01	11.8	42.0679	105.2	10.706	NO
27	33	PFUdA	563.0 > 518.9	1.69e4	2.05e4	0.250		5.32	5.33	10.3	40.3072	100.8	26.603	NO
28	71	13C8-PFOS-EIS	507.0 > 79.7	3.71e3		0.250	272.664	4.71	4.71	3710	54.3755	108.8		
29	71	13C8-PFOS-EIS	507.0 > 79.7	3.71e3		0.250	272.664	4.71	4.71	3710	54.3755	108.8		
30	71	13C8-PFOS-EIS	507.0 > 79.7	3.71e3		0.250	272.664	4.71	4.71	3710	54.3755	108.8		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.96e4		0.250	1568.618	5.00	5.01	19600	50.0570	100.1		
32	79	13C2-PFUdA-EIS	565 > 519.8	2.05e4		0.250	1811.110	5.32	5.32	20500	45.3201	90.6		
33	-1													
34	29	L-MeFOSAA	570 > 419	5.03e3	5.39e3	0.250		5.15	5.16	11.7	35.7722	89.4	2.148	NO
35	1...	Total N-MeFOSAA	570. > 419	5.03e3	5.39e3	0.250		5.19		11.7	35.7722			
36	31	L-EtFOSAA	584.1 > 419	4.29e3	5.41e3	0.250		5.31	5.31	9.92	36.6744	91.7	1.218	NO

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-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	1...	Total N-EtFOSAA	584.1 > 419	4.29e3	5.41e3	0.250		5.37		9.92	36.6744			
38	35	11Cl-PF30UdS	630.9 > 450.9	7.00e3	1.81e4	0.250		5.53	5.53	4.83	44.2713	110.7	20.312	NO
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	5.39e3		0.250	420.487	5.15	5.15	5390	51.2961	102.6		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	5.39e3		0.250	420.487	5.15	5.15	5390	51.2961	102.6		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	5.41e3		0.250	476.890	5.29	5.31	5410	45.3522	90.7		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	5.41e3		0.250	476.890	5.29	5.31	5410	45.3522	90.7		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.81e4		0.250	1503.152	5.59	5.60	18100	48.2019	96.4		
44	-1													
45	37	PFDoA	612.9 > 569.0	1.73e4	1.81e4	0.250		5.60	5.60	11.9	40.7301	101.8	12.126	NO
46	39	PFTrDA	662.9 > 618.9	1.66e4	1.81e4	0.250		5.85	5.84	11.5	40.2510	100.6	65.870	NO
47	41	PFTeDA	713.0 > 669.0	1.50e4	1.89e4	0.250		6.06	6.06	9.92	37.8153	94.5	13.997	NO
48	1...	TDCA	498.3>106.9			0.250		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	1.12e4	1.12e4	0.250	1.000	1.34	1.35	12.5	50.0000	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.81e4		0.250	1503.152	5.59	5.60	18100	48.2019	96.4		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.81e4		0.250	1503.152	5.59	5.60	18100	48.2019	96.4		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.89e4		0.250	1574.744	6.02	6.06	18900	48.0145	96.0		
53	71	13C8-PFOS-EIS	507.0 > 79.7	3.71e3		0.250	272.664	4.71	4.71	3710	54.3755	108.8		
54	1...	13C5-PFHxA	318.0 > 272.9	1.92e4	1.92e4	0.250	1.000	3.06	3.08	12.5	50.0000	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	1.23e3	1.23e3	0.250	1.000	3.81	3.82	12.5	50.0000	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	2.00e4	2.00e4	0.250	1.000	4.18	4.19	12.5	50.0000	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.81e4	1.81e4	0.250	1.000	4.99	5.00	12.5	50.0000	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	2.10e4	2.10e4	0.250	1.000	5.32	5.32	12.5	50.0000	100.0		
60	1...	13C4-PFOS	503 > 79.7	3.89e3	3.89e3	0.250	1.000	4.70	4.71	12.5	50.0000	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.91e4	1.91e4	0.250	1.000	4.62	4.63	12.5	50.0000	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

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Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-BSD1 LCSD 0.25, Description: LCSD

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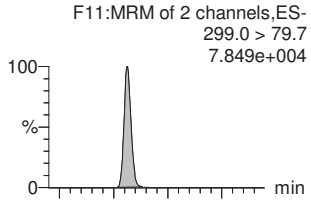

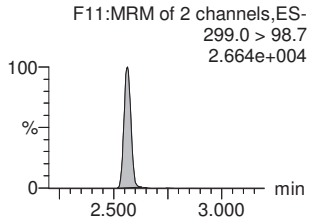

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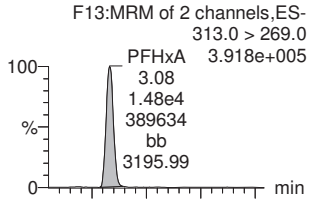

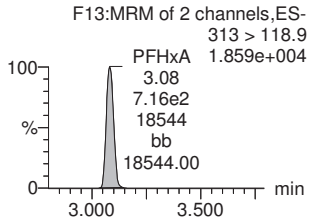

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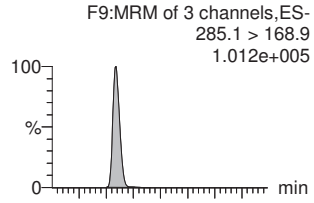

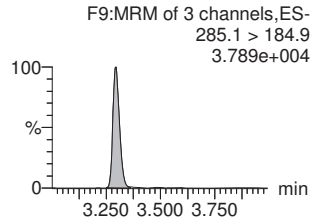

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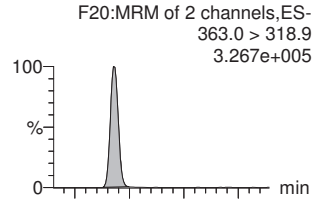

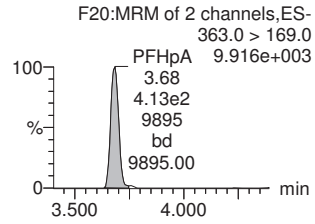

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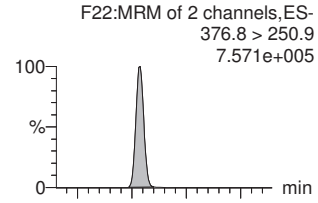

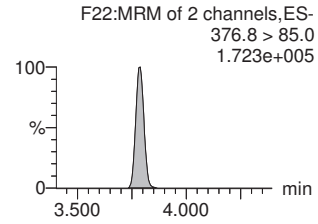

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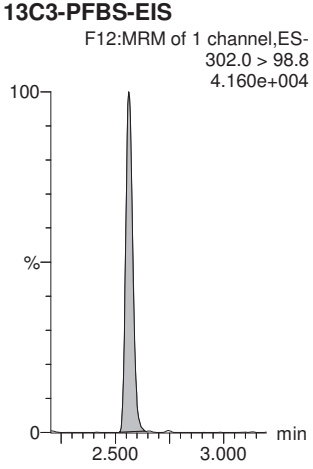

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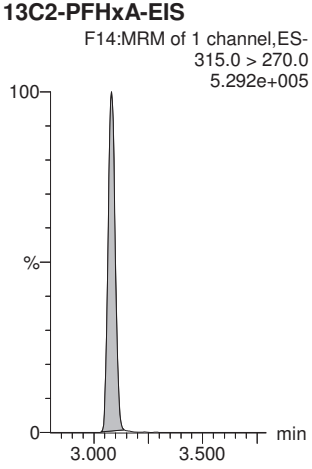

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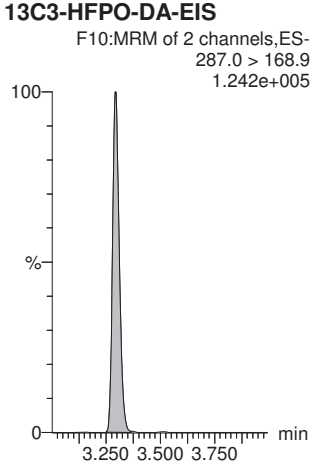

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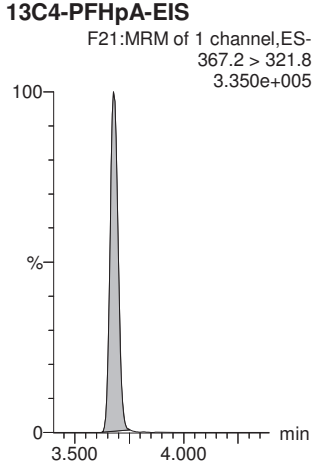

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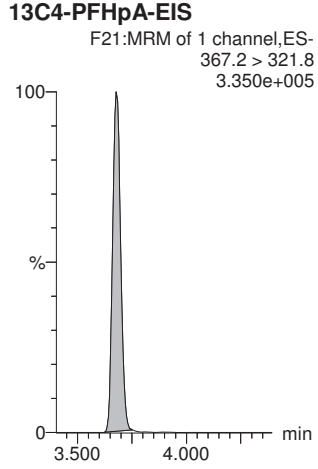

Quantify Sample Report **MassLynx V4.2 SCN982** Page 2 of 8

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-BSD1 LCSD 0.25, Description: LCSD

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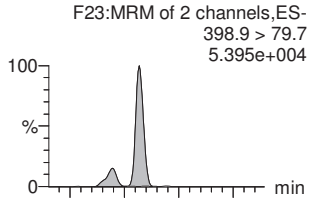

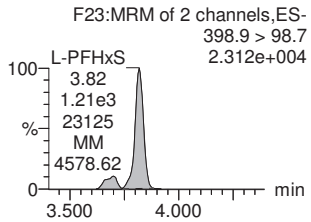

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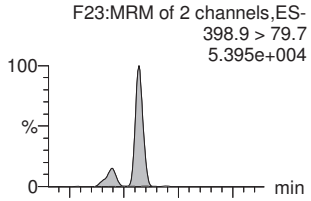
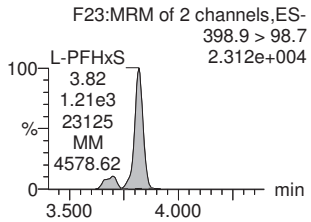
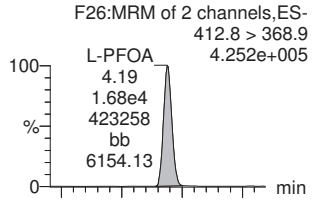
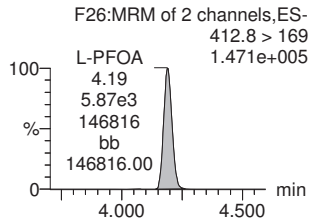




L-PFOA





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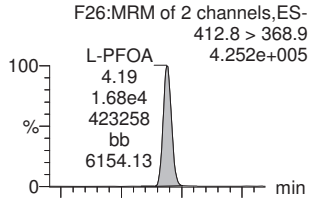

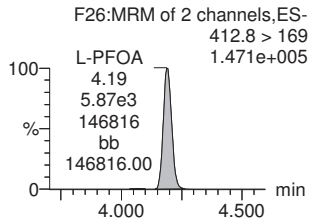

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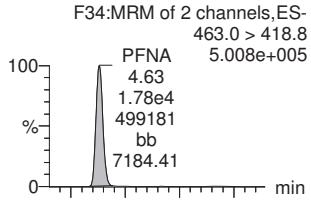

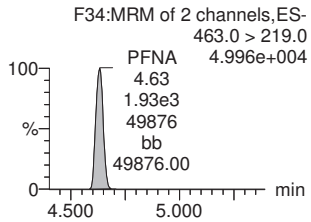

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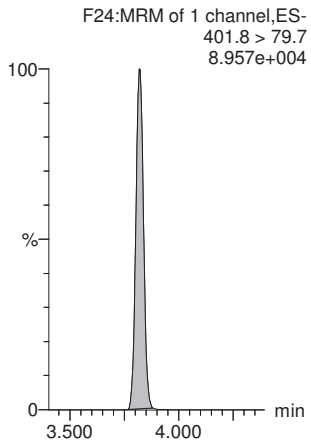

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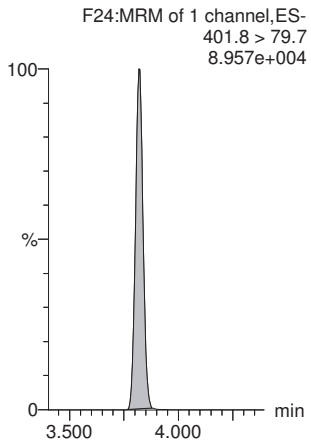

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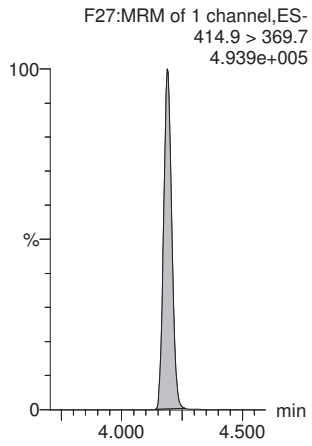

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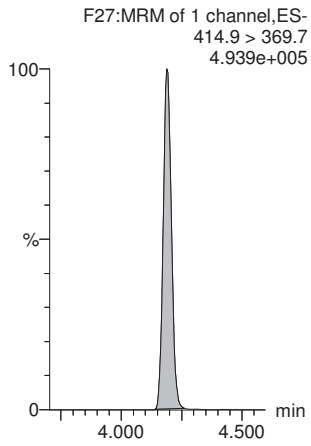

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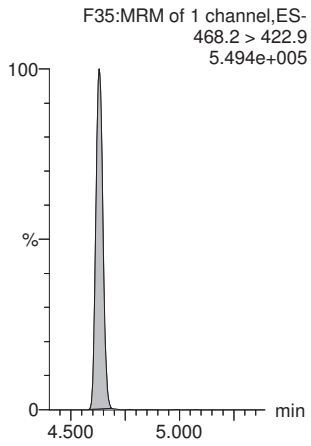

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

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Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-BSD1 LCSD 0.25, Description: LCSD

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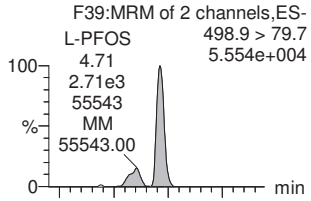

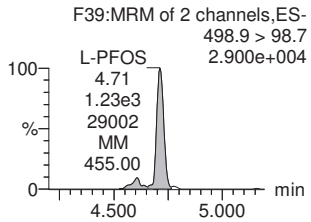

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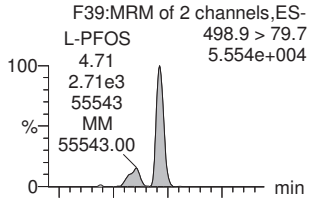

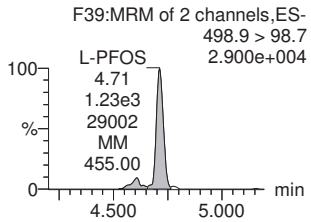

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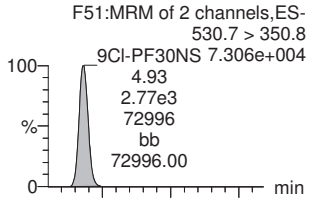

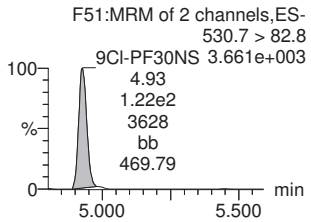

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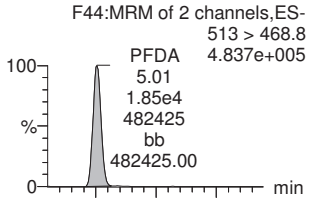

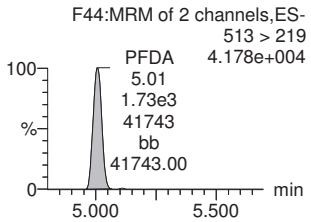

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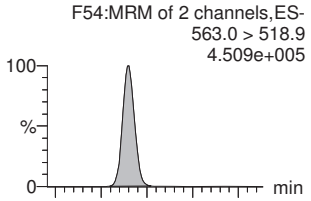

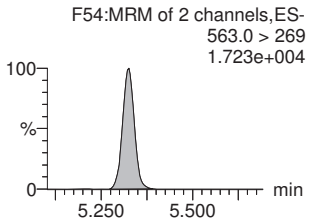

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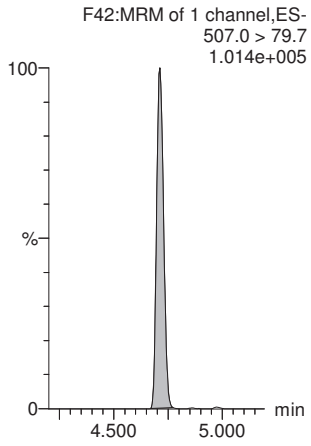

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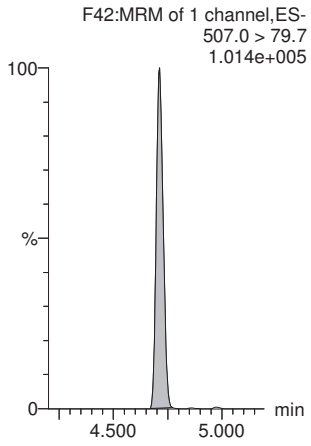

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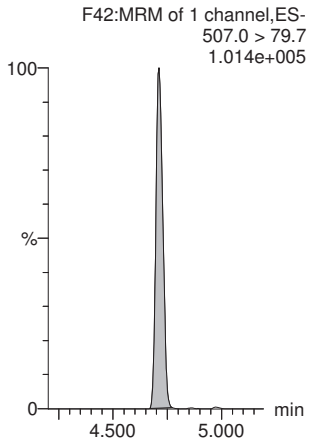

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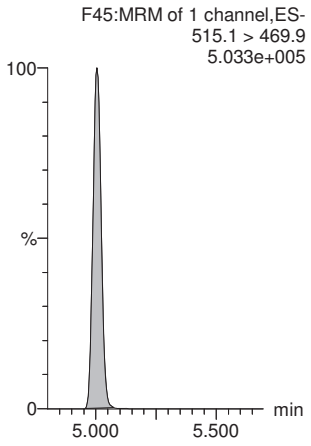

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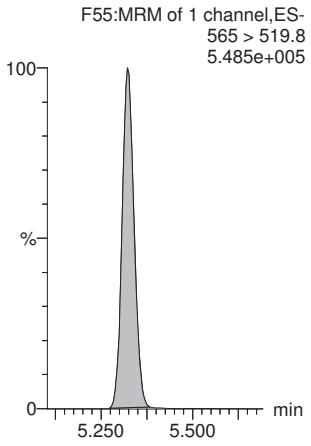

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

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Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-BSD1 LCSD 0.25, Description: LCSD

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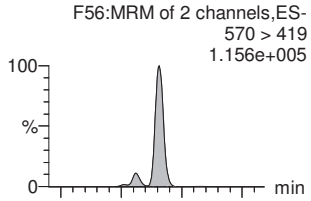

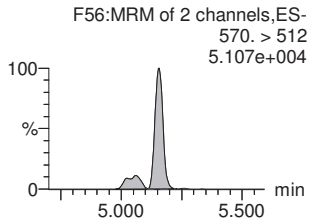

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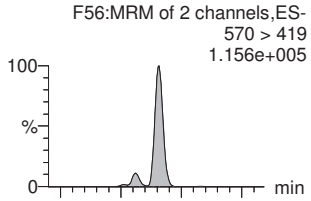

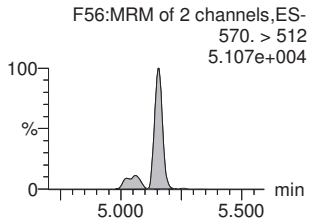

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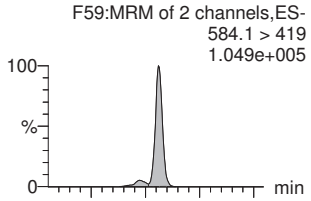

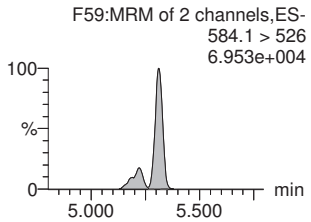

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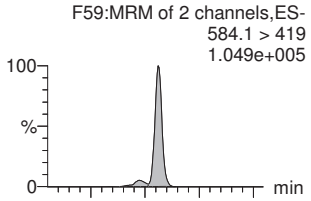
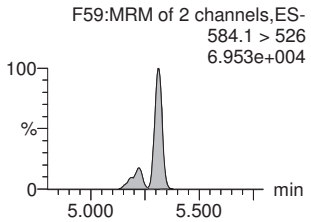
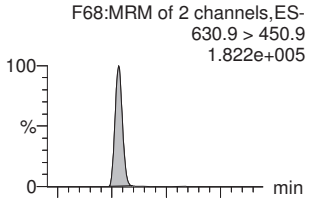
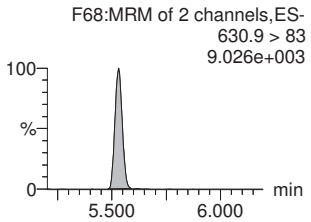


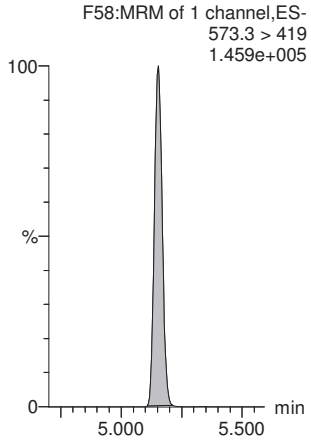


11Cl-PF30UdS





d3-N-MeFOSAA-EIS



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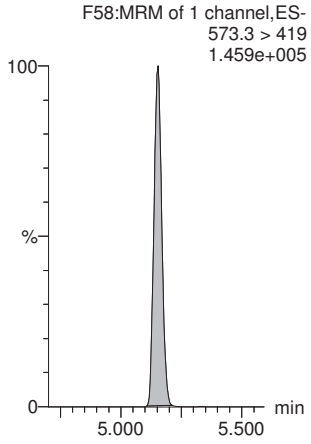

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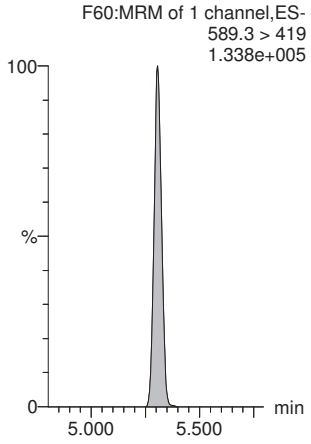

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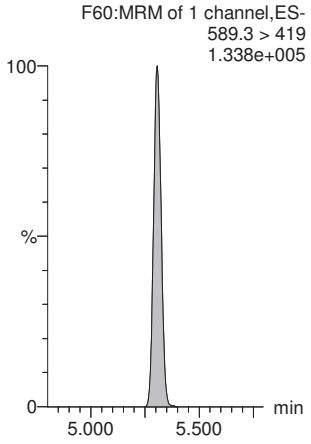
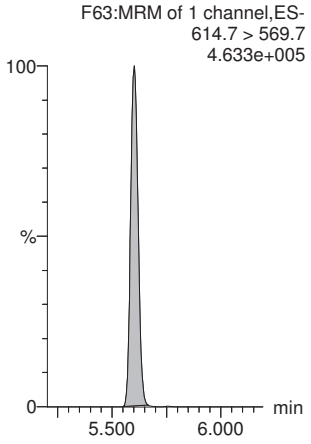


13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN982** Page 5 of 8

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

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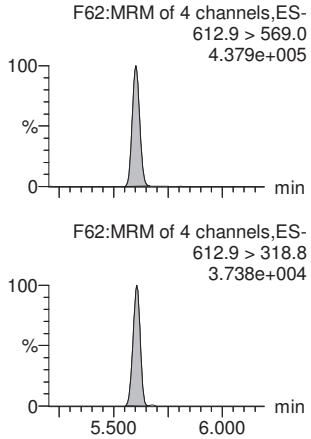

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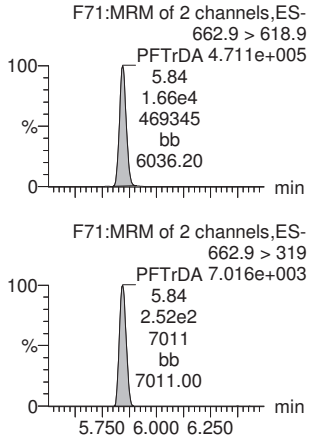
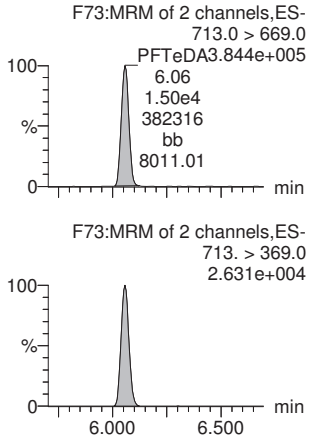


PFTeDA



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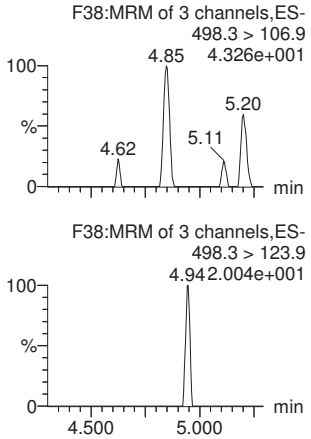
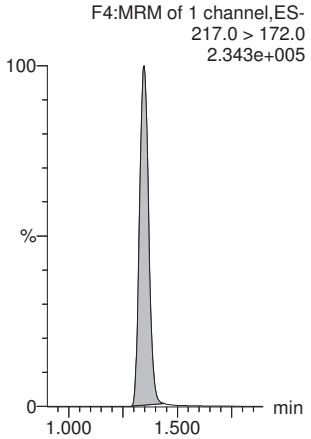
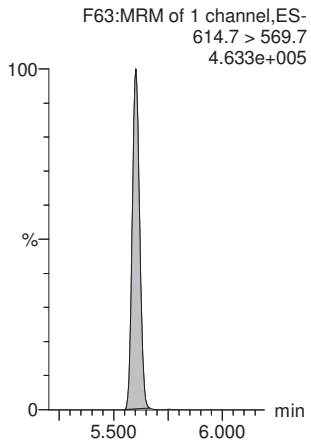


13C4-PFBA



13C2-PFDoA-EIS



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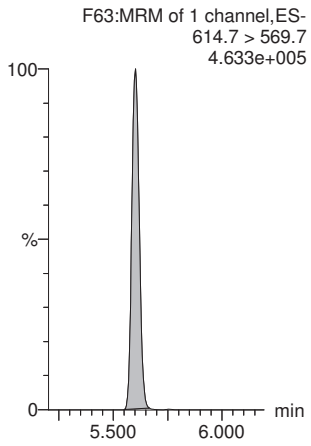
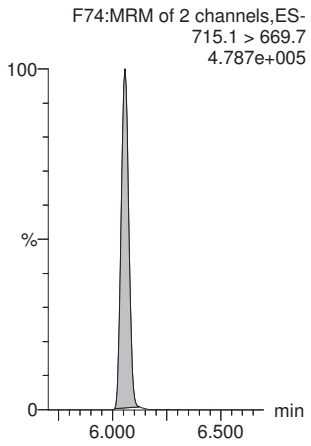
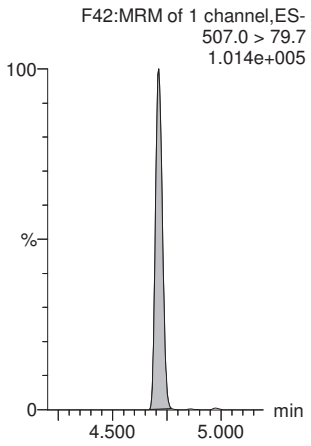


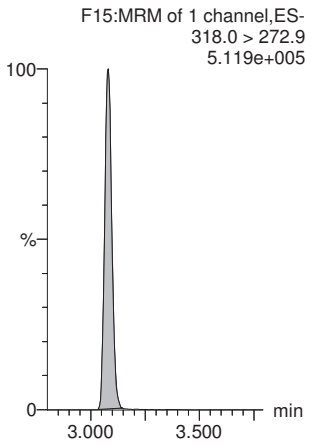
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

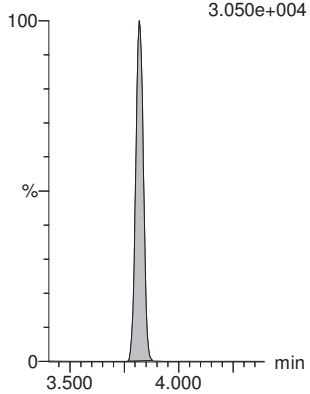
MM 3/2/2020

Dataset: Untitled

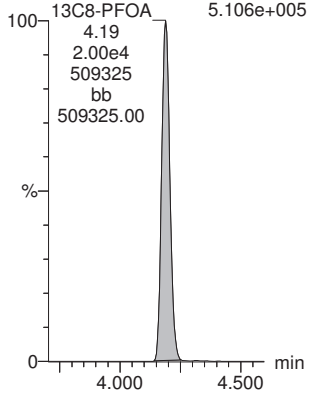
Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:08:16 Pacific Standard Time

Name: 200228P2-47, Date: 28-Feb-2020, Time: 22:16:32, ID: B0B0155-BSD1 LCSD 0.25, Description: LCSD

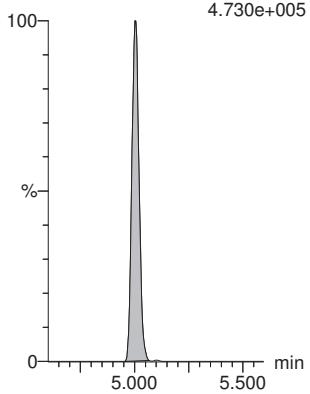
18O2-PFHxS



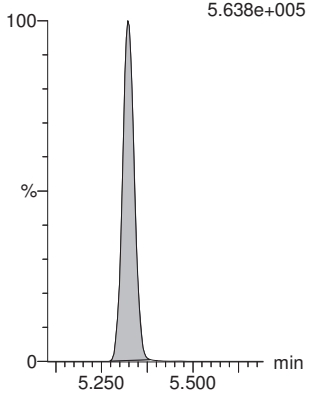
13C8-PFOA



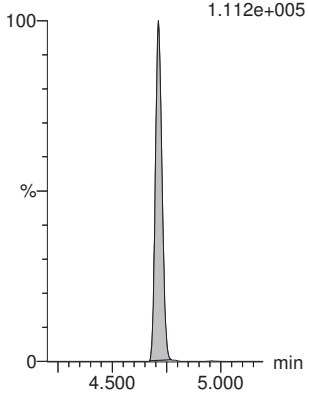
13C6-PFDA



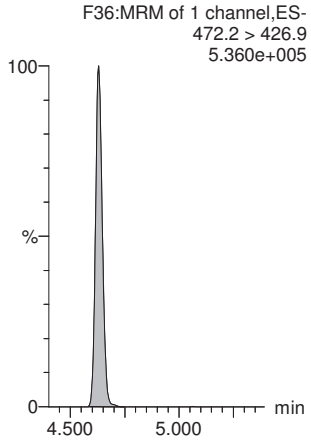
13C7-PFUdA



13C4-PFOS



13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982** Page 7 of 8

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MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:09:51 Pacific Standard Time

Name: 200228P2-48, Date: 28-Feb-2020, Time: 22:27:01, ID: 2000333-01 EB02-20200217 0.24792, Description: EB02-20200217

	#	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		1.39e3	0.248		2.56						YES
2	7	PFHxA	313.0 > 269.0		2.02e4	0.248		3.08						YES
3	9	HFPO-DA	285.1 > 168.9		4.20e3	0.248		3.30						YES
4	11	PFHpA	363.0 > 318.9		1.45e4	0.248		3.68						YES
5	12	ADONA	376.8 > 250.9		1.45e4	0.248		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.39e3		0.248	95.835	2.63	2.56	1390	58.3415	115.7		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	2.02e4		0.248	1583.988	3.08	3.08	20200	51.3548	101.9		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	4.20e3		0.248	320.279	3.35	3.30	4200	52.9421	105.0		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	1.45e4		0.248	1043.640	3.70	3.68	14500	56.0426	111.2		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	1.45e4		0.248	1043.640	3.70	3.68	14500	56.0426	111.2		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	5.15e0	3.38e3	0.248		3.82	3.84	0.0191	0.3590		6.179	YES
13	1...	Total PFHxS	398.9 > 79.7	5.15e0	3.38e3	0.248		3.93		0.0191	0.3590			
14	16	L-PFOA	412.8 > 368.9	2.53e2	1.82e4	0.248		4.19	4.19	0.173	0.3661		3.013	NO
15	1...	Total PFOA	412.8 > 368.9	2.53e2	1.82e4	0.248		4.60		0.173	0.3661			
16	21	PFNA	463.0 > 418.8		1.92e4	0.248		4.63						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	3.38e3		0.248	210.930	3.82	3.82	3380	64.5411	128.0		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	3.38e3		0.248	210.930	3.82	3.82	3380	64.5411	128.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.82e4		0.248	1520.439	4.19	4.19	18200	48.3351	95.9		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.82e4		0.248	1520.439	4.19	4.19	18200	48.3351	95.9		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.92e4		0.248	1397.197	4.63	4.63	19200	55.3595	109.8		
22	-1													
23	23	L-PFOS	498.9 > 79.7	2.54e0	3.78e3	0.248		4.71	4.61	0.00841	0.1411		3.255	NO
24	1...	Total PFOS	498.9 > 79.7	2.54e0	3.78e3	0.248		5.13		0.00841	0.1411			
25	25	9Cl-PF30NS	530.7 > 350.8		3.78e3	0.248		4.92						YES
26	26	PFDA	513 > 468.8		2.16e4	0.248		5.01						YES
27	33	PFUdA	563.0 > 518.9		2.38e4	0.248		5.33						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	3.78e3		0.248	272.664	4.72	4.71	3780	55.9153	110.9		
29	71	13C8-PFOS-EIS	507.0 > 79.7	3.78e3		0.248	272.664	4.72	4.71	3780	55.9153	110.9		
30	71	13C8-PFOS-EIS	507.0 > 79.7	3.78e3		0.248	272.664	4.72	4.71	3780	55.9153	110.9		
31	73	13C2-PFDA-EIS	515.1 > 469.9	2.16e4		0.248	1568.618	5.01	5.01	21600	55.5711	110.2		
32	79	13C2-PFUdA-EIS	565 > 519.8	2.38e4		0.248	1811.110	5.33	5.33	23800	52.9574	105.0		
33	-1													
34	29	L-MeFOSAA	570 > 419		5.13e3	0.248		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	5.13e3	0.248		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		5.22e3	0.248		5.31						YES

Quantify Sample Report **MassLynx V4.2 SCN982**

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MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:09:51 Pacific Standard Time

Name: 200228P2-48, Date: 28-Feb-2020, Time: 22:27:01, ID: 2000333-01 EB02-20200217 0.24792, Description: EB02-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	5.22e3	0.248		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.96e4	0.248		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	5.13e3		0.248	420.487	5.15	5.15	5130	49.2483	97.7		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	5.13e3		0.248	420.487	5.15	5.15	5130	49.2483	97.7		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	5.22e3		0.248	476.890	5.30	5.31	5220	44.1595	87.6		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	5.22e3		0.248	476.890	5.30	5.31	5220	44.1595	87.6		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.96e4		0.248	1503.152	5.59	5.60	19600	52.6909	104.5		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.96e4	0.248		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.96e4	0.248		5.85						YES
47	41	PFTeDA	713.0 > 669.0		2.01e4	0.248		6.06						YES
48	1...	TDCA	498.3>106.9			0.248		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	1.17e4	1.17e4	0.248	1.000	1.34	1.35	12.5	50.4195	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.96e4		0.248	1503.152	5.59	5.60	19600	52.6909	104.5		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.96e4		0.248	1503.152	5.59	5.60	19600	52.6909	104.5		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	2.01e4		0.248	1574.744	6.02	6.06	20100	51.6011	102.3		
53	71	13C8-PFOS-EIS	507.0 > 79.7	3.78e3		0.248	272.664	4.72	4.71	3780	55.9153	110.9		
54	1...	13C5-PFHxA	318.0 > 272.9	2.01e4	2.01e4	0.248	1.000	3.06	3.08	12.5	50.4195	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	1.35e3	1.35e3	0.248	1.000	3.81	3.82	12.5	50.4195	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.96e4	1.96e4	0.248	1.000	4.18	4.19	12.5	50.4195	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.74e4	1.74e4	0.248	1.000	4.99	5.01	12.5	50.4195	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	2.31e4	2.31e4	0.248	1.000	5.32	5.33	12.5	50.4195	100.0		
60	1...	13C4-PFOS	503 > 79.7	3.68e3	3.68e3	0.248	1.000	4.70	4.72	12.5	50.4195	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	2.11e4	2.11e4	0.248	1.000	4.62	4.63	12.5	50.4195	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:09:51 Pacific Standard Time

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Calibration: Z:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-48, Date: 28-Feb-2020, Time: 22:27:01, ID: 2000333-01 EB02-20200217 0.24792, Description: EB02-20200217

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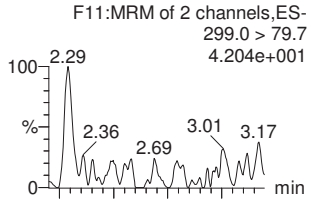
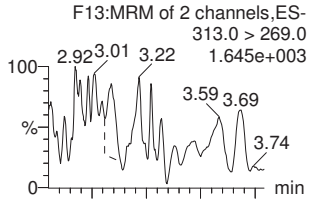


PFHxA



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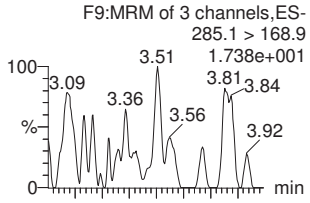
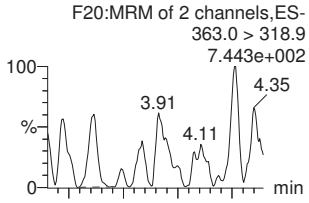


PFHpA



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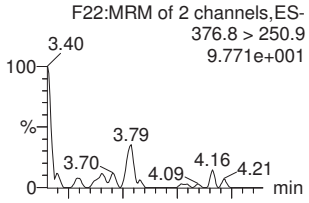
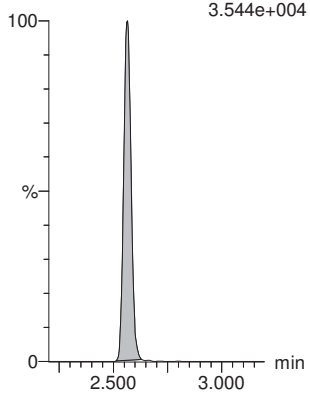


13C3-PFBS-EIS



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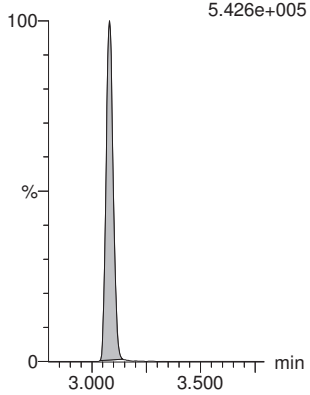

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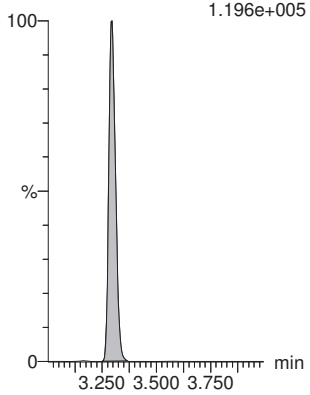

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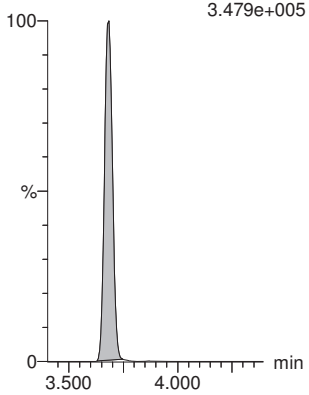

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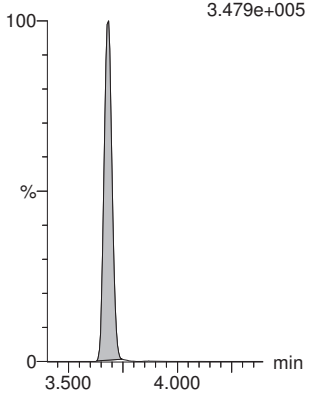

Quantify Sample Report **MassLynx V4.2 SCN982** Page 2 of 8

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MM 3/2/2020

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Printed: Monday, March 02, 2020 16:09:51 Pacific Standard Time

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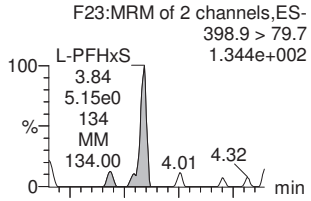

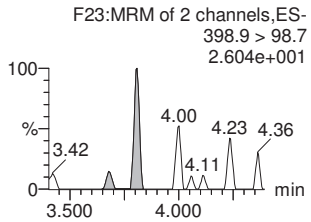

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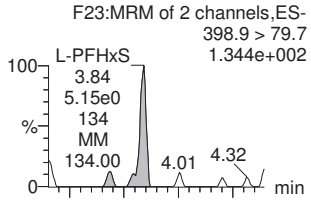

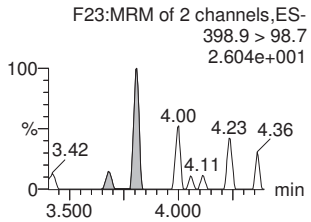

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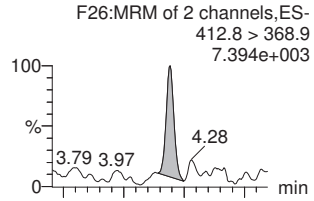

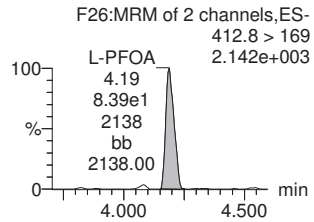

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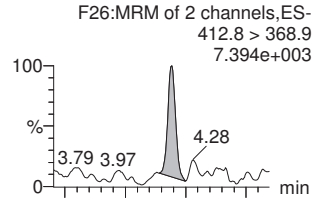

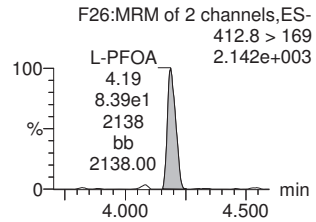

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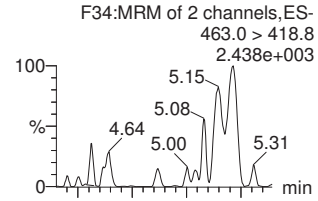

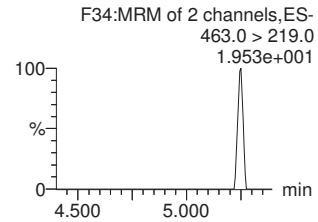

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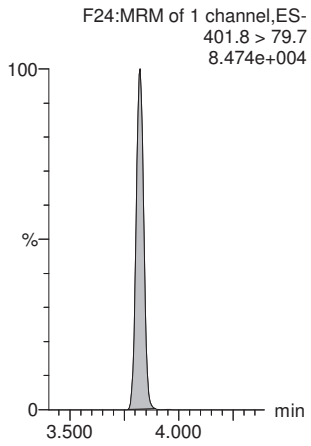

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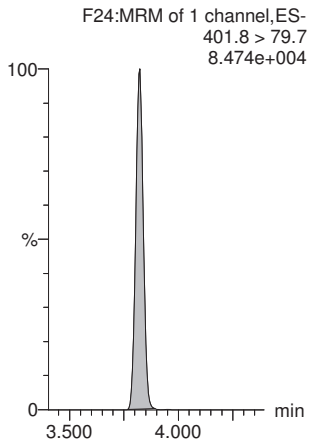

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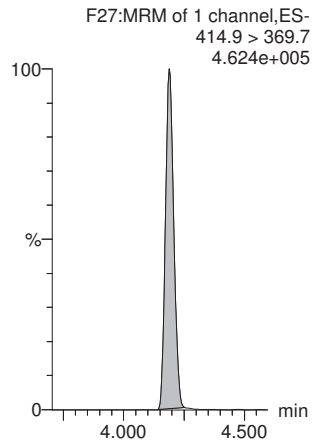

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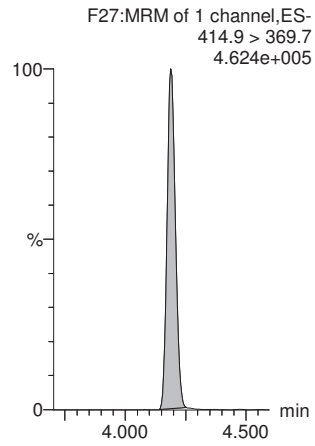

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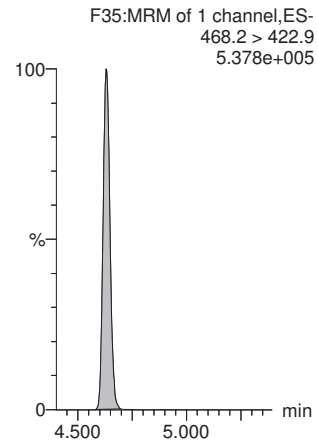

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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Name: 200228P2-48, Date: 28-Feb-2020, Time: 22:27:01, ID: 2000333-01 EB02-20200217 0.24792, Description: EB02-20200217

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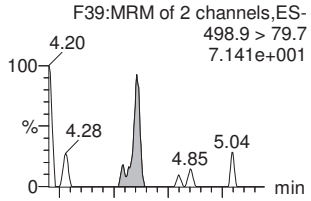

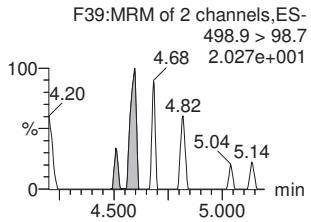

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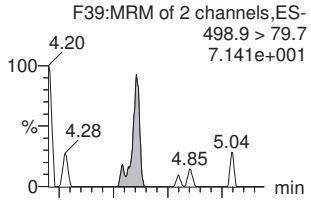

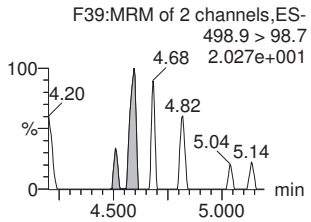

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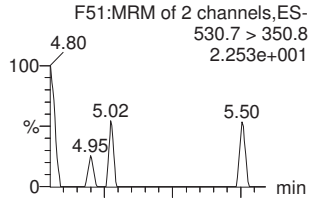

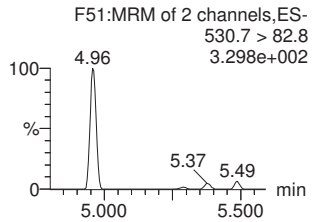

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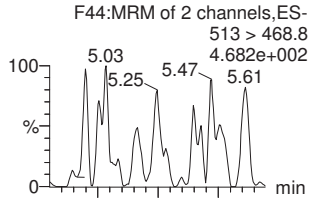

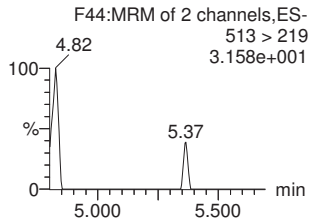

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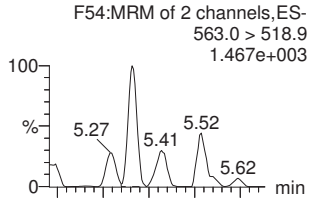

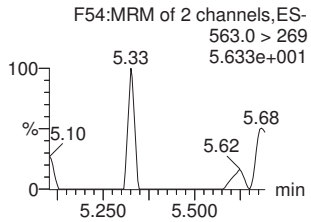

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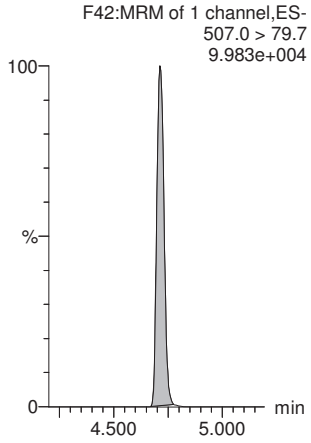

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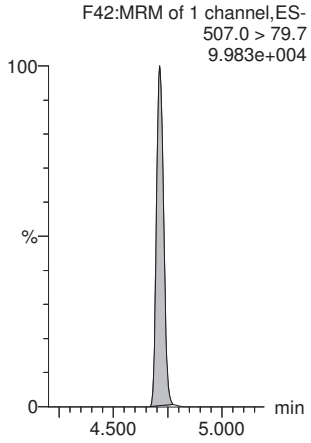

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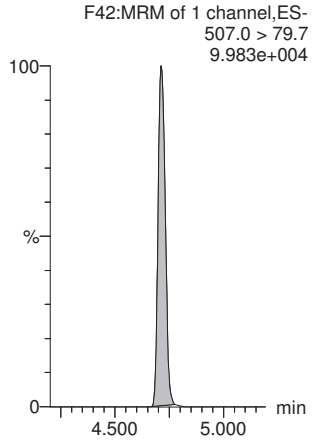

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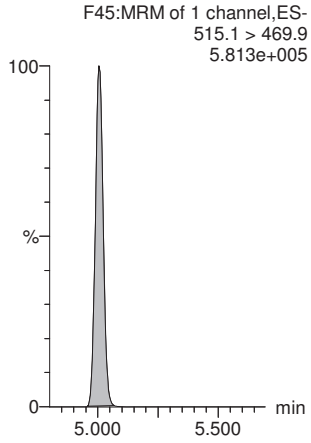

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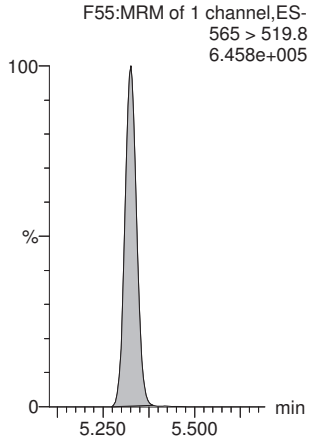

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

MM 3/2/2020

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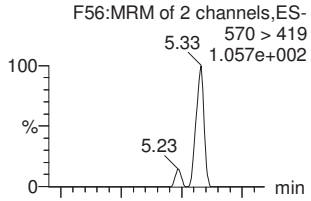

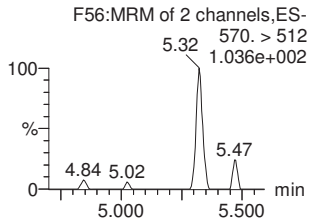

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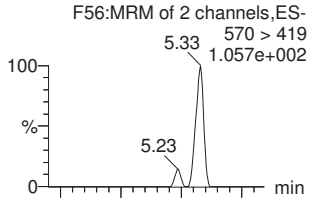

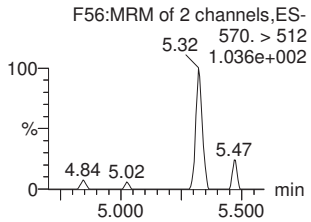

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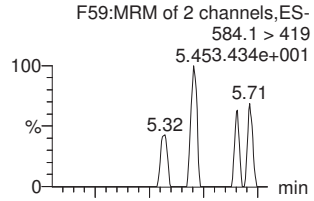

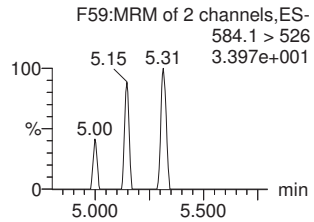

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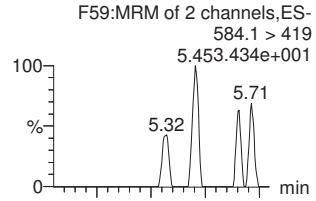

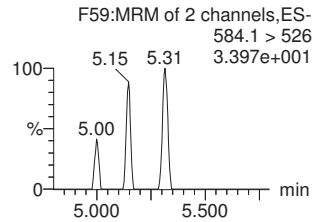

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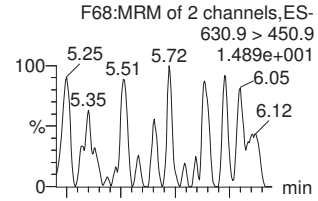

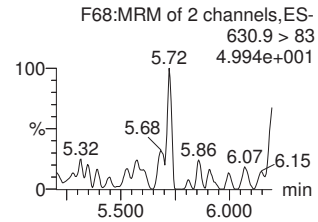

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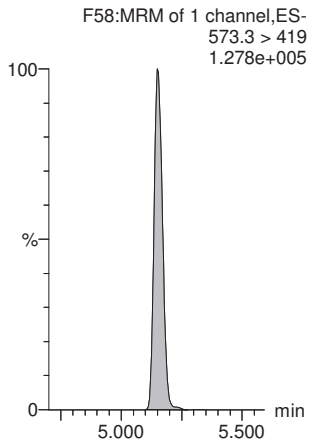

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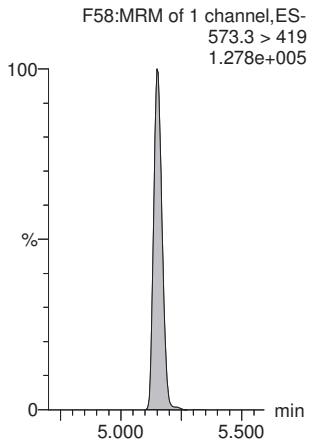

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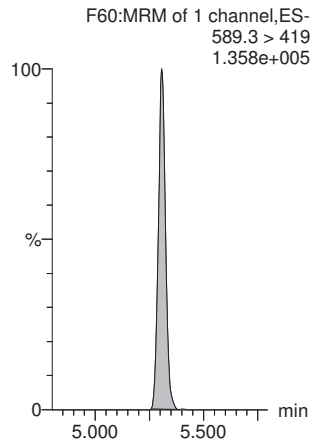

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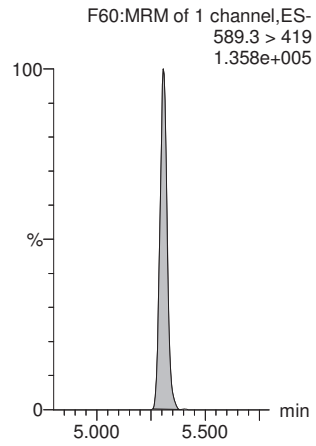

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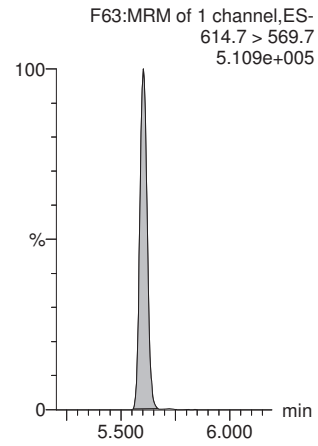

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

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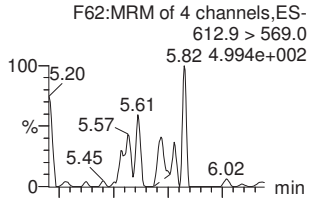

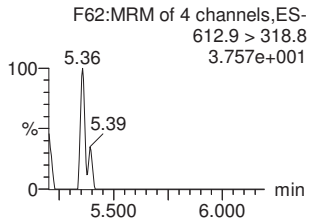

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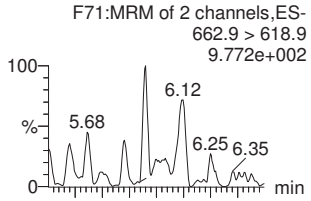
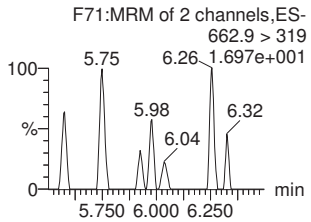
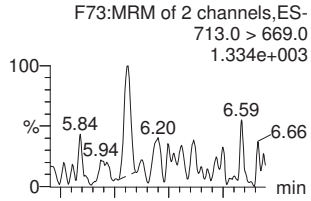
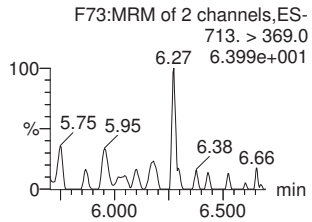




PFTeDA





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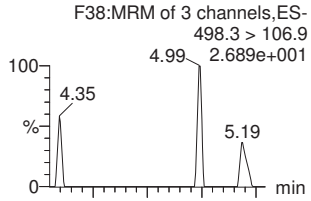
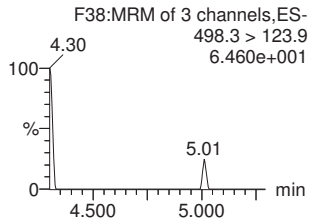
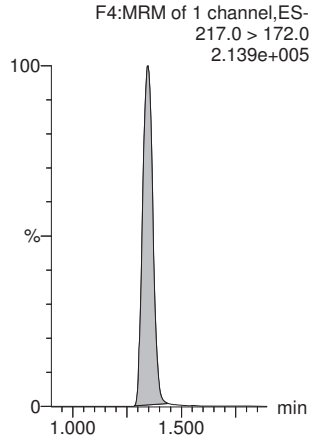
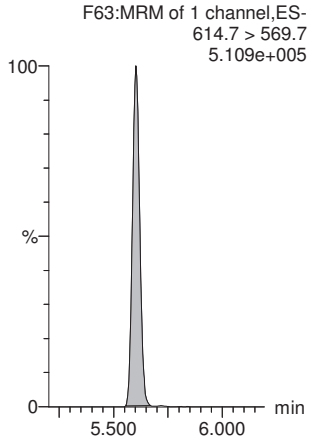




13C4-PFBA



13C2-PFDoA-EIS



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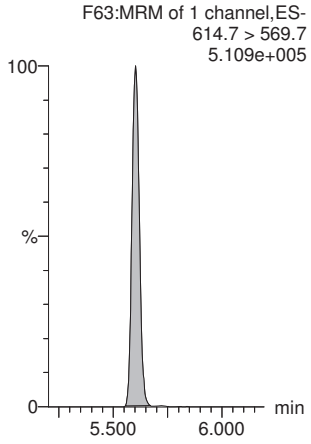
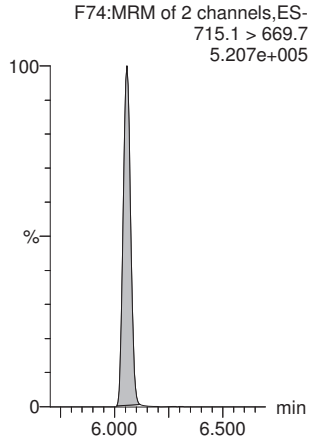


13C2-PFTeDA-EIS



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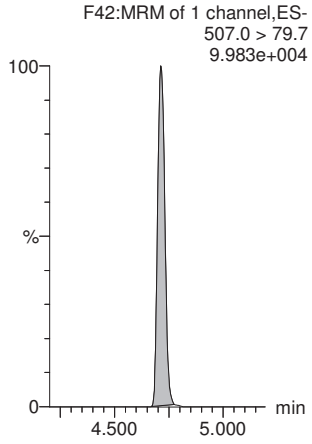
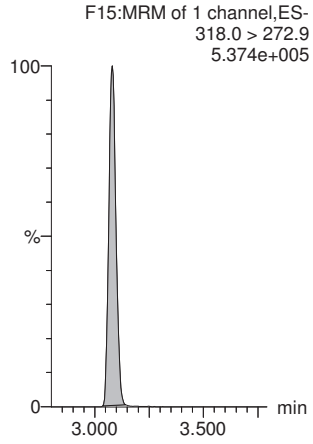


13C5-PFHxA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

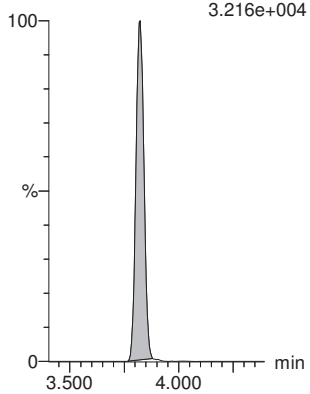
MM 3/2/2020

Dataset: Untitled

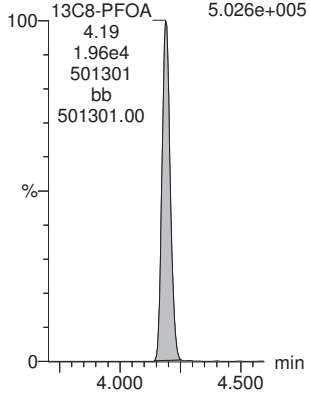
Last Altered: Monday, March 02, 2020 16:06:27 Pacific Standard Time
Printed: Monday, March 02, 2020 16:09:51 Pacific Standard Time

Name: 200228P2-48, Date: 28-Feb-2020, Time: 22:27:01, ID: 2000333-01 EB02-20200217 0.24792, Description: EB02-20200217

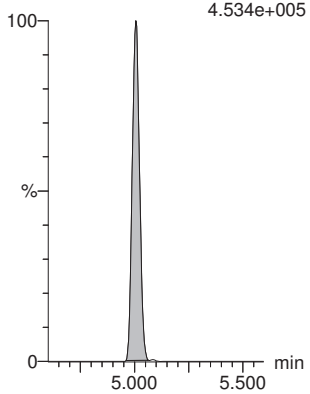
18O2-PFHxS



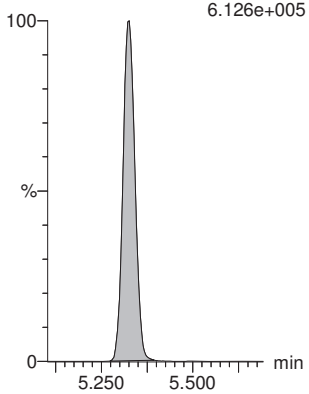
13C8-PFOA



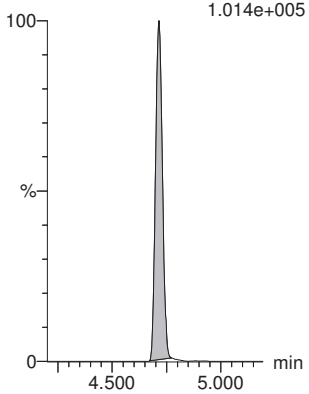
13C6-PFDA



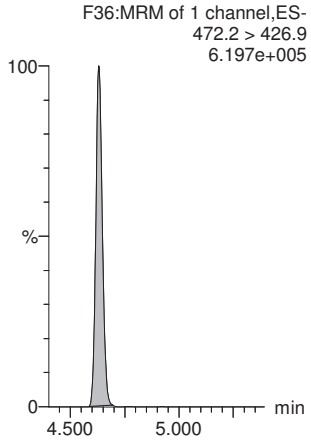
13C7-PFUdA



13C4-PFOS



13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

Last Altered: Tuesday, March 03, 2020 10:12:41 Pacific Standard Time
Printed: Tuesday, March 03, 2020 10:12:47 Pacific Standard Time

Name: 200229P1-17, Date: 29-Feb-2020, Time: 18:13:02, ID: 2000333-02 18-GW-18BGMP10E-20200217 0.25617, Description: 18-GW-18BGMP10E-20200217

	#	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		1.08e3	0.256		2.52						YES
2	7	PFHxA	313.0 > 269.0		1.54e4	0.256		3.04						YES
3	9	HFPO-DA	285.1 > 168.9		3.55e3	0.256		3.25						YES
4	11	PFHpA	363.0 > 318.9		8.73e3	0.256		3.64						YES
5	12	ADONA	376.8 > 250.9		8.73e3	0.256		3.73						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.08e3		0.256	74.669	2.60	2.52	1080	56.2585	115.3		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.54e4		0.256	1142.171	3.04	3.04	15400	52.7455	108.1		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.55e3		0.256	285.582	3.33	3.25	3550	48.5490	99.5		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.73e3		0.256	650.100	3.67	3.64	8730	52.4077	107.4		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.73e3		0.256	650.100	3.67	3.64	8730	52.4077	107.4		
11	-1													
12	13	L-PFHxS	398.9 > 79.7		2.51e3	0.256		3.78						YES
13	1...	Total PFHxS	398.9 > 79.7	0.00e0	2.51e3	0.256		3.93		0.000				
14	16	L-PFOA	412.8 > 368.9	1.97e2	1.26e4	0.256		4.15	4.16	0.197			8.050	YES
15	1...	Total PFOA	412.8 > 368.9	1.97e2	1.26e4	0.256		4.60		0.000				
16	21	PFNA	463.0 > 418.8		1.21e4	0.256		4.60						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.51e3		0.256	169.524	3.78	3.78	2510	57.7506	118.4		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.51e3		0.256	169.524	3.78	3.78	2510	57.7506	118.4		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.26e4		0.256	1020.218	4.15	4.15	12600	48.0445	98.5		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.26e4		0.256	1020.218	4.15	4.15	12600	48.0445	98.5		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.21e4		0.256	928.597	4.60	4.60	12100	50.9865	104.5		
22	-1													
23	23	L-PFOS	498.9 > 79.7		2.70e3	0.256		4.69						YES
24	1...	Total PFOS	498.9 > 79.7	0.00e0	2.70e3	0.256		5.13		0.000				
25	25	9Cl-PF30NS	530.7 > 350.8		2.70e3	0.256		4.89						YES
26	26	PFDA	513 > 468.8		1.29e4	0.256		4.98						YES
27	33	PFUdA	563.0 > 518.9		1.55e4	0.256		5.31						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.70e3		0.256	196.194	4.69	4.69	2700	53.7474	110.1		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.70e3		0.256	196.194	4.69	4.69	2700	53.7474	110.1		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.70e3		0.256	196.194	4.69	4.69	2700	53.7474	110.1		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.29e4		0.256	990.142	4.98	4.98	12900	50.8833	104.3		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.55e4		0.256	1248.401	5.31	5.31	15500	48.5937	99.6		
33	-1													
34	29	L-MeFOSAA	570 > 419		4.11e3	0.256		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	4.11e3	0.256		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		3.79e3	0.256		5.29						YES

Quantify Sample Report **MassLynx V4.2 SCN982** Page 8 of 8

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

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Printed: Tuesday, March 03, 2020 10:12:47 Pacific Standard Time

Name: 200229P1-17, Date: 29-Feb-2020, Time: 18:13:02, ID: 2000333-02 18-GW-18BGMP10E-20200217 0.25617, Description: 18-GW-18BGMP10E-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	3.79e3	0.256		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.61e4	0.256		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	4.11e3		0.256	285.850	5.14	5.13	4110	56.1836	115.1		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	4.11e3		0.256	285.850	5.14	5.13	4110	56.1836	115.1		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.79e3		0.256	376.592	5.28	5.29	3790	39.3118	80.6		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.79e3		0.256	376.592	5.28	5.29	3790	39.3118	80.6		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.61e4		0.256	1402.009	5.57	5.59	16100	44.8734	92.0		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.61e4	0.256		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.61e4	0.256		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.30e4	0.256		6.05						YES
48	1...	TDCA	498.3>106.9			0.256		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	8.96e3	8.96e3	0.256	1.000	1.38	1.29	12.5	48.7957	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.61e4		0.256	1402.009	5.57	5.59	16100	44.8734	92.0		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.61e4		0.256	1402.009	5.57	5.59	16100	44.8734	92.0		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.30e4		0.256	1271.780	6.00	6.05	13000	39.8920	81.8		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.70e3		0.256	196.194	4.69	4.69	2700	53.7474	110.1		
54	1...	13C5-PFHxA	318.0 > 272.9	1.40e4	1.40e4	0.256	1.000	3.08	3.04	12.5	48.7957	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	9.90e2	9.90e2	0.256	1.000	3.82	3.78	12.5	48.7957	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.49e4	1.49e4	0.256	1.000	4.19	4.15	12.5	48.7957	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.29e4	1.29e4	0.256	1.000	5.01	4.98	12.5	48.7957	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.84e4	1.84e4	0.256	1.000	5.32	5.31	12.5	48.7957	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.54e3	2.54e3	0.256	1.000	4.71	4.69	12.5	48.7957	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.22e4	1.22e4	0.256	1.000	4.63	4.60	12.5	48.7957	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982** Page 1 of 8

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

Last Altered: Tuesday, March 03, 2020 10:12:41 Pacific Standard Time
Printed: Tuesday, March 03, 2020 10:12:47 Pacific Standard Time

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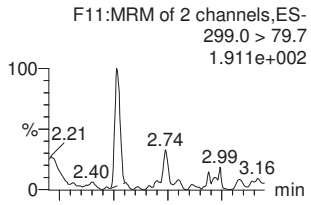
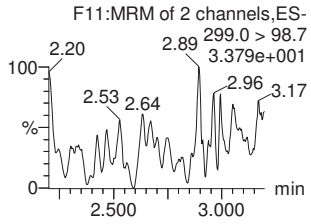
Calibration: Z:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-17, Date: 29-Feb-2020, Time: 18:13:02, ID: 2000333-02 18-GW-18BGMP10E-20200217 0.25617, Description: 18-GW-18BGMP10E-20200217

PFBS





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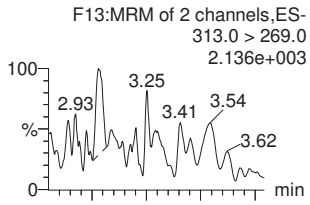

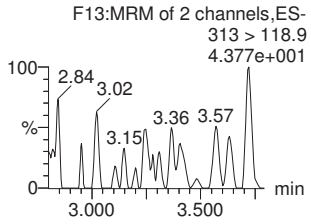

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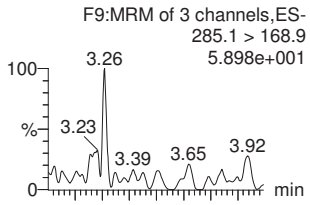

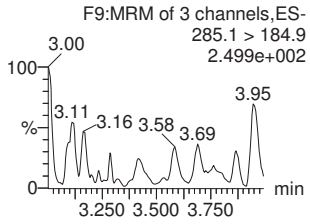

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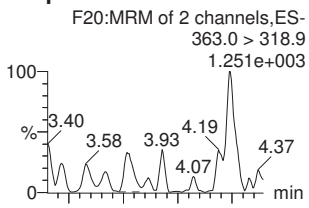
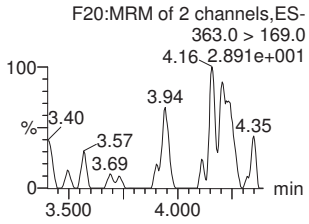
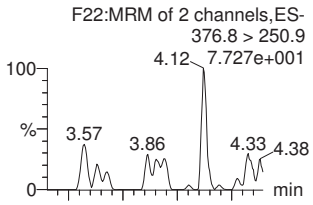
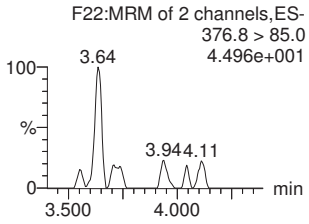


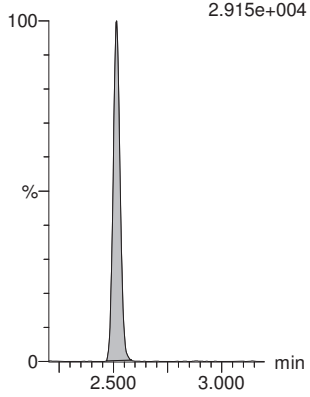


ADONA





13C3-PFBS-EIS



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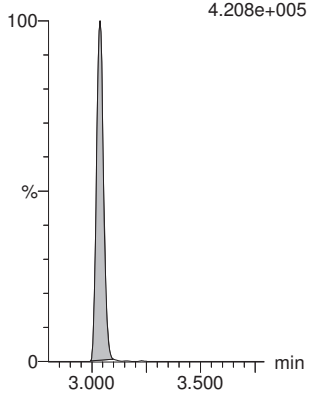

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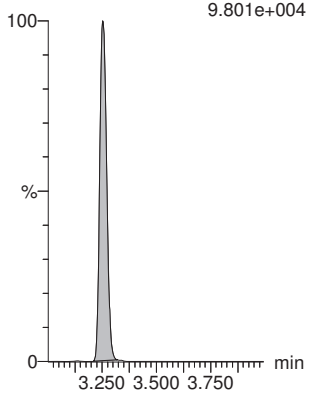

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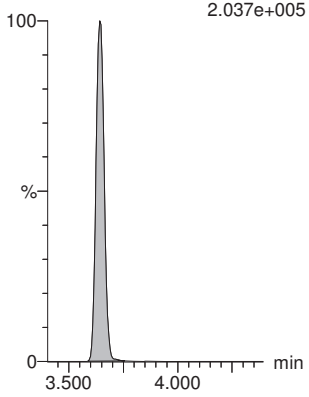

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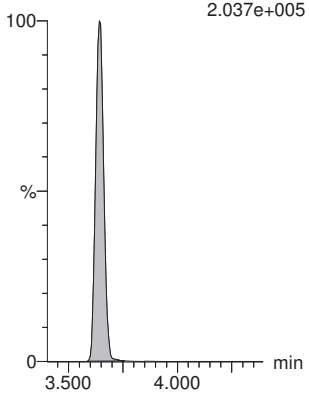

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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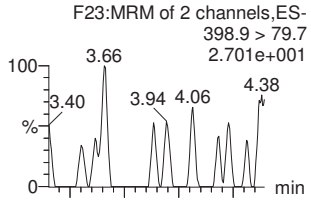

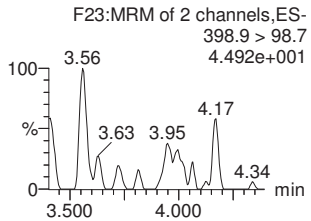

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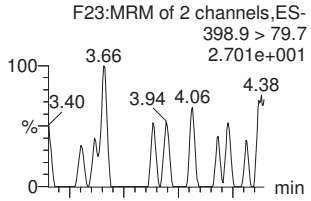

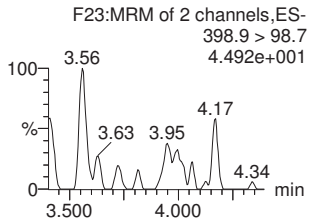

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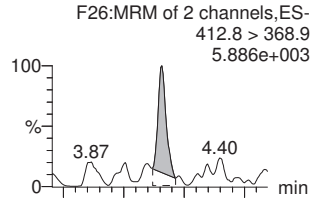

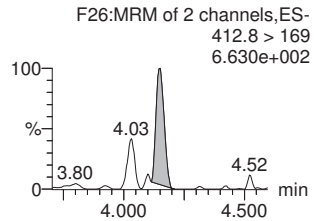

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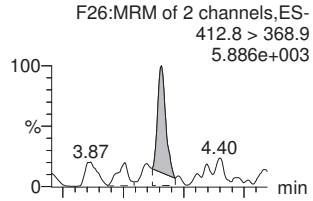

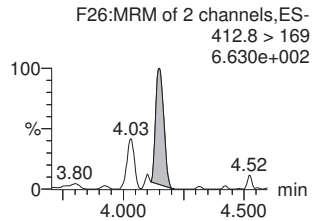

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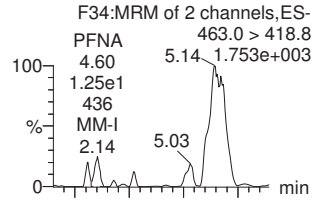

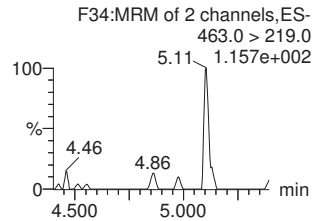

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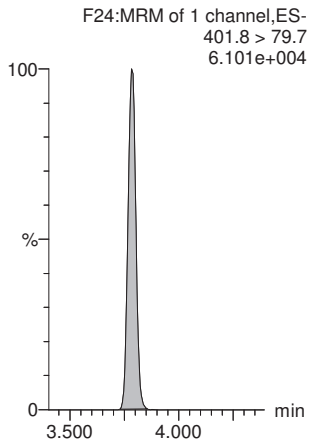

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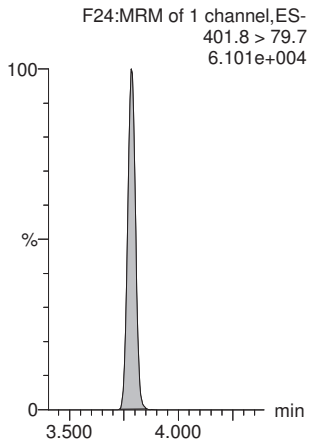

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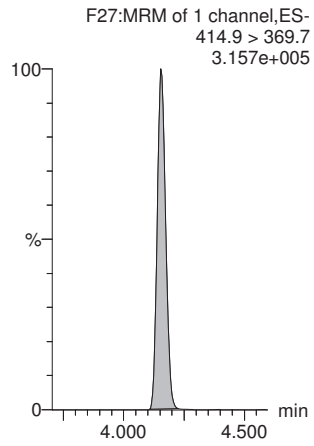

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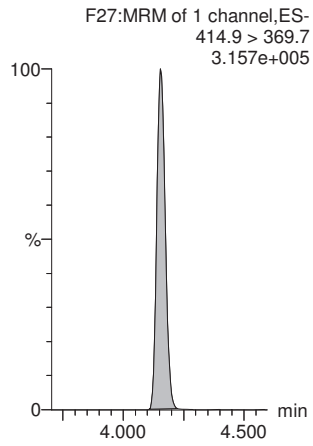

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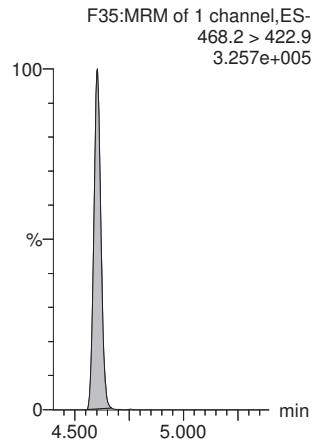

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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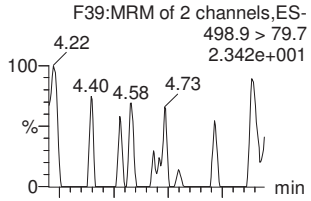

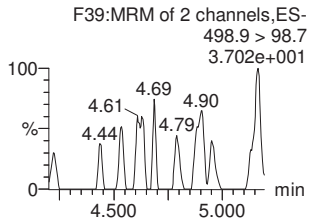

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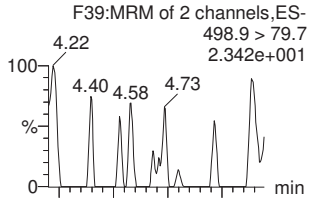

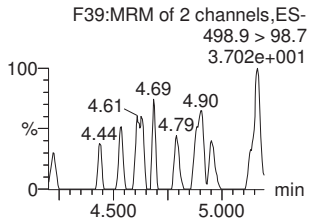

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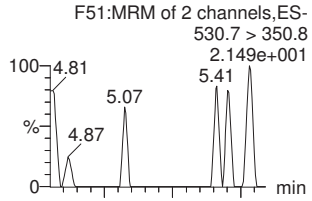

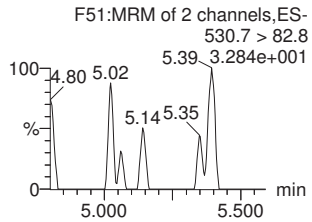

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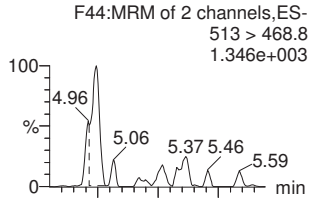

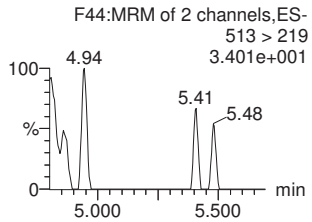

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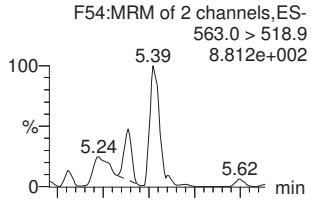

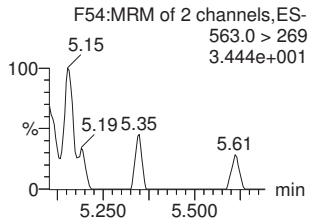

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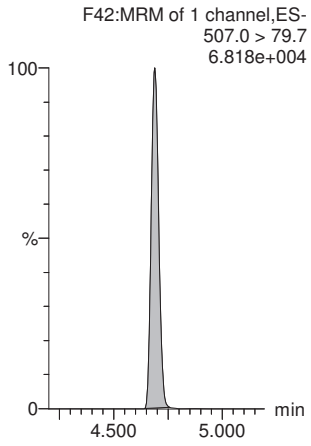

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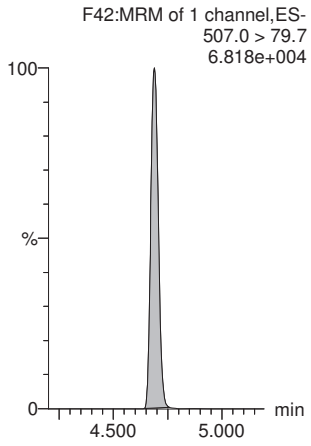

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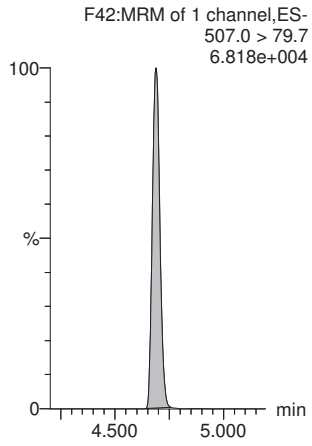

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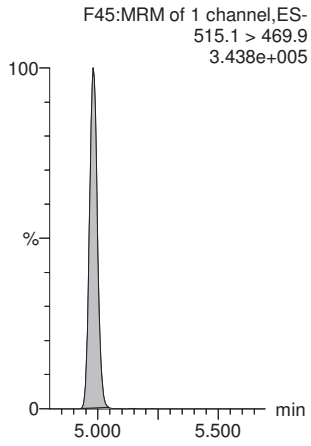

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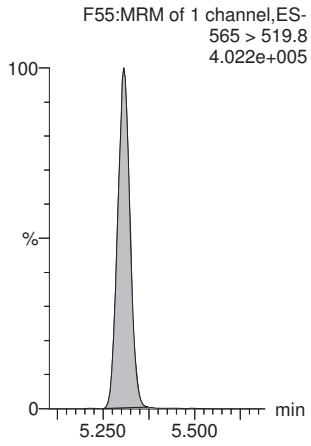

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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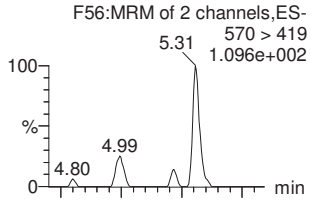

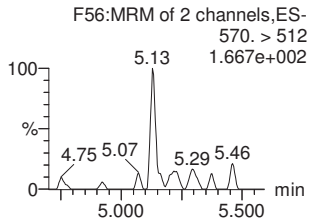

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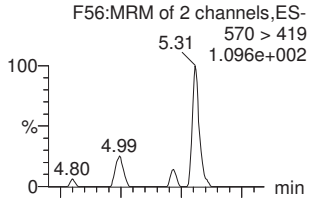

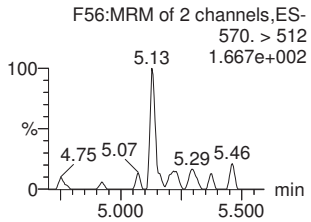

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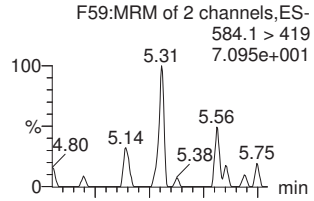

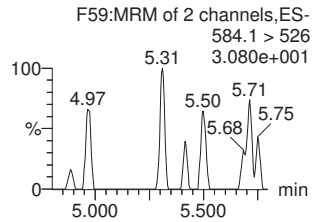

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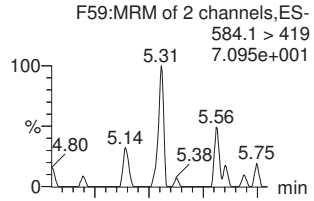

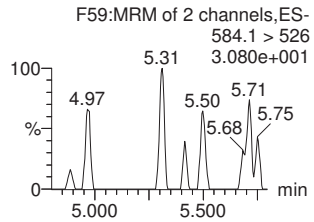

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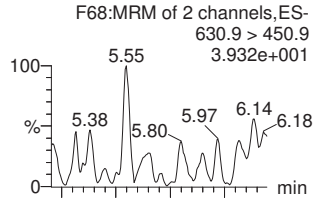

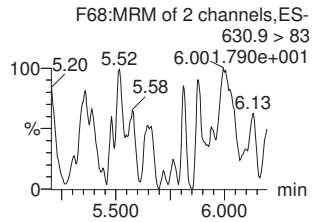

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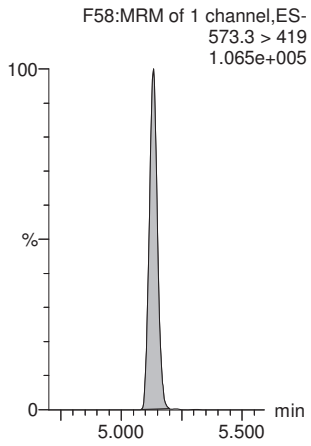

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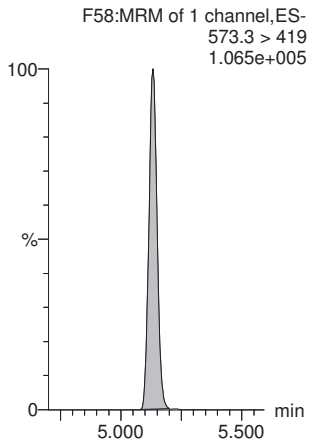

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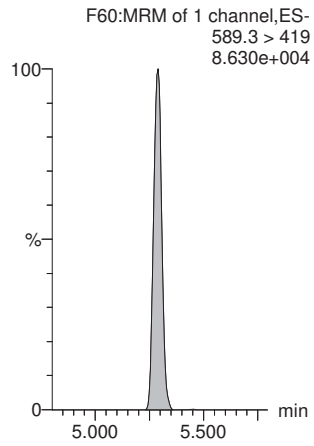

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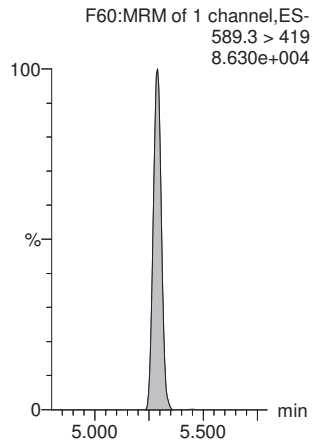

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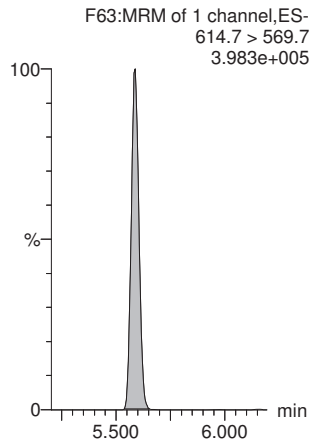

Quantify Sample Report **MassLynx V4.2 SCN982**

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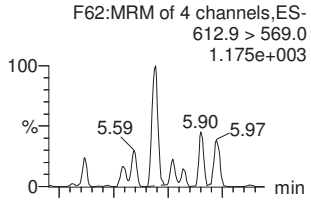
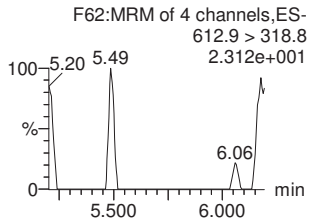
PFDoA





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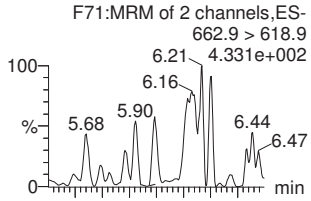

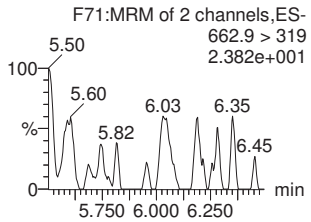

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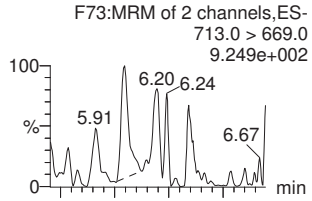

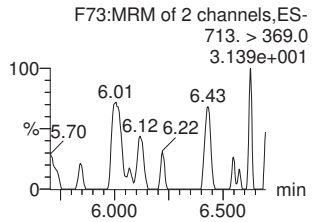

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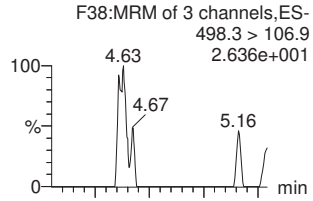

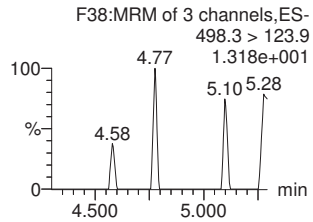

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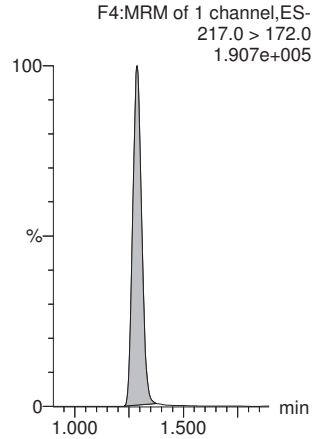

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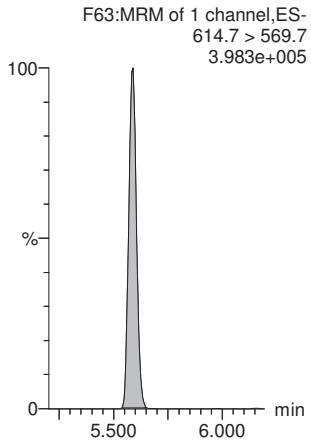

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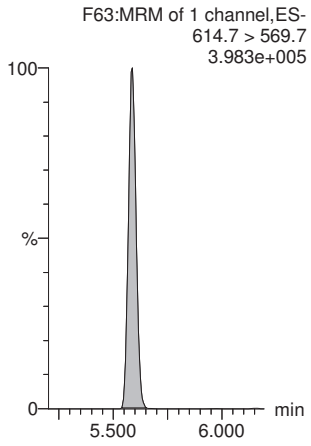

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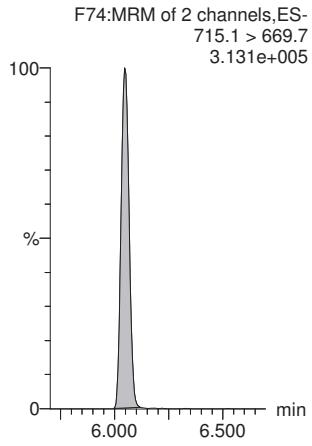

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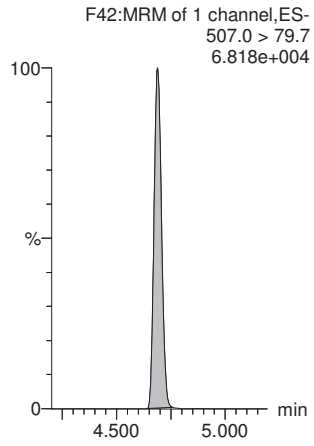

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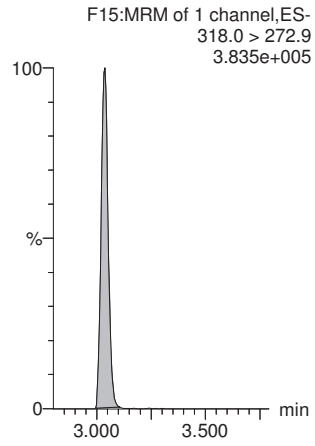

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

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Printed: Tuesday, March 03, 2020 10:12:47 Pacific Standard Time

Name: 200229P1-17, Date: 29-Feb-2020, Time: 18:13:02, ID: 2000333-02 18-GW-18BGMP10E-20200217 0.25617, Description: 18-GW-18BGMP10E-20200217

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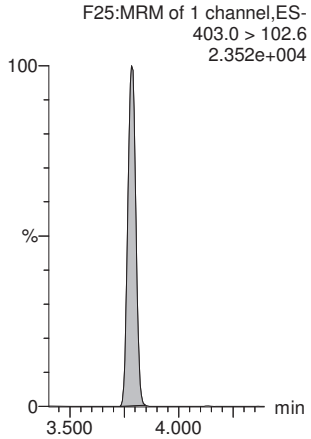
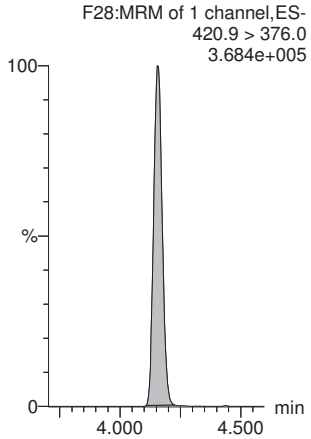


13C8-PFOA



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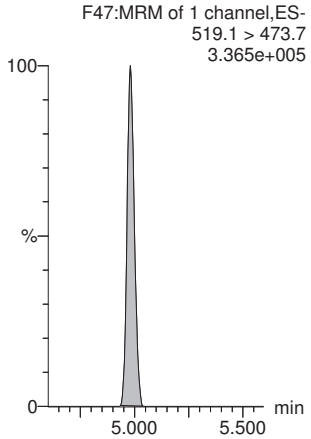
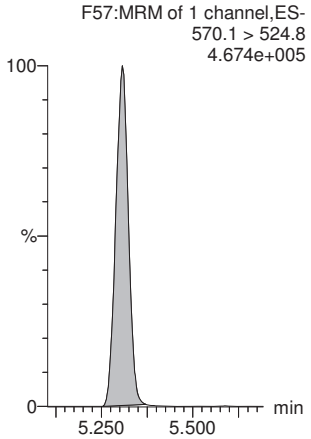


13C7-PFUdA



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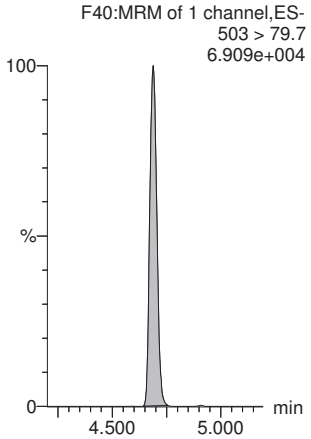
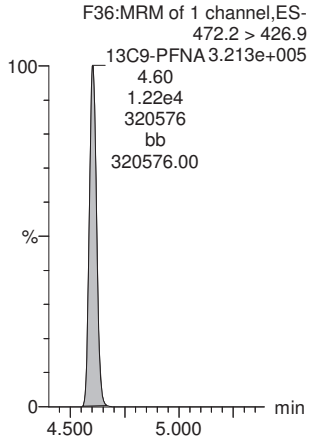


13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982** Page 7 of 8

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

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Printed: Tuesday, March 03, 2020 10:16:35 Pacific Standard Time

Name: 200229P1-18, Date: 29-Feb-2020, Time: 18:23:33, ID: 2000333-03 18-GW-18BGMP10F-20200217 0.24799, Description: 18-GW-18BGMP10F-20200217

	#	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	5.94e1	1.00e3	0.248		2.52	2.52	0.739	1.5078		3.639	NO
2	7	PFHxA	313.0 > 269.0	9.38e2	1.54e4	0.248		3.04	3.04	0.761	3.1568		16.924	NO
3	9	HFPO-DA	285.1 > 168.9		3.37e3	0.248		3.26						YES
4	11	PFHpA	363.0 > 318.9		8.54e3	0.248		3.64						YES
5	12	ADONA	376.8 > 250.9		8.54e3	0.248		3.73						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.00e3		0.248	74.669	2.60	2.52	1000	54.2553	107.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.54e4		0.248	1142.171	3.04	3.04	15400	54.3480	107.8		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.37e3		0.248	285.582	3.33	3.26	3370	47.5931	94.4		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.54e3		0.248	650.100	3.67	3.64	8540	52.9950	105.1		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.54e3		0.248	650.100	3.67	3.64	8540	52.9950	105.1		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	3.72e1	2.27e3	0.248		3.78	3.79	0.205	1.2881		2.520	NO
13	1...	Total PFHxS	398.9 > 79.7	3.72e1	2.27e3	0.248		3.93		0.205	1.2881			
14	16	L-PFOA	412.8 > 368.9	8.71e2	1.30e4	0.248		4.15	4.15	0.836	1.9531		3.836	NO
15	1...	Total PFOA	412.8 > 368.9	8.71e2	1.30e4	0.248		4.60		0.836	1.9531			
16	21	PFNA	463.0 > 418.8	1.22e2	1.18e4	0.248		4.60	4.60	0.129	0.2952		9.820	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.27e3		0.248	169.524	3.78	3.78	2270	53.9285	107.0		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.27e3		0.248	169.524	3.78	3.78	2270	53.9285	107.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.30e4		0.248	1020.218	4.15	4.15	13000	51.4762	102.1		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.30e4		0.248	1020.218	4.15	4.15	13000	51.4762	102.1		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.18e4		0.248	928.597	4.60	4.60	11800	51.4330	102.0		
22	-1													
23	23	L-PFOS	498.9 > 79.7	1.50e1	2.67e3	0.248		4.69	4.68	0.0700	0.6016		2.574	NO
24	1...	Total PFOS	498.9 > 79.7	1.50e1	2.67e3	0.248		5.13		0.0700	0.6016			
25	25	9Cl-PF30NS	530.7 > 350.8		2.67e3	0.248		4.89						YES
26	26	PFDA	513 > 468.8		1.32e4	0.248		4.98						YES
27	33	PFUdA	563.0 > 518.9	1.07e2	1.63e4	0.248		5.31	5.31	0.0824	0.5248		342.339	YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.67e3		0.248	196.194	4.69	4.69	2670	54.8762	108.9		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.67e3		0.248	196.194	4.69	4.69	2670	54.8762	108.9		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.67e3		0.248	196.194	4.69	4.69	2670	54.8762	108.9		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.32e4		0.248	990.142	4.98	4.98	13200	53.6430	106.4		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.63e4		0.248	1248.401	5.31	5.31	16300	52.5197	104.2		
33	-1													
34	29	L-MeFOSAA	570 > 419		4.22e3	0.248		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	4.22e3	0.248		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		4.54e3	0.248		5.28						YES

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

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Printed: Tuesday, March 03, 2020 10:16:35 Pacific Standard Time

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	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	4.54e3	0.248		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.87e4	0.248		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	4.22e3		0.248	285.850	5.14	5.13	4220	59.5668	118.2		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	4.22e3		0.248	285.850	5.14	5.13	4220	59.5668	118.2		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	4.54e3		0.248	376.592	5.28	5.28	4540	48.6358	96.5		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	4.54e3		0.248	376.592	5.28	5.28	4540	48.6358	96.5		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.87e4		0.248	1402.009	5.57	5.59	18700	53.7966	106.7		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.87e4	0.248		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.87e4	0.248		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.38e4	0.248		6.05						YES
48	1...	TDCA	498.3>106.9			0.248		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	8.47e3	8.47e3	0.248	1.000	1.38	1.29	12.5	50.4053	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.87e4		0.248	1402.009	5.57	5.59	18700	53.7966	106.7		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.87e4		0.248	1402.009	5.57	5.59	18700	53.7966	106.7		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.38e4		0.248	1271.780	6.00	6.05	13800	43.8073	86.9		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.67e3		0.248	196.194	4.69	4.69	2670	54.8762	108.9		
54	1...	13C5-PFHxA	318.0 > 272.9	1.36e4	1.36e4	0.248	1.000	3.08	3.04	12.5	50.4053	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.09e2	8.09e2	0.248	1.000	3.82	3.78	12.5	50.4053	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.51e4	1.51e4	0.248	1.000	4.19	4.15	12.5	50.4053	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.29e4	1.29e4	0.248	1.000	5.01	4.98	12.5	50.4053	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.76e4	1.76e4	0.248	1.000	5.32	5.31	12.5	50.4053	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.79e3	2.79e3	0.248	1.000	4.71	4.69	12.5	50.4053	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.13e4	1.13e4	0.248	1.000	4.63	4.60	12.5	50.4053	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982** Page 1 of 8

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Review: AMR 3/3/2020

Dataset: Z:\PFAS5.PRO\RESULTS\200229P1\200229P1-17-23.qld

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Printed: Tuesday, March 03, 2020 10:16:35 Pacific Standard Time

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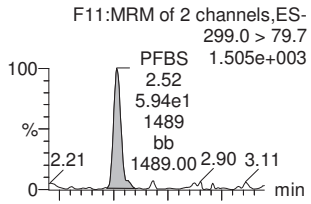

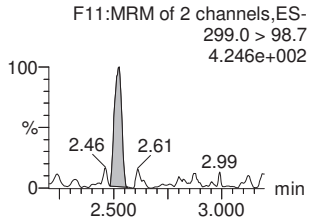

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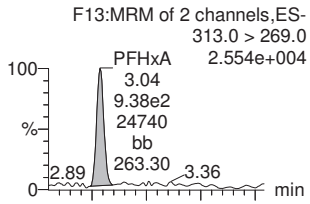

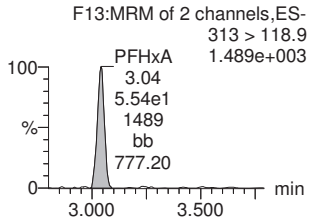

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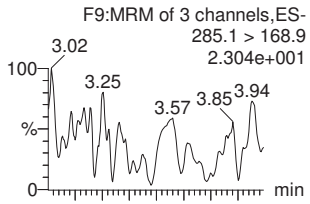

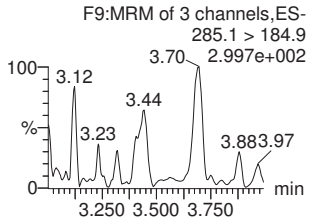

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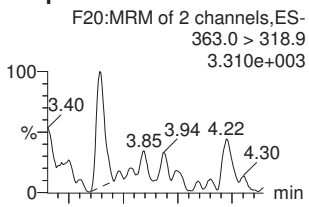
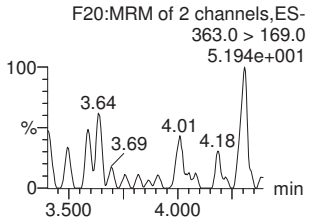
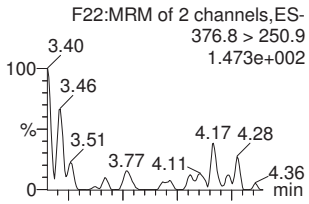
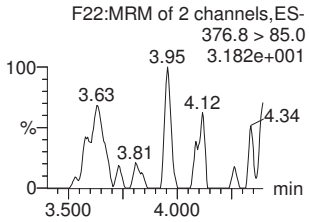




ADONA





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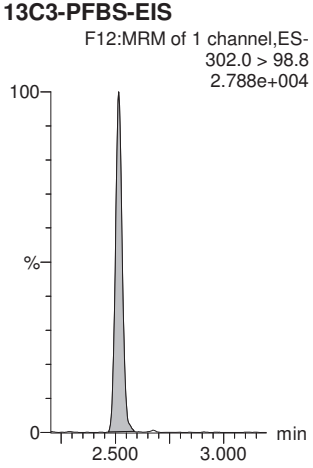

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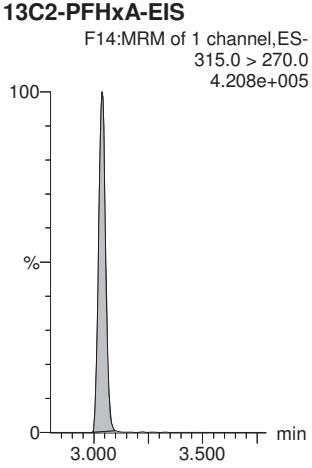

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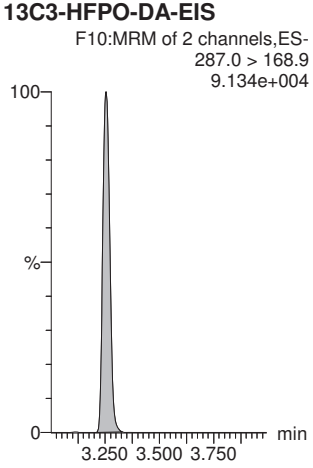

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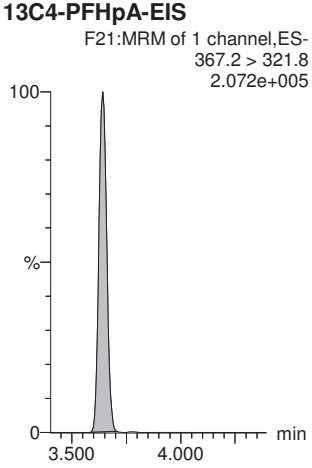

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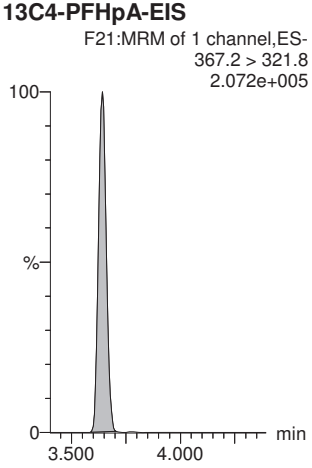

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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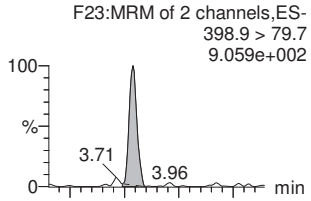

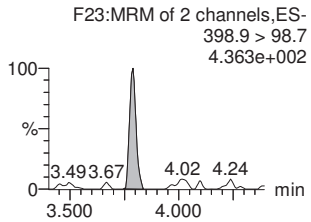

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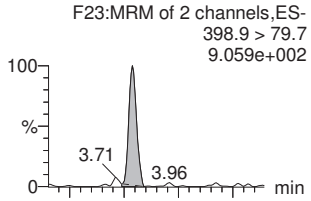

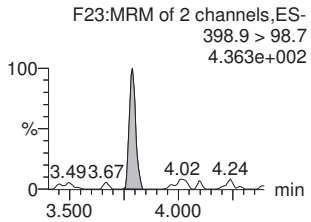

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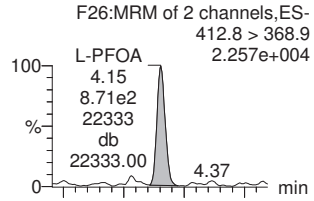

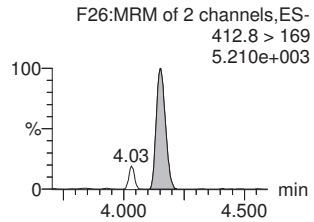

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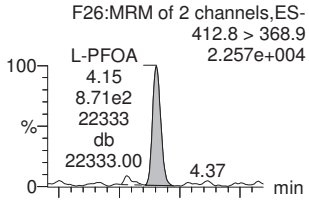

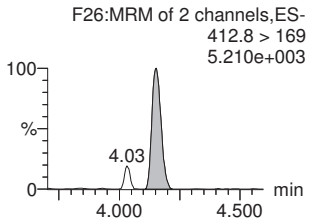

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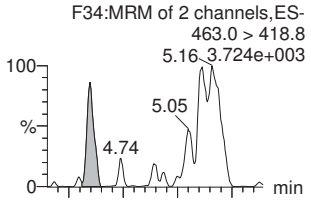

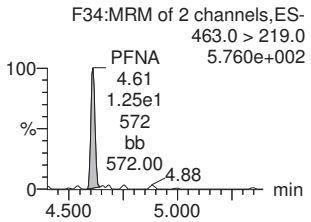

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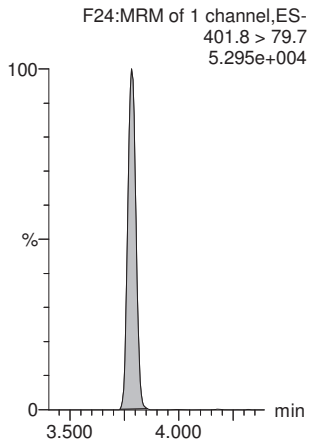

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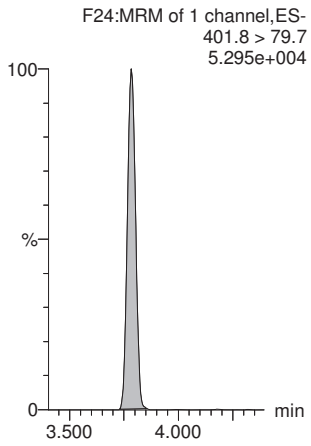

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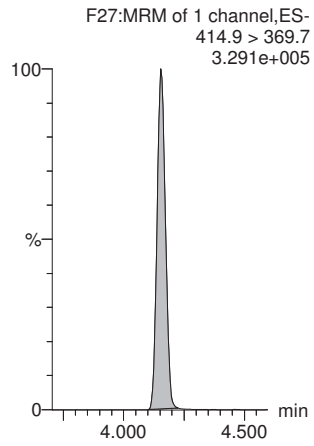

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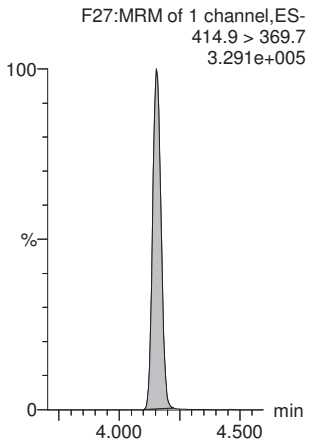

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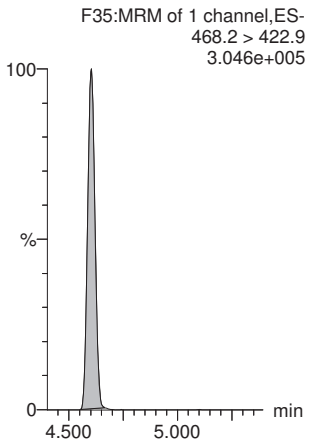

Quantify Sample Report **MassLynx V4.2 SCN982** Page 3 of 8

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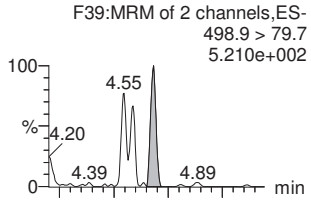

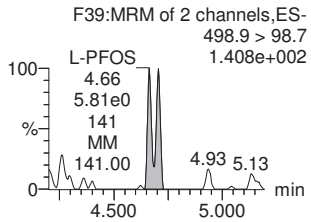

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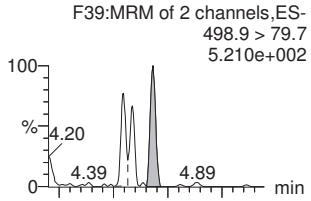

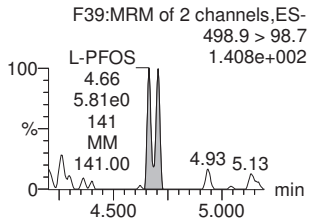

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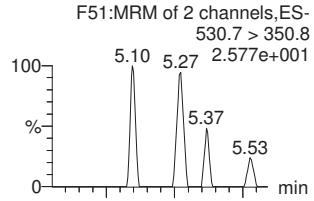

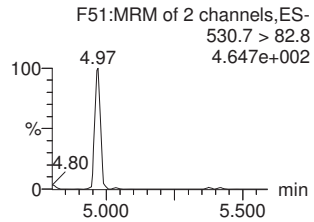

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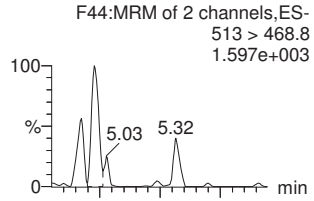

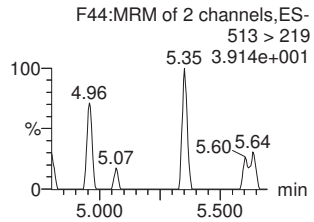

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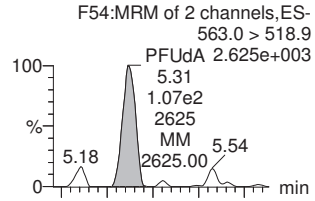

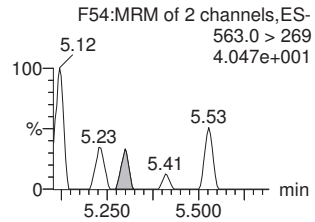

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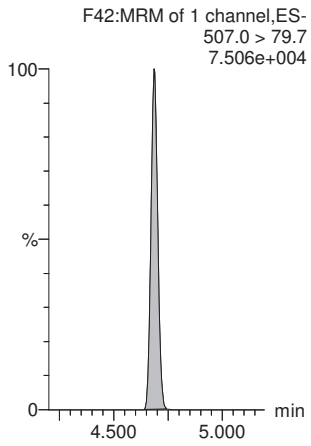

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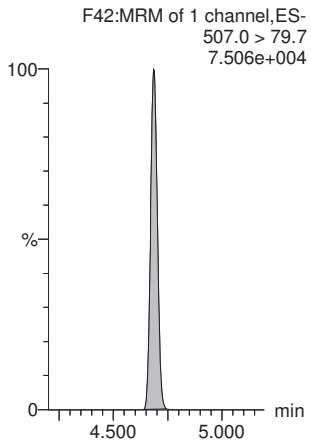

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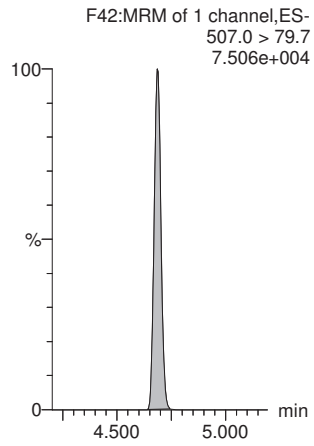

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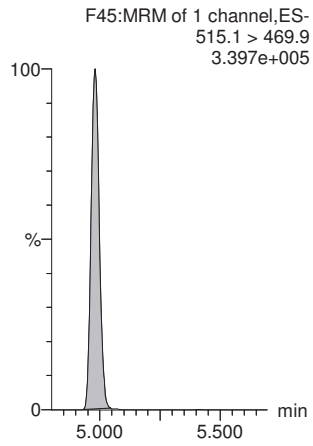

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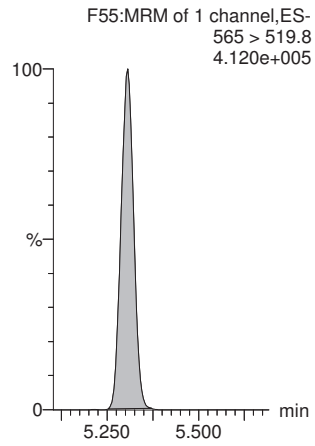

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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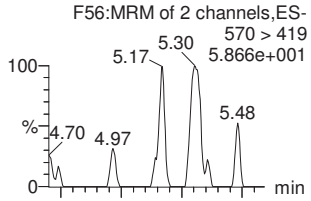

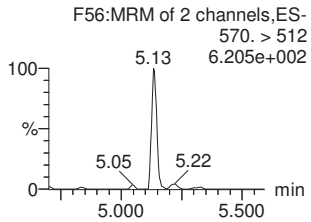

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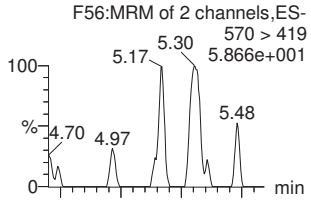

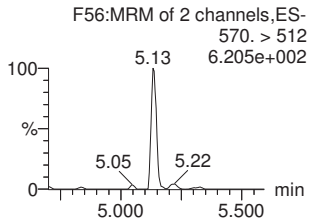

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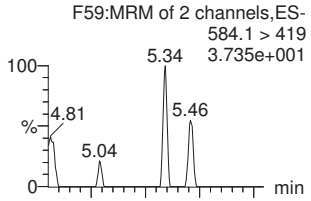

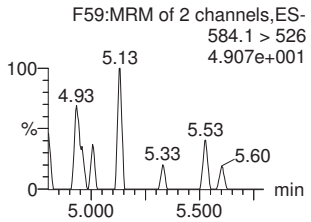

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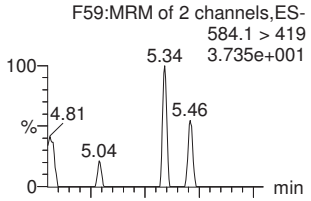

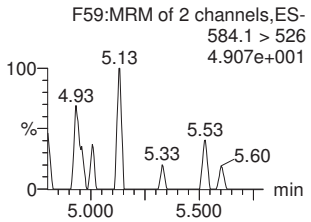

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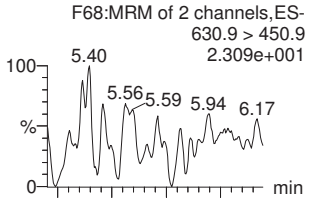

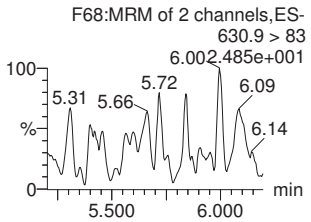

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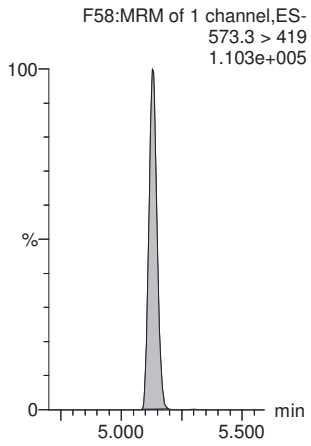

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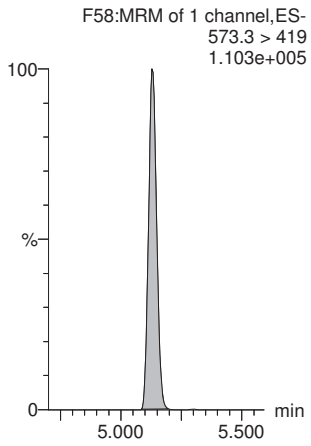

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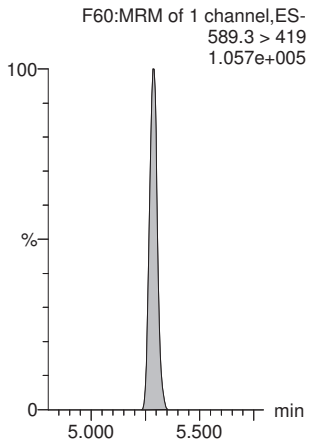

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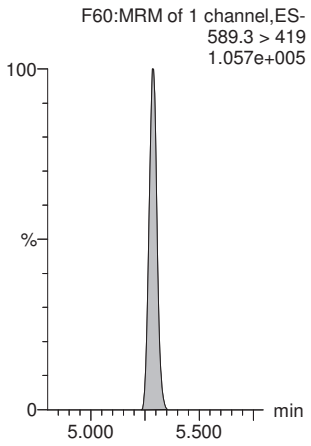
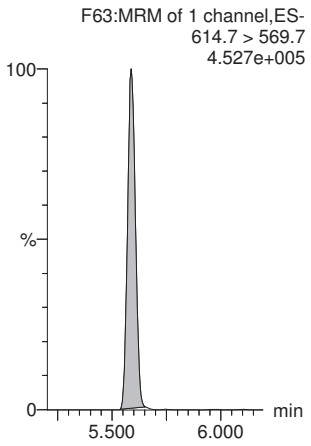


13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

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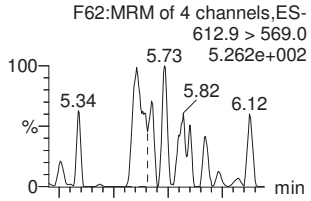

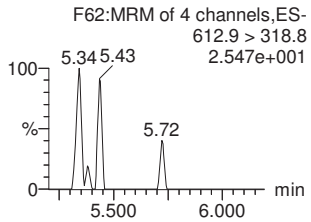

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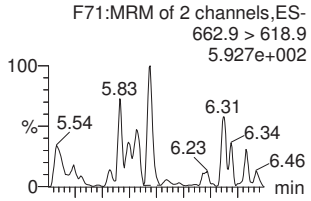

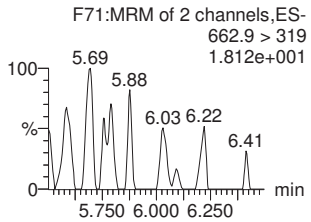

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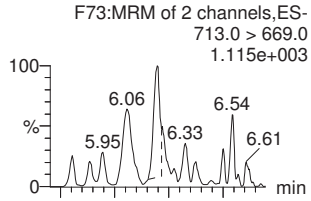

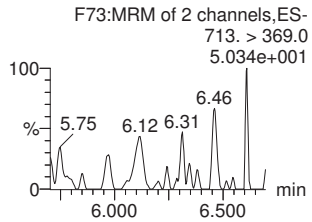

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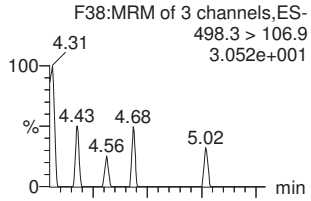

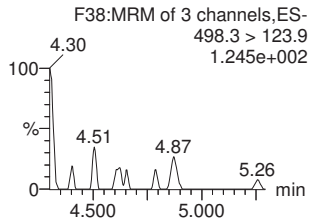

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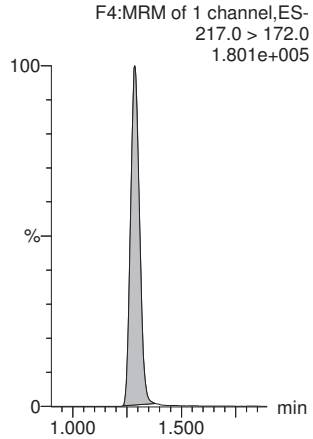

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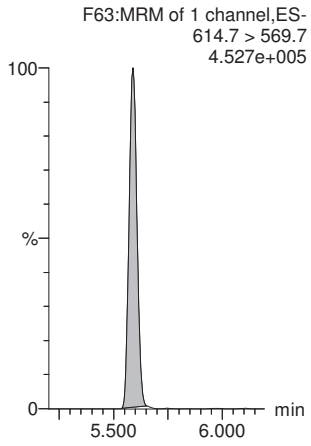

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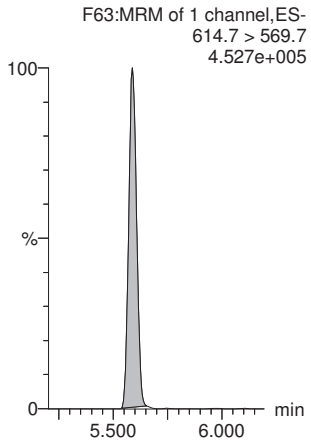

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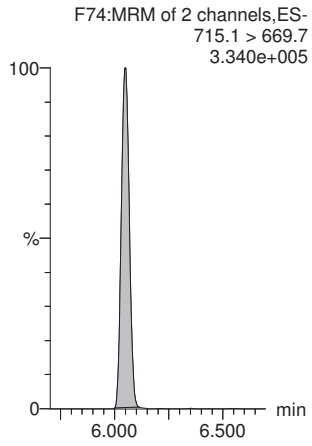

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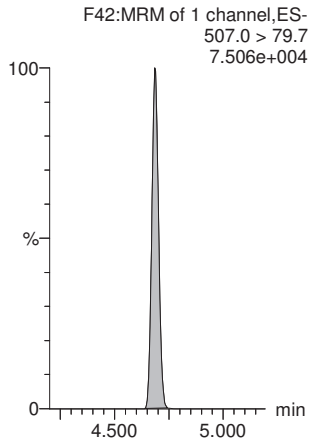

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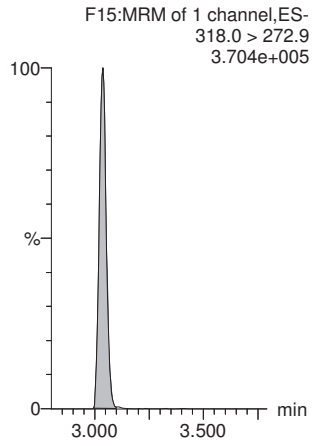

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

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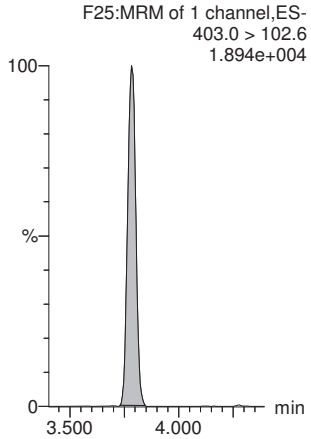

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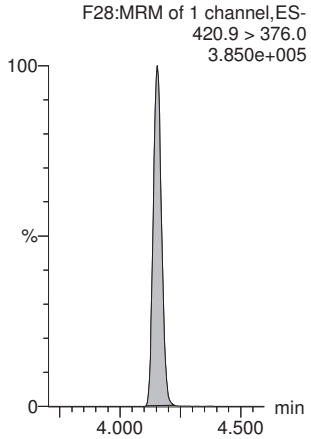

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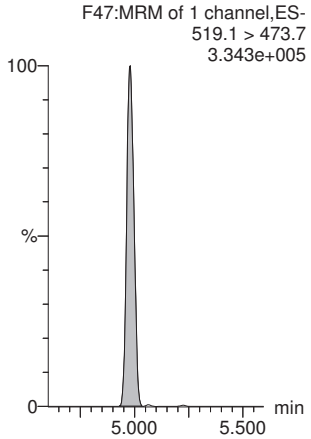

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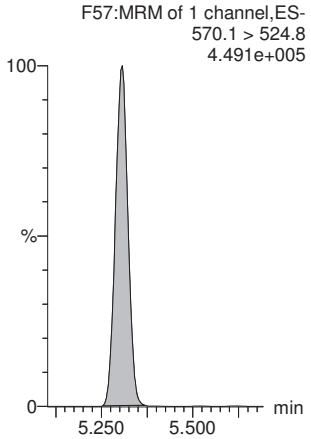

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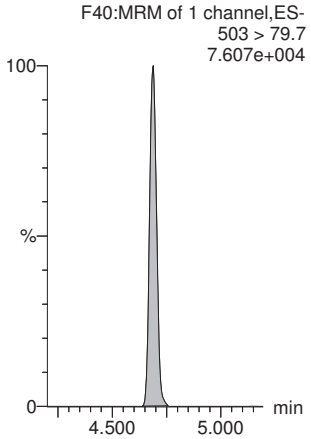
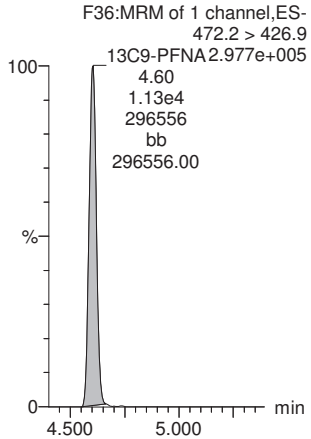


13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:58:43 Pacific Standard Time

Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

	#	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	7.99e0	9.02e2	0.257		2.52	2.52	0.111	0.5325		0.905	YES
2	7	PFHxA	313.0 > 269.0	4.34e2	1.38e4	0.257		3.04	3.04	0.393	1.3398		29.160	YES
3	9	HFPO-DA	285.1 > 168.9		3.05e3	0.257		3.26						YES
4	11	PFHpA	363.0 > 318.9		8.31e3	0.257		3.65						YES
5	12	ADONA	376.8 > 250.9		8.31e3	0.257		3.74						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	9.02e2		0.257	74.669	2.60	2.52	902	47.0857	96.7		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.38e4		0.257	1142.171	3.04	3.04	13800	47.1137	96.7		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.05e3		0.257	285.582	3.33	3.26	3050	41.6367	85.5		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.31e3		0.257	650.100	3.67	3.65	8310	49.8242	102.3		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.31e3		0.257	650.100	3.67	3.65	8310	49.8242	102.3		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	3.52e2	2.22e3	0.257		3.79	3.79	1.98	7.5414		3.192	NO
13	1...	Total PFHxS	398.9 > 79.7	3.52e2	2.22e3	0.257		3.93		1.98	7.5414			
14	16	L-PFOA	412.8 > 368.9	7.08e2	1.23e4	0.257		4.15	4.16	0.720	1.5092		5.037	YES
15	1...	Total PFOA	412.8 > 368.9	7.08e2	1.23e4	0.257		4.60		0.720	1.5092			
16	21	PFNA	463.0 > 418.8		1.12e4	0.257		4.60						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.22e3		0.257	169.524	3.79	3.79	2220	51.0949	104.9		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.22e3		0.257	169.524	3.79	3.79	2220	51.0949	104.9		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.23e4		0.257	1020.218	4.15	4.15	12300	46.9469	96.4		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.23e4		0.257	1020.218	4.15	4.15	12300	46.9469	96.4		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.12e4		0.257	928.597	4.60	4.60	11200	47.0536	96.6		
22	-1													
23	23	L-PFOS	498.9 > 79.7	8.26e1	2.42e3	0.257		4.69	4.69	0.427	2.0016		5.674	YES
24	1...	Total PFOS	498.9 > 79.7	8.26e1	2.42e3	0.257		5.13		0.427	2.0016			
25	25	9Cl-PF30NS	530.7 > 350.8		2.42e3	0.257		4.89						YES
26	26	PFDA	513 > 468.8		1.18e4	0.257		4.98						YES
27	33	PFUdA	563.0 > 518.9		1.49e4	0.257		5.31						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.42e3		0.257	196.194	4.69	4.69	2420	48.0522	98.7		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.42e3		0.257	196.194	4.69	4.69	2420	48.0522	98.7		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.42e3		0.257	196.194	4.69	4.69	2420	48.0522	98.7		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.18e4		0.257	990.142	4.98	4.98	11800	46.5210	95.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.49e4		0.257	1248.401	5.31	5.31	14900	46.6260	95.7		
33	-1													
34	29	L-MeFOSAA	570 > 419		3.55e3	0.257		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	3.55e3	0.257		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		3.95e3	0.257		5.29						YES

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:58:43 Pacific Standard Time

Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	3.95e3	0.257		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.56e4	0.257		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.55e3		0.257	285.850	5.14	5.13	3550	48.4024	99.4		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.55e3		0.257	285.850	5.14	5.13	3550	48.4024	99.4		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.95e3		0.257	376.592	5.28	5.29	3950	40.8922	84.0		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.95e3		0.257	376.592	5.28	5.29	3950	40.8922	84.0		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.56e4		0.257	1402.009	5.57	5.59	15600	43.4013	89.1		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.56e4	0.257		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.56e4	0.257		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.19e4	0.257		6.05						YES
48	1...	TDCA	498.3>106.9			0.257		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	8.31e3	8.31e3	0.257	1.000	1.38	1.29	12.5	48.6969	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.56e4		0.257	1402.009	5.57	5.59	15600	43.4013	89.1		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.56e4		0.257	1402.009	5.57	5.59	15600	43.4013	89.1		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.19e4		0.257	1271.780	6.00	6.05	11900	36.3012	74.5		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.42e3		0.257	196.194	4.69	4.69	2420	48.0522	98.7		
54	1...	13C5-PFHxA	318.0 > 272.9	1.27e4	1.27e4	0.257	1.000	3.08	3.04	12.5	48.6969	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.85e2	7.85e2	0.257	1.000	3.82	3.79	12.5	48.6969	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.41e4	1.41e4	0.257	1.000	4.19	4.15	12.5	48.6969	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.30e4	1.30e4	0.257	1.000	5.01	4.98	12.5	48.6969	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.54e4	1.54e4	0.257	1.000	5.32	5.31	12.5	48.6969	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.34e3	2.34e3	0.257	1.000	4.71	4.69	12.5	48.6969	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.15e4	1.15e4	0.257	1.000	4.63	4.60	12.5	48.6969	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982** Page 1 of 8

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

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Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

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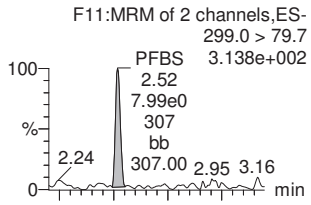

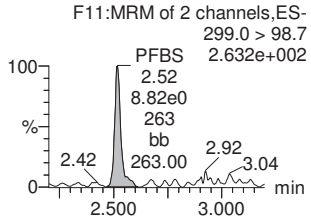

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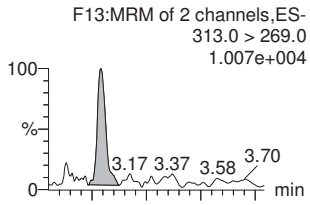

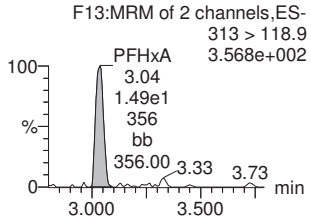

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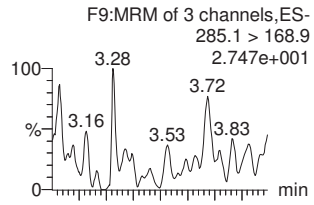
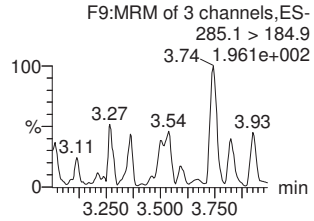
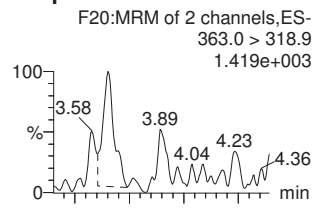
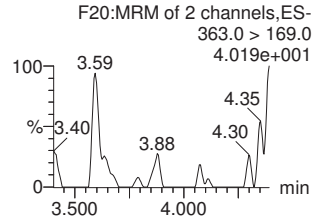




PFHpA





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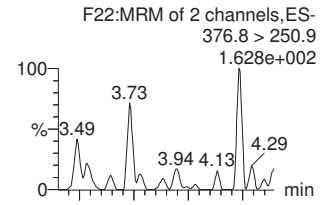

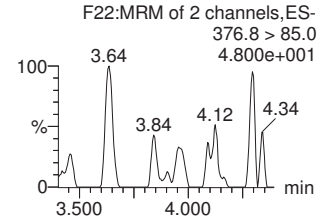

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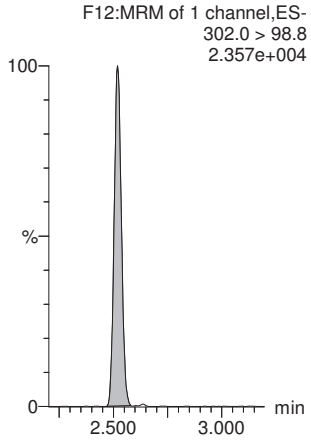

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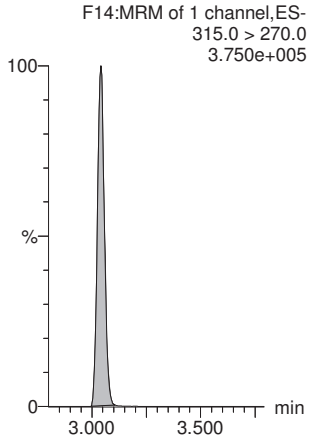

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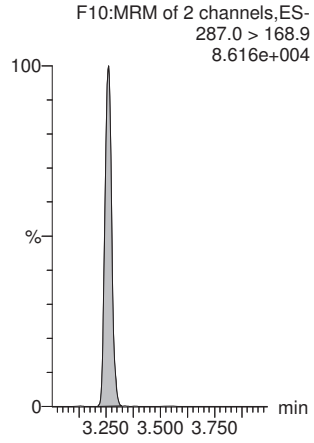

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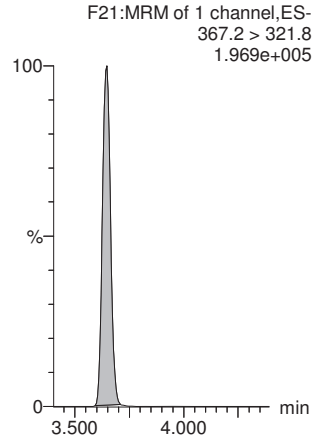

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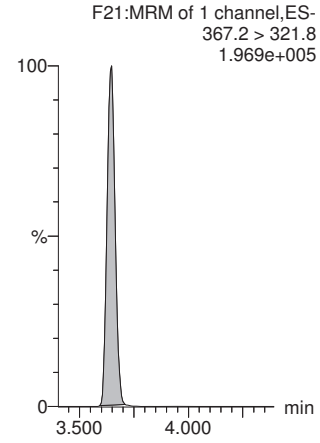


Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

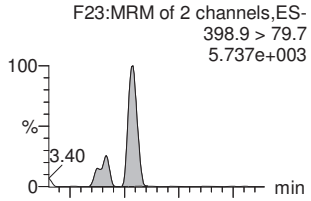
Review: AMR 3/3/2020

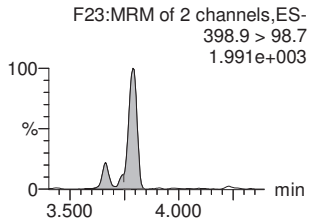
Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:58:43 Pacific Standard Time

Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

L-PFHxS





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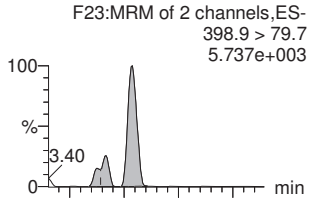

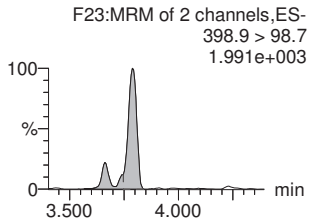

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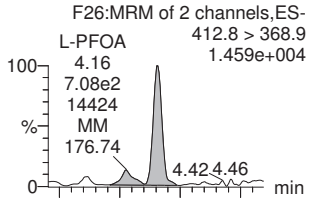

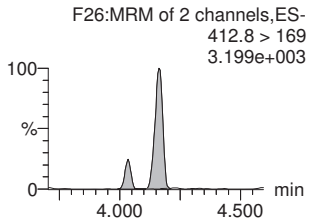

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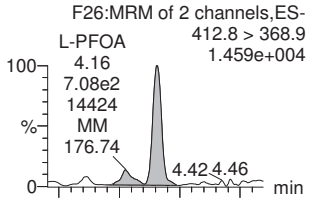

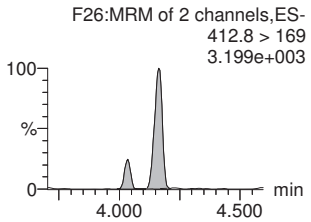

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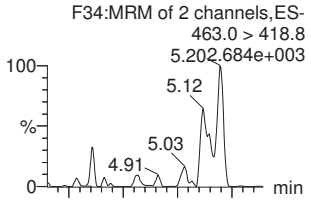

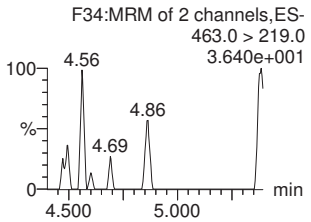

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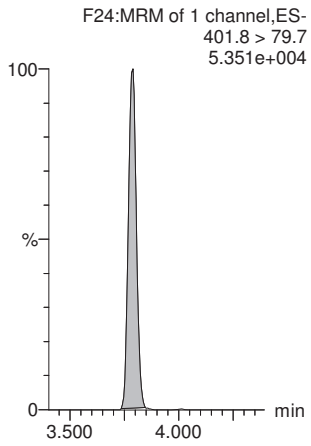

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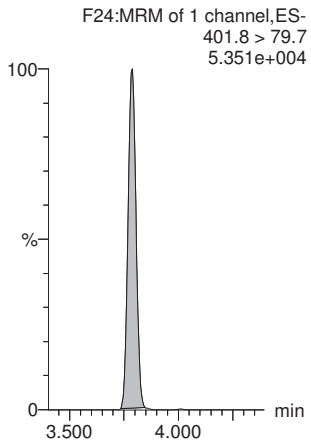

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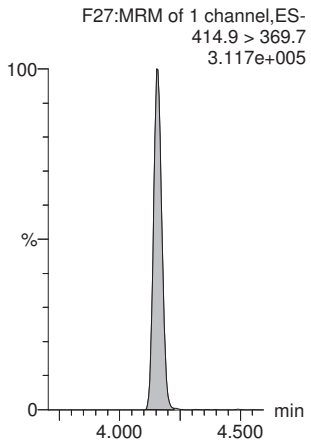

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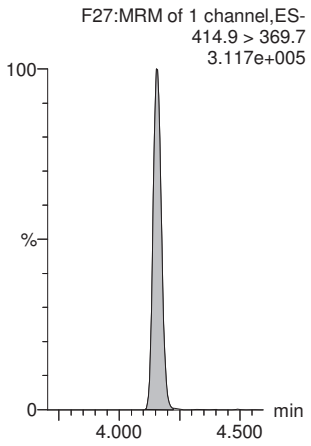

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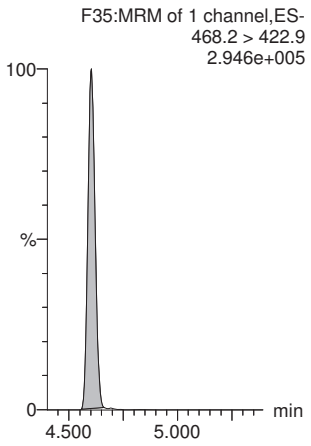


Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

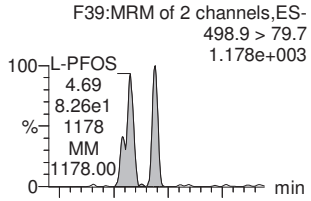
Review: AMR 3/3/2020

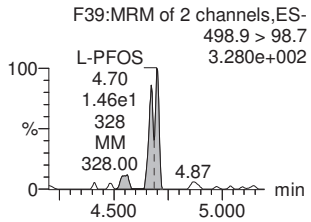
Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:58:43 Pacific Standard Time

Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

L-PFOS





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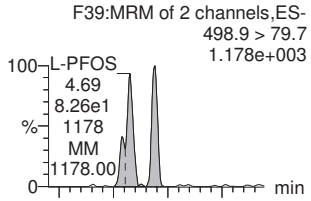

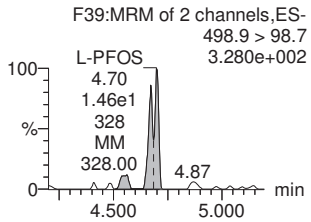

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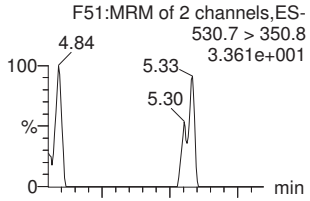

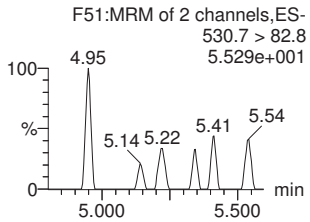

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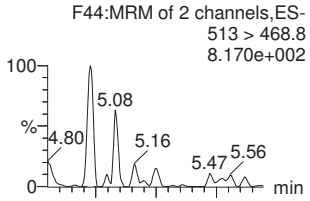

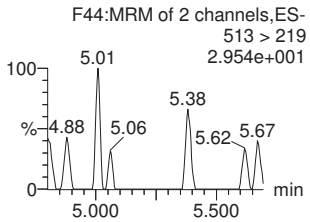

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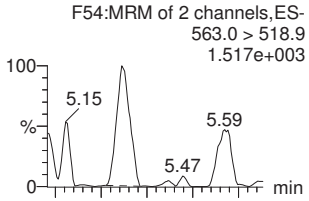

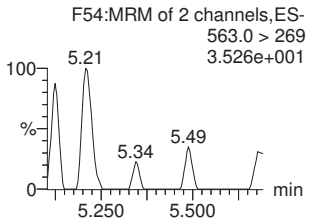

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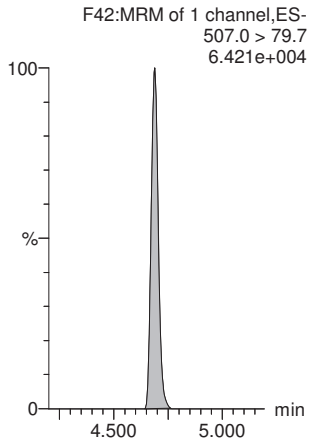

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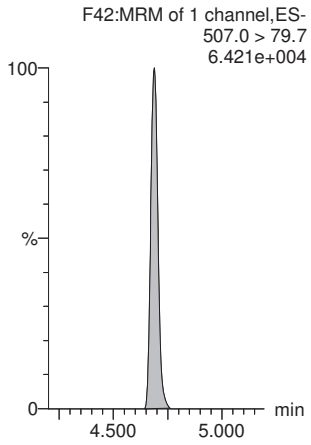

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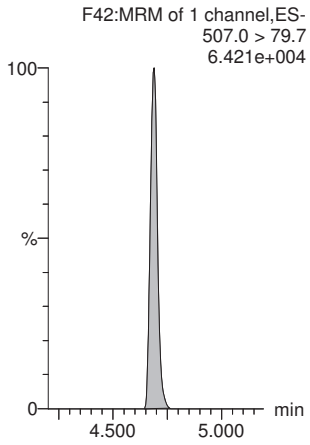

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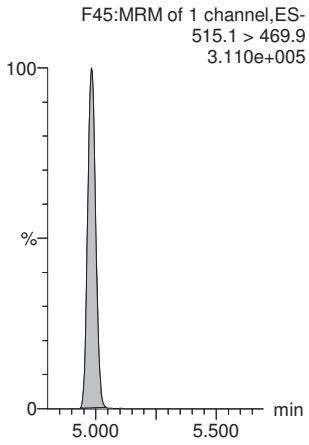

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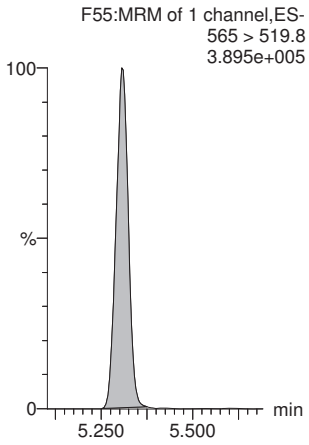

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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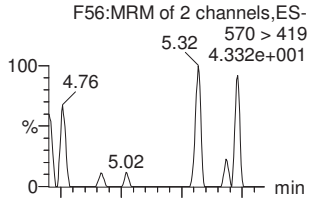
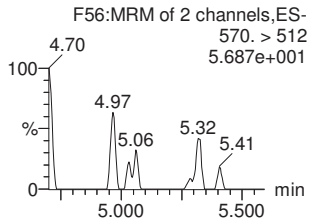
L-MeFOSAA





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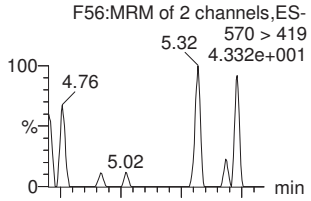

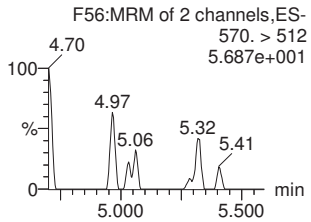

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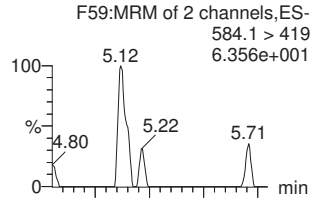

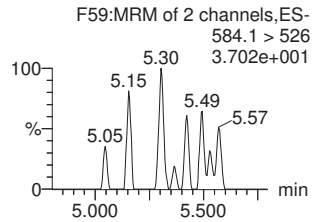

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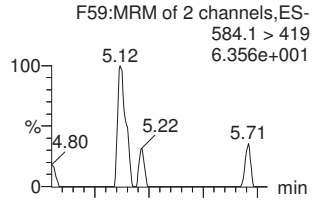

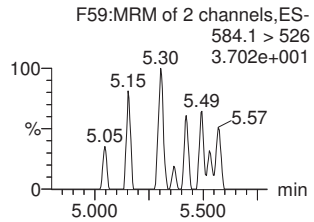

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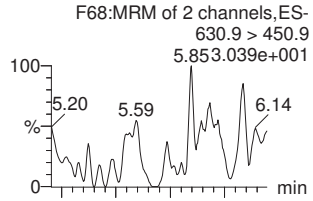

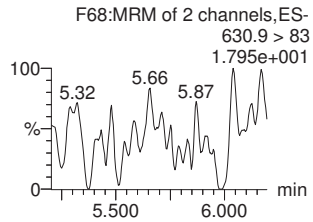

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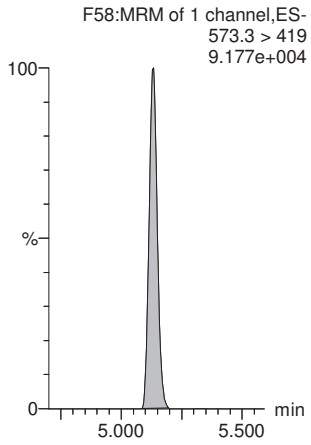

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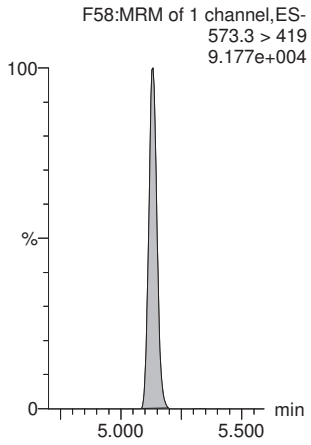

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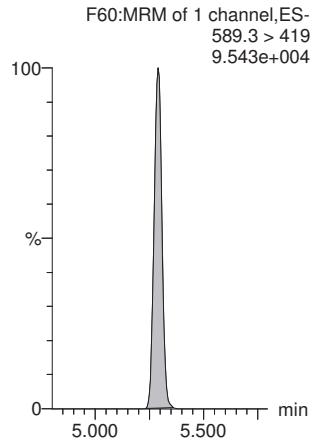

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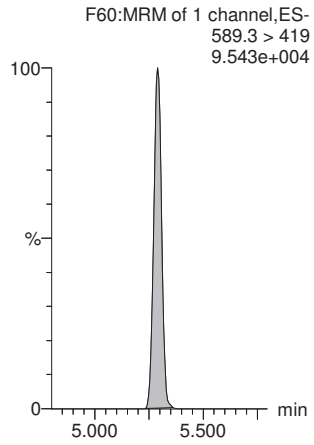
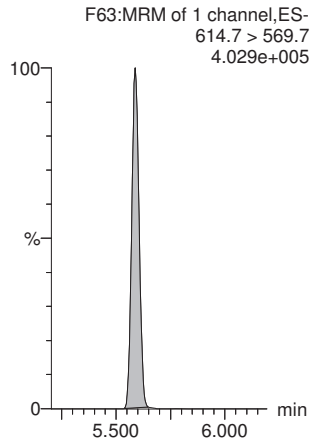


13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:58:43 Pacific Standard Time

Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

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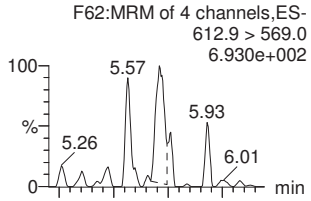
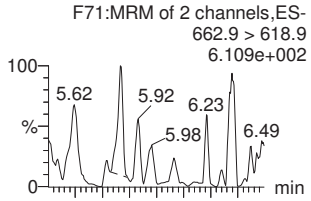
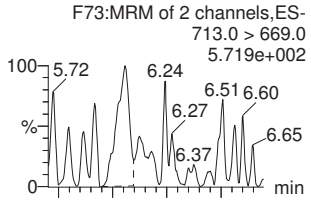


PFTrDA



PFTeDA



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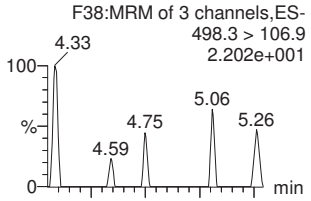

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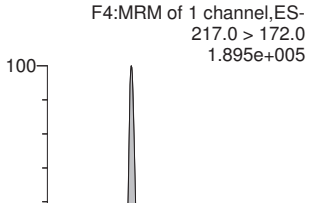

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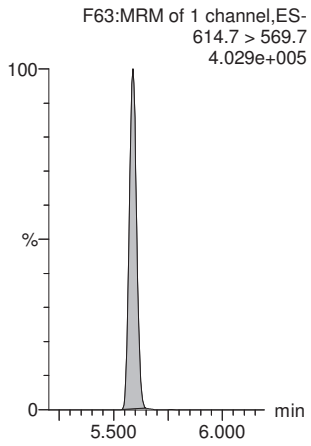

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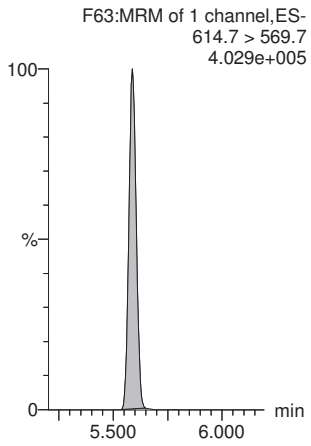

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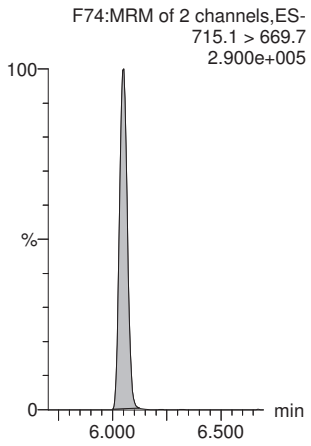

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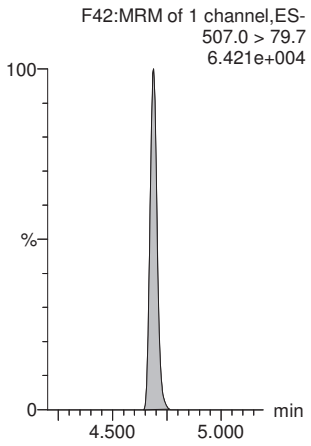

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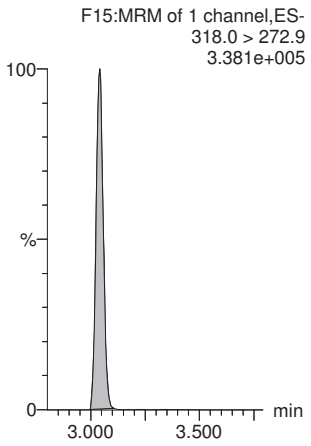

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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Name: 200229P1-19, Date: 29-Feb-2020, Time: 18:34:03, ID: 2000333-04 18-GW-18BGMP08C-20200217 0.25669, Description: 18-GW-18BGMP08C-20200217

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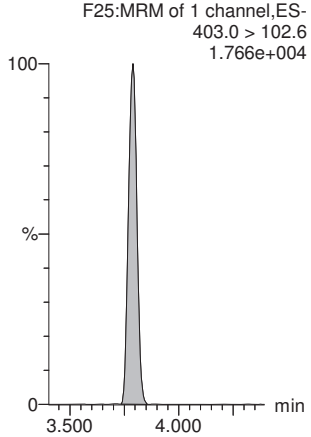
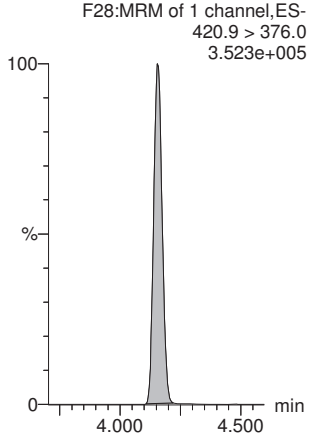


13C8-PFOA



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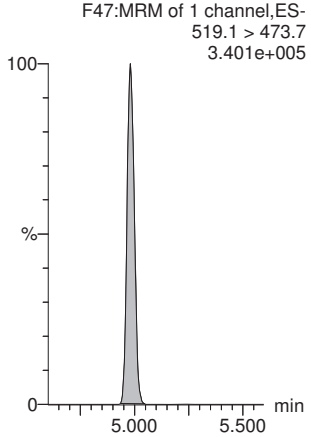

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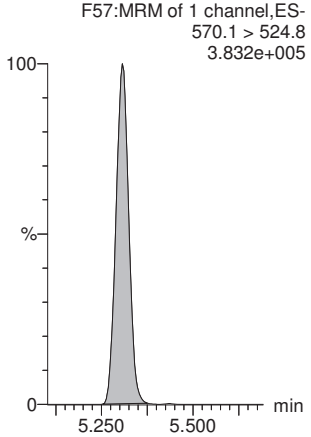

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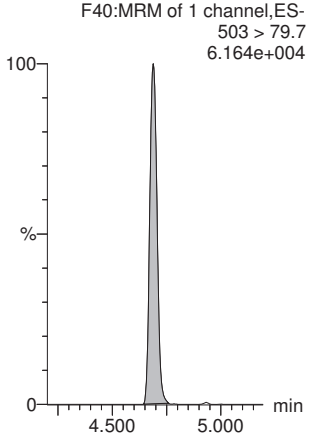

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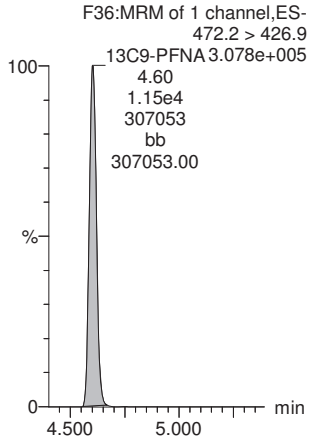

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:59:30 Pacific Standard Time

Name: 200229P1-20, Date: 29-Feb-2020, Time: 18:44:34, ID: 2000333-05 24-GW-18BGMP08D-20200217 0.25341, Description: 24-GW-18BGMP08D-20200217

	#	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	9.36e1	1.04e3	0.253		2.52	2.52	1.12	2.0480		3.423	NO
2	7	PFHxA	313.0 > 269.0	1.65e3	1.39e4	0.253		3.04	3.04	1.49	6.5202		19.296	NO
3	9	HFPO-DA	285.1 > 168.9		3.36e3	0.253		3.26						YES
4	11	PFHpA	363.0 > 318.9	4.40e2	8.09e3	0.253		3.65	3.65	0.680	1.7771		64.776	YES
5	12	ADONA	376.8 > 250.9		8.09e3	0.253		3.74						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.04e3		0.253	74.669	2.60	2.52	1040	55.0429	111.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.39e4		0.253	1142.171	3.04	3.04	13900	47.8524	97.0		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.36e3		0.253	285.582	3.33	3.26	3360	46.4017	94.1		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.09e3		0.253	650.100	3.67	3.65	8090	49.0979	99.5		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.09e3		0.253	650.100	3.67	3.65	8090	49.0979	99.5		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	5.76e2	2.31e3	0.253		3.79	3.79	3.12	11.7274		2.700	NO
13	1...	Total PFHxS	398.9 > 79.7	5.76e2	2.31e3	0.253		3.93		3.12	11.7274			
14	16	L-PFOA	412.8 > 368.9	3.87e3	1.22e4	0.253		4.16	4.16	3.98	12.2631		2.921	NO
15	1...	Total PFOA	412.8 > 368.9	3.87e3	1.22e4	0.253		4.60		3.98	12.2631			
16	21	PFNA	463.0 > 418.8	7.83e1	1.18e4	0.253		4.61	4.62	0.0831	0.1265		13.652	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.31e3		0.253	169.524	3.79	3.79	2310	53.8108	109.1		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.31e3		0.253	169.524	3.79	3.79	2310	53.8108	109.1		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.22e4		0.253	1020.218	4.16	4.16	12200	46.9998	95.3		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.22e4		0.253	1020.218	4.16	4.16	12200	46.9998	95.3		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.18e4		0.253	928.597	4.61	4.61	11800	50.0614	101.5		
22	-1													
23	23	L-PFOS	498.9 > 79.7	3.58e2	2.66e3	0.253		4.69	4.68	1.68	7.1041		4.167	YES
24	1...	Total PFOS	498.9 > 79.7	3.58e2	2.66e3	0.253		5.13		1.68	7.1041			
25	25	9Cl-PF30NS	530.7 > 350.8		2.66e3	0.253		4.90						YES
26	26	PFDA	513 > 468.8		1.36e4	0.253		4.99						YES
27	33	PFUdA	563.0 > 518.9		1.62e4	0.253		5.31						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.66e3		0.253	196.194	4.69	4.69	2660	53.5084	108.5		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.66e3		0.253	196.194	4.69	4.69	2660	53.5084	108.5		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.66e3		0.253	196.194	4.69	4.69	2660	53.5084	108.5		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.36e4		0.253	990.142	4.99	4.99	13600	54.0676	109.6		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.62e4		0.253	1248.401	5.31	5.31	16200	51.3524	104.1		
33	-1													
34	29	L-MeFOSAA	570 > 419		3.38e3	0.253		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	3.38e3	0.253		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		4.23e3	0.253		5.29						YES

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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Name: 200229P1-20, Date: 29-Feb-2020, Time: 18:44:34, ID: 2000333-05 24-GW-18BGMP08D-20200217 0.25341, Description: 24-GW-18BGMP08D-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	4.23e3	0.253		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.53e4	0.253		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.38e3		0.253	285.850	5.14	5.13	3380	46.6241	94.5		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.38e3		0.253	285.850	5.14	5.13	3380	46.6241	94.5		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	4.23e3		0.253	376.592	5.28	5.29	4230	44.2771	89.8		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	4.23e3		0.253	376.592	5.28	5.29	4230	44.2771	89.8		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.53e4		0.253	1402.009	5.58	5.59	15300	43.0767	87.3		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.53e4	0.253		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.53e4	0.253		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.37e4	0.253		6.05						YES
48	1...	TDCA	498.3>106.9			0.253		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	8.27e3	8.27e3	0.253	1.000	1.38	1.29	12.5	49.3272	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.53e4		0.253	1402.009	5.58	5.59	15300	43.0767	87.3		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.53e4		0.253	1402.009	5.58	5.59	15300	43.0767	87.3		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.37e4		0.253	1271.780	6.01	6.05	13700	42.4723	86.1		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.66e3		0.253	196.194	4.69	4.69	2660	53.5084	108.5		
54	1...	13C5-PFHxA	318.0 > 272.9	1.30e4	1.30e4	0.253	1.000	3.08	3.04	12.5	49.3272	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.58e2	7.58e2	0.253	1.000	3.82	3.79	12.5	49.3272	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.44e4	1.44e4	0.253	1.000	4.19	4.16	12.5	49.3272	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.28e4	1.28e4	0.253	1.000	5.01	4.99	12.5	49.3272	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.78e4	1.78e4	0.253	1.000	5.32	5.31	12.5	49.3272	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.57e3	2.57e3	0.253	1.000	4.71	4.69	12.5	49.3272	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.17e4	1.17e4	0.253	1.000	4.63	4.61	12.5	49.3272	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

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Calibration: Z:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-20, Date: 29-Feb-2020, Time: 18:44:34, ID: 2000333-05 24-GW-18BGMP08D-20200217 0.25341, Description: 24-GW-18BGMP08D-20200217

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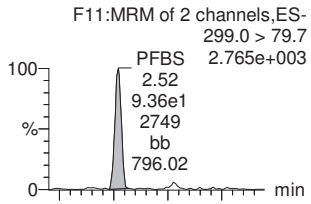

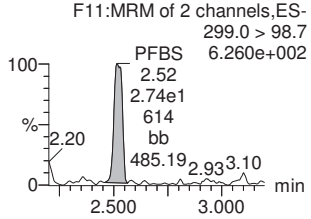

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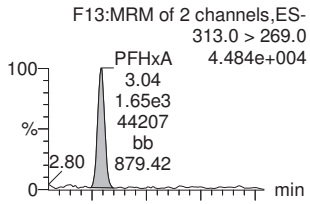

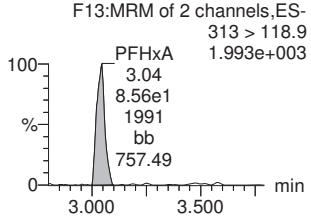

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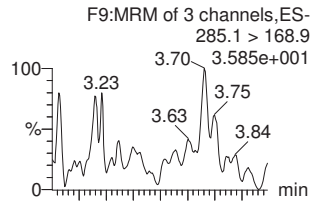

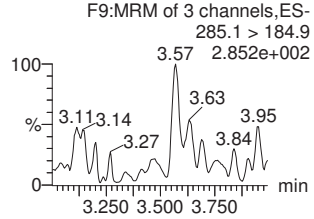

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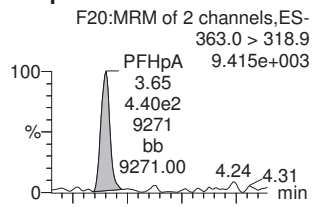

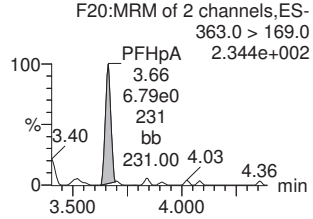

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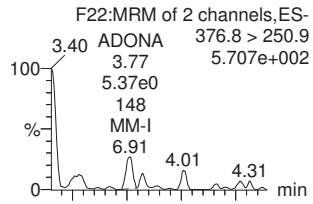

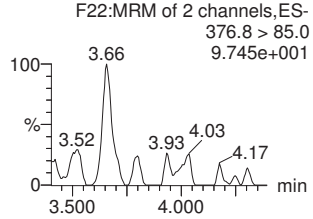

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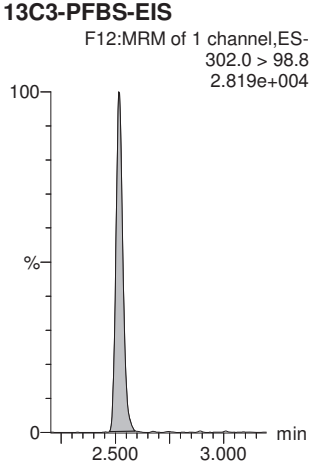

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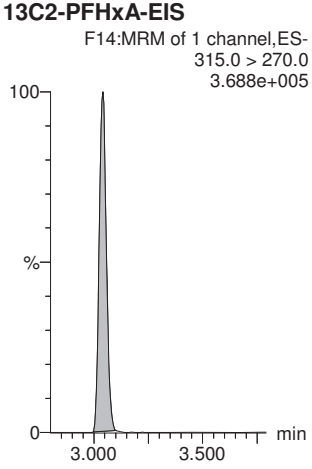

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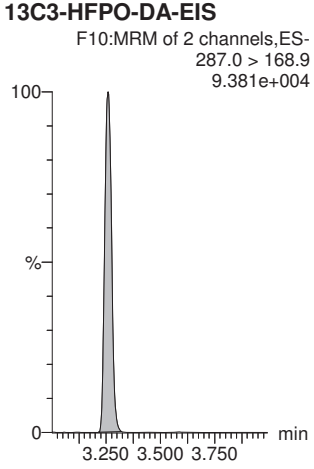

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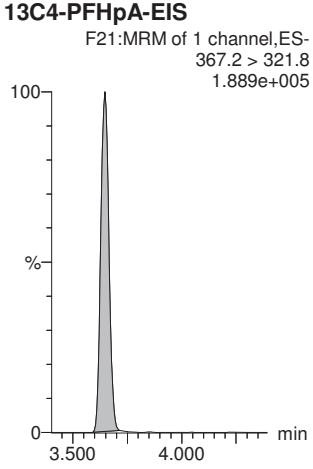

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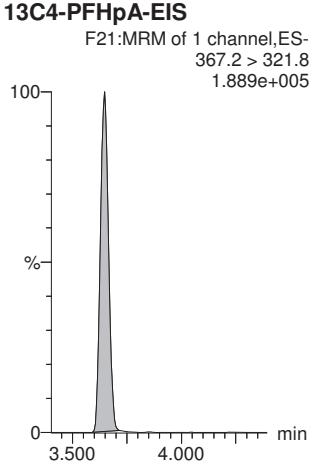

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:59:30 Pacific Standard Time

Name: 200229P1-20, Date: 29-Feb-2020, Time: 18:44:34, ID: 2000333-05 24-GW-18BGMP08D-20200217 0.25341, Description: 24-GW-18BGMP08D-20200217

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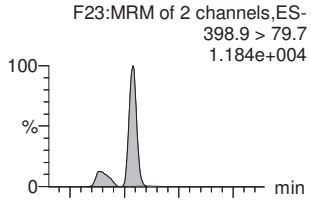

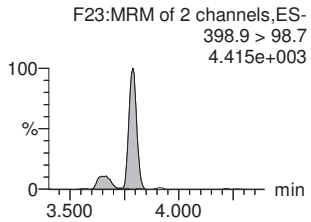

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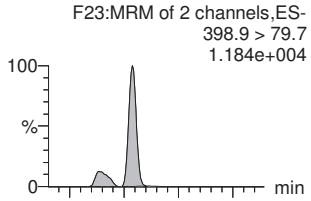

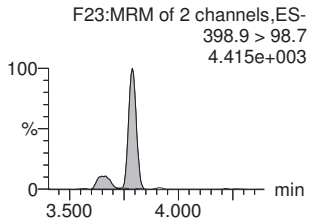

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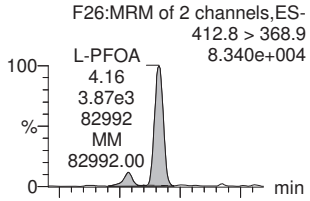

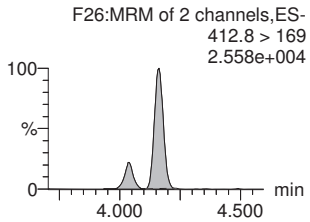

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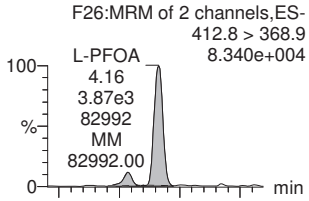

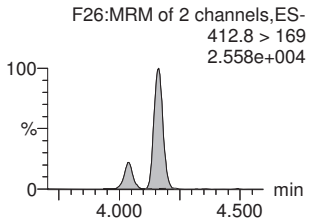

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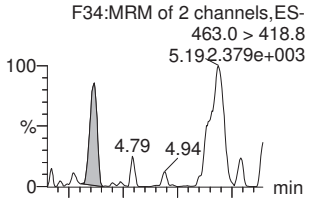

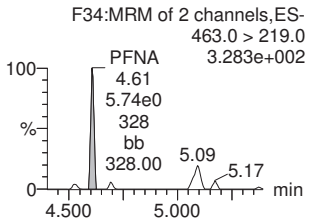

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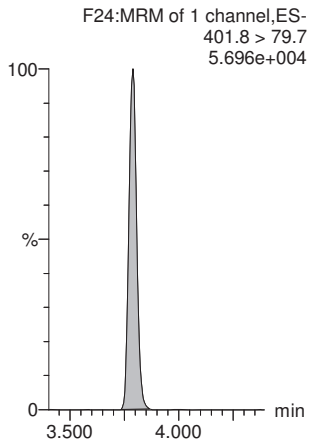

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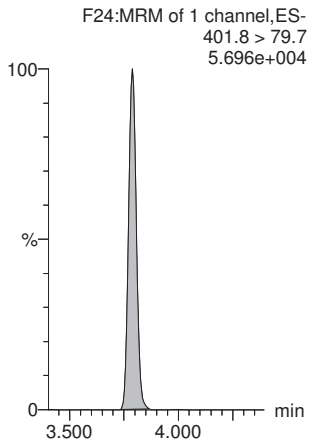

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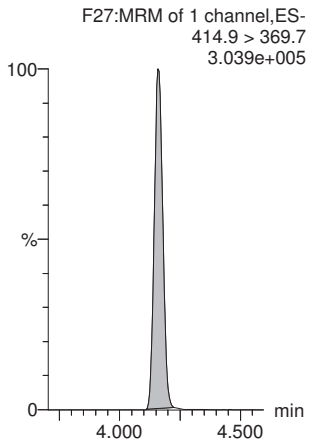

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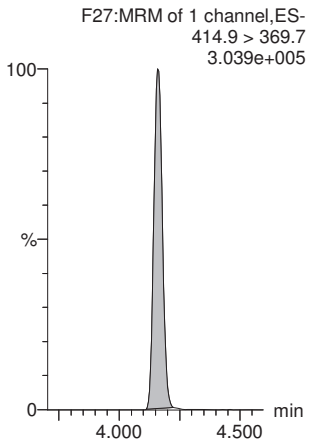

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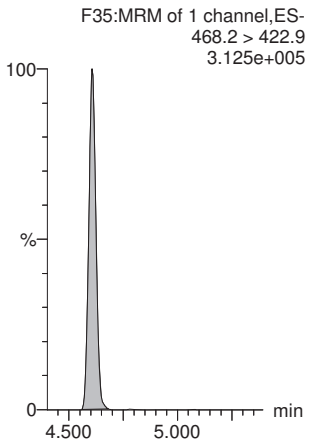

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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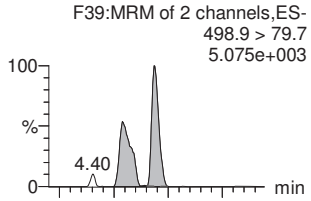
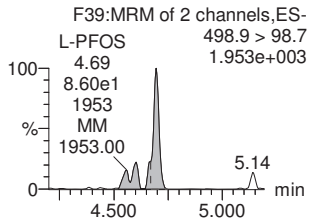
L-PFOS





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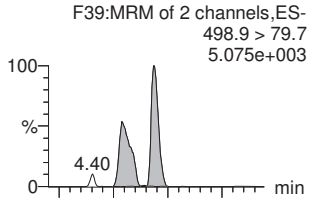

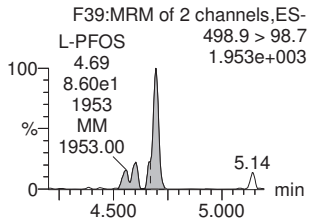

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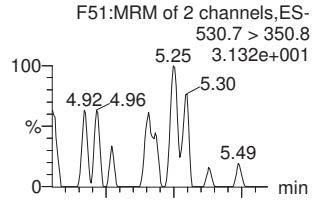

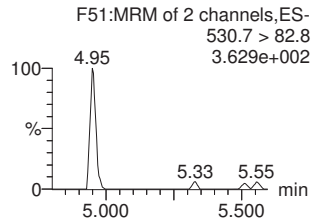

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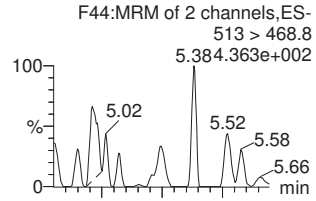

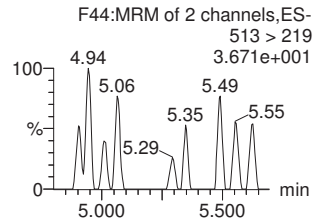

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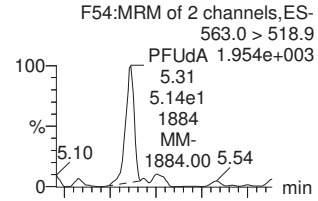

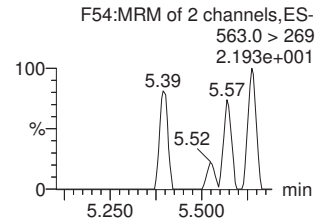

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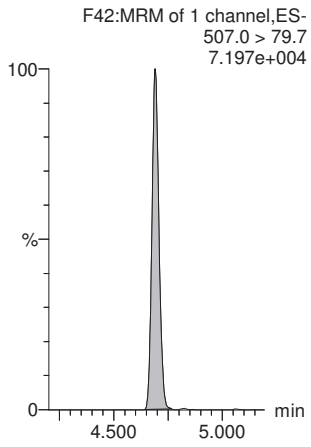

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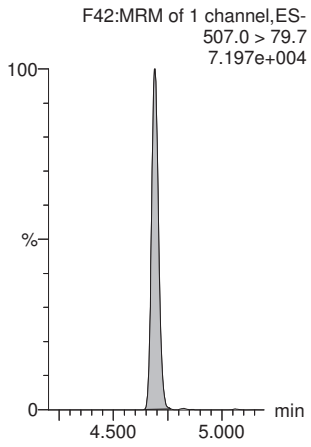

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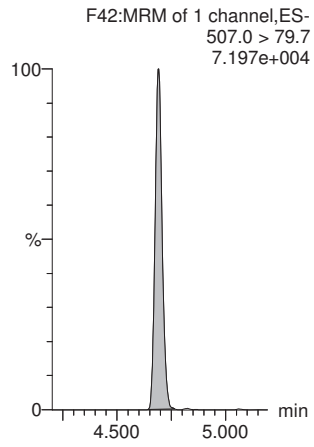

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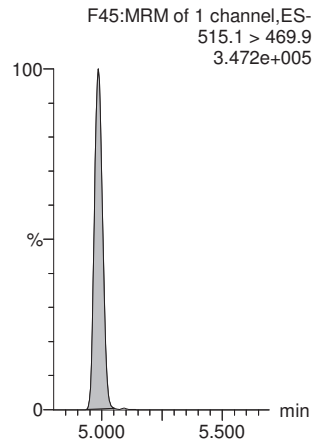

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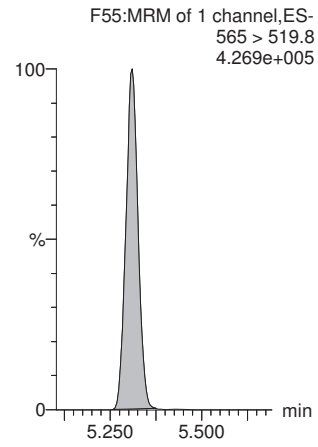

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

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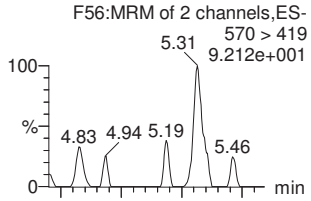
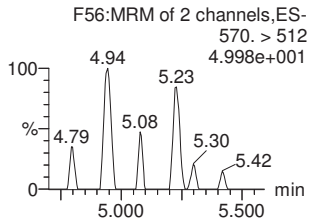
L-MeFOSAA





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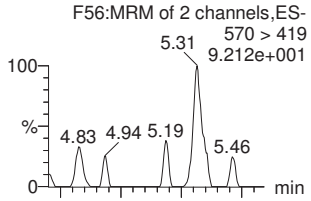

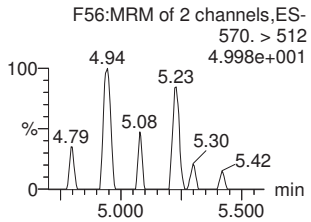

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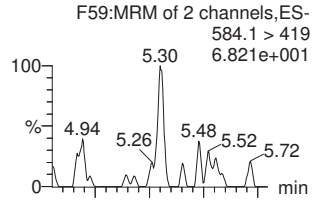

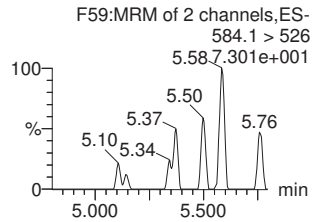

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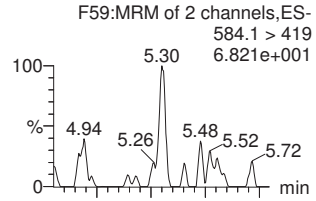

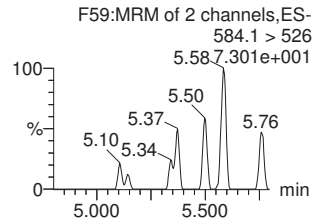

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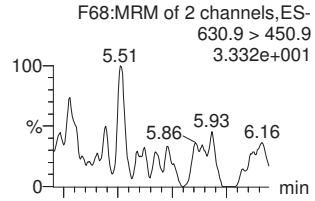

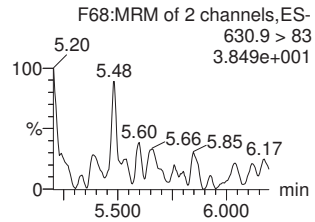

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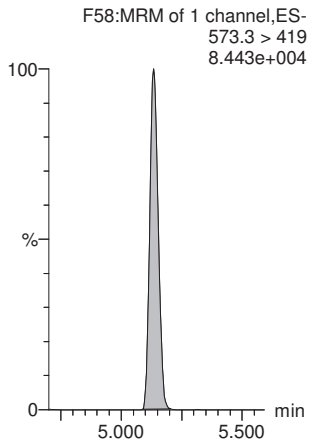

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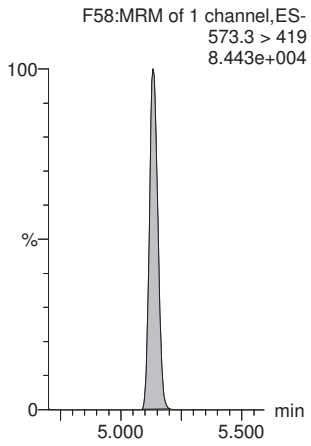

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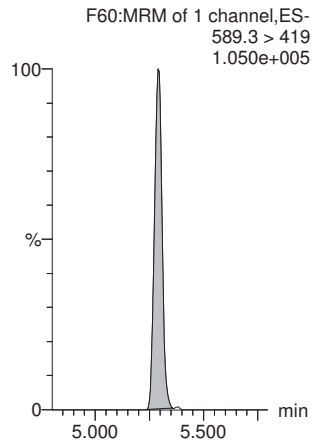

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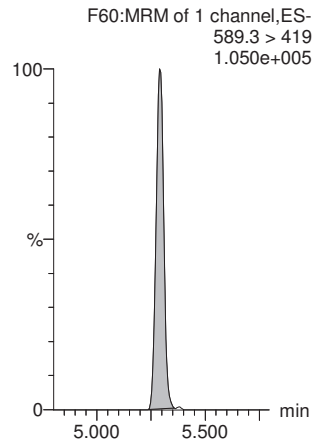

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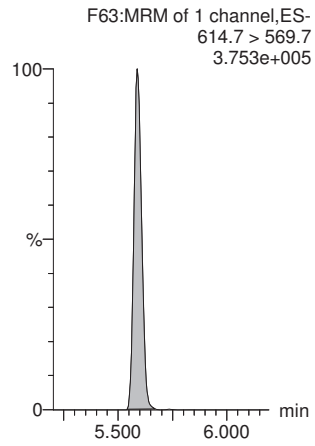

Quantify Sample Report **MassLynx V4.2 SCN982** Page 5 of 8

Vista Analytical Laboratory L18

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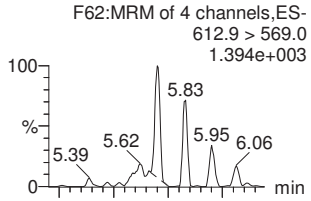
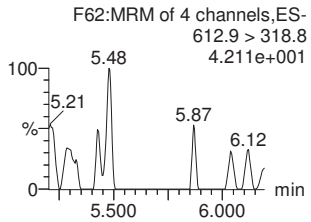
Name: 200229P1-20, Date: 29-Feb-2020, Time: 18:44:34, ID: 2000333-05 24-GW-18BGMP08D-20200217 0.25341, Description: 24-GW-18BGMP08D-20200217

PFDoA





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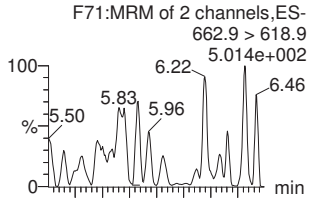

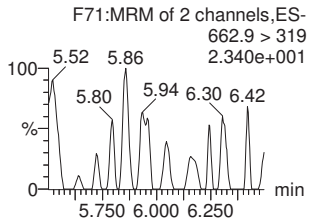

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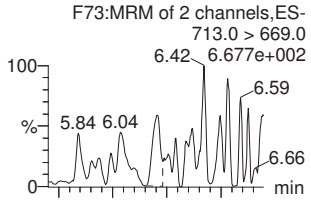

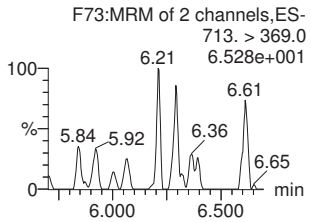

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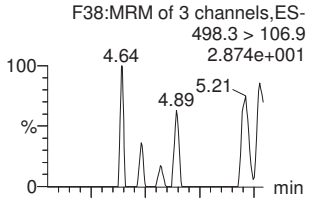

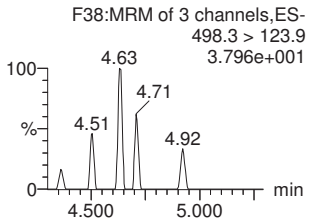

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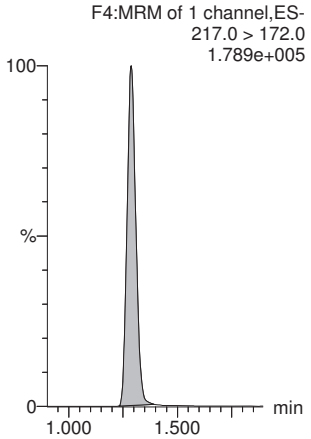

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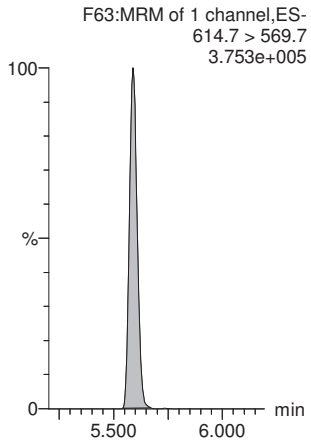

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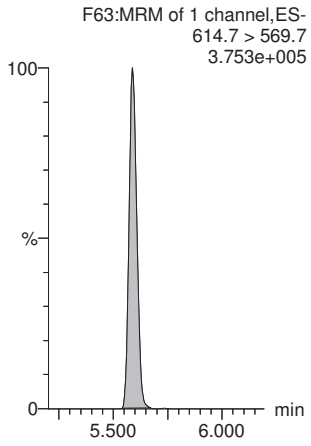

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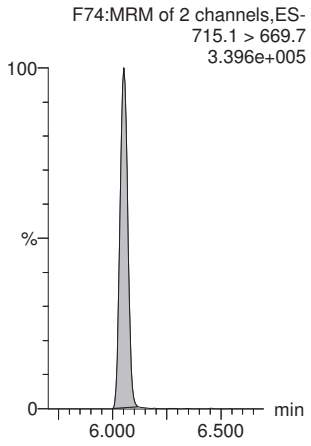

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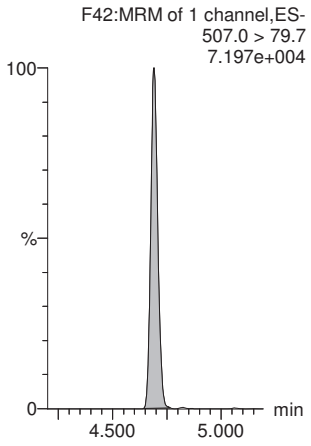

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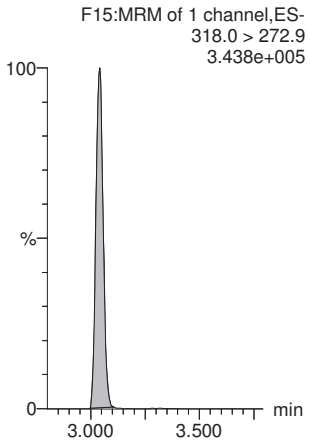


Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

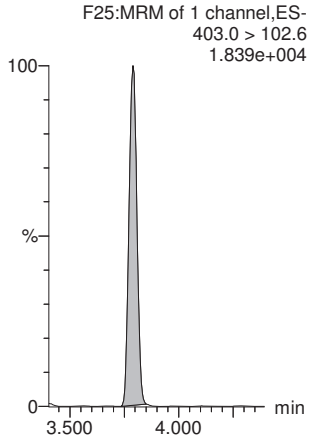
Review: AMR 3/3/2020

Dataset: Untitled

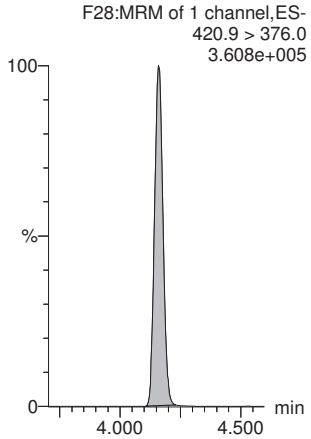
Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 16:59:30 Pacific Standard Time

Name: 200229P1-20, Date: 29-Feb-2020, Time: 18:44:34, ID: 2000333-05 24-GW-18BGMP08D-20200217 0.25341, Description: 24-GW-18BGMP08D-20200217

18O2-PFHxS



13C8-PFOA



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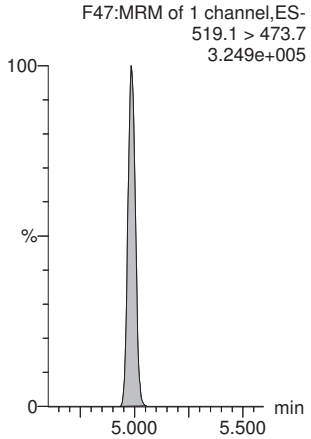
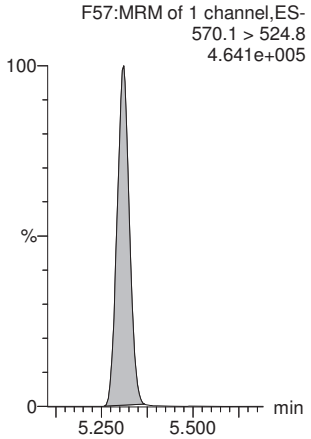
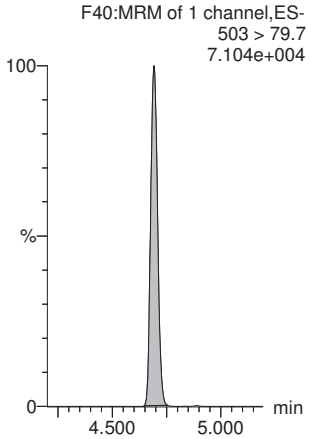


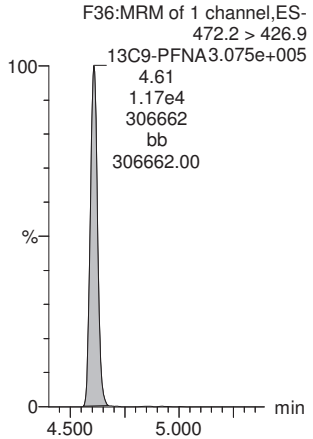
13C7-PFUdA



13C4-PFOS



13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:00:26 Pacific Standard Time

Name: 200229P1-21, Date: 29-Feb-2020, Time: 18:55:02, ID: 2000333-06 24-GW-18BGMP08E-20200217 0.25283, Description: 24-GW-18BGMP08E-20200217

	#	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	1.45e3	1.04e3	0.253		2.52	2.52	17.5	26.5727		3.105	NO
2	7	PFHxA	313.0 > 269.0	1.91e4	1.49e4	0.253		3.04	3.04	16.0	75.0369		17.393	NO
3	9	HFPO-DA	285.1 > 168.9		3.69e3	0.253		3.26						YES
4	11	PFHpA	363.0 > 318.9	5.14e3	8.73e3	0.253		3.64	3.64	7.36	23.7141		12.942	YES
5	12	ADONA	376.8 > 250.9		8.73e3	0.253		3.73						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	1.04e3		0.253	74.669	2.60	2.52	1040	54.9060	111.1		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.49e4		0.253	1142.171	3.04	3.04	14900	51.6599	104.5		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.69e3		0.253	285.582	3.33	3.26	3690	51.1496	103.5		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.73e3		0.253	650.100	3.67	3.64	8730	53.1145	107.4		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.73e3		0.253	650.100	3.67	3.64	8730	53.1145	107.4		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	7.51e3	2.13e3	0.253		3.79	3.78	44.1	160.8866		2.272	NO
13	1...	Total PFHxS	398.9 > 79.7	7.51e3	2.13e3	0.253		3.93		44.1	160.8866			
14	16	L-PFOA	412.8 > 368.9	4.66e4	1.32e4	0.253		4.15	4.15	44.3	146.1585		2.980	NO
15	1...	Total PFOA	412.8 > 368.9	4.66e4	1.32e4	0.253		4.60		44.3	146.1585			
16	21	PFNA	463.0 > 418.8	2.24e2	1.25e4	0.253		4.60	4.61	0.224	0.6251		9.295	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.13e3		0.253	169.524	3.78	3.79	2130	49.6115	100.3		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.13e3		0.253	169.524	3.78	3.79	2130	49.6115	100.3		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.32e4		0.253	1020.218	4.15	4.15	13200	50.9888	103.1		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.32e4		0.253	1020.218	4.15	4.15	13200	50.9888	103.1		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.25e4		0.253	928.597	4.60	4.60	12500	53.1763	107.6		
22	-1													
23	23	L-PFOS	498.9 > 79.7	9.36e3	2.82e3	0.253		4.69	4.69	41.4	168.2926		2.331	NO
24	1...	Total PFOS	498.9 > 79.7	9.36e3	2.82e3	0.253		5.13		41.4	168.2926			
25	25	9Cl-PF30NS	530.7 > 350.8		2.82e3	0.253		4.89						YES
26	26	PFDA	513 > 468.8		1.29e4	0.253		4.99						YES
27	33	PFUdA	563.0 > 518.9		1.64e4	0.253		5.31						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.82e3		0.253	196.194	4.69	4.69	2820	56.9177	115.1		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.82e3		0.253	196.194	4.69	4.69	2820	56.9177	115.1		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.82e3		0.253	196.194	4.69	4.69	2820	56.9177	115.1		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.29e4		0.253	990.142	4.99	4.99	12900	51.6108	104.4		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.64e4		0.253	1248.401	5.31	5.31	16400	51.9359	105.0		
33	-1													
34	29	L-MeFOSAA	570 > 419		3.92e3	0.253		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	3.92e3	0.253		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		3.93e3	0.253		5.29						YES

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:00:26 Pacific Standard Time

Name: 200229P1-21, Date: 29-Feb-2020, Time: 18:55:02, ID: 2000333-06 24-GW-18BGMP08E-20200217 0.25283, Description: 24-GW-18BGMP08E-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	3.93e3	0.253		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.53e4	0.253		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.92e3		0.253	285.850	5.14	5.13	3920	54.2070	109.6		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.92e3		0.253	285.850	5.14	5.13	3920	54.2070	109.6		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.93e3		0.253	376.592	5.28	5.29	3930	41.3096	83.6		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.93e3		0.253	376.592	5.28	5.29	3930	41.3096	83.6		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.53e4		0.253	1402.009	5.57	5.59	15300	43.1480	87.3		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.53e4	0.253		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.53e4	0.253		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.25e4	0.253		6.05						YES
48	1...	TDCA	498.3>106.9			0.253		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	8.84e3	8.84e3	0.253	1.000	1.38	1.29	12.5	49.4403	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.53e4		0.253	1402.009	5.57	5.59	15300	43.1480	87.3		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.53e4		0.253	1402.009	5.57	5.59	15300	43.1480	87.3		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.25e4		0.253	1271.780	6.00	6.05	12500	39.0265	78.9		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.82e3		0.253	196.194	4.69	4.69	2820	56.9177	115.1		
54	1...	13C5-PFHxA	318.0 > 272.9	1.40e4	1.40e4	0.253	1.000	3.08	3.04	12.5	49.4403	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	9.72e2	9.72e2	0.253	1.000	3.82	3.78	12.5	49.4403	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.48e4	1.48e4	0.253	1.000	4.19	4.15	12.5	49.4403	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.34e4	1.34e4	0.253	1.000	5.01	4.99	12.5	49.4403	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.62e4	1.62e4	0.253	1.000	5.32	5.31	12.5	49.4403	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.64e3	2.64e3	0.253	1.000	4.71	4.69	12.5	49.4403	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.22e4	1.22e4	0.253	1.000	4.63	4.60	12.5	49.4403	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:00:26 Pacific Standard Time

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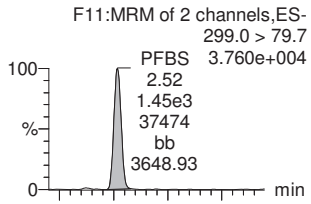
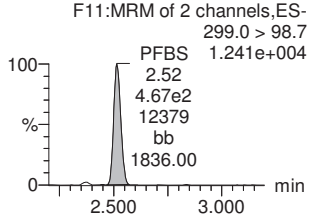
Calibration: Z:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-21, Date: 29-Feb-2020, Time: 18:55:02, ID: 2000333-06 24-GW-18BGMP08E-20200217 0.25283, Description: 24-GW-18BGMP08E-20200217

PFBS





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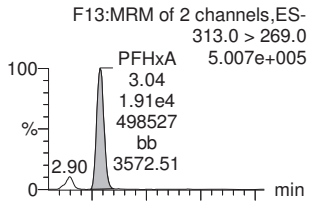

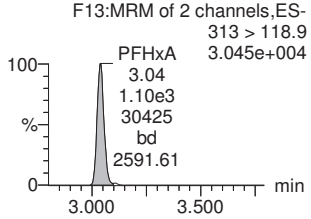

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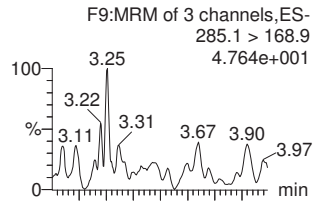

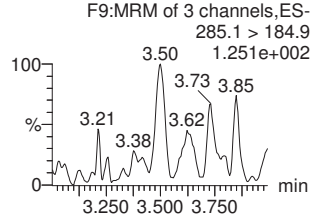

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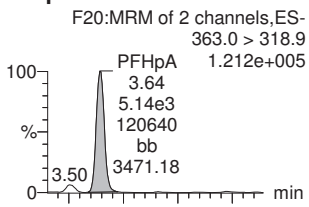

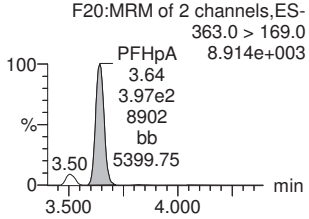

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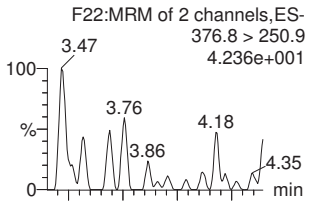

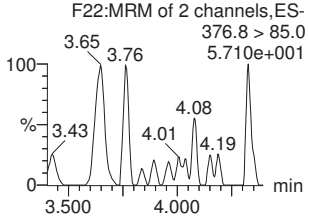

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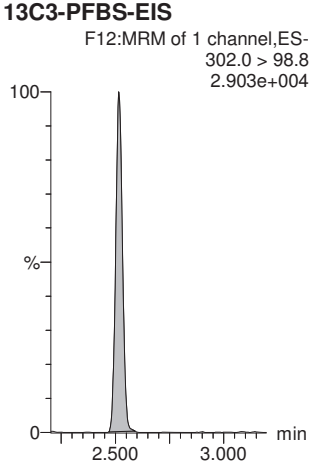

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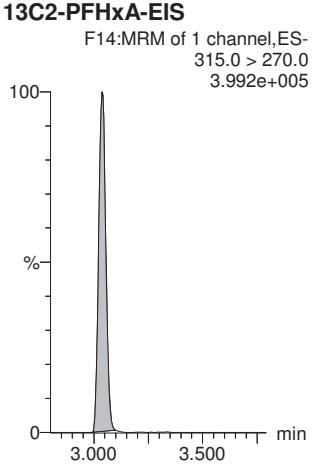

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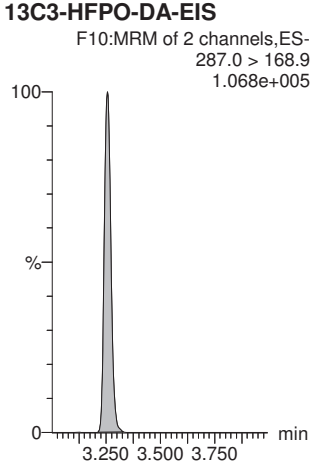

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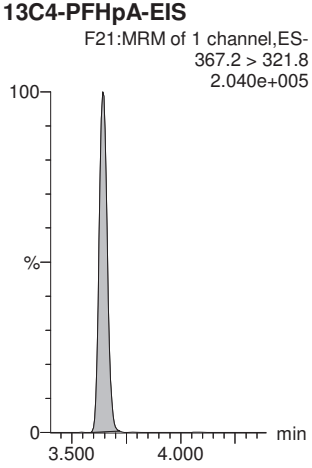

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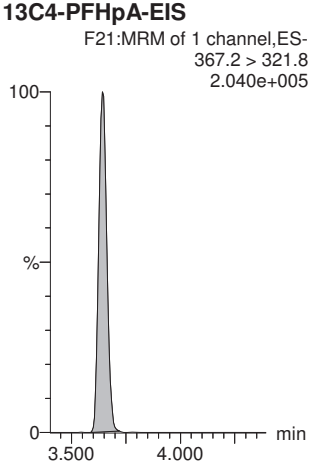

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:00:26 Pacific Standard Time

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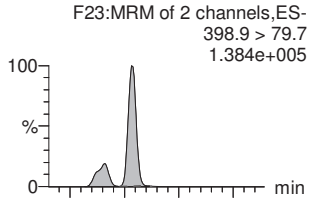

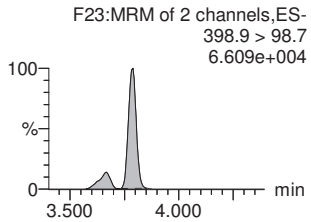

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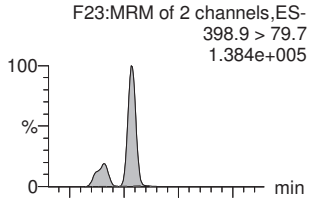

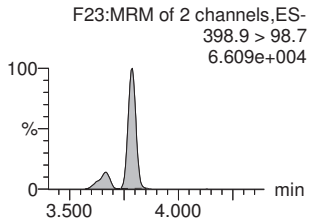

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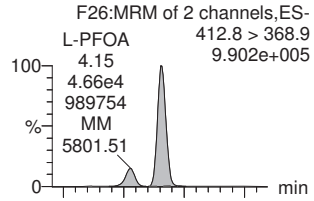

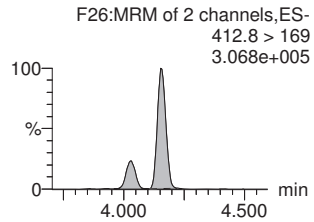

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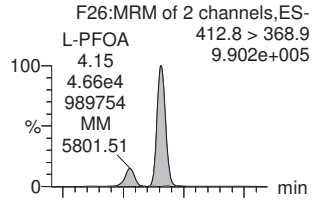

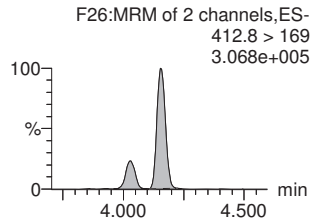

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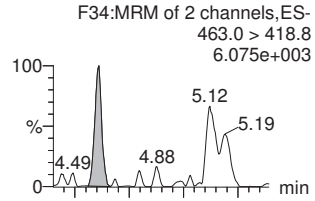

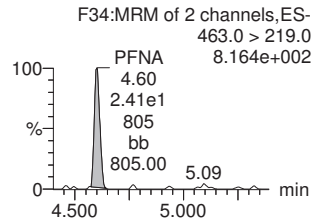

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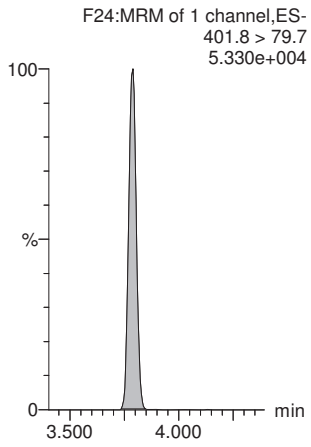

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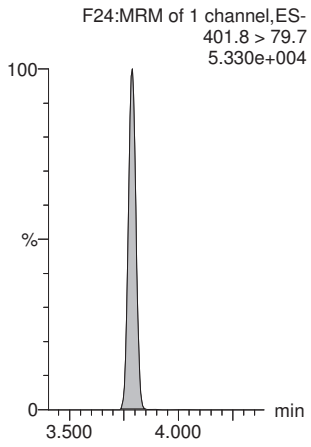

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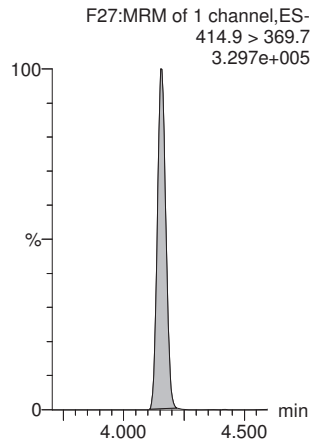

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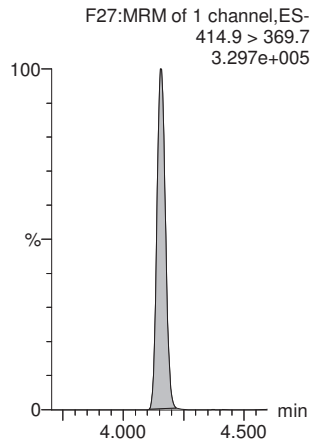

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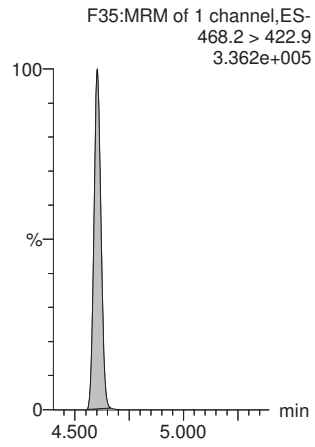

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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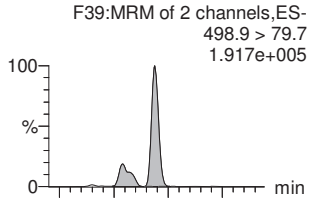

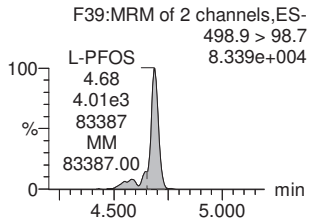

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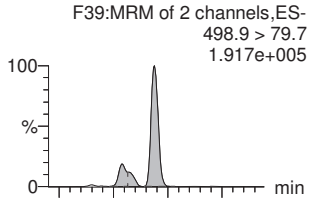

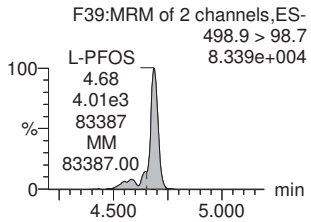

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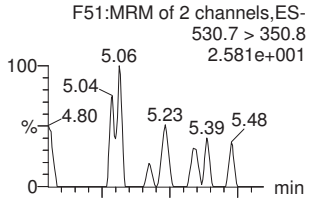

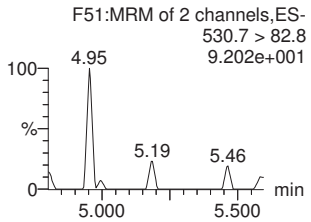

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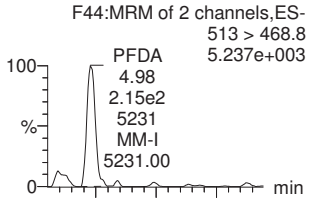

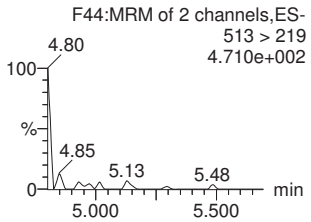

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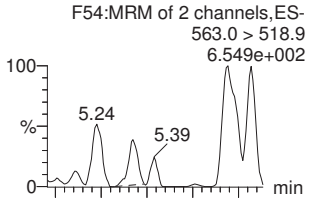

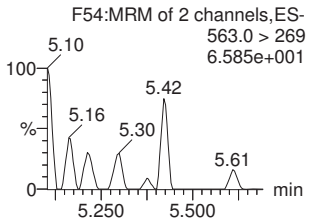

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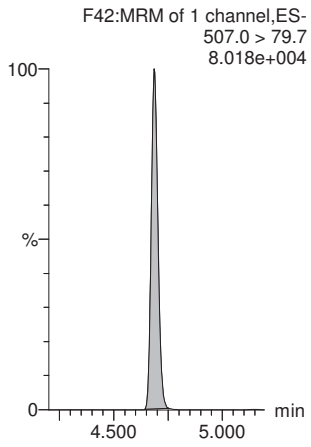

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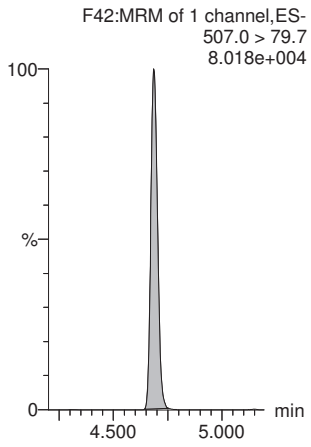

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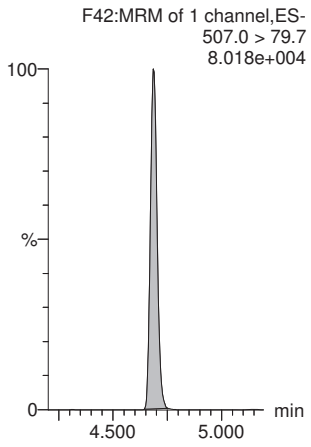

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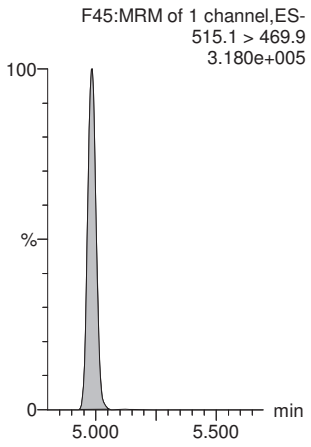

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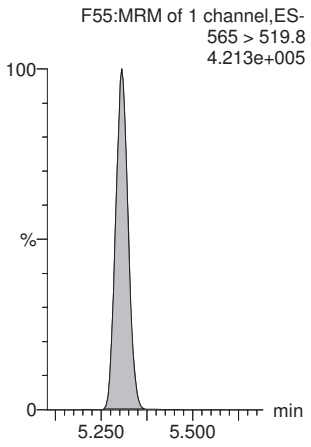

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

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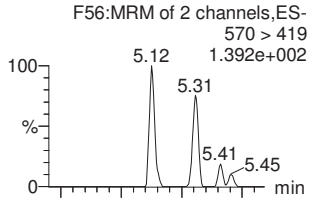

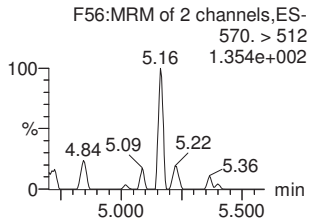

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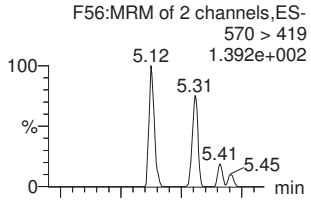

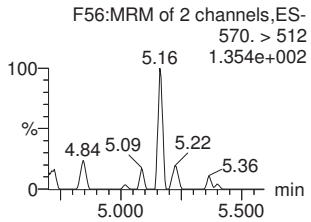

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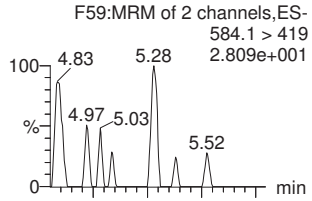

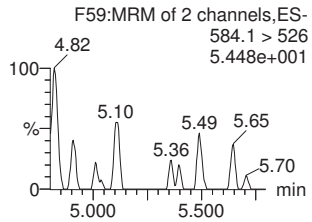

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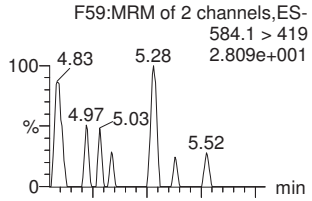

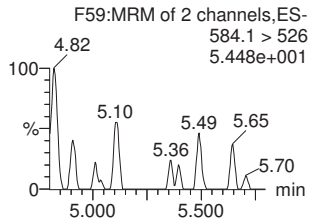

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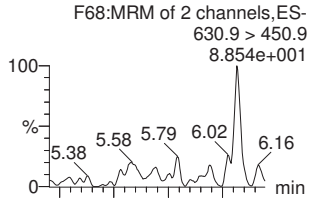

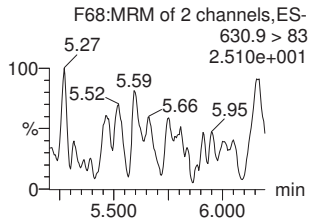

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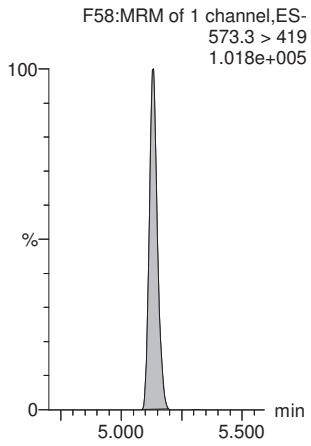

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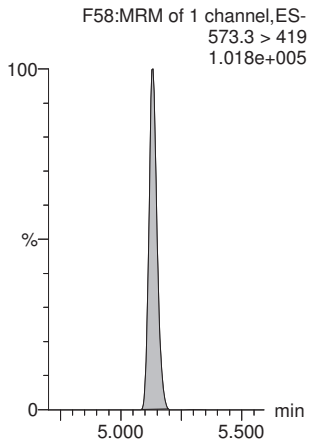

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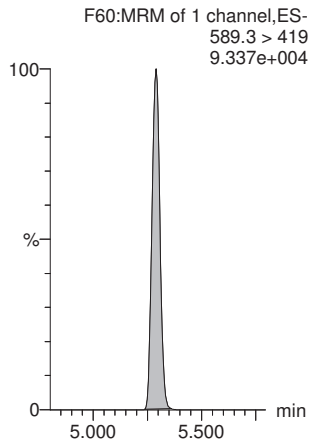

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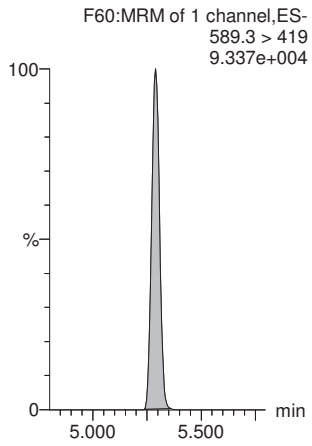

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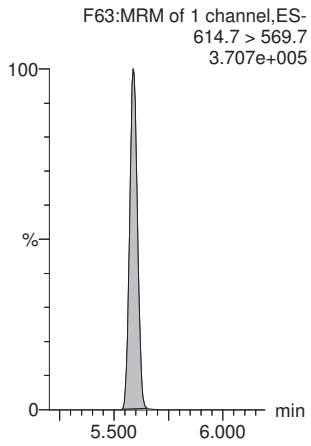

Quantify Sample Report **MassLynx V4.2 SCN982**

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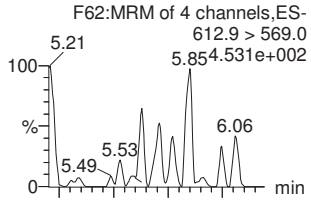
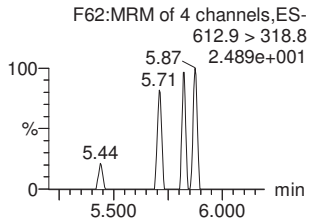
Name: 200229P1-21, Date: 29-Feb-2020, Time: 18:55:02, ID: 2000333-06 24-GW-18BGMP08E-20200217 0.25283, Description: 24-GW-18BGMP08E-20200217

PFDoA





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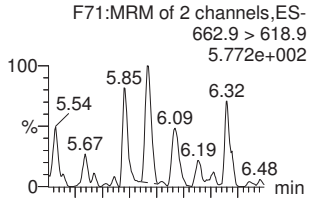

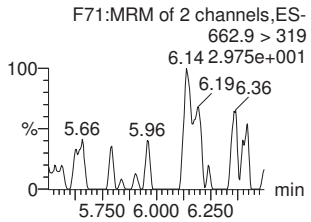

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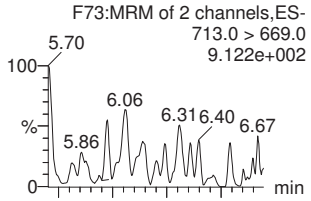

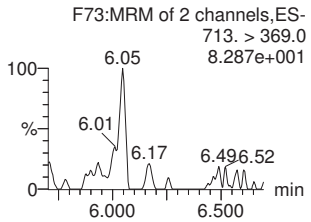

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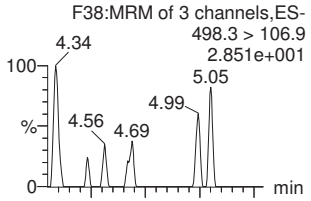

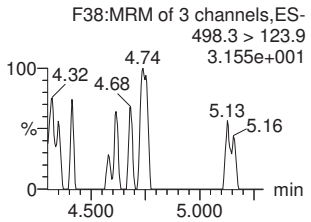

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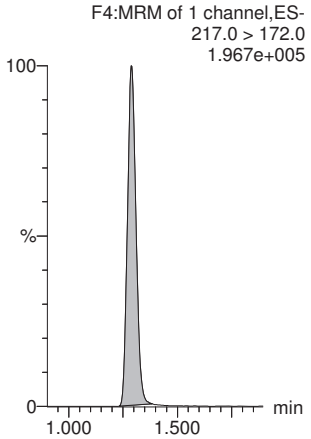

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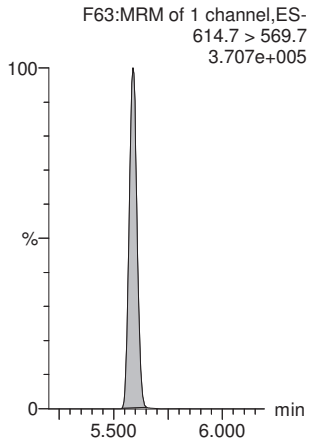

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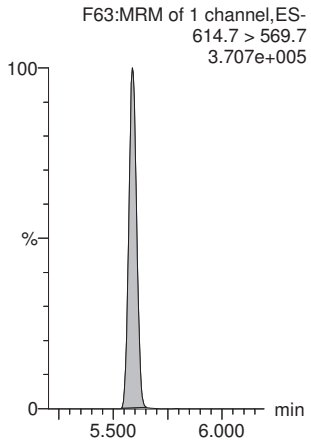

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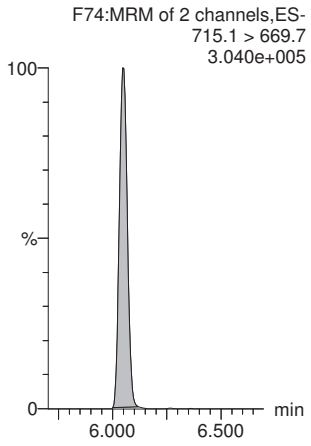

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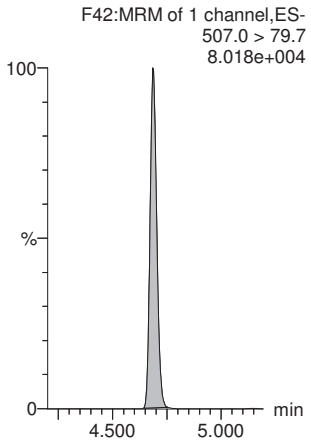

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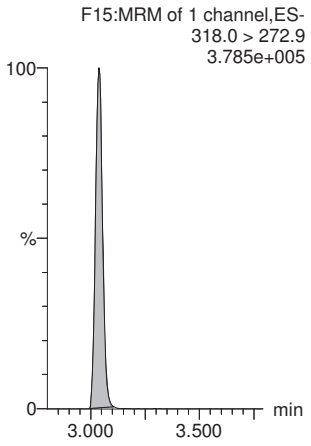

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:00:26 Pacific Standard Time

Name: 200229P1-21, Date: 29-Feb-2020, Time: 18:55:02, ID: 2000333-06 24-GW-18BGMP08E-20200217 0.25283, Description: 24-GW-18BGMP08E-20200217

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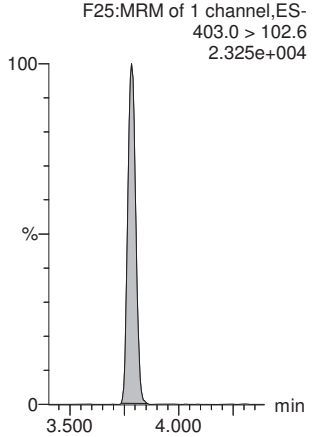
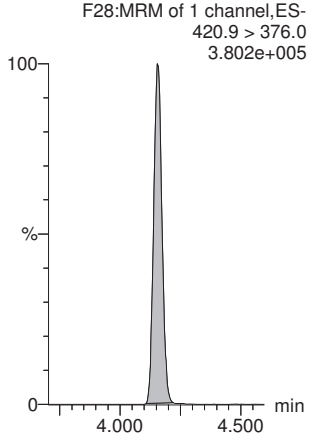


13C8-PFOA



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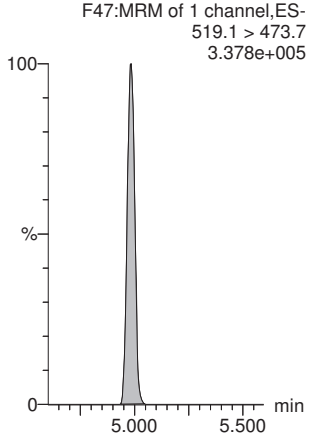

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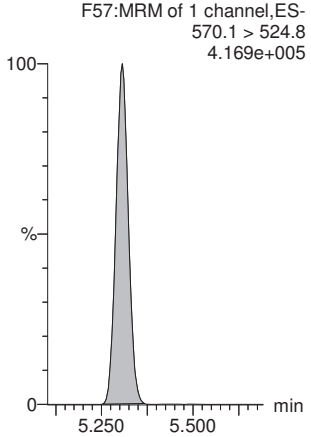

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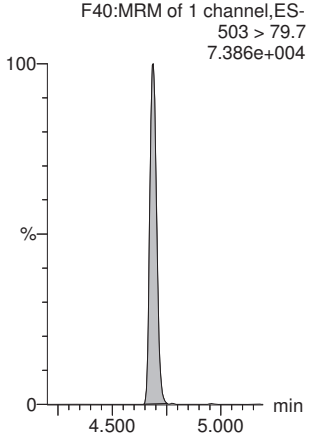
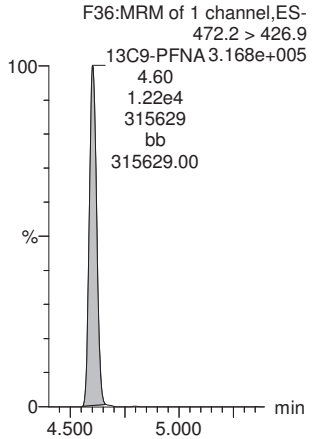


13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982** Page 7 of 8

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:02:18 Pacific Standard Time

Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

	#	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	1.38e3	9.67e2	0.248		2.52	2.52	17.9	27.7394		3.250	NO
2	7	PFHxA	313.0 > 269.0	2.42e4	1.40e4	0.248		3.04	3.04	21.6	103.4014		17.320	NO
3	9	HFPO-DA	285.1 > 168.9		3.40e3	0.248		3.26						YES
4	11	PFHpA	363.0 > 318.9	1.84e3	8.31e3	0.248		3.65	3.65	2.77	8.8279		11.026	YES
5	12	ADONA	376.8 > 250.9		8.31e3	0.248		3.74						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	9.67e2		0.248	74.669	2.60	2.52	967	52.3103	103.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.40e4		0.248	1142.171	3.04	3.04	14000	49.6131	98.3		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.40e3		0.248	285.582	3.33	3.26	3400	48.1349	95.3		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.31e3		0.248	650.100	3.67	3.65	8310	51.6538	102.3		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.31e3		0.248	650.100	3.67	3.65	8310	51.6538	102.3		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	3.79e3	2.39e3	0.248		3.79	3.79	19.8	73.5924		2.354	NO
13	1...	Total PFHxS	398.9 > 79.7	3.79e3	2.39e3	0.248		3.93		19.8	73.5924			
14	16	L-PFOA	412.8 > 368.9	1.01e4	1.28e4	0.248		4.16	4.16	9.84	32.3196		2.949	NO
15	1...	Total PFOA	412.8 > 368.9	1.01e4	1.28e4	0.248		4.60		9.84	32.3196			
16	21	PFNA	463.0 > 418.8		1.10e4	0.248		4.60						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.39e3		0.248	169.524	3.78	3.79	2390	57.0556	113.0		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.39e3		0.248	169.524	3.78	3.79	2390	57.0556	113.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.28e4		0.248	1020.218	4.15	4.16	12800	50.5649	100.2		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.28e4		0.248	1020.218	4.15	4.16	12800	50.5649	100.2		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.10e4		0.248	928.597	4.60	4.60	11000	48.0000	95.1		
22	-1													
23	23	L-PFOS	498.9 > 79.7	6.34e0	2.68e3	0.248		4.69	4.70	0.0296	0.4354		5.205	YES
24	1...	Total PFOS	498.9 > 79.7	6.34e0	2.68e3	0.248		5.13		0.0296	0.4354			
25	25	9Cl-PF30NS	530.7 > 350.8		2.68e3	0.248		4.89						YES
26	26	PFDA	513 > 468.8		1.31e4	0.248		4.99						YES
27	33	PFUdA	563.0 > 518.9		1.51e4	0.248		5.31						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.68e3		0.248	196.194	4.69	4.69	2680	55.1453	109.2		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.68e3		0.248	196.194	4.69	4.69	2680	55.1453	109.2		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.68e3		0.248	196.194	4.69	4.69	2680	55.1453	109.2		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.31e4		0.248	990.142	4.98	4.99	13100	53.4733	105.9		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.51e4		0.248	1248.401	5.31	5.31	15100	48.9437	96.9		
33	-1													
34	29	L-MeFOSAA	570 > 419		3.39e3	0.248		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	3.39e3	0.248		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		3.76e3	0.248		5.29						YES

Quantify Sample Report **MassLynx V4.2 SCN982** Page 8 of 8

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Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:02:18 Pacific Standard Time

Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	3.76e3	0.248		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.51e4	0.248		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.39e3		0.248	285.850	5.14	5.13	3390	47.8853	94.8		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.39e3		0.248	285.850	5.14	5.13	3390	47.8853	94.8		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.76e3		0.248	376.592	5.28	5.29	3760	40.3393	79.9		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.76e3		0.248	376.592	5.28	5.29	3760	40.3393	79.9		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.51e4		0.248	1402.009	5.57	5.59	15100	43.6175	86.4		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.51e4	0.248		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.51e4	0.248		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.32e4	0.248		6.05						YES
48	1...	TDCA	498.3>106.9			0.248		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	8.27e3	8.27e3	0.248	1.000	1.38	1.29	12.5	50.4867	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.51e4		0.248	1402.009	5.57	5.59	15100	43.6175	86.4		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.51e4		0.248	1402.009	5.57	5.59	15100	43.6175	86.4		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.32e4		0.248	1271.780	6.00	6.05	13200	41.7737	82.7		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.68e3		0.248	196.194	4.69	4.69	2680	55.1453	109.2		
54	1...	13C5-PFHxA	318.0 > 272.9	1.28e4	1.28e4	0.248	1.000	3.08	3.04	12.5	50.4867	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.68e2	8.68e2	0.248	1.000	3.82	3.78	12.5	50.4867	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.46e4	1.46e4	0.248	1.000	4.19	4.15	12.5	50.4867	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.30e4	1.30e4	0.248	1.000	5.01	4.98	12.5	50.4867	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.71e4	1.71e4	0.248	1.000	5.32	5.31	12.5	50.4867	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.60e3	2.60e3	0.248	1.000	4.71	4.69	12.5	50.4867	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.18e4	1.18e4	0.248	1.000	4.63	4.60	12.5	50.4867	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:02:18 Pacific Standard Time

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Calibration: Z:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

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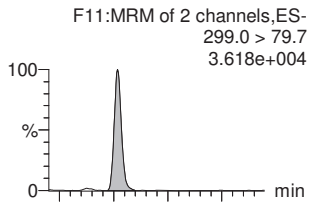

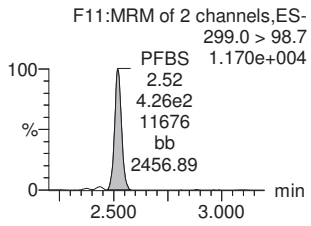

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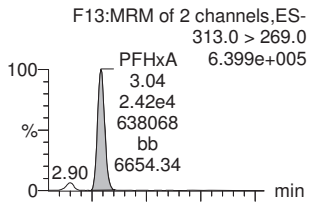

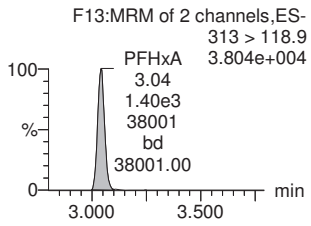

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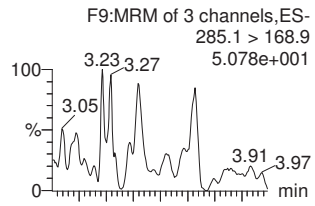

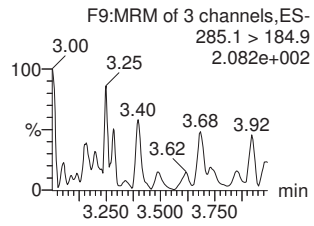

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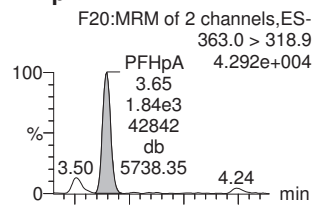

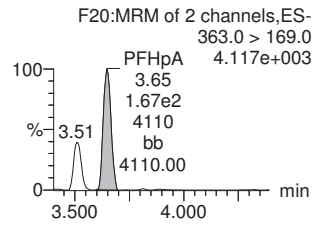

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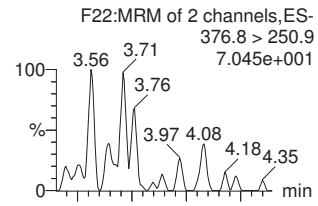

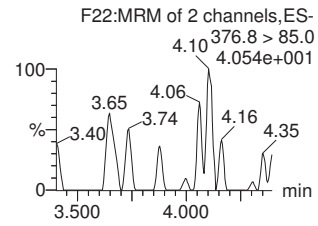

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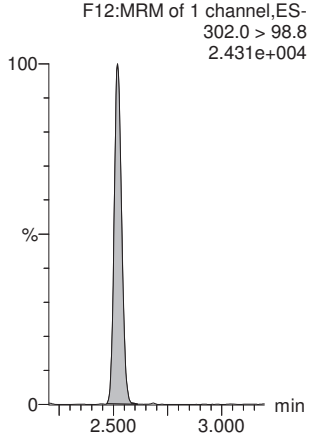

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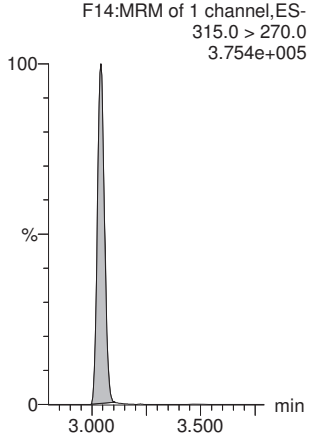

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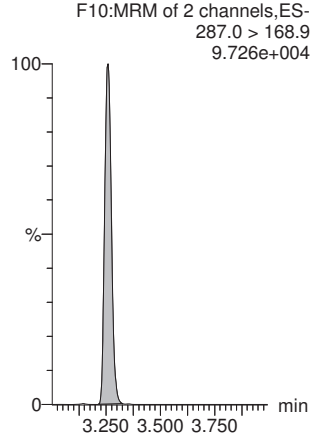

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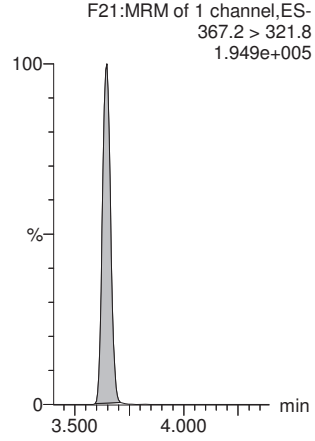

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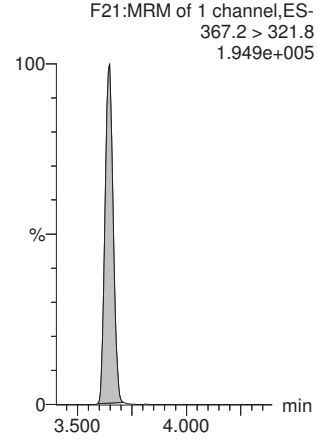

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:02:18 Pacific Standard Time

Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

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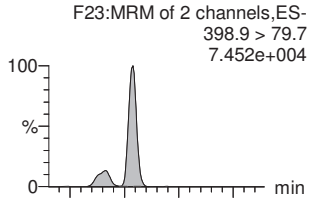

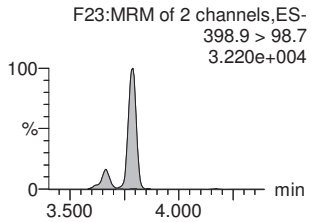

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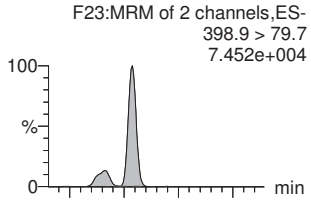

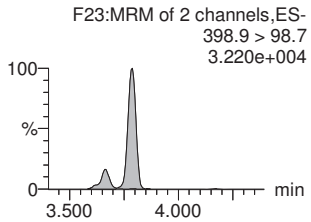

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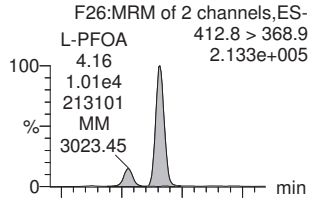

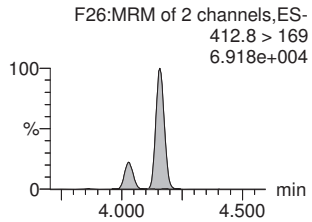

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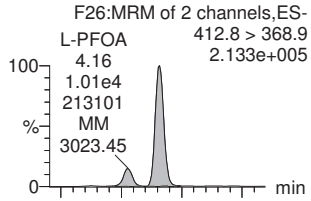

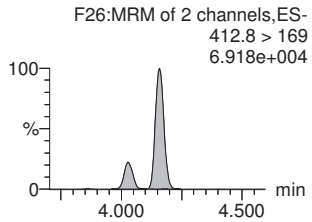

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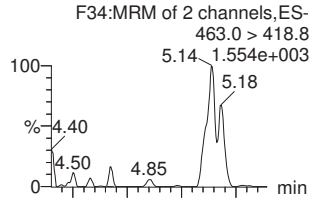

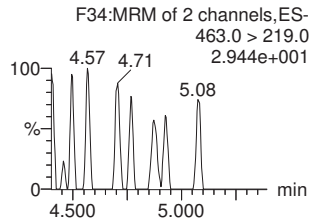

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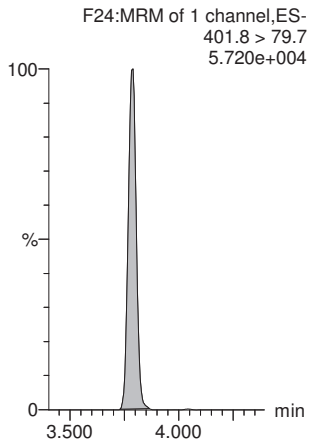

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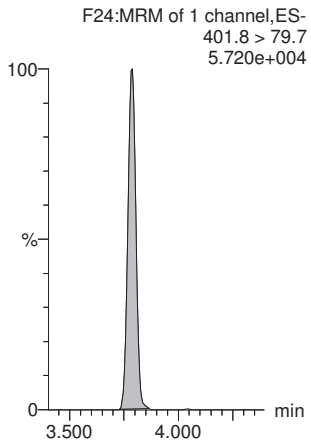

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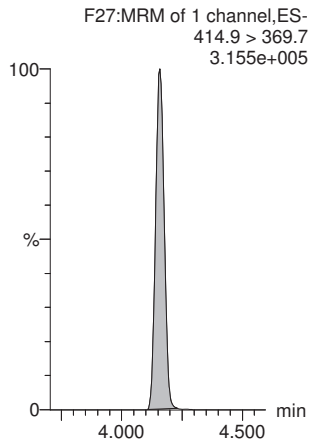

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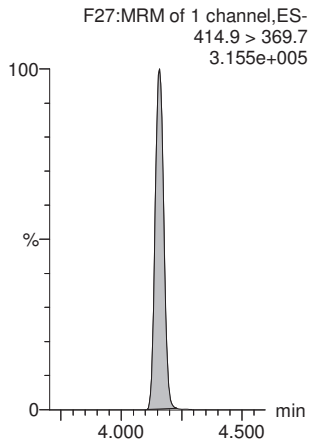

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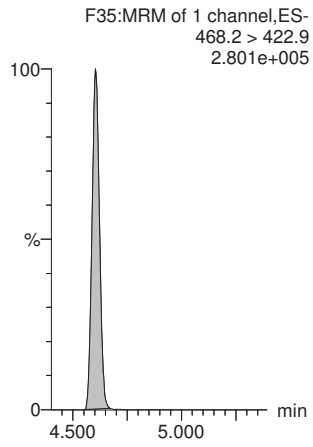

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

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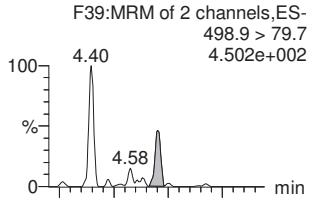

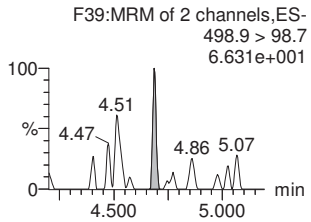

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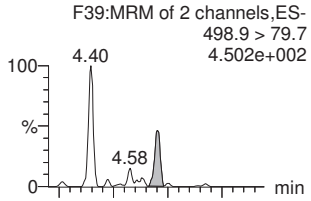

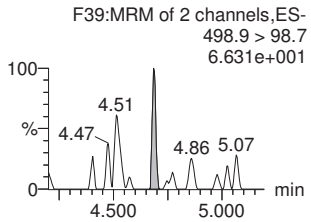

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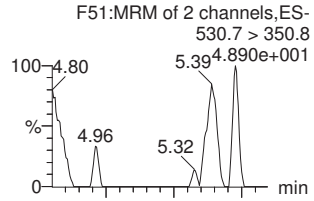

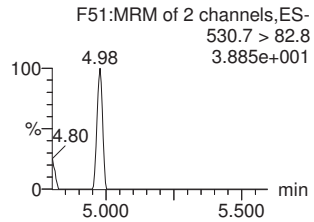

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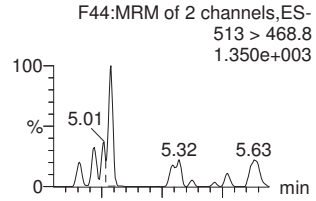

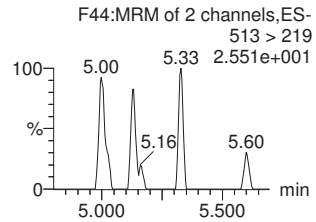

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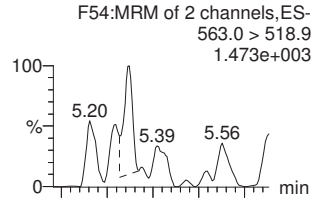

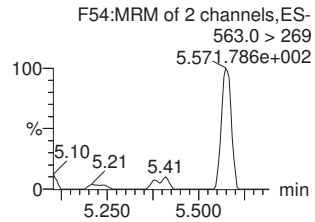

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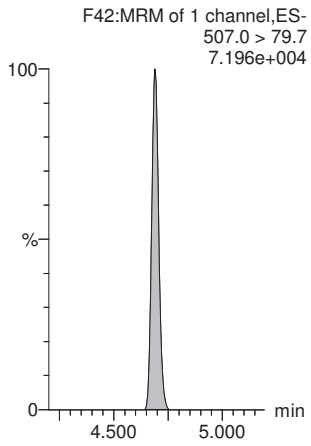

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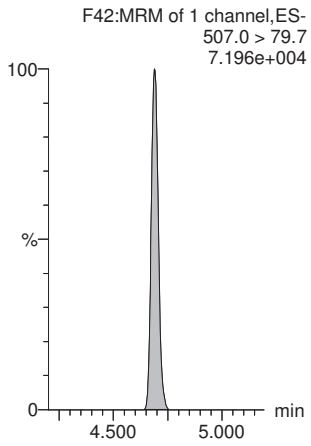

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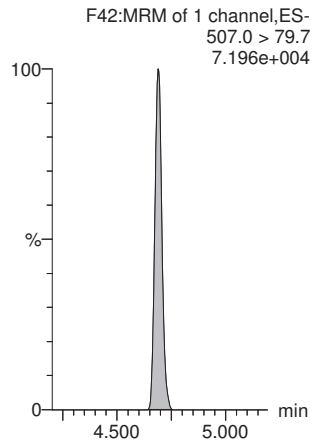

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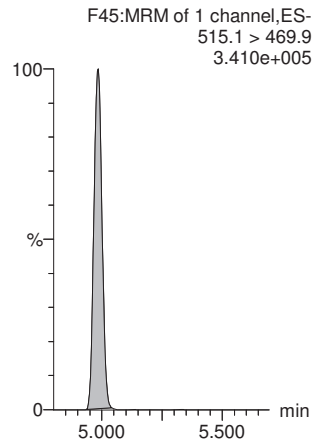

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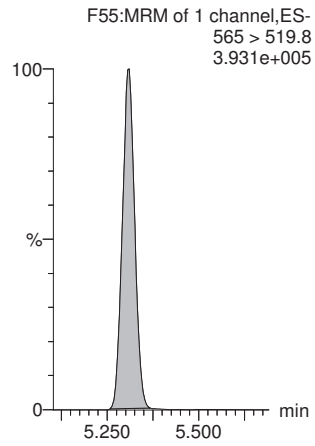

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

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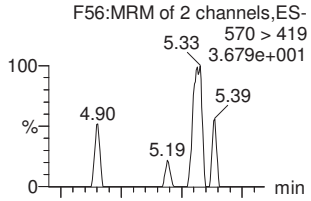

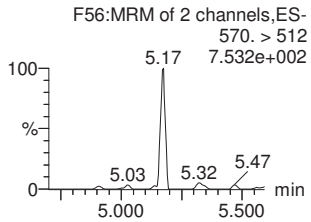

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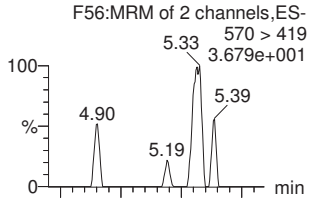

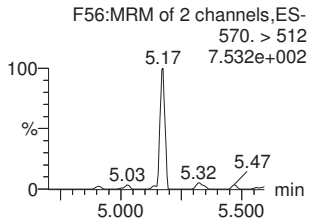

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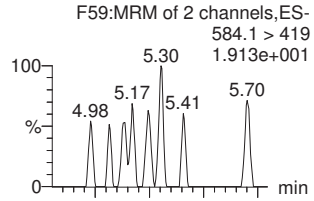

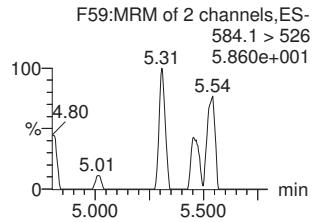

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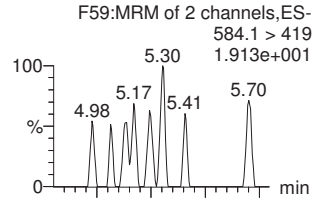

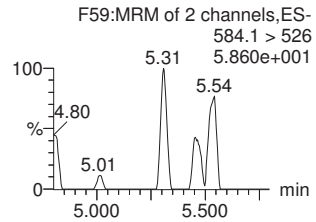

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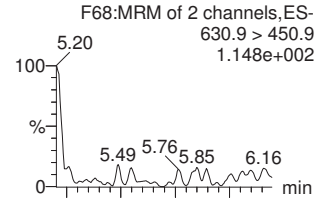

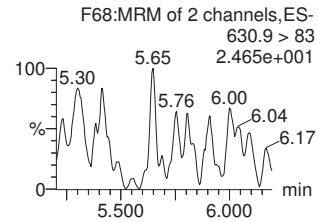

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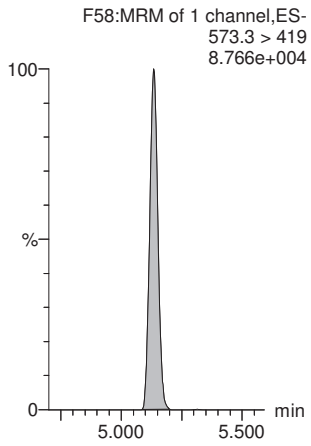

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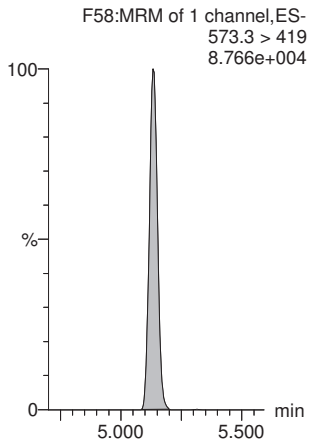

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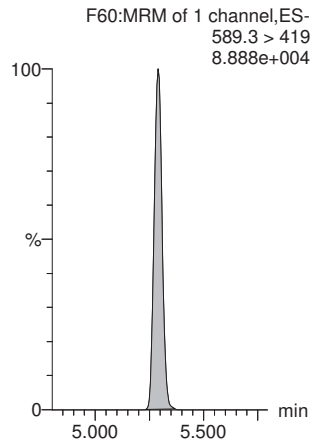

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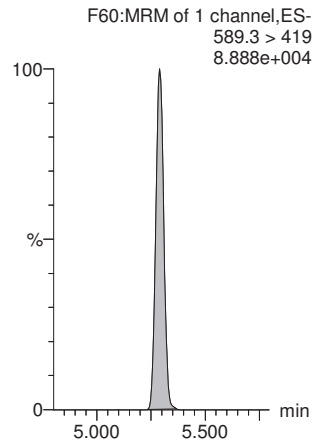

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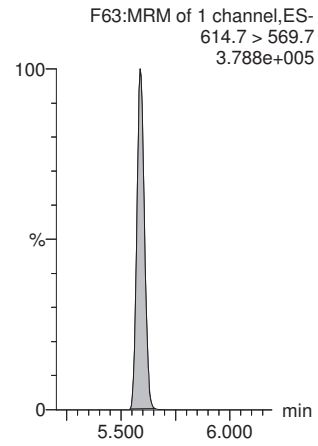

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

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Dataset: Untitled

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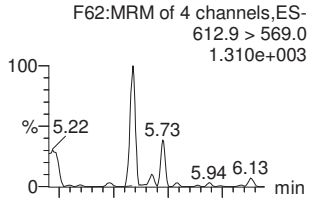
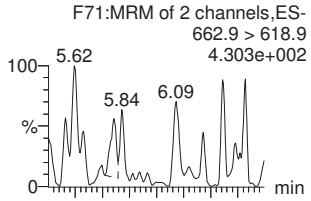
Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

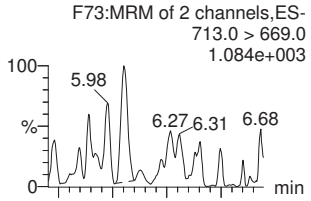
PFDoA



PFTrDA



PFTeDA



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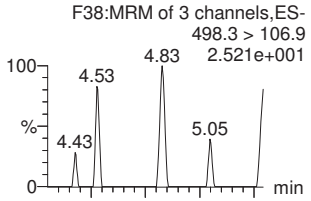
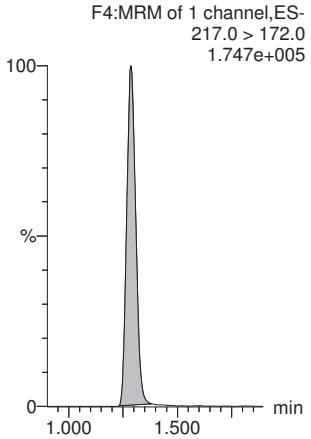
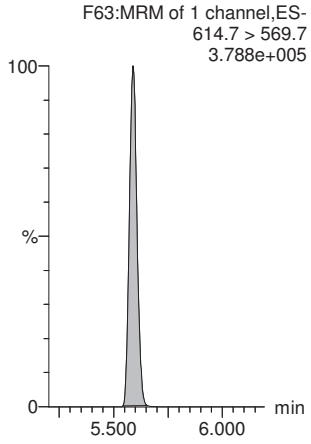


13C4-PFBA



13C2-PFDoA-EIS



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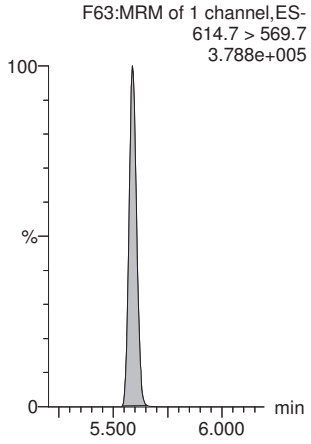
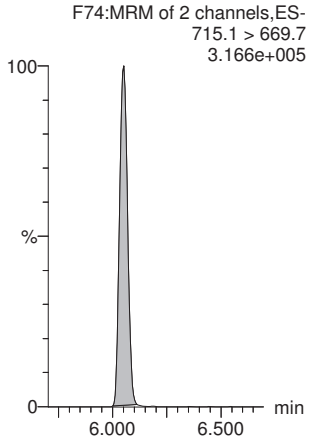
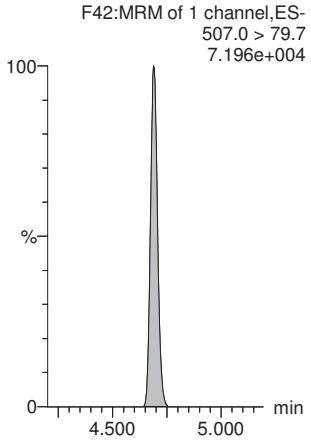


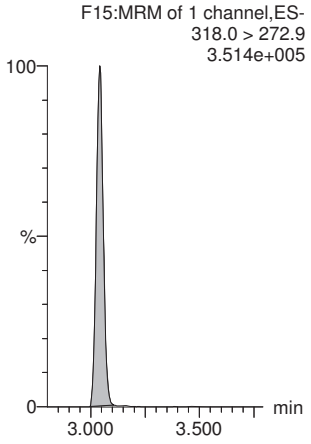
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

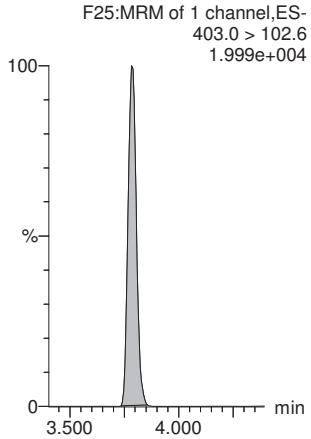
Review: AMR 3/3/2020

Dataset: Untitled

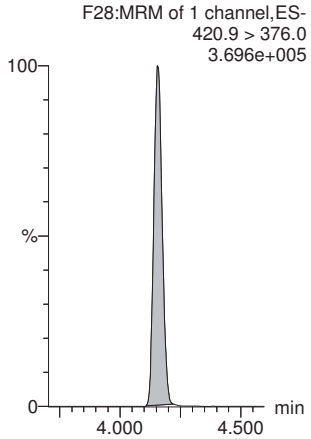
Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:02:18 Pacific Standard Time

Name: 200229P1-22, Date: 29-Feb-2020, Time: 19:05:34, ID: 2000333-07 24-GW-18PS1-20200217 0.24759, Description: 24-GW-18PS1-20200217

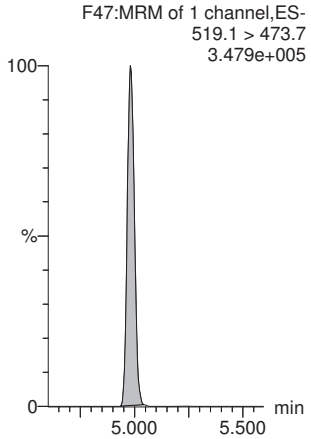
18O2-PFHxS



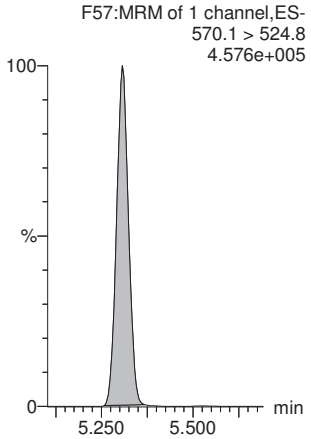
13C8-PFOA



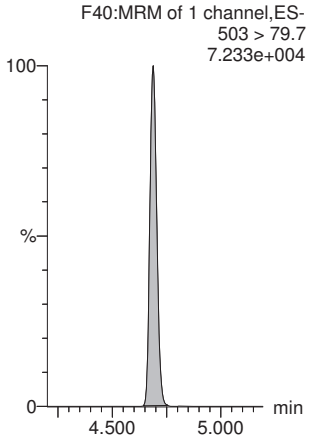
13C6-PFDA



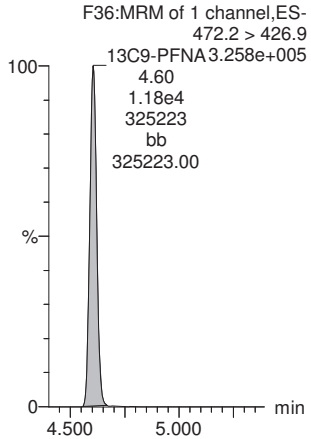
13C7-PFUdA



13C4-PFOS



13C9-PFNA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:01:18 Pacific Standard Time

Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

	#	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	1.32e3	9.78e2	0.249		2.52	2.52	16.9	26.0644		3.391	NO
2	7	PFHxA	313.0 > 269.0	2.55e4	1.35e4	0.249		3.04	3.04	23.6	112.6369		18.100	NO
3	9	HFPO-DA	285.1 > 168.9		3.15e3	0.249		3.26						YES
4	11	PFHpA	363.0 > 318.9	1.90e3	8.10e3	0.249		3.65	3.65	2.94	9.3506		16.161	YES
5	12	ADONA	376.8 > 250.9		8.10e3	0.249		3.74						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	9.78e2		0.249	74.669	2.60	2.52	978	52.7221	104.8		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.35e4		0.249	1142.171	3.04	3.04	13500	47.6155	94.7		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3.15e3		0.249	285.582	3.33	3.26	3150	44.4077	88.3		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.10e3		0.249	650.100	3.67	3.65	8100	50.1404	99.7		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.10e3		0.249	650.100	3.67	3.65	8100	50.1404	99.7		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	3.50e3	2.35e3	0.249		3.78	3.79	18.6	68.9827		2.537	NO
13	1...	Total PFHxS	398.9 > 79.7	3.50e3	2.35e3	0.249		3.93		18.6	68.9827			
14	16	L-PFOA	412.8 > 368.9	9.46e3	1.25e4	0.249		4.16	4.16	9.44	30.8493		3.018	NO
15	1...	Total PFOA	412.8 > 368.9	9.46e3	1.25e4	0.249		4.60		9.44	30.8493			
16	21	PFNA	463.0 > 418.8		1.13e4	0.249		4.61						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.35e3		0.249	169.524	3.78	3.78	2350	55.8385	111.0		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.35e3		0.249	169.524	3.78	3.78	2350	55.8385	111.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.25e4		0.249	1020.218	4.16	4.16	12500	49.4258	98.3		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.25e4		0.249	1020.218	4.16	4.16	12500	49.4258	98.3		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.13e4		0.249	928.597	4.60	4.61	11300	48.9047	97.2		
22	-1													
23	23	L-PFOS	498.9 > 79.7	3.31e1	2.78e3	0.249		4.69	4.68	0.149	0.9246		1.670	NO
24	1...	Total PFOS	498.9 > 79.7	3.31e1	2.78e3	0.249		5.13		0.149	0.9246			
25	25	9Cl-PF30NS	530.7 > 350.8		2.78e3	0.249		4.89						YES
26	26	PFDA	513 > 468.8		1.20e4	0.249		4.98						YES
27	33	PFUdA	563.0 > 518.9		1.51e4	0.249		5.31						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.78e3		0.249	196.194	4.69	4.69	2780	57.0134	113.4		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.78e3		0.249	196.194	4.69	4.69	2780	57.0134	113.4		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.78e3		0.249	196.194	4.69	4.69	2780	57.0134	113.4		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.20e4		0.249	990.142	4.99	4.98	12000	48.7993	97.0		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.51e4		0.249	1248.401	5.31	5.31	15100	48.7035	96.8		
33	-1													
34	29	L-MeFOSAA	570 > 419		3.62e3	0.249		5.13						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	3.62e3	0.249		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		3.63e3	0.249		5.29						YES

Quantify Sample Report **MassLynx V4.2 SCN982**
Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:01:18 Pacific Standard Time

Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	3.63e3	0.249		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.55e4	0.249		5.52						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.62e3		0.249	285.850	5.14	5.13	3620	51.0107	101.4		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	3.62e3		0.249	285.850	5.14	5.13	3620	51.0107	101.4		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.63e3		0.249	376.592	5.28	5.29	3630	38.7358	77.0		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.63e3		0.249	376.592	5.28	5.29	3630	38.7358	77.0		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.55e4		0.249	1402.009	5.57	5.59	15500	44.5704	88.6		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.55e4	0.249		5.59						YES
46	39	PFTrDA	662.9 > 618.9		1.55e4	0.249		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.23e4	0.249		6.05						YES
48	1...	TDCA	498.3>106.9			0.249		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	7.76e3	7.76e3	0.249	1.000	1.38	1.29	12.5	50.2937	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.55e4		0.249	1402.009	5.57	5.59	15500	44.5704	88.6		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.55e4		0.249	1402.009	5.57	5.59	15500	44.5704	88.6		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.23e4		0.249	1271.780	6.00	6.05	12300	39.0597	77.7		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.78e3		0.249	196.194	4.69	4.69	2780	57.0134	113.4		
54	1...	13C5-PFHxA	318.0 > 272.9	1.18e4	1.18e4	0.249	1.000	3.08	3.04	12.5	50.2937	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.51e2	7.51e2	0.249	1.000	3.82	3.78	12.5	50.2937	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.29e4	1.29e4	0.249	1.000	4.19	4.16	12.5	50.2937	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.29e4	1.29e4	0.249	1.000	5.01	4.99	12.5	50.2937	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.60e4	1.60e4	0.249	1.000	5.32	5.31	12.5	50.2937	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.34e3	2.34e3	0.249	1.000	4.71	4.69	12.5	50.2937	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	1.11e4	1.11e4	0.249	1.000	4.63	4.60	12.5	50.2937	100.0		

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:01:18 Pacific Standard Time

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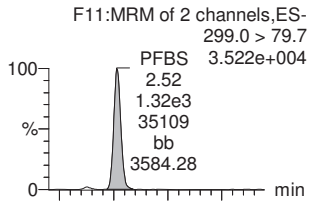
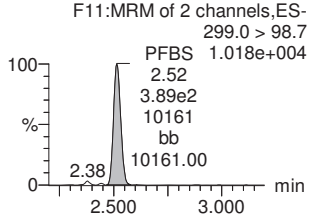
Calibration: Z:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

PFBS





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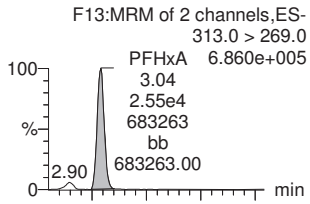

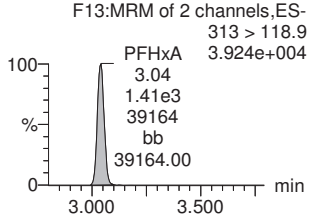

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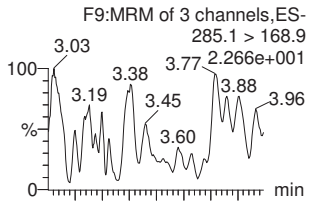
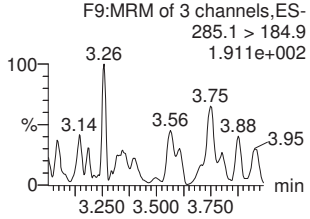
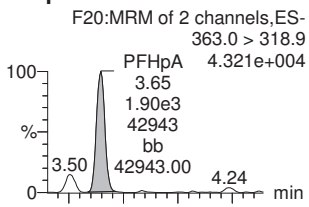
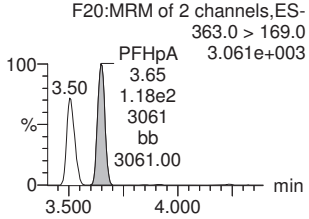


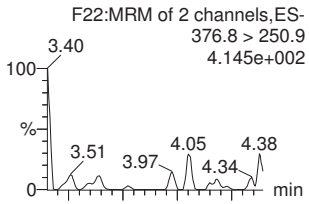


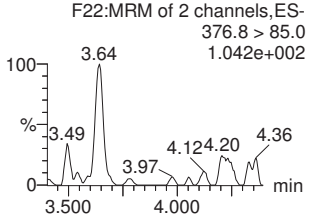
PFHpA



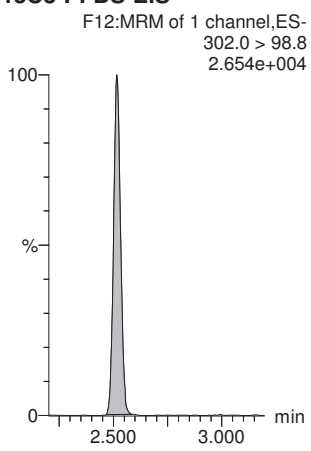


ADONA

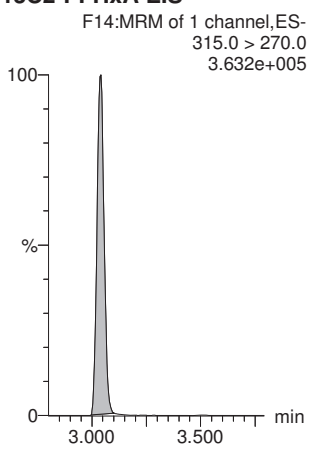




13C3-PFBS-EIS



13C2-PFHxA-EIS



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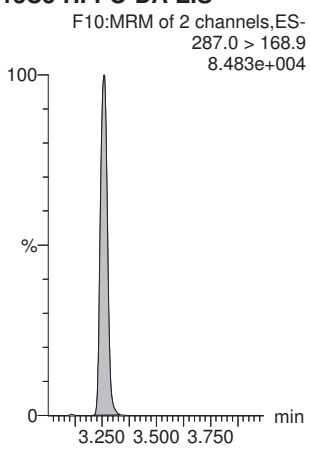
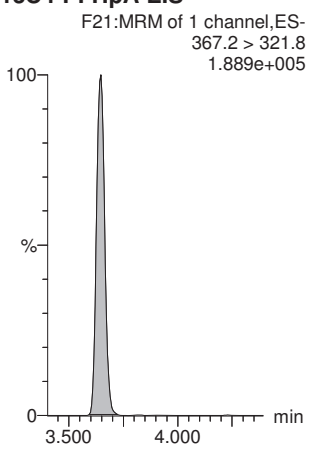


13C4-PFHpA-EIS



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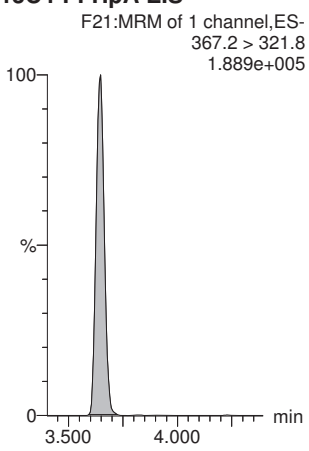

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:01:18 Pacific Standard Time

Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

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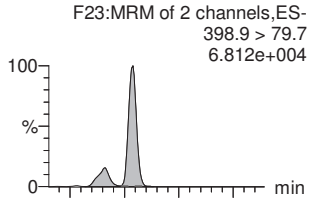

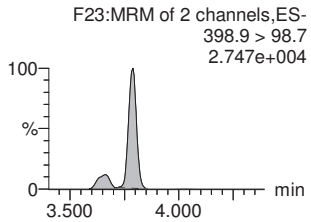

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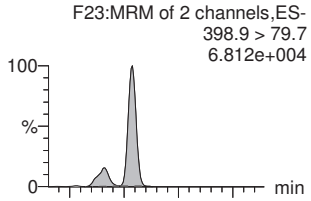

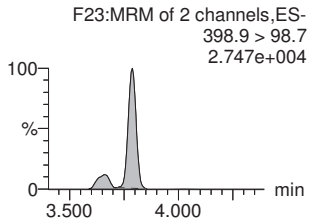

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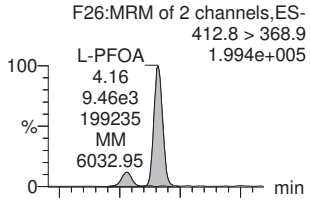

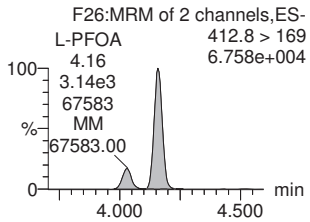

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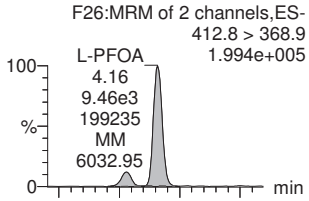

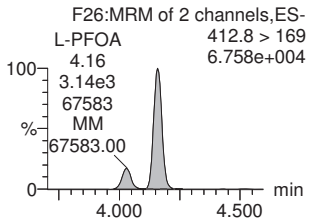

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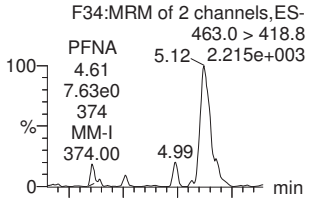

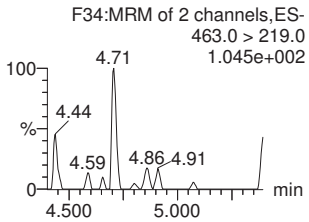

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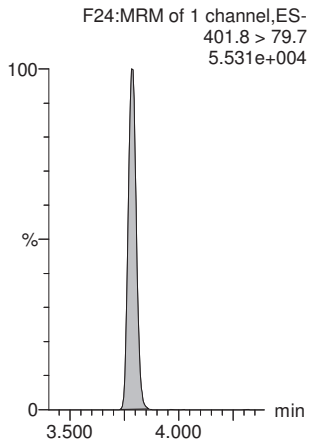

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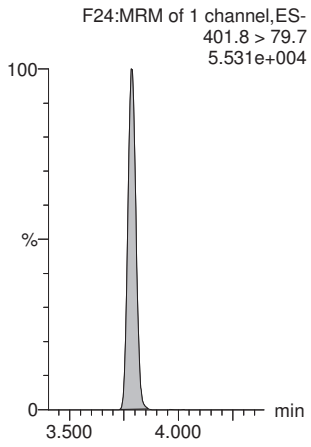

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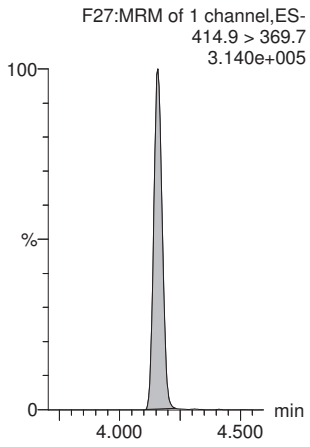

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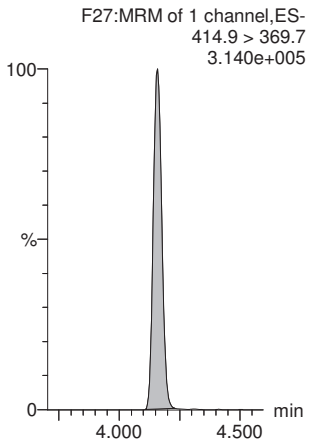

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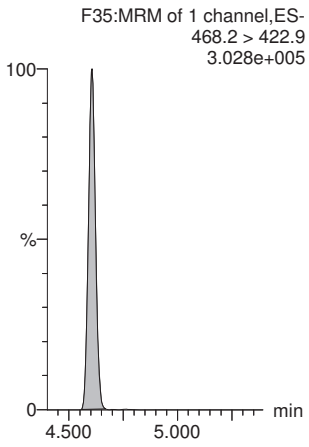

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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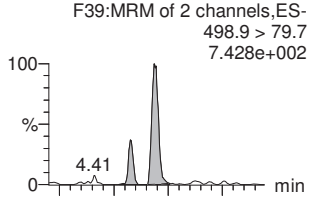
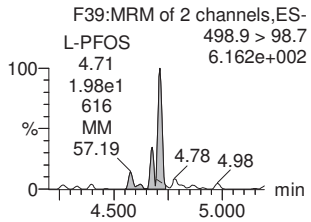
Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

L-PFOS





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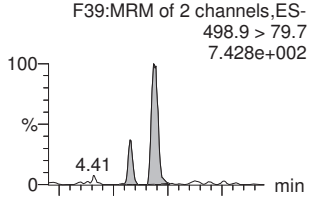

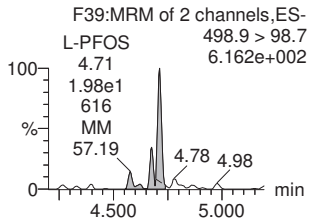

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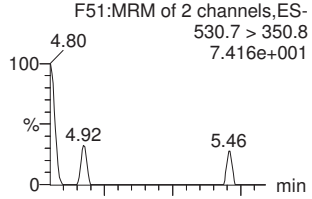

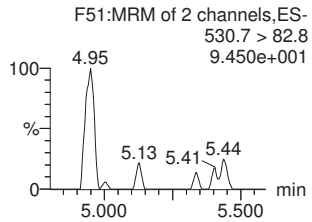

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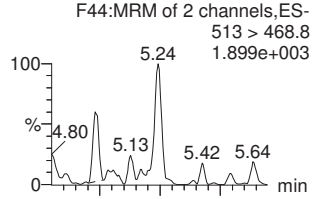

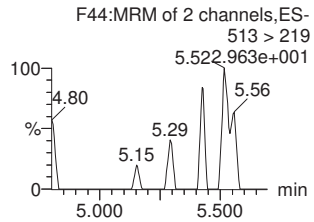

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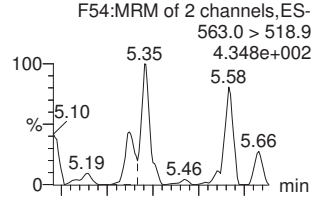

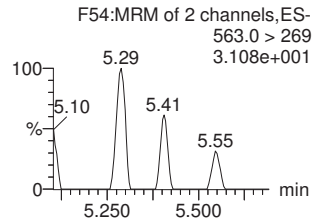

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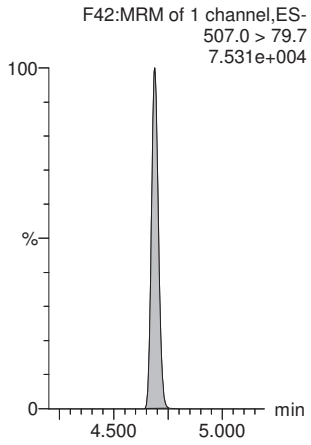

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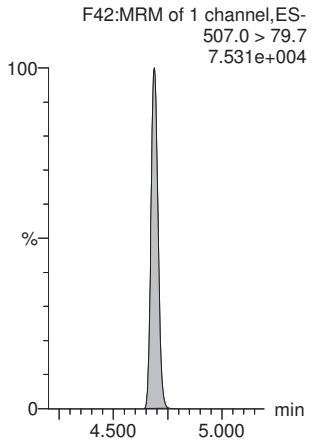

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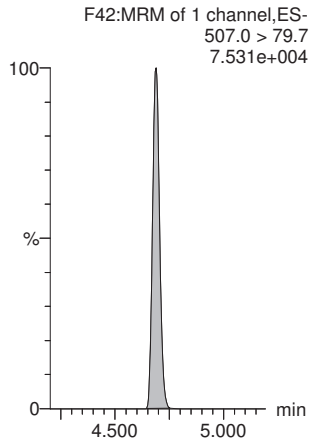

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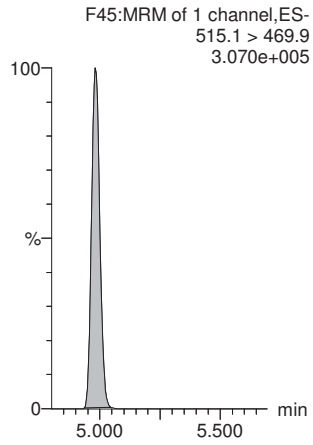

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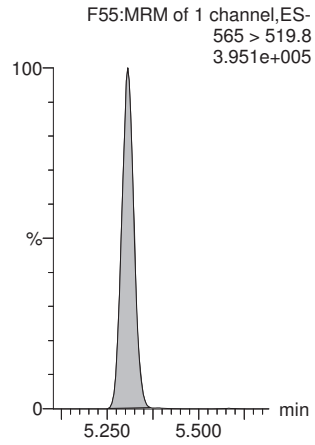

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
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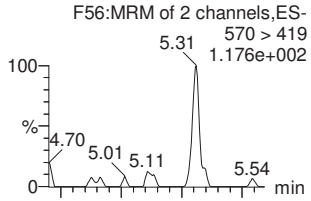
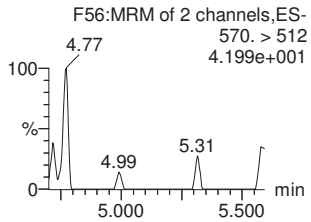
Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

L-MeFOSAA





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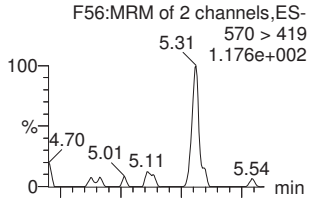

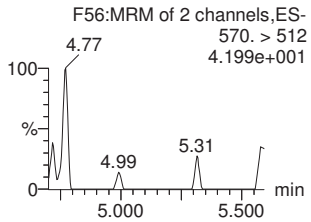

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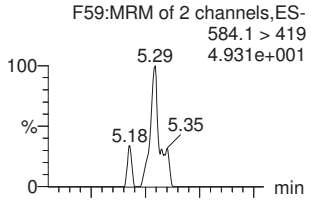

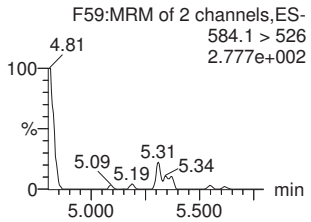

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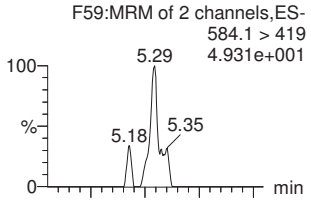

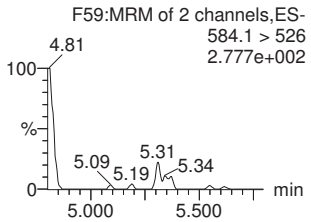

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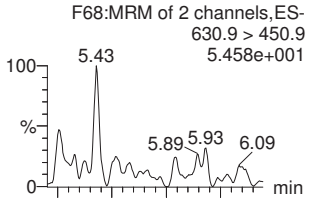

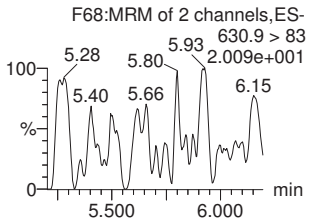

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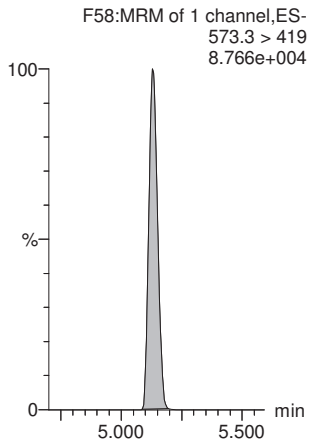

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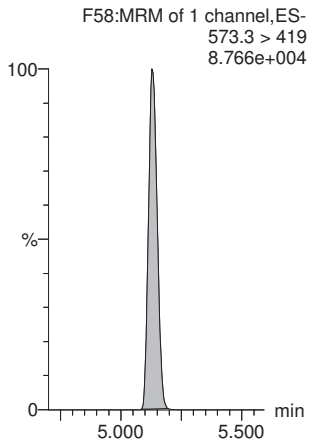

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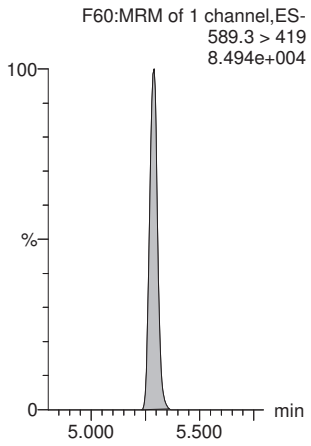

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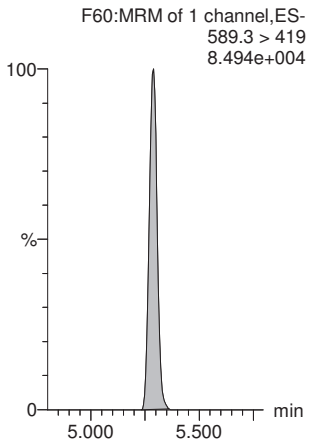

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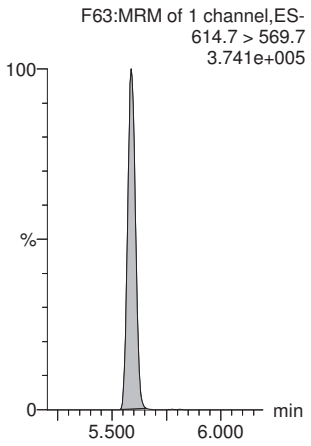

Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

Review: AMR 3/3/2020

Dataset: Untitled

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Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

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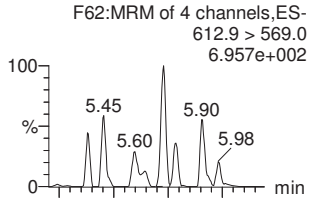

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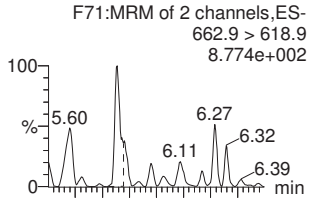

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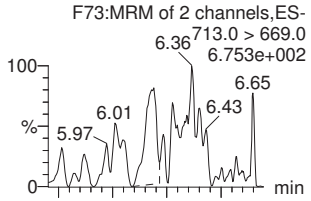

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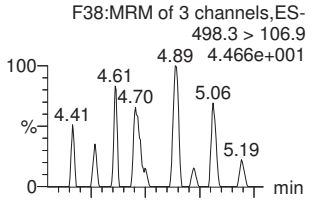

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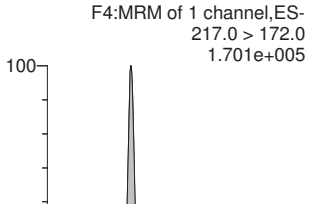
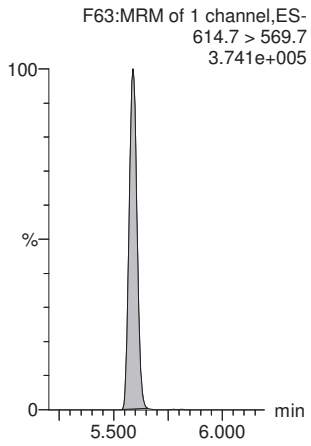


13C2-PFDoA-EIS



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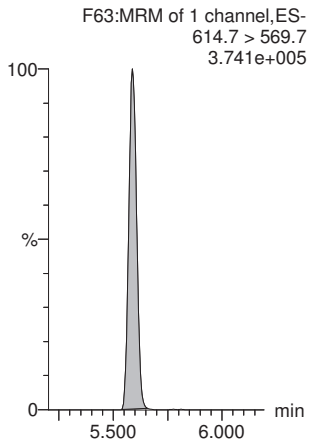
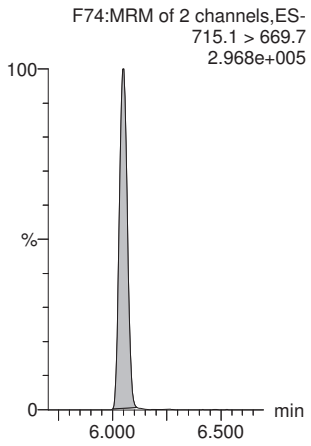
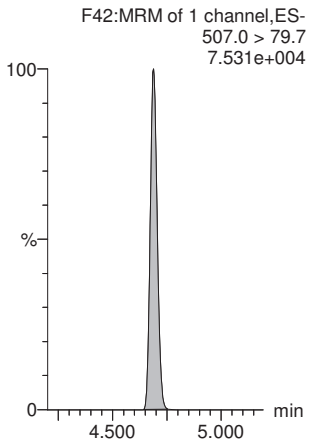


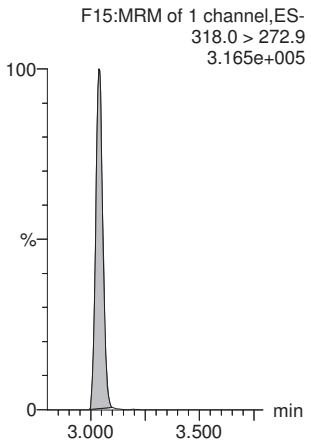
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



Quantify Sample Report **MassLynx V4.2 SCN982**

Vista Analytical Laboratory L18

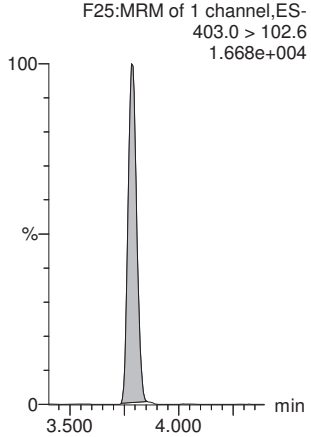
Review: AMR 3/3/2020

Dataset: Untitled

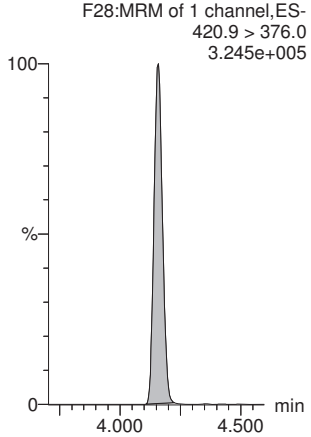
Last Altered: Monday, March 02, 2020 16:56:42 Pacific Standard Time
Printed: Monday, March 02, 2020 17:01:18 Pacific Standard Time

Name: 200229P1-23, Date: 29-Feb-2020, Time: 19:16:05, ID: 2000333-08 DUP01-20200217 0.24854, Description: DUP01-20200217

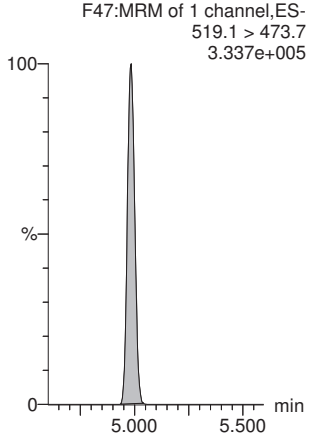
18O2-PFHxS



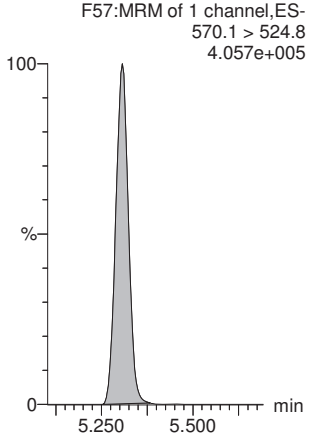
13C8-PFOA



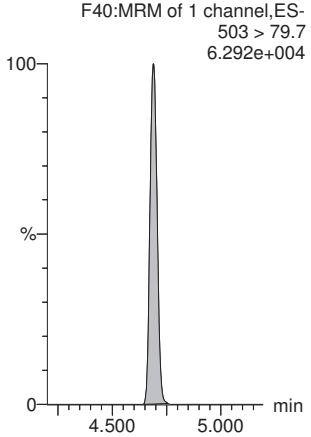
13C6-PFDA



13C7-PFUdA



13C4-PFOS



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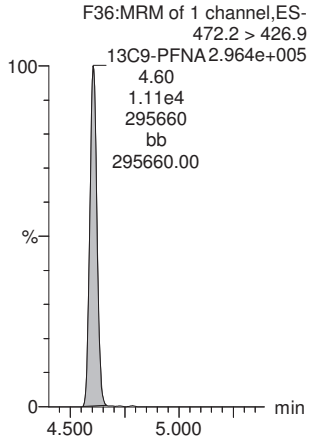

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS (CCV)

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

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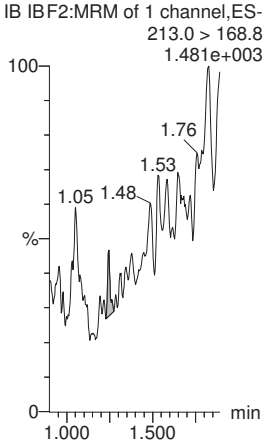
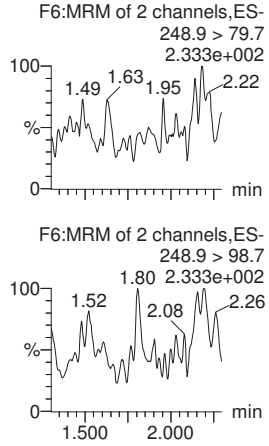
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

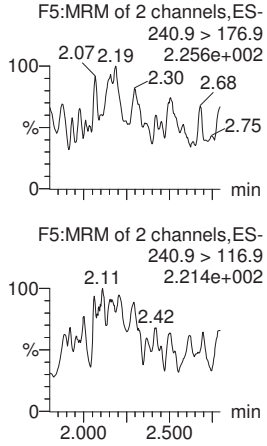
PFBA



PFPrS



3:3 FTCA



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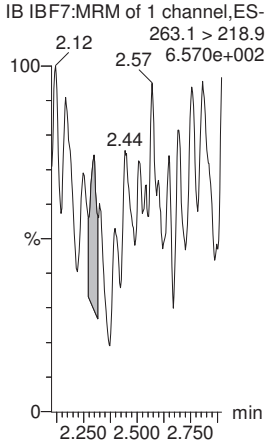

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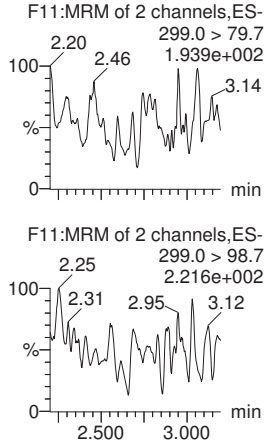
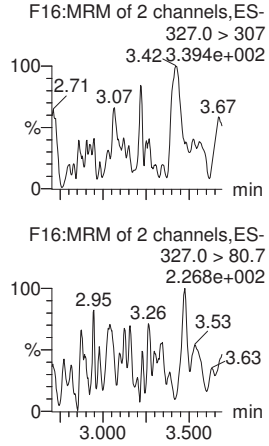
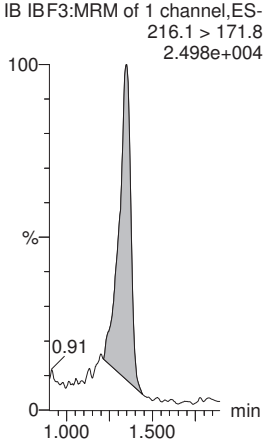


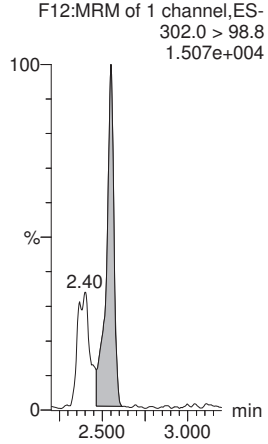
4:2 FTS



13C3-PFBA-EIS



13C3-PFBS-EIS



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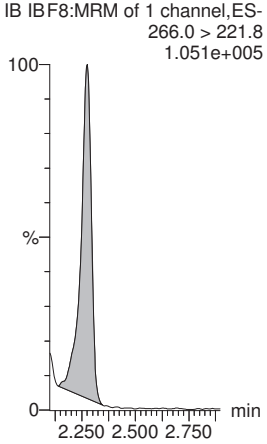

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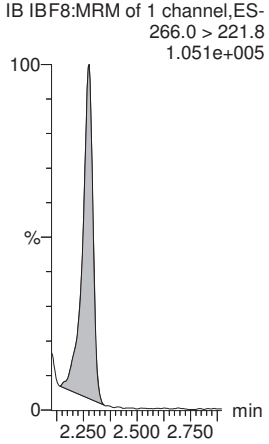

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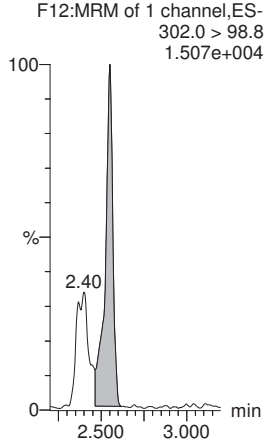
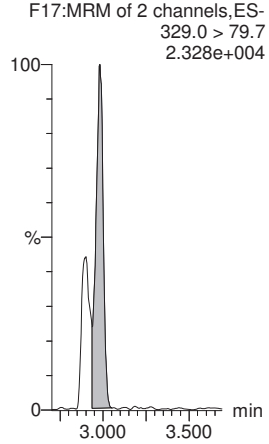


13C2-4:2 FTS-EIS



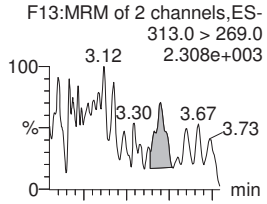
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

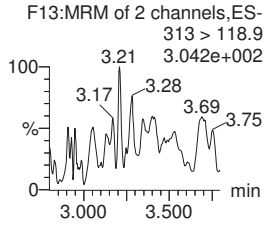
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

PFHxA





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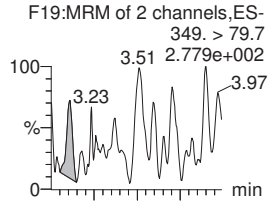
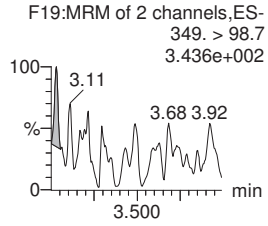
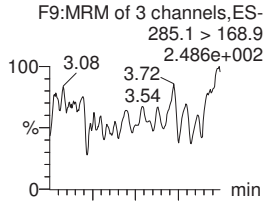
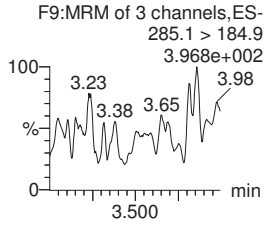


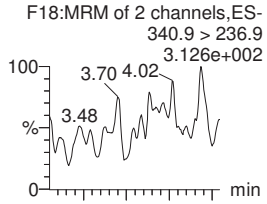


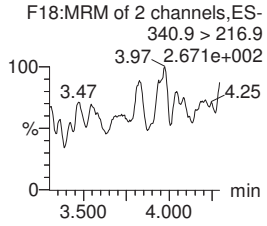
HFPO-DA





5:3 FTCA





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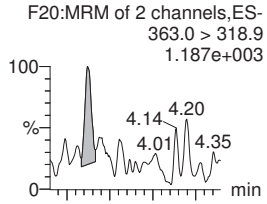
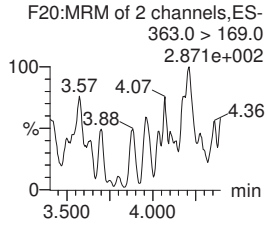
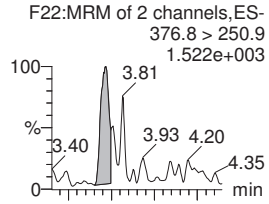
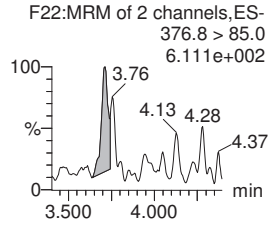




ADONA





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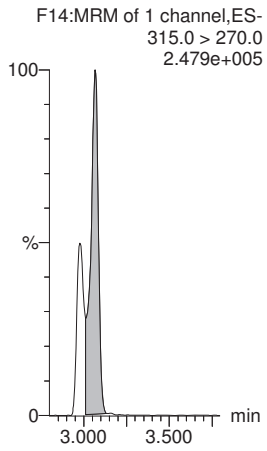

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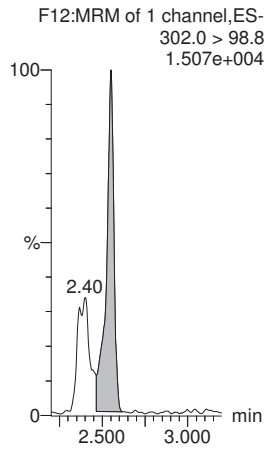

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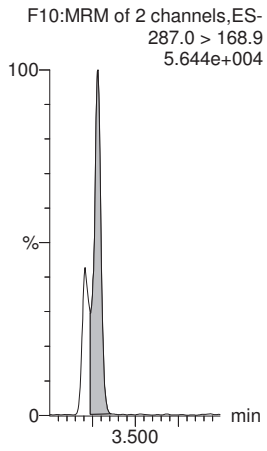
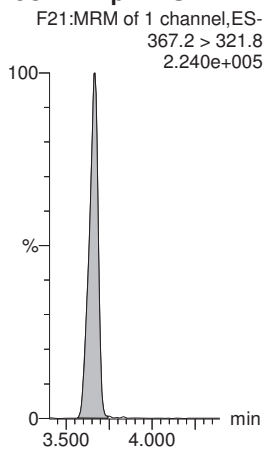


13C4-PFHpA-EIS



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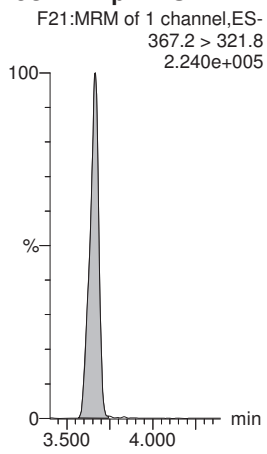

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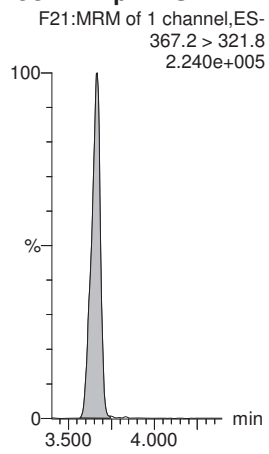


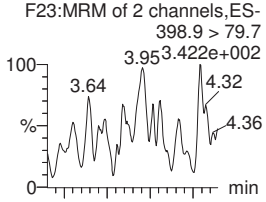
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

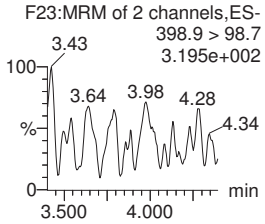
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

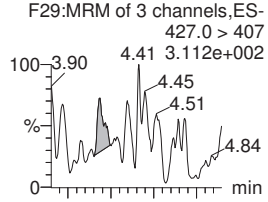
Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

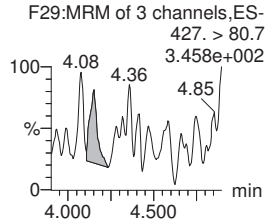
L-PFHxS



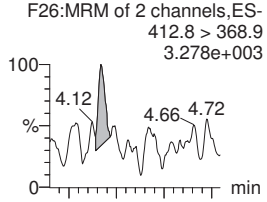


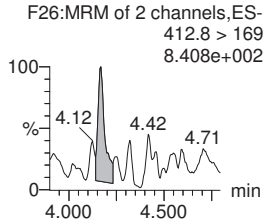
6:2 FTS





L-PFOA





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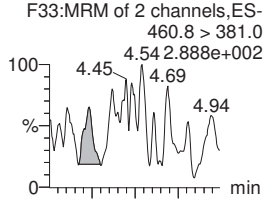

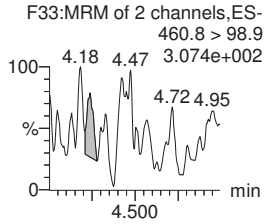

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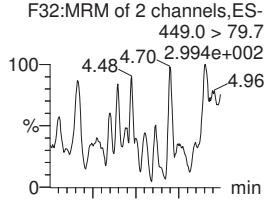
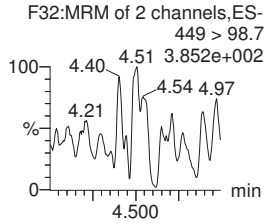
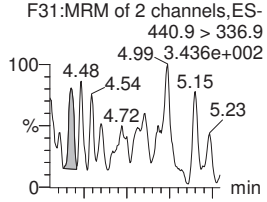
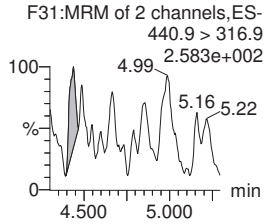


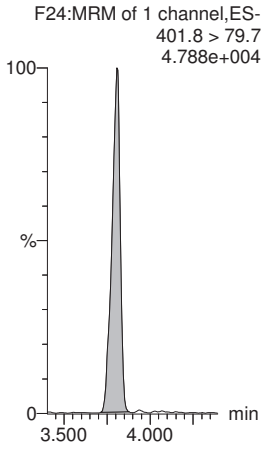


7:3 FTCA

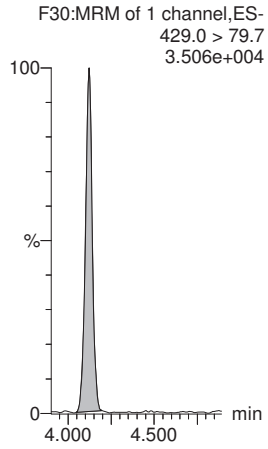




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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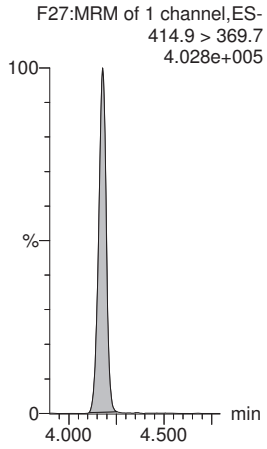

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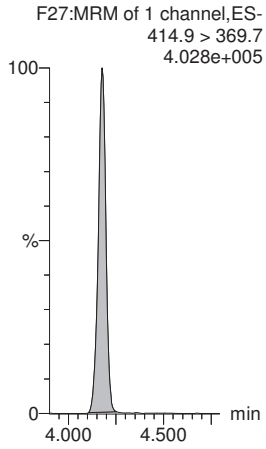
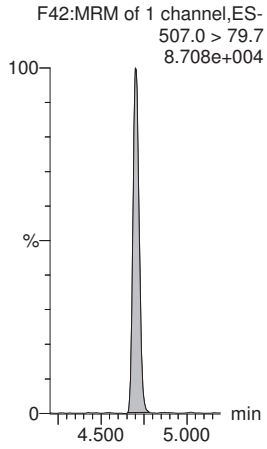
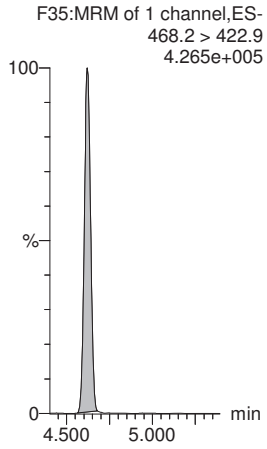


13C8-PFOS-EIS



13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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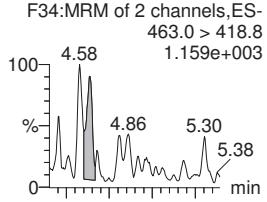

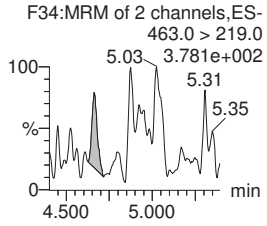

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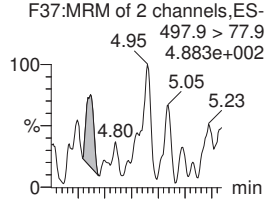

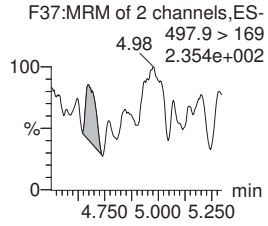

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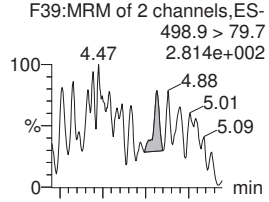

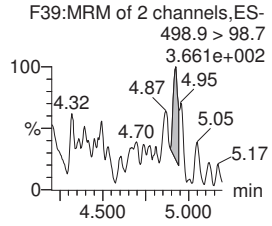

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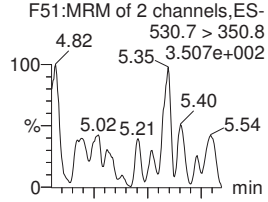

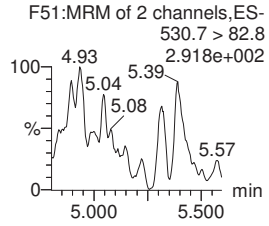

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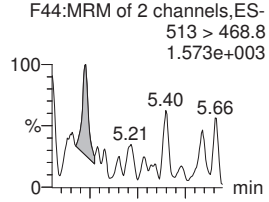
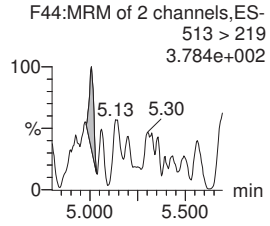
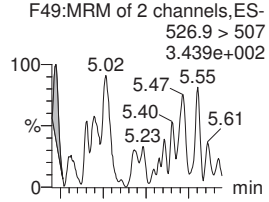
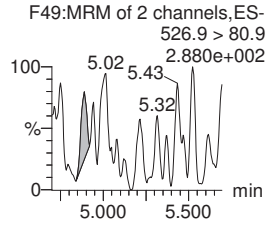




8:2 FTS





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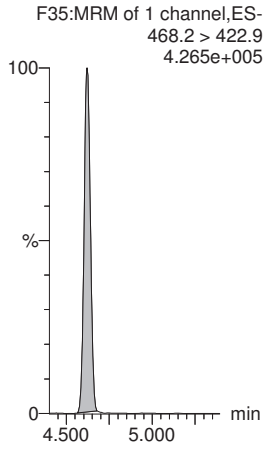
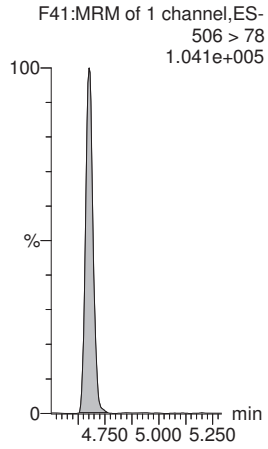


13C8-PFOSA-EIS



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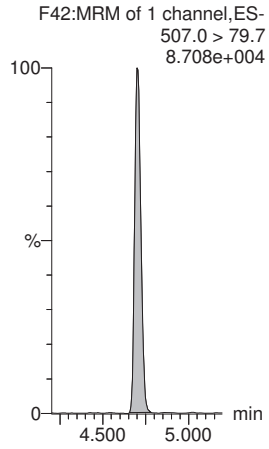

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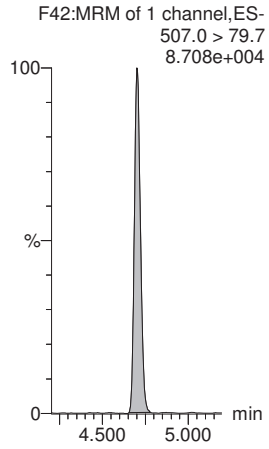

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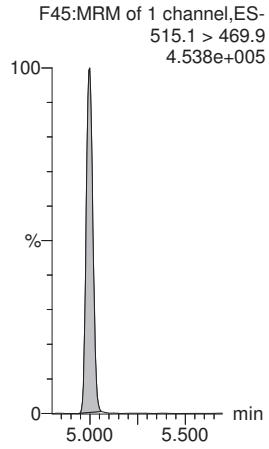
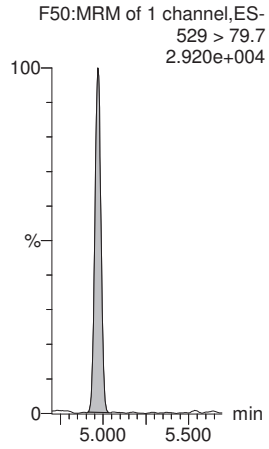


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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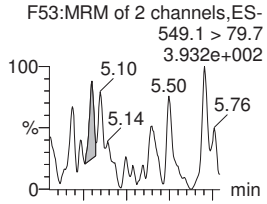

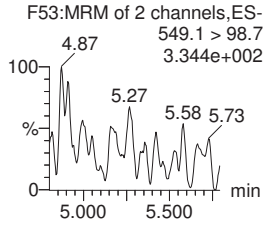

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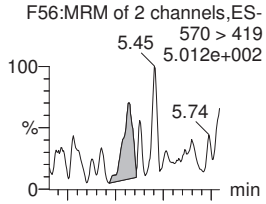

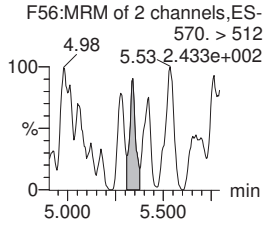

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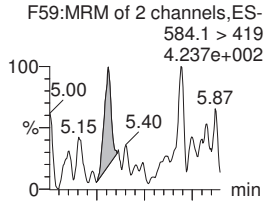

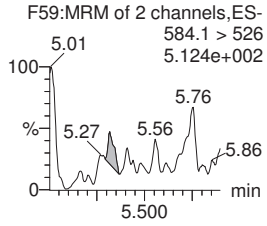

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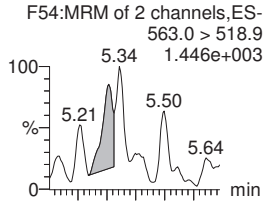

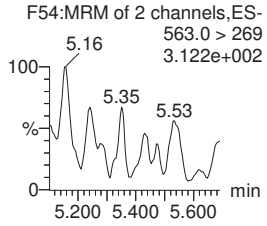

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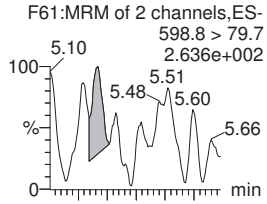

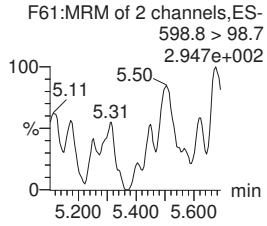

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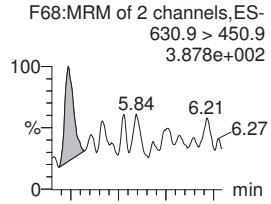

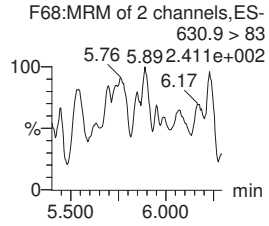

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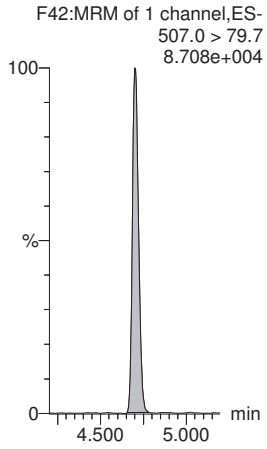

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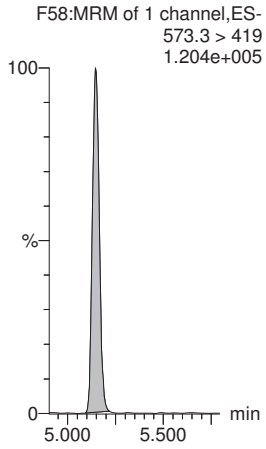

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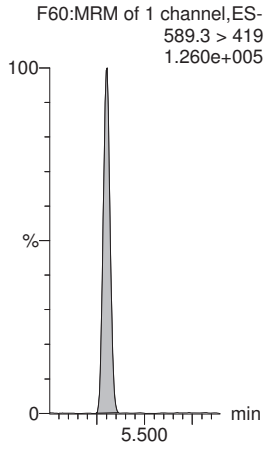

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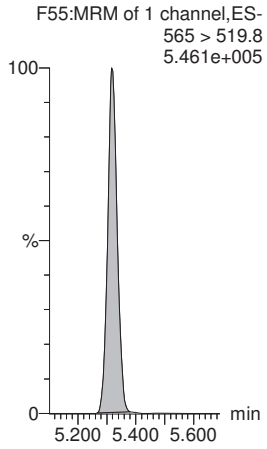

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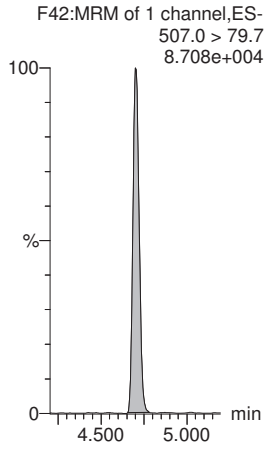

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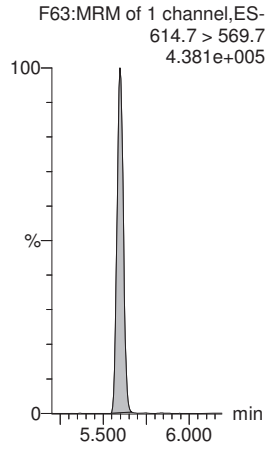


Quantify Sample Report **MassLynx V4.2 SCN977**

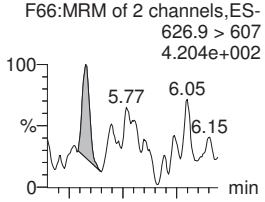
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

10:2 FTS



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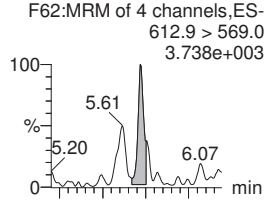

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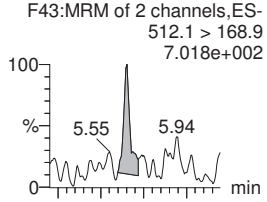

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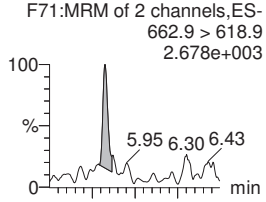
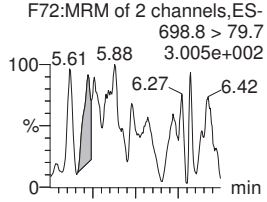


PFDoS



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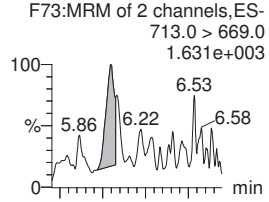
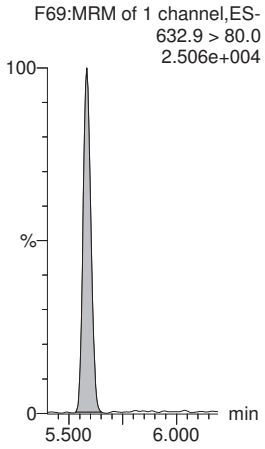


13C2-10:2 FTS-EIS



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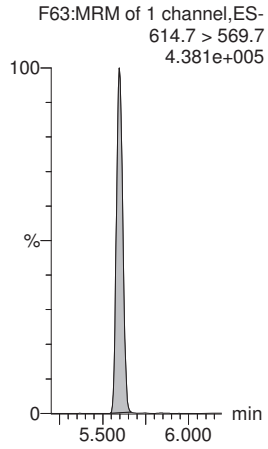
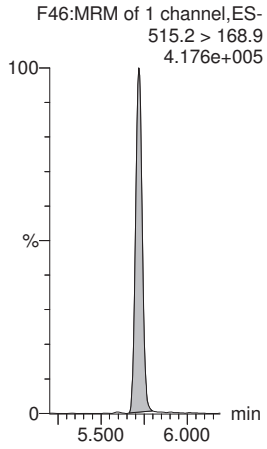


d3-N-MeFOSA-EIS



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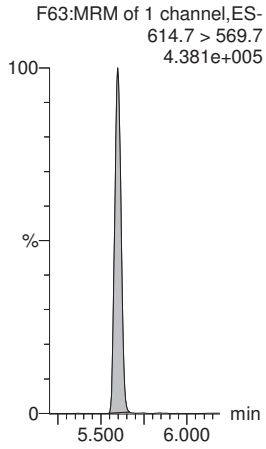

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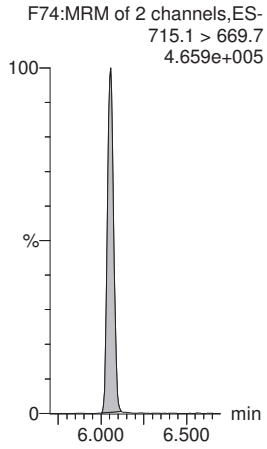

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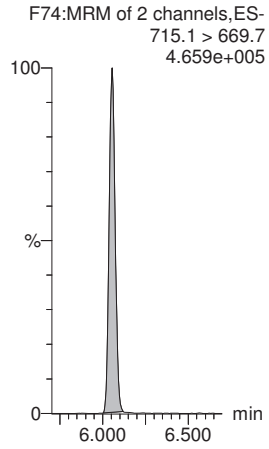

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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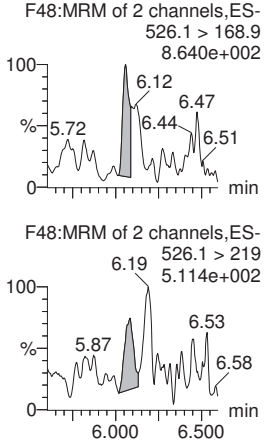

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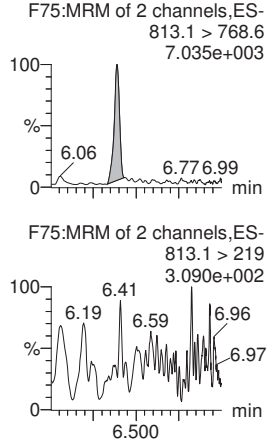

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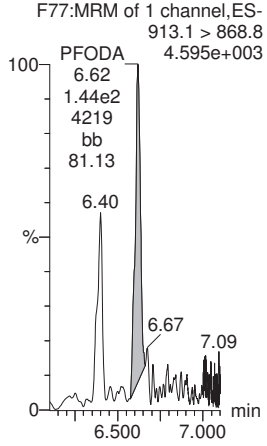

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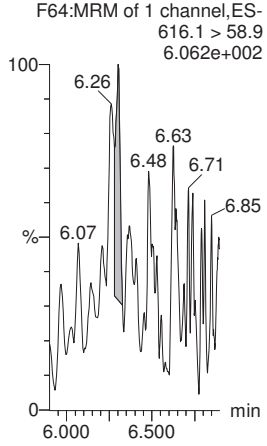

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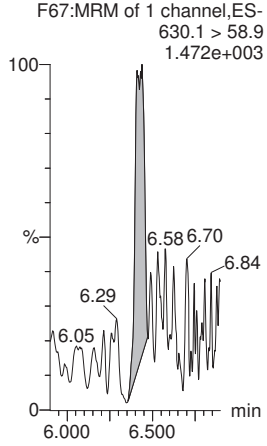

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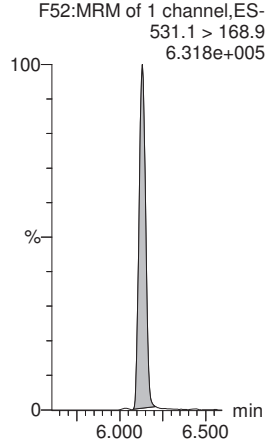

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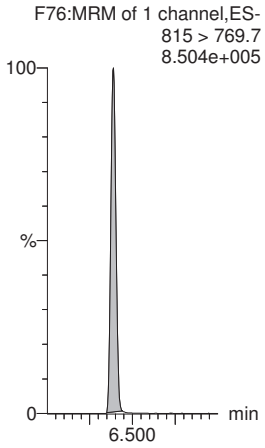

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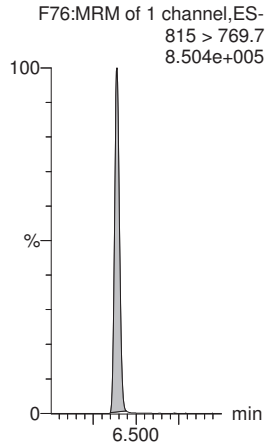

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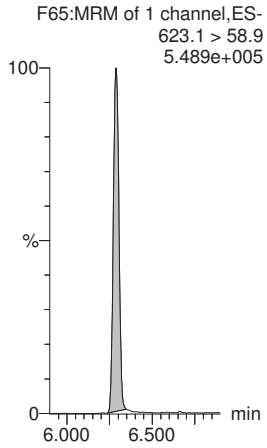

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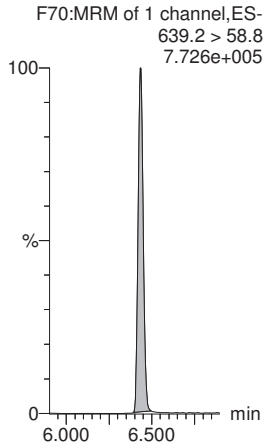

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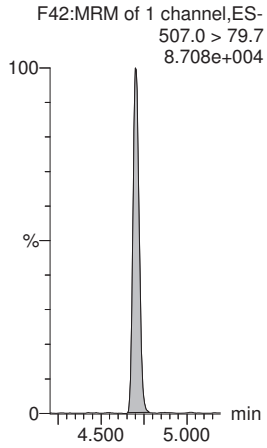

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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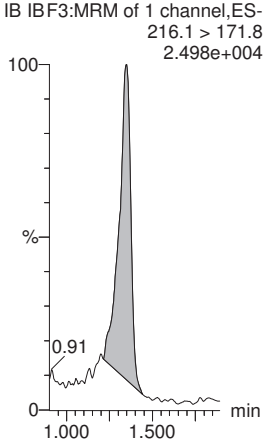

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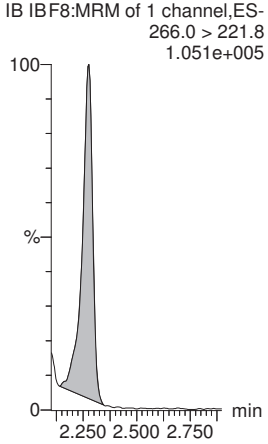

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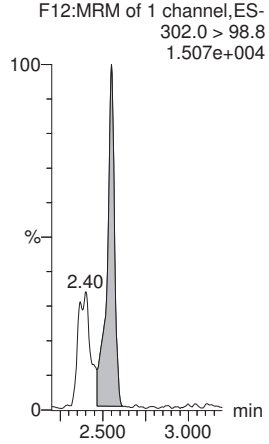

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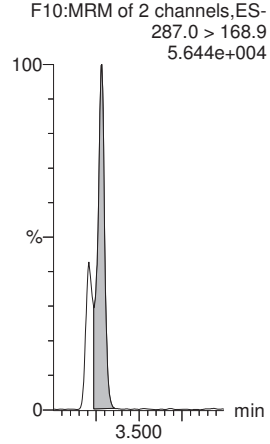

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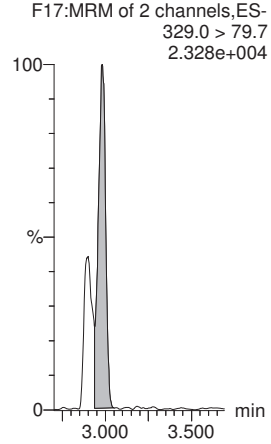

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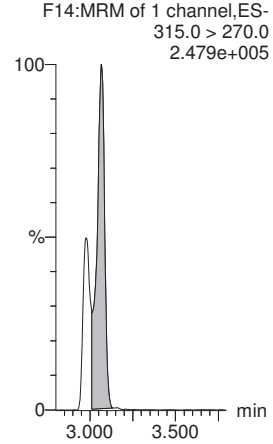

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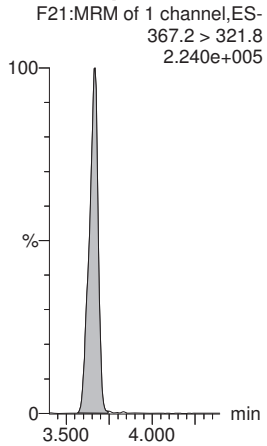

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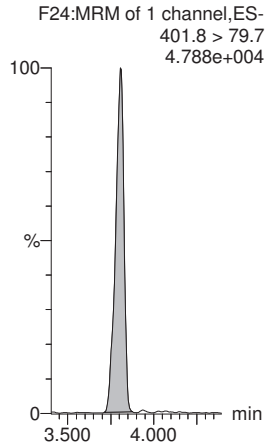

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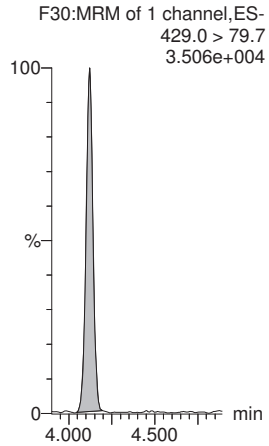

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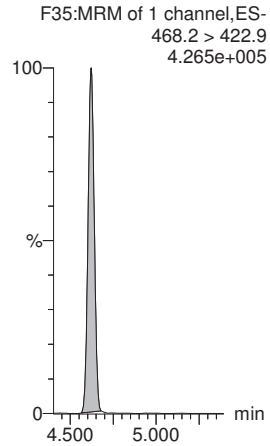

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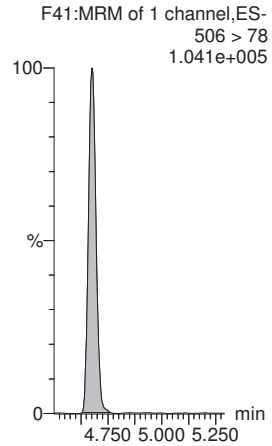

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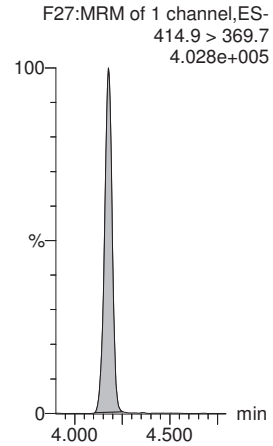

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
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Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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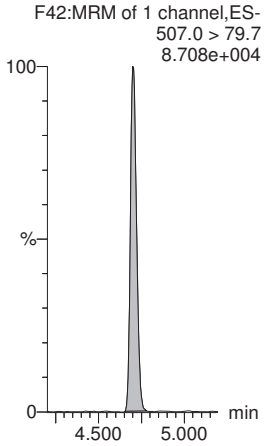

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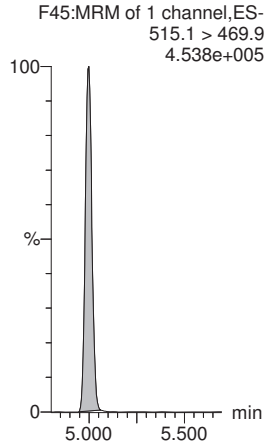

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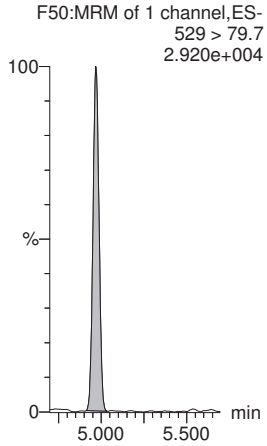

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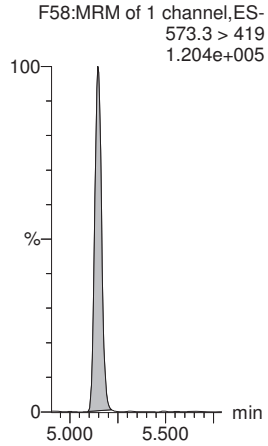

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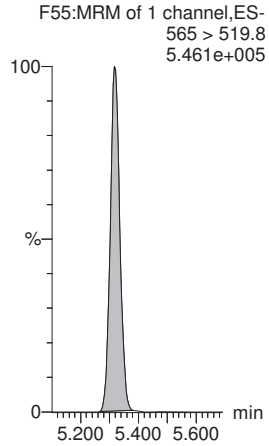

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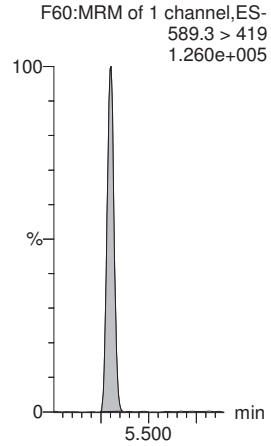

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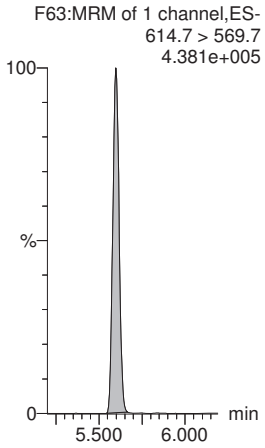

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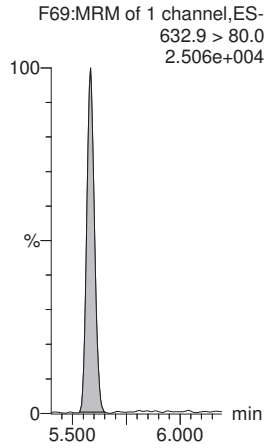

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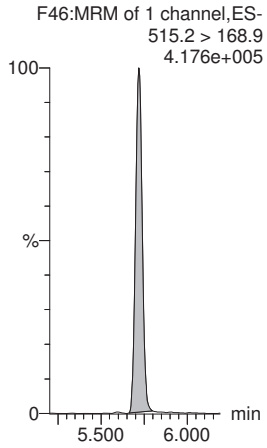

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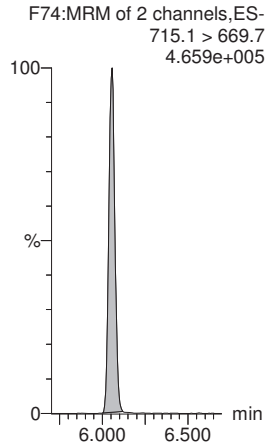

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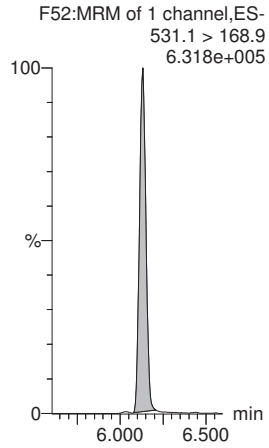

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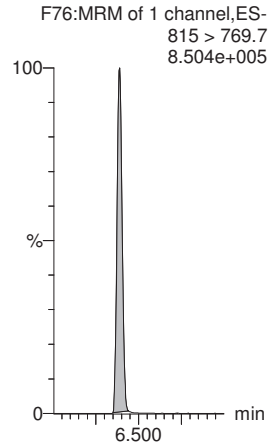

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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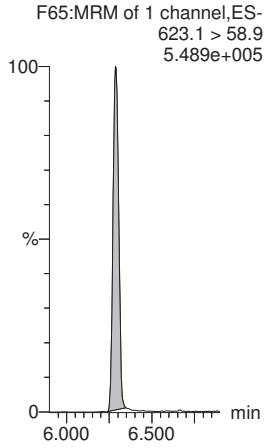
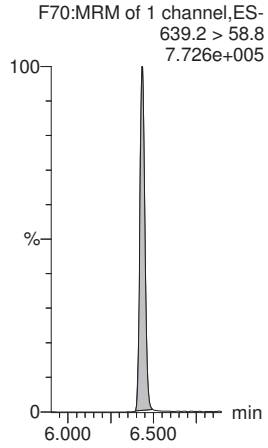


d9-N-EtFOSE-RSD



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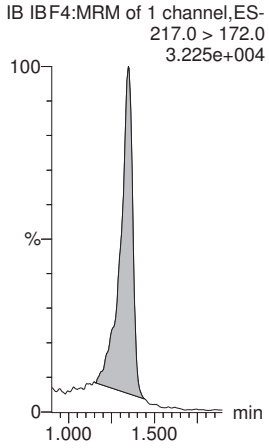

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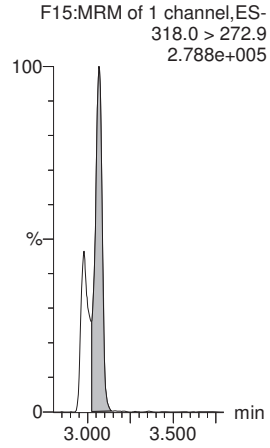

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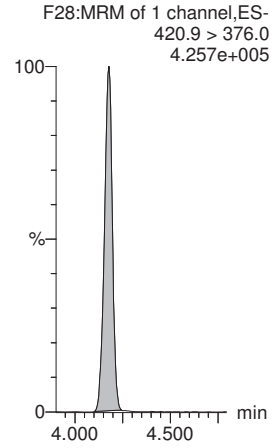

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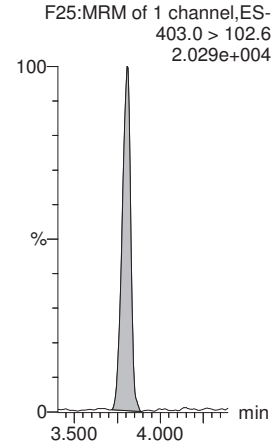

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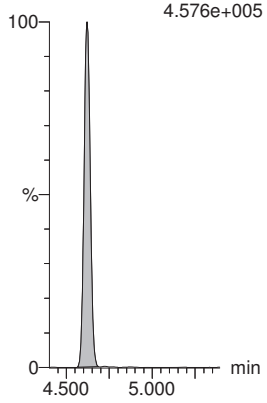

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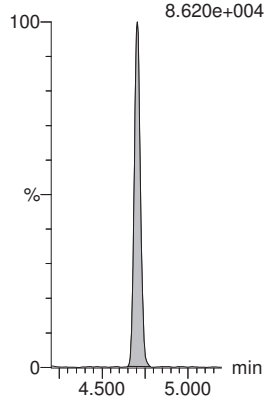

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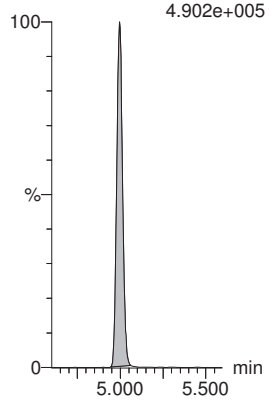

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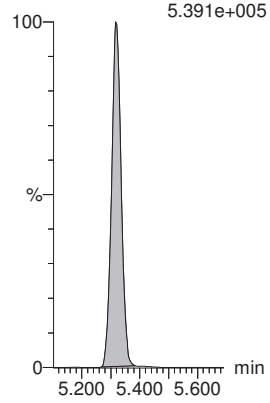

Quantify Sample Report **MassLynx V4.2 SCN977**

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2	2	PFPrS	248.9 > 79.7		740.304	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		5750.177	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	10.206	5750.177	1.00	2.30	0.022				NO		
5	5	PFBS	299.0 > 79.7		740.304	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		1126.016	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1782.178		1.00	1.35	1782.178	12.500	3.31	26.5	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	740.304		1.00	2.55	740.304	12.500	7.72	61.8	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	5750.177		1.00	2.28	5750.177	12.500	6.15	49.2	YES		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	5750.177		1.00	2.28	5750.177	12.500	6.15	49.2	YES		
11	51	13C3-PFBS-EIS	302.0 > 98.8	740.304		1.00	2.55	740.304	12.500	7.72	61.8	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1126.016		1.00	2.98	1126.016	12.500	8.48	67.9	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	83.727	12825.148	1.00	3.45	0.082				NO		YES
15	8	PFPeS	349.>79.7	6.891	740.304	1.00	3.11	0.116				NO	1.266	NO
16	9	HFPO-DA	285.1 > 168.9		2589.484	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		13378.766	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	41.243	13378.766	1.00	3.62	0.039				NO		YES
19	12	ADONA	376.8 > 250.9	79.272	13378.766	1.00	3.72	0.074				NO	3.419	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	12825.148		1.00	3.07	12825.148	12.500	8.10	64.8	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	740.304		1.00	2.55	740.304	12.500	7.72	61.8	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2589.484		1.00	3.28	2589.484	12.500	8.09	64.7	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	13378.766		1.00	3.67	13378.766	12.500	12.8	102.6	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	13378.766		1.00	3.67	13378.766	12.500	12.8	102.6	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	13378.766		1.00	3.67	13378.766	12.500	12.8	102.6	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7		2635.958	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407	5.891	1575.977	1.00	4.19	0.047				NO	0.559	YES
29	16	L-PFOA	412.8 > 368.9	85.615	18192.574	1.00	4.17	0.059				NO	2.641	NO
30	18	PFecHS	460.8 > 381.0	7.885	18192.574	1.00	4.23	0.005		0.0411		NO	1.152	YES
31	19	PFHpS	449.0 > 79.7		3555.921	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9	7.956	17837.137	1.00	4.42	0.006		0.170		NO	1.092	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2635.958		1.00	3.81	2635.958	12.500	12.5	100.0	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1575.977		1.00	4.12	1575.977	12.500	12.9	103.0	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	18192.574		1.00	4.18	18192.574	12.500	12.0	95.7	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	18192.574		1.00	4.18	18192.574	12.500	12.0	95.7	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
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Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	17837.137		1.00	4.62	17837.137	12.500	12.8	102.1	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	39.889	17837.137	1.00	4.64	0.028				NO	4.725	NO
41	22	PFOSA	497.9 > 77.9	11.734	4148.417	1.00	4.68	0.035				NO	2.003	YES
42	23	L-PFOS	498.9 > 79.7	5.464	3555.921	1.00	4.82	0.019		0.0469		NO	0.670	YES
43	25	9Cl-PF30NS	530.7 > 350.8		3555.921	1.00						NO		YES
44	26	PFDA	513 > 468.8	44.669	17897.027	1.00	4.98	0.031				NO	7.086	NO
45	27	8:2 FTS	526.9 > 507	6.191	1193.054	1.00	4.72	0.065		0.00832		NO	1.026	YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	17837.137		1.00	4.62	17837.137	12.500	12.8	102.1	NO		
47	67	13C8-PFOSA-EIS	506 > 78	4148.417		1.00	4.68	4148.417	12.500	13.2	105.3	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	17897.027		1.00	5.00	17897.027	12.500	11.4	91.3	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1193.054		1.00	4.97	1193.054	12.500	13.8	110.5	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	7.344	3555.921	1.00	5.05	0.026		0.0263		NO		YES
54	29	L-MeFOSAA	570 > 419	18.215	4927.294	1.00	5.32	0.046				NO	2.369	NO
55	31	L-EtFOSAA	584.1 > 419	14.159	5275.209	1.00	5.31	0.034		0.0922		NO	2.828	YES
56	33	PFUdA	563.0 > 518.9	41.826	20550.580	1.00	5.31	0.025				NO		YES
57	34	PFDS	598.8 > 79.7	7.570	3555.921	1.00	5.27	0.027		0.0196		NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9	15.881	18249.848	1.00	5.49	0.011				NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	4927.294		1.00	5.14	4927.294	12.500	11.7	93.7	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	5275.209		1.00	5.30	5275.209	12.500	11.1	88.5	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	20550.580		1.00	5.32	20550.580	12.500	11.3	90.8	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	18249.848		1.00	5.60	18249.848	12.500	12.1	97.1	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	12.419	1020.376	1.00	5.58	0.152		0.0846		NO		YES
67	37	PFDoA	612.9 > 569.0	140.161	18249.848	1.00	5.72	0.096		0.0593		NO	15.754	YES
68	38	N-MeFOSA	512.1 > 168.9	27.066	18102.660	1.00	5.65	0.223				NO	1.022	NO
69	39	PFTrDA	662.9 > 618.9	75.651	18249.848	1.00	5.82	0.052				NO		YES
70	40	PFDoS	698.8 > 79.7	9.840	18944.115	1.00	5.72	0.006				NO	1.325	NO
71	41	PFTeDA	713.0 > 669.0	75.225	18944.115	1.00	6.05	0.050				NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	1020.376		1.00	5.58	1020.376	12.500	14.3	114.0	NO		

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Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	18249.848		1.00	5.60	18249.848	12.500	12.1	97.1	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	18102.660		1.00	5.72	18102.660	149.200	143	95.9	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	18249.848		1.00	5.60	18249.848	12.500	12.1	97.1	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	18944.115		1.00	6.06	18944.115	12.500	12.0	96.2	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	18944.115		1.00	6.06	18944.115	12.500	12.0	96.2	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	33.433	27158.578	1.00	6.06	0.184		0.197		NO	1.862	NO
80	43	PFHxDA	813.1 > 768.6	242.782	28228.824	1.00	6.39	0.108				NO		YES
81	44	PFODA	913.1 > 868.8	143.659	28228.824	1.00	6.62	0.064		0.0383		NO		
82	45	N-MeFOSE	616.1 > 58.9	11.728	20182.398	1.00	6.30	0.087				NO		
83	46	N-EtFOSE	630.1 > 58.9	76.697	25715.291	1.00	6.44	0.445				NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	27158.578		1.00	6.13	27158.578	149.200	145	97.3	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	28228.824		1.00	6.39	28228.824	12.500	10.9	87.3	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	28228.824		1.00	6.39	28228.824	12.500	10.9	87.3	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	20182.398		1.00	6.29	20182.398	149.200	135	90.6	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	25715.291		1.00	6.43	25715.291	149.200	142	95.5	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1782.178	2511.324	1.00	1.35	8.871	12.500	11.0	88.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	5750.177	12951.961	1.00	2.28	5.550	12.500	9.55	76.4	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	740.304	1163.393	1.00	2.55	7.954	12.500	7.20	57.6	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2589.484	12951.961	1.00	3.28	2.499	12.500	12.5	100.3	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1126.016	1163.393	1.00	2.98	12.098	12.500	8.53	68.3	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	12825.148	12951.961	1.00	3.07	12.378	12.500	12.8	102.4	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	13378.766	12951.961	1.00	3.67	12.912	12.500	19.4	155.0	YES		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2635.958	1163.393	1.00	3.81	28.322	12.500	11.4	91.4	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1575.977	3581.447	1.00	4.12	5.500	12.500	12.6	100.6	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	17837.137	19049.443	1.00	4.62	11.705	12.500	12.6	100.6	NO		
101	68	13C8-PFOSA-RSD	506 > 78	4148.417	20450.689	1.00	4.68	2.536	12.500	13.3	106.3	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	18192.574	20122.490	1.00	4.18	11.301	12.500	12.2	97.8	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	3555.921	3581.447	1.00	4.70	12.411	12.500	13.4	106.9	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	17897.027	19159.363	1.00	5.00	11.676	12.500	11.9	94.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1193.054	3581.447	1.00	4.97	4.164	12.500	11.6	92.9	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	4927.294	20450.689	1.00	5.14	3.012	12.500	12.8	102.1	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	20550.580	20450.689	1.00	5.32	12.561	12.500	12.2	97.7	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
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Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	5275.209	20450.689	1.00	5.30	3.224	12.500	12.4	99.1	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	18249.848	19159.363	1.00	5.60	11.907	12.500	12.4	99.5	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1020.376	3581.447	1.00	5.58	3.561	12.500	12.6	100.5	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	18102.660	20450.689	1.00	5.72	11.065	149.200	144	96.7	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	18944.115	20450.689	1.00	6.06	11.579	12.500	12.2	97.8	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	27158.578	20450.689	1.00	6.13	16.600	149.200	151	100.9	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	28228.824	20450.689	1.00	6.39	17.254	12.500	11.9	95.2	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	20182.398	20450.689	1.00	6.29	12.336	149.200	141	94.2	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	25715.291	20450.689	1.00	6.43	15.718	149.200	151	101.0	NO		
119	99	13C4-PFBA	217.0 > 172.0	2511.324	2511.324	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	12951.961	12951.961	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	20122.490	20122.490	1.00	4.18	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1163.393	1163.393	1.00	3.81	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	19049.443	19049.443	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	3581.447	3581.447	1.00	4.70	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	19159.363	19159.363	1.00	4.99	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	20450.689	20450.689	1.00	5.32	12.500	12.500	12.5	100.0	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

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VJ 02/28/20

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	6542.472	7103.197	1.00	1.36	11.513	10.000	10.3	103.3	NO		
2	2	PFPrS	248.9 > 79.7	1405.641	1288.897	1.00	1.69	13.632	10.000	10.1	100.7	NO	2.433	NO
3	3	3:3 FTCA	240.9 > 176.9	881.614	12203.898	1.00	2.14	0.903	10.000	9.37	93.7	NO	3.527	NO
4	4	PFPeA	263.1 > 218.9	9381.208	12203.898	1.00	2.28	9.609	10.000	10.2	101.9	NO		
5	5	PFBS	299.0 > 79.7	2736.776	1288.897	1.00	2.56	26.542	10.000	11.4	113.5	NO	3.126	NO
6	6	4:2 FTS	327.0 > 307	1773.347	1687.263	1.00	2.99	13.138	10.000	10.1	101.2	NO	0.840	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	7103.197		1.00	1.36	7103.197	12.500	13.2	105.7	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	1288.897		1.00	2.56	1288.897	12.500	13.4	107.6	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	12203.898		1.00	2.29	12203.898	12.500	13.1	104.4	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	12203.898		1.00	2.29	12203.898	12.500	13.1	104.4	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	1288.897		1.00	2.56	1288.897	12.500	13.4	107.6	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1687.263		1.00	2.99	1687.263	12.500	12.7	101.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	15146.234	19435.004	1.00	3.08	9.742	10.000	11.0	110.5	NO	17.360	NO
15	8	PFPeS	349.>79.7	2606.779	1288.897	1.00	3.28	25.281	10.000	11.9	118.9	NO	2.403	NO
16	9	HFPO-DA	285.1 > 168.9	3416.012	4150.155	1.00	3.29	10.289	10.000	10.0	100.4	NO	2.560	NO
17	10	5:3 FTCA	340.9 > 236.9	2179.915	13919.492	1.00	3.62	1.958	10.000	9.64	96.4	NO	1.782	NO
18	11	PFHpA	363.0 > 318.9	13799.956	13919.492	1.00	3.68	12.393	10.000	10.5	105.2	NO	29.764	NO
19	12	ADONA	376.8 > 250.9	30065.371	13919.492	1.00	3.78	26.999	10.000	10.3	103.3	NO	4.205	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	19435.004		1.00	3.08	19435.004	12.500	12.3	98.2	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	1288.897		1.00	2.56	1288.897	12.500	13.4	107.6	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	4150.155		1.00	3.29	4150.155	12.500	13.0	103.7	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	13919.492		1.00	3.68	13919.492	12.500	13.3	106.7	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	13919.492		1.00	3.68	13919.492	12.500	13.3	106.7	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	13919.492		1.00	3.68	13919.492	12.500	13.3	106.7	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	2669.698	2899.895	1.00	3.82	11.508	10.000	10.3	103.2	NO	2.468	NO
28	15	6:2 FTS	427.0 > 407	2125.418	1613.023	1.00	4.13	16.471	10.000	10.5	104.8	NO	1.088	NO
29	16	L-PFOA	412.8 > 368.9	17675.496	18394.156	1.00	4.19	12.012	10.000	9.97	99.7	NO	3.183	NO
30	18	PFecHS	460.8 > 381.0	2433.403	18394.156	1.00	4.20	1.654	10.000	9.79	97.9	NO	0.474	NO
31	19	PFHpS	449.0 > 79.7	2850.051	3611.079	1.00	4.30	9.866	10.000	11.0	110.2	NO	2.336	NO
32	20	7:3 FTCA	440.9 > 336.9	2239.864	18367.922	1.00	4.62	1.524	10.000	8.61	86.1	NO	1.408	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2899.895		1.00	3.82	2899.895	12.500	13.7	110.0	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1613.023		1.00	4.13	1613.023	12.500	13.2	105.4	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	18394.156		1.00	4.19	18394.156	12.500	12.1	96.8	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	18394.156		1.00	4.19	18394.156	12.500	12.1	96.8	NO		

VJ 02/28/20 VJ 02/28/20

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

Last Altered: Saturday, February 29, 2020 11:58:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	3611.079		1.00	4.71	3611.079	12.500	13.2	105.9	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	18367.922		1.00	4.63	18367.922	12.500	13.1	105.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	17288.732	18367.922	1.00	4.63	11.766	10.000	11.0	110.4	NO	9.600	NO
41	22	PFOSA	497.9 > 77.9	2475.243	4223.220	1.00	4.68	7.326	10.000	9.04	90.4	NO	26.529	NO
42	23	L-PFOS	498.9 > 79.7	2589.372	3611.079	1.00	4.71	8.963	10.000	9.93	99.3	NO	2.251	NO
43	25	9Cl-PF30NS	530.7 > 350.8	2910.053	3611.079	1.00	4.93	10.073	10.000	10.7	107.1	NO	20.320	NO
44	26	PFDA	513 > 468.8	17390.492	18871.133	1.00	5.01	11.519	10.000	10.3	102.9	NO	9.956	NO
45	27	8:2 FTS	526.9 > 507	1497.589	1293.698	1.00	4.98	14.470	10.000	11.2	111.9	NO	2.142	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	18367.922		1.00	4.63	18367.922	12.500	13.1	105.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	4223.220		1.00	4.69	4223.220	12.500	13.4	107.2	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	3611.079		1.00	4.71	3611.079	12.500	13.2	105.9	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	3611.079		1.00	4.71	3611.079	12.500	13.2	105.9	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	18871.133		1.00	5.00	18871.133	12.500	12.0	96.2	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1293.698		1.00	4.97	1293.698	12.500	15.0	119.8	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	3059.089	3611.079	1.00	5.07	10.589	10.000	11.4	114.4	NO	2.486	NO
54	29	L-MeFOSAA	570 > 419	5207.444	5177.542	1.00	5.15	12.572	10.000	9.65	96.5	NO	2.025	NO
55	31	L-EtFOSAA	584.1 > 419	5021.958	6291.136	1.00	5.31	9.978	10.000	9.22	92.2	NO	1.208	NO
56	33	PFUdA	563.0 > 518.9	17344.533	19552.145	1.00	5.33	11.089	10.000	10.8	108.5	NO	25.382	NO
57	34	PFDS	598.8 > 79.7	2351.080	3611.079	1.00	5.37	8.138	10.000	10.0	100.3	NO	1.951	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	6901.873	17705.912	1.00	5.53	4.873	10.000	11.2	111.6	NO	21.171	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	3611.079		1.00	4.71	3611.079	12.500	13.2	105.9	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	5177.542		1.00	5.15	5177.542	12.500	12.3	98.5	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	6291.136		1.00	5.31	6291.136	12.500	13.2	105.5	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	19552.145		1.00	5.33	19552.145	12.500	10.8	86.4	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	3611.079		1.00	4.71	3611.079	12.500	13.2	105.9	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	17705.912		1.00	5.60	17705.912	12.500	11.8	94.2	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1589.728	1007.665	1.00	5.59	19.720	10.000	9.70	97.0	NO	0.974	NO
67	37	PFDoA	612.9 > 569.0	18337.980	17705.912	1.00	5.60	12.946	10.000	11.1	110.7	NO	12.933	NO
68	38	N-MeFOSA	512.1 > 168.9	6247.478	17712.273	1.00	5.70	52.626	50.000	49.9	99.9	NO	1.675	NO
69	39	PFTrDA	662.9 > 618.9	18656.301	17705.912	1.00	5.84	13.171	10.000	11.6	115.7	NO	54.975	NO
70	40	PFDoS	698.8 > 79.7	2641.079	19229.840	1.00	5.87	1.717	10.000	10.2	101.8	NO	3.420	NO
71	41	PFTeDA	713.0 > 669.0	16653.691	19229.840	1.00	6.06	10.825	10.000	10.3	103.2	NO	17.616	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	1007.665		1.00	5.58	1007.665	12.500	14.1	112.6	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

Last Altered: Saturday, February 29, 2020 11:58:58 Pacific Standard Time
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Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	17705.912		1.00	5.60	17705.912	12.500	11.8	94.2	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	17712.273		1.00	5.73	17712.273	149.200	140	93.8	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	17705.912		1.00	5.60	17705.912	12.500	11.8	94.2	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	19229.840		1.00	6.06	19229.840	12.500	12.2	97.7	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	19229.840		1.00	6.06	19229.840	12.500	12.2	97.7	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	9397.323	26331.963	1.00	6.12	53.246	50.000	52.4	104.9	NO	1.720	NO
80	43	PFHxDA	813.1 > 768.6	16191.178	28808.023	1.00	6.39	7.025	10.000	9.75	97.5	NO	173.583	NO
81	44	PFODA	913.1 > 868.8	24463.441	28808.023	1.00	6.62	10.615	10.000	10.7	106.9	NO		
82	45	N-MeFOSE	616.1 > 58.9	7284.161	20010.916	1.00	6.29	54.310	50.000	49.8	99.6	NO		
83	46	N-EtFOSE	630.1 > 58.9	8982.938	24807.305	1.00	6.44	54.027	50.000	55.5	111.0	NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	26331.963		1.00	6.14	26331.963	149.200	141	94.3	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	28808.023		1.00	6.39	28808.023	12.500	11.1	89.1	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	28808.023		1.00	6.39	28808.023	12.500	11.1	89.1	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	20010.916		1.00	6.28	20010.916	149.200	134	89.9	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	24807.305		1.00	6.43	24807.305	149.200	137	92.1	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	3611.079		1.00	4.71	3611.079	12.500	13.2	105.9	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	7095.897	8463.508	1.00	1.36	10.480	12.500	13.0	104.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	12203.898	19739.410	1.00	2.29	7.728	12.500	13.3	106.3	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	1288.897	1307.564	1.00	2.56	12.322	12.500	11.2	89.2	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	4150.155	19739.410	1.00	3.29	2.628	12.500	13.2	105.5	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1687.263	1307.564	1.00	2.99	16.130	12.500	11.4	91.0	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	19435.004	19739.410	1.00	3.08	12.307	12.500	12.7	101.9	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	13919.492	19739.410	1.00	3.68	8.815	12.500	13.2	105.8	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2899.895	1307.564	1.00	3.82	27.722	12.500	11.2	89.5	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1613.023	3735.711	1.00	4.13	5.397	12.500	12.3	98.7	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	18367.922	19305.029	1.00	4.63	11.893	12.500	12.8	102.2	NO		
101	68	13C8-PFOSA-RSD	506 > 78	4223.220	20282.775	1.00	4.69	2.603	12.500	13.6	109.1	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	18394.156	19161.742	1.00	4.19	11.999	12.500	13.0	103.8	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	3611.079	3735.711	1.00	4.71	12.083	12.500	13.0	104.1	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	18871.133	16679.197	1.00	5.00	14.143	12.500	14.4	114.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1293.698	3735.711	1.00	4.97	4.329	12.500	12.1	96.6	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	5177.542	20282.775	1.00	5.15	3.191	12.500	13.5	108.2	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	19552.145	20282.775	1.00	5.33	12.050	12.500	11.7	93.7	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

Last Altered: Saturday, February 29, 2020 11:58:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	6291.136	20282.775	1.00	5.31	3.877	12.500	14.9	119.2	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	17705.912	16679.197	1.00	5.60	13.269	12.500	13.9	110.9	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1007.665	3735.711	1.00	5.58	3.372	12.500	11.9	95.2	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	17712.273	20282.775	1.00	5.73	10.916	149.200	142	95.4	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	19229.840	20282.775	1.00	6.06	11.851	12.500	12.5	100.1	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	26331.963	20282.775	1.00	6.14	16.228	149.200	147	98.7	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	28808.023	20282.775	1.00	6.39	17.754	12.500	12.2	97.9	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	20010.916	20282.775	1.00	6.28	12.332	149.200	140	94.2	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	24807.305	20282.775	1.00	6.43	15.288	149.200	147	98.2	NO		
119	99	13C4-PFBA	217.0 > 172.0	8463.508	8463.508	1.00	1.36	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	19739.410	19739.410	1.00	3.08	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	19161.742	19161.742	1.00	4.19	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1307.564	1307.564	1.00	3.82	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	19305.029	19305.029	1.00	4.63	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	3735.711	3735.711	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	16679.197	16679.197	1.00	5.01	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	20282.775	20282.775	1.00	5.32	12.500	12.500	12.5	100.0	NO		

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 12:21:43 Pacific Standard Time
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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200228P2-1	IPA	28-Feb-20	12:45:37
2	2	200228P2-2	IPA	28-Feb-20	12:56:16
3	3	200228P2-3	ST200228P2-1 PFC CS-2 20B1102	28-Feb-20	13:06:47
4	4	200228P2-4	ST200228P2-2 PFC CS-1 20B1103	28-Feb-20	13:17:15
5	5	200228P2-5	ST200228P2-3 PFC CS0 20B1104	28-Feb-20	13:27:47
6	6	200228P2-6	ST200228P2-4 PFC CS1 20B1105	28-Feb-20	13:38:16
7	7	200228P2-7	ST200228P2-5 PFC CS2 20B1106	28-Feb-20	13:48:48
8	8	200228P2-8	ST200228P2-6 PFC CS3 20B1107	28-Feb-20	13:59:16
9	9	200228P2-9	ST200228P2-7 PFC CS4 20B1108	28-Feb-20	14:09:48
10	10	200228P2-10	ST200228P2-8 PFC CS5 20B1109	28-Feb-20	14:20:17
11	11	200228P2-11	ST200228P2-9 PFC CS6 20B1110	28-Feb-20	14:30:48
12	12	200228P2-12	ST200228P2-10 PFC CS7 20B1111	28-Feb-20	14:41:18
13	13	200228P2-13	IB	28-Feb-20	14:51:49
14	14	200228P2-14	ICV200228P2-1 PFC ICV 20B1112	28-Feb-20	15:02:18
15	15	200228P2-15	IB	28-Feb-20	15:12:50
16	16	200228P2-16	2000328-04 W-SB01-20200213 0.26272	28-Feb-20	16:50:41
17	17	200228P2-17	2000328-05 EB13-20200213 0.2557	28-Feb-20	17:01:23
18	18	200228P2-18	2000328-04@20X W-SB01-20200213 0.26272	28-Feb-20	17:11:52
19	19	200228P2-19	IB	28-Feb-20	17:22:24
20	20	200228P2-20	B0B0233-BLK1 Method Blank 2	28-Feb-20	17:32:54
21	21	200228P2-21	B0B0233-BS1 OPR 2	28-Feb-20	17:43:23
22	22	200228P2-22	B0B0233-MS1 Matrix Spike 2.11	28-Feb-20	17:53:55
23	23	200228P2-23	B0B0233-MSD1 Matrix Spike Dup 2.1	28-Feb-20	18:04:25
24	24	200228P2-24	2000386-01 SRS-70-5' 2.2	28-Feb-20	18:14:54
25	25	200228P2-25	2000386-02 SRS-70-10' 2.16	28-Feb-20	18:25:25
26	26	200228P2-26	2000386-03 SRS-65-5' 2.22	28-Feb-20	18:35:55
27	27	200228P2-27	2000386-04 SRS-65-10' 2.16	28-Feb-20	18:46:26
28	28	200228P2-28	2000386-05 SRS-60-5' 2.19	28-Feb-20	18:56:57
29	29	200228P2-29	2000386-06 SRS-60-10 2.12	28-Feb-20	19:07:25
30	30	200228P2-30	2000386-07 SRS-68-5 2.18	28-Feb-20	19:17:57
31	31	200228P2-31	IB	28-Feb-20	19:28:26
32	32	200228P2-32	ST200228P2-11 PFC CS3 20B1107	28-Feb-20	19:38:56

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 12:21:43 Pacific Standard Time
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Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
33	33	200228P2-33	2000386-08 SRS-69-5 2.22	28-Feb-20	19:49:27
34	34	200228P2-34	2000391-01 SRS-58-5' 2.18	28-Feb-20	19:59:58
35	35	200228P2-35	2000391-02 SRS-58-10' 2.19	28-Feb-20	20:10:27
36	36	200228P2-36	2000391-03 SRS-59-5 2.28	28-Feb-20	20:20:59
37	37	200228P2-37	2000391-04 SRS-59-10' 2.1	28-Feb-20	20:31:30
38	38	200228P2-38	2000391-05 SRS-62-10' 2.17	28-Feb-20	20:41:58
39	39	200228P2-39	2000391-06 SRS-61-5' 2.29	28-Feb-20	20:52:30
40	40	200228P2-40	2000391-07 SRS-61-10 2.23	28-Feb-20	21:02:59
41	41	200228P2-41	2000391-08 SRS-63-10 2.48	28-Feb-20	21:13:30
42	42	200228P2-42	2000391-09 SRS-71-5 2.23	28-Feb-20	21:24:01
43	43	200228P2-43	ST200228P2-12 PFC CS3 20B1107	28-Feb-20	21:34:30
44	44	200228P2-44	IB	28-Feb-20	21:45:01
45	45	200228P2-45	B0B0155-BLK1 Method Blank 0.25	28-Feb-20	21:55:30
46	46	200228P2-46	B0B0155-BS1 OPR 0.25	28-Feb-20	22:06:02
47	47	200228P2-47	B0B0155-BSD1 LCSD 0.25	28-Feb-20	22:16:32
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49	49	200228P2-49	2000333-02@5X 18-GW-18BGMP10E-20200217 0.25617	28-Feb-20	22:37:33
50	50	200228P2-50	2000333-03@5X 18-GW-18BGMP10F-20200217 0.24799	28-Feb-20	22:48:01
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52	52	200228P2-52	2000333-05@5X 24-GW-18BGMP08D-20200217 0.25341	28-Feb-20	23:09:03
53	53	200228P2-53	2000333-06@5X 24-GW-18BGMP08E-20200217 0.25283	28-Feb-20	23:19:34
54	54	200228P2-54	2000333-07@5X 24-GW-18PS1-20200217 0.24759	28-Feb-20	23:30:04
55	55	200228P2-55	2000333-08@5X DUP01-20200217 0.24854	28-Feb-20	23:40:33
56	56	200228P2-56	B0B0160-BLK1 Method Blank 0.25	28-Feb-20	23:51:05
57	57	200228P2-57	B0B0160-BS1 OPR 0.25	29-Feb-20	00:01:35
58	58	200228P2-58	B0B0160-BSD1 LCSD 0.25	29-Feb-20	00:12:04
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62	62	200228P2-62	IB	29-Feb-20	00:54:07
63	63	200228P2-63	2000346-02@5X 18 -GW-18BGMW19C-20200218 0.25031	29-Feb-20	01:04:35
64	64	200228P2-64	2000346-03@5X 18-GW-18IDP2-D-20200218 0.25907	29-Feb-20	01:15:08
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66	66	200228P2-66	2000346-05@5X 18-GW-18DW450-20200218 0.24811	29-Feb-20	01:36:08
67	67	200228P2-67	IB	29-Feb-20	01:46:38
68	68	200228P2-68	2000353-01 S9MW30-20Q1 0.25885	29-Feb-20	01:57:07

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 12:21:43 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:22:53 Pacific Standard Time

Compound name: PFBA

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71	71	200228P2-71	2000353-10@15X S9MW68L1-20Q1 0.25186	29-Feb-20	02:28:38
72	72	200228P2-72	IB	29-Feb-20	02:39:10
73	73	200228P2-73	2000353-11 S9MW71L9-20Q1 0.252	29-Feb-20	02:49:38
74	74	200228P2-74	2000354-06@10X S9SMW2A-20Q1 0.23864	29-Feb-20	03:00:10
75	75	200228P2-75	ST200228P2-14 PFC CS3 20B1107	29-Feb-20	03:10:41
76	76	200228P2-76	IB	29-Feb-20	03:21:09
77	77	200228P2-77	2000354-07 S9SMW10-20Q1 0.24862	29-Feb-20	03:31:42
78	78	200228P2-78	2000354-08@5X S9MW15-20Q1 0.25813	29-Feb-20	03:42:12
79	79	200228P2-79	IB	29-Feb-20	03:52:41
80	80	200228P2-80	2000354-09 S9MW61L1-20Q1 0.25585	29-Feb-20	04:03:12
81	81	200228P2-81	2000354-10 91MW10-20Q1 0.24621	29-Feb-20	04:13:43
82	82	200228P2-82	B0B0137-MS1@5X Matrix Spike 0.24799	29-Feb-20	04:24:13
83	83	200228P2-83	B0B0137-MSD1@5X Matrix Spike Dup 0.24718	29-Feb-20	04:34:42
84	84	200228P2-84	2000330-04@5X DUP04-20200214 0.25435	29-Feb-20	04:45:13
85	85	200228P2-85	ST200228P2-15 PFC CS3 20B1107	29-Feb-20	04:55:43
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Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

Last Altered: Saturday, February 29, 2020 11:58:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

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Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

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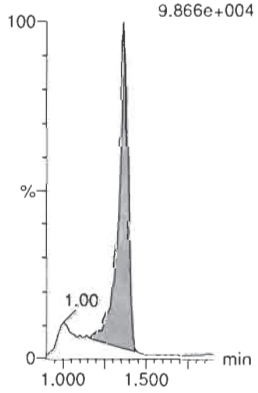

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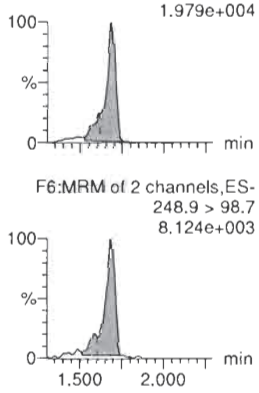

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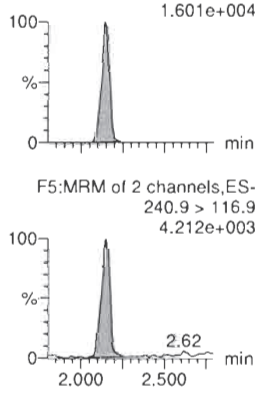

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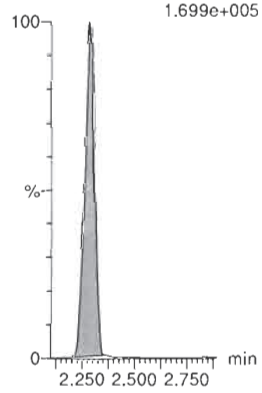

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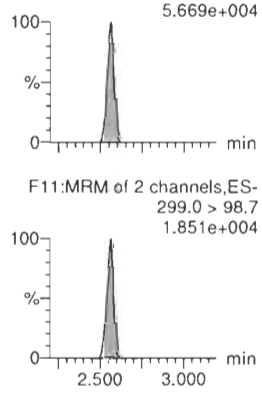

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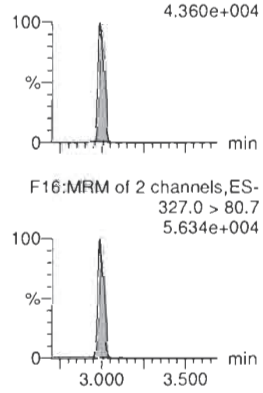

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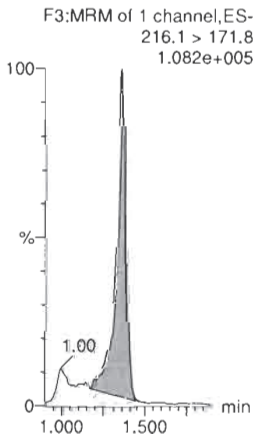

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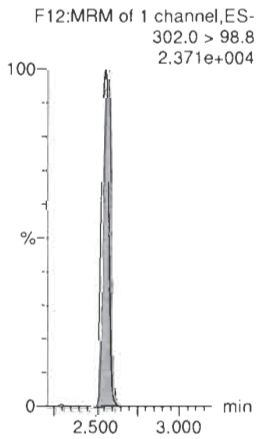

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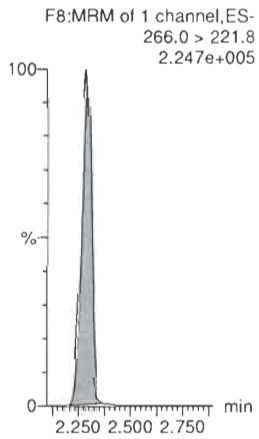

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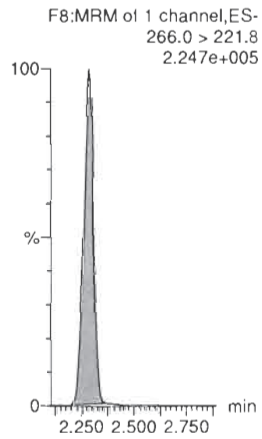

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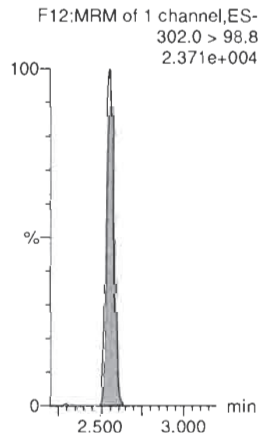

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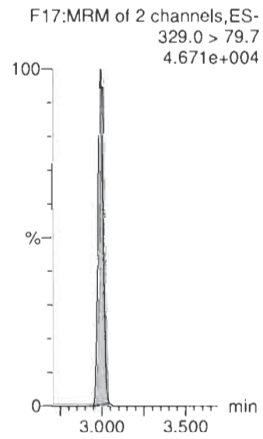

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

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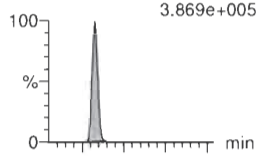
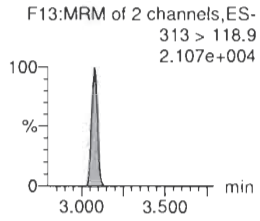
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

PFHxA





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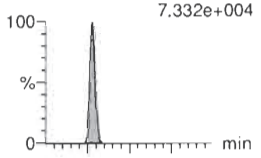

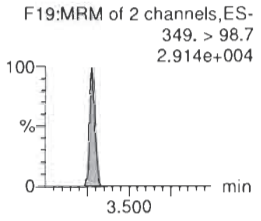

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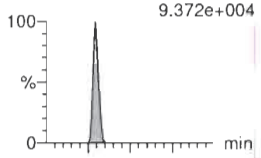

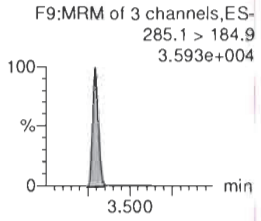

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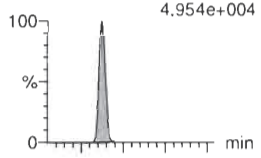

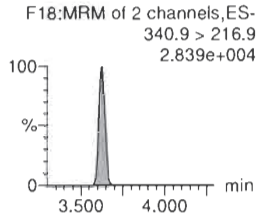

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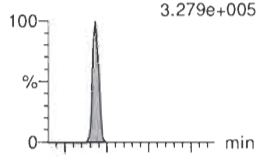

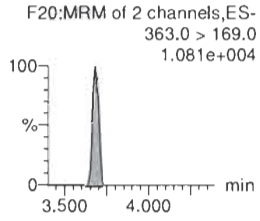

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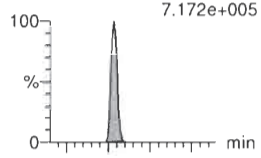

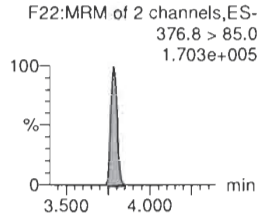

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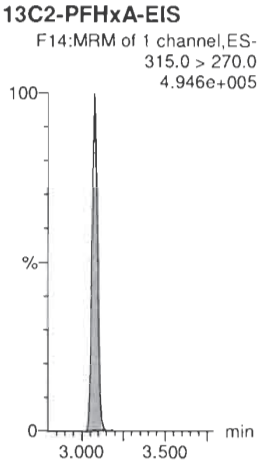

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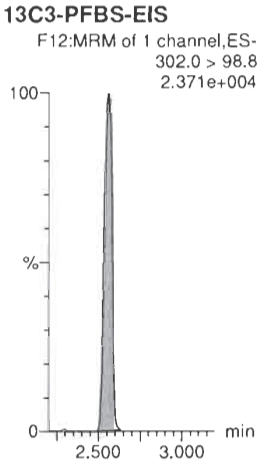

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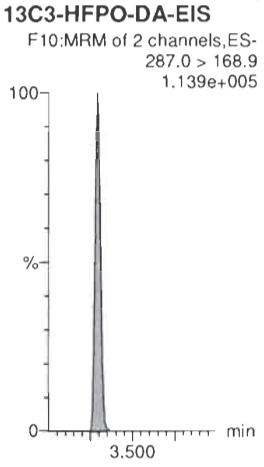

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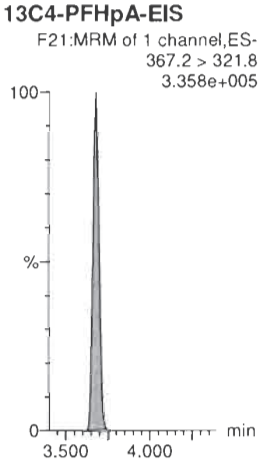

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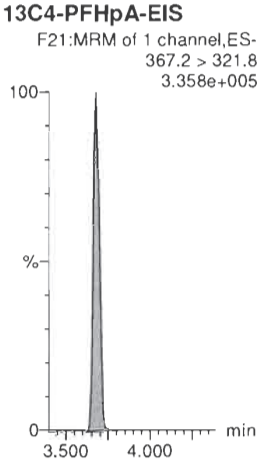

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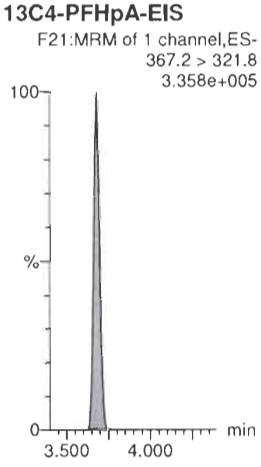

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

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Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

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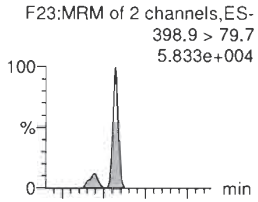

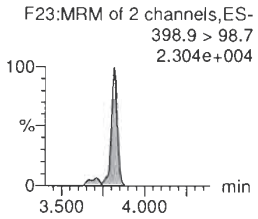

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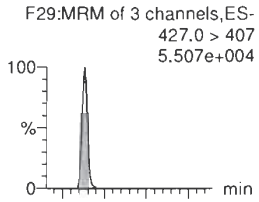

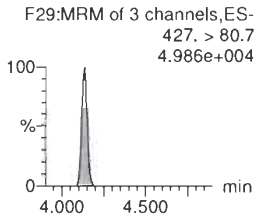

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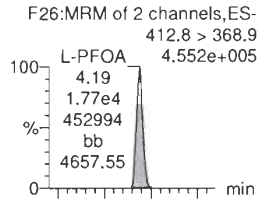

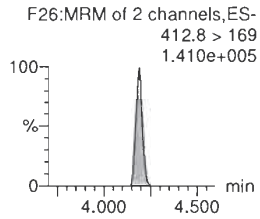

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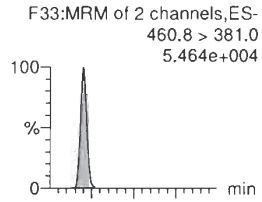

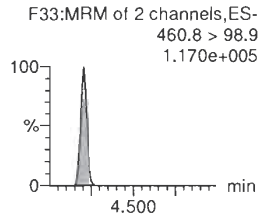

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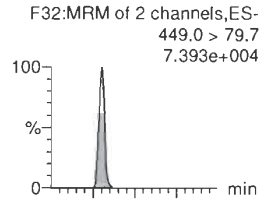

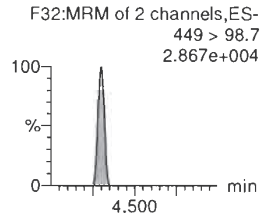

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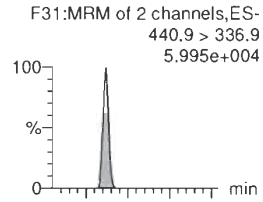

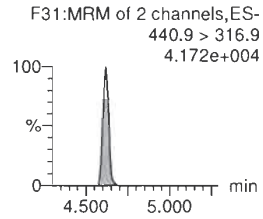

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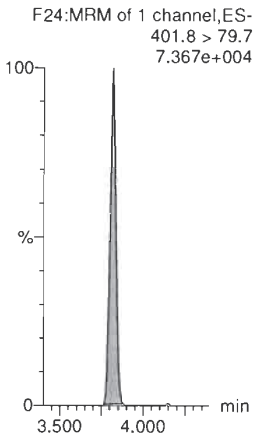

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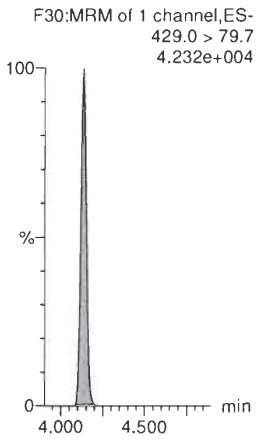

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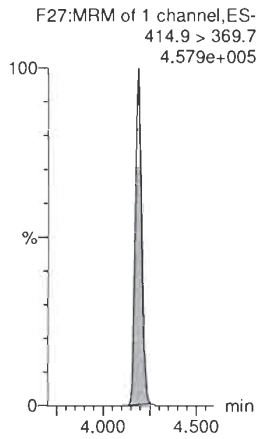

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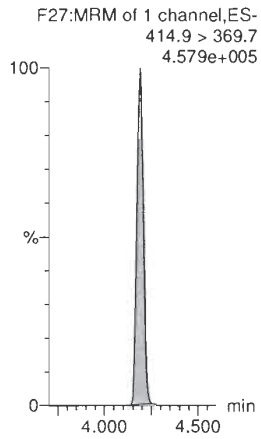

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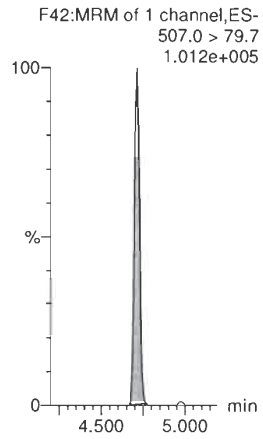
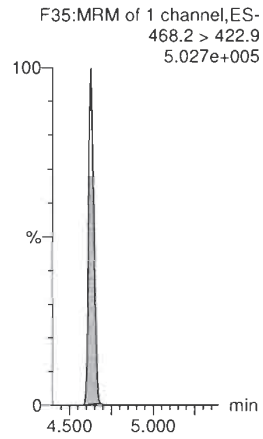


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

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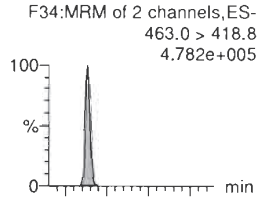

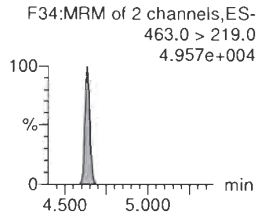

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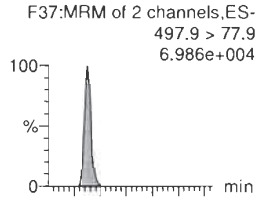

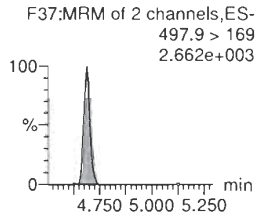

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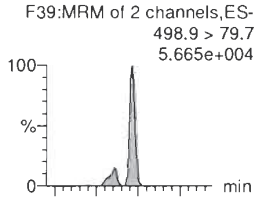

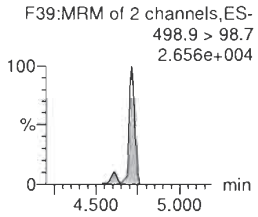

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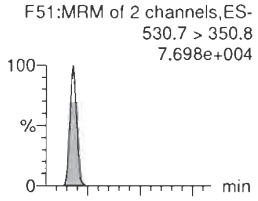

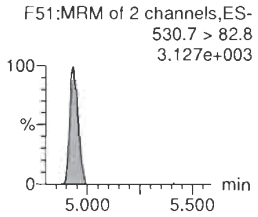

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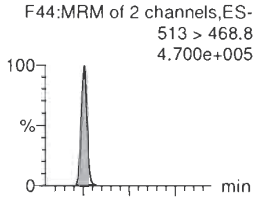

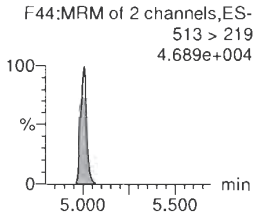

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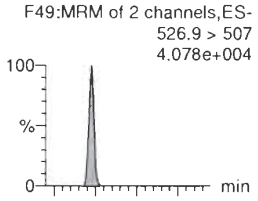

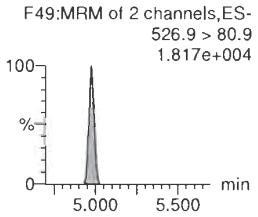

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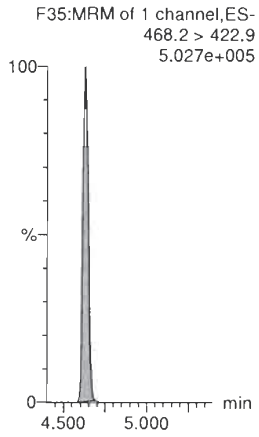

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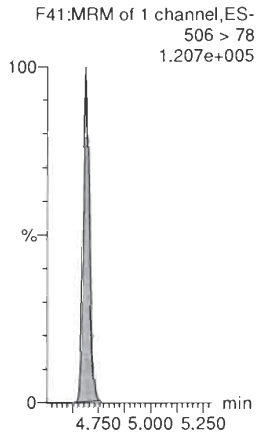

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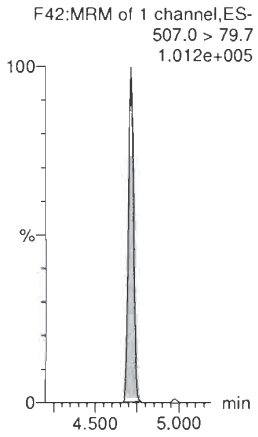

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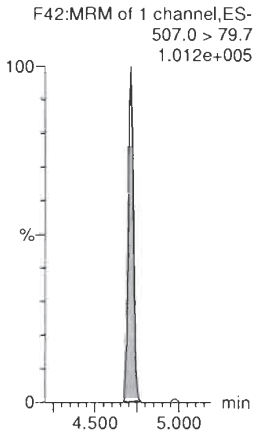

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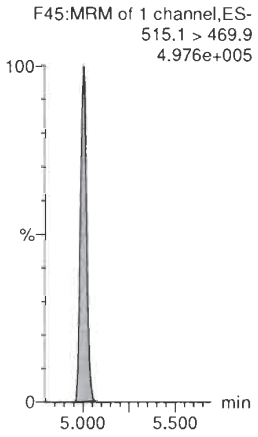

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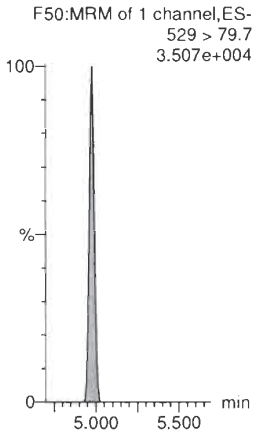

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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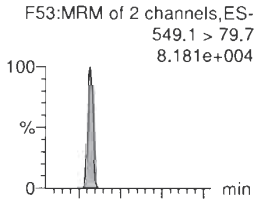

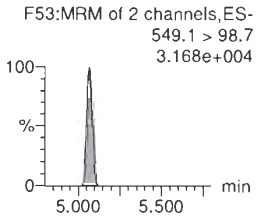

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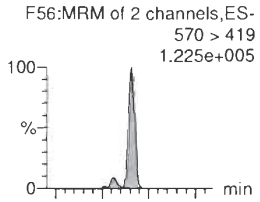

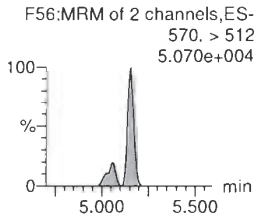

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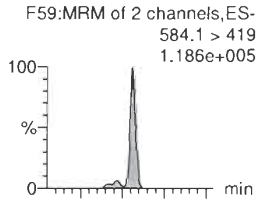

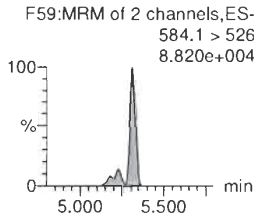

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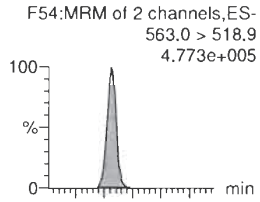

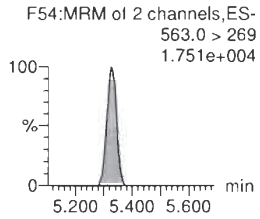

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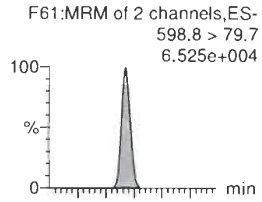

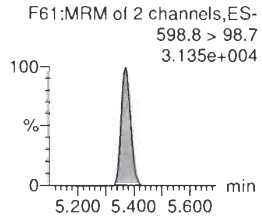

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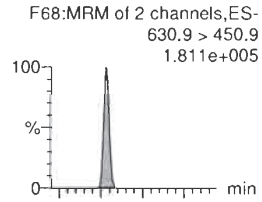

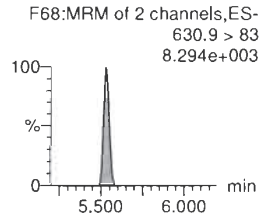

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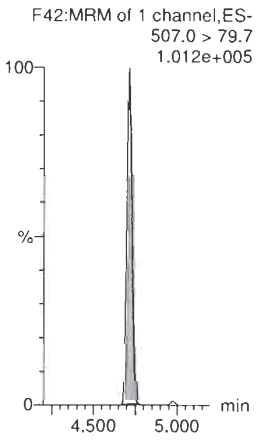

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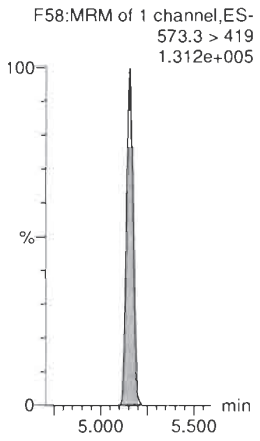

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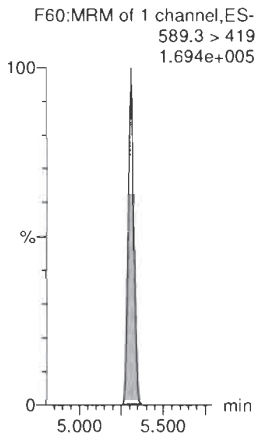

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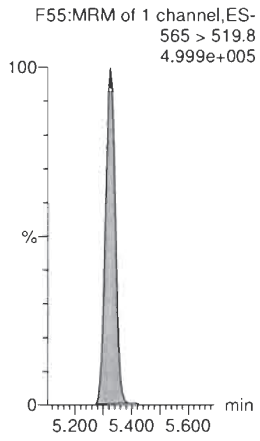

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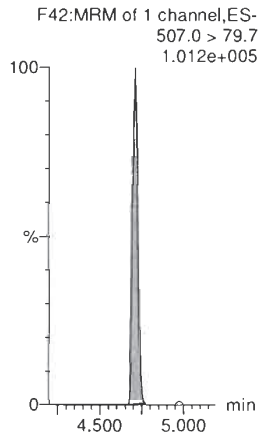

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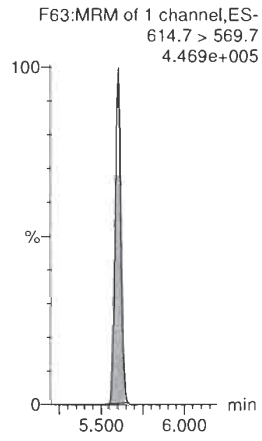

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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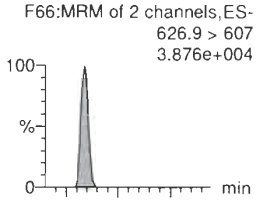
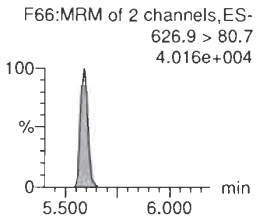
Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

10:2 FTS





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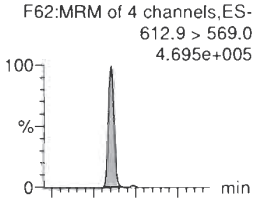

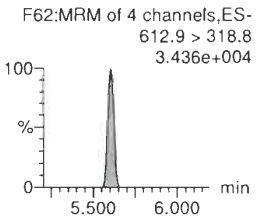

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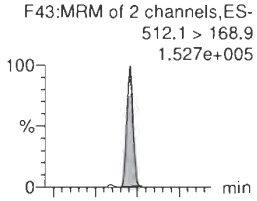

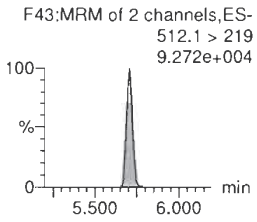

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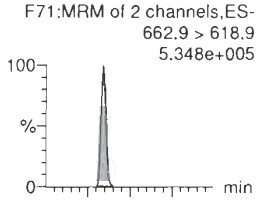
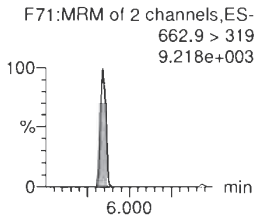
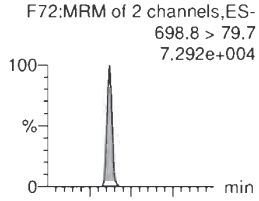
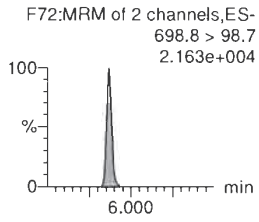


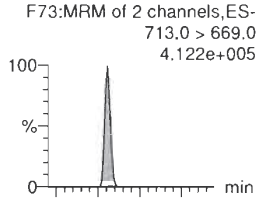


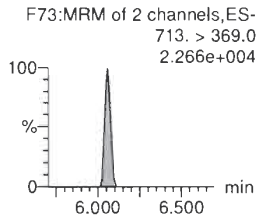
PFDoS



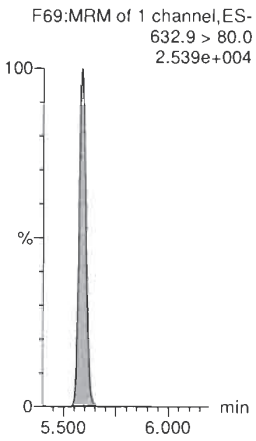


PFTeDA

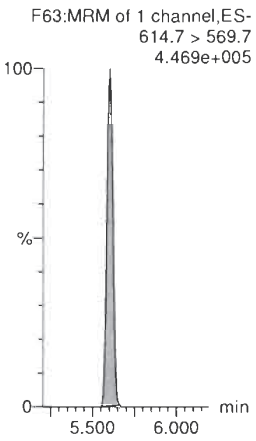




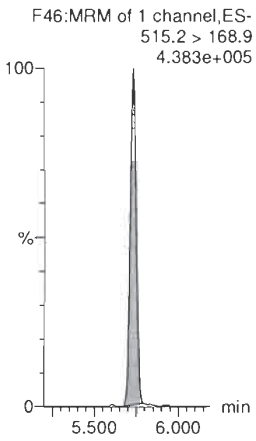
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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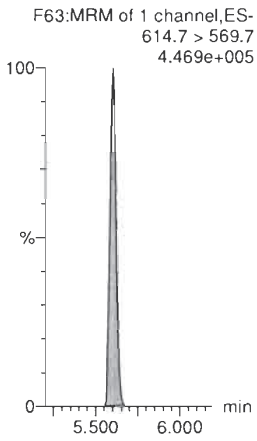

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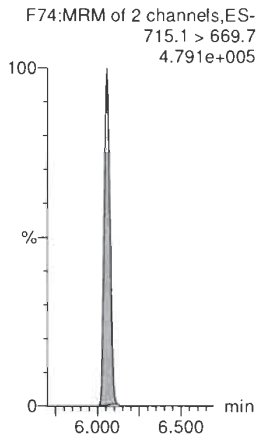

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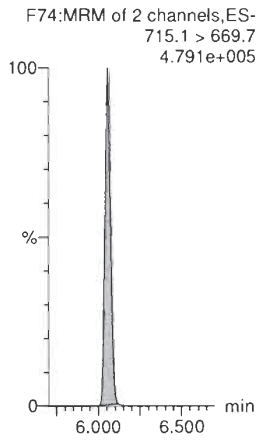


Quantify Sample Report **MassLynx V4.2 SCN977**

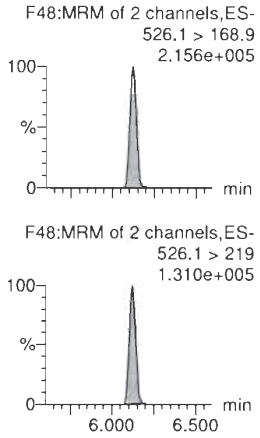
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

Last Altered: Saturday, February 29, 2020 11:58:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

N-EtFOSA



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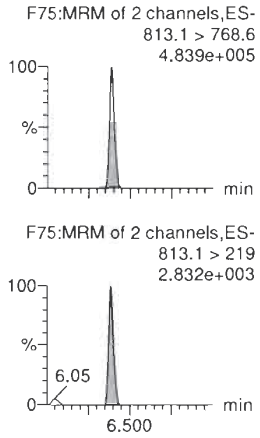
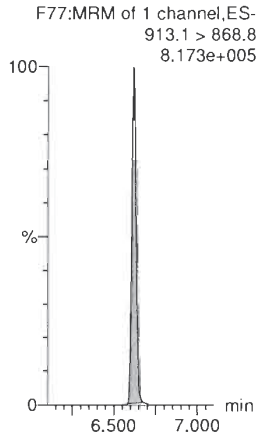
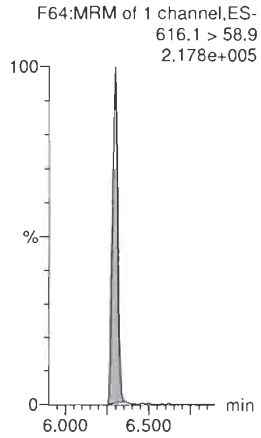


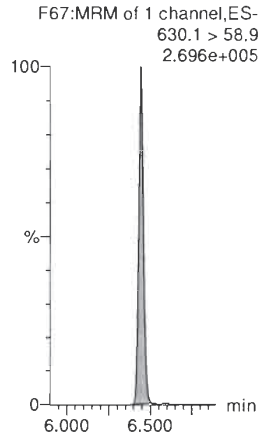
PFODA



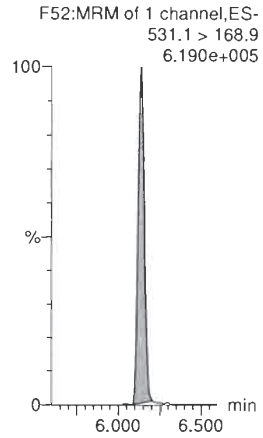
N-MeFOSE



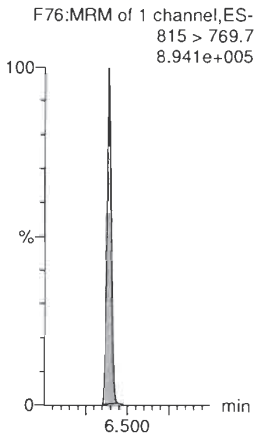
N-EtFOSE



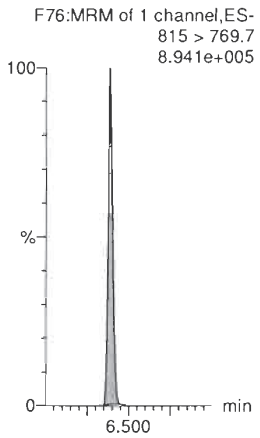
d5-N-ETFOSA-EIS



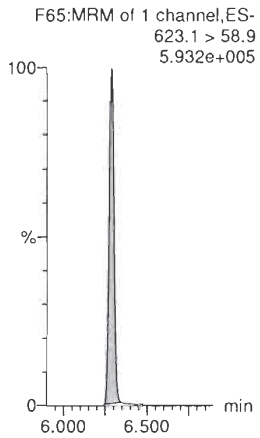
13C2-PFHxDA-EIS



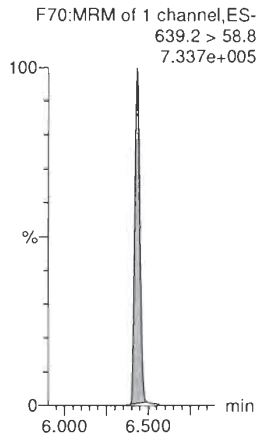
13C2-PFHxDA-EIS



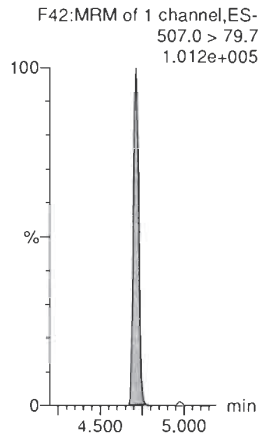
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

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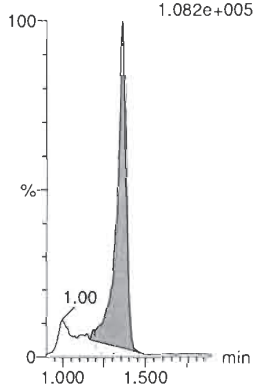
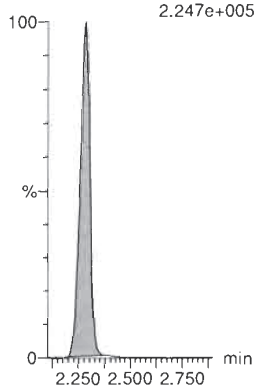
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

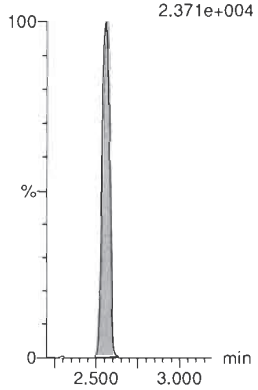
13C3-PFBA-RSD



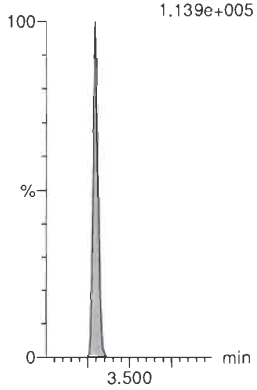
13C3-PFPeA-RSD



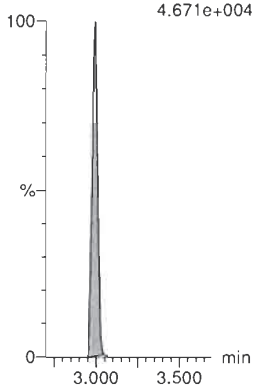
13C3-PFBS-RSD



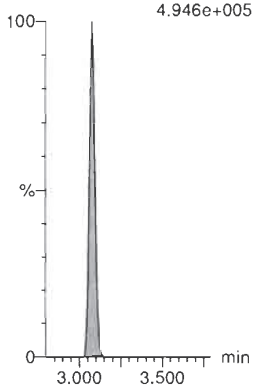
13C3-HFPO-DA-RSD



13C2-4:2 FTS-RSD



13C2-PFHxA-RSD



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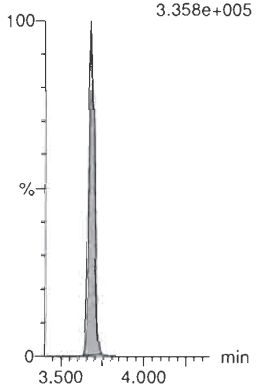
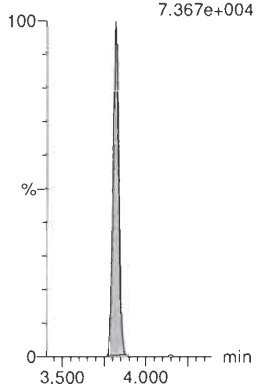
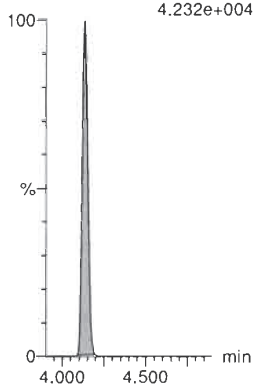


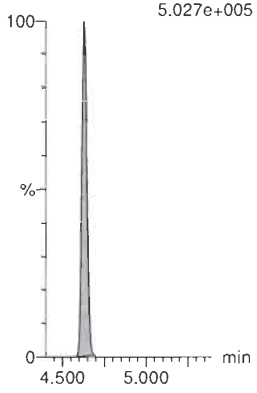
13C3-PFHxS-RSD



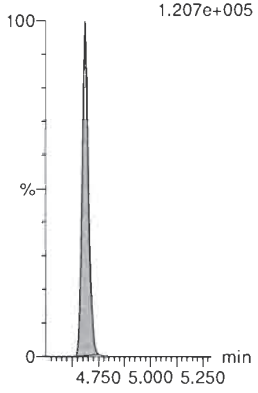
13C2-6:2 FTS-RSD



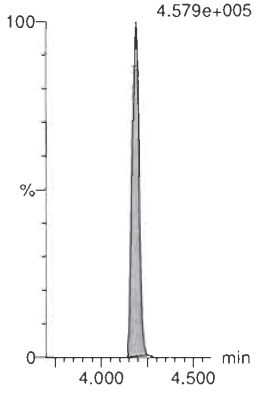
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977** Page 9 of 14
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

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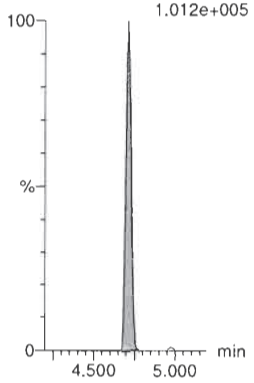
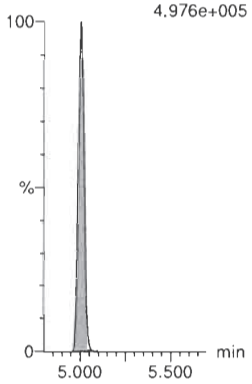
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

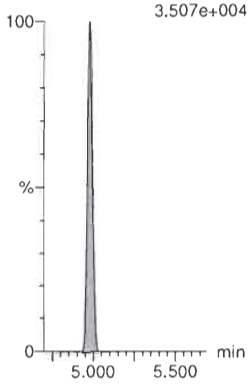
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
1.012e+005



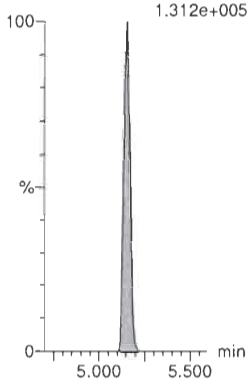
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
4.976e+005



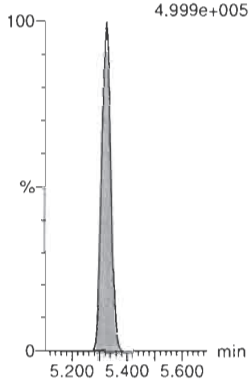
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.507e+004



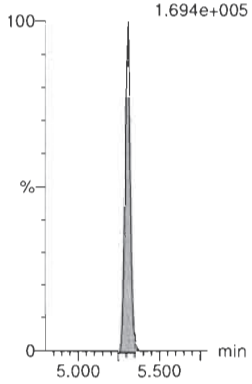
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.312e+005



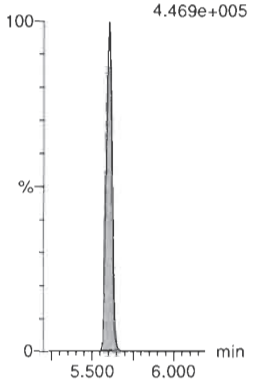
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.999e+005



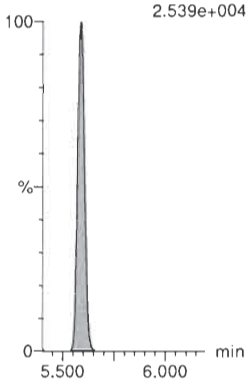
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.694e+005



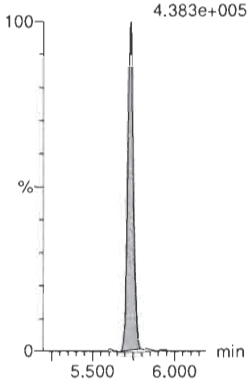
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.469e+005



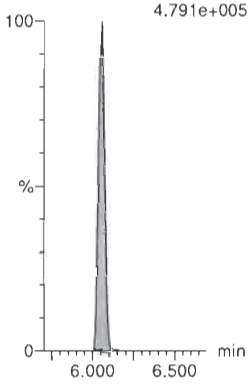
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.539e+004



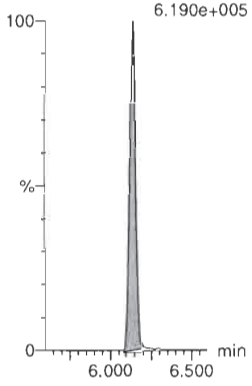
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.383e+005



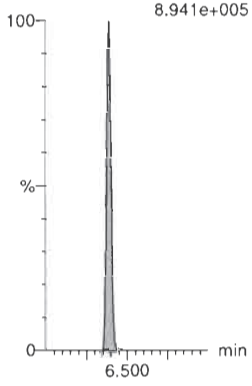
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.791e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
6.190e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
8.941e+005



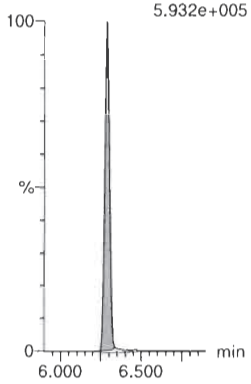
Quantify Sample Report **MassLynx V4.2 SCN977** Page 10 of 14
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-43.qld

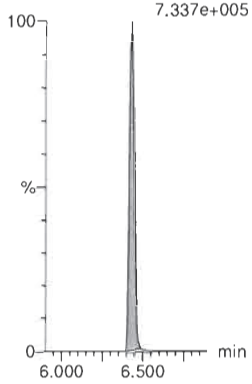
Last Altered: Saturday, February 29, 2020 11:58:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:59:36 Pacific Standard Time

Name: 200228P2-43, Date: 28-Feb-2020, Time: 21:34:30, ID: ST200228P2-12 PFC CS3 20B1107, Description: PFC CS3 20B1107

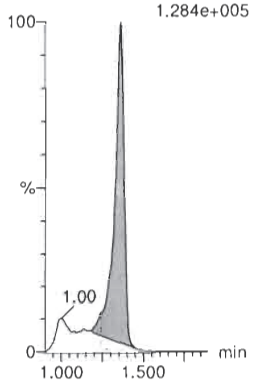
d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.932e+005



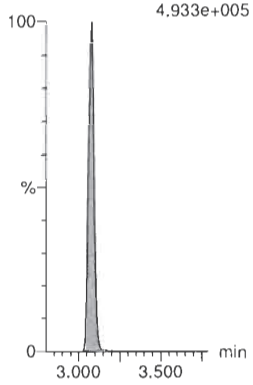
d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
7.337e+005



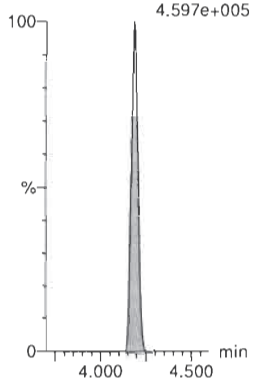
13C4-PFBA
F4:MRM of 1 channel,ES-
217.0 > 172.0
1.284e+005



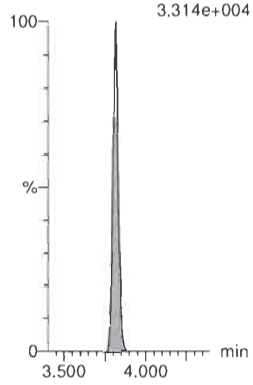
13C5-PFHxA
F15:MRM of 1 channel,ES-
318.0 > 272.9
4.933e+005



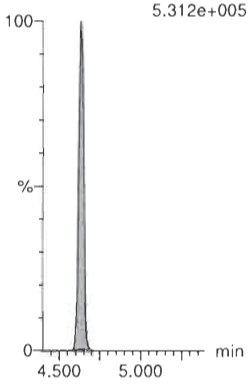
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
4.597e+005



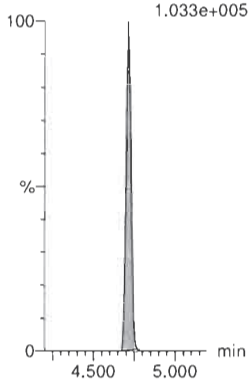
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
3.314e+004



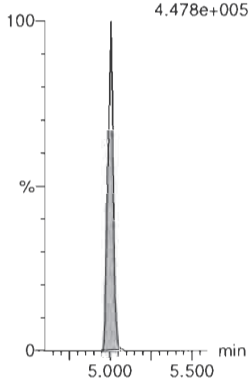
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
5.312e+005



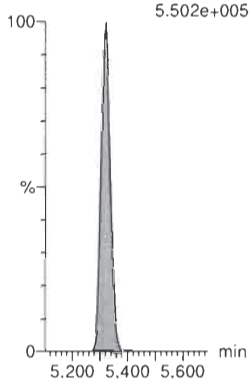
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.7
1.033e+005



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
4.478e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
5.502e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

JM 2/28/20

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	531.264	6171.037	1.00	1.36	1.076	1.000	0.908	90.8	NO		
2	2	PFPrS	248.9 > 79.7	140.511	1225.165	1.00	1.69	1.434	1.000	1.13	112.5	NO	2.220	NO
3	3	3:3 FTCA	240.9 > 176.9	76.061	11382.725	1.00	2.15	0.084	1.000	0.879	87.9	NO	3.230	NO
4	4	PFPeA	263.1 > 218.9	929.503	11382.725	1.00	2.29	1.021	1.000	1.03	103.3	NO		
5	5	PFBS	299.0 > 79.7	247.052	1225.165	1.00	2.56	2.521	1.000	1.02	101.6	NO	3.171	NO
6	6	4:2 FTS	327.0 > 307	159.735	1487.909	1.00	2.99	1.342	1.000	0.978	97.8	NO	1.031	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	6171.037		1.00	1.36	6171.037	12.500	11.5	91.8	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	1225.165		1.00	2.56	1225.165	12.500	12.8	102.3	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	11382.725		1.00	2.29	11382.725	12.500	12.2	97.4	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	11382.725		1.00	2.29	11382.725	12.500	12.2	97.4	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	1225.165		1.00	2.56	1225.165	12.500	12.8	102.3	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1487.909		1.00	2.99	1487.909	12.500	11.2	89.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	1536.308	18013.322	1.00	3.08	1.066	1.000	1.08	108.4	NO	19.899	NO
15	8	PFPeS	349.>79.7	283.817	1225.165	1.00	3.28	2.896	1.000	1.28	127.6	NO	3.539	NO
16	9	HFPO-DA	285.1 > 168.9	384.485	3698.760	1.00	3.29	1.299	1.000	1.23	123.0	NO	2.950	NO
17	10	5:3 FTCA	340.9 > 236.9	204.587	12961.413	1.00	3.62	0.197	1.000	0.927	92.7	NO	1.969	NO
18	11	PFHpA	363.0 > 318.9	1253.959	12961.413	1.00	3.68	1.209	1.000	0.932	93.2	NO	62.247	YES
19	12	ADONA	376.8 > 250.9	2931.169	12961.413	1.00	3.79	2.827	1.000	1.01	101.4	NO	4.759	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	18013.322		1.00	3.08	18013.322	12.500	11.4	91.0	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	1225.165		1.00	2.56	1225.165	12.500	12.8	102.3	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3698.760		1.00	3.29	3698.760	12.500	11.5	92.4	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	12961.413		1.00	3.68	12961.413	12.500	12.4	99.4	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	12961.413		1.00	3.68	12961.413	12.500	12.4	99.4	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	12961.413		1.00	3.68	12961.413	12.500	12.4	99.4	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	197.618	2977.717	1.00	3.82	0.830	1.000	0.808	80.8	NO	4.065	YES
28	15	6:2 FTS	427.0 > 407	135.551	1277.026	1.00	4.13	1.327	1.000	0.798	79.8	NO	0.955	NO
29	16	L-PFOA	412.8 > 368.9	1424.729	17021.574	1.00	4.19	1.046	1.000	0.817	81.7	NO	2.957	NO
30	18	PFecHS	460.8 > 381.0	197.893	17021.574	1.00	4.20	0.145	1.000	0.866	86.6	NO	0.416	NO
31	19	PFHpS	449.0 > 79.7	221.368	3199.037	1.00	4.31	0.865	1.000	0.991	99.1	NO	2.210	NO
32	20	7:3 FTCA	440.9 > 336.9	181.693	17536.924	1.00	4.62	0.130	1.000	0.855	85.5	NO	1.264	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2977.717		1.00	3.82	2977.717	12.500	14.1	112.9	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1277.026		1.00	4.13	1277.026	12.500	10.4	83.5	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	17021.574		1.00	4.19	17021.574	12.500	11.2	89.6	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	17021.574		1.00	4.19	17021.574	12.500	11.2	89.6	NO		

JY 02/28/20

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	3199.037		1.00	4.71	3199.037	12.500	11.7	93.9	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	17536.924		1.00	4.63	17536.924	12.500	12.6	100.4	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	1569.734	17536.924	1.00	4.63	1.119	1.000	0.968	96.8	NO	8.816	NO
41	22	PFOSA	497.9 > 77.9	238.430	3581.390	1.00	4.69	0.832	1.000	0.984	98.4	NO	40.086	YES
42	23	L-PFOS	498.9 > 79.7	230.403	3199.037	1.00	4.71	0.900	1.000	1.02	102.3	NO	2.508	NO
43	25	9Cl-PF30NS	530.7 > 350.8	208.259	3199.037	1.00	4.93	0.814	1.000	0.866	86.6	NO	114.115	YES
44	26	PFDA	513 > 468.8	1852.179	17175.596	1.00	5.01	1.348	1.000	1.13	113.0	NO	12.442	NO
45	27	8:2 FTS	526.9 > 507	129.985	1162.079	1.00	4.97	1.398	1.000	1.04	104.1	NO	2.056	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	17536.924		1.00	4.63	17536.924	12.500	12.6	100.4	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3581.390		1.00	4.69	3581.390	12.500	11.4	90.9	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	3199.037		1.00	4.71	3199.037	12.500	11.7	93.9	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	3199.037		1.00	4.71	3199.037	12.500	11.7	93.9	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	17175.596		1.00	5.01	17175.596	12.500	10.9	87.6	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1162.079		1.00	4.98	1162.079	12.500	13.5	107.6	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	265.428	3199.037	1.00	5.07	1.037	1.000	1.12	111.9	NO	2.230	NO
54	29	L-MeFOSAA	570 > 419	428.871	4650.694	1.00	5.15	1.153	1.000	0.783	78.3	NO	2.423	NO
55	31	L-EtFOSAA	584.1 > 419	388.805	5521.901	1.00	5.32	0.880	1.000	0.865	86.5	NO	1.466	NO
56	33	PFUdA	563.0 > 518.9	1812.163	18125.938	1.00	5.33	1.250	1.000	1.19	118.6	NO	48.380	YES
57	34	PFDS	598.8 > 79.7	265.235	3199.037	1.00	5.38	1.036	1.000	1.27	126.6	NO	2.371	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	655.645	15888.556	1.00	5.53	0.516	1.000	1.12	111.6	NO	22.229	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	3199.037		1.00	4.71	3199.037	12.500	11.7	93.9	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	4650.694		1.00	5.15	4650.694	12.500	11.1	88.5	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	5521.901		1.00	5.31	5521.901	12.500	11.6	92.6	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	18125.938		1.00	5.33	18125.938	12.500	10.0	80.1	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	3199.037		1.00	4.71	3199.037	12.500	11.7	93.9	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	15888.556		1.00	5.60	15888.556	12.500	10.6	84.6	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	151.507	939.149	1.00	5.60	2.017	1.000	0.997	99.7	NO	0.763	NO
67	37	PFDoA	612.9 > 569.0	1784.162	15888.556	1.00	5.60	1.404	1.000	1.17	117.5	NO	18.326	YES
68	38	N-MeFOSA	512.1 > 168.9	530.485	16174.914	1.00	5.71	4.893	5.000	3.92	78.4	NO	1.257	NO
69	39	PFTrDA	662.9 > 618.9	1793.803	15888.556	1.00	5.84	1.411	1.000	1.15	115.3	NO	75.554	NO
70	40	PFDoS	698.8 > 79.7	274.672	17483.717	1.00	5.87	0.196	1.000	1.11	111.4	NO	4.699	NO
71	41	PFTeDA	713.0 > 669.0	1631.524	17483.717	1.00	6.06	1.166	1.000	1.06	106.2	NO	18.500	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	939.149		1.00	5.59	939.149	12.500	13.1	105.0	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	15888.556		1.00	5.60	15888.556	12.500	10.6	84.6	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	16174.914		1.00	5.73	16174.914	149.200	128	85.7	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	15888.556		1.00	5.60	15888.556	12.500	10.6	84.6	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	17483.717		1.00	6.06	17483.717	12.500	11.1	88.8	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	17483.717		1.00	6.06	17483.717	12.500	11.1	88.8	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	815.932	24268.350	1.00	6.12	5.016	5.000	4.94	98.9	NO	1.620	NO
80	43	PFHxDA	813.1 > 768.6	1694.567	25617.951	1.00	6.39	0.827	1.000	0.969	96.9	NO	436.407	YES
81	44	PFODA	913.1 > 868.8	2386.672	25617.951	1.00	6.62	1.165	1.000	1.15	114.8	NO		
82	45	N-MeFOSE	616.1 > 58.9	710.885	17626.959	1.00	6.30	6.017	5.000	5.33	106.6	NO		
83	46	N-EtFOSE	630.1 > 58.9	849.512	22041.656	1.00	6.44	5.750	5.000	5.45	108.9	NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	24268.350		1.00	6.14	24268.350	149.200	130	86.9	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	25617.951		1.00	6.39	25617.951	12.500	9.91	79.2	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	25617.951		1.00	6.39	25617.951	12.500	9.91	79.2	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17626.959		1.00	6.29	17626.959	149.200	118	79.1	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	22041.656		1.00	6.43	22041.656	149.200	122	81.8	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	3199.037		1.00	4.71	3199.037	12.500	11.7	93.9	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	6164.530	7712.645	1.00	1.36	9.991	12.500	12.4	99.5	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	11382.725	18395.031	1.00	2.29	7.735	12.500	13.3	106.4	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	1225.165	1192.837	1.00	2.56	12.839	12.500	11.6	93.0	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3698.760	18395.031	1.00	3.29	2.513	12.500	12.6	100.9	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1487.909	1192.837	1.00	2.99	15.592	12.500	11.0	88.0	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	18013.322	18395.031	1.00	3.08	12.241	12.500	12.7	101.3	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	12961.413	18395.031	1.00	3.68	8.808	12.500	13.2	105.7	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2977.717	1192.837	1.00	3.82	31.204	12.500	12.6	100.8	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1277.026	3282.796	1.00	4.13	4.863	12.500	11.1	88.9	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	17536.924	18267.348	1.00	4.63	12.000	12.500	12.9	103.1	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3581.390	18137.031	1.00	4.69	2.468	12.500	12.9	103.5	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	17021.574	18289.533	1.00	4.19	11.633	12.500	12.6	100.7	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	3199.037	3282.796	1.00	4.71	12.181	12.500	13.1	104.9	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	17175.596	13214.146	1.00	5.01	16.247	12.500	16.5	131.9	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1162.079	3282.796	1.00	4.98	4.425	12.500	12.3	98.8	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	4650.694	18137.031	1.00	5.15	3.205	12.500	13.6	108.7	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	18125.938	18137.031	1.00	5.33	12.492	12.500	12.1	97.2	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	5521.901	18137.031	1.00	5.31	3.806	12.500	14.6	117.0	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	15888.556	13214.146	1.00	5.60	15.030	12.500	15.7	125.6	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	939.149	3282.796	1.00	5.59	3.576	12.500	12.6	100.9	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	16174.914	18137.031	1.00	5.73	11.148	149.200	145	97.4	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	17483.717	18137.031	1.00	6.06	12.050	12.500	12.7	101.7	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	24268.350	18137.031	1.00	6.14	16.726	149.200	152	101.7	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	25617.951	18137.031	1.00	6.39	17.656	12.500	12.2	97.4	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17626.959	18137.031	1.00	6.29	12.148	149.200	138	92.8	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	22041.656	18137.031	1.00	6.43	15.191	149.200	146	97.6	NO		
119	99	13C4-PFBA	217.0 > 172.0	7712.645	7712.645	1.00	1.36	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	18395.031	18395.031	1.00	3.08	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	18289.533	18289.533	1.00	4.19	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1192.837	1192.837	1.00	3.82	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	18267.348	18267.348	1.00	4.63	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	3282.796	3282.796	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	13214.146	13214.146	1.00	5.01	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	18137.031	18137.031	1.00	5.33	12.500	12.500	12.5	100.0	NO		

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 12:21:43 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:22:53 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200228P2-1	IPA	28-Feb-20	12:45:37
2	2	200228P2-2	IPA	28-Feb-20	12:56:16
3	3	200228P2-3	ST200228P2-1 PFC CS-2 20B1102	28-Feb-20	13:06:47
4	4	200228P2-4	ST200228P2-2 PFC CS-1 20B1103	28-Feb-20	13:17:15
5	5	200228P2-5	ST200228P2-3 PFC CS0 20B1104	28-Feb-20	13:27:47
6	6	200228P2-6	ST200228P2-4 PFC CS1 20B1105	28-Feb-20	13:38:16
7	7	200228P2-7	ST200228P2-5 PFC CS2 20B1106	28-Feb-20	13:48:48
8	8	200228P2-8	ST200228P2-6 PFC CS3 20B1107	28-Feb-20	13:59:16
9	9	200228P2-9	ST200228P2-7 PFC CS4 20B1108	28-Feb-20	14:09:48
10	10	200228P2-10	ST200228P2-8 PFC CS5 20B1109	28-Feb-20	14:20:17
11	11	200228P2-11	ST200228P2-9 PFC CS6 20B1110	28-Feb-20	14:30:48
12	12	200228P2-12	ST200228P2-10 PFC CS7 20B1111	28-Feb-20	14:41:18
13	13	200228P2-13	IB	28-Feb-20	14:51:49
14	14	200228P2-14	ICV200228P2-1 PFC ICV 20B1112	28-Feb-20	15:02:18
15	15	200228P2-15	IB	28-Feb-20	15:12:50
16	16	200228P2-16	2000328-04 W-SB01-20200213 0.26272	28-Feb-20	16:50:41
17	17	200228P2-17	2000328-05 EB13-20200213 0.2557	28-Feb-20	17:01:23
18	18	200228P2-18	2000328-04@20X W-SB01-20200213 0.26272	28-Feb-20	17:11:52
19	19	200228P2-19	IB	28-Feb-20	17:22:24
20	20	200228P2-20	B0B0233-BLK1 Method Blank 2	28-Feb-20	17:32:54
21	21	200228P2-21	B0B0233-BS1 OPR 2	28-Feb-20	17:43:23
22	22	200228P2-22	B0B0233-MS1 Matrix Spike 2.11	28-Feb-20	17:53:55
23	23	200228P2-23	B0B0233-MSD1 Matrix Spike Dup 2.1	28-Feb-20	18:04:25
24	24	200228P2-24	2000386-01 SRS-70-5' 2.2	28-Feb-20	18:14:54
25	25	200228P2-25	2000386-02 SRS-70-10' 2.16	28-Feb-20	18:25:25
26	26	200228P2-26	2000386-03 SRS-65-5' 2.22	28-Feb-20	18:35:55
27	27	200228P2-27	2000386-04 SRS-65-10' 2.16	28-Feb-20	18:46:26
28	28	200228P2-28	2000386-05 SRS-60-5' 2.19	28-Feb-20	18:56:57
29	29	200228P2-29	2000386-06 SRS-60-10 2.12	28-Feb-20	19:07:25
30	30	200228P2-30	2000386-07 SRS-68-5 2.18	28-Feb-20	19:17:57
31	31	200228P2-31	IB	28-Feb-20	19:28:26
32	32	200228P2-32	ST200228P2-11 PFC CS3 20B1107	28-Feb-20	19:38:56

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 12:21:43 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:22:53 Pacific Standard Time

Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
33	33 200228P2-33	2000386-08 SRS-69-5 2.22	28-Feb-20	19:49:27
34	34 200228P2-34	2000391-01 SRS-58-5' 2.18	28-Feb-20	19:59:58
35	35 200228P2-35	2000391-02 SRS-58-10' 2.19	28-Feb-20	20:10:27
36	36 200228P2-36	2000391-03 SRS-59-5 2.28	28-Feb-20	20:20:59
37	37 200228P2-37	2000391-04 SRS-59-10' 2.1	28-Feb-20	20:31:30
38	38 200228P2-38	2000391-05 SRS-62-10' 2.17	28-Feb-20	20:41:58
39	39 200228P2-39	2000391-06 SRS-61-5' 2.29	28-Feb-20	20:52:30
40	40 200228P2-40	2000391-07 SRS-61-10 2.23	28-Feb-20	21:02:59
41	41 200228P2-41	2000391-08 SRS-63-10 2.48	28-Feb-20	21:13:30
42	42 200228P2-42	2000391-09 SRS-71-5 2.23	28-Feb-20	21:24:01
43	43 200228P2-43	ST200228P2-12 PFC CS3 20B1107	28-Feb-20	21:34:30
44	44 200228P2-44	IB	28-Feb-20	21:45:01
45	45 200228P2-45	B0B0155-BLK1 Method Blank 0.25	28-Feb-20	21:55:30
46	46 200228P2-46	B0B0155-BS1 OPR 0.25	28-Feb-20	22:06:02
47	47 200228P2-47	B0B0155-BSD1 LCSD 0.25	28-Feb-20	22:16:32
48	48 200228P2-48	2000333-01 EB02-20200217 0.24792	28-Feb-20	22:27:01
49	49 200228P2-49	2000333-02@5X 18-GW-18BGMP10E-20200217 0.25617	28-Feb-20	22:37:33
50	50 200228P2-50	2000333-03@5X 18-GW-18BGMP10F-20200217 0.24799	28-Feb-20	22:48:01
51	51 200228P2-51	2000333-04@5X 18-GW-18BGMP08C-20200217 0.25669	28-Feb-20	22:58:34
52	52 200228P2-52	2000333-05@5X 24-GW-18BGMP08D-20200217 0.25341	28-Feb-20	23:09:03
53	53 200228P2-53	2000333-06@5X 24-GW-18BGMP08E-20200217 0.25283	28-Feb-20	23:19:34
54	54 200228P2-54	2000333-07@5X 24-GW-18PS1-20200217 0.24759	28-Feb-20	23:30:04
55	55 200228P2-55	2000333-08@5X DUP01-20200217 0.24854	28-Feb-20	23:40:33
56	56 200228P2-56	B0B0160-BLK1 Method Blank 0.25	28-Feb-20	23:51:05
57	57 200228P2-57	B0B0160-BS1 OPR 0.25	29-Feb-20	00:01:35
58	58 200228P2-58	B0B0160-BSD1 LCSD 0.25	29-Feb-20	00:12:04
59	59 200228P2-59	2000345-01@5X ET-LW01-20200218 0.25307	29-Feb-20	00:22:36
60	60 200228P2-60	2000346-01 EB03-20200218 0.25369	29-Feb-20	00:33:06
61	61 200228P2-61	ST200228P2-13 PFC CS0 20B1104	29-Feb-20	00:43:35
62	62 200228P2-62	IB	29-Feb-20	00:54:07
63	63 200228P2-63	2000346-02@5X 18 -GW-18BGMW19C-20200218 0.25031	29-Feb-20	01:04:35
64	64 200228P2-64	2000346-03@5X 18-GW-18IDP2-D-20200218 0.25907	29-Feb-20	01:15:08
65	65 200228P2-65	2000346-04@5X 18-GW-18DW540-20200218 0.25311	29-Feb-20	01:25:37
66	66 200228P2-66	2000346-05@5X 18-GW-18DW450-20200218 0.24811	29-Feb-20	01:36:08
67	67 200228P2-67	IB	29-Feb-20	01:46:38
68	68 200228P2-68	2000353-01 S9MW30-20Q1 0.25885	29-Feb-20	01:57:07

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 12:21:43 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:22:53 Pacific Standard Time

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
69	69	200228P2-69	2000353-07 S9MW22-20Q1 0.251	29-Feb-20	02:07:39
70	70	200228P2-70	2000353-08 S9MW23-20Q1 0.25701	29-Feb-20	02:18:10
71	71	200228P2-71	2000353-10@15X S9MW68L1-20Q1 0.25186	29-Feb-20	02:28:38
72	72	200228P2-72	IB	29-Feb-20	02:39:10
73	73	200228P2-73	2000353-11 S9MW71L9-20Q1 0.252	29-Feb-20	02:49:38
74	74	200228P2-74	2000354-06@10X S9SMW2A-20Q1 0.23864	29-Feb-20	03:00:10
75	75	200228P2-75	ST200228P2-14 PFC CS3 20B1107	29-Feb-20	03:10:41
76	76	200228P2-76	IB	29-Feb-20	03:21:09
77	77	200228P2-77	2000354-07 S9SMW10-20Q1 0.24862	29-Feb-20	03:31:42
78	78	200228P2-78	2000354-08@5X S9MW15-20Q1 0.25813	29-Feb-20	03:42:12
79	79	200228P2-79	IB	29-Feb-20	03:52:41
80	80	200228P2-80	2000354-09 S9MW61L1-20Q1 0.25585	29-Feb-20	04:03:12
81	81	200228P2-81	2000354-10 91MW10-20Q1 0.24621	29-Feb-20	04:13:43
82	82	200228P2-82	B0B0137-MS1@5X Matrix Spike 0.24799	29-Feb-20	04:24:13
83	83	200228P2-83	B0B0137-MSD1@5X Matrix Spike Dup 0.24718	29-Feb-20	04:34:42
84	84	200228P2-84	2000330-04@5X DUP04-20200214 0.25435	29-Feb-20	04:45:13
85	85	200228P2-85	ST200228P2-15 PFC CS3 20B1107	29-Feb-20	04:55:43
86	86	200228P2-86	IB	29-Feb-20	05:06:14

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

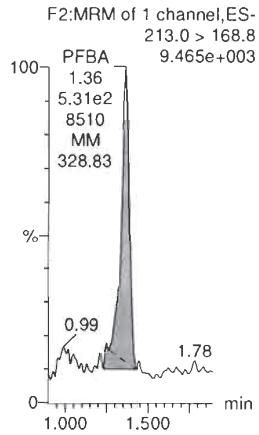
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

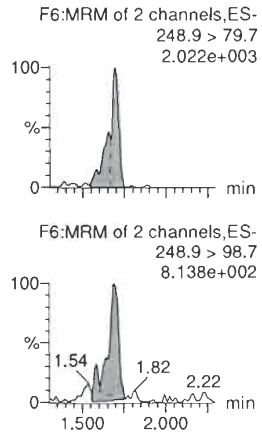
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

PFBA



PFPrS



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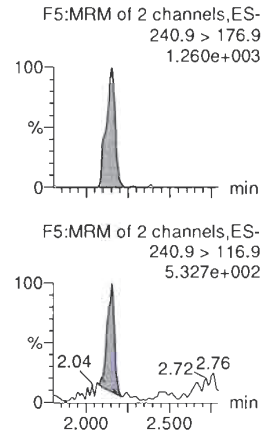

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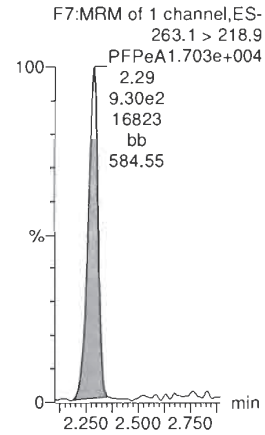

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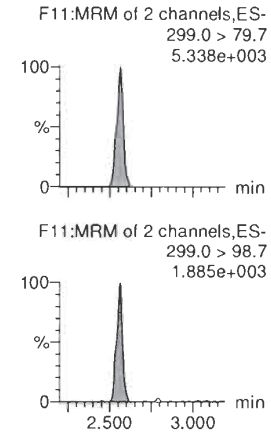
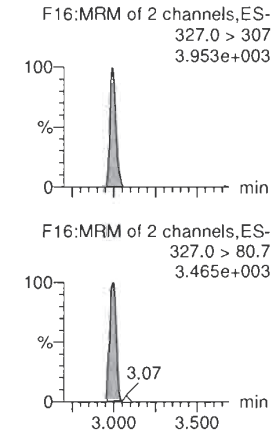


4:2 FTS



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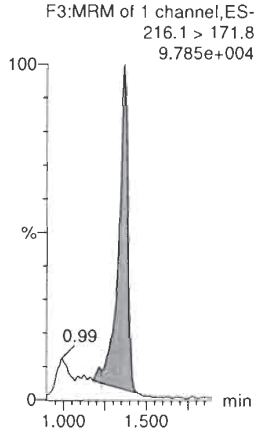

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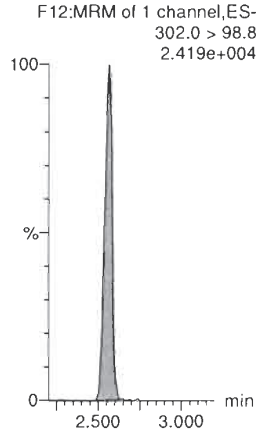

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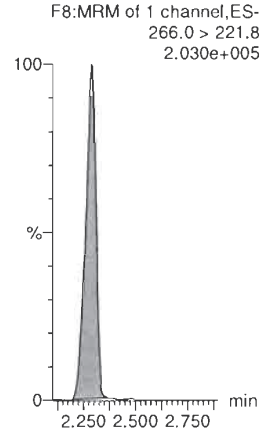

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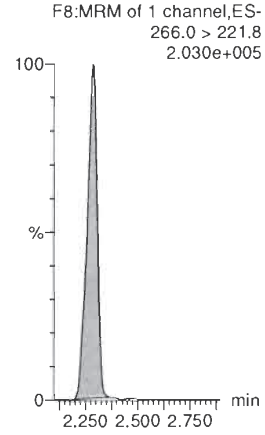

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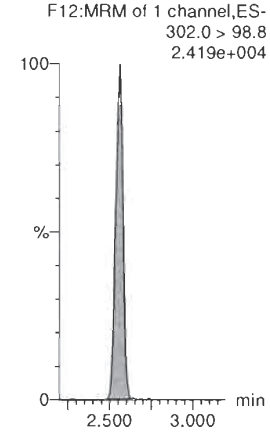

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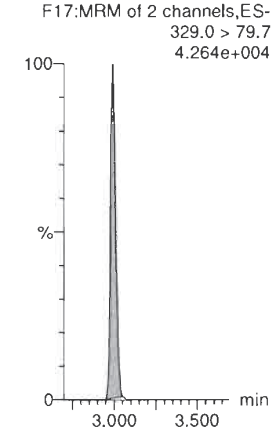


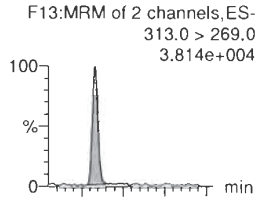
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

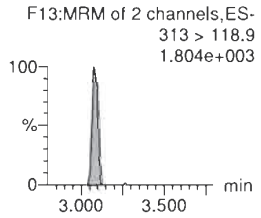
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

PFHxA





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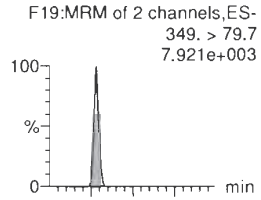

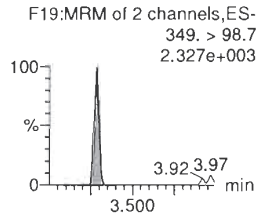

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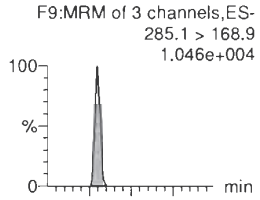

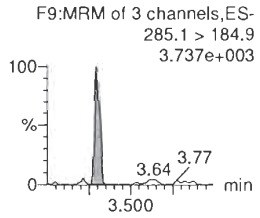

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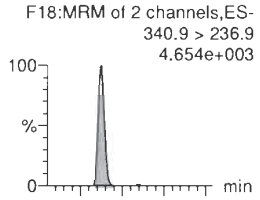

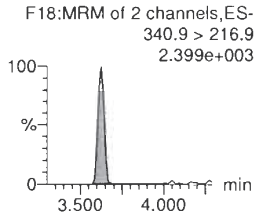

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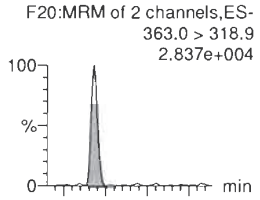

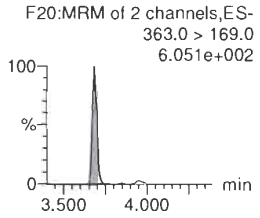

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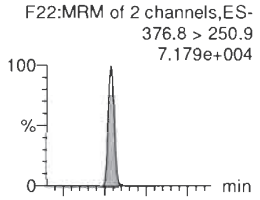

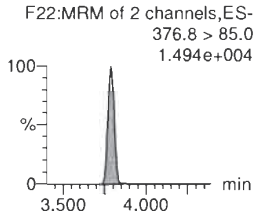

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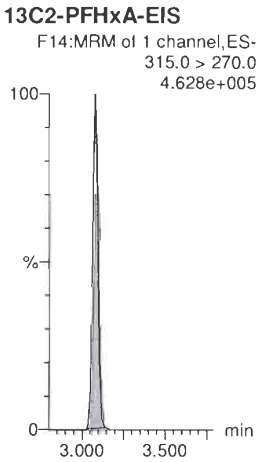

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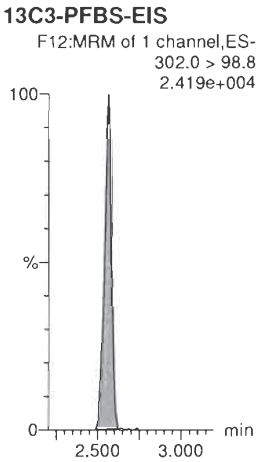

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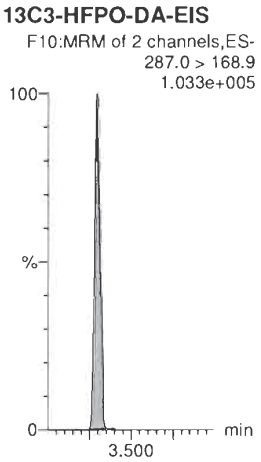

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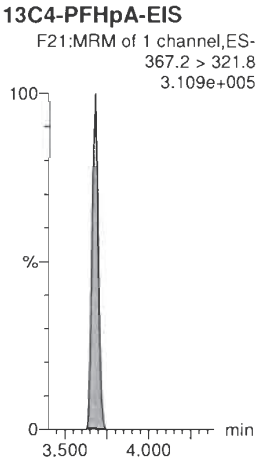

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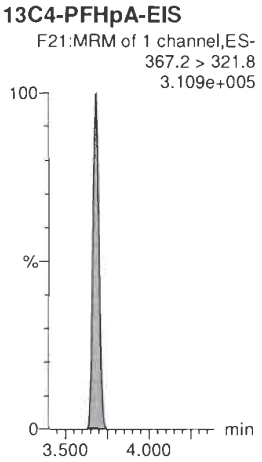

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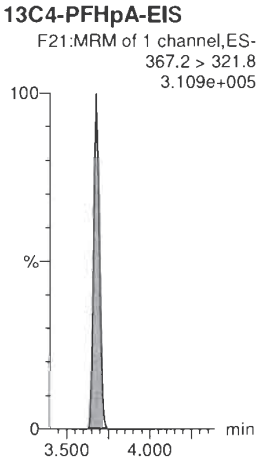

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

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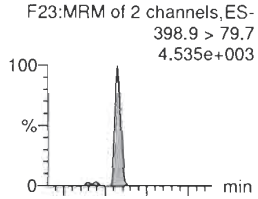
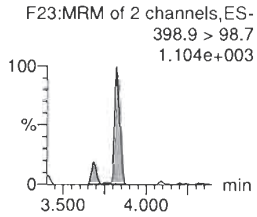
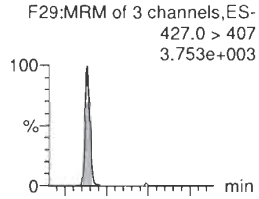
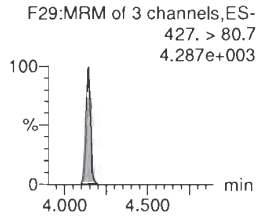




6:2 FTS





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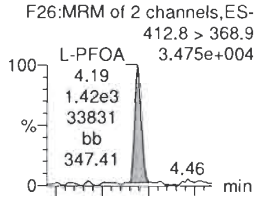

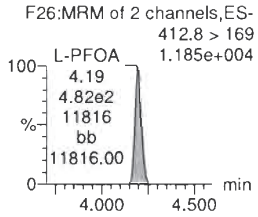

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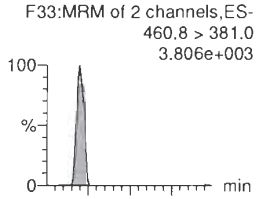

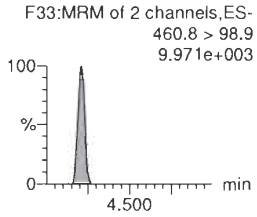

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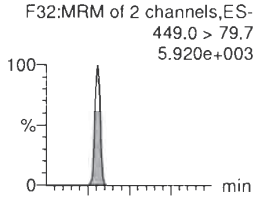

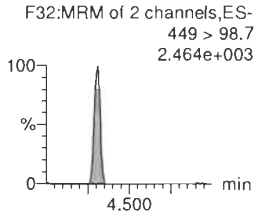

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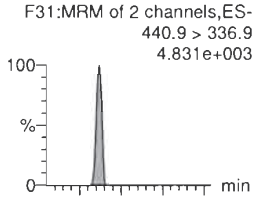

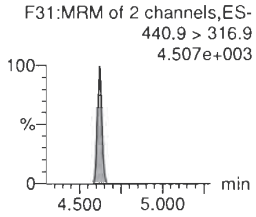

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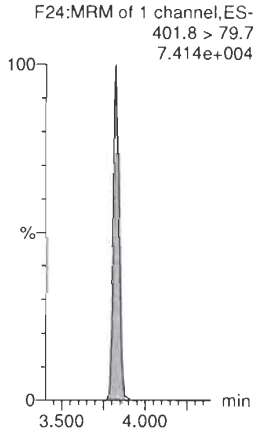

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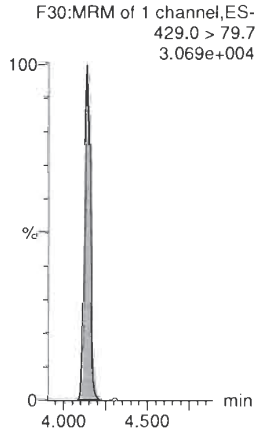

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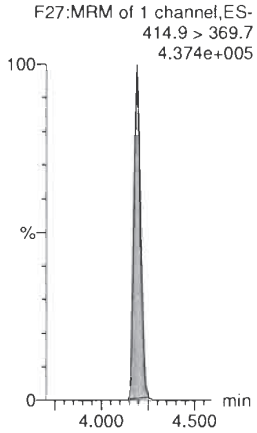

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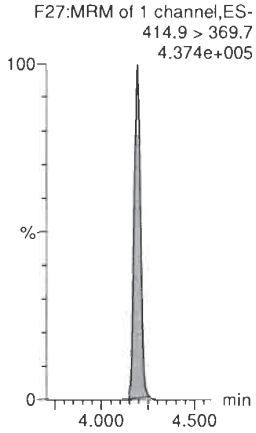

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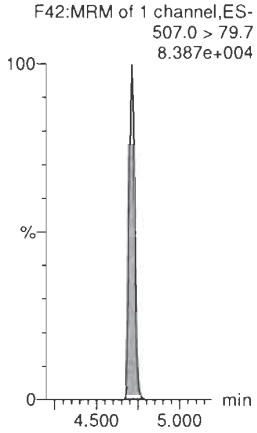

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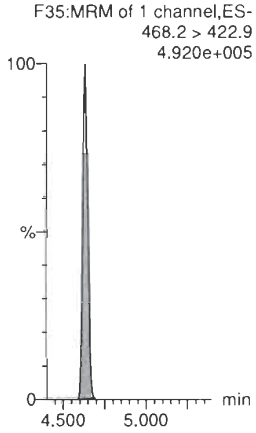

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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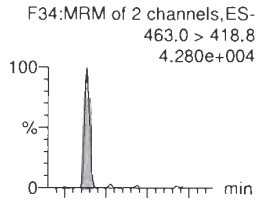

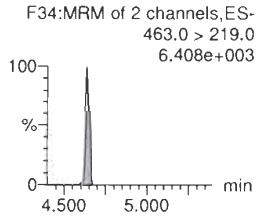

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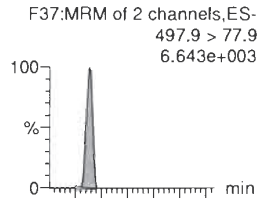

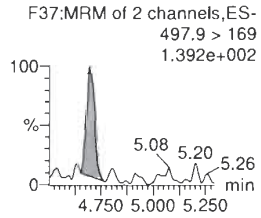

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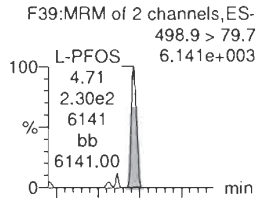

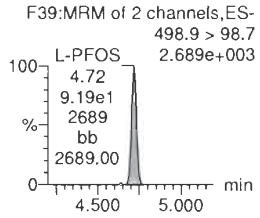

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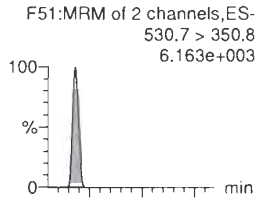

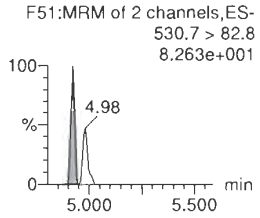

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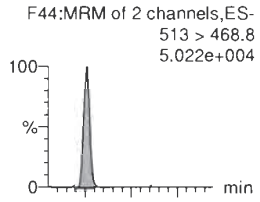

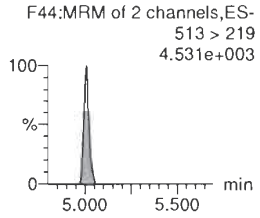

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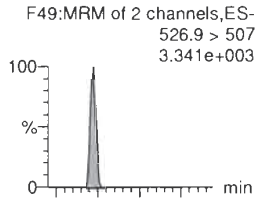

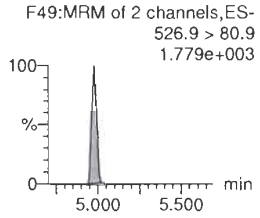

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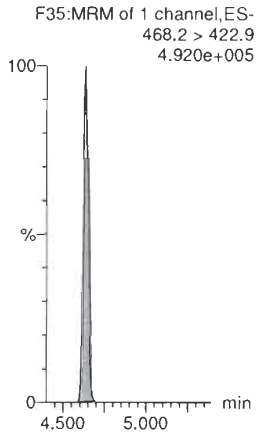

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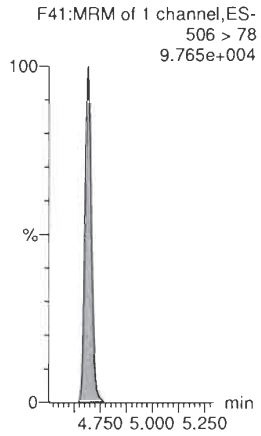

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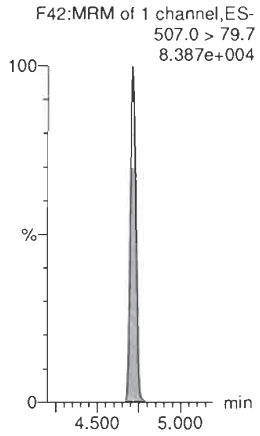

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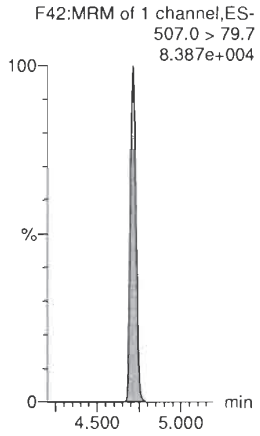

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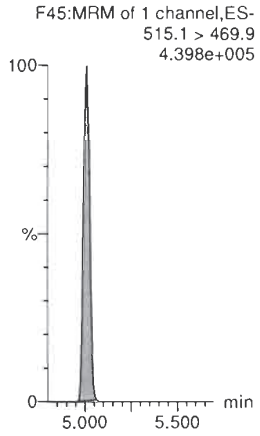

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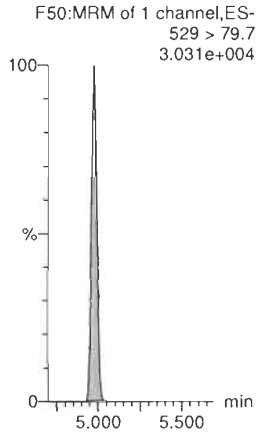

Quantify Sample Report **MassLynx V4.2 SCN977** Page 5 of 14
Vista Analytical Laboratory

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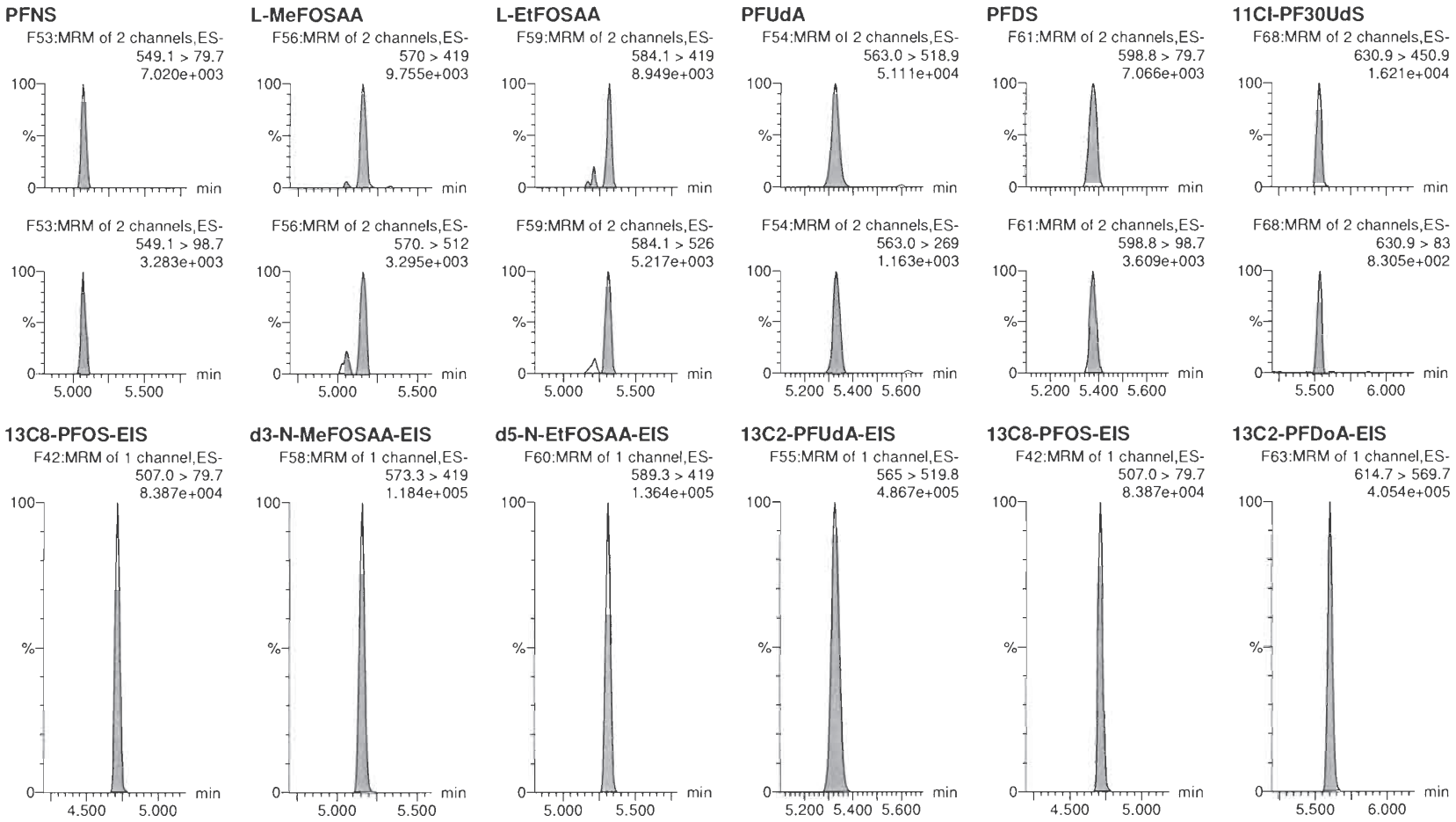

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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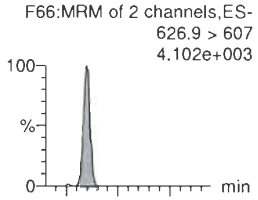
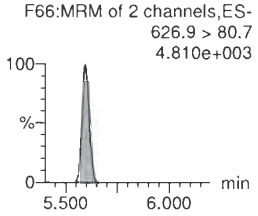
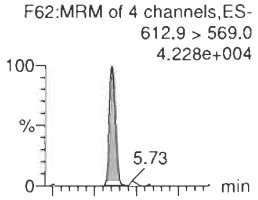
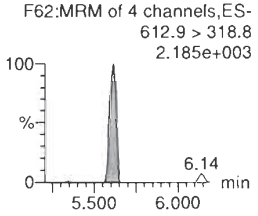
10:2 FTS



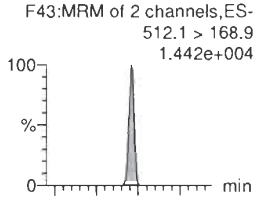


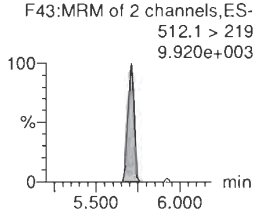
PFDoA





N-MeFOSA





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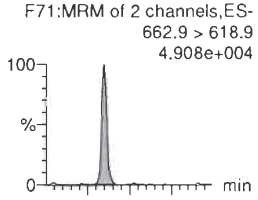
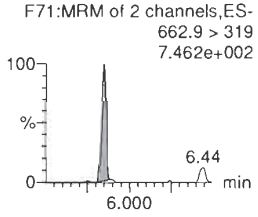
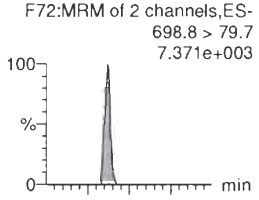
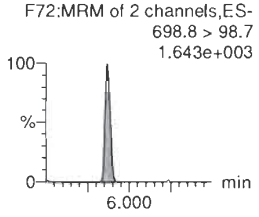


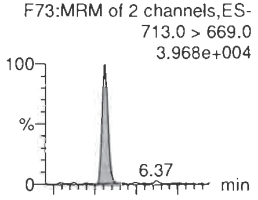


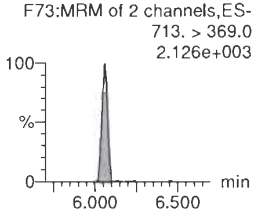
PFDoS



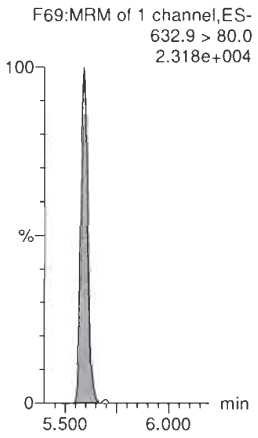


PFTeDA

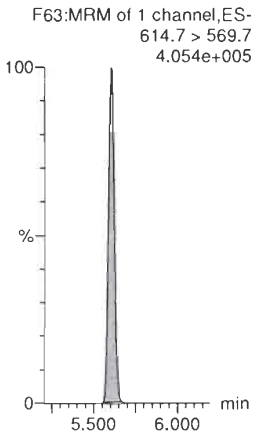




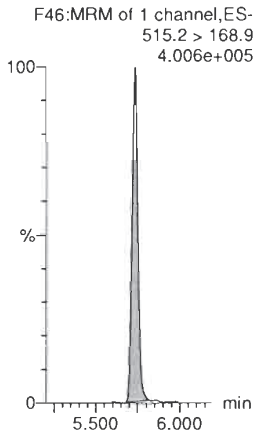
13C2-10:2 FTS-EIS



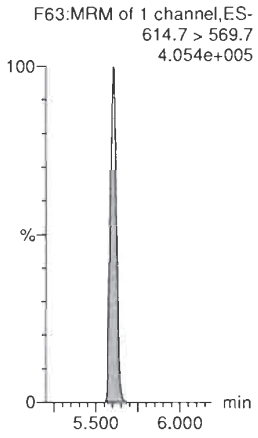
13C2-PFDoA-EIS



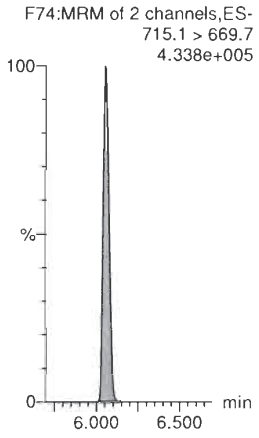
d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



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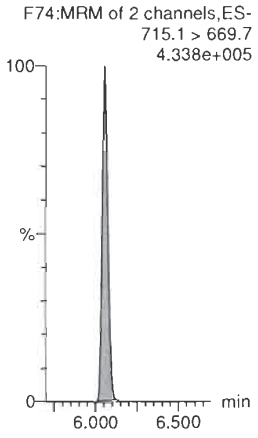


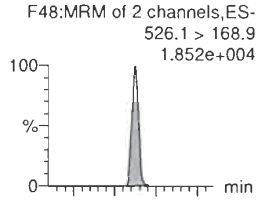
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

Last Altered: Saturday, February 29, 2020 12:06:38 Pacific Standard Time
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

N-EtFOSA



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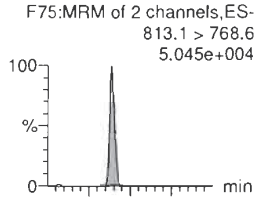
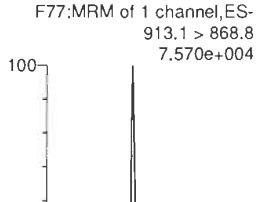
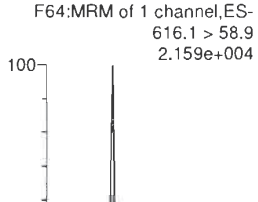


PFODA



N-MeFOSE



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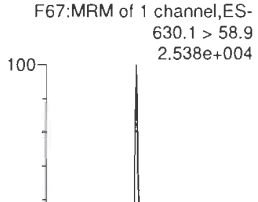
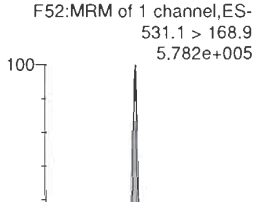
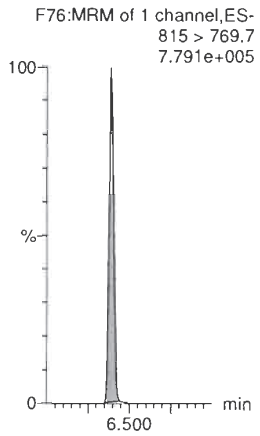


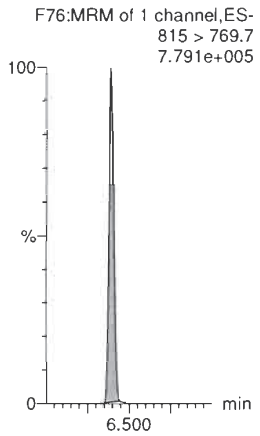
d5-N-ETFOSA-EIS



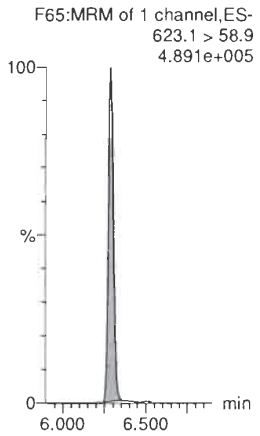
13C2-PFHxDA-EIS



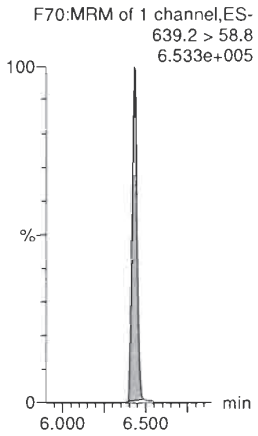
13C2-PFHxDA-EIS



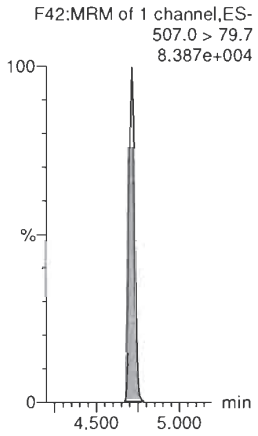
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977** Page 8 of 14
Vista Analytical Laboratory

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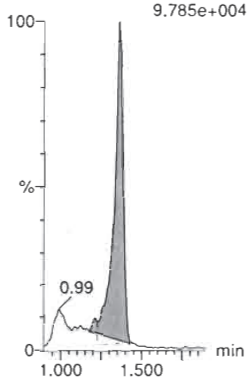
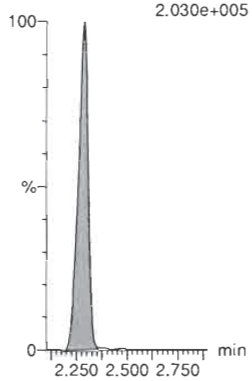
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

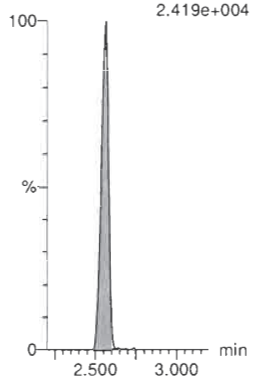
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
9.785e+004



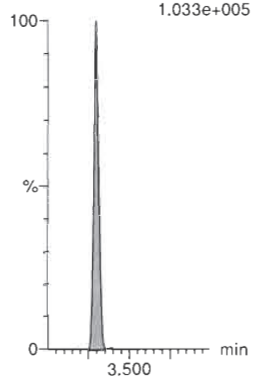
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
2.030e+005



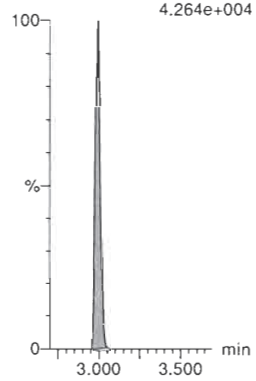
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.419e+004



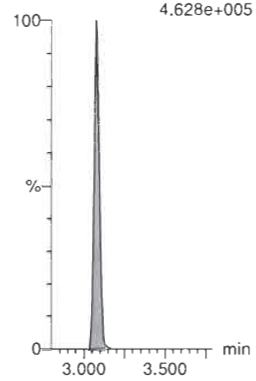
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.033e+005



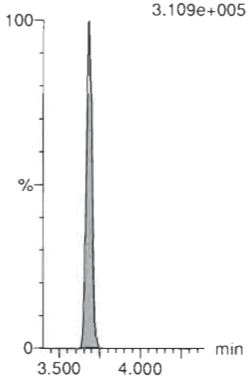
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
4.264e+004



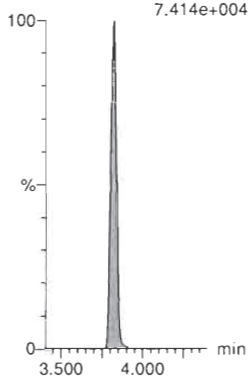
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
4.628e+005



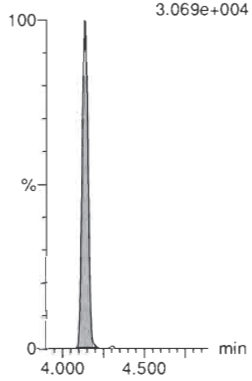
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.109e+005



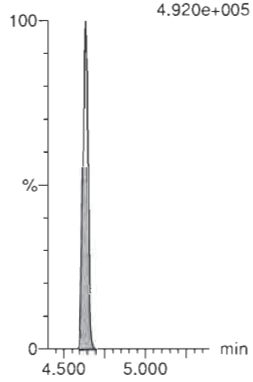
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
7.414e+004



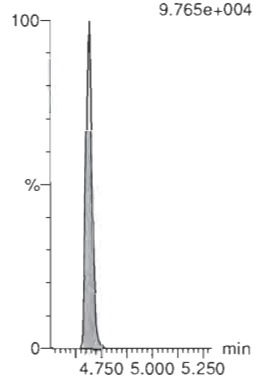
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.069e+004



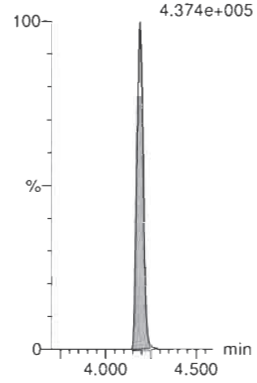
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.920e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.765e+004



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.374e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

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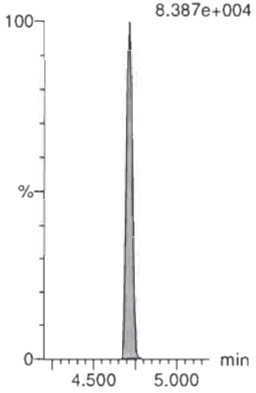
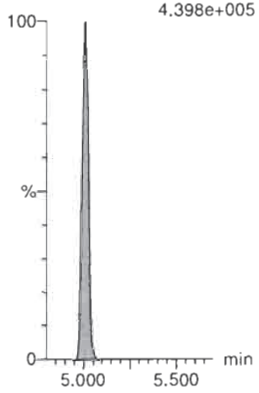
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

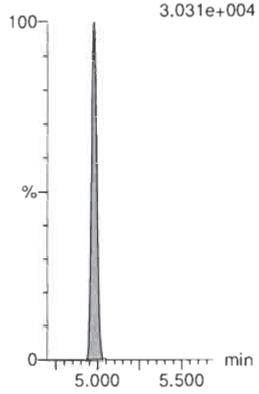
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
8.387e+004



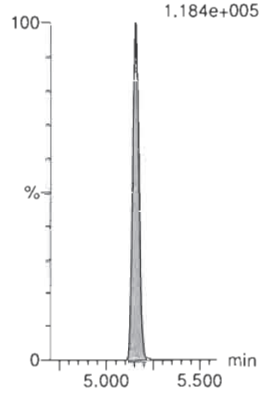
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
4.398e+005



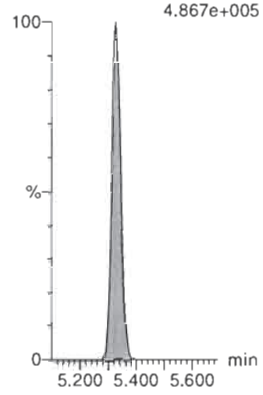
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.031e+004



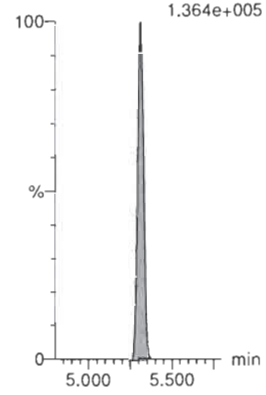
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.184e+005



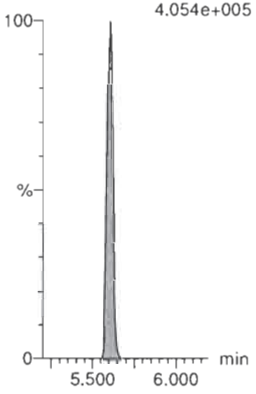
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.867e+005



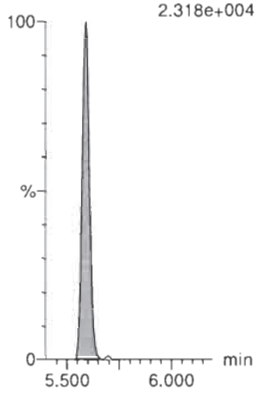
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.364e+005



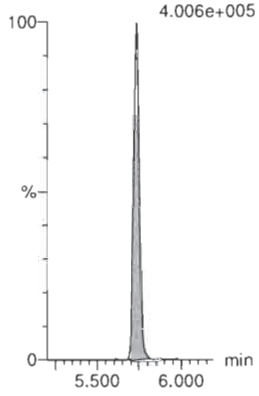
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.054e+005



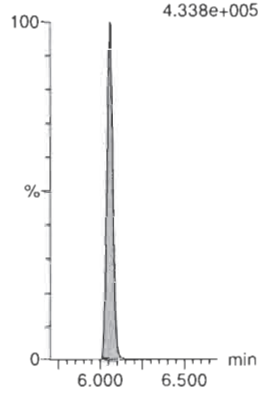
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.318e+004



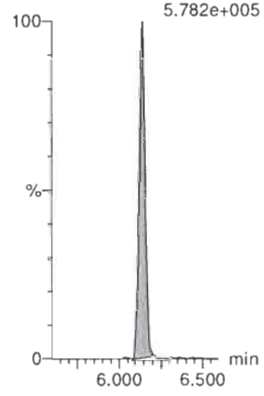
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.006e+005



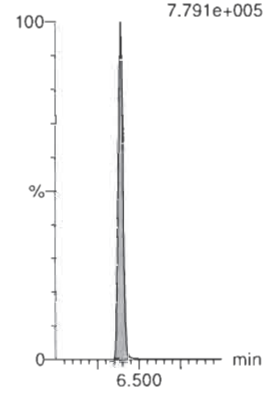
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.338e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.782e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
7.791e+005



Quantify Sample Report **MassLynx V4.2 SCN977** Page 10 of 14
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-61.qld

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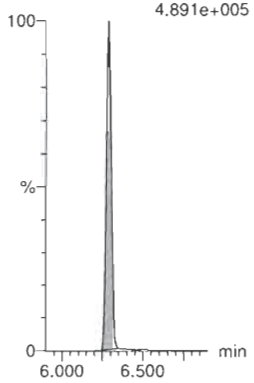
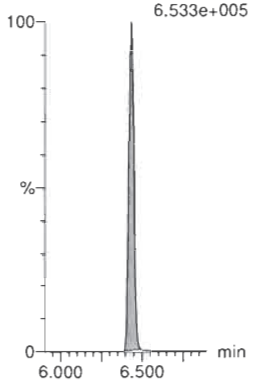
Printed: Saturday, February 29, 2020 12:06:46 Pacific Standard Time

Name: 200228P2-61, Date: 29-Feb-2020, Time: 00:43:35, ID: ST200228P2-13 PFC CS0 20B1104, Description: PFC CS0 20B1104

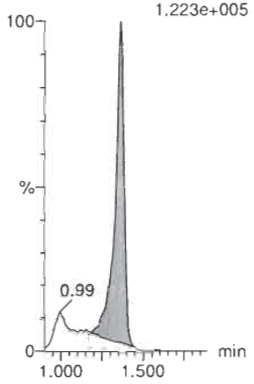
d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.891e+005



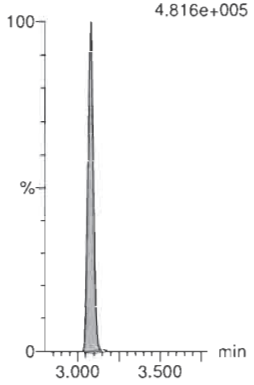
d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.533e+005



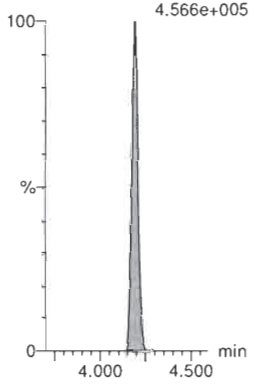
13C4-PFBA
F4:MRM of 1 channel,ES-
217.0 > 172.0
1.223e+005



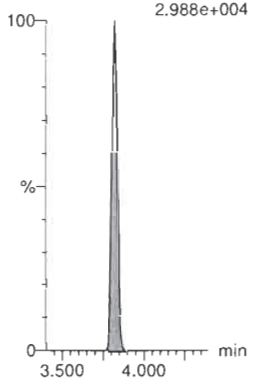
13C5-PFHxA
F15:MRM of 1 channel,ES-
318.0 > 272.9
4.816e+005



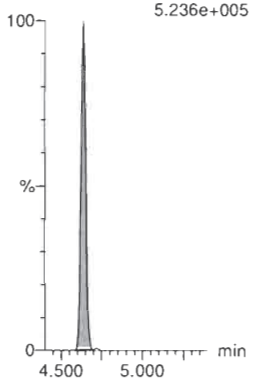
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
4.566e+005



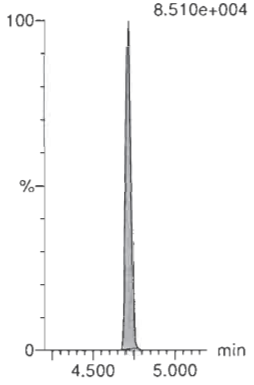
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
2.988e+004



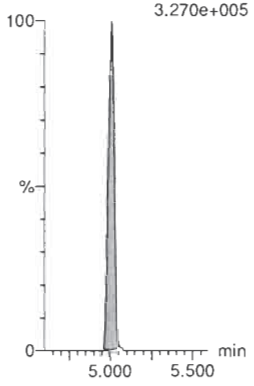
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
5.236e+005



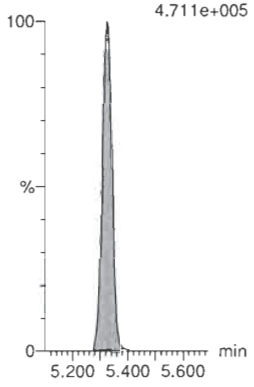
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.7
8.510e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
3.270e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
4.711e+005



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

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Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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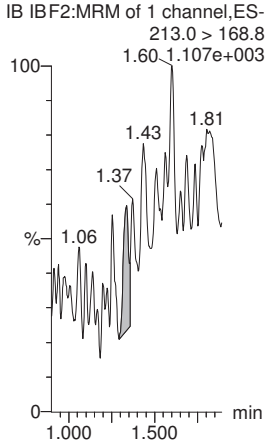

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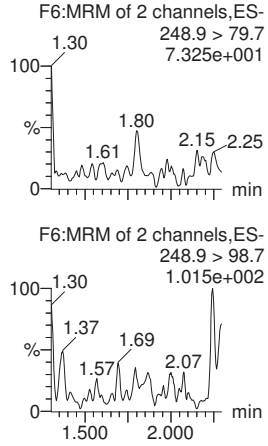
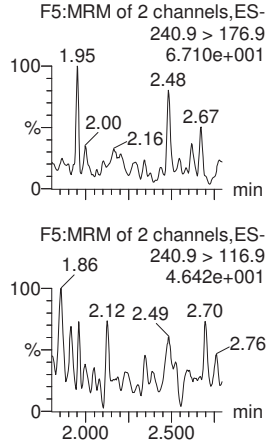


3:3 FTCA



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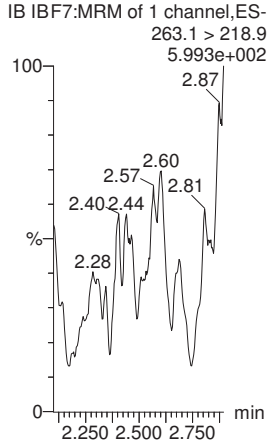

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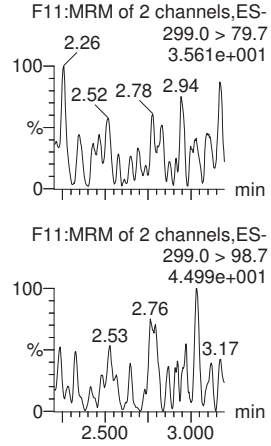
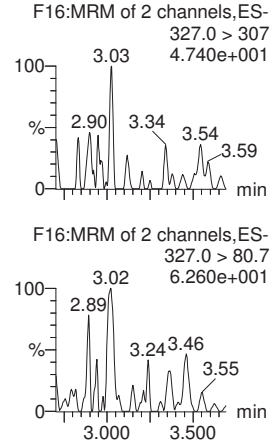


4:2 FTS



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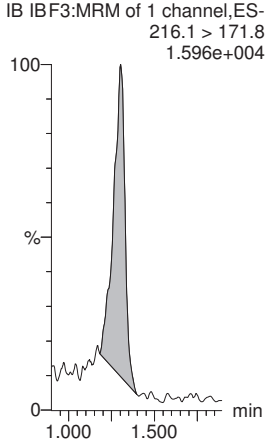

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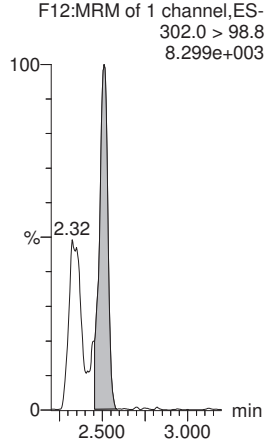

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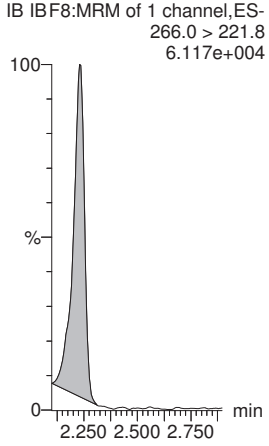

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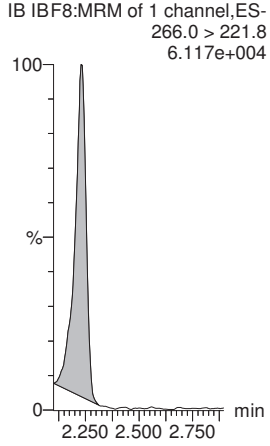

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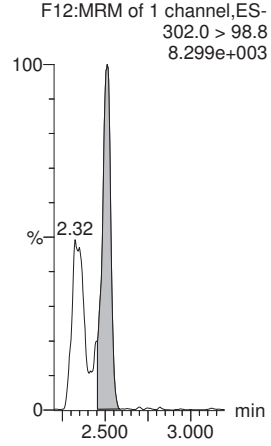

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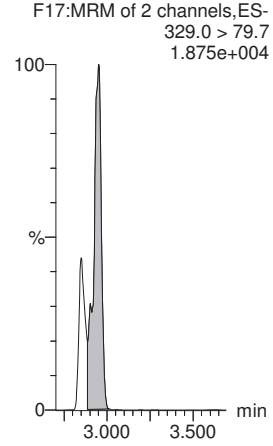

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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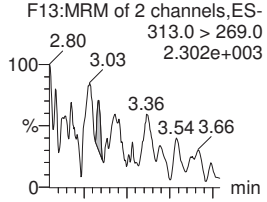

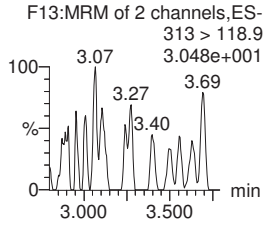

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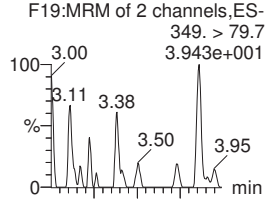

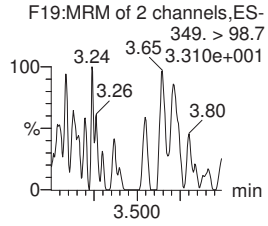

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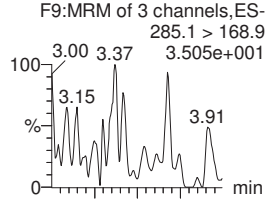
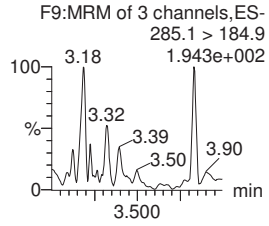
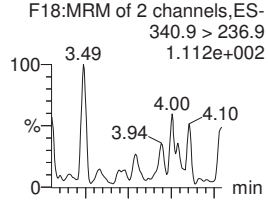
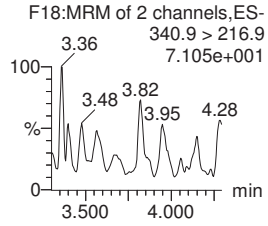




5:3 FTCA





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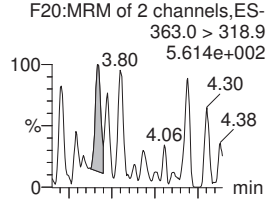

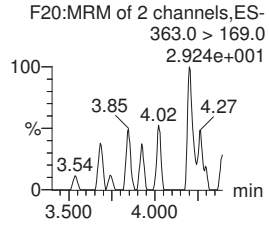

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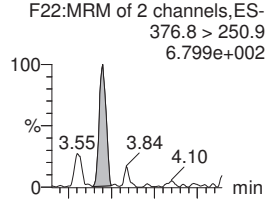

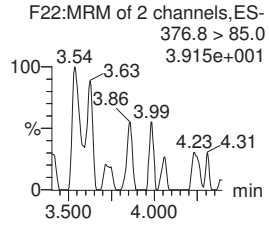

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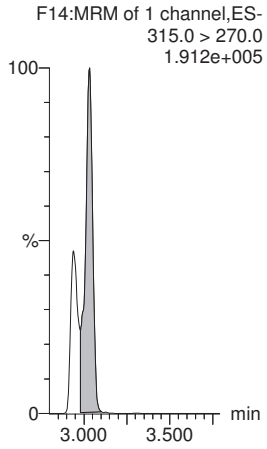

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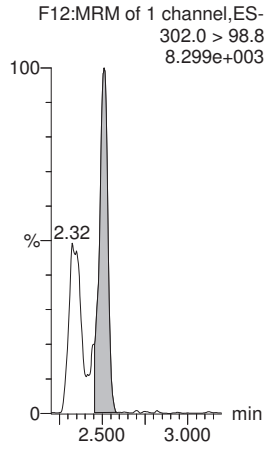
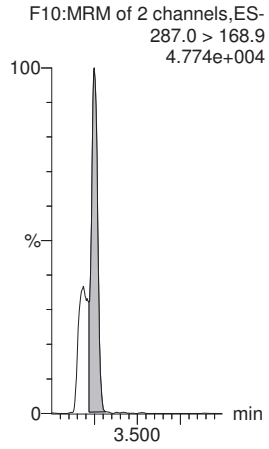


13C3-HFPO-DA-EIS



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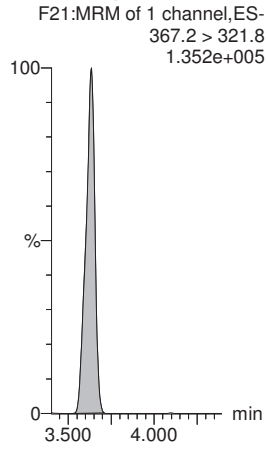

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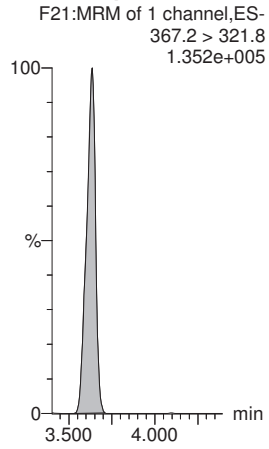

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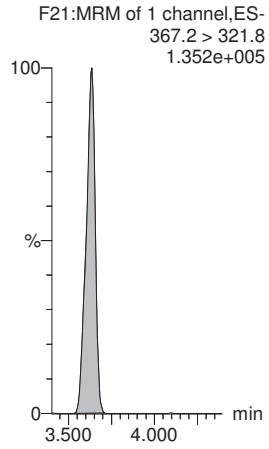

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

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Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

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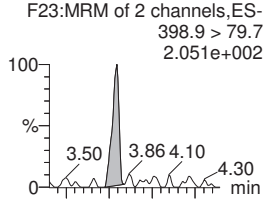

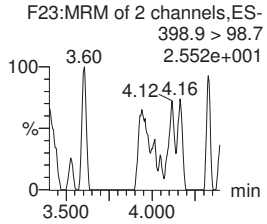

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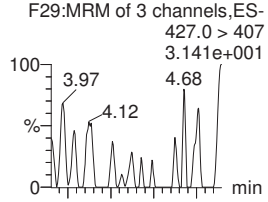
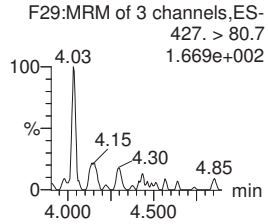
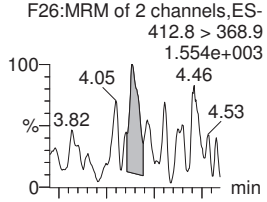
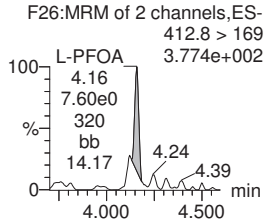




L-PFOA





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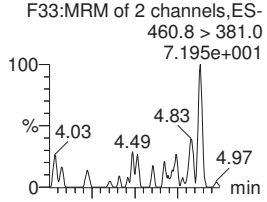

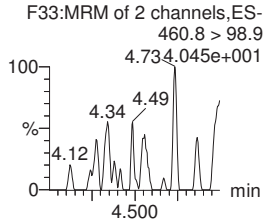

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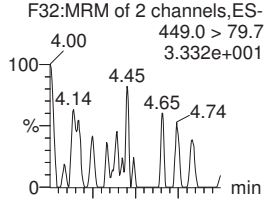

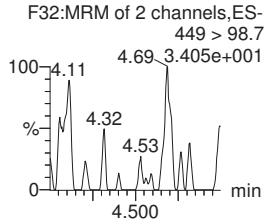

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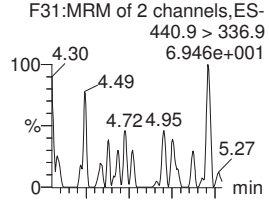
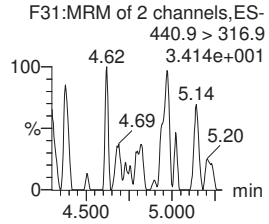
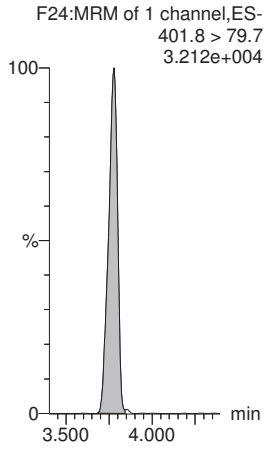
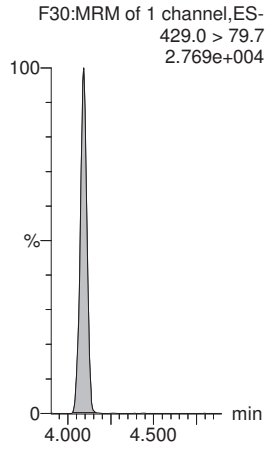




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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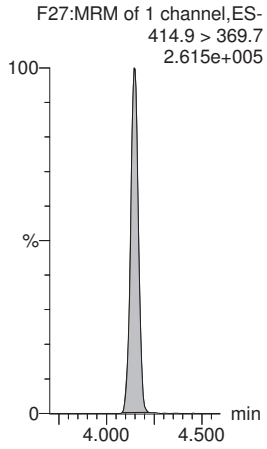

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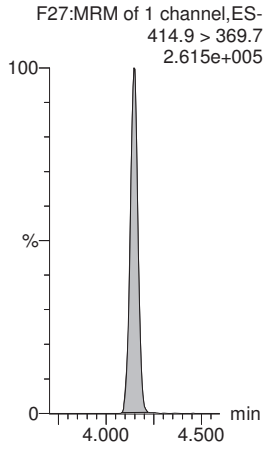

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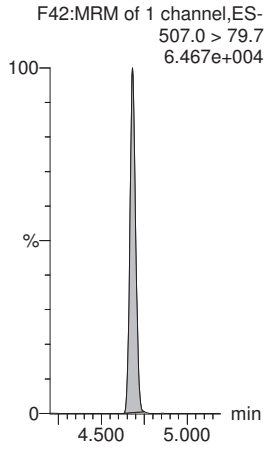
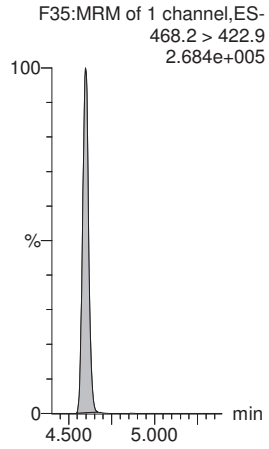


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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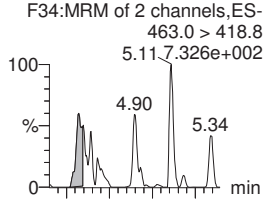

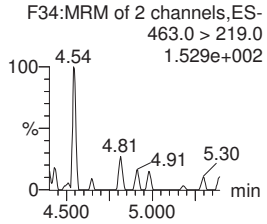

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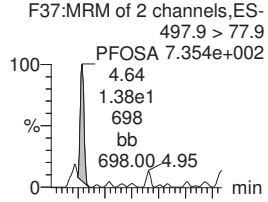

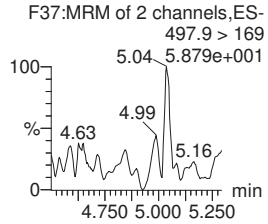

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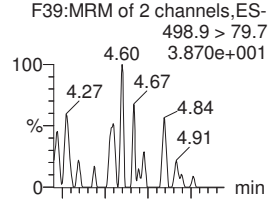

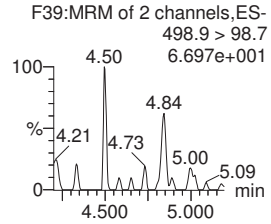

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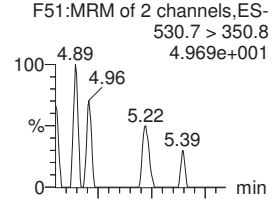

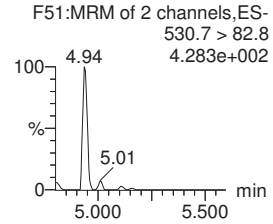

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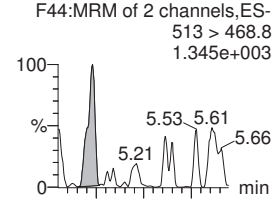

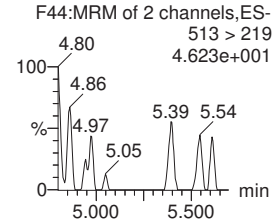

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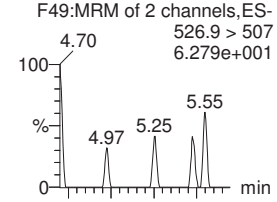

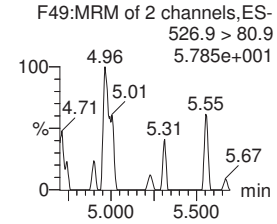

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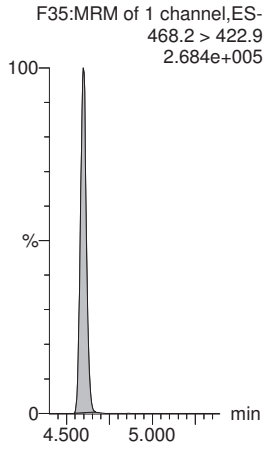

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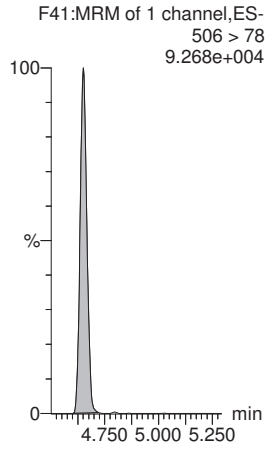

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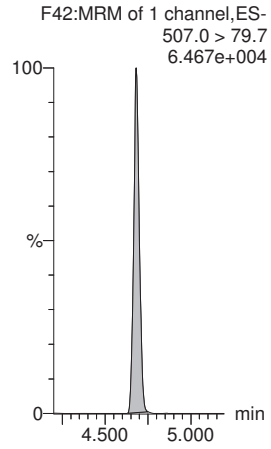

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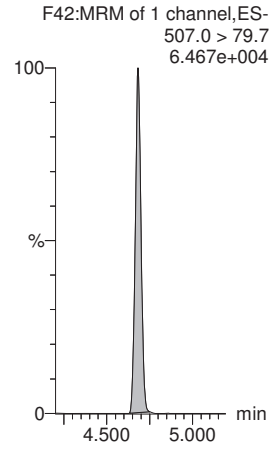

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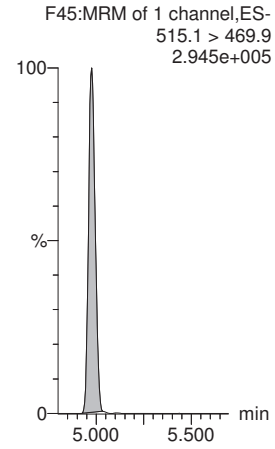

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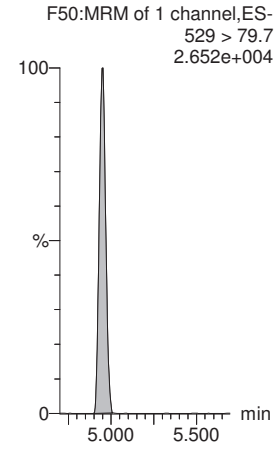

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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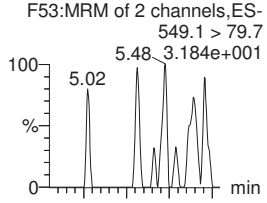

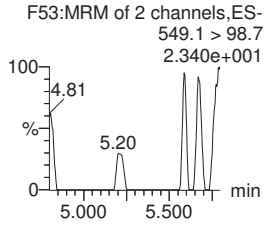

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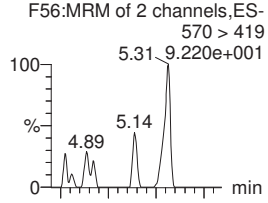
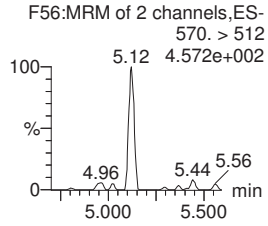
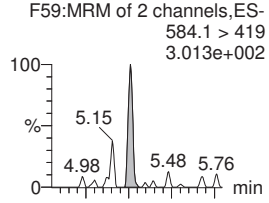
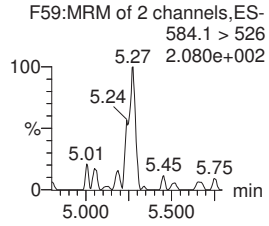




L-EtFOSAA





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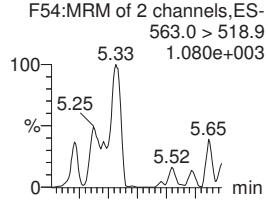

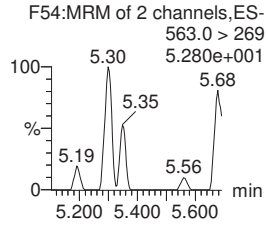

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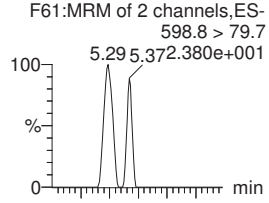

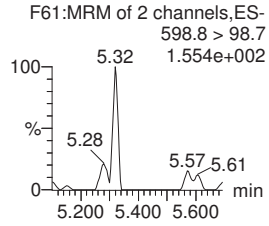

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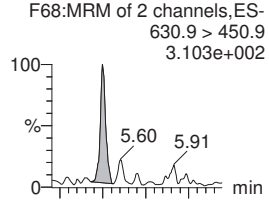

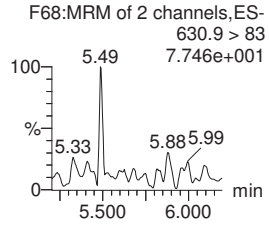

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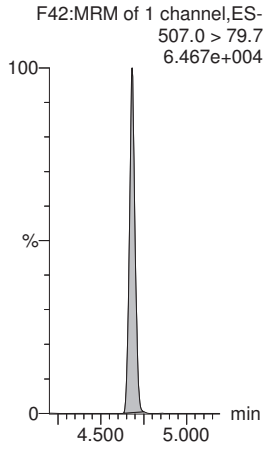

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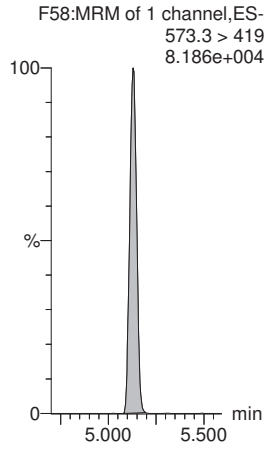

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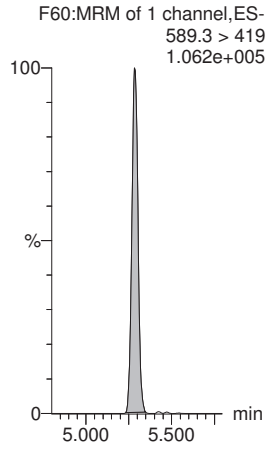

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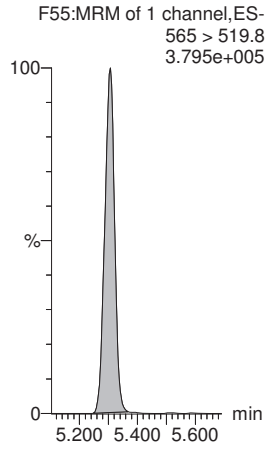

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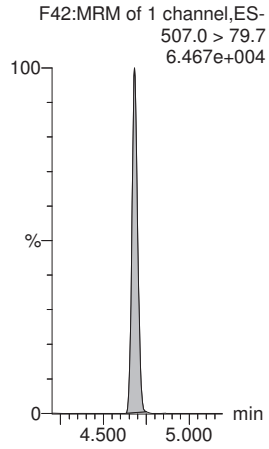

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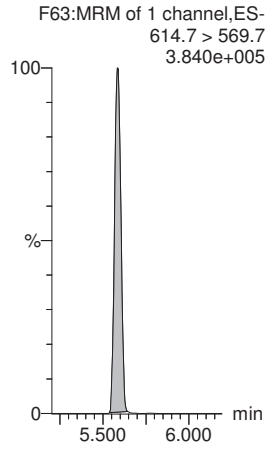

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

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Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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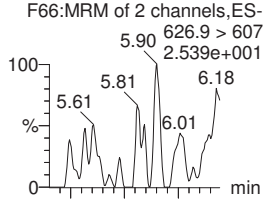

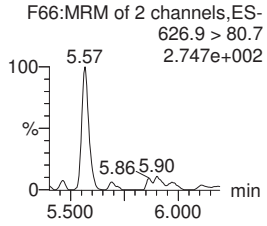

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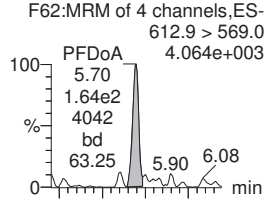

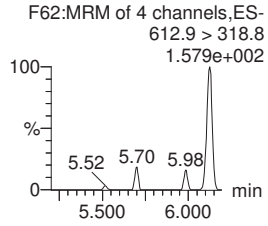

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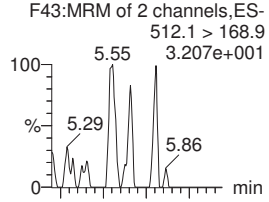

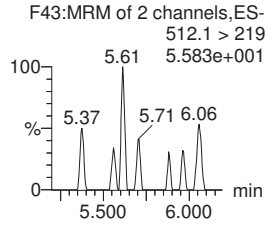

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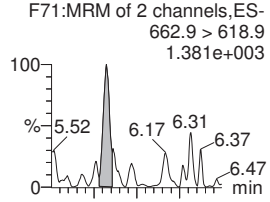

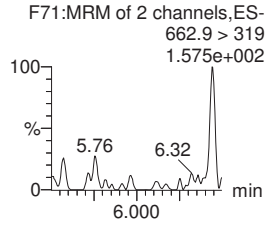

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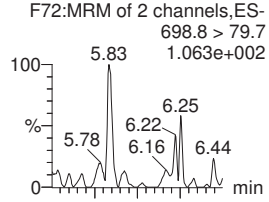

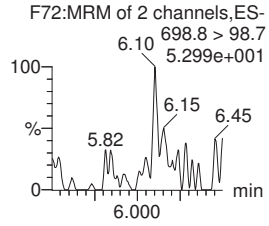

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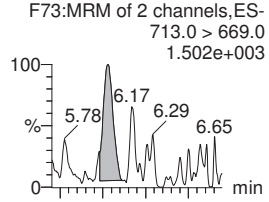

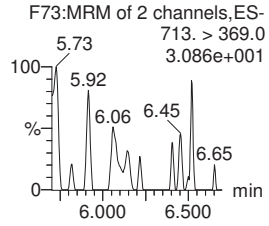

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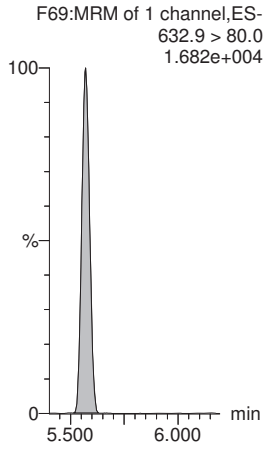

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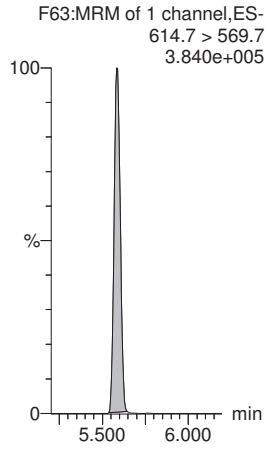

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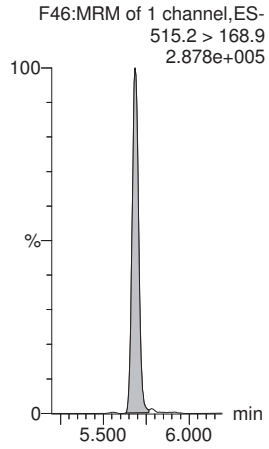

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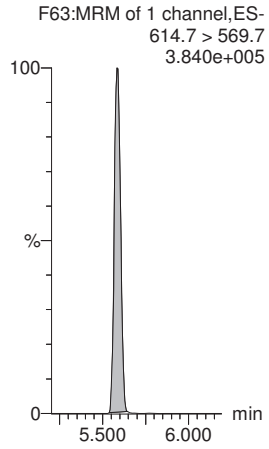

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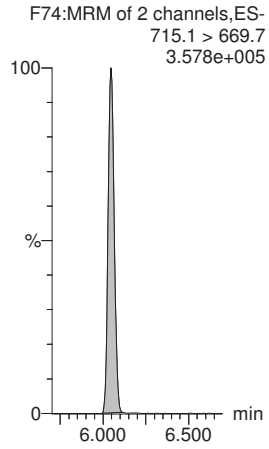

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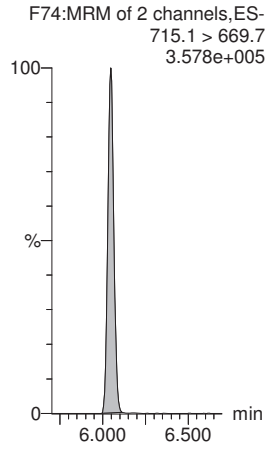


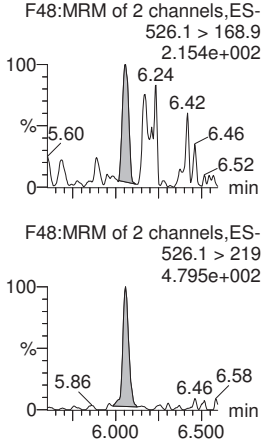
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

N-EtFOSA



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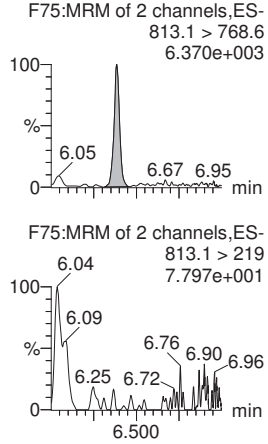

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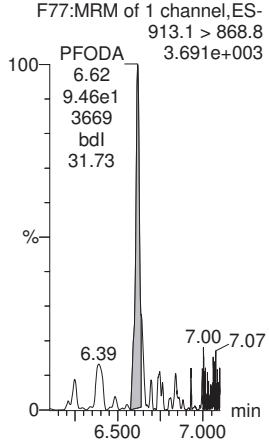

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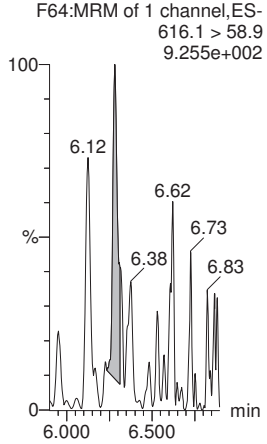

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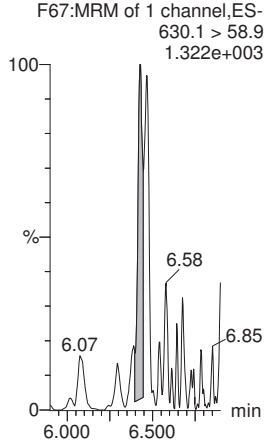
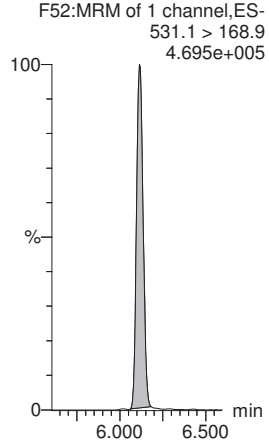


d5-N-ETFOSA-EIS



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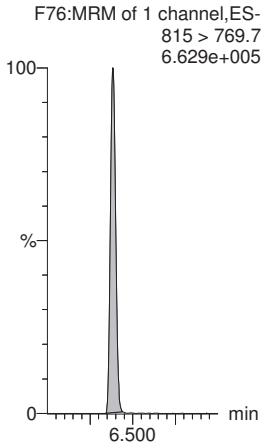

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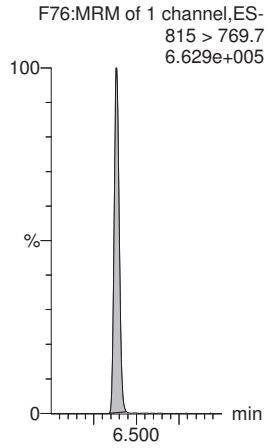

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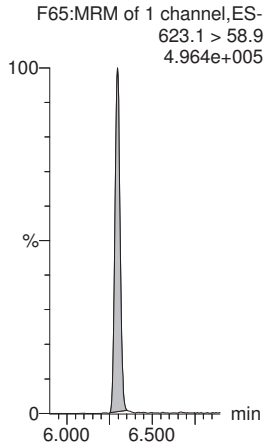
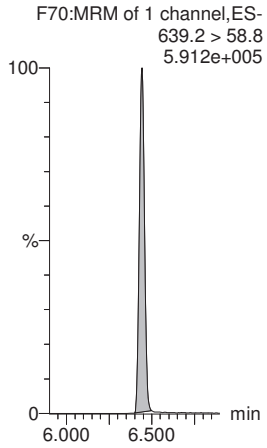


d9-N-EtFOSE-EIS



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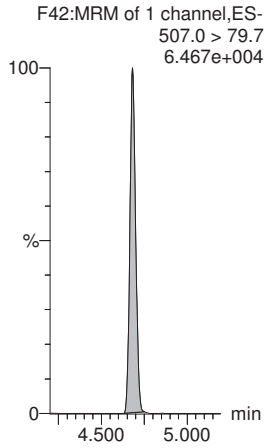

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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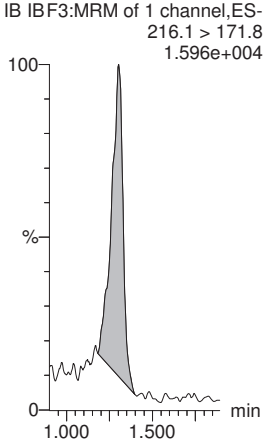

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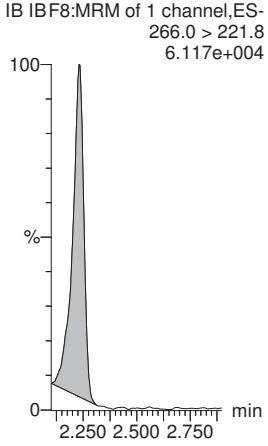

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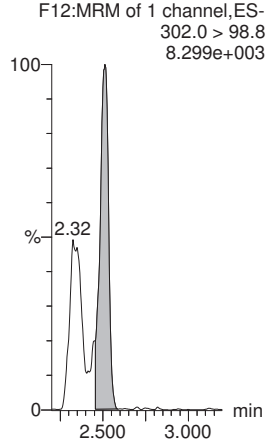

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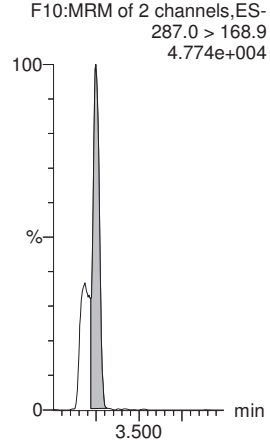

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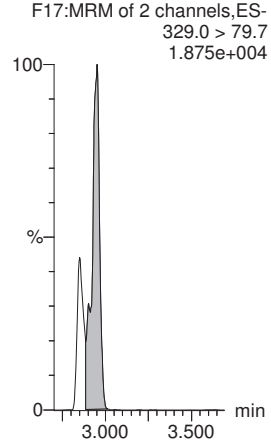

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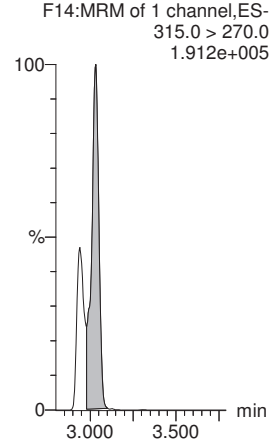

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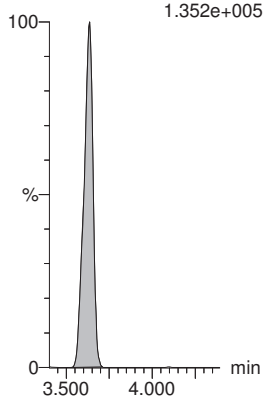
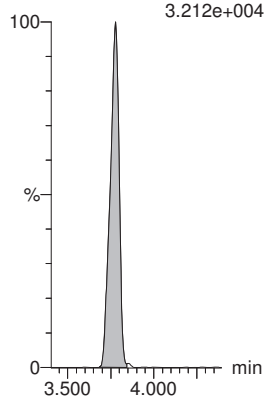


13C3-PFHxS-RSD



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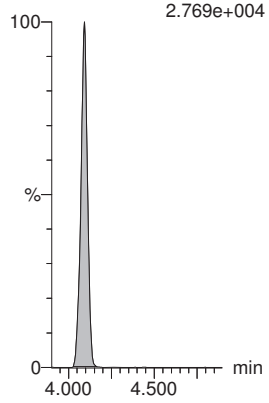
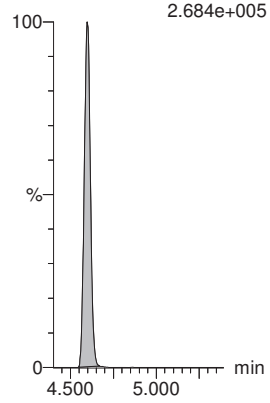
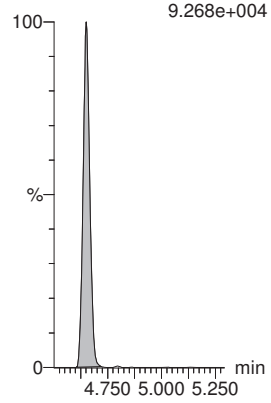


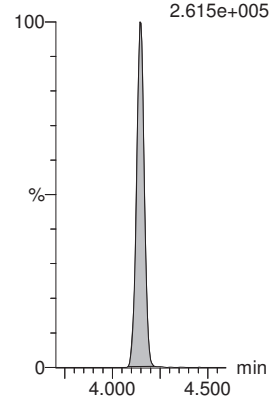
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

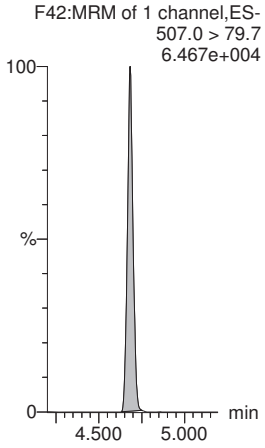
Vista Analytical Laboratory

Dataset: Untitled

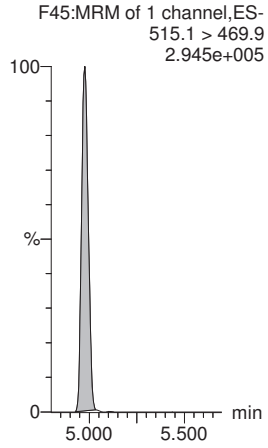
Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

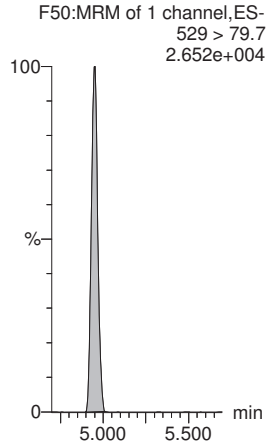
13C8-PFOS-RSD



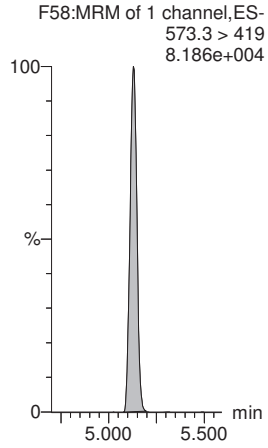
13C2-PFDA-RSD



13C2-8:2 FTS-RSD



d3-N-MeFOSAA-RSD



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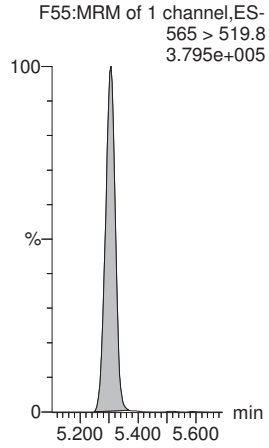

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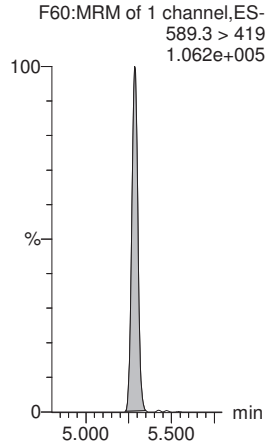

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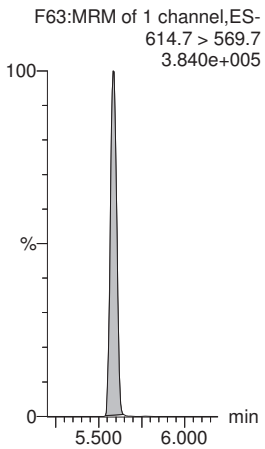

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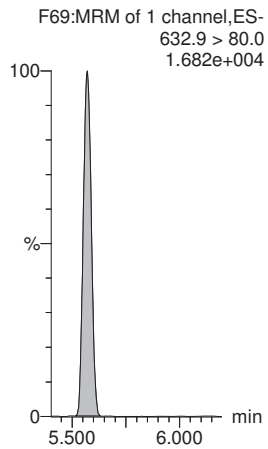

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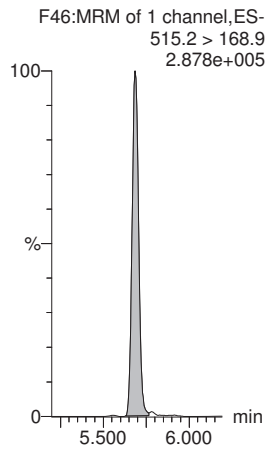

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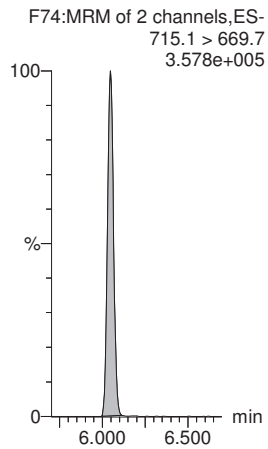

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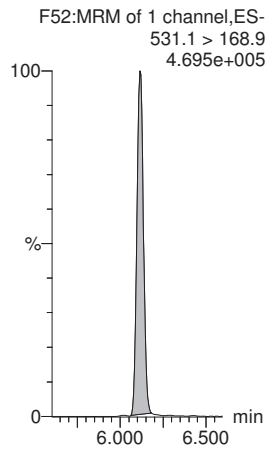

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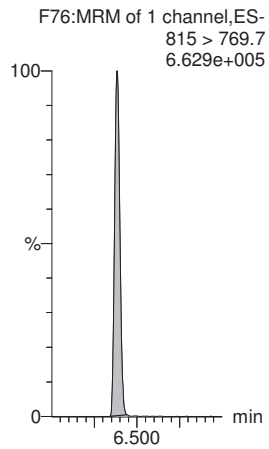

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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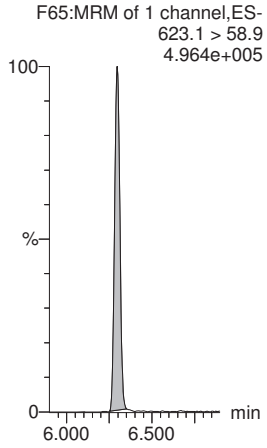
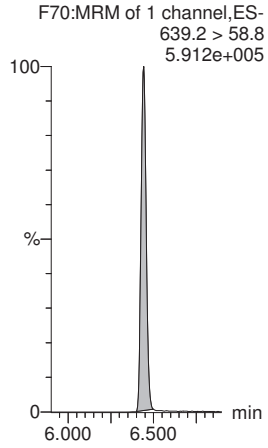
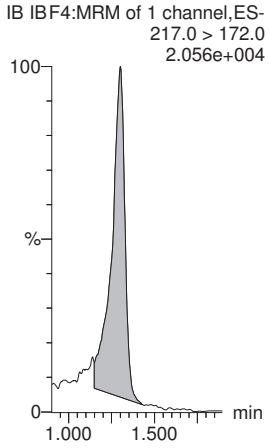
d7-N-MeFOSE-RSD



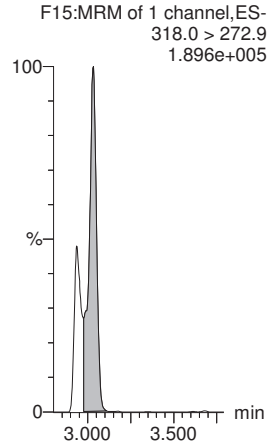
d9-N-EtFOSE-RSD



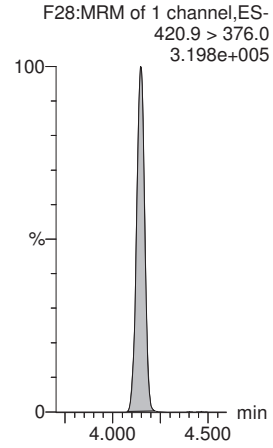
13C4-PFBA



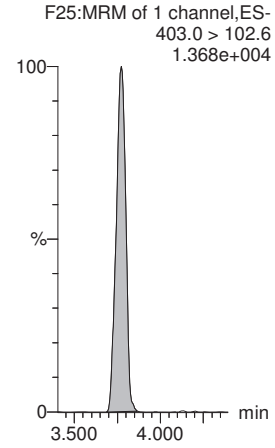
13C5-PFHxA



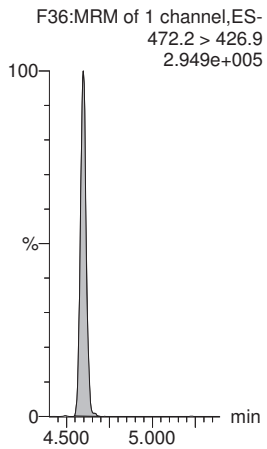
13C8-PFOA



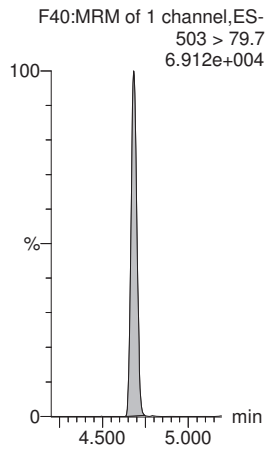
18O2-PFHxS



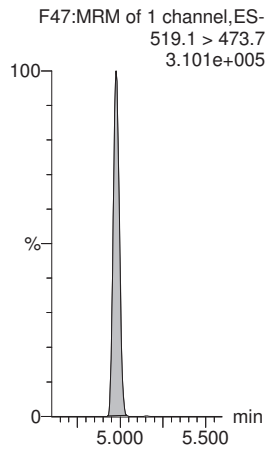
13C9-PFNA



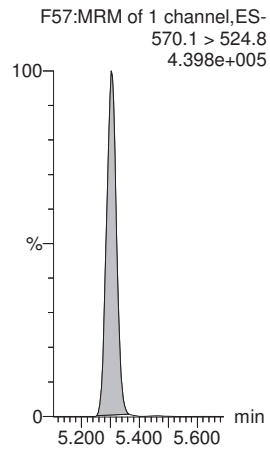
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	14.157	1115.262	1.00	1.34	0.159		0.0867		NO		
2	2	PFPrS	248.9 > 79.7		473.731	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		3554.875	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9		3554.875	1.00						NO		
5	5	PFBS	299.0 > 79.7		473.731	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		951.418	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1115.262		1.00	1.30	1115.262	12.500	3.20	25.6	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	473.731		1.00	2.51	473.731	12.500	6.34	50.8	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	3554.875		1.00	2.23	3554.875	12.500	5.52	44.2	YES		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	3554.875		1.00	2.23	3554.875	12.500	5.52	44.2	YES		
11	51	13C3-PFBS-EIS	302.0 > 98.8	473.731		1.00	2.51	473.731	12.500	6.34	50.8	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	951.418		1.00	2.95	951.418	12.500	8.16	65.3	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	21.225	9208.006	1.00	3.08	0.029				NO		YES
15	8	PFPeS	349.>79.7		473.731	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2012.123	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		8097.259	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	18.369	8097.259	1.00	3.67	0.028				NO		YES
19	12	ADONA	376.8 > 250.9	30.956	8097.259	1.00	3.70	0.048				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	9208.006		1.00	3.03	9208.006	12.500	8.06	64.5	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	473.731		1.00	2.51	473.731	12.500	6.34	50.8	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2012.123		1.00	3.25	2012.123	12.500	7.05	56.4	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8097.259		1.00	3.64	8097.259	12.500	12.5	99.6	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8097.259		1.00	3.64	8097.259	12.500	12.5	99.6	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8097.259		1.00	3.64	8097.259	12.500	12.5	99.6	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	8.996	1915.874	1.00	3.79	0.059		0.186		NO		YES
28	15	6:2 FTS	427.0 > 407		1221.489	1.00						NO		YES
29	16	L-PFOA	412.8 > 368.9	77.457	12178.052	1.00	4.13	0.080				NO	10.197	YES
30	18	PFecHS	460.8 > 381.0		12178.052	1.00						NO		YES
31	19	PFHpS	449.0 > 79.7		2456.501	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		10870.944	1.00						NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	1915.874		1.00	3.78	1915.874	12.500	11.3	90.4	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1221.489		1.00	4.09	1221.489	12.500	13.2	105.3	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12178.052		1.00	4.15	12178.052	12.500	11.9	95.5	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12178.052		1.00	4.15	12178.052	12.500	11.9	95.5	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	10870.944		1.00	4.60	10870.944	12.500	11.7	93.7	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	16.738	10870.944	1.00	4.57	0.019				NO		YES
41	22	PFOSA	497.9 > 77.9	13.824	3299.818	1.00	4.64	0.052		0.0121		NO		YES
42	23	L-PFOS	498.9 > 79.7		2456.501	1.00						NO		YES
43	25	9Cl-PF30NS	530.7 > 350.8		2456.501	1.00						NO		YES
44	26	PFDA	513 > 468.8	58.675	11710.319	1.00	4.98	0.063				NO		YES
45	27	8:2 FTS	526.9 > 507		1127.206	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	10870.944		1.00	4.60	10870.944	12.500	11.7	93.7	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3299.818		1.00	4.65	3299.818	12.500	11.2	89.5	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	11710.319		1.00	4.98	11710.319	12.500	11.8	94.6	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1127.206		1.00	4.95	1127.206	12.500	13.4	106.8	NO		
52	-1													
53	28	PFNS	549.1 > 79.7		2456.501	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		3341.979	1.00						NO		YES
55	31	L-EtFOSAA	584.1 > 419	8.949	4420.043	1.00	5.26	0.025		0.0476		NO		YES
56	33	PFUdA	563.0 > 518.9		14715.999	1.00						NO		YES
57	34	PFDS	598.8 > 79.7		2456.501	1.00						NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9	10.712	15840.331	1.00	5.50	0.008				NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	3341.979		1.00	5.13	3341.979	12.500	11.7	93.5	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	4420.043		1.00	5.28	4420.043	12.500	11.7	93.9	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	14715.999		1.00	5.31	14715.999	12.500	11.8	94.3	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	15840.331		1.00	5.58	15840.331	12.500	11.3	90.4	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		710.394	1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	164.316	15840.331	1.00	5.70	0.130		0.0957		NO		YES
68	38	N-MeFOSA	512.1 > 168.9		12609.581	1.00						NO		YES
69	39	PFTrDA	662.9 > 618.9	58.097	15840.331	1.00	5.82	0.046				NO		YES
70	40	PFDoS	698.8 > 79.7		14604.578	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	93.868	14604.578	1.00	6.03	0.080		0.0588		NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	710.394		1.00	5.57	710.394	12.500	10.9	87.3	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	15840.331		1.00	5.58	15840.331	12.500	11.3	90.4	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	12609.581		1.00	5.69	12609.581	149.200	139	93.4	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	15840.331		1.00	5.58	15840.331	12.500	11.3	90.4	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	14604.578		1.00	6.05	14604.578	12.500	11.5	91.9	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	14604.578		1.00	6.05	14604.578	12.500	11.5	91.9	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	8.454	20283.383	1.00	6.06	0.062				NO	0.465	YES
80	43	PFHxDA	813.1 > 768.6	241.646	22783.920	1.00	6.39	0.133				NO		YES
81	44	PFODA	913.1 > 868.8	94.619	22783.920	1.00	6.62	0.052				NO		
82	45	N-MeFOSE	616.1 > 58.9	26.283	17286.043	1.00	6.28	0.227				NO		
83	46	N-EtFOSE	630.1 > 58.9	39.785	19829.824	1.00	6.43	0.299				NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	20283.383		1.00	6.11	20283.383	149.200	137	91.9	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	22783.920		1.00	6.38	22783.920	12.500	11.7	93.5	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	22783.920		1.00	6.38	22783.920	12.500	11.7	93.5	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17286.043		1.00	6.29	17286.043	149.200	139	92.9	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19829.824		1.00	6.44	19829.824	149.200	135	90.4	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1115.262	1747.093	1.00	1.30	7.979	12.500	10.7	85.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	3554.875	9488.963	1.00	2.23	4.683	12.500	8.55	68.4	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	473.731	868.893	1.00	2.51	6.815	12.500	6.84	54.7	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2012.123	9488.963	1.00	3.25	2.651	12.500	11.0	88.1	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	951.418	868.893	1.00	2.95	13.687	12.500	9.48	75.8	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	9208.006	9488.963	1.00	3.03	12.130	12.500	12.0	96.0	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8097.259	9488.963	1.00	3.64	10.667	12.500	18.8	150.4	YES		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	1915.874	868.893	1.00	3.78	27.562	12.500	11.6	92.7	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1221.489	2678.392	1.00	4.09	5.701	12.500	12.2	97.9	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	10870.944	11558.146	1.00	4.60	11.757	12.500	12.3	98.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3299.818	17157.313	1.00	4.65	2.404	12.500	11.9	95.3	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12178.052	15383.705	1.00	4.15	9.895	12.500	12.0	96.1	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2456.501	2678.392	1.00	4.68	11.464	12.500	11.9	95.6	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	11710.319	12556.789	1.00	4.98	11.657	12.500	12.6	100.6	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1127.206	2678.392	1.00	4.95	5.261	12.500	14.4	114.8	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	3341.979	17157.313	1.00	5.13	2.435	12.500	11.3	90.8	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	14715.999	17157.313	1.00	5.31	10.721	12.500	11.2	89.8	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	4420.043	17157.313	1.00	5.28	3.220	12.500	12.4	99.5	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	15840.331	12556.789	1.00	5.58	15.769	12.500	12.2	97.5	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	710.394	2678.392	1.00	5.57	3.315	12.500	9.91	79.3	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	12609.581	17157.313	1.00	5.69	9.187	149.200	136	91.0	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	14604.578	17157.313	1.00	6.05	10.640	12.500	11.9	95.6	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	20283.383	17157.313	1.00	6.11	14.778	149.200	142	95.5	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	22783.920	17157.313	1.00	6.38	16.599	12.500	11.4	91.4	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17286.043	17157.313	1.00	6.29	12.594	149.200	140	93.5	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19829.824	17157.313	1.00	6.44	14.447	149.200	139	93.0	NO		
119	99	13C4-PFBA	217.0 > 172.0	1747.093	1747.093	1.00	1.30	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	9488.963	9488.963	1.00	3.03	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	15383.705	15383.705	1.00	4.15	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	868.893	868.893	1.00	3.77	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11558.146	11558.146	1.00	4.60	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2678.392	2678.392	1.00	4.68	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	12556.789	12556.789	1.00	4.98	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	17157.313	17157.313	1.00	5.30	12.500	12.500	12.5	100.0	NO		

LC Calibration Standards Review Checklist Q5

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	N/A
Calibration ID:	ST200229P1-11	L M H	☑	☑	☑	☑	☑	☑	☐
Calibration ID:	↓ -12	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	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 20200226-1

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

All Branches in Acquisition Window ☑

IIS Area Saved ☑

Reviewed By: RK 3/2/20
Initials/Date

Comments:

ID: LR - LCSRC *Rev. No.: 2* *Rev. Date: 04/29/2019* *Page: 1 of 1*

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

TK 3/2/20

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	4545.992	4578.631	1.00	1.30	12.411	10.000	10.2	102.3	NO		
2	2	PFPrS	248.9 > 79.7	1061.240	944.661	1.00	1.63	14.043	10.000	10.6	105.7	NO	2.822	NO
3	3	3:3 FTCA	240.9 > 176.9	863.002	8084.413	1.00	2.09	1.334	10.000	10.0	100.0	NO	3.795	NO
4	4	PFPeA	263.1 > 218.9	6552.413	8084.413	1.00	2.23	10.131	10.000	10.5	104.8	NO		
5	5	PFBS	299.0 > 79.7	1963.863	944.661	1.00	2.51	25.986	10.000	9.96	99.6	NO	3.482	NO
6	6	4:2 FTS	327.0 > 307	1628.680	1414.836	1.00	2.95	14.389	10.000	9.26	92.6	NO	0.965	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4578.631		1.00	1.30	4578.631	12.500	13.2	105.2	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	944.661		1.00	2.51	944.661	12.500	12.7	101.2	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	8084.413		1.00	2.23	8084.413	12.500	12.6	100.4	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	8084.413		1.00	2.23	8084.413	12.500	12.6	100.4	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	944.661		1.00	2.51	944.661	12.500	12.7	101.2	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1414.836		1.00	2.95	1414.836	12.500	12.1	97.1	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	11197.328	15070.203	1.00	3.04	9.288	10.000	10.9	109.5	NO	16.550	NO
15	8	PFPeS	349.>79.7	1947.530	944.661	1.00	3.24	25.770	10.000	9.50	95.0	NO	2.555	NO
16	9	HFPO-DA	285.1 > 168.9	3318.440	3584.100	1.00	3.25	11.573	10.000	10.9	109.3	NO	2.978	NO
17	10	5:3 FTCA	340.9 > 236.9	2217.239	8360.387	1.00	3.58	3.315	10.000	9.61	96.1	NO	1.770	NO
18	11	PFHpA	363.0 > 318.9	8501.870	8360.387	1.00	3.64	12.712	10.000	10.4	104.4	NO	13.191	YES
19	12	ADONA	376.8 > 250.9	23476.066	8360.387	1.00	3.75	35.100	10.000	11.3	113.3	NO	3.740	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	15070.203		1.00	3.04	15070.203	12.500	13.2	105.6	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	944.661		1.00	2.51	944.661	12.500	12.7	101.2	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3584.100		1.00	3.25	3584.100	12.500	12.6	100.4	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8360.387		1.00	3.64	8360.387	12.500	12.9	102.9	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8360.387		1.00	3.64	8360.387	12.500	12.9	102.9	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8360.387		1.00	3.64	8360.387	12.500	12.9	102.9	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	1833.021	2086.865	1.00	3.79	10.980	10.000	10.2	101.5	NO	2.257	NO
28	15	6:2 FTS	427.0 > 407	2123.568	1131.779	1.00	4.10	23.454	10.000	10.8	108.2	NO	1.524	NO
29	16	L-PFOA	412.8 > 368.9	13364.517	12658.704	1.00	4.16	13.197	10.000	10.8	108.1	NO	3.118	NO
30	18	PFecHS	460.8 > 381.0	2155.446	12658.704	1.00	4.17	2.128	10.000	11.4	113.6	NO	0.597	NO
31	19	PFHpS	449.0 > 79.7	2002.755	2646.552	1.00	4.27	9.459	10.000	8.36	83.6	NO	2.235	NO
32	20	7:3 FTCA	440.9 > 336.9	2218.383	11408.199	1.00	4.59	2.431	10.000	9.78	97.8	NO	1.666	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2086.865		1.00	3.79	2086.865	12.500	12.3	98.5	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1131.779		1.00	4.10	1131.779	12.500	12.2	97.5	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12658.704		1.00	4.16	12658.704	12.500	12.4	99.3	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12658.704		1.00	4.16	12658.704	12.500	12.4	99.3	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

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Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

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Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2646.552		1.00	4.69	2646.552	12.500	13.5	107.9	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	11408.199		1.00	4.60	11408.199	12.500	12.3	98.3	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	12016.743	11408.199	1.00	4.60	13.167	10.000	11.7	117.1	NO	5.767	NO
41	22	PFOSA	497.9 > 77.9	2447.139	3564.798	1.00	4.66	8.581	10.000	10.0	100.2	NO	26.024	NO
42	23	L-PFOS	498.9 > 79.7	2096.880	2646.552	1.00	4.69	9.904	10.000	10.2	102.1	NO	2.096	NO
43	25	9Cl-PF30NS	530.7 > 350.8	3508.842	2646.552	1.00	4.91	16.573	10.000	10.7	106.9	NO	22.295	NO
44	26	PFDA	513 > 468.8	14997.096	13043.857	1.00	4.98	14.372	10.000	10.9	109.2	NO	8.515	NO
45	27	8:2 FTS	526.9 > 507	1557.911	1144.013	1.00	4.95	17.022	10.000	9.42	94.2	NO	2.790	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	11408.199		1.00	4.60	11408.199	12.500	12.3	98.3	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3564.798		1.00	4.65	3564.798	12.500	12.1	96.6	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2646.552		1.00	4.69	2646.552	12.500	13.5	107.9	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2646.552		1.00	4.69	2646.552	12.500	13.5	107.9	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	13043.857		1.00	4.98	13043.857	12.500	13.2	105.4	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1144.013		1.00	4.95	1144.013	12.500	13.6	108.4	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1915.633	2646.552	1.00	5.04	9.048	10.000	9.73	97.3	NO	2.160	NO
54	29	L-MeFOSAA	570 > 419	4712.391	3857.103	1.00	5.13	15.272	10.000	9.46	94.6	NO	2.334	NO
55	31	L-EtFOSAA	584.1 > 419	4045.113	4257.436	1.00	5.29	11.877	10.000	11.0	110.4	NO	1.253	NO
56	33	PFUdA	563.0 > 518.9	13585.625	16037.858	1.00	5.31	10.589	10.000	10.2	101.8	NO	18.136	NO
57	34	PFDS	598.8 > 79.7	1883.773	2646.552	1.00	5.35	8.897	10.000	10.2	101.6	NO	1.811	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	6063.354	17174.354	1.00	5.52	4.413	10.000	10.6	105.6	NO	22.650	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	2646.552		1.00	4.69	2646.552	12.500	13.5	107.9	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	3857.103		1.00	5.13	3857.103	12.500	13.5	107.9	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	4257.436		1.00	5.29	4257.436	12.500	11.3	90.4	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	16037.858		1.00	5.31	16037.858	12.500	12.8	102.8	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2646.552		1.00	4.69	2646.552	12.500	13.5	107.9	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	17174.354		1.00	5.59	17174.354	12.500	12.2	98.0	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1476.360	889.448	1.00	5.57	20.748	10.000	9.70	97.0	NO	1.020	NO
67	37	PFDoA	612.9 > 569.0	14445.468	17174.354	1.00	5.59	10.514	10.000	10.8	108.1	NO	10.617	NO
68	38	N-MeFOSA	512.1 > 168.9	5182.773	14046.566	1.00	5.66	55.050	50.000	52.6	105.2	NO	1.641	NO
69	39	PFTrDA	662.9 > 618.9	15334.015	17174.354	1.00	5.83	11.161	10.000	10.5	104.8	NO	35.785	NO
70	40	PFDoS	698.8 > 79.7	2046.224	14637.226	1.00	5.86	1.747	10.000	10.7	106.7	NO	3.134	NO
71	41	PFTeDA	713.0 > 669.0	15085.252	14637.226	1.00	6.05	12.883	10.000	9.67	96.7	NO	16.011	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	889.448		1.00	5.57	889.448	12.500	13.7	109.3	NO		

Quantify Sample Report **MassLynx V4.2 SCN977** Page 13 of 14
Vista Analytical Laboratory

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Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	17174.354		1.00	5.59	17174.354	12.500	12.2	98.0	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	14046.566		1.00	5.69	14046.566	149.200	155	104.1	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	17174.354		1.00	5.59	17174.354	12.500	12.2	98.0	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	14637.226		1.00	6.05	14637.226	12.500	11.5	92.1	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	14637.226		1.00	6.05	14637.226	12.500	11.5	92.1	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	6857.971	21925.426	1.00	6.10	46.668	50.000	50.5	101.0	NO	1.723	NO
80	43	PFHxDA	813.1 > 768.6	13848.229	23688.973	1.00	6.39	7.307	10.000	10.8	108.2	NO	82.880	NO
81	44	PFODA	913.1 > 868.8	19617.145	23688.973	1.00	6.62	10.351	10.000	11.3	112.7	NO		
82	45	N-MeFOSE	616.1 > 58.9	6767.500	18901.303	1.00	6.30	53.420	50.000	51.3	102.6	NO		
83	46	N-EtFOSE	630.1 > 58.9	7688.967	22302.607	1.00	6.45	51.438	50.000	50.9	101.8	NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	21925.426		1.00	6.12	21925.426	149.200	148	99.4	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	23688.973		1.00	6.39	23688.973	12.500	12.2	97.2	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	23688.973		1.00	6.39	23688.973	12.500	12.2	97.2	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	18901.303		1.00	6.29	18901.303	149.200	152	101.6	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	22302.607		1.00	6.44	22302.607	149.200	152	101.7	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2646.552		1.00	4.69	2646.552	12.500	13.5	107.9	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	4580.259	6009.308	1.00	1.30	9.527	12.500	12.7	101.9	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	8084.413	14906.527	1.00	2.23	6.779	12.500	12.4	99.0	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	944.661	890.562	1.00	2.51	13.259	12.500	13.3	106.5	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3584.100	14906.527	1.00	3.25	3.005	12.500	12.5	99.9	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1414.836	890.562	1.00	2.95	19.859	12.500	13.7	110.0	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	15070.203	14906.527	1.00	3.04	12.637	12.500	12.5	100.0	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8360.387	14906.527	1.00	3.64	7.011	12.500	12.4	98.8	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2086.865	890.562	1.00	3.79	29.291	12.500	12.3	98.5	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1131.779	2706.877	1.00	4.10	5.226	12.500	11.2	89.8	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	11408.199	11796.409	1.00	4.60	12.089	12.500	12.7	101.6	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3564.798	16745.436	1.00	4.65	2.661	12.500	13.2	105.5	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12658.704	14921.802	1.00	4.16	10.604	12.500	12.9	103.0	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2646.552	2706.877	1.00	4.69	12.221	12.500	12.7	101.9	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	13043.857	13423.078	1.00	4.98	12.147	12.500	13.1	104.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1144.013	2706.877	1.00	4.95	5.283	12.500	14.4	115.3	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	3857.103	16745.436	1.00	5.13	2.879	12.500	13.4	107.3	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	16037.858	16745.436	1.00	5.31	11.972	12.500	12.5	100.3	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	4257.436	16745.436	1.00	5.29	3.178	12.500	12.3	98.2	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	17174.354	13423.078	1.00	5.59	15.993	12.500	12.4	98.9	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	889.448	2706.877	1.00	5.57	4.107	12.500	12.3	98.2	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	14046.566	16745.436	1.00	5.69	10.485	149.200	155	103.8	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	14637.226	16745.436	1.00	6.05	10.926	12.500	12.3	98.2	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	21925.426	16745.436	1.00	6.12	16.367	149.200	158	105.7	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	23688.973	16745.436	1.00	6.39	17.683	12.500	12.2	97.4	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	18901.303	16745.436	1.00	6.29	14.109	149.200	156	104.8	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	22302.607	16745.436	1.00	6.44	16.648	149.200	160	107.2	NO		
119	99	13C4-PFBA	217.0 > 172.0	6009.308	6009.308	1.00	1.30	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	14906.527	14906.527	1.00	3.04	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	14921.802	14921.802	1.00	4.16	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	890.562	890.562	1.00	3.78	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11796.409	11796.409	1.00	4.60	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2706.877	2706.877	1.00	4.69	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	13423.078	13423.078	1.00	4.98	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	16745.436	16745.436	1.00	5.31	12.500	12.500	12.5	100.0	NO		

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 13:22:43 Pacific Standard Time
Printed: Monday, March 02, 2020 13:23:30 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 02 Mar 2020 10:31:16
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Compound name: PFBA

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2	2	200229P1-2	IPA	29-Feb-20	15:35:28
3	3	200229P1-3	ST200229P1-1 PFC CS-2 20B1102	29-Feb-20	15:45:57
4	4	200229P1-4	ST200229P1-2 PFC CS-1 20B1103	29-Feb-20	15:56:29
5	5	200229P1-5	ST200229P1-3 PFC CS0 20B1104	29-Feb-20	16:06:57
6	6	200229P1-6	ST200229P1-4 PFC CS1 20B1105	29-Feb-20	16:17:29
7	7	200229P1-7	ST200229P1-5 PFC CS2 20B1106	29-Feb-20	16:28:00
8	8	200229P1-8	ST200229P1-6 PFC CS3 20B1107	29-Feb-20	16:38:28
9	9	200229P1-9	ST200229P1-7 PFC CS4 20B1108	29-Feb-20	16:49:00
10	10	200229P1-10	ST200229P1-8 PFC CS5 20B1109	29-Feb-20	16:59:31
11	11	200229P1-11	ST200229P1-9 PFC CS6 20B1110	29-Feb-20	17:10:00
12	12	200229P1-12	ST200229P1-10 PFC CS7 20B1111	29-Feb-20	17:20:30
13	13	200229P1-13	IB	29-Feb-20	17:31:01
14	14	200229P1-14	ICV200229P1-1 PFC ICV 20B1112	29-Feb-20	17:41:30
15	15	200229P1-15	IB	29-Feb-20	17:52:02
16	16	200229P1-16	2000321-09@20X I003MW01S-20200213 0.25107	29-Feb-20	18:02:31
17	17	200229P1-17	2000333-02 18-GW-18BGMP10E-20200217 0.25617	29-Feb-20	18:13:02
18	18	200229P1-18	2000333-03 18-GW-18BGMP10F-20200217 0.24799	29-Feb-20	18:23:33
19	19	200229P1-19	2000333-04 18-GW-18BGMP08C-20200217 0.25669	29-Feb-20	18:34:03
20	20	200229P1-20	2000333-05 24-GW-18BGMP08D-20200217 0.25341	29-Feb-20	18:44:34
21	21	200229P1-21	2000333-06 24-GW-18BGMP08E-20200217 0.25283	29-Feb-20	18:55:02
22	22	200229P1-22	2000333-07 24-GW-18PS1-20200217 0.24759	29-Feb-20	19:05:34
23	23	200229P1-23	2000333-08 DUP01-20200217 0.24854	29-Feb-20	19:16:05
24	24	200229P1-24	2000386-05 SRS-60-5' 2.19	29-Feb-20	19:26:34
25	25	200229P1-25	IB	29-Feb-20	19:37:05
26	26	200229P1-26	ST200229P1-11 PFC CS3 20B1107	29-Feb-20	19:47:36
27	27	200229P1-27	IB	29-Feb-20	19:58:05
28	28	200229P1-28	2000345-01 ET-LW01-20200218 0.25307	29-Feb-20	20:08:39
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30	30	200229P1-30	2000346-03 18-GW-18IDP2-D-20200218 0.25907	29-Feb-20	20:29:37
31	31	200229P1-31	2000346-04 18-GW-18DW540-20200218 0.25311	29-Feb-20	20:40:05
32	32	200229P1-32	2000346-05 18-GW-18DW450-20200218 0.24811	29-Feb-20	20:50:37

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 13:22:43 Pacific Standard Time
Printed: Monday, March 02, 2020 13:23:30 Pacific Standard Time

Compound name: PFBA

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34	34	200229P1-34	2000353-10@20X S9MW68L1-20Q1 0.25186	29-Feb-20	21:11:37
35	35	200229P1-35	2000354-08@20X S9MW15-20Q1 0.25813	29-Feb-20	21:22:08
36	36	200229P1-36	2000328-04 W-SB01-20200213 0.26272	29-Feb-20	21:32:39
37	37	200229P1-37	IB	29-Feb-20	21:43:07
38	38	200229P1-38	2000328-05 EB13-20200213 0.2557	29-Feb-20	21:53:39
39	39	200229P1-39	2000321-09 I003MW01S-20200213 0.25107	29-Feb-20	22:04:09
40	40	200229P1-40	IB	29-Feb-20	22:14:40
41	41	200229P1-41	ST200229P1-12 PFC CS3 20B1107	29-Feb-20	22:25:09
42	42	200229P1-42	IB	29-Feb-20	22:35:40

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

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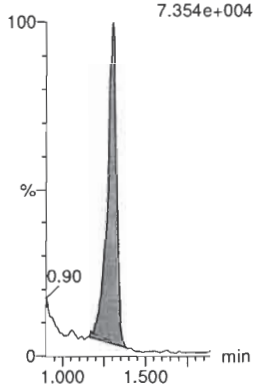
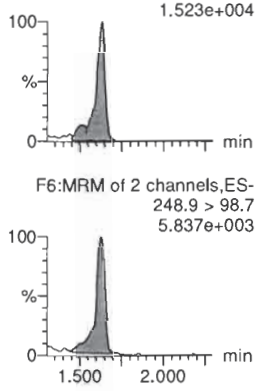
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

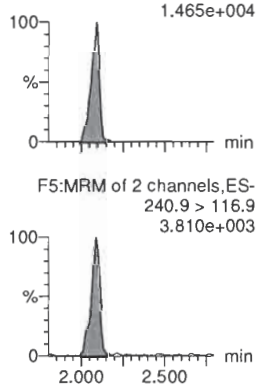
PFBA



PFPrS



3:3 FTCA



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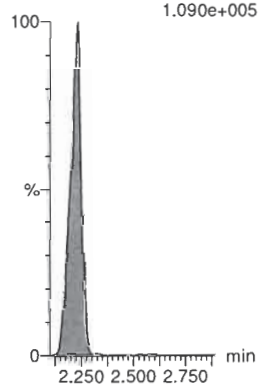

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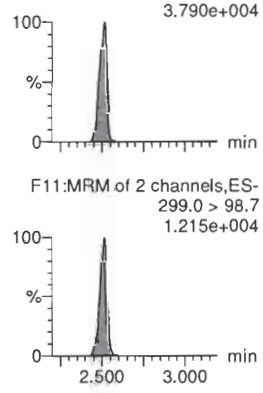
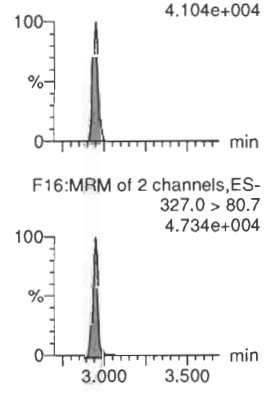


4:2 FTS



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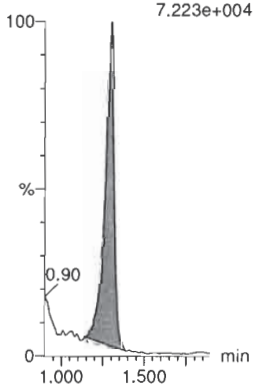

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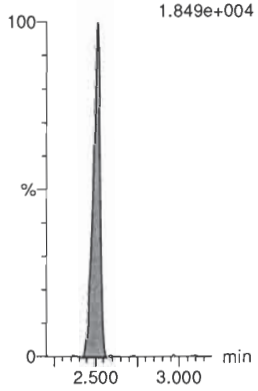

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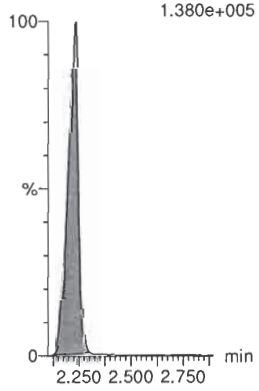

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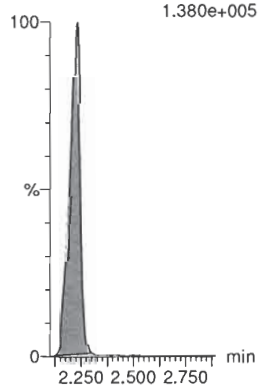

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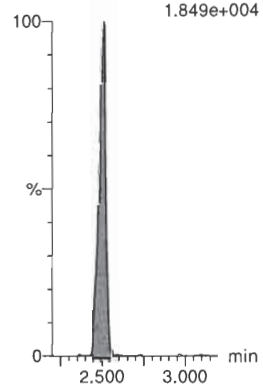

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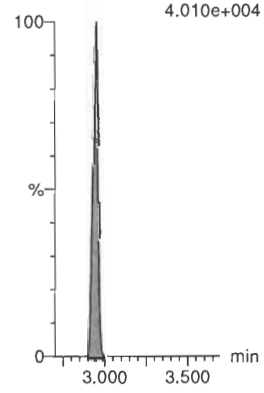

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

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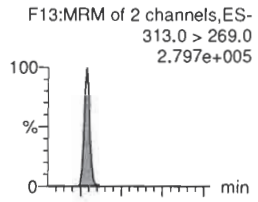
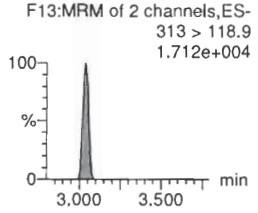
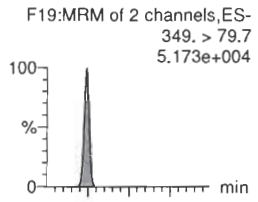
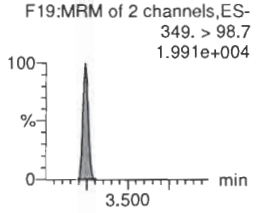


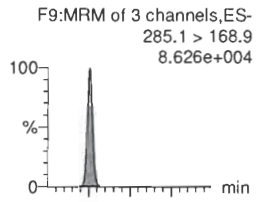


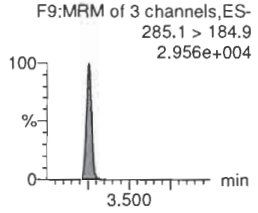
PFPeS





HFPO-DA





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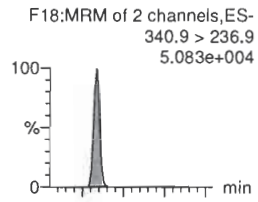

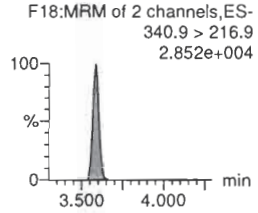

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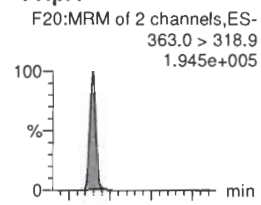

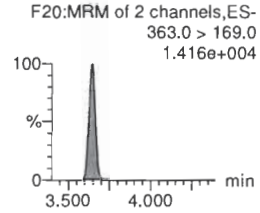

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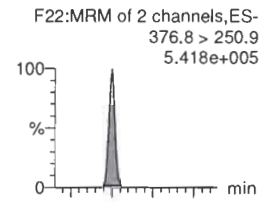

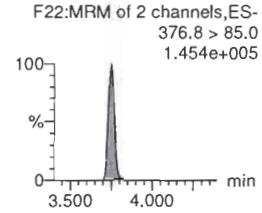

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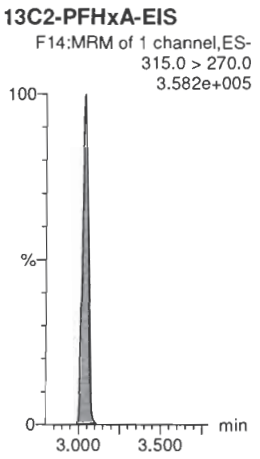

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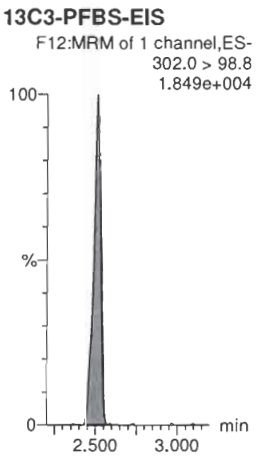

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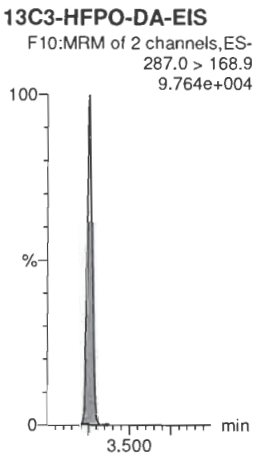

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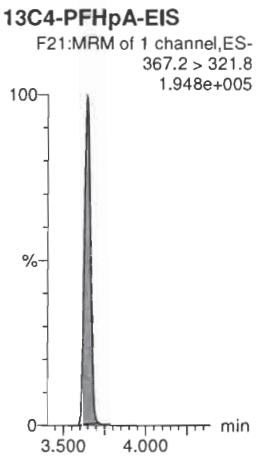

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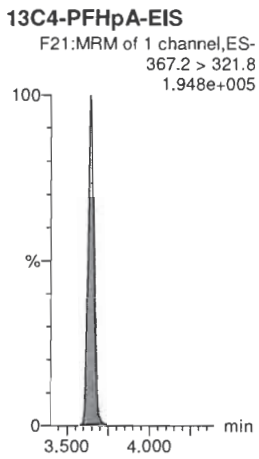

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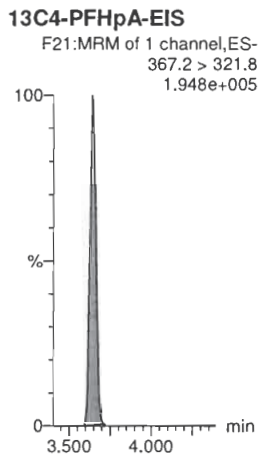

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
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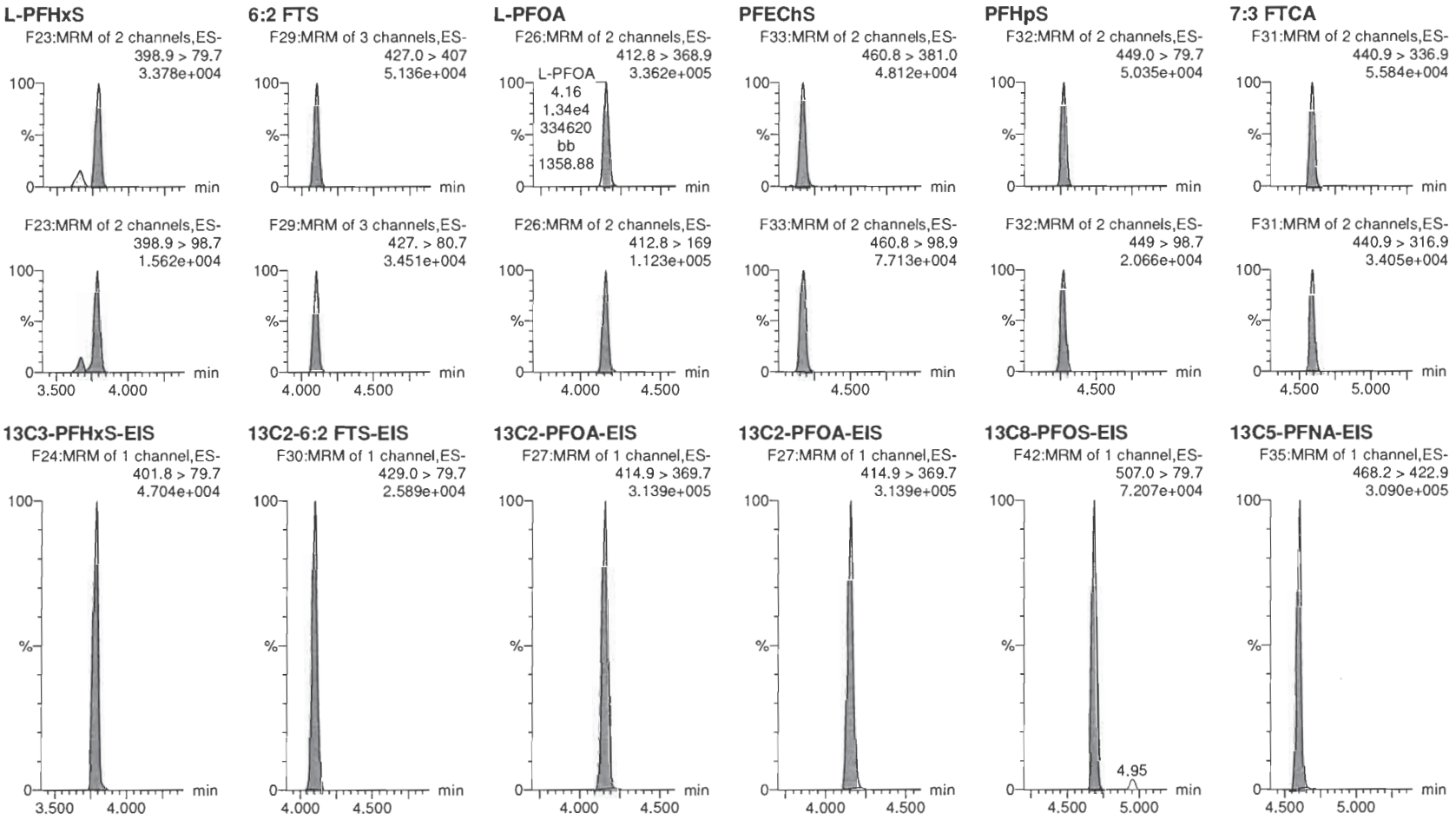

Quantify Sample Report **MassLynx V4.2 SCN977** Page 4 of 14
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

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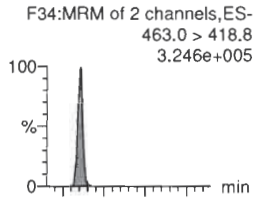

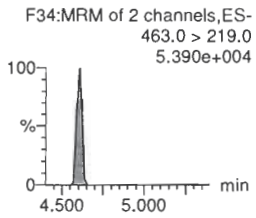

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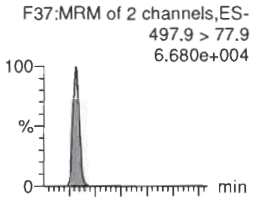
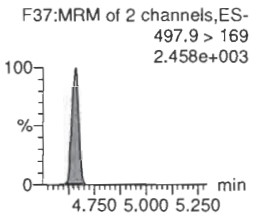
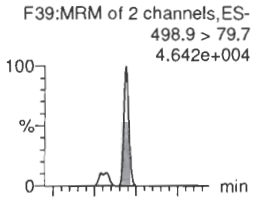
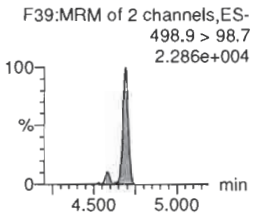




L-PFOS





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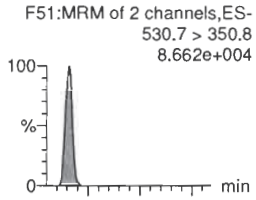

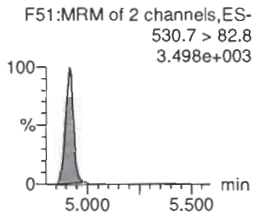

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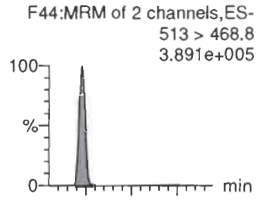

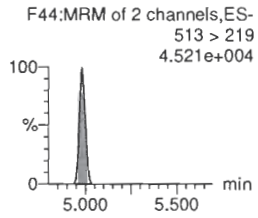

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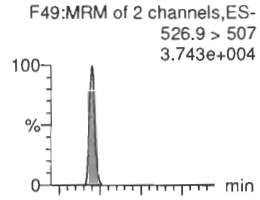
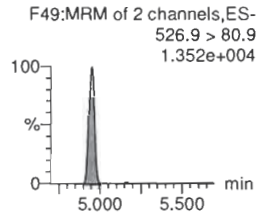
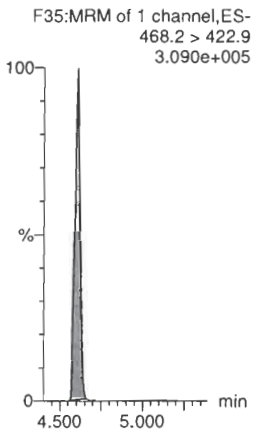




13C5-PFNA-EIS



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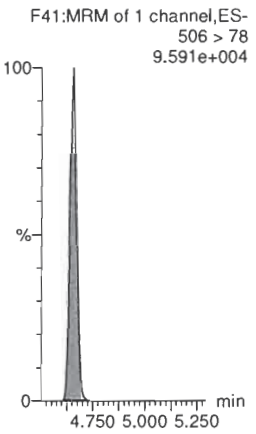

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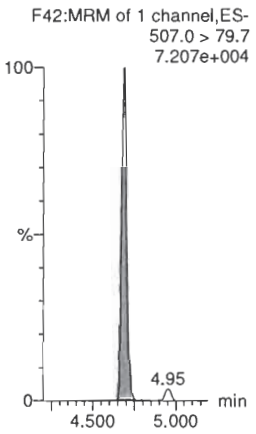

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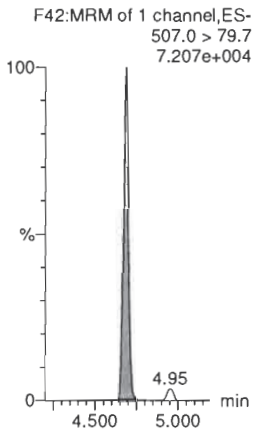

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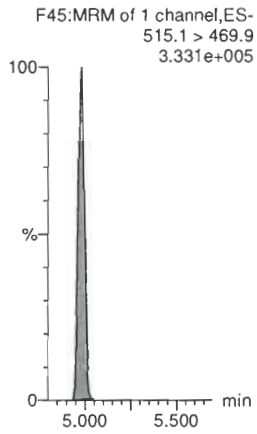

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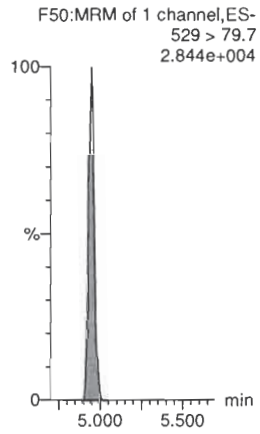

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

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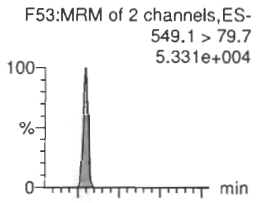

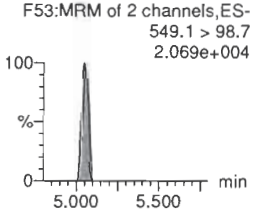

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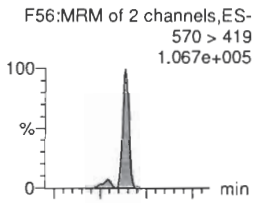

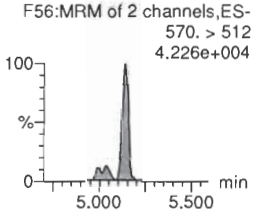

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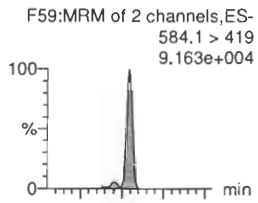

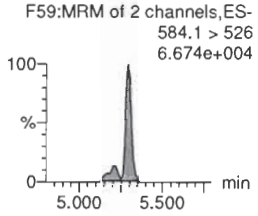

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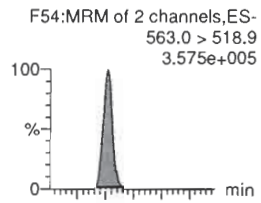

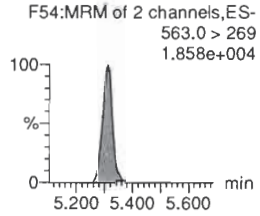

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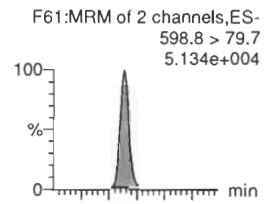

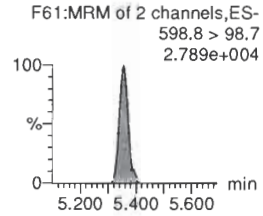

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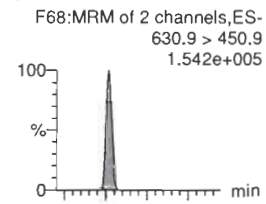
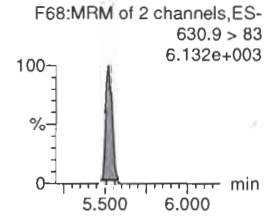
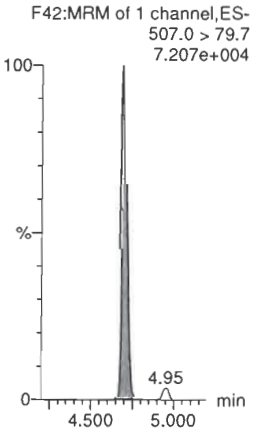




13C8-PFOS-EIS



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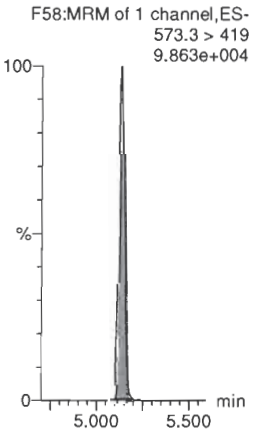

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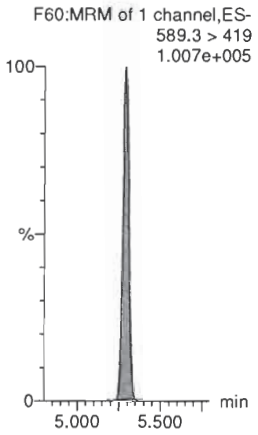

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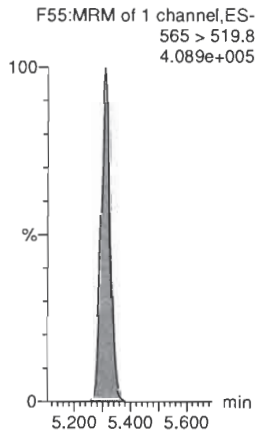

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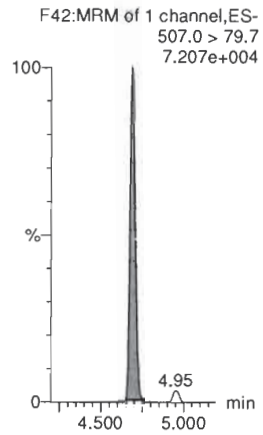

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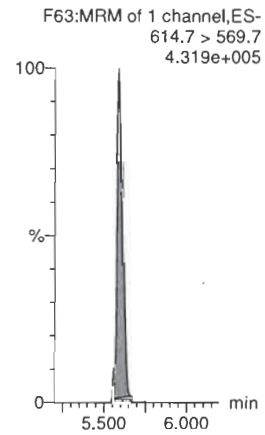

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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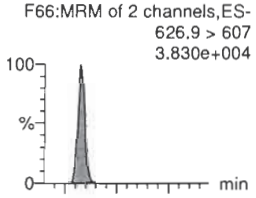
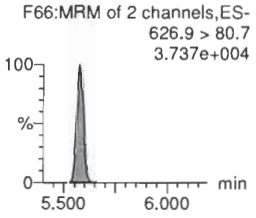
Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

10:2 FTS





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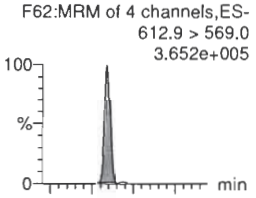
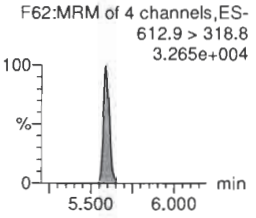
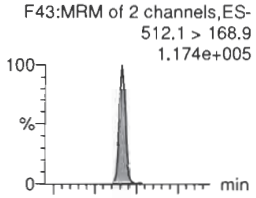
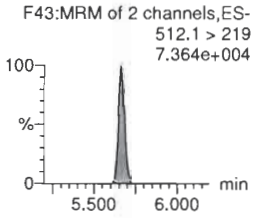




N-MeFOSA





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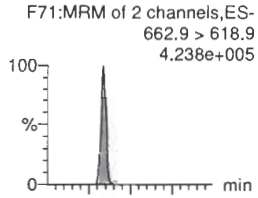

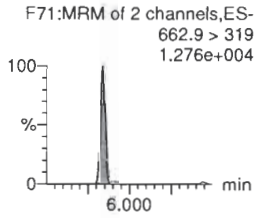

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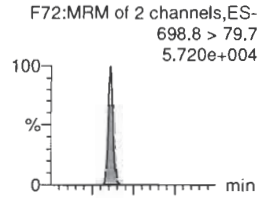

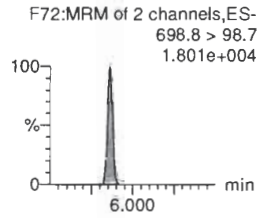

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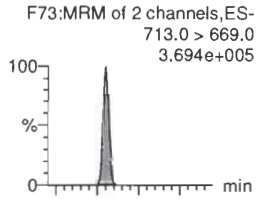

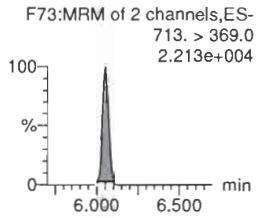

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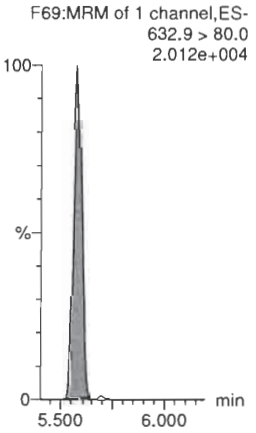
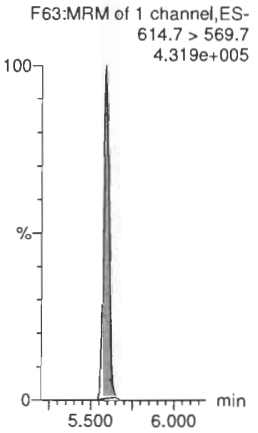
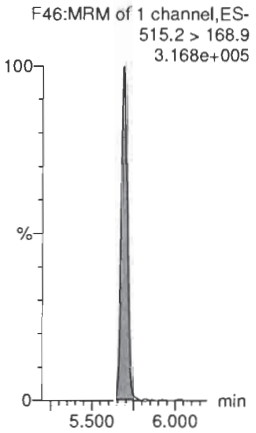


13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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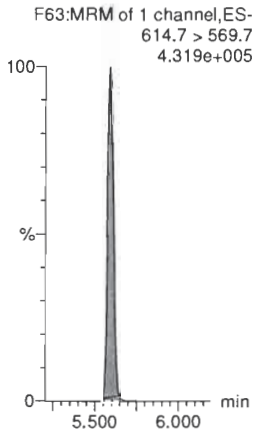

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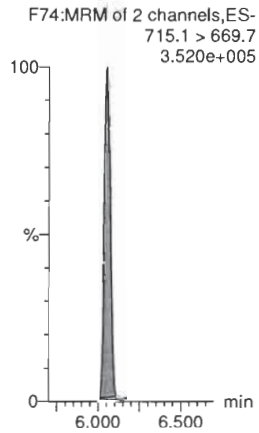

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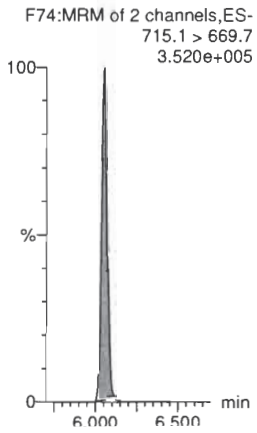

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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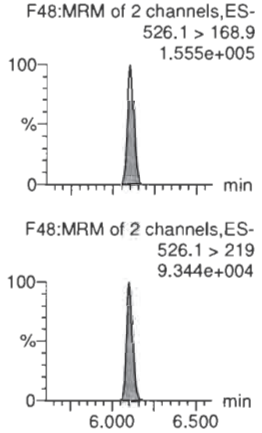
Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

N-EtFOSA



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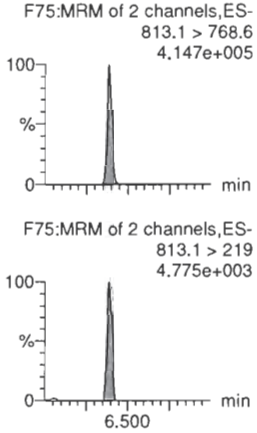
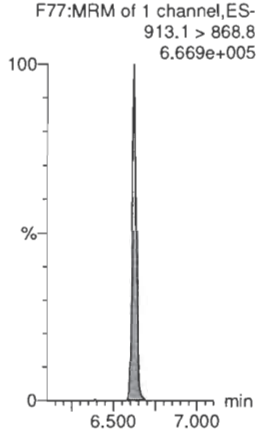
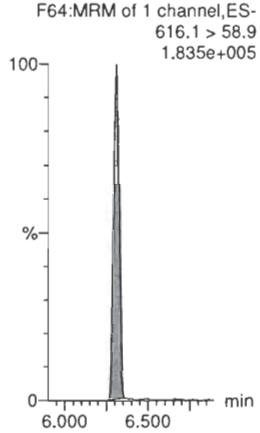


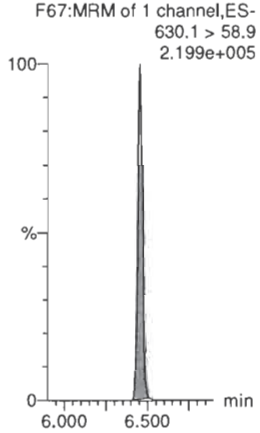
PFODA



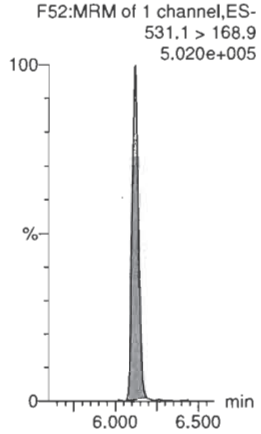
N-MeFOSE



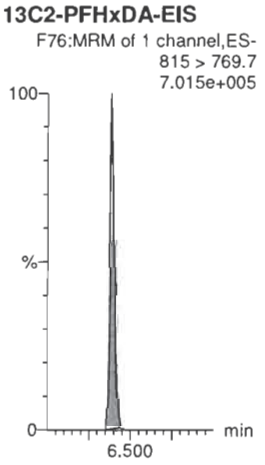
N-EtFOSE



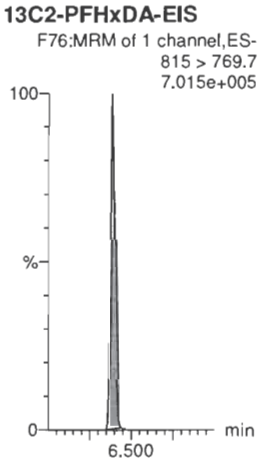
d5-N-ETFOSA-EIS



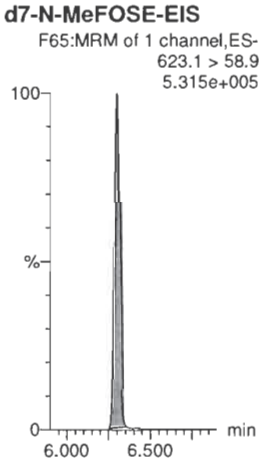
13C2-PFHxDA-EIS



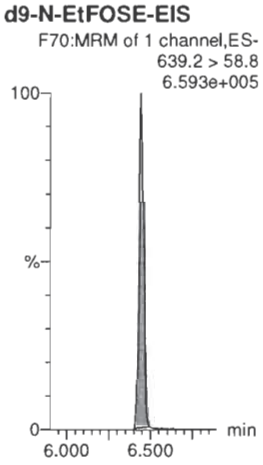
13C2-PFHxDA-EIS



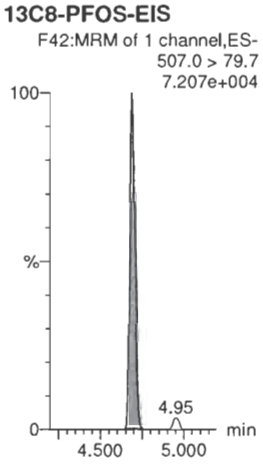
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS



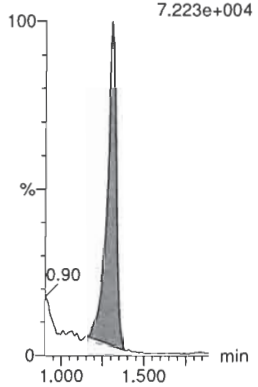
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

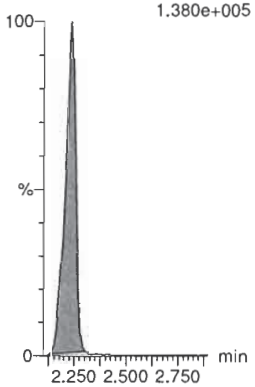
Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

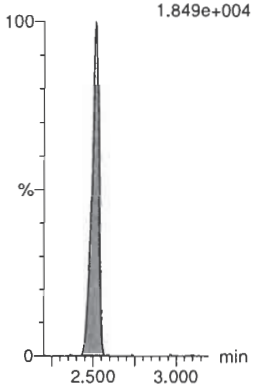
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
7.223e+004



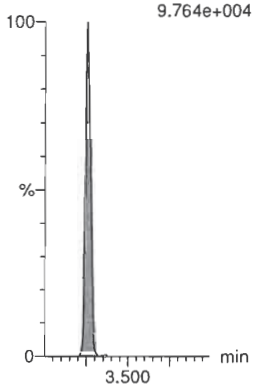
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.380e+005



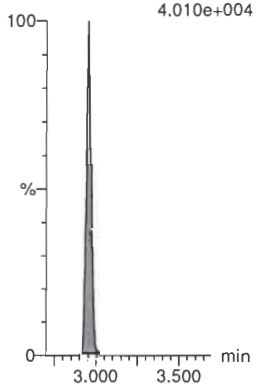
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.849e+004



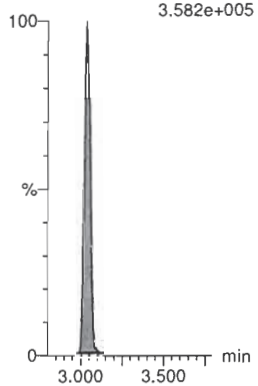
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.764e+004



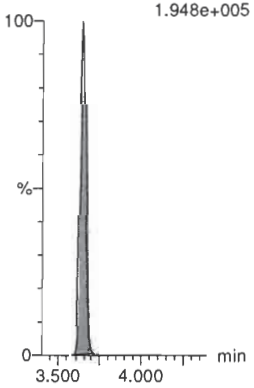
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
4.010e+004



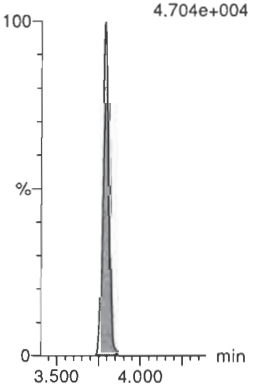
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.582e+005



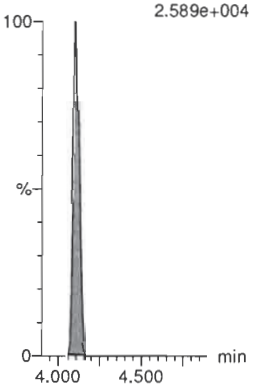
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.948e+005



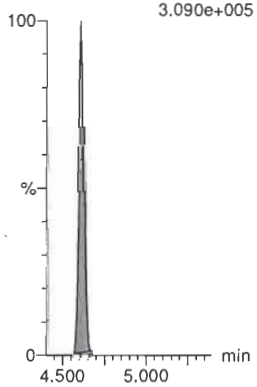
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.704e+004



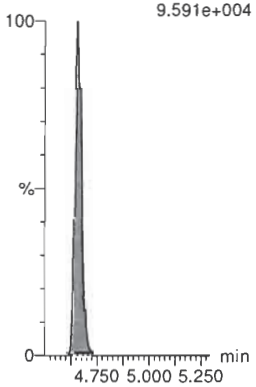
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.589e+004



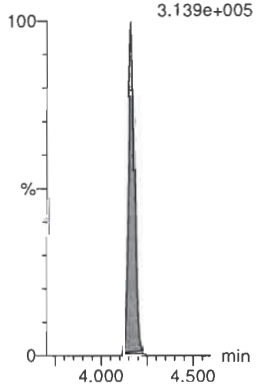
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
3.090e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.591e+004



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.139e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

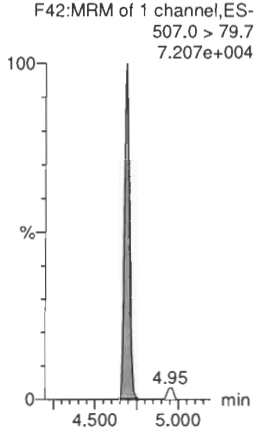
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

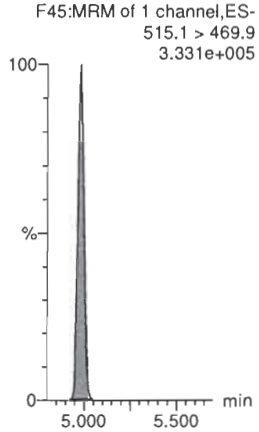
Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

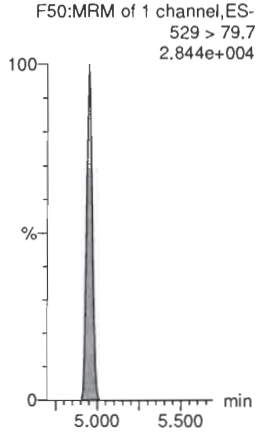
13C8-PFOS-RSD



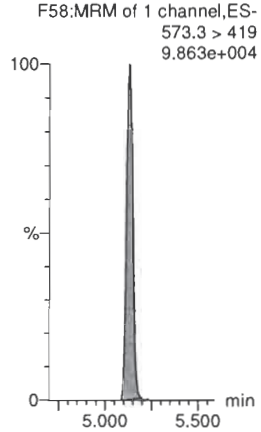
13C2-PFDA-RSD



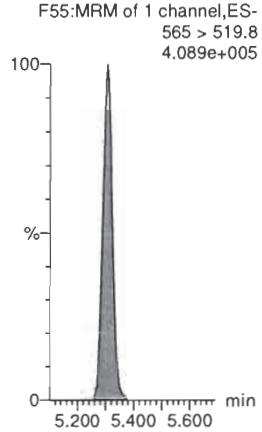
13C2-8:2 FTS-RSD



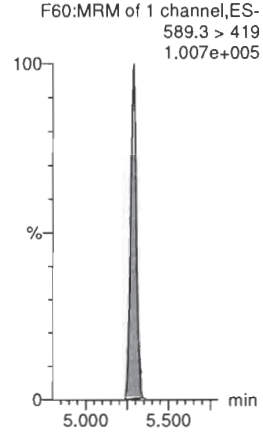
d3-N-MeFOSAA-RSD



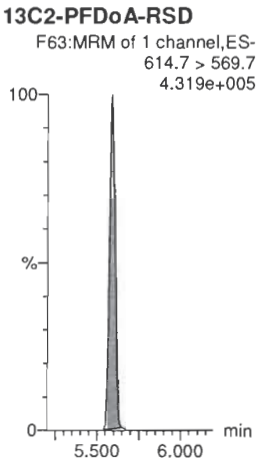
13C2-PFUdA-RSD



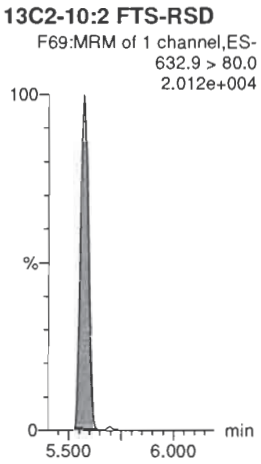
d5-N-EtFOSAA-RSD



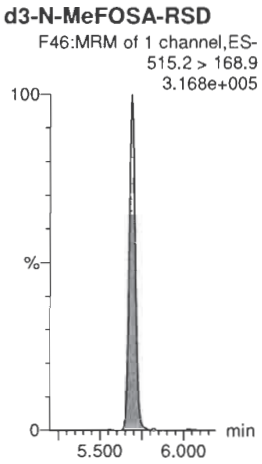
13C2-PFDoA-RSD



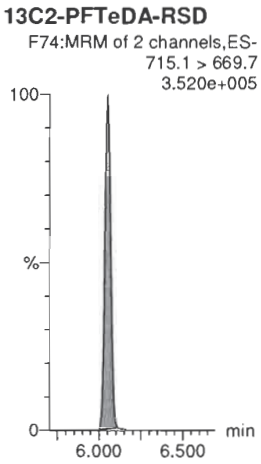
13C2-10:2 FTS-RSD



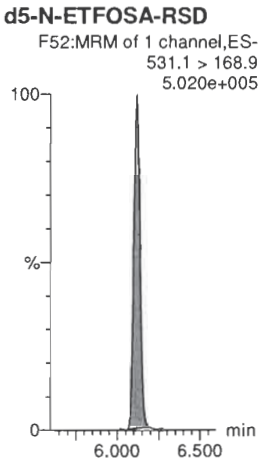
d3-N-MeFOSA-RSD



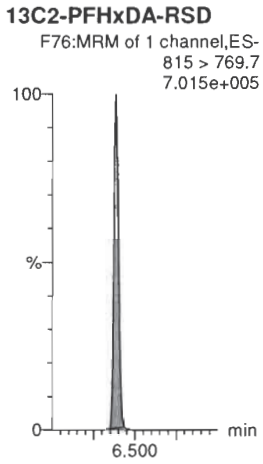
13C2-PFTeDA-RSD



d5-N-ETFOSA-RSD



13C2-PFHxDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

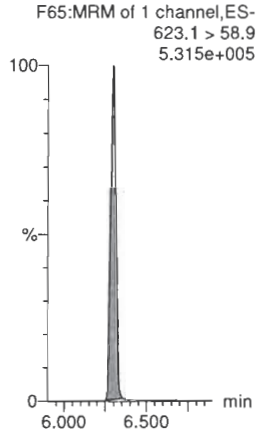
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-26.qld

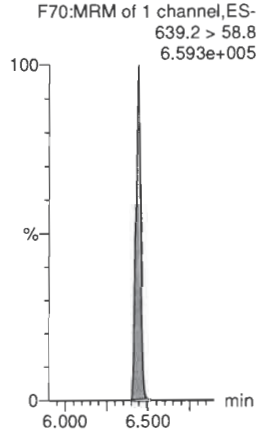
Last Altered: Monday, March 02, 2020 13:03:55 Pacific Standard Time
Printed: Monday, March 02, 2020 13:05:00 Pacific Standard Time

Name: 200229P1-26, Date: 29-Feb-2020, Time: 19:47:36, ID: ST200229P1-11 PFC CS3 20B1107, Description: PFC CS3 20B1107

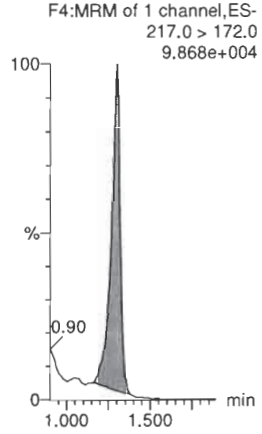
d7-N-MeFOSE-RSD



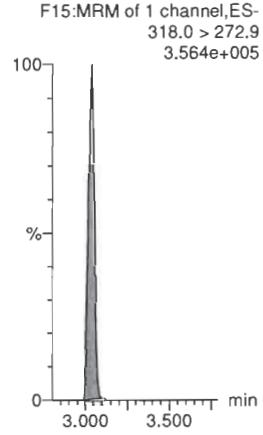
d9-N-EtFOSE-RSD



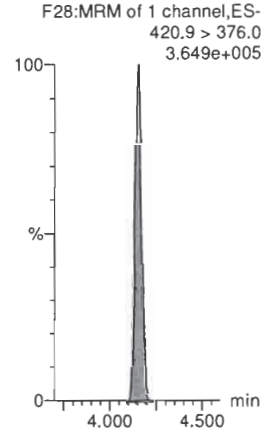
13C4-PFBA



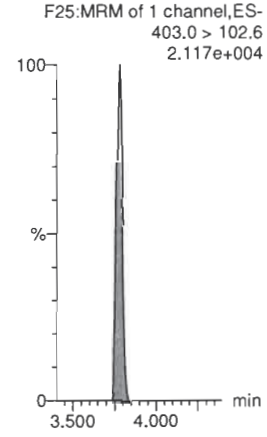
13C5-PFHxA



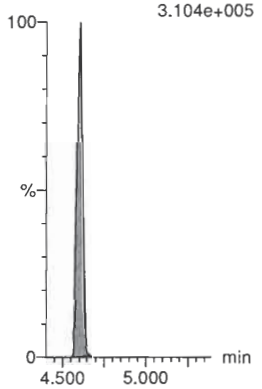
13C8-PFOA



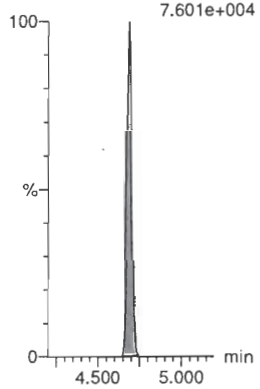
18O2-PFHxS



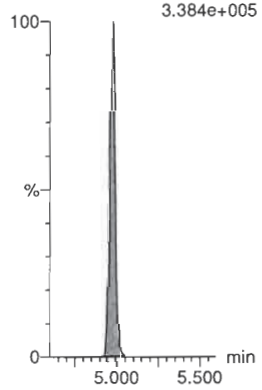
13C9-PFNA



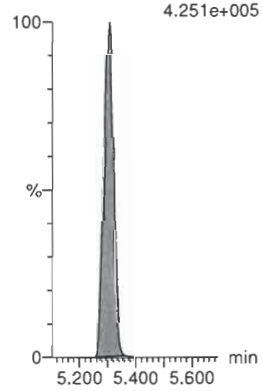
13C4-PFOS



13C6-PFDA



13C7-PFUdA



INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

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

Low point
gcl : 0.5
8:2 FTS : 0.5
L-MeFOSAA : 0.5
PFDS : 0.5
N-MeFOSA : 2.5
PFDoS : 0.5

High point
3:3 FTCA : 100
5:3 FTCA : 100
7:3 FTCA : 100
L-EtFOSAA : 250
PFDoS : 250

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:17:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:21:46 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022720.mdb 28 Feb 2020 10:51:32
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:17:47

Compound name: PFBA
Correlation coefficient: r = 0.999413, r^2 = 0.998826
Calibration curve: 1.10826 * x + 0.0696979
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

VJM 2/29/2020 VJ 02/28/20

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	0.250	1.35	143.710	5693.918	0.315	0.2	-11.3	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	1.34	290.052	6087.459	0.596	0.5	-5.1	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	1.34	552.765	6083.945	1.136	1.0	-3.8	NO	0.999	NO	MM
4	4	200228P2-6	Standard	2.000	1.35	1117.719	6339.746	2.204	1.9	-3.7	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	1.35	3020.311	6156.793	6.132	5.5	9.4	NO	0.999	NO	MM
6	6	200228P2-8	Standard	10.000	1.35	6221.964	6720.548	11.573	10.4	3.8	NO	0.999	NO	MM
7	7	200228P2-9	Standard	50.000	1.35	31316.611	6685.317	58.555	52.8	5.5	NO	0.999	NO	MM
8	8	200228P2-10	Standard	100.000	1.34	58478.980	6199.003	117.920	106.3	6.3	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	1.35	148265.453	6582.901	281.535	254.0	1.6	NO	0.999	NO	MM
10	10	200228P2-12	Standard	500.000	1.35	314632.031	7297.394	538.946	486.2	-2.8	NO	0.999	NO	MM

Compound name: PFPrS
Coefficient of Determination: R^2 = 0.999747
Calibration curve: 4.84839e-005 * x^2 + 1.3627 * x + -0.100099
Response type: Internal Std (Ref 51), 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	200228P2-3	Standard	0.250	1.67	25.533	1235.219	0.258	0.3	5.2	NO	1.000	NO	bb
2	2	200228P2-4	Standard	0.500	1.66	42.820	1240.708	0.431	0.4	-22.0	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	1.67	109.659	1189.869	1.152	0.9	-8.1	NO	1.000	NO	MM
4	4	200228P2-6	Standard	2.000	1.66	228.830	1284.728	2.226	1.7	-14.6	NO	1.000	NO	MM
5	5	200228P2-7	Standard	5.000	1.67	651.246	1226.688	6.636	4.9	-1.2	NO	1.000	NO	MM
6	6	200228P2-8	Standard	10.000	1.67	1441.833	1197.935	15.045	11.1	11.1	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	1.67	7126.206	1292.873	68.899	50.5	1.1	NO	1.000	NO	MM
8	8	200228P2-10	Standard	100.000	1.67	13495.909	1240.957	135.943	99.5	-0.5	NO	1.000	NO	MM
9	9	200228P2-11	Standard	250.000	1.67	33898.414	1239.422	341.877	248.8	-0.5	NO	1.000	NO	MM
10	10	200228P2-12	Standard	500.000	1.67	64273.449	1157.202	694.276	500.6	0.1	NO	1.000	NO	MM

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

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Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999800
Calibration curve: -7.45053e-006 * x^2 + 0.0966278 * x + -0.00141223
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	200228P2-3	Standard	0.250	2.14	18.645	10563.604	0.022	0.2	-2.8	NO	1.000	NO	bb
2	2	200228P2-4	Standard	0.500	2.14	34.119	10904.597	0.039	0.4	-16.1	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	2.12	89.880	11114.90	0.101	1.1	6.1	NO	1.000	NO	bb
4	4	200228P2-6	Standard	2.000	2.13	175.839	10781.746	0.204	2.1	6.2	NO	1.000	NO	bb
5	5	200228P2-7	Standard	5.000	2.13	425.441	11040.878	0.482	5.0	0.0	NO	1.000	NO	bb
6	6	200228P2-8	Standard	10.000	2.13	914.795	11689.495	0.978	10.1	1.5	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	2.13	4530.963	11880.203	4.767	49.5	-0.9	NO	1.000	NO	bb
8	8	200228P2-10	Standard	100.000	2.13	8604.997	11196.03	9.607	100.2	0.2	NO	1.000	NO	bb
9	9	200228P2-11	Standard	250.000	2.13	4491.213	11936.076	4.703	48.9	-80.5	YES	1.000	NO	bdX
10	10	200228P2-12	Standard	500.000	2.13	9082.521	10952.733	10.366	108.2	-78.4	YES	1.000	NO	bbX

Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999151
Calibration curve: -8.29689e-005 * x^2 + 0.938772 * x + 0.0510655
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	200228P2-3	Standard	0.250	2.27	237.783	10563.604	0.281	0.2	-1.9	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	2.27	449.886	10904.597	0.516	0.5	-1.0	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	2.27	865.643	11114.90	0.974	1.0	-1.7	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	2.27	1801.183	10781.746	2.088	2.2	8.5	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	2.27	4652.290	11040.878	5.267	5.6	11.2	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	2.27	9091.417	11689.495	9.722	10.3	3.1	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	2.27	46130.504	11880.203	48.537	51.9	3.8	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	2.27	85981.695	11196.03	95.996	103.1	3.1	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	2.27	209967.578	11936.076	219.888	239.2	-4.3	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	2.27	396720.281	10952.733	452.764	504.8	1.0	NO	0.999	NO	bb

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Compound name: PFBS
Correlation coefficient: r = 0.999452, r^2 = 0.998905
Calibration curve: 2.32412 * x + 0.160204
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	0.250	2.55	66.335	1235.219	0.671	0.2	-12.0	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	2.54	126.026	1240.708	1.270	0.5	-4.5	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	2.54	250.782	1189.869	2.635	1.1	6.5	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	2.55	478.026	1284.728	4.651	1.9	-3.4	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	2.55	1409.278	1226.688	14.361	6.1	22.2	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	2.55	2505.489	1197.935	26.144	11.2	11.8	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	2.55	12497.577	1292.873	120.831	51.9	3.8	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	2.55	24486.564	1240.957	246.650	106.1	6.1	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	2.55	56702.824	1239.422	571.868	246.0	-1.6	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	2.55	106259.227	1157.202	1147.803	493.8	-1.2	NO	0.999	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999388
Calibration curve: -0.000340962 * x^2 + 1.29353 * x + 0.0772484
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	0.250	2.98	43.743	1544.957	0.354	0.2	-14.4	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	2.97	94.218	1566.614	0.752	0.5	4.3	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	2.98	124.512	1519.960	1.024	0.7	-26.8	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	2.98	387.712	1567.699	3.091	2.3	16.6	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	2.98	867.124	1527.414	7.096	5.4	8.7	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	2.98	1914.146	1659.260	14.420	11.1	11.2	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	2.98	9163.784	1763.701	64.947	50.8	1.7	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	2.98	16860.102	1660.416	126.927	100.7	0.7	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	2.98	36836.145	1562.131	294.759	243.4	-2.6	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	2.98	65634.766	1452.158	564.976	503.5	0.7	NO	0.999	NO	bb

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Compound name: PFHxA
Correlation coefficient: r = 0.998775, r^2 = 0.997551
Calibration curve: 0.87057 * x + 0.122807
Response type: Internal Std (Ref 57), 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	200228P2-3	Standard	0.250	3.06	439.795	18107.494	0.304	0.2	-16.9	NO	0.998	NO	bb
2	2	200228P2-4	Standard	0.500	3.06	859.694	17982.678	0.598	0.5	9.1	NO	0.998	NO	bb
3	3	200228P2-5	Standard	1.000	3.06	1658.206	17804.041	1.164	1.2	19.6	NO	0.998	NO	db
4	4	200228P2-6	Standard	2.000	3.06	2814.434	17873.602	1.968	2.1	6.0	NO	0.998	NO	bb
5	5	200228P2-7	Standard	5.000	3.07	7577.538	18577.861	5.099	5.7	14.3	NO	0.998	NO	bb
6	6	200228P2-8	Standard	10.000	3.07	15270.910	19799.846	9.641	10.9	9.3	NO	0.998	NO	bb
7	7	200228P2-9	Standard	50.000	3.07	74544.500	19765.725	47.143	54.0	8.0	NO	0.998	NO	bb
8	8	200228P2-10	Standard	100.000	3.07	143988.594	18790.016	95.788	109.9	9.9	NO	0.998	NO	bb
9	9	200228P2-11	Standard	250.000	3.07	329673.719	18813.150	219.045	251.5	0.6	NO	0.998	NO	bb
10	10	200228P2-12	Standard	500.000	3.07	630300.125	18744.832	420.316	482.7	-3.5	NO	0.998	NO	bb

Compound name: PFPeS
Correlation coefficient: r = 0.996617, r^2 = 0.993246
Calibration curve: 2.10956 * x + 0.2038
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	0.250	3.26	57.039	1235.219	0.577	0.2	-29.2	NO	0.993	NO	bb
2	2	200228P2-4	Standard	0.500	3.27	105.300	1240.708	1.061	0.4	-18.7	NO	0.993	NO	bb
3	3	200228P2-5	Standard	1.000	3.26	236.344	1189.869	2.483	1.1	8.0	NO	0.993	NO	bb
4	4	200228P2-6	Standard	2.000	3.26	451.814	1284.728	4.396	2.0	-0.6	NO	0.993	NO	bb
5	5	200228P2-7	Standard	5.000	3.26	1327.331	1226.688	13.526	6.3	26.3	NO	0.993	NO	bb
6	6	200228P2-8	Standard	10.000	3.26	2549.976	1197.935	26.608	12.5	25.2	NO	0.993	NO	bb
7	7	200228P2-9	Standard	50.000	3.26	13120.754	1292.873	126.857	60.0	20.1	NO	0.993	NO	bb
8	8	200228P2-10	Standard	100.000	3.27	23777.613	1240.957	239.509	113.4	13.4	NO	0.993	NO	bb
9	9	200228P2-11	Standard	250.000	3.27	51942.789	1239.422	523.861	248.2	-0.7	NO	0.993	NO	bb
10	10	200228P2-12	Standard	500.000	3.26	92697.883	1157.202	1001.315	474.6	-5.1	NO	0.993	NO	bb

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Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998989
Calibration curve: -0.000240539 * x^2 + 1.02346 * x + 0.0413162
Response type: Internal Std (Ref 53), 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	200228P2-3	Standard	0.250	3.28	67.501	3543.095	0.238	0.2	-23.1	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	3.28	163.477	3741.298	0.546	0.5	-1.3	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	3.28	354.316	3534.105	1.253	1.2	18.4	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	3.28	676.249	3658.248	2.311	2.2	10.9	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	3.28	1683.407	3811.648	5.521	5.4	7.2	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	3.28	3349.217	4003.488	10.457	10.2	2.0	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	3.28	16971.271	4182.291	50.724	50.1	0.2	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	3.28	31848.779	3789.889	105.045	105.2	5.2	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	3.28	77161.828	4179.957	230.749	238.8	-4.5	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	3.28	145104.125	3980.572	455.664	505.2	1.0	NO	0.999	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.998996
Calibration curve: 1.9554e-005 * x^2 + 0.201925 * x + 0.0100515
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	200228P2-3	Standard	0.250	3.61	57.915	12581.276	0.058	0.2	-5.9	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	3.61	94.190	12169.229	0.097	0.4	-14.1	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	3.61	227.966	11996.332	0.238	1.1	12.6	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	3.61	410.804	12809.899	0.401	1.9	-3.2	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	3.61	1145.145	13124.444	1.091	5.3	7.0	NO	0.999	NO	bd
6	6	200228P2-8	Standard	10.000	3.61	2255.137	13045.506	2.161	10.6	6.4	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	3.61	11267.840	14375.872	9.798	48.2	-3.5	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	3.61	21407.004	13014.601	20.561	100.8	0.8	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	3.61	11317.965	12944.269	10.930	53.8	-78.5	YES	0.999	NO	bbX
10	10	200228P2-12	Standard	500.000	3.61	22206.279	12388.945	22.405	109.7	-78.1	YES	0.999	NO	bbX

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Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999882
Calibration curve: -0.000137784 * x^2 + 1.16847 * x + 0.120302
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	200228P2-3	Standard	0.250	3.67	342.335	12581.276	0.340	0.2	-24.7	NO	1.000	NO	db
2	2	200228P2-4	Standard	0.500	3.67	693.637	12169.229	0.712	0.5	1.4	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	3.67	1333.191	11996.332	1.389	1.1	8.6	NO	1.000	NO	bb
4	4	200228P2-6	Standard	2.000	3.67	2748.854	12809.899	2.682	2.2	9.7	NO	1.000	NO	bb
5	5	200228P2-7	Standard	5.000	3.67	6226.021	13124.444	5.930	5.0	-0.5	NO	1.000	NO	bb
6	6	200228P2-8	Standard	10.000	3.67	12964.614	13045.506	12.422	10.5	5.4	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	3.67	67923.469	14375.872	59.060	50.7	1.5	NO	1.000	NO	bb
8	8	200228P2-10	Standard	100.000	3.67	119320.313	13014.601	114.602	99.1	-0.9	NO	1.000	NO	bb
9	9	200228P2-11	Standard	250.000	3.67	291973.625	12944.269	281.953	248.5	-0.6	NO	1.000	NO	bb
10	10	200228P2-12	Standard	500.000	3.67	545947.000	12388.945	550.841	500.9	0.2	NO	1.000	NO	bb

Compound name: ADONA
Coefficient of Determination: R^2 = 0.999691
Calibration curve: -0.000271075 * x^2 + 2.59794 * x + 0.191799
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	200228P2-3	Standard	0.250	3.77	689.053	12581.276	0.685	0.2	-24.1	NO	1.000	NO	bb
2	2	200228P2-4	Standard	0.500	3.77	1402.786	12169.229	1.441	0.5	-3.8	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	3.77	2742.247	11996.332	2.857	1.0	2.6	NO	1.000	NO	bb
4	4	200228P2-6	Standard	2.000	3.77	5653.880	12809.899	5.517	2.1	2.5	NO	1.000	NO	bb
5	5	200228P2-7	Standard	5.000	3.77	15634.994	13124.444	14.891	5.7	13.2	NO	1.000	NO	bb
6	6	200228P2-8	Standard	10.000	3.77	30086.199	13045.506	28.828	11.0	10.4	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	3.77	150297.172	14375.872	130.685	50.5	1.0	NO	1.000	NO	bb
8	8	200228P2-10	Standard	100.000	3.77	265503.969	13014.601	255.006	99.1	-0.9	NO	1.000	NO	bb
9	9	200228P2-11	Standard	250.000	3.77	647658.375	12944.269	625.430	247.0	-1.2	NO	1.000	NO	bb
10	10	200228P2-12	Standard	500.000	3.77	1224325.500	12388.945	1235.300	501.7	0.3	NO	1.000	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999028
Calibration curve: -0.00036565 * x^2 + 1.12704 * x + -0.0812317
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	200228P2-3	Standard	0.250	3.81	28.231	2804.351	0.126	0.2	-26.5	NO	0.999	NO	MM
2	2	200228P2-4	Standard	0.500	3.81	123.861	2834.503	0.546	0.6	11.4	NO	0.999	NO	MM
3	3	200228P2-5	Standard	1.000	3.81	232.498	2641.797	1.100	1.0	4.9	NO	0.999	NO	MM
4	4	200228P2-6	Standard	2.000	3.81	496.561	2735.614	2.269	2.1	4.3	NO	0.999	NO	MM
5	5	200228P2-7	Standard	5.000	3.81	1393.777	2981.774	5.843	5.3	5.3	NO	0.999	NO	MM
6	6	200228P2-8	Standard	10.000	3.81	2533.260	2636.619	12.010	10.8	7.7	NO	0.999	NO	MM
7	7	200228P2-9	Standard	50.000	3.81	12718.212	3092.432	51.409	46.4	-7.2	NO	0.999	NO	MM
8	8	200228P2-10	Standard	100.000	3.81	22593.072	2661.052	106.128	97.3	-2.7	NO	0.999	NO	MM
9	9	200228P2-11	Standard	250.000	3.81	54803.711	2556.917	267.919	259.7	3.9	NO	0.999	NO	MM
10	10	200228P2-12	Standard	500.000	3.81	101084.070	2697.473	468.420	495.3	-0.9	NO	0.999	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999399
Calibration curve: -5.55014e-005 * x^2 + 1.56476 * x + 0.0780386
Response type: Internal Std (Ref 63), 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	200228P2-3	Standard	0.250	4.13	56.309	1564.045	0.450	0.2	-4.9	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	4.12	102.608	1495.903	0.857	0.5	-0.4	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	4.12	170.545	1391.667	1.532	0.9	-7.1	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	4.12	453.035	1518.498	3.729	2.3	16.7	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	4.12	1009.307	1531.110	8.240	5.2	4.3	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	4.12	2179.885	1530.195	17.807	11.3	13.3	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	4.12	10402.798	1721.369	75.542	48.3	-3.4	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	4.13	19179.859	1491.310	160.764	103.1	3.1	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	4.13	40375.848	1330.319	379.381	244.5	-2.2	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	4.13	80265.609	1299.548	772.053	502.3	0.5	NO	0.999	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999347
Calibration curve: -0.000456114 * x^2 + 1.20238 * x + 0.0642634
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	200228P2-3	Standard	0.250	4.18	531.018	16386.402	0.405	0.3	13.4	NO	0.999	NO	MM
2	2	200228P2-4	Standard	0.500	4.18	774.749	16716.035	0.579	0.4	-14.3	NO	0.999	NO	MM
3	3	200228P2-5	Standard	1.000	4.18	1658.961	17407.059	1.191	0.9	-6.2	NO	0.999	NO	MM
4	4	200228P2-6	Standard	2.000	4.18	3627.830	17488.086	2.593	2.1	5.2	NO	0.999	NO	MM
5	5	200228P2-7	Standard	5.000	4.18	8798.688	17831.416	6.168	5.1	1.7	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	4.18	17861.650	19005.488	11.748	9.8	-2.5	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	4.18	90200.672	18969.861	59.437	50.3	0.7	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	4.18	162200.031	16762.920	120.952	104.7	4.7	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	4.18	357927.625	16981.471	263.469	241.1	-3.5	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	4.18	682264.625	17387.346	490.489	504.4	0.9	NO	0.999	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999401
Calibration curve: -6.57161e-005 * x^2 + 0.169715 * x + -0.00156209
Response type: Internal Std (Ref 69), 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	200228P2-3	Standard	0.250	4.18	47.840	16386.402	0.036	0.2	-10.3	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	4.19	120.119	16716.035	0.090	0.5	7.7	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	4.19	230.880	17407.059	0.166	1.0	-1.4	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	4.19	482.296	17488.086	0.345	2.0	2.1	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	4.19	1207.108	17831.416	0.846	5.0	0.1	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	4.19	2423.717	19005.488	1.594	9.4	-5.6	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	4.19	12902.631	18969.861	8.502	51.1	2.2	NO	0.999	NO	bd
8	8	200228P2-10	Standard	100.000	4.19	22729.246	16762.920	16.949	104.1	4.1	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	4.19	50461.094	16981.471	37.144	241.4	-3.4	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	4.19	95798.539	17387.346	68.871	504.3	0.9	NO	0.999	NO	bb

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Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999647
Calibration curve: 0.000155667 * x^2 + 0.89521 * x + -0.0222947
Response type: Internal Std (Ref 71), 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	200228P2-3	Standard	0.250	4.28	37.677	3307.030	0.142	0.2	-26.4	NO	1.000	NO	bb
2	2	200228P2-4	Standard	0.500	4.29	119.188	3096.751	0.481	0.6	12.5	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	4.29	193.080	2988.655	0.808	0.9	-7.3	NO	1.000	NO	bb
4	4	200228P2-6	Standard	2.000	4.29	456.093	3192.128	1.786	2.0	1.0	NO	1.000	NO	bb
5	5	200228P2-7	Standard	5.000	4.29	1231.264	3073.394	5.008	5.6	12.3	NO	1.000	NO	bb
6	6	200228P2-8	Standard	10.000	4.29	2593.760	3408.305	9.513	10.6	6.3	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	4.29	12482.933	3366.450	46.351	51.3	2.7	NO	1.000	NO	bb
8	8	200228P2-10	Standard	100.000	4.29	24656.650	3355.900	91.841	100.8	0.8	NO	1.000	NO	bb
9	9	200228P2-11	Standard	250.000	4.29	57210.895	3137.205	227.953	244.3	-2.3	NO	1.000	NO	bb
10	10	200228P2-12	Standard	500.000	4.29	103027.781	2633.736	488.981	502.4	0.5	NO	1.000	NO	bb

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.998738
Calibration curve: -0.000145642 * x^2 + 0.181281 * x + -0.025321
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	200228P2-3	Standard	0.250	4.61	32.978	15947.615	0.026	0.3	12.9	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	4.60	98.454	17004.100	0.072	0.5	7.8	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	4.61	219.047	17405.514	0.157	1.0	0.8	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	4.61	424.446	18564.672	0.286	1.7	-14.1	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	4.61	1153.840	17174.816	0.840	4.8	-4.2	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	4.61	2315.783	17464.965	1.657	9.4	-6.5	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	4.61	11599.682	16066.092	9.025	52.1	4.2	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	4.61	21565.387	16351.739	16.486	98.9	-1.1	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	4.61	11657.833	18136.590	8.035	46.2	-81.5	YES	0.999	NO	bbX
10	10	200228P2-12	Standard	500.000	4.61	22210.365	16156.843	17.183	103.5	-79.3	YES	0.999	NO	bbX

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Compound name: PFNA
Correlation coefficient: r = 0.997210, r^2 = 0.994427
Calibration curve: 1.05725 * x + 0.0955486
Response type: Internal Std (Ref 65), 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	200228P2-3	Standard	0.250	4.62	444.056	15947.615	0.348	0.2	-4.5	NO	0.994	NO	bb
2	2	200228P2-4	Standard	0.500	4.62	724.378	17004.100	0.533	0.4	-17.3	NO	0.994	NO	bb
3	3	200228P2-5	Standard	1.000	4.62	1488.471	17405.514	1.069	0.9	-7.9	NO	0.994	NO	bb
4	4	200228P2-6	Standard	2.000	4.62	3305.542	18564.672	2.226	2.0	0.7	NO	0.994	NO	bb
5	5	200228P2-7	Standard	5.000	4.62	8861.696	17174.816	6.450	6.0	20.2	NO	0.994	NO	bb
6	6	200228P2-8	Standard	10.000	4.62	17680.422	17464.965	12.654	11.9	18.8	NO	0.994	NO	bb
7	7	200228P2-9	Standard	50.000	4.62	82569.281	16066.092	64.242	60.7	21.3	NO	0.994	NO	bb
8	8	200228P2-10	Standard	100.000	4.62	154599.969	16351.739	118.183	111.7	11.7	NO	0.994	NO	bb
9	9	200228P2-11	Standard	250.000	4.62	369386.844	18136.590	254.587	240.7	-3.7	NO	0.994	NO	bb
10	10	200228P2-12	Standard	500.000	4.62	661804.938	16156.843	512.016	484.2	-3.2	NO	0.994	NO	bb

Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999163
Calibration curve: -0.000128536 * x^2 + 0.807117 * x + 0.0383818
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	200228P2-3	Standard	0.250	4.67	56.935	3508.692	0.203	0.2	-18.5	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	4.67	143.500	3746.921	0.479	0.5	9.1	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	4.68	254.962	3909.152	0.815	1.0	-3.7	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	4.68	499.253	3762.045	1.659	2.0	0.4	NO	0.999	NO	MM
5	5	200228P2-7	Standard	5.000	4.67	1328.062	3920.882	4.234	5.2	4.1	NO	0.999	NO	db
6	6	200228P2-8	Standard	10.000	4.68	2693.240	3939.926	8.545	10.6	5.6	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	4.67	13647.335	3926.786	43.443	54.2	8.5	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	4.68	24329.160	4040.278	75.271	94.6	-5.4	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	4.68	60058.738	3884.290	193.275	249.3	-0.3	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	4.68	114894.477	3858.538	372.209	501.1	0.2	NO	0.999	NO	bb

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Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999449
Calibration curve: 0.000252685 * x^2 + 0.902177 * x + -0.0231466
Response type: Internal Std (Ref 71), 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	200228P2-3	Standard	0.250	4.71	37.024	3307.030	0.140	0.2	-27.7	NO	0.999	NO	MM
2	2	200228P2-4	Standard	0.500	4.70	86.789	3096.751	0.350	0.4	-17.2	NO	0.999	NO	MM
3	3	200228P2-5	Standard	1.000	4.70	191.113	2988.655	0.799	0.9	-8.9	NO	0.999	NO	MM
4	4	200228P2-6	Standard	2.000	4.70	580.670	3192.128	2.274	2.5	27.2	NO	0.999	NO	MM
5	5	200228P2-7	Standard	5.000	4.70	1303.060	3073.394	5.300	5.9	17.8	NO	0.999	NO	MM
6	6	200228P2-8	Standard	10.000	4.70	2696.914	3408.305	9.891	11.0	9.6	NO	0.999	NO	MM
7	7	200228P2-9	Standard	50.000	4.70	12646.315	3366.450	46.957	51.3	2.7	NO	0.999	NO	MM
8	8	200228P2-10	Standard	100.000	4.70	24067.898	3355.900	89.648	96.8	-3.2	NO	0.999	NO	MM
9	9	200228P2-11	Standard	250.000	4.71	60276.000	3137.205	240.166	248.9	-0.4	NO	0.999	NO	MM
10	10	200228P2-12	Standard	500.000	4.71	108567.727	2633.736	515.274	500.9	0.2	NO	0.999	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999587
Calibration curve: 8.1805e-005 * x^2 + 0.939758 * x
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	0.250	4.93	21.385	3307.030	0.081	0.1	-65.6	YES	1.000	NO	bbX
2	2	200228P2-4	Standard	0.500	4.93	107.067	3096.751	0.432	0.5	-8.0	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	4.92	268.218	2988.655	1.122	1.2	19.4	NO	1.000	NO	bb
4	4	200228P2-6	Standard	2.000	4.92	458.591	3192.128	1.796	1.9	-4.5	NO	1.000	NO	bb
5	5	200228P2-7	Standard	5.000	4.92	1313.318	3073.394	5.341	5.7	13.6	NO	1.000	NO	bb
6	6	200228P2-8	Standard	10.000	4.93	2573.195	3408.305	9.437	10.0	0.3	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	4.92	13384.409	3366.450	49.698	52.6	5.3	NO	1.000	NO	bb
8	8	200228P2-10	Standard	100.000	4.93	25218.316	3355.900	93.933	99.1	-0.9	NO	1.000	NO	bb
9	9	200228P2-11	Standard	250.000	4.93	59097.375	3137.205	235.470	245.3	-1.9	NO	1.000	NO	bb
10	10	200228P2-12	Standard	500.000	4.93	103776.820	2633.736	492.536	502.2	0.4	NO	1.000	NO	bb

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Compound name: PFDA
Coefficient of Determination: R^2 = 0.999061
Calibration curve: -0.000223444 * x^2 + 1.11295 * x + 0.0911483
Response type: Internal Std (Ref 73), 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	200228P2-3	Standard	0.250	4.99	497.680	16701.305	0.372	0.3	1.1	NO	0.999	NO	MM
2	2	200228P2-4	Standard	0.500	4.99	960.379	18137.516	0.662	0.5	2.6	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	4.99	1715.913	16917.445	1.268	1.1	5.8	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	4.99	3872.912	19539.207	2.478	2.1	7.3	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	4.99	8958.885	18620.824	6.014	5.3	6.5	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	4.99	19043.631	19607.719	12.140	10.9	8.5	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	5.00	93253.766	21206.717	54.967	49.8	-0.4	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	5.00	173128.891	18954.754	114.172	104.7	4.7	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	5.00	388694.000	19154.133	253.662	239.3	-4.3	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	5.00	762720.938	18877.402	505.049	504.9	1.0	NO	0.999	NO	bb

Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.998241
Calibration curve: -0.000329705 * x^2 + 1.29152 * x + 0.0541173
Response type: Internal Std (Ref 75), 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	200228P2-3	Standard	0.250	4.98	58.741	1062.998	0.691	0.5	97.2	YES	0.998	NO	bbX
2	2	200228P2-4	Standard	0.500	4.96	52.464	1275.449	0.514	0.4	-28.8	NO	0.998	NO	bb
3	3	200228P2-5	Standard	1.000	4.97	121.110	1274.255	1.188	0.9	-12.2	NO	0.998	NO	bb
4	4	200228P2-6	Standard	2.000	4.97	280.028	1258.480	2.781	2.1	5.6	NO	0.998	NO	bd
5	5	200228P2-7	Standard	5.000	4.97	676.788	1101.410	7.681	5.9	18.3	NO	0.998	NO	bb
6	6	200228P2-8	Standard	10.000	4.97	1413.819	1079.929	16.365	12.7	26.7	NO	0.998	NO	bb
7	7	200228P2-9	Standard	50.000	4.96	7268.410	1417.717	64.086	50.2	0.4	NO	0.998	NO	bb
8	8	200228P2-10	Standard	100.000	4.97	13176.328	1291.610	127.518	101.3	1.3	NO	0.998	NO	bb
9	9	200228P2-11	Standard	250.000	4.97	29668.926	1276.225	290.593	239.6	-4.2	NO	0.998	NO	bb
10	10	200228P2-12	Standard	500.000	4.97	52137.152	1145.721	568.825	505.7	1.1	NO	0.998	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Compound name: PFNS
Correlation coefficient: r = 0.998843, r^2 = 0.997686
Calibration curve: 0.925171 * x + 0.00150863
Response type: Internal Std (Ref 71), 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	200228P2-3	Standard	0.250	5.05	56.341	3307.030	0.213	0.2	-8.6	NO	0.998	NO	bb
2	2	200228P2-4	Standard	0.500	5.06	99.856	3096.751	0.403	0.4	-13.2	NO	0.998	NO	bb
3	3	200228P2-5	Standard	1.000	5.06	206.939	2988.655	0.866	0.9	-6.6	NO	0.998	NO	bb
4	4	200228P2-6	Standard	2.000	5.06	452.462	3192.128	1.772	1.9	-4.3	NO	0.998	NO	bb
5	5	200228P2-7	Standard	5.000	5.06	1373.442	3073.394	5.586	6.0	20.7	NO	0.998	NO	bb
6	6	200228P2-8	Standard	10.000	5.06	2754.505	3408.305	10.102	10.9	9.2	NO	0.998	NO	bb
7	7	200228P2-9	Standard	50.000	5.06	13471.567	3366.450	50.021	54.1	8.1	NO	0.998	NO	bb
8	8	200228P2-10	Standard	100.000	5.06	24820.855	3355.900	92.452	99.9	-0.1	NO	0.998	NO	bb
9	9	200228P2-11	Standard	250.000	5.06	54036.484	3137.205	215.305	232.7	-6.9	NO	0.998	NO	bb
10	10	200228P2-12	Standard	500.000	5.06	99722.930	2633.736	473.296	511.6	2.3	NO	0.998	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999797
Calibration curve: -0.000281991 * x^2 + 1.29029 * x + 0.141953
Response type: Internal Std (Ref 77), 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	200228P2-3	Standard	0.250	5.15	71.359	4440.857	0.201	0.0	-81.7	YES	1.000	NO	MMX
2	2	200228P2-4	Standard	0.500	5.14	277.734	4636.922	0.749	0.5	-5.9	NO	1.000	NO	MM
3	3	200228P2-5	Standard	1.000	5.15	509.296	4818.728	1.321	0.9	-8.6	NO	1.000	NO	MM
4	4	200228P2-6	Standard	2.000	5.15	1046.217	4594.937	2.846	2.1	4.8	NO	1.000	NO	MM
5	5	200228P2-7	Standard	5.000	5.14	2575.229	4343.470	7.411	5.6	12.8	NO	1.000	NO	MM
6	6	200228P2-8	Standard	10.000	5.15	5377.550	5256.091	12.789	9.8	-1.8	NO	1.000	NO	MM
7	7	200228P2-9	Standard	50.000	5.15	26576.254	5207.488	63.793	49.9	-0.3	NO	1.000	NO	MM
8	8	200228P2-10	Standard	100.000	5.15	49582.082	4999.120	123.977	98.1	-1.9	NO	1.000	NO	MM
9	9	200228P2-11	Standard	250.000	5.15	116341.227	4721.123	308.034	252.6	1.0	NO	1.000	NO	MM
10	10	200228P2-12	Standard	500.000	5.15	212127.219	4621.091	573.802	499.0	-0.2	NO	1.000	NO	MM

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022720.mdb 28 Feb 2020 10:51:32
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: L-EtFOSAA
Coefficient of Determination: R^2 = 0.998538
Calibration curve: -0.000703582 * x^2 + 1.0956 * x + -0.0674174
Response type: Internal Std (Ref 81), 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	200228P2-3	Standard	0.250	5.31	73.772	4848.913	0.190	0.2	-5.9	NO	0.999	NO	MM
2	2	200228P2-4	Standard	0.500	5.30	198.790	5232.013	0.475	0.5	-1.0	NO	0.999	NO	MM
3	3	200228P2-5	Standard	1.000	5.31	376.956	5357.471	0.880	0.9	-13.5	NO	0.999	NO	MM
4	4	200228P2-6	Standard	2.000	5.31	891.725	5044.189	2.210	2.1	4.1	NO	0.999	NO	MM
5	5	200228P2-7	Standard	5.000	5.31	2642.941	5133.022	6.436	6.0	19.2	NO	0.999	NO	MM
6	6	200228P2-8	Standard	10.000	5.31	4961.620	5961.130	10.404	9.6	-3.8	NO	0.999	NO	MM
7	7	200228P2-9	Standard	50.000	5.31	24538.893	5536.460	55.403	52.4	4.8	NO	0.999	NO	MM
8	8	200228P2-10	Standard	100.000	5.31	44267.332	5629.953	98.285	95.6	-4.4	NO	0.999	NO	MM
9	9	200228P2-11	Standard	250.000	5.31	101384.633	5485.366	231.034	251.6	0.6	NO	0.999	NO	MM
10	10	200228P2-12	Standard	500.000	5.31	176296.172	4388.995	502.097			NO	0.999	NO	MMXI

Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999396
Calibration curve: -0.00024686 * x^2 + 1.02132 * x + 0.0388613
Response type: Internal Std (Ref 79), 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	200228P2-3	Standard	0.250	5.32	404.709	18573.832	0.272	0.2	-8.5	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	5.32	894.108	20339.076	0.550	0.5	0.0	NO	0.999	NO	bd
3	3	200228P2-5	Standard	1.000	5.32	1791.143	19144.830	1.169	1.1	10.7	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	5.32	3526.903	21978.574	2.006	1.9	-3.7	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	5.32	9020.064	22048.242	5.114	5.0	-0.5	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	5.32	17948.205	22638.875	9.910	9.7	-3.1	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	5.32	91829.648	21553.762	53.256	52.8	5.6	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	5.32	175154.313	21511.697	101.779	102.1	2.1	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	5.32	378869.625	20388.465	232.282	241.5	-3.4	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	5.32	704158.000	19467.848	452.129	504.1	0.8	NO	0.999	NO	bb

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Vista Analytical Laboratory

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Compound name: PFDS
Correlation coefficient: r = 0.997073, r^2 = 0.994155
Calibration curve: 0.810357 * x + 0.0107457
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	200228P2-3	Standard	0.250	5.36	29.619	3307.030	0.112	0.1	-50.0	YES	0.994	NO	bbX
2	2	200228P2-4	Standard	0.500	5.37	98.667	3096.751	0.398	0.5	-4.4	NO	0.994	NO	bb
3	3	200228P2-5	Standard	1.000	5.37	208.579	2988.655	0.872	1.1	6.3	NO	0.994	NO	db
4	4	200228P2-6	Standard	2.000	5.36	416.943	3192.128	1.633	2.0	0.1	NO	0.994	NO	db
5	5	200228P2-7	Standard	5.000	5.36	1099.104	3073.394	4.470	5.5	10.1	NO	0.994	NO	bb
6	6	200228P2-8	Standard	10.000	5.37	2128.758	3408.305	7.807	9.6	-3.8	NO	0.994	NO	bb
7	7	200228P2-9	Standard	50.000	5.37	11610.561	3366.450	43.111	53.2	6.4	NO	0.994	NO	bb
8	8	200228P2-10	Standard	100.000	5.37	19070.660	3355.900	71.034	87.6	-12.4	NO	0.994	NO	bb
9	9	200228P2-11	Standard	250.000	5.37	46639.227	3137.205	185.831	229.3	-8.3	NO	0.994	NO	bb
10	10	200228P2-12	Standard	500.000	5.37	90442.945	2633.736	429.252	529.7	5.9	NO	0.994	NO	bb

Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.997770
Calibration curve: -0.000131372 * x^2 + 0.43548 * x + 0.0298851
Response type: Internal Std (Ref 83), 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	200228P2-3	Standard	0.250	5.53	141.767	16184.979	0.109	0.2	-26.9	NO	0.998	NO	bb
2	2	200228P2-4	Standard	0.500	5.53	307.059	17512.301	0.219	0.4	-13.1	NO	0.998	NO	bb
3	3	200228P2-5	Standard	1.000	5.53	706.291	17816.285	0.496	1.1	7.0	NO	0.998	NO	bb
4	4	200228P2-6	Standard	2.000	5.53	1382.121	17523.025	0.986	2.2	9.8	NO	0.998	NO	bb
5	5	200228P2-7	Standard	5.000	5.53	3750.892	18587.152	2.523	5.7	14.7	NO	0.998	NO	bb
6	6	200228P2-8	Standard	10.000	5.53	7087.320	18789.406	4.715	10.8	7.9	NO	0.998	NO	bb
7	7	200228P2-9	Standard	50.000	5.53	34372.590	20632.824	20.824	48.5	-3.1	NO	0.998	NO	bb
8	8	200228P2-10	Standard	100.000	5.53	65764.742	17997.957	45.675	108.4	8.4	NO	0.998	NO	bb
9	9	200228P2-11	Standard	250.000	5.53	144219.688	18979.340	94.985	234.7	-6.1	NO	0.998	NO	bb
10	10	200228P2-12	Standard	500.000	5.53	273314.063	18254.855	187.152	507.3	1.5	NO	0.998	NO	bb

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.994215
Calibration curve: -0.000732966 * x^2 + 2.04332 * x + -0.0206719
Response type: Internal Std (Ref 85), 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	200228P2-3	Standard	0.250	5.59	26.598	960.348	0.346	0.2	-28.2	NO	0.994	NO	bb
2	2	200228P2-4	Standard	0.500	5.58	63.920	1151.221	0.694	0.3	-30.0	~~Y56~~ ND	0.994	NO	bb
3	3	200228P2-5	Standard	1.000	5.59	159.004	915.781	2.170	1.1	7.3	NO	0.994	NO	bb
4	4	200228P2-6	Standard	2.000	5.59	350.360	937.627	4.671	2.3	14.9	NO	0.994	NO	bb
5	5	200228P2-7	Standard	5.000	5.59	1022.777	1056.572	12.100	5.9	18.9	NO	0.994	NO	bb
6	6	200228P2-8	Standard	10.000	5.59	1518.448	894.798	21.212	10.4	4.3	NO	0.994	NO	bb
7	7	200228P2-9	Standard	50.000	5.59	8744.704	893.415	122.349	61.2	22.5	NO	0.994	NO	bb
8	8	200228P2-10	Standard	100.000	5.59	15698.558	1033.161	189.934	96.3	-3.7	NO	0.994	NO	bb
9	9	200228P2-11	Standard	250.000	5.59	31146.400	904.394	430.487	229.6	-8.2	NO	0.994	NO	bb
10	10	200228P2-12	Standard	500.000	5.59	57086.715	834.775	854.822	512.6	2.5	NO	0.994	NO	bb

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.998870
Calibration curve: -0.000532708 * x^2 + 1.17293 * x + 0.0264657
Response type: Internal Std (Ref 83), 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	200228P2-3	Standard	0.250	5.59	376.758	16184.979	0.291	0.2	-9.8	NO	0.999	NO	bd
2	2	200228P2-4	Standard	0.500	5.59	902.117	17512.301	0.644	0.5	5.3	NO	0.999	NO	bd
3	3	200228P2-5	Standard	1.000	5.60	1791.321	17816.285	1.257	1.0	4.9	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	5.60	3653.569	17523.025	2.606	2.2	10.1	NO	0.999	NO	bd
5	5	200228P2-7	Standard	5.000	5.60	9012.456	18587.152	6.061	5.2	3.1	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	5.60	17295.561	18789.406	11.506	9.8	-1.7	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	5.60	87056.453	20632.824	52.741	45.9	-8.2	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	5.60	171259.547	17997.957	118.944	106.5	6.5	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	5.60	389540.188	18979.340	256.555	246.2	-1.5	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	5.60	663151.063	18254.855	454.092	501.2	0.2	NO	0.999	NO	bb

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Vista Analytical Laboratory

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999025
Calibration curve: -8.12207e-005 * x^2 + 1.04177 * x + 0.809124
Response type: Internal Std (Ref 87), 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	200228P2-3	Standard	1.250	5.69	90.572	18159.350	0.744			NO	0.999	NO	bbXI
2	2	200228P2-4	Standard	2.500	5.68	324.528	18045.119	2.683	1.8	-28.0	NO	0.999	NO	bb
3	3	200228P2-5	Standard	5.000	5.69	704.051	17548.061	5.986	5.0	-0.6	NO	0.999	NO	bb
4	4	200228P2-6	Standard	10.000	5.69	1411.281	17690.459	11.903	10.7	6.6	NO	0.999	NO	bd
5	5	200228P2-7	Standard	25.000	5.69	3722.970	17803.273	31.200	29.2	17.0	NO	0.999	NO	bb
6	6	200228P2-8	Standard	50.000	5.69	7036.738	18883.377	55.598	52.8	5.6	NO	0.999	NO	bb
7	7	200228P2-9	Standard	250.000	5.69	33350.738	19870.102	250.423	244.3	-2.3	NO	0.999	NO	bb
8	8	200228P2-10	Standard	500.000	5.69	63135.125	18013.250	522.935	522.5	4.5	NO	0.999	NO	bb
9	9	200228P2-11	Standard	1250.000	5.69	146654.656	19231.553	1137.759	1204.5	-3.6	NO	0.999	NO	bb
10	10	200228P2-12	Standard	2500.000	5.69	272756.000	19259.861	2112.954	2524.2	1.0	NO	0.999	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.997881
Calibration curve: -0.000454632 * x^2 + 1.13495 * x + 0.102846
Response type: Internal Std (Ref 83), 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	200228P2-3	Standard	0.250	5.84	435.376	16184.979	0.336	0.2	-17.7	NO	0.998	NO	bb
2	2	200228P2-4	Standard	0.500	5.84	715.365	17512.301	0.511	0.4	-28.1	NO	0.998	NO	bb
3	3	200228P2-5	Standard	1.000	5.84	1999.068	17816.285	1.403	1.1	14.6	NO	0.998	NO	db
4	4	200228P2-6	Standard	2.000	5.84	3789.050	17523.025	2.703	2.3	14.7	NO	0.998	NO	bb
5	5	200228P2-7	Standard	5.000	5.84	8910.555	18587.152	5.992	5.2	4.0	NO	0.998	NO	bb
6	6	200228P2-8	Standard	10.000	5.84	19347.605	18789.406	12.871	11.3	13.0	NO	0.998	NO	bb
7	7	200228P2-9	Standard	50.000	5.84	88611.047	20632.824	53.683	48.1	-3.7	NO	0.998	NO	bb
8	8	200228P2-10	Standard	100.000	5.84	168571.297	17997.957	117.077	107.7	7.7	NO	0.998	NO	bb
9	9	200228P2-11	Standard	250.000	5.84	367976.031	18979.340	242.353	235.7	-5.7	NO	0.998	NO	bb
10	10	200228P2-12	Standard	500.000	5.84	670353.688	18254.855	459.024	507.5	1.5	NO	0.998	NO	bb

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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999053
Calibration curve: -0.000154395 * x^2 + 0.16939 * x + 0.00789247
Response type: Internal Std (Ref 89), 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	200228P2-3	Standard	0.250	5.87	47.092	19160.992	0.031	0.1	-46.1	YES	0.999	NO	bbX
2	2	200228P2-4	Standard	0.500	5.87	129.978	19432.734	0.084	0.4	-10.6	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	5.86	263.391	18393.316	0.179	1.0	1.1	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	5.87	493.386	18997.523	0.325	1.9	-6.3	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	5.87	1382.551	18252.168	0.947	5.6	11.4	NO	0.999	NO	db
6	6	200228P2-8	Standard	10.000	5.87	2867.940	19684.295	1.821	10.8	8.1	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	5.87	13080.840	21250.850	7.694	47.4	-5.1	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	5.87	23372.684	18719.377	15.607	101.5	1.5	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	5.87	51196.801	19572.852	32.696	249.9	-0.0	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	5.87	93181.367	17645.891	66.008			NO	0.999	NO	bbXI

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.999107
Calibration curve: -0.00044468 * x^2 + 1.04827 * x + 0.0538161
Response type: Internal Std (Ref 89), 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	200228P2-3	Standard	0.250	6.05	408.702	19160.992	0.267	0.2	-18.8	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	6.06	727.446	19432.734	0.468	0.4	-21.0	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	6.05	1796.180	18393.316	1.221	1.1	11.4	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	6.05	3605.387	18997.523	2.372	2.2	10.7	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	6.06	9114.531	18252.168	6.242	5.9	18.4	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	6.06	17269.658	19684.295	10.967	10.5	4.6	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	6.06	80721.969	21250.850	47.482	46.1	-7.7	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	6.06	154223.000	18719.377	102.984	102.7	2.7	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	6.06	366454.719	19572.852	234.033	249.6	-0.1	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	6.06	583058.063	17645.891	413.027	500.0	0.0	NO	0.999	NO	db

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999287
Calibration curve: -5.59093e-005 * x^2 + 1.0186 * x + -0.0169663
Response type: Internal Std (Ref 91), 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	200228P2-3	Standard	1.250	6.11	206.656	26306.035	1.172	1.2	-6.6	NO	0.999	NO	bb
2	2	200228P2-4	Standard	2.500	6.11	411.414	26606.641	2.307	2.3	-8.7	NO	0.999	NO	bb
3	3	200228P2-5	Standard	5.000	6.11	947.835	27114.072	5.216	5.1	2.8	NO	0.999	NO	db
4	4	200228P2-6	Standard	10.000	6.11	1829.091	26701.916	10.220	10.1	0.6	NO	0.999	NO	bb
5	5	200228P2-7	Standard	25.000	6.11	4923.130	27373.635	26.834	26.4	5.6	NO	0.999	NO	bb
6	6	200228P2-8	Standard	50.000	6.11	9860.575	27913.611	52.705	51.9	3.8	NO	0.999	NO	bb
7	7	200228P2-9	Standard	250.000	6.11	47969.539	28027.129	255.362	254.3	1.7	NO	0.999	NO	bb
8	8	200228P2-10	Standard	500.000	6.12	88039.047	25526.758	514.575	520.0	4.0	NO	0.999	NO	bb
9	9	200228P2-11	Standard	1250.000	6.11	200993.438	26280.881	1141.066	1199.2	-4.1	NO	0.999	NO	bb
10	10	200228P2-12	Standard	2500.000	6.11	350524.094	23609.523	2215.131	2524.5	1.0	NO	0.999	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999194
Calibration curve: -0.000191695 * x^2 + 0.708349 * x + 0.140307
Response type: Internal Std (Ref 93), 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	200228P2-3	Standard	0.250	6.39	699.537	29822.758	0.293	0.2	-13.7	NO	0.999	NO	bb
2	2	200228P2-4	Standard	0.500	6.39	1116.967	28963.484	0.482	0.5	-3.5	NO	0.999	NO	bb
3	3	200228P2-5	Standard	1.000	6.39	1986.745	28612.426	0.868	1.0	2.8	NO	0.999	NO	bb
4	4	200228P2-6	Standard	2.000	6.39	3783.063	28804.293	1.642	2.1	6.0	NO	0.999	NO	bb
5	5	200228P2-7	Standard	5.000	6.39	9377.712	29791.461	3.935	5.4	7.3	NO	0.999	NO	bb
6	6	200228P2-8	Standard	10.000	6.39	18546.781	32327.924	7.171	10.0	-0.5	NO	0.999	NO	bb
7	7	200228P2-9	Standard	50.000	6.39	86309.844	31042.344	34.755	49.5	-0.9	NO	0.999	NO	bb
8	8	200228P2-10	Standard	100.000	6.39	171675.422	29518.701	72.698	105.4	5.4	NO	0.999	NO	bb
9	9	200228P2-11	Standard	250.000	6.39	358410.625	28101.732	159.426	240.5	-3.8	NO	0.999	NO	bb
10	10	200228P2-12	Standard	500.000	6.39	639401.875	25898.963	308.604	504.3	0.9	NO	0.999	NO	bb

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Compound name: PFODA
Coefficient of Determination: R^2 = 0.999807
Calibration curve: -0.000198865 * x^2 + 0.992712 * x + 0.0256061
Response type: Internal Std (Ref 93), 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	200228P2-3	Standard	0.250	6.62	573.166	29822.758	0.240	0.2	-13.5	NO	1.000	NO	bb
2	2	200228P2-4	Standard	0.500	6.61	1305.184	28963.484	0.563	0.5	8.3	NO	1.000	NO	bb
3	3	200228P2-5	Standard	1.000	6.62	2436.274	28612.426	1.064	1.0	4.7	NO	1.000	NO	bb
4	4	200228P2-6	Standard	2.000	6.62	5017.258	28804.293	2.177	2.2	8.4	NO	1.000	NO	bb
5	5	200228P2-7	Standard	5.000	6.62	12267.357	29791.461	5.147	5.2	3.3	NO	1.000	NO	bb
6	6	200228P2-8	Standard	10.000	6.62	24955.527	32327.924	9.649	9.7	-2.9	NO	1.000	NO	bb
7	7	200228P2-9	Standard	50.000	6.62	124512.672	31042.344	50.138	51.0	2.0	NO	1.000	NO	bb
8	8	200228P2-10	Standard	100.000	6.62	232934.625	29518.701	98.639	101.4	1.4	NO	1.000	NO	bb
9	9	200228P2-11	Standard	250.000	6.62	520859.063	28101.732	231.685	245.4	-1.8	NO	1.000	NO	bb
10	10	200228P2-12	Standard	500.000	6.62	928944.563	25898.963	448.350	502.1	0.4	NO	1.000	NO	bb

Compound name: N-MeFOSE
Coefficient of Determination: R^2 = 0.999509
Calibration curve: -4.41238e-005 * x^2 + 1.08829 * x + 0.219461
Response type: Internal Std (Ref 95), 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	200228P2-3	Standard	1.250	6.30	157.375	18876.465	1.244	0.9	-24.7	NO	1.000	NO	bb
2	2	200228P2-4	Standard	2.500	6.30	429.819	20143.355	3.184	2.7	9.0	NO	1.000	NO	bb
3	3	200228P2-5	Standard	5.000	6.30	823.318	21041.822	5.838	5.2	3.3	NO	1.000	NO	bb
4	4	200228P2-6	Standard	10.000	6.30	1603.866	20855.742	11.474	10.3	3.5	NO	1.000	NO	bb
5	5	200228P2-7	Standard	25.000	6.30	4139.143	21036.621	29.356	26.8	7.2	NO	1.000	NO	bb
6	6	200228P2-8	Standard	50.000	6.30	8165.117	22270.443	54.702	50.2	0.3	NO	1.000	NO	bb
7	7	200228P2-9	Standard	250.000	6.30	41317.445	21702.188	284.053	263.6	5.4	NO	1.000	NO	bb
8	8	200228P2-10	Standard	500.000	6.30	77250.039	22608.139	509.803	477.5	-4.5	NO	1.000	NO	bb
9	9	200228P2-11	Standard	1250.000	6.30	189332.297	21762.920	1298.005	1256.5	0.5	NO	1.000	NO	bb
10	10	200228P2-12	Standard	2500.000	6.30	343171.969	20939.395	2445.212	2500.1	0.0	NO	1.000	NO	bb

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.999753, r^2 = 0.999505
Calibration curve: 0.964785 * x + 0.495135
Response type: Internal Std (Ref 97), 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	200228P2-3	Standard	1.250	6.45	224.216	23260.693	1.438	1.0	-21.8	NO	1.000	NO	bb
2	2	200228P2-4	Standard	2.500	6.44	407.488	24204.588	2.512	2.1	-16.4	NO	1.000	NO	MM
3	3	200228P2-5	Standard	5.000	6.45	954.318	24771.996	5.748	5.4	8.9	NO	1.000	NO	bd
4	4	200228P2-6	Standard	10.000	6.44	1729.268	23734.000	10.871	10.8	7.5	NO	1.000	NO	bb
5	5	200228P2-7	Standard	25.000	6.45	4561.072	24951.182	27.274	27.8	11.0	NO	1.000	NO	bb
6	6	200228P2-8	Standard	50.000	6.45	9265.671	26929.420	51.336	52.7	5.4	NO	1.000	NO	bb
7	7	200228P2-9	Standard	250.000	6.44	45291.969	27077.797	249.561	258.2	3.3	NO	1.000	NO	bb
8	8	200228P2-10	Standard	500.000	6.44	83955.500	24881.539	503.432	521.3	4.3	NO	1.000	NO	bb
9	9	200228P2-11	Standard	1250.000	6.45	210198.172	26395.951	1188.120	1231.0	-1.5	NO	1.000	NO	bb
10	10	200228P2-12	Standard	2500.000	6.44	402920.500	25083.348	2396.639	2483.6	-0.7	NO	1.000	NO	bb

Compound name: 13C3-PFBA-EIS
Response Factor: 537.644
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	1.34	5693.918		5693.918	10.6	-15.3	NO		NO	MMX
2	2	200228P2-4	Standard	12.500	1.34	6087.459		6087.459	11.3	-9.4	NO		NO	MMX
3	3	200228P2-5	Standard	12.500	1.34	6083.945		6083.945	11.3	-9.5	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	1.34	6339.746		6339.746	11.8	-5.7	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	1.35	6156.793		6156.793	11.5	-8.4	NO		NO	MMX
6	6	200228P2-8	Standard	12.500	1.35	6720.548		6720.548	12.5	0.0	NO		NO	db
7	7	200228P2-9	Standard	12.500	1.35	6685.317		6685.317	12.4	-0.5	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	1.34	6199.003		6199.003	11.5	-7.8	NO		NO	MMX
9	9	200228P2-11	Standard	12.500	1.35	6582.901		6582.901	12.2	-2.0	NO		NO	MMX
10	10	200228P2-12	Standard	12.500	1.35	7297.394		7297.394	13.6	8.6	NO		NO	MMX

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Compound name: 13C3-PFBA-RSD
Response Factor: 0.803468
RRF SD: 0.0282566, Relative SD: 3.51683
Response type: Internal Std (Ref 99), 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	200228P2-3	Standard	12.500	1.34	5685.271	7248.806	9.804	12.2	-2.4	NO		NO	MM
2	2	200228P2-4	Standard	12.500	1.34	6119.896	7590.792	10.078	12.5	0.3	NO		NO	MM
3	3	200228P2-5	Standard	12.500	1.34	6083.945	7162.085	10.618	13.2	5.7	NO		NO	bb
4	4	200228P2-6	Standard	12.500	1.34	6339.746	7872.748	10.066	12.5	0.2	NO		NO	bb
5	5	200228P2-7	Standard	12.500	1.35	6178.124	7554.741	10.222	12.7	1.8	NO		NO	MM
6	6	200228P2-8	Standard	12.500	1.35	6645.920	8415.775	9.871	12.3	-1.7	NO		NO	MM
7	7	200228P2-9	Standard	12.500	1.35	6685.317	8580.313	9.739	12.1	-3.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	1.34	6223.333	8282.436	9.392	11.7	-6.5	NO		NO	MM
9	9	200228P2-11	Standard	12.500	1.35	6582.901	7956.204	10.342	12.9	3.0	NO		NO	MM
10	10	200228P2-12	Standard	12.500	1.35	7305.919	8866.442	10.300	12.8	2.6	NO		NO	MM

Compound name: 13C3-PFPeA-EIS
Response Factor: 935.16
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	2.27	10563.604		10563.604	11.3	-9.6	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	2.27	10904.597		10904.597	11.7	-6.7	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	2.27	11114.909		11114.909	11.9	-4.9	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	2.27	10781.746		10781.746	11.5	-7.8	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	2.27	11040.878		11040.878	11.8	-5.5	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	2.27	11689.495		11689.495	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	2.27	11880.203		11880.203	12.7	1.6	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	2.27	11196.039		11196.039	12.0	-4.2	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	2.27	11936.076		11936.076	12.8	2.1	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	2.27	10952.733		10952.733	11.7	-6.3	NO		NO	bbX

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Compound name: 13C3-PFPeA-RSD
Response Factor: 0.581386
RRF SD: 0.0233696, Relative SD: 4.01963
Response type: Internal Std (Ref 100), 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 200228P2-3	Standard	12.500	2.27	10563.604	19238.939	6.863	11.8	-5.6	NO		NO	bb
2	2 200228P2-4	Standard	12.500	2.27	10904.597	19438.518	7.012	12.1	-3.5	NO		NO	bb
3	3 200228P2-5	Standard	12.500	2.27	11114.909	18858.510	7.367	12.7	1.4	NO		NO	bb
4	4 200228P2-6	Standard	12.500	2.27	10781.746	19720.152	6.834	11.8	-6.0	NO		NO	bb
5	5 200228P2-7	Standard	12.500	2.27	11040.878	17828.893	7.741	13.3	6.5	NO		NO	bb
6	6 200228P2-8	Standard	12.500	2.27	11689.495	20418.775	7.156	12.3	-1.5	NO		NO	bb
7	7 200228P2-9	Standard	12.500	2.27	11880.203	20156.393	7.368	12.7	1.4	NO		NO	bb
8	8 200228P2-10	Standard	12.500	2.27	11196.039	18867.879	7.417	12.8	2.1	NO		NO	bb
9	9 200228P2-11	Standard	12.500	2.27	11936.076	19947.314	7.480	12.9	2.9	NO		NO	bb
10	10 200228P2-12	Standard	12.500	2.27	10952.733	18415.488	7.434	12.8	2.3	NO		NO	bb

Compound name: 13C3-PFBS-EIS
Response Factor: 95.8348
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	2.54	1235.219		1235.219	12.9	3.1	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	2.54	1240.708		1240.708	12.9	3.6	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	2.54	1189.869		1189.869	12.4	-0.7	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	2.54	1284.728		1284.728	13.4	7.2	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	2.54	1226.688		1226.688	12.8	2.4	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	2.55	1197.935		1197.935	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	2.55	1292.873		1292.873	13.5	7.9	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	2.55	1240.957		1240.957	12.9	3.6	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	2.55	1239.422		1239.422	12.9	3.5	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	2.55	1157.202		1157.202	12.1	-3.4	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C3-PFBS-RSD
Response Factor: 1.10464
RRF SD: 0.104552, Relative SD: 9.46483
Response type: Internal Std (Ref 101), 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 200228P2-3	Standard	12.500	2.54	1235.219	1010.974	15.273	13.8	10.6	NO		NO	bb
2	2 200228P2-4	Standard	12.500	2.54	1240.708	1084.264	14.304	12.9	3.6	NO		NO	bb
3	3 200228P2-5	Standard	12.500	2.54	1189.869	1077.516	13.803	12.5	-0.0	NO		NO	bb
4	4 200228P2-6	Standard	12.500	2.54	1284.728	990.154	16.219	14.7	17.5	NO		NO	bb
5	5 200228P2-7	Standard	12.500	2.54	1226.688	1245.659	12.310	11.1	-10.9	NO		NO	bb
6	6 200228P2-8	Standard	12.500	2.55	1197.935	1049.325	14.270	12.9	3.3	NO		NO	bb
7	7 200228P2-9	Standard	12.500	2.55	1292.873	1301.320	12.419	11.2	-10.1	NO		NO	bb
8	8 200228P2-10	Standard	12.500	2.55	1240.957	1271.190	12.203	11.0	-11.6	NO		NO	bb
9	9 200228P2-11	Standard	12.500	2.55	1239.422	1158.894	13.369	12.1	-3.2	NO		NO	bb
10	10 200228P2-12	Standard	12.500	2.55	1157.202	1039.799	13.911	12.6	0.7	NO		NO	bb

Compound name: 13C3-HFPO-DA-EIS
Response Factor: 320.279
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	3.28	3543.095		3543.095	11.1	-11.5	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	3.28	3741.298		3741.298	11.7	-6.5	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	3.28	3534.105		3534.105	11.0	-11.7	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	3.28	3658.248		3658.248	11.4	-8.6	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	3.28	3811.648		3811.648	11.9	-4.8	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	3.28	4003.488		4003.488	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	3.28	4182.291		4182.291	13.1	4.5	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	3.28	3789.889		3789.889	11.8	-5.3	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	3.28	4179.957		4179.957	13.1	4.4	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	3.28	3980.572		3980.572	12.4	-0.6	NO		NO	bbX

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Compound name: 13C3-HFPO-DA-RSD
Response Factor: 0.199346
RRF SD: 0.0119567, Relative SD: 5.99796
Response type: Internal Std (Ref 100), 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	200228P2-3	Standard	12.500	3.28	3543.095	19238.939	2.302	11.5	-7.6	NO		NO	bb
2	2	200228P2-4	Standard	12.500	3.28	3741.298	19438.518	2.406	12.1	-3.5	NO		NO	bb
3	3	200228P2-5	Standard	12.500	3.28	3534.105	18858.510	2.343	11.8	-6.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	3.28	3658.248	19720.152	2.319	11.6	-6.9	NO		NO	bb
5	5	200228P2-7	Standard	12.500	3.28	3811.648	17828.893	2.672	13.4	7.2	NO		NO	bb
6	6	200228P2-8	Standard	12.500	3.28	4003.488	20418.775	2.451	12.3	-1.6	NO		NO	bb
7	7	200228P2-9	Standard	12.500	3.28	4182.291	20156.393	2.594	13.0	4.1	NO		NO	bb
8	8	200228P2-10	Standard	12.500	3.28	3789.889	18867.879	2.511	12.6	0.8	NO		NO	bb
9	9	200228P2-11	Standard	12.500	3.28	4179.957	19947.314	2.619	13.1	5.1	NO		NO	bb
10	10	200228P2-12	Standard	12.500	3.28	3980.572	18415.488	2.702	13.6	8.4	NO		NO	bb

Compound name: 13C2-4:2 FTS-EIS
Response Factor: 132.741
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	2.98	1544.957		1544.957	11.6	-6.9	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	2.98	1566.614		1566.614	11.8	-5.6	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	2.98	1519.960		1519.960	11.5	-8.4	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	2.98	1567.699		1567.699	11.8	-5.5	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	2.98	1527.414		1527.414	11.5	-7.9	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	2.98	1659.260		1659.260	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	2.98	1763.701		1763.701	13.3	6.3	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	2.98	1660.416		1660.416	12.5	0.1	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	2.98	1562.131		1562.131	11.8	-5.9	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	2.98	1452.158		1452.158	10.9	-12.5	NO		NO	bbX

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Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C2-4:2 FTS-RSD
Response Factor: 1.41804
RRF SD: 0.118077, Relative SD: 8.32678
Response type: Internal Std (Ref 101), 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	200228P2-3	Standard	12.500	2.98	1544.957	1010.974	19.102	13.5	7.8	NO		NO	bb
2	2	200228P2-4	Standard	12.500	2.98	1566.614	1084.264	18.061	12.7	1.9	NO		NO	bb
3	3	200228P2-5	Standard	12.500	2.98	1519.960	1077.516	17.633	12.4	-0.5	NO		NO	bb
4	4	200228P2-6	Standard	12.500	2.98	1567.699	990.154	19.791	14.0	11.7	NO		NO	bb
5	5	200228P2-7	Standard	12.500	2.98	1527.414	1245.659	15.327	10.8	-13.5	NO		NO	bb
6	6	200228P2-8	Standard	12.500	2.98	1659.260	1049.325	19.766	13.9	11.5	NO		NO	bb
7	7	200228P2-9	Standard	12.500	2.98	1763.701	1301.320	16.941	11.9	-4.4	NO		NO	bb
8	8	200228P2-10	Standard	12.500	2.98	1660.416	1271.190	16.327	11.5	-7.9	NO		NO	bb
9	9	200228P2-11	Standard	12.500	2.98	1562.131	1158.894	16.849	11.9	-4.9	NO		NO	bb
10	10	200228P2-12	Standard	12.500	2.98	1452.158	1039.799	17.457	12.3	-1.5	NO		NO	bb

Compound name: 13C2-PFHxA-EIS
Response Factor: 1583.99
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	3.06	18107.494		18107.494	11.4	-8.5	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	3.06	17982.678		17982.678	11.4	-9.2	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	3.06	17804.041		17804.041	11.2	-10.1	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	3.06	17873.602		17873.602	11.3	-9.7	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	3.06	18577.861		18577.861	11.7	-6.2	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	3.06	19799.846		19799.846	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	3.06	19765.725		19765.725	12.5	-0.2	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	3.07	18790.016		18790.016	11.9	-5.1	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	3.07	18813.150		18813.150	11.9	-5.0	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	3.07	18744.832		18744.832	11.8	-5.3	NO		NO	bbX

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Compound name: 13C2-PFHxA-RSD
Response Factor: 0.966596
RRF SD: 0.0427301, Relative SD: 4.42068
Response type: Internal Std (Ref 100), 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 200228P2-3	Standard	12.500	3.06	18107.494	19238.939	11.765	12.2	-2.6	NO		NO	bb
2	2 200228P2-4	Standard	12.500	3.06	17982.678	19438.518	11.564	12.0	-4.3	NO		NO	bb
3	3 200228P2-5	Standard	12.500	3.06	17804.041	18858.510	11.801	12.2	-2.3	NO		NO	bb
4	4 200228P2-6	Standard	12.500	3.06	17873.602	19720.152	11.330	11.7	-6.2	NO		NO	bb
5	5 200228P2-7	Standard	12.500	3.06	18577.861	17828.893	13.025	13.5	7.8	NO		NO	bb
6	6 200228P2-8	Standard	12.500	3.06	19799.846	20418.775	12.121	12.5	0.3	NO		NO	bb
7	7 200228P2-9	Standard	12.500	3.06	19765.725	20156.393	12.258	12.7	1.5	NO		NO	bb
8	8 200228P2-10	Standard	12.500	3.07	18790.016	18867.879	12.448	12.9	3.0	NO		NO	bb
9	9 200228P2-11	Standard	12.500	3.07	18813.150	19947.314	11.789	12.2	-2.4	NO		NO	bb
10	10 200228P2-12	Standard	12.500	3.07	18744.832	18415.488	12.724	13.2	5.3	NO		NO	bb

Compound name: 13C4-PFHpA-EIS
Response Factor: 1043.64
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	3.67	12581.276		12581.276	12.1	-3.6	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	3.66	12169.229		12169.229	11.7	-6.7	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	3.67	11996.332		11996.332	11.5	-8.0	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	3.67	12809.899		12809.899	12.3	-1.8	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	3.67	13124.444		13124.444	12.6	0.6	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	3.67	13045.506		13045.506	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	3.67	14375.872		14375.872	13.8	10.2	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	3.67	13014.601		13014.601	12.5	-0.2	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	3.67	12944.269		12944.269	12.4	-0.8	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	3.67	12388.945		12388.945	11.9	-5.0	NO		NO	bbX

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Compound name: 13C4-PFHpA-RSD
Response Factor: 0.666538
RRF SD: 0.0360348, Relative SD: 5.40626
Response type: Internal Std (Ref 100), 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	200228P2-3	Standard	12.500	3.67	12581.276	19238.939	8.174	12.3	-1.9	NO		NO	bb
2	2	200228P2-4	Standard	12.500	3.66	12169.229	19438.518	7.825	11.7	-6.1	NO		NO	bb
3	3	200228P2-5	Standard	12.500	3.67	11996.332	18858.510	7.952	11.9	-4.6	NO		NO	bb
4	4	200228P2-6	Standard	12.500	3.67	12809.899	19720.152	8.120	12.2	-2.5	NO		NO	bb
5	5	200228P2-7	Standard	12.500	3.67	13124.444	17828.893	9.202	13.8	10.4	NO		NO	bb
6	6	200228P2-8	Standard	12.500	3.67	13045.506	20418.775	7.986	12.0	-4.1	NO		NO	bb
7	7	200228P2-9	Standard	12.500	3.67	14375.872	20156.393	8.915	13.4	7.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	3.67	13014.601	18867.879	8.622	12.9	3.5	NO		NO	bb
9	9	200228P2-11	Standard	12.500	3.67	12944.269	19947.314	8.112	12.2	-2.6	NO		NO	bb
10	10	200228P2-12	Standard	12.500	3.67	12388.945	18415.488	8.409	12.6	0.9	NO		NO	bb

Compound name: 13C3-PFHxS-EIS
Response Factor: 210.93
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	3.81	2804.351		2804.351	13.3	6.4	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	3.80	2834.503		2834.503	13.4	7.5	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	3.81	2641.797		2641.797	12.5	0.2	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	3.81	2735.614		2735.614	13.0	3.8	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	3.81	2981.774		2981.774	14.1	13.1	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	3.81	2636.619		2636.619	12.5	0.0	NO		NO	MM
7	7	200228P2-9	Standard	12.500	3.81	3092.432		3092.432	14.7	17.3	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	3.81	2661.052		2661.052	12.6	0.9	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	3.81	2556.917		2556.917	12.1	-3.0	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	3.81	2697.473		2697.473	12.8	2.3	NO		NO	bbX

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Compound name: 13C3-PFHxS-RSD
Response Factor: 2.47767
RRF SD: 0.221519, Relative SD: 8.94061
Response type: Internal Std (Ref 101), 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 200228P2-3	Standard	12.500	3.81	2804.351	1010.974	34.674	14.0	12.0	NO		NO	bb
2	2 200228P2-4	Standard	12.500	3.80	2834.503	1084.264	32.678	13.2	5.5	NO		NO	bb
3	3 200228P2-5	Standard	12.500	3.81	2641.797	1077.516	30.647	12.4	-1.0	NO		NO	bb
4	4 200228P2-6	Standard	12.500	3.81	2735.614	990.154	34.535	13.9	11.5	NO		NO	bb
5	5 200228P2-7	Standard	12.500	3.81	2981.774	1245.659	29.922	12.1	-3.4	NO		NO	bb
6	6 200228P2-8	Standard	12.500	3.81	2633.811	1049.325	31.375	12.7	1.3	NO		NO	MM
7	7 200228P2-9	Standard	12.500	3.81	3092.432	1301.320	29.705	12.0	-4.1	NO		NO	bb
8	8 200228P2-10	Standard	12.500	3.81	2661.052	1271.190	26.167	10.6	-15.5	NO		NO	bb
9	9 200228P2-11	Standard	12.500	3.81	2556.917	1158.894	27.579	11.1	-11.0	NO		NO	bb
10	10 200228P2-12	Standard	12.500	3.81	2697.473	1039.799	32.428	13.1	4.7	NO		NO	bb

Compound name: 13C2-6:2 FTS-EIS
Response Factor: 122.416
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	4.12	1564.045		1564.045	12.8	2.2	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	4.12	1495.903		1495.903	12.2	-2.2	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	4.12	1391.667		1391.667	11.4	-9.1	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	4.12	1518.498		1518.498	12.4	-0.8	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	4.12	1531.110		1531.110	12.5	0.1	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	4.12	1530.195		1530.195	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	4.12	1721.369		1721.369	14.1	12.5	NO		NO	bdX
8	8 200228P2-10	Standard	12.500	4.12	1491.310		1491.310	12.2	-2.5	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	4.13	1330.319		1330.319	10.9	-13.1	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	4.13	1299.548		1299.548	10.6	-15.1	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C2-6:2 FTS-RSD
Response Factor: 0.437387
RRF SD: 0.0367159, Relative SD: 8.39437
Response type: Internal Std (Ref 104), 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	200228P2-3	Standard	12.500	4.12	1564.045	3039.571	6.432	14.7	17.6	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.12	1495.903	3466.657	5.394	12.3	-1.3	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.12	1391.667	3106.286	5.600	12.8	2.4	NO		NO	bb
4	4	200228P2-6	Standard	12.500	4.12	1518.498	3707.464	5.120	11.7	-6.4	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.12	1531.110	3568.517	5.363	12.3	-1.9	NO		NO	bb
6	6	200228P2-8	Standard	12.500	4.12	1530.195	3567.552	5.362	12.3	-1.9	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.12	1721.369	3800.974	5.661	12.9	3.5	NO		NO	bd
8	8	200228P2-10	Standard	12.500	4.12	1491.310	3201.337	5.823	13.3	6.5	NO		NO	bb
9	9	200228P2-11	Standard	12.500	4.13	1330.319	3526.663	4.715	10.8	-13.8	NO		NO	bb
10	10	200228P2-12	Standard	12.500	4.13	1299.548	3121.729	5.204	11.9	-4.8	NO		NO	bb

Compound name: 13C5-PFNA-EIS
Response Factor: 1397.2
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	4.62	15947.615		15947.615	11.4	-8.7	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	4.62	17004.100		17004.100	12.2	-2.6	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	4.62	17405.514		17405.514	12.5	-0.3	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	4.62	18564.672		18564.672	13.3	6.3	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	4.62	17174.816		17174.816	12.3	-1.7	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	4.62	17464.965		17464.965	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.62	16066.092		16066.092	11.5	-8.0	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	4.62	16351.739		16351.739	11.7	-6.4	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	4.62	18136.590		18136.590	13.0	3.8	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	4.62	16156.843		16156.843	11.6	-7.5	NO		NO	bbX

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Compound name: 13C5-PFNA-RSD
Response Factor: 0.930713
RRF SD: 0.0483582, Relative SD: 5.19583
Response type: Internal Std (Ref 103), 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 200228P2-3	Standard	12.500	4.62	15947.615	16622.115	11.993	12.9	3.1	NO		NO	bb
2	2 200228P2-4	Standard	12.500	4.62	17004.100	18325.652	11.599	12.5	-0.3	NO		NO	bb
3	3 200228P2-5	Standard	12.500	4.62	17405.514	18594.150	11.701	12.6	0.6	NO		NO	bb
4	4 200228P2-6	Standard	12.500	4.62	18564.672	19121.793	12.136	13.0	4.3	NO		NO	bb
5	5 200228P2-7	Standard	12.500	4.62	17174.816	18431.674	11.648	12.5	0.1	NO		NO	bb
6	6 200228P2-8	Standard	12.500	4.62	17464.965	18453.684	11.830	12.7	1.7	NO		NO	bb
7	7 200228P2-9	Standard	12.500	4.62	16066.092	19558.520	10.268	11.0	-11.7	NO		NO	bb
8	8 200228P2-10	Standard	12.500	4.62	16351.739	18416.230	11.099	11.9	-4.6	NO		NO	bb
9	9 200228P2-11	Standard	12.500	4.62	18136.590	18171.371	12.476	13.4	7.2	NO		NO	bb
10	10 200228P2-12	Standard	12.500	4.62	16156.843	17424.914	11.590	12.5	-0.4	NO		NO	bb

Compound name: 13C8-PFOSA-EIS
Response Factor: 315.194
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	4.68	3508.692		3508.692	11.1	-10.9	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	4.68	3746.921		3746.921	11.9	-4.9	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	4.68	3909.152		3909.152	12.4	-0.8	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	4.68	3762.045		3762.045	11.9	-4.5	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	4.68	3920.882		3920.882	12.4	-0.5	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	4.68	3939.926		3939.926	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	4.68	3926.786		3926.786	12.5	-0.3	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	4.68	4040.278		4040.278	12.8	2.5	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	4.68	3884.290		3884.290	12.3	-1.4	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	4.68	3858.538		3858.538	12.2	-2.1	NO		NO	bbX

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Compound name: 13C8-PFOSA-RSD
Response Factor: 0.190836
RRF SD: 0.00911114, Relative SD: 4.77433
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	12.500	4.68	3508.692	19170.955	2.288	12.0	-4.1	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.68	3746.921	19971.170	2.345	12.3	-1.7	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.68	3909.152	20536.209	2.379	12.5	-0.3	NO		NO	bb
4	4	200228P2-6	Standard	12.500	4.68	3762.045	18845.355	2.495	13.1	4.6	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.68	3920.882	21036.143	2.330	12.2	-2.3	NO		NO	bb
6	6	200228P2-8	Standard	12.500	4.68	3939.926	22479.787	2.191	11.5	-8.2	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.68	3926.786	21272.746	2.307	12.1	-3.3	NO		NO	bb
8	8	200228P2-10	Standard	12.500	4.68	4040.278	20457.059	2.469	12.9	3.5	NO		NO	bb
9	9	200228P2-11	Standard	12.500	4.68	3884.290	19353.719	2.509	13.1	5.2	NO		NO	bb
10	10	200228P2-12	Standard	12.500	4.68	3858.538	18979.961	2.541	13.3	6.5	NO		NO	bb

Compound name: 13C2-PFOA-EIS
Response Factor: 1520.44
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	4.18	16386.402		16386.402	10.8	-13.8	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	4.18	16716.035		16716.035	11.0	-12.0	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	4.18	17407.059		17407.059	11.4	-8.4	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	4.18	17488.086		17488.086	11.5	-8.0	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	4.18	17831.416		17831.416	11.7	-6.2	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	4.18	19005.488		19005.488	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.18	18969.861		18969.861	12.5	-0.2	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	4.18	16762.920		16762.920	11.0	-11.8	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	4.18	16981.471		16981.471	11.2	-10.6	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	4.18	17387.346		17387.346	11.4	-8.5	NO		NO	bbX

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Compound name: 13C2-PFOA-RSD
Response Factor: 0.92465
RRF SD: 0.0425102, Relative SD: 4.59744
Response type: Internal Std (Ref 102), 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 200228P2-3	Standard	12.500	4.18	16386.402	18004.723	11.376	12.3	-1.6	NO		NO	bb
2	2 200228P2-4	Standard	12.500	4.18	16716.035	19584.238	10.669	11.5	-7.7	NO		NO	bb
3	3 200228P2-5	Standard	12.500	4.18	17407.059	19046.402	11.424	12.4	-1.2	NO		NO	bb
4	4 200228P2-6	Standard	12.500	4.18	17488.086	19435.168	11.248	12.2	-2.7	NO		NO	bb
5	5 200228P2-7	Standard	12.500	4.18	17831.416	20020.416	11.133	12.0	-3.7	NO		NO	bb
6	6 200228P2-8	Standard	12.500	4.18	19005.488	20665.604	11.496	12.4	-0.5	NO		NO	bb
7	7 200228P2-9	Standard	12.500	4.18	18969.861	20043.463	11.830	12.8	2.4	NO		NO	bb
8	8 200228P2-10	Standard	12.500	4.18	16762.920	17432.254	12.020	13.0	4.0	NO		NO	bb
9	9 200228P2-11	Standard	12.500	4.18	16981.471	18008.961	11.787	12.7	2.0	NO		NO	bb
10	10 200228P2-12	Standard	12.500	4.18	17387.346	17253.141	12.597	13.6	9.0	NO		NO	bb

Compound name: 13C8-PFOS-EIS
Response Factor: 272.664
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	4.70	3307.030		3307.030	12.1	-3.0	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	4.70	3096.751		3096.751	11.4	-9.1	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	4.70	2988.655		2988.655	11.0	-12.3	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	4.70	3192.128		3192.128	11.7	-6.3	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	4.70	3073.394		3073.394	11.3	-9.8	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	4.70	3408.305		3408.305	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	4.70	3366.450		3366.450	12.3	-1.2	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	4.70	3355.900		3355.900	12.3	-1.5	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	4.70	3137.205		3137.205	11.5	-8.0	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	4.70	2633.736		2633.736	9.7	-22.7	NO		NO	bbX

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Compound name: 13C8-PFOS-RSD
Response Factor: 0.928705
RRF SD: 0.0834682, Relative SD: 8.98759
Response type: Internal Std (Ref 104), 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	200228P2-3	Standard	12.500	4.70	3307.030	3039.571	13.600	14.6	17.2	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.70	3096.751	3466.657	11.166	12.0	-3.8	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.70	2988.655	3106.286	12.027	12.9	3.6	NO		NO	bb
4	4	200228P2-6	Standard	12.500	4.70	3192.128	3707.464	10.763	11.6	-7.3	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.70	3073.394	3568.517	10.766	11.6	-7.3	NO		NO	bb
6	6	200228P2-8	Standard	12.500	4.70	3408.305	3567.552	11.942	12.9	2.9	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.70	3366.450	3800.974	11.071	11.9	-4.6	NO		NO	bb
8	8	200228P2-10	Standard	12.500	4.70	3355.900	3201.337	13.104	14.1	12.9	NO		NO	bb
9	9	200228P2-11	Standard	12.500	4.70	3137.205	3526.663	11.120	12.0	-4.2	NO		NO	bb
10	10	200228P2-12	Standard	12.500	4.70	2630.020	3121.729	10.531	11.3	-9.3	NO		NO	bb

Compound name: 13C2-PFDA-EIS
Response Factor: 1568.62
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	4.99	16701.305		16701.305	10.6	-14.8	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	4.99	18137.516		18137.516	11.6	-7.5	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	4.99	16917.445		16917.445	10.8	-13.7	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	5.00	19539.207		19539.207	12.5	-0.3	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	4.99	18620.824		18620.824	11.9	-5.0	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	5.00	19607.719		19607.719	12.5	0.0	NO		NO	MM
7	7	200228P2-9	Standard	12.500	5.00	21206.717		21206.717	13.5	8.2	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	5.00	18954.754		18954.754	12.1	-3.3	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	5.00	19154.133		19154.133	12.2	-2.3	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	5.00	18877.402		18877.402	12.0	-3.7	NO		NO	bbX

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Compound name: 13C2-PFDA-RSD
Response Factor: 0.985195
RRF SD: 0.0597551, Relative SD: 6.06531
Response type: Internal Std (Ref 105), 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	200228P2-3	Standard	12.500	4.99	16701.305	18681.912	11.175	11.3	-9.3	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.99	18137.516	18092.438	12.531	12.7	1.8	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.99	16917.445	18230.012	11.600	11.8	-5.8	NO		NO	bb
4	4	200228P2-6	Standard	12.500	5.00	19539.207	19853.422	12.302	12.5	-0.1	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.99	18620.824	19566.799	11.896	12.1	-3.4	NO		NO	bb
6	6	200228P2-8	Standard	12.500	5.00	19615.248	20881.883	11.742	11.9	-4.7	NO		NO	MM
7	7	200228P2-9	Standard	12.500	5.00	21206.717	19756.271	13.418	13.6	9.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	5.00	18954.754	19158.900	12.367	12.6	0.4	NO		NO	bb
9	9	200228P2-11	Standard	12.500	5.00	19154.133	18922.775	12.653	12.8	2.7	NO		NO	bb
10	10	200228P2-12	Standard	12.500	5.00	18877.402	17522.609	13.466	13.7	9.4	NO		NO	bb

Compound name: 13C2-8:2 FTS-EIS
Response Factor: 86.3943
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	4.96	1062.998		1062.998	12.3	-1.6	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	4.96	1275.449		1275.449	14.8	18.1	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	4.96	1274.255		1274.255	14.7	18.0	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	4.97	1258.480		1258.480	14.6	16.5	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	4.96	1101.410		1101.410	12.7	2.0	NO		NO	MMX
6	6	200228P2-8	Standard	12.500	4.97	1079.929		1079.929	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.97	1417.717		1417.717	16.4	31.3	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	4.97	1291.610		1291.610	15.0	19.6	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	4.97	1276.225		1276.225	14.8	18.2	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	4.97	1145.721		1145.721	13.3	6.1	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: 13C2-8:2 FTS-RSD
Response Factor: 0.358407
RRF SD: 0.0351336, Relative SD: 9.80269
Response type: Internal Std (Ref 104), 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 200228P2-3	Standard	12.500	4.96	1062.998	3039.571	4.371	12.2	-2.4	NO		NO	bb
2	2 200228P2-4	Standard	12.500	4.96	1275.449	3466.657	4.599	12.8	2.7	NO		NO	bb
3	3 200228P2-5	Standard	12.500	4.96	1274.255	3106.286	5.128	14.3	14.5	NO		NO	bb
4	4 200228P2-6	Standard	12.500	4.97	1258.480	3707.464	4.243	11.8	-5.3	NO		NO	bb
5	5 200228P2-7	Standard	12.500	4.96	1101.679	3568.517	3.859	10.8	-13.9	NO		NO	MM
6	6 200228P2-8	Standard	12.500	4.97	1079.929	3567.552	3.784	10.6	-15.5	NO		NO	bb
7	7 200228P2-9	Standard	12.500	4.97	1417.717	3800.974	4.662	13.0	4.1	NO		NO	bb
8	8 200228P2-10	Standard	12.500	4.97	1291.610	3201.337	5.043	14.1	12.6	NO		NO	bb
9	9 200228P2-11	Standard	12.500	4.97	1276.225	3526.663	4.523	12.6	1.0	NO		NO	bb
10	10 200228P2-12	Standard	12.500	4.97	1145.721	3121.729	4.588	12.8	2.4	NO		NO	bb

Compound name: d3-N-MeFOSAA-EIS
Response Factor: 420.487
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	5.14	4440.857		4440.857	10.6	-15.5	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	5.14	4636.922		4636.922	11.0	-11.8	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	5.14	4818.728		4818.728	11.5	-8.3	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	5.14	4594.937		4594.937	10.9	-12.6	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	5.14	4343.470		4343.470	10.3	-17.4	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	5.14	5256.091		5256.091	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.14	5207.488		5207.488	12.4	-0.9	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	5.14	4999.120		4999.120	11.9	-4.9	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	5.14	4721.123		4721.123	11.2	-10.2	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	5.14	4621.091		4621.091	11.0	-12.1	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: d3-N-MeFOSAA-RSD
Response Factor: 0.235916
RRF SD: 0.0117343, Relative SD: 4.97392
Response type: Internal Std (Ref 106), 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 200228P2-3	Standard	12.500	5.14	4440.857	19170.955	2.896	12.3	-1.8	NO		NO	bb
2	2 200228P2-4	Standard	12.500	5.14	4636.922	19971.170	2.902	12.3	-1.6	NO		NO	bb
3	3 200228P2-5	Standard	12.500	5.14	4818.728	20536.209	2.933	12.4	-0.5	NO		NO	bb
4	4 200228P2-6	Standard	12.500	5.14	4594.937	18845.355	3.048	12.9	3.4	NO		NO	bb
5	5 200228P2-7	Standard	12.500	5.14	4343.470	21036.143	2.581	10.9	-12.5	NO		NO	bb
6	6 200228P2-8	Standard	12.500	5.14	5256.091	22479.787	2.923	12.4	-0.9	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.14	5207.488	21272.746	3.060	13.0	3.8	NO		NO	bb
8	8 200228P2-10	Standard	12.500	5.14	4999.120	20457.059	3.055	12.9	3.6	NO		NO	bb
9	9 200228P2-11	Standard	12.500	5.14	4721.123	19353.719	3.049	12.9	3.4	NO		NO	bb
10	10 200228P2-12	Standard	12.500	5.14	4621.091	18979.961	3.043	12.9	3.2	NO		NO	bb

Compound name: 13C2-PFUdA-EIS
Response Factor: 1811.11
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	5.32	18573.832		18573.832	10.3	-18.0	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	5.32	20339.076		20339.076	11.2	-10.2	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	5.32	19144.830		19144.830	10.6	-15.4	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	5.32	21978.574		21978.574	12.1	-2.9	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	5.32	22048.242		22048.242	12.2	-2.6	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	5.32	22638.875		22638.875	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.32	21553.762		21553.762	11.9	-4.8	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	5.32	21511.697		21511.697	11.9	-5.0	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	5.32	20388.465		20388.465	11.3	-9.9	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	5.32	19467.848		19467.848	10.7	-14.0	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: 13C2-PFUdA-RSD
Response Factor: 1.02849
RRF SD: 0.0615914, Relative SD: 5.98852
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	12.500	5.32	18573.832	19170.955	12.111	11.8	-5.8	NO		NO	bb
2	2	200228P2-4	Standard	12.500	5.32	20339.076	19971.170	12.730	12.4	-1.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	5.32	19144.830	20536.209	11.653	11.3	-9.4	NO		NO	bb
4	4	200228P2-6	Standard	12.500	5.32	21978.574	18845.355	14.578	14.2	13.4	NO		NO	bb
5	5	200228P2-7	Standard	12.500	5.32	22048.242	21036.143	13.101	12.7	1.9	NO		NO	bb
6	6	200228P2-8	Standard	12.500	5.32	22638.875	22479.787	12.588	12.2	-2.1	NO		NO	bb
7	7	200228P2-9	Standard	12.500	5.32	21553.762	21272.746	12.665	12.3	-1.5	NO		NO	bb
8	8	200228P2-10	Standard	12.500	5.32	21511.697	20457.059	13.144	12.8	2.2	NO		NO	bb
9	9	200228P2-11	Standard	12.500	5.32	20388.465	19353.719	13.168	12.8	2.4	NO		NO	bb
10	10	200228P2-12	Standard	12.500	5.32	19467.848	18979.961	12.821	12.5	-0.3	NO		NO	bb

Compound name: d5-N-EtFOSAA-EIS
Response Factor: 476.89
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	5.30	4848.913		4848.913	10.2	-18.7	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	5.30	5232.013		5232.013	11.0	-12.2	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	5.30	5357.471		5357.471	11.2	-10.1	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	5.30	5044.189		5044.189	10.6	-15.4	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	5.30	5133.022		5133.022	10.8	-13.9	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	5.30	5961.130		5961.130	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	5.30	5536.460		5536.460	11.6	-7.1	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	5.30	5629.953		5629.953	11.8	-5.6	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	5.30	5485.366		5485.366	11.5	-8.0	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	5.30	4388.995		4388.995	9.2	-26.4	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: d5-N-EtFOSAA-RSD
Response Factor: 0.260278
RRF SD: 0.0149154, Relative SD: 5.73056
Response type: Internal Std (Ref 106), 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 200228P2-3	Standard	12.500	5.30	4848.913	19170.955	3.162	12.1	-2.8	NO		NO	bb
2	2 200228P2-4	Standard	12.500	5.30	5232.013	19971.170	3.275	12.6	0.7	NO		NO	bb
3	3 200228P2-5	Standard	12.500	5.30	5357.471	20536.209	3.261	12.5	0.2	NO		NO	bb
4	4 200228P2-6	Standard	12.500	5.30	5044.189	18845.355	3.346	12.9	2.8	NO		NO	bb
5	5 200228P2-7	Standard	12.500	5.30	5133.022	21036.143	3.050	11.7	-6.3	NO		NO	bb
6	6 200228P2-8	Standard	12.500	5.30	5961.130	22479.787	3.315	12.7	1.9	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.30	5536.460	21272.746	3.253	12.5	-0.0	NO		NO	bb
8	8 200228P2-10	Standard	12.500	5.30	5629.953	20457.059	3.440	13.2	5.7	NO		NO	bb
9	9 200228P2-11	Standard	12.500	5.30	5485.366	19353.719	3.543	13.6	8.9	NO		NO	bb
10	10 200228P2-12	Standard	12.500	5.30	4388.995	18979.961	2.891	11.1	-11.2	NO		NO	bb

Compound name: 13C2-PFDoA-EIS
Response Factor: 1503.15
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	5.59	16184.979		16184.979	10.8	-13.9	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	5.59	17512.301		17512.301	11.7	-6.8	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	5.60	17816.285		17816.285	11.9	-5.2	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	5.60	17523.025		17523.025	11.7	-6.7	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	5.60	18587.152		18587.152	12.4	-1.1	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	5.60	18789.406		18789.406	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.60	20632.824		20632.824	13.7	9.8	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	5.60	17997.957		17997.957	12.0	-4.2	NO		NO	bbX
9	9 200228P2-11	Standard	12.500	5.60	18979.340		18979.340	12.6	1.0	NO		NO	bbX
10	10 200228P2-12	Standard	12.500	5.60	18254.855		18254.855	12.1	-2.8	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: 13C2-PFDoA-RSD
Response Factor: 0.957248
RRF SD: 0.0622284, Relative SD: 6.50076
Response type: Internal Std (Ref 105), 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 200228P2-3	Standard	12.500	5.59	16184.979	18681.912	10.829	11.3	-9.5	NO		NO	bb
2	2 200228P2-4	Standard	12.500	5.59	17512.301	18092.438	12.099	12.6	1.1	NO		NO	bb
3	3 200228P2-5	Standard	12.500	5.60	17816.285	18230.012	12.216	12.8	2.1	NO		NO	bb
4	4 200228P2-6	Standard	12.500	5.60	17523.025	19853.422	11.033	11.5	-7.8	NO		NO	bb
5	5 200228P2-7	Standard	12.500	5.60	18587.152	19566.799	11.874	12.4	-0.8	NO		NO	bb
6	6 200228P2-8	Standard	12.500	5.60	18789.406	20881.883	11.247	11.7	-6.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.60	20632.824	19756.271	13.055	13.6	9.1	NO		NO	bb
8	8 200228P2-10	Standard	12.500	5.60	17997.957	19158.900	11.743	12.3	-1.9	NO		NO	bb
9	9 200228P2-11	Standard	12.500	5.60	18979.340	18922.775	12.537	13.1	4.8	NO		NO	bb
10	10 200228P2-12	Standard	12.500	5.60	18254.855	17522.609	13.022	13.6	8.8	NO		NO	bb

Compound name: 13C2-10:2 FTS-EIS
Response Factor: 71.5838
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200228P2-3	Standard	12.500	5.58	960.348		960.348	13.4	7.3	NO		NO	bbX
2	2 200228P2-4	Standard	12.500	5.58	1151.221		1151.221	16.1	28.7	NO		NO	bbX
3	3 200228P2-5	Standard	12.500	5.58	915.781		915.781	12.8	2.3	NO		NO	bbX
4	4 200228P2-6	Standard	12.500	5.58	937.627		937.627	13.1	4.8	NO		NO	bbX
5	5 200228P2-7	Standard	12.500	5.58	1056.572		1056.572	14.8	18.1	NO		NO	bbX
6	6 200228P2-8	Standard	12.500	5.58	894.798		894.798	12.5	0.0	NO		NO	bb
7	7 200228P2-9	Standard	12.500	5.58	893.415		893.415	12.5	-0.2	NO		NO	bbX
8	8 200228P2-10	Standard	12.500	5.58	1033.161		1033.161	14.4	15.5	NO		NO	MMX
9	9 200228P2-11	Standard	12.500	5.58	904.394		904.394	12.6	1.1	NO		NO	MMX
10	10 200228P2-12	Standard	12.500	5.58	834.775		834.775	11.7	-6.7	NO		NO	MMX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C2-10:2 FTS-RSD
Response Factor: 0.283441
RRF SD: 0.036088, Relative SD: 12.7321
Response type: Internal Std (Ref 104), 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	200228P2-3	Standard	12.500	5.58	960.348	3039.571	3.949	13.9	11.5	NO		NO	bb
2	2	200228P2-4	Standard	12.500	5.58	1151.221	3466.657	4.151	14.6	17.2	NO		NO	bb
3	3	200228P2-5	Standard	12.500	5.58	915.781	3106.286	3.685	13.0	4.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	5.58	937.627	3707.464	3.161	11.2	-10.8	NO		NO	bb
5	5	200228P2-7	Standard	12.500	5.58	1056.572	3568.517	3.701	13.1	4.5	NO		NO	bb
6	6	200228P2-8	Standard	12.500	5.58	894.798	3567.552	3.135	11.1	-11.5	NO		NO	bb
7	7	200228P2-9	Standard	12.500	5.58	893.415	3800.974	2.938	10.4	-17.1	NO		NO	bb
8	8	200228P2-10	Standard	12.500	5.58	1071.093	3201.337	4.182	14.8	18.0	NO		NO	MM
9	9	200228P2-11	Standard	12.500	5.58	902.295	3526.663	3.198	11.3	-9.7	NO		NO	MM
10	10	200228P2-12	Standard	12.500	5.58	831.288	3121.729	3.329	11.7	-6.1	NO		NO	MM

Compound name: d3-N-MeFOSA-EIS
Response Factor: 126.564
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	149.200	5.72	18159.350		18159.350	143.5	-3.8	NO		NO	bbX
2	2	200228P2-4	Standard	149.200	5.71	18045.119		18045.119	142.6	-4.4	NO		NO	bbX
3	3	200228P2-5	Standard	149.200	5.72	17548.061		17548.061	138.6	-7.1	NO		NO	bbX
4	4	200228P2-6	Standard	149.200	5.72	17690.459		17690.459	139.8	-6.3	NO		NO	bbX
5	5	200228P2-7	Standard	149.200	5.72	17803.273		17803.273	140.7	-5.7	NO		NO	bbX
6	6	200228P2-8	Standard	149.200	5.72	18883.377		18883.377	149.2	0.0	NO		NO	bb
7	7	200228P2-9	Standard	149.200	5.72	19870.102		19870.102	157.0	5.2	NO		NO	bbX
8	8	200228P2-10	Standard	149.200	5.72	18013.250		18013.250	142.3	-4.6	NO		NO	bbX
9	9	200228P2-11	Standard	149.200	5.72	19231.553		19231.553	152.0	1.8	NO		NO	bbX
10	10	200228P2-12	Standard	149.200	5.72	19259.861		19259.861	152.2	2.0	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: d3-N-MeFOSA-RSD
Response Factor: 0.0766871
RRF SD: 0.00510564, Relative SD: 6.65776
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	149.200	5.72	18159.350	19170.955	11.840	154.4	3.5	NO		NO	bb
2	2	200228P2-4	Standard	149.200	5.71	18045.119	19971.170	11.294	147.3	-1.3	NO		NO	bb
3	3	200228P2-5	Standard	149.200	5.72	17548.061	20536.209	10.681	139.3	-6.6	NO		NO	bb
4	4	200228P2-6	Standard	149.200	5.72	17690.459	18845.355	11.734	153.0	2.6	NO		NO	bb
5	5	200228P2-7	Standard	149.200	5.72	17803.273	21036.143	10.579	137.9	-7.5	NO		NO	bb
6	6	200228P2-8	Standard	149.200	5.72	18883.377	22479.787	10.500	136.9	-8.2	NO		NO	bb
7	7	200228P2-9	Standard	149.200	5.72	19870.102	21272.746	11.676	152.3	2.0	NO		NO	bb
8	8	200228P2-10	Standard	149.200	5.72	18013.250	20457.059	11.007	143.5	-3.8	NO		NO	bb
9	9	200228P2-11	Standard	149.200	5.72	19231.553	19353.719	12.421	162.0	8.6	NO		NO	bb
10	10	200228P2-12	Standard	149.200	5.72	19259.861	18979.961	12.684	165.4	10.9	NO		NO	bb

Compound name: 13C2-PFTeDA-EIS
Response Factor: 1574.74
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	6.05	19160.992		19160.992	12.2	-2.7	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	6.05	19432.734		19432.734	12.3	-1.3	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	6.05	18393.316		18393.316	11.7	-6.6	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	6.05	18997.523		18997.523	12.1	-3.5	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	6.05	18252.168		18252.168	11.6	-7.3	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	6.05	19684.295		19684.295	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	6.06	21250.850		21250.850	13.5	8.0	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	6.06	18719.377		18719.377	11.9	-4.9	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	6.06	19572.852		19572.852	12.4	-0.6	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	6.06	17645.891		17645.891	11.2	-10.4	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:28:03 Pacific Standard Time

Compound name: 13C2-PFTeDA-RSD
Response Factor: 0.947461
RRF SD: 0.0570976, Relative SD: 6.02638
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	12.500	6.05	19160.992	19170.955	12.494	13.2	5.5	NO		NO	bb
2	2	200228P2-4	Standard	12.500	6.05	19432.734	19971.170	12.163	12.8	2.7	NO		NO	bb
3	3	200228P2-5	Standard	12.500	6.05	18393.316	20536.209	11.196	11.8	-5.5	NO		NO	bb
4	4	200228P2-6	Standard	12.500	6.05	18997.523	18845.355	12.601	13.3	6.4	NO		NO	bb
5	5	200228P2-7	Standard	12.500	6.05	18252.168	21036.143	10.846	11.4	-8.4	NO		NO	bb
6	6	200228P2-8	Standard	12.500	6.05	19684.295	22479.787	10.946	11.6	-7.6	NO		NO	bb
7	7	200228P2-9	Standard	12.500	6.06	21250.850	21272.746	12.487	13.2	5.4	NO		NO	bb
8	8	200228P2-10	Standard	12.500	6.06	18719.377	20457.059	11.438	12.1	-3.4	NO		NO	bb
9	9	200228P2-11	Standard	12.500	6.06	19572.852	19353.719	12.642	13.3	6.7	NO		NO	bb
10	10	200228P2-12	Standard	12.500	6.06	17645.891	18979.961	11.621	12.3	-1.9	NO		NO	bb

Compound name: d5-N-ETFOSA-EIS
Response Factor: 187.089
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	149.200	6.13	26306.035		26306.035	140.6	-5.8	NO		NO	bbX
2	2	200228P2-4	Standard	149.200	6.13	26606.641		26606.641	142.2	-4.7	NO		NO	bbX
3	3	200228P2-5	Standard	149.200	6.13	27114.072		27114.072	144.9	-2.9	NO		NO	bbX
4	4	200228P2-6	Standard	149.200	6.13	26701.916		26701.916	142.7	-4.3	NO		NO	bbX
5	5	200228P2-7	Standard	149.200	6.13	27373.635		27373.635	146.3	-1.9	NO		NO	bbX
6	6	200228P2-8	Standard	149.200	6.13	27913.611		27913.611	149.2	0.0	NO		NO	MM
7	7	200228P2-9	Standard	149.200	6.13	28027.129		28027.129	149.8	0.4	NO		NO	bbX
8	8	200228P2-10	Standard	149.200	6.13	25526.758		25526.758	136.4	-8.6	NO		NO	bbX
9	9	200228P2-11	Standard	149.200	6.13	26280.881		26280.881	140.5	-5.8	NO		NO	bbX
10	10	200228P2-12	Standard	149.200	6.13	23609.523		23609.523	126.2	-15.4	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: d5-N-ETFOSA-RSD
Response Factor: 0.110236
RRF SD: 0.00484534, Relative SD: 4.39541
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	149.200	6.13	26306.035	19170.955	17.152	155.6	4.3	NO		NO	bb
2	2	200228P2-4	Standard	149.200	6.13	26606.641	19971.170	16.653	151.1	1.3	NO		NO	bb
3	3	200228P2-5	Standard	149.200	6.13	27114.072	20536.209	16.504	149.7	0.3	NO		NO	bb
4	4	200228P2-6	Standard	149.200	6.13	26701.916	18845.355	17.711	160.7	7.7	NO		NO	bb
5	5	200228P2-7	Standard	149.200	6.13	27373.635	21036.143	16.266	147.6	-1.1	NO		NO	bb
6	6	200228P2-8	Standard	149.200	6.13	28048.318	22479.787	15.596	141.5	-5.2	NO		NO	bd
7	7	200228P2-9	Standard	149.200	6.13	28027.129	21272.746	16.469	149.4	0.1	NO		NO	bb
8	8	200228P2-10	Standard	149.200	6.13	25526.758	20457.059	15.598	141.5	-5.2	NO		NO	bb
9	9	200228P2-11	Standard	149.200	6.13	26280.881	19353.719	16.974	154.0	3.2	NO		NO	bb
10	10	200228P2-12	Standard	149.200	6.13	23609.523	18979.961	15.549	141.1	-5.5	NO		NO	bb

Compound name: 13C2-PFHxDA-EIS
Response Factor: 2586.23
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	12.500	6.38	29822.758		29822.758	11.5	-7.7	NO		NO	bbX
2	2	200228P2-4	Standard	12.500	6.39	28963.484		28963.484	11.2	-10.4	NO		NO	bbX
3	3	200228P2-5	Standard	12.500	6.39	28612.426		28612.426	11.1	-11.5	NO		NO	bbX
4	4	200228P2-6	Standard	12.500	6.39	28804.293		28804.293	11.1	-10.9	NO		NO	bbX
5	5	200228P2-7	Standard	12.500	6.39	29791.461		29791.461	11.5	-7.8	NO		NO	bbX
6	6	200228P2-8	Standard	12.500	6.39	32327.924		32327.924	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	6.39	31042.344		31042.344	12.0	-4.0	NO		NO	bbX
8	8	200228P2-10	Standard	12.500	6.39	29518.701		29518.701	11.4	-8.7	NO		NO	bbX
9	9	200228P2-11	Standard	12.500	6.39	28101.732		28101.732	10.9	-13.1	NO		NO	bbX
10	10	200228P2-12	Standard	12.500	6.39	25898.963		25898.963	10.0	-19.9	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C2-PFHxDA-RSD
Response Factor: 1.45007
RRF SD: 0.0570149, Relative SD: 3.93188
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	12.500	6.38	29822.758	19170.955	19.445	13.4	7.3	NO		NO	bb
2	2	200228P2-4	Standard	12.500	6.39	28963.484	19971.170	18.128	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	6.39	28612.426	20536.209	17.416	12.0	-3.9	NO		NO	bb
4	4	200228P2-6	Standard	12.500	6.39	28804.293	18845.355	19.106	13.2	5.4	NO		NO	bb
5	5	200228P2-7	Standard	12.500	6.39	29791.461	21036.143	17.703	12.2	-2.3	NO		NO	bb
6	6	200228P2-8	Standard	12.500	6.39	32327.924	22479.787	17.976	12.4	-0.8	NO		NO	bb
7	7	200228P2-9	Standard	12.500	6.39	31042.344	21272.746	18.241	12.6	0.6	NO		NO	bb
8	8	200228P2-10	Standard	12.500	6.39	29518.701	20457.059	18.037	12.4	-0.5	NO		NO	bb
9	9	200228P2-11	Standard	12.500	6.39	28101.732	19353.719	18.150	12.5	0.1	NO		NO	bb
10	10	200228P2-12	Standard	12.500	6.39	25898.963	18979.961	17.057	11.8	-5.9	NO		NO	bb

Compound name: d7-N-MeFOSE-EIS
Response Factor: 149.266
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	149.200	6.29	18876.465		18876.465	126.5	-15.2	NO		NO	MMX
2	2	200228P2-4	Standard	149.200	6.29	20143.355		20143.355	134.9	-9.6	NO		NO	bbX
3	3	200228P2-5	Standard	149.200	6.29	21041.822		21041.822	141.0	-5.5	NO		NO	bbX
4	4	200228P2-6	Standard	149.200	6.29	20855.742		20855.742	139.7	-6.4	NO		NO	bbX
5	5	200228P2-7	Standard	149.200	6.29	21036.621		21036.621	140.9	-5.5	NO		NO	bbX
6	6	200228P2-8	Standard	149.200	6.29	22270.443		22270.443	149.2	0.0	NO		NO	MM
7	7	200228P2-9	Standard	149.200	6.29	21702.188		21702.188	145.4	-2.6	NO		NO	bbX
8	8	200228P2-10	Standard	149.200	6.29	22608.139		22608.139	151.5	1.5	NO		NO	bbX
9	9	200228P2-11	Standard	149.200	6.29	21762.920		21762.920	145.8	-2.3	NO		NO	bbX
10	10	200228P2-12	Standard	149.200	6.29	20939.395		20939.395	140.3	-6.0	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: d7-N-MeFOSE-RSD
Response Factor: 0.0877832
RRF SD: 0.00459125, Relative SD: 5.23021
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	149.200	6.29	18917.463	19170.955	12.335	140.5	-5.8	NO		NO	MM
2	2	200228P2-4	Standard	149.200	6.29	20143.355	19971.170	12.608	143.6	-3.7	NO		NO	bb
3	3	200228P2-5	Standard	149.200	6.29	21041.822	20536.209	12.808	145.9	-2.2	NO		NO	bb
4	4	200228P2-6	Standard	149.200	6.29	20855.742	18845.355	13.833	157.6	5.6	NO		NO	bb
5	5	200228P2-7	Standard	149.200	6.29	21036.621	21036.143	12.500	142.4	-4.6	NO		NO	bb
6	6	200228P2-8	Standard	149.200	6.29	22435.268	22479.787	12.475	142.1	-4.7	NO		NO	bd
7	7	200228P2-9	Standard	149.200	6.29	21702.188	21272.746	12.752	145.3	-2.6	NO		NO	bb
8	8	200228P2-10	Standard	149.200	6.29	22608.139	20457.059	13.814	157.4	5.5	NO		NO	bb
9	9	200228P2-11	Standard	149.200	6.29	21762.920	19353.719	14.056	160.1	7.3	NO		NO	bb
10	10	200228P2-12	Standard	149.200	6.29	20939.395	18979.961	13.790	157.1	5.3	NO		NO	bb

Compound name: d9-N-EtFOSE-EIS
Response Factor: 180.492
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200228P2-3	Standard	149.200	6.43	23260.693		23260.693	128.9	-13.6	NO		NO	bbX
2	2	200228P2-4	Standard	149.200	6.43	24204.588		24204.588	134.1	-10.1	NO		NO	bbX
3	3	200228P2-5	Standard	149.200	6.44	24771.996		24771.996	137.2	-8.0	NO		NO	bbX
4	4	200228P2-6	Standard	149.200	6.44	23734.000		23734.000	131.5	-11.9	NO		NO	bbX
5	5	200228P2-7	Standard	149.200	6.44	24951.182		24951.182	138.2	-7.3	NO		NO	MMX
6	6	200228P2-8	Standard	149.200	6.43	26929.420		26929.420	149.2	0.0	NO		NO	bb
7	7	200228P2-9	Standard	149.200	6.43	27077.797		27077.797	150.0	0.6	NO		NO	bbX
8	8	200228P2-10	Standard	149.200	6.43	24881.539		24881.539	137.9	-7.6	NO		NO	bbX
9	9	200228P2-11	Standard	149.200	6.44	26395.951		26395.951	146.2	-2.0	NO		NO	bbX
10	10	200228P2-12	Standard	149.200	6.43	25083.348		25083.348	139.0	-6.9	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: d9-N-EtFOSE-RSD
Response Factor: 0.104305
RRF SD: 0.00492162, Relative SD: 4.7185
Response type: Internal Std (Ref 106), 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	200228P2-3	Standard	149.200	6.43	23260.693	19170.955	15.167	145.4	-2.5	NO		NO	bb
2	2	200228P2-4	Standard	149.200	6.43	24204.588	19971.170	15.150	145.2	-2.7	NO		NO	bb
3	3	200228P2-5	Standard	149.200	6.44	24771.996	20536.209	15.078	144.6	-3.1	NO		NO	bb
4	4	200228P2-6	Standard	149.200	6.44	23734.000	18845.355	15.743	150.9	1.2	NO		NO	bb
5	5	200228P2-7	Standard	149.200	6.44	24955.105	21036.143	14.829	142.2	-4.7	NO		NO	MM
6	6	200228P2-8	Standard	149.200	6.43	26929.420	22479.787	14.974	143.6	-3.8	NO		NO	bb
7	7	200228P2-9	Standard	149.200	6.43	27077.797	21272.746	15.911	152.5	2.2	NO		NO	bb
8	8	200228P2-10	Standard	149.200	6.43	24881.539	20457.059	15.204	145.8	-2.3	NO		NO	bb
9	9	200228P2-11	Standard	149.200	6.44	26395.951	19353.719	17.048	163.4	9.5	NO		NO	bb
10	10	200228P2-12	Standard	149.200	6.43	25083.348	18979.961	16.520	158.4	6.2	NO		NO	bb

Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 7.40149e-017, Relative SD: 7.40149e-015
Response type: Internal Std (Ref 99), 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	200228P2-3	Standard	12.500	1.34	7248.806	7248.806	12.500	12.5	0.0	NO		NO	MM
2	2	200228P2-4	Standard	12.500	1.34	7590.792	7590.792	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	1.34	7162.085	7162.085	12.500	12.5	0.0	NO		NO	MM
4	4	200228P2-6	Standard	12.500	1.34	7872.748	7872.748	12.500	12.5	0.0	NO		NO	MM
5	5	200228P2-7	Standard	12.500	1.34	7554.741	7554.741	12.500	12.5	0.0	NO		NO	MM
6	6	200228P2-8	Standard	12.500	1.34	8415.775	8415.775	12.500	12.5	0.0	NO		NO	MM
7	7	200228P2-9	Standard	12.500	1.34	8580.313	8580.313	12.500	12.5	0.0	NO		NO	MM
8	8	200228P2-10	Standard	12.500	1.34	8282.436	8282.436	12.500	12.5	0.0	NO		NO	db
9	9	200228P2-11	Standard	12.500	1.35	7956.204	7956.204	12.500	12.5	0.0	NO		NO	MM
10	10	200228P2-12	Standard	12.500	1.35	8866.442	8866.442	12.500	12.5	0.0	NO		NO	MM

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 100), 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	200228P2-3	Standard	12.500	3.06	19238.939	19238.939	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	3.06	19438.518	19438.518	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	3.06	18858.510	18858.510	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	3.06	19720.152	19720.152	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	3.07	17828.893	17828.893	12.500	12.5	0.0	NO		NO	bb
6	6	200228P2-8	Standard	12.500	3.06	20418.775	20418.775	12.500	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	3.06	20156.393	20156.393	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	3.07	18867.879	18867.879	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	3.07	19947.314	19947.314	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	3.07	18415.488	18415.488	12.500	12.5	0.0	NO		NO	bb

Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 5.23364e-017, Relative SD: 5.23364e-015
Response type: Internal Std (Ref 101), 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	200228P2-3	Standard	12.500	3.81	1010.974	1010.974	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	3.81	1084.264	1084.264	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	3.81	1077.516	1077.516	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	3.81	990.154	990.154	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	3.81	1245.659	1245.659	12.500	12.5	0.0	NO		NO	dd
6	6	200228P2-8	Standard	12.500	3.81	1049.325	1049.325	12.500	12.5	0.0	NO		NO	MM
7	7	200228P2-9	Standard	12.500	3.81	1301.320	1301.320	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	3.81	1271.190	1271.190	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	3.81	1158.894	1158.894	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	3.81	1039.799	1039.799	12.500	12.5	0.0	NO		NO	bb

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 102), 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	200228P2-3	Standard	12.500	4.18	18004.723	18004.723	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.17	19584.238	19584.238	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.18	19046.402	19046.402	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	4.18	19435.168	19435.168	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.18	20020.416	20020.416	12.500	12.5	0.0	NO		NO	bb
6	6	200228P2-8	Standard	12.500	4.18	20665.604	20665.604	12.500	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.18	20043.463	20043.463	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	4.18	17432.254	17432.254	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	4.18	18008.961	18008.961	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	4.18	17253.141	17253.141	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 103), 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	200228P2-3	Standard	12.500	4.62	16622.115	16622.115	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.62	18325.652	18325.652	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.62	18594.150	18594.150	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	4.62	19121.793	19121.793	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.62	18431.674	18431.674	12.500	12.5	0.0	NO		NO	bb
6	6	200228P2-8	Standard	12.500	4.62	18453.684	18453.684	12.500	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.62	19558.520	19558.520	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	4.62	18416.230	18416.230	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	4.62	18171.371	18171.371	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	4.62	17424.914	17424.914	12.500	12.5	0.0	NO		NO	bb

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Last Altered: Saturday, February 29, 2020 10:27:53 Pacific Standard Time
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Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-015
Response type: Internal Std (Ref 104), 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	200228P2-3	Standard	12.500	4.70	3039.571	3039.571	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.70	3466.657	3466.657	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.70	3106.286	3106.286	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	4.70	3707.464	3707.464	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	4.70	3568.517	3568.517	12.500	12.5	0.0	NO		NO	bb
6	6	200228P2-8	Standard	12.500	4.70	3567.552	3567.552	12.500	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	4.70	3800.974	3800.974	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	4.70	3201.337	3201.337	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	4.70	3526.663	3526.663	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	4.71	3121.729	3121.729	12.500	12.5	0.0	NO		NO	bb

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

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Printed: Saturday, February 29, 2020 11:32:32 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 105), 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	200228P2-3	Standard	12.500	4.99	18681.912	18681.912	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	4.99	18092.438	18092.438	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	4.99	18230.012	18230.012	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	5.00	19853.422	19853.422	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	5.00	19566.799	19566.799	12.500	12.5	0.0	NO		NO	bb
6	6	200228P2-8	Standard	12.500	5.00	20881.883	20881.883	12.500	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	5.00	19756.271	19756.271	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	5.00	19158.900	19158.900	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	5.00	18922.775	18922.775	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	5.00	17522.609	17522.609	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 106), 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	200228P2-3	Standard	12.500	5.32	19170.955	19170.955	12.500	12.5	0.0	NO		NO	bb
2	2	200228P2-4	Standard	12.500	5.32	19971.170	19971.170	12.500	12.5	0.0	NO		NO	bb
3	3	200228P2-5	Standard	12.500	5.32	20536.209	20536.209	12.500	12.5	0.0	NO		NO	bb
4	4	200228P2-6	Standard	12.500	5.32	18845.355	18845.355	12.500	12.5	0.0	NO		NO	bb
5	5	200228P2-7	Standard	12.500	5.32	21036.143	21036.143	12.500	12.5	0.0	NO		NO	bb
6	6	200228P2-8	Standard	12.500	5.32	22479.787	22479.787	12.500	12.5	0.0	NO		NO	bb
7	7	200228P2-9	Standard	12.500	5.32	21272.746	21272.746	12.500	12.5	0.0	NO		NO	bb
8	8	200228P2-10	Standard	12.500	5.32	20457.059	20457.059	12.500	12.5	0.0	NO		NO	bb
9	9	200228P2-11	Standard	12.500	5.32	19353.719	19353.719	12.500	12.5	0.0	NO		NO	bb
10	10	200228P2-12	Standard	12.500	5.32	18979.961	18979.961	12.500	12.5	0.0	NO		NO	bb

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:35:28 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9988	NO	
2	2	PFPrS	51	0.9997	NO	
3	3	3:3 FTCA	49	0.9998	NO	
4	4	PFPeA	49	0.9992	NO	
5	5	PFBS	51	0.9989	NO	
6	6	4:2 FTS	55	0.9994	NO	
7	7	PFHxA	57	0.9976	NO	
8	8	PFPeS	51	0.9932	NO	
9	9	HFPO-DA	53	0.9990	NO	
10	10	5:3 FTCA	59	0.9990	NO	
11	11	PFHpA	59	0.9999	NO	
12	12	ADONA	59	0.9997	NO	
13	13	L-PFHxS	61	0.9990	NO	
14	15	6:2 FTS	63	0.9994	NO	
15	16	L-PFOA	69	0.9993	NO	
16	18	PFecHS	69	0.9994	NO	
17	19	PFHpS	71	0.9996	NO	
18	20	7:3 FTCA	65	0.9987	NO	
19	21	PFNA	65	0.9944	NO	
20	22	PFOSA	67	0.9992	NO	
21	23	L-PFOS	71	0.9994	NO	
22	25	9Cl-PF30NS	71	0.9996	NO	
23	26	PFDA	73	0.9991	NO	
24	27	8:2 FTS	75	0.9982	NO	
25	28	PFNS	71	0.9977	NO	
26	29	L-MeFOSAA	77	0.9998	NO	

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	81	0.9985	NO	
2	33	PFUdA	79	0.9994	NO	
3	34	PFDS	71	0.9942	NO	
4	35	11Cl-PF30UdS	83	0.9978	NO	
5	36	10:2 FTS	85	0.9942	NO	
6	37	PFDoA	83	0.9989	NO	
7	38	N-MeFOSA	87	0.9990	NO	
8	39	PFTrDA	83	0.9979	NO	
9	40	PFDoS	89	0.9991	NO	
10	41	PFTeDA	89	0.9991	NO	
11	42	N-EtFOSA	91	0.9993	NO	
12	43	PFHxDA	93	0.9992	NO	
13	44	PFODA	93	0.9998	NO	
14	45	N-MeFOSE	95	0.9995	NO	
15	46	N-EtFOSE	97	0.9995	NO	
16	47	13C3-PFBA-EIS			NO	0.000
17	48	13C3-PFBA-RSD	99		NO	3.517
18	49	13C3-PFPeA-EIS			NO	0.000
19	50	13C3-PFPeA-RSD	100		NO	4.020
20	51	13C3-PFBS-EIS			NO	0.000
21	52	13C3-PFBS-RSD	101		NO	9.465
22	53	13C3-HFPO-DA-EIS			NO	0.000
23	54	13C3-HFPO-DA-RSD	100		NO	5.998
24	55	13C2-4:2 FTS-EIS			NO	0.000
25	56	13C2-4:2 FTS-RSD	101		NO	8.327
26	57	13C2-PFHxA-EIS			NO	0.000
27	58	13C2-PFHxA-RSD	100		NO	4.421
28	59	13C4-PFHpA-EIS			NO	0.000
29	60	13C4-PFHpA-RSD	100		NO	5.406
30	61	13C3-PFHxS-EIS			NO	0.000
31	62	13C3-PFHxS-RSD	101		NO	8.941
32	63	13C2-6:2 FTS-EIS			NO	0.000

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Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

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Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	13C2-6:2 FTS-RSD	104		NO	8.394
34	65	13C5-PFNA-EIS			NO	0.000
35	66	13C5-PFNA-RSD	103		NO	5.196
36	67	13C8-PFOSA-EIS			NO	0.000
37	68	13C8-PFOSA-RSD	106		NO	4.774
38	69	13C2-PFOA-EIS			NO	0.000
39	70	13C2-PFOA-RSD	102		NO	4.597
40	71	13C8-PFOS-EIS			NO	0.000
41	72	13C8-PFOS-RSD	104		NO	8.988
42	73	13C2-PFDA-EIS			NO	0.000
43	74	13C2-PFDA-RSD	105		NO	6.065
44	75	13C2-8:2 FTS-EIS			NO	0.000
45	76	13C2-8:2 FTS-RSD	104		NO	9.803
46	77	d3-N-MeFOSAA-EIS			NO	0.000
47	78	d3-N-MeFOSAA-RSD	106		NO	4.974
48	79	13C2-PFUdA-EIS			NO	0.000
49	80	13C2-PFUdA-RSD	106		NO	5.989
50	81	d5-N-EtFOSAA-EIS			NO	0.000
51	82	d5-N-EtFOSAA-RSD	106		NO	5.731
52	83	13C2-PFDoA-EIS			NO	0.000
53	84	13C2-PFDoA-RSD	105		NO	6.501
54	85	13C2-10:2 FTS-EIS			NO	0.000
55	86	13C2-10:2 FTS-RSD	104		NO	12.732
56	87	d3-N-MeFOSA-EIS			NO	0.000
57	88	d3-N-MeFOSA-RSD	106		NO	6.658
58	89	13C2-PFTeDA-EIS			NO	0.000
59	90	13C2-PFTeDA-RSD	106		NO	6.026
60	91	d5-N-ETFOSA-EIS			NO	0.000
61	92	d5-N-ETFOSA-RSD	106		NO	4.395
62	93	13C2-PFHxDA-EIS			NO	0.000
63	94	13C2-PFHxDA-RSD	106		NO	3.932
64	95	d7-N-MeFOSE-EIS			NO	0.000
65	96	d7-N-MeFOSE-RSD	106		NO	5.230
66	97	d9-N-EtFOSE-EIS			NO	0.000
67	98	d9-N-EtFOSE-RSD	106		NO	4.718
68	99	13C4-PFBA	99		NO	0.000

Quantify Sample Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:33:45 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
69	1...	13C5-PFHxA	100		NO	0.000
70	1...	18O2-PFHxS	101		NO	0.000
71	1...	13C8-PFOA	102		NO	0.000
72	1...	13C9-PFNA	103		NO	0.000
73	1...	13C4-PFOS	104		NO	0.000
74	1...	13C6-PFDA	105		NO	0.000
75	1...	13C7-PFUdA	106		NO	0.000

Quantify Sample Summary Report **MassLynx V4.2 SCN977** Page 1 of 1
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:38:32 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.35	1.35			
2	PFPrS	1.71	1.67	2.395	2.743	NO
3	3:3 FTCA	2.13	2.13	3.660	3.671	NO
4	PFPeA	2.27	2.27			
5	PFBS	2.55	2.55	3.139	3.004	NO
6	4:2 FTS	2.98	2.98	0.899	0.886	NO
7	PFHxA	3.06	3.07	16.931	18.870	NO
8	PFPeS	3.22	3.26	2.432	2.571	NO
9	HFPO-DA	3.28	3.28	2.776	2.612	NO
10	5:3 FTCA	3.61	3.61	1.853	1.751	NO
11	PFHpA	3.67	3.67	33.693	30.813	NO
12	ADONA	3.76	3.77	4.296	4.293	NO
13	L-PFHxS	3.81	3.81	2.174	2.384	NO
14	6:2 FTS	4.12	4.12	1.229	1.287	NO
15	L-PFOA	4.18	4.18	2.800	3.135	NO
16	PFecHS	4.19	4.19	0.486	0.494	NO
17	PFHpS	4.31	4.29	2.025	2.146	NO
18	7:3 FTCA	4.61	4.61	1.539	1.441	NO
19	PFNA	4.62	4.62	9.406	8.741	NO
20	PFOSA	4.68	4.68	26.472	28.332	NO
21	L-PFOS	4.70	4.70	2.608	2.518	NO
22	9Cl-PF30NS	4.91	4.93	16.976	12.185	NO
23	PFDA	5.00	4.99	11.681	10.193	NO
24	8:2 FTS	4.97	4.97	2.559	2.811	NO
25	PFNS	5.05	5.06	2.122	2.390	NO
26	L-MeFOSAA	5.14	5.15	1.874	2.039	NO

Quantify Sample Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:38:56 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.30	5.31	1.127	1.206	NO
2	PFUdA	5.32	5.32	23.768	24.381	NO
3	PFDS	5.33	5.37	2.050	1.794	NO
4	11Cl-PF30UdS	5.53	5.53	19.229	19.152	NO
5	10:2 FTS	5.58	5.59	0.992	0.857	NO
6	PFDoA	5.60	5.60	9.903	9.557	NO
7	N-MeFOSA	5.71	5.69	1.781	1.624	NO
8	PFTrDA	5.85	5.84	50.652	61.024	NO
9	PFDoS	5.86	5.87	3.011	3.764	NO
10	PFTeDA	6.05	6.06	17.346	15.579	NO
11	N-EtFOSA	6.11	6.11	1.652	1.698	NO
12	PFHxDA	6.39	6.39	155.012	149.421	NO
13	PFODA	6.60	6.62			
14	N-MeFOSE	6.29	6.30			
15	N-EtFOSE	6.43	6.45			

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 10:40:23 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:40:41 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200228P2-1	IPA	28-Feb-20	12:45:37
2	2	200228P2-2	IPA	28-Feb-20	12:56:16
3	3	200228P2-3	ST200228P2-1 PFC CS-2 20B1102	28-Feb-20	13:06:47
4	4	200228P2-4	ST200228P2-2 PFC CS-1 20B1103	28-Feb-20	13:17:15
5	5	200228P2-5	ST200228P2-3 PFC CS0 20B1104	28-Feb-20	13:27:47
6	6	200228P2-6	ST200228P2-4 PFC CS1 20B1105	28-Feb-20	13:38:16
7	7	200228P2-7	ST200228P2-5 PFC CS2 20B1106	28-Feb-20	13:48:48
8	8	200228P2-8	ST200228P2-6 PFC CS3 20B1107	28-Feb-20	13:59:16
9	9	200228P2-9	ST200228P2-7 PFC CS4 20B1108	28-Feb-20	14:09:48
10	10	200228P2-10	ST200228P2-8 PFC CS5 20B1109	28-Feb-20	14:20:17
11	11	200228P2-11	ST200228P2-9 PFC CS6 20B1110	28-Feb-20	14:30:48
12	12	200228P2-12	ST200228P2-10 PFC CS7 20B1111	28-Feb-20	14:41:18
13	13	200228P2-13	IB	28-Feb-20	14:51:49
14	14	200228P2-14	ICV200228P2-1 PFC ICV 20B1112	28-Feb-20	15:02:18
15	15	200228P2-15	IB	28-Feb-20	15:12:50

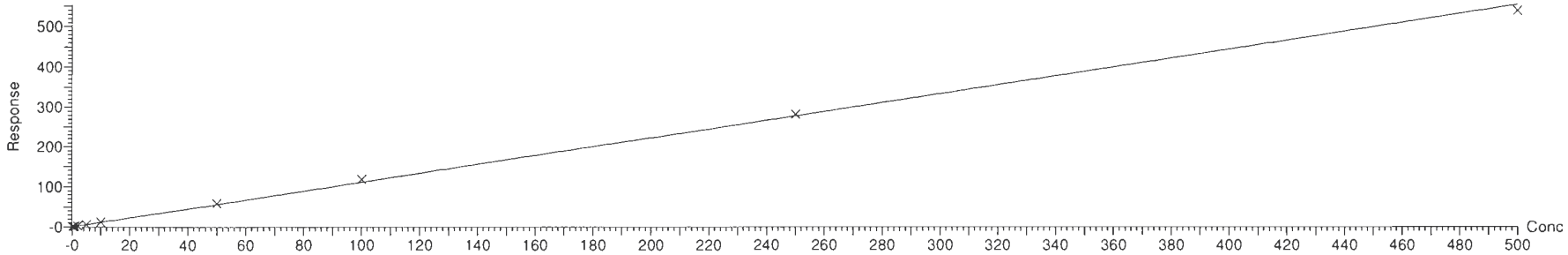
Quantify Calibration Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

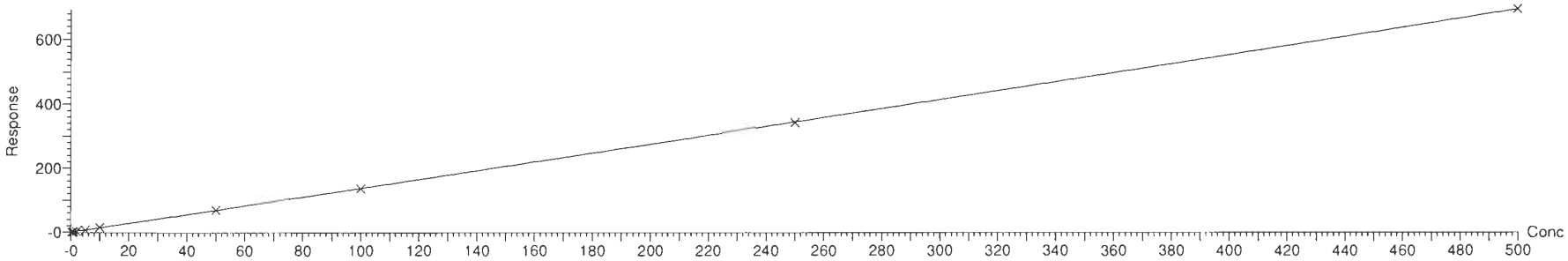
Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: PFBA
Correlation coefficient: r = 0.999413, r^2 = 0.998826
Calibration curve: 1.10826 * x + 0.0696979
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 = 0.999747
Calibration curve: 4.84839e-005 * x^2 + 1.3627 * x + -0.100099
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

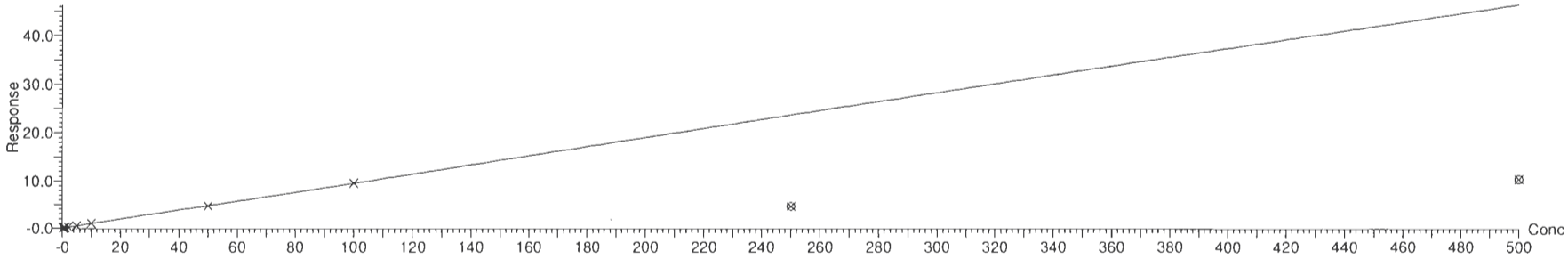


Quantify Calibration Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory Q1

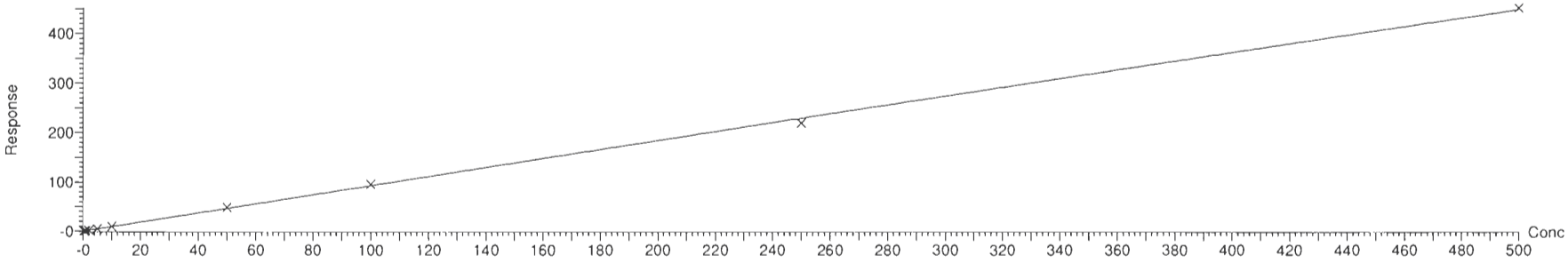
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999800
Calibration curve: -7.45053e-006 * x^2 + 0.0966278 * x + -0.00141223
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999151
Calibration curve: -8.29689e-005 * x^2 + 0.938772 * x + 0.0510655
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



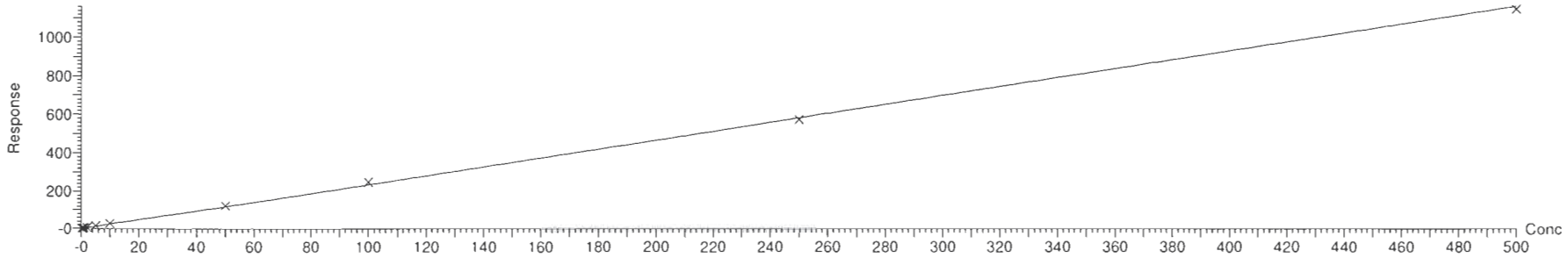
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

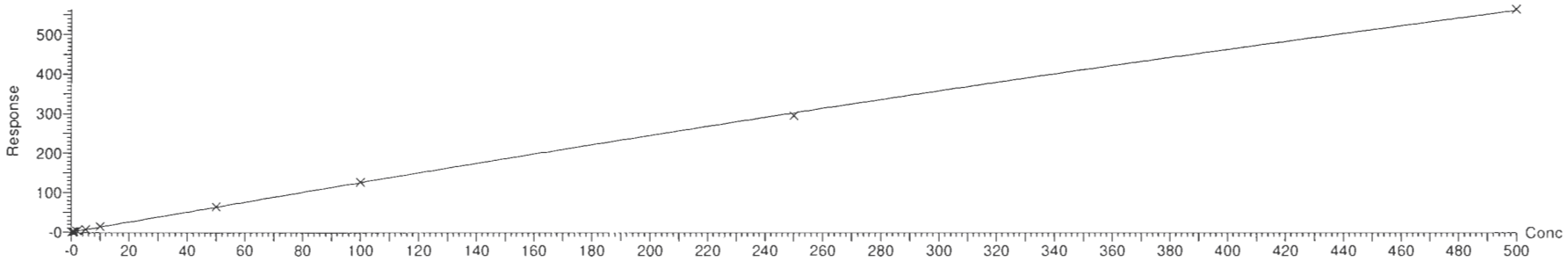
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFBS
Correlation coefficient: r = 0.999452, r^2 = 0.998905
Calibration curve: 2.32412 * x + 0.160204
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999388
Calibration curve: -0.000340962 * x^2 + 1.29353 * x + 0.0772484
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



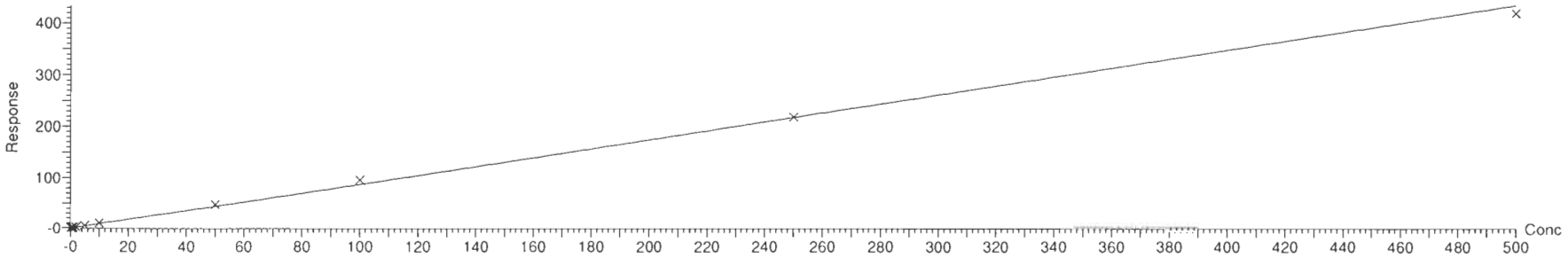
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

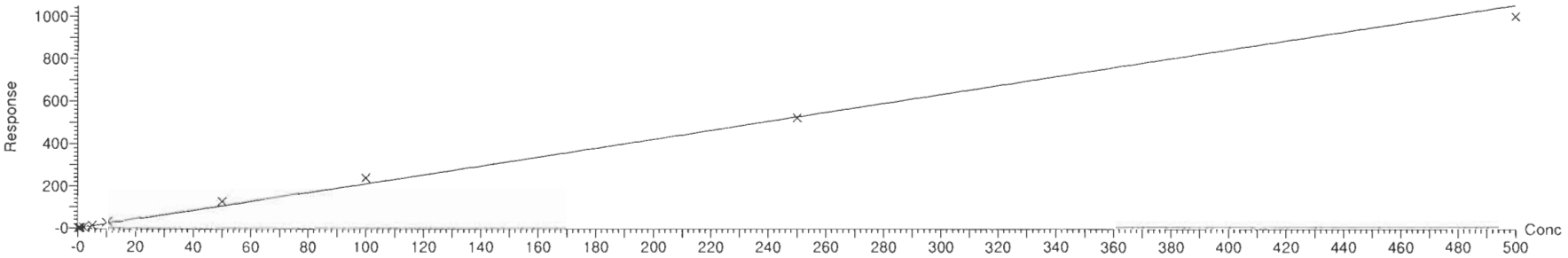
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.998775, r^2 = 0.997551
Calibration curve: 0.87057 * x + 0.122807
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeS
Correlation coefficient: r = 0.996617, r^2 = 0.993246
Calibration curve: 2.10956 * x + 0.2038
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



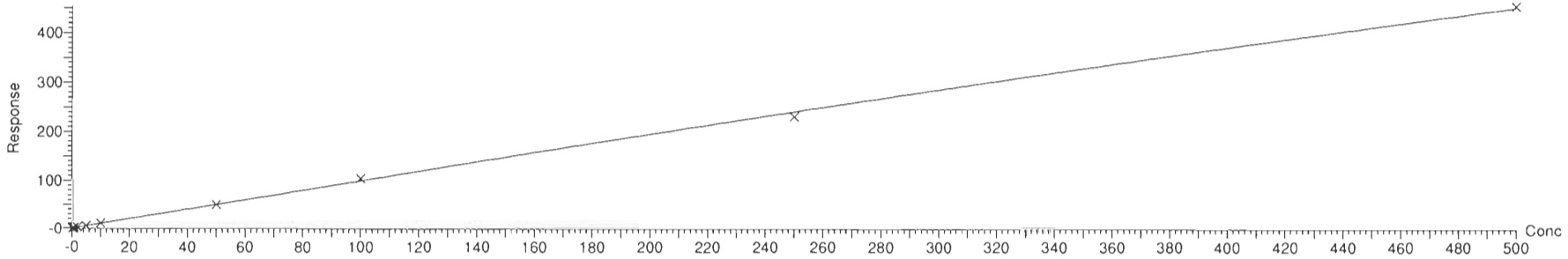
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

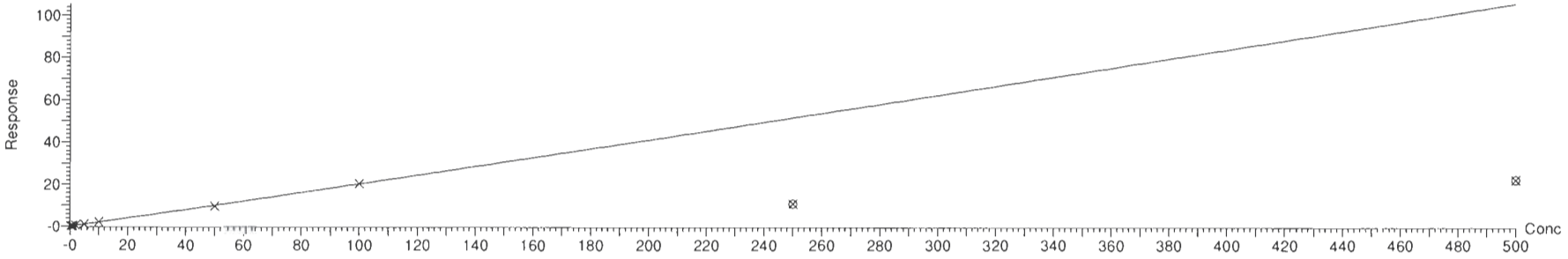
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998989
Calibration curve: -0.000240539 * x^2 + 1.02346 * x + 0.0413162
Response type: Internal Std (Ref 53), 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 = 0.998996
Calibration curve: 1.9554e-005 * x^2 + 0.201925 * x + 0.0100515
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



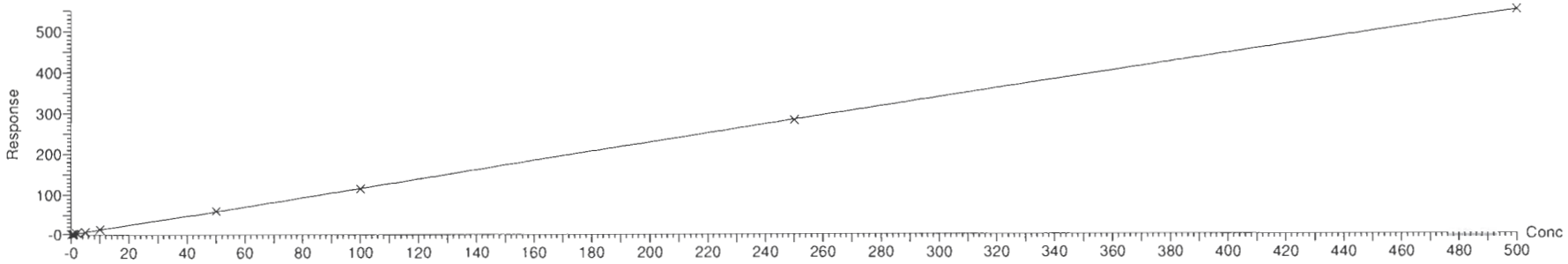
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

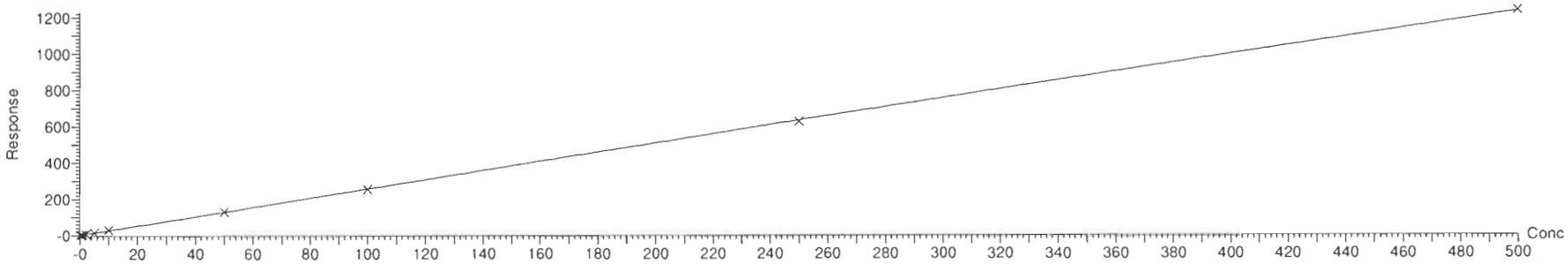
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999882
Calibration curve: -0.000137784 * x^2 + 1.16847 * x + 0.120302
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: ADONA
Coefficient of Determination: R^2 = 0.999691
Calibration curve: -0.000271075 * x^2 + 2.59794 * x + 0.191799
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



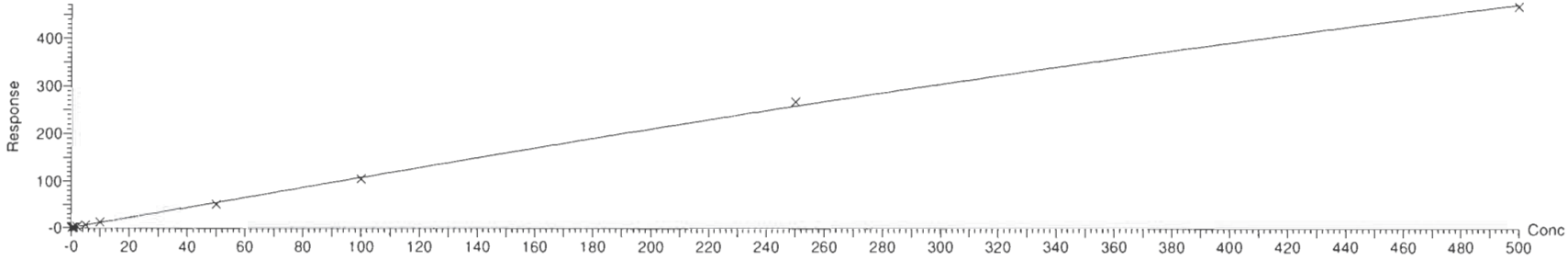
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

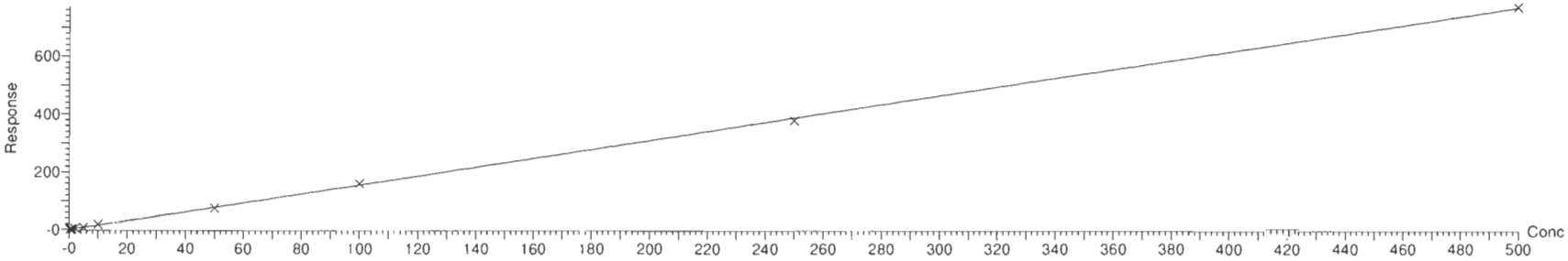
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999028
Calibration curve: -0.00036565 * x^2 + 1.12704 * x + -0.0812317
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: 6:2 FTS
Coefficient of Determination: R^2 = 0.999399
Calibration curve: -5.55014e-005 * x^2 + 1.56476 * x + 0.0780386
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



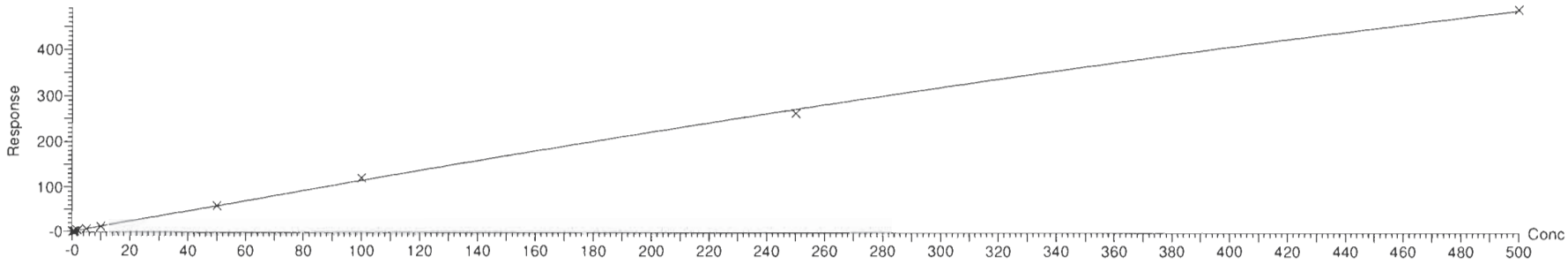
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

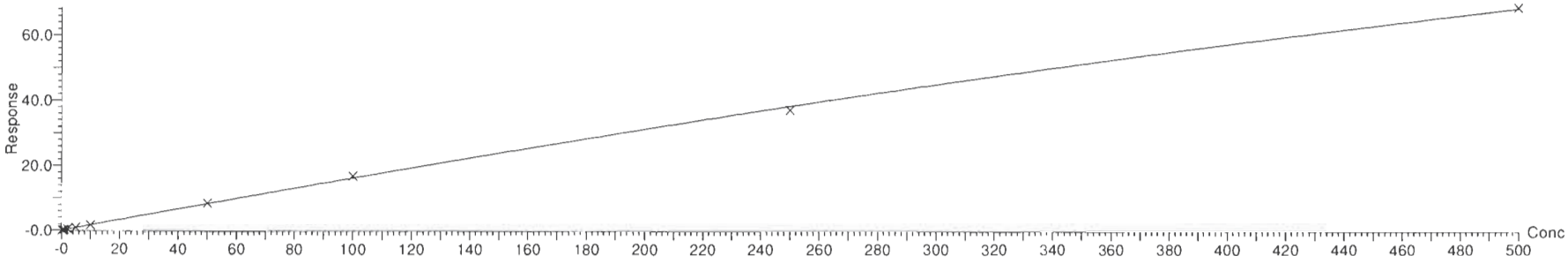
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999347
Calibration curve: -0.000456114 * x^2 + 1.20238 * x + 0.0642634
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999401
Calibration curve: -6.57161e-005 * x^2 + 0.169715 * x + -0.00156209
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



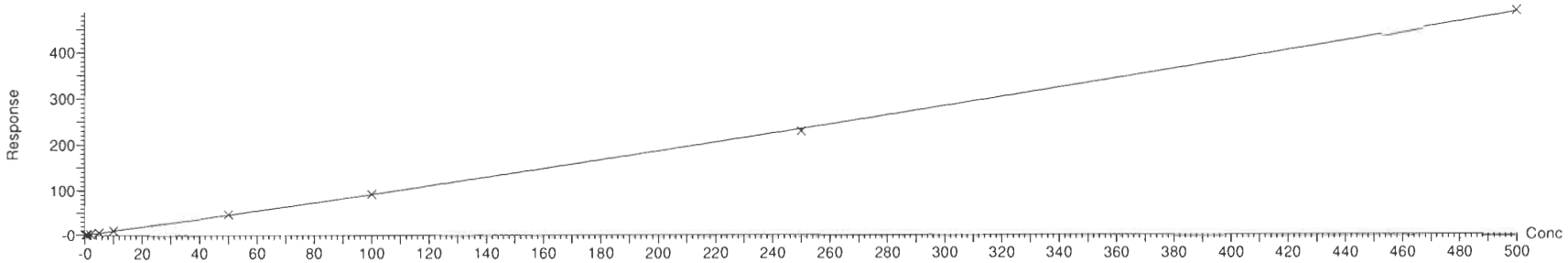
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

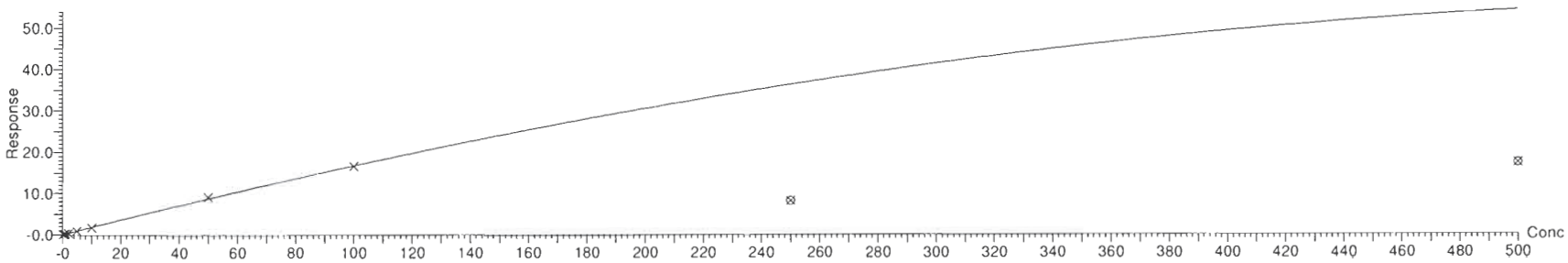
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999647
Calibration curve: 0.000155667 * x^2 + 0.89521 * x + -0.0222947
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.998738
Calibration curve: -0.000145642 * x^2 + 0.181281 * x + -0.025321
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



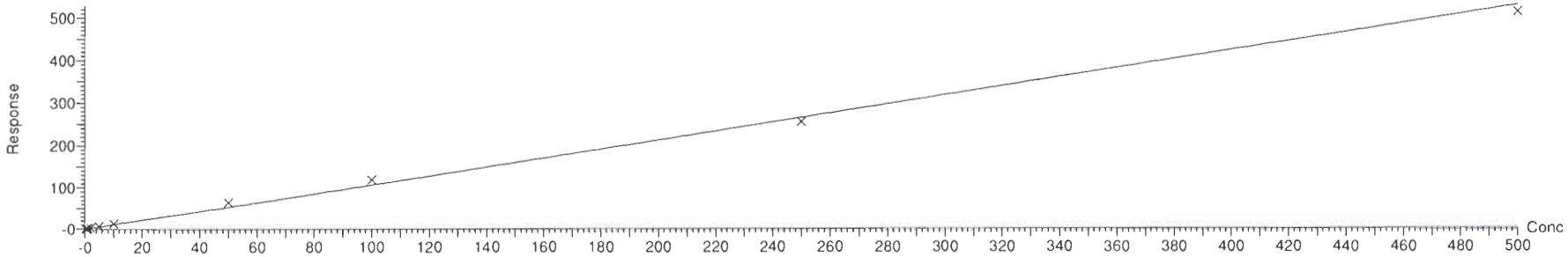
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

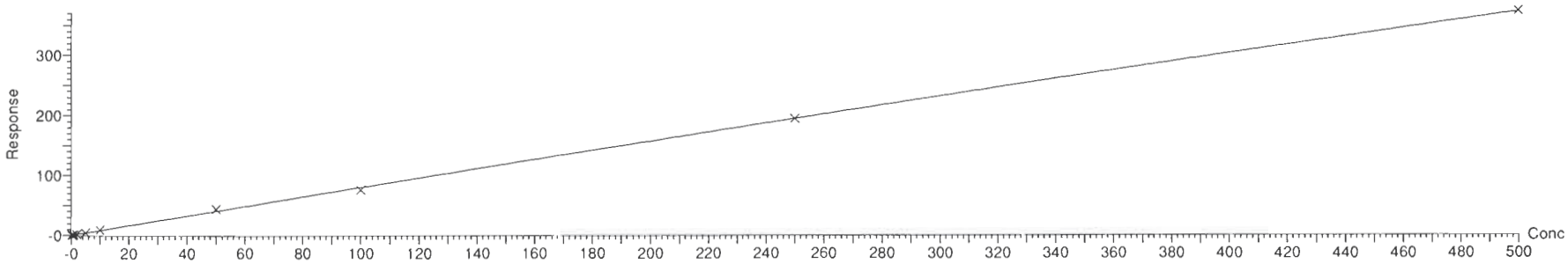
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.997210, r^2 = 0.994427
Calibration curve: 1.05725 * x + 0.0955486
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999163
Calibration curve: -0.000128536 * x^2 + 0.807117 * x + 0.0383818
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



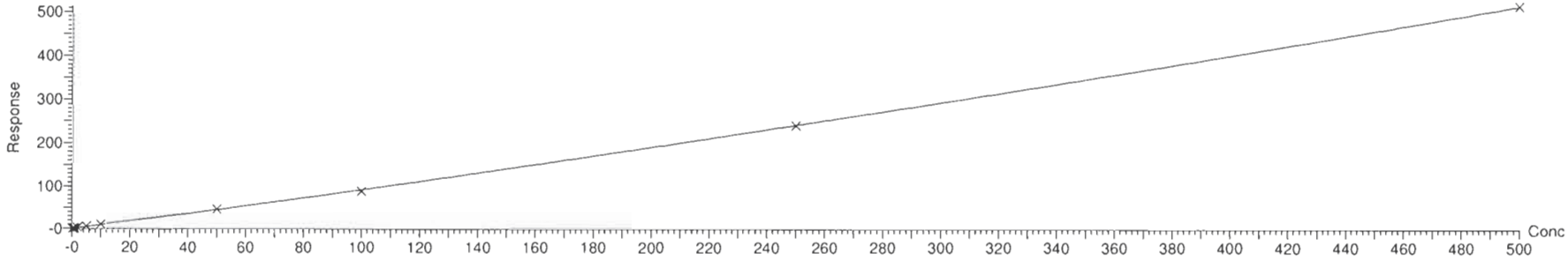
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

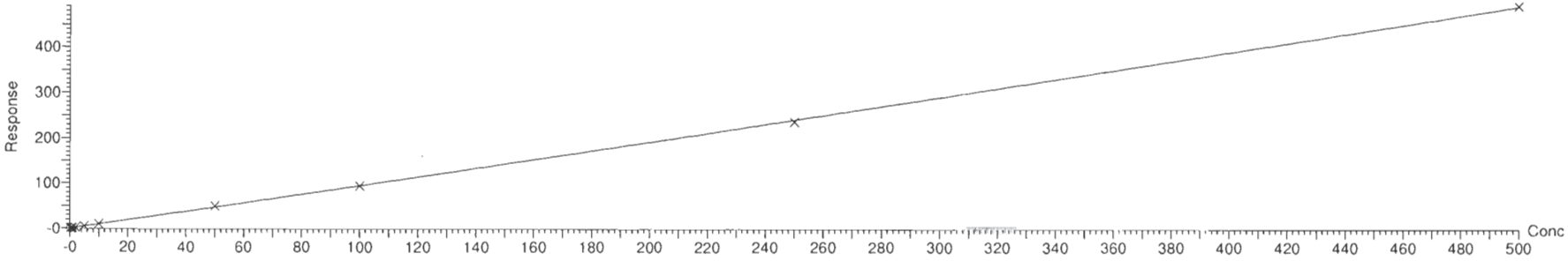
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999449
Calibration curve: 0.000252685 * x^2 + 0.902177 * x + -0.0231466
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999587
Calibration curve: 8.1805e-005 * x^2 + 0.939758 * x
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

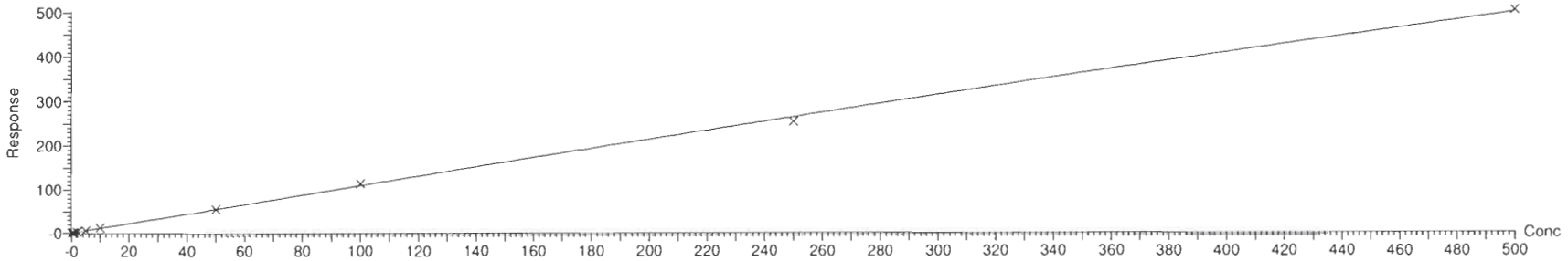


Quantify Calibration Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory Q1

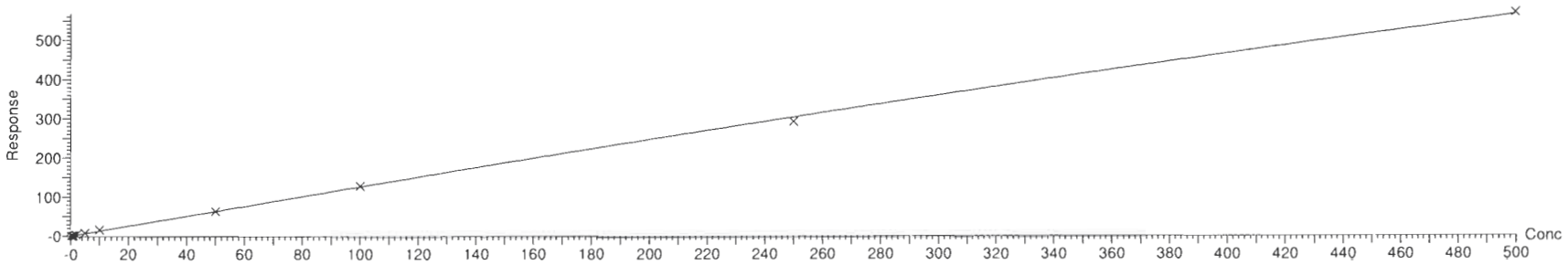
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999061
Calibration curve: -0.000223444 * x^2 + 1.11295 * x + 0.0911483
Response type: Internal Std (Ref 73), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.998241
Calibration curve: -0.000329705 * x^2 + 1.29152 * x + 0.0541173
Response type: Internal Std (Ref 75), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



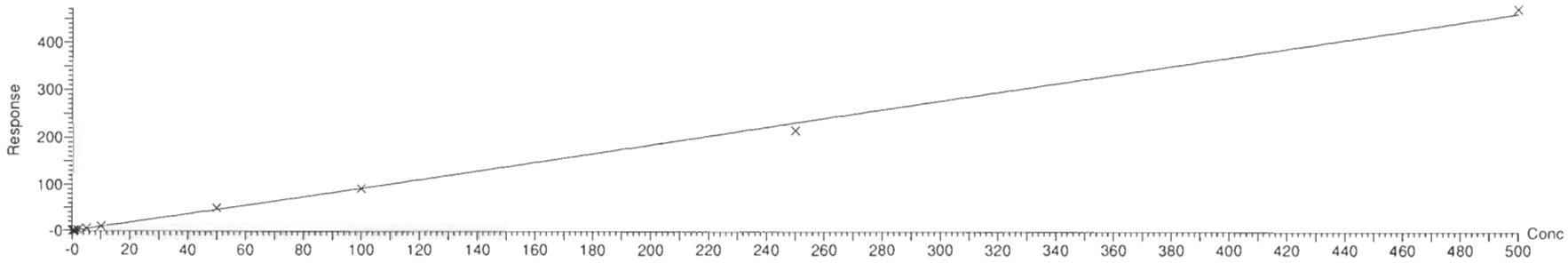
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

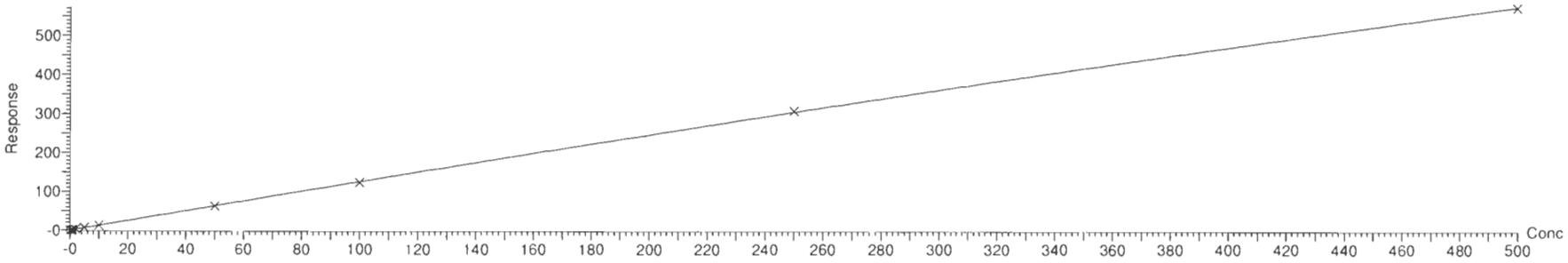
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:36:55 Pacific Standard Time

Compound name: PFNS
Correlation coefficient: r = 0.998843, r^2 = 0.997686
Calibration curve: 0.925171 * x + 0.00150863
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999797
Calibration curve: -0.000281991 * x^2 + 1.29029 * x + 0.141953
Response type: Internal Std (Ref 77), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



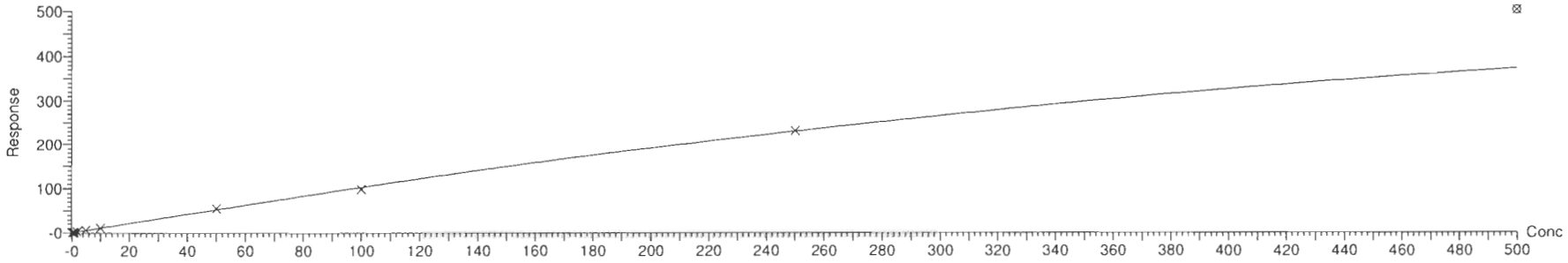
Quantify Calibration Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

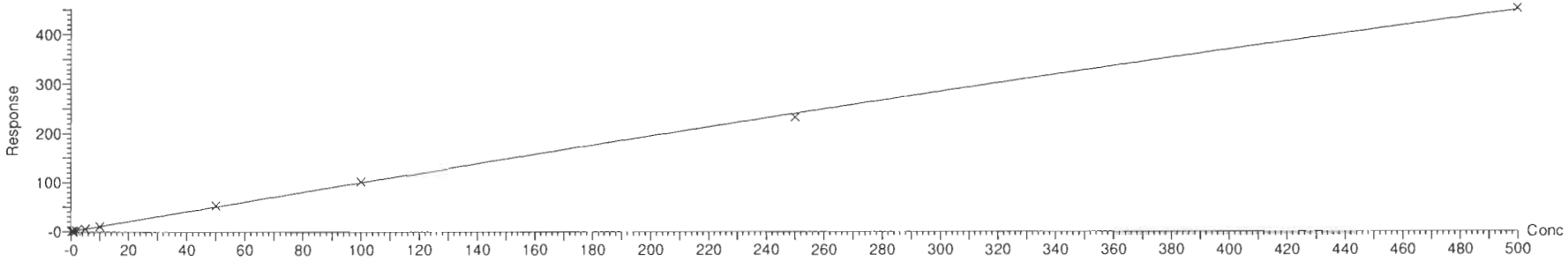
Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Compound name: L-EtFOSAA
Coefficient of Determination: R^2 = 0.998538
Calibration curve: -0.000703582 * x^2 + 1.0956 * x + -0.0674174
Response type: Internal Std (Ref 81), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999396
Calibration curve: -0.00024686 * x^2 + 1.02132 * x + 0.0388613
Response type: Internal Std (Ref 79), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

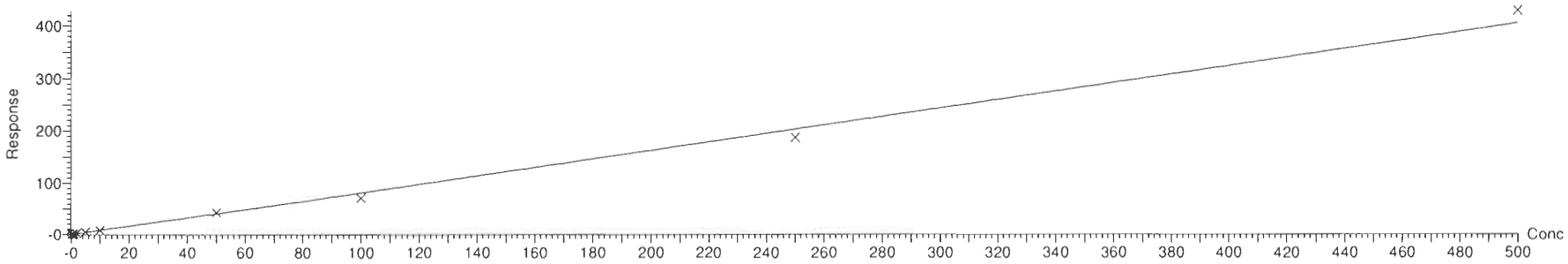


Quantify Calibration Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory Q1

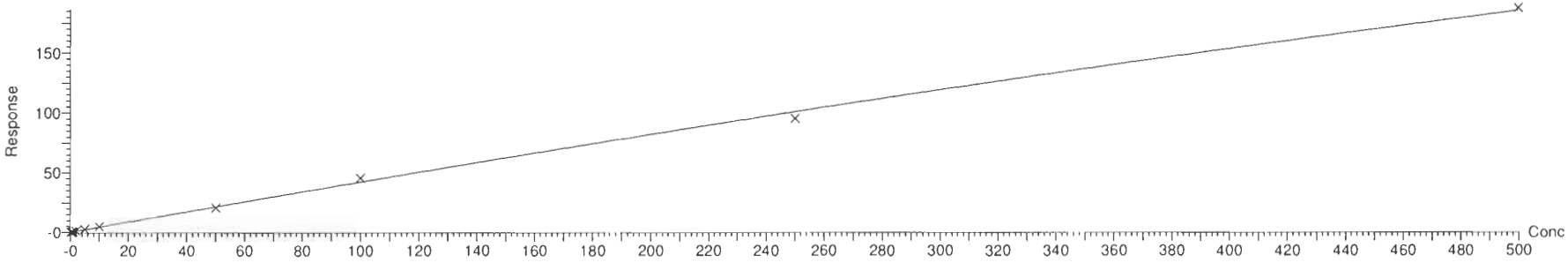
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: PFDS
Correlation coefficient: r = 0.997073, r^2 = 0.994155
Calibration curve: 0.810357 * x + 0.0107457
Response type: Internal Std (Ref 71), 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 = 0.997770
Calibration curve: -0.000131372 * x^2 + 0.43548 * x + 0.0298851
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



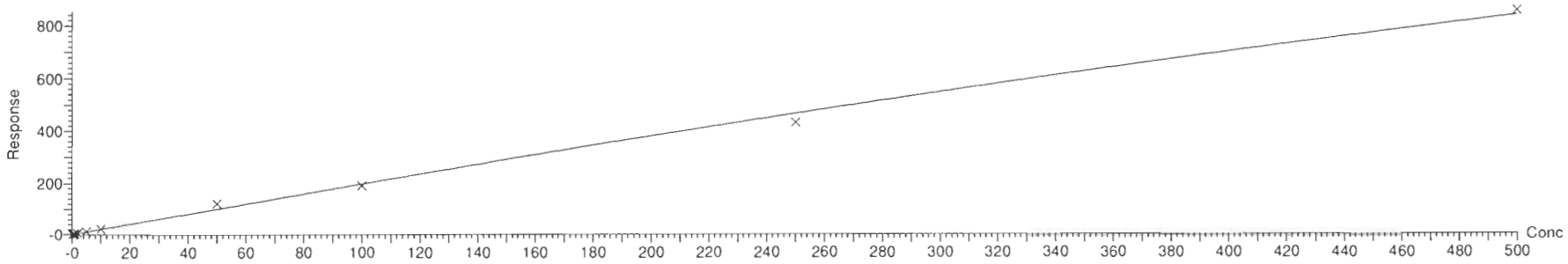
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

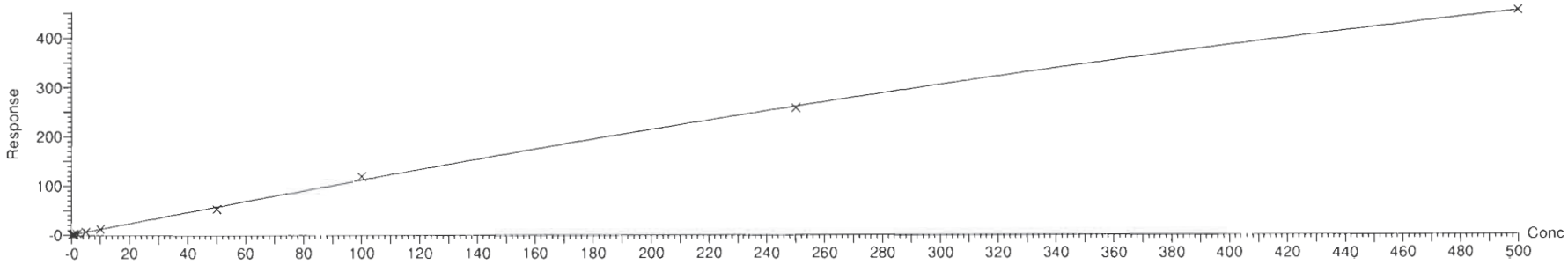
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.994215
Calibration curve: -0.000732966 * x^2 + 2.04332 * x + -0.0206719
Response type: Internal Std (Ref 85), 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 = 0.998870
Calibration curve: -0.000532708 * x^2 + 1.17293 * x + 0.0264657
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

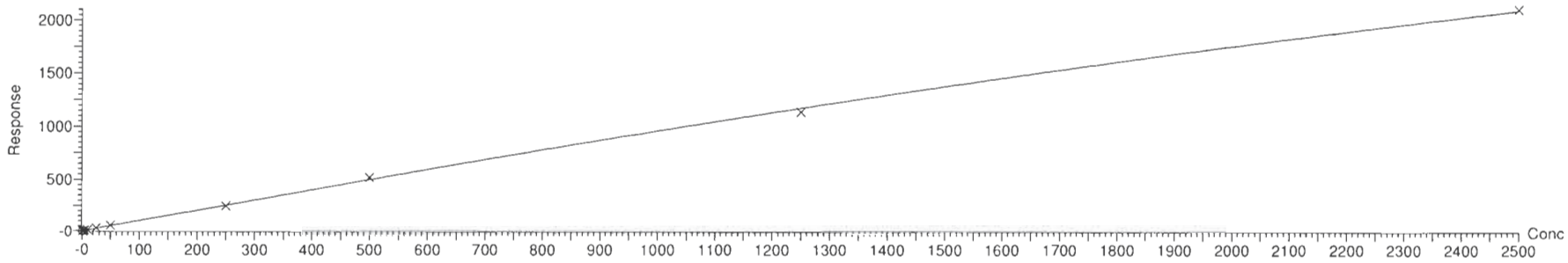


Quantify Calibration Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory Q1

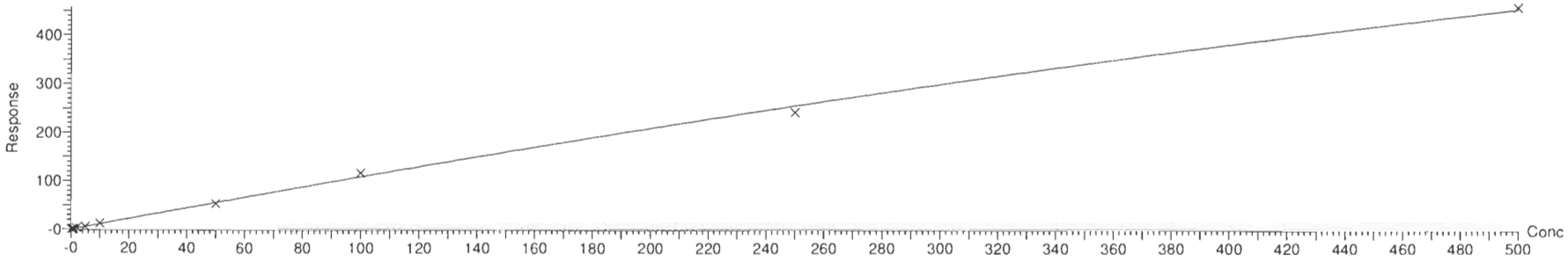
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999025
Calibration curve: -8.12207e-005 * x^2 + 1.04177 * x + 0.809124
Response type: Internal Std (Ref 87), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.997881
Calibration curve: -0.000454632 * x^2 + 1.13495 * x + 0.102846
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

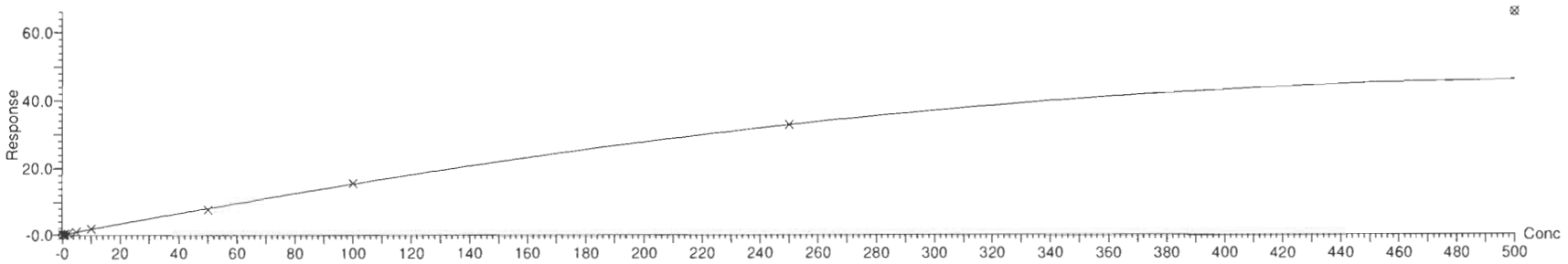


Quantify Calibration Report **MassLynx V4.2 SCN977** Page 5 of 8
Vista Analytical Laboratory Q1

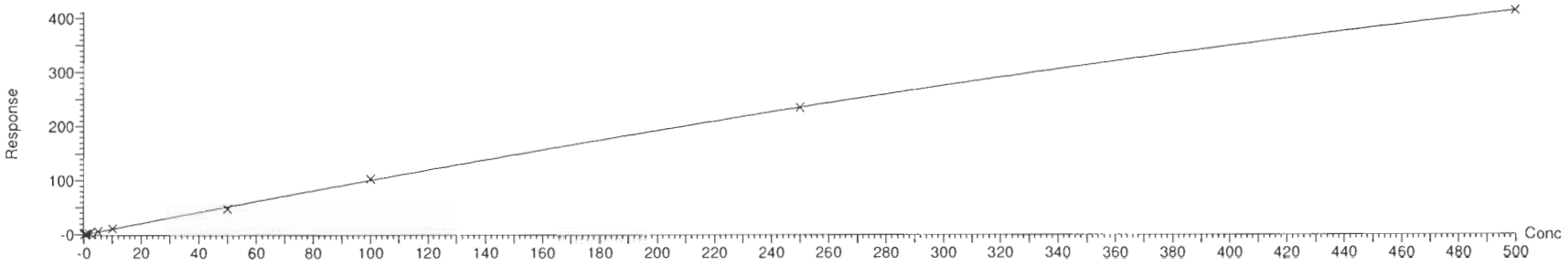
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999053
Calibration curve: -0.000154395 * x^2 + 0.16939 * x + 0.00789247
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.999107
Calibration curve: -0.00044468 * x^2 + 1.04827 * x + 0.0538161
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



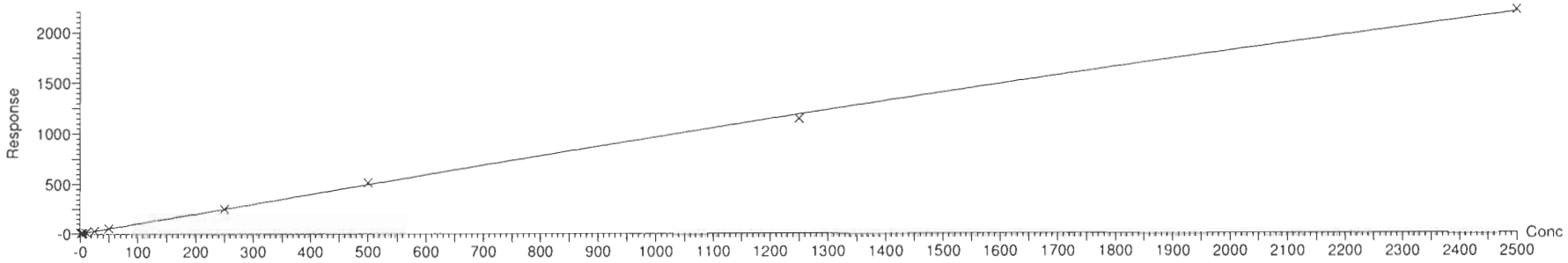
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

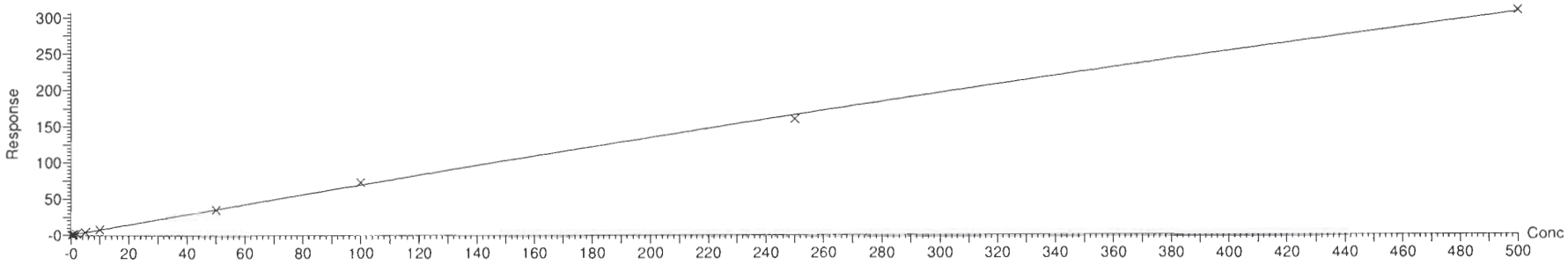
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999287
Calibration curve: -5.59093e-005 * x^2 + 1.0186 * x + -0.0169663
Response type: Internal Std (Ref 91), 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 = 0.999194
Calibration curve: -0.000191695 * x^2 + 0.708349 * x + 0.140307
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



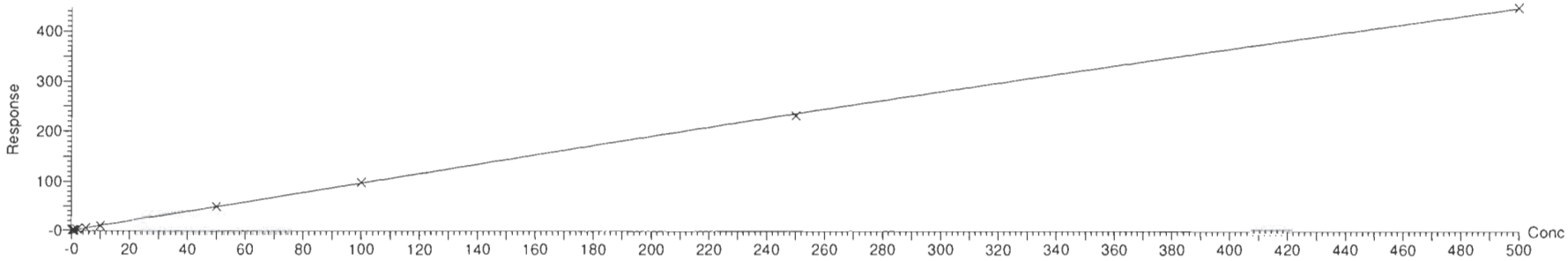
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

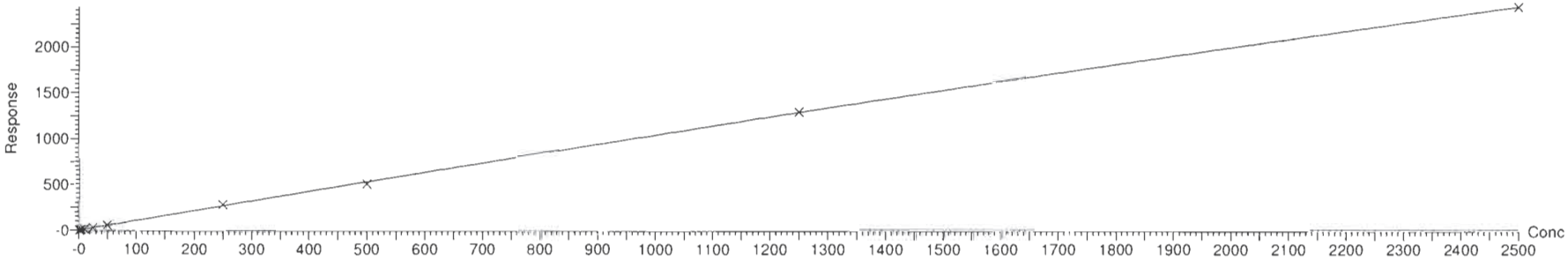
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999807
Calibration curve: -0.000198865 * x^2 + 0.992712 * x + 0.0256061
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: N-MeFOSE
Coefficient of Determination: R^2 = 0.999509
Calibration curve: -4.41238e-005 * x^2 + 1.08829 * x + 0.219461
Response type: Internal Std (Ref 95), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



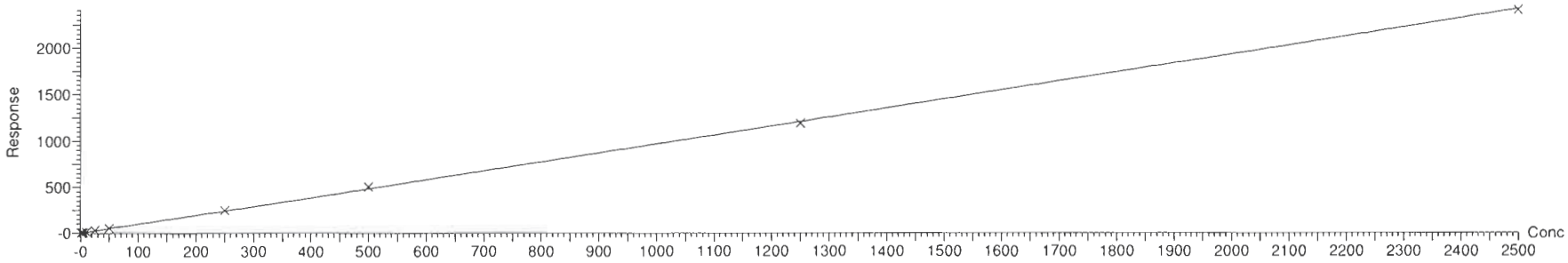
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-CRV.qld

Last Altered: Saturday, February 29, 2020 10:30:03 Pacific Standard Time
Printed: Saturday, February 29, 2020 10:37:27 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999753, r^2 = 0.999505
Calibration curve: 0.964785 * x + 0.495135
Response type: Internal Std (Ref 97), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

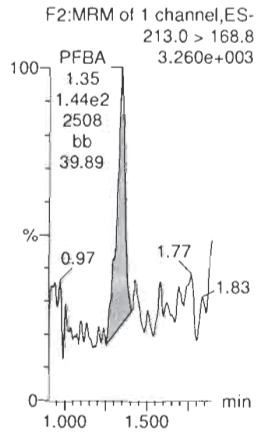
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

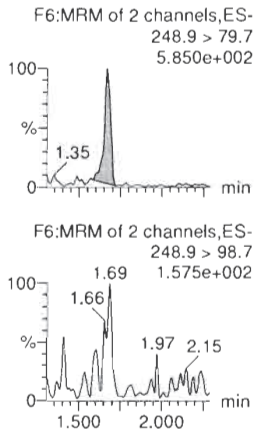
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022720.mdb 28 Feb 2020 10:51:32
Calibration: 29 Feb 2020 09:19:58

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

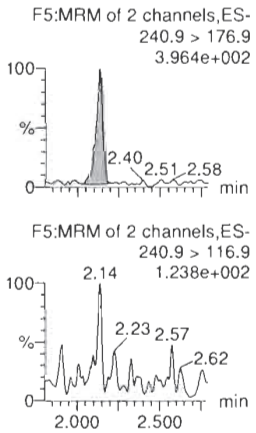
PFBA



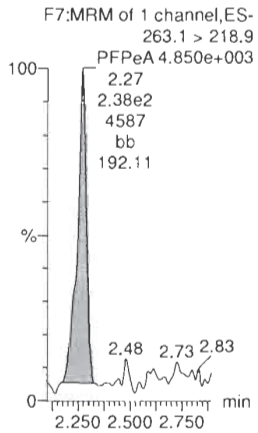
PFPrS



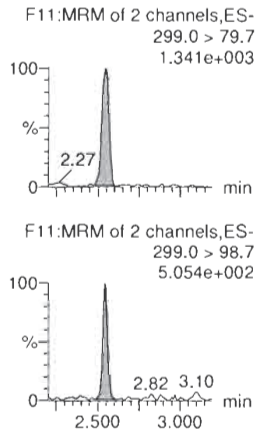
3:3 FTCA



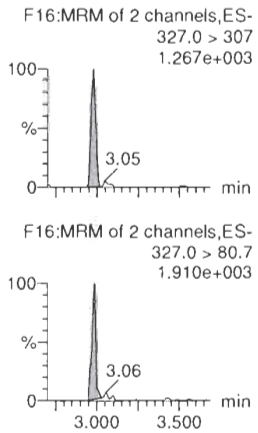
PFPeA



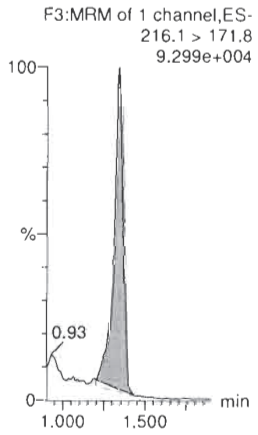
PFBS



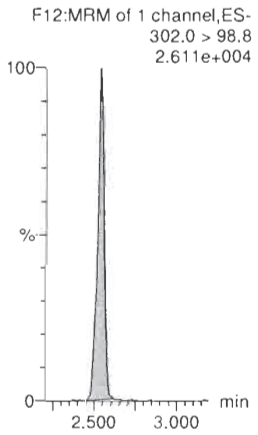
4:2 FTS



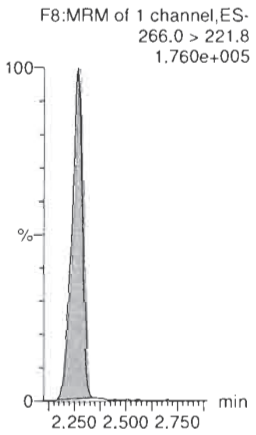
13C3-PFBA-EIS



13C3-PFBS-EIS



13C3-PFPeA-EIS



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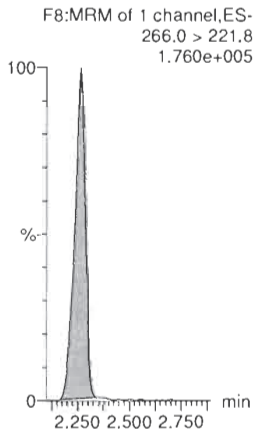

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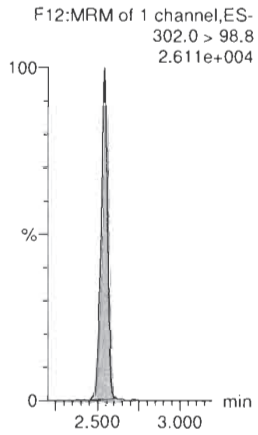
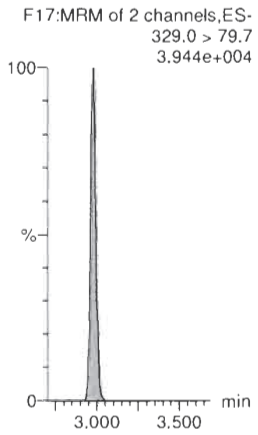


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

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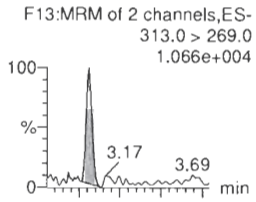

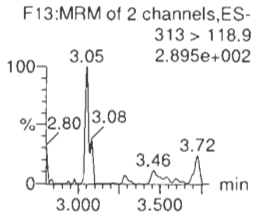

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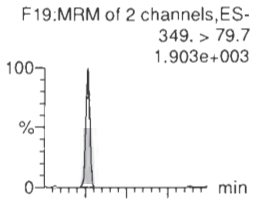

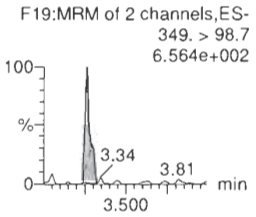

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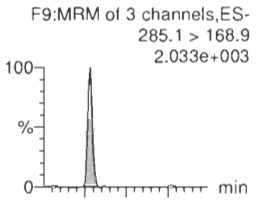
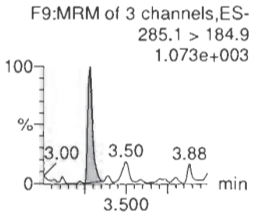
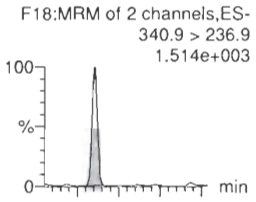
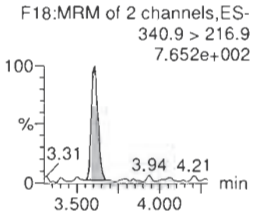




5:3 FTCA





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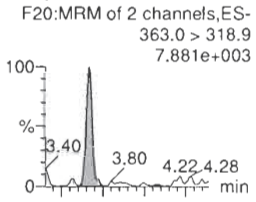

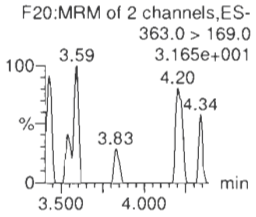

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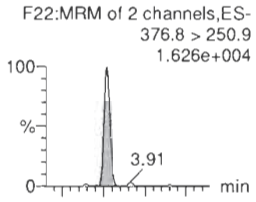

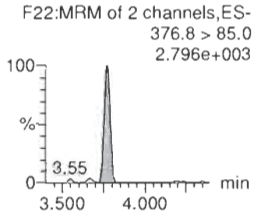

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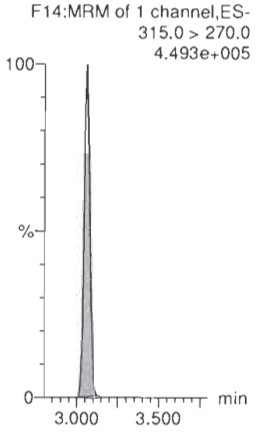

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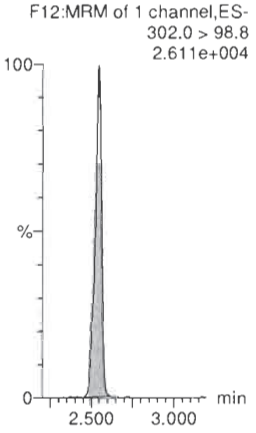

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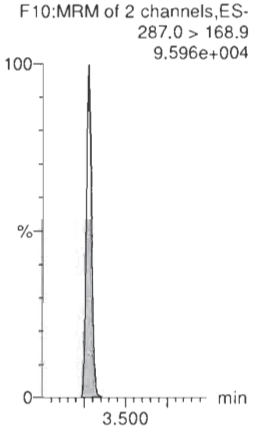

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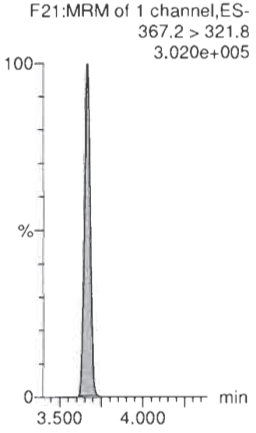

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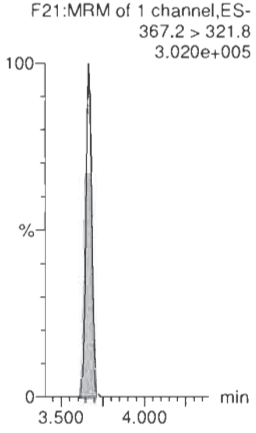

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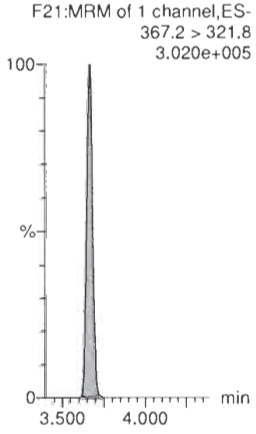

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:50:07 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

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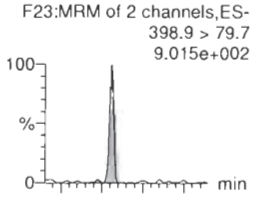
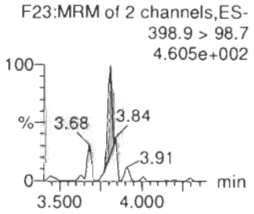
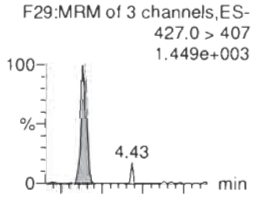
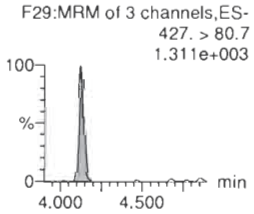




6:2 FTS





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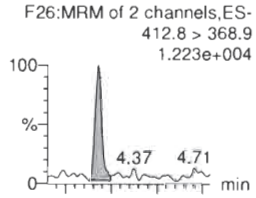

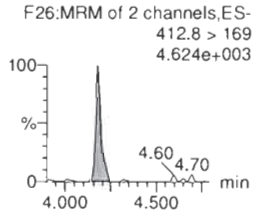

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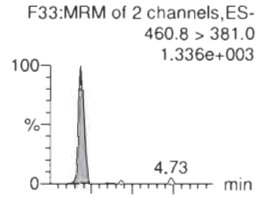

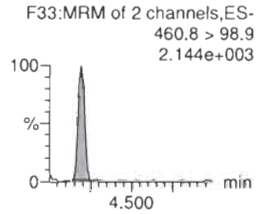

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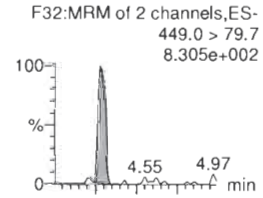
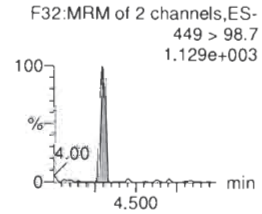
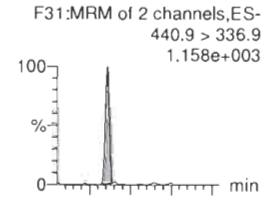
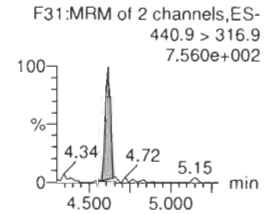




7:3 FTCA





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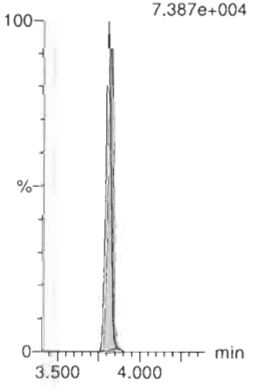
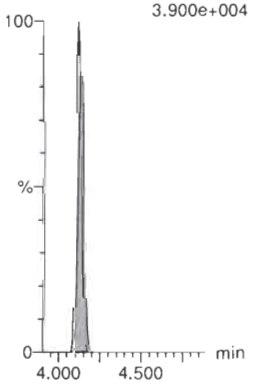


13C2-6:2 FTS-EIS



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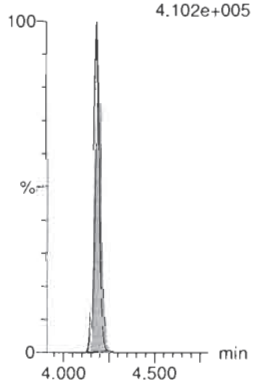

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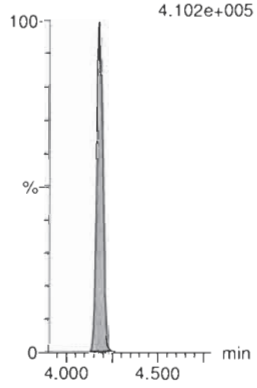
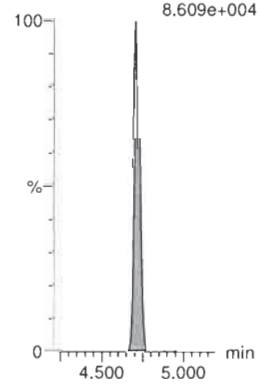
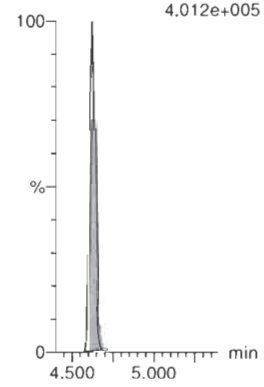


13C8-PFOS-EIS



13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

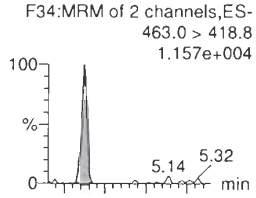
Vista Analytical Laboratory

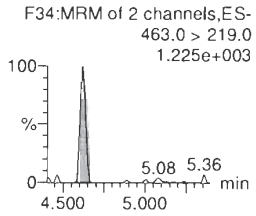
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

PFNA





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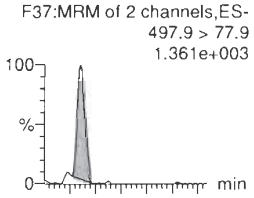
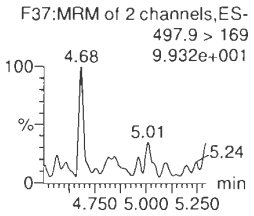
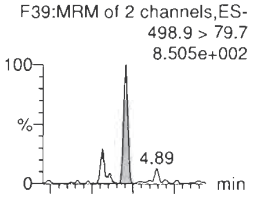
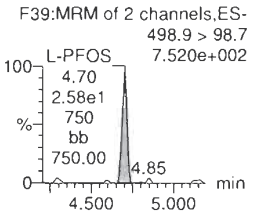




L-PFOS





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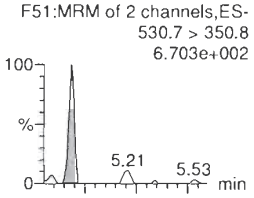

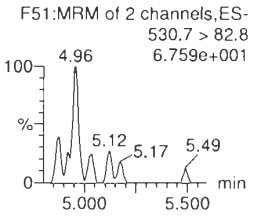

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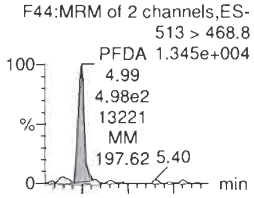

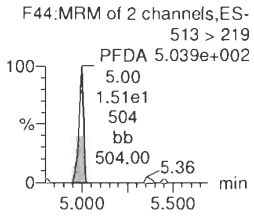

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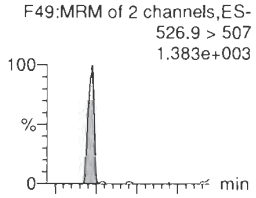

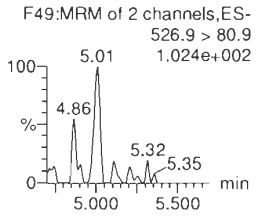

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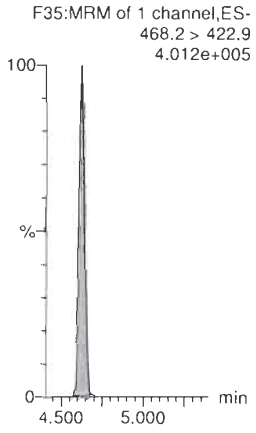
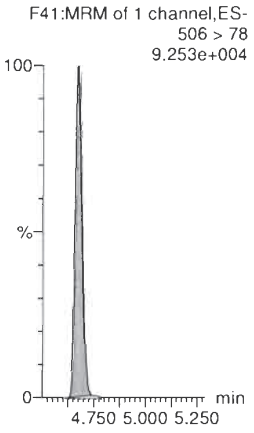


13C8-PFOSA-EIS



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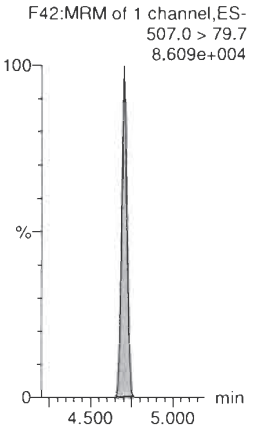

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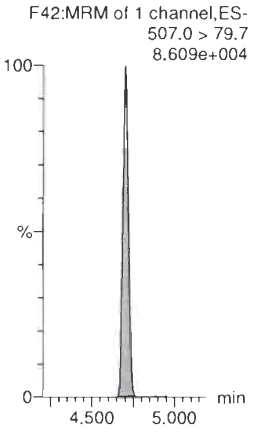

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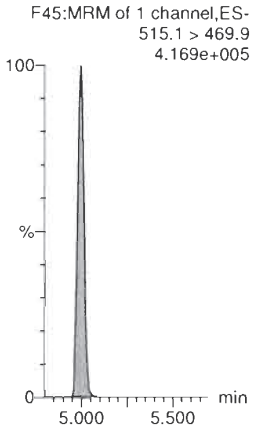

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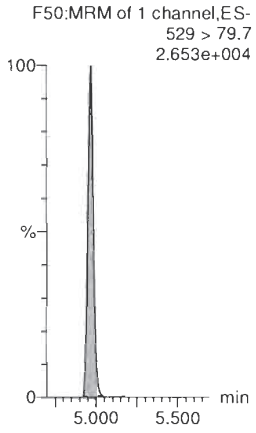

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

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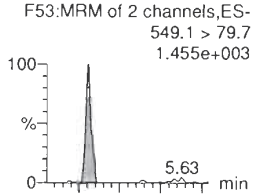

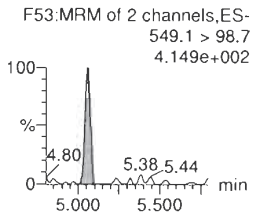

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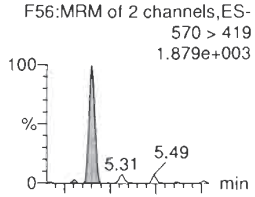

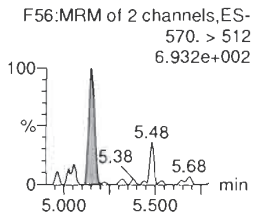

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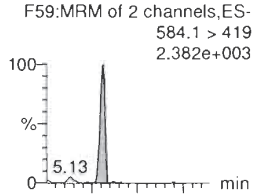

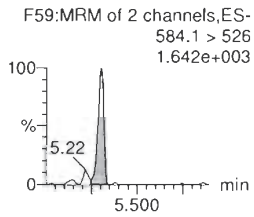

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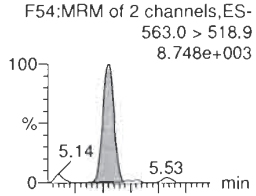

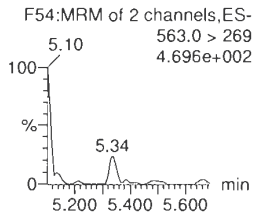

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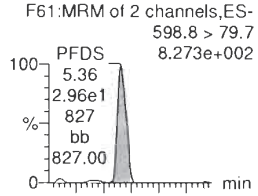

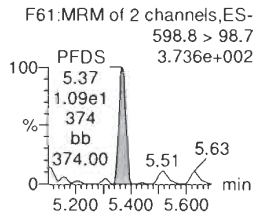

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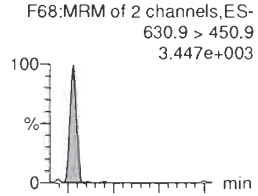

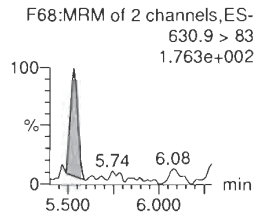

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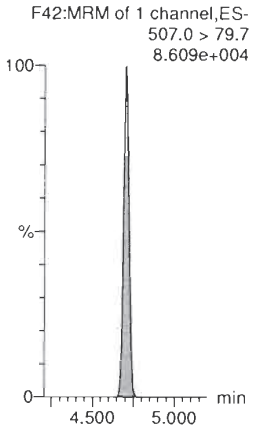

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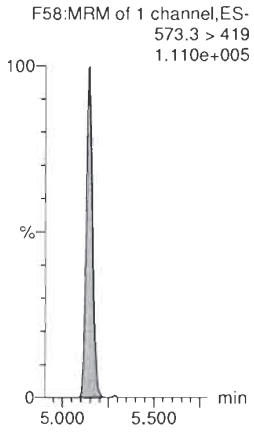

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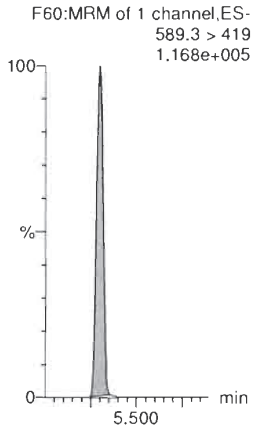

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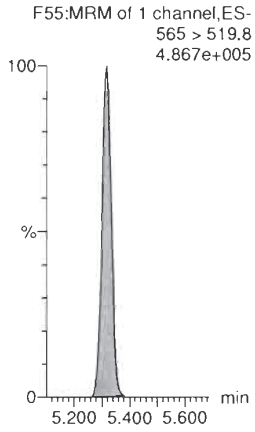

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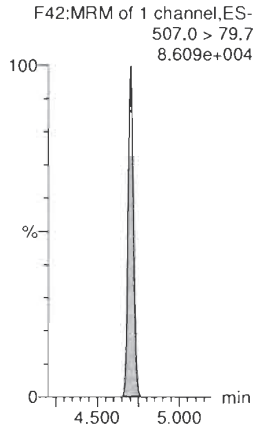

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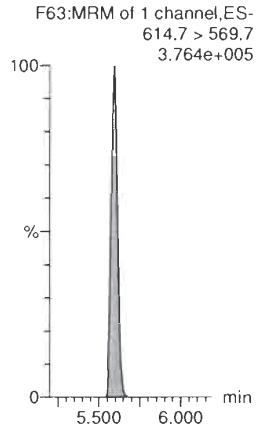


Quantify Sample Report **MassLynx V4.2 SCN977**

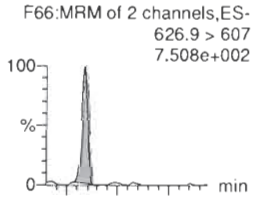
Vista Analytical Laboratory

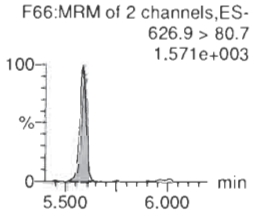
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

10:2 FTS





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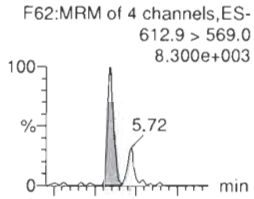

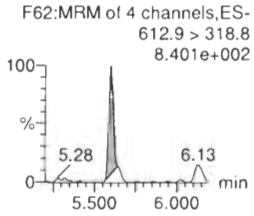

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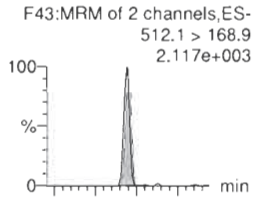

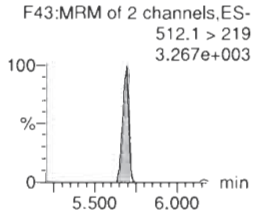

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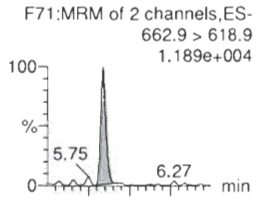

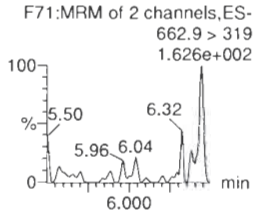

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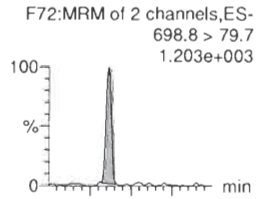

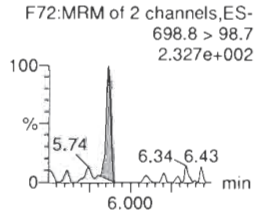

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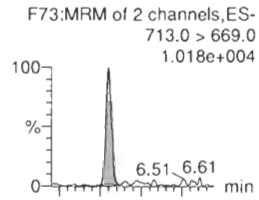

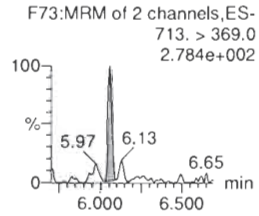

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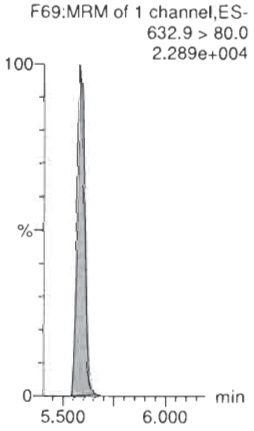

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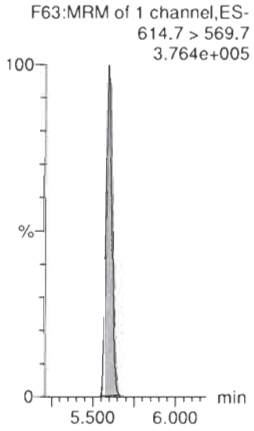

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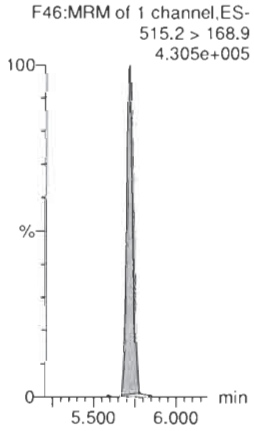

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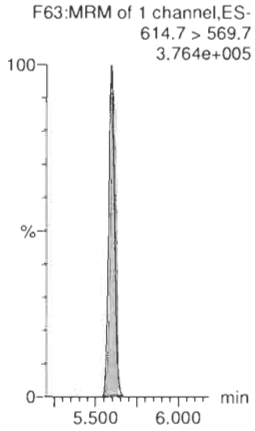

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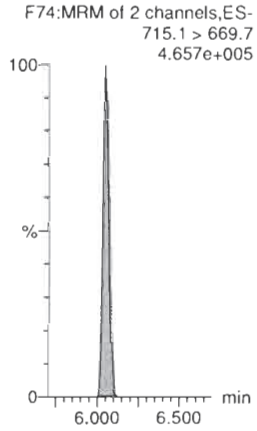

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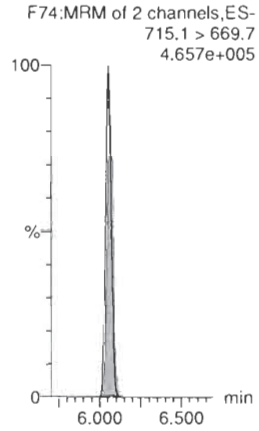

Quantify Sample Report **MassLynx V4.2 SCN977** Page 7 of 100
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

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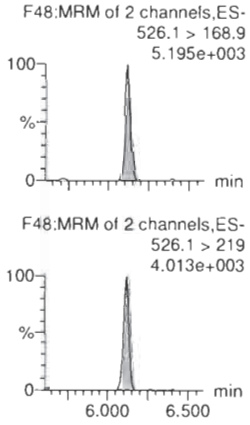

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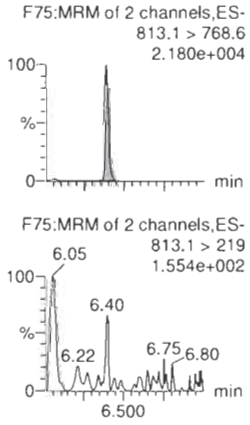

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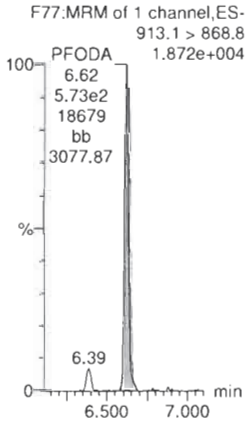

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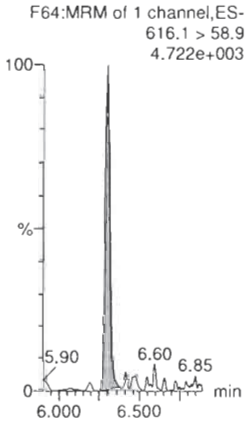

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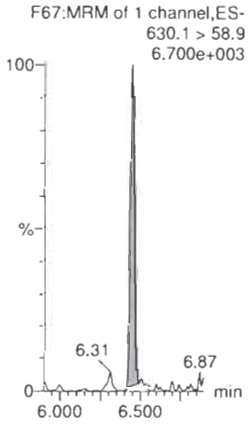

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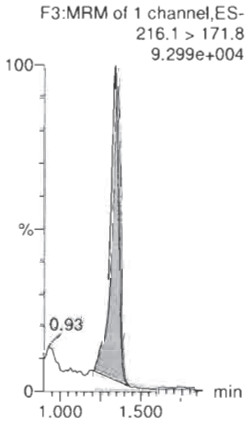

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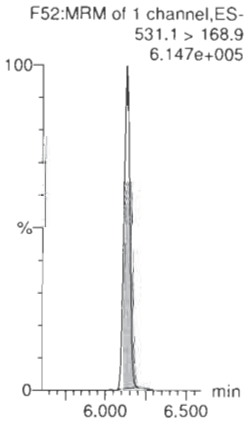

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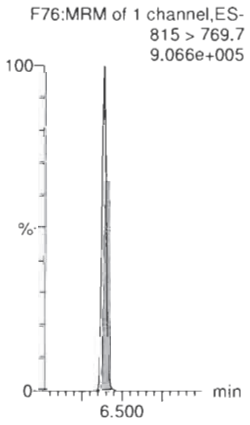

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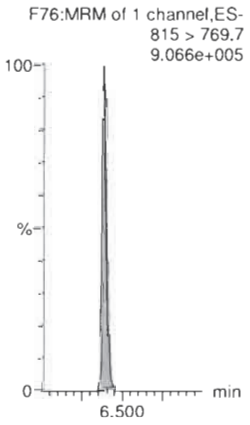

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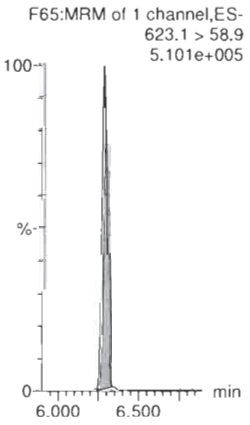

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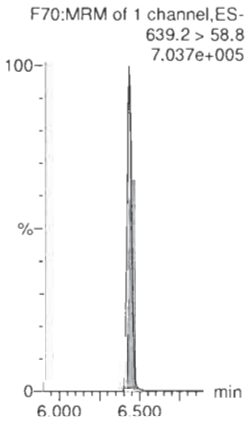
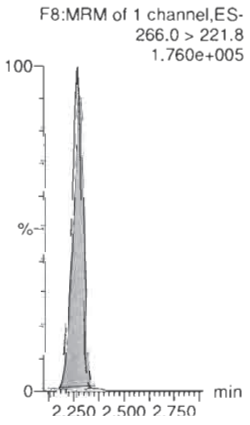


13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977** Page 8 of 100
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
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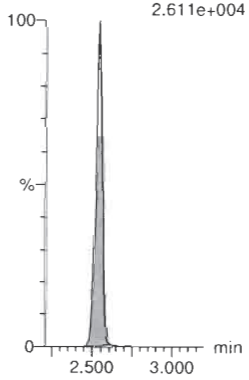
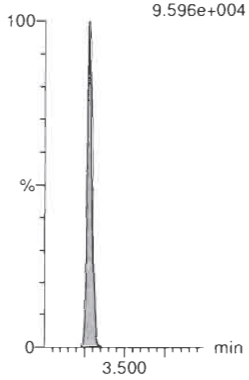
Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

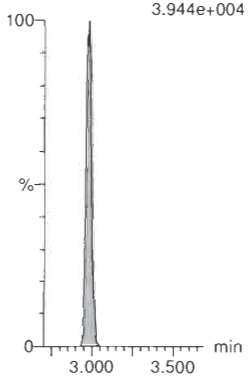
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.611e+004



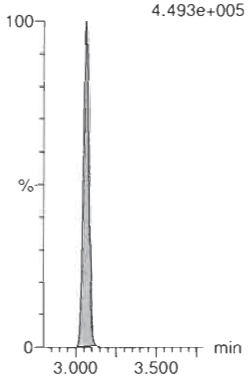
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.596e+004



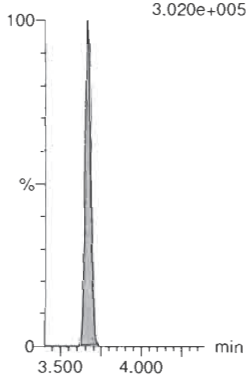
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.944e+004



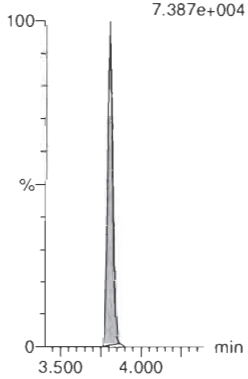
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
4.493e+005



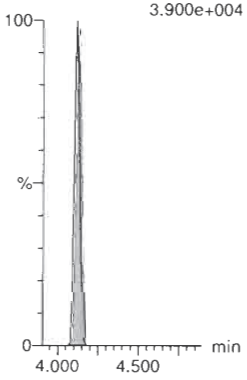
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.020e+005



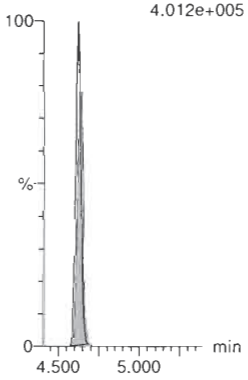
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
7.387e+004



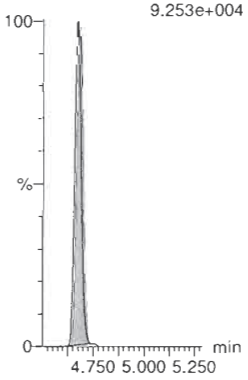
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.900e+004



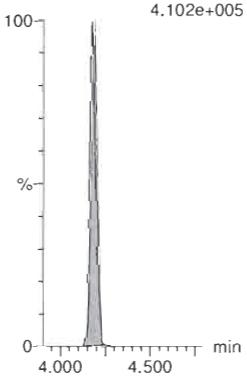
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.012e+005



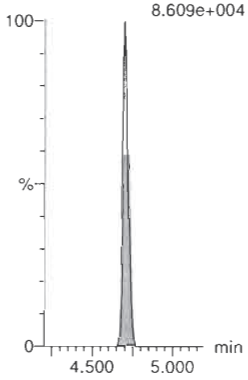
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.253e+004



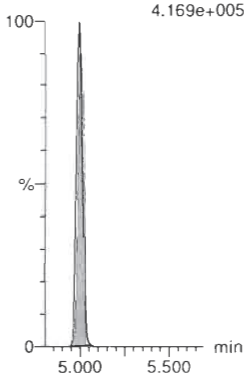
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.102e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
8.609e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
4.169e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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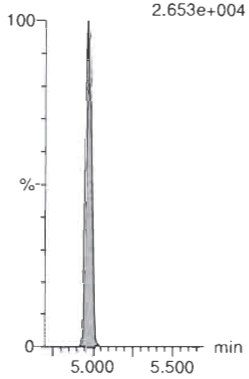
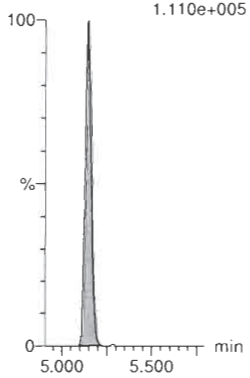
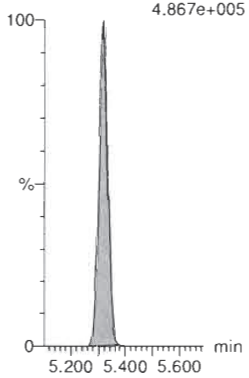
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.653e+004



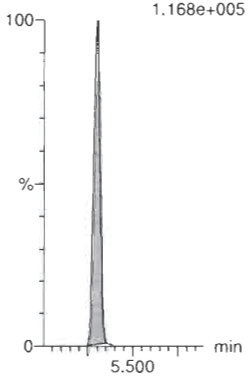
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.110e+005



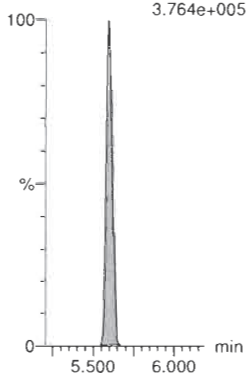
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.867e+005



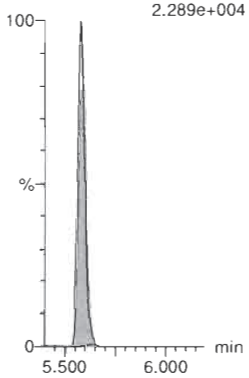
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.168e+005



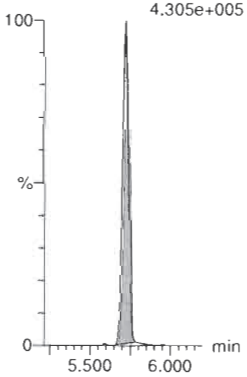
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.764e+005



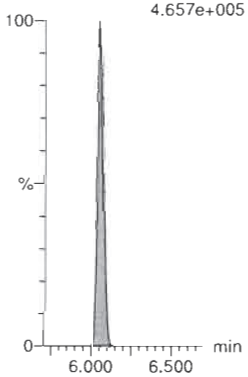
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.289e+004



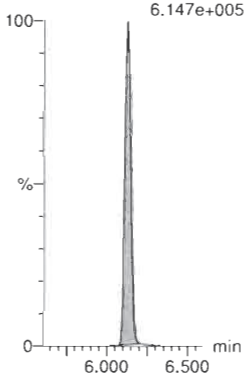
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.305e+005



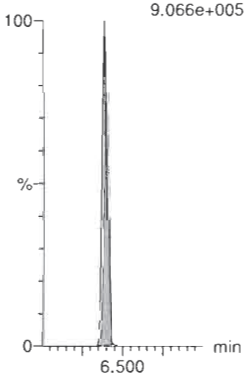
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.657e+005



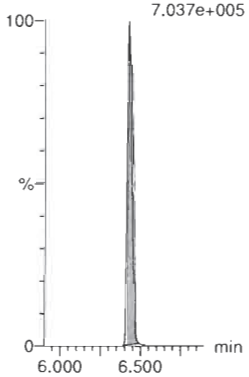
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
6.147e+005



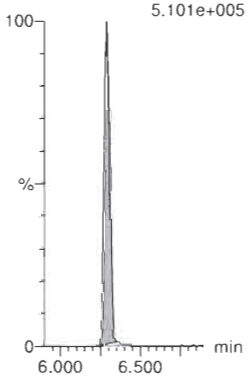
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
9.066e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
7.037e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.101e+005



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Dataset: Untitled

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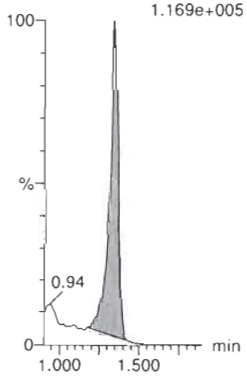
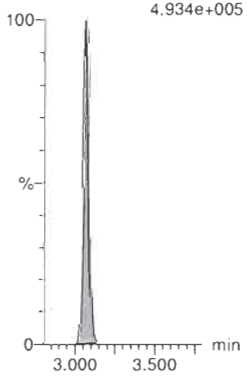
Name: 200228P2-3, Date: 28-Feb-2020, Time: 13:06:47, ID: ST200228P2-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

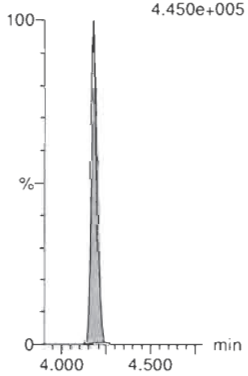
13C4-PFBA



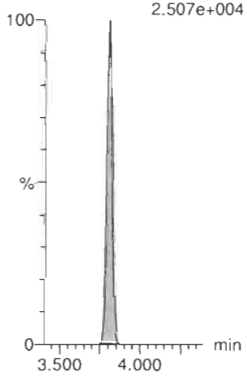
13C5-PFHxA



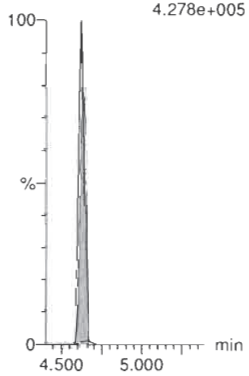
13C8-PFOA



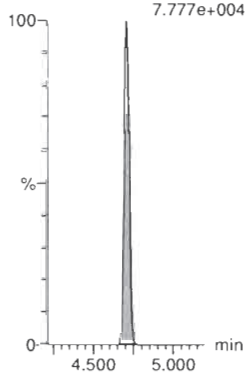
18O2-PFHxS



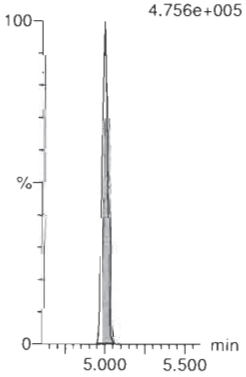
13C9-PFNA



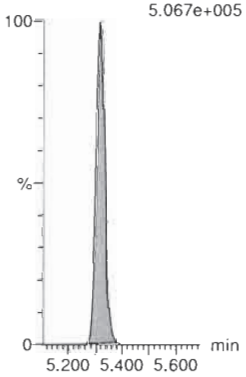
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

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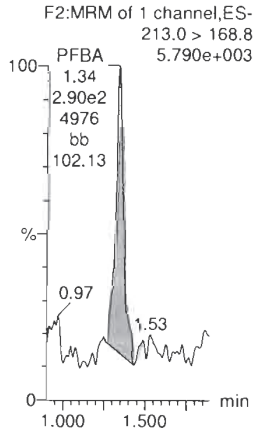
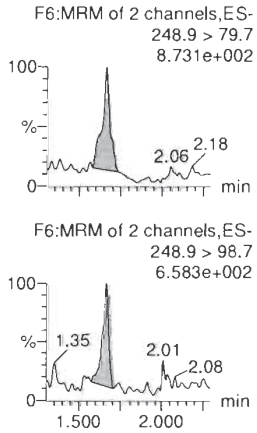
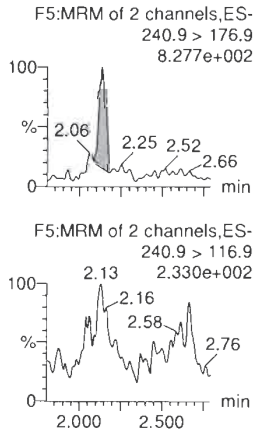
PFBA



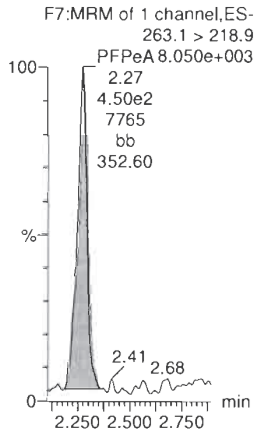
PFPrS



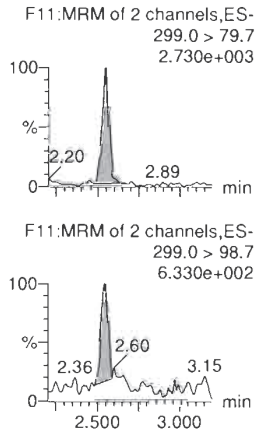
3:3 FTCA



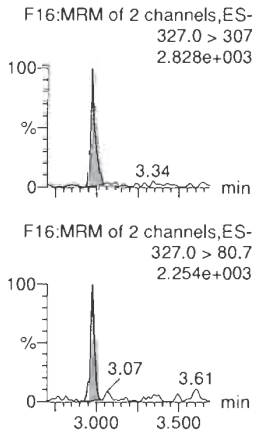
PFPeA



PFBS



4:2 FTS



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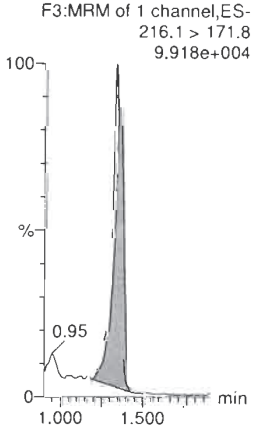
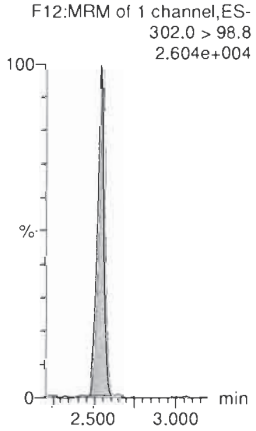
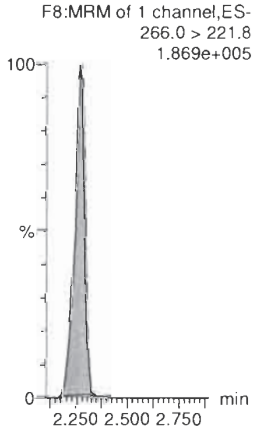


13C3-PFBS-EIS



13C3-PFPeA-EIS



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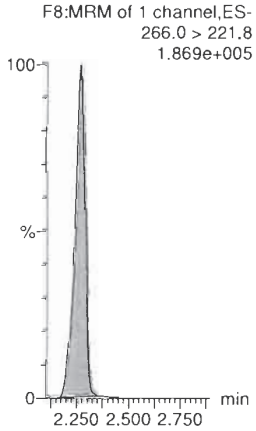

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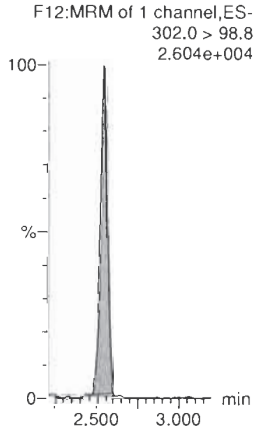
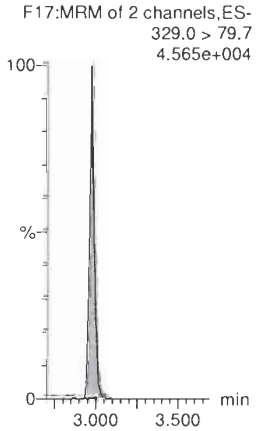


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

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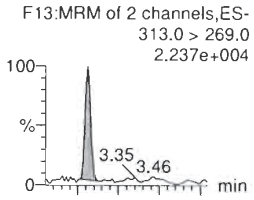
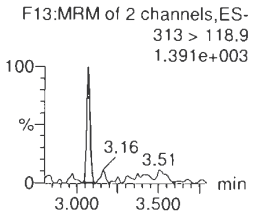
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

PFHxA





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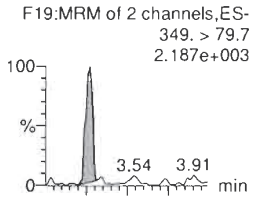

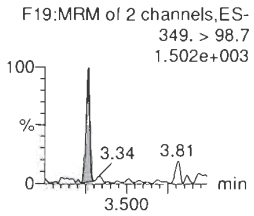

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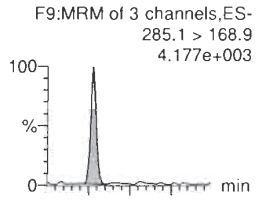
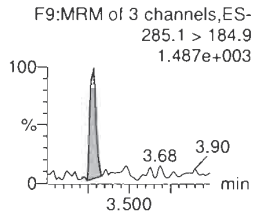
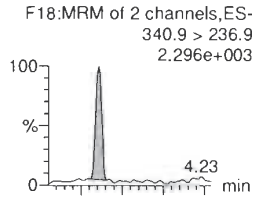
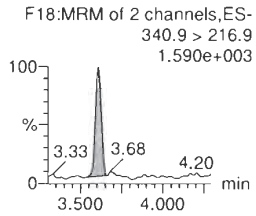




5:3 FTCA





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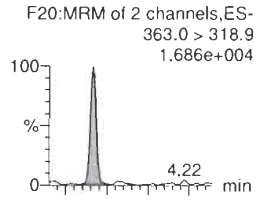

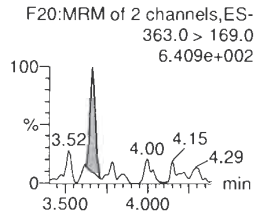

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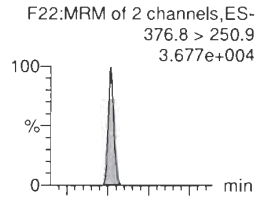

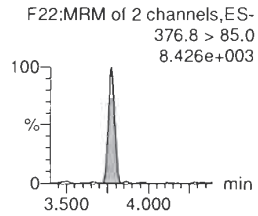

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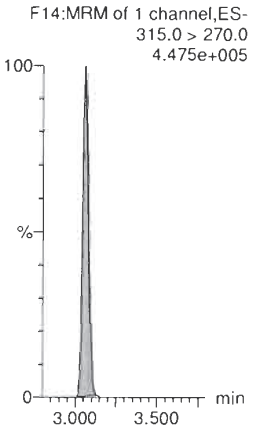

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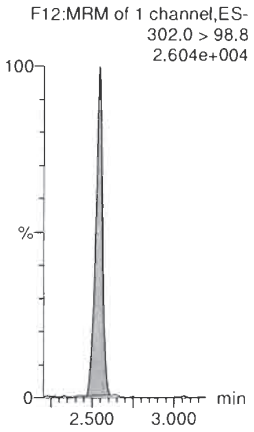

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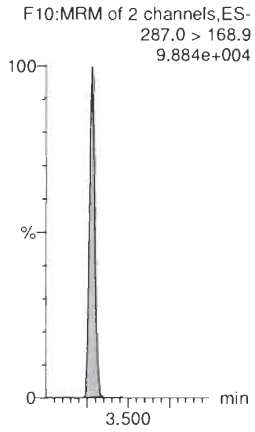

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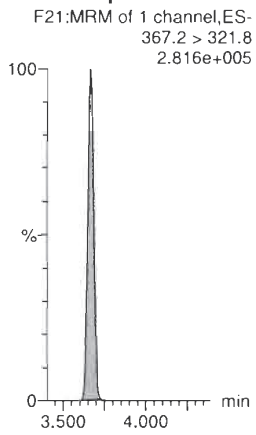

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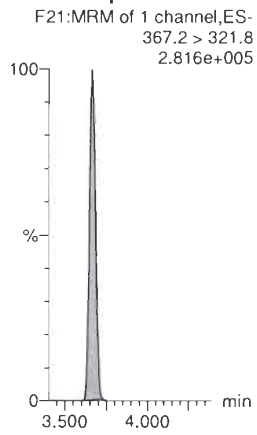

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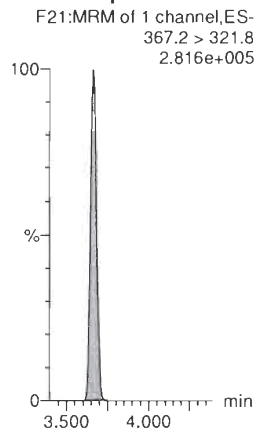

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

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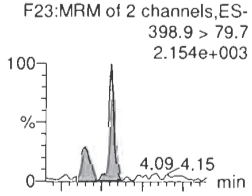
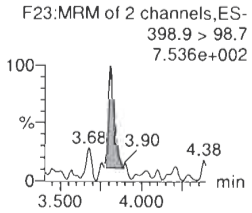
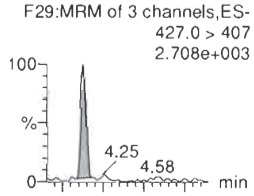
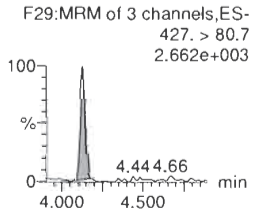




6:2 FTS





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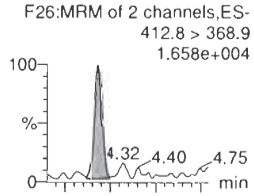

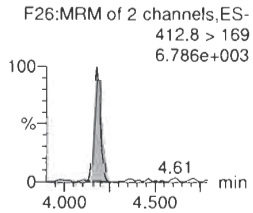

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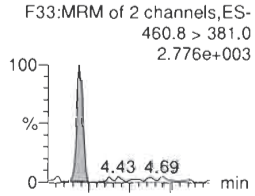

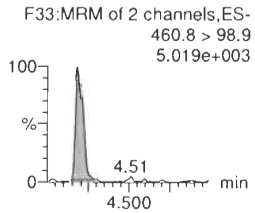

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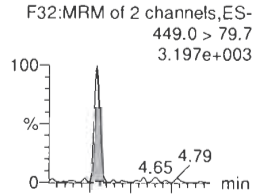

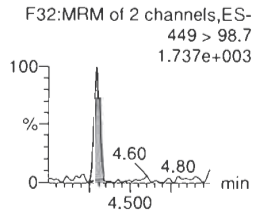

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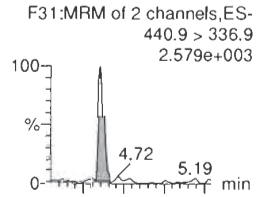

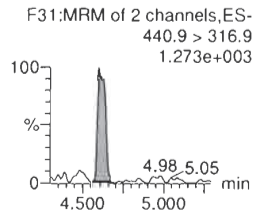

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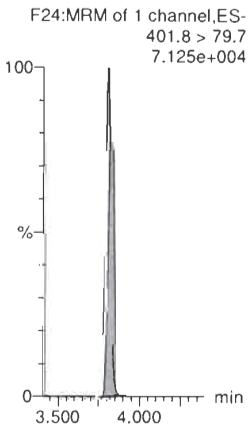

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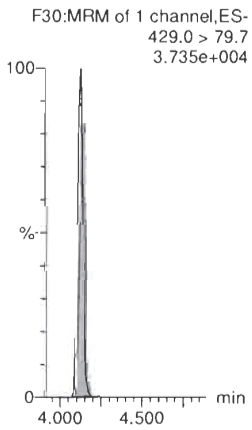

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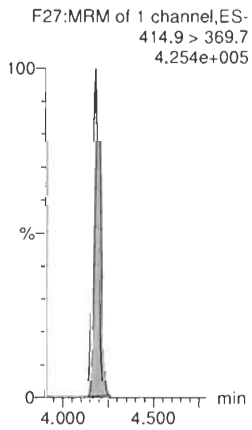

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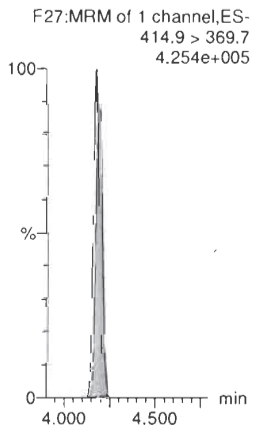
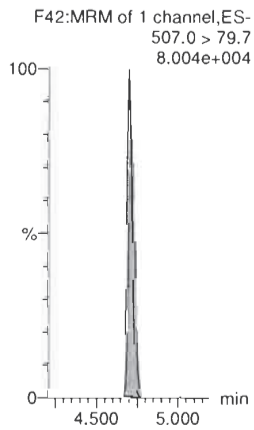


13C8-PFOS-EIS



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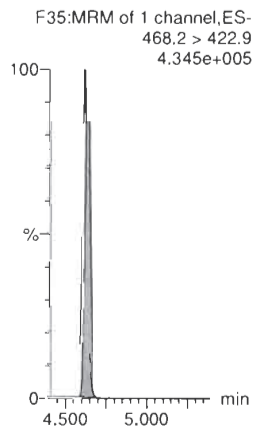

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

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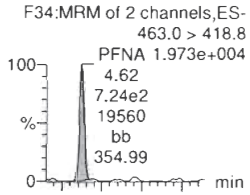

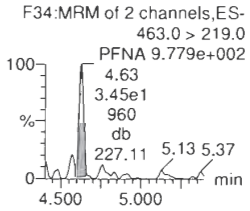

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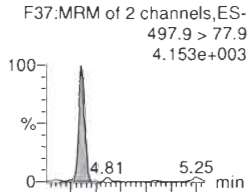
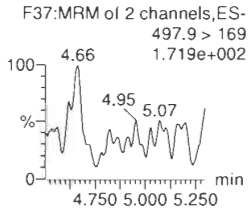
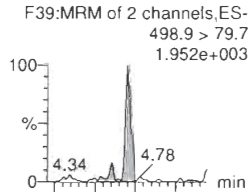
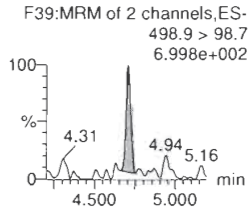




L-PFOS





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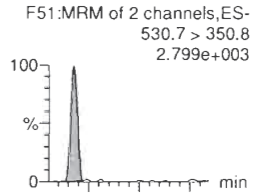

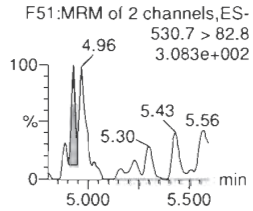

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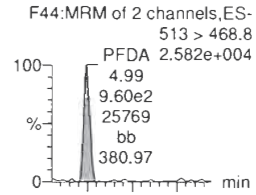
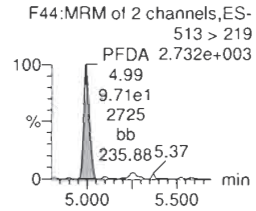
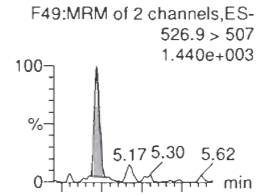
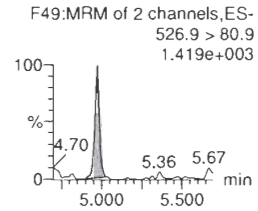




8:2 FTS





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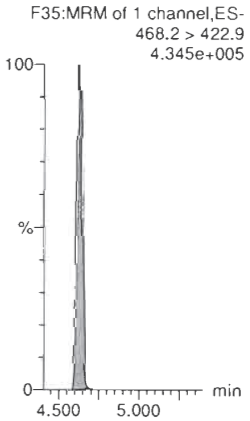

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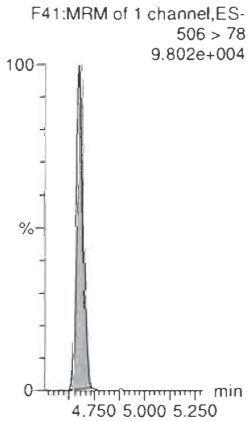

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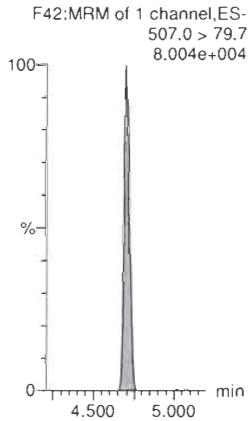

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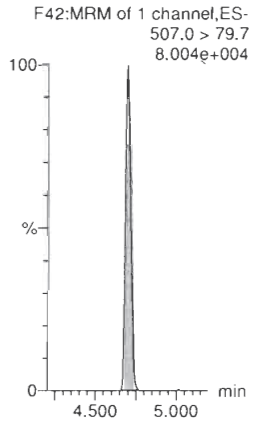

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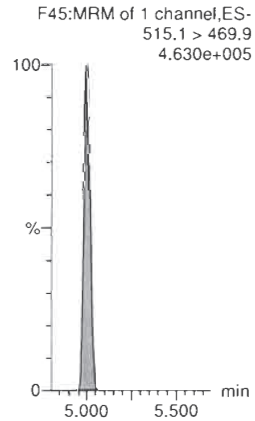
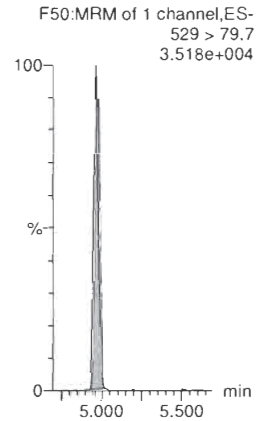


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

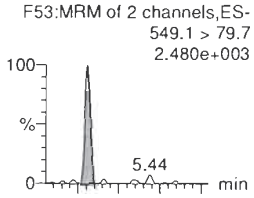
Vista Analytical Laboratory

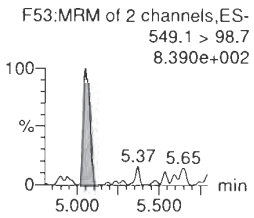
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

PFNS





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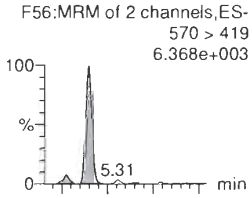

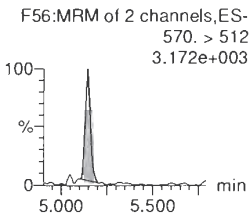

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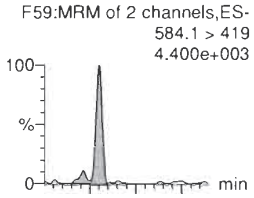

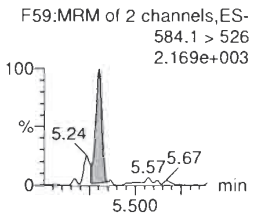

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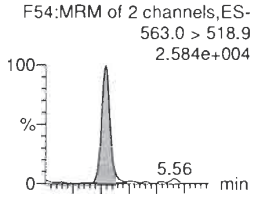

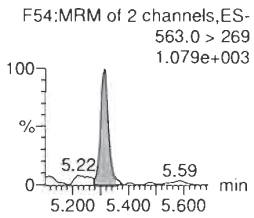

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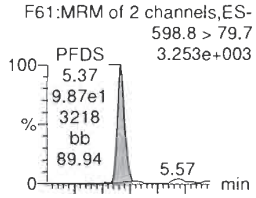

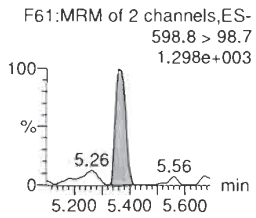

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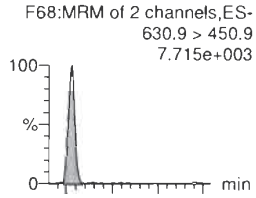

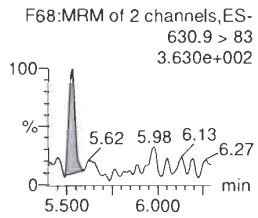

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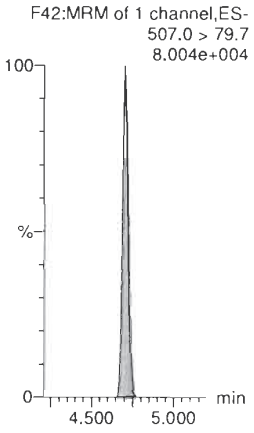

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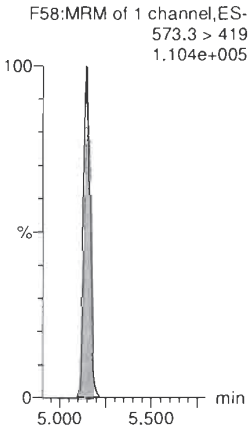
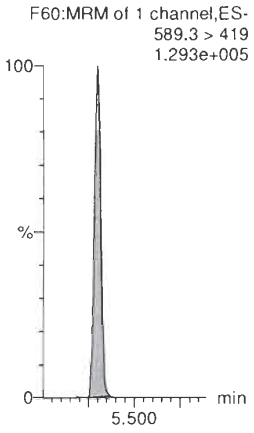
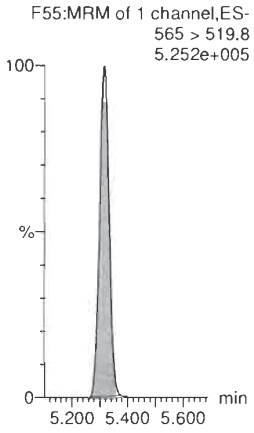


d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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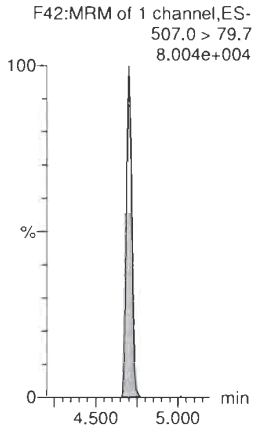

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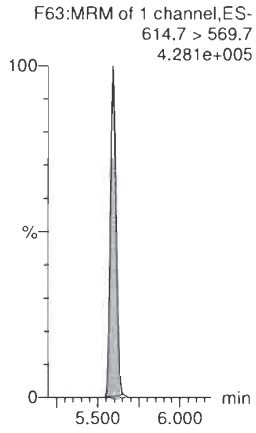

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
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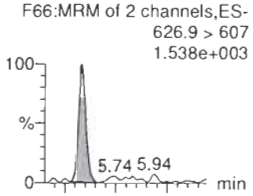
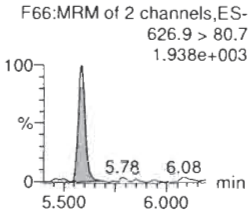
Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

10:2 FTS





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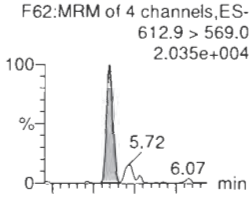

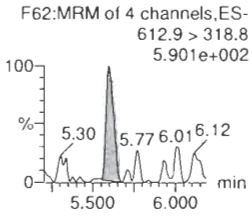

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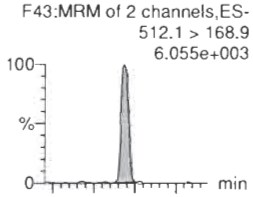

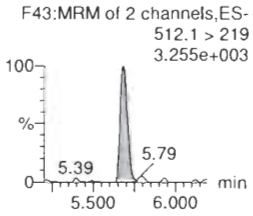

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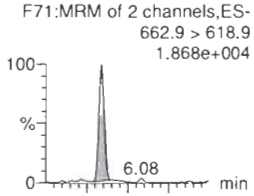

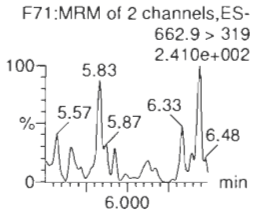

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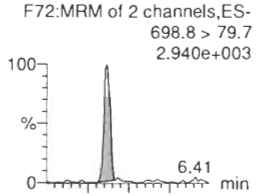

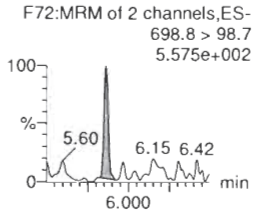

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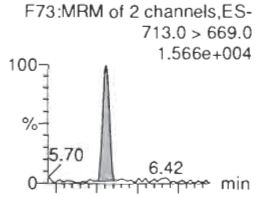

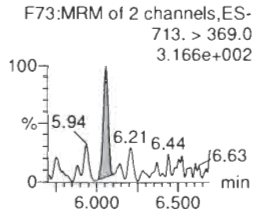

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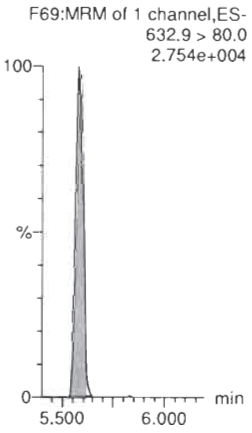

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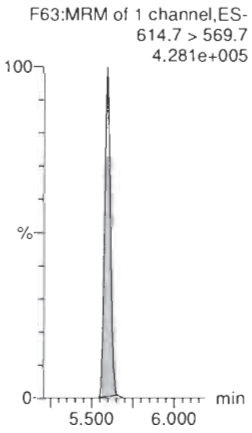
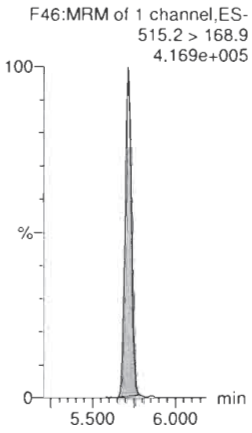


d3-N-MeFOSA-EIS



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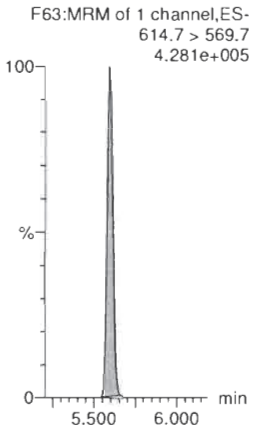

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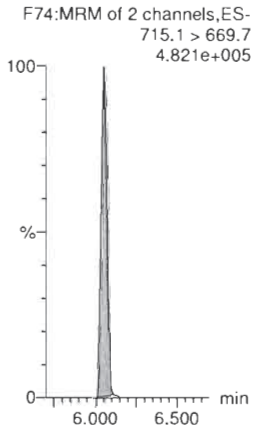

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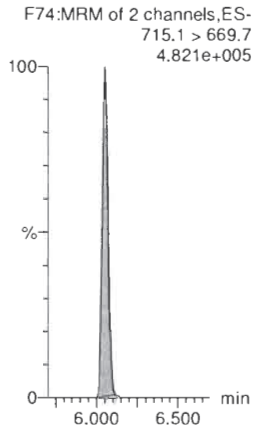

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
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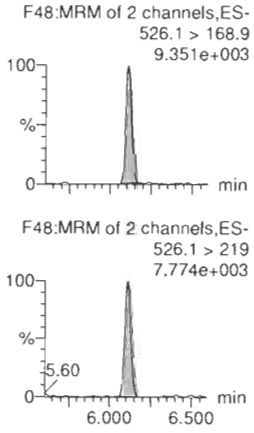
Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

N-EtFOSA



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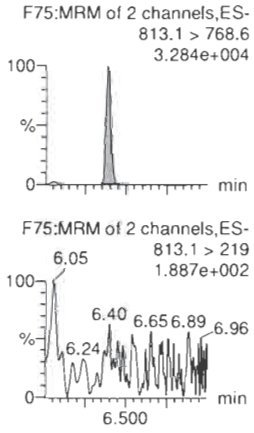
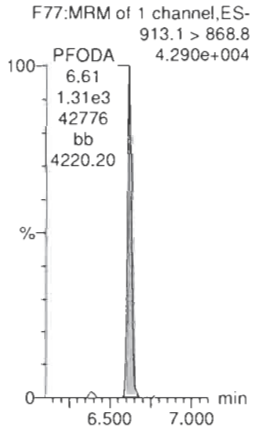


PFODA



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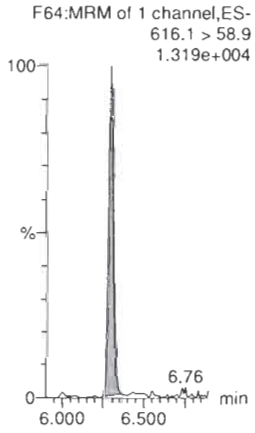

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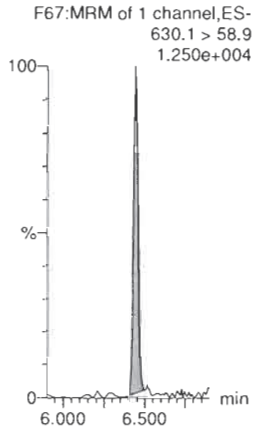

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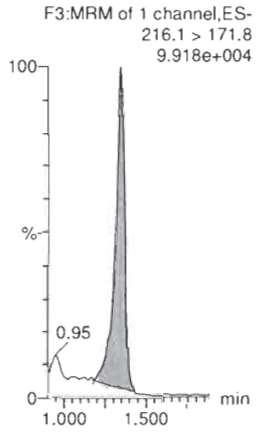
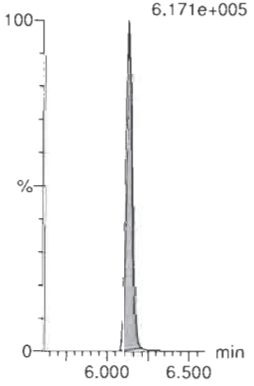


d5-N-ETFOSA-EIS



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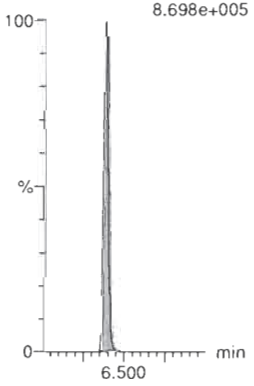

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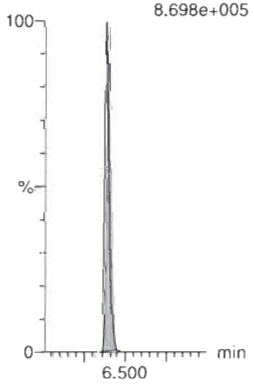

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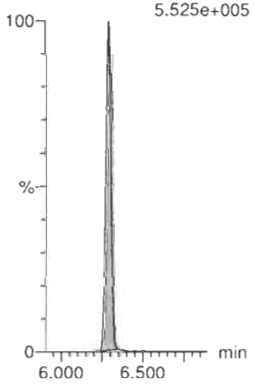

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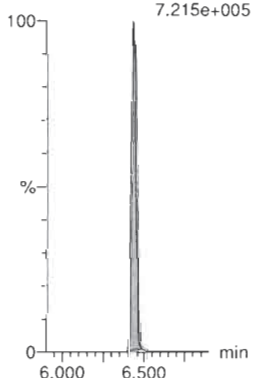

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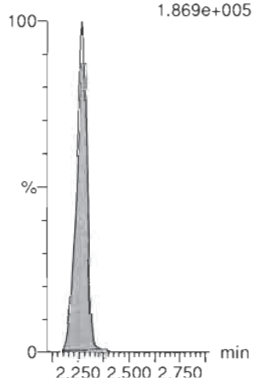

Quantify Sample Report **MassLynx V4.2 SCN977** Page 18 of 100
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
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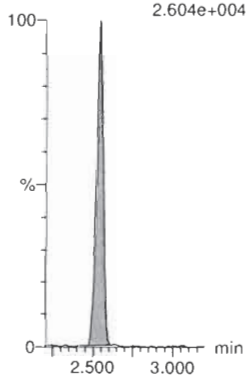
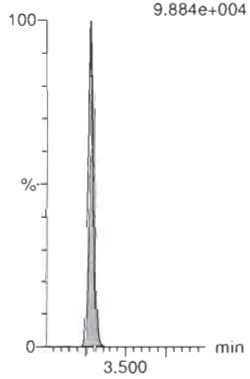
Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

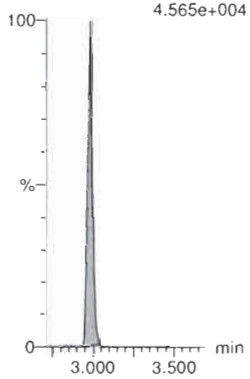
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.604e+004



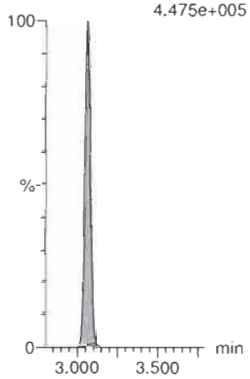
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.884e+004



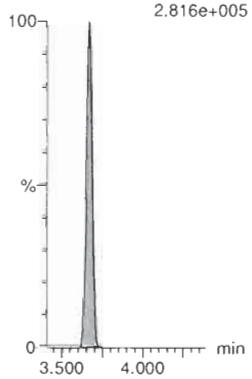
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
4.565e+004



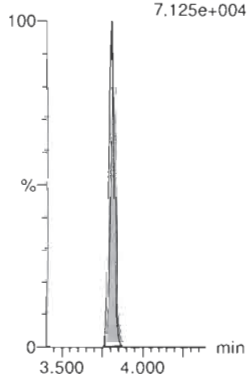
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
4.475e+005



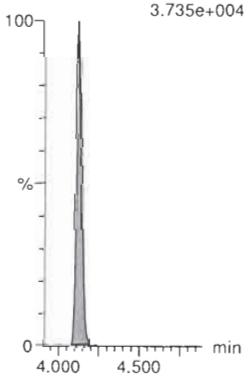
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.816e+005



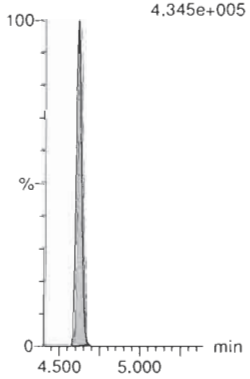
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
7.125e+004



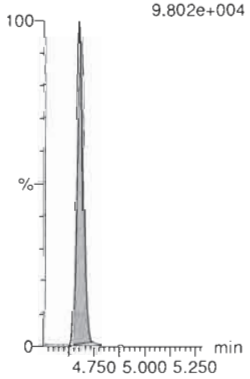
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.735e+004



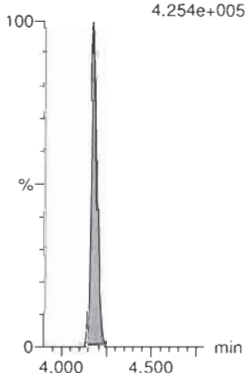
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.345e+005



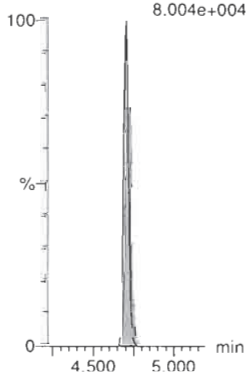
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.802e+004



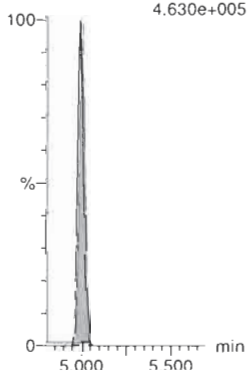
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.254e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
8.004e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
4.630e+005



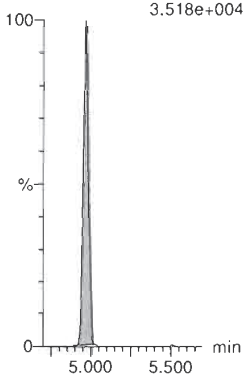
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

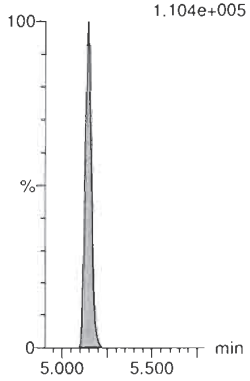
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

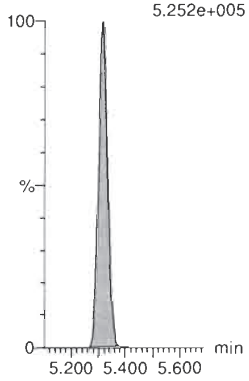
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.518e+004



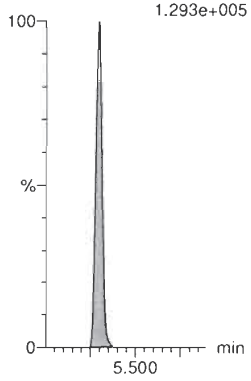
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.104e+005



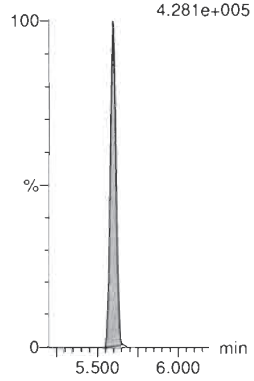
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
5.252e+005



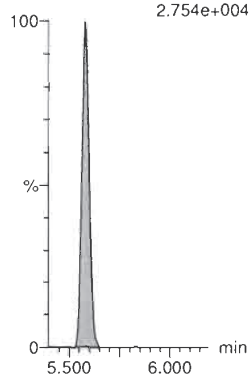
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.293e+005



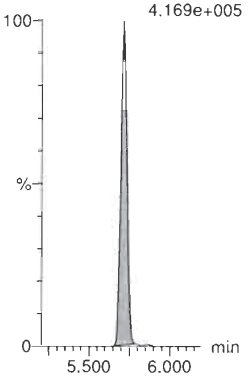
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.281e+005



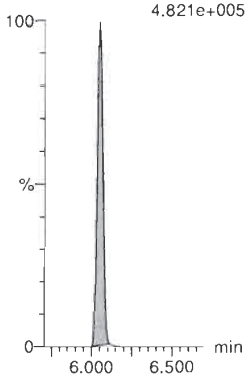
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.754e+004



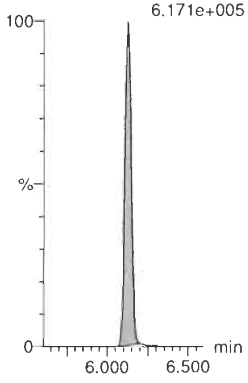
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.169e+005



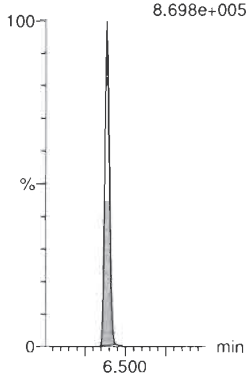
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.821e+005



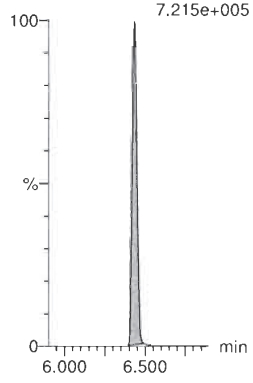
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
6.171e+005



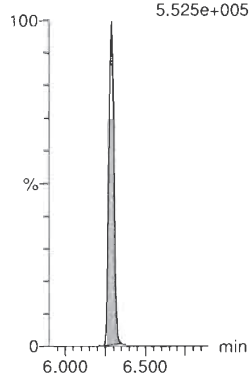
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
8.698e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
7.215e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.525e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

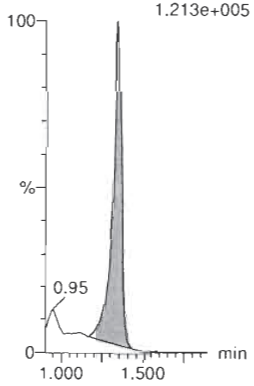
Vista Analytical Laboratory

Dataset: Untitled

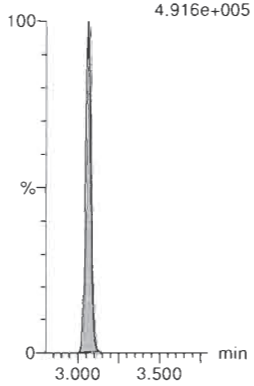
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-4, Date: 28-Feb-2020, Time: 13:17:15, ID: ST200228P2-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

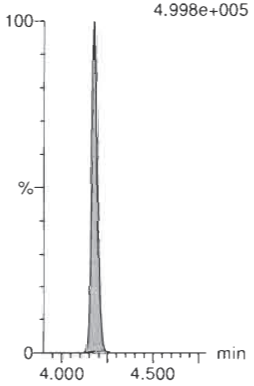
13C4-PFBA



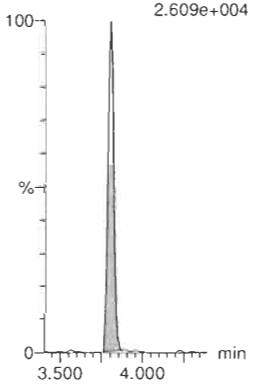
13C5-PFHxA



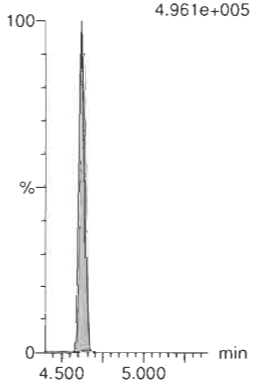
13C8-PFOA



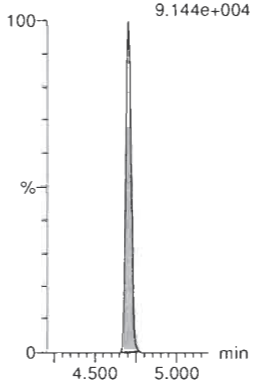
18O2-PFHxS



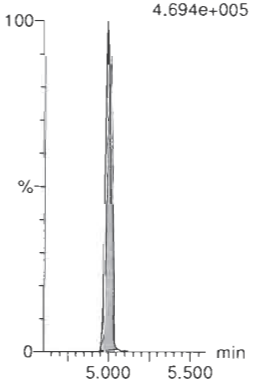
13C9-PFNA



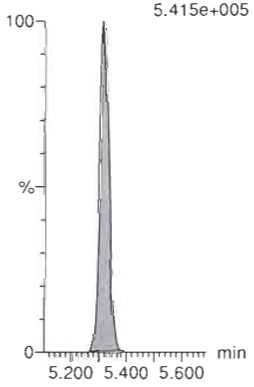
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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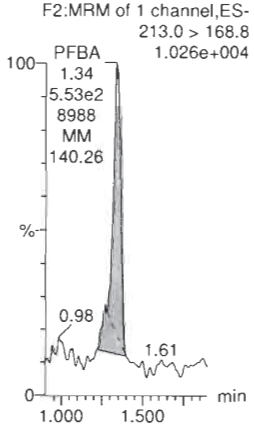
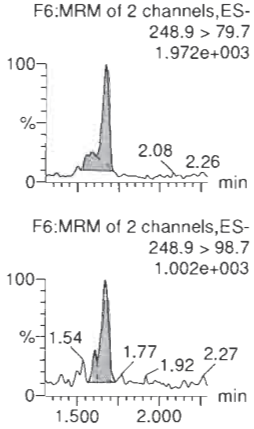
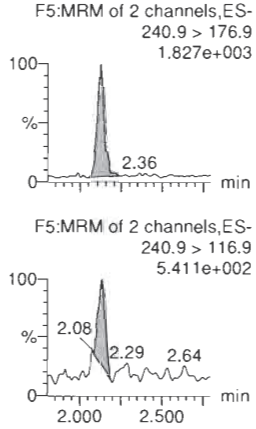
PFBA



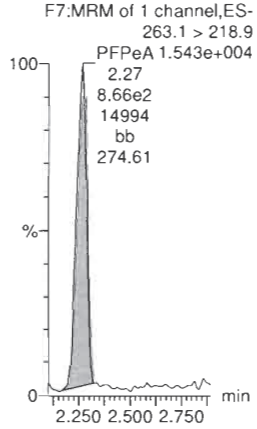
PFPrS



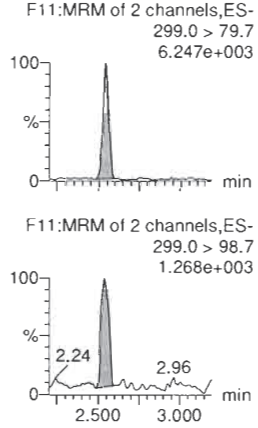
3:3 FTCA



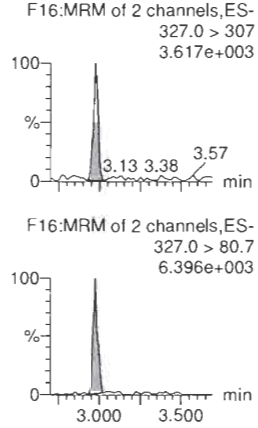
PFPeA



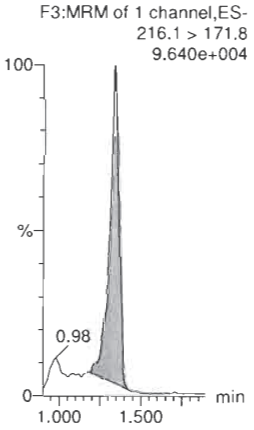
PFBS



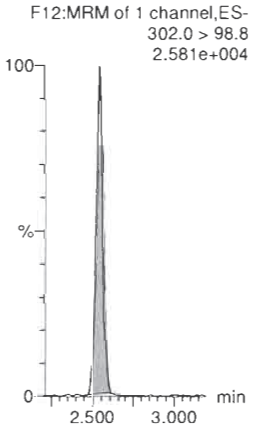
4:2 FTS



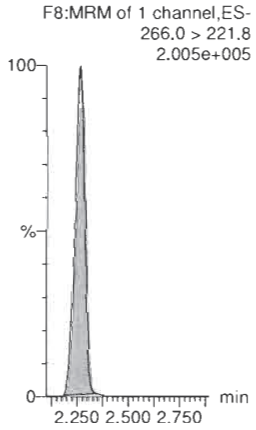
13C3-PFBA-EIS



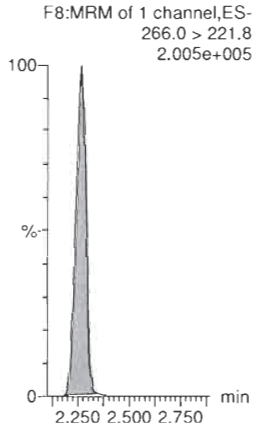
13C3-PFBS-EIS



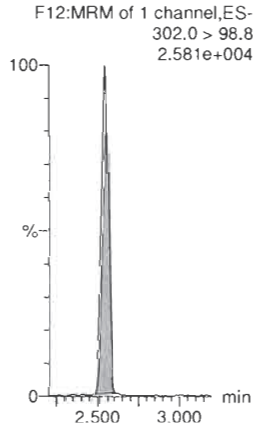
13C3-PFPeA-EIS



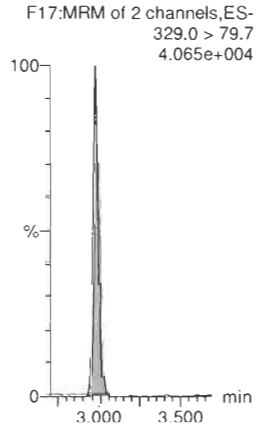
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977** Page 22 of 100
Vista Analytical Laboratory

Dataset: Untitled

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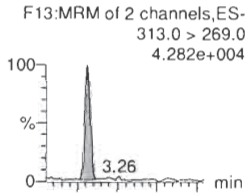
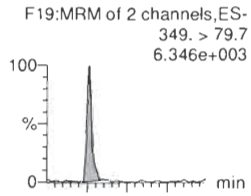
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-5, Date: 28-Feb-2020, Time: 13:27:47, ID: ST200228P2-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

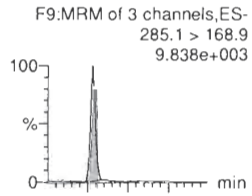
PFHxA



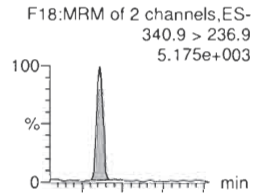
PFPeS



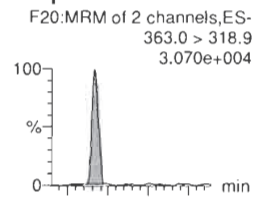
HFPO-DA



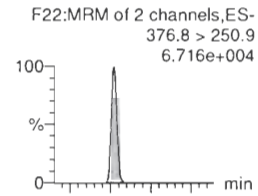
5:3 FTCA



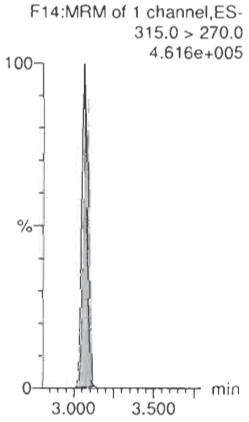
PFHpA



ADONA



13C2-PFHxA-EIS



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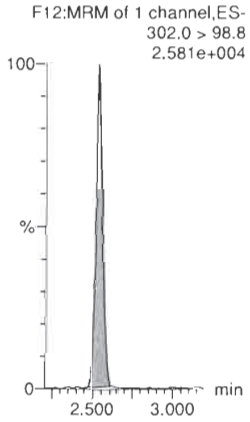

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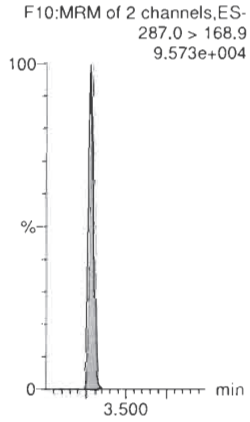

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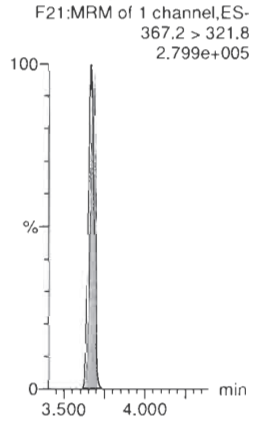

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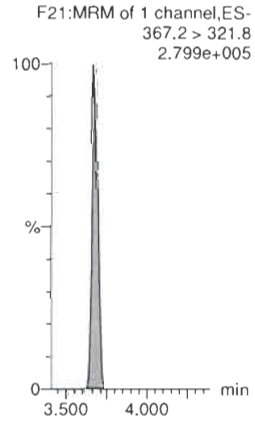

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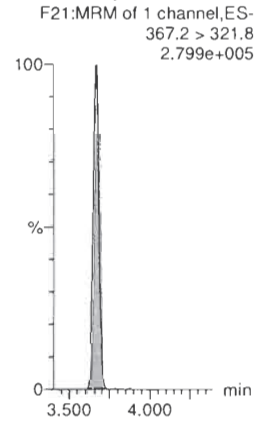

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

Name: 200228P2-5, Date: 28-Feb-2020, Time: 13:27:47, ID: ST200228P2-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

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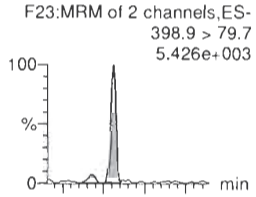

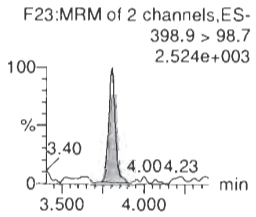

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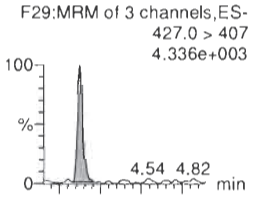

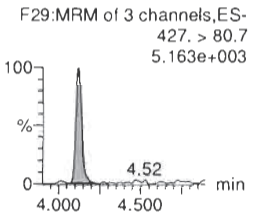

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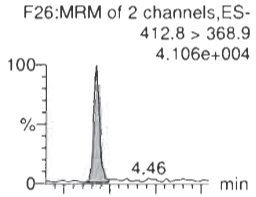

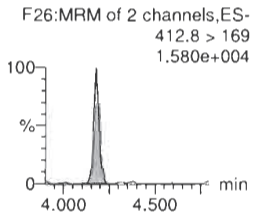

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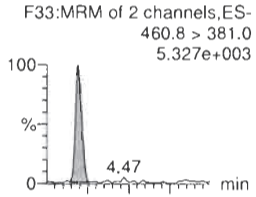

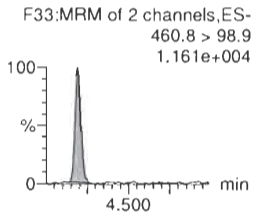

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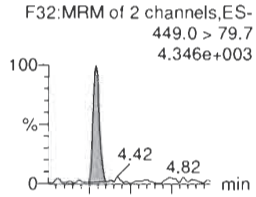

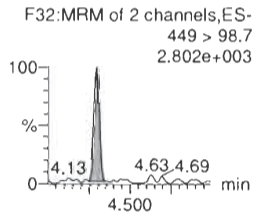

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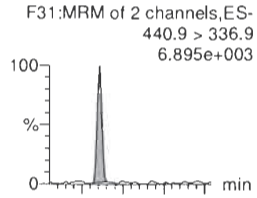

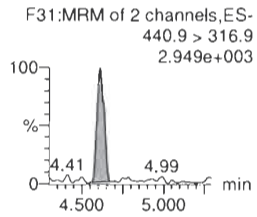

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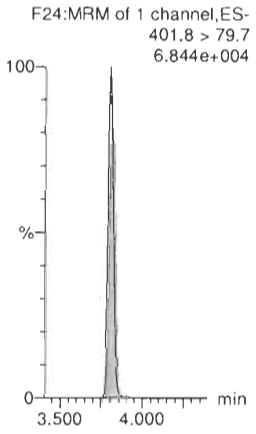

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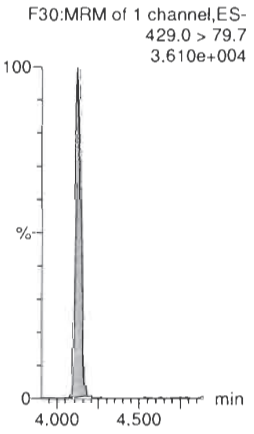

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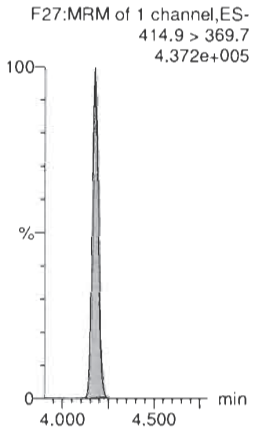

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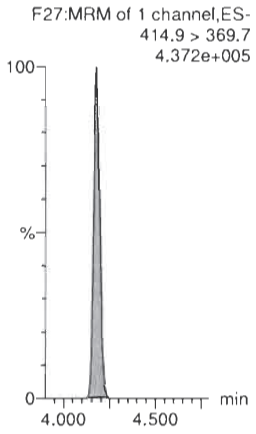

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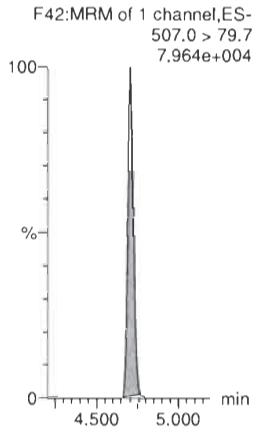

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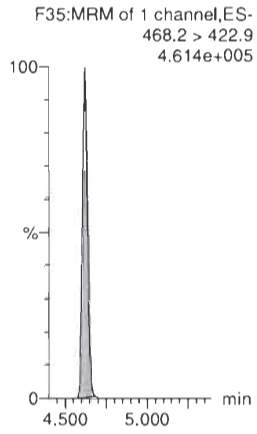

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:50:07 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

Name: 200228P2-5, Date: 28-Feb-2020, Time: 13:27:47, ID: ST200228P2-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

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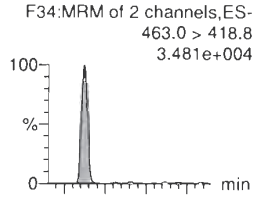

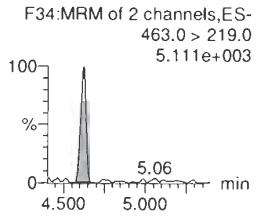

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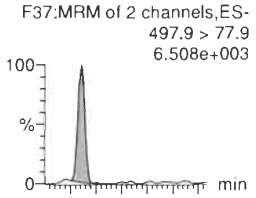

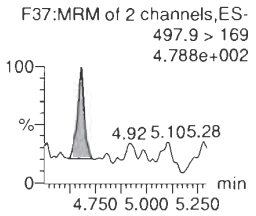

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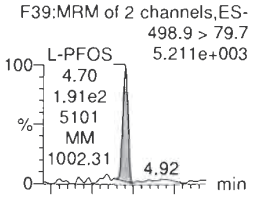

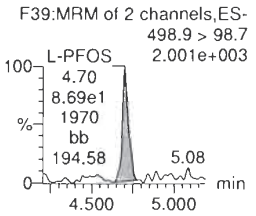

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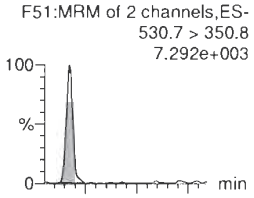

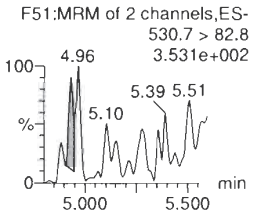

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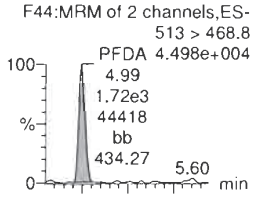

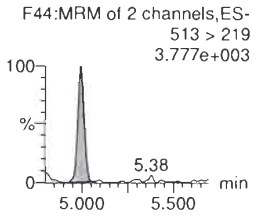

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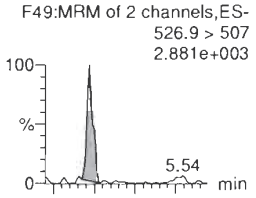

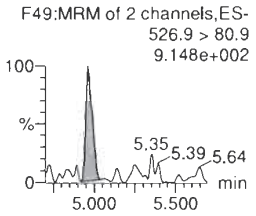

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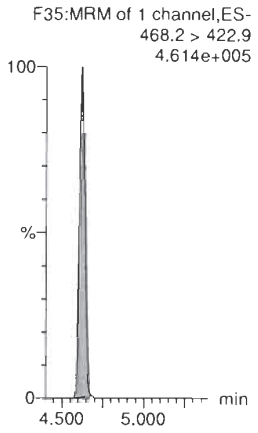

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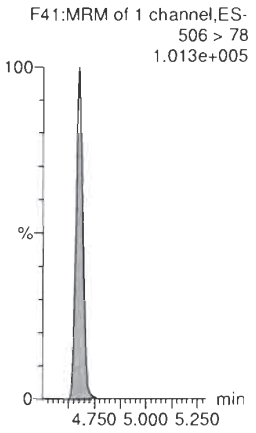

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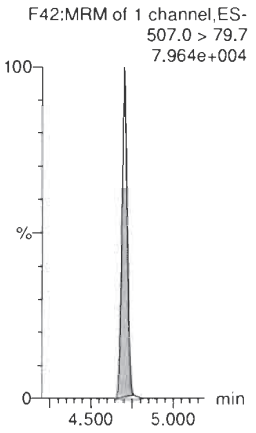

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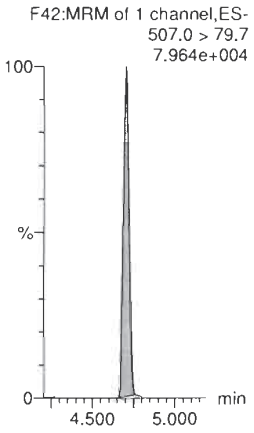

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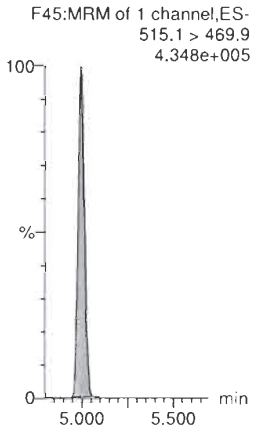

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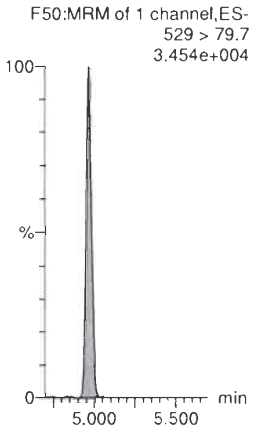

Quantify Sample Report **MassLynx V4.2 SCN977** Page 25 of 100
Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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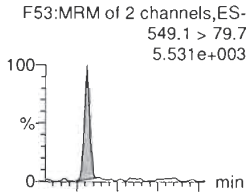

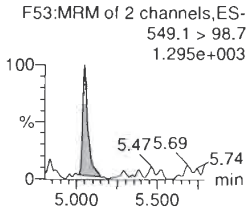

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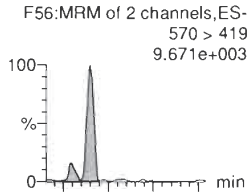

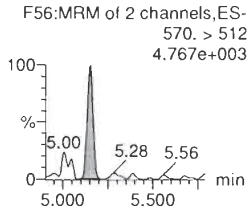

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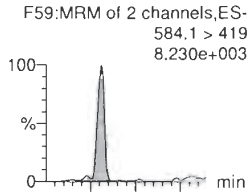

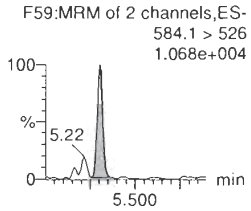

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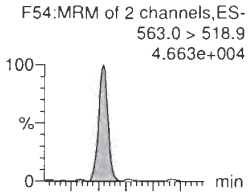

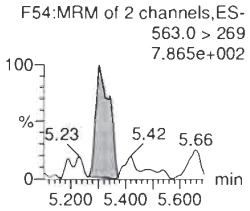

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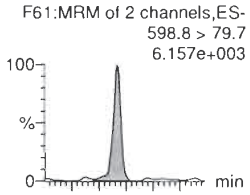

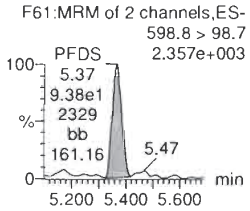

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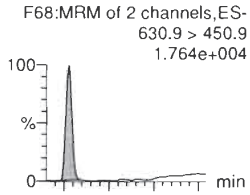

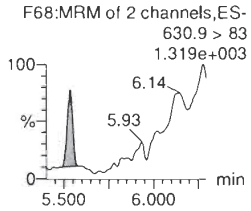

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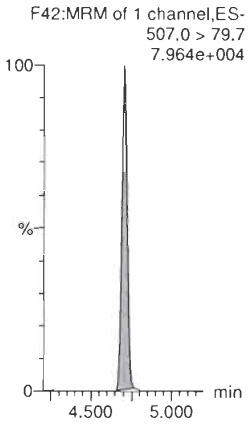

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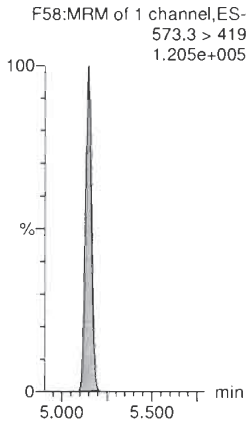

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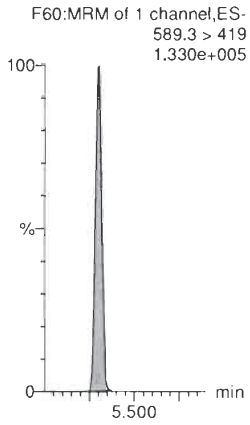

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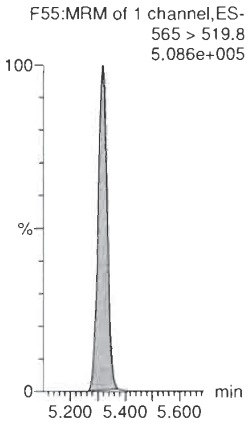

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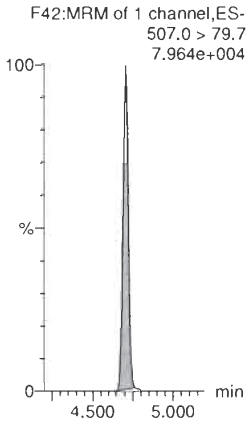

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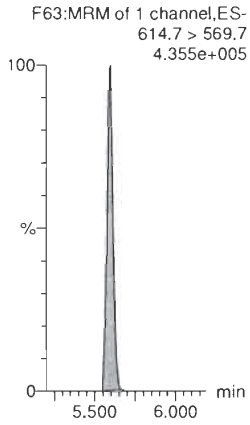

Quantify Sample Report **MassLynx V4.2 SCN977** Page 26 of 100
Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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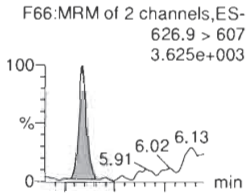

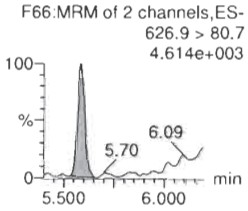

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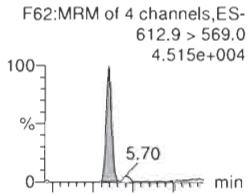

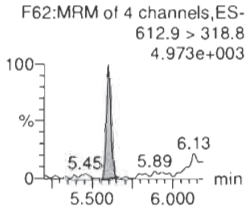

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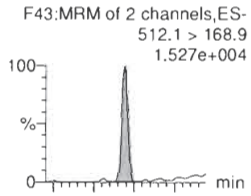

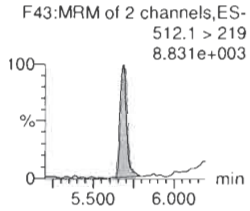

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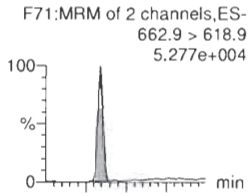

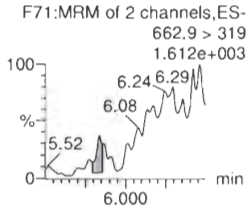

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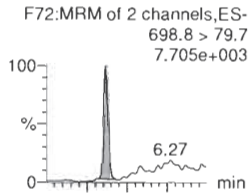

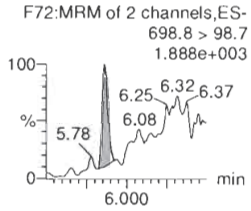

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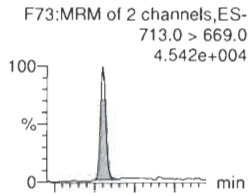

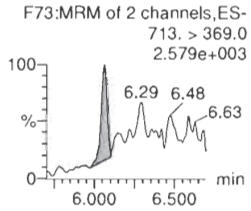

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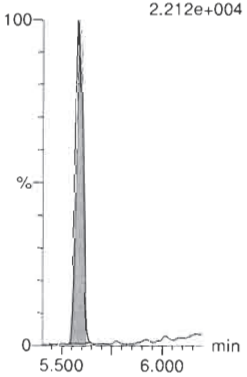

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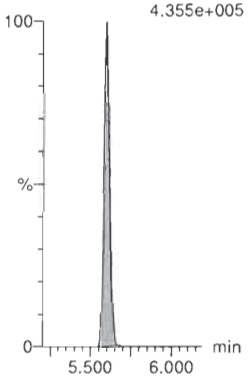

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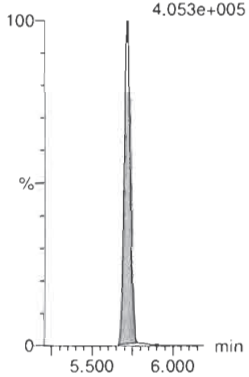

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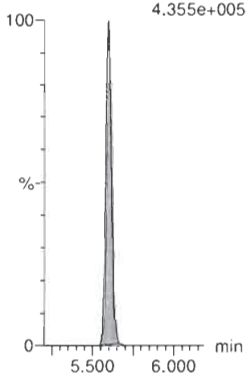

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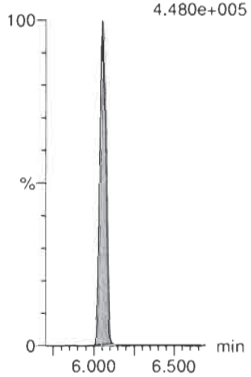

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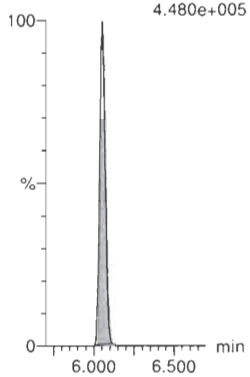

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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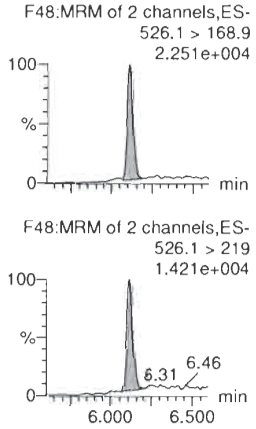

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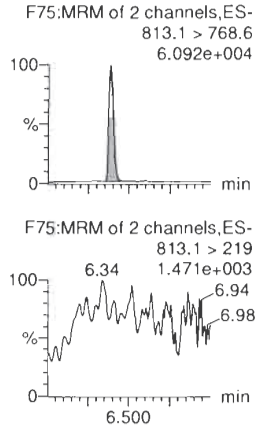

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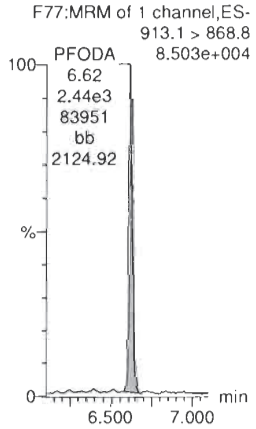

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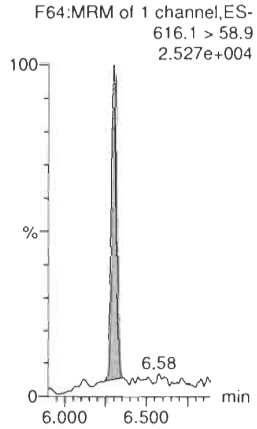

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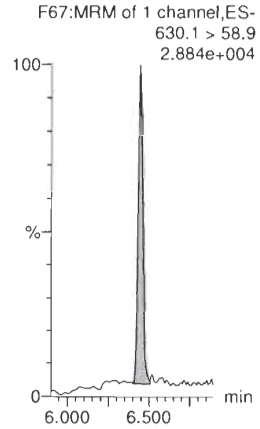

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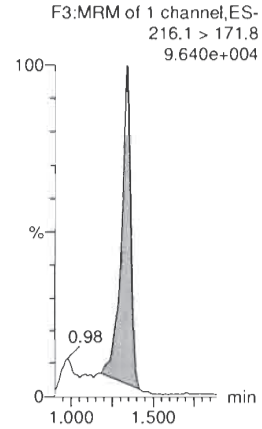

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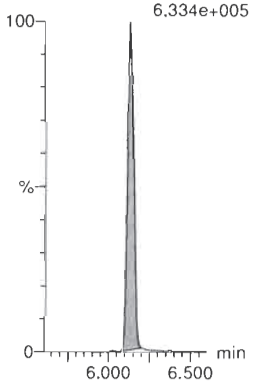

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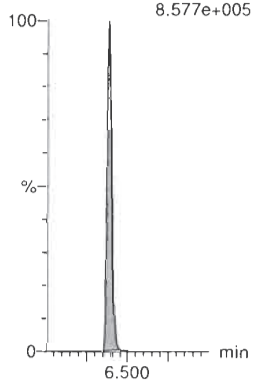

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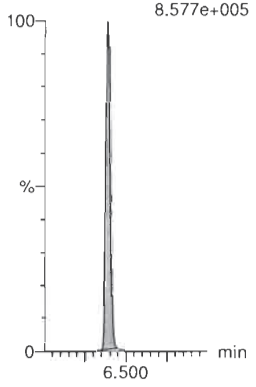

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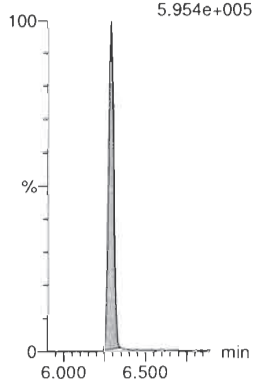

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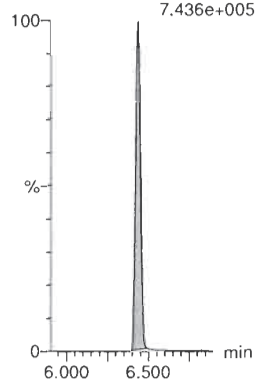

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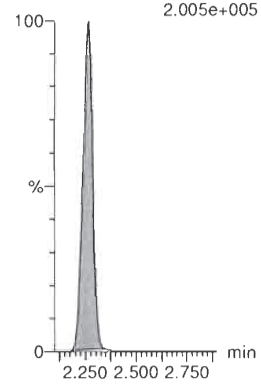

Quantify Sample Report **MassLynx V4.2 SCN977**

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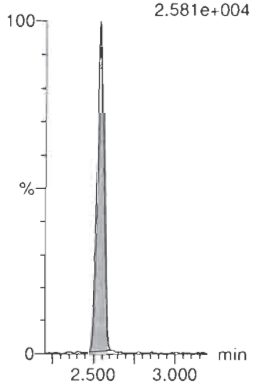

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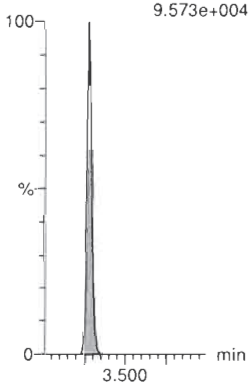

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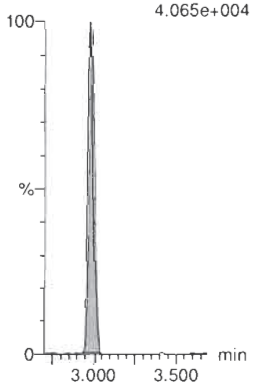

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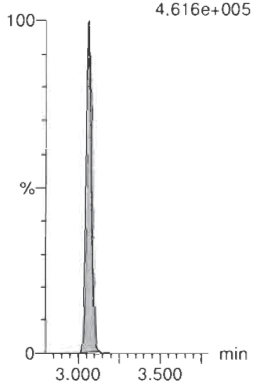

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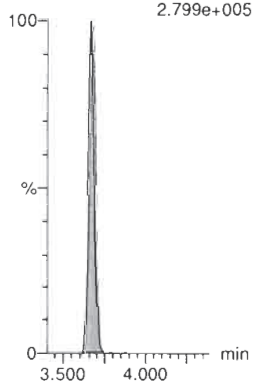

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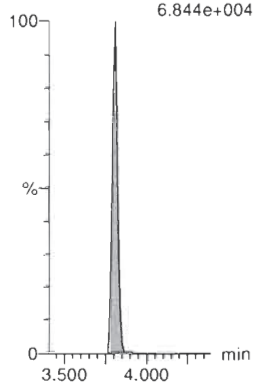

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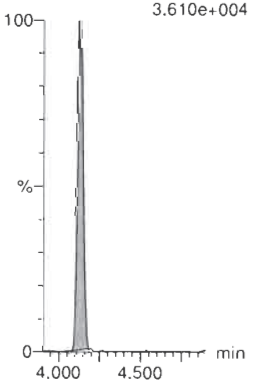

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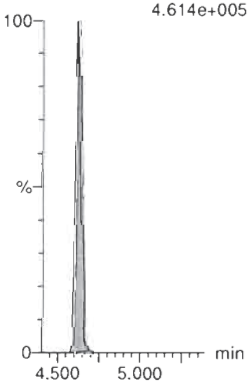

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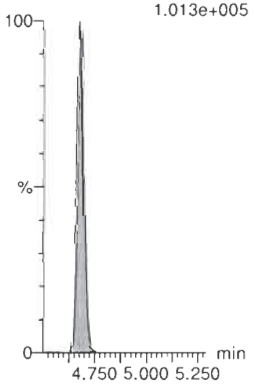

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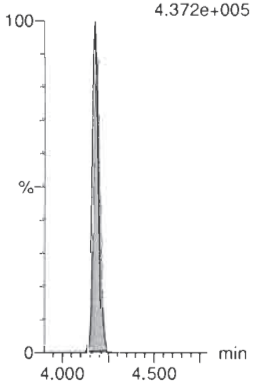

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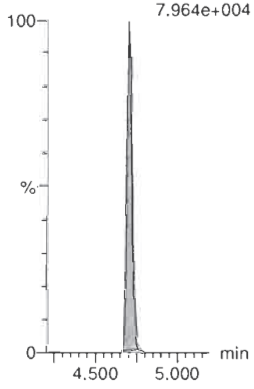

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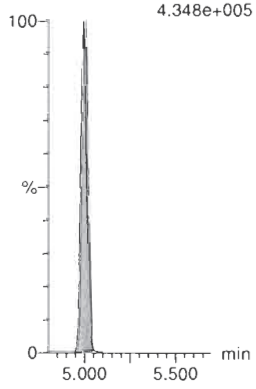

Quantify Sample Report **MassLynx V4.2 SCN977**

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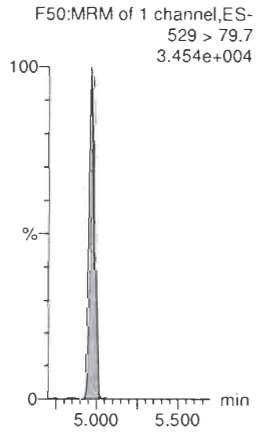

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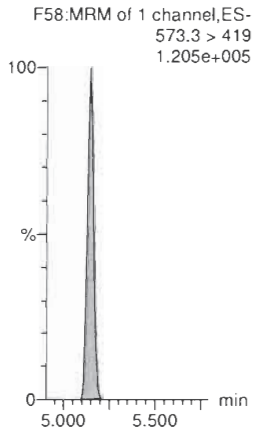
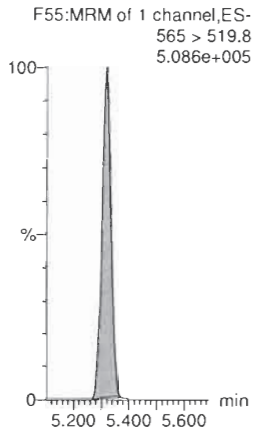
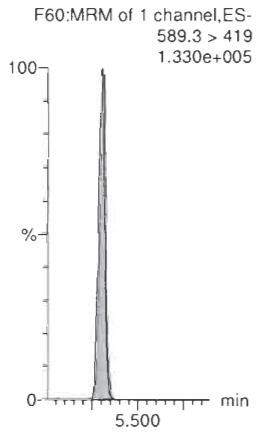


13C2-PFUdA-RSD



d5-N-EtFOSAA-RSD



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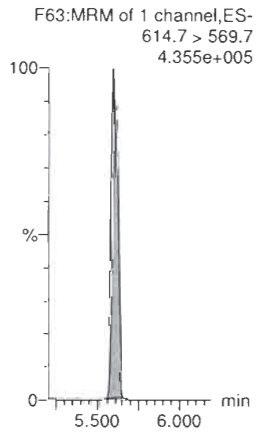
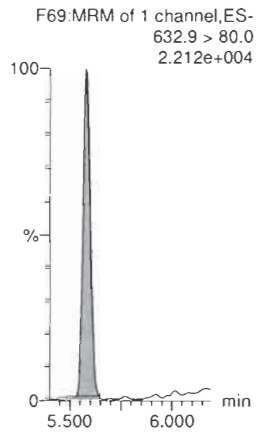


13C2-10:2 FTS-RSD



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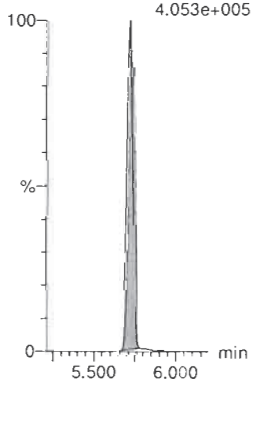

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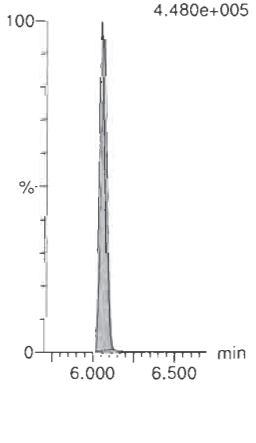

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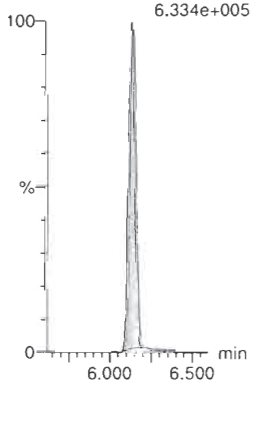

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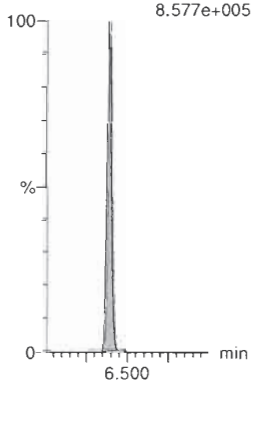

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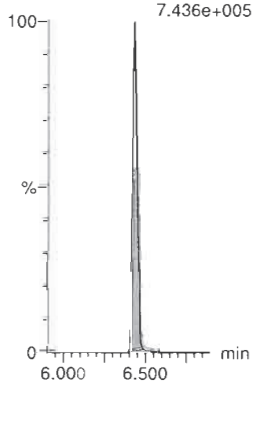

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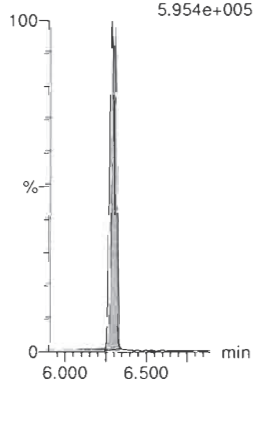

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-5, Date: 28-Feb-2020, Time: 13:27:47, ID: ST200228P2-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

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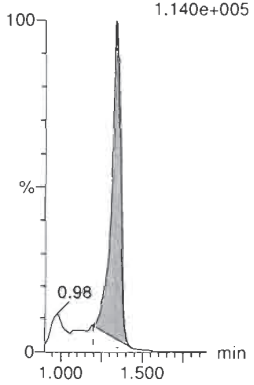
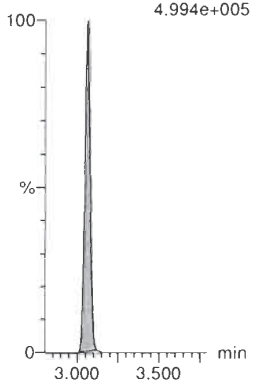


13C5-PFHxA



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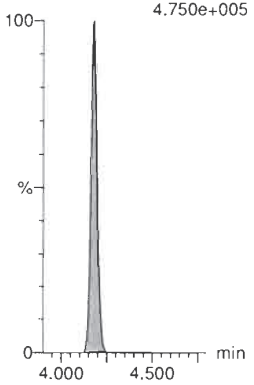
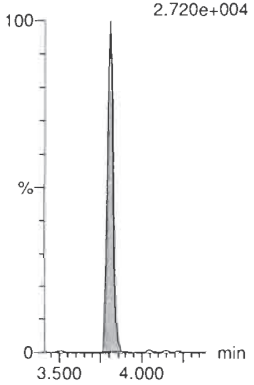
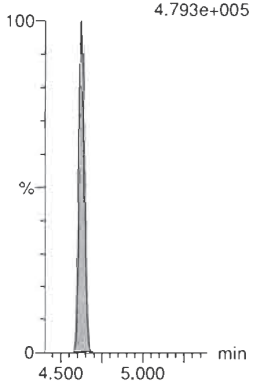


18O2-PFHxS



13C9-PFNA



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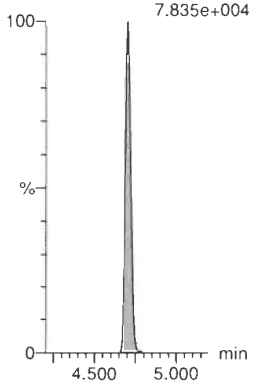

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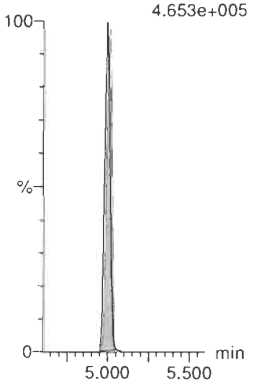

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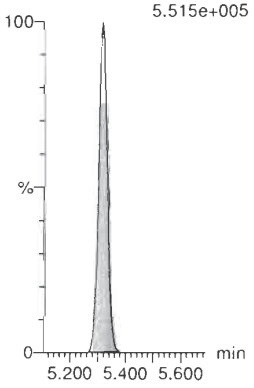


Quantify Sample Report **MassLynx V4.2 SCN977**

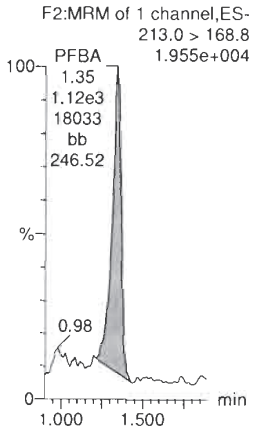
Vista Analytical Laboratory

Dataset: Untitled

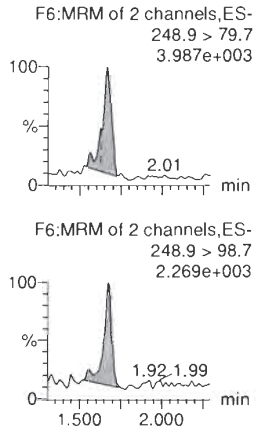
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

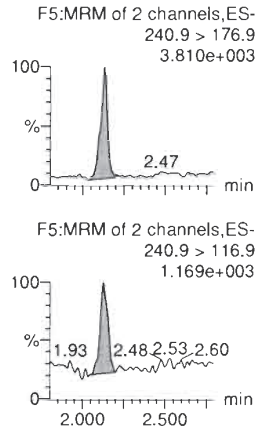
PFBA



PFPrS



3:3 FTCA



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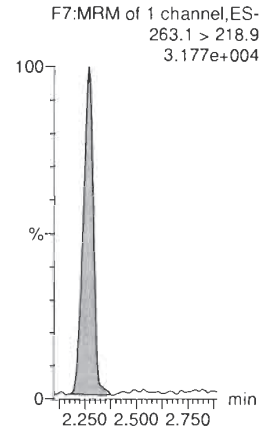
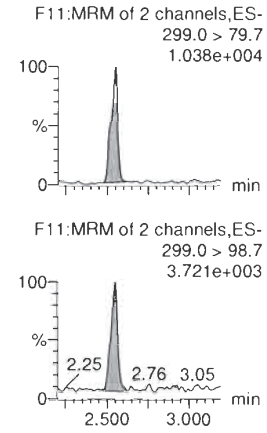
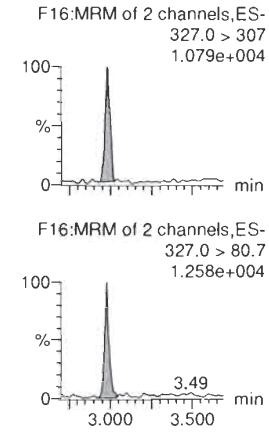


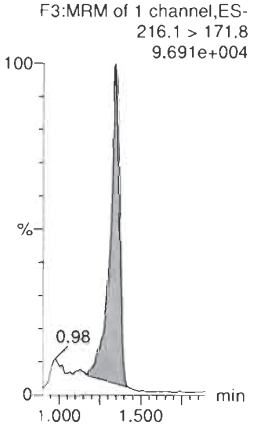
PFBS



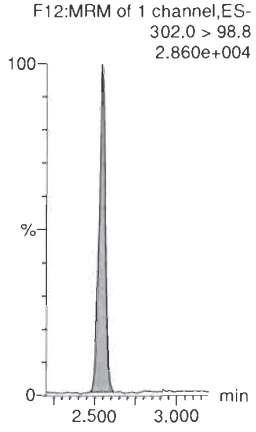
4:2 FTS



13C3-PFBA-EIS



13C3-PFBS-EIS



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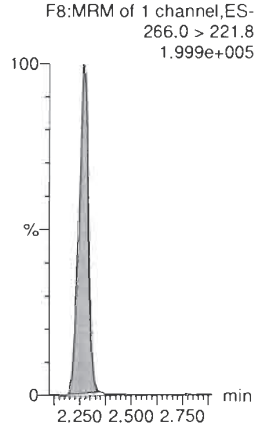

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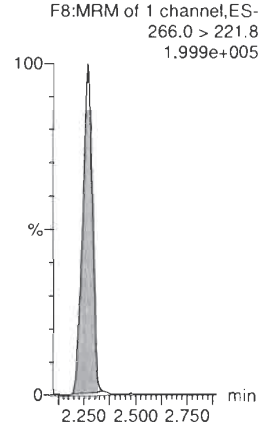

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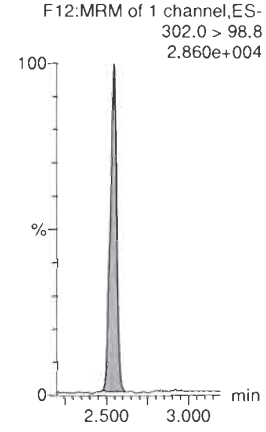
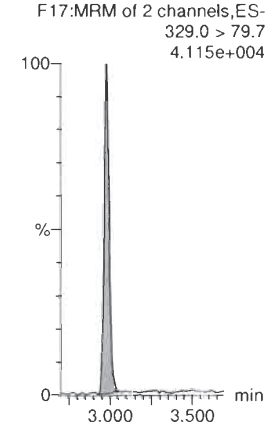


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

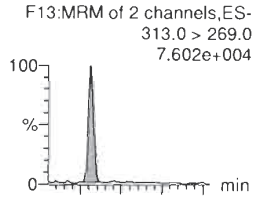
Vista Analytical Laboratory

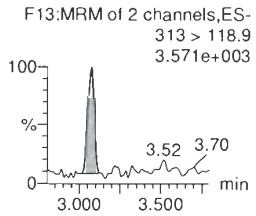
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

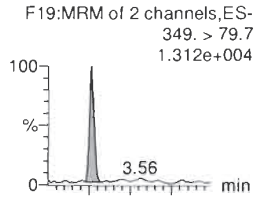
Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

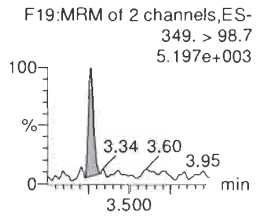
PFHxA



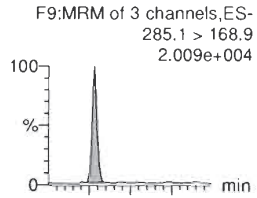


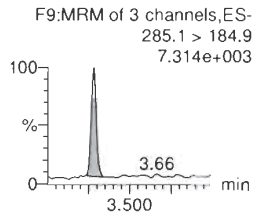
PFPeS



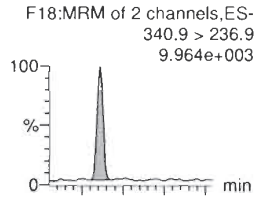


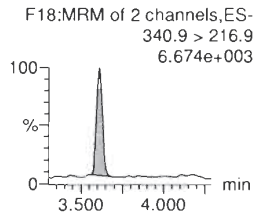
HFPO-DA



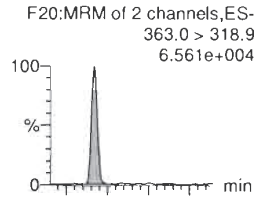


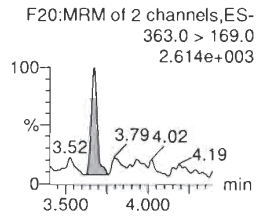
5:3 FTCA





PFHpA





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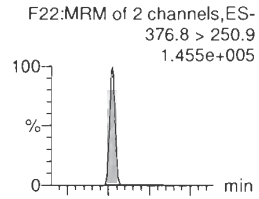

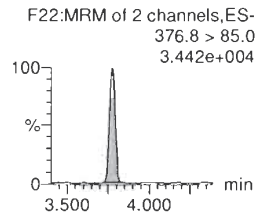

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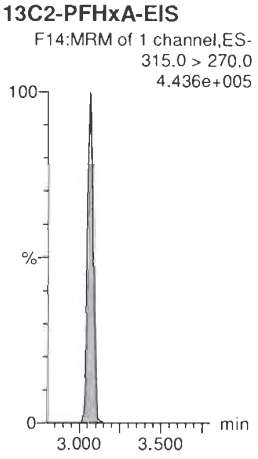
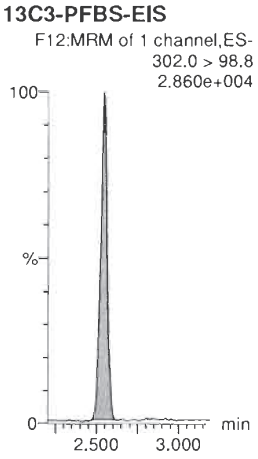
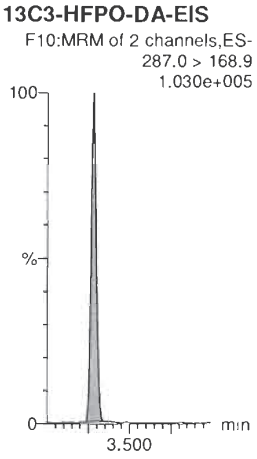


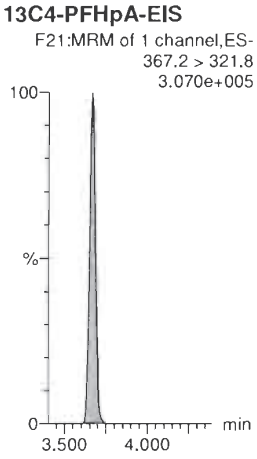
13C3-PFBS-EIS



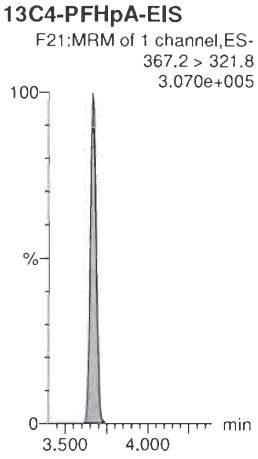
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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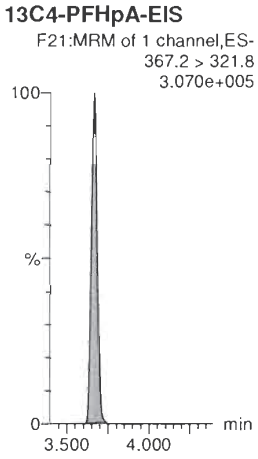


Quantify Sample Report **MassLynx V4.2 SCN977**

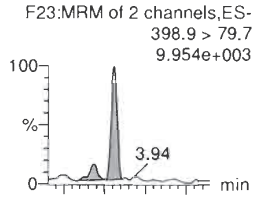
Vista Analytical Laboratory

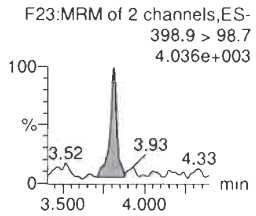
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:50:07 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

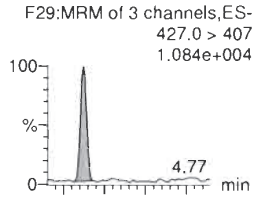
Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

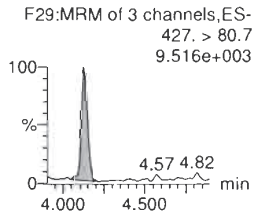
L-PFHxS





6:2 FTS





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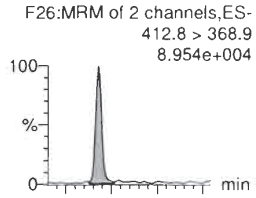

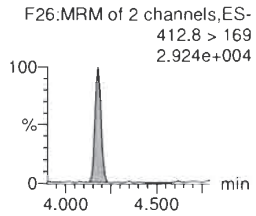

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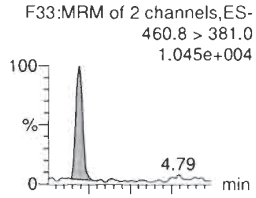

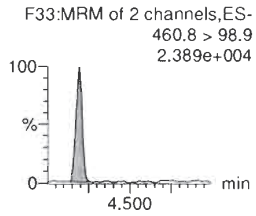

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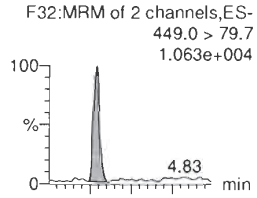

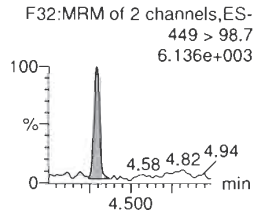

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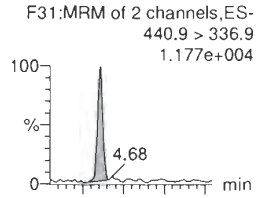

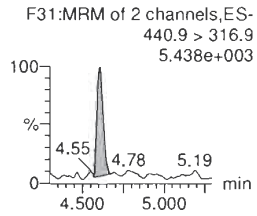

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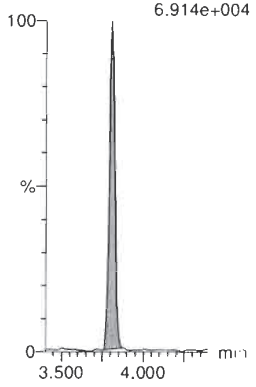

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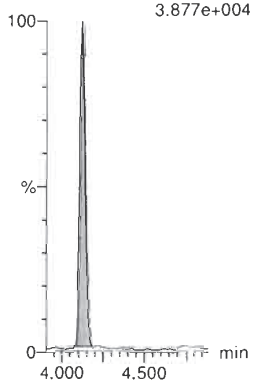

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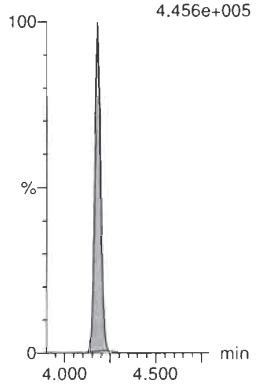

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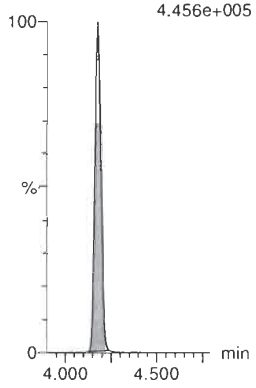

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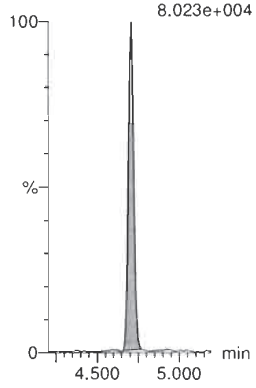
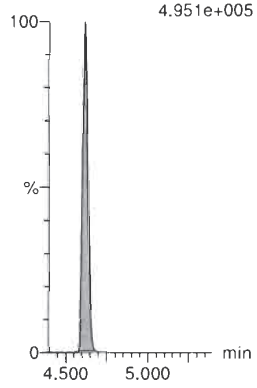


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977** Page 34 of 100
Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

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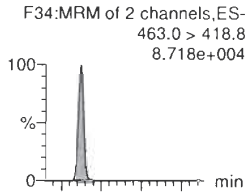

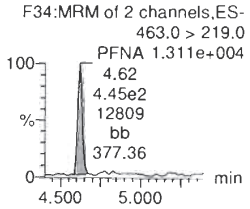

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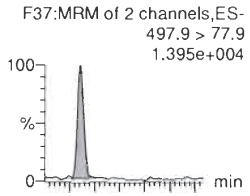

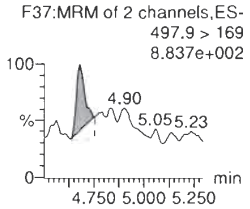

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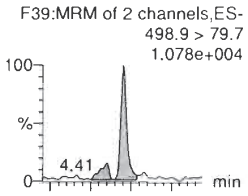

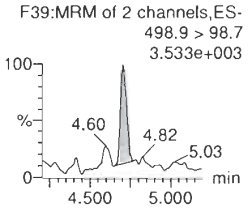

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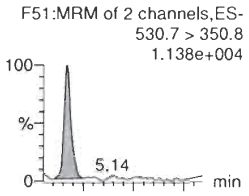

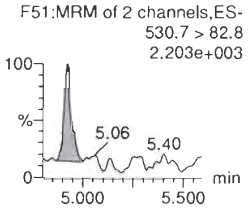

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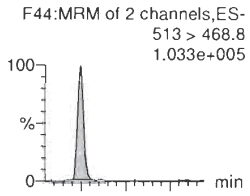

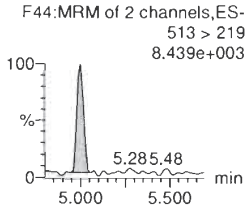

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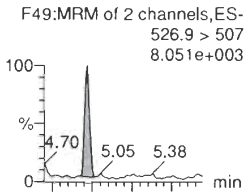

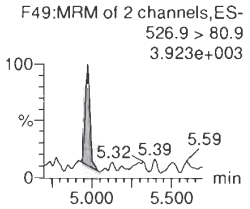

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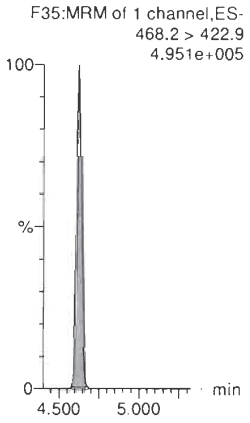

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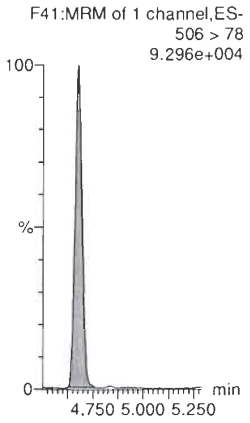

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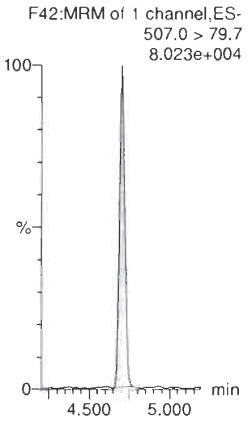

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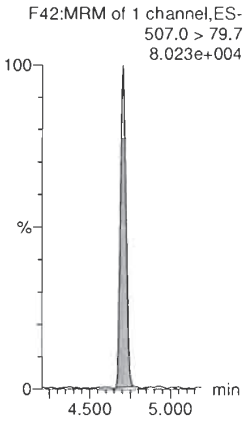

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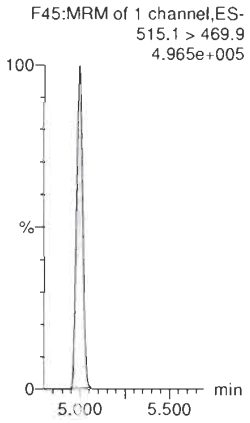

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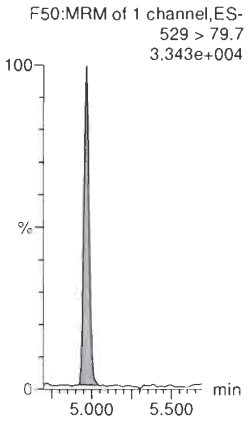

Quantify Sample Report **MassLynx V4.2 SCN977** Page 35 of 100
Vista Analytical Laboratory

Dataset: Untitled

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Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

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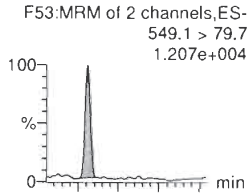

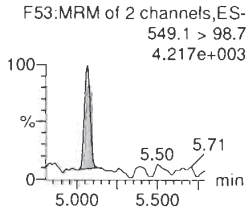

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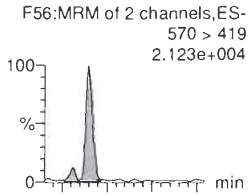

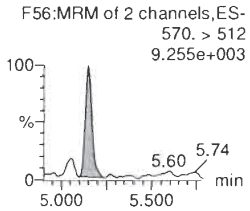

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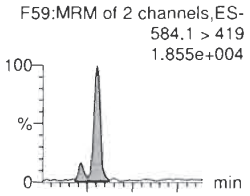

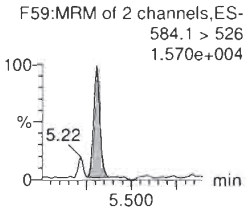

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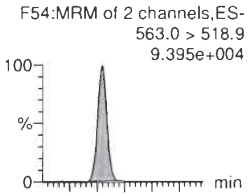

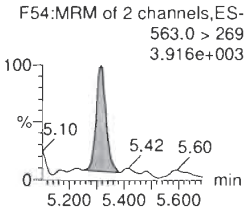

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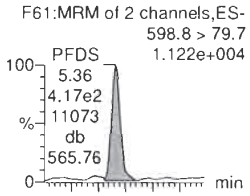

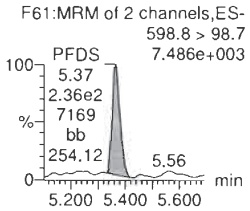

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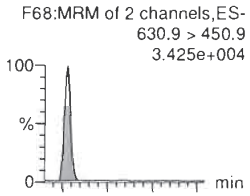

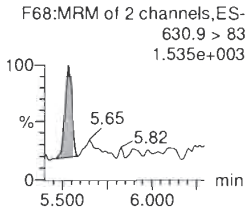

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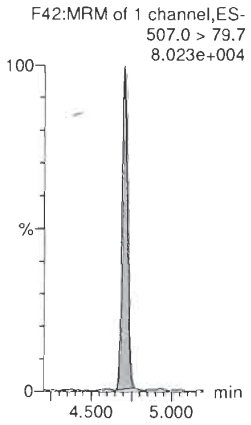

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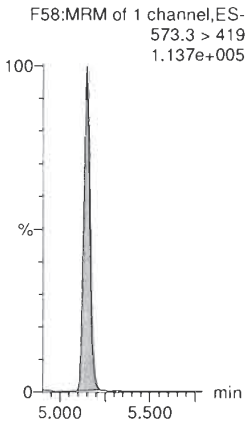

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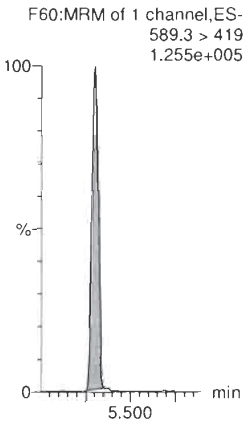

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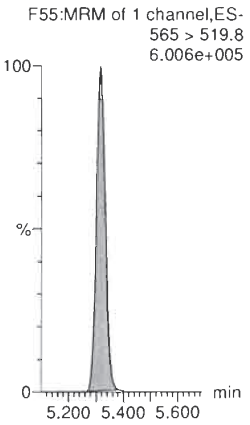

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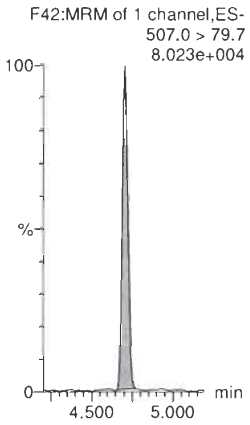

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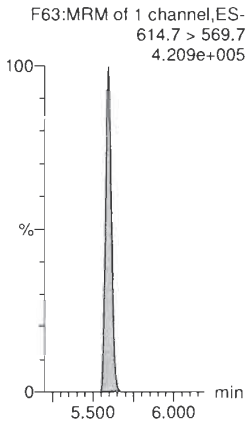

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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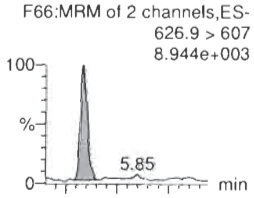
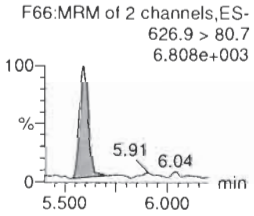
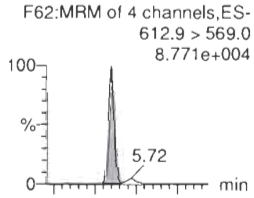
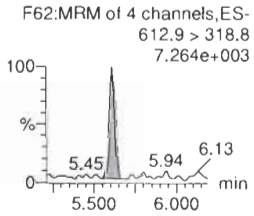


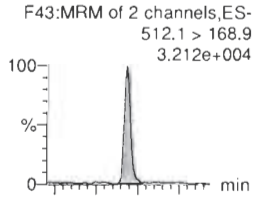


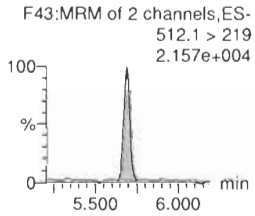
PFDoA



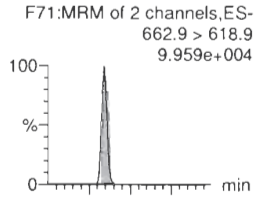


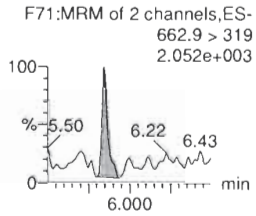
N-MeFOSA



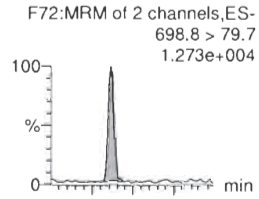


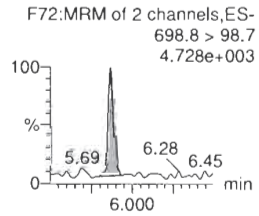
PFTrDA



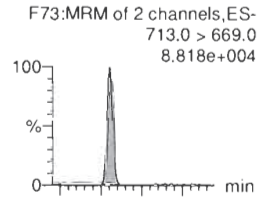


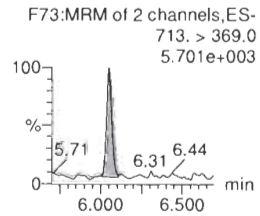
PFDoS



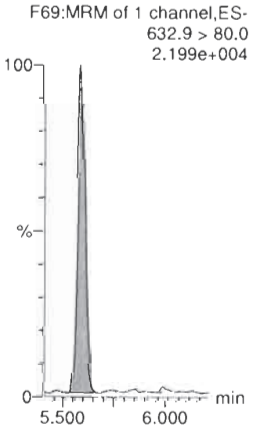


PFTeDA

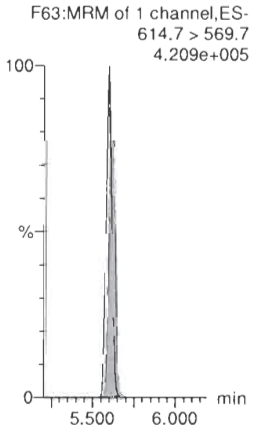




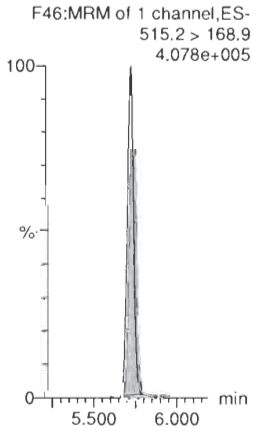
13C2-10:2 FTS-EIS



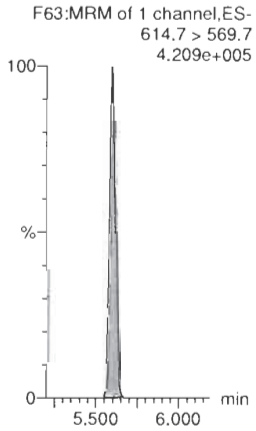
13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



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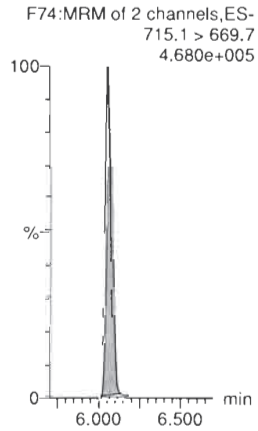
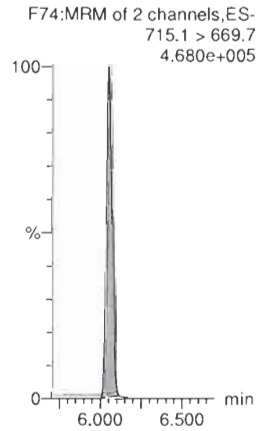


13C2-PFTeDA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

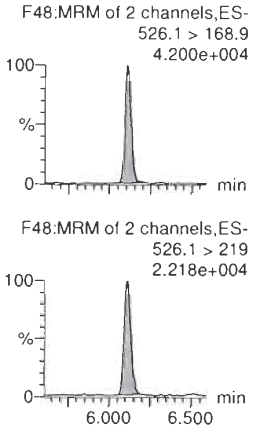
Vista Analytical Laboratory

Dataset: Untitled

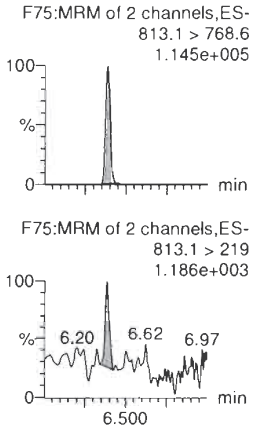
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

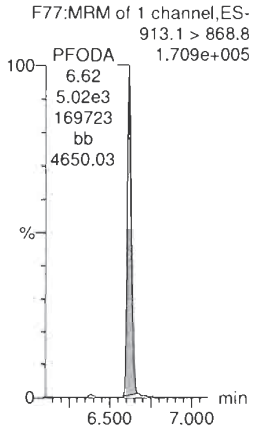
N-EtFOSA



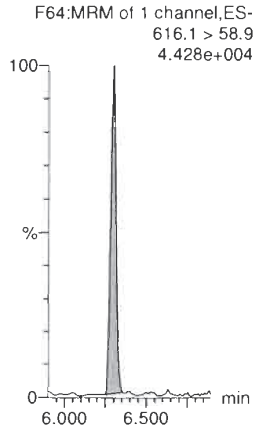
PFHxDA



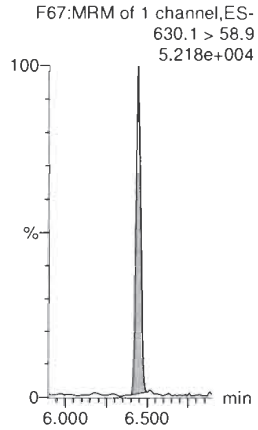
PFODA



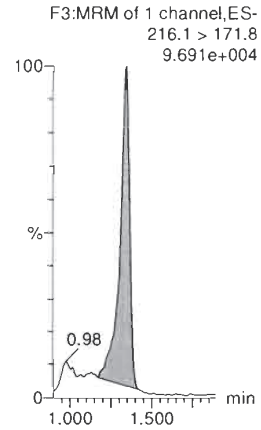
N-MeFOSE



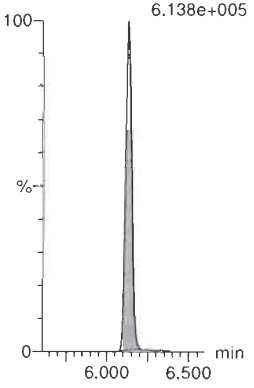
N-EtFOSE



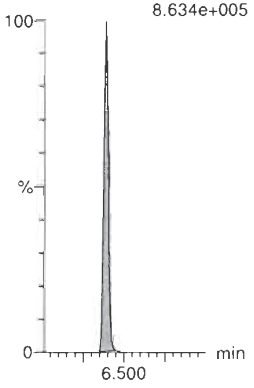
13C3-PFBA-RSD



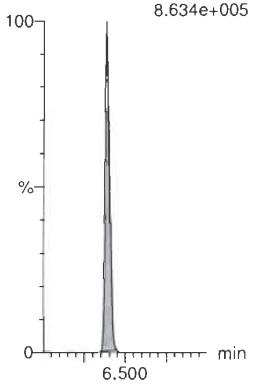
d5-N-ETFOSA-EIS



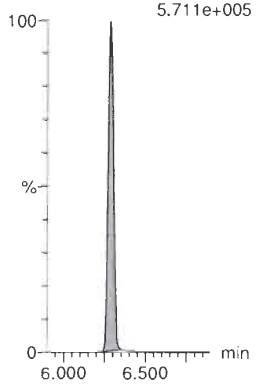
13C2-PFHxDA-EIS



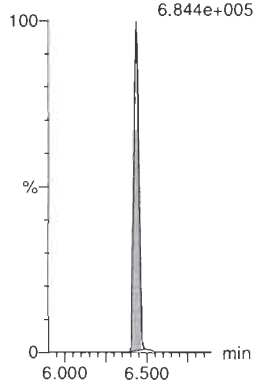
13C2-PFHxDA-EIS



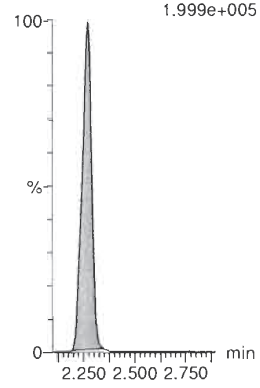
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

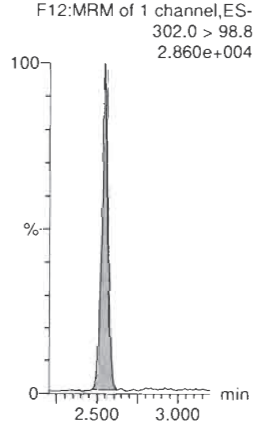
Vista Analytical Laboratory

Dataset: Untitled

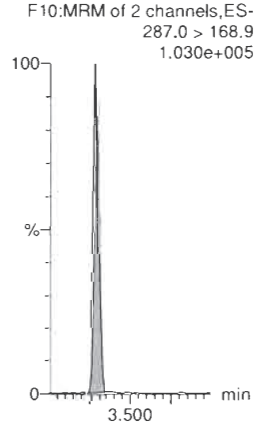
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

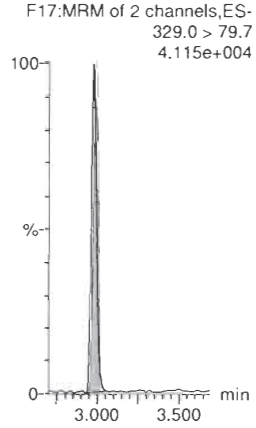
13C3-PFBS-RSD



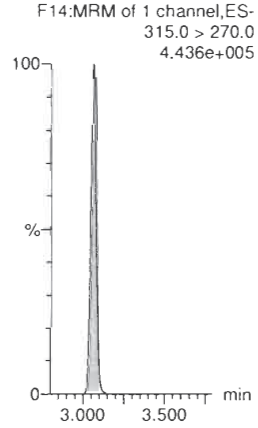
13C3-HFPO-DA-RSD



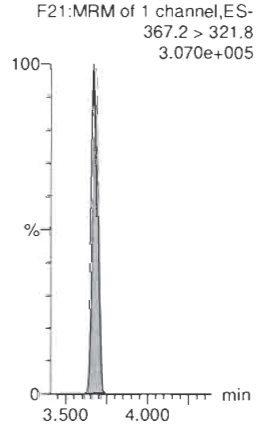
13C2-4:2 FTS-RSD



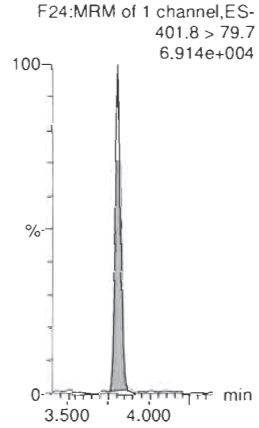
13C2-PFHxA-RSD



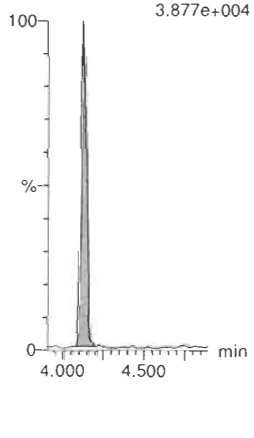
13C4-PFHpA-RSD



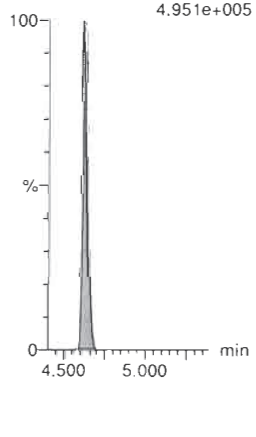
13C3-PFHxS-RSD



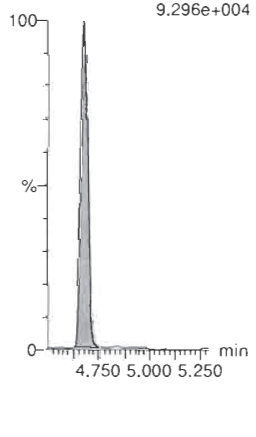
13C2-6:2 FTS-RSD



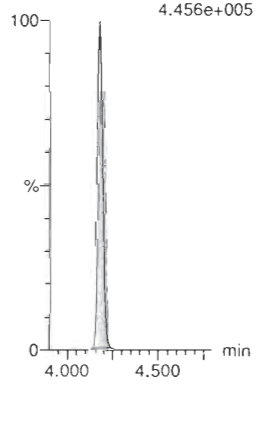
13C5-PFNA-RSD



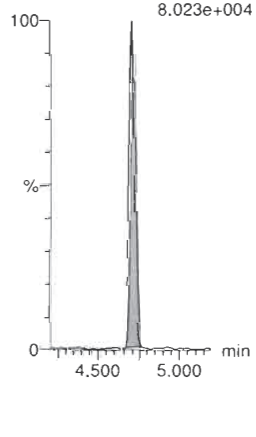
13C8-PFOSA-RSD



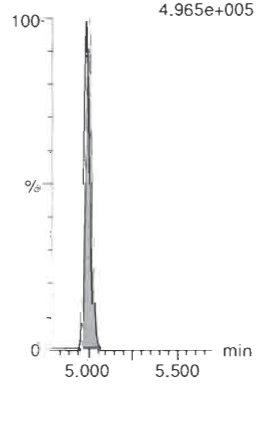
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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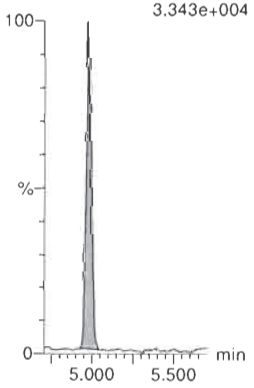
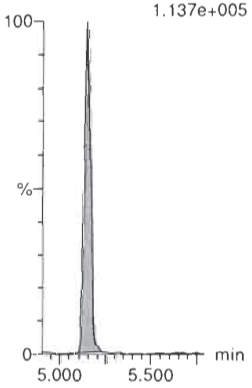
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

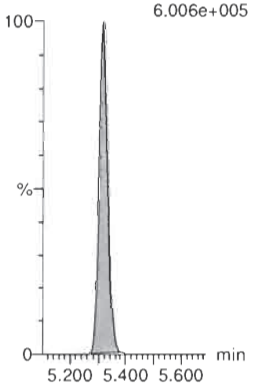
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.343e+004



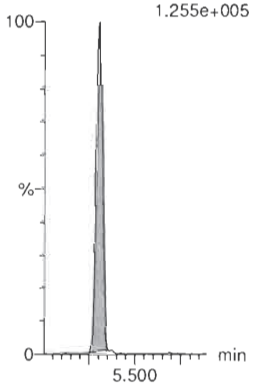
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.137e+005



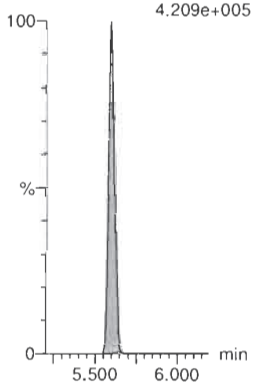
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
6.006e+005



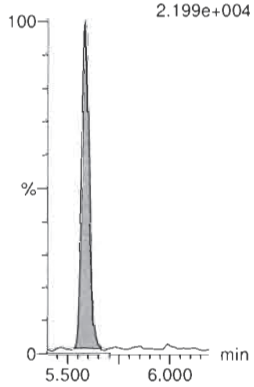
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.255e+005



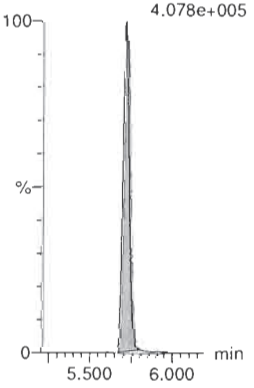
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.209e+005



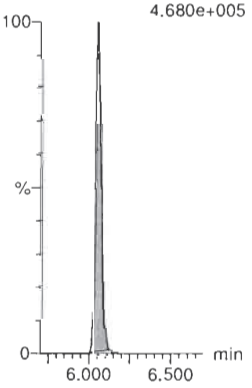
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.199e+004



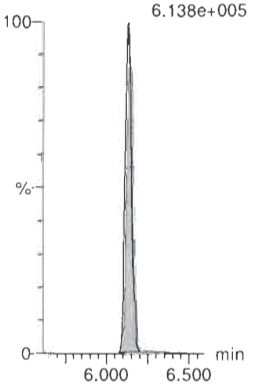
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.078e+005



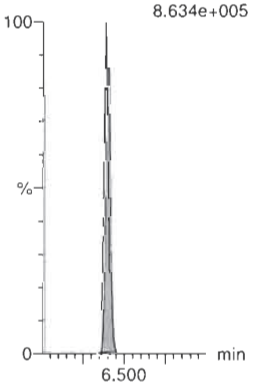
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.680e+005



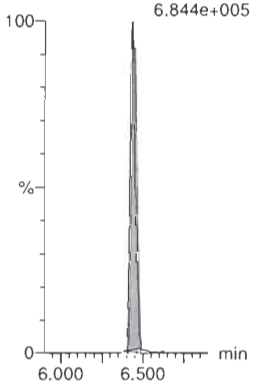
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
6.138e+005



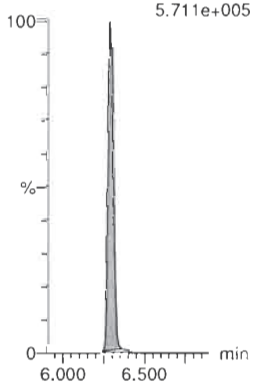
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
8.634e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.844e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.711e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

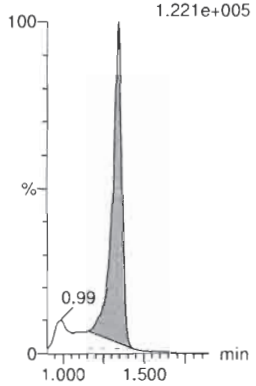
Vista Analytical Laboratory

Dataset: Untitled

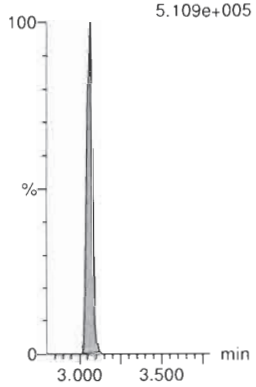
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-6, Date: 28-Feb-2020, Time: 13:38:16, ID: ST200228P2-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

13C4-PFBA



13C5-PFHxA



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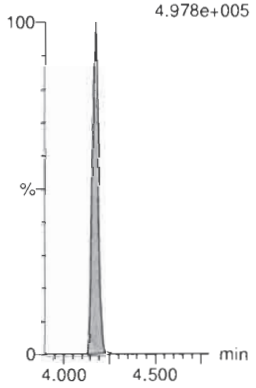
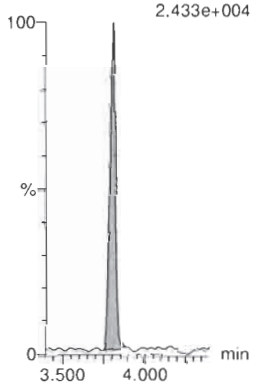
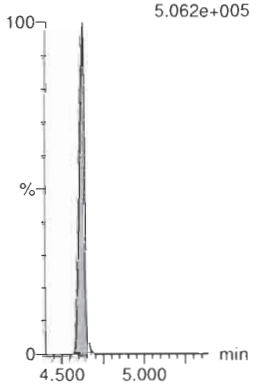


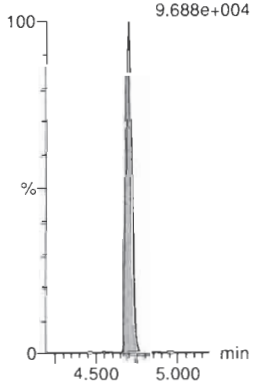
18O2-PFHxS



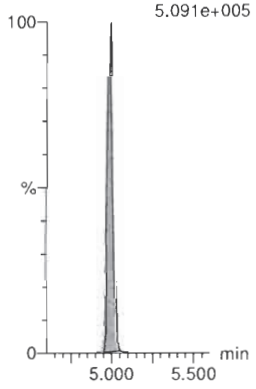
13C9-PFNA



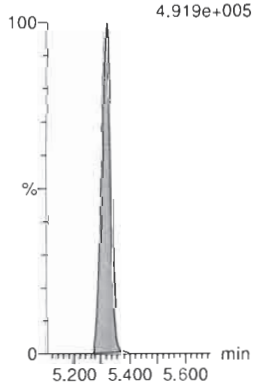
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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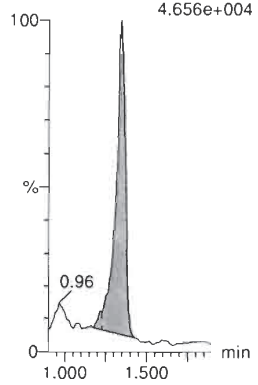
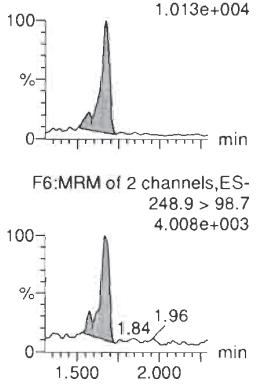
Last Altered: Saturday, February 29, 2020 09:50:07 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:51:09 Pacific Standard Time

Name: 200228P2-7, Date: 28-Feb-2020, Time: 13:48:48, ID: ST200228P2-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

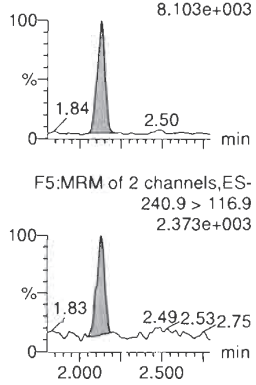
PFBA



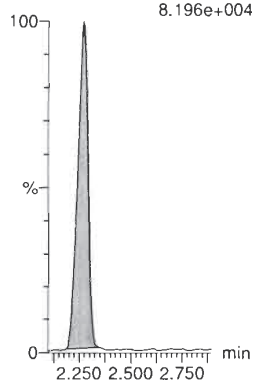
PFPrS



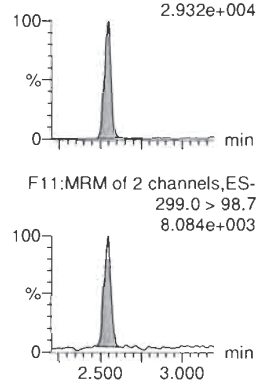
3:3 FTCA



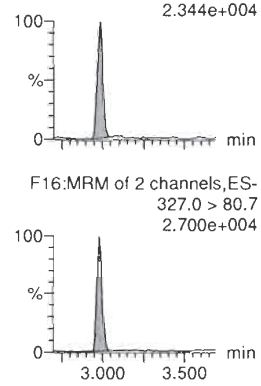
PFPeA



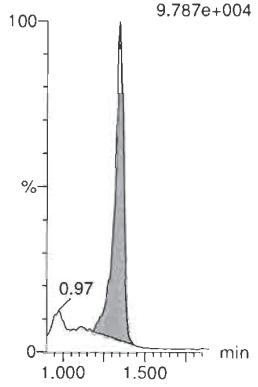
PFBS



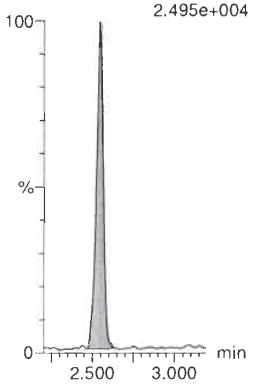
4:2 FTS



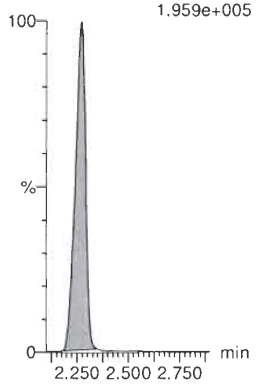
13C3-PFBA-EIS



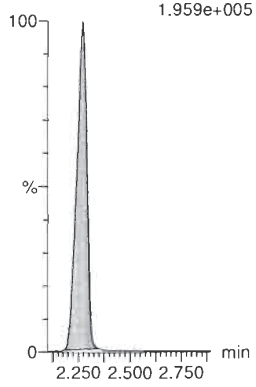
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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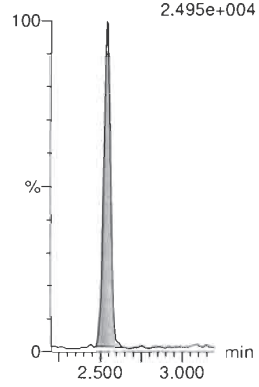
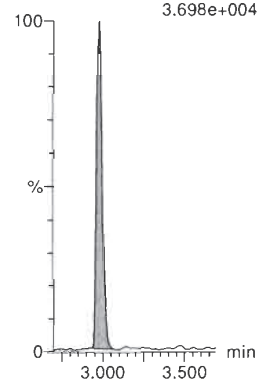


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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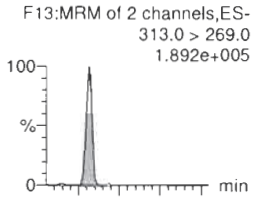
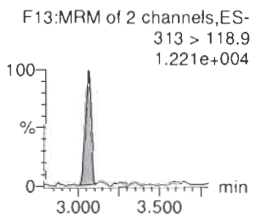
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-7, Date: 28-Feb-2020, Time: 13:48:48, ID: ST200228P2-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

PFHxA





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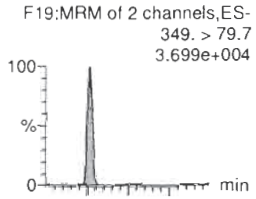
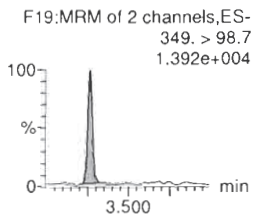
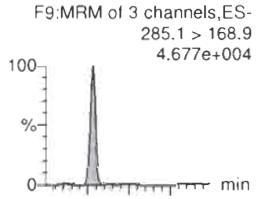
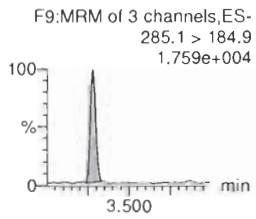


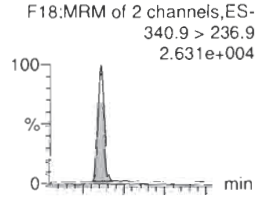


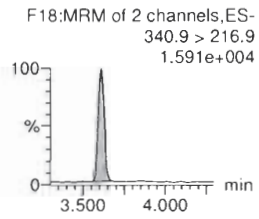
HFPO-DA



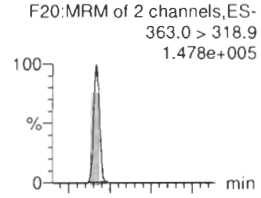


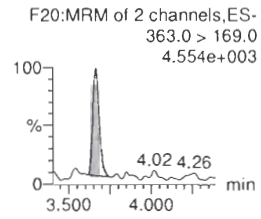
5:3 FTCA





PFHpA





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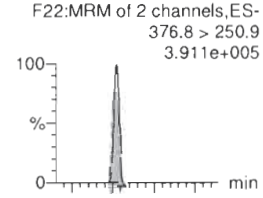

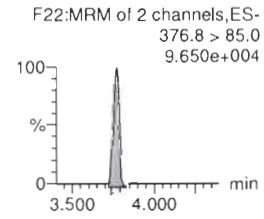

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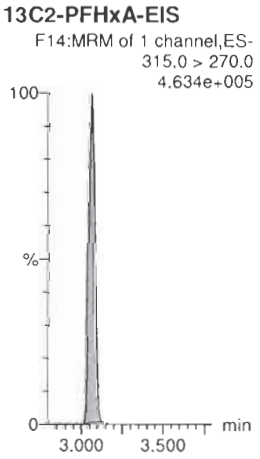
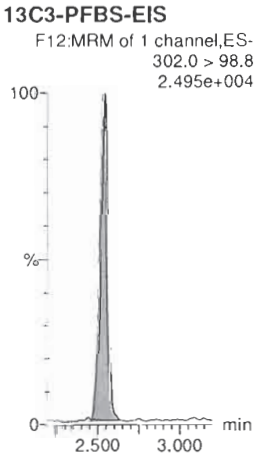
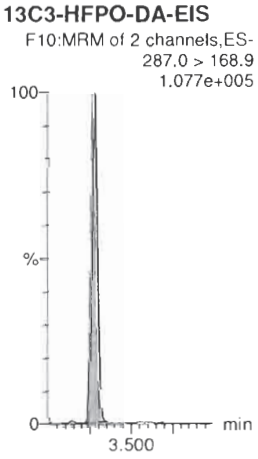


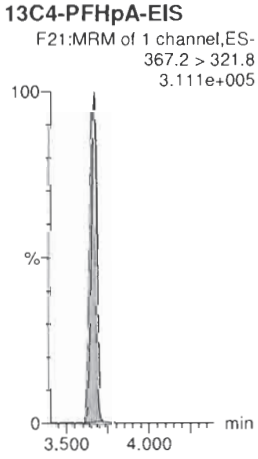
13C3-PFBS-EIS



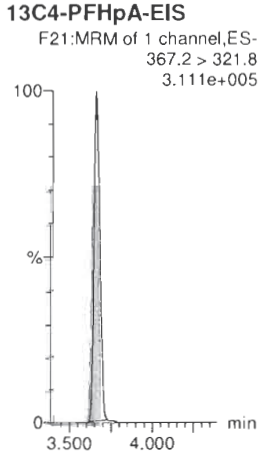
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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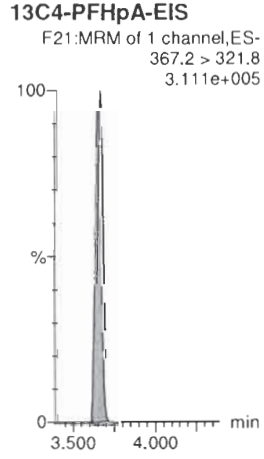


Quantify Sample Report **MassLynx V4.2 SCN977**

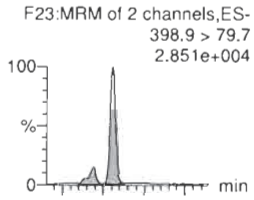
Vista Analytical Laboratory

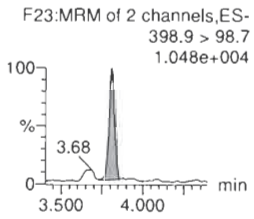
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

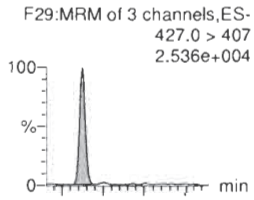
Name: 200228P2-7, Date: 28-Feb-2020, Time: 13:48:48, ID: ST200228P2-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

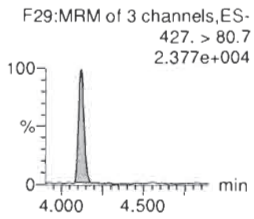
L-PFHxS



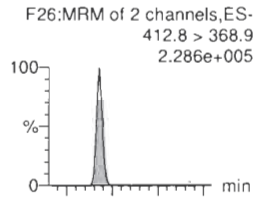


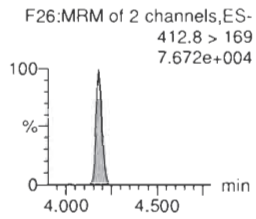
6:2 FTS



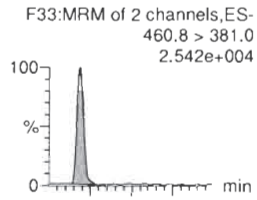


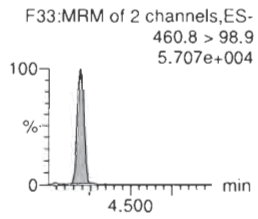
L-PFOA



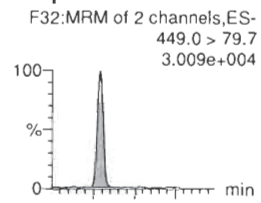


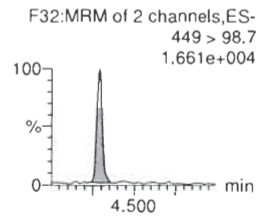
PFEChS



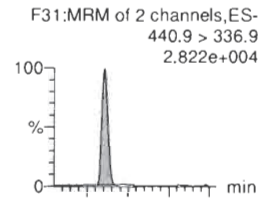


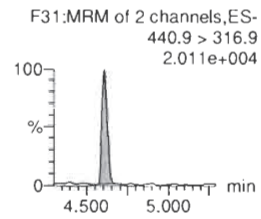
PFHpS





7:3 FTCA





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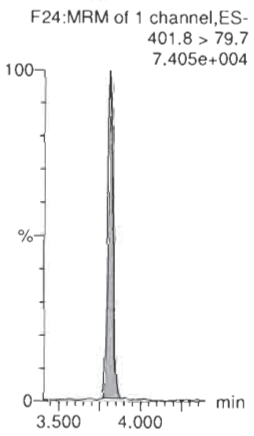

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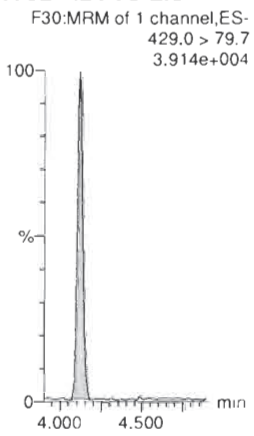

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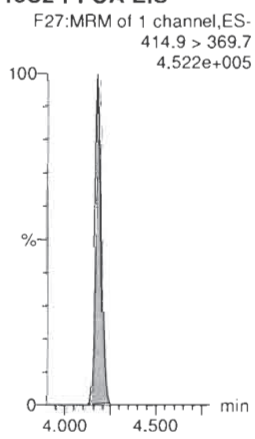

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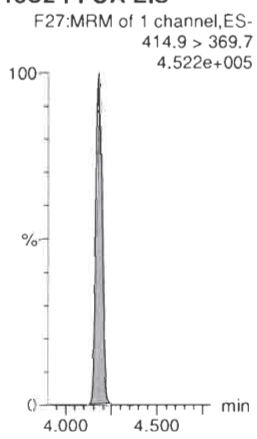

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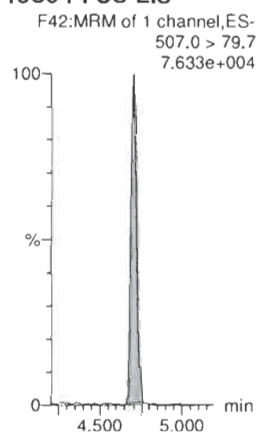

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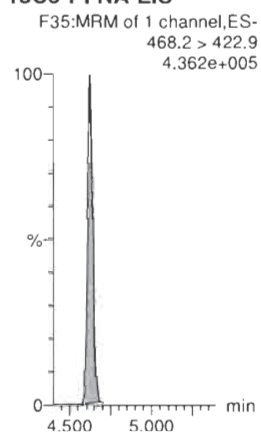

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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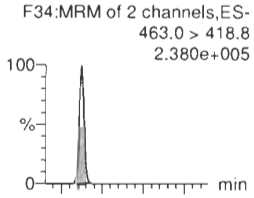

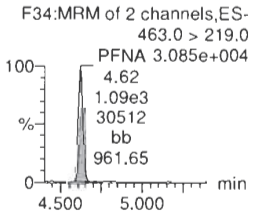

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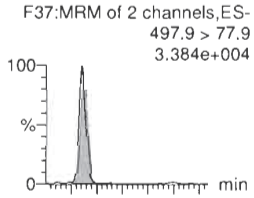

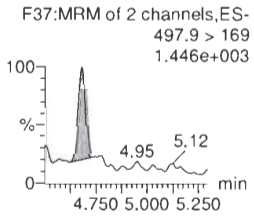

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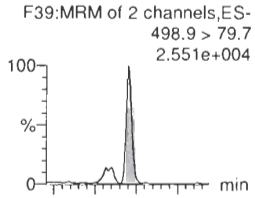

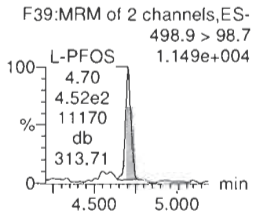

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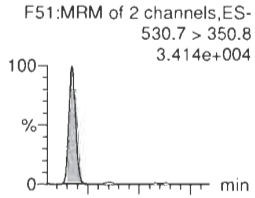

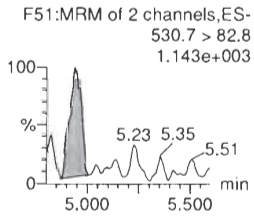

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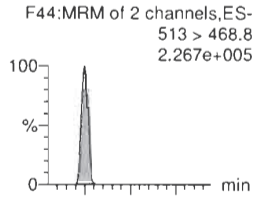

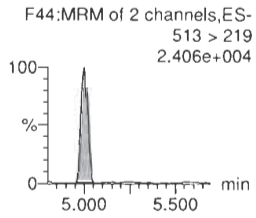

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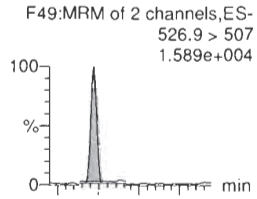

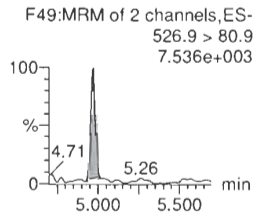

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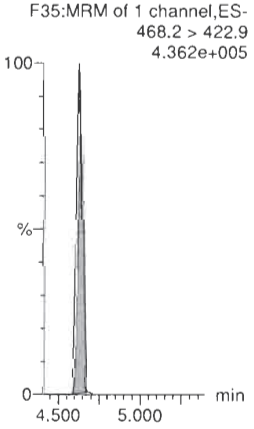

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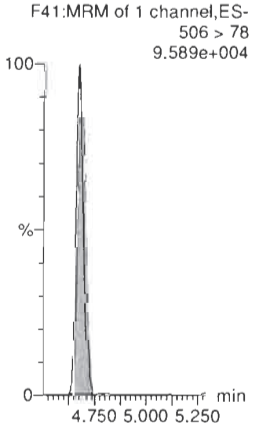

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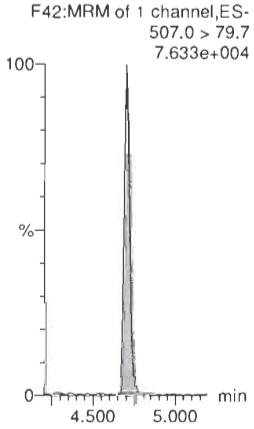

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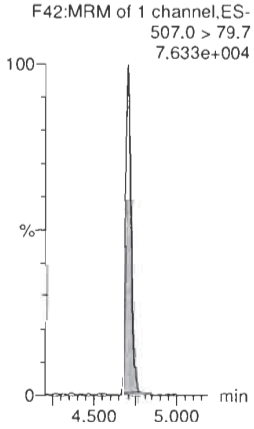

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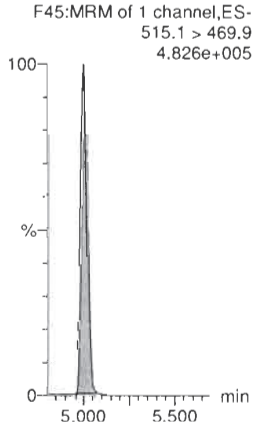

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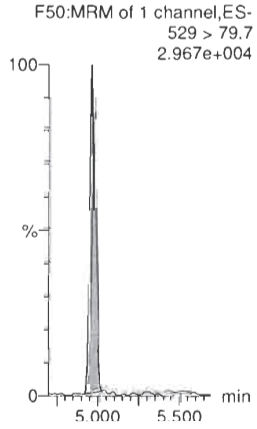

Quantify Sample Report **MassLynx V4.2 SCN977** Page 45 of 100
Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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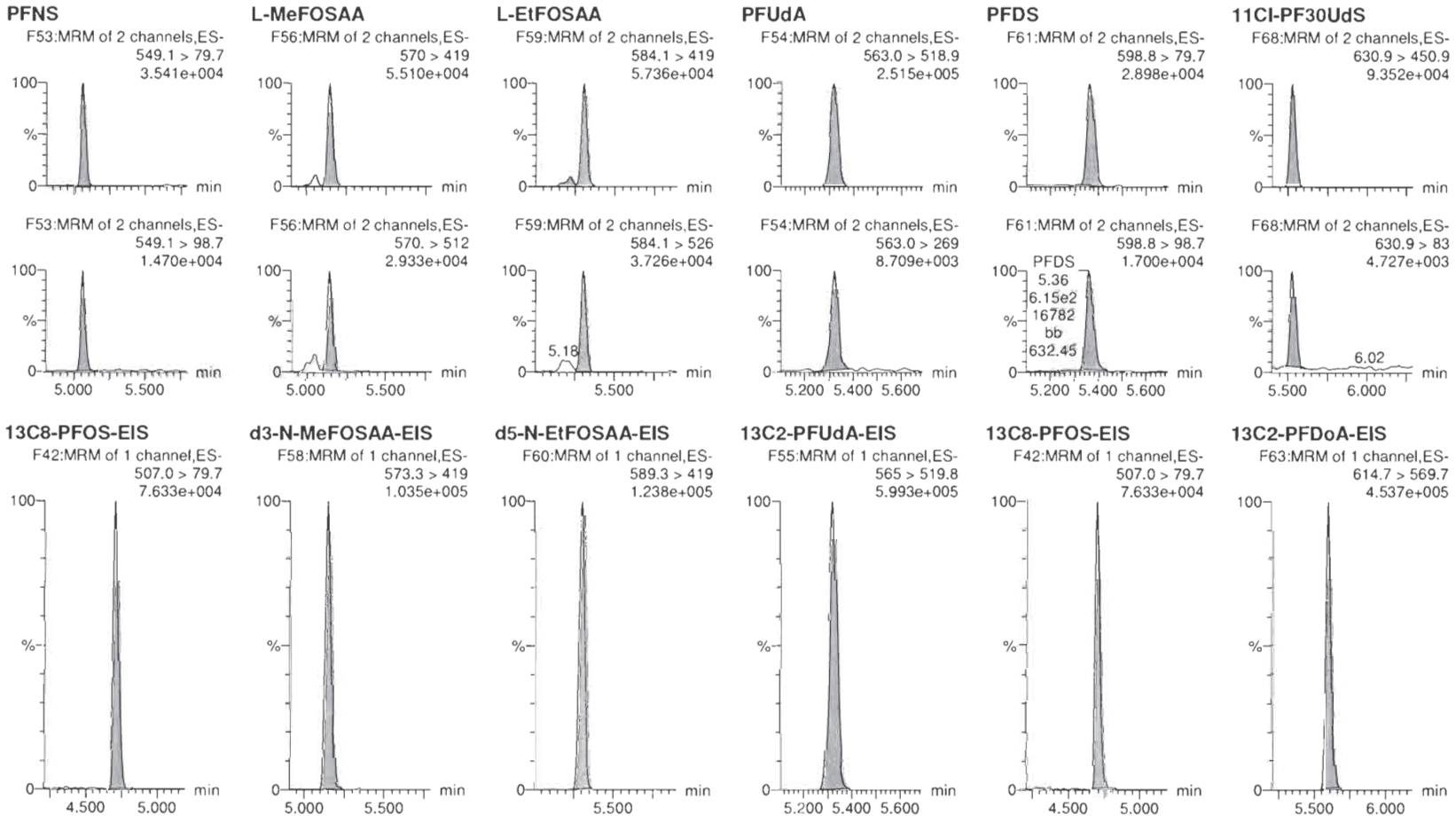

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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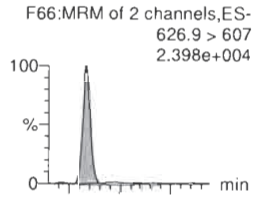

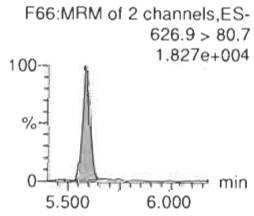

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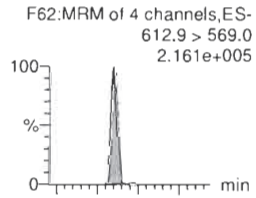

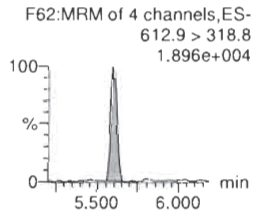

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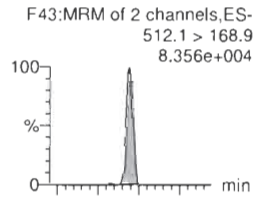

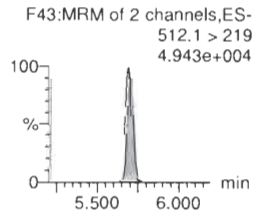

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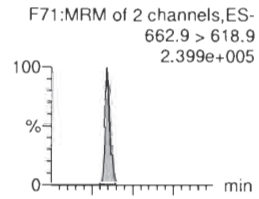

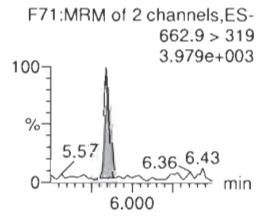

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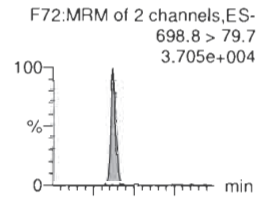

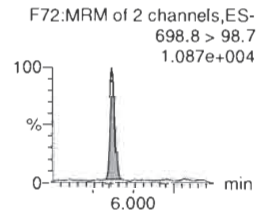

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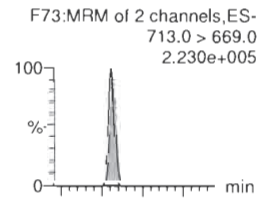

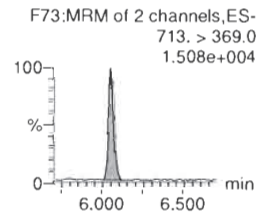

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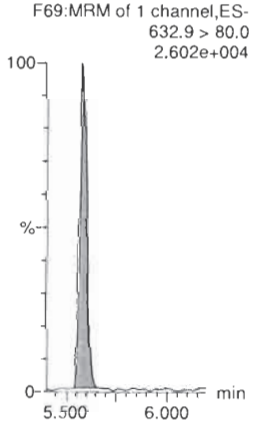

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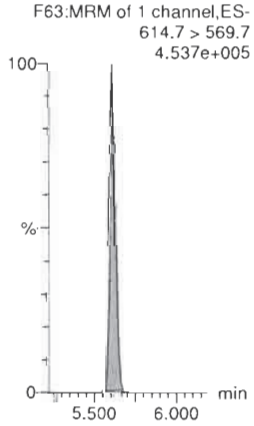

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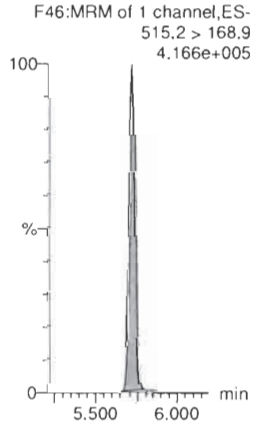

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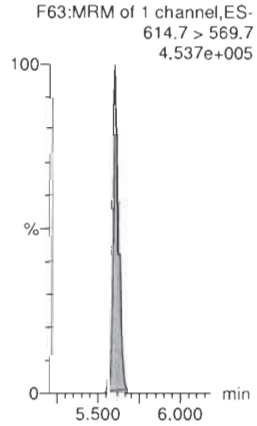

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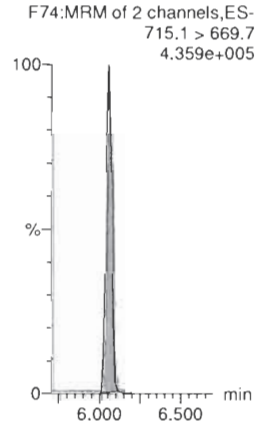

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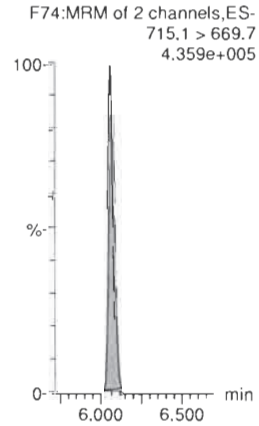

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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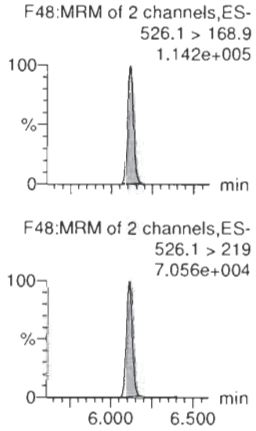

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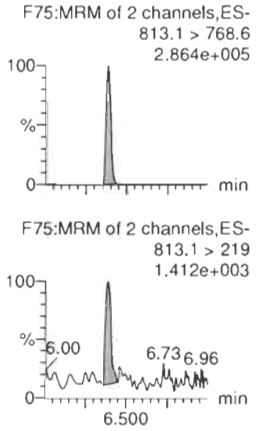

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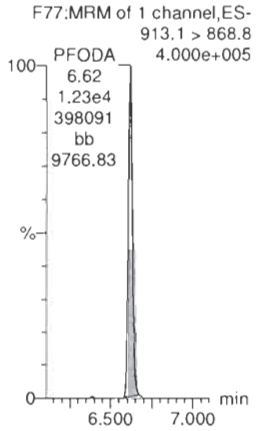

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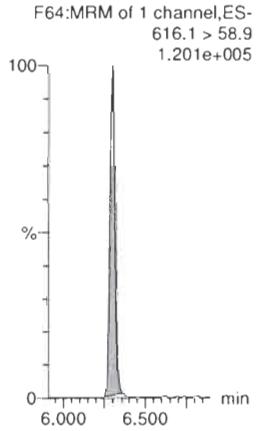

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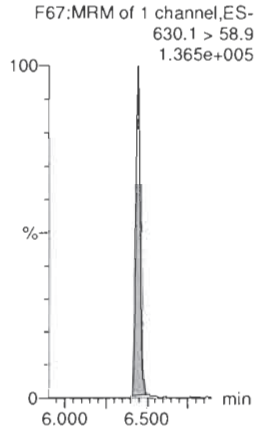

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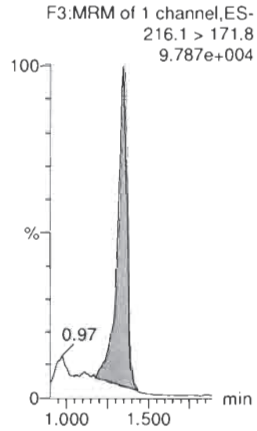

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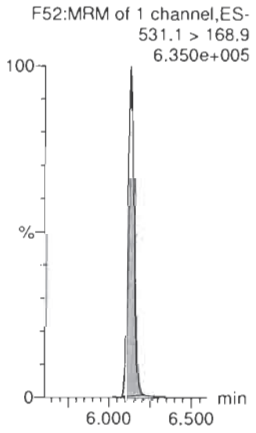

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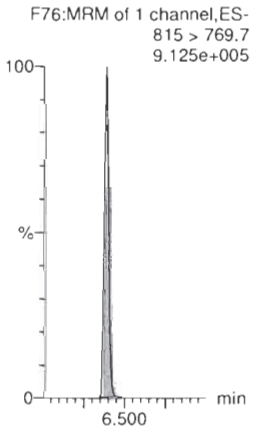
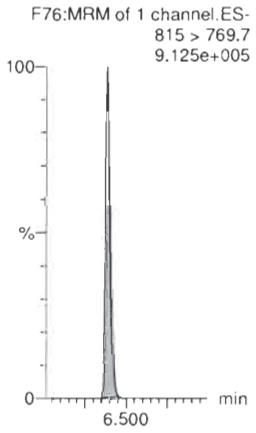
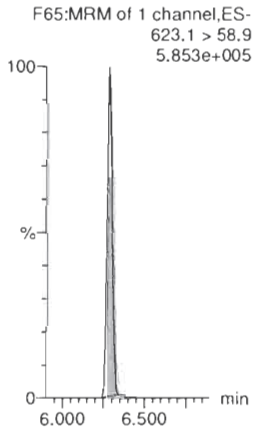


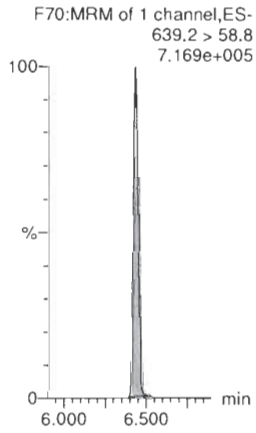
13C2-PFHxDA-EIS



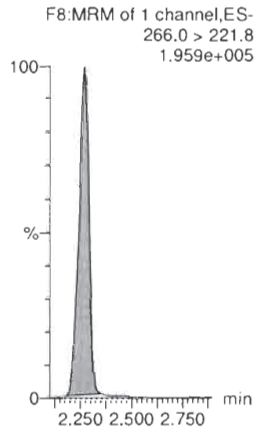
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

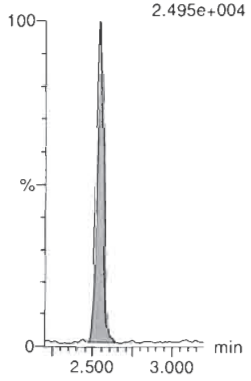
Vista Analytical Laboratory

Dataset: Untitled

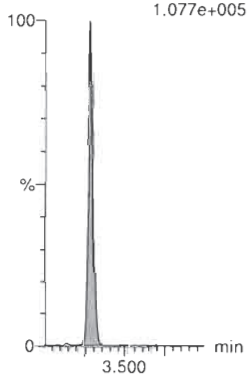
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-7, Date: 28-Feb-2020, Time: 13:48:48, ID: ST200228P2-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

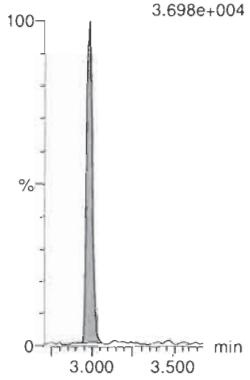
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.495e+004



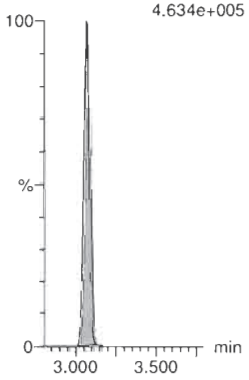
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.077e+005



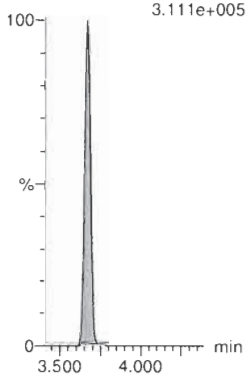
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.698e+004



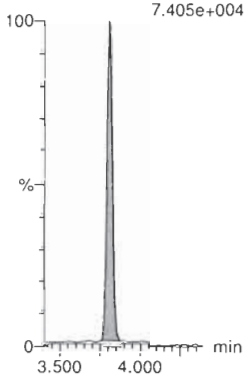
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
4.634e+005



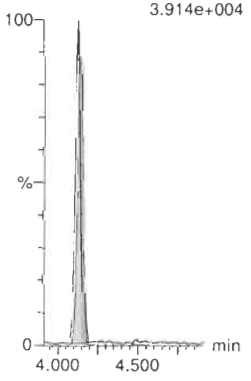
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.111e+005



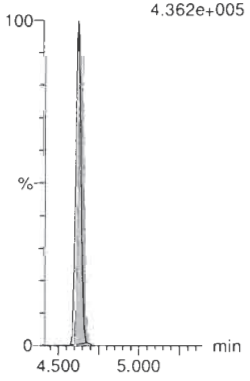
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
7.405e+004



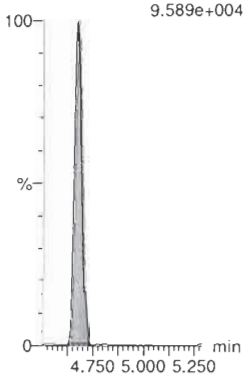
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.914e+004



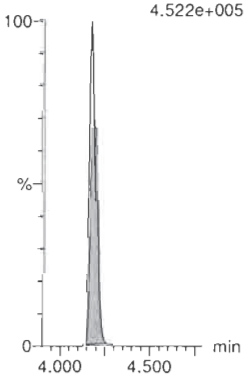
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.362e+005



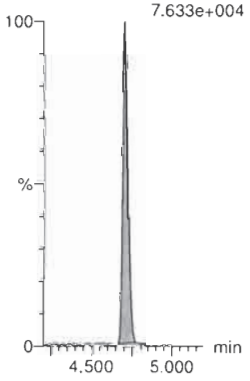
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.589e+004



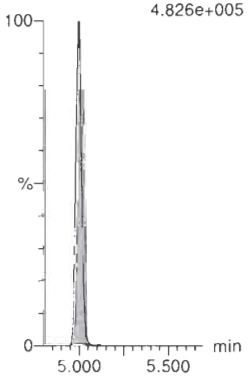
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.522e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
7.633e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
4.826e+005



Quantify Sample Report **MassLynx V4.2 SCN977** Page 49 of 100
Vista Analytical Laboratory

Dataset: Untitled

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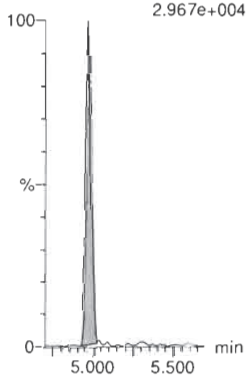
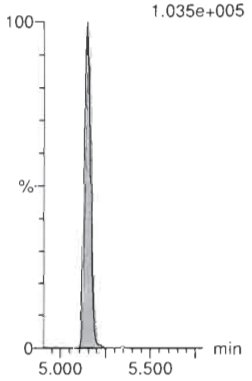
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-7, Date: 28-Feb-2020, Time: 13:48:48, ID: ST200228P2-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

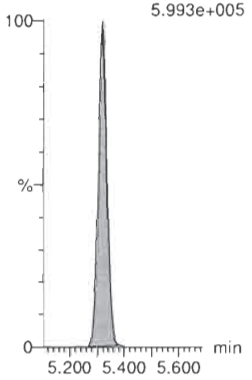
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.967e+004



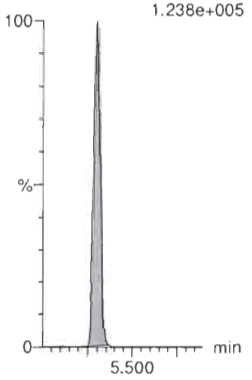
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.035e+005



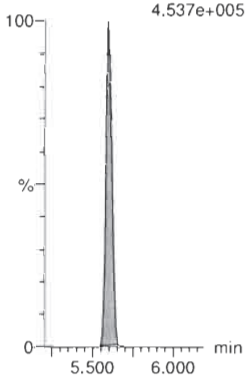
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
5.993e+005



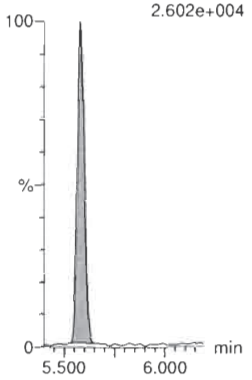
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.238e+005



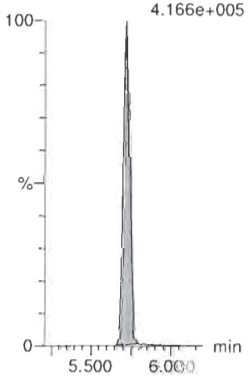
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.537e+005



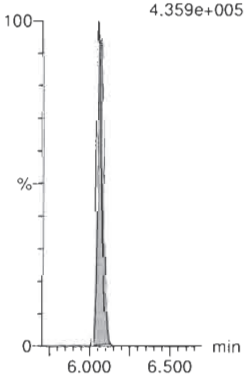
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.602e+004



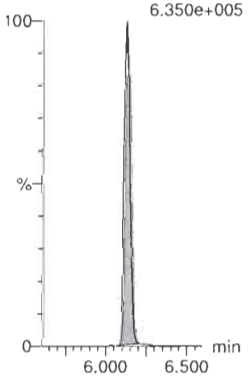
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.166e+005



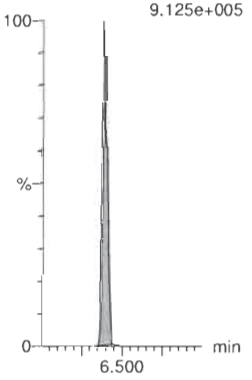
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.359e+005



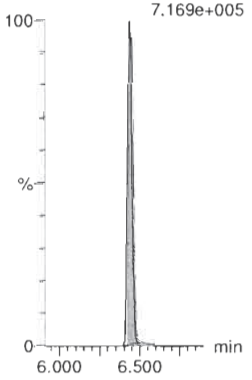
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
6.350e+005



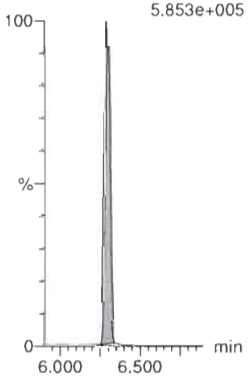
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
9.125e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
7.169e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.853e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

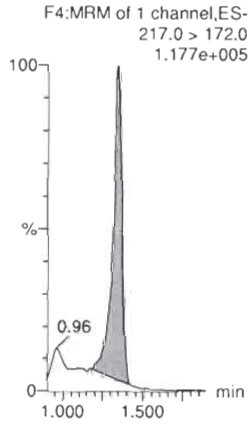
Vista Analytical Laboratory

Dataset: Untitled

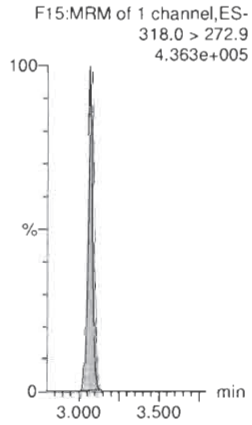
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-7, Date: 28-Feb-2020, Time: 13:48:48, ID: ST200228P2-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

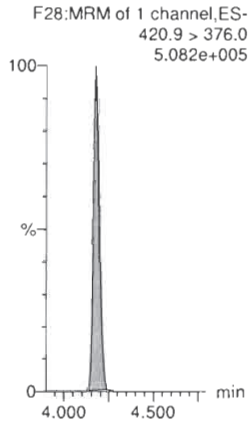
13C4-PFBA



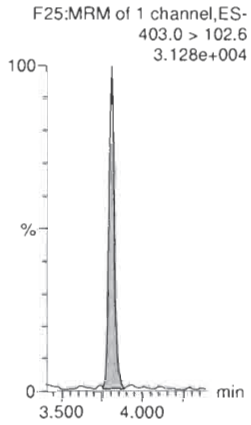
13C5-PFHxA



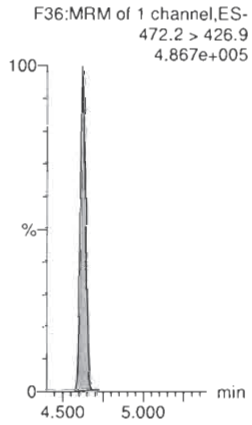
13C8-PFOA



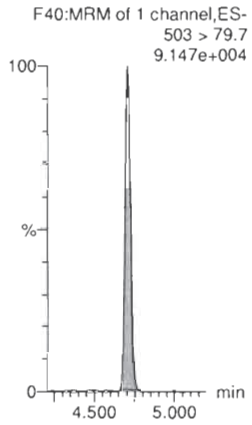
18O2-PFHxS



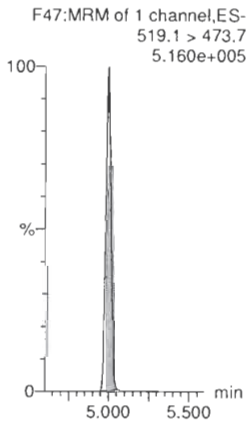
13C9-PFNA



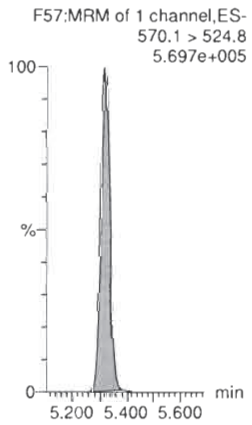
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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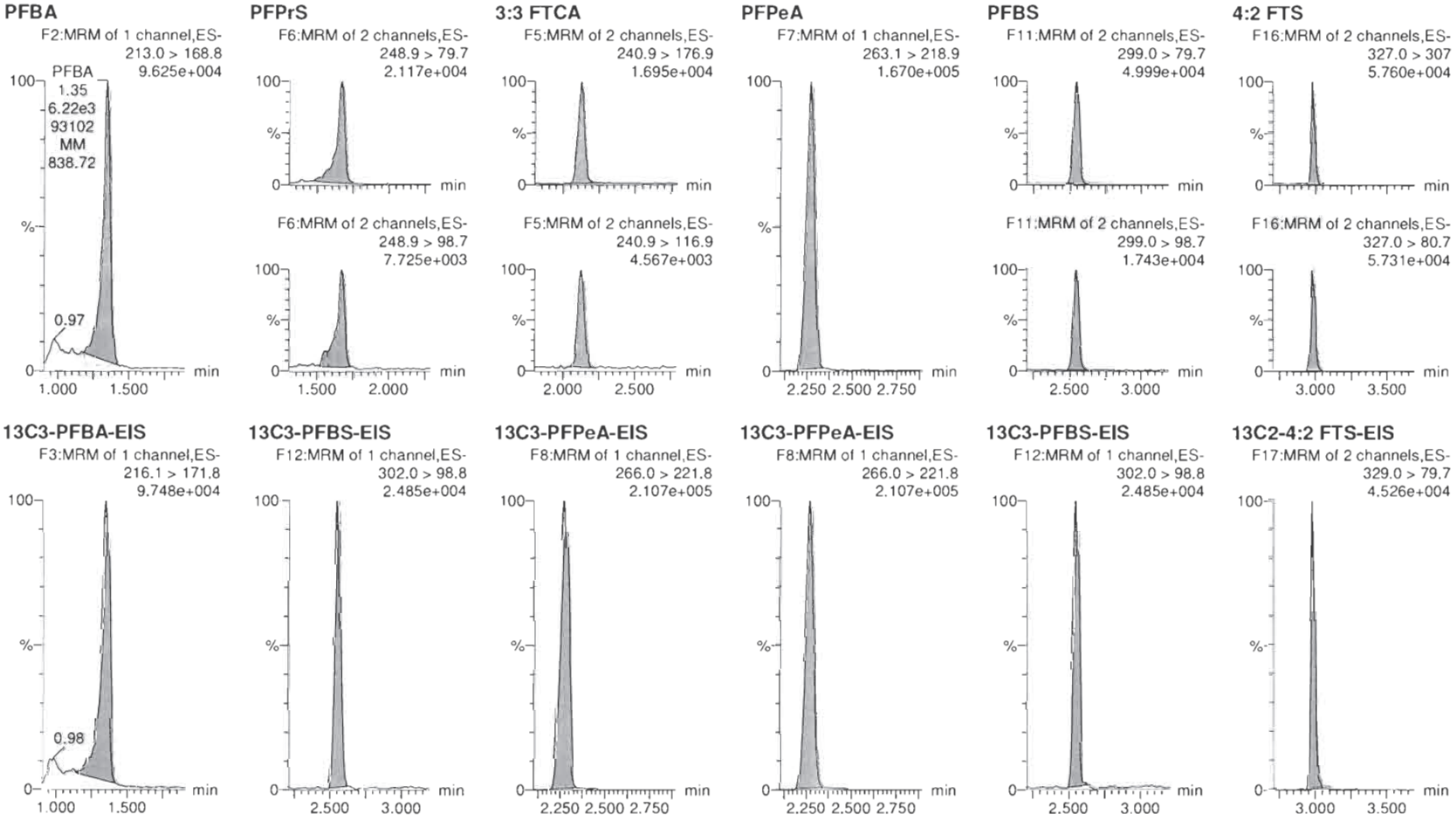

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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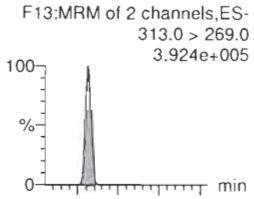
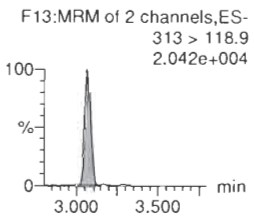
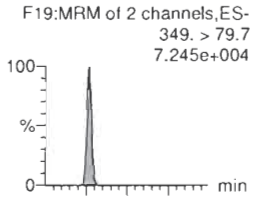
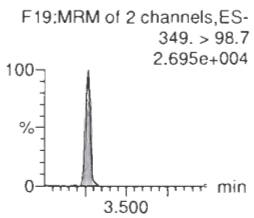
PFHxA



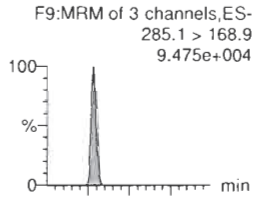


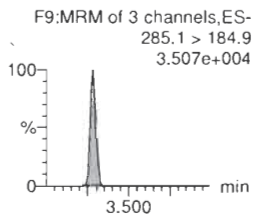
PFPeS





HFPO-DA





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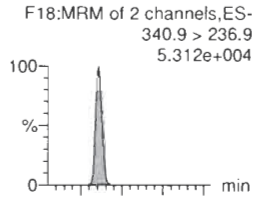
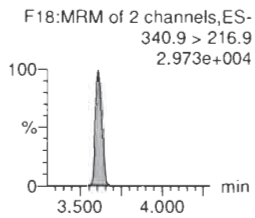
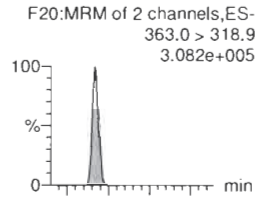
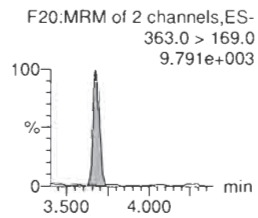




PFHpA





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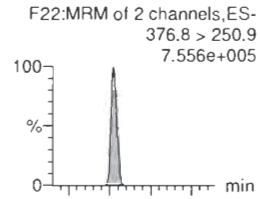

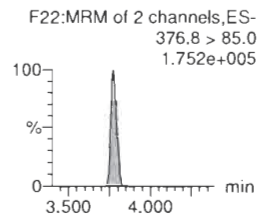

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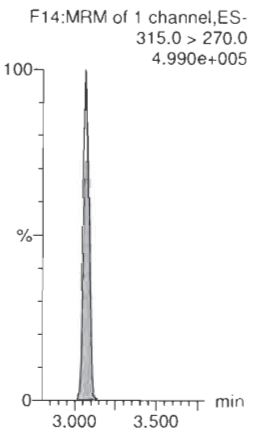

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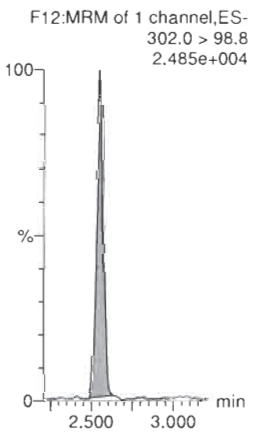

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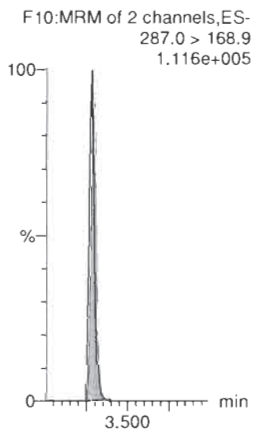

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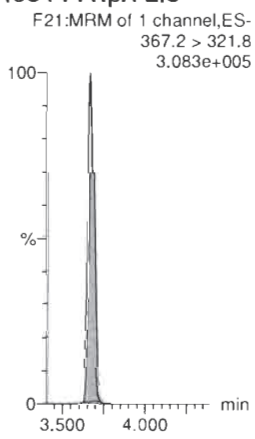

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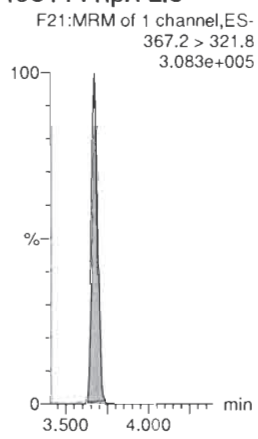

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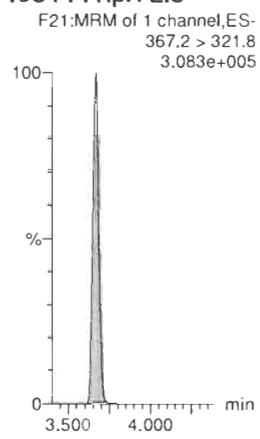

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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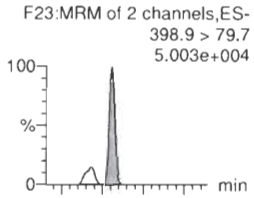

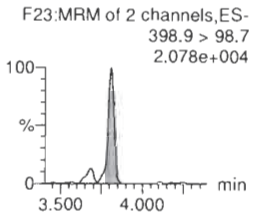

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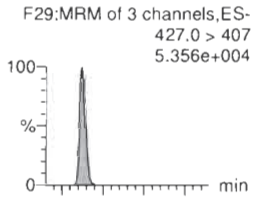

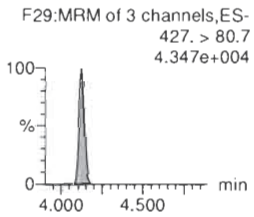

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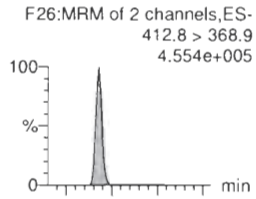

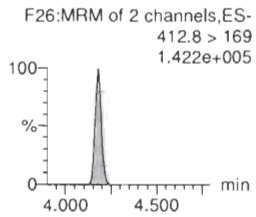

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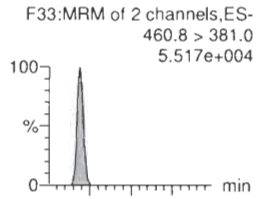

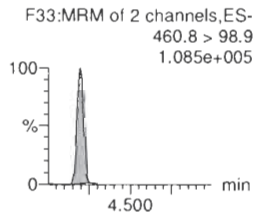

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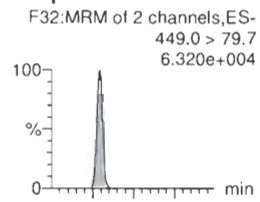

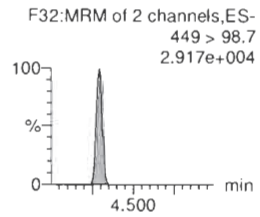

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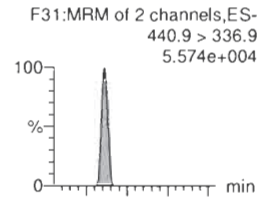

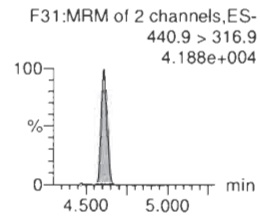

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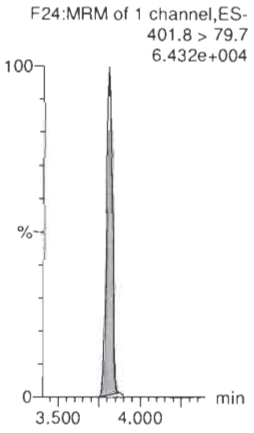

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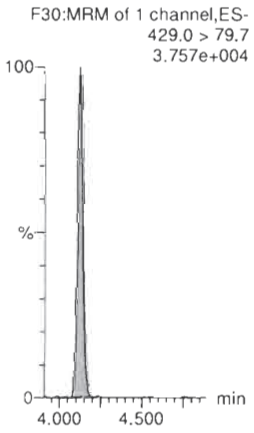

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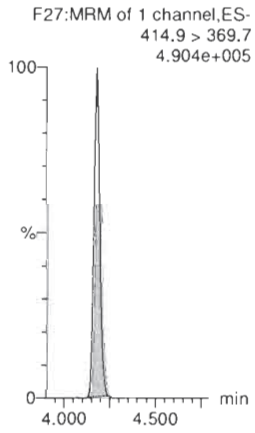

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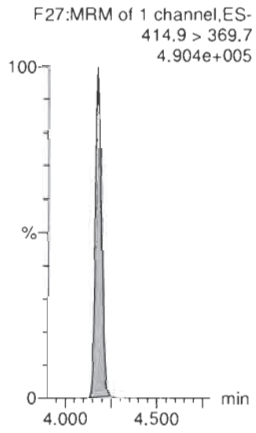
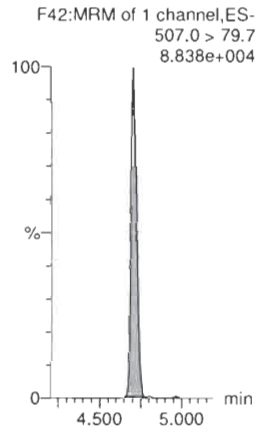
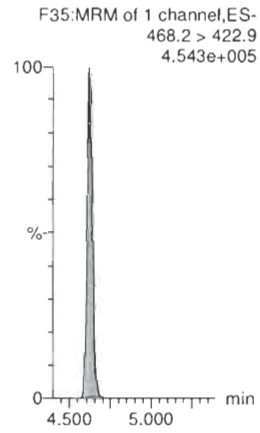


13C8-PFOS-EIS



13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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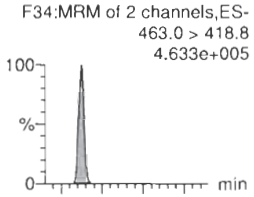

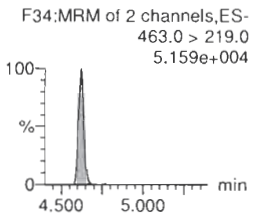

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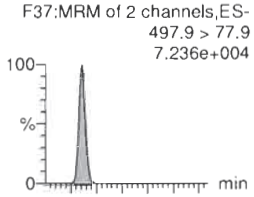

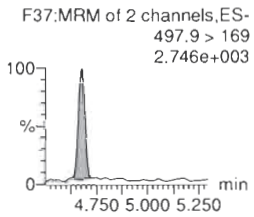

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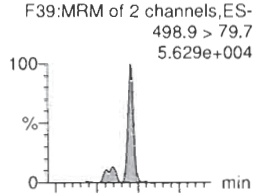

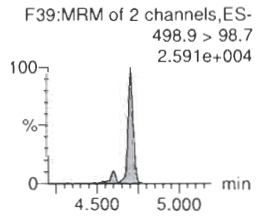

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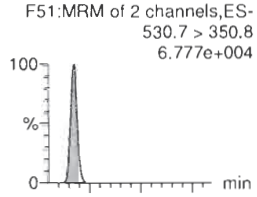

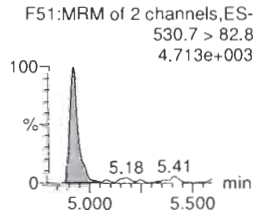

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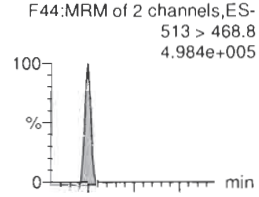

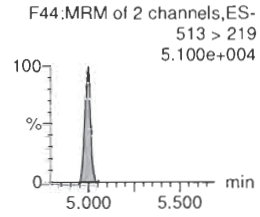

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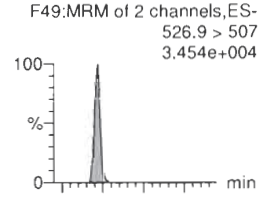

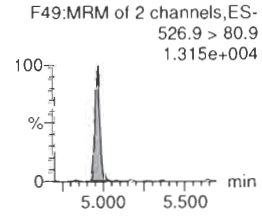

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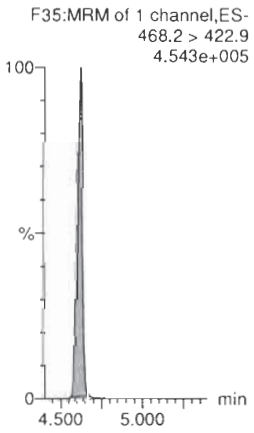

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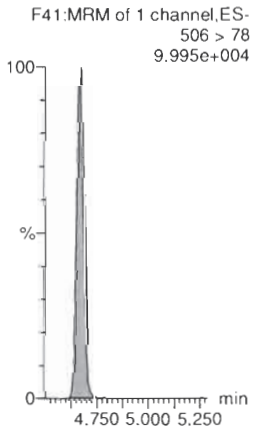

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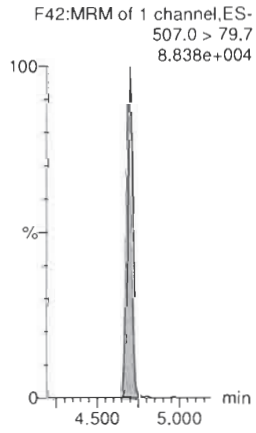

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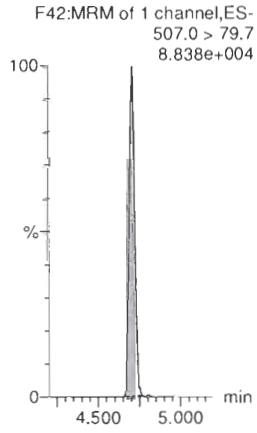

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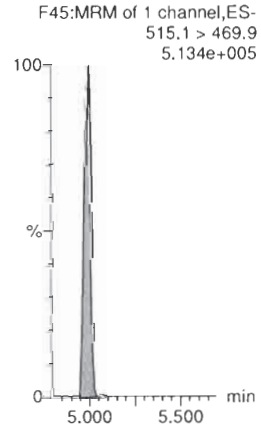

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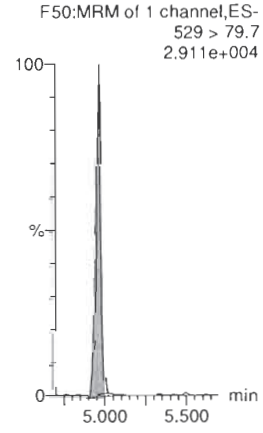

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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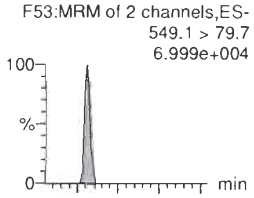

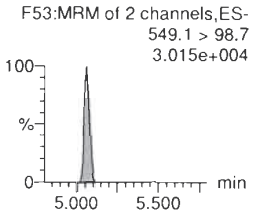

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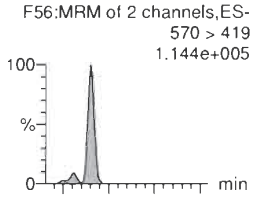

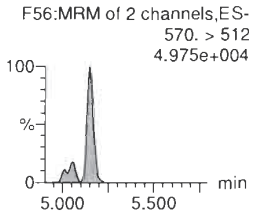

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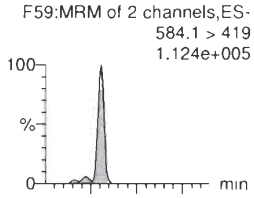

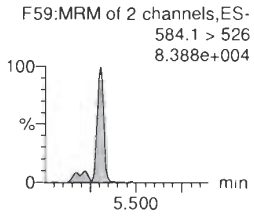

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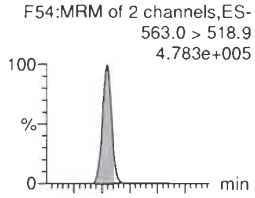
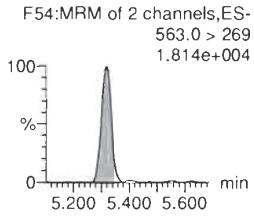
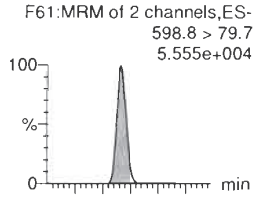
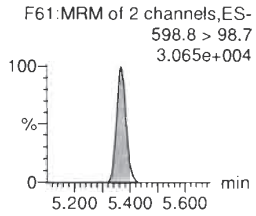




PFDS





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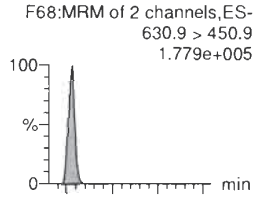
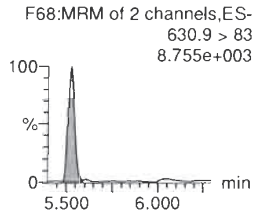
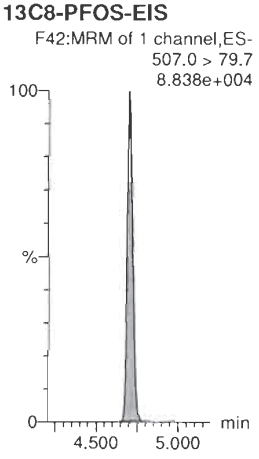
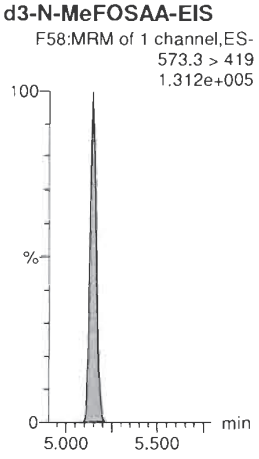




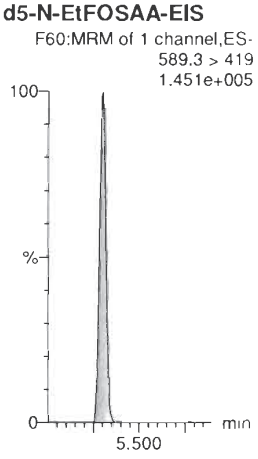
13C8-PFOS-EIS



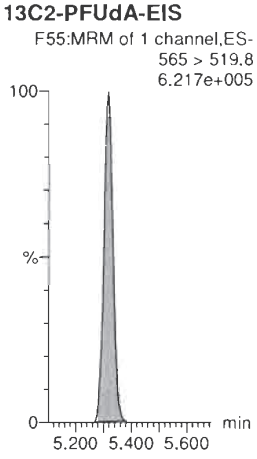
d3-N-MeFOSAA-EIS



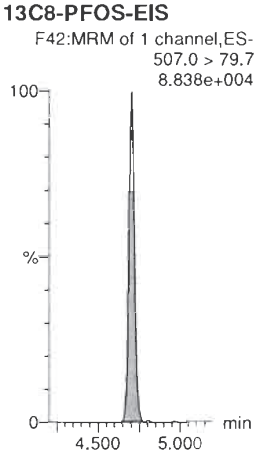
d5-N-EtFOSAA-EIS



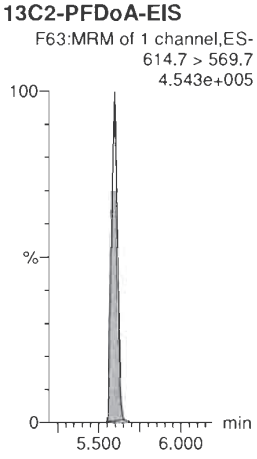
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

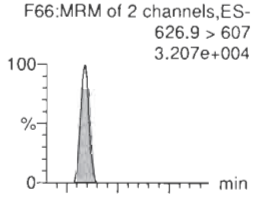
Vista Analytical Laboratory

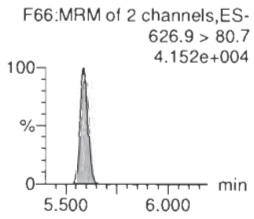
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

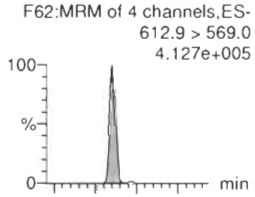
Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

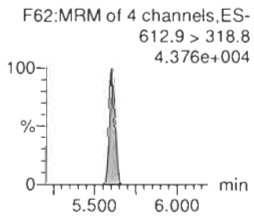
10:2 FTS



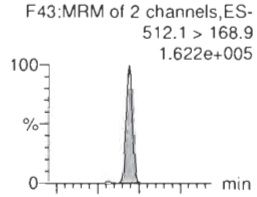


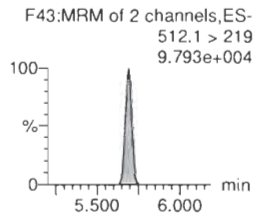
PFDoA





N-MeFOSA





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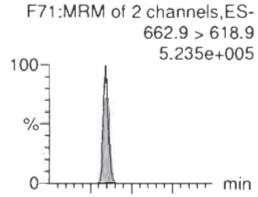

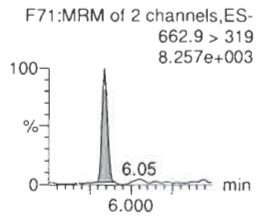

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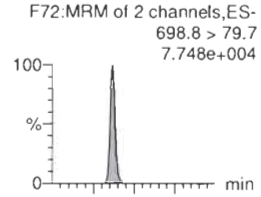

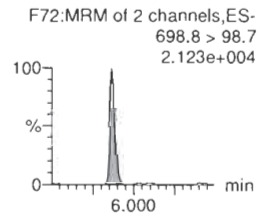

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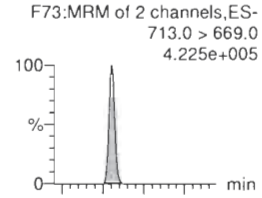
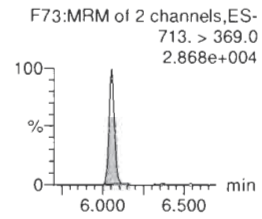
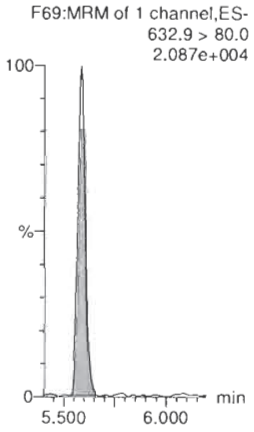
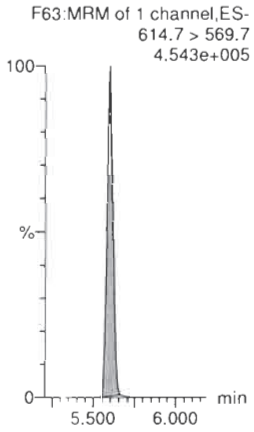




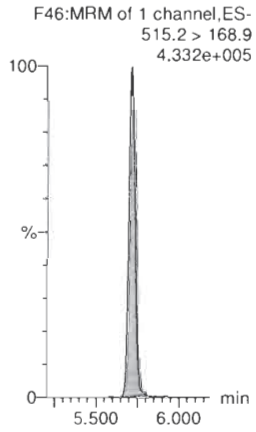
13C2-10:2 FTS-EIS



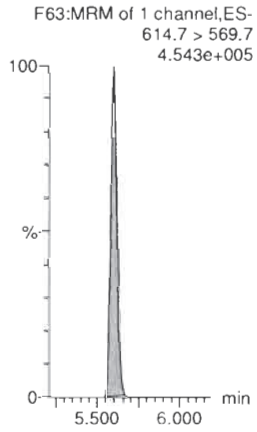
13C2-PFDoA-EIS



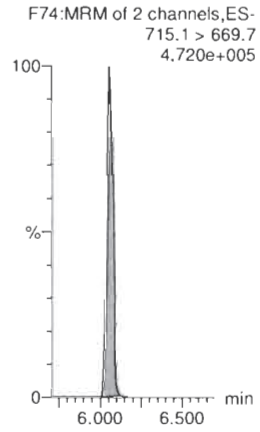
d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



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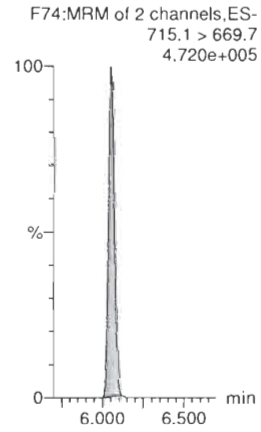


Quantify Sample Report **MassLynx V4.2 SCN977**

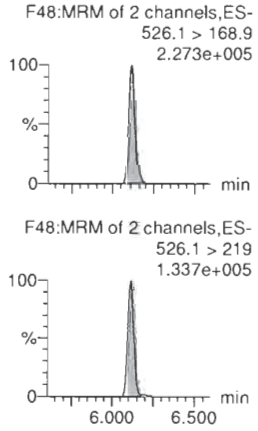
Vista Analytical Laboratory

Dataset: Untitled

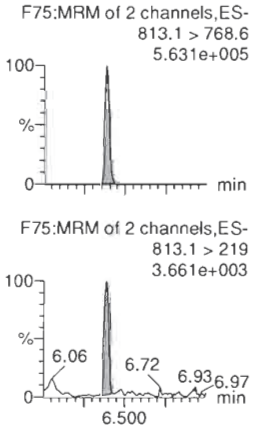
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

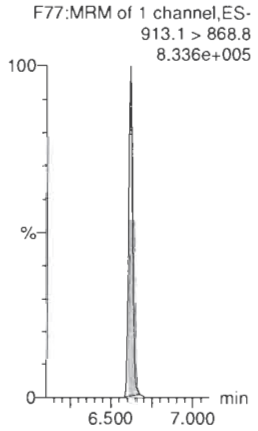
N-EtFOSA



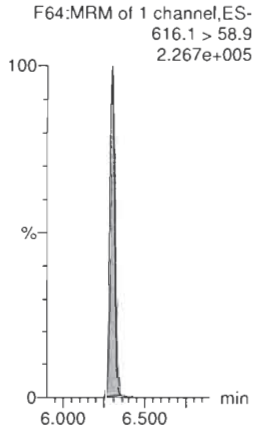
PFHxDA



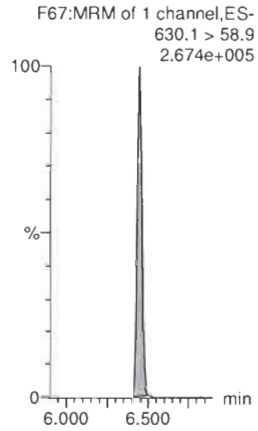
PFODA



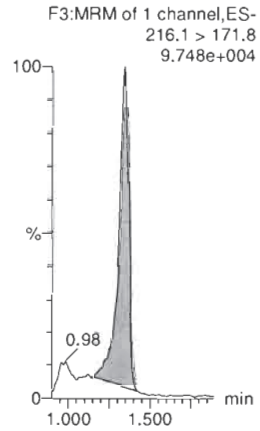
N-MeFOSE



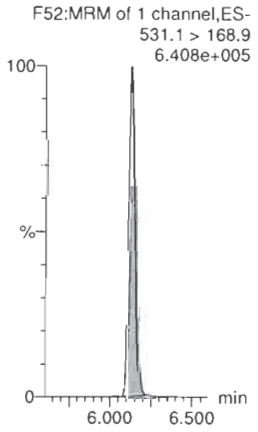
N-EtFOSE



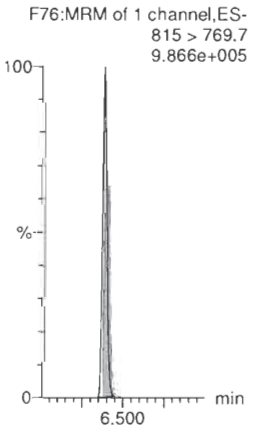
13C3-PFBA-RSD



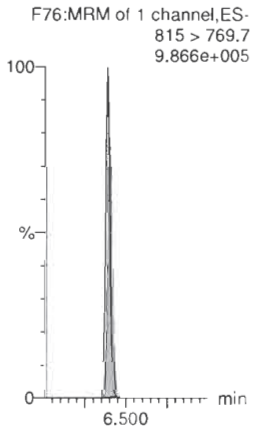
d5-N-ETFOSA-EIS



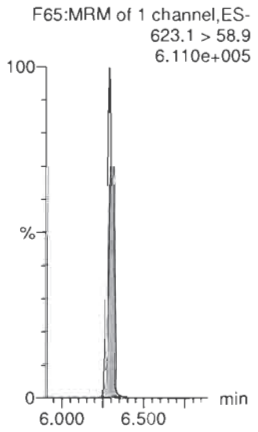
13C2-PFHxDA-EIS



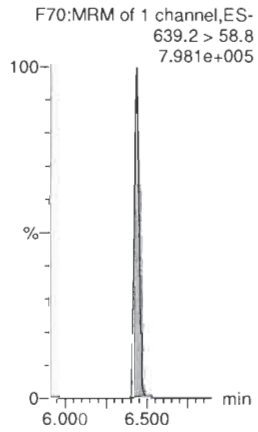
13C2-PFHxDA-EIS



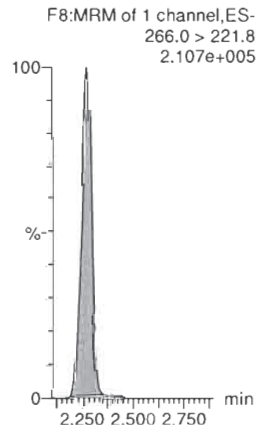
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

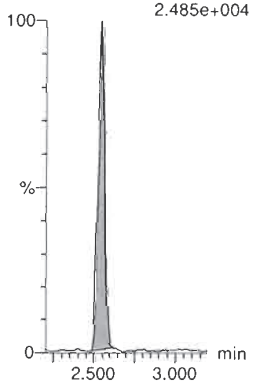
Vista Analytical Laboratory

Dataset: Untitled

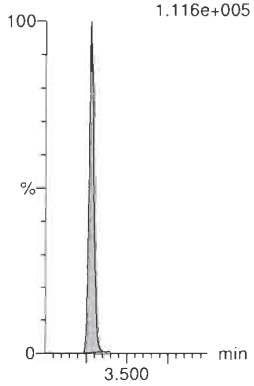
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

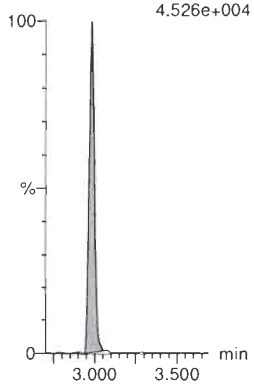
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.485e+004



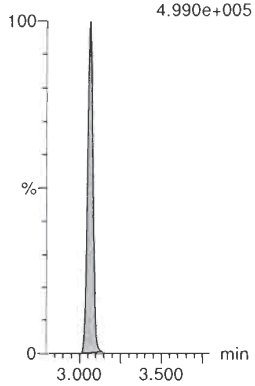
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.116e+005



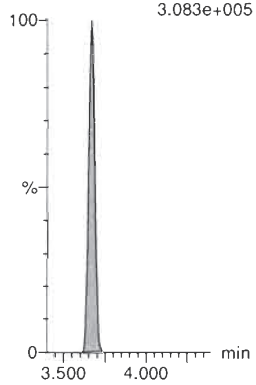
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
4.526e+004



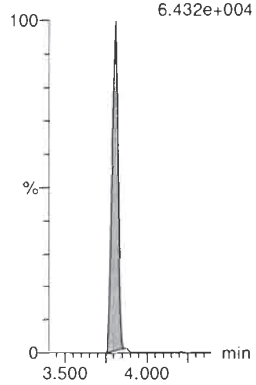
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
4.990e+005



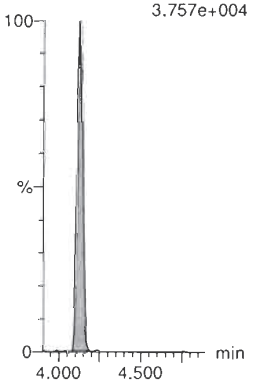
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.083e+005



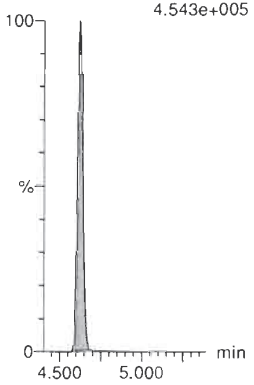
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.432e+004



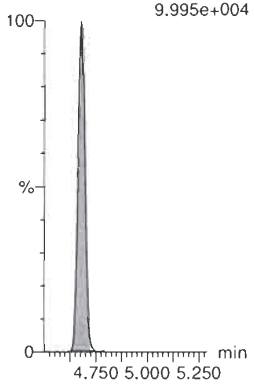
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.757e+004



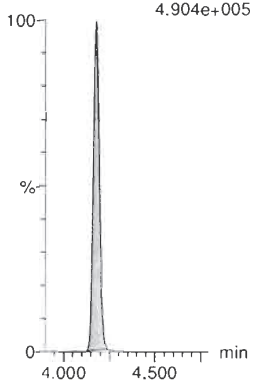
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.543e+005



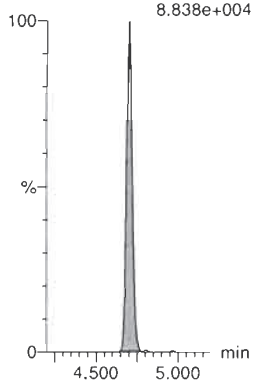
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.995e+004



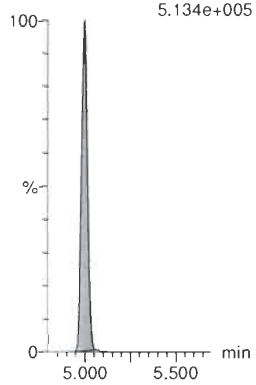
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.904e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
8.838e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
5.134e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

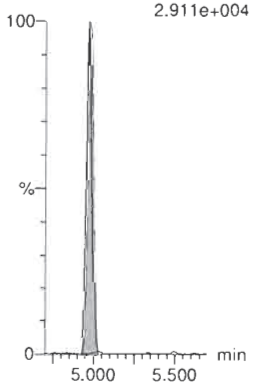
Vista Analytical Laboratory

Dataset: Untitled

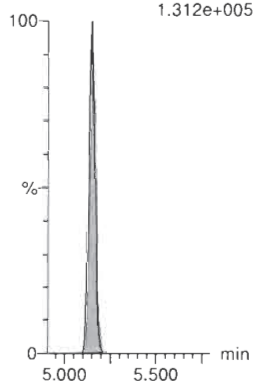
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

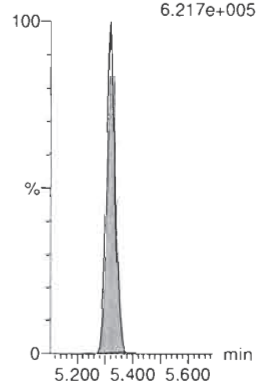
13C2-8:2 FTS-RSD



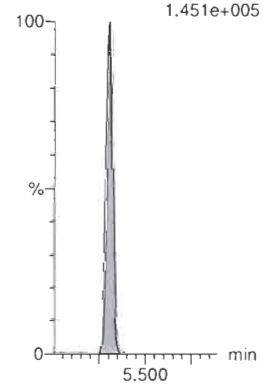
d3-N-MeFOSAA-RSD



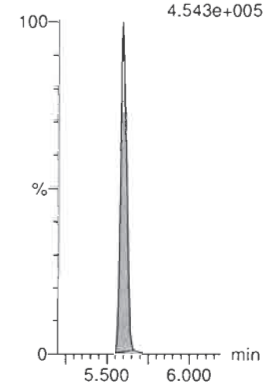
13C2-PFUdA-RSD



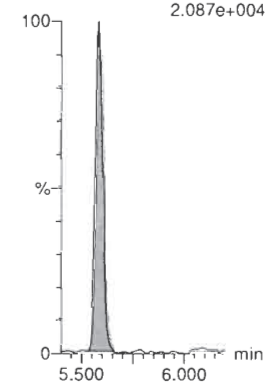
d5-N-EtFOSAA-RSD



13C2-PFDoA-RSD



13C2-10:2 FTS-RSD



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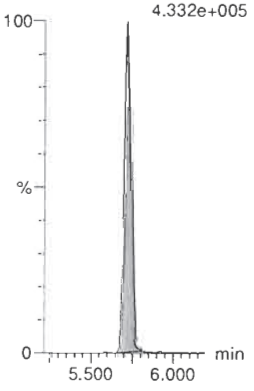
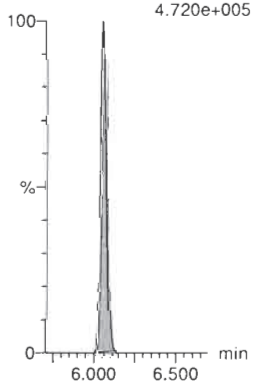
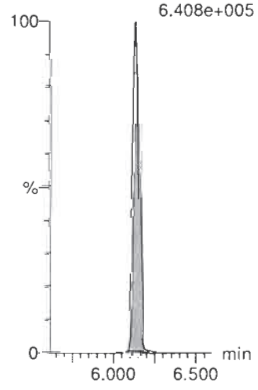


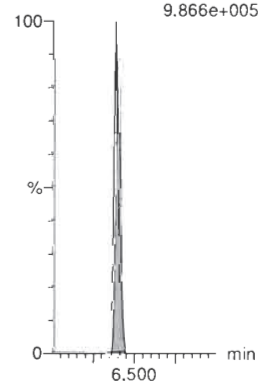
13C2-PFTeDA-RSD



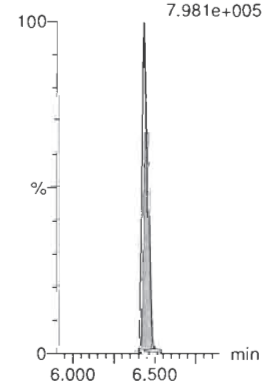
d5-N-ETFOSA-RSD



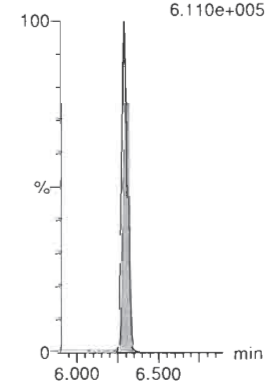
13C2-PFHxDA-RSD



d9-N-EtFOSE-RSD



d7-N-MeFOSE-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

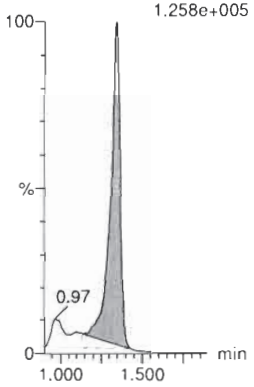
Vista Analytical Laboratory

Dataset: Untitled

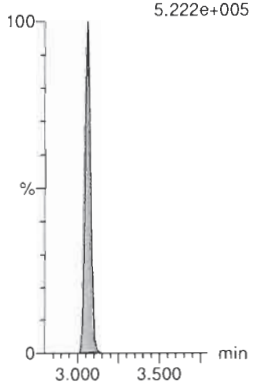
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-8, Date: 28-Feb-2020, Time: 13:59:16, ID: ST200228P2-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

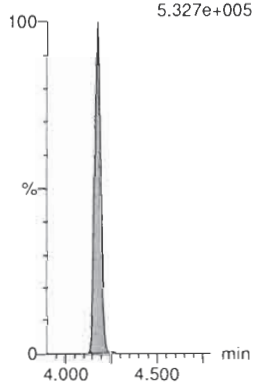
13C4-PFBA



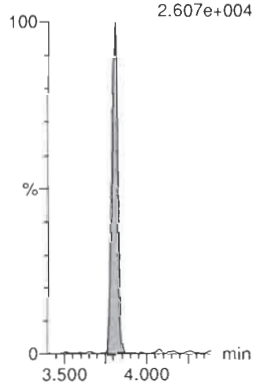
13C5-PFHxA



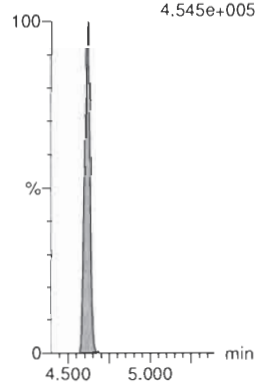
13C8-PFOA



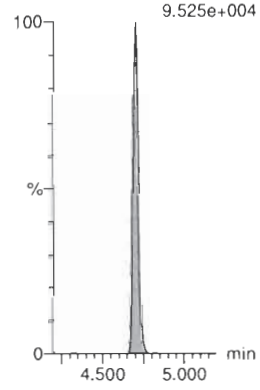
18O2-PFHxS



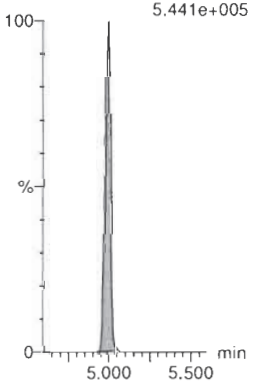
13C9-PFNA



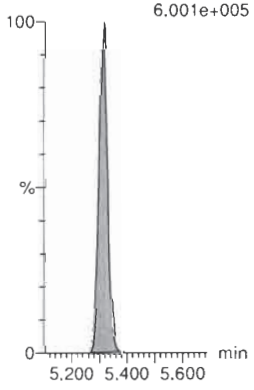
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

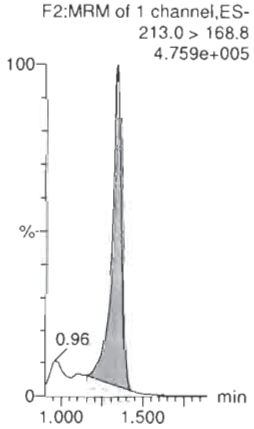
Vista Analytical Laboratory

Dataset: Untitled

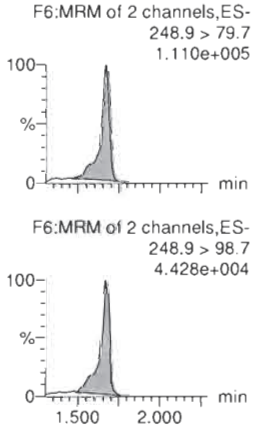
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

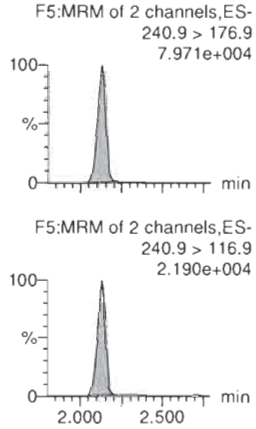
PFBA



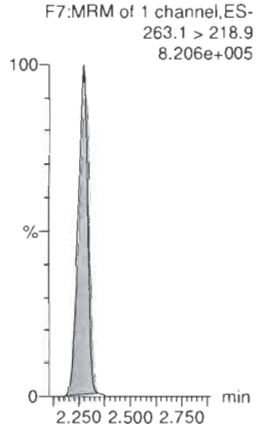
PFPrS



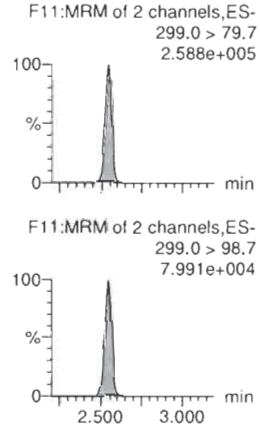
3:3 FTCA



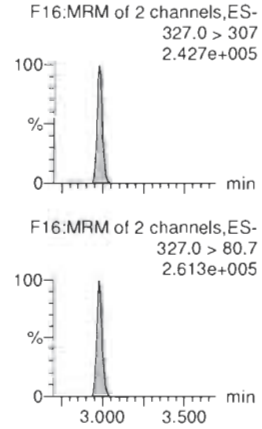
PFPeA



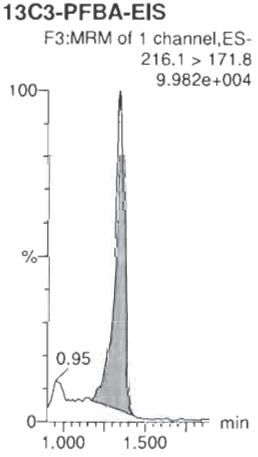
PFBS



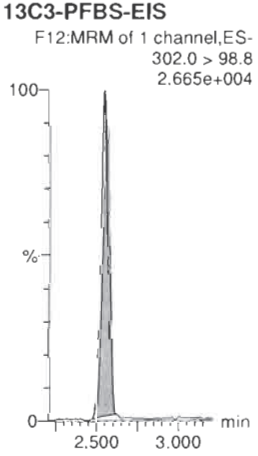
4:2 FTS



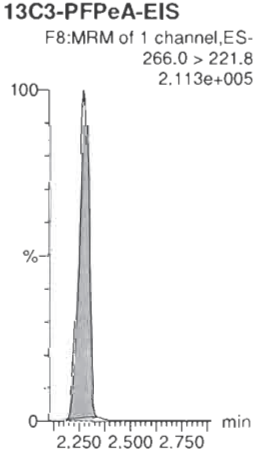
13C3-PFBA-EIS



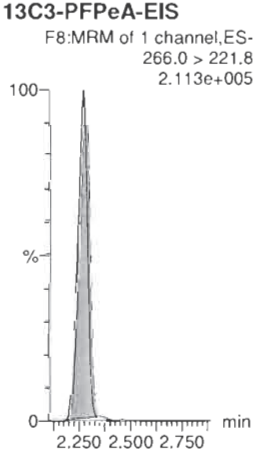
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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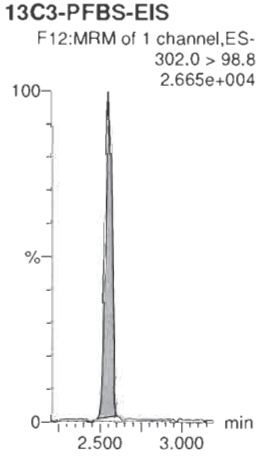
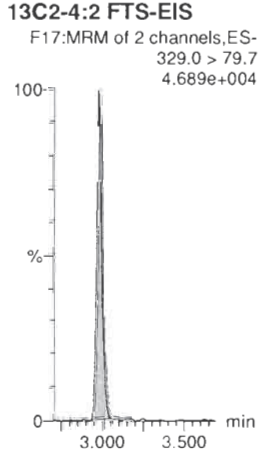


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

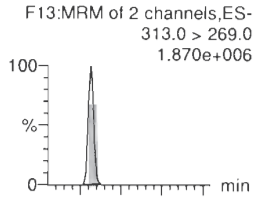
Vista Analytical Laboratory

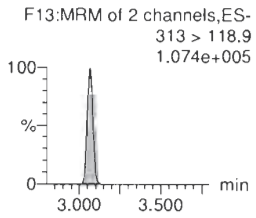
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

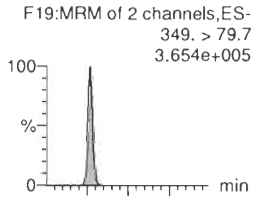
Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

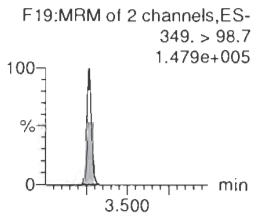
PFHxA



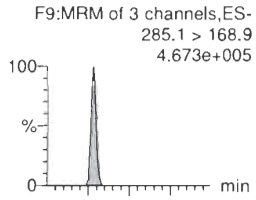


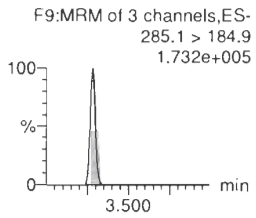
PFPeS



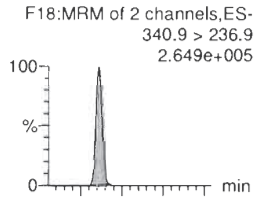


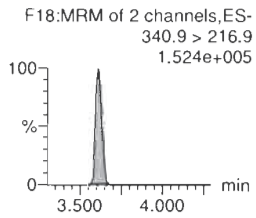
HFPO-DA



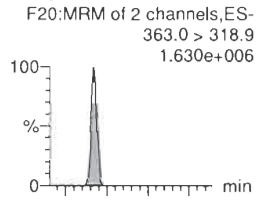


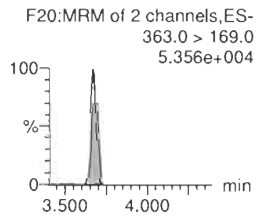
5:3 FTCA





PFHpA





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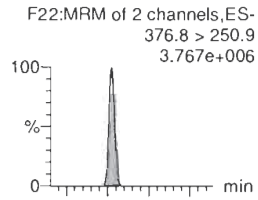

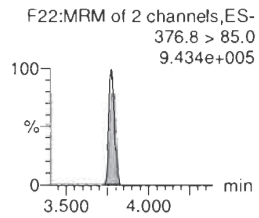

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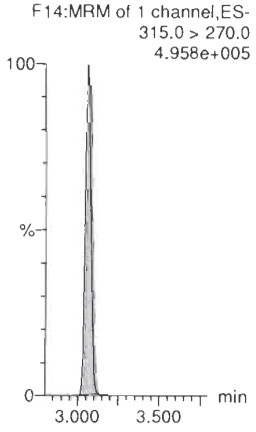
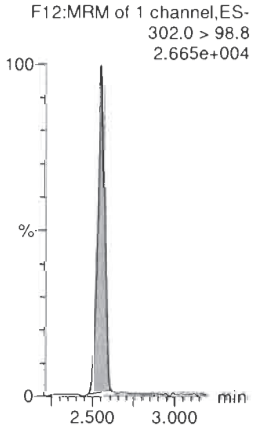
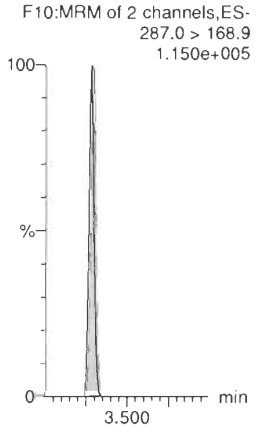


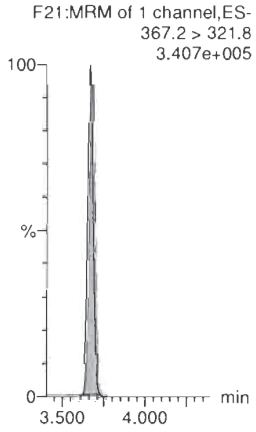
13C3-PFBS-EIS



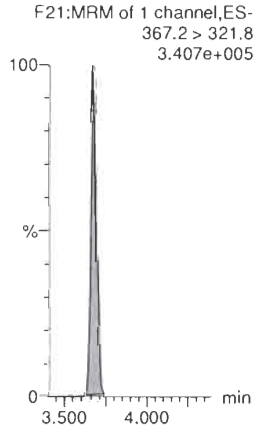
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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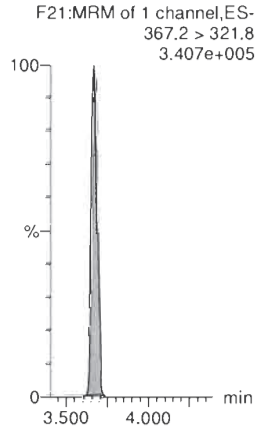

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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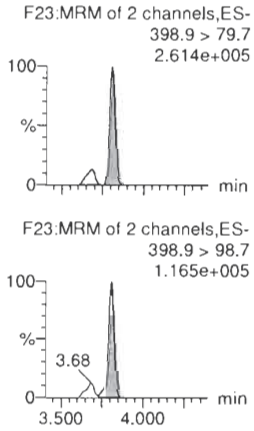
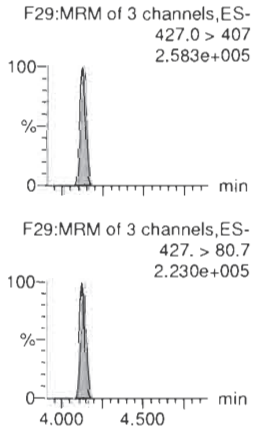


6:2 FTS



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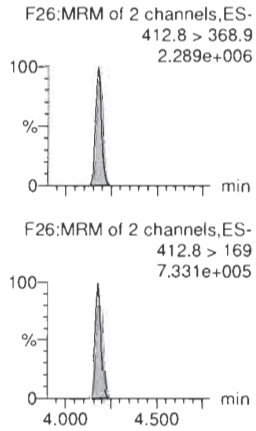

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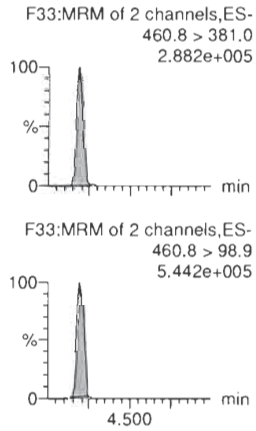

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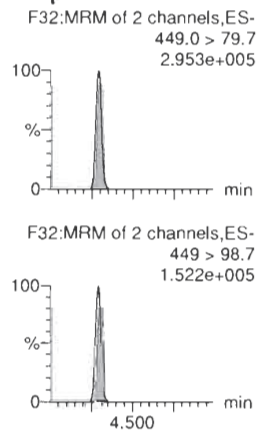
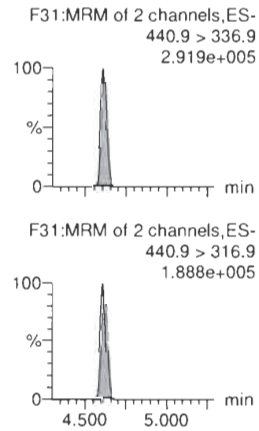


7:3 FTCA



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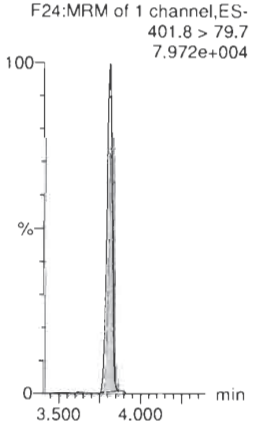
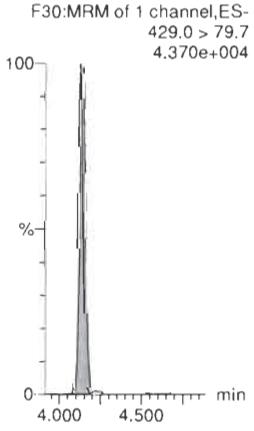


13C2-6:2 FTS-EIS



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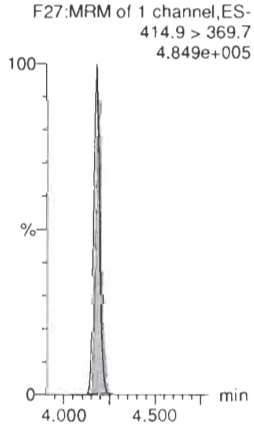

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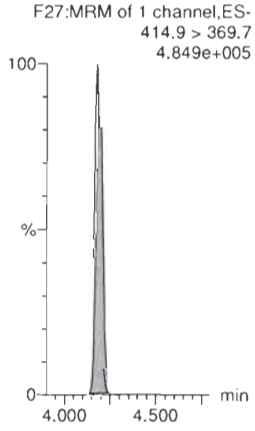
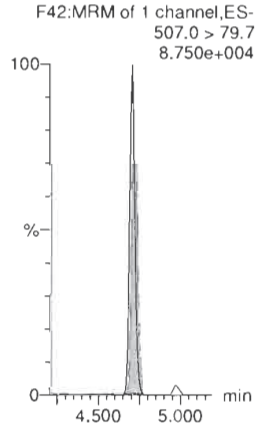


13C8-PFOS-EIS



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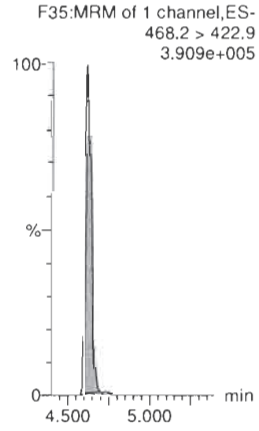

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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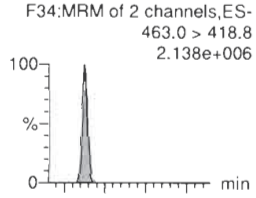

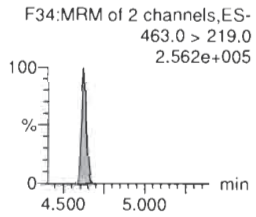

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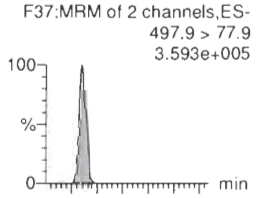

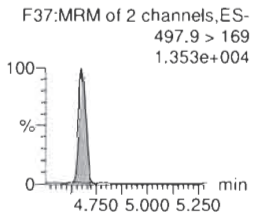

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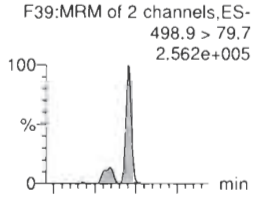

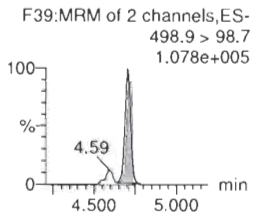

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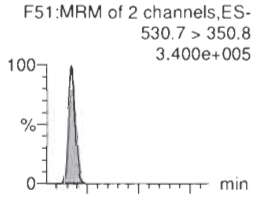

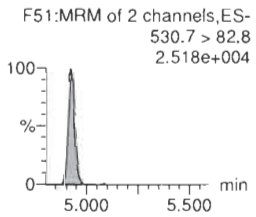

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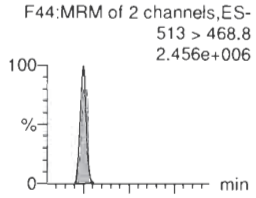

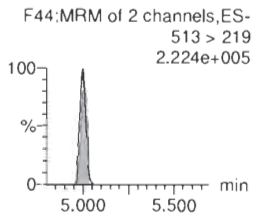

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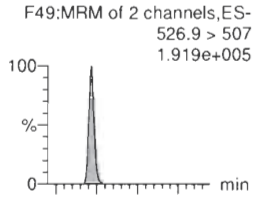

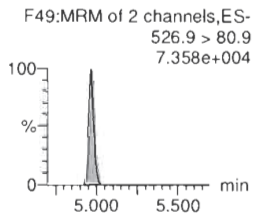

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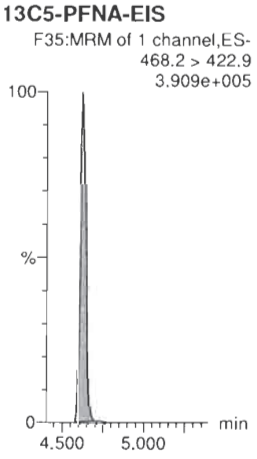

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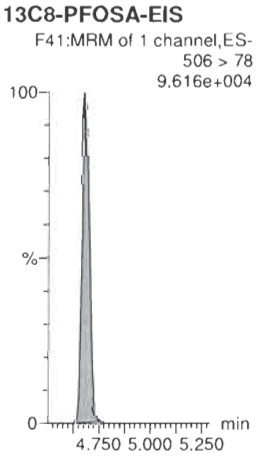

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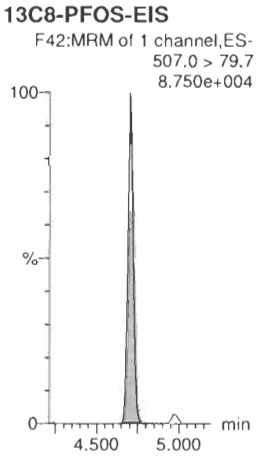

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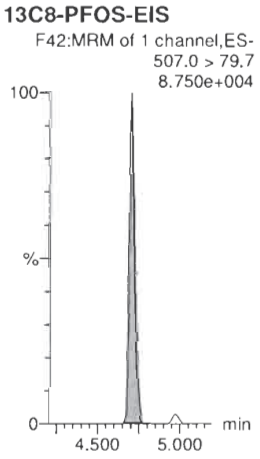

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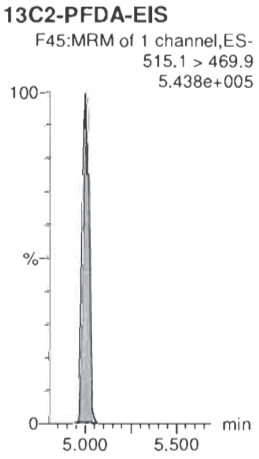

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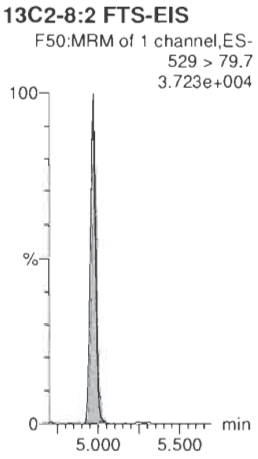

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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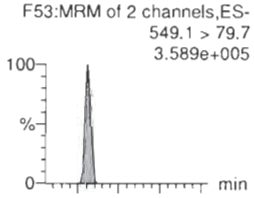

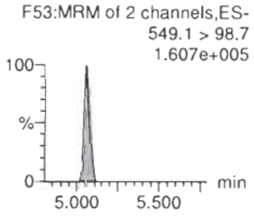

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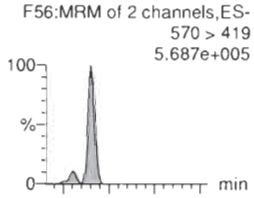

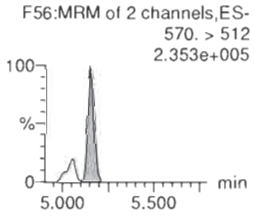

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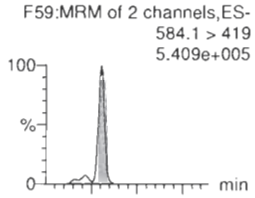

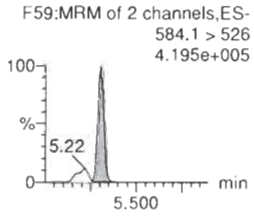

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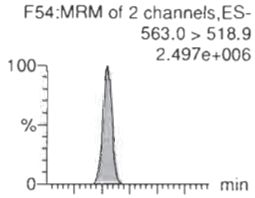

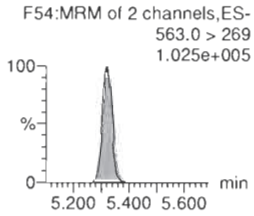

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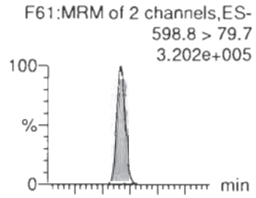

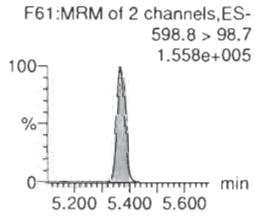

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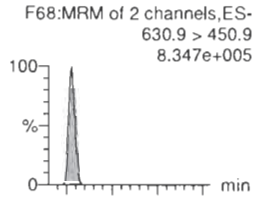

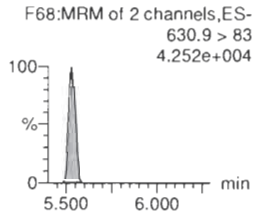

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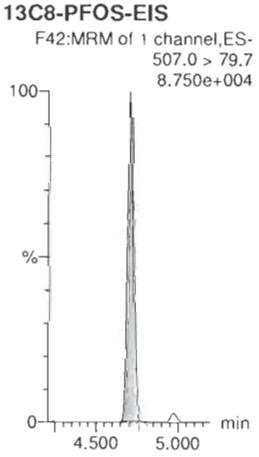

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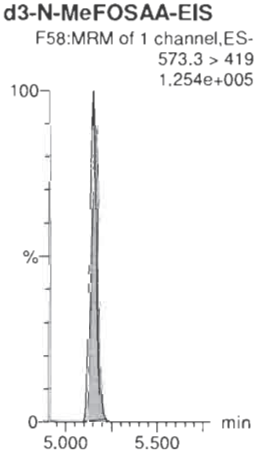

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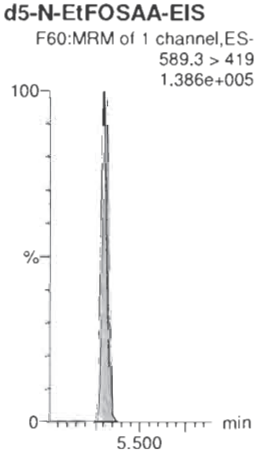

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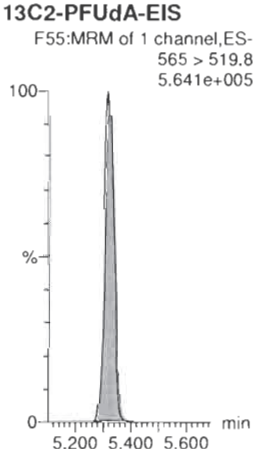

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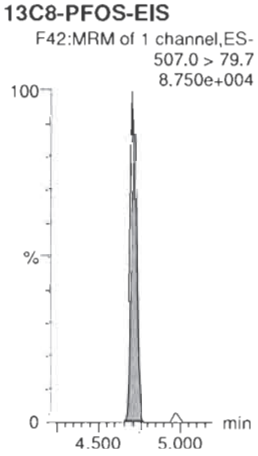

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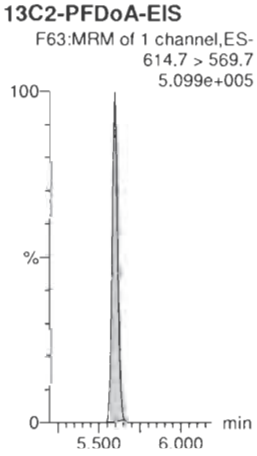

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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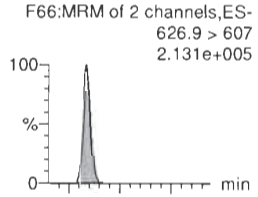
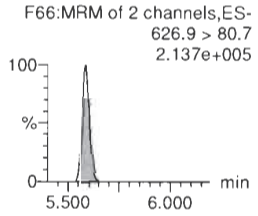
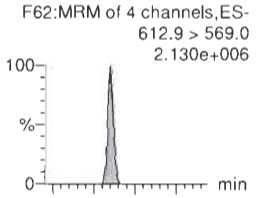
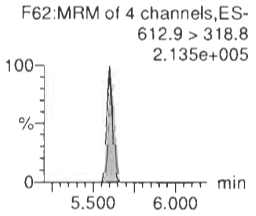
10:2 FTS



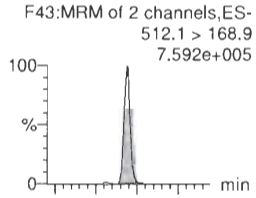


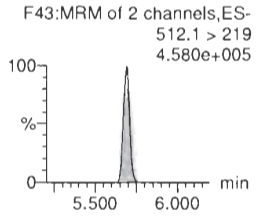
PFDoA



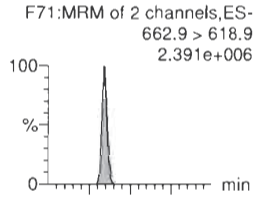


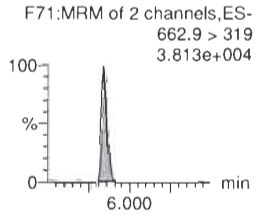
N-MeFOSA



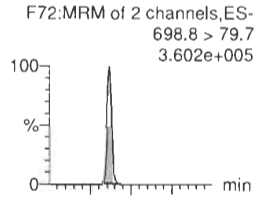


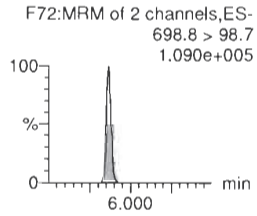
PFTrDA



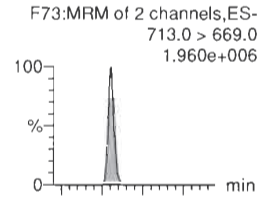


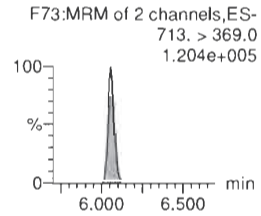
PFDoS



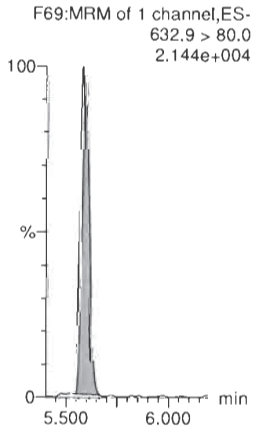


PFTeDA

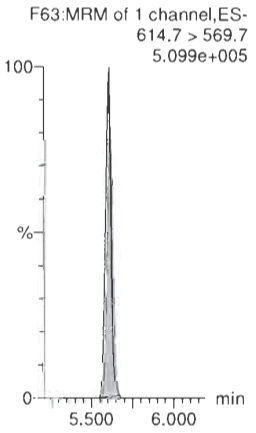




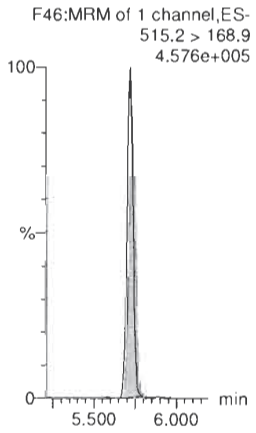
13C2-10:2 FTS-EIS



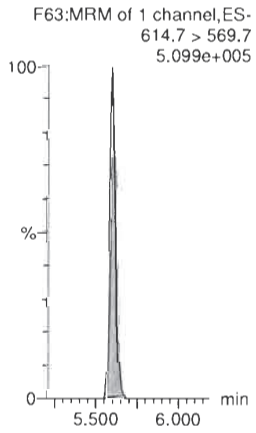
13C2-PFDoA-EIS



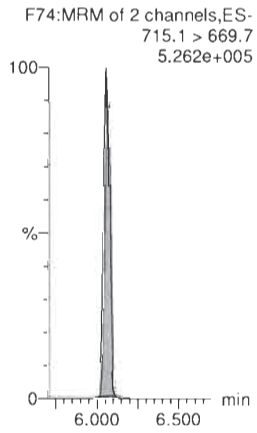
d3-N-MeFOSA-EIS



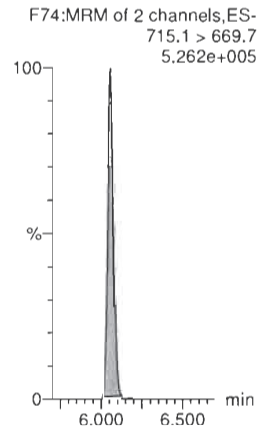
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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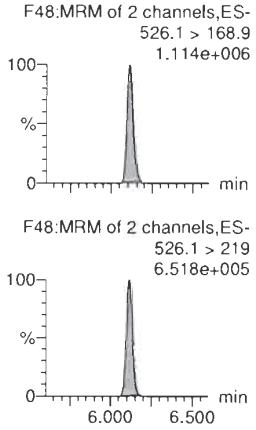

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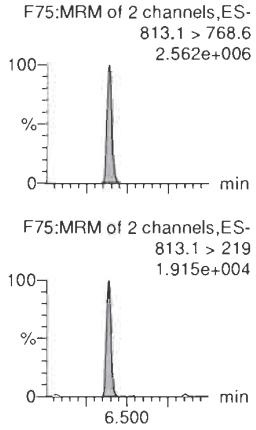
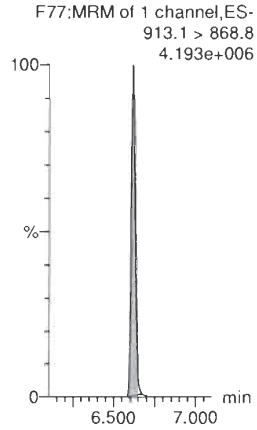
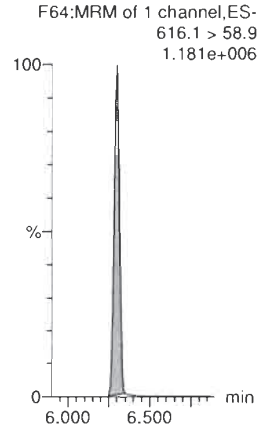


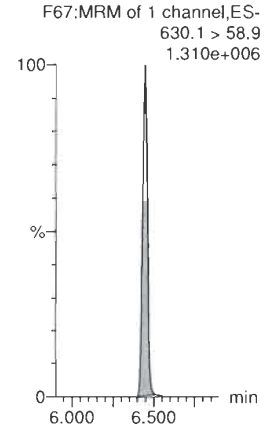
PFODA



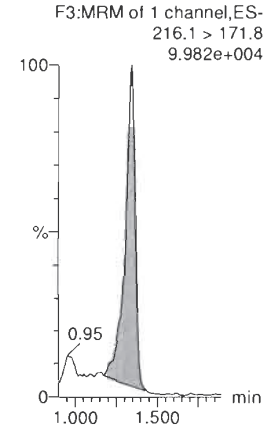
N-MeFOSE



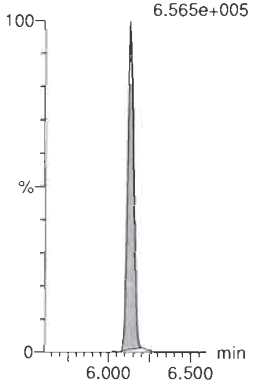
N-EtFOSE



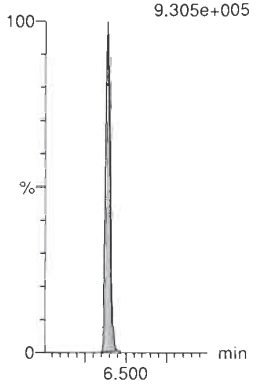
13C3-PFBA-RSD



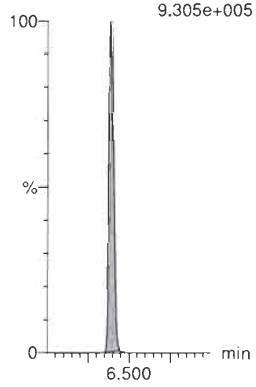
d5-N-ETFOSA-EIS



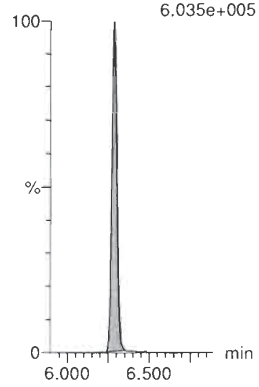
13C2-PFHxDA-EIS



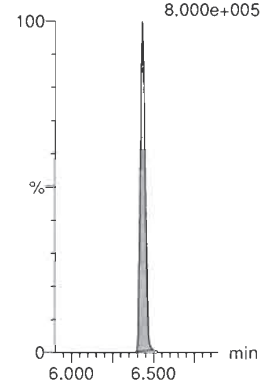
13C2-PFHxDA-EIS



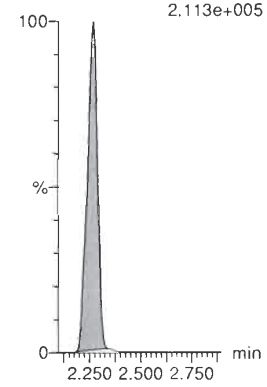
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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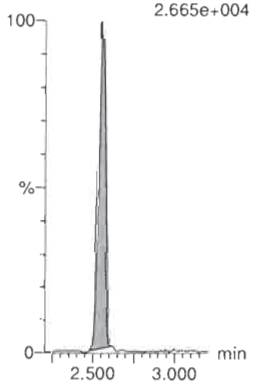
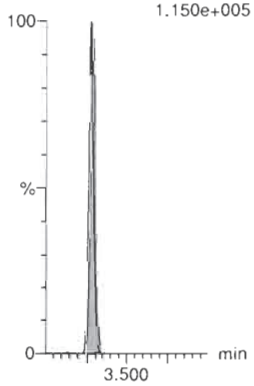
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

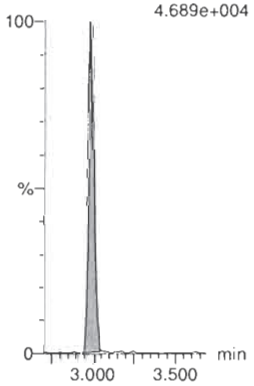
13C3-PFBS-RSD



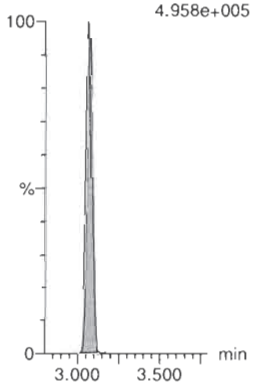
13C3-HFPO-DA-RSD



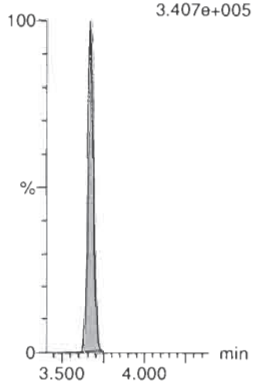
13C2-4:2 FTS-RSD



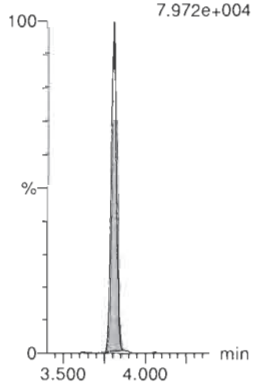
13C2-PFHxA-RSD



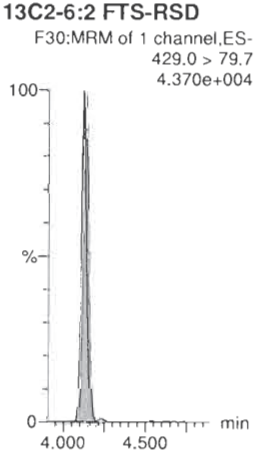
13C4-PFHpA-RSD



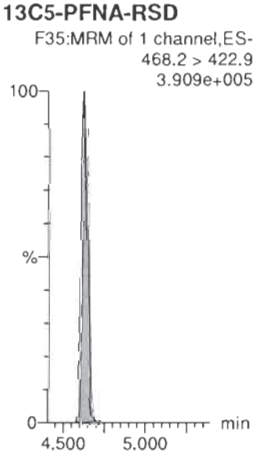
13C3-PFHxS-RSD



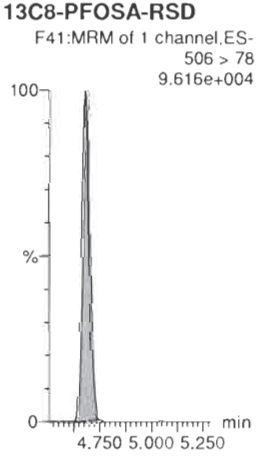
13C2-6:2 FTS-RSD



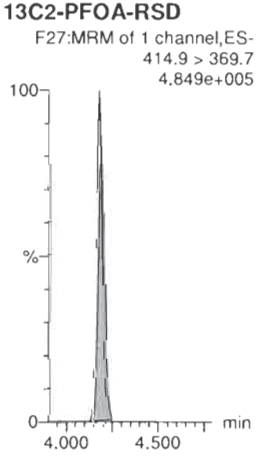
13C5-PFNA-RSD



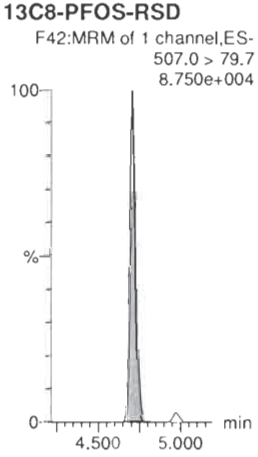
13C8-PFOSA-RSD



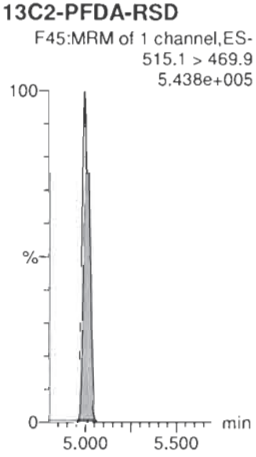
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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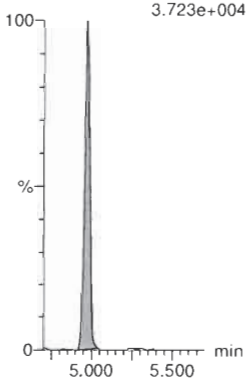
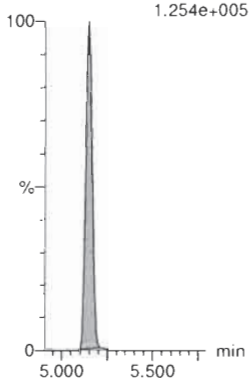
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

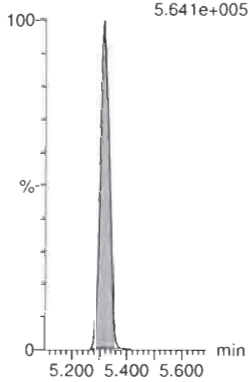
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.723e+004



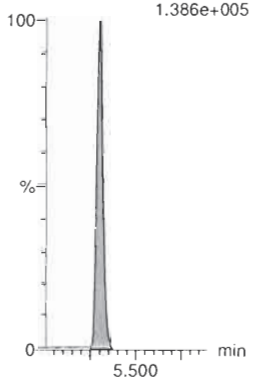
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.254e+005



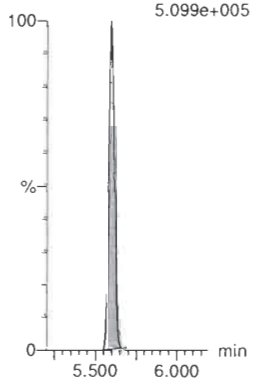
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
5.641e+005



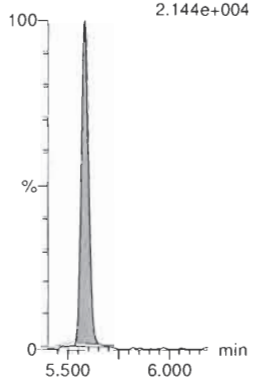
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.386e+005



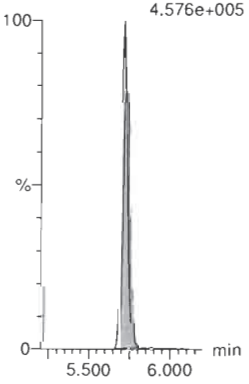
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
5.099e+005



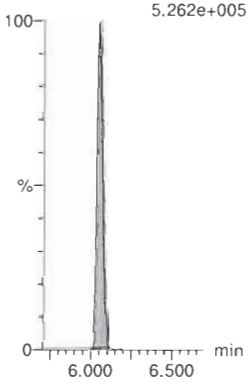
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.144e+004



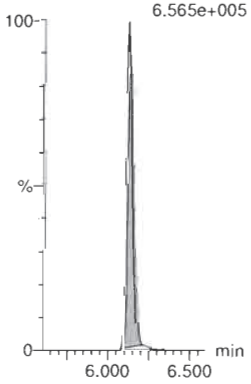
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.576e+005



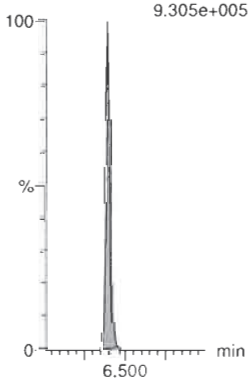
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
5.262e+005



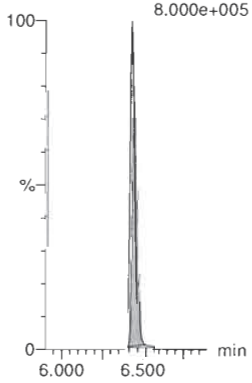
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
6.565e+005



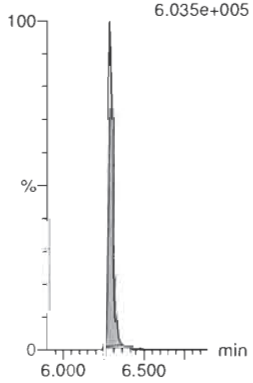
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
9.305e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
8.000e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
6.035e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-9, Date: 28-Feb-2020, Time: 14:09:48, ID: ST200228P2-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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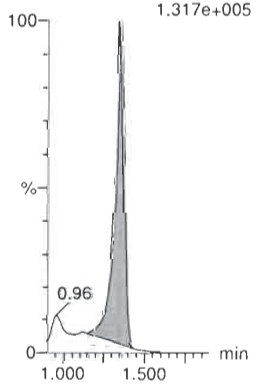
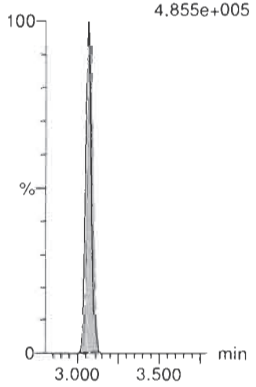


13C5-PFHxA



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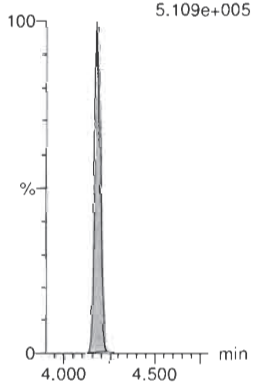
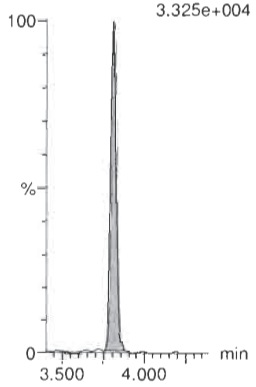
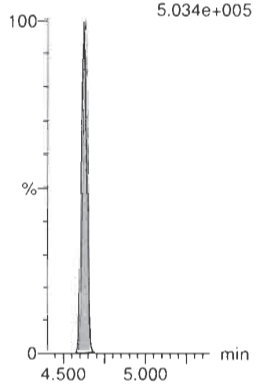


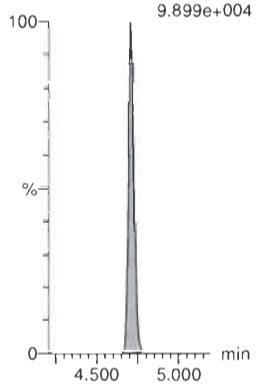
18O2-PFHxS



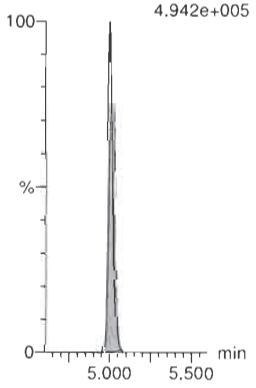
13C9-PFNA



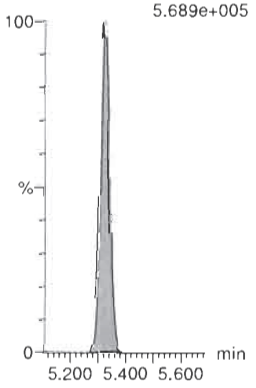
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

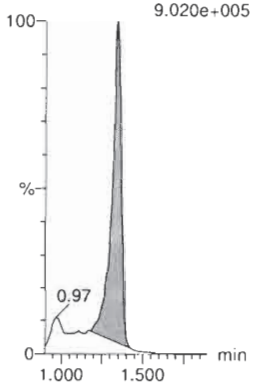
Vista Analytical Laboratory

Dataset: Untitled

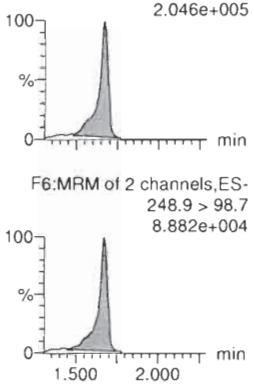
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

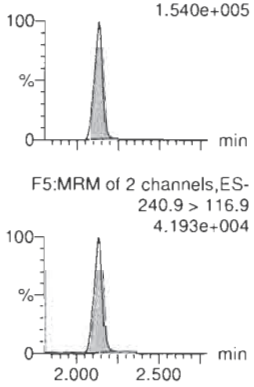
PFBA



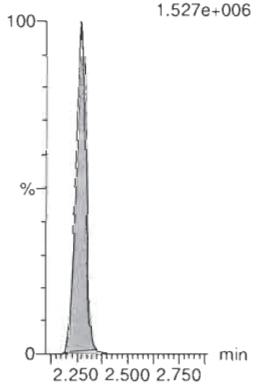
PFPrS



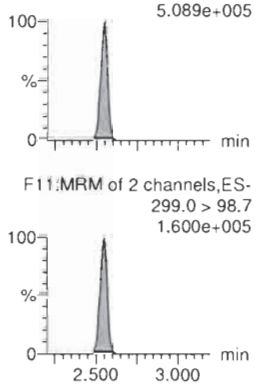
3:3 FTCA



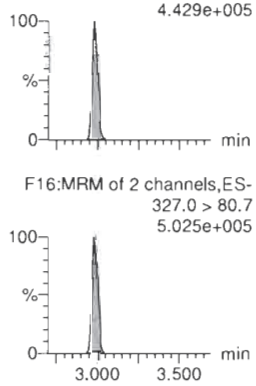
PFPeA



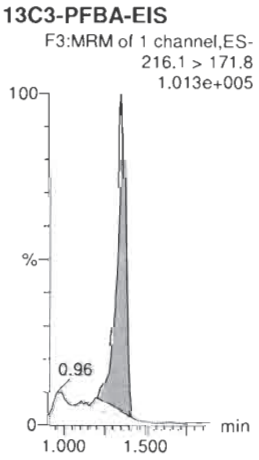
PFBS



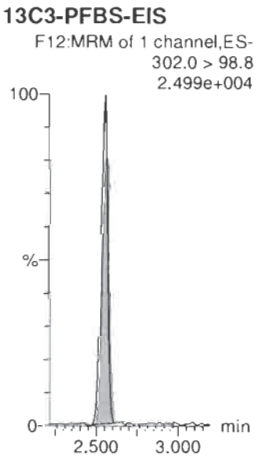
4:2 FTS



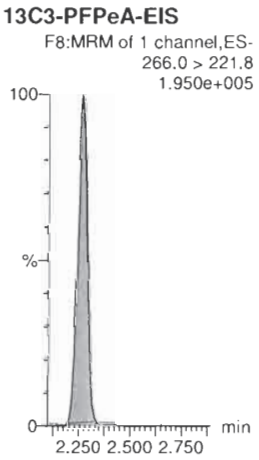
13C3-PFBA-EIS



13C3-PFBS-EIS



13C3-PFPeA-EIS



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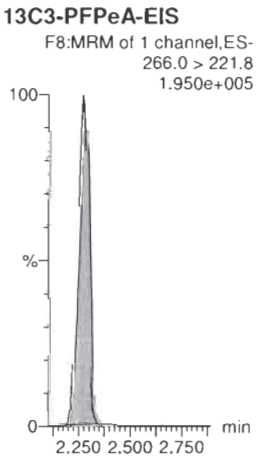

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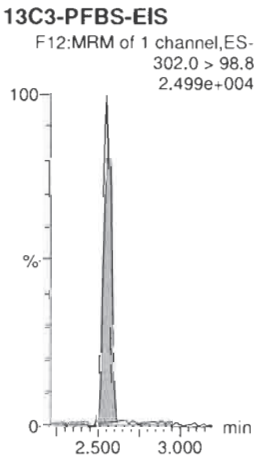
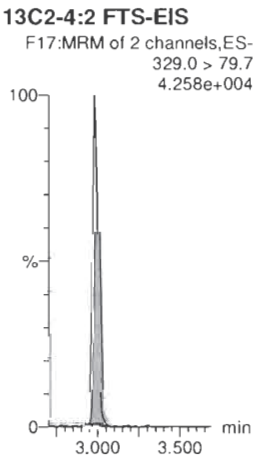


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

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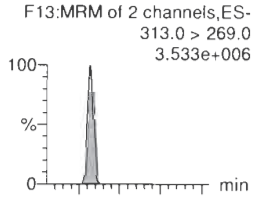
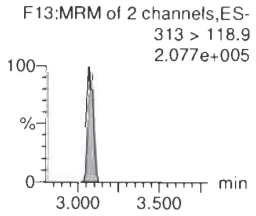
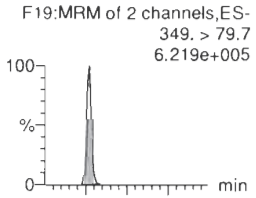
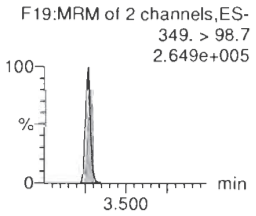
PFHxA



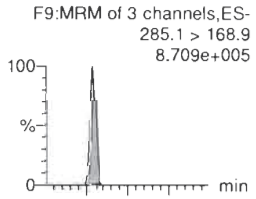


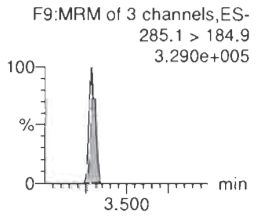
PFPeS



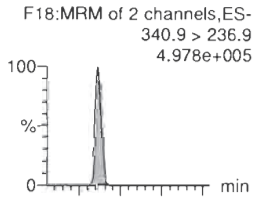


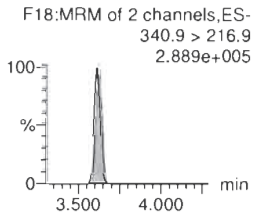
HFPO-DA



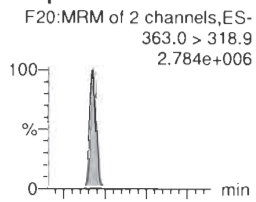


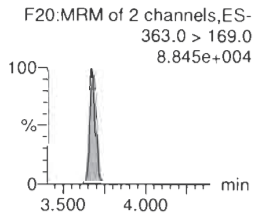
5:3 FTCA



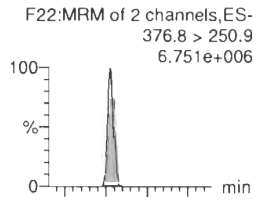


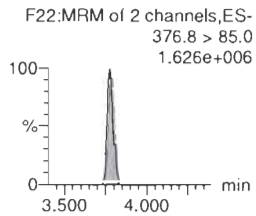
PFHpA



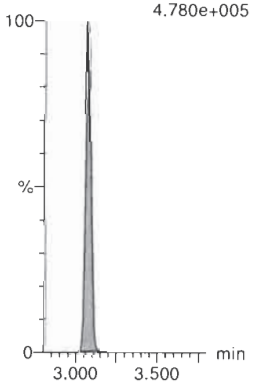


ADONA

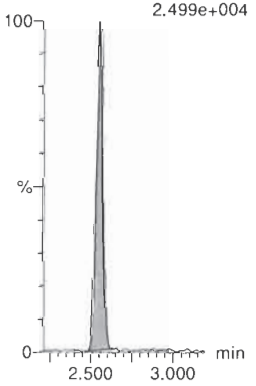




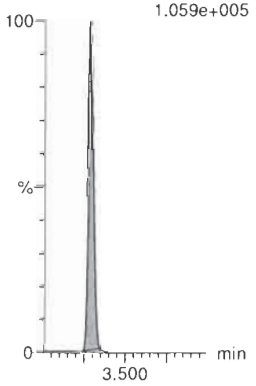
13C2-PFHxA-EIS



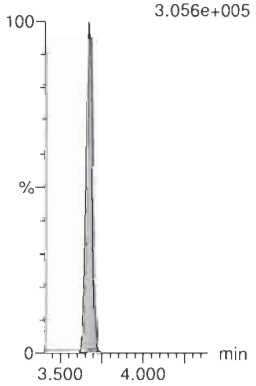
13C3-PFBS-EIS



13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



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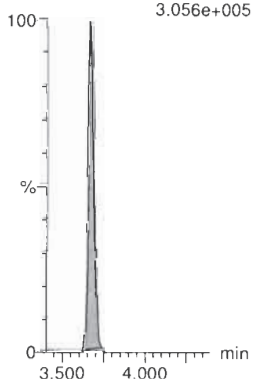

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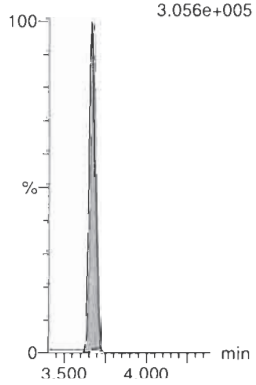


Quantify Sample Report **MassLynx V4.2 SCN977**

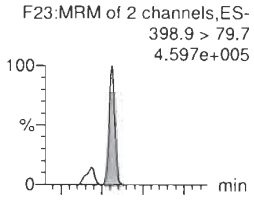
Vista Analytical Laboratory

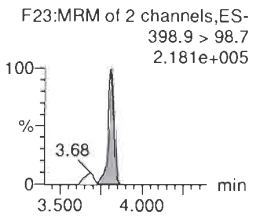
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

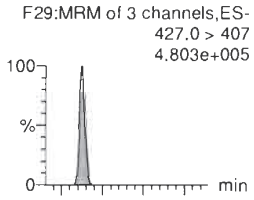
Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

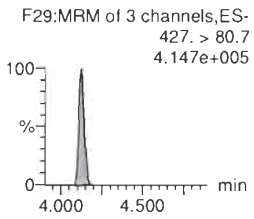
L-PFHxS



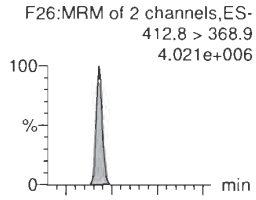


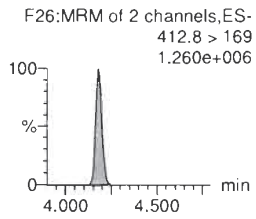
6:2 FTS



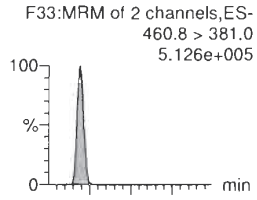


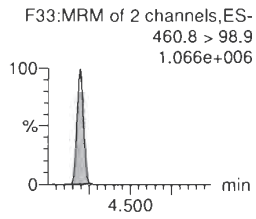
L-PFOA



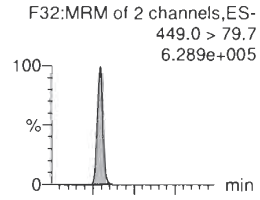


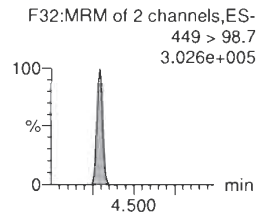
PFEChS



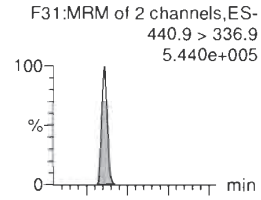


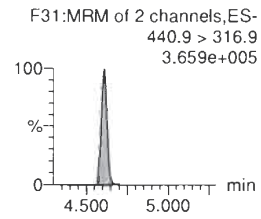
PFHpS



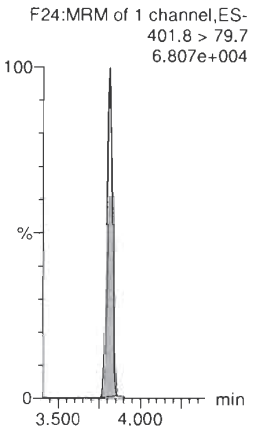


7:3 FTCA

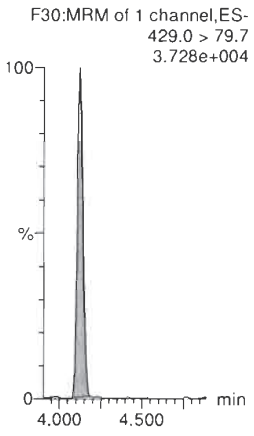




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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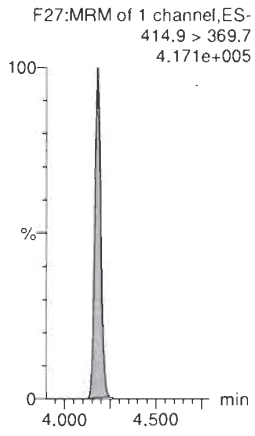

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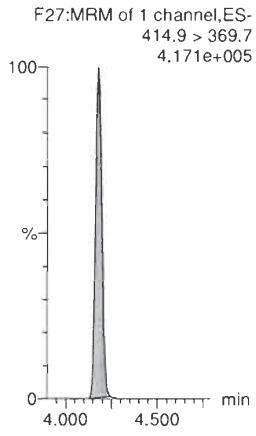

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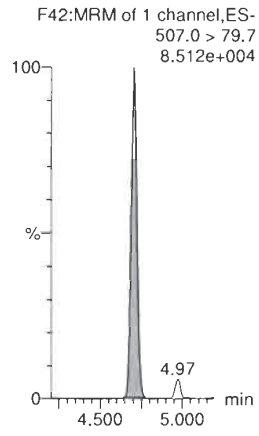
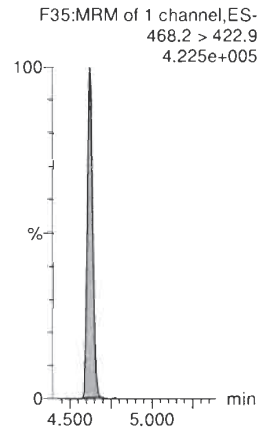


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

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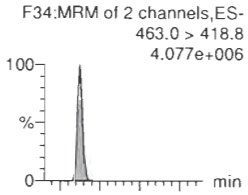

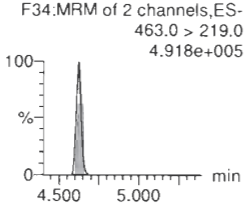

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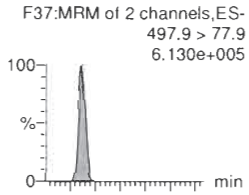

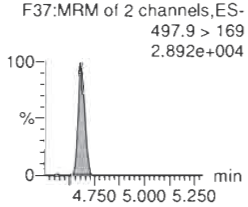

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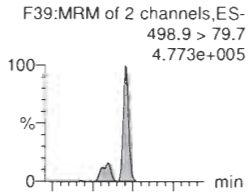
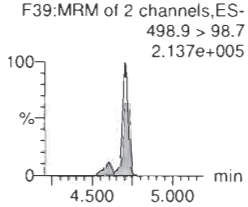
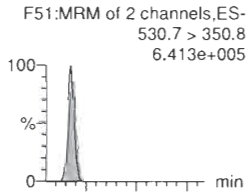
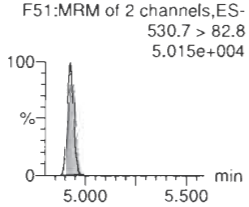




9Cl-PF30NS





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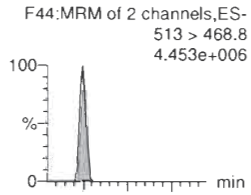
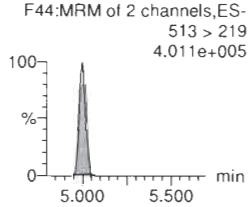
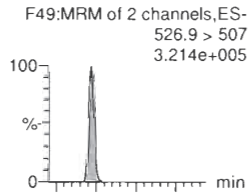
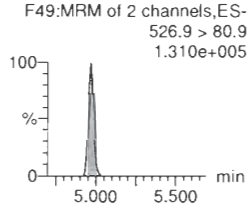


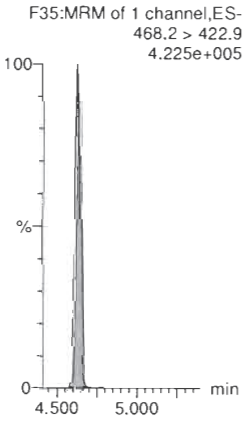


8:2 FTS

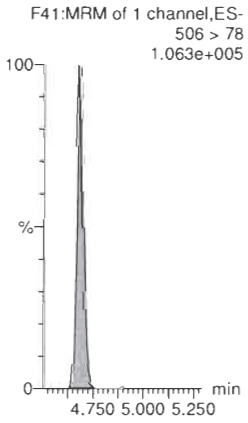




13C5-PFNA-EIS



13C8-PFOSA-EIS



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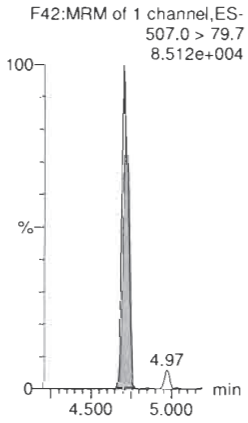

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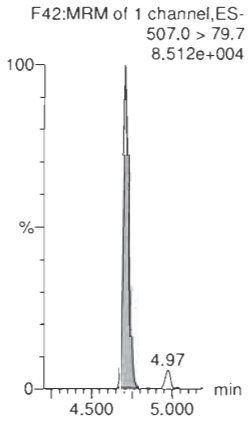

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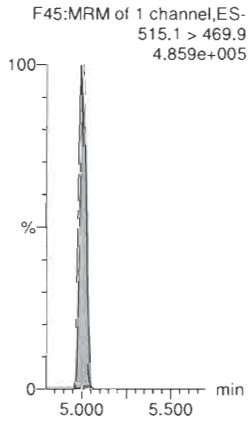

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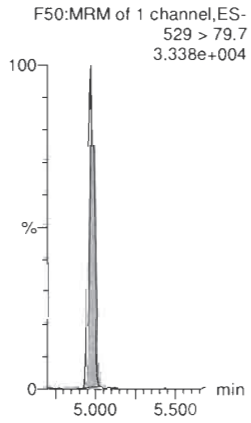

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

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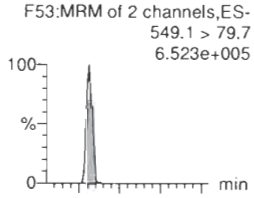

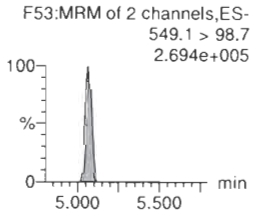

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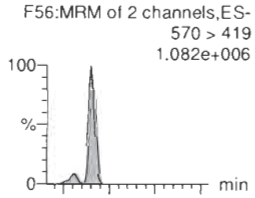

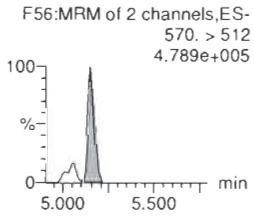

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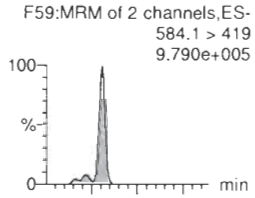

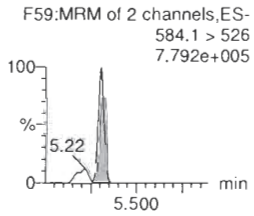

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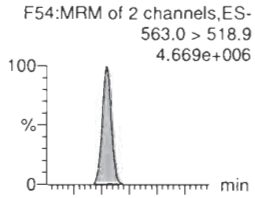

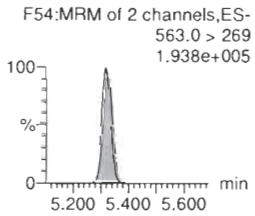

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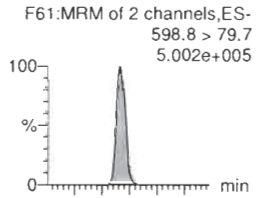

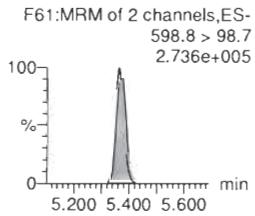

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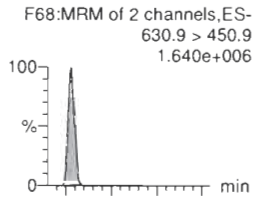
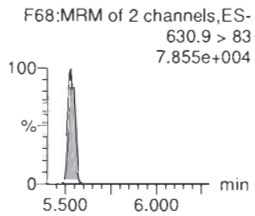
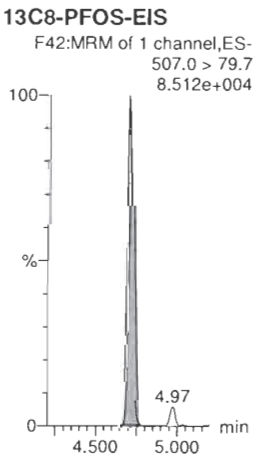
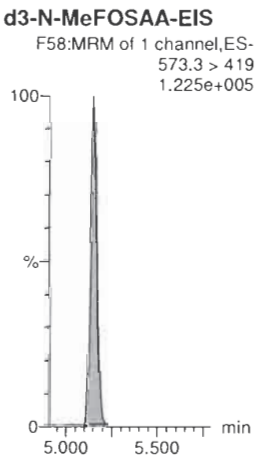




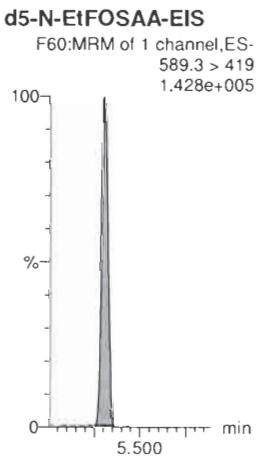
13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



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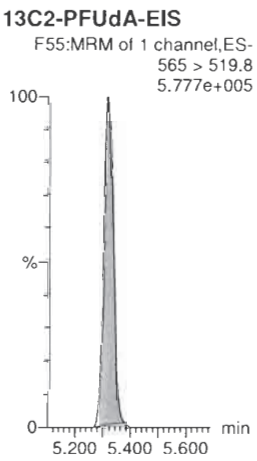

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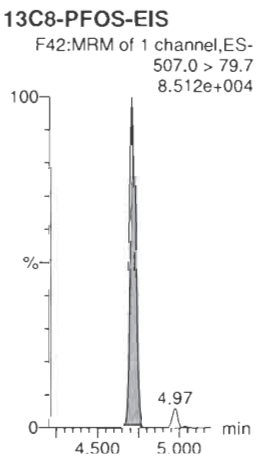

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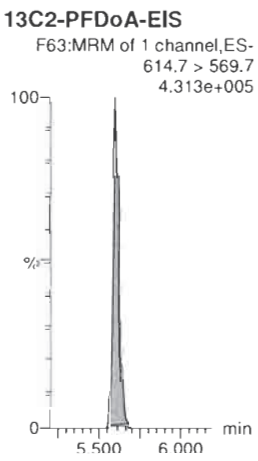


Quantify Sample Report **MassLynx V4.2 SCN977**

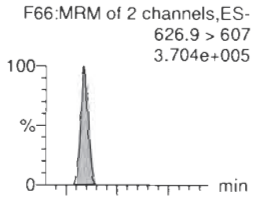
Vista Analytical Laboratory

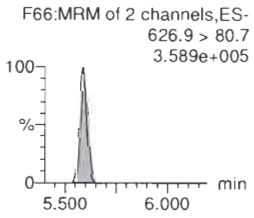
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

10:2 FTS





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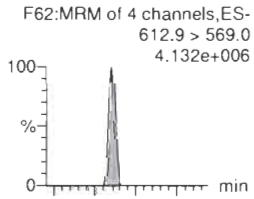
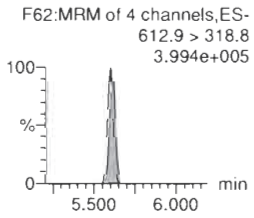
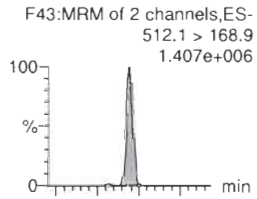
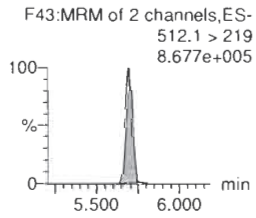




N-MeFOSA





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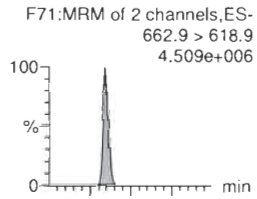

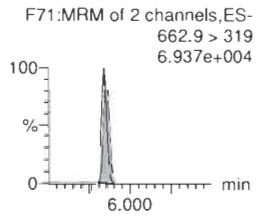

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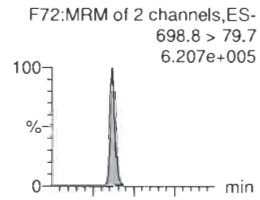

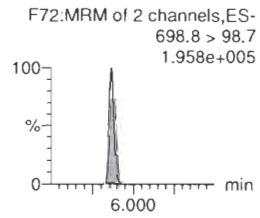

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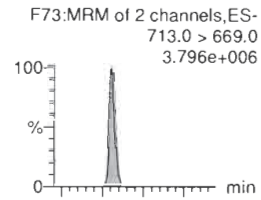
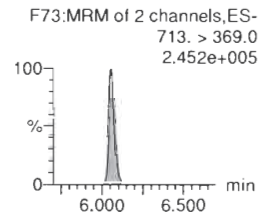
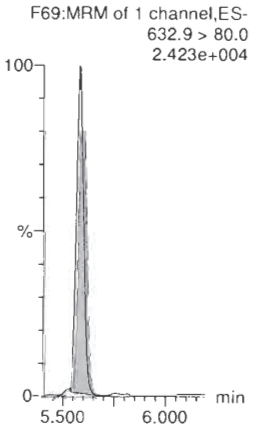
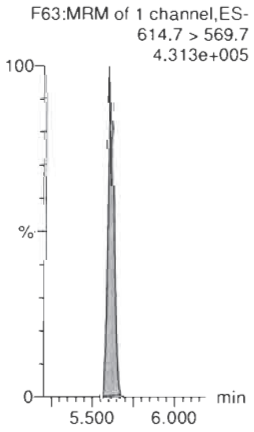




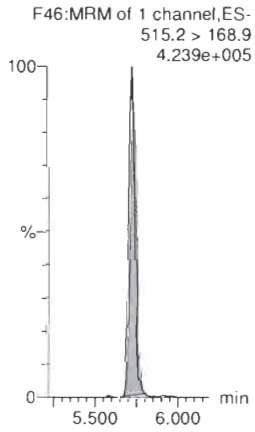
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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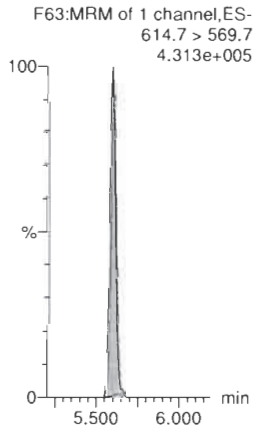

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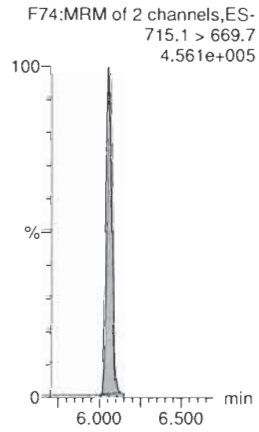
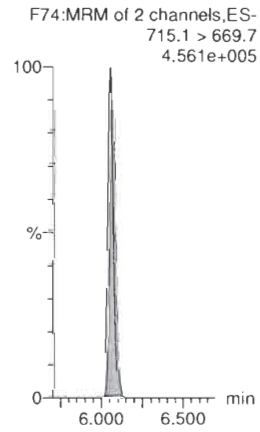


13C2-PFTeDA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

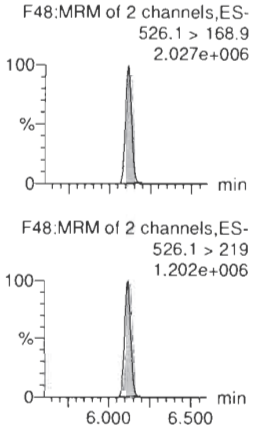
Vista Analytical Laboratory

Dataset: Untitled

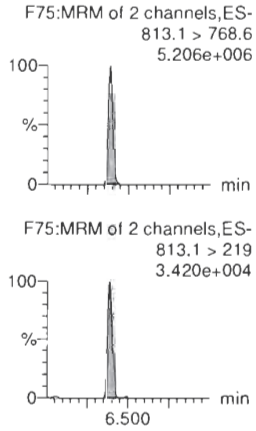
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

N-EtFOSA



PFHxDA



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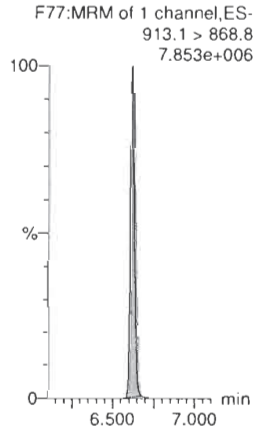
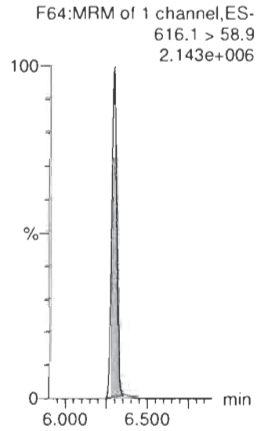
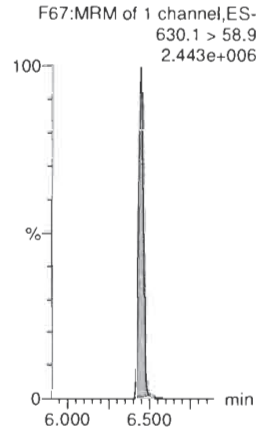


N-MeFOSE



N-EtFOSE



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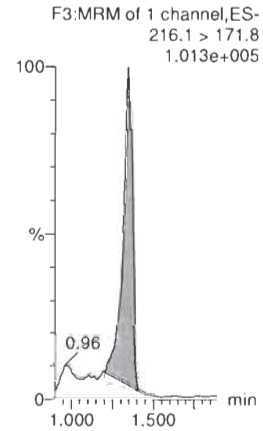
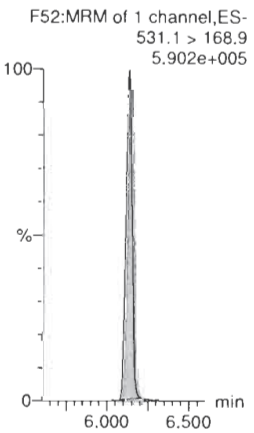
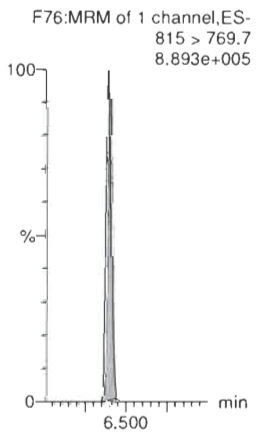


d5-N-ETFOSA-EIS



13C2-PFHxDA-EIS



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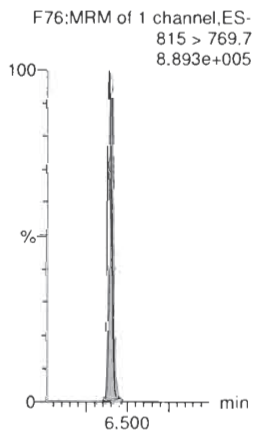
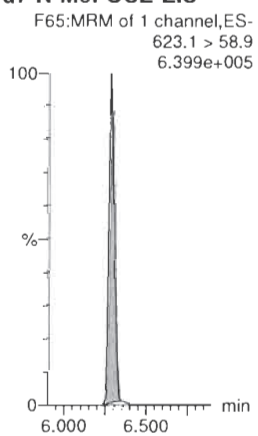
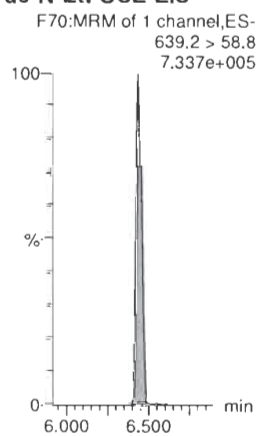


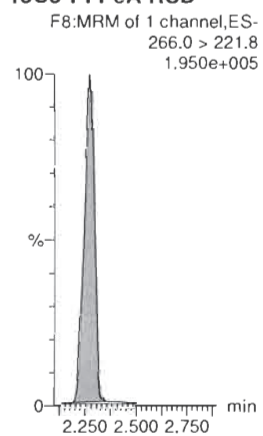
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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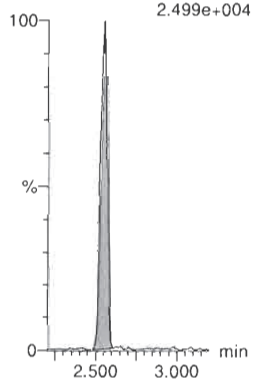
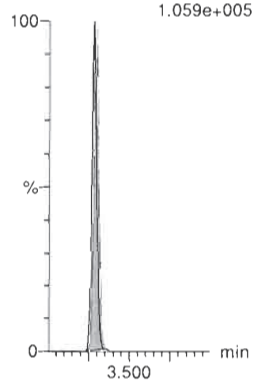
Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

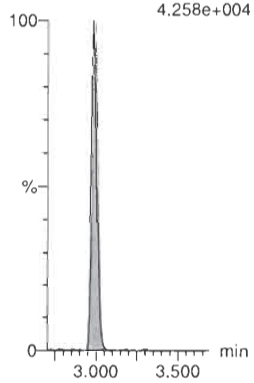
13C3-PFBS-RSD



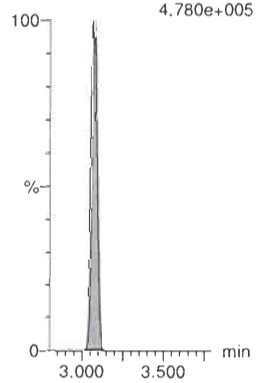
13C3-HFPO-DA-RSD



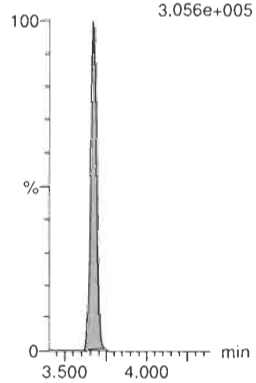
13C2-4:2 FTS-RSD



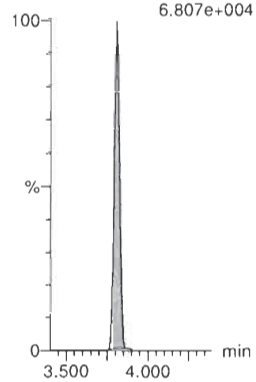
13C2-PFHxA-RSD



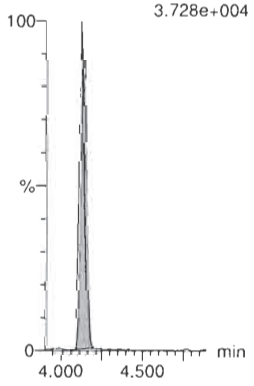
13C4-PFHpA-RSD



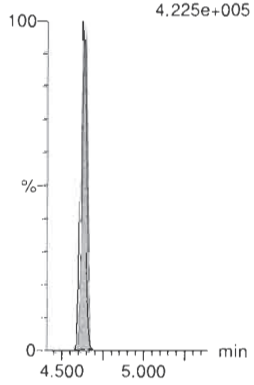
13C3-PFHxS-RSD



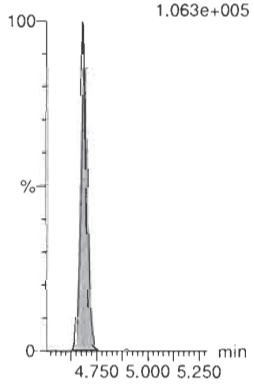
13C2-6:2 FTS-RSD



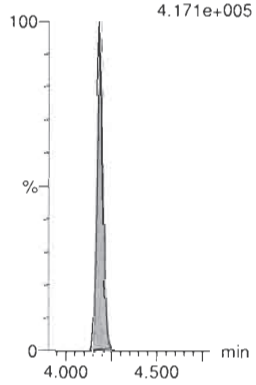
13C5-PFNA-RSD



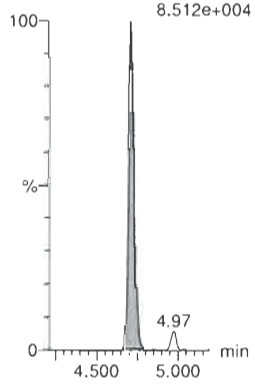
13C8-PFOSA-RSD



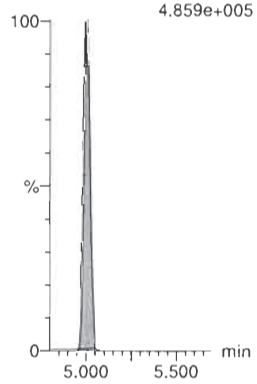
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977** Page 79 of 100
Vista Analytical Laboratory

Dataset: Untitled

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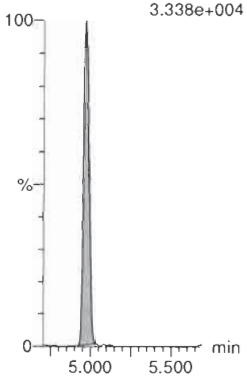
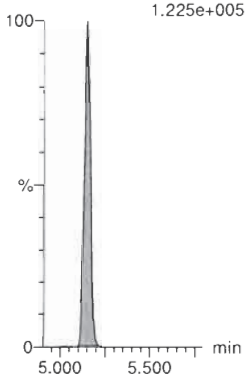
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

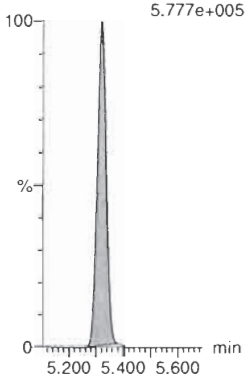
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.338e+004



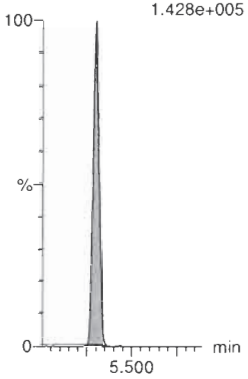
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.225e+005



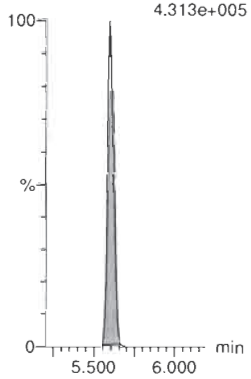
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
5.777e+005



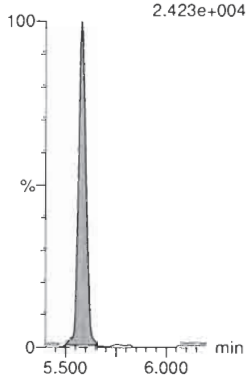
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.428e+005



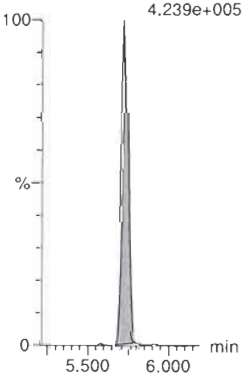
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.313e+005



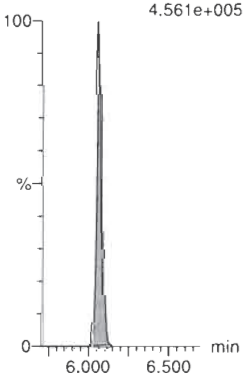
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.423e+004



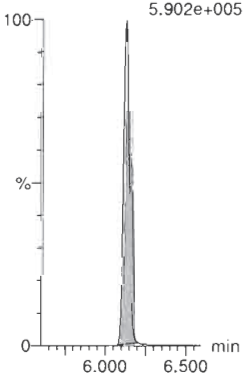
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
4.239e+004



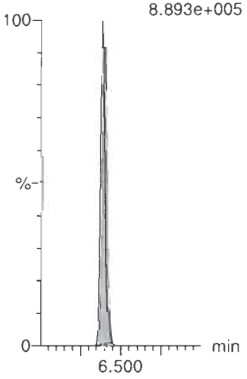
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.561e+005



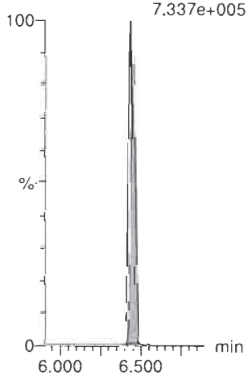
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.902e+005



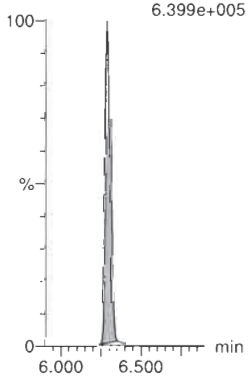
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
8.893e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
7.337e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
6.399e+005



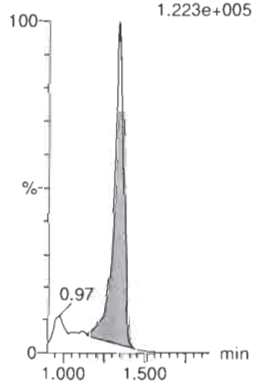
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

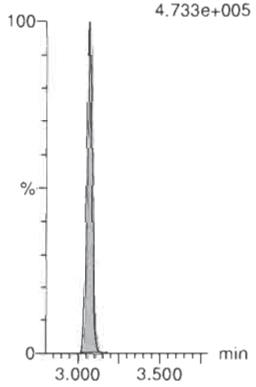
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-10, Date: 28-Feb-2020, Time: 14:20:17, ID: ST200228P2-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

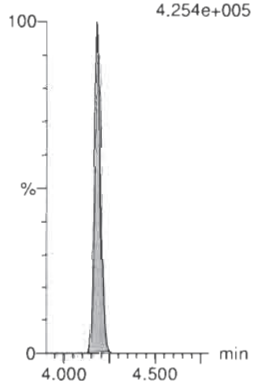
13C4-PFBA



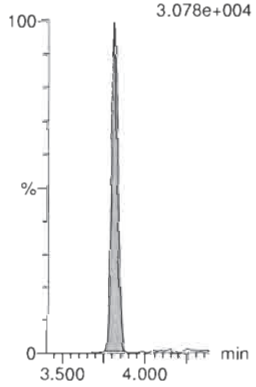
13C5-PFHxA



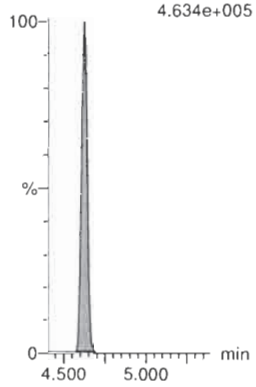
13C8-PFOA



18O2-PFHxS



13C9-PFNA



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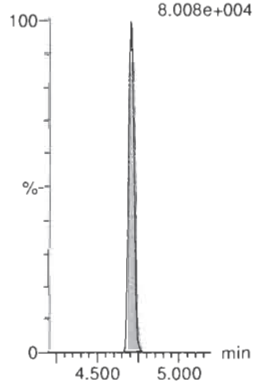

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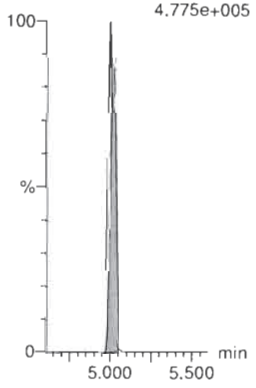

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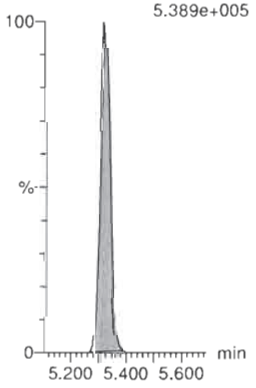

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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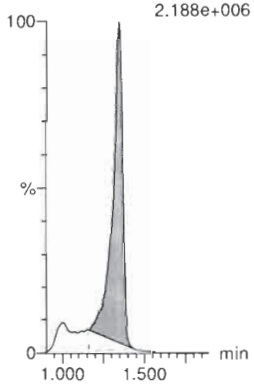

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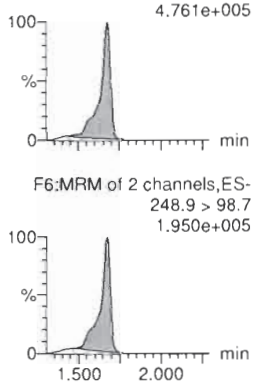

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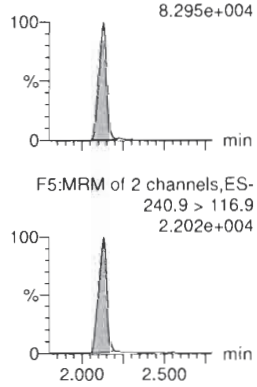

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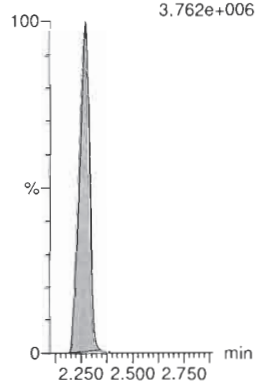

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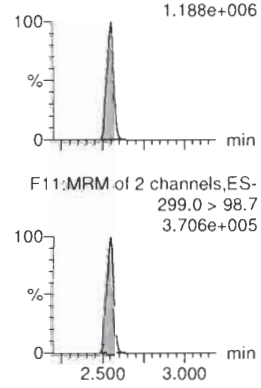

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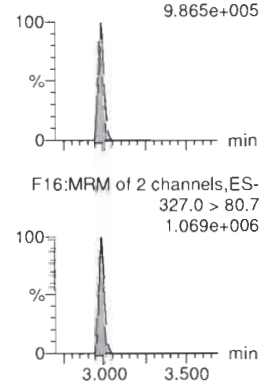

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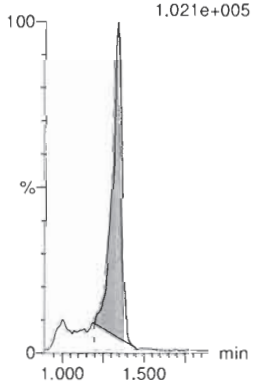

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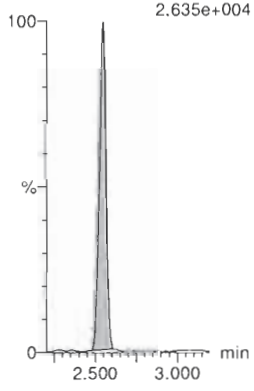

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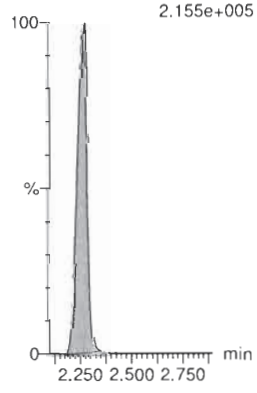

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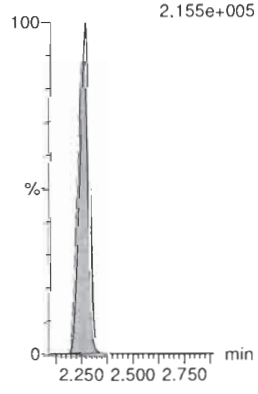

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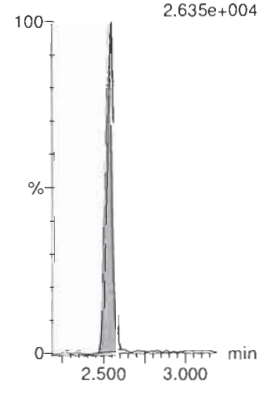

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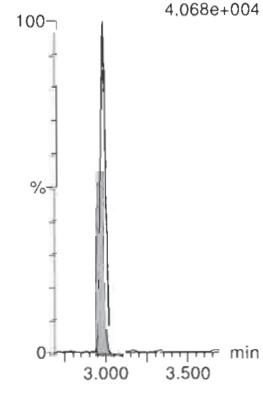


Quantify Sample Report **MassLynx V4.2 SCN977**

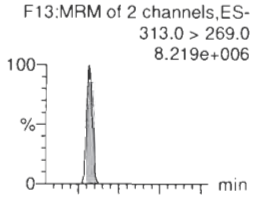
Vista Analytical Laboratory

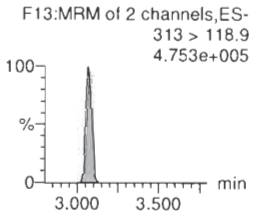
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

PFHxA





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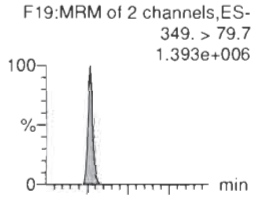

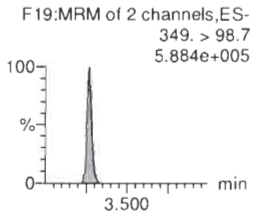

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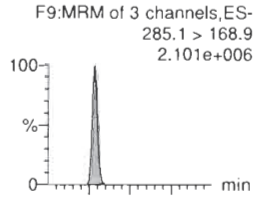

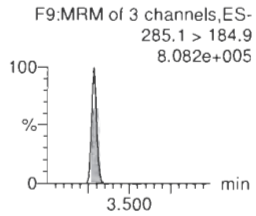

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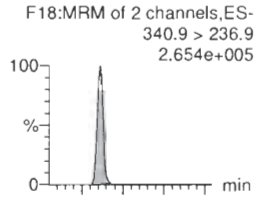

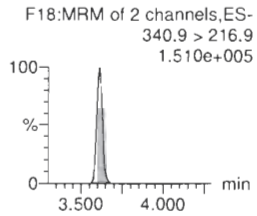

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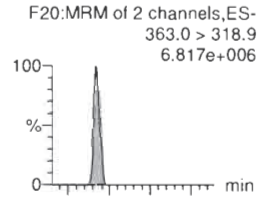

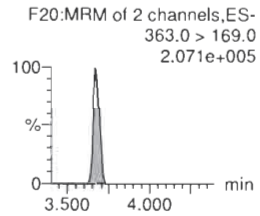

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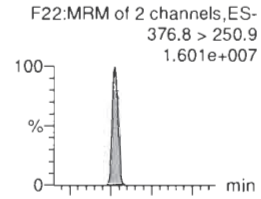

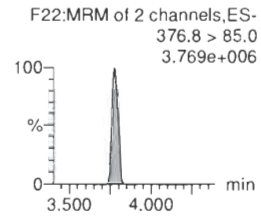

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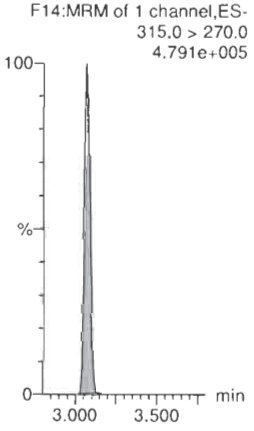

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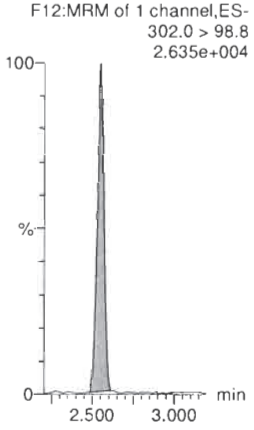

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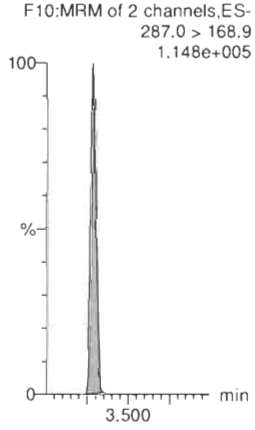

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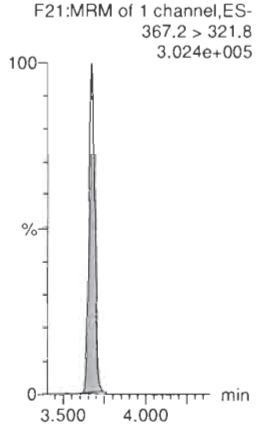

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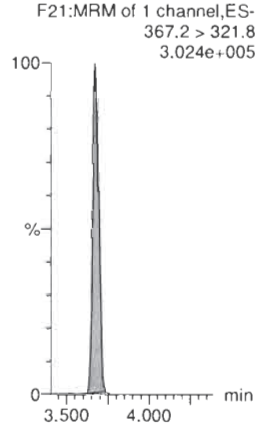

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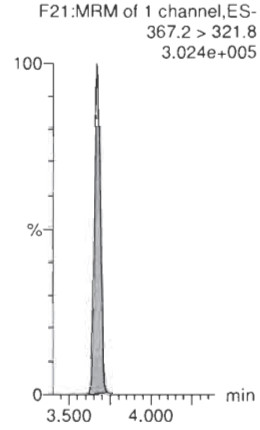

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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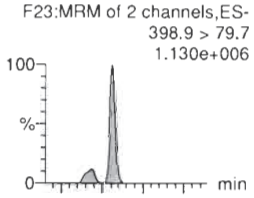
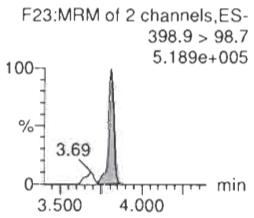
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

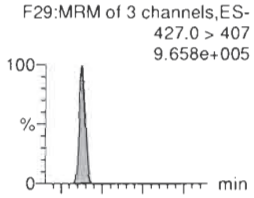
Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

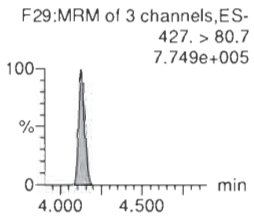
L-PFHxS





6:2 FTS





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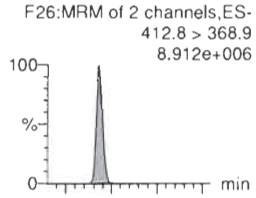

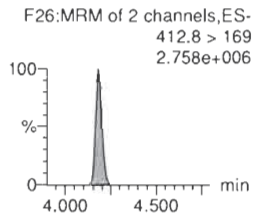

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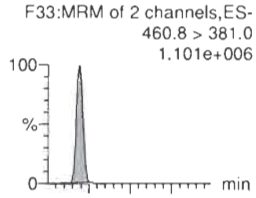

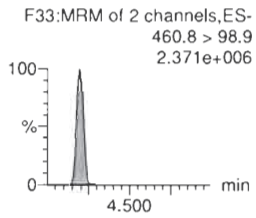

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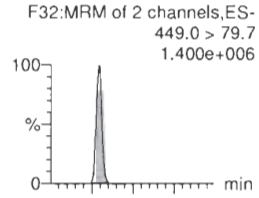
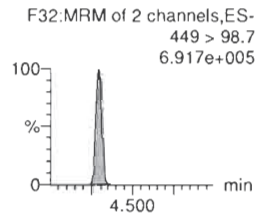
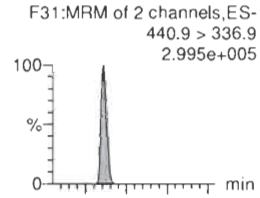
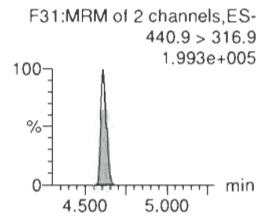


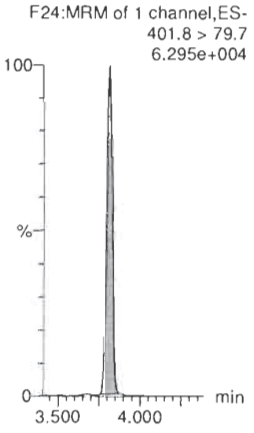


7:3 FTCA

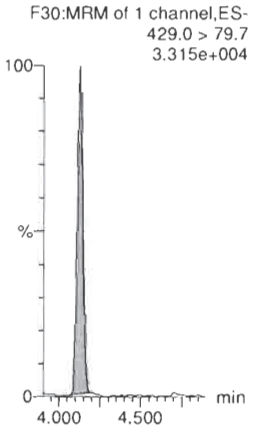




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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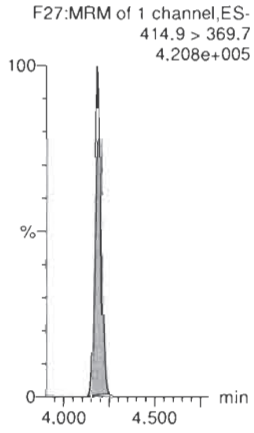

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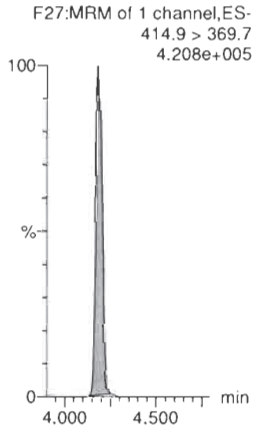

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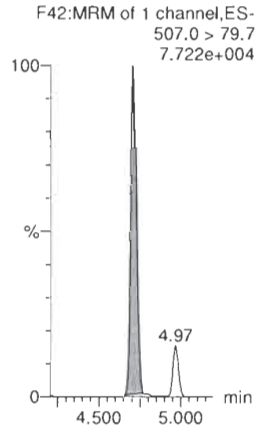
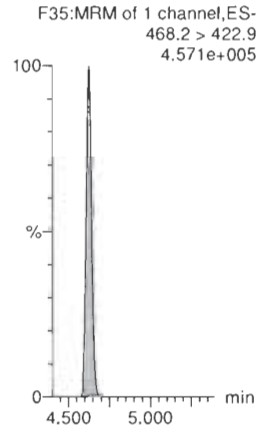


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

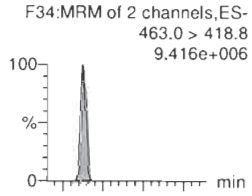
Vista Analytical Laboratory

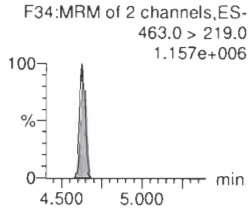
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

PFNA





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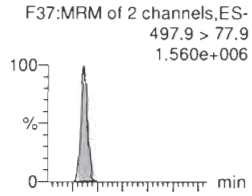

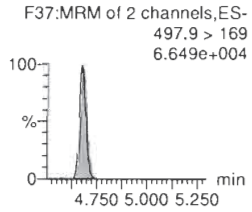

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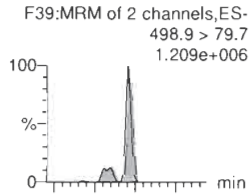

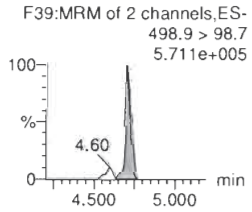

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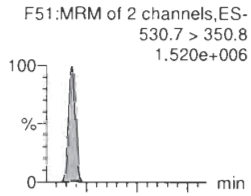

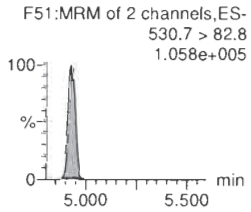

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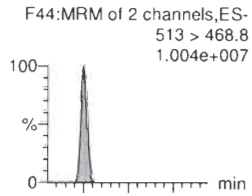

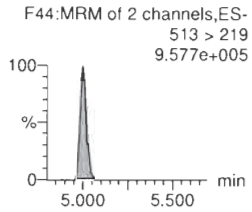

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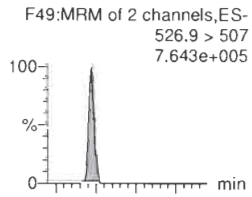
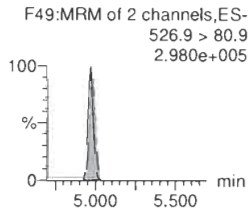
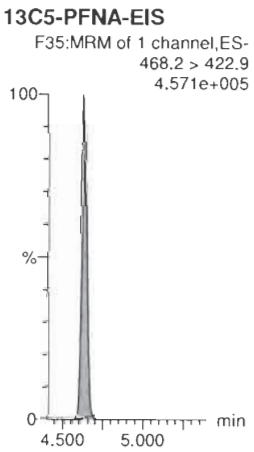




13C5-PFNA-EIS



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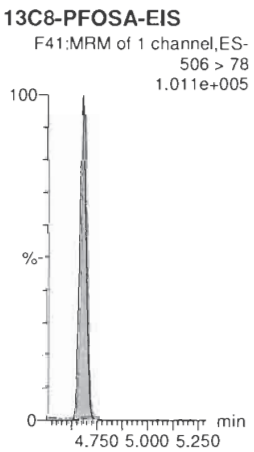

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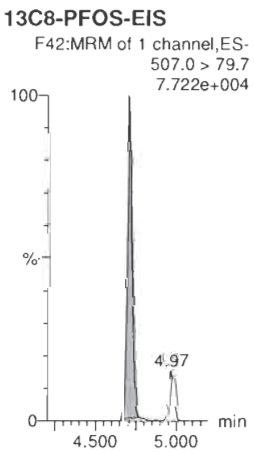

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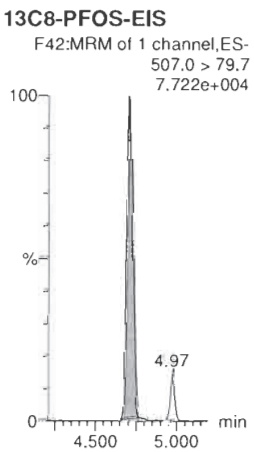

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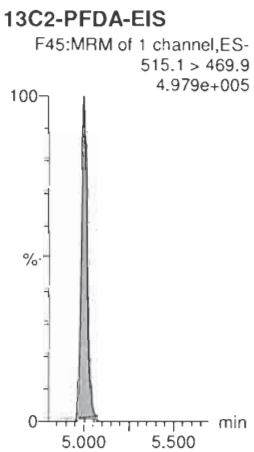
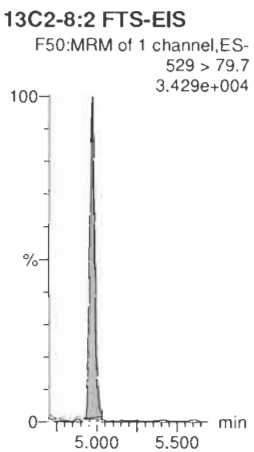


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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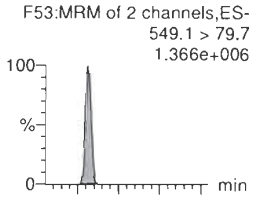

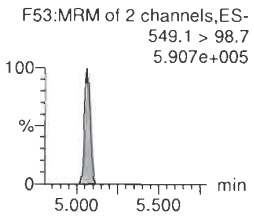

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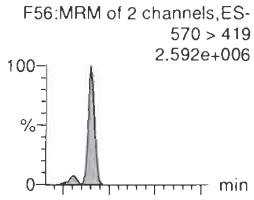

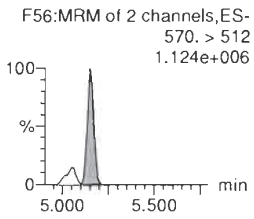

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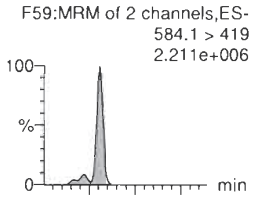

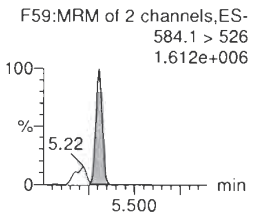

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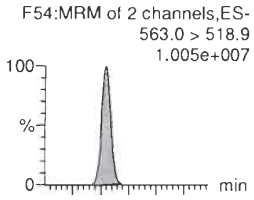

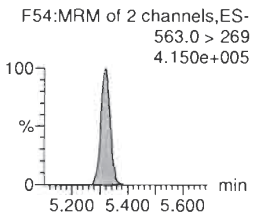

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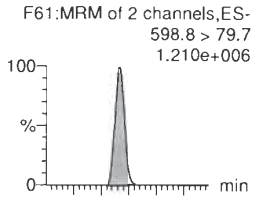

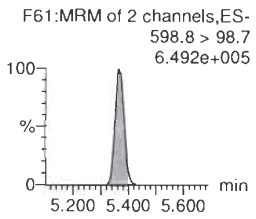

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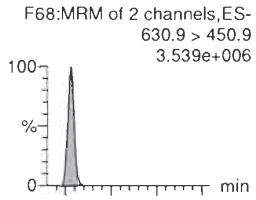

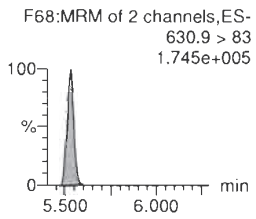

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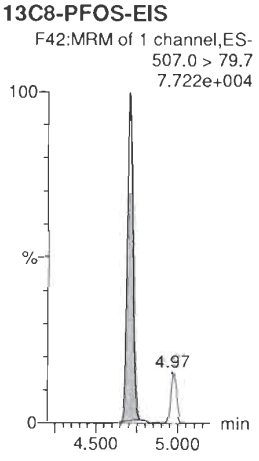

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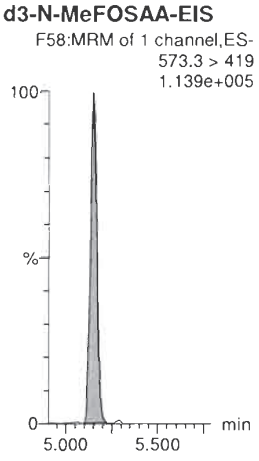

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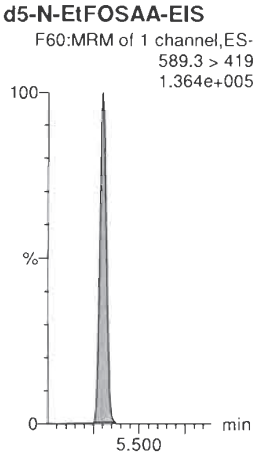

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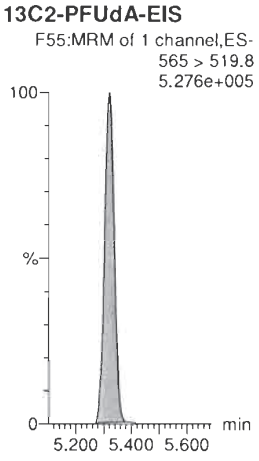

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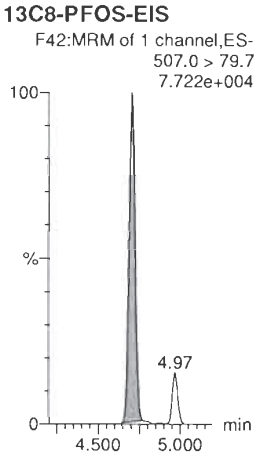

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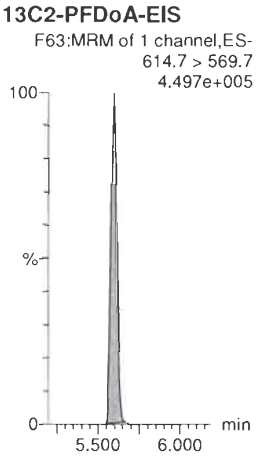


Quantify Sample Report **MassLynx V4.2 SCN977**

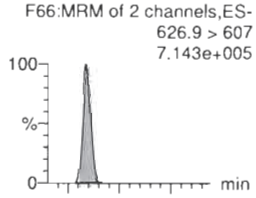
Vista Analytical Laboratory

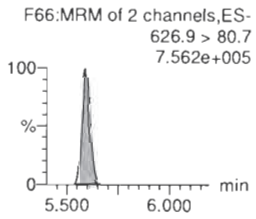
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

10:2 FTS





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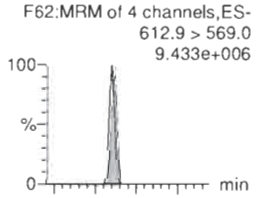

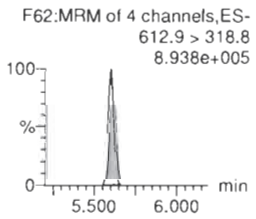

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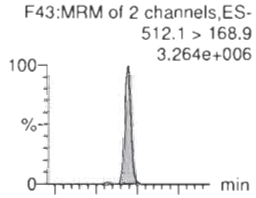

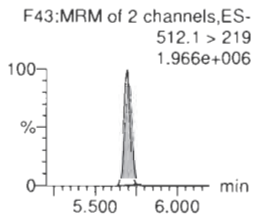

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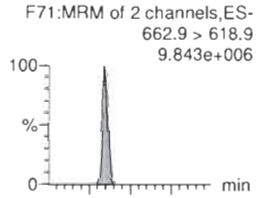

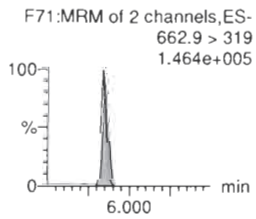

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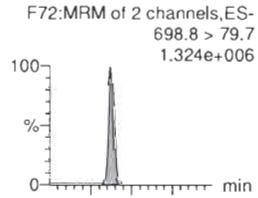

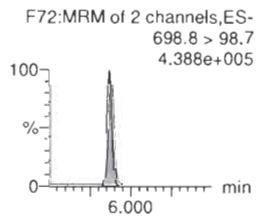

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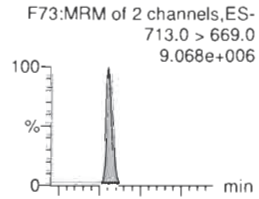

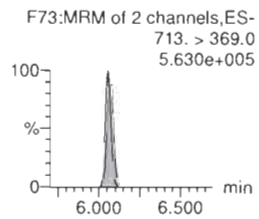

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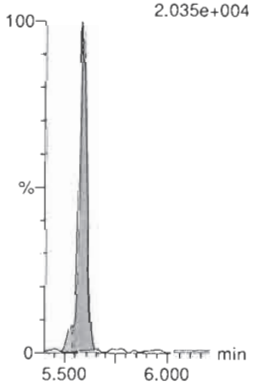

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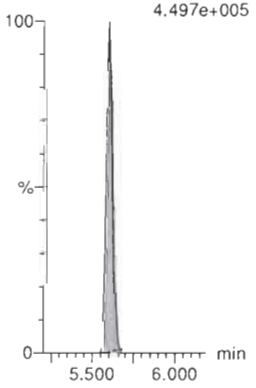

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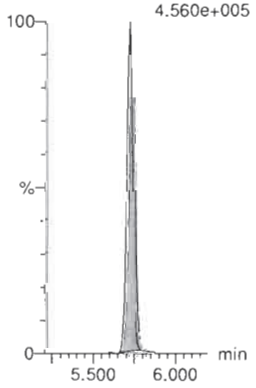

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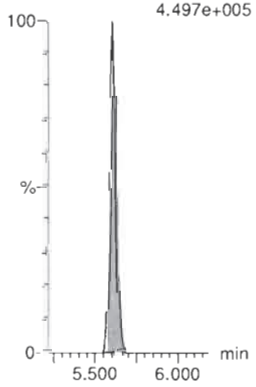

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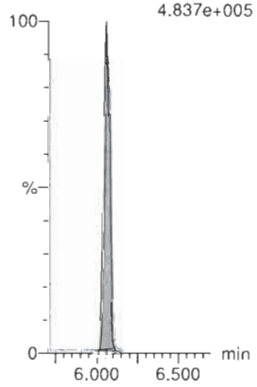

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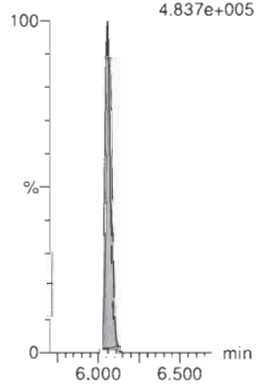

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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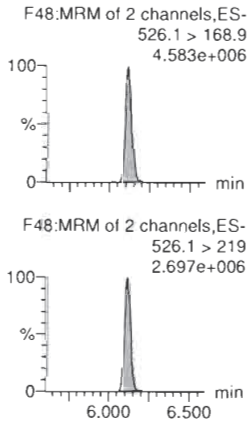

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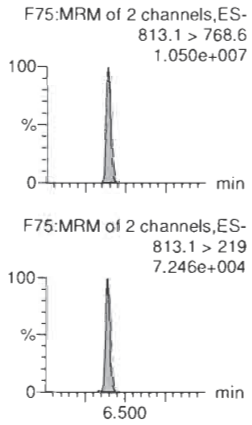

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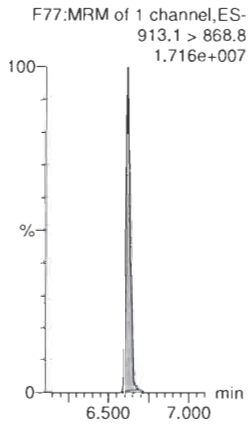

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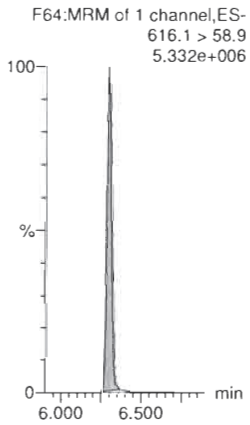

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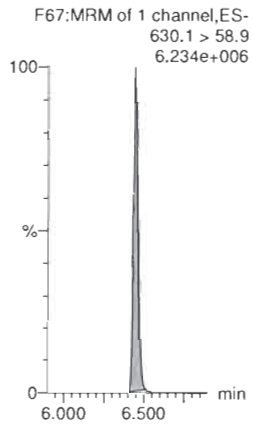

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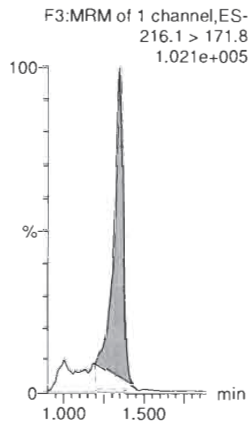
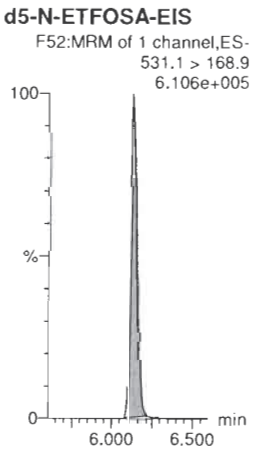


d5-N-ETFOSA-EIS



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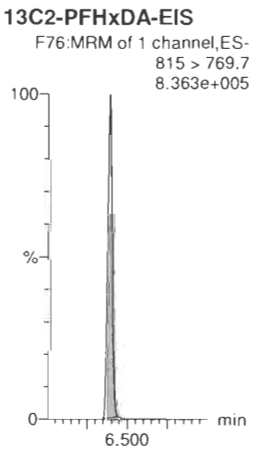

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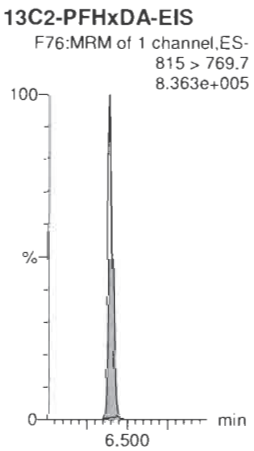

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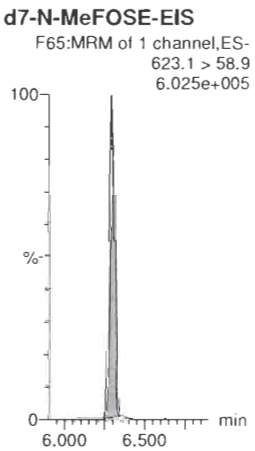

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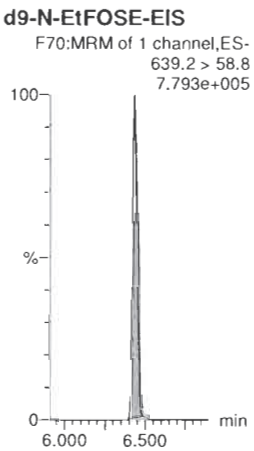
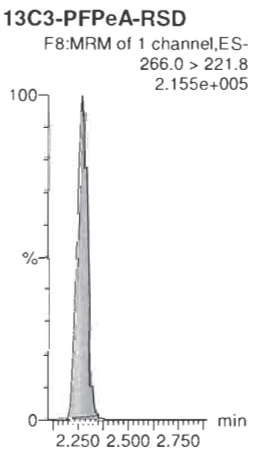


13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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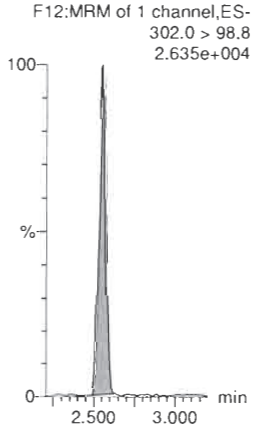
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

13C3-PFBS-RSD



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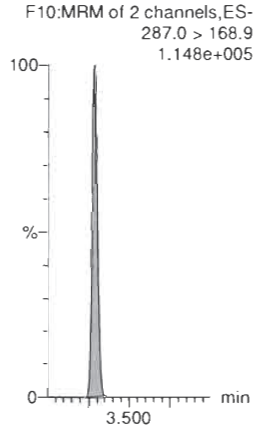
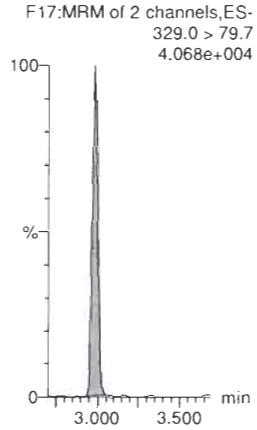


13C2-4:2 FTS-RSD



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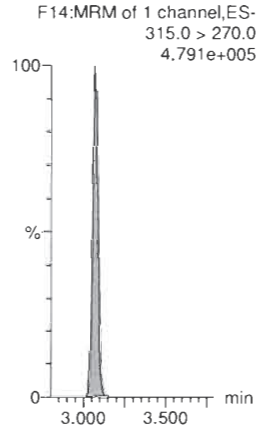

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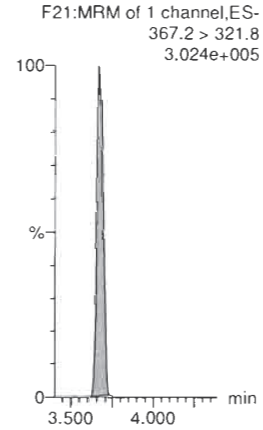

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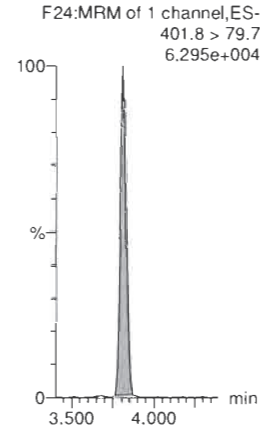

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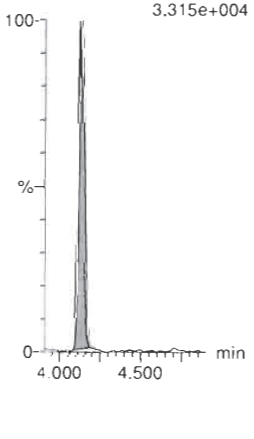
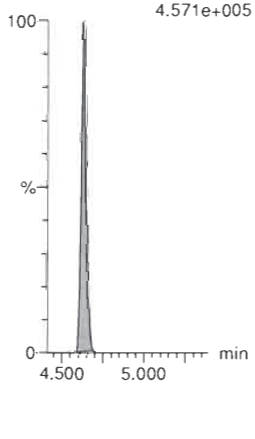


13C5-PFNA-RSD



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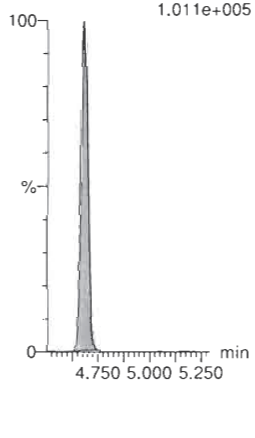
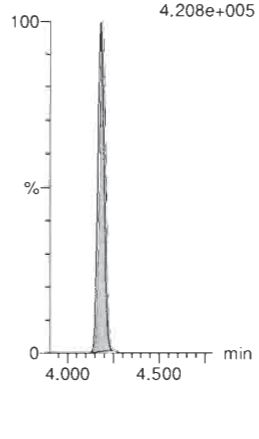


13C2-PFOA-RSD



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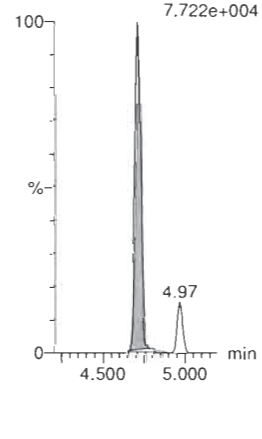

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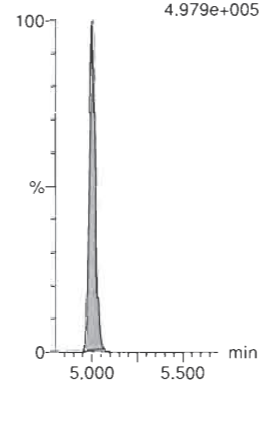


Quantify Sample Report **MassLynx V4.2 SCN977**

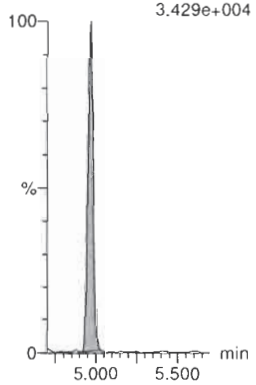
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

13C2-8:2 FTS-RSD



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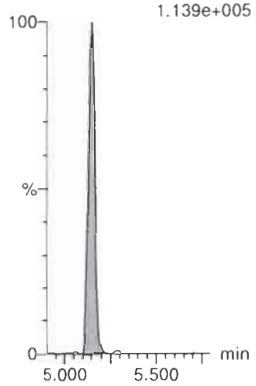

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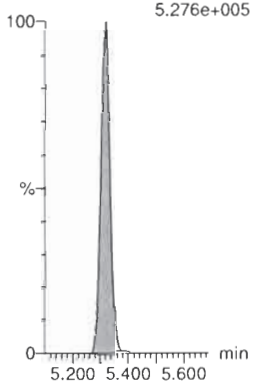

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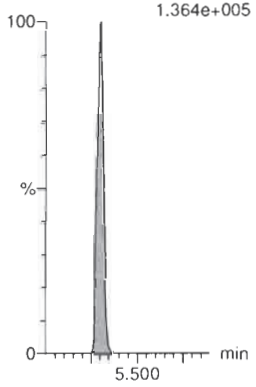

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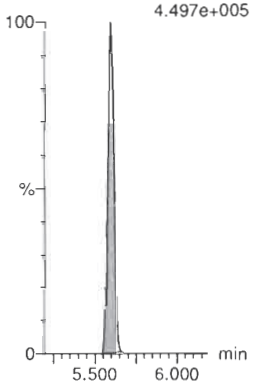
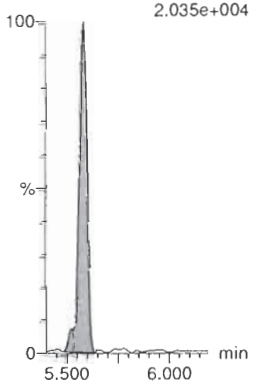


13C2-10:2 FTS-RSD



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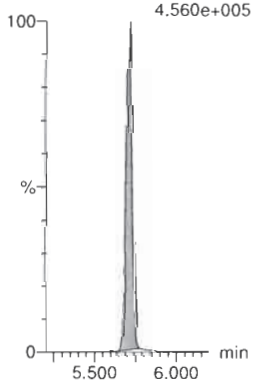
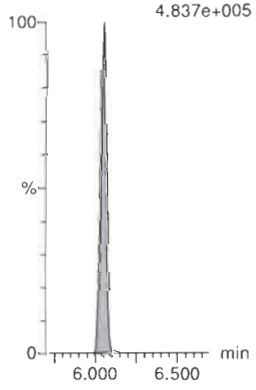


13C2-PFTeDA-RSD



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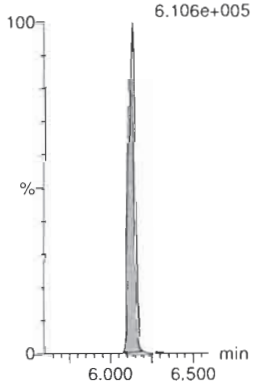

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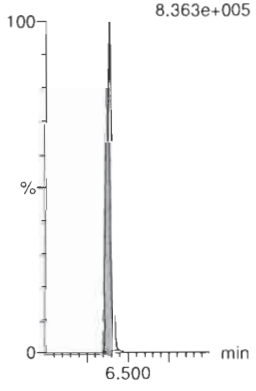
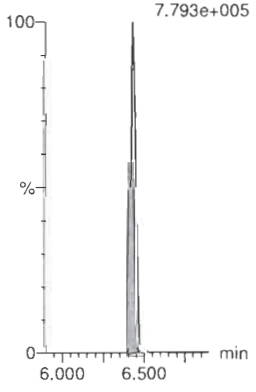
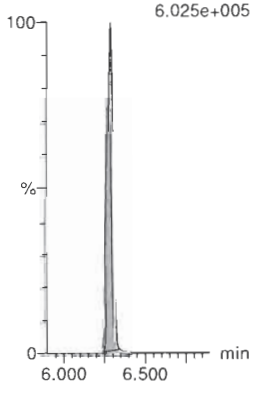


d9-N-EtFOSE-RSD



d7-N-MeFOSE-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-11, Date: 28-Feb-2020, Time: 14:30:48, ID: ST200228P2-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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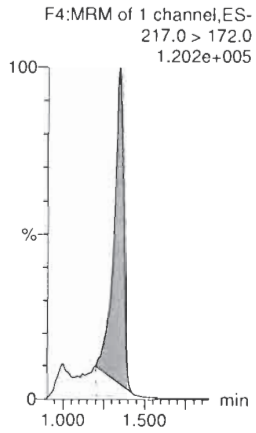

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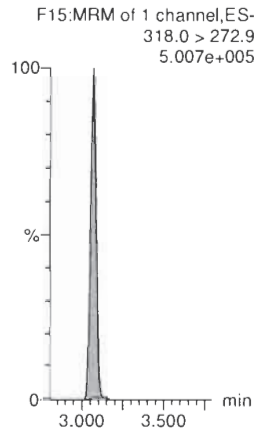

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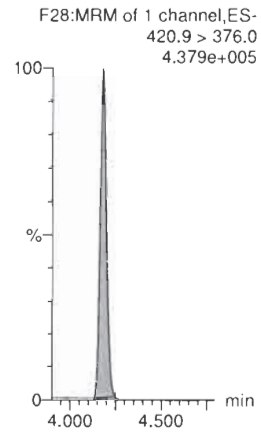

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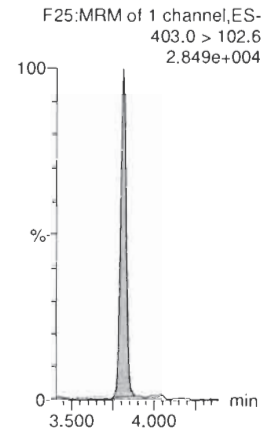
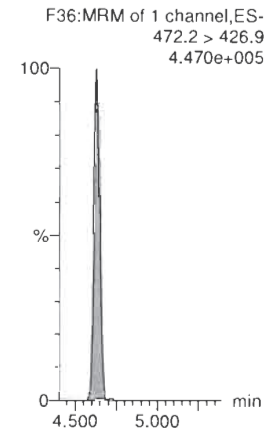


13C9-PFNA



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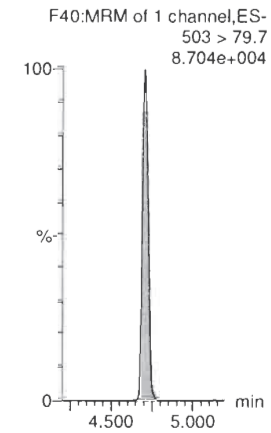

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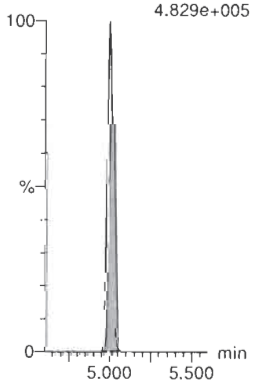
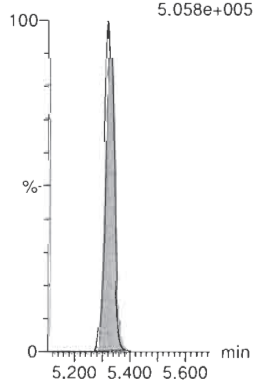


13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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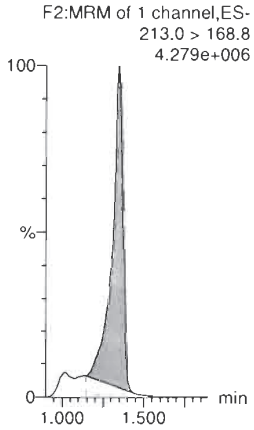
PFBA



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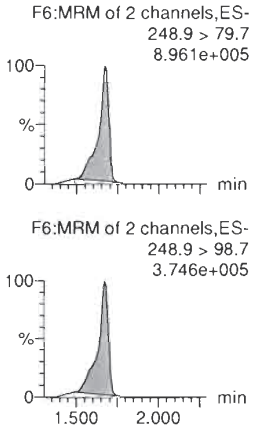

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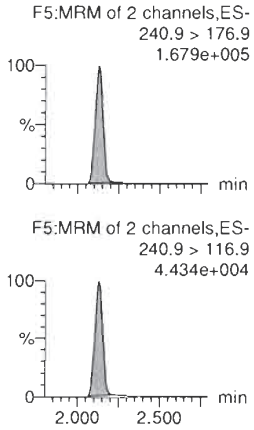

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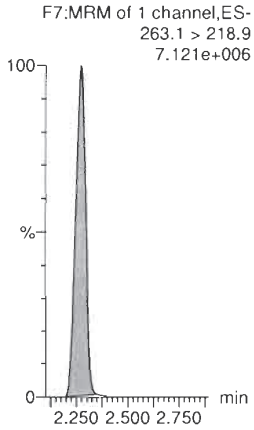
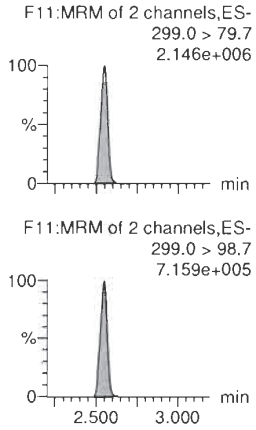


PFBS



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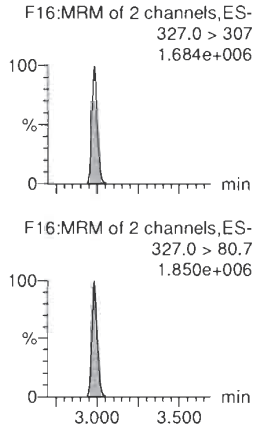
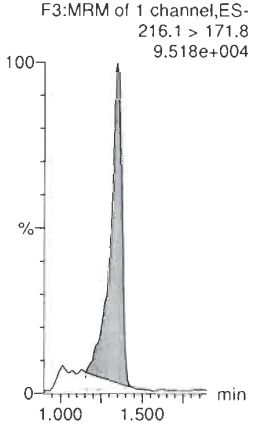


13C3-PFBA-EIS



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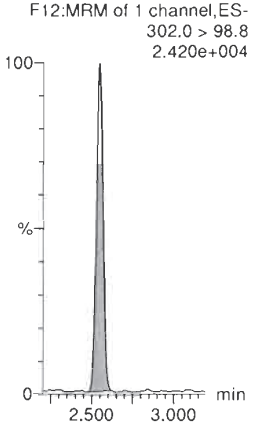

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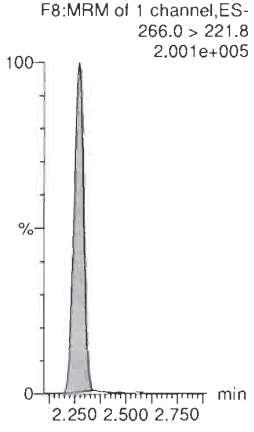

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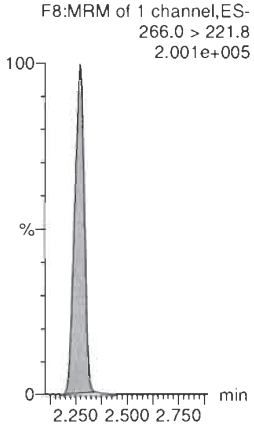

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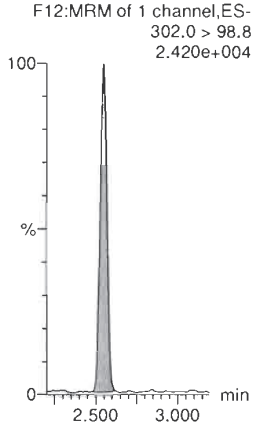

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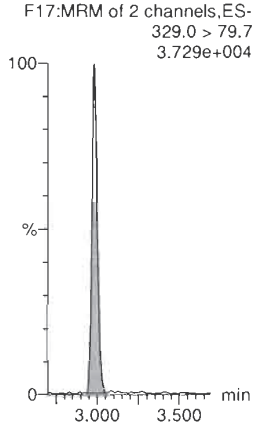

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

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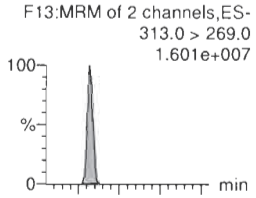

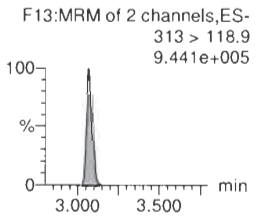

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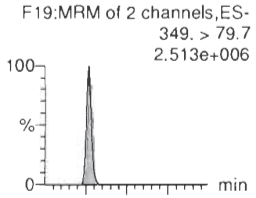

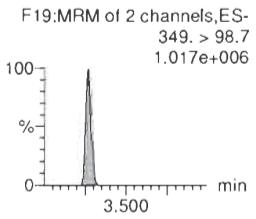

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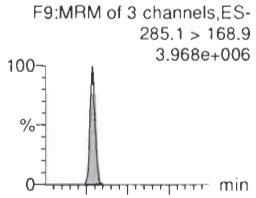

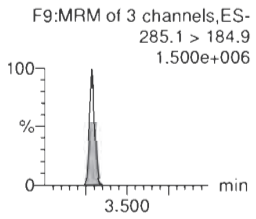

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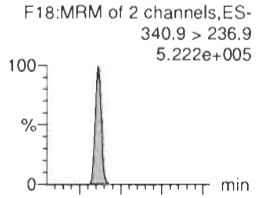

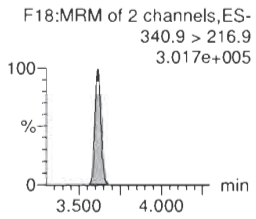

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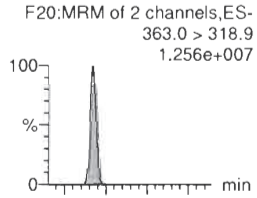

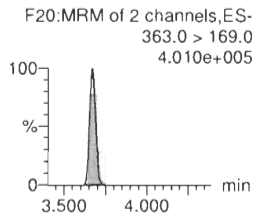

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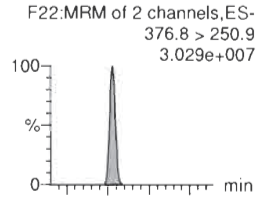

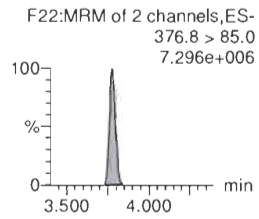

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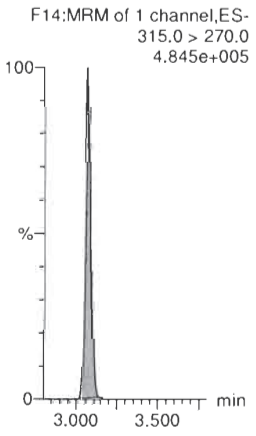
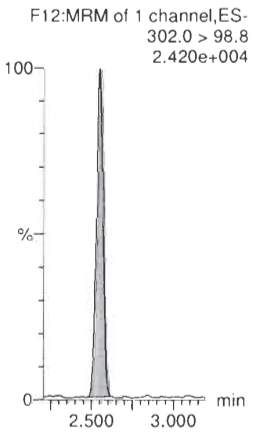


13C3-PFBS-EIS



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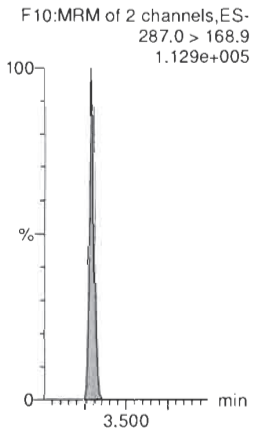

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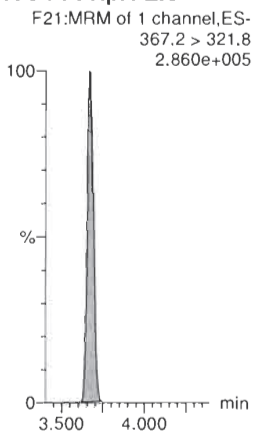

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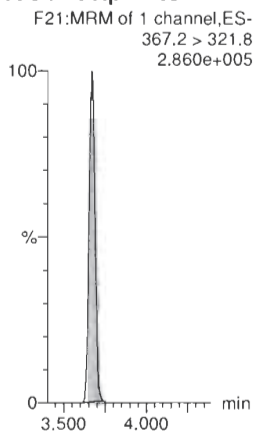

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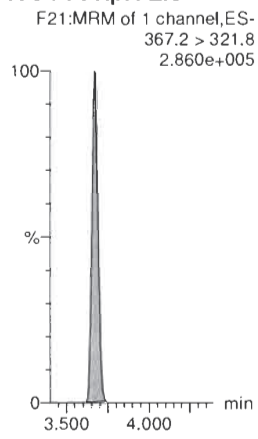

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

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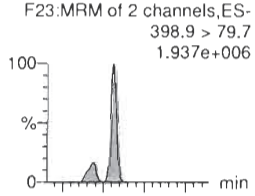
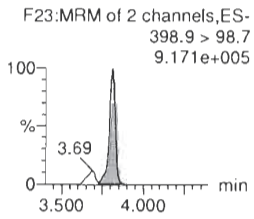
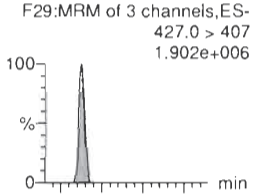
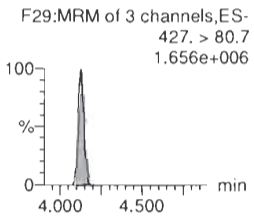




6:2 FTS





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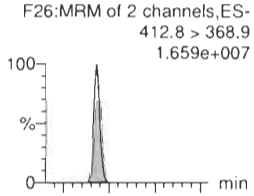

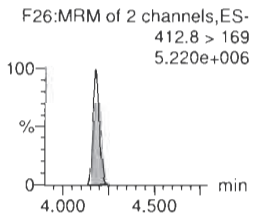

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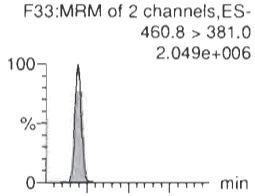

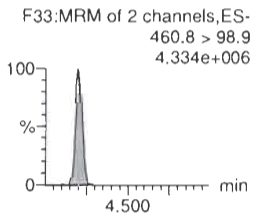

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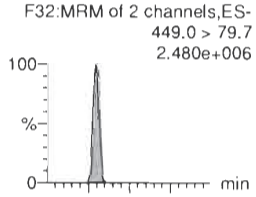
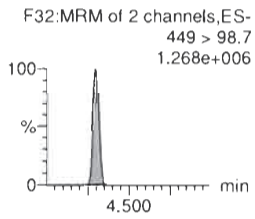
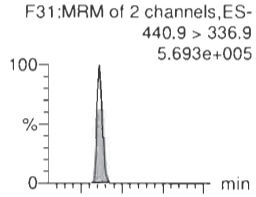
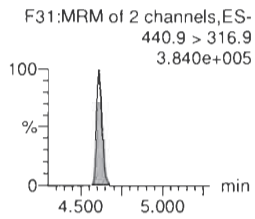




7:3 FTCA





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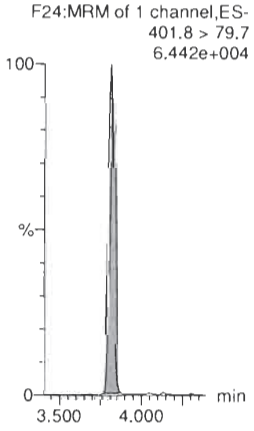

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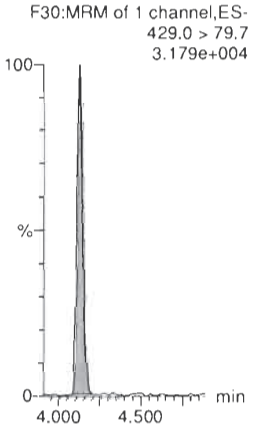

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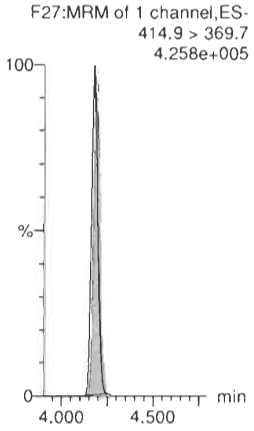

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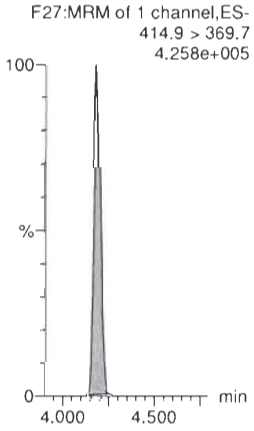

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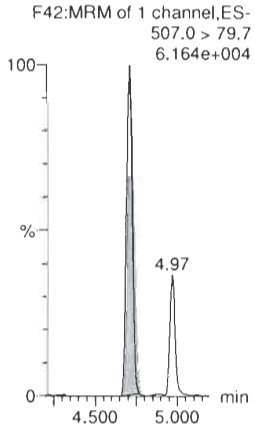

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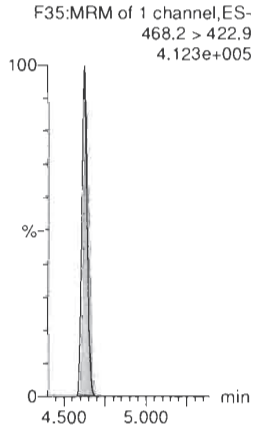


Quantify Sample Report **MassLynx V4.2 SCN977**

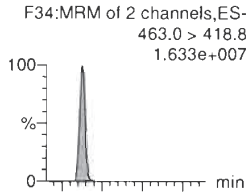
Vista Analytical Laboratory

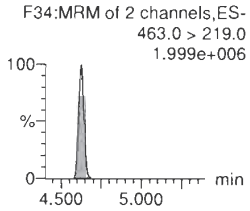
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

PFNA





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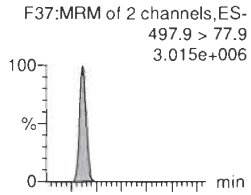
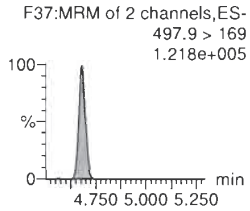
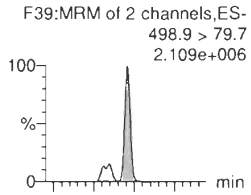
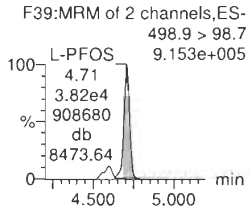




L-PFOS





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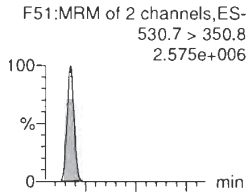

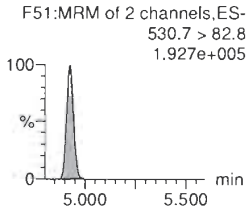

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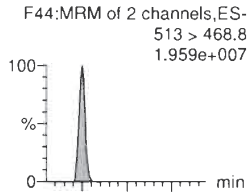
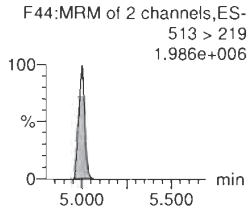
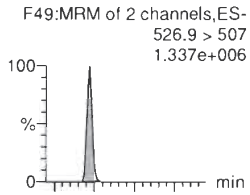
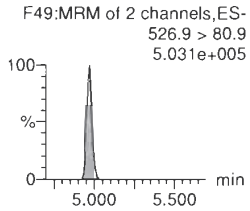


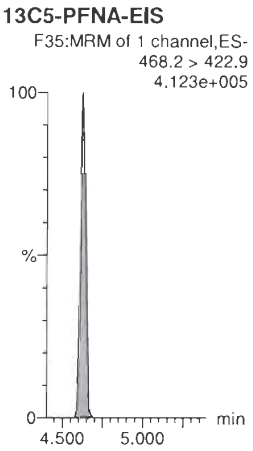


8:2 FTS

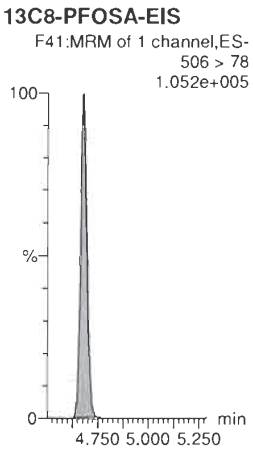




13C5-PFNA-EIS



13C8-PFOSA-EIS



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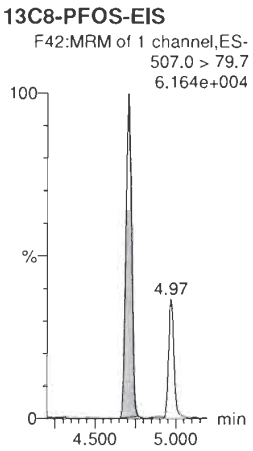

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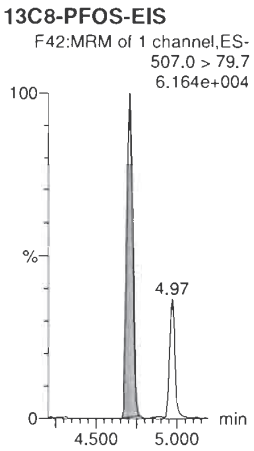

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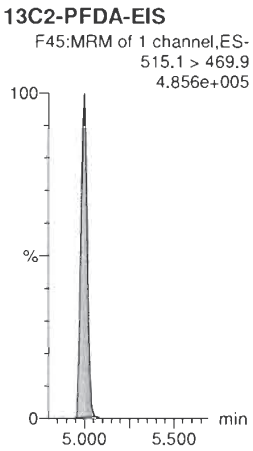
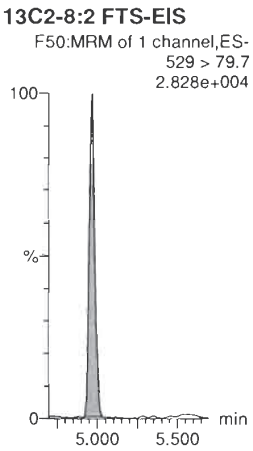


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

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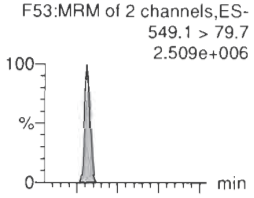

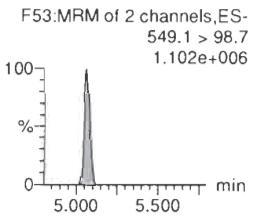

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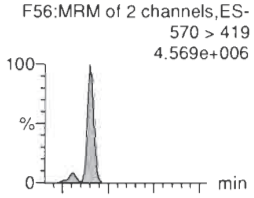

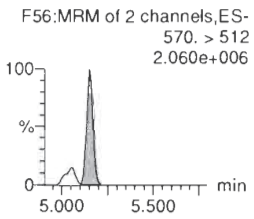

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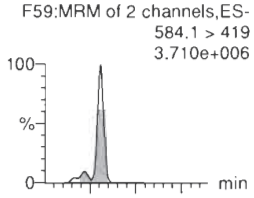

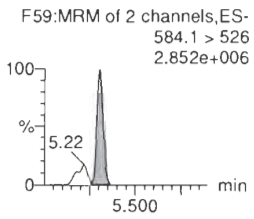

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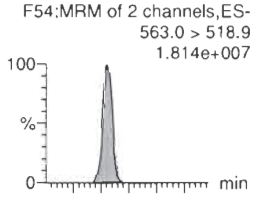

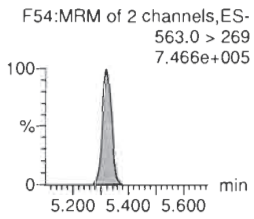

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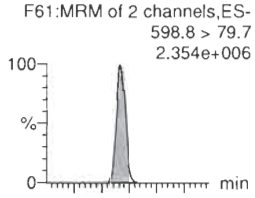

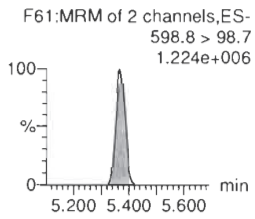

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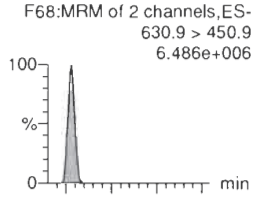
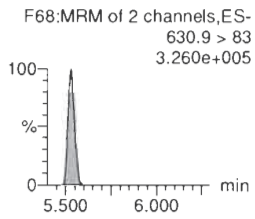
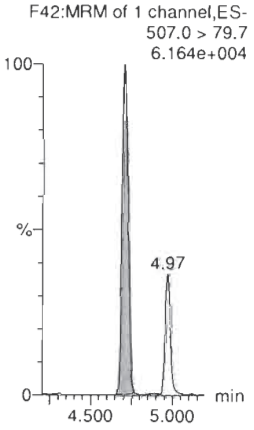
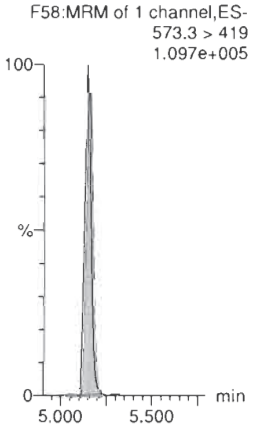




13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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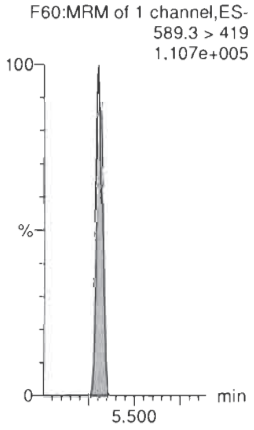

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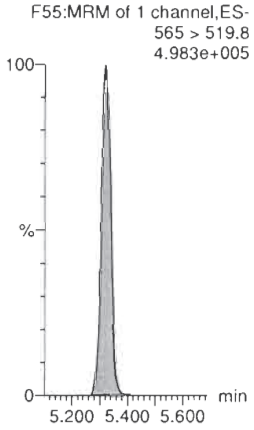

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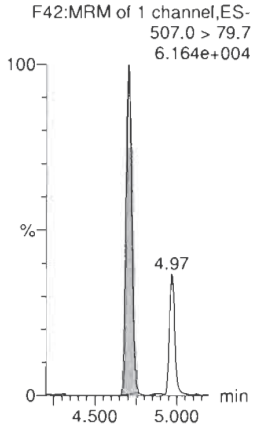

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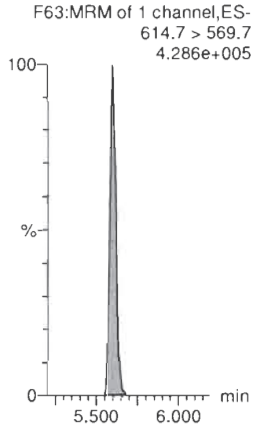


Quantify Sample Report **MassLynx V4.2 SCN977**

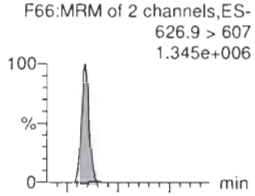
Vista Analytical Laboratory

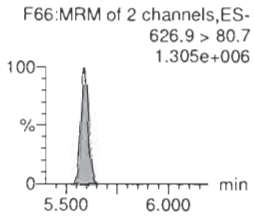
Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

10:2 FTS





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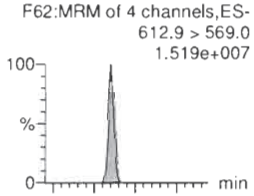

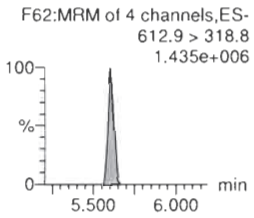

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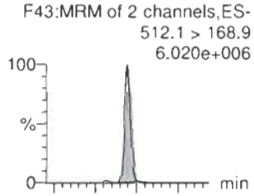

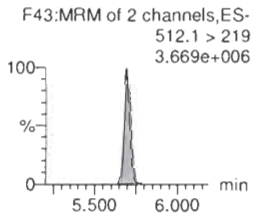

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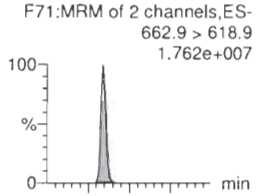

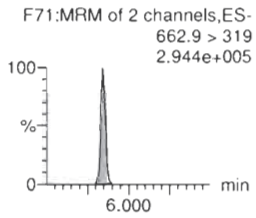

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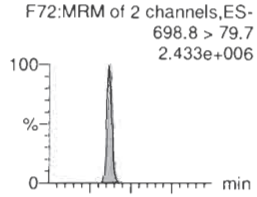

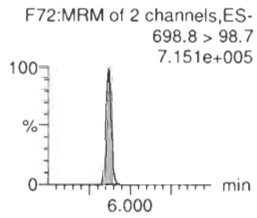

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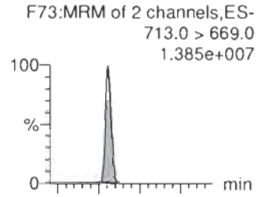

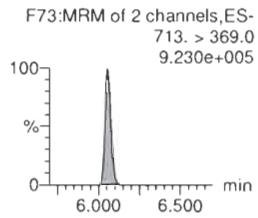

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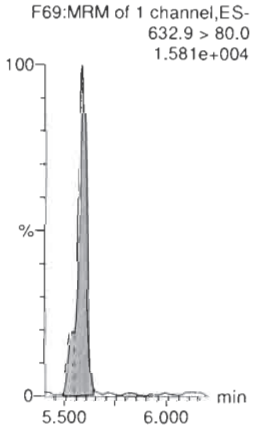
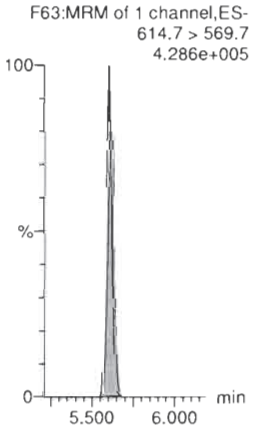


13C2-PFDoA-EIS



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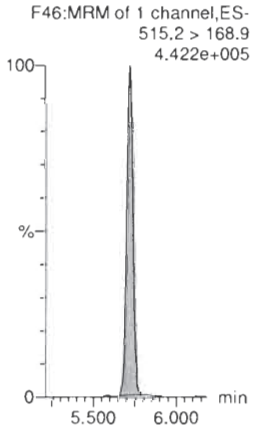

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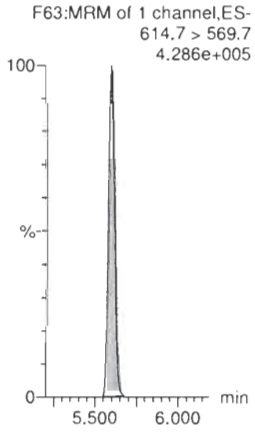

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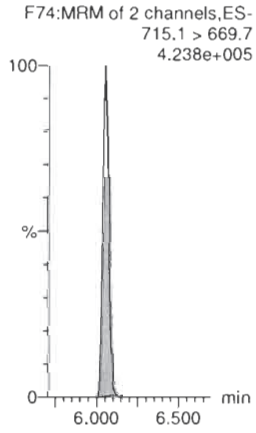

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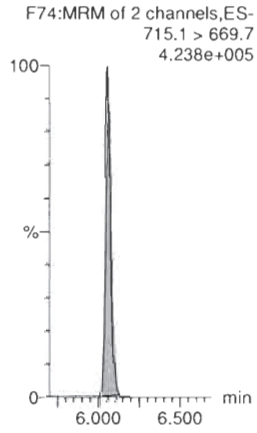


Quantify Sample Report **MassLynx V4.2 SCN977**

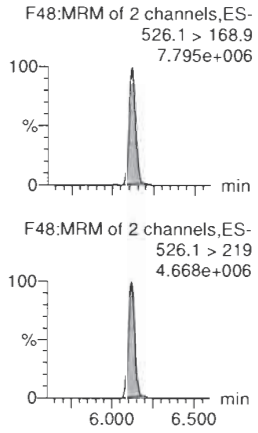
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

N-EtFOSA



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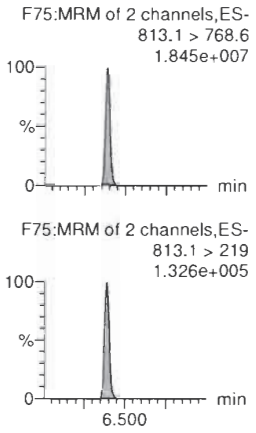

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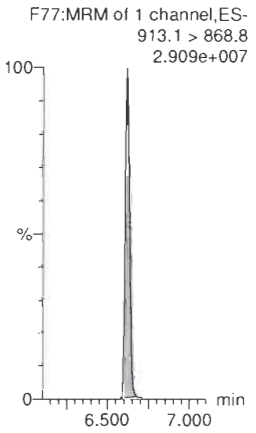

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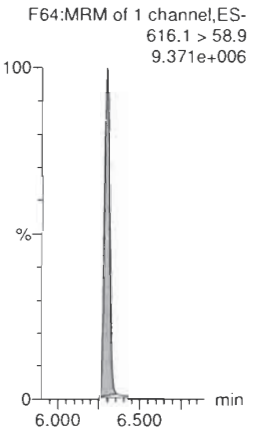

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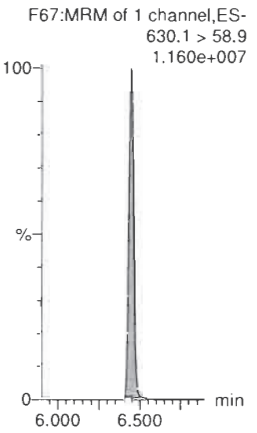

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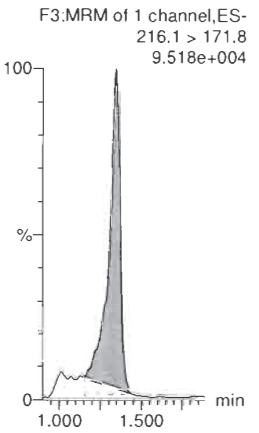
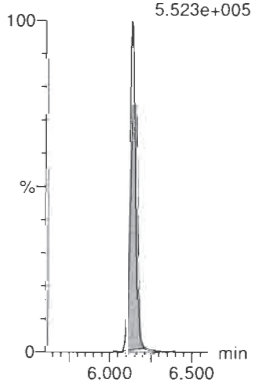
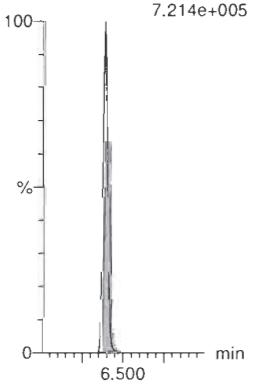


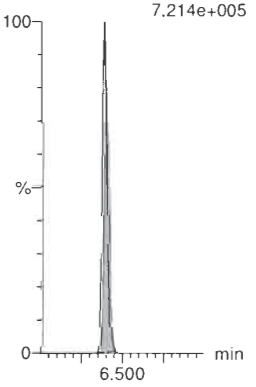
d5-N-ETFOSA-EIS



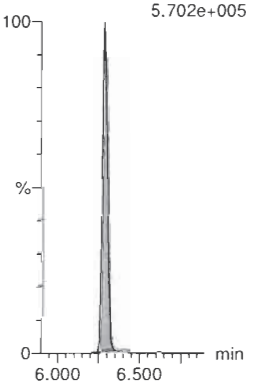
13C2-PFHxDA-EIS



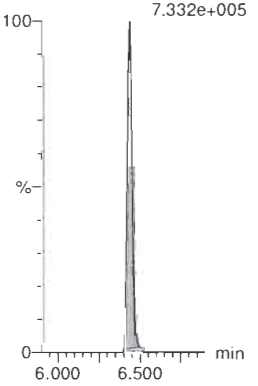
13C2-PFHxDA-EIS



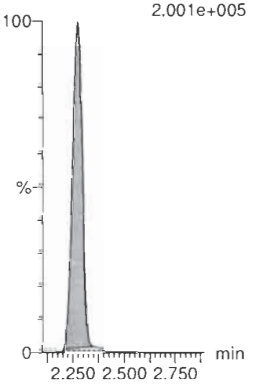
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

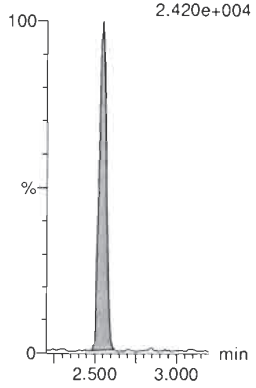
Vista Analytical Laboratory

Dataset: Untitled

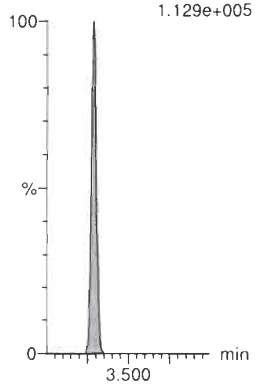
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

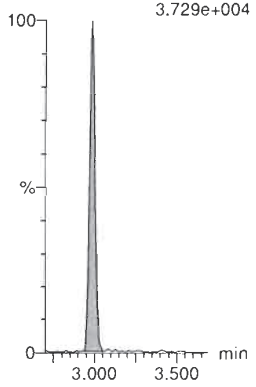
13C3-PFBS-RSD



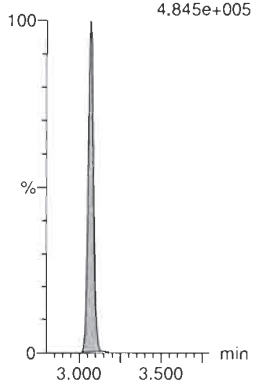
13C3-HFPO-DA-RSD



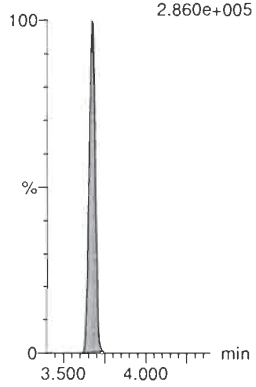
13C2-4:2 FTS-RSD



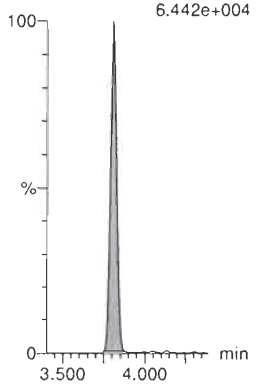
13C2-PFHxA-RSD



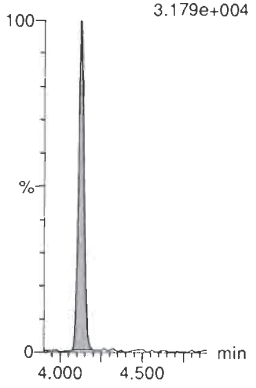
13C4-PFHpA-RSD



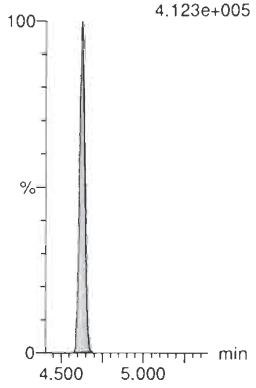
13C3-PFHxS-RSD



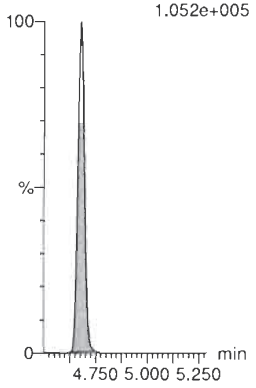
13C2-6:2 FTS-RSD



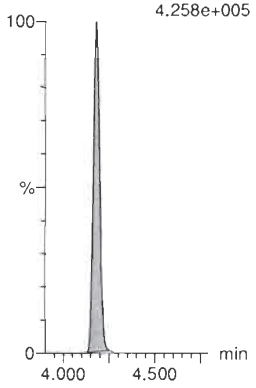
13C5-PFNA-RSD



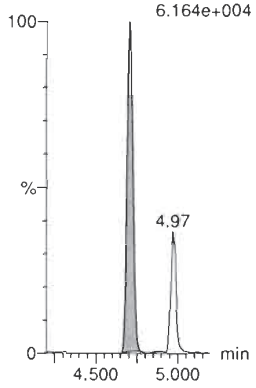
13C8-PFOSA-RSD



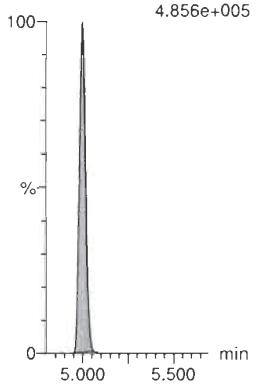
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

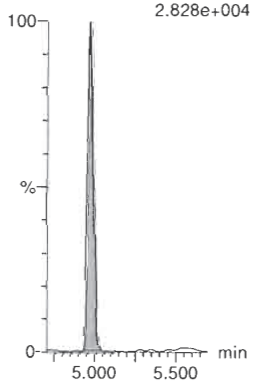
Vista Analytical Laboratory

Dataset: Untitled

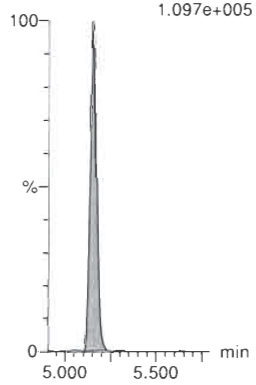
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

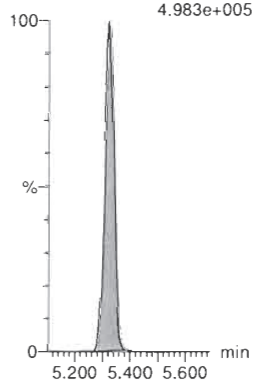
13C2-8:2 FTS-RSD



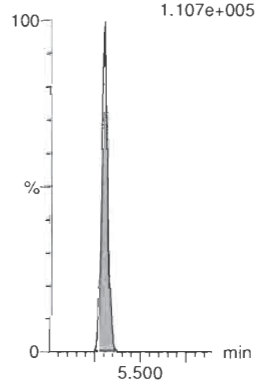
d3-N-MeFOSAA-RSD



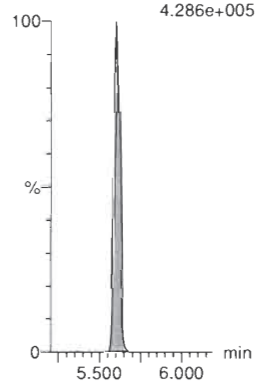
13C2-PFUdA-RSD



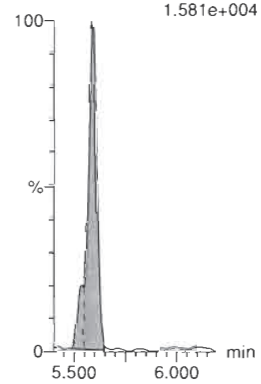
d5-N-EtFOSAA-RSD



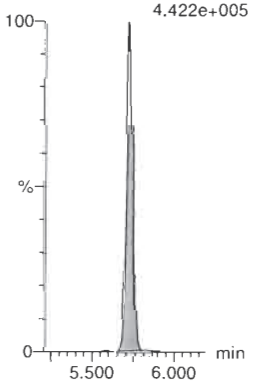
13C2-PFDoA-RSD



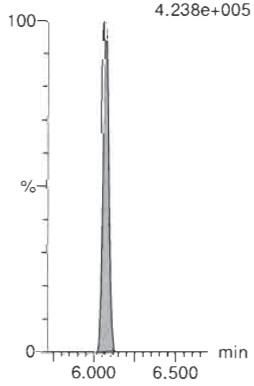
13C2-10:2 FTS-RSD



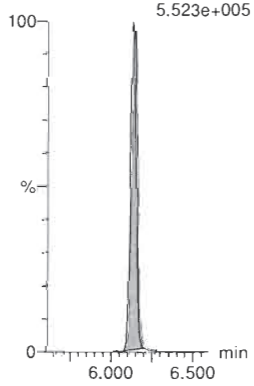
d3-N-MeFOSA-RSD



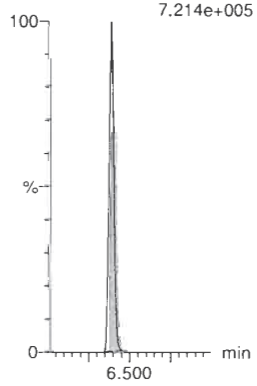
13C2-PFTeDA-RSD



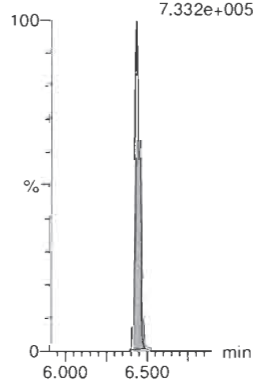
d5-N-ETFOSA-RSD



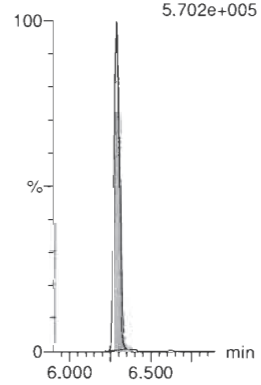
13C2-PFHxDA-RSD



d9-N-EtFOSE-RSD



d7-N-MeFOSE-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

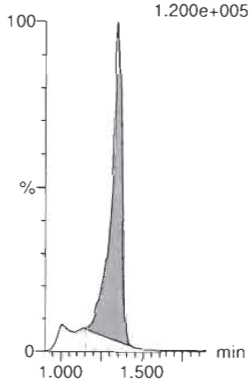
Vista Analytical Laboratory

Dataset: Untitled

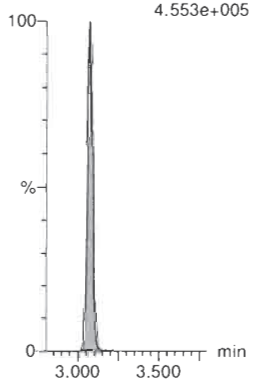
Last Altered: Saturday, February 29, 2020 09:19:58 Pacific Standard Time
Printed: Saturday, February 29, 2020 09:20:23 Pacific Standard Time

Name: 200228P2-12, Date: 28-Feb-2020, Time: 14:41:18, ID: ST200228P2-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

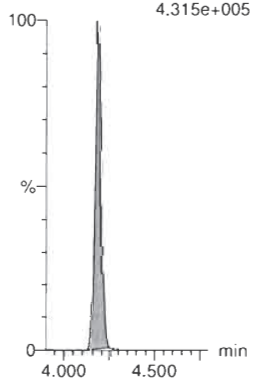
13C4-PFBA



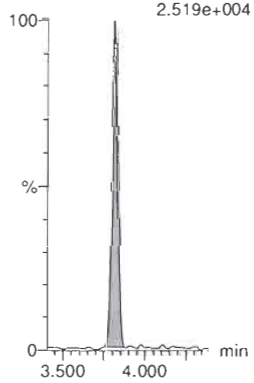
13C5-PFHxA



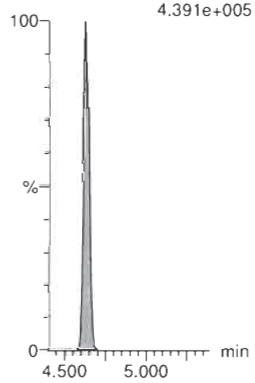
13C8-PFOA



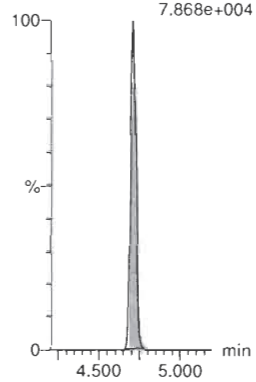
18O2-PFHxS



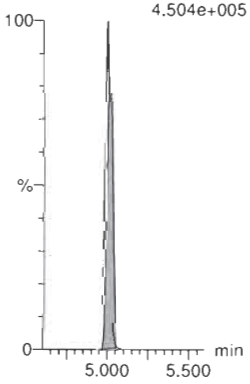
13C9-PFNA



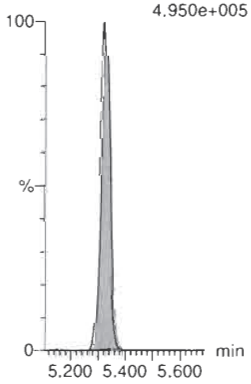
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

Last Altered: Saturday, February 29, 2020 11:35:49 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:36:35 Pacific Standard Time

VJM 2/29/2020

(A) not in ICV

Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	5713.362	6306.565	1.00	1.35	11.324	10.000	10.2	101.6	NO		
2	2	PFPrS	248.9 > 79.7		1191.958	1.00			10.000		(A)	NO		YES
3	3	3:3 FTCA	240.9 > 176.9		10586.499	1.00			10.000		↓	NO		YES
4	4	PFPeA	263.1 > 218.9	8771.021	10586.499	1.00	2.28	10.356	10.000	11.0	109.9	NO		
5	5	PFBS	299.0 > 79.7	2125.063	1191.958	1.00	2.55	22.285	8.840	9.52	107.7	NO	3.059	NO
6	6	4:2 FTS	327.0 > 307	1521.217	1672.055	1.00	2.99	11.372	9.360	8.75	93.5	NO	0.833	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	6306.565		1.00	1.35	6306.565	12.500	11.7	93.8	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	1191.958		1.00	2.55	1191.958	12.500	12.4	99.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	10586.499		1.00	2.28	10586.499	12.500	11.3	90.6	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	10586.499		1.00	2.28	10586.499	12.500	11.3	90.6	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	1191.958		1.00	2.55	1191.958	12.500	12.4	99.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1672.055		1.00	2.99	1672.055	12.500	12.6	100.8	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	14191.963	17652.342	1.00	3.07	10.050	10.000	11.4	114.0	NO	15.648	NO
15	8	PFPeS	349.>79.7	2284.800	1191.958	1.00	3.27	23.961	9.360	11.3	120.3	NO	2.408	NO
16	9	HFPO-DA	285.1 > 168.9	3214.207	3662.065	1.00	3.29	10.971	10.000	10.7	107.1	NO	2.690	NO
17	10	5:3 FTCA	340.9 > 236.9		13006.940	1.00			10.000			NO		YES
18	11	PFHpA	363.0 > 318.9	12919.545	13006.940	1.00	3.67	12.416	10.000	10.5	105.4	NO	40.465	YES
19	12	ADONA	376.8 > 250.9	27559.961	13006.940	1.00	3.78	26.486	10.000	10.1	101.3	NO	3.928	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	17652.342		1.00	3.07	17652.342	12.500	11.1	89.2	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	1191.958		1.00	2.55	1191.958	12.500	12.4	99.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3662.065		1.00	3.29	3662.065	12.500	11.4	91.5	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	13006.940		1.00	3.67	13006.940	12.500	12.5	99.7	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	13006.940		1.00	3.67	13006.940	12.500	12.5	99.7	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	13006.940		1.00	3.67	13006.940	12.500	12.5	99.7	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	2154.354	2666.442	1.00	3.81	10.099	9.120	9.06	99.3	NO	2.597	NO
28	15	6:2 FTS	427.0 > 407	2019.568	1396.995	1.00	4.13	18.071	9.480	11.5	121.3	NO	1.193	NO
29	16	L-PFOA	412.8 > 368.9	16782.971	17016.531	1.00	4.19	12.328	10.000	10.2	102.4	NO	3.164	NO
30	18	PFecHS	460.8 > 381.0		17016.531	1.00			10.000			NO		YES
31	19	PFHpS	449.0 > 79.7	2484.653	3133.020	1.00	4.30	9.913	9.480	11.1	116.8	NO	2.075	NO
32	20	7:3 FTCA	440.9 > 336.9		16439.645	1.00			10.000			NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2666.442		1.00	3.82	2666.442	12.500	12.6	101.1	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1396.995		1.00	4.13	1396.995	12.500	11.4	91.3	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	17016.531		1.00	4.19	17016.531	12.500	11.2	89.5	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	17016.531		1.00	4.19	17016.531	12.500	11.2	89.5	NO		

VJ 02/28/20

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Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	3133.020		1.00	4.71	3133.020	12.500	11.5	91.9	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	16439.645		1.00	4.62	16439.645	12.500	11.8	94.1	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	16751.174	16439.645	1.00	4.62	12.737	10.000	12.0	119.6	NO	8.659	NO
41	22	PFOSA	497.9 > 77.9	2369.061	3826.356	1.00	4.68	7.739	10.000	9.56	95.6	NO	27.741	NO
42	23	L-PFOS	498.9 > 79.7	2307.943	3133.020	1.00	4.71	9.208	9.280	10.2	109.9	NO	2.171	NO
43	25	9Cl-PF30NS	530.7 > 350.8	2456.530	3133.020	1.00	4.93	9.801	9.280	10.4	112.3	NO	16.863	NO
44	26	PFDA	513 > 468.8	16878.637	18007.318	1.00	5.00	11.717	10.000	10.5	104.7	NO	10.259	NO
45	27	8:2 FTS	526.9 > 507	1474.184	1216.794	1.00	4.97	15.144	9.600	11.7	122.1	NO	3.066	YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	16439.645		1.00	4.62	16439.645	12.500	11.8	94.1	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3826.356		1.00	4.68	3826.356	12.500	12.1	97.1	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	3133.020		1.00	4.71	3133.020	12.500	11.5	91.9	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	3133.020		1.00	4.71	3133.020	12.500	11.5	91.9	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	18007.318		1.00	5.00	18007.318	12.500	11.5	91.8	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1216.794		1.00	4.97	1216.794	12.500	14.1	112.7	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	2283.647	3133.020	1.00	5.07	9.111	9.600	9.85	102.6	NO	2.453	NO
54	29	L-MeFOSAA	570 > 419	4801.958	4737.077	1.00	5.15	12.671	10.000	9.73	97.3	NO	2.193	NO
55	31	L-EtFOSAA	584.1 > 419	4683.428	5385.876	1.00	5.31	10.870	10.000	10.0	100.5	NO	1.247	NO
56	33	PFUdA	563.0 > 518.9	17131.482	20525.344	1.00	5.32	10.433	10.000	10.2	102.0	NO	29.375	NO
57	34	PFDS	598.8 > 79.7	2277.069	3133.020	1.00	5.37	9.085	9.600	11.2	116.6	NO	1.766	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	6057.757	16907.936	1.00	5.53	4.478	9.440	10.2	108.5	NO	21.146	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	3133.020		1.00	4.71	3133.020	12.500	11.5	91.9	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	4737.077		1.00	5.15	4737.077	12.500	11.3	90.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	5385.876		1.00	5.31	5385.876	12.500	11.3	90.3	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	20525.344		1.00	5.32	20525.344	12.500	11.3	90.7	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	3133.020		1.00	4.71	3133.020	12.500	11.5	91.9	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	16907.936		1.00	5.60	16907.936	12.500	11.2	90.0	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		953.192	1.00			10.000		(A)	NO		YES
67	37	PFDoA	612.9 > 569.0	15659.586	16907.936	1.00	5.60	11.577	10.000	9.89	98.9	NO	12.323	NO
68	38	N-MeFOSA	512.1 > 168.9		16967.213	1.00			9.600		(A)	NO		YES
69	39	PFTrDA	662.9 > 618.9	17000.330	16907.936	1.00	5.85	12.568	10.000	11.0	110.3	NO	52.186	NO
70	40	PFDoS	698.8 > 79.7		17386.932	1.00			10.000		(A)	NO		YES
71	41	PFTeDA	713.0 > 669.0	16327.019	17386.932	1.00	6.06	11.738	10.000	11.2	112.0	NO	17.686	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	953.192		1.00	5.59	953.192	12.500	13.3	106.5	NO		

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Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	16907.936		1.00	5.60	16907.936	12.500	11.2	90.0	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	16967.213		1.00	5.72	16967.213	149.200	134	89.9	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	16907.936		1.00	5.60	16907.936	12.500	11.2	90.0	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	17386.932		1.00	6.06	17386.932	12.500	11.0	88.3	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	17386.932		1.00	6.06	17386.932	12.500	11.0	88.3	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9		25801.750	1.00			9.600			NO		YES
80	43	PFHxDA	813.1 > 768.6		25334.709	1.00			10.000			NO		YES
81	44	PFODA	913.1 > 868.8		25334.709	1.00			10.000			NO		
82	45	N-MeFOSE	616.1 > 58.9		20400.309	1.00			9.600			NO		
83	46	N-EtFOSE	630.1 > 58.9		23907.336	1.00			9.600			NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	25801.750		1.00	6.13	25801.750	149.200	138	92.4	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	25334.709		1.00	6.39	25334.709	12.500	9.80	78.4	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	25334.709		1.00	6.39	25334.709	12.500	9.80	78.4	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	20400.309		1.00	6.29	20400.309	149.200	137	91.6	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	23907.336		1.00	6.44	23907.336	149.200	132	88.8	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	3133.020		1.00	4.71	3133.020	12.500	11.5	91.9	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	6306.565	7212.117	1.00	1.35	10.931	12.500	13.6	108.8	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	10660.777	18650.850	1.00	2.28	7.145	12.500	12.3	98.3	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	1191.958	1136.216	1.00	2.55	13.113	12.500	11.9	95.0	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3662.065	18650.850	1.00	3.29	2.454	12.500	12.3	98.5	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1657.999	1136.216	1.00	2.99	18.240	12.500	12.9	102.9	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	17652.342	18650.850	1.00	3.07	11.831	12.500	12.2	97.9	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	13006.940	18650.850	1.00	3.67	8.717	12.500	13.1	104.6	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2630.779	1136.216	1.00	3.82	28.942	12.500	11.7	93.5	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1396.995	3466.292	1.00	4.13	5.038	12.500	11.5	92.1	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	16439.645	18998.502	1.00	4.62	10.816	12.500	11.6	93.0	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3826.356	20276.240	1.00	4.68	2.359	12.500	12.4	98.9	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	17016.531	19128.445	1.00	4.19	11.120	12.500	12.0	96.2	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	3172.651	3466.292	1.00	4.71	11.441	12.500	12.3	98.6	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	18007.318	20151.943	1.00	5.00	11.170	12.500	11.3	90.7	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1216.794	3466.292	1.00	4.97	4.388	12.500	12.2	97.9	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	4737.077	20276.240	1.00	5.15	2.920	12.500	12.4	99.0	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	20525.344	20276.240	1.00	5.32	12.654	12.500	12.3	98.4	NO		

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Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	5385.876	20276.240	1.00	5.31	3.320	12.500	12.8	102.1	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	16907.936	20151.943	1.00	5.60	10.488	12.500	11.0	87.6	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	953.192	3466.292	1.00	5.59	3.437	12.500	12.1	97.0	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	16967.213	20276.240	1.00	5.72	10.460	149.200	136	91.4	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	17386.932	20276.240	1.00	6.06	10.719	12.500	11.3	90.5	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	25801.750	20276.240	1.00	6.13	15.906	149.200	144	96.7	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	25334.709	20276.240	1.00	6.39	15.618	12.500	10.8	86.2	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	20400.309	20276.240	1.00	6.29	12.576	149.200	143	96.0	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	24440.137	20276.240	1.00	6.44	15.067	149.200	144	96.8	NO		
119	99	13C4-PFBA	217.0 > 172.0	7212.117	7212.117	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	18650.850	18650.850	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	19128.445	19128.445	1.00	4.19	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1136.216	1136.216	1.00	3.82	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	18998.502	18998.502	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	3466.292	3466.292	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	20151.943	20151.943	1.00	5.00	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	20276.240	20276.240	1.00	5.32	12.500	12.500	12.5	100.0	NO		

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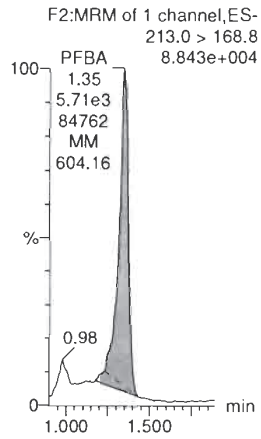

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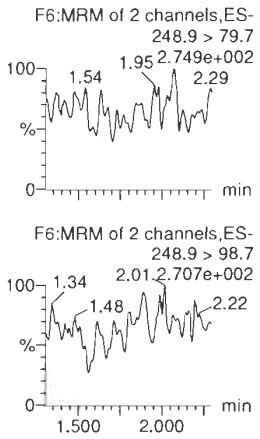

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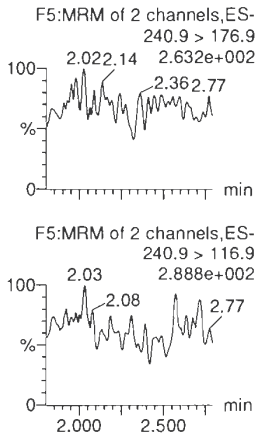

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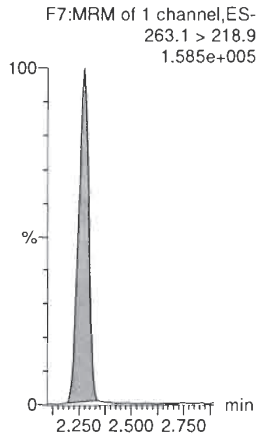

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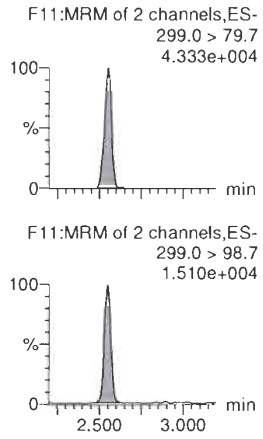

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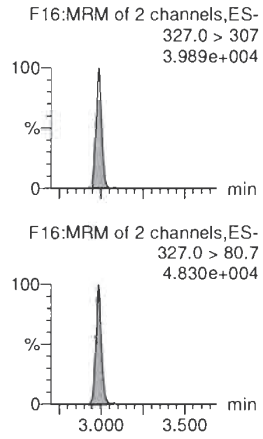

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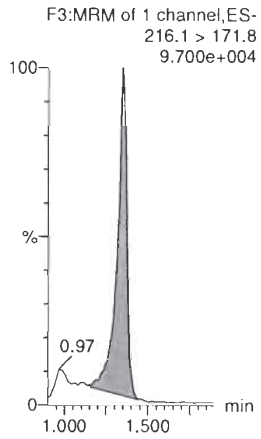

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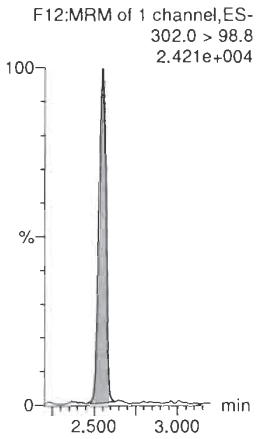

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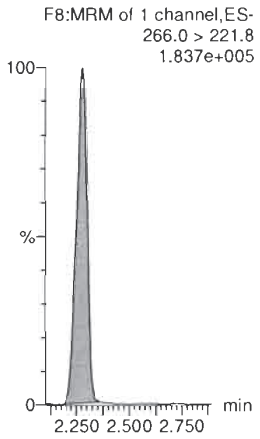

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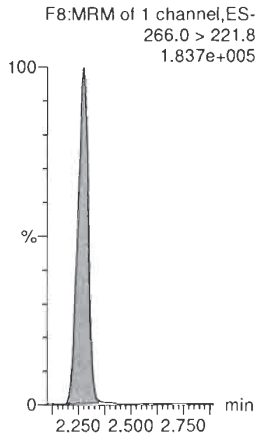

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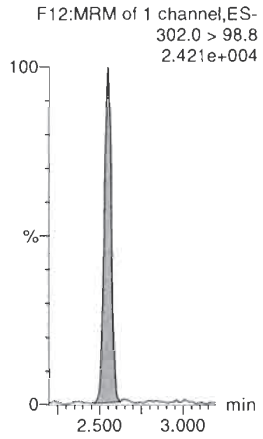

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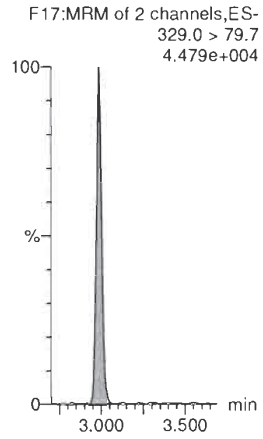

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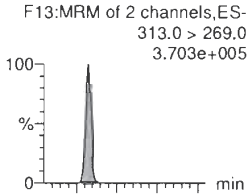
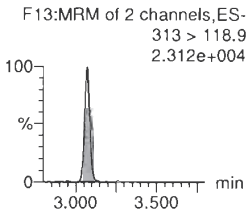
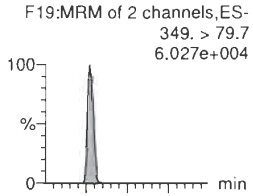
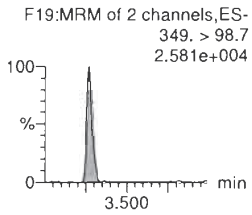
PFHxA





PFPeS





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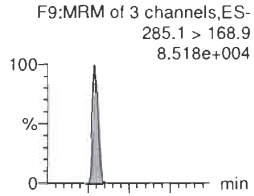

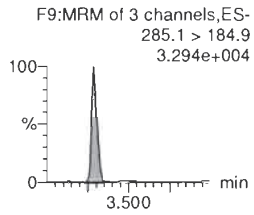

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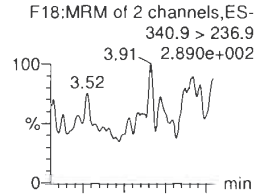

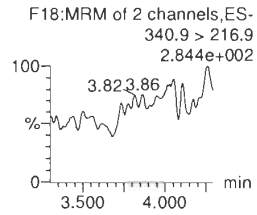

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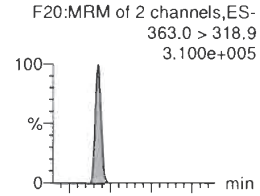

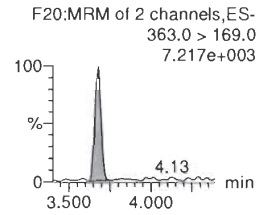

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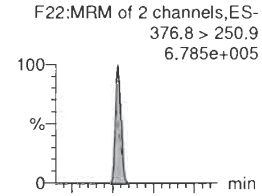
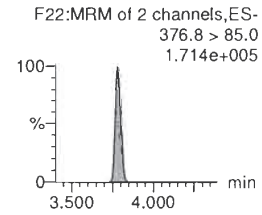
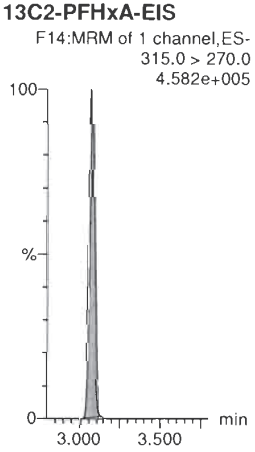




13C2-PFHxA-EIS



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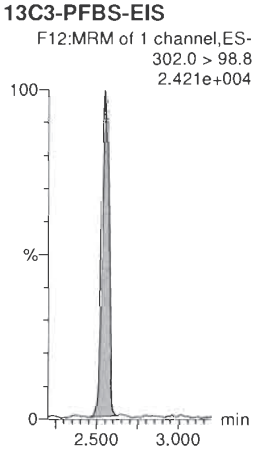

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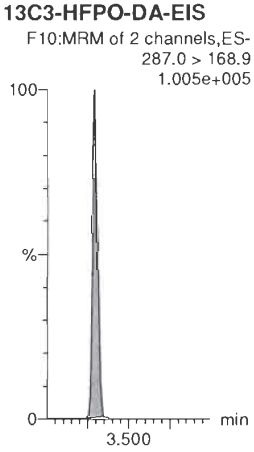

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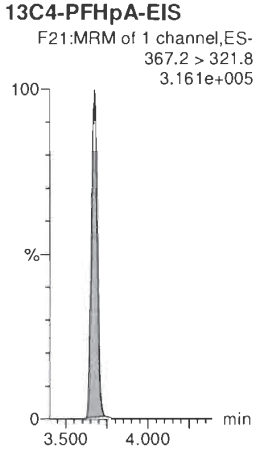

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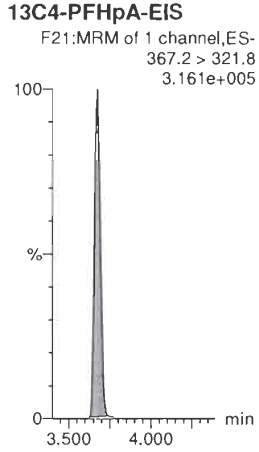

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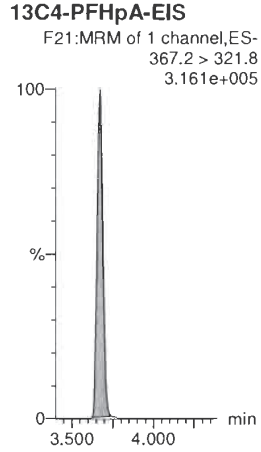

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Saturday, February 29, 2020 11:36:35 Pacific Standard Time

Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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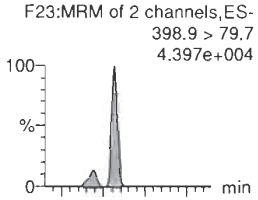

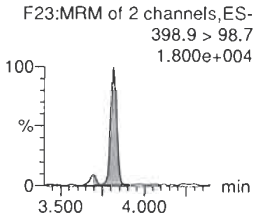

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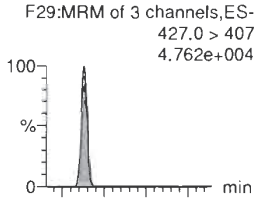

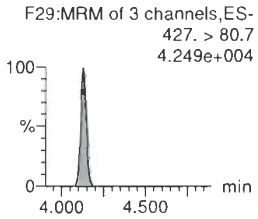

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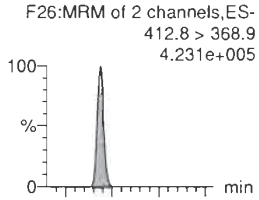

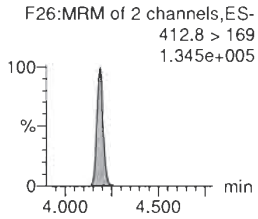

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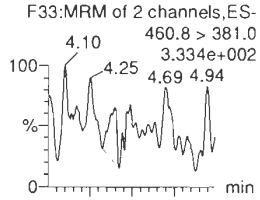

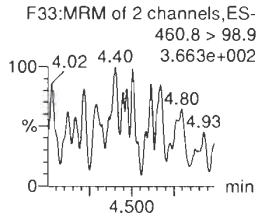

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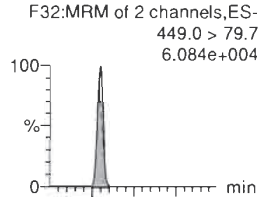

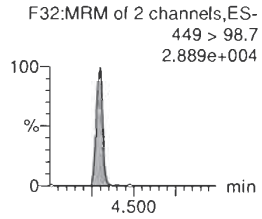

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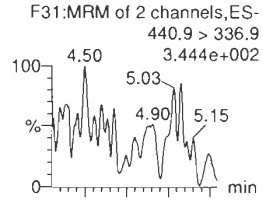

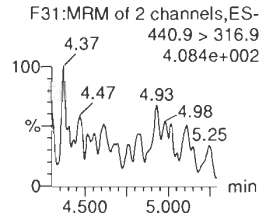

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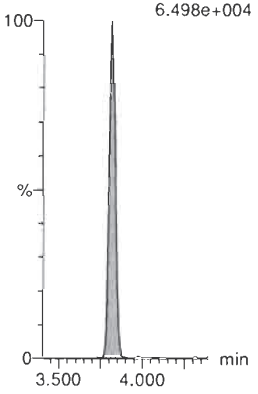

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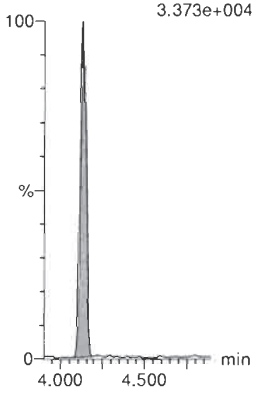

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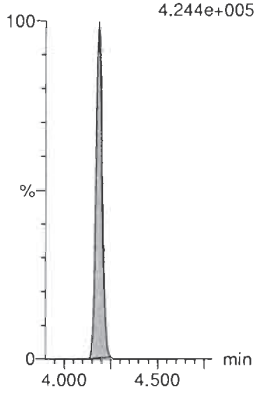

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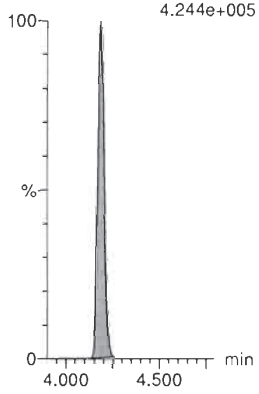

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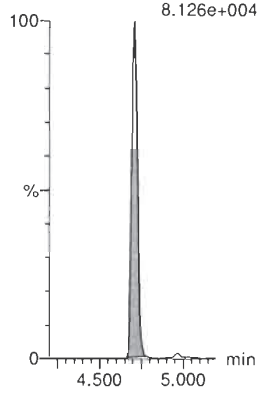
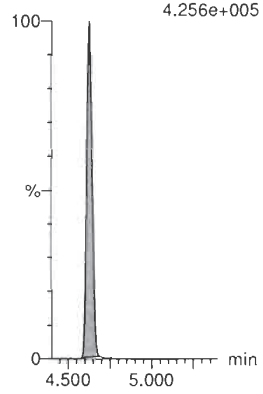


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

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Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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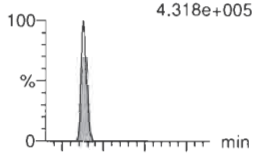

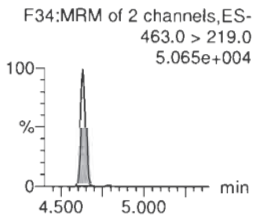

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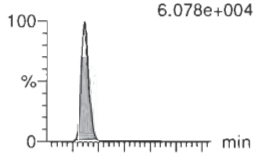
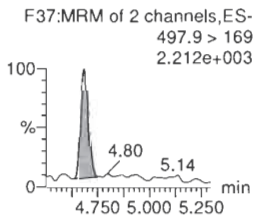
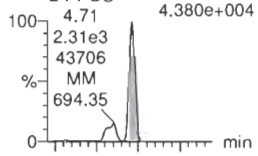
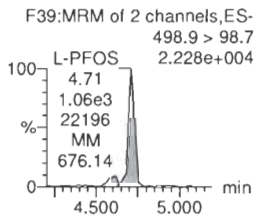




L-PFOS





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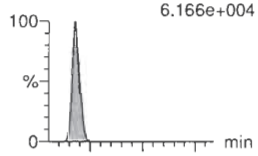

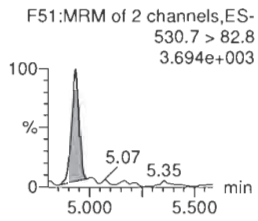

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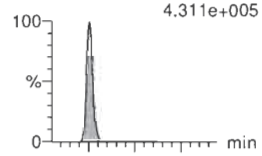

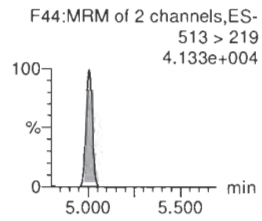

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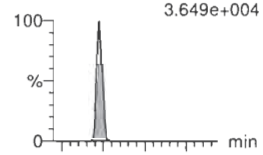
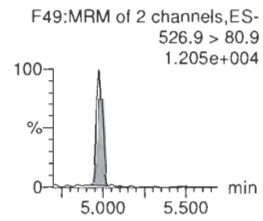
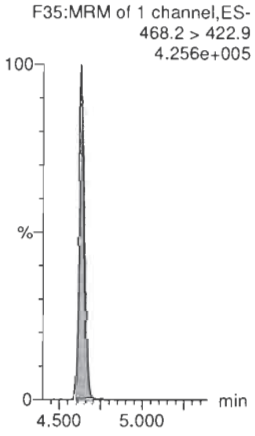




13C5-PFNA-EIS



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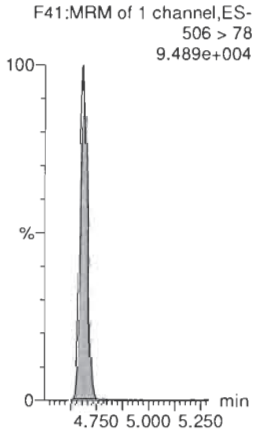

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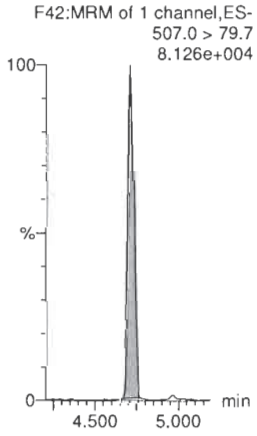

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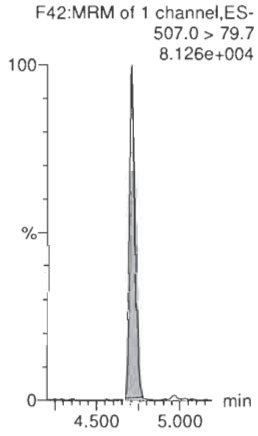

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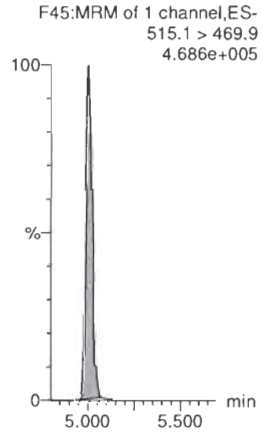

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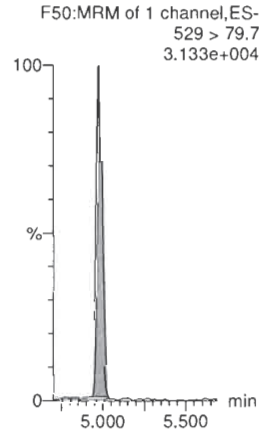

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

Last Altered: Saturday, February 29, 2020 11:35:49 Pacific Standard Time
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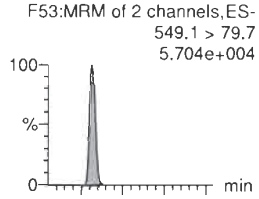
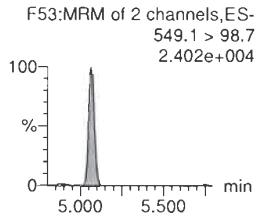
Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

PFNS





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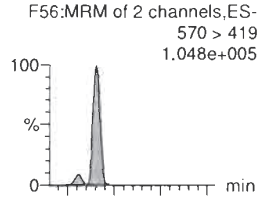

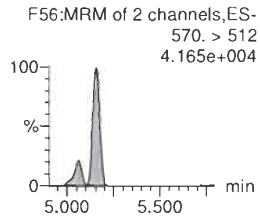

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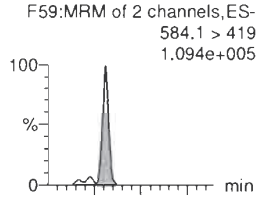

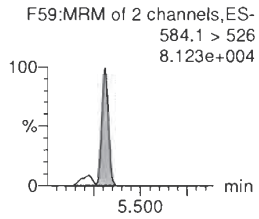

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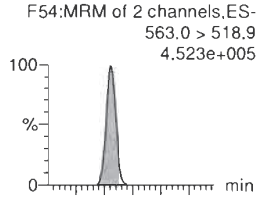

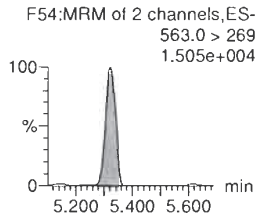

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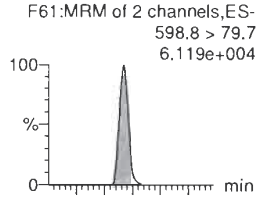

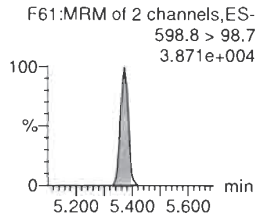

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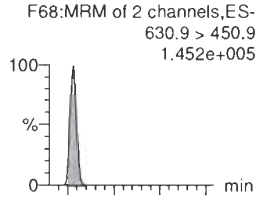
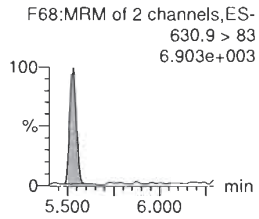
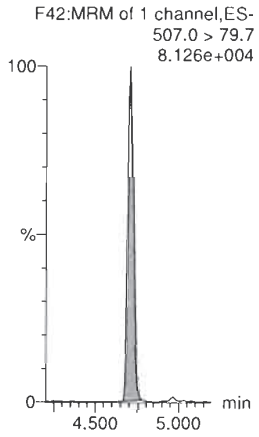
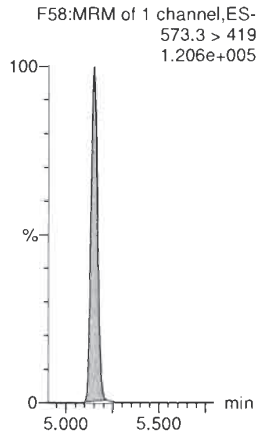




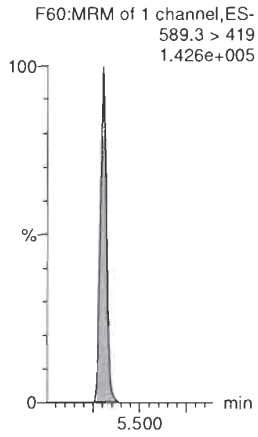
13C8-PFOS-EIS



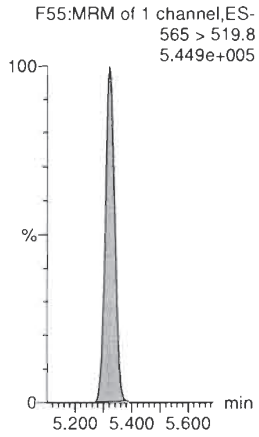
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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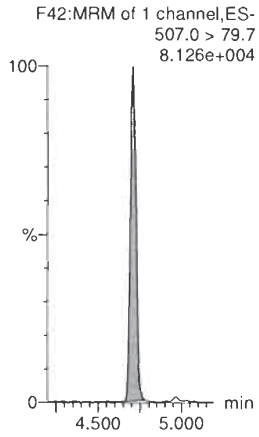
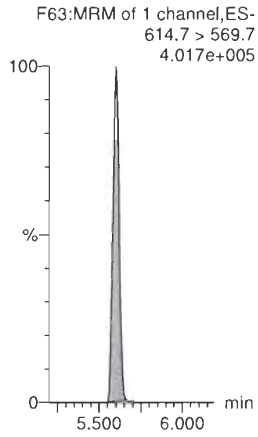


13C2-PFDoA-EIS



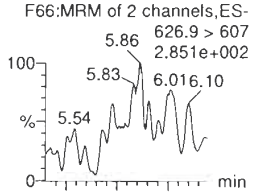
Quantify Sample Report **MassLynx V4.2 SCN977** Page 6 of 14
Vista Analytical Laboratory

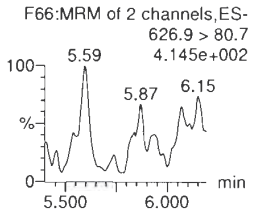
Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

Last Altered: Saturday, February 29, 2020 11:35:49 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:36:35 Pacific Standard Time

Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

10:2 FTS





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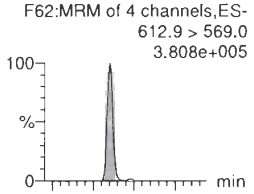

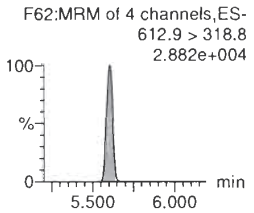

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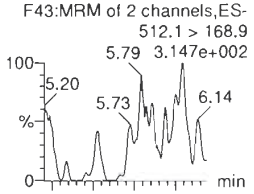

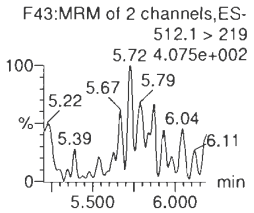

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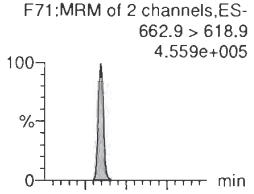

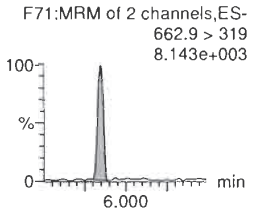

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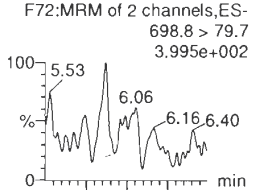

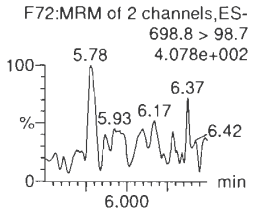

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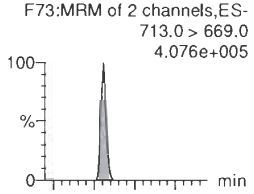

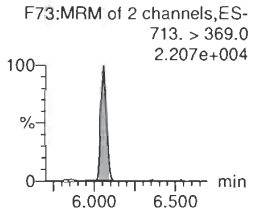

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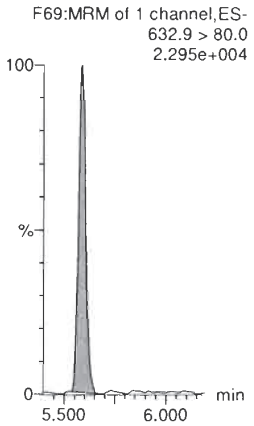
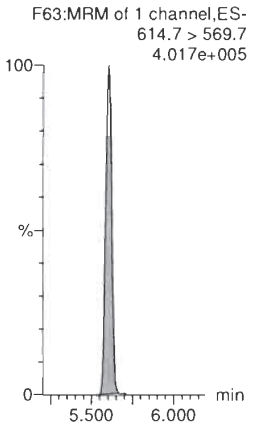


13C2-PFDoA-EIS



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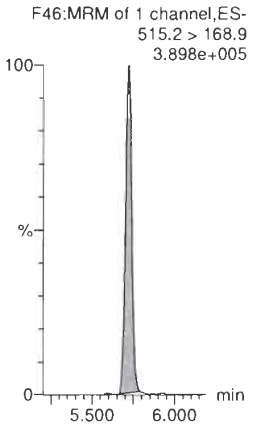

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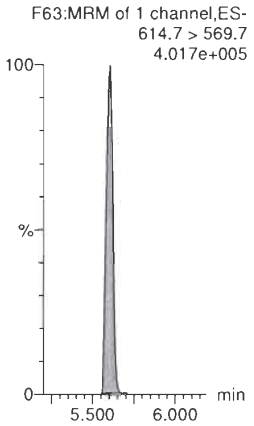

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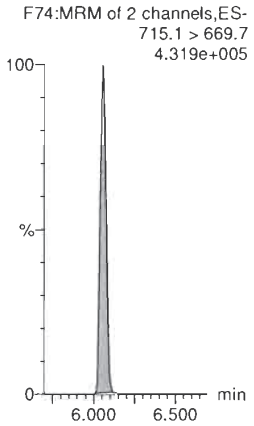

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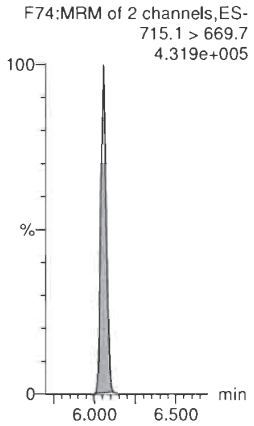

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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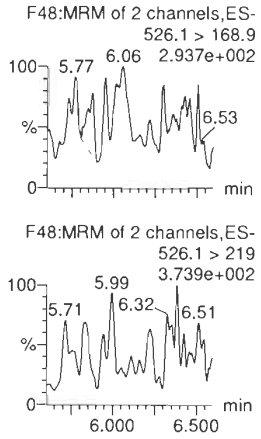

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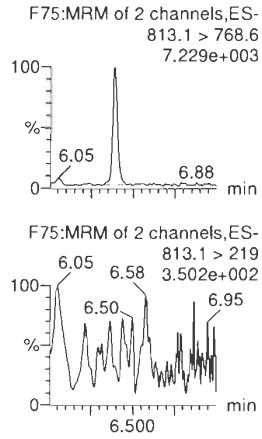

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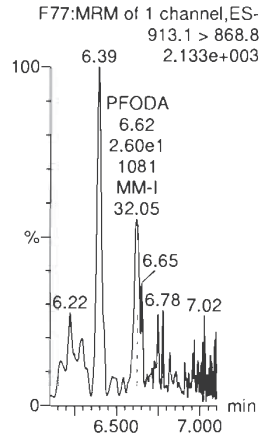

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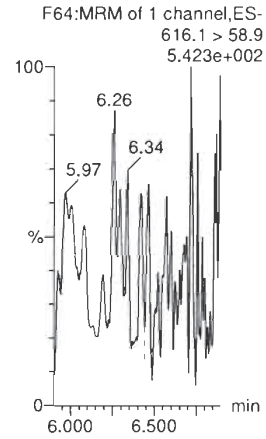

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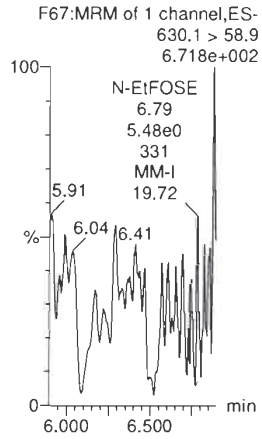

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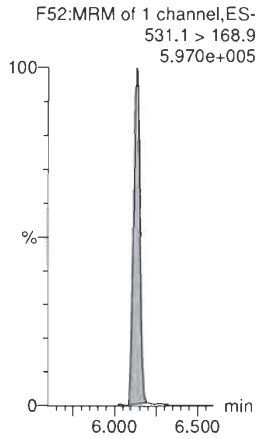

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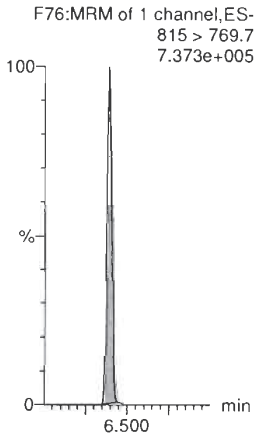

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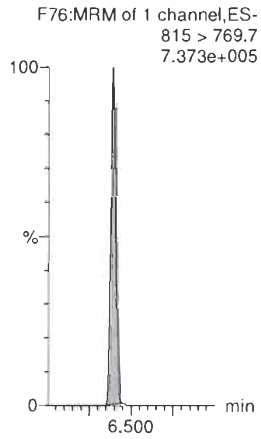

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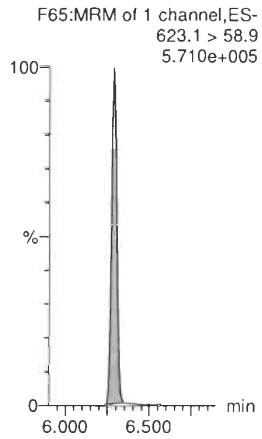

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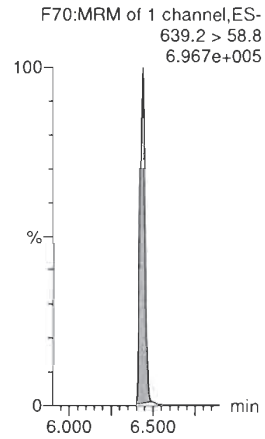

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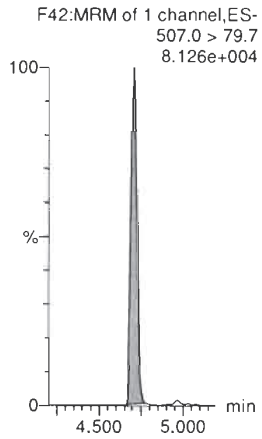

Quantify Sample Report **MassLynx V4.2 SCN977** Page 8 of 14
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

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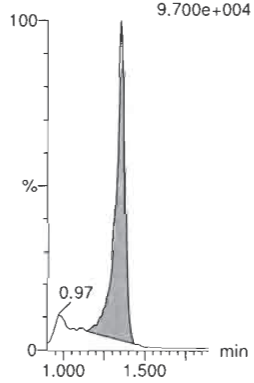
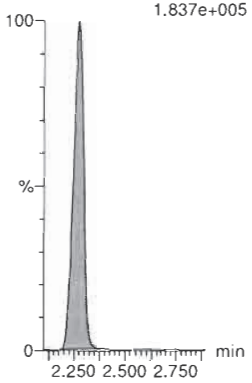
Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

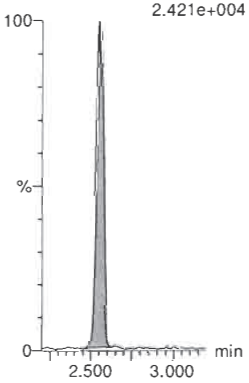
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
9.700e+004



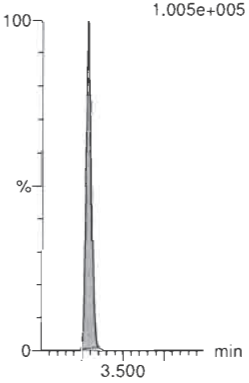
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.837e+005



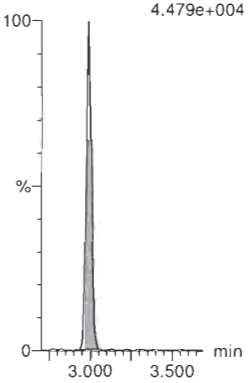
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.421e+004



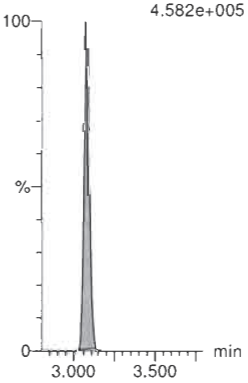
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.005e+005



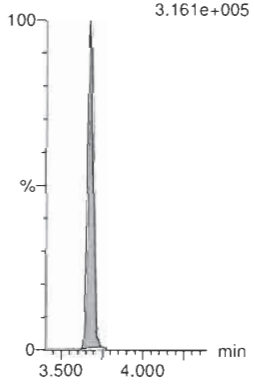
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
4.479e+004



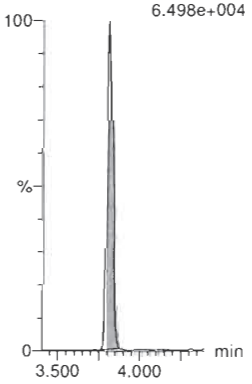
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
4.582e+005



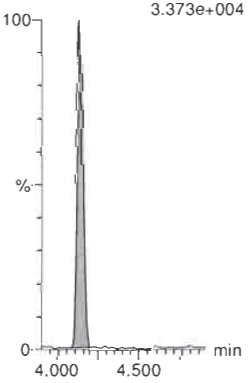
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.161e+005



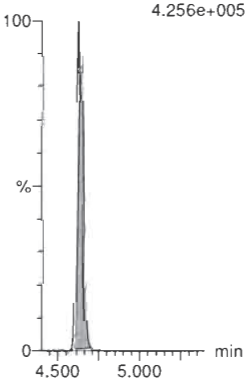
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.498e+004



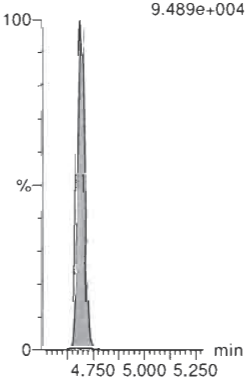
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.373e+004



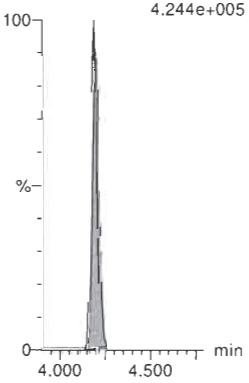
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
4.256e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.489e+004



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.244e+005



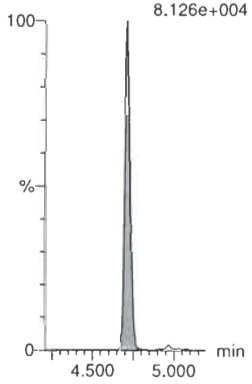
Quantify Sample Report **MassLynx V4.2 SCN977** Page 9 of 14
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

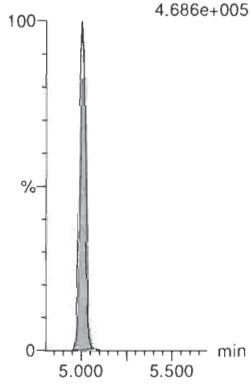
Last Altered: Saturday, February 29, 2020 11:35:49 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:36:35 Pacific Standard Time

Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

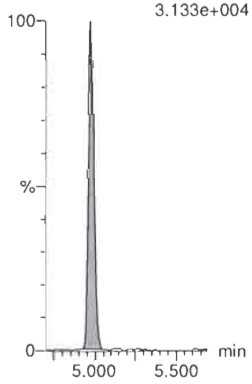
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
8.126e+004



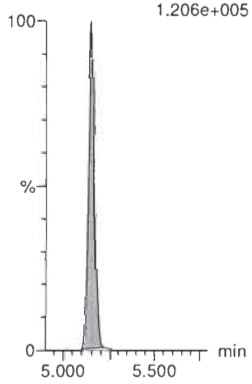
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
4.686e+005



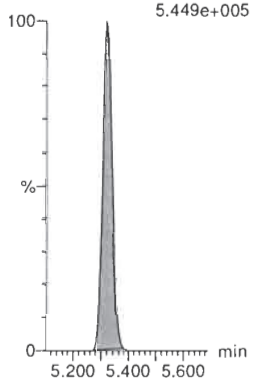
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
3.133e+004



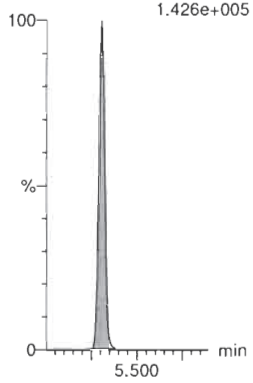
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.206e+005



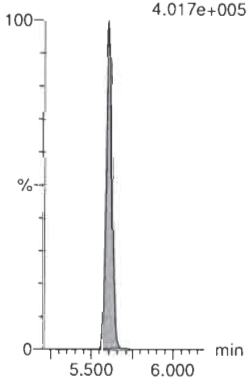
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
5.449e+005



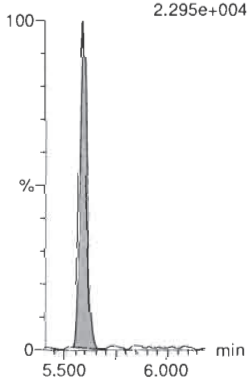
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.426e+005



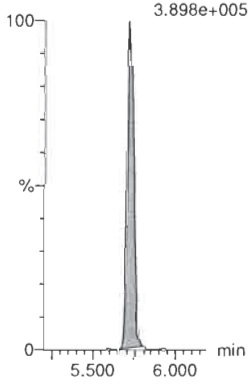
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.017e+005



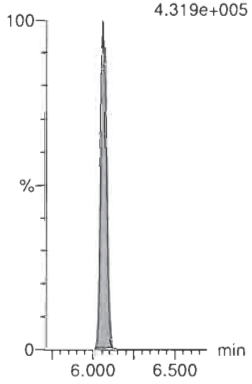
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.295e+004



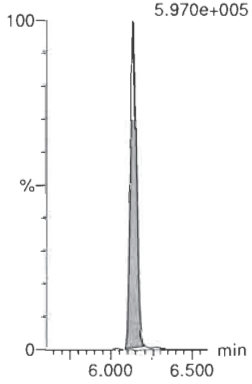
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.898e+005



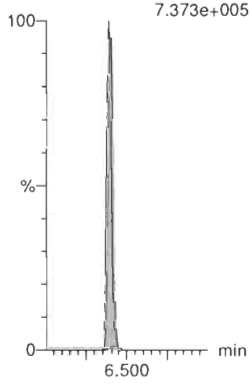
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.319e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.970e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
7.373e+005



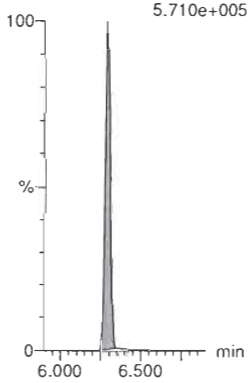
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200228P1\200228P1-ICV.qld

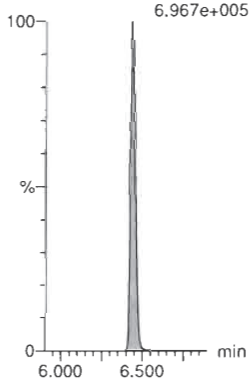
Last Altered: Saturday, February 29, 2020 11:35:49 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:36:35 Pacific Standard Time

Name: 200228P2-14, Date: 28-Feb-2020, Time: 15:02:18, ID: ICV200228P2-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

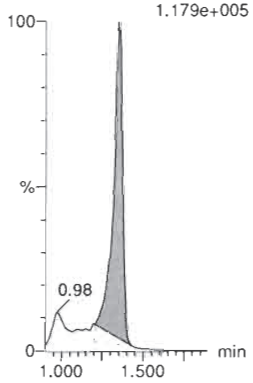
d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.710e+005



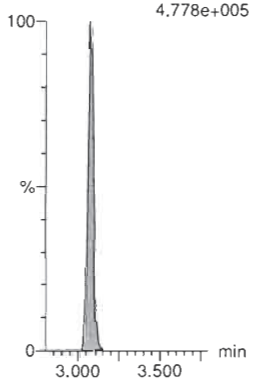
d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.967e+005



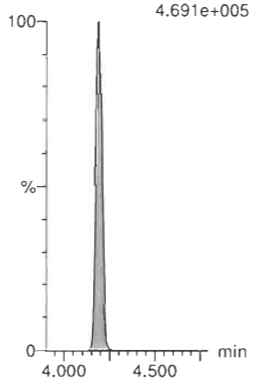
13C4-PFBA
F4:MRM of 1 channel,ES-
217.0 > 172.0
1.179e+005



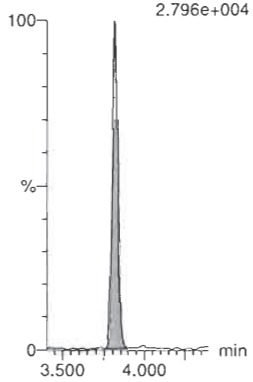
13C5-PFHxA
F15:MRM of 1 channel,ES-
318.0 > 272.9
4.778e+005



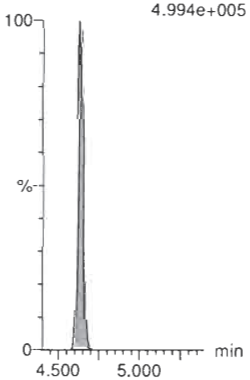
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
4.691e+005



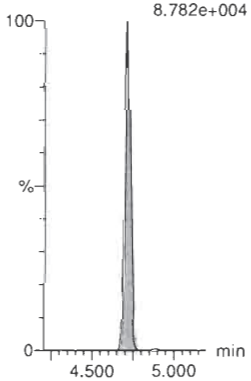
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
2.796e+004



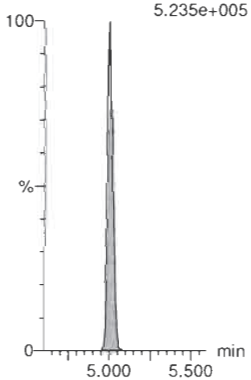
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
4.994e+005



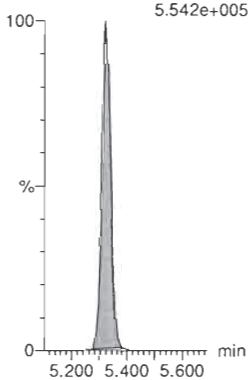
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.7
8.782e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
5.235e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
5.542e+005



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

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Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-28-20.cdb 29 Feb 2020 10:27:53

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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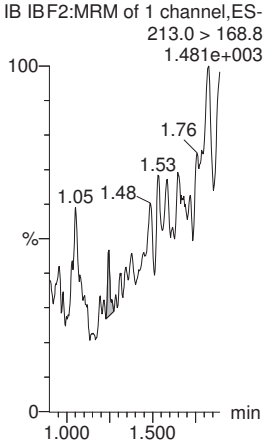
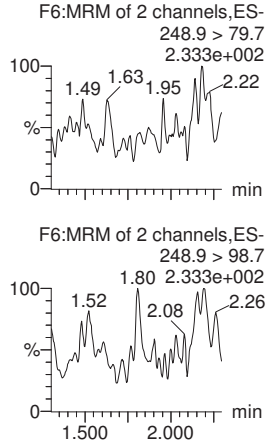
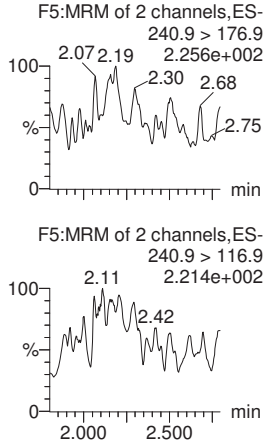


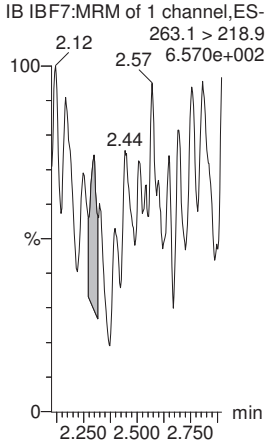
PFPrS



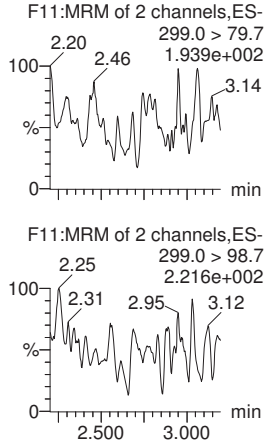
3:3 FTCA



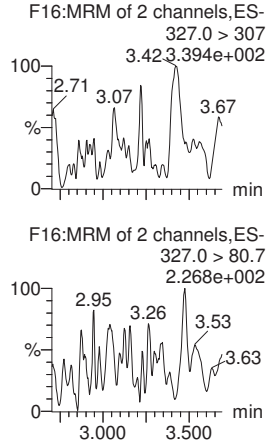
PFPeA



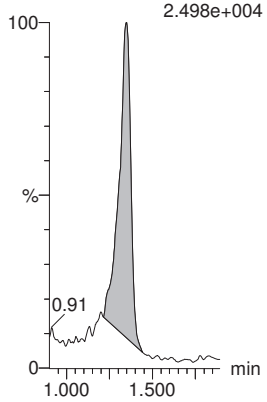
PFBS



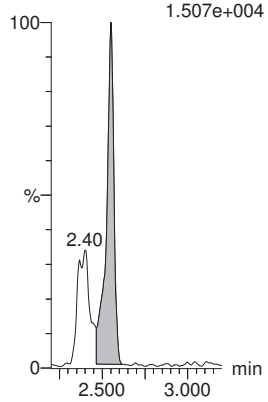
4:2 FTS



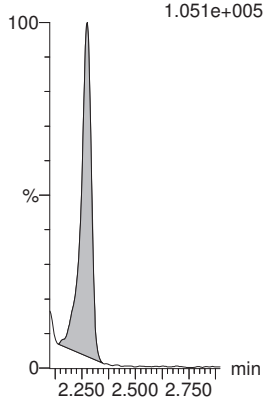
13C3-PFBA-EIS



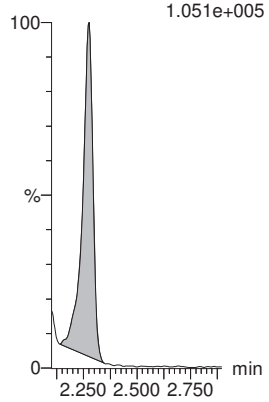
13C3-PFBS-EIS



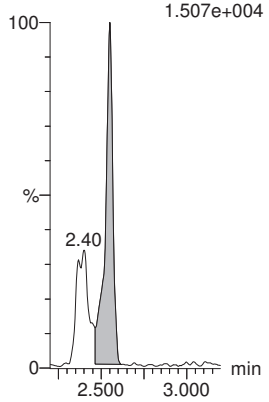
13C3-PFPeA-EIS



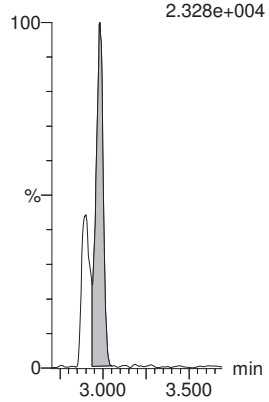
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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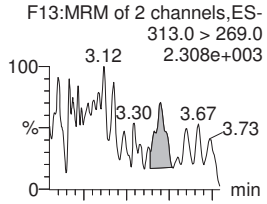

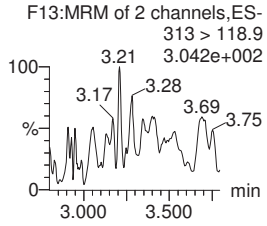

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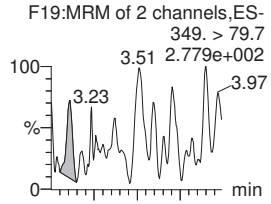
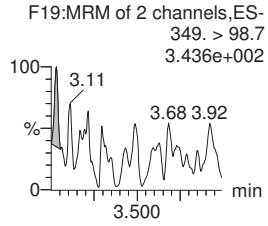
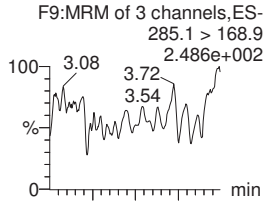
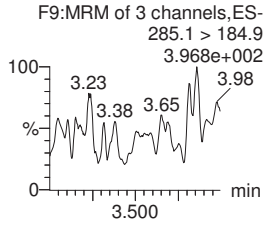




HFPO-DA





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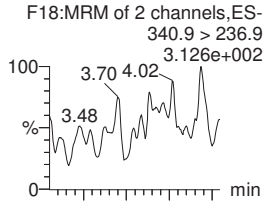

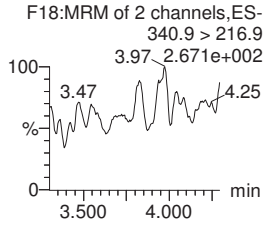

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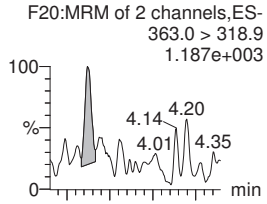

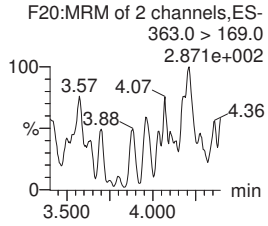

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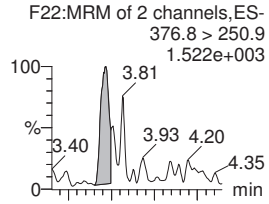

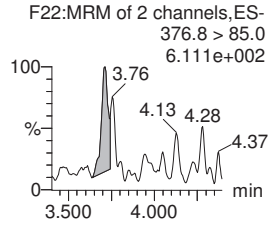

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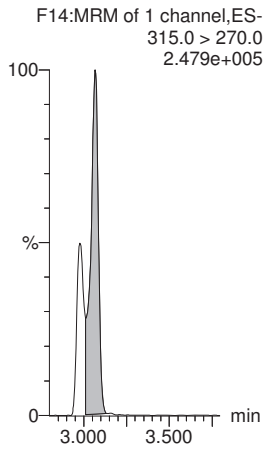

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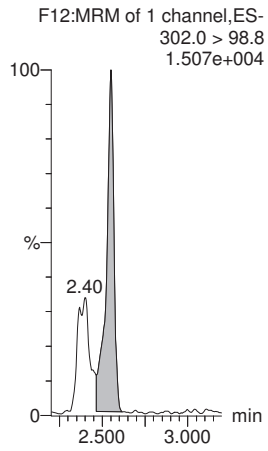

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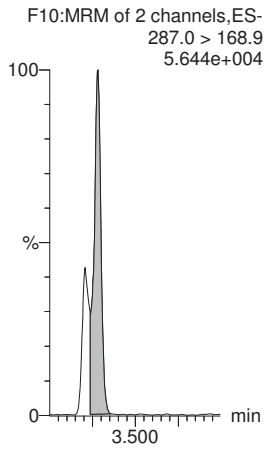

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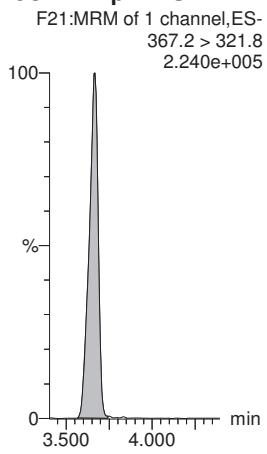

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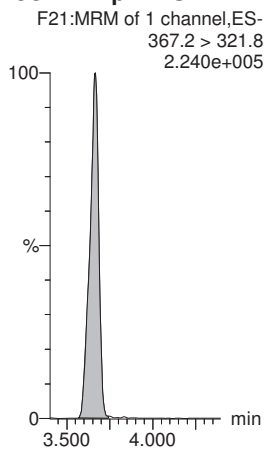

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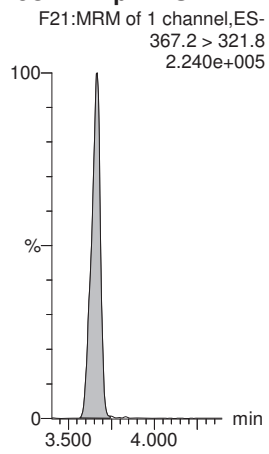

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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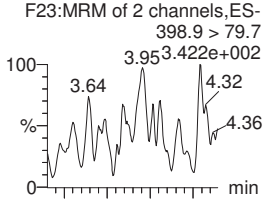

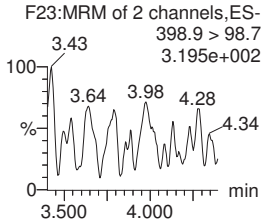

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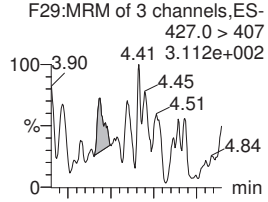

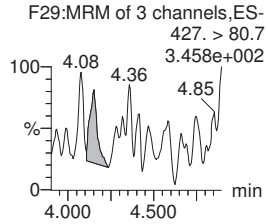

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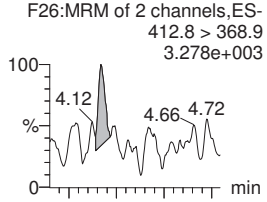

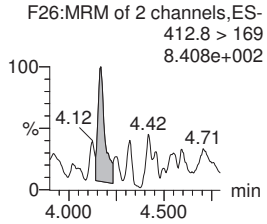

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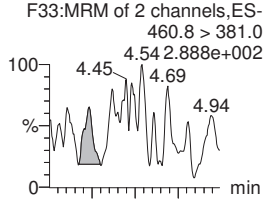

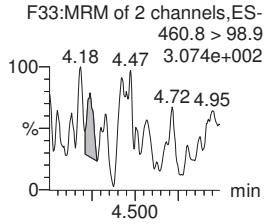

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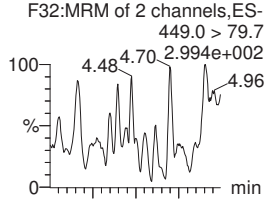

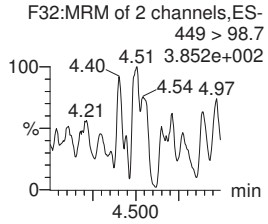

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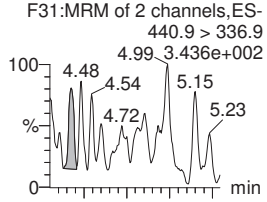

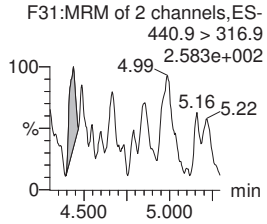

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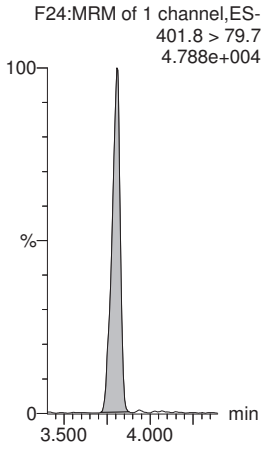

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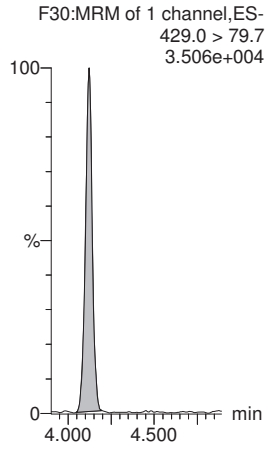

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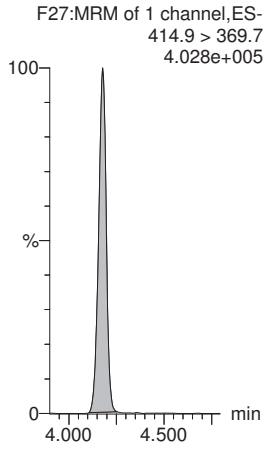

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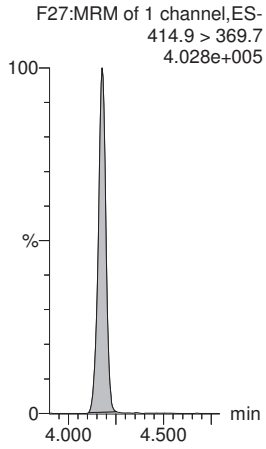

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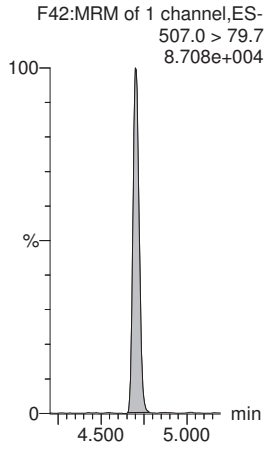
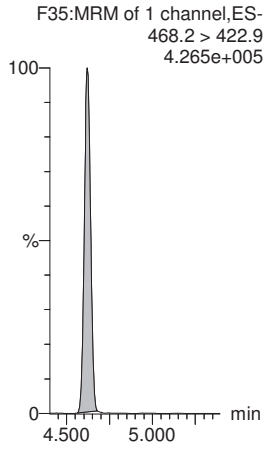


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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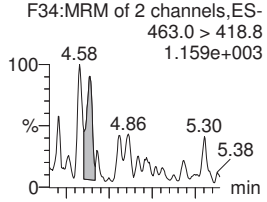

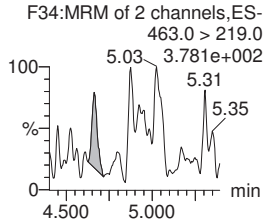

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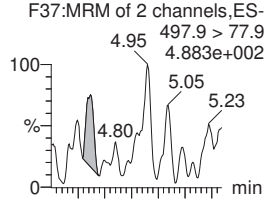
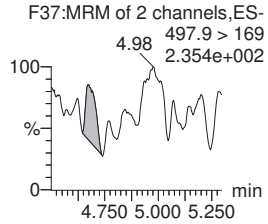
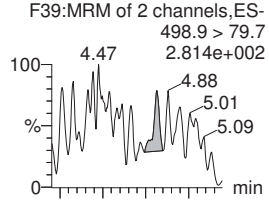
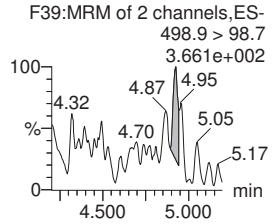




L-PFOS





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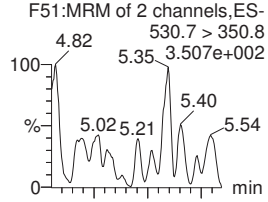

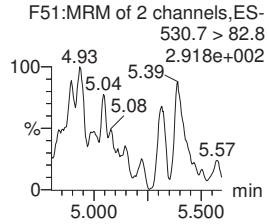

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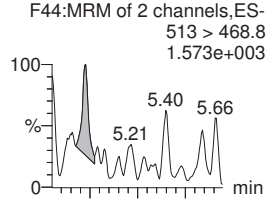

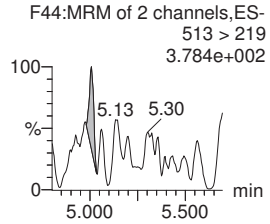

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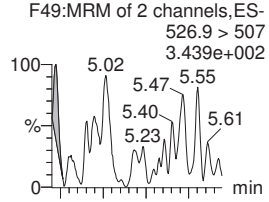

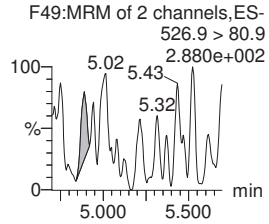

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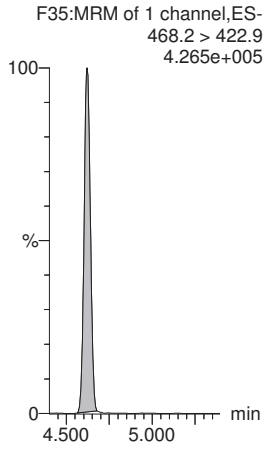

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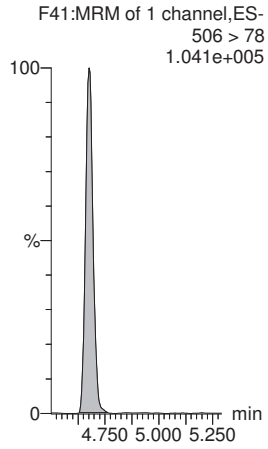

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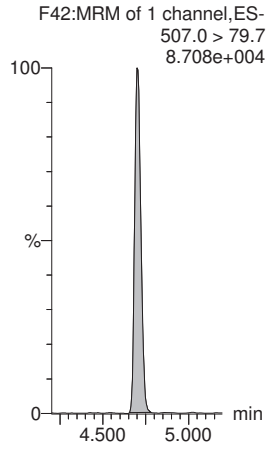

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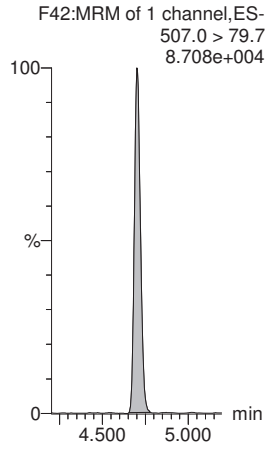

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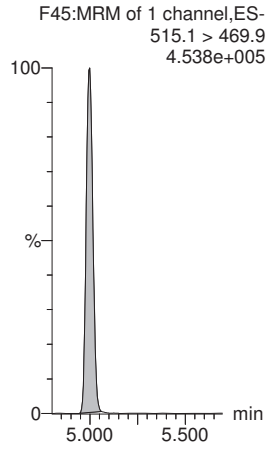

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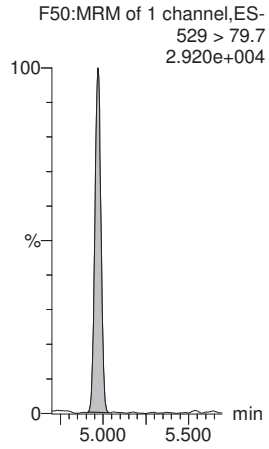

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
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Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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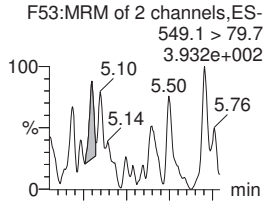

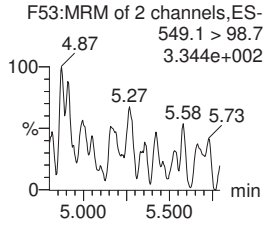

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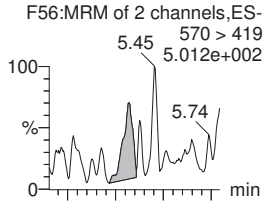

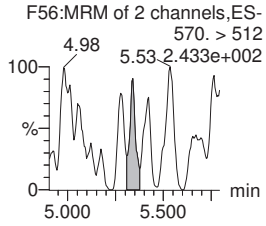

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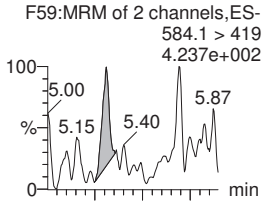

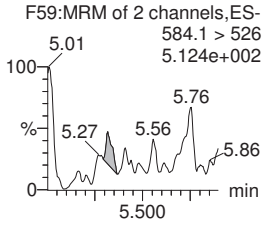

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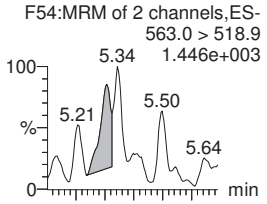

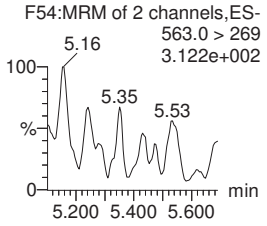

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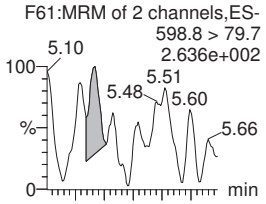

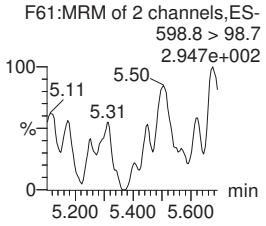

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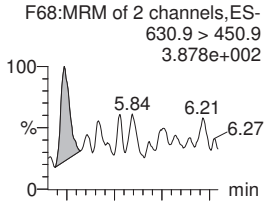

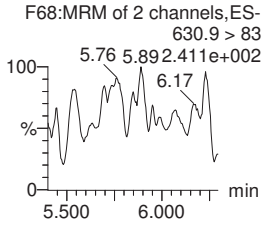

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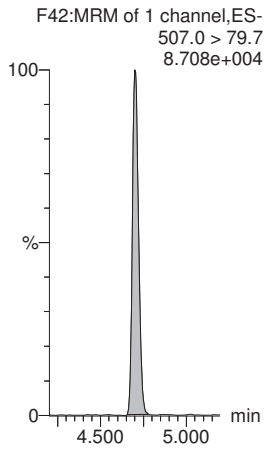

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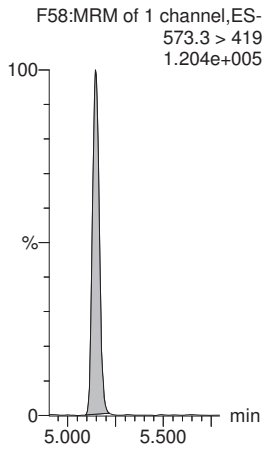

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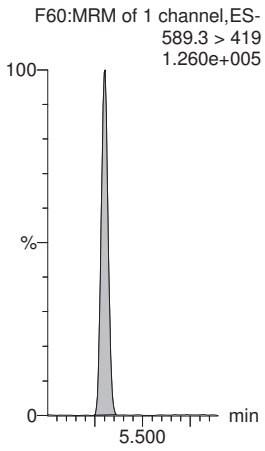

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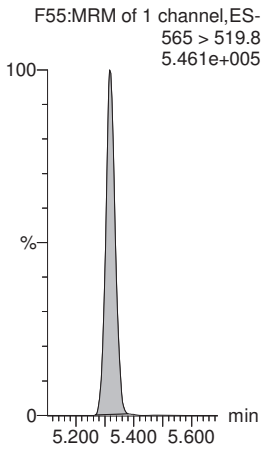

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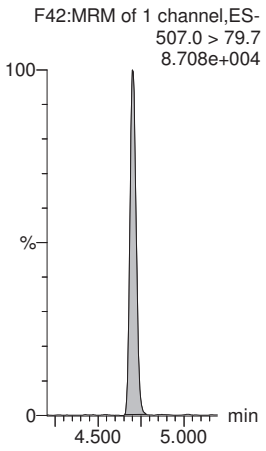

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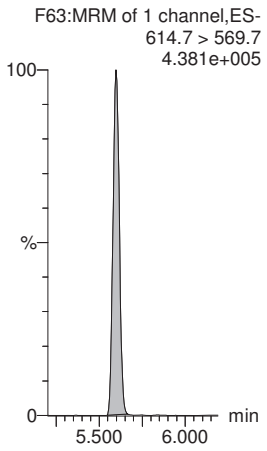


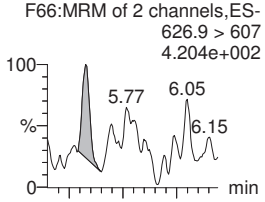
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

10:2 FTS



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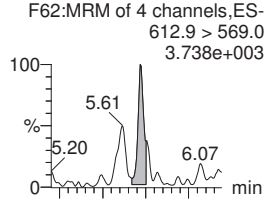

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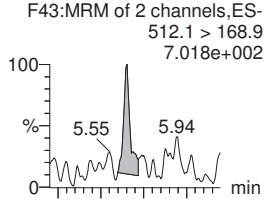

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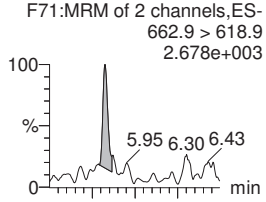

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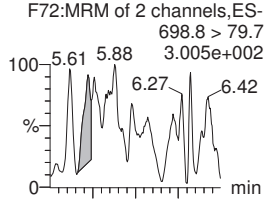

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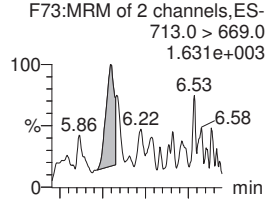

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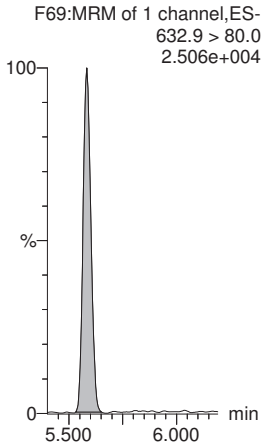

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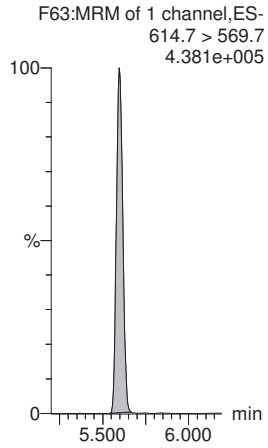

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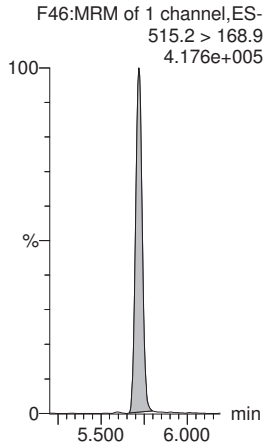

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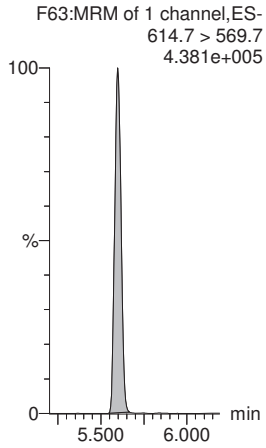

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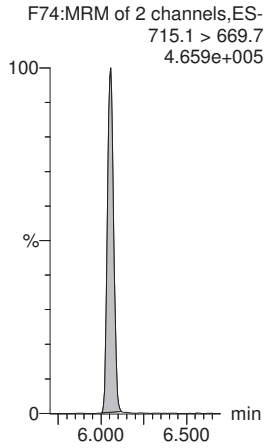

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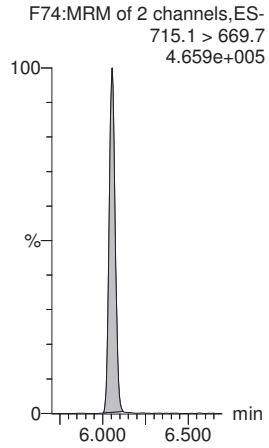

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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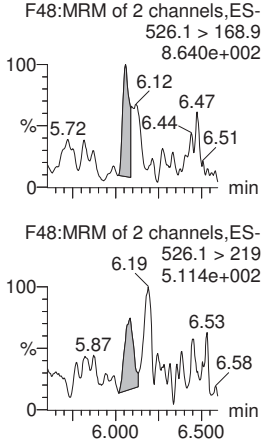

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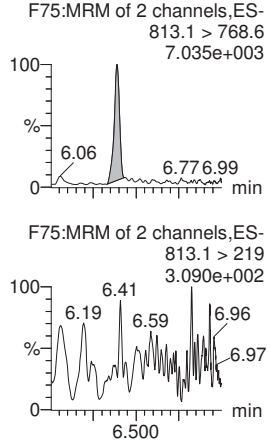

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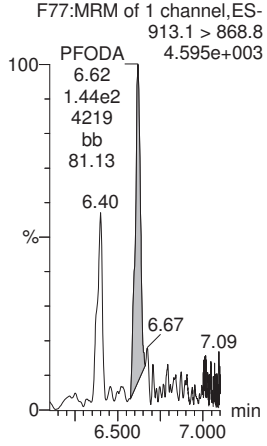

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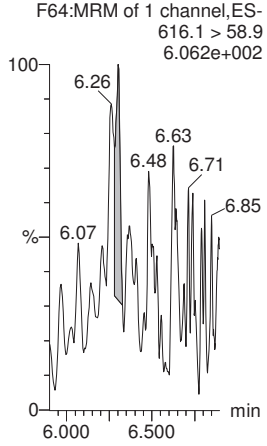

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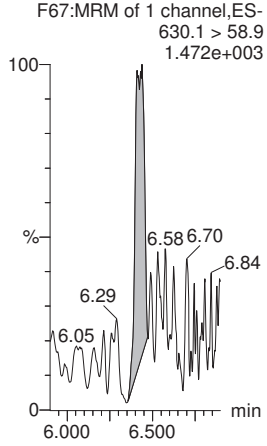

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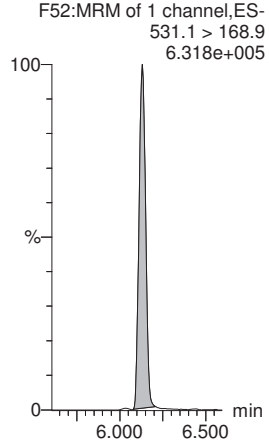

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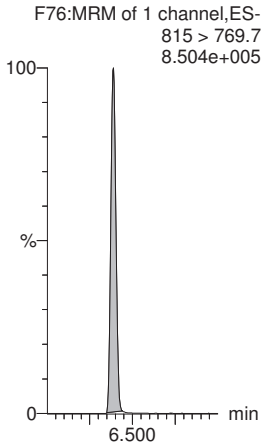

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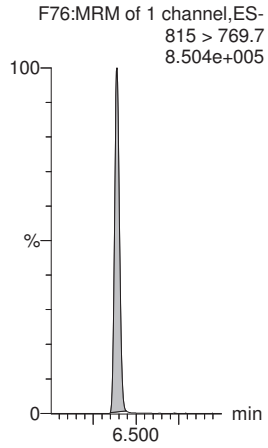

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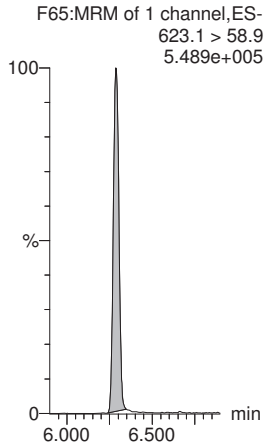

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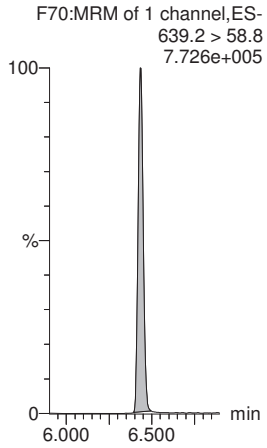
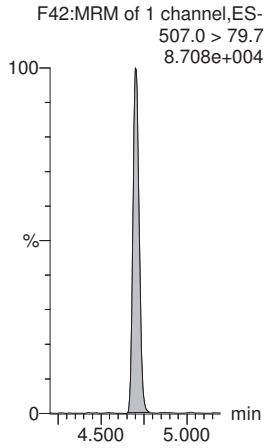


13C8-PFOS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

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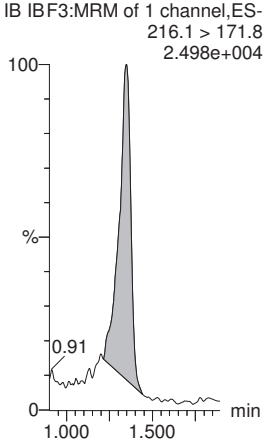

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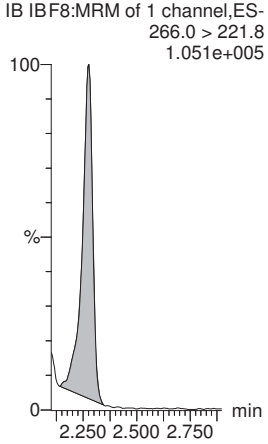

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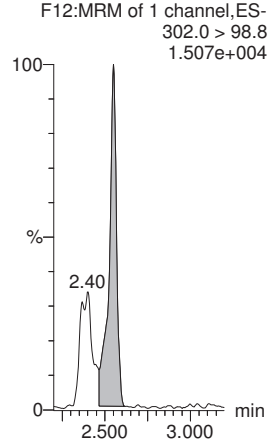

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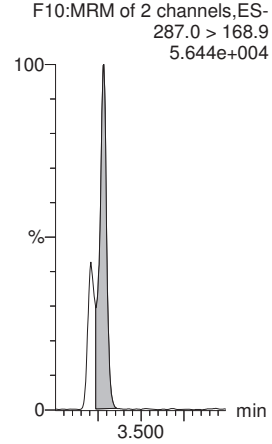

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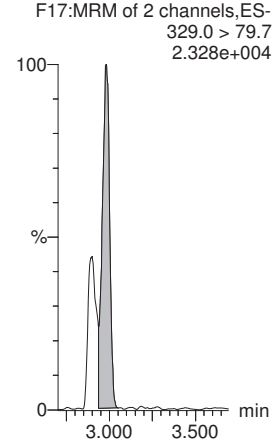

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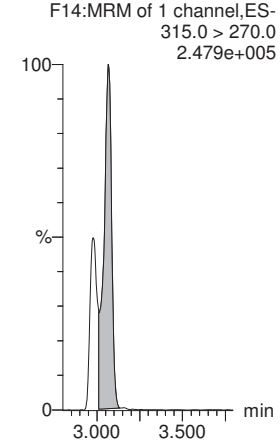

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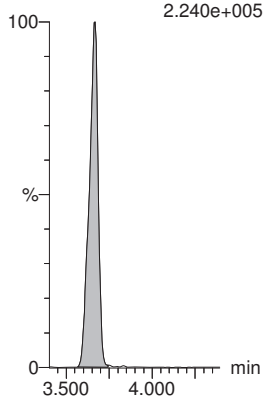

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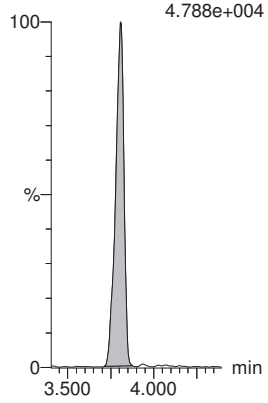

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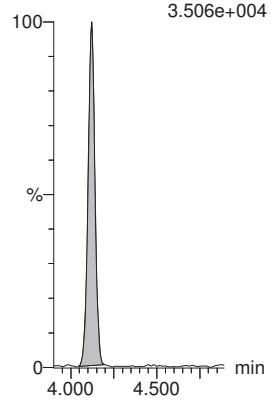

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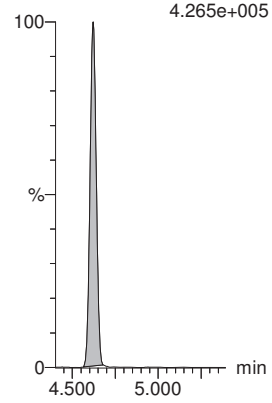

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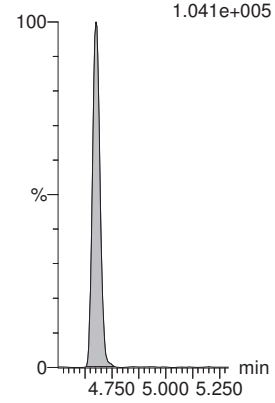

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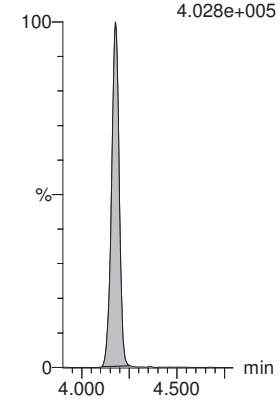

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
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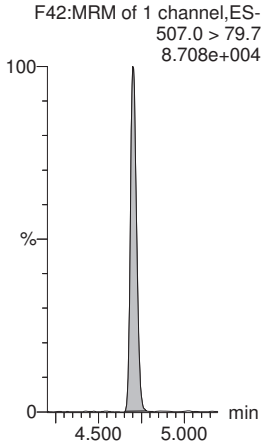
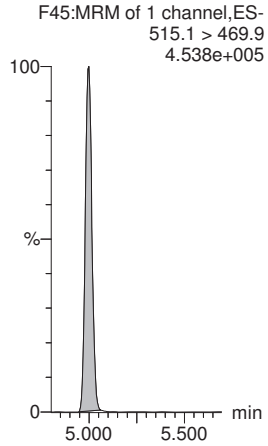
Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

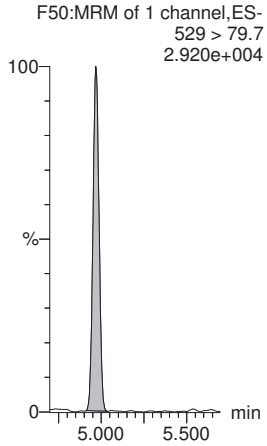
13C8-PFOS-RSD



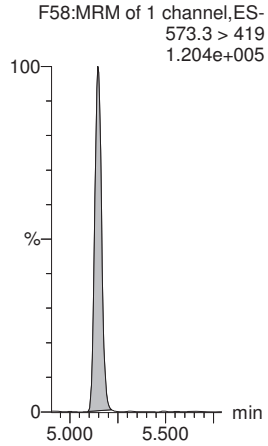
13C2-PFDA-RSD



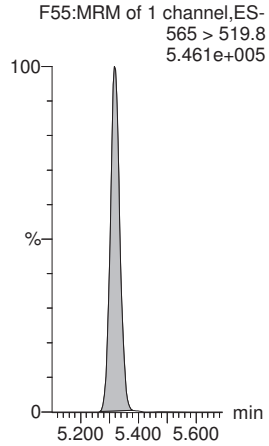
13C2-8:2 FTS-RSD



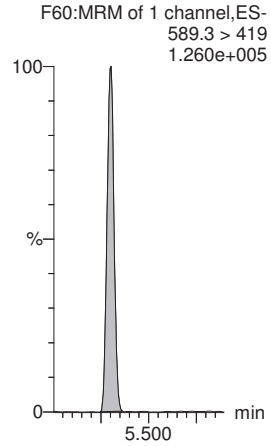
d3-N-MeFOSAA-RSD



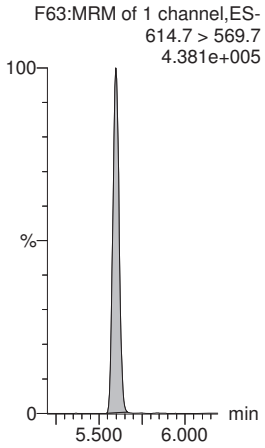
13C2-PFUdA-RSD



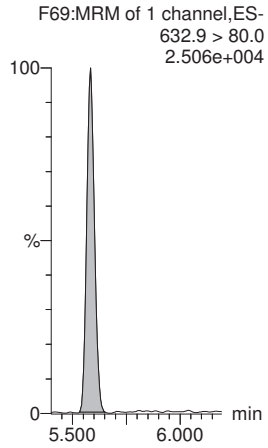
d5-N-EtFOSAA-RSD



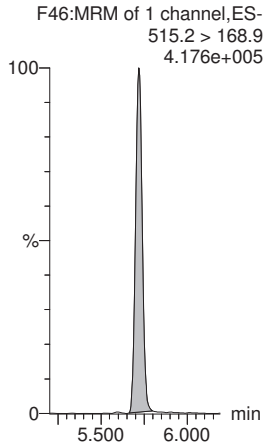
13C2-PFDoA-RSD



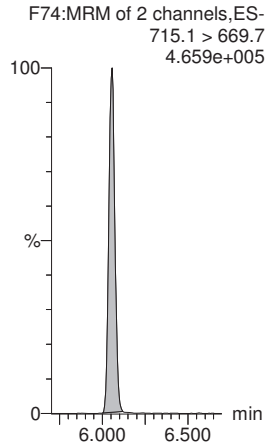
13C2-10:2 FTS-RSD



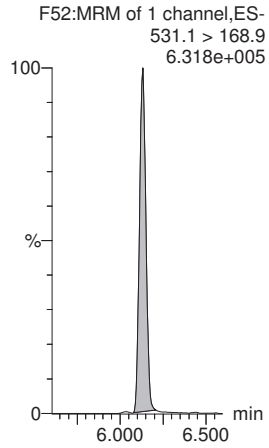
d3-N-MeFOSA-RSD



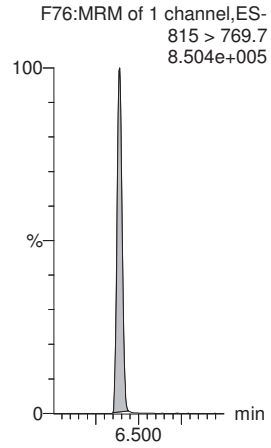
13C2-PFTeDA-RSD



d5-N-ETFOSA-RSD



13C2-PFHxDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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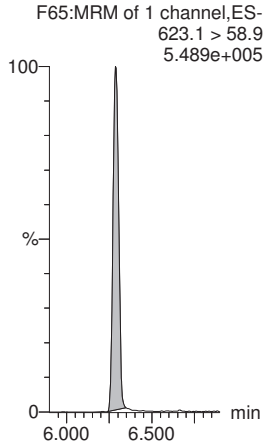
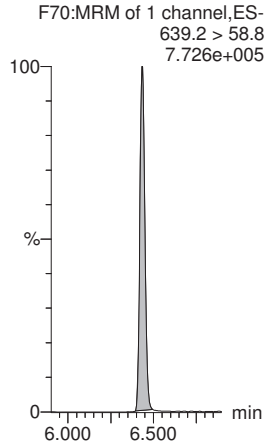
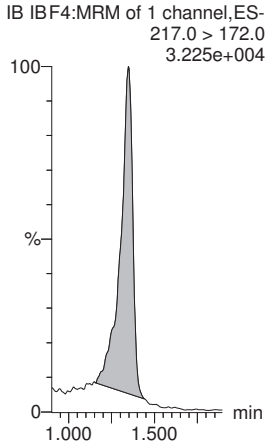
d7-N-MeFOSE-RSD



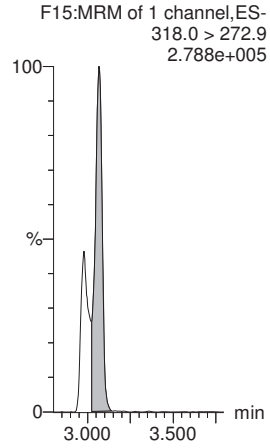
d9-N-EtFOSE-RSD



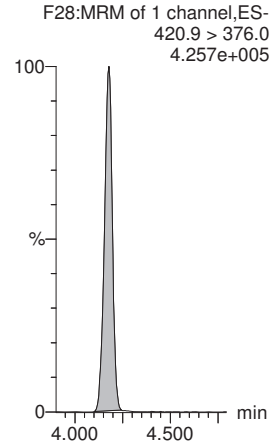
13C4-PFBA



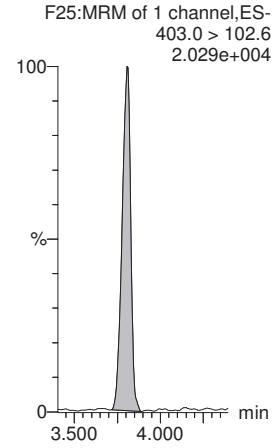
13C5-PFHxA



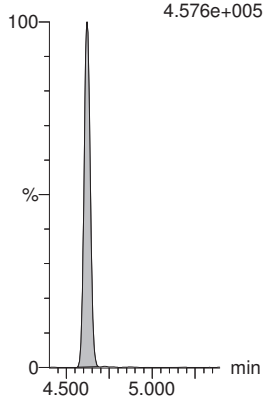
13C8-PFOA



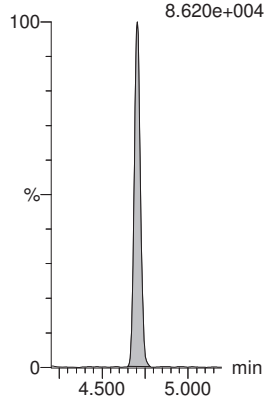
18O2-PFHxS



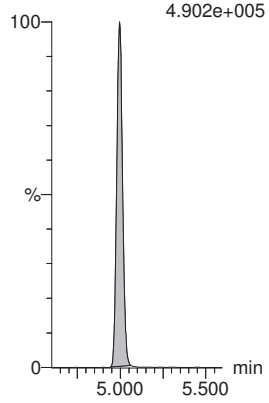
13C9-PFNA



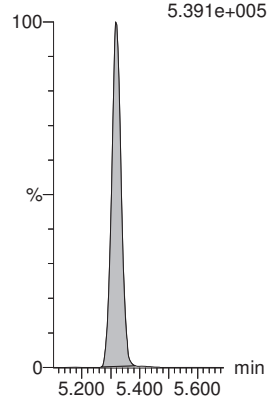
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	5.015	1782.178	1.00	1.24	0.035				NO		
2	2	PFPrS	248.9 > 79.7		740.304	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		5750.177	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	10.206	5750.177	1.00	2.30	0.022				NO		
5	5	PFBS	299.0 > 79.7		740.304	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		1126.016	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1782.178		1.00	1.35	1782.178	12.500	3.31	26.5	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	740.304		1.00	2.55	740.304	12.500	7.72	61.8	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	5750.177		1.00	2.28	5750.177	12.500	6.15	49.2	YES		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	5750.177		1.00	2.28	5750.177	12.500	6.15	49.2	YES		
11	51	13C3-PFBS-EIS	302.0 > 98.8	740.304		1.00	2.55	740.304	12.500	7.72	61.8	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1126.016		1.00	2.98	1126.016	12.500	8.48	67.9	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	83.727	12825.148	1.00	3.45	0.082				NO		YES
15	8	PFPeS	349.>79.7	6.891	740.304	1.00	3.11	0.116				NO	1.266	NO
16	9	HFPO-DA	285.1 > 168.9		2589.484	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		13378.766	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	41.243	13378.766	1.00	3.62	0.039				NO		YES
19	12	ADONA	376.8 > 250.9	79.272	13378.766	1.00	3.72	0.074				NO	3.419	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	12825.148		1.00	3.07	12825.148	12.500	8.10	64.8	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	740.304		1.00	2.55	740.304	12.500	7.72	61.8	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2589.484		1.00	3.28	2589.484	12.500	8.09	64.7	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	13378.766		1.00	3.67	13378.766	12.500	12.8	102.6	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	13378.766		1.00	3.67	13378.766	12.500	12.8	102.6	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	13378.766		1.00	3.67	13378.766	12.500	12.8	102.6	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7		2635.958	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407	5.891	1575.977	1.00	4.19	0.047				NO	0.559	YES
29	16	L-PFOA	412.8 > 368.9	85.615	18192.574	1.00	4.17	0.059				NO	2.641	NO
30	18	PFecHS	460.8 > 381.0	7.885	18192.574	1.00	4.23	0.005		0.0411		NO	1.152	YES
31	19	PFHpS	449.0 > 79.7		3555.921	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9	7.956	17837.137	1.00	4.42	0.006		0.170		NO	1.092	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2635.958		1.00	3.81	2635.958	12.500	12.5	100.0	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1575.977		1.00	4.12	1575.977	12.500	12.9	103.0	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	18192.574		1.00	4.18	18192.574	12.500	12.0	95.7	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	18192.574		1.00	4.18	18192.574	12.500	12.0	95.7	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	17837.137		1.00	4.62	17837.137	12.500	12.8	102.1	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	39.889	17837.137	1.00	4.64	0.028				NO	4.725	NO
41	22	PFOSA	497.9 > 77.9	11.734	4148.417	1.00	4.68	0.035				NO	2.003	YES
42	23	L-PFOS	498.9 > 79.7	5.464	3555.921	1.00	4.82	0.019		0.0469		NO	0.670	YES
43	25	9Cl-PF30NS	530.7 > 350.8		3555.921	1.00						NO		YES
44	26	PFDA	513 > 468.8	44.669	17897.027	1.00	4.98	0.031				NO	7.086	NO
45	27	8:2 FTS	526.9 > 507	6.191	1193.054	1.00	4.72	0.065		0.00832		NO	1.026	YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	17837.137		1.00	4.62	17837.137	12.500	12.8	102.1	NO		
47	67	13C8-PFOSA-EIS	506 > 78	4148.417		1.00	4.68	4148.417	12.500	13.2	105.3	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	17897.027		1.00	5.00	17897.027	12.500	11.4	91.3	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1193.054		1.00	4.97	1193.054	12.500	13.8	110.5	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	7.344	3555.921	1.00	5.05	0.026		0.0263		NO		YES
54	29	L-MeFOSAA	570 > 419	18.215	4927.294	1.00	5.32	0.046				NO	2.369	NO
55	31	L-EtFOSAA	584.1 > 419	14.159	5275.209	1.00	5.31	0.034		0.0922		NO	2.828	YES
56	33	PFUdA	563.0 > 518.9	41.826	20550.580	1.00	5.31	0.025				NO		YES
57	34	PFDS	598.8 > 79.7	7.570	3555.921	1.00	5.27	0.027		0.0196		NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9	15.881	18249.848	1.00	5.49	0.011				NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	4927.294		1.00	5.14	4927.294	12.500	11.7	93.7	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	5275.209		1.00	5.30	5275.209	12.500	11.1	88.5	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	20550.580		1.00	5.32	20550.580	12.500	11.3	90.8	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	18249.848		1.00	5.60	18249.848	12.500	12.1	97.1	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	12.419	1020.376	1.00	5.58	0.152		0.0846		NO		YES
67	37	PFDoA	612.9 > 569.0	140.161	18249.848	1.00	5.72	0.096		0.0593		NO	15.754	YES
68	38	N-MeFOSA	512.1 > 168.9	27.066	18102.660	1.00	5.65	0.223				NO	1.022	NO
69	39	PFTrDA	662.9 > 618.9	75.651	18249.848	1.00	5.82	0.052				NO		YES
70	40	PFDoS	698.8 > 79.7	9.840	18944.115	1.00	5.72	0.006				NO	1.325	NO
71	41	PFTeDA	713.0 > 669.0	75.225	18944.115	1.00	6.05	0.050				NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	1020.376		1.00	5.58	1020.376	12.500	14.3	114.0	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

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73	83	13C2-PFDoA-EIS	614.7 > 569.7	18249.848		1.00	5.60	18249.848	12.500	12.1	97.1	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	18102.660		1.00	5.72	18102.660	149.200	143	95.9	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	18249.848		1.00	5.60	18249.848	12.500	12.1	97.1	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	18944.115		1.00	6.06	18944.115	12.500	12.0	96.2	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	18944.115		1.00	6.06	18944.115	12.500	12.0	96.2	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	33.433	27158.578	1.00	6.06	0.184		0.197		NO	1.862	NO
80	43	PFHxDA	813.1 > 768.6	242.782	28228.824	1.00	6.39	0.108				NO		YES
81	44	PFODA	913.1 > 868.8	143.659	28228.824	1.00	6.62	0.064		0.0383		NO		
82	45	N-MeFOSE	616.1 > 58.9	11.728	20182.398	1.00	6.30	0.087				NO		
83	46	N-EtFOSE	630.1 > 58.9	76.697	25715.291	1.00	6.44	0.445				NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	27158.578		1.00	6.13	27158.578	149.200	145	97.3	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	28228.824		1.00	6.39	28228.824	12.500	10.9	87.3	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	28228.824		1.00	6.39	28228.824	12.500	10.9	87.3	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	20182.398		1.00	6.29	20182.398	149.200	135	90.6	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	25715.291		1.00	6.43	25715.291	149.200	142	95.5	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	3555.921		1.00	4.70	3555.921	12.500	13.0	104.3	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1782.178	2511.324	1.00	1.35	8.871	12.500	11.0	88.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	5750.177	12951.961	1.00	2.28	5.550	12.500	9.55	76.4	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	740.304	1163.393	1.00	2.55	7.954	12.500	7.20	57.6	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2589.484	12951.961	1.00	3.28	2.499	12.500	12.5	100.3	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1126.016	1163.393	1.00	2.98	12.098	12.500	8.53	68.3	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	12825.148	12951.961	1.00	3.07	12.378	12.500	12.8	102.4	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	13378.766	12951.961	1.00	3.67	12.912	12.500	19.4	155.0	YES		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2635.958	1163.393	1.00	3.81	28.322	12.500	11.4	91.4	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1575.977	3581.447	1.00	4.12	5.500	12.500	12.6	100.6	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	17837.137	19049.443	1.00	4.62	11.705	12.500	12.6	100.6	NO		
101	68	13C8-PFOSA-RSD	506 > 78	4148.417	20450.689	1.00	4.68	2.536	12.500	13.3	106.3	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	18192.574	20122.490	1.00	4.18	11.301	12.500	12.2	97.8	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	3555.921	3581.447	1.00	4.70	12.411	12.500	13.4	106.9	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	17897.027	19159.363	1.00	5.00	11.676	12.500	11.9	94.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1193.054	3581.447	1.00	4.97	4.164	12.500	11.6	92.9	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	4927.294	20450.689	1.00	5.14	3.012	12.500	12.8	102.1	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	20550.580	20450.689	1.00	5.32	12.561	12.500	12.2	97.7	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Saturday, February 29, 2020 11:01:47 Pacific Standard Time
Printed: Saturday, February 29, 2020 11:05:27 Pacific Standard Time

Name: 200228P2-13, Date: 28-Feb-2020, Time: 14:51:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	5275.209	20450.689	1.00	5.30	3.224	12.500	12.4	99.1	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	18249.848	19159.363	1.00	5.60	11.907	12.500	12.4	99.5	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1020.376	3581.447	1.00	5.58	3.561	12.500	12.6	100.5	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	18102.660	20450.689	1.00	5.72	11.065	149.200	144	96.7	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	18944.115	20450.689	1.00	6.06	11.579	12.500	12.2	97.8	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	27158.578	20450.689	1.00	6.13	16.600	149.200	151	100.9	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	28228.824	20450.689	1.00	6.39	17.254	12.500	11.9	95.2	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	20182.398	20450.689	1.00	6.29	12.336	149.200	141	94.2	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	25715.291	20450.689	1.00	6.43	15.718	149.200	151	101.0	NO		
119	99	13C4-PFBA	217.0 > 172.0	2511.324	2511.324	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	12951.961	12951.961	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	20122.490	20122.490	1.00	4.18	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1163.393	1163.393	1.00	3.81	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	19049.443	19049.443	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	3581.447	3581.447	1.00	4.70	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	19159.363	19159.363	1.00	4.99	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	20450.689	20450.689	1.00	5.32	12.500	12.500	12.5	100.0	NO		

low point

PFPeS : 0.5
L-PFOA : 0.5
PFecHs : 1.0
8:2 FTS : 0.5
L-EtFoSAA : 0.5

high point

3:3 FTCA : 100
PFBS : 250
PFPeS : 250
5:3 FTCA : 100
6:2 FTS : 250
7:3 FTCA : 100
L-PFOS : 250
9Cl : 250
PFNS : 250
PFUdA : 100

PFDS : 250

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
Printed: Monday, March 02, 2020 10:43:21 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:27:54

✓ lm 3/2/2020

Compound name: PFBA
Coefficient of Determination: R^2 = 0.999014
Calibration curve: -7.26e-005 * x^2 + 1.20883 * x + 0.0539221
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	200229P1-3	Standard	0.250	1.37	94.646	4139.773	0.286	0.2	-23.3	NO	0.999	NO	MM
2	2	200229P1-4	Standard	0.500	1.31	211.752	4309.036	0.614	0.5	-7.3	NO	0.999	NO	MM
3	3	200229P1-5	Standard	1.000	1.30	403.837	4180.249	1.208	1.0	-4.6	NO	0.999	NO	MM
4	4	200229P1-6	Standard	2.000	1.30	879.501	4088.781	2.689	2.2	9.0	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	1.30	2277.379	4116.687	6.915	5.7	13.6	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	1.30	4755.645	4436.269	13.400	11.0	10.5	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	1.30	23443.797	4751.110	61.680	51.1	2.3	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	1.30	42556.625	4287.231	124.080	103.2	3.2	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	1.30	106507.367	4673.336	284.880	239.1	-4.4	NO	0.999	NO	MM
10	10	200229P1-12	Standard	500.000	1.30	214322.000	4526.938	591.796	504.8	1.0	NO	0.999	NO	MM

Compound name: PFPrS
Coefficient of Determination: R^2 = 0.998898
Calibration curve: 0.000254058 * x^2 + 1.32918 * x + -0.0292731
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	200229P1-3	Standard	0.250	1.70	19.588	820.961	0.298	0.2	-1.4	NO	0.999	NO	MM
2	2	200229P1-4	Standard	0.500	1.64	44.455	845.774	0.657	0.5	3.3	NO	0.999	NO	MM
3	3	200229P1-5	Standard	1.000	1.63	64.387	872.793	0.922	0.7	-28.4	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	1.63	204.337	902.117	2.831	2.2	7.6	NO	0.999	NO	MM
5	5	200229P1-7	Standard	5.000	1.63	514.220	906.262	7.093	5.4	7.1	NO	0.999	NO	MM
6	6	200229P1-8	Standard	10.000	1.63	1066.701	933.362	14.286	10.7	7.5	NO	0.999	NO	MM
7	7	200229P1-9	Standard	50.000	1.63	5386.904	964.595	69.808	52.0	4.0	NO	0.999	NO	MM
8	8	200229P1-10	Standard	100.000	1.63	9743.902	862.402	141.232	104.2	4.2	NO	0.999	NO	db
9	9	200229P1-11	Standard	250.000	1.62	24163.613	911.534	331.359	238.4	-4.6	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	1.63	48351.422	822.291	735.011	504.4	0.9	NO	0.999	NO	bb

VY 03/02/20 ~~VY 03~~ VY 03/12/20

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
Printed: Monday, March 02, 2020 10:43:21 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999514
Calibration curve: 5.29325e-005 * x^2 + 0.133561 * x + -0.00607305
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 200229P1-3	Standard	0.250	2.15	11.433	6932.076	0.021	0.2	-20.1	NO	1.000	NO	bb
2	2 200229P1-4	Standard	0.500	2.10	35.837	7600.224	0.059	0.5	-2.7	NO	1.000	NO	MM
3	3 200229P1-5	Standard	1.000	2.09	74.357	7425.095	0.125	1.0	-1.8	NO	1.000	NO	bb
4	4 200229P1-6	Standard	2.000	2.09	147.792	7302.792	0.253	1.9	-3.1	NO	1.000	NO	bb
5	5 200229P1-7	Standard	5.000	2.09	421.786	7351.109	0.717	5.4	8.1	NO	1.000	NO	bb
6	6 200229P1-8	Standard	10.000	2.09	884.177	8048.850	1.373	10.3	2.8	NO	1.000	NO	bd
7	7 200229P1-9	Standard	50.000	2.09	4424.747	8291.952	6.670	49.0	-1.9	NO	1.000	NO	bb
8	8 200229P1-10	Standard	100.000	2.09	8259.924	7406.676	13.940	100.4	0.4	NO	1.000	NO	bb
9	9 200229P1-11	Standard	250.000	2.09	4410.753	7815.998	7.054	51.8	-79.3	YES	1.000	NO	bbX
10	10 200229P1-12	Standard	500.000	2.09	8516.847	7376.919	14.432	103.8	-79.2	YES	1.000	NO	bbX

Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999206
Calibration curve: -0.000124021 * x^2 + 0.964733 * x + 0.0392424
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 200229P1-3	Standard	0.250	2.30	142.939	6932.076	0.258	0.2	-9.4	NO	0.999	NO	bb
2	2 200229P1-4	Standard	0.500	2.24	302.978	7600.224	0.498	0.5	-4.8	NO	0.999	NO	bb
3	3 200229P1-5	Standard	1.000	2.23	691.985	7425.095	1.165	1.2	16.7	NO	0.999	NO	bb
4	4 200229P1-6	Standard	2.000	2.23	1219.628	7302.792	2.088	2.1	6.2	NO	0.999	NO	bb
5	5 200229P1-7	Standard	5.000	2.23	3070.264	7351.109	5.221	5.4	7.5	NO	0.999	NO	bb
6	6 200229P1-8	Standard	10.000	2.23	6051.646	8048.850	9.398	9.7	-2.9	NO	0.999	NO	bb
7	7 200229P1-9	Standard	50.000	2.23	32268.311	8291.952	48.644	50.7	1.4	NO	0.999	NO	bb
8	8 200229P1-10	Standard	100.000	2.23	59039.234	7406.676	99.639	104.6	4.6	NO	0.999	NO	bb
9	9 200229P1-11	Standard	250.000	2.23	140452.219	7815.998	224.623	240.2	-3.9	NO	0.999	NO	bb
10	10 200229P1-12	Standard	500.000	2.23	268451.750	7376.919	454.885	504.1	0.8	NO	0.999	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
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Compound name: PFBS
Coefficient of Determination: R^2 = 0.999497
Calibration curve: -0.00173094 * x^2 + 2.6513 * x + -0.251741
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	200229P1-3	Standard	0.250	2.56	21.934	820.961	0.334	0.2	-11.6	NO	0.999	NO	bb
2	2	200229P1-4	Standard	0.500	2.51	85.936	845.774	1.270	0.6	14.8	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	2.51	198.707	872.793	2.846	1.2	16.9	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	2.51	295.240	902.117	4.091	1.6	-18.0	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	2.51	907.905	906.262	12.523	4.8	-3.3	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	2.51	1983.074	933.362	26.558	10.2	1.8	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	2.51	9674.182	964.595	125.366	48.9	-2.1	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	2.51	17362.521	862.402	251.659	101.8	1.8	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	2.51	40346.090	911.534	553.272	249.4	-0.3	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	2.51	76220.852	822.291	1158.666			NO	0.999	NO	bbXI

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.997493
Calibration curve: -0.000644207 * x^2 + 1.56988 * x + -0.0868661
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	0.250	2.99	30.327	1187.177	0.319	0.3	3.5	NO	0.997	NO	bb
2	2	200229P1-4	Standard	0.500	2.94	70.900	1295.567	0.684	0.5	-1.8	NO	0.997	NO	MM
3	3	200229P1-5	Standard	1.000	2.95	163.215	1334.430	1.529	1.0	3.0	NO	0.997	NO	bb
4	4	200229P1-6	Standard	2.000	2.95	313.085	1328.309	2.946	1.9	-3.3	NO	0.997	NO	bb
5	5	200229P1-7	Standard	5.000	2.95	878.025	1381.076	7.947	5.1	2.6	NO	0.997	NO	bb
6	6	200229P1-8	Standard	10.000	2.95	1695.004	1457.295	14.539	9.4	-6.5	NO	0.997	NO	bb
7	7	200229P1-9	Standard	50.000	2.95	8339.776	1409.845	73.942	48.1	-3.8	NO	0.997	NO	bb
8	8	200229P1-10	Standard	100.000	2.95	14579.963	1097.437	166.068	110.9	10.9	NO	0.997	NO	bb
9	9	200229P1-11	Standard	250.000	2.95	32704.459	1224.052	333.977	235.6	-5.8	NO	0.997	NO	bb
10	10	200229P1-12	Standard	500.000	2.95	57802.836	1146.782	630.055	506.8	1.4	NO	0.997	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
Printed: Monday, March 02, 2020 10:43:21 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.999611, r^2 = 0.999222
Calibration curve: 0.838943 * x + 0.10463
Response type: Internal Std (Ref 57), 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	200229P1-3	Standard	0.250	3.08	349.415	12969.711	0.337	0.3	10.7	NO	0.999	NO	bd
2	2	200229P1-4	Standard	0.500	3.04	582.056	13837.118	0.526	0.5	0.4	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	3.03	1146.886	13536.680	1.059	1.1	13.8	NO	0.999	NO	db
4	4	200229P1-6	Standard	2.000	3.03	1978.944	13822.810	1.790	2.0	0.4	NO	0.999	NO	MM
5	5	200229P1-7	Standard	5.000	3.03	5096.759	14053.604	4.533	5.3	5.6	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	3.03	10900.467	14277.139	9.544	11.3	12.5	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	3.03	51793.414	14906.268	43.433	51.6	3.3	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	3.03	100280.344	14298.241	87.668	104.4	4.4	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	3.03	241584.609	14275.010	211.545	252.0	0.8	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	3.03	440424.688	13382.184	411.391	490.2	-2.0	NO	0.999	NO	bb

Compound name: PFPeS
Coefficient of Determination: R^2 = 0.999637
Calibration curve: -0.0030014 * x^2 + 2.79602 * x + -0.53413
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	200229P1-3	Standard	0.250	3.28	49.070	820.961	0.747	0.5	83.4	YES	1.000	NO	bbX
2	2	200229P1-4	Standard	0.500	3.23	47.983	845.774	0.709	0.4	-11.0	NO	1.000	NO	bb
3	3	200229P1-5	Standard	1.000	3.24	173.344	872.793	2.483	1.1	8.0	NO	1.000	NO	bb
4	4	200229P1-6	Standard	2.000	3.24	384.986	902.117	5.334	2.1	5.2	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	3.24	976.099	906.262	13.463	5.0	0.7	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	3.24	1989.886	933.362	26.649	9.8	-1.7	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	3.24	9867.755	964.595	127.874	48.4	-3.1	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	3.24	17541.797	862.402	254.258	102.4	2.4	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	3.24	37160.918	911.534	509.593	249.0	-0.4	NO	1.000	NO	bb
10	10	200229P1-12	Standard	500.000	3.24	64070.262	822.291	973.960			NO	1.000	NO	bbXI

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998793
Calibration curve: -0.000153928 * x^2 + 1.05532 * x + 0.0533749
Response type: Internal Std (Ref 53), 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	200229P1-3	Standard	0.250	3.30	61.112	2938.399	0.260	0.2	-21.7	NO	0.999	NO	bb
2	2	200229P1-4	Standard	0.500	3.25	152.516	3165.362	0.602	0.5	4.0	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	3.25	308.286	3256.216	1.183	1.1	7.1	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	3.25	604.389	3195.763	2.364	2.2	9.5	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	3.25	1531.231	3199.245	5.983	5.6	12.5	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	3.25	3186.829	3569.769	11.159	10.5	5.4	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	3.25	16035.869	3698.668	54.195	51.7	3.4	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	3.25	29324.770	3388.342	108.183	104.0	4.0	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	3.25	69593.047	3600.825	241.587	237.1	-5.2	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	3.25	126039.156	3185.709	494.549	505.9	1.2	NO	0.999	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999659
Calibration curve: -0.000139609 * x^2 + 0.346434 * x + -0.000467738
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	200229P1-3	Standard	0.250	3.63	40.649	7163.202	0.071	0.2	-17.6	NO	1.000	NO	bb
2	2	200229P1-4	Standard	0.500	3.58	123.961	8080.123	0.192	0.6	11.0	NO	1.000	NO	bb
3	3	200229P1-5	Standard	1.000	3.58	217.673	8198.353	0.332	1.0	-4.0	NO	1.000	NO	bb
4	4	200229P1-6	Standard	2.000	3.58	460.727	7707.320	0.747	2.2	8.0	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	3.58	1041.328	7435.883	1.751	5.1	1.3	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	3.58	2301.112	8126.255	3.540	10.3	2.6	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	3.58	11186.093	8382.969	16.680	49.1	-1.8	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	3.58	21153.363	7920.969	33.382	100.4	0.4	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	3.58	11218.321	8410.690	16.673	49.1	-80.4	YES	1.000	NO	bbX
10	10	200229P1-12	Standard	500.000	3.58	21343.998	6866.574	38.855	117.7	-76.5	YES	1.000	NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Compound name: PFHpA
Coefficient of Determination: R^2 = 0.998543
Calibration curve: -2.80604e-005 * x^2 + 1.20464 * x + 0.137234
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	200229P1-3	Standard	0.250	3.69	208.212	7163.202	0.363	0.2	-24.9	NO	0.999	NO	db
2	2	200229P1-4	Standard	0.500	3.64	405.564	8080.123	0.627	0.4	-18.6	NO	0.999	NO	bd
3	3	200229P1-5	Standard	1.000	3.64	885.299	8198.353	1.350	1.0	0.7	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	3.64	1699.861	7707.320	2.757	2.2	8.7	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	3.64	4216.457	7435.883	7.088	5.8	15.4	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	3.64	9129.807	8126.255	14.044	11.5	15.5	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	3.64	42412.613	8382.969	63.242	52.4	4.9	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	3.64	78051.211	7920.969	123.172	102.4	2.4	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	3.64	191179.797	8410.690	284.132	237.1	-5.2	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	3.64	330822.906	6866.574	602.234	505.8	1.2	NO	0.999	NO	bb

Compound name: ADONA
Coefficient of Determination: R^2 = 0.994634
Calibration curve: 0.000465383 * x^2 + 3.05822 * x + 0.398385
Response type: Internal Std (Ref 59), 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	200229P1-3	Standard	0.250	3.79	604.380	7163.202	1.055	0.2	-14.2	NO	0.995	NO	bb
2	2	200229P1-4	Standard	0.500	3.75	1282.813	8080.123	1.985	0.5	3.7	NO	0.995	NO	bb
3	3	200229P1-5	Standard	1.000	3.75	2142.690	8198.353	3.267	0.9	-6.2	NO	0.995	NO	bb
4	4	200229P1-6	Standard	2.000	3.75	4557.876	7707.320	7.392	2.3	14.3	NO	0.995	NO	bb
5	5	200229P1-7	Standard	5.000	3.75	11549.985	7435.883	19.416	6.2	24.3	NO	0.995	NO	bb
6	6	200229P1-8	Standard	10.000	3.75	24037.303	8126.255	36.975	11.9	19.4	NO	0.995	NO	bb
7	7	200229P1-9	Standard	50.000	3.75	118068.039	8382.969	176.053	56.9	13.9	NO	0.995	NO	bb
8	8	200229P1-10	Standard	100.000	3.75	207290.500	7920.969	327.123	105.2	5.2	NO	0.995	NO	bb
9	9	200229P1-11	Standard	250.000	3.75	477001.469	8410.690	708.921	224.0	-10.4	NO	0.995	NO	bb
10	10	200229P1-12	Standard	500.000	3.75	924430.438	6866.574	1682.845	510.5	2.1	NO	0.995	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.998679
Calibration curve: -0.000251852 * x^2 + 1.09858 * x + -0.145925
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	200229P1-3	Standard	0.250	3.81	15.441	2137.160	0.090	0.2	-14.0	NO	0.999	NO	MM
2	2	200229P1-4	Standard	0.500	3.78	94.435	2128.375	0.555	0.6	27.6	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	3.78	151.786	2158.272	0.879	0.9	-6.7	NO	0.999	NO	MM
4	4	200229P1-6	Standard	2.000	3.78	327.413	2173.002	1.883	1.8	-7.6	NO	0.999	NO	MM
5	5	200229P1-7	Standard	5.000	3.78	907.067	2162.301	5.244	4.9	-1.8	NO	0.999	NO	MM
6	6	200229P1-8	Standard	10.000	3.78	2010.526	2119.048	11.860	11.0	9.6	NO	0.999	NO	MM
7	7	200229P1-9	Standard	50.000	3.78	9312.389	2303.492	50.534	46.6	-6.7	NO	0.999	NO	MM
8	8	200229P1-10	Standard	100.000	3.78	17531.781	2129.199	102.925	95.9	-4.1	NO	0.999	NO	MM
9	9	200229P1-11	Standard	250.000	3.78	40465.563	1869.943	270.500	262.1	4.8	NO	0.999	NO	MM
10	10	200229P1-12	Standard	500.000	3.78	74020.875	1921.595	481.507	494.5	-1.1	NO	0.999	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999738
Calibration curve: -0.00207235 * x^2 + 2.19851 * x + -0.0932146
Response type: Internal Std (Ref 63), 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	200229P1-3	Standard	0.250	4.13	48.051	1091.834	0.550	0.3	17.1	NO	1.000	NO	bb
2	2	200229P1-4	Standard	0.500	4.10	64.253	1144.814	0.702	0.4	-27.7	NO	1.000	NO	bb
3	3	200229P1-5	Standard	1.000	4.10	190.548	1134.689	2.099	1.0	-0.2	NO	1.000	NO	bb
4	4	200229P1-6	Standard	2.000	4.10	417.770	1100.729	4.744	2.2	10.2	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	4.10	1138.620	1302.586	10.927	5.0	0.7	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	4.10	2024.160	1160.524	21.802	10.1	0.5	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	4.10	10165.970	1227.868	103.492	49.4	-1.2	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	4.10	18183.869	1137.185	199.878	100.5	0.5	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	4.10	40211.867	1197.070	419.899	249.9	-0.0	NO	1.000	NO	bb
10	10	200229P1-12	Standard	500.000	4.10	70208.258	1095.448	801.136			NO	1.000	NO	bbXI

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999566
Calibration curve: -0.000173152 * x^2 + 1.19871 * x + 0.255567
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	200229P1-3	Standard	0.250	4.19	308.776	11289.896	0.342	0.1	-71.2	YES	1.000	NO	bbX
2	2	200229P1-4	Standard	0.500	4.15	790.308	11847.828	0.834	0.5	-3.5	NO	1.000	NO	MM
3	3	200229P1-5	Standard	1.000	4.15	1268.657	12103.008	1.310	0.9	-12.0	NO	1.000	NO	dd
4	4	200229P1-6	Standard	2.000	4.15	2277.503	11279.954	2.524	1.9	-5.4	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	4.15	6581.798	11810.525	6.966	5.6	12.1	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	4.15	13282.319	12752.723	13.019	10.7	6.6	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	4.15	65298.836	13027.886	62.653	52.5	4.9	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	4.15	113462.055	12148.066	116.749	98.6	-1.4	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	4.15	259731.891	11426.523	284.133	245.5	-1.8	NO	1.000	NO	bb
10	10	200229P1-12	Standard	500.000	4.15	473524.969	10591.959	558.826	502.4	0.5	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999692
Calibration curve: -2.49656e-005 * x^2 + 0.189183 * x + -0.0174813
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	200229P1-3	Standard	0.250	4.21	26.235	11289.896	0.029	0.2	-1.6	NO	1.000	NO	bbX
2	2	200229P1-4	Standard	0.500	4.16	108.982	11847.828	0.115	0.7	40.0	YES	1.000	NO	bbX
3	3	200229P1-5	Standard	1.000	4.18	116.150	12103.008	0.120	0.7	-27.3	NO	1.000	NO	bb
4	4	200229P1-6	Standard	2.000	4.17	360.462	11279.954	0.399	2.2	10.2	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	4.16	1024.069	11810.525	1.084	5.8	16.5	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	4.17	1939.337	12752.723	1.901	10.2	1.5	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	4.17	9795.409	13027.886	9.399	50.1	0.2	NO	1.000	NO	dd
8	8	200229P1-10	Standard	100.000	4.17	17927.109	12148.066	18.446	98.9	-1.1	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	4.17	41748.992	11426.523	45.671	249.7	-0.1	NO	1.000	NO	bb
10	10	200229P1-12	Standard	500.000	4.17	74900.320	10591.959	88.393	500.4	0.1	NO	1.000	NO	bb

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Compound name: PFHpS
Coefficient of Determination: R^2 = 0.992382
Calibration curve: -0.00118396 * x^2 + 1.15176 * x + -0.0858055
Response type: Internal Std (Ref 71), 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	200229P1-3	Standard	0.250	4.30	46.991	2261.978	0.260	0.3	20.0	NO	0.992	NO	bb
2	2	200229P1-4	Standard	0.500	4.27	73.476	2325.863	0.395	0.4	-16.5	NO	0.992	NO	bb
3	3	200229P1-5	Standard	1.000	4.27	189.268	2477.304	0.955	0.9	-9.5	NO	0.992	NO	bb
4	4	200229P1-6	Standard	2.000	4.27	417.420	2306.226	2.262	2.0	2.2	NO	0.992	NO	bb
5	5	200229P1-7	Standard	5.000	4.27	977.092	2402.780	5.083	4.5	-9.8	NO	0.992	NO	bb
6	6	200229P1-8	Standard	10.000	4.27	2060.569	2452.425	10.503	9.3	-7.2	NO	0.992	NO	bb
7	7	200229P1-9	Standard	50.000	4.27	10730.175	2732.857	49.079	44.7	-10.5	NO	0.992	NO	bb
8	8	200229P1-10	Standard	100.000	4.27	18228.328	2378.871	95.782	91.9	-8.1	NO	0.992	NO	bb
9	9	200229P1-11	Standard	250.000	4.27	42689.574	2237.110	238.531	299.2	19.7	NO	0.992	NO	bb
10	10	200229P1-12	Standard	500.000	4.27	79251.961	3675.494	269.528	392.3	-21.5	NO	0.992	NO	MM

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.997113
Calibration curve: -6.34032e-005 * x^2 + 0.250677 * x + -0.0155274
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	200229P1-3	Standard	0.250	4.61	24.957	10161.933	0.031	0.2	-26.2	NO	0.997	NO	bb
2	2	200229P1-4	Standard	0.500	4.59	126.088	11226.779	0.140	0.6	24.4	NO	0.997	NO	MM
3	3	200229P1-5	Standard	1.000	4.59	160.561	11836.420	0.170	0.7	-26.2	NO	0.997	NO	bb
4	4	200229P1-6	Standard	2.000	4.59	471.500	11022.959	0.535	2.2	9.8	NO	0.997	NO	bb
5	5	200229P1-7	Standard	5.000	4.59	1248.681	10822.433	1.442	5.8	16.5	NO	0.997	NO	bb
6	6	200229P1-8	Standard	10.000	4.59	2439.564	11607.460	2.627	10.6	5.7	NO	0.997	NO	bb
7	7	200229P1-9	Standard	50.000	4.59	11810.681	12599.075	11.718	47.4	-5.3	NO	0.997	NO	bb
8	8	200229P1-10	Standard	100.000	4.59	21920.537	11087.045	24.714	101.2	1.2	NO	0.997	NO	bb
9	9	200229P1-11	Standard	250.000	4.59	11221.673	10811.774	12.974	52.5	-79.0	YES	0.997	NO	bbX
10	10	200229P1-12	Standard	500.000	4.59	21694.736	10452.676	25.944	106.4	-78.7	YES	0.997	NO	bbX

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Compound name: PFNA
Correlation coefficient: r = 0.999204, r^2 = 0.998408
Calibration curve: 1.1206 * x + 0.0471681
Response type: Internal Std (Ref 65), 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	200229P1-3	Standard	0.250	4.63	223.909	10161.933	0.275	0.2	-18.5	NO	0.998	NO	bb
2	2	200229P1-4	Standard	0.500	4.60	537.710	11226.779	0.599	0.5	-1.6	NO	0.998	NO	bb
3	3	200229P1-5	Standard	1.000	4.60	1005.383	11836.420	1.062	0.9	-9.5	NO	0.998	NO	bb
4	4	200229P1-6	Standard	2.000	4.60	2199.030	11022.959	2.494	2.2	9.2	NO	0.998	NO	bd
5	5	200229P1-7	Standard	5.000	4.60	5876.302	10822.433	6.787	6.0	20.3	NO	0.998	NO	bb
6	6	200229P1-8	Standard	10.000	4.60	11555.718	11607.460	12.444	11.1	10.6	NO	0.998	NO	bb
7	7	200229P1-9	Standard	50.000	4.60	56232.000	12599.075	55.790	49.7	-0.5	NO	0.998	NO	bb
8	8	200229P1-10	Standard	100.000	4.60	107337.531	11087.045	121.017	108.0	8.0	NO	0.998	NO	bb
9	9	200229P1-11	Standard	250.000	4.60	246363.016	10811.774	284.832	254.1	1.7	NO	0.998	NO	bb
10	10	200229P1-12	Standard	500.000	4.60	455505.594	10452.676	544.724	486.1	-2.8	NO	0.998	NO	bb

Compound name: PFOSA
Coefficient of Determination: R^2 = 0.998244
Calibration curve: -0.000135417 * x^2 + 0.853196 * x + 0.0420568
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	200229P1-3	Standard	0.250	4.70	43.616	2845.449	0.192	0.2	-29.9	NO	0.998	NO	bb
2	2	200229P1-4	Standard	0.500	4.65	100.354	3236.567	0.388	0.4	-19.0	NO	0.998	NO	bb
3	3	200229P1-5	Standard	1.000	4.65	246.582	3403.331	0.906	1.0	1.2	NO	0.998	NO	bb
4	4	200229P1-6	Standard	2.000	4.65	474.219	2969.843	1.996	2.3	14.5	NO	0.998	NO	bb
5	5	200229P1-7	Standard	5.000	4.65	1304.079	3111.854	5.238	6.1	21.9	NO	0.998	NO	bb
6	6	200229P1-8	Standard	10.000	4.66	2703.150	3688.936	9.160	10.7	7.0	NO	0.998	NO	bb
7	7	200229P1-9	Standard	50.000	4.66	12525.685	3506.720	44.649	52.7	5.4	NO	0.998	NO	bb
8	8	200229P1-10	Standard	100.000	4.66	23667.334	3414.109	86.653	103.2	3.2	NO	0.998	NO	bb
9	9	200229P1-11	Standard	250.000	4.65	54551.492	3527.968	193.282	235.3	-5.9	NO	0.998	NO	bb
10	10	200229P1-12	Standard	500.000	4.66	101267.469	3182.081	397.804	507.0	1.4	NO	0.998	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 11:00:06 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999770
Calibration curve: -5.78438e-005 * x^2 + 0.977835 * x + -0.0758606
Response type: Internal Std (Ref 71), 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	200229P1-3	Standard	0.250	4.72	23.166	2261.978	0.128	0.2	-16.6	NO	1.000	NO	MM
2	2	200229P1-4	Standard	0.500	4.68	101.448	2325.863	0.545	0.6	27.0	NO	1.000	NO	MM
3	3	200229P1-5	Standard	1.000	4.68	162.744	2477.304	0.821	0.9	-8.3	NO	1.000	NO	MM
4	4	200229P1-6	Standard	2.000	4.68	328.852	2306.226	1.782	1.9	-5.0	NO	1.000	NO	MM
5	5	200229P1-7	Standard	5.000	4.68	985.342	2402.780	5.126	5.3	6.4	NO	1.000	NO	MM
6	6	200229P1-8	Standard	10.000	4.69	1831.966	2452.425	9.338	9.6	-3.7	NO	1.000	NO	MM
7	7	200229P1-9	Standard	50.000	4.69	10602.898	2732.857	48.497	49.8	-0.4	NO	1.000	NO	MM
8	8	200229P1-10	Standard	100.000	4.69	18567.559	2378.871	97.565	100.5	0.5	NO	1.000	NO	MM
9	9	200229P1-11	Standard	250.000	4.69	43066.508	2237.110	240.637	249.9	-0.1	NO	1.000	NO	MM
10	10	200229P1-12	Standard	500.000	4.69	80293.016	3675.494	273.069	284.1	-43.2	YES	1.000	NO	MMX

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.996808
Calibration curve: 4.27072e-005 * x^2 + 1.54969 * x + -0.000241627
Response type: Internal Std (Ref 71), 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	200229P1-3	Standard	0.250	4.93	55.994	2261.978	0.309	0.2	-20.1	NO	0.997	NO	bb
2	2	200229P1-4	Standard	0.500	4.92	109.825	2325.863	0.590	0.4	-23.8	NO	0.997	NO	bb
3	3	200229P1-5	Standard	1.000	4.91	306.936	2477.304	1.549	1.0	-0.0	NO	0.997	NO	bb
4	4	200229P1-6	Standard	2.000	4.91	731.539	2306.226	3.965	2.6	27.9	NO	0.997	NO	bb
5	5	200229P1-7	Standard	5.000	4.91	1623.493	2402.780	8.446	5.4	9.0	NO	0.997	NO	bb
6	6	200229P1-8	Standard	10.000	4.91	3493.994	2452.425	17.809	11.5	14.9	NO	0.997	NO	bb
7	7	200229P1-9	Standard	50.000	4.91	14966.275	2732.857	68.455	44.1	-11.8	NO	0.997	NO	bb
8	8	200229P1-10	Standard	100.000	4.91	30783.041	2378.871	161.752	104.1	4.1	NO	0.997	NO	bb
9	9	200229P1-11	Standard	250.000	4.91	69665.977	2237.110	389.263	249.5	-0.2	NO	0.997	NO	bb
10	10	200229P1-12	Standard	500.000	4.91	132408.359	3675.494	450.308	288.3	-42.3	YES	0.997	NO	MMX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
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Compound name: PFDA
Coefficient of Determination: R^2 = 0.997454
Calibration curve: -1.7216e-005 * x^2 + 1.30956 * x + 0.0697503
Response type: Internal Std (Ref 73), 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	200229P1-3	Standard	0.250	5.01	277.529	11459.666	0.303	0.2	-28.8	NO	0.997	NO	bb
2	2	200229P1-4	Standard	0.500	4.98	785.704	12428.431	0.790	0.6	10.0	NO	0.997	NO	bb
3	3	200229P1-5	Standard	1.000	4.98	1471.115	12512.931	1.470	1.1	6.9	NO	0.997	NO	bb
4	4	200229P1-6	Standard	2.000	4.98	2732.304	12248.468	2.788	2.1	3.8	NO	0.997	NO	bb
5	5	200229P1-7	Standard	5.000	4.98	7398.540	12133.270	7.622	5.8	15.4	NO	0.997	NO	bb
6	6	200229P1-8	Standard	10.000	4.98	13890.864	12376.774	14.029	10.7	6.6	NO	0.997	NO	bb
7	7	200229P1-9	Standard	50.000	4.98	73337.297	12924.905	70.926	54.1	8.3	NO	0.997	NO	bb
8	8	200229P1-10	Standard	100.000	4.98	137101.266	12469.418	137.438	105.0	5.0	NO	0.997	NO	bb
9	9	200229P1-11	Standard	250.000	4.98	291324.750	12054.813	302.083	231.3	-7.5	NO	0.997	NO	bb
10	10	200229P1-12	Standard	500.000	4.98	559387.750	10581.484	660.810	507.9	1.6	NO	0.997	NO	bb

Compound name: 8:2 FTS
Correlation coefficient: r = 0.997040, r^2 = 0.994088
Calibration curve: 1.86851 * x + -0.58767
Response type: Internal Std (Ref 75), 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	200229P1-3	Standard	0.250	4.97	24.056	895.027	0.336	0.5	97.7	YES	0.994	NO	bbX
2	2	200229P1-4	Standard	0.500	4.96	36.601	936.199	0.489	0.6	15.2	NO	0.994	NO	bb
3	3	200229P1-5	Standard	1.000	4.96	84.153	1001.024	1.051	0.9	-12.3	NO	0.994	NO	bb
4	4	200229P1-6	Standard	2.000	4.95	252.987	968.505	3.265	2.1	3.1	NO	0.994	NO	bb
5	5	200229P1-7	Standard	5.000	4.95	597.873	908.851	8.223	4.7	-5.7	NO	0.994	NO	bb
6	6	200229P1-8	Standard	10.000	4.95	1277.799	1055.189	15.137	8.4	-15.8	NO	0.994	NO	bb
7	7	200229P1-9	Standard	50.000	4.95	7651.411	861.114	111.068	59.8	19.5	NO	0.994	NO	bb
8	8	200229P1-10	Standard	100.000	4.95	12949.323	881.059	183.718	98.6	-1.4	NO	0.994	NO	bb
9	9	200229P1-11	Standard	250.000	4.95	27555.625	758.161	454.317	243.5	-2.6	NO	0.994	NO	bb
10	10	200229P1-12	Standard	500.000	4.95	45034.965	861.122	653.725	350.2	-30.0	NO	0.994	NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
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Compound name: PFNS
Coefficient of Determination: R^2 = 0.999120
Calibration curve: -7.6989e-005 * x^2 + 0.946618 * x + -0.154527
Response type: Internal Std (Ref 71), 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	200229P1-3	Standard	0.250	5.07	10.855	2261.978	0.060	0.2	-9.4	NO	0.999	NO	bd
2	2	200229P1-4	Standard	0.500	5.05	37.690	2325.863	0.203	0.4	-24.6	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	5.04	167.546	2477.304	0.845	1.1	5.6	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	5.05	346.778	2306.226	1.880	2.1	7.5	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	5.04	975.530	2402.780	5.075	5.5	10.5	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	5.04	2081.971	2452.425	10.612	11.4	13.8	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	5.05	10052.249	2732.857	45.979	48.9	-2.1	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	5.05	17523.584	2378.871	92.079	98.2	-1.8	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	5.04	41608.305	2237.110	232.489	250.9	0.4	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	5.04	71504.047	3675.494	243.178	262.7	-47.5	YES	0.999	NO	MMX

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.998610
Calibration curve: -0.000634818 * x^2 + 1.62895 * x + -0.0773097
Response type: Internal Std (Ref 77), 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	200229P1-3	Standard	0.250	5.16	111.419	3168.347	0.440	0.3	26.9	NO	0.999	NO	MM
2	2	200229P1-4	Standard	0.500	5.13	208.371	3570.328	0.730	0.5	-0.9	NO	0.999	NO	MM
3	3	200229P1-5	Standard	1.000	5.14	365.844	3577.611	1.278	0.8	-16.8	NO	0.999	NO	MM
4	4	200229P1-6	Standard	2.000	5.13	840.374	3852.686	2.727	1.7	-13.9	NO	0.999	NO	MM
5	5	200229P1-7	Standard	5.000	5.13	1951.194	3518.992	6.931	4.3	-13.8	NO	0.999	NO	MM
6	6	200229P1-8	Standard	10.000	5.13	4554.669	3573.122	15.934	9.9	-1.3	NO	0.999	NO	MM
7	7	200229P1-9	Standard	50.000	5.14	22312.563	3680.932	75.771	47.4	-5.1	NO	0.999	NO	MM
8	8	200229P1-10	Standard	100.000	5.13	43021.992	3193.711	168.386	108.0	8.0	NO	0.999	NO	MM
9	9	200229P1-11	Standard	250.000	5.13	97589.406	3393.035	359.521	243.9	-2.4	NO	0.999	NO	MM
10	10	200229P1-12	Standard	500.000	5.13	178359.297	3389.770	657.712	502.0	0.4	NO	0.999	NO	MM

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
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Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:27:54

Compound name: L-EtFOSAA
Coefficient of Determination: R^2 = 0.996768
Calibration curve: -9.38021e-005 * x^2 + 1.07916 * x + -0.0261113
Response type: Internal Std (Ref 81), 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	200229P1-3	Standard	0.250	5.31	128.793	4145.440	0.388	0.4	53.6	YES	0.997	NO	bbX
2	2	200229P1-4	Standard	0.500	5.29	142.696	4293.098	0.415	0.4	-18.2	NO	0.997	NO	MM
3	3	200229P1-5	Standard	1.000	5.29	381.581	4520.519	1.055	1.0	0.2	NO	0.997	NO	MM
4	4	200229P1-6	Standard	2.000	5.29	719.047	4202.519	2.139	2.0	0.3	NO	0.997	NO	MM
5	5	200229P1-7	Standard	5.000	5.29	1901.267	4423.989	5.372	5.0	0.1	NO	0.997	NO	MM
6	6	200229P1-8	Standard	10.000	5.29	4132.181	4707.402	10.973	10.2	2.0	NO	0.997	NO	MM
7	7	200229P1-9	Standard	50.000	5.29	20826.189	4377.257	59.473	55.4	10.8	NO	0.997	NO	MM
8	8	200229P1-10	Standard	100.000	5.29	36452.984	4002.260	113.851	106.5	6.5	NO	0.997	NO	MM
9	9	200229P1-11	Standard	250.000	5.29	83074.375	4287.272	242.212	229.0	-8.4	NO	0.997	NO	MM
10	10	200229P1-12	Standard	500.000	5.29	142031.844	3381.788	524.988	509.0	1.8	NO	0.997	NO	MM

Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999416
Calibration curve: -0.00155432 * x^2 + 1.06125 * x + -0.0557055
Response type: Internal Std (Ref 79), 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	200229P1-3	Standard	0.250	5.33	195.031	15143.614	0.161	0.2	-18.3	NO	0.999	NO	bb
2	2	200229P1-4	Standard	0.500	5.31	767.553	15612.996	0.615	0.6	26.4	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	5.31	1317.222	16250.042	1.013	1.0	0.9	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	5.31	2333.510	15155.739	1.925	1.9	-6.4	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	5.31	6479.982	15577.516	5.200	5.0	-0.2	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	5.30	12532.446	15605.015	10.039	9.6	-3.5	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	5.31	63546.410	15930.297	49.863	50.8	1.6	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	5.31	119669.289	16584.908	90.194	99.6	-0.4	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	5.31	269492.781	15402.601	218.707			NO	0.999	NO	bbXI
10	10	200229P1-12	Standard	500.000	5.31	476195.688	14392.195	413.588			NO	0.999	NO	bbXI

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
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Compound name: PFDS
Coefficient of Determination: R^2 = 0.997825
Calibration curve: 7.28117e-005 * x^2 + 0.883279 * x + -0.0867867
Response type: Internal Std (Ref 71), 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	200229P1-3	Standard	0.250	5.38	27.263	2261.978	0.151	0.3	7.5	NO	0.998	NO	MM
2	2	200229P1-4	Standard	0.500	5.36	55.813	2325.863	0.300	0.4	-12.4	NO	0.998	NO	bb
3	3	200229P1-5	Standard	1.000	5.36	120.383	2477.304	0.607	0.8	-21.4	NO	0.998	NO	bb
4	4	200229P1-6	Standard	2.000	5.35	307.243	2306.226	1.665	2.0	-0.8	NO	0.998	NO	bb
5	5	200229P1-7	Standard	5.000	5.35	923.723	2402.780	4.805	5.5	10.7	NO	0.998	NO	bb
6	6	200229P1-8	Standard	10.000	5.35	2113.333	2452.425	10.772	12.3	22.8	NO	0.998	NO	bb
7	7	200229P1-9	Standard	50.000	5.35	8960.991	2732.857	40.987	46.3	-7.4	NO	0.998	NO	bb
8	8	200229P1-10	Standard	100.000	5.35	17076.529	2378.871	89.730	100.8	0.8	NO	0.998	NO	bb
9	9	200229P1-11	Standard	250.000	5.35	40365.438	2237.110	225.545	250.3	0.1	NO	0.998	NO	bb
10	10	200229P1-12	Standard	500.000	5.35	70369.820	3675.494	239.321	265.2	-47.0	YES	0.998	NO	MMX

Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.999727
Calibration curve: -0.000120038 * x^2 + 0.417922 * x + 0.0152764
Response type: Internal Std (Ref 83), 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	200229P1-3	Standard	0.250	5.53	128.681	15810.315	0.102	0.2	-17.2	NO	1.000	NO	bb
2	2	200229P1-4	Standard	0.500	5.52	295.750	18056.061	0.205	0.5	-9.3	NO	1.000	NO	bb
3	3	200229P1-5	Standard	1.000	5.52	612.062	16516.145	0.463	1.1	7.2	NO	1.000	NO	bb
4	4	200229P1-6	Standard	2.000	5.51	1132.650	16635.623	0.851	2.0	0.1	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	5.52	2982.705	15677.705	2.378	5.7	13.3	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	5.52	6231.536	17525.113	4.445	10.6	6.3	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	5.52	30787.193	18324.189	21.002	51.0	1.9	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	5.52	55729.688	17453.809	39.912	98.2	-1.8	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	5.52	129477.945	16796.951	96.355	248.2	-0.7	NO	1.000	NO	bb
10	10	200229P1-12	Standard	500.000	5.52	230575.813	16067.748	179.378	501.4	0.3	NO	1.000	NO	bb

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999120
Calibration curve: -0.00116944 * x^2 + 2.16156 * x + -0.11312
Response type: Internal Std (Ref 85), 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	200229P1-3	Standard	0.250	5.60	29.078	863.125	0.421	0.2	-1.1	NO	0.999	NO	bb
2	2	200229P1-4	Standard	0.500	5.58	74.402	972.349	0.956	0.5	-1.0	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	5.58	99.931	843.444	1.481	0.7	-26.2	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	5.57	245.490	777.134	3.949	1.9	-5.9	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	5.57	781.553	906.122	10.782	5.1	1.1	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	5.57	1524.076	813.752	23.411	10.9	9.5	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	5.57	7543.444	839.592	112.308	53.6	7.1	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	5.57	13381.120	848.368	197.160	96.3	-3.7	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	5.57	27319.068	737.420	463.085	247.4	-1.0	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	5.57	44535.805	703.762	791.031	502.8	0.6	NO	0.999	NO	bb

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999647
Calibration curve: -0.000311507 * x^2 + 0.972615 * x + 0.0366162
Response type: Internal Std (Ref 83), 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	200229P1-3	Standard	0.250	5.60	263.102	15810.315	0.208	0.2	-29.5	NO	1.000	NO	bb
2	2	200229P1-4	Standard	0.500	5.59	882.931	18056.061	0.611	0.6	18.2	NO	1.000	NO	bb
3	3	200229P1-5	Standard	1.000	5.58	1439.130	16516.145	1.089	1.1	8.3	NO	1.000	NO	MM
4	4	200229P1-6	Standard	2.000	5.59	2615.676	16635.623	1.965	2.0	-0.8	NO	1.000	NO	MM
5	5	200229P1-7	Standard	5.000	5.59	6752.400	15677.705	5.384	5.5	10.1	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	5.58	14821.743	17525.113	10.572	10.9	8.7	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	5.59	71499.641	18324.189	48.774	50.9	1.9	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	5.59	130691.859	17453.809	93.598	99.4	-0.6	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	5.59	296000.875	16796.951	220.279	245.8	-1.7	NO	1.000	NO	bb
10	10	200229P1-12	Standard	500.000	5.59	527272.438	16067.748	410.195	502.6	0.5	NO	1.000	NO	bb

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Vista Analytical Laboratory

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.998963
Calibration curve: -6.26912e-005 * x^2 + 1.04758 * x + 0.13891
Response type: Internal Std (Ref 87), 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 200229P1-3	Standard	1.250	5.71	83.003	10935.630	1.132	0.9	-24.1	NO	0.999	NO	bb
2	2 200229P1-4	Standard	2.500	5.66	250.938	13527.701	2.768	2.5	0.4	NO	0.999	NO	bb
3	3 200229P1-5	Standard	5.000	5.66	480.080	12956.387	5.528	5.1	2.9	NO	0.999	NO	bb
4	4 200229P1-6	Standard	10.000	5.66	1056.276	12918.987	12.199	11.5	15.2	NO	0.999	NO	bb
5	5 200229P1-7	Standard	25.000	5.66	2305.925	12942.512	26.582	25.3	1.1	NO	0.999	NO	bb
6	6 200229P1-8	Standard	50.000	5.66	5326.114	13498.043	58.872	56.3	12.5	NO	0.999	NO	bb
7	7 200229P1-9	Standard	250.000	5.66	25785.885	14390.063	267.355	259.1	3.6	NO	0.999	NO	bb
8	8 200229P1-10	Standard	500.000	5.66	46302.430	13285.713	519.981	511.9	2.4	NO	0.999	NO	bb
9	9 200229P1-11	Standard	1250.000	5.66	108183.445	13913.983	1160.054	1192.3	-4.6	NO	0.999	NO	bb
10	10 200229P1-12	Standard	2500.000	5.66	196935.141	13061.014	2249.651	2530.6	1.2	NO	0.999	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999653
Calibration curve: -0.000483457 * x^2 + 1.06119 * x + 0.0940389
Response type: Internal Std (Ref 83), 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 200229P1-3	Standard	0.250	5.84	389.417	15810.315	0.308	0.2	-19.4	NO	1.000	NO	bb
2	2 200229P1-4	Standard	0.500	5.83	882.476	18056.061	0.611	0.5	-2.6	NO	1.000	NO	bb
3	3 200229P1-5	Standard	1.000	5.83	1654.498	16516.145	1.252	1.1	9.2	NO	1.000	NO	bb
4	4 200229P1-6	Standard	2.000	5.83	2834.564	16635.623	2.130	1.9	-4.0	NO	1.000	NO	bb
5	5 200229P1-7	Standard	5.000	5.83	7624.210	15677.705	6.079	5.7	13.1	NO	1.000	NO	bb
6	6 200229P1-8	Standard	10.000	5.83	15324.119	17525.113	10.930	10.3	2.6	NO	1.000	NO	bb
7	7 200229P1-9	Standard	50.000	5.83	77595.656	18324.189	52.933	51.0	2.0	NO	1.000	NO	bb
8	8 200229P1-10	Standard	100.000	5.83	142566.938	17453.809	102.103	100.8	0.8	NO	1.000	NO	bb
9	9 200229P1-11	Standard	250.000	5.83	309655.125	16796.951	230.440	244.2	-2.3	NO	1.000	NO	bb
10	10 200229P1-12	Standard	500.000	5.83	529511.375	16067.748	411.937	503.7	0.7	NO	1.000	NO	bb

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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999248
Calibration curve: -6.72059e-005 * x^2 + 0.166876 * x + -0.0249515
Response type: Internal Std (Ref 89), 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	200229P1-3	Standard	0.250	5.86	58.001	13363.974	0.054	0.5	89.9	YES	0.999	NO	bbX
2	2	200229P1-4	Standard	0.500	5.86	61.198	15848.644	0.048	0.4	-12.2	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	5.86	158.552	15068.212	0.132	0.9	-6.2	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	5.86	357.611	14366.785	0.311	2.0	0.8	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	5.86	1047.835	13608.132	0.963	5.9	18.6	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	5.86	2081.151	15897.249	1.636	10.0	-0.0	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	5.86	10015.454	15872.385	7.887	48.4	-3.3	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	5.86	18107.162	13597.658	16.645	104.3	4.3	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	5.86	41577.363	14180.411	36.650	243.7	-2.5	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	5.86	71111.547	13281.593	66.927	503.2	0.6	NO	0.999	NO	bb

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.999578
Calibration curve: -0.000551541 * x^2 + 1.33737 * x + 0.00164932
Response type: Internal Std (Ref 89), 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	200229P1-3	Standard	0.250	6.06	308.475	13363.974	0.289	0.2	-14.2	NO	1.000	NO	bb
2	2	200229P1-4	Standard	0.500	6.05	866.944	15848.644	0.684	0.5	2.0	NO	1.000	NO	bb
3	3	200229P1-5	Standard	1.000	6.05	1698.647	15068.212	1.409	1.1	5.3	NO	1.000	NO	bb
4	4	200229P1-6	Standard	2.000	6.05	3197.638	14366.785	2.782	2.1	4.0	NO	1.000	NO	bb
5	5	200229P1-7	Standard	5.000	6.05	7853.258	13608.132	7.214	5.4	8.1	NO	1.000	NO	bb
6	6	200229P1-8	Standard	10.000	6.05	16438.895	15897.249	12.926	9.7	-3.0	NO	1.000	NO	bb
7	7	200229P1-9	Standard	50.000	6.05	78868.930	15872.385	62.112	47.4	-5.3	NO	1.000	NO	bb
8	8	200229P1-10	Standard	100.000	6.05	144004.594	13597.658	132.380	103.4	3.4	NO	1.000	NO	bb
9	9	200229P1-11	Standard	250.000	6.05	338881.156	14180.411	298.723	248.9	-0.4	NO	1.000	NO	db
10	10	200229P1-12	Standard	500.000	6.05	564080.438	13281.593	530.886	500.1	0.0	NO	1.000	NO	db

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999219
Calibration curve: -5.04959e-005 * x^2 + 0.921576 * x + 0.268488
Response type: Internal Std (Ref 91), 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	200229P1-3	Standard	1.250	6.12	146.961	18122.236	1.210	1.0	-18.3	NO	0.999	NO	bb
2	2	200229P1-4	Standard	2.500	6.10	401.952	20611.051	2.910	2.9	14.7	NO	0.999	NO	bb
3	3	200229P1-5	Standard	5.000	6.10	644.196	20920.973	4.594	4.7	-6.1	NO	0.999	NO	bd
4	4	200229P1-6	Standard	10.000	6.10	1244.641	20314.105	9.141	9.6	-3.7	NO	0.999	NO	bb
5	5	200229P1-7	Standard	25.000	6.10	3339.280	20693.260	24.076	25.9	3.5	NO	0.999	NO	bb
6	6	200229P1-8	Standard	50.000	6.10	7272.022	22062.475	49.178	53.2	6.5	NO	0.999	NO	bb
7	7	200229P1-9	Standard	250.000	6.10	34104.781	21593.529	235.646	259.1	3.6	NO	0.999	NO	bb
8	8	200229P1-10	Standard	500.000	6.10	61044.328	19733.254	461.546	515.1	3.0	NO	0.999	NO	bb
9	9	200229P1-11	Standard	1250.000	6.10	139646.469	20202.795	1031.305	1197.3	-4.2	NO	0.999	NO	bb
10	10	200229P1-12	Standard	2500.000	6.10	241967.781	17995.693	2006.124	2526.2	1.0	NO	0.999	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.998523
Calibration curve: -0.000133679 * x^2 + 0.663349 * x + 0.143374
Response type: Internal Std (Ref 93), 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	200229P1-3	Standard	0.250	6.39	496.590	22948.350	0.270	0.2	-23.3	NO	0.999	NO	bb
2	2	200229P1-4	Standard	0.500	6.39	858.898	24522.900	0.438	0.4	-11.2	NO	0.999	NO	bb
3	3	200229P1-5	Standard	1.000	6.39	1626.681	24480.826	0.831	1.0	3.6	NO	0.999	NO	bb
4	4	200229P1-6	Standard	2.000	6.39	2864.156	22875.904	1.565	2.1	7.2	NO	0.999	NO	bb
5	5	200229P1-7	Standard	5.000	6.39	7048.647	22963.584	3.837	5.6	11.5	NO	0.999	NO	bb
6	6	200229P1-8	Standard	10.000	6.39	14259.608	24367.902	7.315	10.8	8.3	NO	0.999	NO	bb
7	7	200229P1-9	Standard	50.000	6.39	71556.797	26075.000	34.303	52.0	4.1	NO	0.999	NO	bb
8	8	200229P1-10	Standard	100.000	6.39	127567.289	23498.615	67.859	104.3	4.3	NO	0.999	NO	bb
9	9	200229P1-11	Standard	250.000	6.39	287948.188	24161.551	148.970	235.5	-5.8	NO	0.999	NO	bb
10	10	200229P1-12	Standard	500.000	6.39	503604.094	20842.158	302.035	506.9	1.4	NO	0.999	NO	bb

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Compound name: PFODA
Coefficient of Determination: R^2 = 0.998419
Calibration curve: -0.000117862 * x^2 + 0.914837 * x + 0.0554344
Response type: Internal Std (Ref 93), 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	200229P1-3	Standard	0.250	6.62	452.201	22948.350	0.246	0.2	-16.5	NO	0.998	NO	bb
2	2	200229P1-4	Standard	0.500	6.62	997.348	24522.900	0.508	0.5	-1.0	NO	0.998	NO	bb
3	3	200229P1-5	Standard	1.000	6.62	2027.311	24480.826	1.035	1.1	7.1	NO	0.998	NO	bb
4	4	200229P1-6	Standard	2.000	6.62	3789.471	22875.904	2.071	2.2	10.2	NO	0.998	NO	bb
5	5	200229P1-7	Standard	5.000	6.62	9543.678	22963.584	5.195	5.6	12.4	NO	0.998	NO	bd
6	6	200229P1-8	Standard	10.000	6.62	19417.385	24367.902	9.961	10.8	8.4	NO	0.998	NO	bb
7	7	200229P1-9	Standard	50.000	6.62	98073.445	26075.000	47.015	51.7	3.4	NO	0.998	NO	bb
8	8	200229P1-10	Standard	100.000	6.62	178012.406	23498.615	94.693	104.9	4.9	NO	0.998	NO	bb
9	9	200229P1-11	Standard	250.000	6.62	403394.813	24161.551	208.697	235.2	-5.9	NO	0.998	NO	bb
10	10	200229P1-12	Standard	500.000	6.62	722505.750	20842.158	433.320	506.7	1.3	NO	0.998	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.998734, r^2 = 0.997470
Calibration curve: 1.03547 * x + 0.325816
Response type: Internal Std (Ref 95), 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	200229P1-3	Standard	1.250	6.31	145.566	15613.309	1.391	1.0	-17.7	NO	0.997	NO	bb
2	2	200229P1-4	Standard	2.500	6.31	298.720	17470.814	2.551	2.1	-14.0	NO	0.997	NO	bb
3	3	200229P1-5	Standard	5.000	6.31	632.620	17413.082	5.420	4.9	-1.6	NO	0.997	NO	bb
4	4	200229P1-6	Standard	10.000	6.31	1323.382	17389.162	11.355	10.7	6.5	NO	0.997	NO	bb
5	5	200229P1-7	Standard	25.000	6.30	3379.436	17452.363	28.891	27.6	10.3	NO	0.997	NO	bb
6	6	200229P1-8	Standard	50.000	6.30	7110.518	18603.994	57.025	54.8	9.5	NO	0.997	NO	bb
7	7	200229P1-9	Standard	250.000	6.30	34559.508	18812.133	274.093	264.4	5.8	NO	0.997	NO	bb
8	8	200229P1-10	Standard	500.000	6.30	62583.934	16814.250	555.334	536.0	7.2	NO	0.997	NO	bb
9	9	200229P1-11	Standard	1250.000	6.30	154855.141	19260.871	1199.550	1158.1	-7.3	NO	0.997	NO	bb
10	10	200229P1-12	Standard	2500.000	6.30	291308.719	16561.521	2624.352	2534.1	1.4	NO	0.997	NO	bb

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.999189, r^2 = 0.998378
Calibration curve: 0.996847 * x + 0.706727
Response type: Internal Std (Ref 97), 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	200229P1-3	Standard	1.250	6.45	193.220	16255.980	1.773	1.1	-14.4	NO	0.998	NO	bb
2	2	200229P1-4	Standard	2.500	6.45	405.547	19541.107	3.096	2.4	-4.1	NO	0.998	NO	bb
3	3	200229P1-5	Standard	5.000	6.45	758.830	19959.885	5.672	5.0	-0.4	NO	0.998	NO	db
4	4	200229P1-6	Standard	10.000	6.45	1420.467	19709.787	10.753	10.1	0.8	NO	0.998	NO	bb
5	5	200229P1-7	Standard	25.000	6.45	3980.488	20249.461	29.329	28.7	14.8	NO	0.998	NO	bb
6	6	200229P1-8	Standard	50.000	6.45	7663.915	21930.020	52.141	51.6	3.2	NO	0.998	NO	bb
7	7	200229P1-9	Standard	250.000	6.45	38984.750	22480.229	258.740	258.8	3.5	NO	0.998	NO	bb
8	8	200229P1-10	Standard	500.000	6.45	70977.750	21166.922	500.303	501.2	0.2	NO	0.998	NO	bb
9	9	200229P1-11	Standard	1250.000	6.45	168819.328	21542.221	1169.232	1172.2	-6.2	NO	0.998	NO	bb
10	10	200229P1-12	Standard	2500.000	6.45	333421.625	19468.021	2555.293	2562.7	2.5	NO	0.998	NO	bb

Compound name: 13C3-PFBA-EIS
Response Factor: 348.075
RRF SD: 18.9591, Relative SD: 5.44685
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	1.38	4139.773		4139.773	11.9	-4.9	NO		NO	bb
2	2	200229P1-4	Standard	12.500	1.31	4309.036		4309.036	12.4	-1.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	1.30	4180.249		4180.249	12.0	-3.9	NO		NO	MM
4	4	200229P1-6	Standard	12.500	1.30	4088.781		4088.781	11.7	-6.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	1.30	4116.687		4116.687	11.8	-5.4	NO		NO	bb
6	6	200229P1-8	Standard	12.500	1.30	4436.269		4436.269	12.7	2.0	NO		NO	MM
7	7	200229P1-9	Standard	12.500	1.30	4751.110		4751.110	13.6	9.2	NO		NO	bb
8	8	200229P1-10	Standard	12.500	1.29	4287.231		4287.231	12.3	-1.5	NO		NO	bb
9	9	200229P1-11	Standard	12.500	1.29	4673.336		4673.336	13.4	7.4	NO		NO	MM
10	10	200229P1-12	Standard	12.500	1.30	4526.938		4526.938	13.0	4.0	NO		NO	MM

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Compound name: 13C3-PFBA-RSD
Response Factor: 0.748063
RRF SD: 0.0132564, Relative SD: 1.7721
Response type: Internal Std (Ref 99), 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 200229P1-3	Standard	12.500	1.38	4290.845	5835.744	9.191	12.3	-1.7	NO		NO	MM
2	2 200229P1-4	Standard	12.500	1.31	4309.036	5669.284	9.501	12.7	1.6	NO		NO	bb
3	3 200229P1-5	Standard	12.500	1.30	4198.886	5537.038	9.479	12.7	1.4	NO		NO	MM
4	4 200229P1-6	Standard	12.500	1.30	4088.781	5559.221	9.194	12.3	-1.7	NO		NO	bb
5	5 200229P1-7	Standard	12.500	1.30	4116.687	5626.135	9.146	12.2	-2.2	NO		NO	bb
6	6 200229P1-8	Standard	12.500	1.30	4743.942	6231.405	9.516	12.7	1.8	NO		NO	MM
7	7 200229P1-9	Standard	12.500	1.30	4751.110	6272.565	9.468	12.7	1.3	NO		NO	bb
8	8 200229P1-10	Standard	12.500	1.29	4287.231	5837.685	9.180	12.3	-1.8	NO		NO	bb
9	9 200229P1-11	Standard	12.500	1.29	4665.463	6104.808	9.553	12.8	2.2	NO		NO	MM
10	10 200229P1-12	Standard	12.500	1.30	4384.869	5906.391	9.280	12.4	-0.8	NO		NO	MM

Compound name: 13C3-PFPeA-EIS
Response Factor: 643.908
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200229P1-3	Standard	12.500	2.30	6932.076		6932.076	10.8	-13.9	NO		NO	bbX
2	2 200229P1-4	Standard	12.500	2.24	7600.224		7600.224	11.8	-5.6	NO		NO	bbX
3	3 200229P1-5	Standard	12.500	2.23	7425.095		7425.095	11.5	-7.7	NO		NO	bbX
4	4 200229P1-6	Standard	12.500	2.23	7302.792		7302.792	11.3	-9.3	NO		NO	bbX
5	5 200229P1-7	Standard	12.500	2.23	7351.109		7351.109	11.4	-8.7	NO		NO	bbX
6	6 200229P1-8	Standard	12.500	2.23	8048.850		8048.850	12.5	0.0	NO		NO	bb
7	7 200229P1-9	Standard	12.500	2.23	8291.952		8291.952	12.9	3.0	NO		NO	bbX
8	8 200229P1-10	Standard	12.500	2.23	7406.676		7406.676	11.5	-8.0	NO		NO	bbX
9	9 200229P1-11	Standard	12.500	2.23	7815.998		7815.998	12.1	-2.9	NO		NO	bbX
10	10 200229P1-12	Standard	12.500	2.23	7376.919		7376.919	11.5	-8.3	NO		NO	bbX

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Compound name: 13C3-PFPeA-RSD
Response Factor: 0.547585
RRF SD: 0.0176362, Relative SD: 3.22073
Response type: Internal Std (Ref 100), 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	200229P1-3	Standard	12.500	2.30	6932.076	12669.063	6.840	12.5	-0.1	NO		NO	bb
2	2	200229P1-4	Standard	12.500	2.24	7600.224	13823.993	6.872	12.6	0.4	NO		NO	bb
3	3	200229P1-5	Standard	12.500	2.23	7388.164	13588.657	6.796	12.4	-0.7	NO		NO	bb
4	4	200229P1-6	Standard	12.500	2.23	7302.792	13872.069	6.580	12.0	-3.9	NO		NO	bb
5	5	200229P1-7	Standard	12.500	2.23	7351.109	13960.303	6.582	12.0	-3.8	NO		NO	bb
6	6	200229P1-8	Standard	12.500	2.23	8048.850	14521.299	6.928	12.7	1.2	NO		NO	bb
7	7	200229P1-9	Standard	12.500	2.23	8291.952	15497.363	6.688	12.2	-2.3	NO		NO	bb
8	8	200229P1-10	Standard	12.500	2.23	7406.676	13645.467	6.785	12.4	-0.9	NO		NO	bb
9	9	200229P1-11	Standard	12.500	2.23	7815.998	13806.657	7.076	12.9	3.4	NO		NO	bb
10	10	200229P1-12	Standard	12.500	2.23	7376.919	12632.668	7.299	13.3	6.6	NO		NO	bb

Compound name: 13C3-PFBS-EIS
Response Factor: 74.669
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	2.57	820.961		820.961	11.0	-12.0	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	2.52	845.774		845.774	11.3	-9.4	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	2.51	872.793		872.793	11.7	-6.5	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	2.51	902.117		902.117	12.1	-3.3	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	2.51	906.262		906.262	12.1	-2.9	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	2.51	933.362		933.362	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	2.51	964.595		964.595	12.9	3.3	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	2.51	862.402		862.402	11.5	-7.6	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	2.51	911.534		911.534	12.2	-2.3	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	2.51	822.291		822.291	11.0	-11.9	NO		NO	bbX

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Compound name: 13C3-PFBS-RSD
Response Factor: 0.995979
RRF SD: 0.057282, Relative SD: 5.75133
Response type: Internal Std (Ref 101), 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	200229P1-3	Standard	12.500	2.57	820.961	856.125	11.987	12.0	-3.7	NO		NO	bb
2	2	200229P1-4	Standard	12.500	2.52	845.774	861.102	12.277	12.3	-1.4	NO		NO	bb
3	3	200229P1-5	Standard	12.500	2.51	872.793	886.043	12.313	12.4	-1.1	NO		NO	bb
4	4	200229P1-6	Standard	12.500	2.51	902.117	906.847	12.435	12.5	-0.1	NO		NO	bb
5	5	200229P1-7	Standard	12.500	2.51	906.262	1007.768	11.241	11.3	-9.7	NO		NO	bb
6	6	200229P1-8	Standard	12.500	2.51	933.362	949.511	12.287	12.3	-1.3	NO		NO	bb
7	7	200229P1-9	Standard	12.500	2.51	964.595	926.409	13.015	13.1	4.5	NO		NO	bb
8	8	200229P1-10	Standard	12.500	2.51	862.402	777.999	13.856	13.9	11.3	NO		NO	bb
9	9	200229P1-11	Standard	12.500	2.51	911.534	872.006	13.067	13.1	5.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	2.51	822.291	855.193	12.019	12.1	-3.5	NO		NO	bb

Compound name: 13C3-HFPO-DA-EIS
Response Factor: 285.582
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	3.30	2938.399		2938.399	10.3	-17.7	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	3.25	3165.362		3165.362	11.1	-11.3	NO		NO	bdX
3	3	200229P1-5	Standard	12.500	3.25	3256.216		3256.216	11.4	-8.8	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	3.25	3195.763		3195.763	11.2	-10.5	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	3.25	3199.245		3199.245	11.2	-10.4	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	3.25	3569.769		3569.769	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.25	3698.668		3698.668	13.0	3.6	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	3.25	3388.342		3388.342	11.9	-5.1	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	3.25	3600.825		3600.825	12.6	0.9	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	3.25	3185.709		3185.709	11.2	-10.8	NO		NO	bbX

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Compound name: 13C3-HFPO-DA-RSD
Response Factor: 0.240587
RRF SD: 0.0109509, Relative SD: 4.55172
Response type: Internal Std (Ref 100), 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	200229P1-3	Standard	12.500	3.30	2938.399	12669.063	2.899	12.1	-3.6	NO		NO	bb
2	2	200229P1-4	Standard	12.500	3.25	3165.362	13823.993	2.862	11.9	-4.8	NO		NO	bd
3	3	200229P1-5	Standard	12.500	3.25	3256.216	13588.657	2.995	12.5	-0.4	NO		NO	bb
4	4	200229P1-6	Standard	12.500	3.25	3195.763	13872.069	2.880	12.0	-4.2	NO		NO	bb
5	5	200229P1-7	Standard	12.500	3.25	3199.245	13960.303	2.865	11.9	-4.7	NO		NO	bb
6	6	200229P1-8	Standard	12.500	3.25	3569.769	14521.299	3.073	12.8	2.2	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.25	3698.668	15497.363	2.983	12.4	-0.8	NO		NO	bb
8	8	200229P1-10	Standard	12.500	3.25	3388.342	13645.467	3.104	12.9	3.2	NO		NO	bb
9	9	200229P1-11	Standard	12.500	3.25	3600.825	13806.657	3.260	13.6	8.4	NO		NO	bb
10	10	200229P1-12	Standard	12.500	3.25	3185.709	12632.668	3.152	13.1	4.8	NO		NO	bb

Compound name: 13C2-4:2 FTS-EIS
Response Factor: 116.584
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	3.00	1187.177		1187.177	10.2	-18.5	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	2.95	1295.567		1295.567	11.1	-11.1	NO		NO	bdX
3	3	200229P1-5	Standard	12.500	2.94	1334.430		1334.430	11.4	-8.4	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	2.95	1328.309		1328.309	11.4	-8.9	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	2.95	1381.076		1381.076	11.8	-5.2	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	2.95	1457.295		1457.295	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	2.95	1409.845		1409.845	12.1	-3.3	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	2.95	1097.437		1097.437	9.4	-24.7	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	2.94	1224.052		1224.052	10.5	-16.0	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	2.95	1146.782		1146.782	9.8	-21.3	NO		NO	bbX

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Compound name: 13C2-4:2 FTS-RSD
Response Factor: 1.44444
RRF SD: 0.0701577, Relative SD: 4.8571
Response type: Internal Std (Ref 101), 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	200229P1-3	Standard	12.500	3.00	1187.177	856.125	17.334	12.0	-4.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	2.95	1295.567	861.102	18.807	13.0	4.2	NO		NO	bd
3	3	200229P1-5	Standard	12.500	2.94	1334.430	886.043	18.826	13.0	4.3	NO		NO	bb
4	4	200229P1-6	Standard	12.500	2.95	1328.309	906.847	18.309	12.7	1.4	NO		NO	bb
5	5	200229P1-7	Standard	12.500	2.95	1381.076	1007.768	17.130	11.9	-5.1	NO		NO	bb
6	6	200229P1-8	Standard	12.500	2.95	1457.295	949.511	19.185	13.3	6.3	NO		NO	bb
7	7	200229P1-9	Standard	12.500	2.95	1409.845	926.409	19.023	13.2	5.4	NO		NO	bb
8	8	200229P1-10	Standard	12.500	2.95	1097.437	777.999	17.632	12.2	-2.3	NO		NO	bb
9	9	200229P1-11	Standard	12.500	2.94	1224.052	872.006	17.546	12.1	-2.8	NO		NO	bb
10	10	200229P1-12	Standard	12.500	2.95	1146.782	855.193	16.762	11.6	-7.2	NO		NO	bb

Compound name: 13C2-PFHxA-EIS
Response Factor: 1142.17
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	3.08	12969.711		12969.711	11.4	-9.2	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	3.04	13837.118		13837.118	12.1	-3.1	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	3.03	13536.680		13536.680	11.9	-5.2	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	3.03	13822.810		13822.810	12.1	-3.2	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	3.03	14053.604		14053.604	12.3	-1.6	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	3.03	14277.139		14277.139	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.03	14906.268		14906.268	13.1	4.4	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	3.03	14298.241		14298.241	12.5	0.1	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	3.03	14275.010		14275.010	12.5	-0.0	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	3.03	13382.184		13382.184	11.7	-6.3	NO		NO	bbX

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Compound name: 13C2-PFHxA-RSD
Response Factor: 1.01101
RRF SD: 0.0300373, Relative SD: 2.97101
Response type: Internal Std (Ref 100), 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	200229P1-3	Standard	12.500	3.08	12969.711	12669.063	12.797	12.7	1.3	NO		NO	bb
2	2	200229P1-4	Standard	12.500	3.04	13837.118	13823.993	12.512	12.4	-1.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	3.03	13536.680	13588.657	12.452	12.3	-1.5	NO		NO	bb
4	4	200229P1-6	Standard	12.500	3.03	13822.810	13872.069	12.456	12.3	-1.4	NO		NO	bb
5	5	200229P1-7	Standard	12.500	3.03	14053.604	13960.303	12.584	12.4	-0.4	NO		NO	bb
6	6	200229P1-8	Standard	12.500	3.03	14277.139	14521.299	12.290	12.2	-2.8	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.03	14906.268	15497.363	12.023	11.9	-4.9	NO		NO	bb
8	8	200229P1-10	Standard	12.500	3.03	14298.241	13645.467	13.098	13.0	3.6	NO		NO	bb
9	9	200229P1-11	Standard	12.500	3.03	14275.010	13806.657	12.924	12.8	2.3	NO		NO	bb
10	10	200229P1-12	Standard	12.500	3.03	13382.184	12632.668	13.242	13.1	4.8	NO		NO	bb

Compound name: 13C4-PFHpA-EIS
Response Factor: 650.1
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	3.68	7163.202		7163.202	11.0	-11.9	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	3.64	8080.123		8080.123	12.4	-0.6	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	3.64	8198.353		8198.353	12.6	0.9	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	3.64	7707.320		7707.320	11.9	-5.2	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	3.64	7435.883		7435.883	11.4	-8.5	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	3.64	8126.255		8126.255	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.64	8382.969		8382.969	12.9	3.2	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	3.64	7920.969		7920.969	12.2	-2.5	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	3.64	8410.690		8410.690	12.9	3.5	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	3.64	6866.574		6866.574	10.6	-15.5	NO		NO	bbX

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Compound name: 13C4-PFHpA-RSD
Response Factor: 0.567523
RRF SD: 0.0262048, Relative SD: 4.6174
Response type: Internal Std (Ref 100), 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 200229P1-3	Standard	12.500	3.68	7163.202	12669.063	7.068	12.5	-0.4	NO		NO	bb
2	2 200229P1-4	Standard	12.500	3.64	8080.123	13823.993	7.306	12.9	3.0	NO		NO	bb
3	3 200229P1-5	Standard	12.500	3.64	8198.353	13588.657	7.542	13.3	6.3	NO		NO	bb
4	4 200229P1-6	Standard	12.500	3.64	7707.320	13872.069	6.945	12.2	-2.1	NO		NO	bb
5	5 200229P1-7	Standard	12.500	3.64	7435.883	13960.303	6.658	11.7	-6.1	NO		NO	bb
6	6 200229P1-8	Standard	12.500	3.64	8126.255	14521.299	6.995	12.3	-1.4	NO		NO	bb
7	7 200229P1-9	Standard	12.500	3.64	8382.969	15497.363	6.762	11.9	-4.7	NO		NO	bb
8	8 200229P1-10	Standard	12.500	3.64	7920.969	13645.467	7.256	12.8	2.3	NO		NO	bb
9	9 200229P1-11	Standard	12.500	3.64	8410.690	13806.657	7.615	13.4	7.3	NO		NO	bb
10	10 200229P1-12	Standard	12.500	3.64	6866.574	12632.668	6.794	12.0	-4.2	NO		NO	bb

Compound name: 13C3-PFHxS-EIS
Response Factor: 169.524
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200229P1-3	Standard	12.500	3.82	2137.160		2137.160	12.6	0.9	NO		NO	bbX
2	2 200229P1-4	Standard	12.500	3.78	2128.375		2128.375	12.6	0.4	NO		NO	bbX
3	3 200229P1-5	Standard	12.500	3.78	2158.272		2158.272	12.7	1.9	NO		NO	bbX
4	4 200229P1-6	Standard	12.500	3.78	2173.002		2173.002	12.8	2.5	NO		NO	bbX
5	5 200229P1-7	Standard	12.500	3.78	2162.301		2162.301	12.8	2.0	NO		NO	bbX
6	6 200229P1-8	Standard	12.500	3.78	2119.048		2119.048	12.5	0.0	NO		NO	bb
7	7 200229P1-9	Standard	12.500	3.78	2303.492		2303.492	13.6	8.7	NO		NO	bbX
8	8 200229P1-10	Standard	12.500	3.78	2129.199		2129.199	12.6	0.5	NO		NO	bbX
9	9 200229P1-11	Standard	12.500	3.78	1869.943		1869.943	11.0	-11.8	NO		NO	bbX
10	10 200229P1-12	Standard	12.500	3.78	1921.595		1921.595	11.3	-9.3	NO		NO	bbX

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Compound name: 13C3-PFHxS-RSD
Response Factor: 2.37921
RRF SD: 0.186797, Relative SD: 7.85124
Response type: Internal Std (Ref 101), 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	200229P1-3	Standard	12.500	3.82	2137.160	856.125	31.204	13.1	4.9	NO		NO	bb
2	2	200229P1-4	Standard	12.500	3.78	2128.375	861.102	30.896	13.0	3.9	NO		NO	bb
3	3	200229P1-5	Standard	12.500	3.78	2158.272	886.043	30.448	12.8	2.4	NO		NO	bb
4	4	200229P1-6	Standard	12.500	3.78	2173.002	906.847	29.953	12.6	0.7	NO		NO	bb
5	5	200229P1-7	Standard	12.500	3.78	2162.301	1007.768	26.820	11.3	-9.8	NO		NO	bb
6	6	200229P1-8	Standard	12.500	3.78	2119.048	949.511	27.897	11.7	-6.2	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.78	2303.492	926.409	31.081	13.1	4.5	NO		NO	bb
8	8	200229P1-10	Standard	12.500	3.78	2129.199	777.999	34.210	14.4	15.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	3.78	1869.943	872.006	26.805	11.3	-9.9	NO		NO	bb
10	10	200229P1-12	Standard	12.500	3.78	1921.595	855.193	28.087	11.8	-5.6	NO		NO	bb

Compound name: 13C2-6:2 FTS-EIS
Response Factor: 92.8419
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	4.13	1091.834		1091.834	11.8	-5.9	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	4.10	1144.814		1144.814	12.3	-1.4	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	4.10	1134.689		1134.689	12.2	-2.2	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	4.10	1100.729		1100.729	11.9	-5.2	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	4.10	1302.586		1302.586	14.0	12.2	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	4.10	1160.524		1160.524	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.10	1227.868		1227.868	13.2	5.8	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	4.10	1137.185		1137.185	12.2	-2.0	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	4.10	1197.070		1197.070	12.9	3.1	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	4.10	1095.448		1095.448	11.8	-5.6	NO		NO	bbX

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Compound name: 13C2-6:2 FTS-RSD
Response Factor: 0.465709
RRF SD: 0.0448038, Relative SD: 9.62054
Response type: Internal Std (Ref 104), 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	200229P1-3	Standard	12.500	4.13	1091.834	2272.423	6.006	12.9	3.2	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.10	1144.814	2622.329	5.457	11.7	-6.3	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.10	1134.689	2619.181	5.415	11.6	-7.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.10	1100.729	2446.402	5.624	12.1	-3.4	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.10	1302.586	2230.149	7.301	15.7	25.4	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.10	1160.524	2610.765	5.556	11.9	-4.6	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.10	1227.868	2795.483	5.490	11.8	-5.7	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.10	1137.185	2514.325	5.654	12.1	-2.9	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.10	1197.070	2628.682	5.692	12.2	-2.2	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.10	1095.448	2275.545	6.018	12.9	3.4	NO		NO	bb

Compound name: 13C5-PFNA-EIS
Response Factor: 928.597
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	4.63	10161.933		10161.933	10.9	-12.5	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	4.60	11226.779		11226.779	12.1	-3.3	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	4.60	11836.420		11836.420	12.7	2.0	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	4.60	11022.959		11022.959	11.9	-5.0	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	4.60	10822.433		10822.433	11.7	-6.8	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	4.60	11607.460		11607.460	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.60	12599.075		12599.075	13.6	8.5	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	4.60	11087.045		11087.045	11.9	-4.5	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	4.60	10811.774		10811.774	11.6	-6.9	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	4.60	10452.676		10452.676	11.3	-9.9	NO		NO	bbX

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Compound name: 13C5-PFNA-RSD
Response Factor: 0.952007
RRF SD: 0.0377986, Relative SD: 3.97041
Response type: Internal Std (Ref 103), 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	200229P1-3	Standard	12.500	4.63	10161.933	10628.747	11.951	12.6	0.4	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.60	11226.779	11974.754	11.719	12.3	-1.5	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.60	11836.420	11455.452	12.916	13.6	8.5	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.60	11022.959	11904.761	11.574	12.2	-2.7	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.60	10822.433	11187.718	12.092	12.7	1.6	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.60	11607.460	12967.569	11.189	11.8	-6.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.60	12599.075	13536.669	11.634	12.2	-2.2	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.60	11087.045	11939.165	11.608	12.2	-2.5	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.60	10811.774	11152.880	12.118	12.7	1.8	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.60	10452.676	10709.433	12.200	12.8	2.5	NO		NO	bb

Compound name: 13C8-PFOSA-EIS
Response Factor: 295.115
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	4.69	2845.449		2845.449	9.6	-22.9	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	4.65	3236.567		3236.567	11.0	-12.3	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	4.65	3403.331		3403.331	11.5	-7.7	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	4.65	2969.843		2969.843	10.1	-19.5	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	4.65	3111.854		3111.854	10.5	-15.6	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	4.65	3688.936		3688.936	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.65	3506.720		3506.720	11.9	-4.9	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	4.65	3414.109		3414.109	11.6	-7.5	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	4.65	3527.968		3527.968	12.0	-4.4	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	4.65	3182.081		3182.081	10.8	-13.7	NO		NO	bbX

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Compound name: 13C8-PFOSA-RSD
Response Factor: 0.201795
RRF SD: 0.0190225, Relative SD: 9.42665
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	4.69	2845.449	16310.590	2.181	10.8	-13.5	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.65	3236.567	15475.649	2.614	13.0	3.6	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.65	3403.331	17443.197	2.439	12.1	-3.3	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.65	2969.843	15913.268	2.333	11.6	-7.5	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.65	3111.854	17453.613	2.229	11.0	-11.6	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.65	3688.936	18273.922	2.523	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.65	3506.720	16250.412	2.697	13.4	6.9	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.65	3414.109	17097.771	2.496	12.4	-1.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.65	3527.968	15512.265	2.843	14.1	12.7	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.65	3182.081	13862.071	2.869	14.2	13.8	NO		NO	bb

Compound name: 13C2-PFOA-EIS
Response Factor: 1020.22
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	4.19	11289.896		11289.896	11.1	-11.5	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	4.15	11847.828		11847.828	11.6	-7.1	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	4.15	12103.008		12103.008	11.9	-5.1	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	4.15	11279.954		11279.954	11.1	-11.5	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	4.15	11810.525		11810.525	11.6	-7.4	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	4.15	12752.723		12752.723	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.15	13027.886		13027.886	12.8	2.2	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	4.15	12148.066		12148.066	11.9	-4.7	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	4.15	11426.523		11426.523	11.2	-10.4	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	4.15	10591.959		10591.959	10.4	-16.9	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

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Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
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Compound name: 13C2-PFOA-RSD
Response Factor: 0.823807
RRF SD: 0.0191855, Relative SD: 2.32888
Response type: Internal Std (Ref 102), 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	200229P1-3	Standard	12.500	4.19	11289.896	14173.799	9.957	12.1	-3.3	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.15	11847.828	14178.126	10.446	12.7	1.4	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.15	12103.008	14149.585	10.692	13.0	3.8	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.15	11279.954	13984.859	10.082	12.2	-2.1	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.15	11810.525	14429.136	10.231	12.4	-0.6	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.15	12752.723	15418.980	10.338	12.5	0.4	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.15	13027.886	16177.321	10.066	12.2	-2.2	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.15	12148.066	14387.090	10.555	12.8	2.5	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.15	11426.523	14081.781	10.143	12.3	-1.5	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.15	10591.959	12651.249	10.465	12.7	1.6	NO		NO	bb

Compound name: 13C8-PFOS-EIS
Response Factor: 196.194
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	4.71	2261.978		2261.978	11.5	-7.8	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	4.69	2325.863		2325.863	11.9	-5.2	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	4.69	2477.304		2477.304	12.6	1.0	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	4.69	2306.226		2306.226	11.8	-6.0	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	4.69	2402.780		2402.780	12.2	-2.0	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	4.69	2452.425		2452.425	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.69	2732.857		2732.857	13.9	11.4	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	4.69	2378.871		2378.871	12.1	-3.0	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	4.69	2237.110		2237.110	11.4	-8.8	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	4.95	3675.494		3675.494	18.7	49.9	NO		NO	MMX

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Compound name: 13C8-PFOS-RSD
Response Factor: 0.959587
RRF SD: 0.0658882, Relative SD: 6.86631
Response type: Internal Std (Ref 104), 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	200229P1-3	Standard	12.500	4.71	2261.978	2272.423	12.443	13.0	3.7	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.69	2325.863	2622.329	11.087	11.6	-7.6	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.69	2477.304	2619.181	11.823	12.3	-1.4	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.69	2306.226	2446.402	11.784	12.3	-1.8	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.69	2402.780	2230.149	13.468	14.0	12.3	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.69	2452.425	2610.765	11.742	12.2	-2.1	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.69	2732.857	2795.483	12.220	12.7	1.9	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.69	2378.871	2514.325	11.827	12.3	-1.4	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.69	2237.110	2628.682	10.638	11.1	-11.3	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.69	2351.694	2275.545	12.918	13.5	7.7	NO		NO	bb

Compound name: 13C2-PFDA-EIS
Response Factor: 990.142
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	5.01	11459.666		11459.666	11.6	-7.4	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	4.98	12428.431		12428.431	12.6	0.4	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	4.98	12512.931		12512.931	12.6	1.1	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	4.98	12248.468		12248.468	12.4	-1.0	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	4.98	12133.270		12133.270	12.3	-2.0	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	4.98	12376.774		12376.774	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.98	12924.905		12924.905	13.1	4.4	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	4.98	12469.418		12469.418	12.6	0.7	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	4.98	12054.813		12054.813	12.2	-2.6	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	4.98	10581.484		10581.484	10.7	-14.5	NO		NO	bbX

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Compound name: 13C2-PFDA-RSD
Response Factor: 0.926811
RRF SD: 0.0466091, Relative SD: 5.02898
Response type: Internal Std (Ref 105), 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 200229P1-3	Standard	12.500	5.01	11459.666	13206.572	10.847	11.7	-6.4	NO		NO	bb
2	2 200229P1-4	Standard	12.500	4.98	12428.431	12862.382	12.078	13.0	4.3	NO		NO	bb
3	3 200229P1-5	Standard	12.500	4.98	12512.931	14104.088	11.090	12.0	-4.3	NO		NO	bb
4	4 200229P1-6	Standard	12.500	4.98	12248.468	12585.971	12.165	13.1	5.0	NO		NO	bb
5	5 200229P1-7	Standard	12.500	4.98	12133.270	13691.760	11.077	12.0	-4.4	NO		NO	bb
6	6 200229P1-8	Standard	12.500	4.98	12376.774	14224.657	10.876	11.7	-6.1	NO		NO	bb
7	7 200229P1-9	Standard	12.500	4.98	12924.905	13694.373	11.798	12.7	1.8	NO		NO	bb
8	8 200229P1-10	Standard	12.500	4.98	12469.418	13248.680	11.765	12.7	1.6	NO		NO	bb
9	9 200229P1-11	Standard	12.500	4.98	12054.813	12052.096	12.503	13.5	7.9	NO		NO	bb
10	10 200229P1-12	Standard	12.500	4.98	10581.484	11350.231	11.653	12.6	0.6	NO		NO	bb

Compound name: 13C2-8:2 FTS-EIS
Response Factor: 84.4151
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200229P1-3	Standard	12.500	4.97	895.027		895.027	10.6	-15.2	NO		NO	bbX
2	2 200229P1-4	Standard	12.500	4.95	936.199		936.199	11.1	-11.3	NO		NO	bbX
3	3 200229P1-5	Standard	12.500	4.95	1001.024		1001.024	11.9	-5.1	NO		NO	bbX
4	4 200229P1-6	Standard	12.500	4.95	968.505		968.505	11.5	-8.2	NO		NO	bbX
5	5 200229P1-7	Standard	12.500	4.95	908.851		908.851	10.8	-13.9	NO		NO	bbX
6	6 200229P1-8	Standard	12.500	4.95	1055.189		1055.189	12.5	0.0	NO		NO	bb
7	7 200229P1-9	Standard	12.500	4.95	861.114		861.114	10.2	-18.4	NO		NO	bbX
8	8 200229P1-10	Standard	12.500	4.95	881.059		881.059	10.4	-16.5	NO		NO	bbX
9	9 200229P1-11	Standard	12.500	4.95	758.161		758.161	9.0	-28.1	NO		NO	bbX
10	10 200229P1-12	Standard	12.500	4.95	861.122		861.122	10.2	-18.4	NO		NO	bbX

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Compound name: 13C2-8:2 FTS-RSD
Response Factor: 0.366595
RRF SD: 0.0407791, Relative SD: 11.1238
Response type: Internal Std (Ref 104), 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	200229P1-3	Standard	12.500	4.97	895.027	2272.423	4.923	13.4	7.4	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.95	936.199	2622.329	4.463	12.2	-2.6	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.95	1001.024	2619.181	4.777	13.0	4.3	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.95	968.505	2446.402	4.949	13.5	8.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.95	908.851	2230.149	5.094	13.9	11.2	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.95	1055.189	2610.765	5.052	13.8	10.2	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.95	861.114	2795.483	3.850	10.5	-16.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.95	881.059	2514.325	4.380	11.9	-4.4	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.95	758.161	2628.682	3.605	9.8	-21.3	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.95	861.122	2275.545	4.730	12.9	3.2	NO		NO	bb

Compound name: d3-N-MeFOSAA-EIS
Response Factor: 285.85
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	5.15	3168.347		3168.347	11.1	-11.3	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	5.13	3570.328		3570.328	12.5	-0.1	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	5.13	3577.611		3577.611	12.5	0.1	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	5.13	3852.686		3852.686	13.5	7.8	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	5.13	3518.992		3518.992	12.3	-1.5	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	5.13	3573.122		3573.122	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.13	3680.932		3680.932	12.9	3.0	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	5.13	3193.711		3193.711	11.2	-10.6	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	5.13	3393.035		3393.035	11.9	-5.0	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	5.13	3389.770		3389.770	11.9	-5.1	NO		NO	bbX

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Compound name: d3-N-MeFOSAA-RSD
Response Factor: 0.214589
RRF SD: 0.0207655, Relative SD: 9.67689
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	5.15	3168.347	16310.590	2.428	11.3	-9.5	NO		NO	bb
2	2	200229P1-4	Standard	12.500	5.13	3570.328	15475.649	2.884	13.4	7.5	NO		NO	bb
3	3	200229P1-5	Standard	12.500	5.13	3577.611	17443.197	2.564	11.9	-4.4	NO		NO	bb
4	4	200229P1-6	Standard	12.500	5.13	3852.686	15913.268	3.026	14.1	12.8	NO		NO	bb
5	5	200229P1-7	Standard	12.500	5.13	3518.992	17453.613	2.520	11.7	-6.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	5.13	3573.122	18273.922	2.444	11.4	-8.9	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.13	3680.932	16250.412	2.831	13.2	5.6	NO		NO	bb
8	8	200229P1-10	Standard	12.500	5.13	3193.711	17097.771	2.335	10.9	-13.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	5.13	3393.035	15512.265	2.734	12.7	1.9	NO		NO	bb
10	10	200229P1-12	Standard	12.500	5.13	3389.770	13862.071	3.057	14.2	14.0	NO		NO	bb

Compound name: 13C2-PFUdA-EIS
Response Factor: 1248.4
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	5.32	15143.614		15143.614	12.1	-3.0	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	5.31	15612.996		15612.996	12.5	0.1	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	5.31	16250.042		16250.042	13.0	4.1	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	5.31	15155.739		15155.739	12.1	-2.9	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	5.31	15577.516		15577.516	12.5	-0.2	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	5.30	15605.015		15605.015	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.31	15930.297		15930.297	12.8	2.1	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	5.31	16584.908		16584.908	13.3	6.3	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	5.31	15402.601		15402.601	12.3	-1.3	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	5.31	14392.195		14392.195	11.5	-7.8	NO		NO	bbX

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Compound name: 13C2-PFUdA-RSD
Response Factor: 0.954926
RRF SD: 0.0552883, Relative SD: 5.7898
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	5.32	15143.614	16310.590	11.606	12.2	-2.8	NO		NO	bb
2	2	200229P1-4	Standard	12.500	5.31	15612.996	15475.649	12.611	13.2	5.6	NO		NO	bb
3	3	200229P1-5	Standard	12.500	5.31	16250.042	17443.197	11.645	12.2	-2.4	NO		NO	bb
4	4	200229P1-6	Standard	12.500	5.31	15155.739	15913.268	11.905	12.5	-0.3	NO		NO	bb
5	5	200229P1-7	Standard	12.500	5.31	15577.516	17453.613	11.156	11.7	-6.5	NO		NO	bb
6	6	200229P1-8	Standard	12.500	5.30	15605.015	18273.922	10.674	11.2	-10.6	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.31	15930.297	16250.412	12.254	12.8	2.7	NO		NO	bb
8	8	200229P1-10	Standard	12.500	5.31	16584.908	17097.771	12.125	12.7	1.6	NO		NO	bb
9	9	200229P1-11	Standard	12.500	5.31	15402.601	15512.265	12.412	13.0	4.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	5.31	14392.195	13862.071	12.978	13.6	8.7	NO		NO	bb

Compound name: d5-N-EtFOSAA-EIS
Response Factor: 376.592
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	5.30	4145.440		4145.440	11.0	-11.9	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	5.29	4293.098		4293.098	11.4	-8.8	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	5.29	4520.519		4520.519	12.0	-4.0	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	5.29	4202.519		4202.519	11.2	-10.7	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	5.28	4423.989		4423.989	11.7	-6.0	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	5.28	4707.402		4707.402	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.29	4377.257		4377.257	11.6	-7.0	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	5.29	4002.260		4002.260	10.6	-15.0	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	5.28	4287.272		4287.272	11.4	-8.9	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	5.28	3381.788		3381.788	9.0	-28.2	NO		NO	bbX

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Compound name: d5-N-EtFOSAA-RSD
Response Factor: 0.258967
RRF SD: 0.0136521, Relative SD: 5.27177
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	5.30	4145.440	16310.590	3.177	12.3	-1.9	NO		NO	bb
2	2	200229P1-4	Standard	12.500	5.29	4293.098	15475.649	3.468	13.4	7.1	NO		NO	bb
3	3	200229P1-5	Standard	12.500	5.29	4520.519	17443.197	3.239	12.5	0.1	NO		NO	bb
4	4	200229P1-6	Standard	12.500	5.29	4202.519	15913.268	3.301	12.7	2.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	5.28	4423.989	17453.613	3.168	12.2	-2.1	NO		NO	bb
6	6	200229P1-8	Standard	12.500	5.28	4707.402	18273.922	3.220	12.4	-0.5	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.29	4377.257	16250.412	3.367	13.0	4.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	5.29	4002.260	17097.771	2.926	11.3	-9.6	NO		NO	bb
9	9	200229P1-11	Standard	12.500	5.28	4287.272	15512.265	3.455	13.3	6.7	NO		NO	bb
10	10	200229P1-12	Standard	12.500	5.28	3381.788	13862.071	3.049	11.8	-5.8	NO		NO	bb

Compound name: 13C2-PFDoA-EIS
Response Factor: 1402.01
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	5.60	15810.315		15810.315	11.3	-9.8	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	5.59	18056.061		18056.061	12.9	3.0	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	5.59	16516.145		16516.145	11.8	-5.8	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	5.59	16635.623		16635.623	11.9	-5.1	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	5.59	15677.705		15677.705	11.2	-10.5	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	5.58	17525.113		17525.113	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.59	18324.189		18324.189	13.1	4.6	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	5.59	17453.809		17453.809	12.4	-0.4	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	5.59	16796.951		16796.951	12.0	-4.2	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	5.59	16067.748		16067.748	11.5	-8.3	NO		NO	bbX

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
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Compound name: 13C2-PFDoA-RSD
Response Factor: 1.29356
RRF SD: 0.100321, Relative SD: 7.75538
Response type: Internal Std (Ref 105), 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	200229P1-3	Standard	12.500	5.60	15810.315	13206.572	14.964	11.6	-7.5	NO		NO	bb
2	2	200229P1-4	Standard	12.500	5.59	18056.061	12862.382	17.547	13.6	8.5	NO		NO	bb
3	3	200229P1-5	Standard	12.500	5.59	16516.145	14104.088	14.638	11.3	-9.5	NO		NO	bb
4	4	200229P1-6	Standard	12.500	5.59	16635.623	12585.971	16.522	12.8	2.2	NO		NO	bb
5	5	200229P1-7	Standard	12.500	5.59	15677.705	13691.760	14.313	11.1	-11.5	NO		NO	bb
6	6	200229P1-8	Standard	12.500	5.58	17525.113	14224.657	15.400	11.9	-4.8	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.59	18324.189	13694.373	16.726	12.9	3.4	NO		NO	bb
8	8	200229P1-10	Standard	12.500	5.59	17453.809	13248.680	16.467	12.7	1.8	NO		NO	bb
9	9	200229P1-11	Standard	12.500	5.59	16796.951	12052.096	17.421	13.5	7.7	NO		NO	bb
10	10	200229P1-12	Standard	12.500	5.59	16067.748	11350.231	17.695	13.7	9.4	NO		NO	bb

Compound name: 13C2-10:2 FTS-EIS
Response Factor: 65.1002
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	5.58	863.125		863.125	13.3	6.1	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	5.57	972.349		972.349	14.9	19.5	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	5.57	843.444		843.444	13.0	3.6	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	5.57	777.134		777.134	11.9	-4.5	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	5.57	906.122		906.122	13.9	11.4	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	5.57	813.752		813.752	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.57	839.592		839.592	12.9	3.2	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	5.57	848.368		848.368	13.0	4.3	NO		NO	MM!X
9	9	200229P1-11	Standard	12.500	5.57	737.420		737.420	11.3	-9.4	NO		NO	MMX
10	10	200229P1-12	Standard	12.500	5.57	703.762		703.762	10.8	-13.5	NO		NO	MMX

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Compound name: 13C2-10:2 FTS-RSD
Response Factor: 0.334499
RRF SD: 0.0384708, Relative SD: 11.501
Response type: Internal Std (Ref 104), 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	200229P1-3	Standard	12.500	5.58	863.125	2272.423	4.748	14.2	13.6	NO		NO	bb
2	2	200229P1-4	Standard	12.500	5.57	972.349	2622.329	4.635	13.9	10.9	NO		NO	bb
3	3	200229P1-5	Standard	12.500	5.57	843.444	2619.181	4.025	12.0	-3.7	NO		NO	bb
4	4	200229P1-6	Standard	12.500	5.57	777.134	2446.402	3.971	11.9	-5.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	5.57	906.122	2230.149	5.079	15.2	21.5	NO		NO	bb
6	6	200229P1-8	Standard	12.500	5.57	813.752	2610.765	3.896	11.6	-6.8	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.57	839.592	2795.483	3.754	11.2	-10.2	NO		NO	bb
8	8	200229P1-10	Standard	12.500	5.57	848.753	2514.325	4.220	12.6	0.9	NO		NO	MM
9	9	200229P1-11	Standard	12.500	5.57	761.338	2628.682	3.620	10.8	-13.4	NO		NO	MM
10	10	200229P1-12	Standard	12.500	5.57	703.473	2275.545	3.864	11.6	-7.6	NO		NO	MM

Compound name: d3-N-MeFOSA-EIS
Response Factor: 90.4695
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	149.200	5.73	10935.630		10935.630	120.9	-19.0	NO		NO	bbX
2	2	200229P1-4	Standard	149.200	5.69	13527.701		13527.701	149.5	0.2	NO		NO	bbX
3	3	200229P1-5	Standard	149.200	5.69	12956.387		12956.387	143.2	-4.0	NO		NO	MMX
4	4	200229P1-6	Standard	149.200	5.69	12918.987		12918.987	142.8	-4.3	NO		NO	bbX
5	5	200229P1-7	Standard	149.200	5.69	12942.512		12942.512	143.1	-4.1	NO		NO	bbX
6	6	200229P1-8	Standard	149.200	5.69	13498.043		13498.043	149.2	0.0	NO		NO	bb
7	7	200229P1-9	Standard	149.200	5.69	14390.063		14390.063	159.1	6.6	NO		NO	bbX
8	8	200229P1-10	Standard	149.200	5.69	13285.713		13285.713	146.9	-1.6	NO		NO	bbX
9	9	200229P1-11	Standard	149.200	5.69	13913.983		13913.983	153.8	3.1	NO		NO	bbX
10	10	200229P1-12	Standard	149.200	5.69	13061.014		13061.014	144.4	-3.2	NO		NO	bbX

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Compound name: d3-N-MeFOSA-RSD
Response Factor: 0.0676858
RRF SD: 0.00738692, Relative SD: 10.9135
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	149.200	5.73	10935.630	16310.590	8.381	123.8	-17.0	NO		NO	bb
2	2	200229P1-4	Standard	149.200	5.69	13527.701	15475.649	10.927	161.4	8.2	NO		NO	bb
3	3	200229P1-5	Standard	149.200	5.69	12918.850	17443.197	9.258	136.8	-8.3	NO		NO	MM
4	4	200229P1-6	Standard	149.200	5.69	12918.987	15913.268	10.148	149.9	0.5	NO		NO	bb
5	5	200229P1-7	Standard	149.200	5.69	12942.512	17453.613	9.269	136.9	-8.2	NO		NO	bb
6	6	200229P1-8	Standard	149.200	5.69	13498.043	18273.922	9.233	136.4	-8.6	NO		NO	bb
7	7	200229P1-9	Standard	149.200	5.69	14390.063	16250.412	11.069	163.5	9.6	NO		NO	bb
8	8	200229P1-10	Standard	149.200	5.69	13285.713	17097.771	9.713	143.5	-3.8	NO		NO	bb
9	9	200229P1-11	Standard	149.200	5.69	13913.983	15512.265	11.212	165.6	11.0	NO		NO	bb
10	10	200229P1-12	Standard	149.200	5.69	13061.014	13862.071	11.778	174.0	16.6	NO		NO	bb

Compound name: 13C2-PFTeDA-EIS
Response Factor: 1271.78
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	6.06	13363.974		13363.974	10.5	-15.9	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	6.05	15848.644		15848.644	12.5	-0.3	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	6.05	15068.212		15068.212	11.8	-5.2	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	6.05	14366.785		14366.785	11.3	-9.6	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	6.05	13608.132		13608.132	10.7	-14.4	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	6.05	15897.249		15897.249	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	6.05	15872.385		15872.385	12.5	-0.2	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	6.05	13597.658		13597.658	10.7	-14.5	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	6.05	14180.411		14180.411	11.2	-10.8	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	6.05	13281.593		13281.593	10.4	-16.5	NO		NO	bbX

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Compound name: 13C2-PFTeDA-RSD
Response Factor: 0.890402
RRF SD: 0.0803562, Relative SD: 9.02472
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	6.06	13363.974	16310.590	10.242	11.5	-8.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	6.05	15848.644	15475.649	12.801	14.4	15.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	6.05	15068.212	17443.197	10.798	12.1	-3.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	6.05	14366.785	15913.268	11.285	12.7	1.4	NO		NO	bb
5	5	200229P1-7	Standard	12.500	6.05	13608.132	17453.613	9.746	10.9	-12.4	NO		NO	bb
6	6	200229P1-8	Standard	12.500	6.05	15897.249	18273.922	10.874	12.2	-2.3	NO		NO	bb
7	7	200229P1-9	Standard	12.500	6.05	15872.385	16250.412	12.209	13.7	9.7	NO		NO	bb
8	8	200229P1-10	Standard	12.500	6.05	13597.658	17097.771	9.941	11.2	-10.7	NO		NO	bb
9	9	200229P1-11	Standard	12.500	6.05	14180.411	15512.265	11.427	12.8	2.7	NO		NO	bb
10	10	200229P1-12	Standard	12.500	6.05	13281.593	13862.071	11.977	13.5	7.6	NO		NO	bb

Compound name: d5-N-ETFOSA-EIS
Response Factor: 147.872
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	149.200	6.14	18122.236		18122.236	122.6	-17.9	NO		NO	MMX
2	2	200229P1-4	Standard	149.200	6.12	20611.051		20611.051	139.4	-6.6	NO		NO	bbX
3	3	200229P1-5	Standard	149.200	6.12	20920.973		20920.973	141.5	-5.2	NO		NO	bbX
4	4	200229P1-6	Standard	149.200	6.12	20314.105		20314.105	137.4	-7.9	NO		NO	bbX
5	5	200229P1-7	Standard	149.200	6.11	20693.260		20693.260	139.9	-6.2	NO		NO	bbX
6	6	200229P1-8	Standard	149.200	6.12	22062.475		22062.475	149.2	0.0	NO		NO	bb
7	7	200229P1-9	Standard	149.200	6.12	21593.529		21593.529	146.0	-2.1	NO		NO	bbX
8	8	200229P1-10	Standard	149.200	6.12	19733.254		19733.254	133.4	-10.6	NO		NO	bbX
9	9	200229P1-11	Standard	149.200	6.12	20202.795		20202.795	136.6	-8.4	NO		NO	bbX
10	10	200229P1-12	Standard	149.200	6.12	17995.693		17995.693	121.7	-18.4	NO		NO	bbX

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Compound name: d5-N-ETFOSA-RSD
Response Factor: 0.103757
RRF SD: 0.00669712, Relative SD: 6.45465
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	149.200	6.14	17944.387	16310.590	13.752	132.5	-11.2	NO		NO	MM
2	2	200229P1-4	Standard	149.200	6.12	20611.051	15475.649	16.648	160.5	7.5	NO		NO	bb
3	3	200229P1-5	Standard	149.200	6.12	20920.973	17443.197	14.992	144.5	-3.2	NO		NO	bb
4	4	200229P1-6	Standard	149.200	6.12	20314.105	15913.268	15.957	153.8	3.1	NO		NO	bb
5	5	200229P1-7	Standard	149.200	6.11	20693.260	17453.613	14.820	142.8	-4.3	NO		NO	bb
6	6	200229P1-8	Standard	149.200	6.12	22062.475	18273.922	15.092	145.5	-2.5	NO		NO	bb
7	7	200229P1-9	Standard	149.200	6.12	21593.529	16250.412	16.610	160.1	7.3	NO		NO	bb
8	8	200229P1-10	Standard	149.200	6.12	19733.254	17097.771	14.427	139.0	-6.8	NO		NO	bb
9	9	200229P1-11	Standard	149.200	6.12	20202.795	15512.265	16.280	156.9	5.2	NO		NO	bb
10	10	200229P1-12	Standard	149.200	6.12	17995.693	13862.071	16.227	156.4	4.8	NO		NO	bb

Compound name: 13C2-PFHxDA-EIS
Response Factor: 1949.43
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	12.500	6.39	22948.350		22948.350	11.8	-5.8	NO		NO	bbX
2	2	200229P1-4	Standard	12.500	6.39	24522.900		24522.900	12.6	0.6	NO		NO	bbX
3	3	200229P1-5	Standard	12.500	6.39	24480.826		24480.826	12.6	0.5	NO		NO	bbX
4	4	200229P1-6	Standard	12.500	6.39	22875.904		22875.904	11.7	-6.1	NO		NO	bbX
5	5	200229P1-7	Standard	12.500	6.38	22963.584		22963.584	11.8	-5.8	NO		NO	bbX
6	6	200229P1-8	Standard	12.500	6.39	24367.902		24367.902	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	6.39	26075.000		26075.000	13.4	7.0	NO		NO	bbX
8	8	200229P1-10	Standard	12.500	6.39	23498.615		23498.615	12.1	-3.6	NO		NO	bbX
9	9	200229P1-11	Standard	12.500	6.39	24161.551		24161.551	12.4	-0.8	NO		NO	bbX
10	10	200229P1-12	Standard	12.500	6.38	20842.158		20842.158	10.7	-14.5	NO		NO	bbX

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Compound name: 13C2-PFHxDA-RSD
Response Factor: 1.45218
RRF SD: 0.104305, Relative SD: 7.18263
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	6.39	22948.350	16310.590	17.587	12.1	-3.1	NO		NO	bb
2	2	200229P1-4	Standard	12.500	6.39	24522.900	15475.649	19.808	13.6	9.1	NO		NO	bb
3	3	200229P1-5	Standard	12.500	6.39	24480.826	17443.197	17.543	12.1	-3.4	NO		NO	bb
4	4	200229P1-6	Standard	12.500	6.39	22875.904	15913.268	17.969	12.4	-1.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	6.38	22963.584	17453.613	16.446	11.3	-9.4	NO		NO	bb
6	6	200229P1-8	Standard	12.500	6.39	24367.902	18273.922	16.668	11.5	-8.2	NO		NO	bb
7	7	200229P1-9	Standard	12.500	6.39	26075.000	16250.412	20.057	13.8	10.5	NO		NO	bb
8	8	200229P1-10	Standard	12.500	6.39	23498.615	17097.771	17.180	11.8	-5.4	NO		NO	bb
9	9	200229P1-11	Standard	12.500	6.39	24161.551	15512.265	19.470	13.4	7.3	NO		NO	bb
10	10	200229P1-12	Standard	12.500	6.38	20842.158	13862.071	18.794	12.9	3.5	NO		NO	bb

Compound name: d7-N-MeFOSE-EIS
Response Factor: 124.692
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	149.200	6.29	15613.309		15613.309	125.2	-16.1	NO		NO	bbX
2	2	200229P1-4	Standard	149.200	6.30	17470.814		17470.814	140.1	-6.1	NO		NO	bbX
3	3	200229P1-5	Standard	149.200	6.30	17413.082		17413.082	139.6	-6.4	NO		NO	bbX
4	4	200229P1-6	Standard	149.200	6.29	17389.162		17389.162	139.5	-6.5	NO		NO	bbX
5	5	200229P1-7	Standard	149.200	6.29	17452.363		17452.363	140.0	-6.2	NO		NO	bbX
6	6	200229P1-8	Standard	149.200	6.29	18603.994		18603.994	149.2	0.0	NO		NO	bb
7	7	200229P1-9	Standard	149.200	6.30	18812.133		18812.133	150.9	1.1	NO		NO	bbX
8	8	200229P1-10	Standard	149.200	6.29	16814.250		16814.250	134.8	-9.6	NO		NO	bbX
9	9	200229P1-11	Standard	149.200	6.29	19260.871		19260.871	154.5	3.5	NO		NO	bbX
10	10	200229P1-12	Standard	149.200	6.29	16561.521		16561.521	132.8	-11.0	NO		NO	bbX

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Compound name: d7-N-MeFOSE-RSD
Response Factor: 0.0902533
RRF SD: 0.00833734, Relative SD: 9.23772
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	149.200	6.29	15613.309	16310.590	11.966	132.6	-11.1	NO		NO	bb
2	2	200229P1-4	Standard	149.200	6.30	17470.814	15475.649	14.112	156.4	4.8	NO		NO	bb
3	3	200229P1-5	Standard	149.200	6.30	17413.082	17443.197	12.478	138.3	-7.3	NO		NO	bb
4	4	200229P1-6	Standard	149.200	6.29	17389.162	15913.268	13.659	151.3	1.4	NO		NO	bb
5	5	200229P1-7	Standard	149.200	6.29	17452.363	17453.613	12.499	138.5	-7.2	NO		NO	bb
6	6	200229P1-8	Standard	149.200	6.29	18603.994	18273.922	12.726	141.0	-5.5	NO		NO	bb
7	7	200229P1-9	Standard	149.200	6.30	18812.133	16250.412	14.471	160.3	7.5	NO		NO	bb
8	8	200229P1-10	Standard	149.200	6.29	16814.250	17097.771	12.293	136.2	-8.7	NO		NO	bb
9	9	200229P1-11	Standard	149.200	6.29	19260.871	15512.265	15.521	172.0	15.3	NO		NO	bb
10	10	200229P1-12	Standard	149.200	6.29	16561.521	13862.071	14.934	165.5	10.9	NO		NO	bb

Compound name: d9-N-EtFOSE-EIS
Response Factor: 146.984
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200229P1-3	Standard	149.200	6.44	16255.980		16255.980	110.6	-25.9	NO		NO	bbX
2	2	200229P1-4	Standard	149.200	6.44	19541.107		19541.107	132.9	-10.9	NO		NO	bbX
3	3	200229P1-5	Standard	149.200	6.44	19959.885		19959.885	135.8	-9.0	NO		NO	bbX
4	4	200229P1-6	Standard	149.200	6.44	19709.787		19709.787	134.1	-10.1	NO		NO	MMX
5	5	200229P1-7	Standard	149.200	6.44	20249.461		20249.461	137.8	-7.7	NO		NO	bbX
6	6	200229P1-8	Standard	149.200	6.44	21930.020		21930.020	149.2	0.0	NO		NO	bb
7	7	200229P1-9	Standard	149.200	6.44	22480.229		22480.229	152.9	2.5	NO		NO	bbX
8	8	200229P1-10	Standard	149.200	6.44	21166.922		21166.922	144.0	-3.5	NO		NO	bbX
9	9	200229P1-11	Standard	149.200	6.44	21542.221		21542.221	146.6	-1.8	NO		NO	bbX
10	10	200229P1-12	Standard	149.200	6.44	19468.021		19468.021	132.4	-11.2	NO		NO	bbX

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Compound name: d9-N-EtFOSE-RSD
Response Factor: 0.104137
RRF SD: 0.010693, Relative SD: 10.2682
Response type: Internal Std (Ref 106), 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 200229P1-3	Standard	149.200	6.44	16255.980	16310.590	12.458	119.6	-19.8	NO		NO	bb
2	2 200229P1-4	Standard	149.200	6.44	19541.107	15475.649	15.784	151.6	1.6	NO		NO	bb
3	3 200229P1-5	Standard	149.200	6.44	19959.885	17443.197	14.303	137.4	-7.9	NO		NO	bb
4	4 200229P1-6	Standard	149.200	6.44	19914.111	15913.268	15.643	150.2	0.7	NO		NO	bd
5	5 200229P1-7	Standard	149.200	6.44	20249.461	17453.613	14.502	139.3	-6.7	NO		NO	bb
6	6 200229P1-8	Standard	149.200	6.44	21930.020	18273.922	15.001	144.0	-3.5	NO		NO	bb
7	7 200229P1-9	Standard	149.200	6.44	22480.229	16250.412	17.292	166.1	11.3	NO		NO	bb
8	8 200229P1-10	Standard	149.200	6.44	21166.922	17097.771	15.475	148.6	-0.4	NO		NO	bb
9	9 200229P1-11	Standard	149.200	6.44	21542.221	15512.265	17.359	166.7	11.7	NO		NO	bb
10	10 200229P1-12	Standard	149.200	6.44	19468.021	13862.071	17.555	168.6	13.0	NO		NO	bb

Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 99), 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 200229P1-3	Standard	12.500	1.38	5835.744	5835.744	12.500	12.5	0.0	NO		NO	MM
2	2 200229P1-4	Standard	12.500	1.31	5669.284	5669.284	12.500	12.5	0.0	NO		NO	MM
3	3 200229P1-5	Standard	12.500	1.30	5537.038	5537.038	12.500	12.5	0.0	NO		NO	bb
4	4 200229P1-6	Standard	12.500	1.30	5559.221	5559.221	12.500	12.5	0.0	NO		NO	bb
5	5 200229P1-7	Standard	12.500	1.30	5626.135	5626.135	12.500	12.5	0.0	NO		NO	bb
6	6 200229P1-8	Standard	12.500	1.30	6231.405	6231.405	12.500	12.5	0.0	NO		NO	bb
7	7 200229P1-9	Standard	12.500	1.30	6272.565	6272.565	12.500	12.5	0.0	NO		NO	bb
8	8 200229P1-10	Standard	12.500	1.30	5837.685	5837.685	12.500	12.5	0.0	NO		NO	bb
9	9 200229P1-11	Standard	12.500	1.30	6104.808	6104.808	12.500	12.5	0.0	NO		NO	MM
10	10 200229P1-12	Standard	12.500	1.30	5906.391	5906.391	12.500	12.5	0.0	NO		NO	MM

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Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 9.06493e-017, Relative SD: 9.06493e-015
Response type: Internal Std (Ref 100), 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	200229P1-3	Standard	12.500	3.08	12669.063	12669.063	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	3.03	13823.993	13823.993	12.500	12.5	0.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	3.03	13588.657	13588.657	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	3.03	13872.069	13872.069	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	3.03	13960.303	13960.303	12.500	12.5	0.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	3.03	14521.299	14521.299	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.03	15497.363	15497.363	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	3.03	13645.467	13645.467	12.500	12.5	0.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	3.03	13806.657	13806.657	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	3.03	12632.668	12632.668	12.500	12.5	0.0	NO		NO	bb

Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 9.79125e-017, Relative SD: 9.79125e-015
Response type: Internal Std (Ref 101), 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	200229P1-3	Standard	12.500	3.82	856.125	856.125	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	3.79	861.102	861.102	12.500	12.5	0.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	3.78	886.043	886.043	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	3.78	906.847	906.847	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	3.78	1007.768	1007.768	12.500	12.5	0.0	NO		NO	bd
6	6	200229P1-8	Standard	12.500	3.78	949.511	949.511	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	3.78	926.409	926.409	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	3.78	777.999	777.999	12.500	12.5	0.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	3.78	872.006	872.006	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	3.78	855.193	855.193	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 7.40149e-017, Relative SD: 7.40149e-015
Response type: Internal Std (Ref 102), 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	200229P1-3	Standard	12.500	4.19	14173.799	14173.799	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.15	14178.126	14178.126	12.500	12.5	0.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.15	14149.585	14149.585	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.15	13984.859	13984.859	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.15	14429.136	14429.136	12.500	12.5	0.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.15	15418.980	15418.980	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.15	16177.321	16177.321	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.15	14387.090	14387.090	12.500	12.5	0.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.15	14081.781	14081.781	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.15	12651.249	12651.249	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 103), 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	200229P1-3	Standard	12.500	4.63	10628.747	10628.747	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.60	11974.754	11974.754	12.500	12.5	0.0	NO		NO	bd
3	3	200229P1-5	Standard	12.500	4.60	11455.452	11455.452	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.60	11904.761	11904.761	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.60	11187.718	11187.718	12.500	12.5	0.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.60	12967.569	12967.569	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.60	13536.669	13536.669	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.60	11939.165	11939.165	12.500	12.5	0.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.60	11152.880	11152.880	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.60	10709.433	10709.433	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 104), 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	200229P1-3	Standard	12.500	4.71	2272.423	2272.423	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.69	2622.329	2622.329	12.500	12.5	0.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.69	2619.181	2619.181	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.68	2446.402	2446.402	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.69	2230.149	2230.149	12.500	12.5	0.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.69	2610.765	2610.765	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.69	2795.483	2795.483	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.69	2514.325	2514.325	12.500	12.5	0.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	4.69	2628.682	2628.682	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.69	2275.545	2275.545	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-015
Response type: Internal Std (Ref 105), 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	200229P1-3	Standard	12.500	5.01	13206.572	13206.572	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	4.98	12862.382	12862.382	12.500	12.5	0.0	NO		NO	bb
3	3	200229P1-5	Standard	12.500	4.98	14104.088	14104.088	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	4.98	12585.971	12585.971	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	4.98	13691.760	13691.760	12.500	12.5	0.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	4.98	14224.657	14224.657	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	4.98	13694.373	13694.373	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	4.98	13248.680	13248.680	12.500	12.5	0.0	NO		NO	bd
9	9	200229P1-11	Standard	12.500	4.98	12052.096	12052.096	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	4.98	11350.231	11350.231	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 106), 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	200229P1-3	Standard	12.500	5.32	16310.590	16310.590	12.500	12.5	0.0	NO		NO	bb
2	2	200229P1-4	Standard	12.500	5.31	15475.649	15475.649	12.500	12.5	0.0	NO		NO	bd
3	3	200229P1-5	Standard	12.500	5.31	17443.197	17443.197	12.500	12.5	0.0	NO		NO	bb
4	4	200229P1-6	Standard	12.500	5.31	15913.268	15913.268	12.500	12.5	0.0	NO		NO	bb
5	5	200229P1-7	Standard	12.500	5.31	17453.613	17453.613	12.500	12.5	0.0	NO		NO	bb
6	6	200229P1-8	Standard	12.500	5.31	18273.922	18273.922	12.500	12.5	0.0	NO		NO	bb
7	7	200229P1-9	Standard	12.500	5.31	16250.412	16250.412	12.500	12.5	0.0	NO		NO	bb
8	8	200229P1-10	Standard	12.500	5.31	17097.771	17097.771	12.500	12.5	0.0	NO		NO	bb
9	9	200229P1-11	Standard	12.500	5.31	15512.265	15512.265	12.500	12.5	0.0	NO		NO	bb
10	10	200229P1-12	Standard	12.500	5.31	13862.071	13862.071	12.500	12.5	0.0	NO		NO	bb

Quantify Sample Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 12:09:39 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9990	NO	
2	2	PFPrS	51	0.9989	NO	
3	3	3:3 FTCA	49	0.9995	NO	
4	4	PFPeA	49	0.9992	NO	
5	5	PFBS	51	0.9995	NO	
6	6	4:2 FTS	55	0.9975	NO	
7	7	PFHxA	57	0.9992	NO	
8	8	PFPeS	51	0.9996	NO	
9	9	HFPO-DA	53	0.9988	NO	
10	10	5:3 FTCA	59	0.9997	NO	
11	11	PFHpA	59	0.9985	NO	
12	12	ADONA	59	0.9946	NO	
13	13	L-PFHxS	61	0.9987	NO	
14	15	6:2 FTS	63	0.9997	NO	
15	16	L-PFOA	69	0.9996	NO	
16	18	PFecHS	69	0.9997	NO	
17	19	PFHpS	71	0.9924	NO	
18	20	7:3 FTCA	65	0.9971	NO	
19	21	PFNA	65	0.9984	NO	
20	22	PFOSA	67	0.9982	NO	
21	23	L-PFOS	71	0.9998	NO	
22	25	9Cl-PF30NS	71	0.9968	NO	
23	26	PFDA	73	0.9975	NO	
24	27	8:2 FTS	75	0.9941	NO	
25	28	PFNS	71	0.9991	NO	
26	29	L-MeFOSAA	77	0.9986	NO	

Quantify Sample Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
Printed: Monday, March 02, 2020 10:51:50 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:27:54

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	81	0.9968	NO	
2	33	PFUdA	79	0.9994	NO	
3	34	PFDS	71	0.9978	NO	
4	35	11Cl-PF30UdS	83	0.9997	NO	
5	36	10:2 FTS	85	0.9991	NO	
6	37	PFDoA	83	0.9996	NO	
7	38	N-MeFOSA	87	0.9990	NO	
8	39	PFTrDA	83	0.9997	NO	
9	40	PFDoS	89	0.9992	NO	
10	41	PFTeDA	89	0.9996	NO	
11	42	N-EtFOSA	91	0.9992	NO	
12	43	PFHxDA	93	0.9985	NO	
13	44	PFODA	93	0.9984	NO	
14	45	N-MeFOSE	95	0.9975	NO	
15	46	N-EtFOSE	97	0.9984	NO	
16	47	13C3-PFBA-EIS			NO	5.447
17	48	13C3-PFBA-RSD	99		NO	1.772
18	49	13C3-PFPeA-EIS			NO	0.000
19	50	13C3-PFPeA-RSD	100		NO	3.221
20	51	13C3-PFBS-EIS			NO	0.000
21	52	13C3-PFBS-RSD	101		NO	5.751
22	53	13C3-HFPO-DA-EIS			NO	0.000
23	54	13C3-HFPO-DA-RSD	100		NO	4.552
24	55	13C2-4:2 FTS-EIS			NO	0.000
25	56	13C2-4:2 FTS-RSD	101		NO	4.857
26	57	13C2-PFHxA-EIS			NO	0.000
27	58	13C2-PFHxA-RSD	100		NO	2.971
28	59	13C4-PFHpA-EIS			NO	0.000
29	60	13C4-PFHpA-RSD	100		NO	4.617
30	61	13C3-PFHxS-EIS			NO	0.000
31	62	13C3-PFHxS-RSD	101		NO	7.851
32	63	13C2-6:2 FTS-EIS			NO	0.000

Quantify Sample Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
Printed: Monday, March 02, 2020 10:51:50 Pacific Standard Time

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	13C2-6:2 FTS-RSD	104		NO	9.621
34	65	13C5-PFNA-EIS			NO	0.000
35	66	13C5-PFNA-RSD	103		NO	3.970
36	67	13C8-PFOSA-EIS			NO	0.000
37	68	13C8-PFOSA-RSD	106		NO	9.427
38	69	13C2-PFOA-EIS			NO	0.000
39	70	13C2-PFOA-RSD	102		NO	2.329
40	71	13C8-PFOS-EIS			NO	0.000
41	72	13C8-PFOS-RSD	104		NO	6.866
42	73	13C2-PFDA-EIS			NO	0.000
43	74	13C2-PFDA-RSD	105		NO	5.029
44	75	13C2-8:2 FTS-EIS			NO	0.000
45	76	13C2-8:2 FTS-RSD	104		NO	11.124
46	77	d3-N-MeFOSAA-EIS			NO	0.000
47	78	d3-N-MeFOSAA-RSD	106		NO	9.677
48	79	13C2-PFUdA-EIS			NO	0.000
49	80	13C2-PFUdA-RSD	106		NO	5.790
50	81	d5-N-EtFOSAA-EIS			NO	0.000
51	82	d5-N-EtFOSAA-RSD	106		NO	5.272
52	83	13C2-PFDoA-EIS			NO	0.000
53	84	13C2-PFDoA-RSD	105		NO	7.755
54	85	13C2-10:2 FTS-EIS			NO	0.000
55	86	13C2-10:2 FTS-RSD	104		NO	11.501
56	87	d3-N-MeFOSA-EIS			NO	0.000
57	88	d3-N-MeFOSA-RSD	106		NO	10.914
58	89	13C2-PFTeDA-EIS			NO	0.000
59	90	13C2-PFTeDA-RSD	106		NO	9.025
60	91	d5-N-ETFOSA-EIS			NO	0.000
61	92	d5-N-ETFOSA-RSD	106		NO	6.455
62	93	13C2-PFHxDA-EIS			NO	0.000
63	94	13C2-PFHxDA-RSD	106		NO	7.183
64	95	d7-N-MeFOSE-EIS			NO	0.000
65	96	d7-N-MeFOSE-RSD	106		NO	9.238
66	97	d9-N-EtFOSE-EIS			NO	0.000
67	98	d9-N-EtFOSE-RSD	106		NO	10.268
68	99	13C4-PFBA	99		NO	0.000

Quantify Sample Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:31:19 Pacific Standard Time
Printed: Monday, March 02, 2020 10:51:50 Pacific Standard Time

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	#	Name	IS#	CoD	CoD Flag	%RSD
69	1...	13C5-PFHxA	100		NO	0.000
70	1...	18O2-PFHxS	101		NO	0.000
71	1...	13C8-PFOA	102		NO	0.000
72	1...	13C9-PFNA	103		NO	0.000
73	1...	13C4-PFOS	104		NO	0.000
74	1...	13C6-PFDA	105		NO	0.000
75	1...	13C7-PFUdA	106		NO	0.000

Quantify Sample Summary Report **MassLynx V4.2 SCN977** Page 1 of 1
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 11:03:56 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.30	1.30			
2	PFPrS	1.69	1.63	2.395	2.330	NO
3	3:3 FTCA	2.09	2.09	3.660	4.128	NO
4	PFPeA	2.23	2.23			
5	PFBS	2.51	2.51	3.139	3.298	NO
6	4:2 FTS	2.95	2.95	0.899	1.041	NO
7	PFHxA	3.03	3.03	16.931	17.285	NO
8	PFPeS	3.18	3.24	2.432	2.549	NO
9	HFPO-DA	3.25	3.25	2.776	2.855	NO
10	5:3 FTCA	3.59	3.58	1.853	1.833	NO
11	PFHpA	3.64	3.64	33.693	16.937	NO
12	ADONA	3.73	3.75	4.296	3.896	NO
13	L-PFHxS	3.78	3.78	2.174	3.153	NO
14	6:2 FTS	4.10	4.10	1.229	1.406	NO
15	L-PFOA	4.15	4.15	2.800	3.375	NO
16	PFecHS	4.17	4.17	0.486	0.505	NO
17	PFHpS	4.30	4.27	2.025	2.001	NO
18	7:3 FTCA	4.59	4.59	1.539	1.765	NO
19	PFNA	4.60	4.60	9.406	6.213	NO
20	PFOSA	4.65	4.66	26.472	26.281	NO
21	L-PFOS	4.69	4.69	2.608	2.129	NO
22	9Cl-PF30NS	4.89	4.91	16.976	28.181	YES
23	PFDA	4.98	4.98	11.681	7.905	NO
24	8:2 FTS	4.95	4.95	2.559	2.038	NO
25	PFNS	5.03	5.04	2.122	2.242	NO
26	L-MeFOSAA	5.13	5.13	1.874	1.969	NO

Quantify Sample Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 11:04:24 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.28	5.29	1.127	1.274	NO
2	PFUdA	5.30	5.30	23.768	14.121	NO
3	PFDS	5.31	5.35	2.050	2.285	NO
4	11Cl-PF30UdS	5.52	5.52	19.229	19.064	NO
5	10:2 FTS	5.57	5.57	0.992	1.004	NO
6	PFDoA	5.58	5.58	9.903	9.742	NO
7	N-MeFOSA	5.68	5.66	1.781	1.681	NO
8	PFTrDA	5.84	5.83	50.652	42.389	NO
9	PFDoS	5.85	5.86	3.011	3.192	NO
10	PFTeDA	6.05	6.05	17.346	17.143	NO
11	N-EtFOSA	6.10	6.10	1.652	1.696	NO
12	PFHxDA	6.39	6.39	155.012	99.146	NO
13	PFODA	6.60	6.62			
14	N-MeFOSE	6.29	6.30			
15	N-EtFOSE	6.44	6.45			

Quantify Compound Summary Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:08:35 Pacific Standard Time
Printed: Monday, March 02, 2020 11:08:51 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200229P1-1	IPA	29-Feb-20	15:24:43
2	2	200229P1-2	IPA	29-Feb-20	15:35:28
3	3	200229P1-3	ST200229P1-1 PFC CS-2 20B1102	29-Feb-20	15:45:57
4	4	200229P1-4	ST200229P1-2 PFC CS-1 20B1103	29-Feb-20	15:56:29
5	5	200229P1-5	ST200229P1-3 PFC CS0 20B1104	29-Feb-20	16:06:57
6	6	200229P1-6	ST200229P1-4 PFC CS1 20B1105	29-Feb-20	16:17:29
7	7	200229P1-7	ST200229P1-5 PFC CS2 20B1106	29-Feb-20	16:28:00
8	8	200229P1-8	ST200229P1-6 PFC CS3 20B1107	29-Feb-20	16:38:28
9	9	200229P1-9	ST200229P1-7 PFC CS4 20B1108	29-Feb-20	16:49:00
10	10	200229P1-10	ST200229P1-8 PFC CS5 20B1109	29-Feb-20	16:59:31
11	11	200229P1-11	ST200229P1-9 PFC CS6 20B1110	29-Feb-20	17:10:00
12	12	200229P1-12	ST200229P1-10 PFC CS7 20B1111	29-Feb-20	17:20:30
13	13	200229P1-13	IB	29-Feb-20	17:31:01
14	14	200229P1-14	ICV200229P1-1 PFC ICV 20B1112	29-Feb-20	17:41:30
15	15	200229P1-15	IB	29-Feb-20	17:52:02

Quantify Calibration Report **MassLynx V4.2 SCN977**

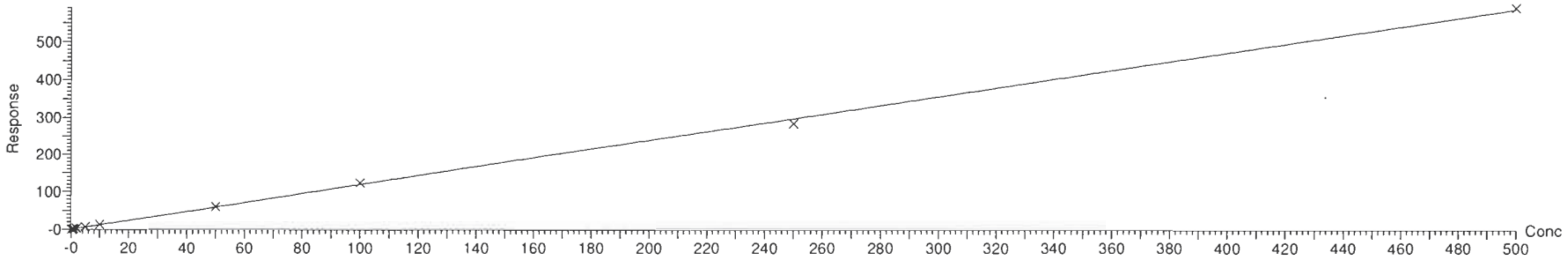
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

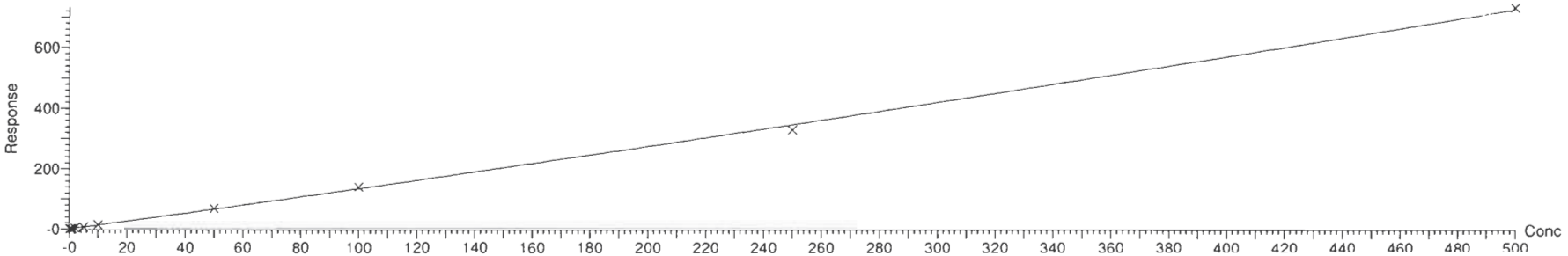
Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Compound name: PFBA
Coefficient of Determination: R^2 = 0.999014
Calibration curve: -7.26e-005 * x^2 + 1.20883 * x + 0.0539221
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 = 0.998898
Calibration curve: 0.000254058 * x^2 + 1.32918 * x + -0.0292731
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



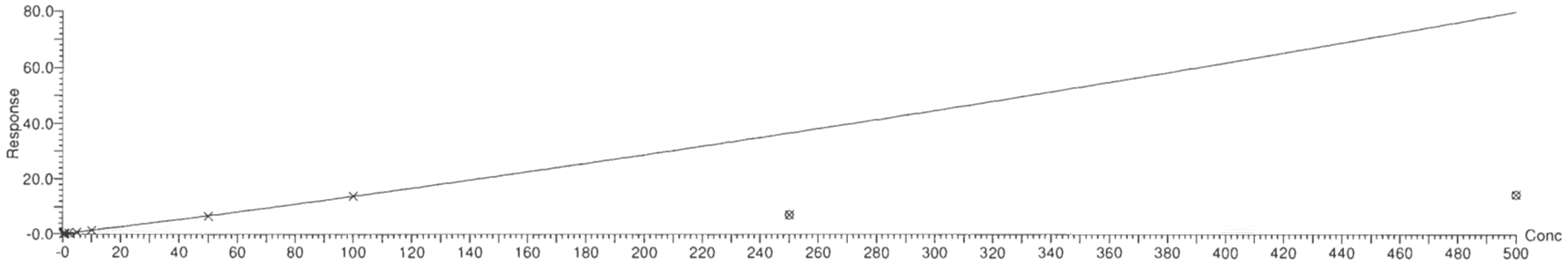
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

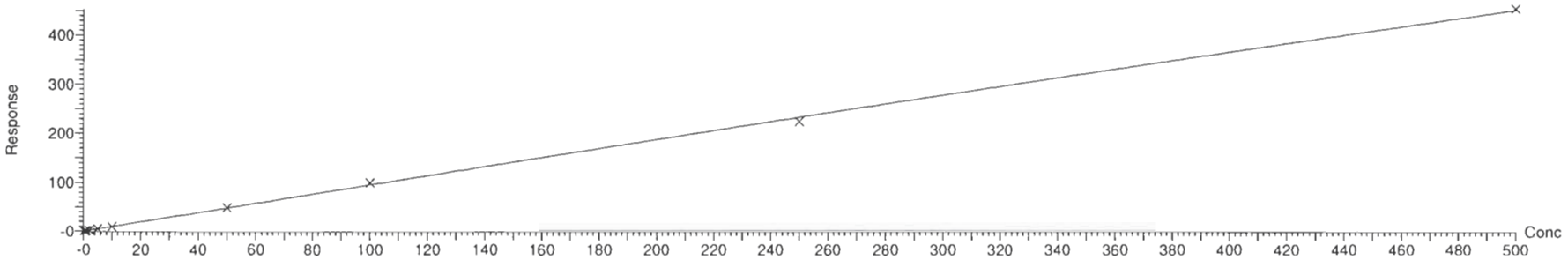
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999514
Calibration curve: 5.29325e-005 * x^2 + 0.133561 * x + -0.00607305
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999206
Calibration curve: -0.000124021 * x^2 + 0.964733 * x + 0.0392424
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



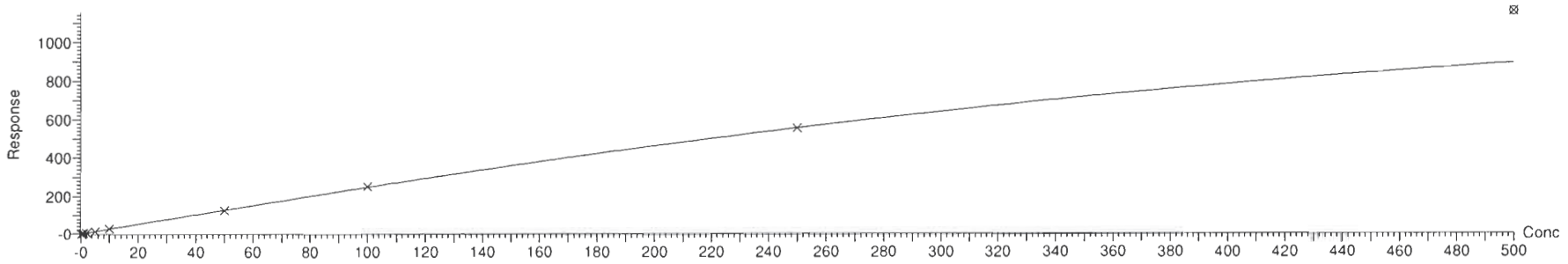
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

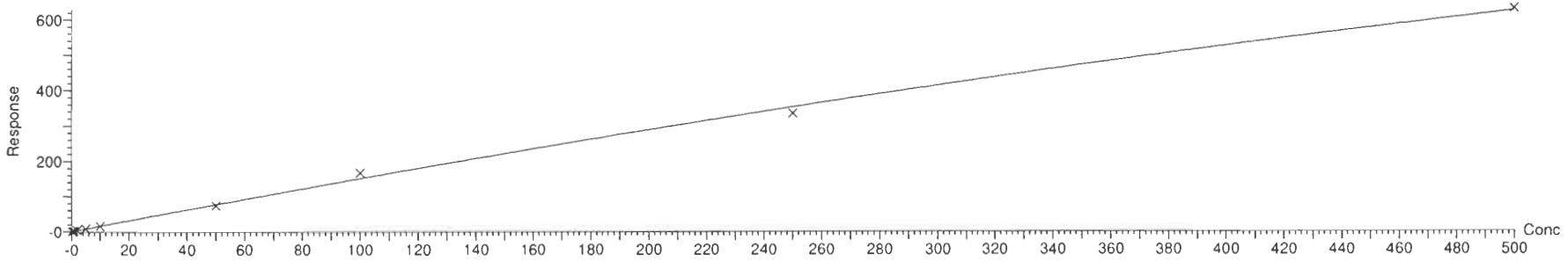
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFBS
Coefficient of Determination: R^2 = 0.999497
Calibration curve: -0.00173094 * x^2 + 2.6513 * x + -0.251741
Response type: Internal Std (Ref 51), 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 = 0.997493
Calibration curve: -0.000644207 * x^2 + 1.56988 * x + -0.0868661
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



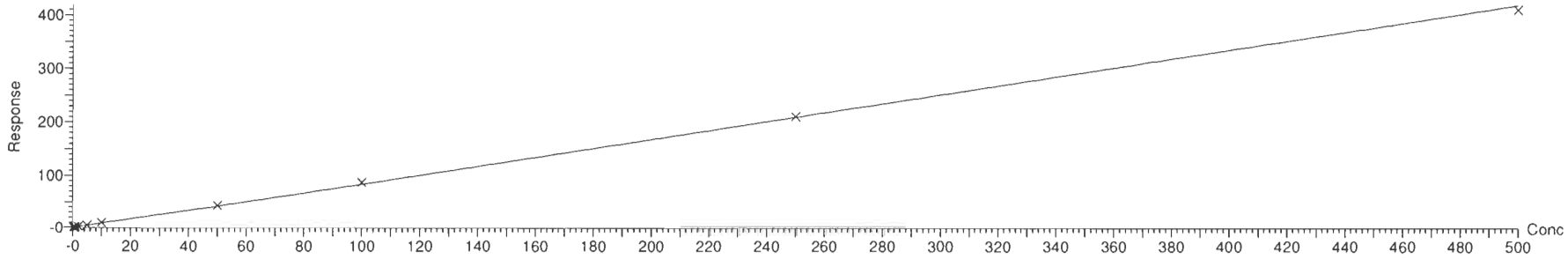
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

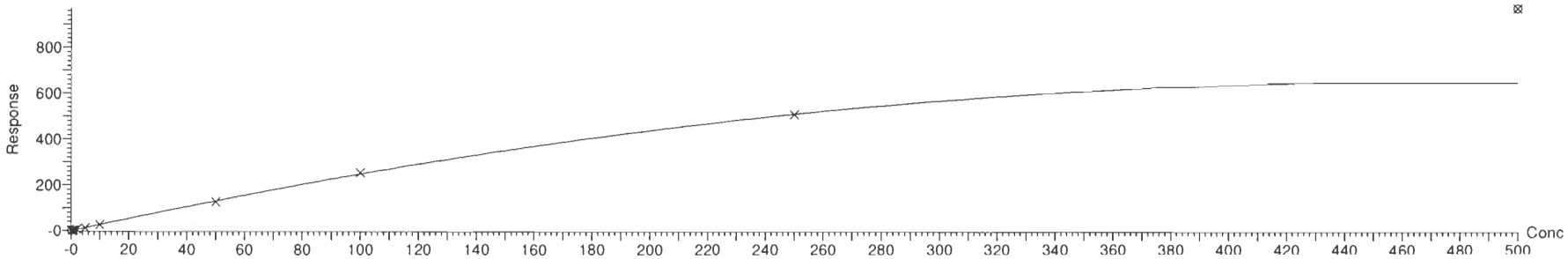
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.999611, r^2 = 0.999222
Calibration curve: 0.838943 * x + 0.10463
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeS
Coefficient of Determination: R^2 = 0.999637
Calibration curve: -0.0030014 * x^2 + 2.79602 * x + -0.53413
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



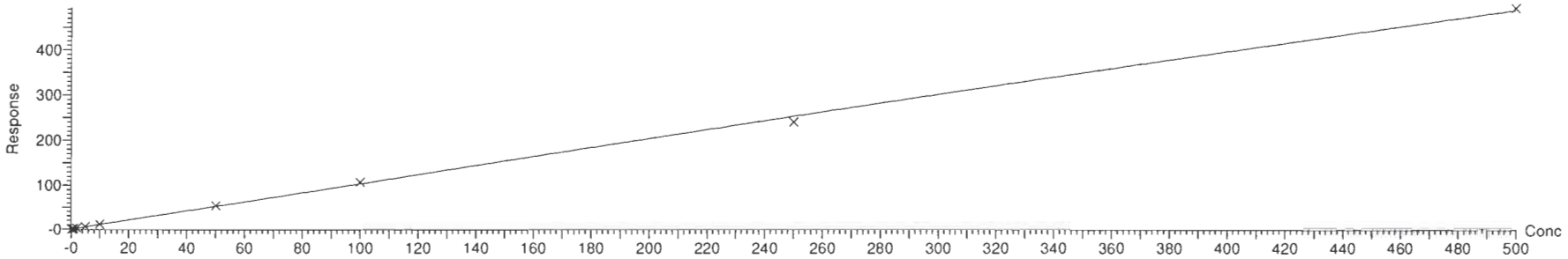
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

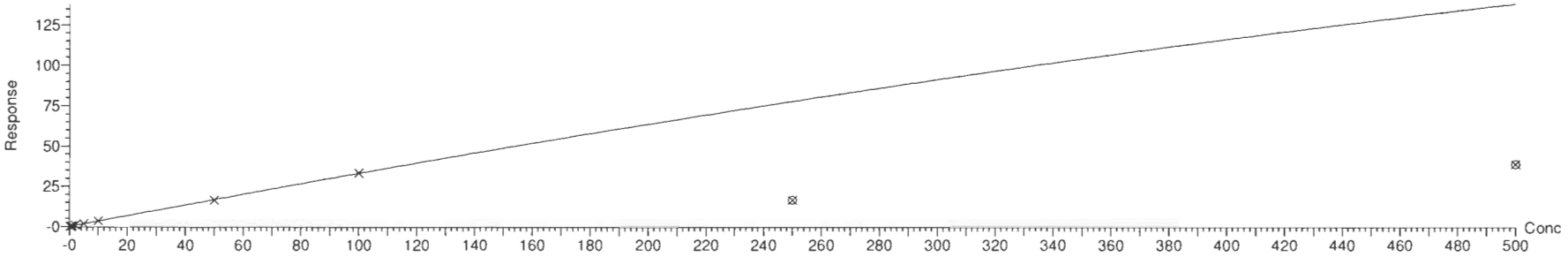
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.998793
Calibration curve: -0.000153928 * x^2 + 1.05532 * x + 0.0533749
Response type: Internal Std (Ref 53), 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 = 0.999659
Calibration curve: -0.000139609 * x^2 + 0.346434 * x + -0.000467738
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



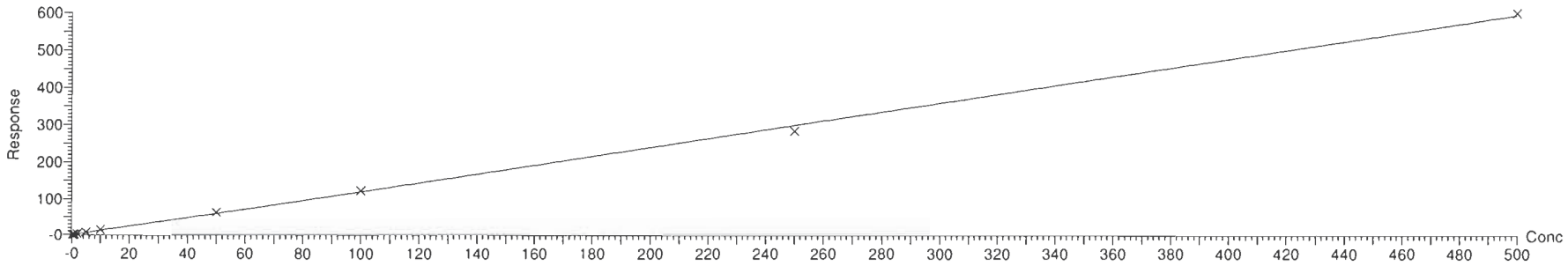
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

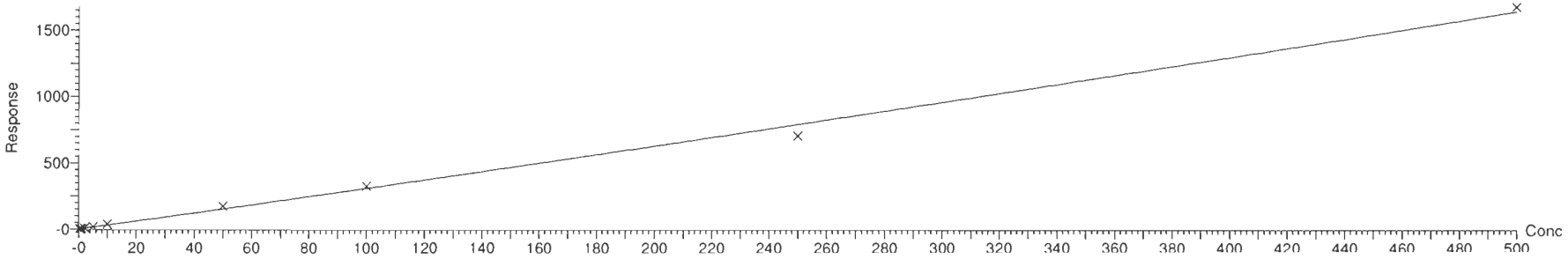
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.998543
Calibration curve: -2.80604e-005 * x^2 + 1.20464 * x + 0.137234
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: ADONA
Coefficient of Determination: R^2 = 0.994634
Calibration curve: 0.000465383 * x^2 + 3.05822 * x + 0.398385
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

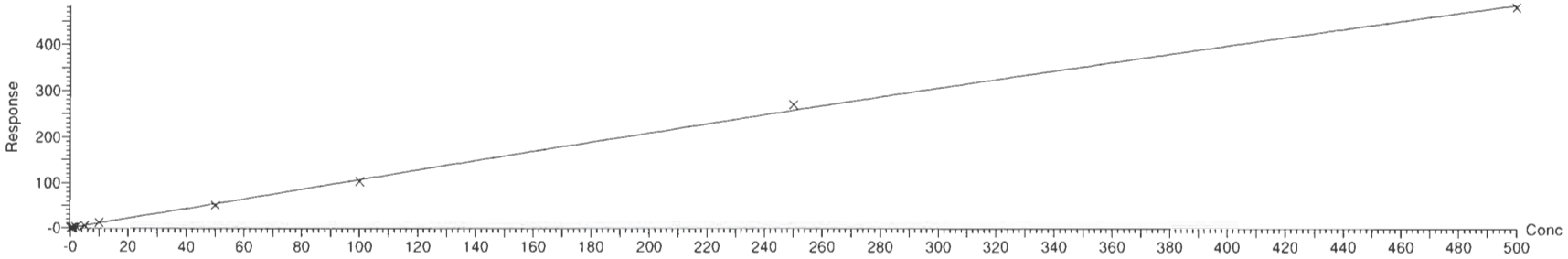


Quantify Calibration Report **MassLynx V4.2 SCN977** Page 7 of 13
Vista Analytical Laboratory Q1

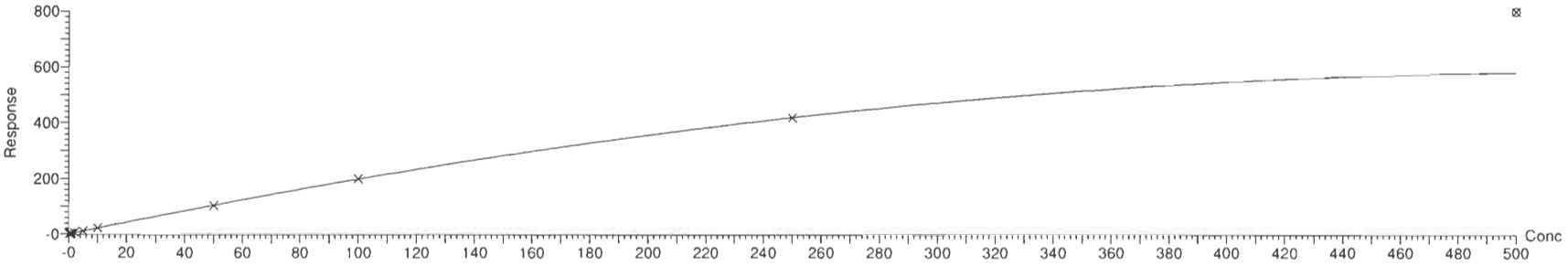
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.998679
Calibration curve: -0.000251852 * x^2 + 1.09858 * x + -0.145925
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: 6:2 FTS
Coefficient of Determination: R^2 = 0.999738
Calibration curve: -0.00207235 * x^2 + 2.19851 * x + -0.0932146
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



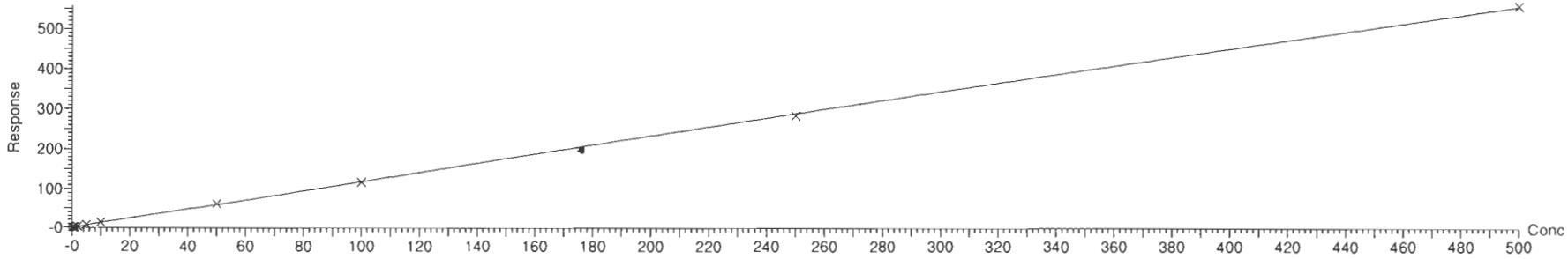
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

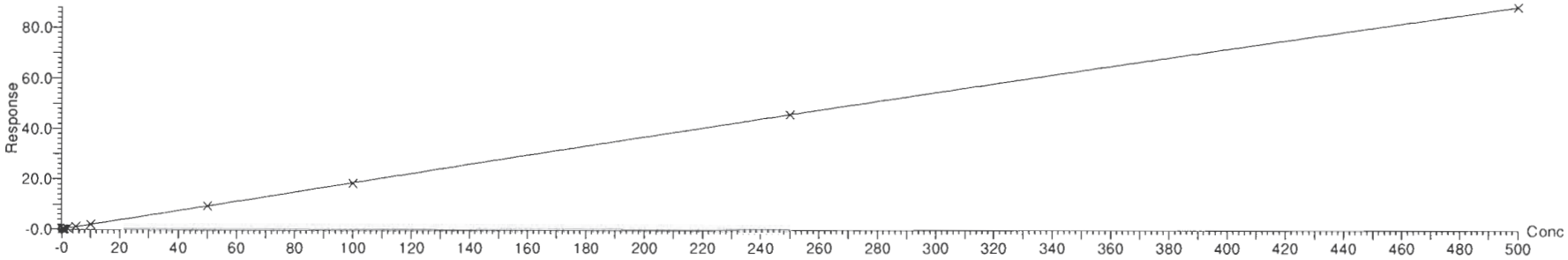
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999566
Calibration curve: -0.000173152 * x^2 + 1.19871 * x + 0.255567
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999692
Calibration curve: -2.49656e-005 * x^2 + 0.189183 * x + -0.0174813
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



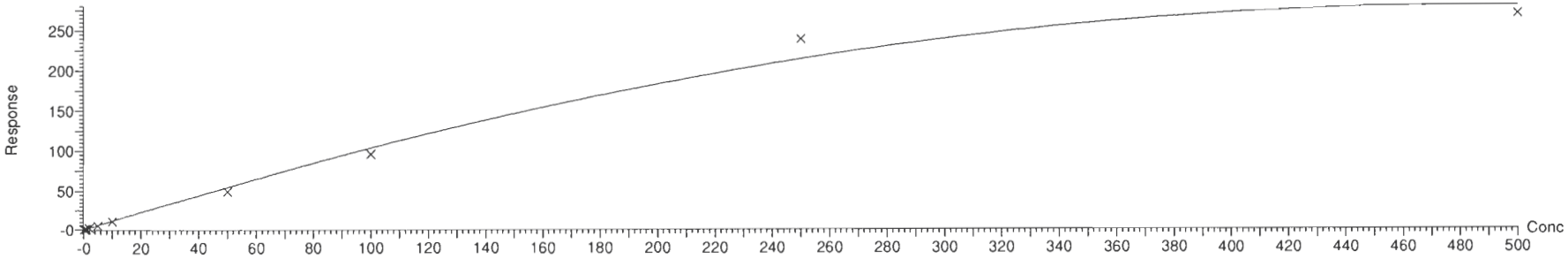
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

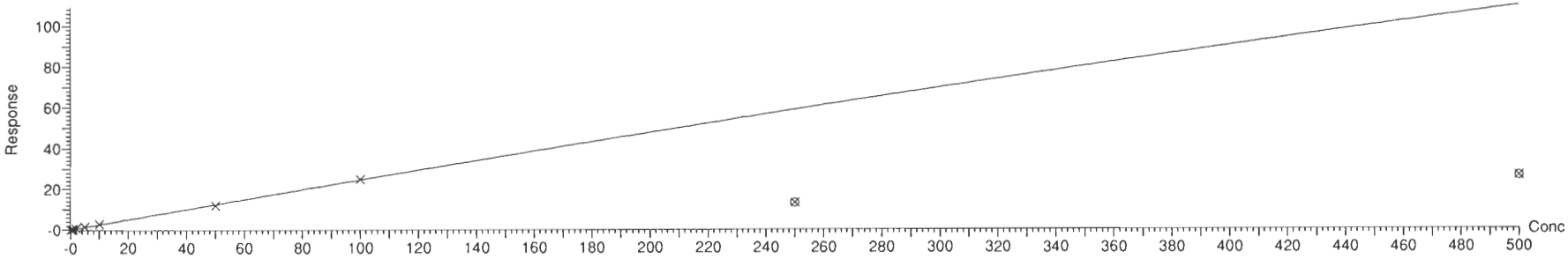
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.992382
Calibration curve: -0.00118396 * x^2 + 1.15176 * x + -0.0858055
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.997113
Calibration curve: -6.34032e-005 * x^2 + 0.250677 * x + -0.0155274
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



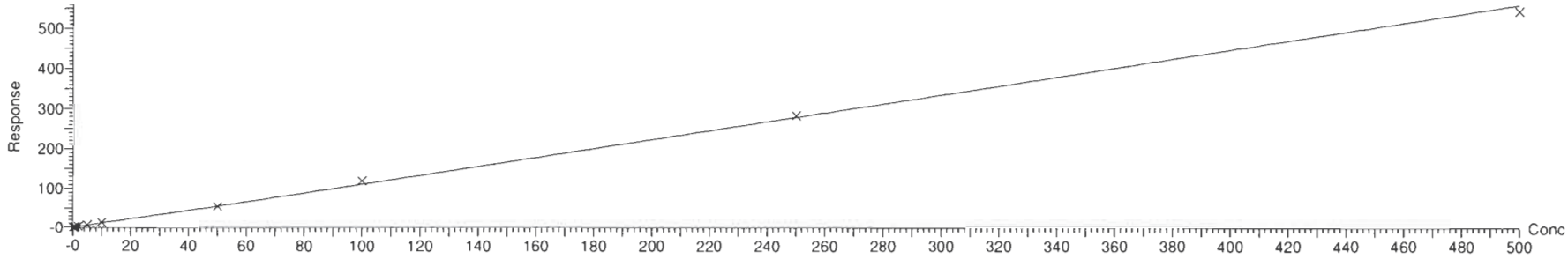
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

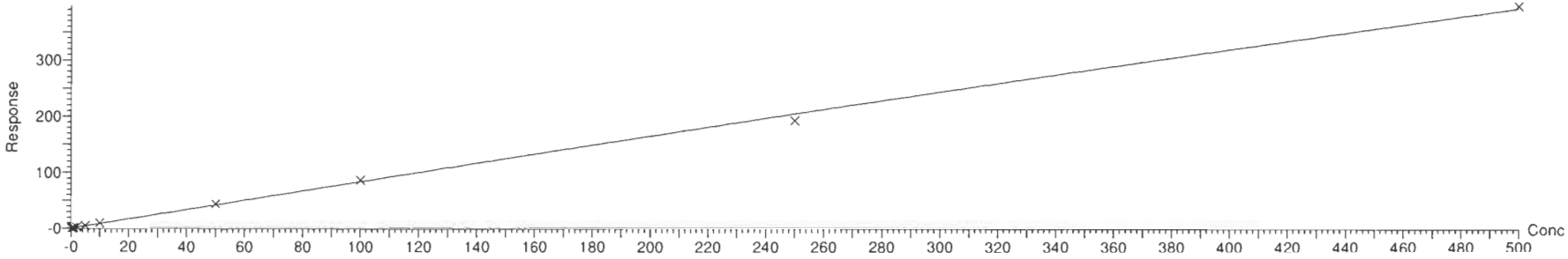
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.999204, r^2 = 0.998408
Calibration curve: 1.1206 * x + 0.0471681
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFOSA
Coefficient of Determination: R^2 = 0.998244
Calibration curve: -0.000135417 * x^2 + 0.853196 * x + 0.0420568
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



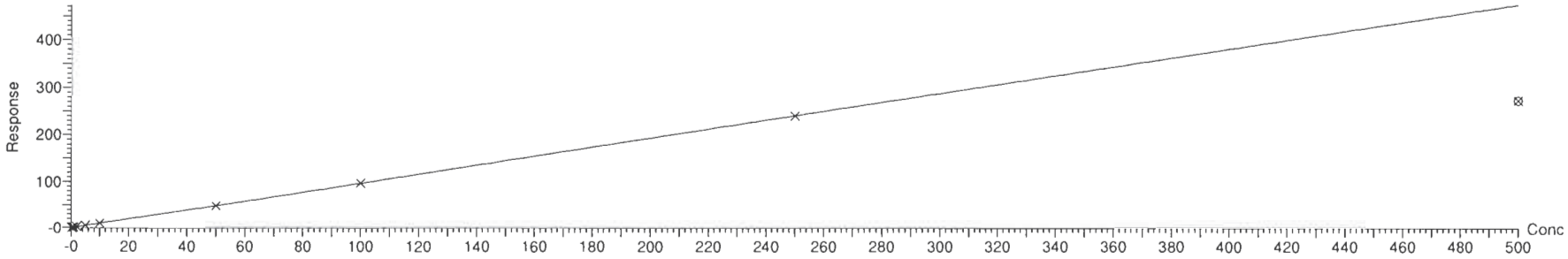
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

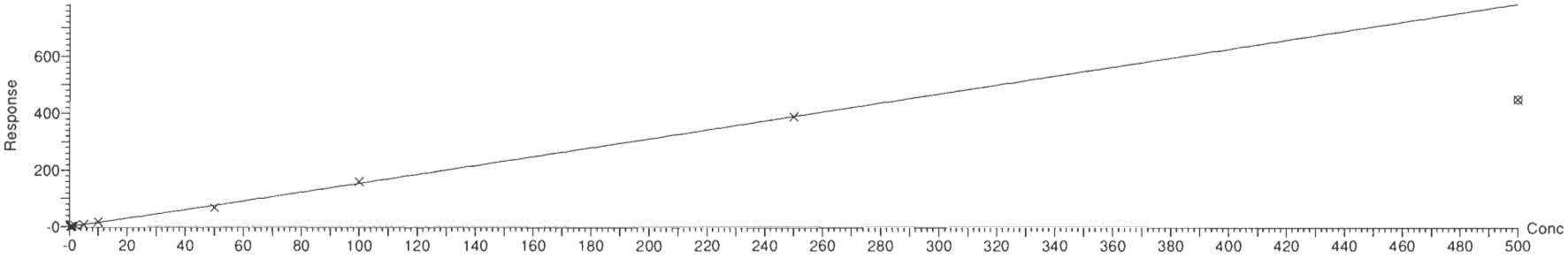
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999770
Calibration curve: -5.78438e-005 * x^2 + 0.977835 * x + -0.0758606
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.996808
Calibration curve: 4.27072e-005 * x^2 + 1.54969 * x + -0.000241627
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



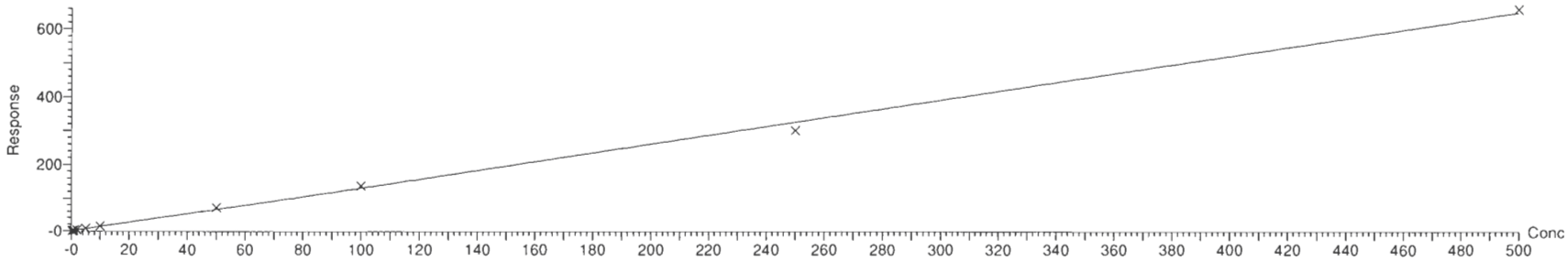
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

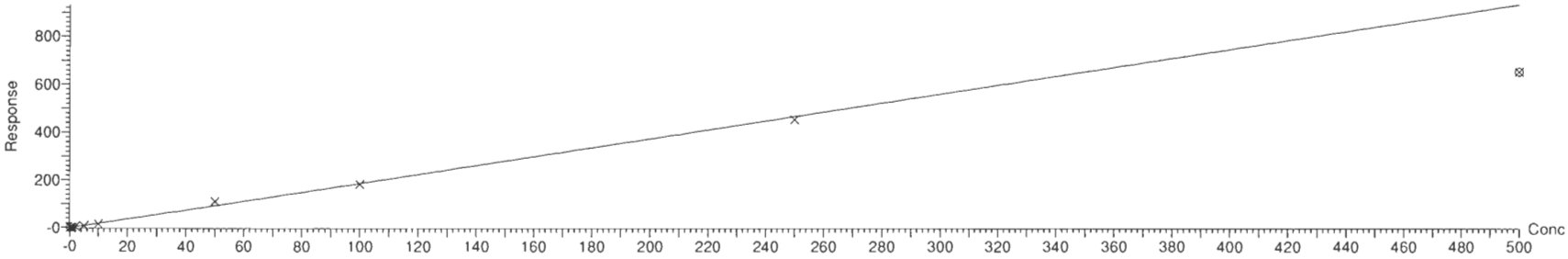
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.997454
Calibration curve: -1.7216e-005 * x^2 + 1.30956 * x + 0.0697503
Response type: Internal Std (Ref 73), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: 8:2 FTS
Correlation coefficient: r = 0.997040, r^2 = 0.994088
Calibration curve: 1.86851 * x + -0.58767
Response type: Internal Std (Ref 75), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



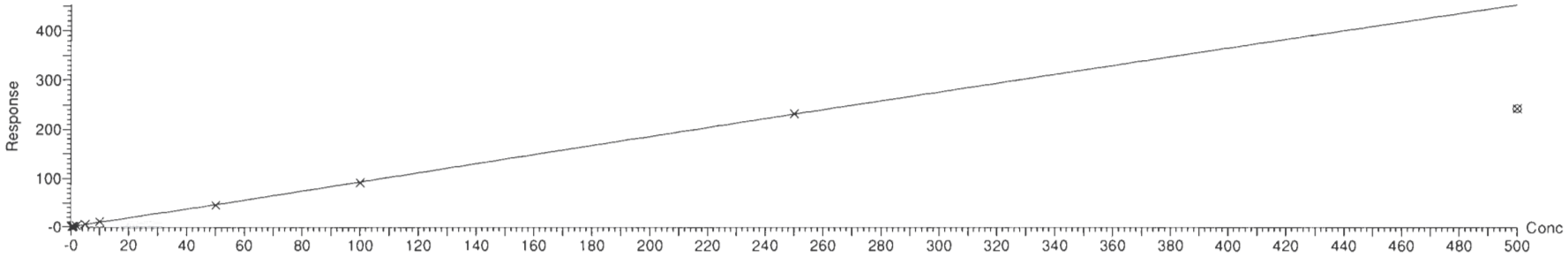
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

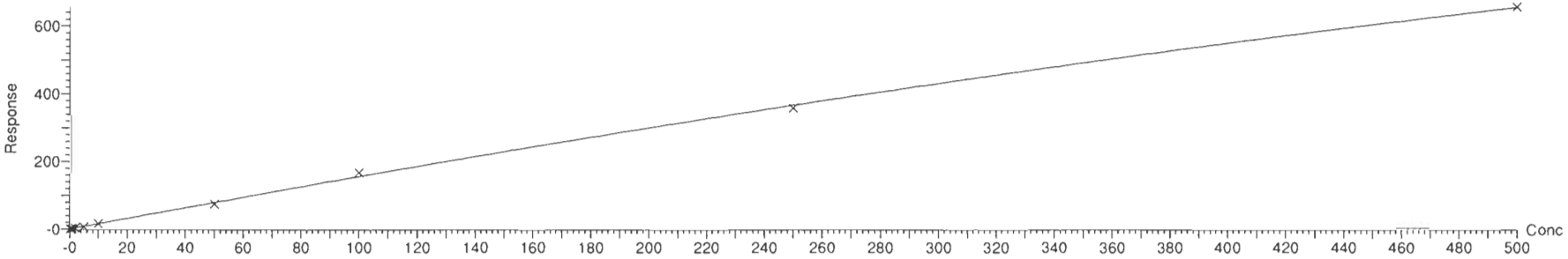
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:55:30 Pacific Standard Time

Compound name: PFNS
Coefficient of Determination: R^2 = 0.999120
Calibration curve: -7.6989e-005 * x^2 + 0.946618 * x + -0.154527
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.998610
Calibration curve: -0.000634818 * x^2 + 1.62895 * x + -0.0773097
Response type: Internal Std (Ref 77), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



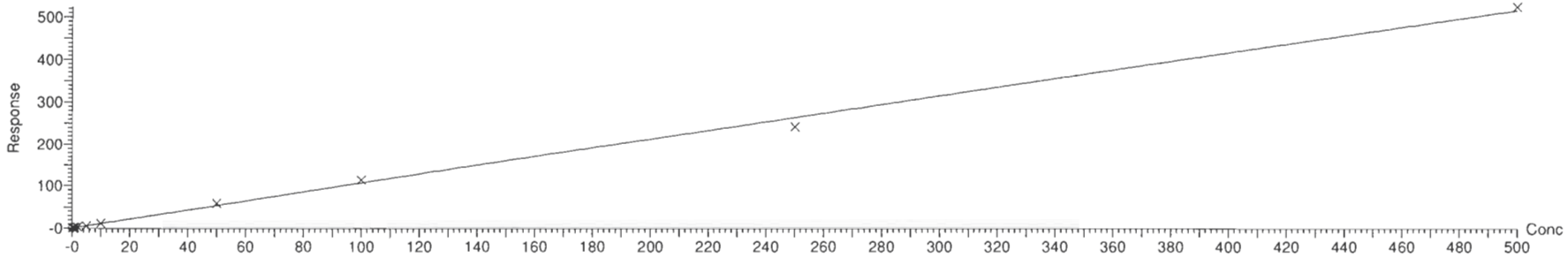
Quantify Calibration Report **MassLynx V4.2 SCN977** Page 1 of 8
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

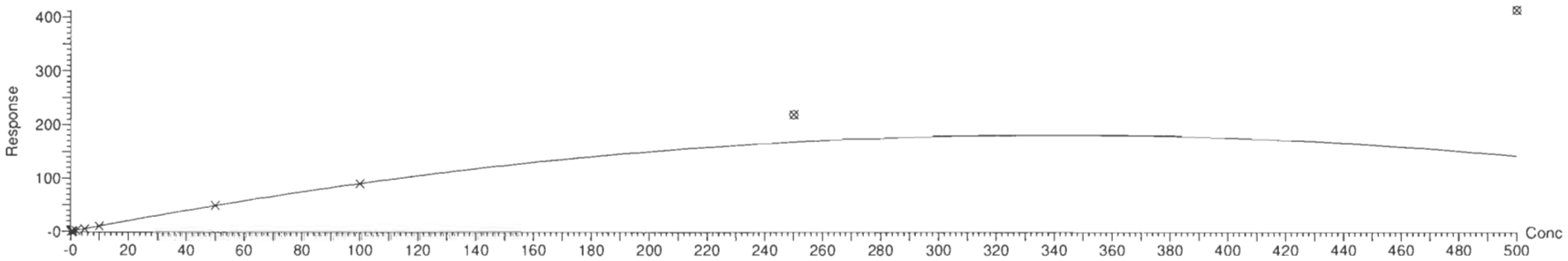
Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 02 Mar 2020 10:31:16
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Compound name: L-EtFOSAA
Coefficient of Determination: R^2 = 0.996768
Calibration curve: -9.38021e-005 * x^2 + 1.07916 * x + -0.0261113
Response type: Internal Std (Ref 81), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999416
Calibration curve: -0.00155432 * x^2 + 1.06125 * x + -0.0557055
Response type: Internal Std (Ref 79), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



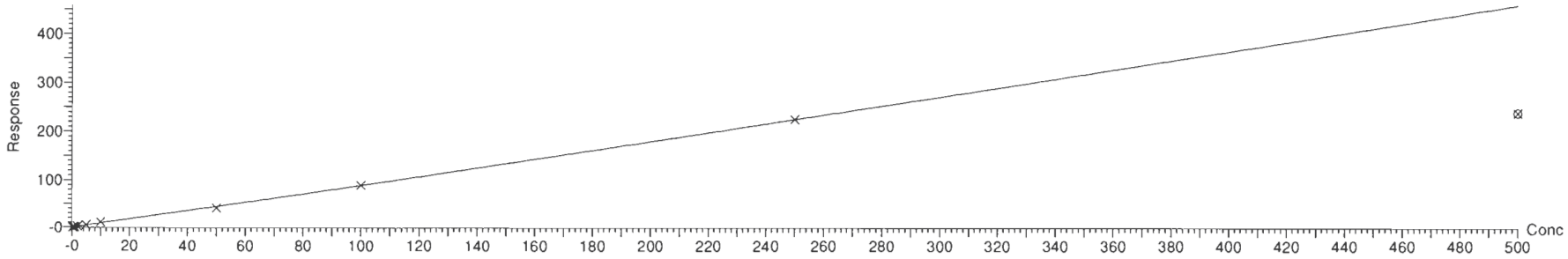
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

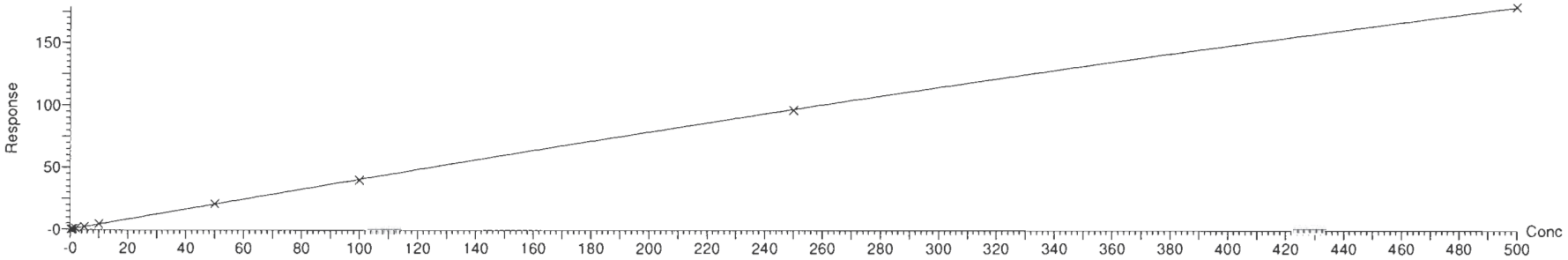
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: PFDS
Coefficient of Determination: R^2 = 0.997825
Calibration curve: 7.28117e-005 * x^2 + 0.883279 * x + -0.0867867
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: 11Cl-PF30UdS
Coefficient of Determination: R^2 = 0.999727
Calibration curve: -0.000120038 * x^2 + 0.417922 * x + 0.0152764
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



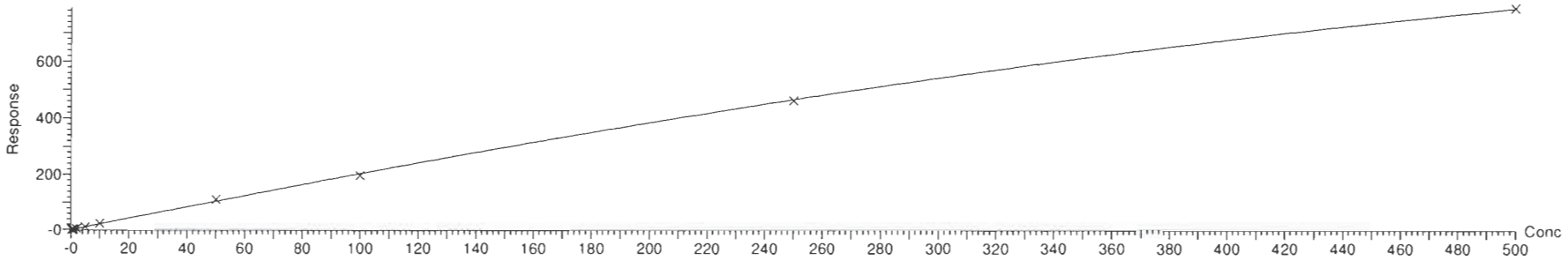
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

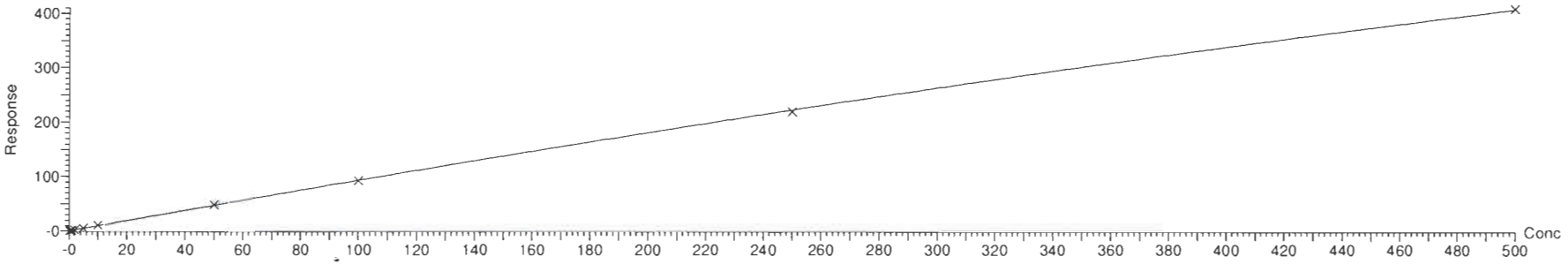
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999120
Calibration curve: -0.00116944 * x^2 + 2.16156 * x + -0.11312
Response type: Internal Std (Ref 85), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999647
Calibration curve: -0.000311507 * x^2 + 0.972615 * x + 0.0366162
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



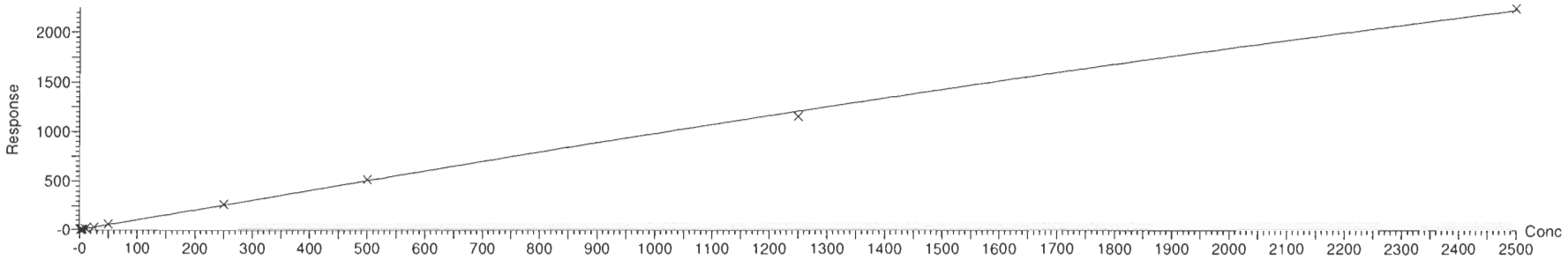
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

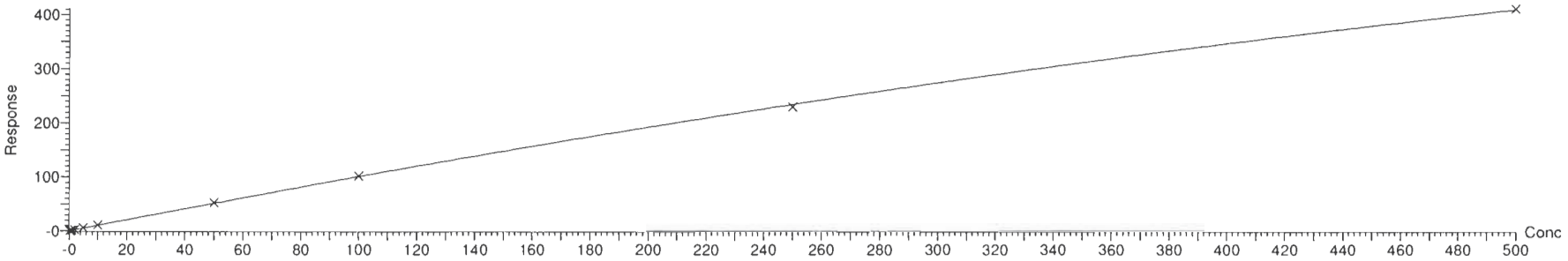
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.998963
Calibration curve: -6.26912e-005 * x^2 + 1.04758 * x + 0.13891
Response type: Internal Std (Ref 87), 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 = 0.999653
Calibration curve: -0.000483457 * x^2 + 1.06119 * x + 0.0940389
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



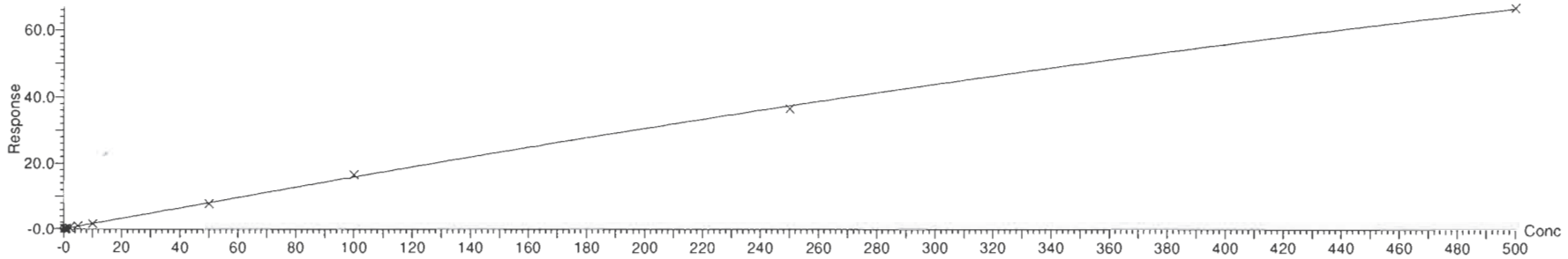
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

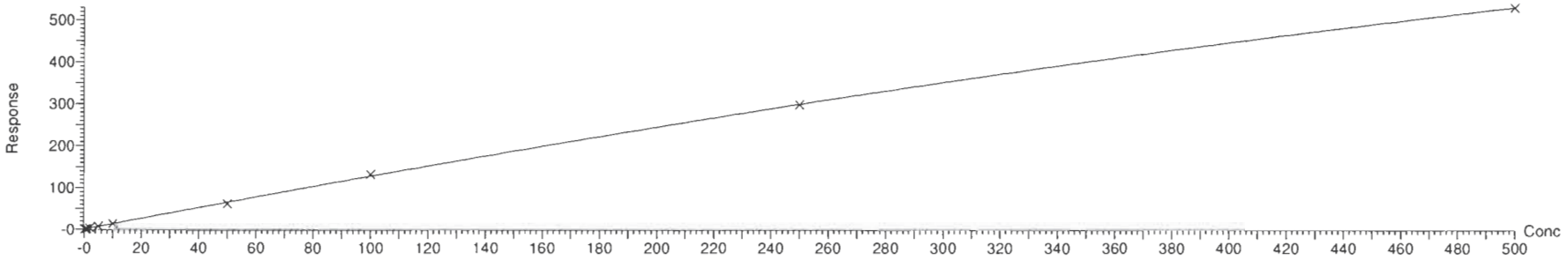
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999248
Calibration curve: -6.72059e-005 * x^2 + 0.166876 * x + -0.0249515
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.999578
Calibration curve: -0.000551541 * x^2 + 1.33737 * x + 0.00164932
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



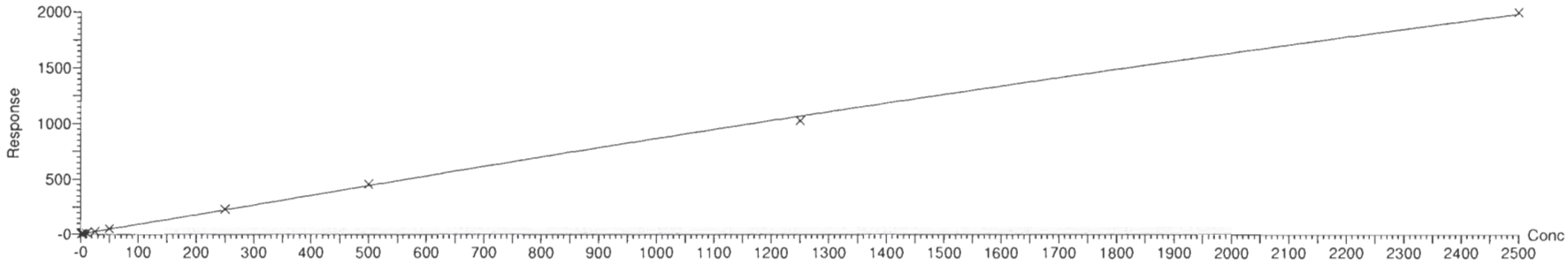
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

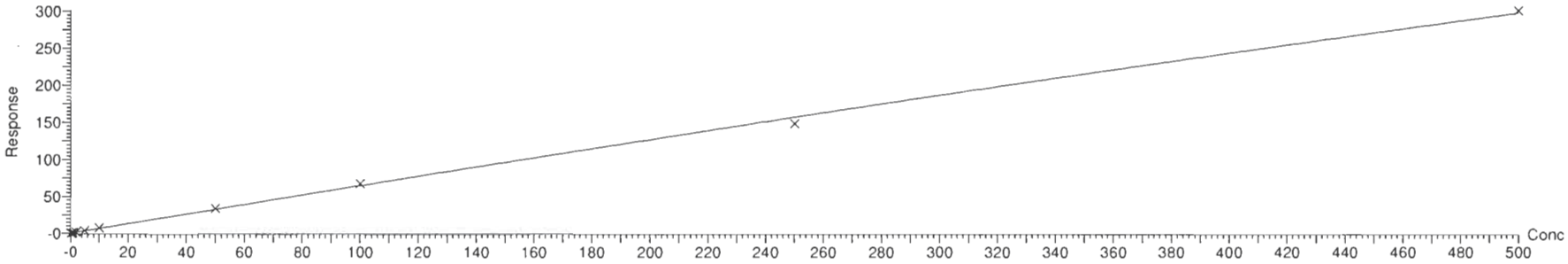
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999219
Calibration curve: -5.04959e-005 * x^2 + 0.921576 * x + 0.268488
Response type: Internal Std (Ref 91), 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 = 0.998523
Calibration curve: -0.000133679 * x^2 + 0.663349 * x + 0.143374
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



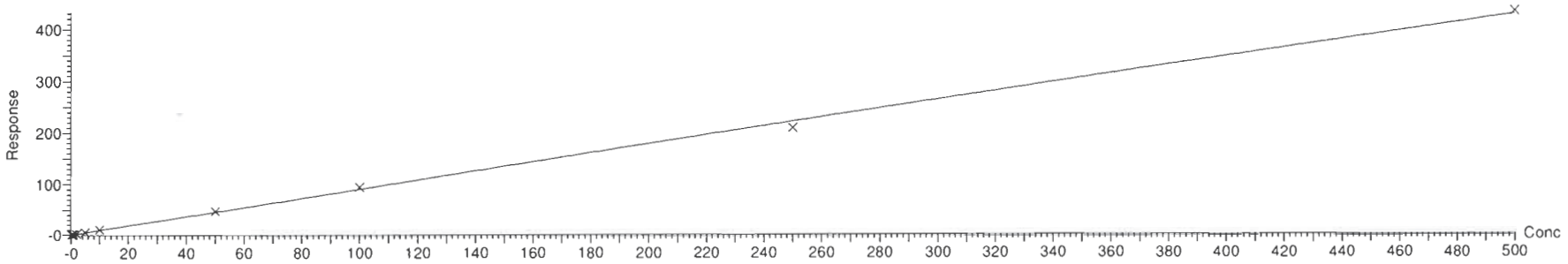
Quantify Calibration Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory Q1

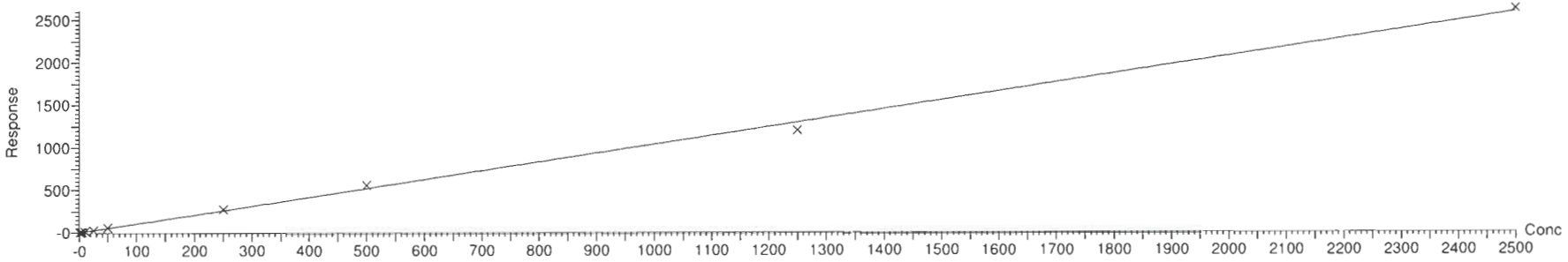
Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.998419
Calibration curve: -0.000117862 * x^2 + 0.914837 * x + 0.0554344
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: N-MeFOSE
Correlation coefficient: r = 0.998734, r^2 = 0.997470
Calibration curve: 1.03547 * x + 0.325816
Response type: Internal Std (Ref 95), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

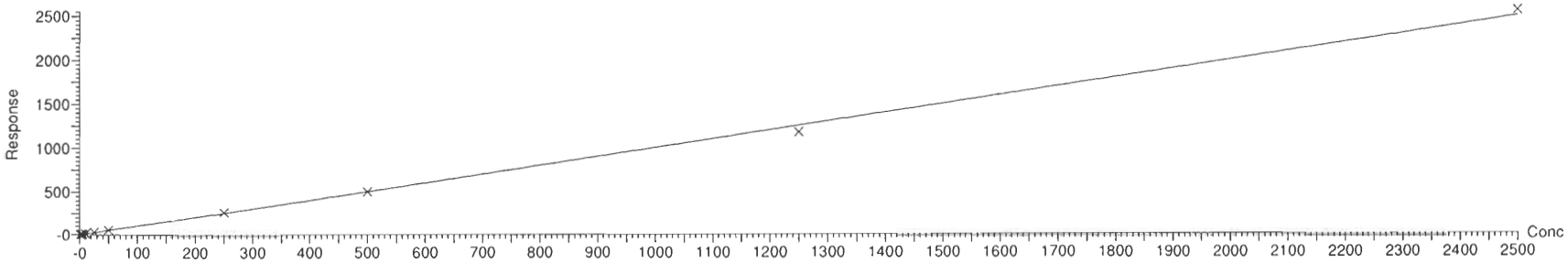


Quantify Calibration Report **MassLynx V4.2 SCN977** Page 8 of 8
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-CRV.qld

Last Altered: Monday, March 02, 2020 10:55:04 Pacific Standard Time
Printed: Monday, March 02, 2020 10:56:55 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999189, r^2 = 0.998378
Calibration curve: 0.996847 * x + 0.706727
Response type: Internal Std (Ref 97), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Quantify Sample Report **MassLynx V4.2 SCN977** Page 1 of 100
Vista Analytical Laboratory

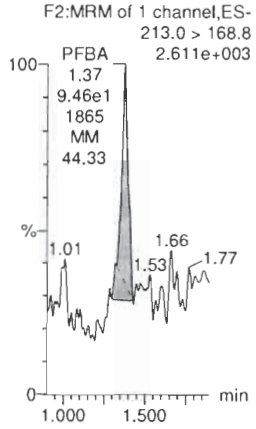
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

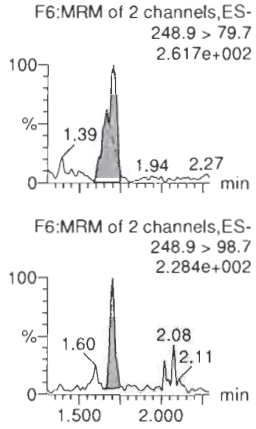
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022820.mdb 29 Feb 2020 10:29:57
Calibration: 02 Mar 2020 09:31:37

Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

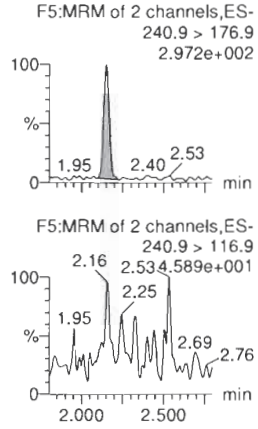
PFBA



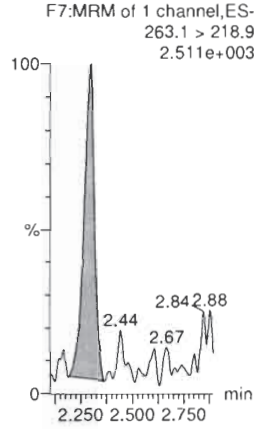
PFPrS



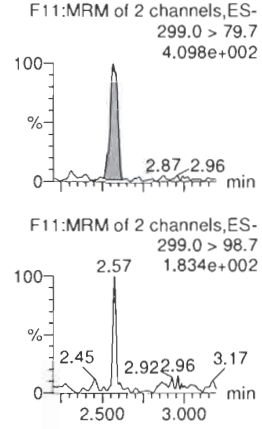
3:3 FTCA



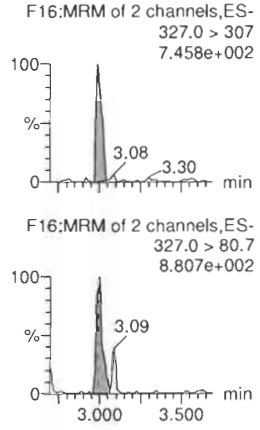
PFPeA



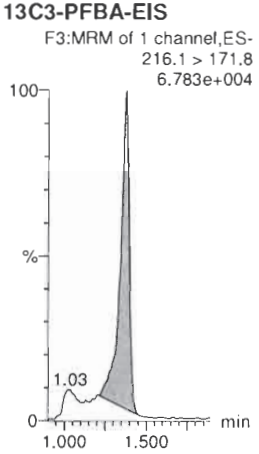
PFBS



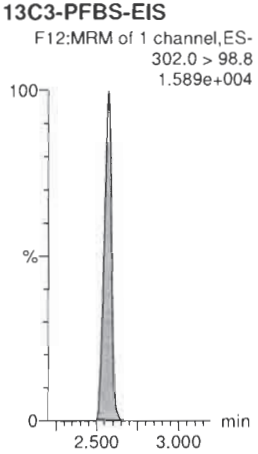
4:2 FTS



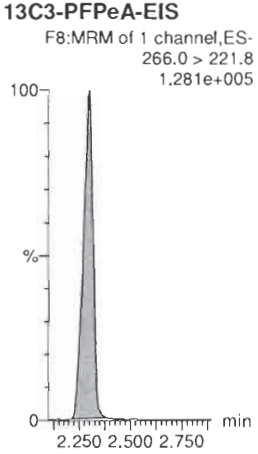
13C3-PFBA-EIS



13C3-PFBS-EIS



13C3-PFPeA-EIS



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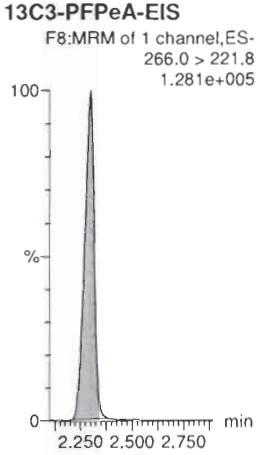

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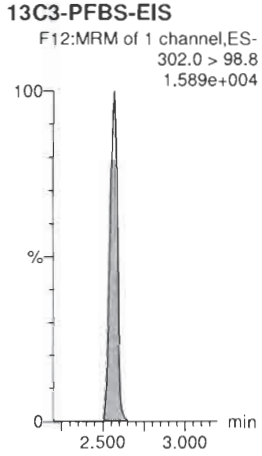
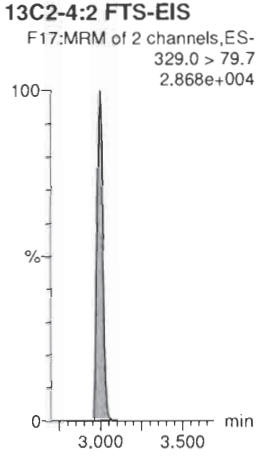


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

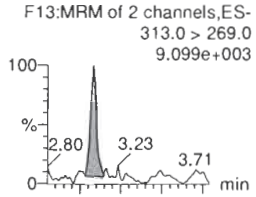
Vista Analytical Laboratory

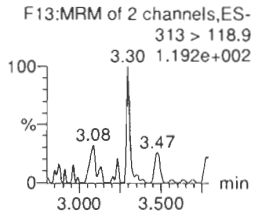
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

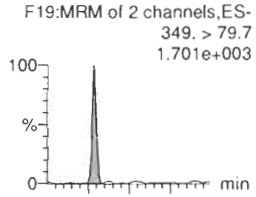
Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

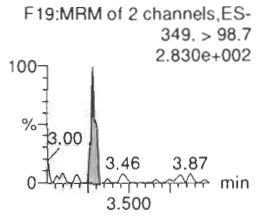
PFHxA



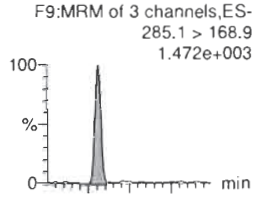


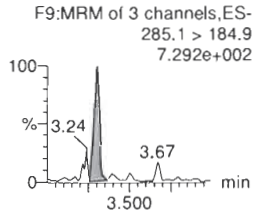
PFPeS



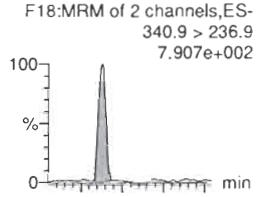


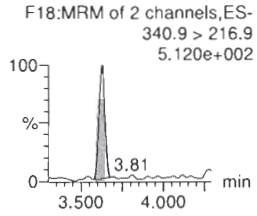
HFPO-DA



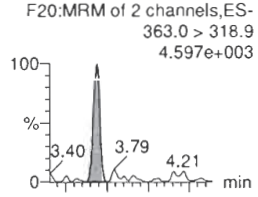


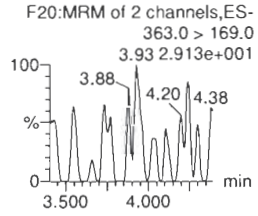
5:3 FTCA



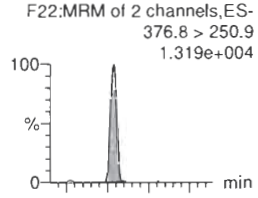


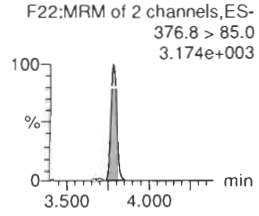
PFHpA



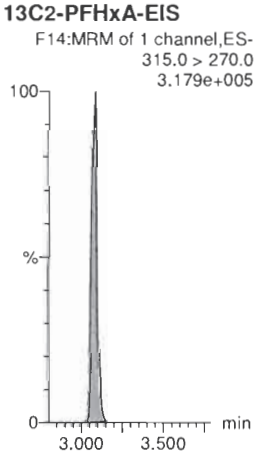


ADONA

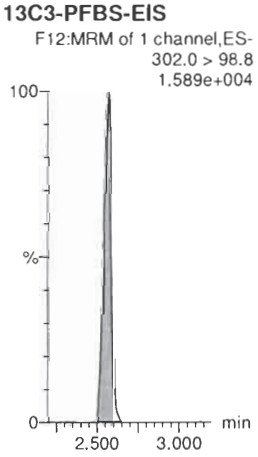




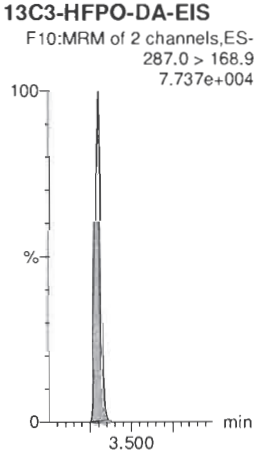
13C2-PFHxA-EIS



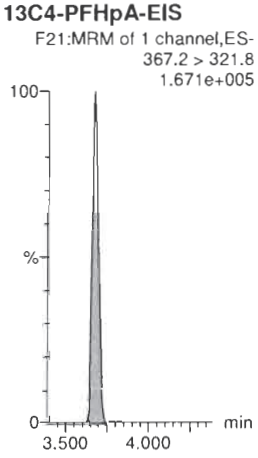
13C3-PFBS-EIS



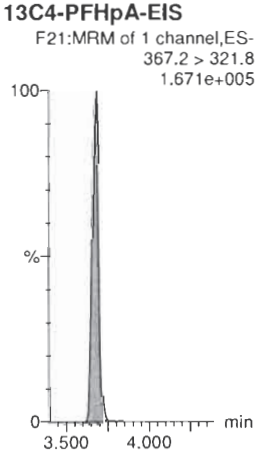
13C3-HFPO-DA-EIS



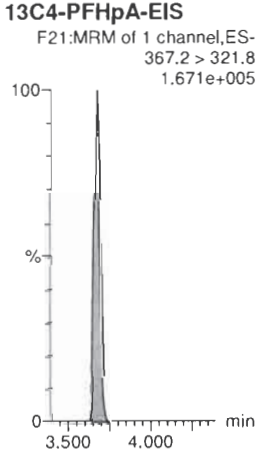
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

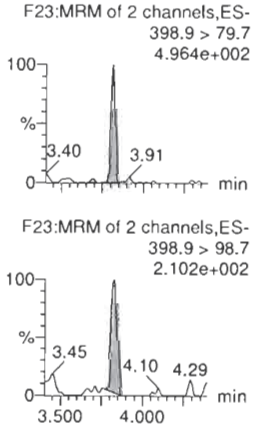
Vista Analytical Laboratory

Dataset: Untitled

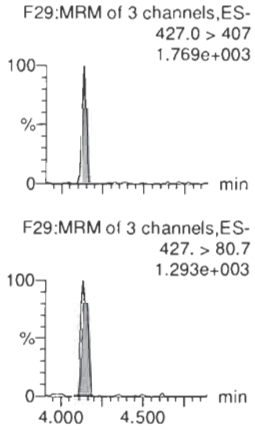
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

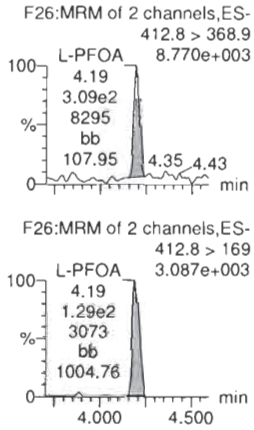
L-PFHxS



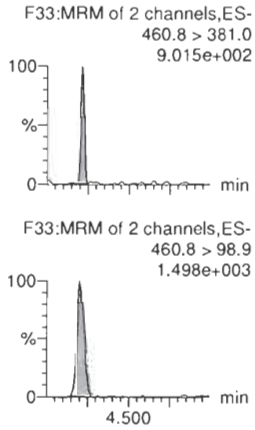
6:2 FTS



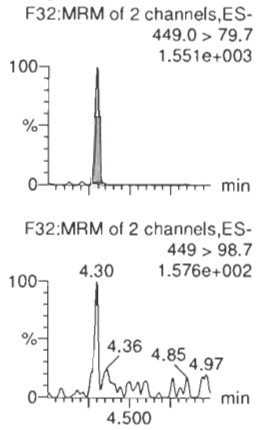
L-PFOA



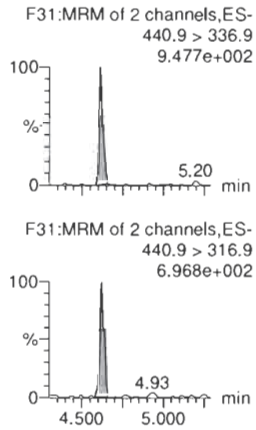
PFEChS



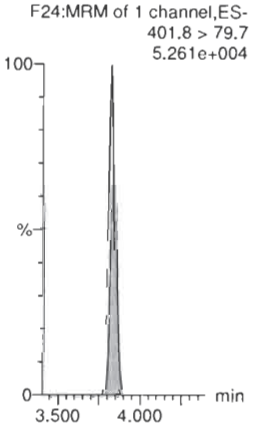
PFHpS



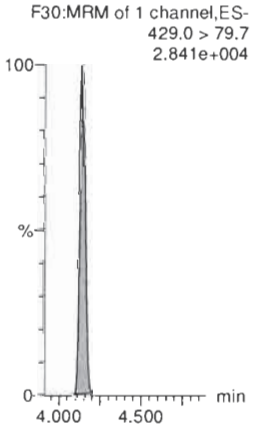
7:3 FTCA



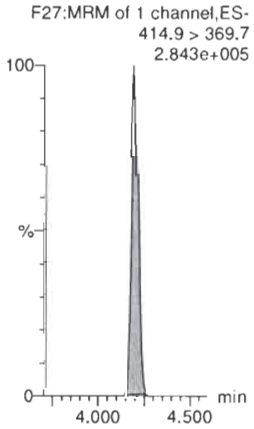
13C3-PFHxS-EIS



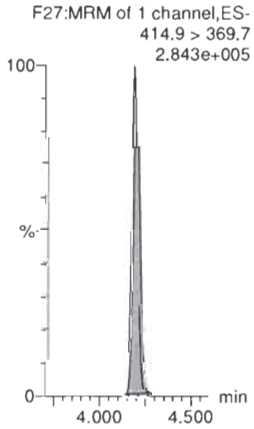
13C2-6:2 FTS-EIS



13C2-PFOA-EIS



13C2-PFOA-EIS



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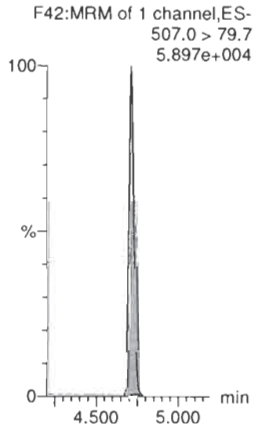

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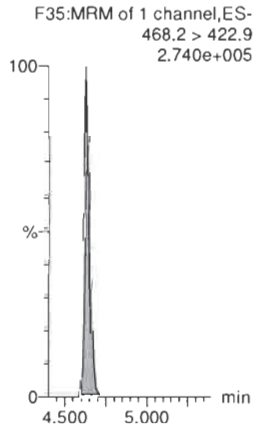

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

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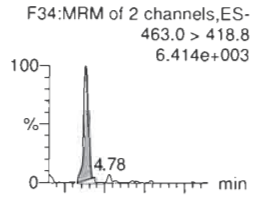

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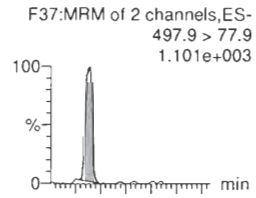

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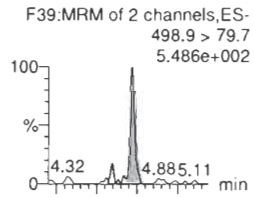

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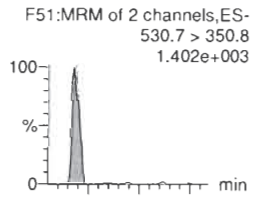

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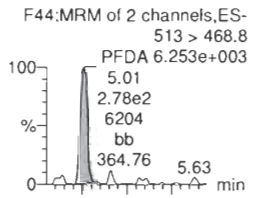

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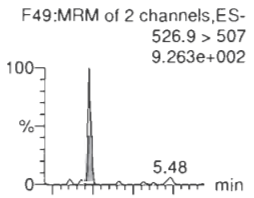

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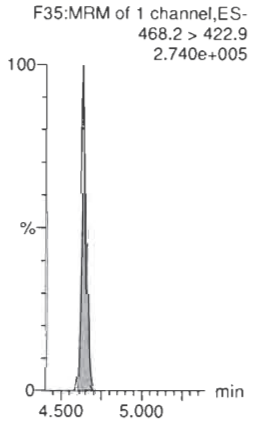

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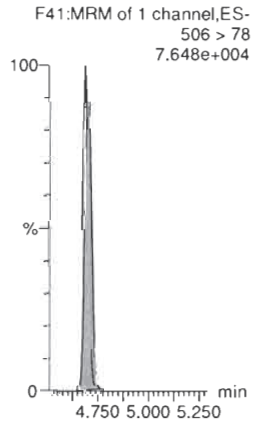

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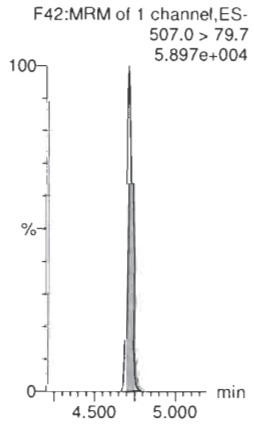

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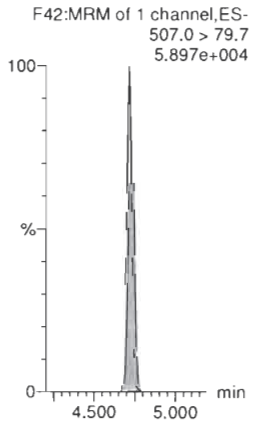

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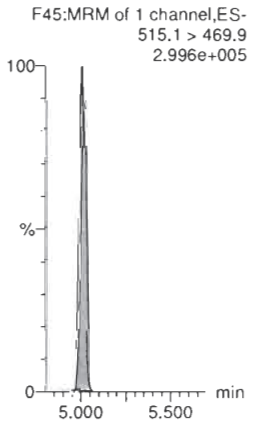

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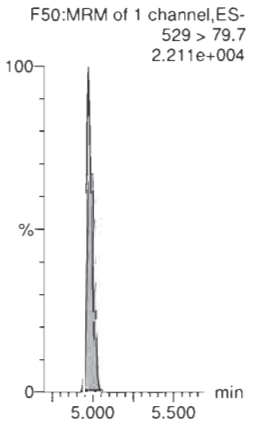

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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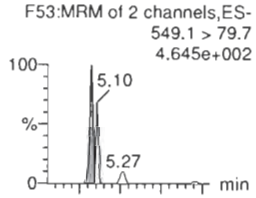

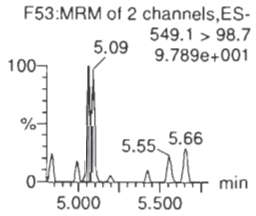

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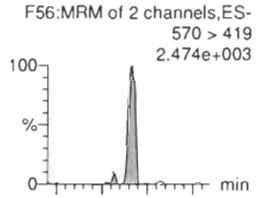

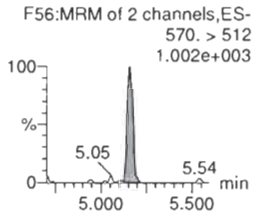

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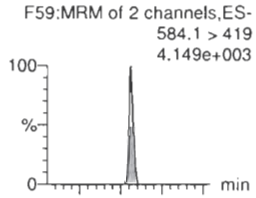

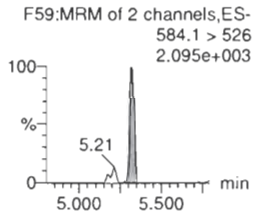

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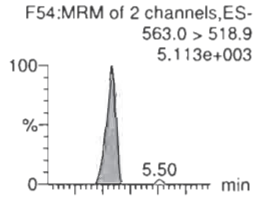

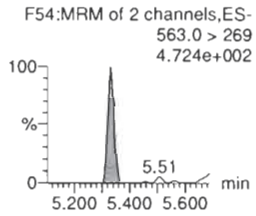

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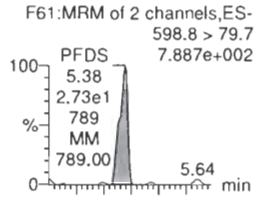

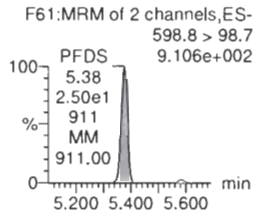

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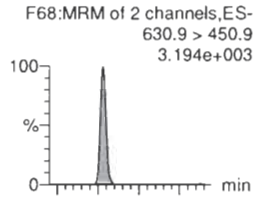

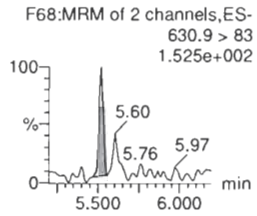

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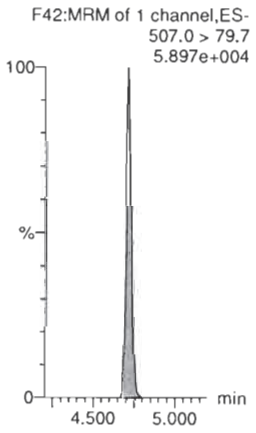

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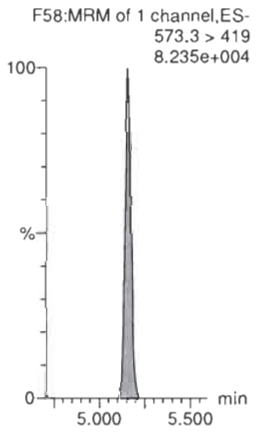

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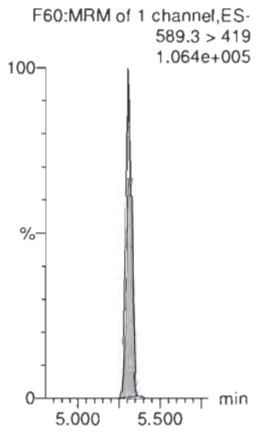

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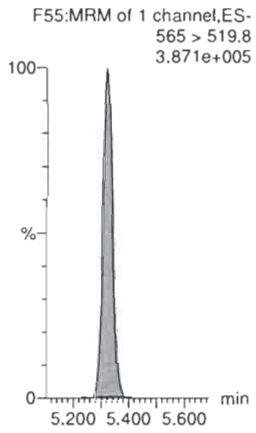

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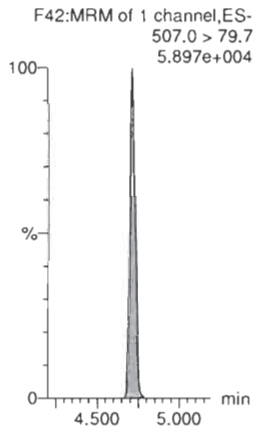

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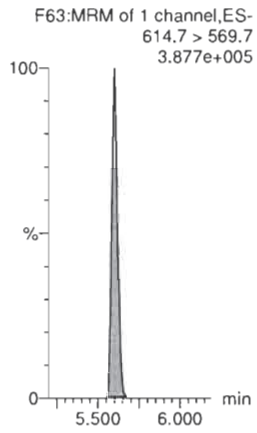

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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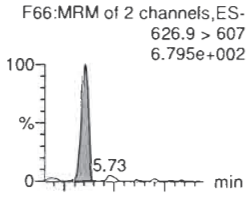
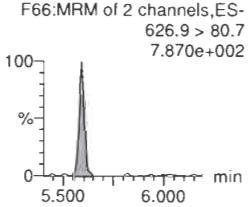
10:2 FTS





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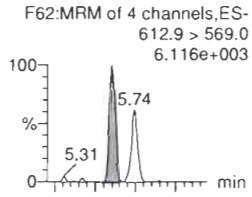

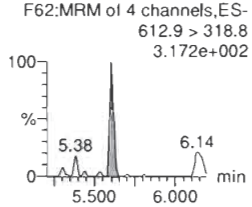

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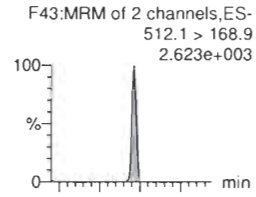

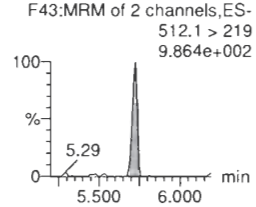

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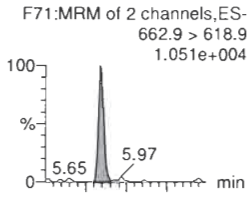

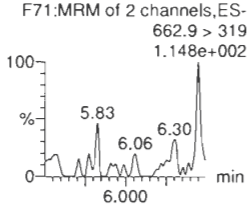

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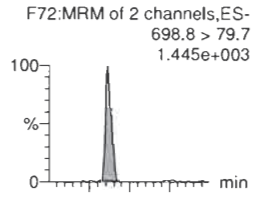

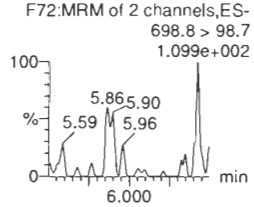

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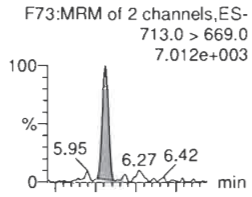

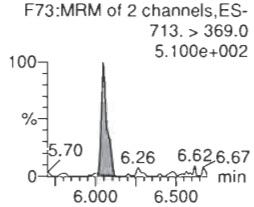

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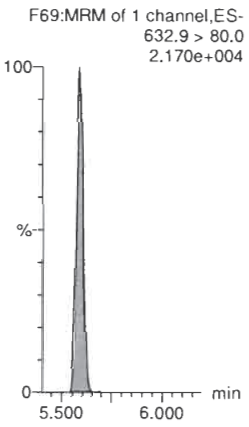

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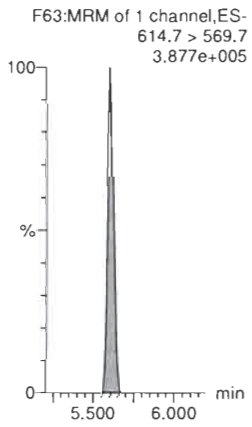

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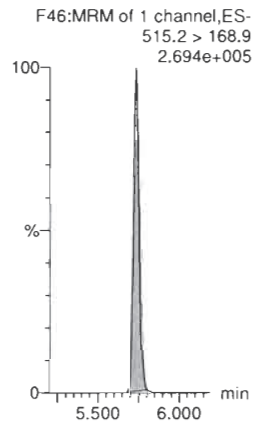

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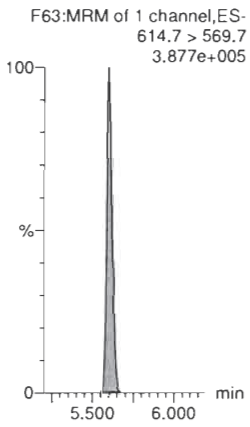

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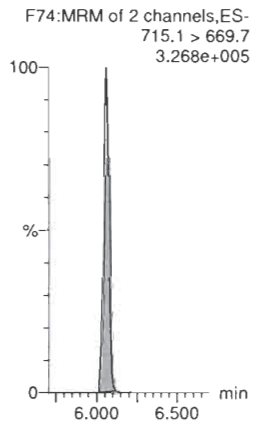

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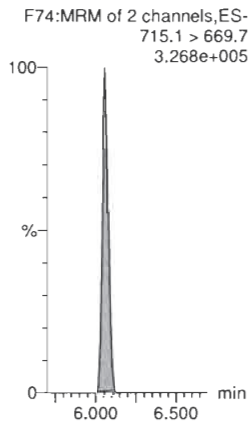

Quantify Sample Report **MassLynx V4.2 SCN977**

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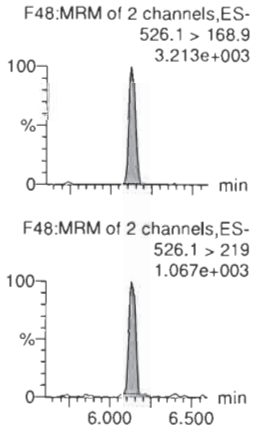
Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

N-EtFOSA



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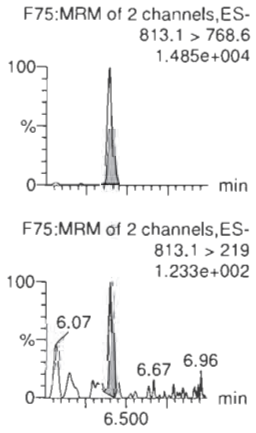

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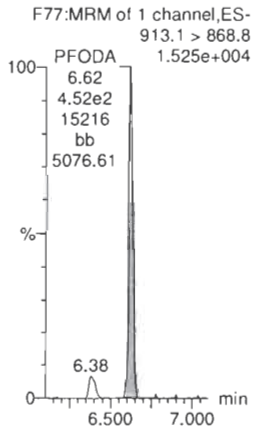

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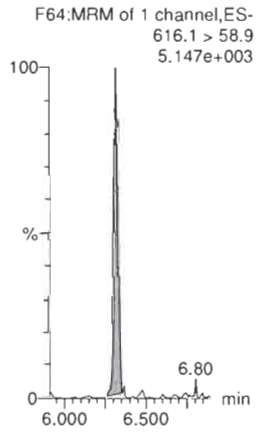

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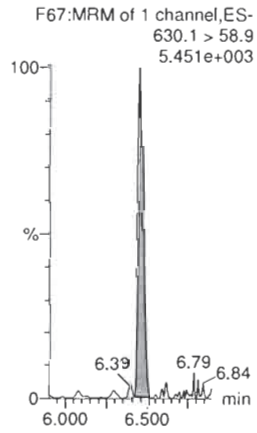

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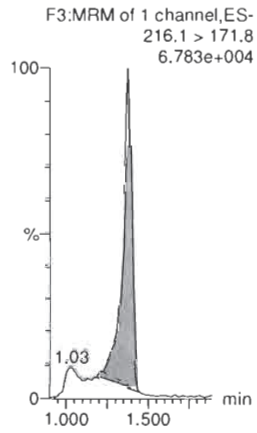
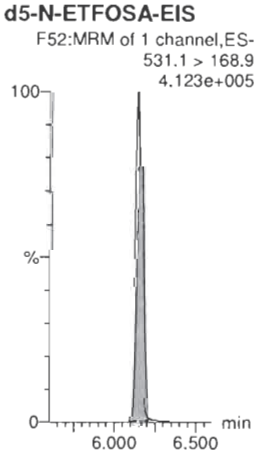
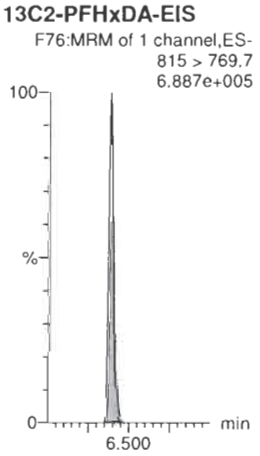


d5-N-ETFOSA-EIS



13C2-PFHxDA-EIS



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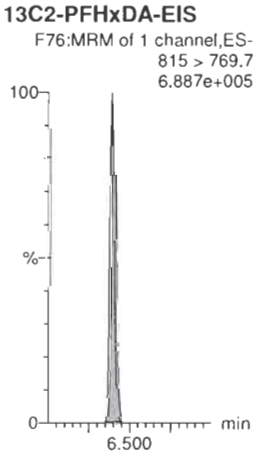
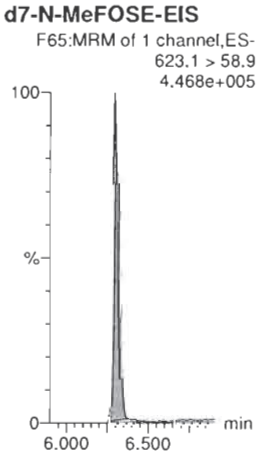


d7-N-MeFOSE-EIS



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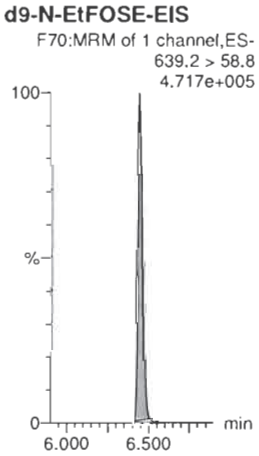

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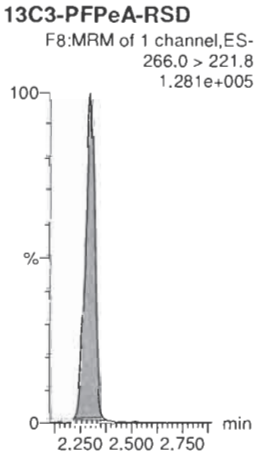

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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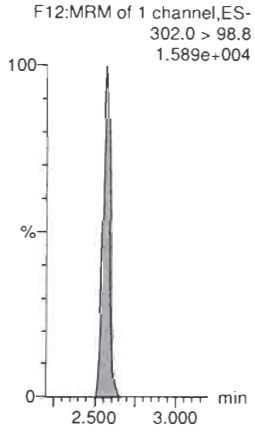
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

13C3-PFBS-RSD



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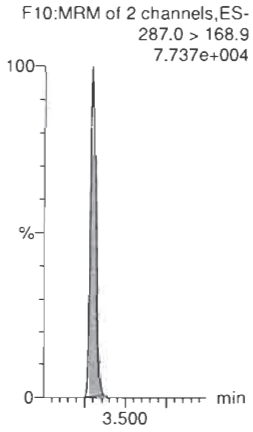
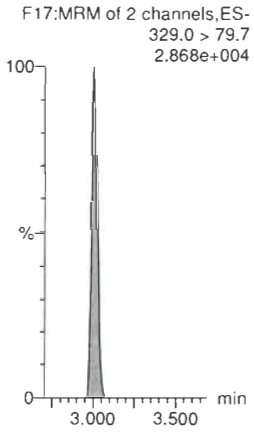


13C2-4:2 FTS-RSD



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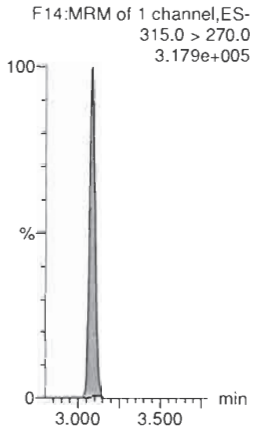

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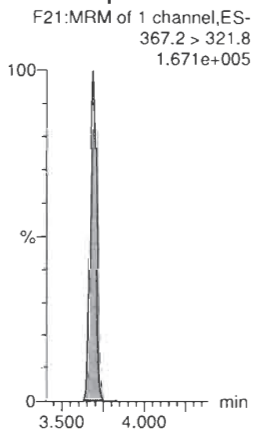

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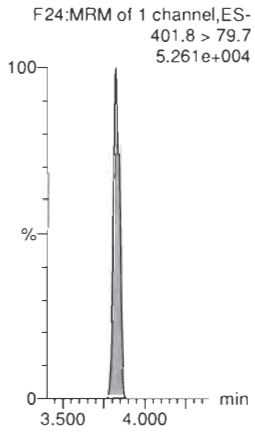
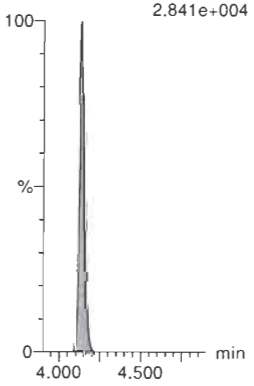
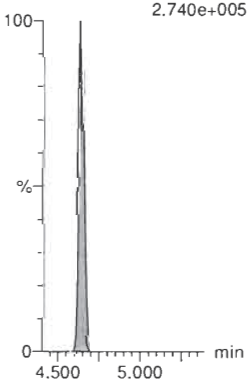


13C2-6:2 FTS-RSD



13C5-PFNA-RSD



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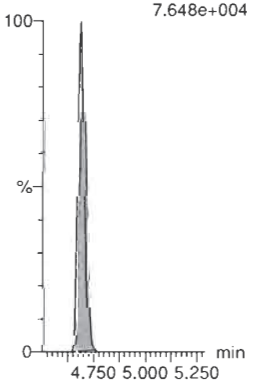
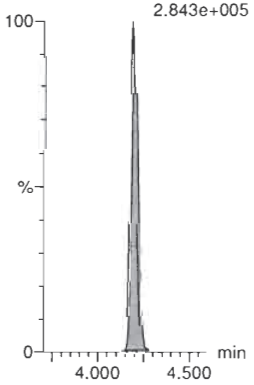


13C2-PFOA-RSD



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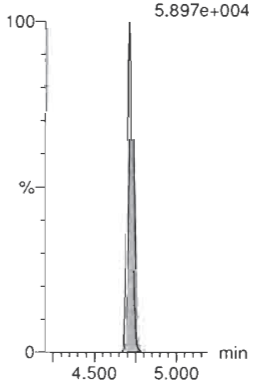

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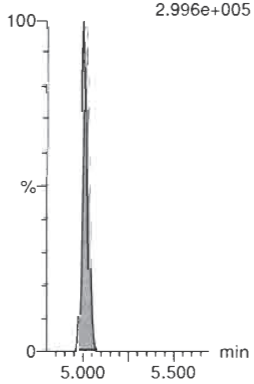


Quantify Sample Report **MassLynx V4.2 SCN977**

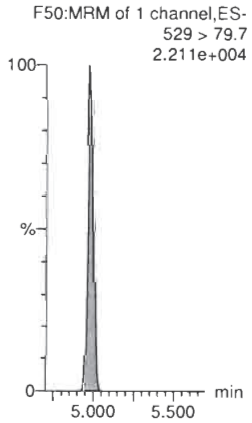
Vista Analytical Laboratory

Dataset: Untitled

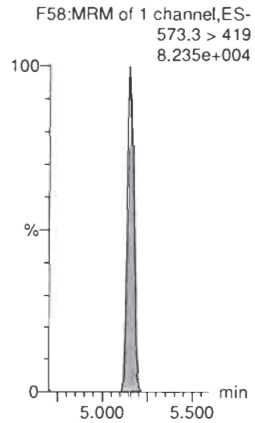
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

13C2-8:2 FTS-RSD



d3-N-MeFOSAA-RSD



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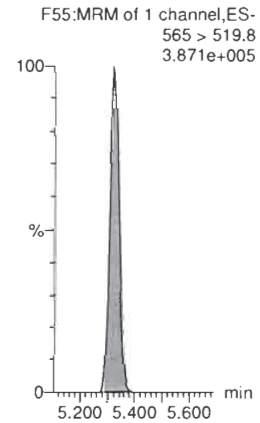

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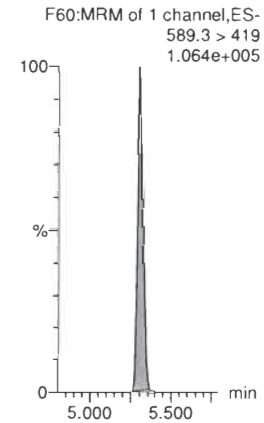

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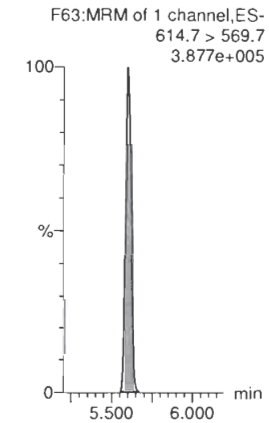
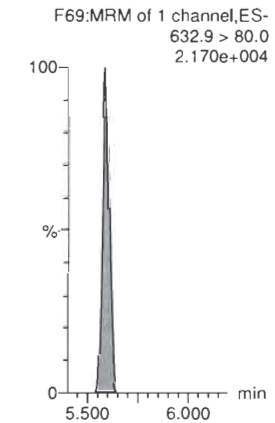


13C2-10:2 FTS-RSD



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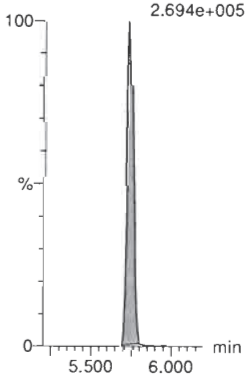
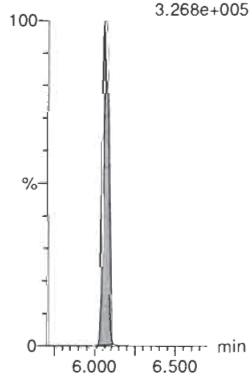
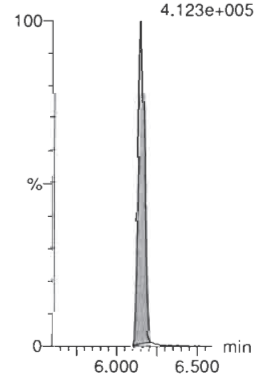


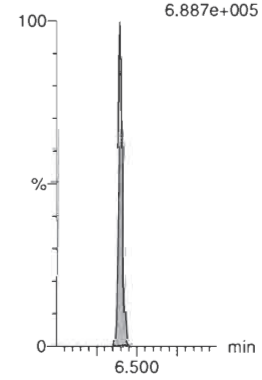
13C2-PFTeDA-RSD



d5-N-ETFOSA-RSD



13C2-PFHxDA-RSD



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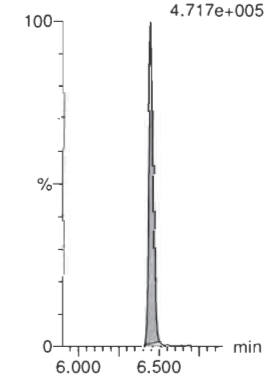

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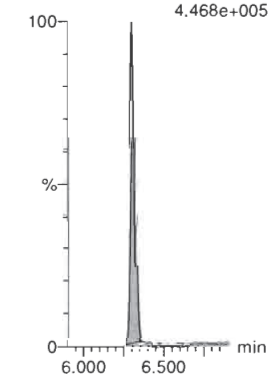

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-3, Date: 29-Feb-2020, Time: 15:45:57, ID: ST200229P1-1 PFC CS-2 20B1102, Description: PFC CS-2 20B1102

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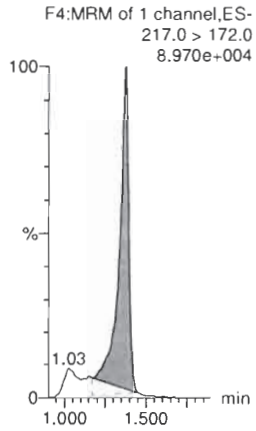

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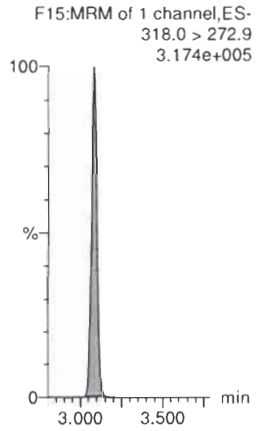

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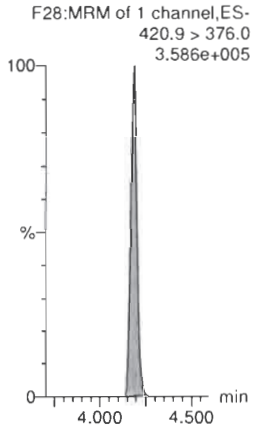

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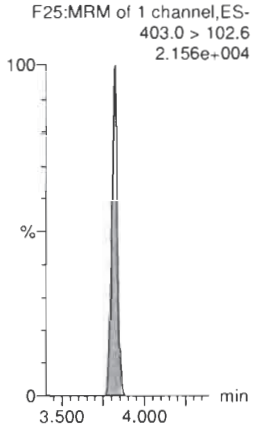
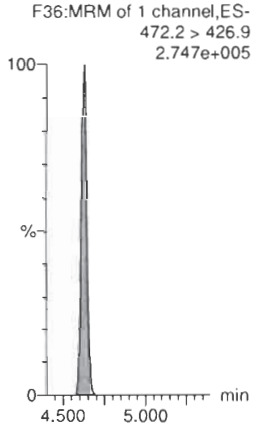


13C9-PFNA



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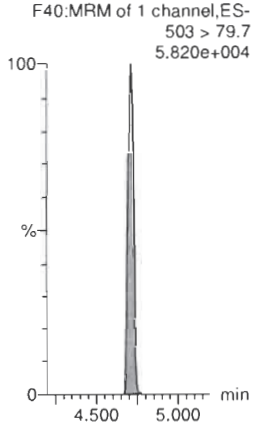
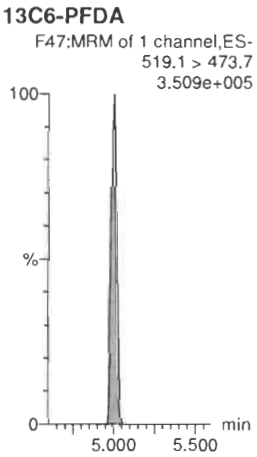
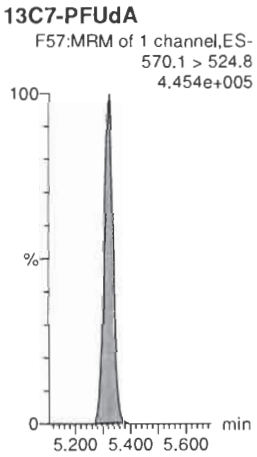


13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 09:58:33 Pacific Standard Time

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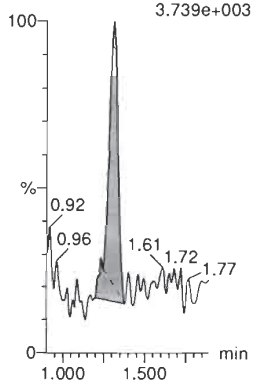
PFBA



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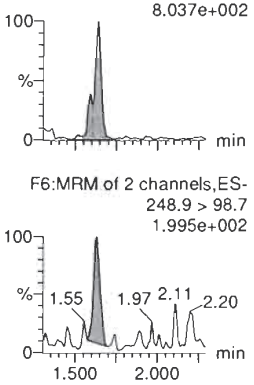

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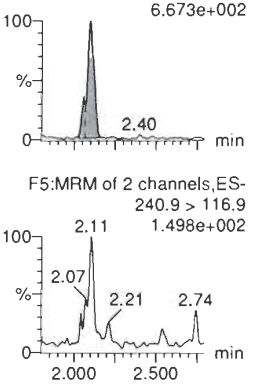

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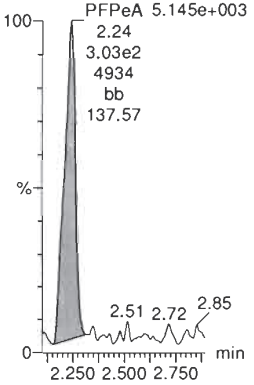
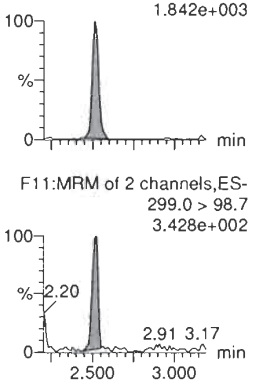


PFBS



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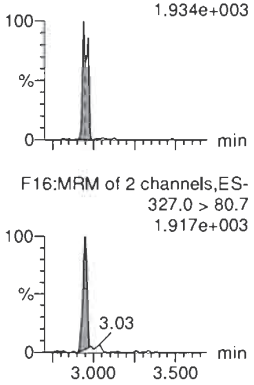
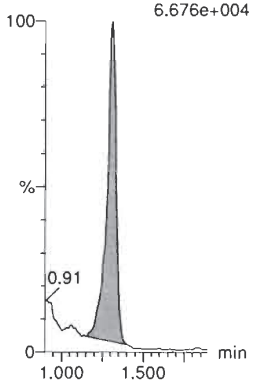
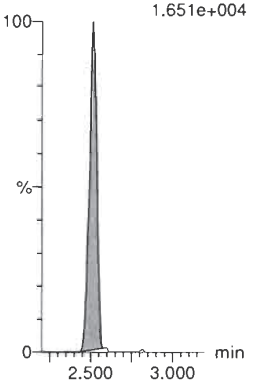


13C3-PFBA-EIS



13C3-PFBS-EIS



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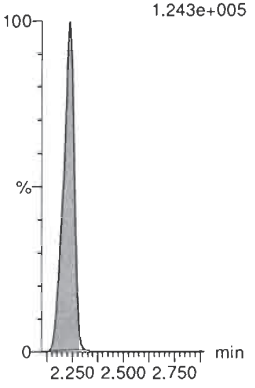

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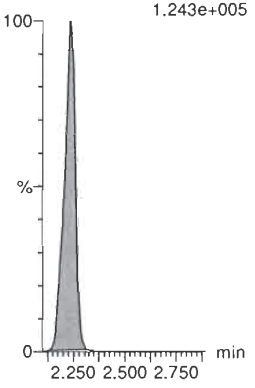

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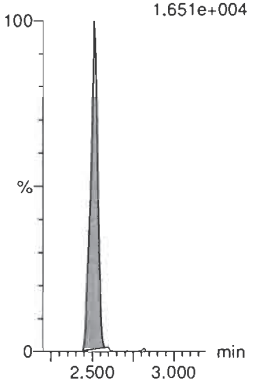

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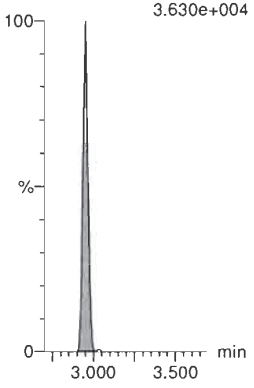

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

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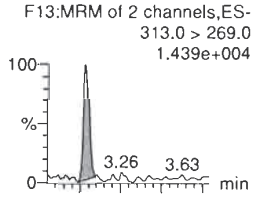

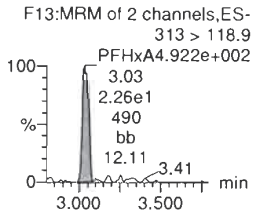

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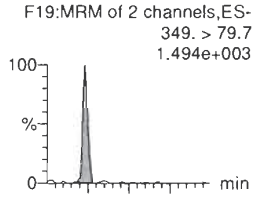

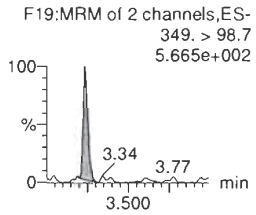

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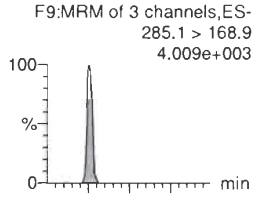

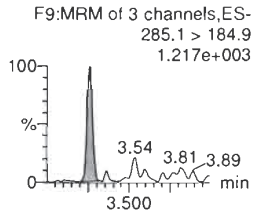

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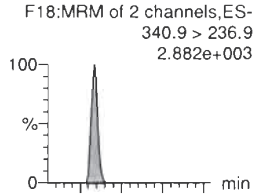

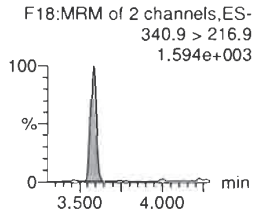

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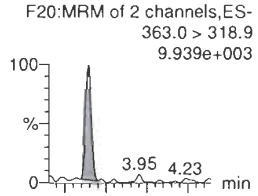

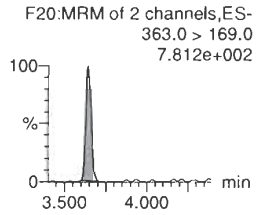

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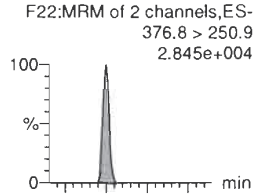

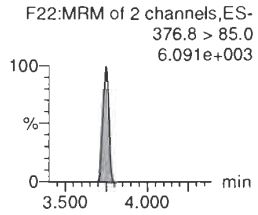

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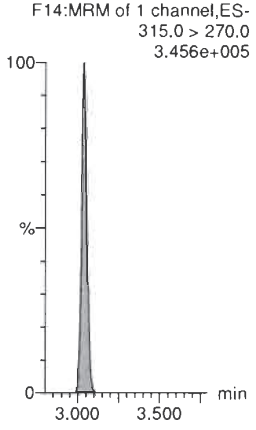

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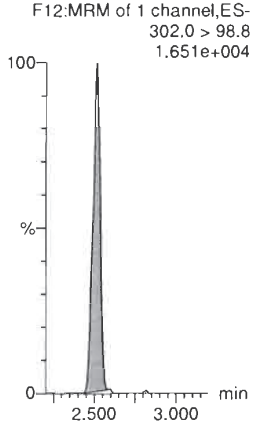

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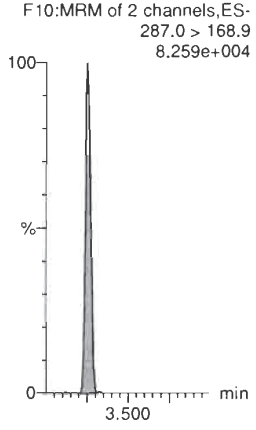

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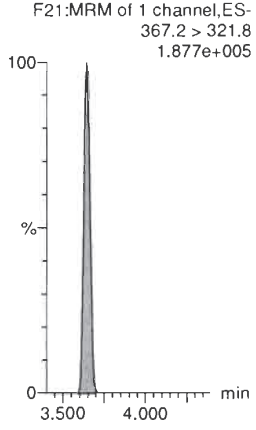

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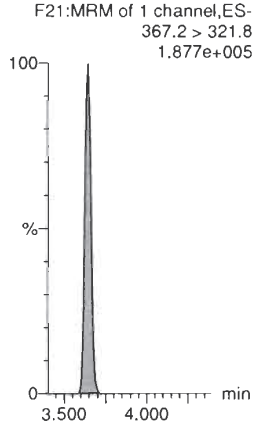

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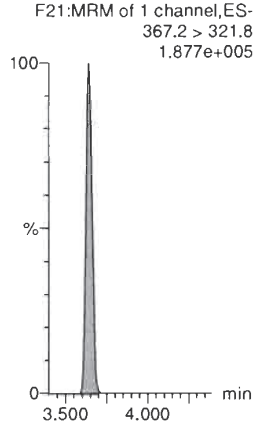

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

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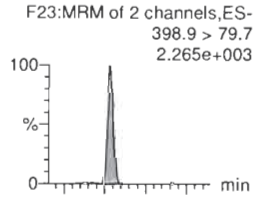

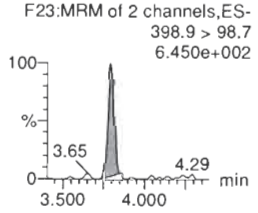

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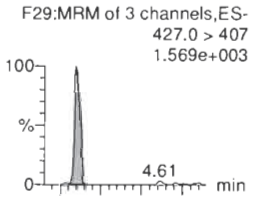

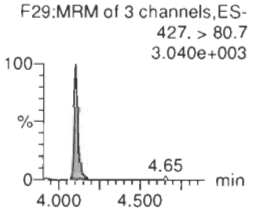

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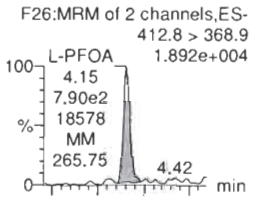

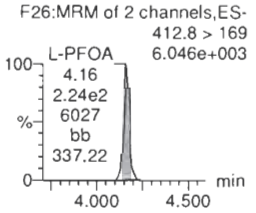

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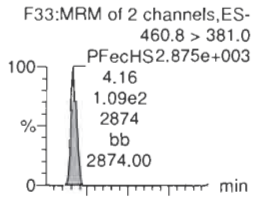

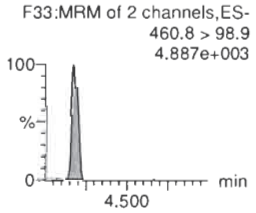

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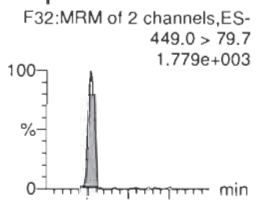

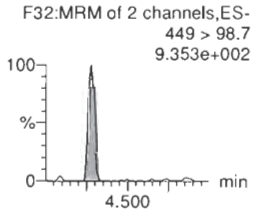

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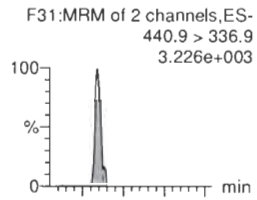

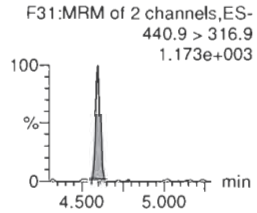

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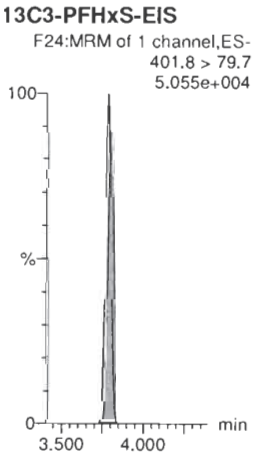

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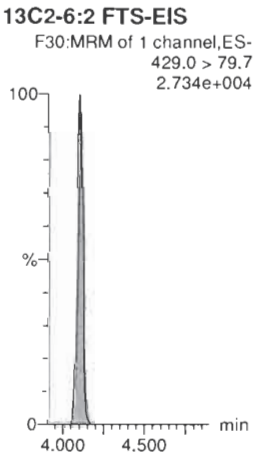

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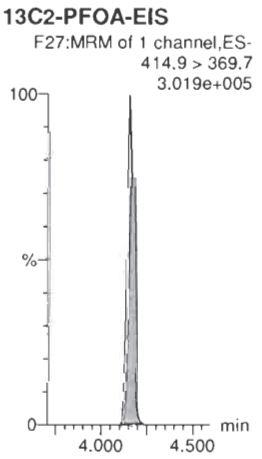

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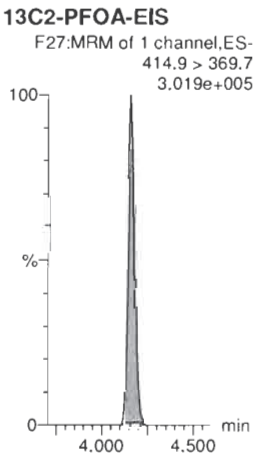

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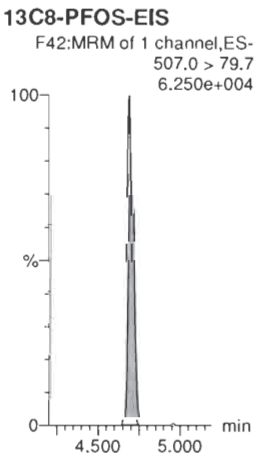

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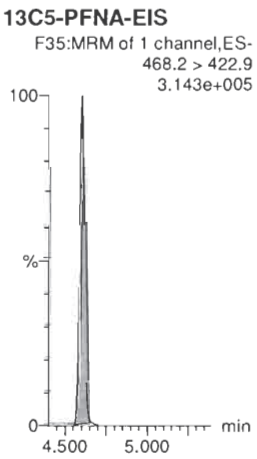

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

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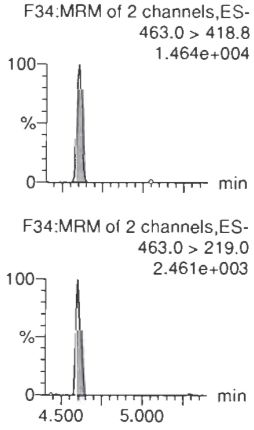

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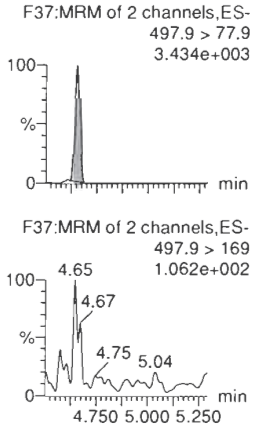

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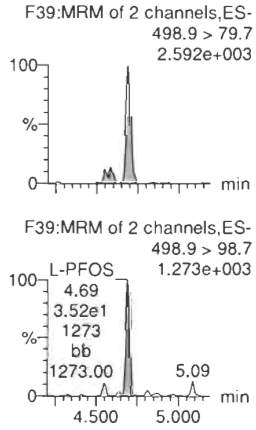

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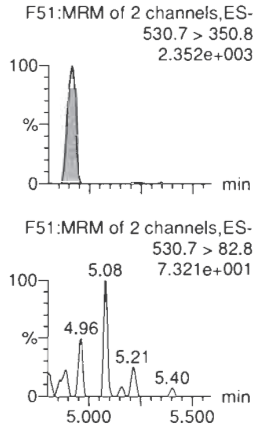

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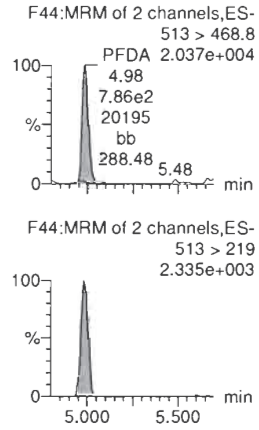

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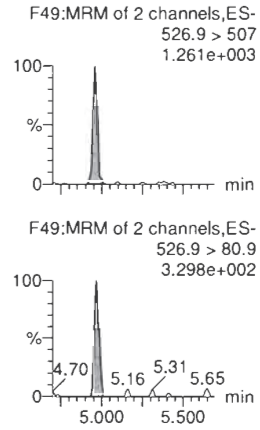

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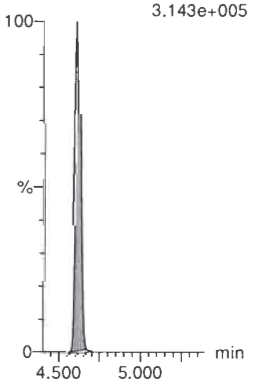

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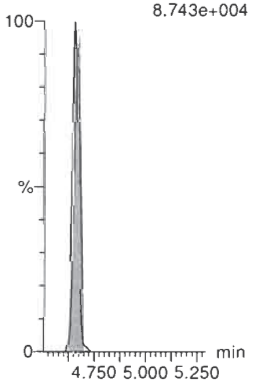

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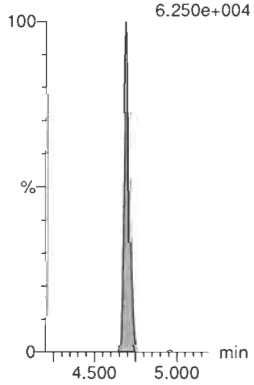

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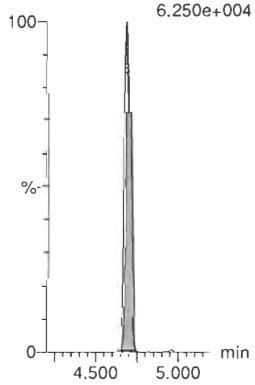

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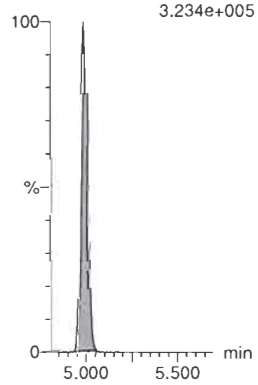
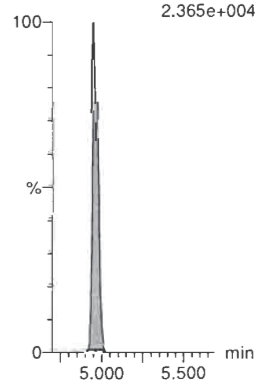


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

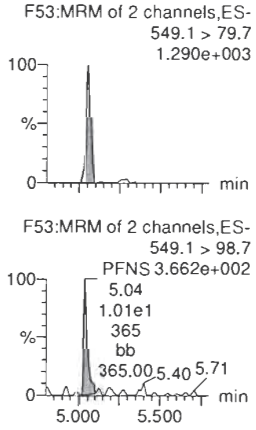
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

PFNS



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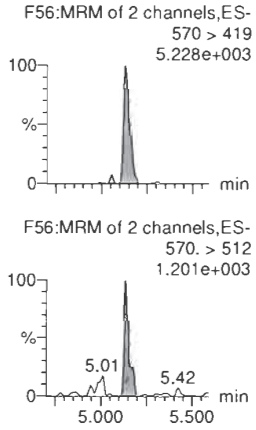

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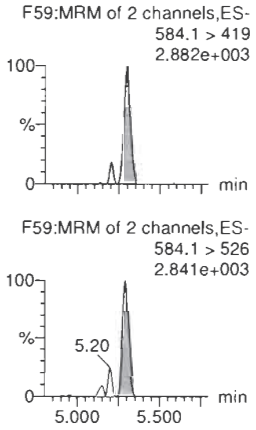

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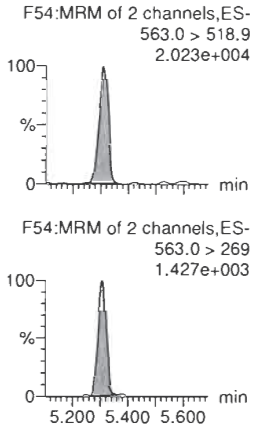

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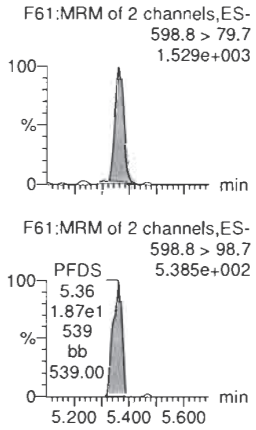

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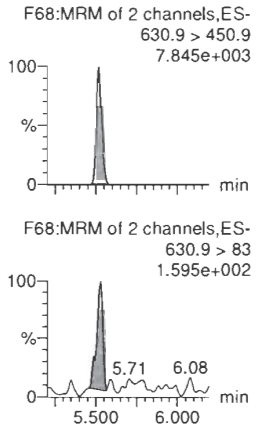
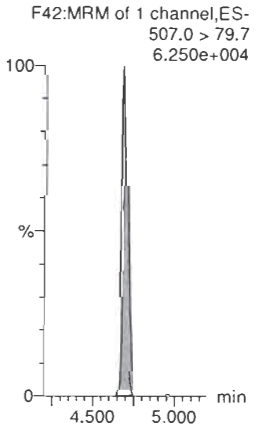
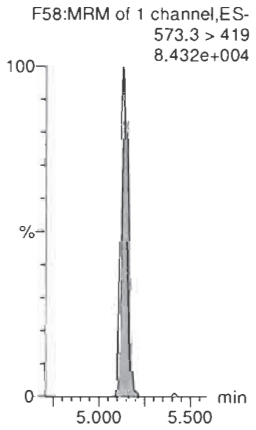


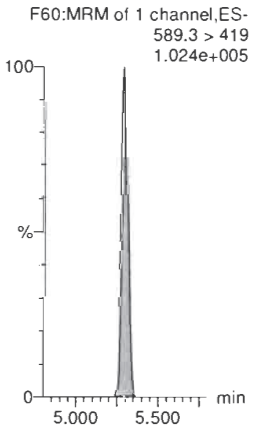
13C8-PFOS-EIS



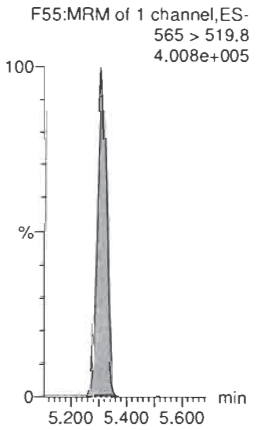
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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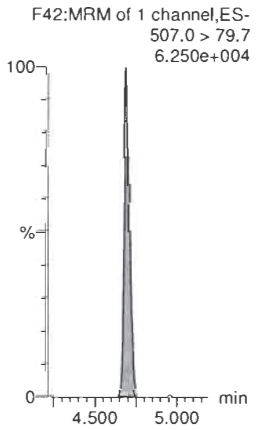

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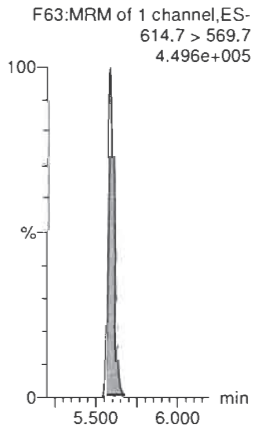

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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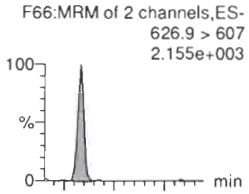
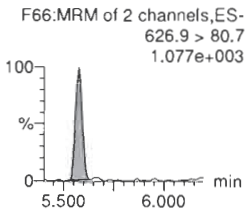
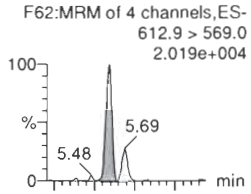
Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

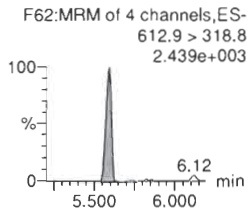
10:2 FTS



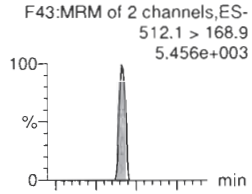


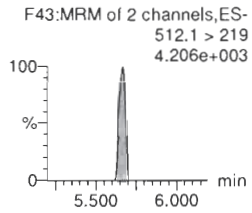
PFDoA





N-MeFOSA





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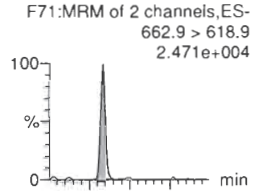

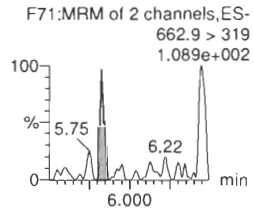

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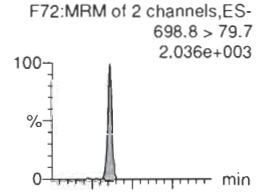

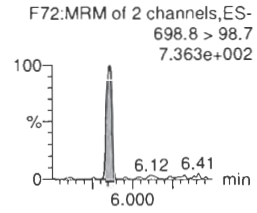

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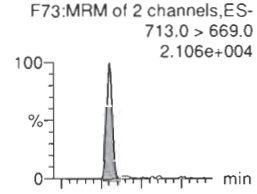
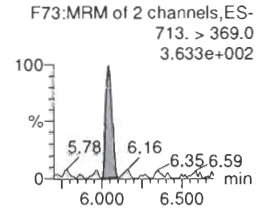
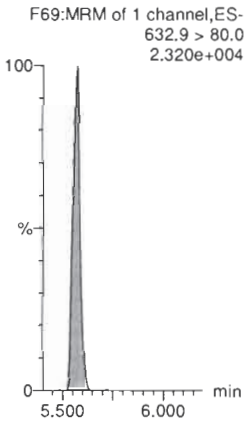
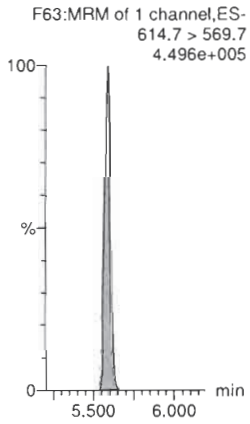




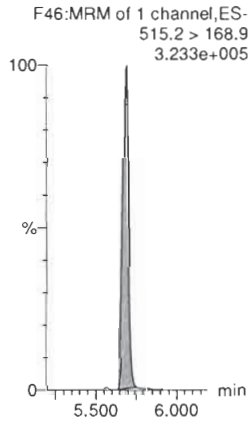
13C2-10:2 FTS-EIS



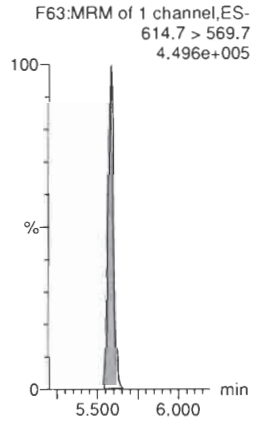
13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



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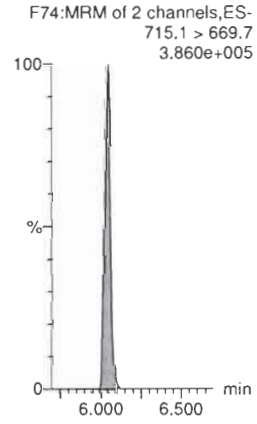

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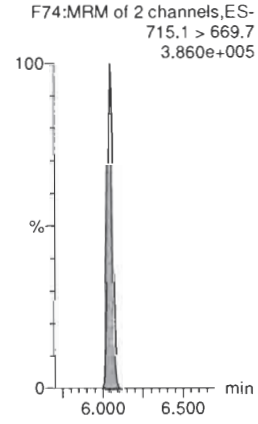


Quantify Sample Report **MassLynx V4.2 SCN977**

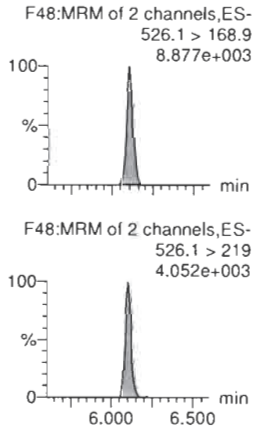
Vista Analytical Laboratory

Dataset: Untitled

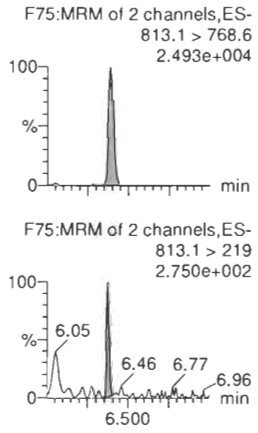
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

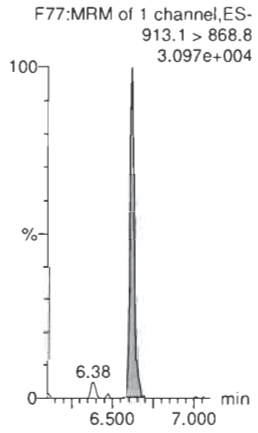
N-EtFOSA



PFHxDA



PFODA



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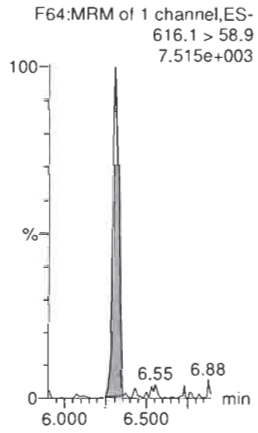

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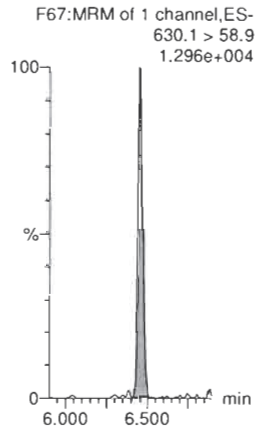

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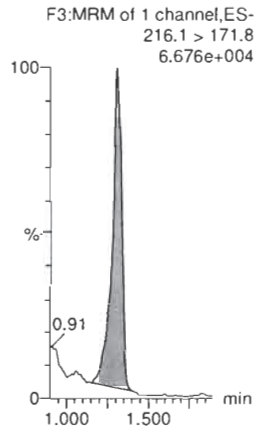
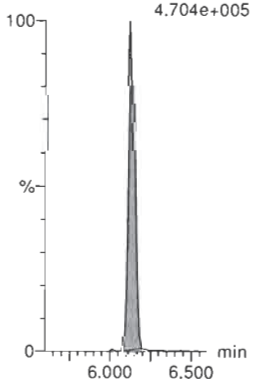
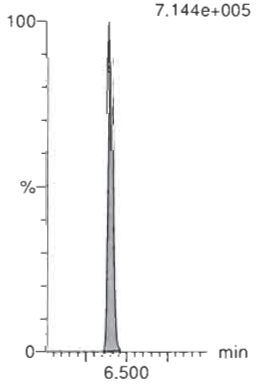


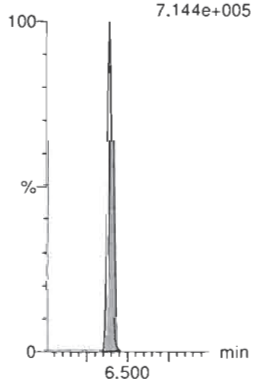
d5-N-ETFOSA-EIS



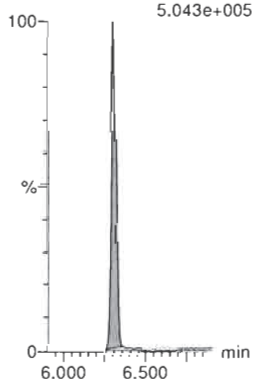
13C2-PFHxDA-EIS



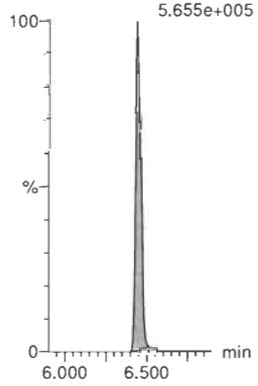
13C2-PFHxDA-EIS



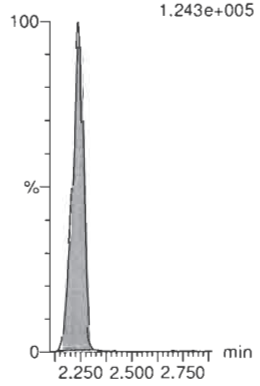
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

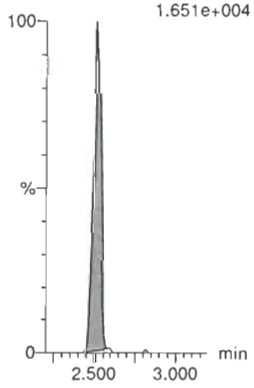
Vista Analytical Laboratory

Dataset: Untitled

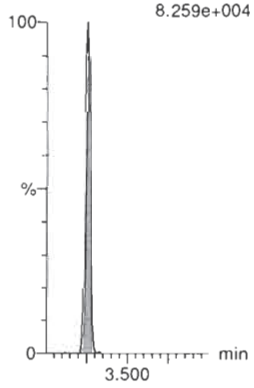
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

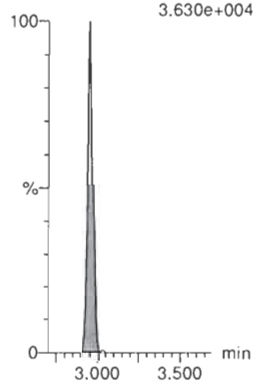
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.651e+004



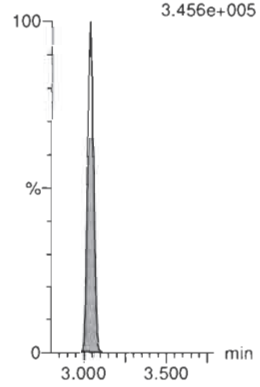
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.259e+004



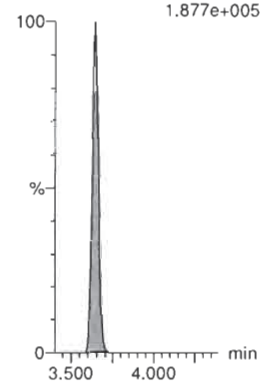
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.630e+004



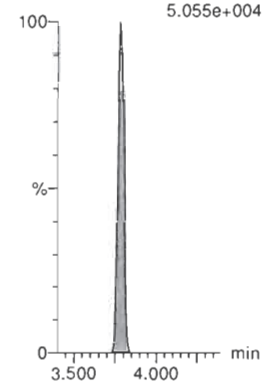
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.456e+005



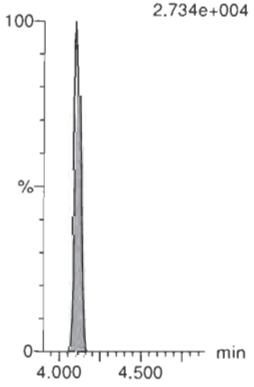
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.877e+005



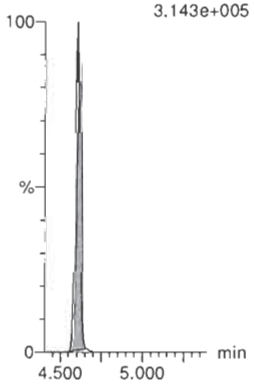
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
5.055e+004



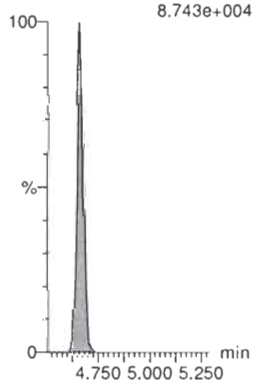
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.734e+004



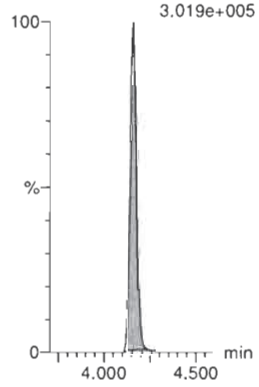
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
3.143e+005



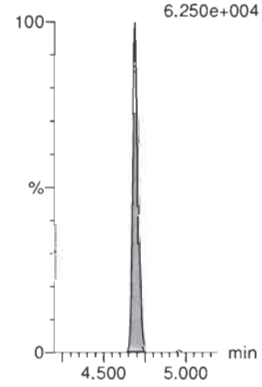
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.743e+004



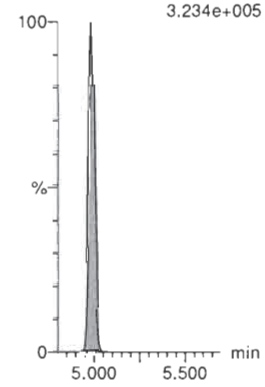
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.019e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.250e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.234e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

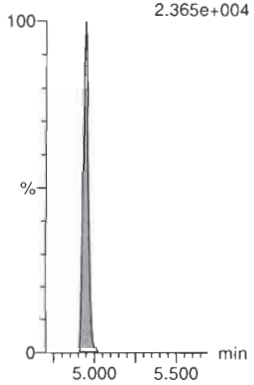
Vista Analytical Laboratory

Dataset: Untitled

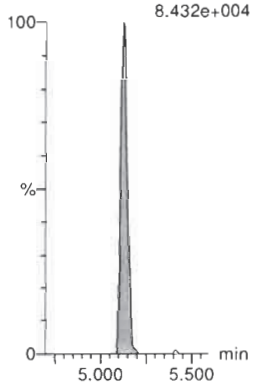
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

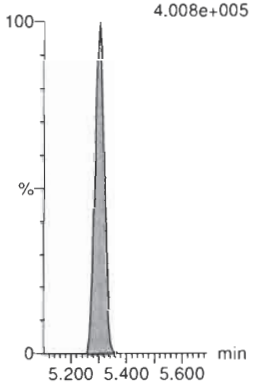
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.365e+004



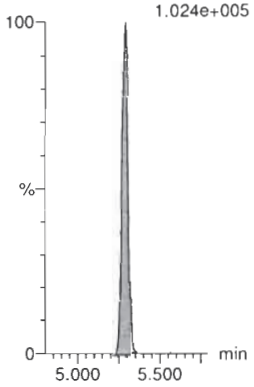
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
8.432e+004



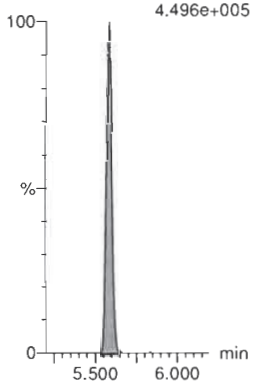
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.008e+005



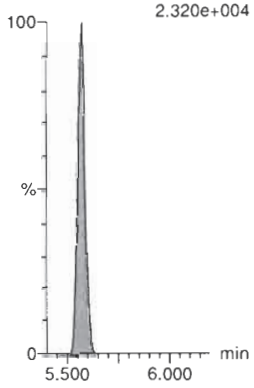
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.024e+005



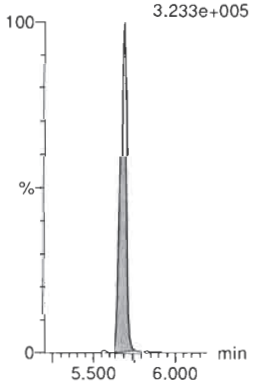
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.496e+005



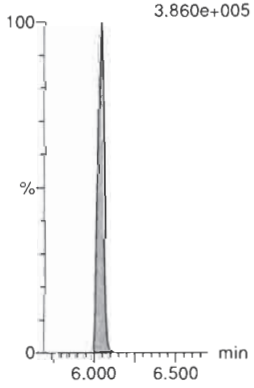
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.320e+004



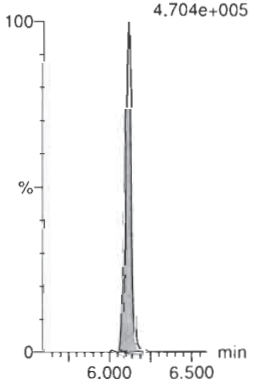
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.233e+005



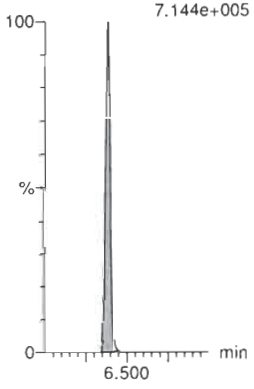
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.860e+005



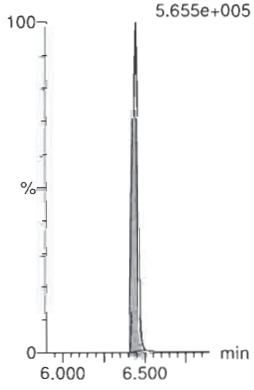
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.704e+005



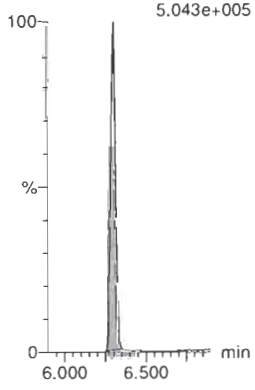
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
7.144e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.655e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.043e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

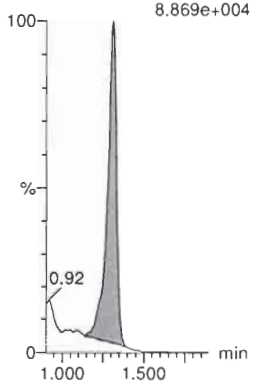
Vista Analytical Laboratory

Dataset: Untitled

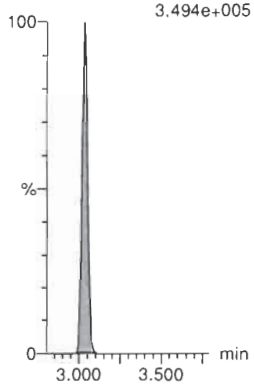
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-4, Date: 29-Feb-2020, Time: 15:56:29, ID: ST200229P1-2 PFC CS-1 20B1103, Description: PFC CS-1 20B1103

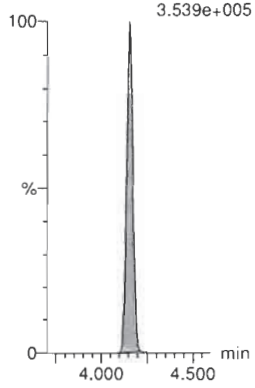
13C4-PFBA



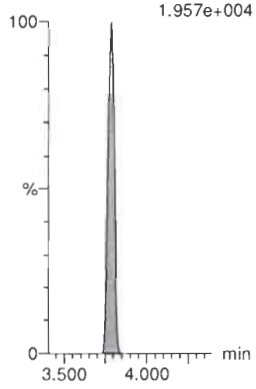
13C5-PFHxA



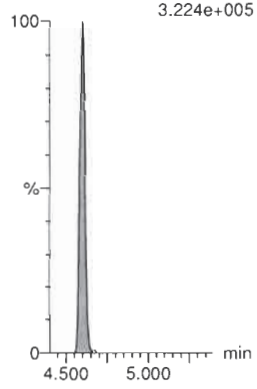
13C8-PFOA



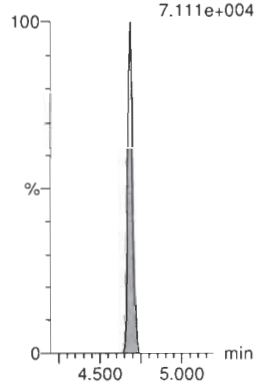
18O2-PFHxS



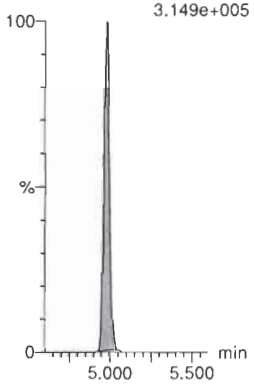
13C9-PFNA



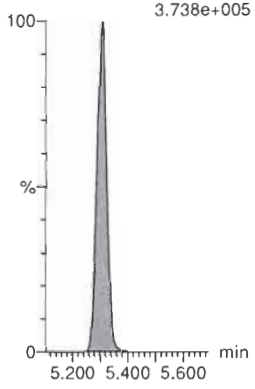
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

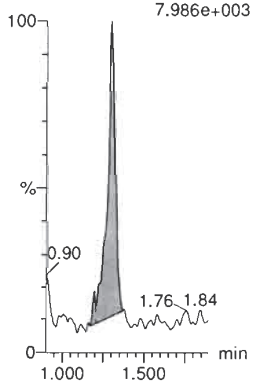
Vista Analytical Laboratory

Dataset: Untitled

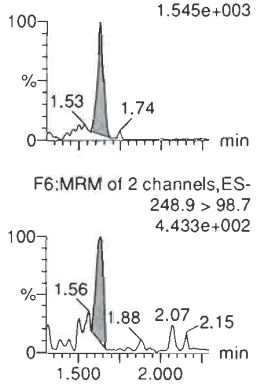
Last Altered: Monday, March 02, 2020 09:57:42 Pacific Standard Time
Printed: Monday, March 02, 2020 09:58:33 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

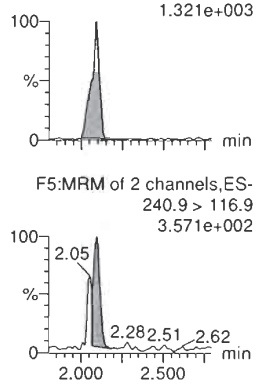
PFBA



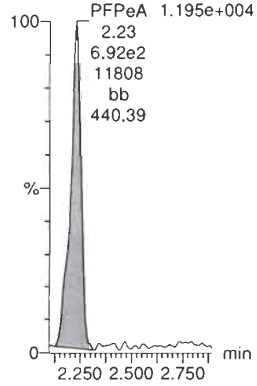
PFPrS



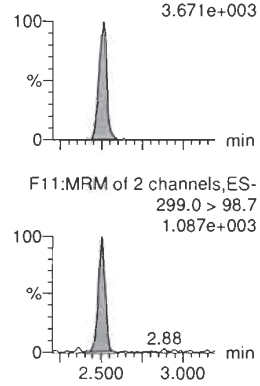
3:3 FTCA



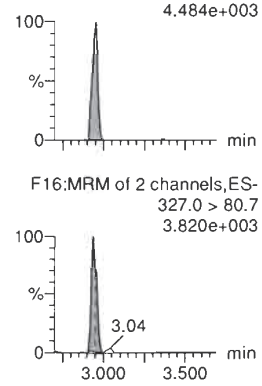
PFPeA



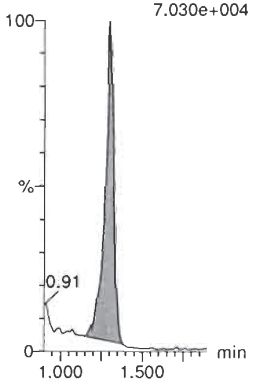
PFBS



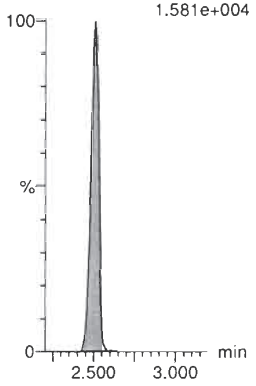
4:2 FTS



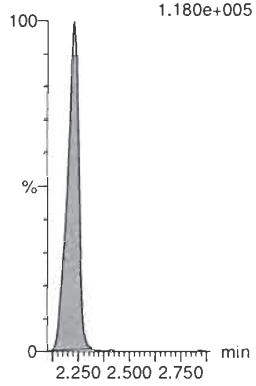
13C3-PFBA-EIS



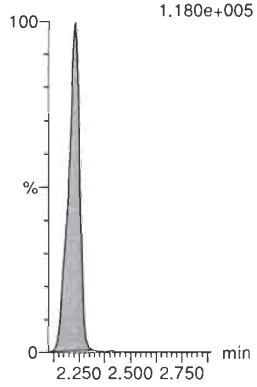
13C3-PFBS-EIS



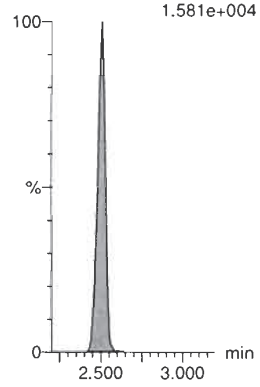
13C3-PFPeA-EIS



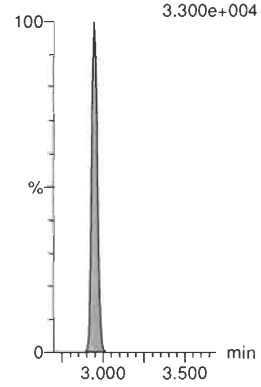
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

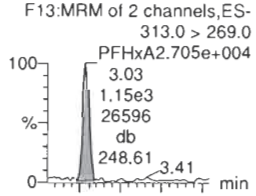
Vista Analytical Laboratory

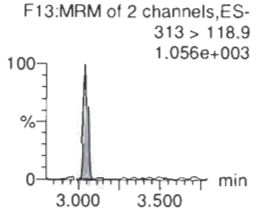
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

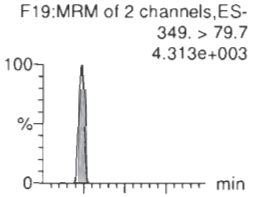
Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

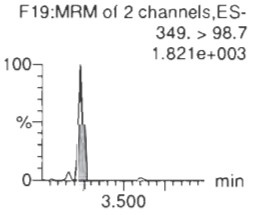
PFHxA



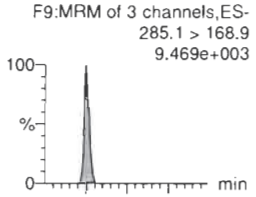


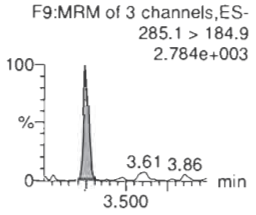
PFPeS



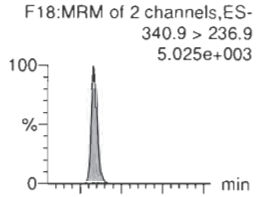


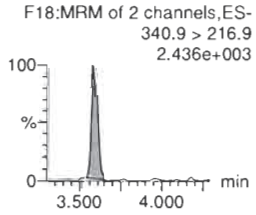
HFPO-DA



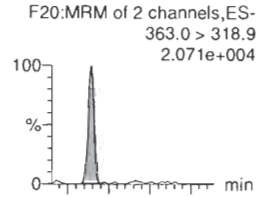


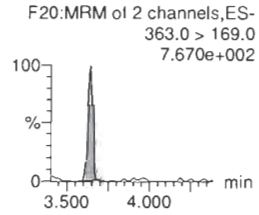
5:3 FTCA



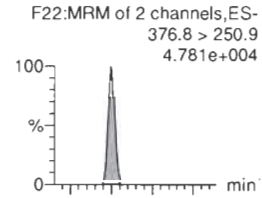


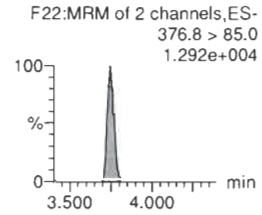
PFHpA



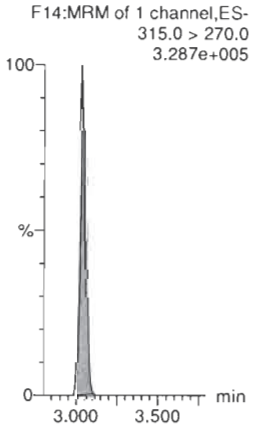


ADONA





13C2-PFHxA-EIS



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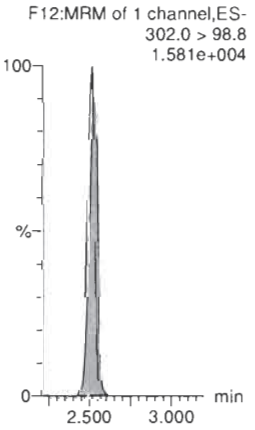

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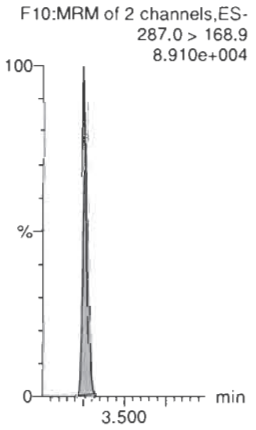

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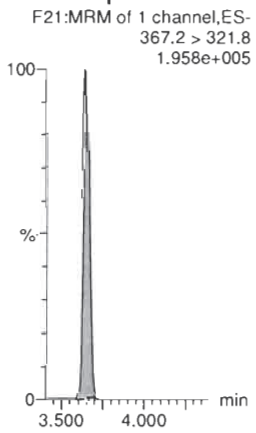

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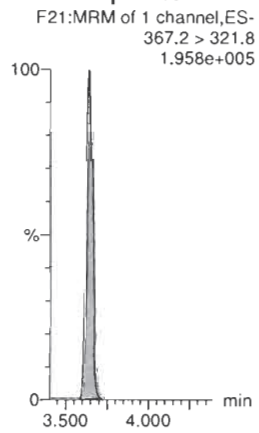

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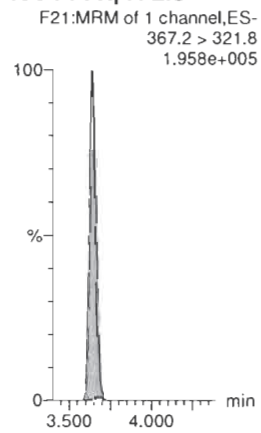

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:57:42 Pacific Standard Time
Printed: Monday, March 02, 2020 09:58:33 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

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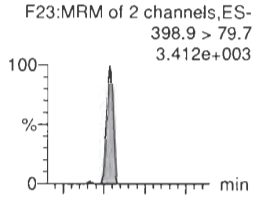

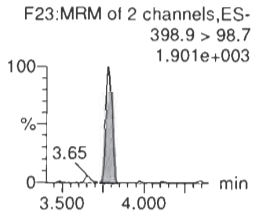

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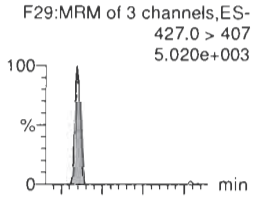

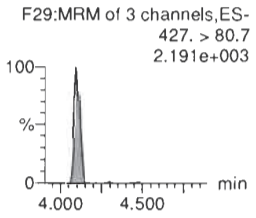

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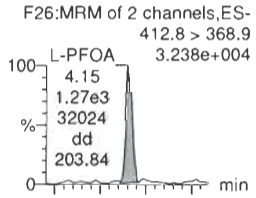

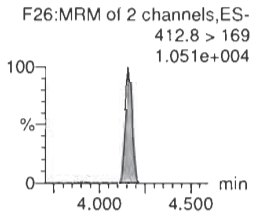

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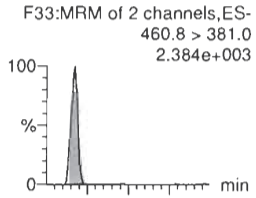

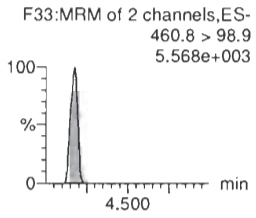

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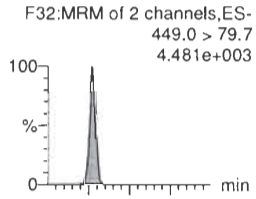

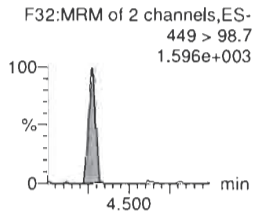

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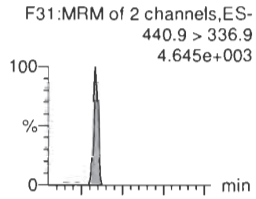

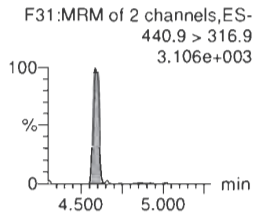

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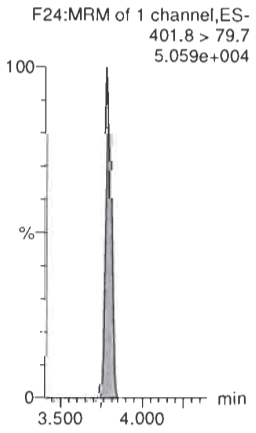

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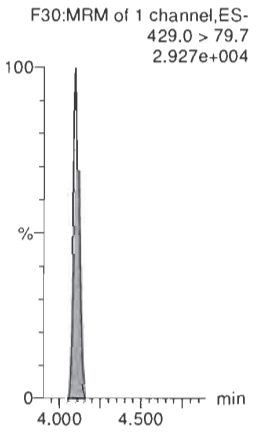

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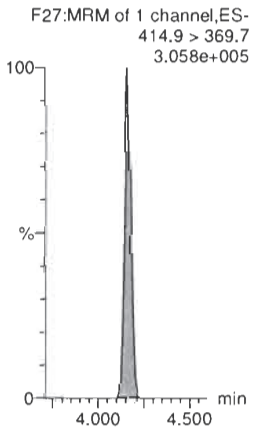

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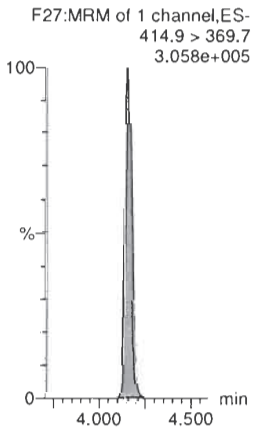

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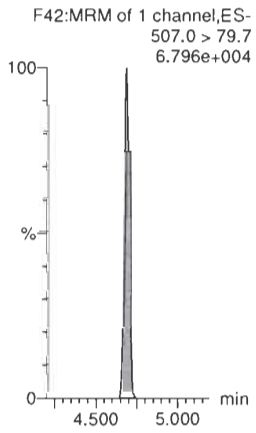

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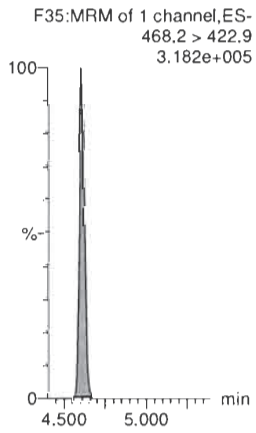

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

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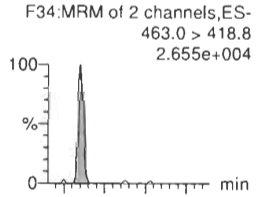

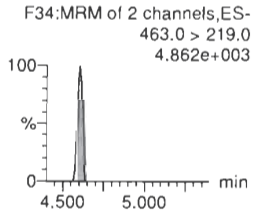

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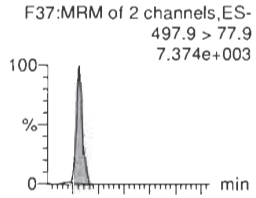

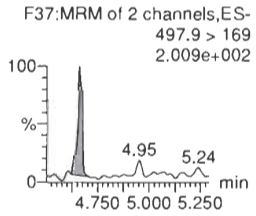

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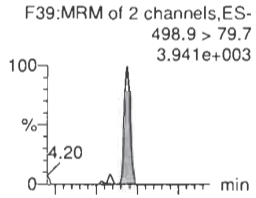

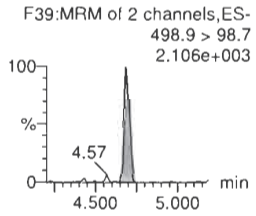

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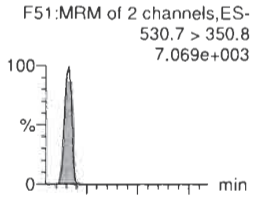

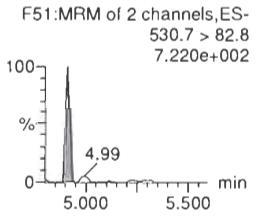

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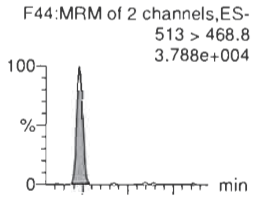

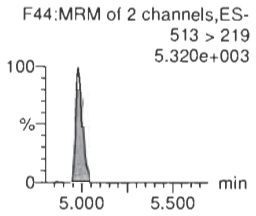

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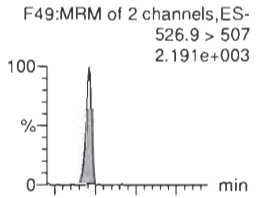

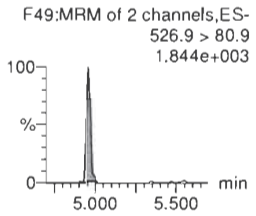

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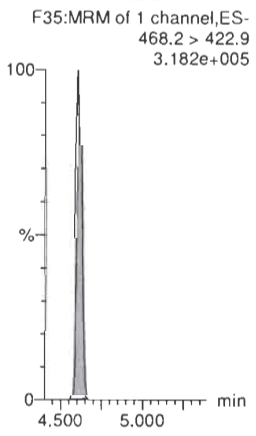

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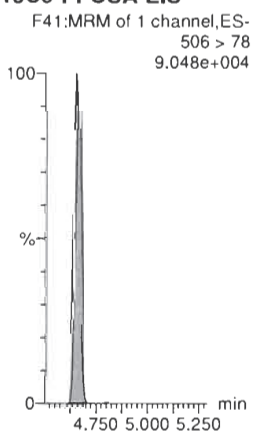

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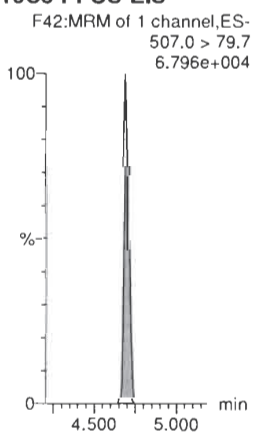

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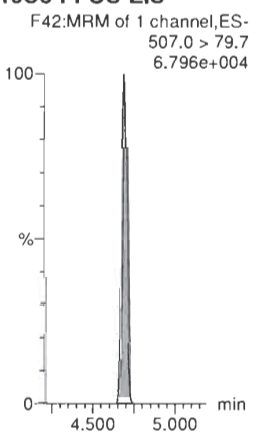

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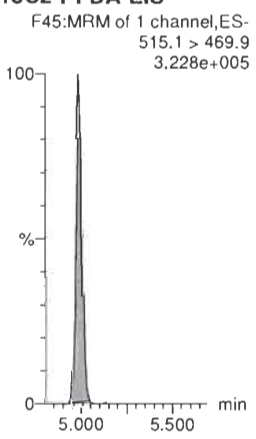

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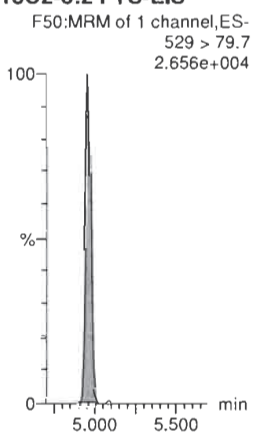


Quantify Sample Report **MassLynx V4.2 SCN977**

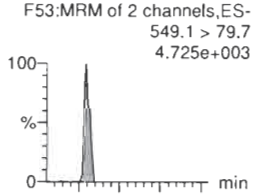
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

PFNS



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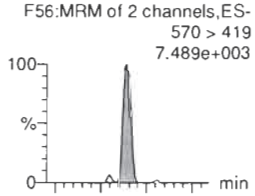

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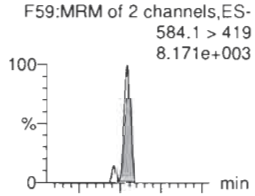

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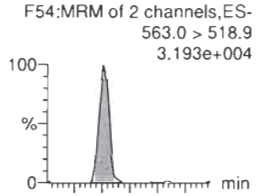

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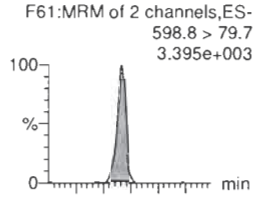

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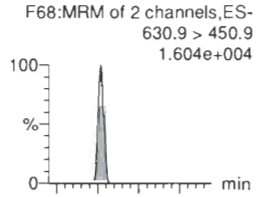

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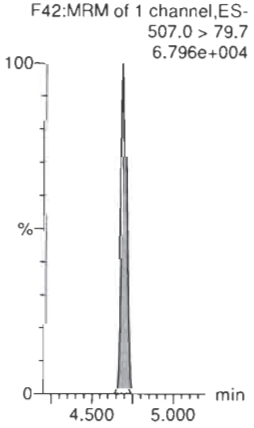

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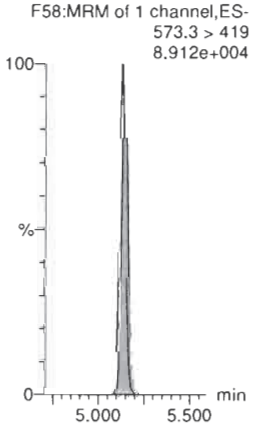
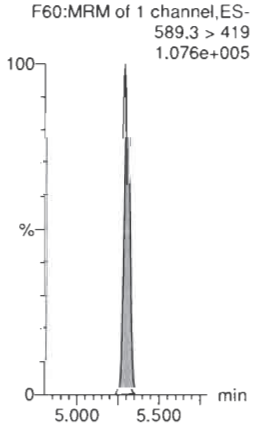


d5-N-EtFOSAA-EIS



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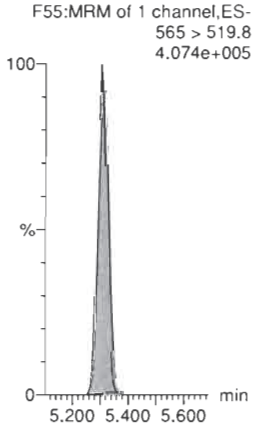
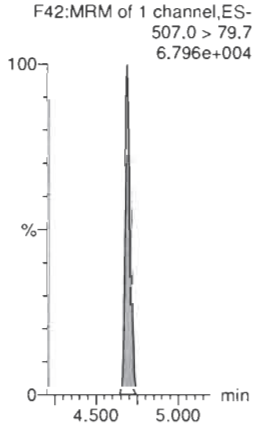
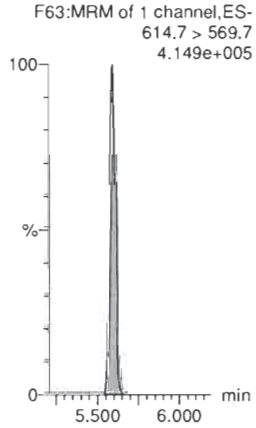


13C8-PFOS-EIS



13C2-PFDoA-EIS



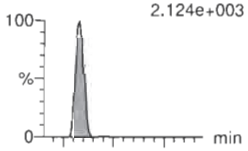
Quantify Sample Report **MassLynx V4.2 SCN977** Page 26 of 100
Vista Analytical Laboratory

Dataset: Untitled

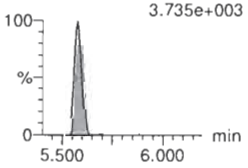
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

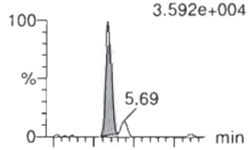
10:2 FTS
F66:MRM of 2 channels,ES-
626.9 > 607
2.124e+003



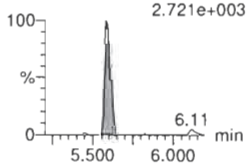
F66:MRM of 2 channels,ES-
626.9 > 80.7
3.735e+003



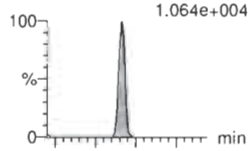
PFDoA
F62:MRM of 4 channels,ES-
612.9 > 569.0
3.592e+004



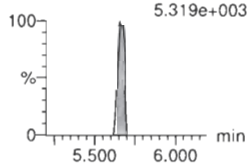
F62:MRM of 4 channels,ES-
612.9 > 318.8
2.721e+003



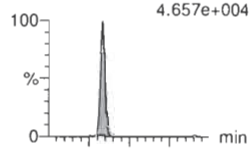
N-MeFOSA
F43:MRM of 2 channels,ES-
512.1 > 168.9
1.064e+004



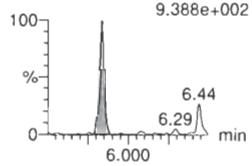
F43:MRM of 2 channels,ES-
512.1 > 219
5.319e+003



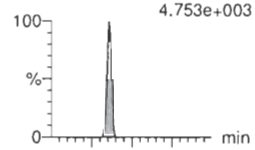
PFTrDA
F71:MRM of 2 channels,ES-
662.9 > 618.9
4.657e+004



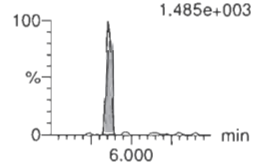
F71:MRM of 2 channels,ES-
662.9 > 319
9.388e+002



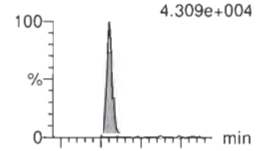
PFDoS
F72:MRM of 2 channels,ES-
698.8 > 79.7
4.753e+003



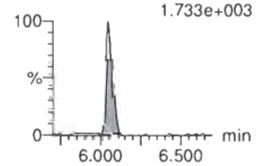
F72:MRM of 2 channels,ES-
698.8 > 98.7
1.485e+003



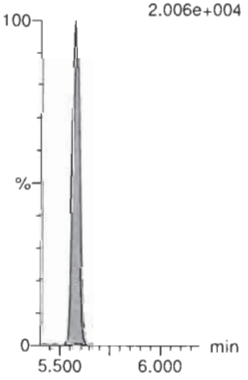
PFTeDA
F73:MRM of 2 channels,ES-
713.0 > 669.0
4.309e+004



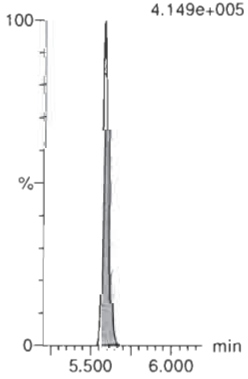
F73:MRM of 2 channels,ES-
713. > 369.0
1.733e+003



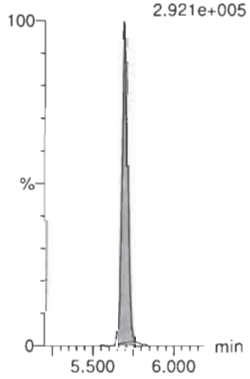
13C2-10:2 FTS-EIS
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.006e+004



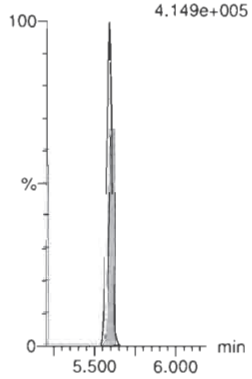
13C2-PFDoA-EIS
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.149e+005



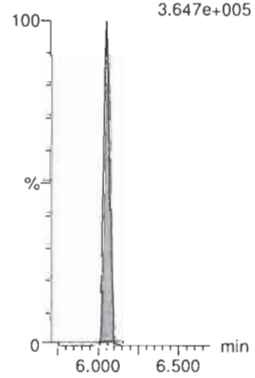
d3-N-MeFOSA-EIS
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.921e+005



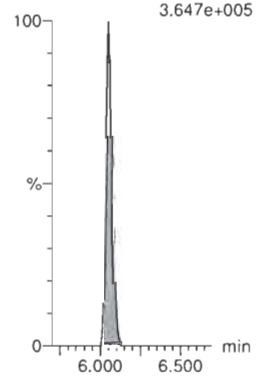
13C2-PFDoA-EIS
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.149e+005



13C2-PFTeDA-EIS
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.647e+005



13C2-PFTeDA-EIS
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.647e+005



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Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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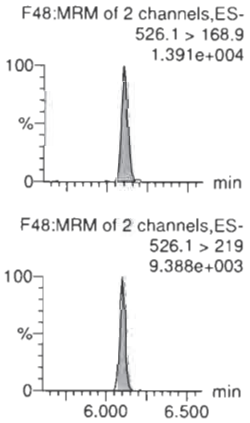
Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

N-EtFOSA



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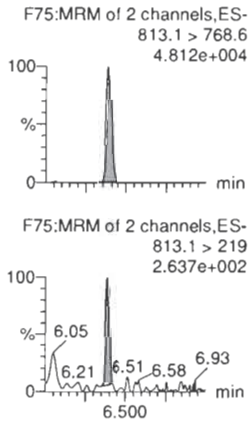
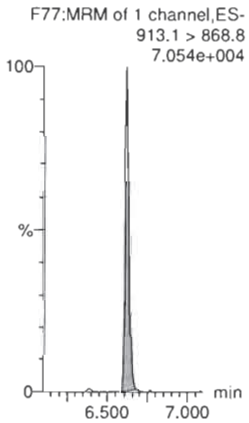
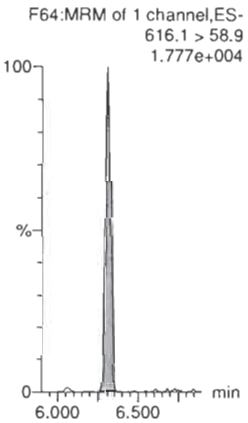


PFODA



N-MeFOSE



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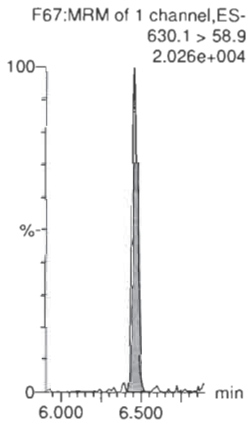

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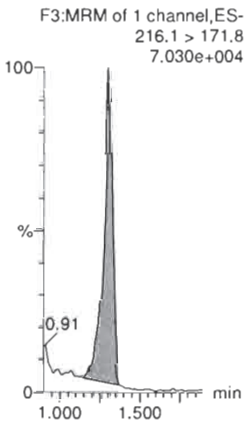
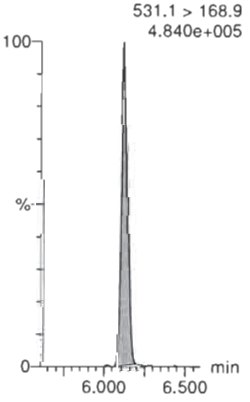
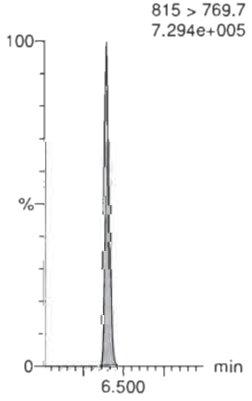


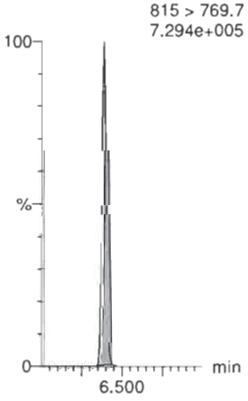
d5-N-ETFOSA-EIS



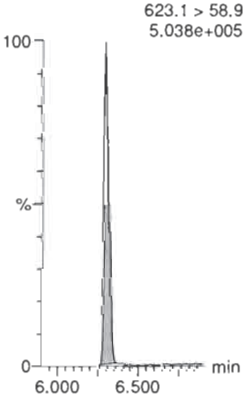
13C2-PFHxDA-EIS



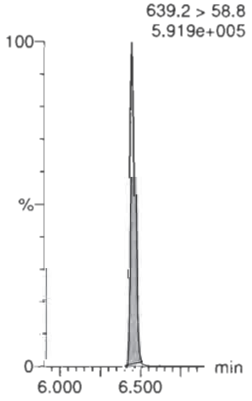
13C2-PFHxDA-EIS



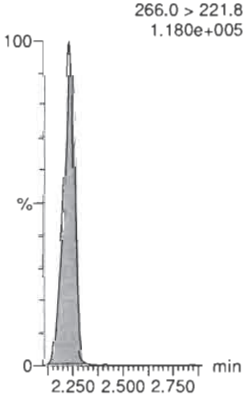
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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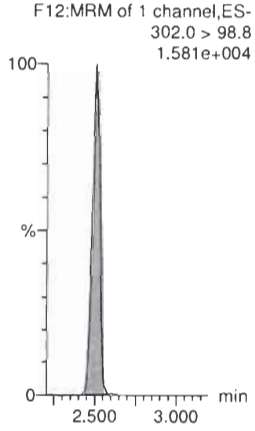
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

13C3-PFBS-RSD



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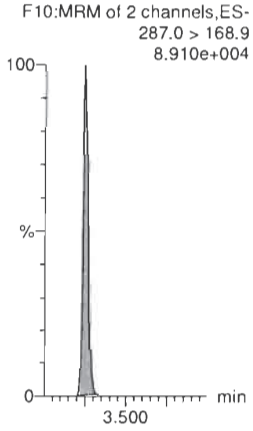
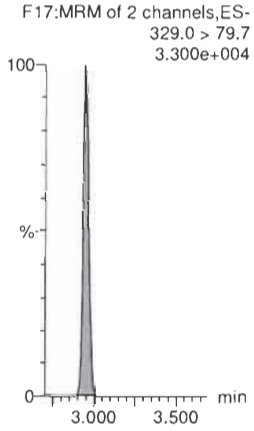


13C2-4:2 FTS-RSD



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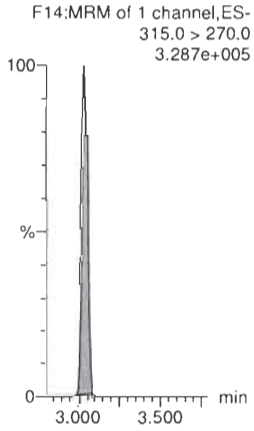

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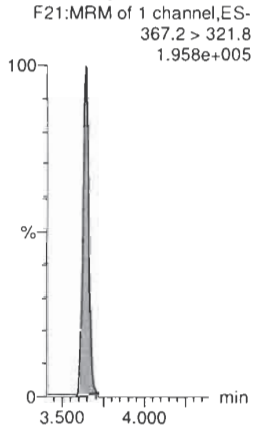
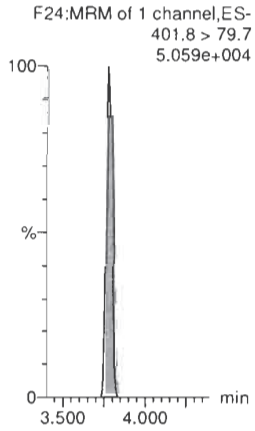
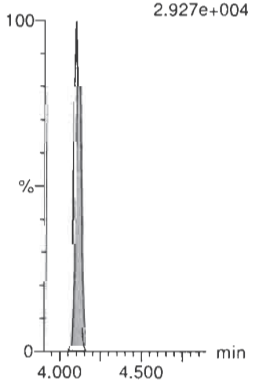


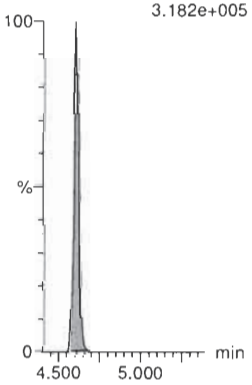
13C3-PFHxS-RSD



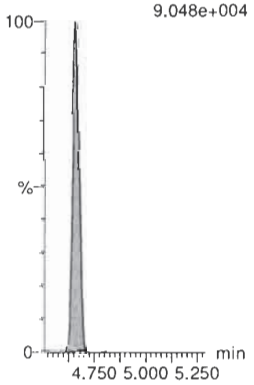
13C2-6:2 FTS-RSD



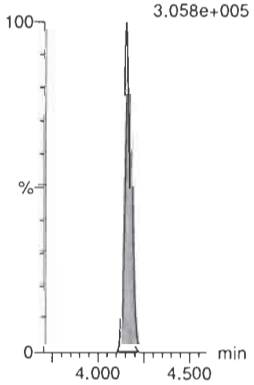
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD



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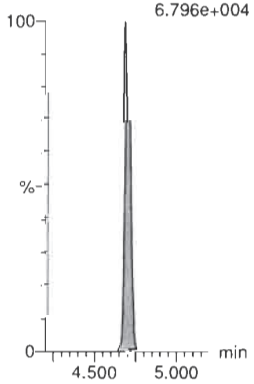
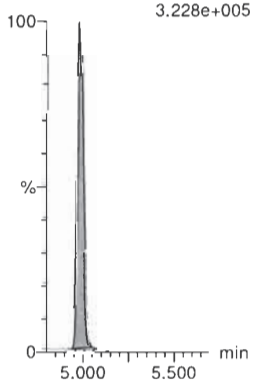


13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977** Page 29 of 100
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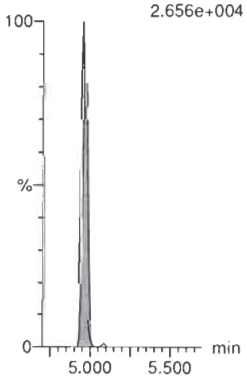
Dataset: Untitled

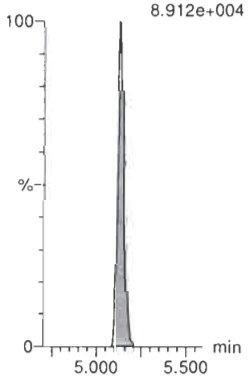
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

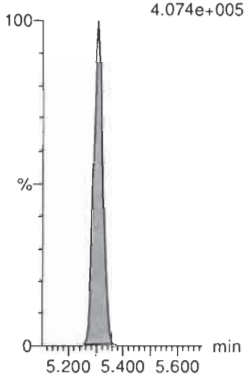
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.656e+004



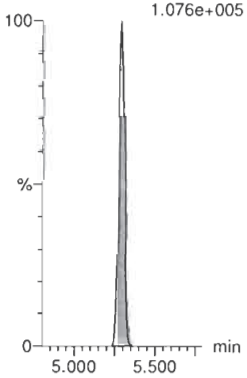
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
8.912e+004



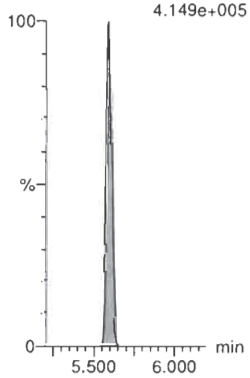
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.074e+005



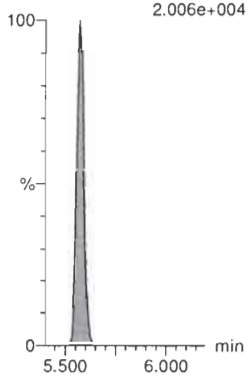
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.076e+005



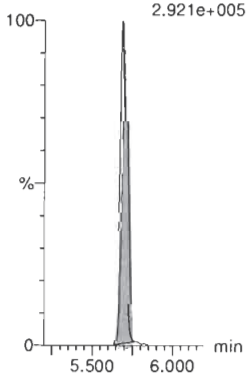
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.149e+005



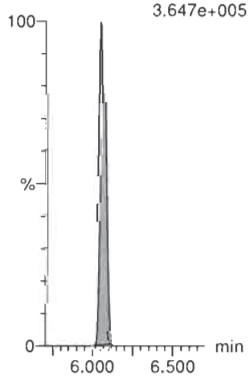
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.006e+004



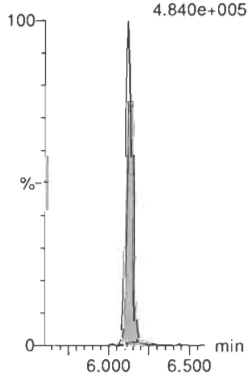
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.921e+005



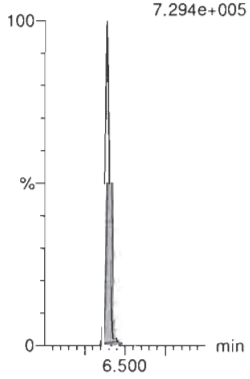
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.647e+005



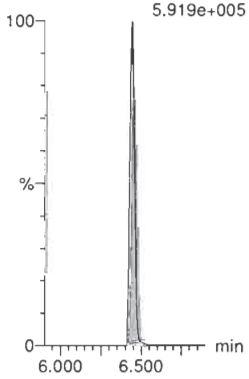
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.840e+005



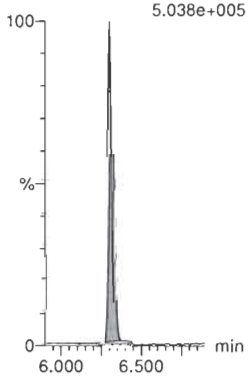
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
7.294e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.919e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.038e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-5, Date: 29-Feb-2020, Time: 16:06:57, ID: ST200229P1-3 PFC CS0 20B1104, Description: PFC CS0 20B1104

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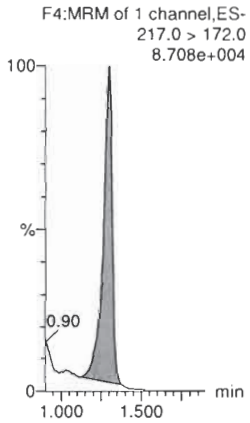
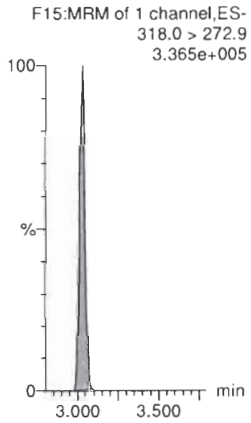
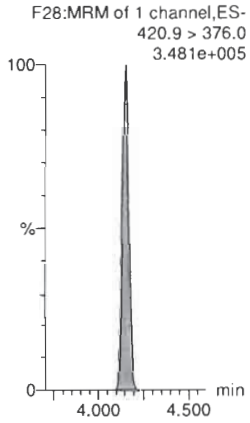


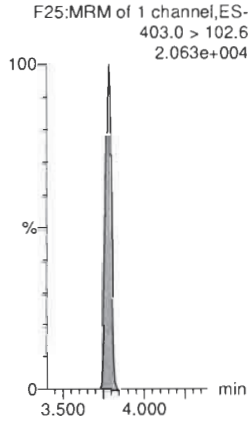
13C5-PFHxA



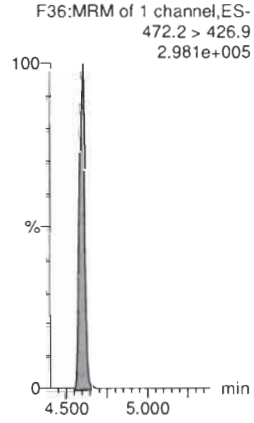
13C8-PFOA



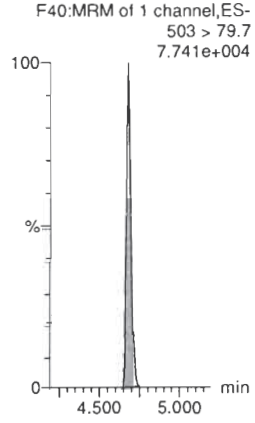
18O2-PFHxS



13C9-PFNA



13C4-PFOS



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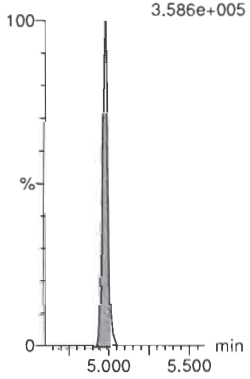
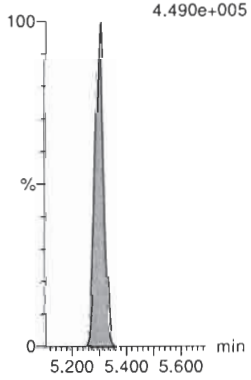


13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

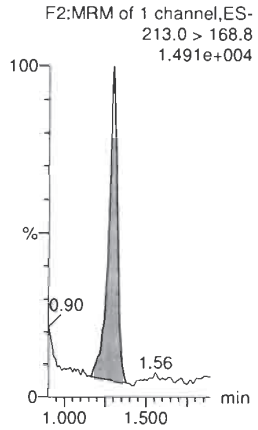
Vista Analytical Laboratory

Dataset: Untitled

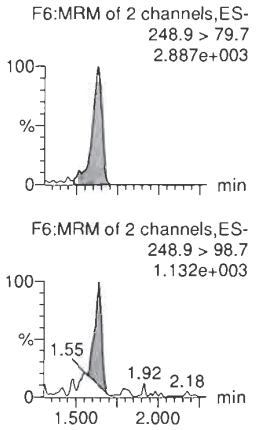
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

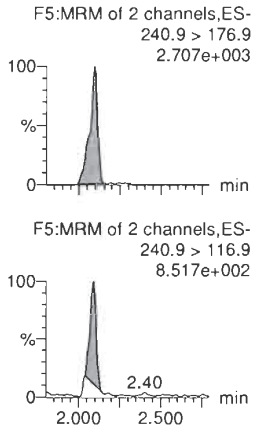
PFBA



PFPrS



3:3 FTCA



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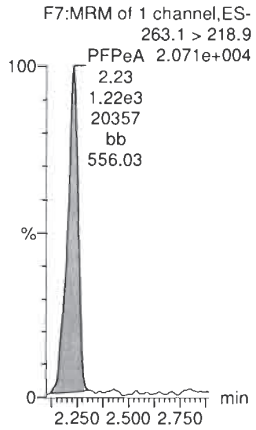

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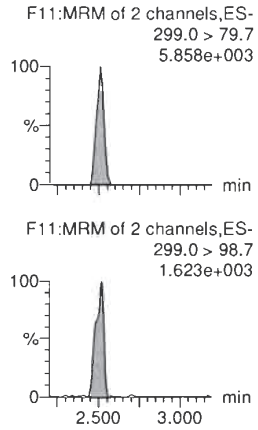
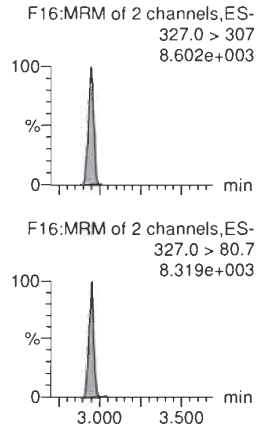
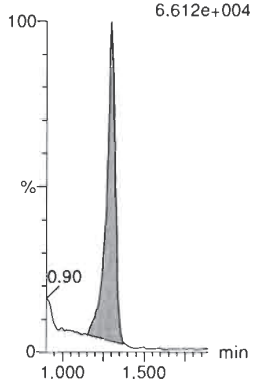


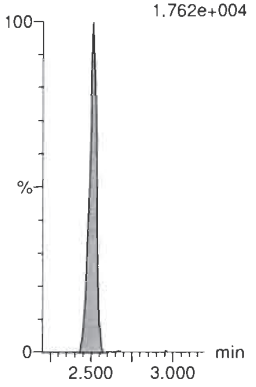
4:2 FTS



13C3-PFBA-EIS



13C3-PFBS-EIS



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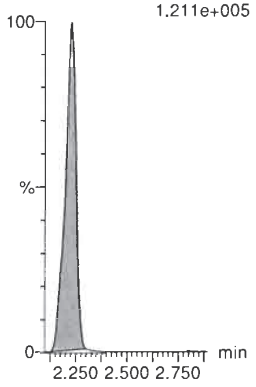

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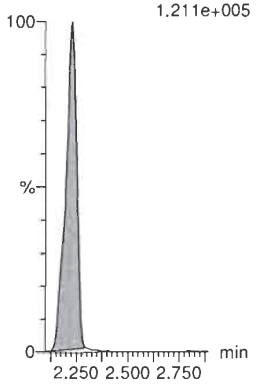

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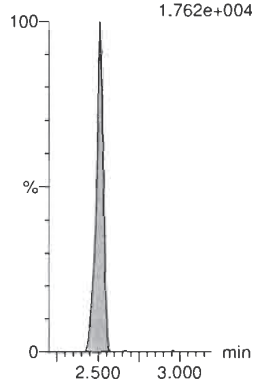

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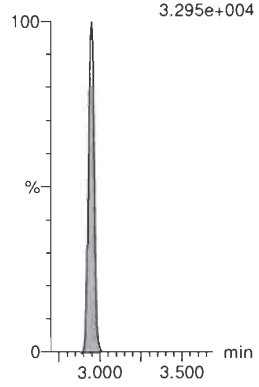


Quantify Sample Report **MassLynx V4.2 SCN977**

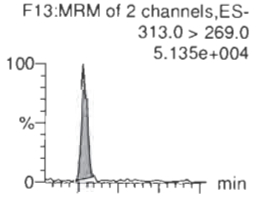
Vista Analytical Laboratory

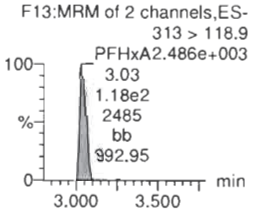
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

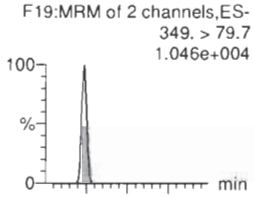
Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

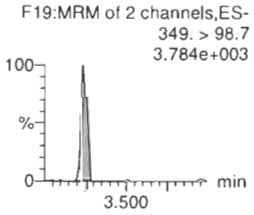
PFHxA



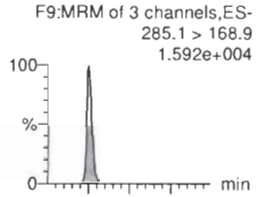


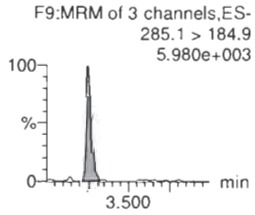
PFPeS



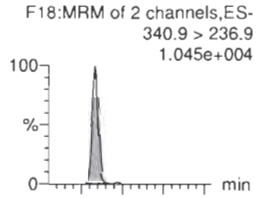


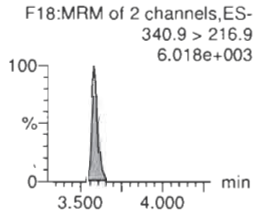
HFPO-DA



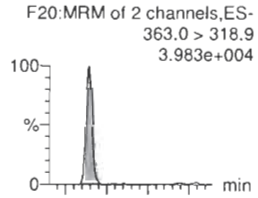


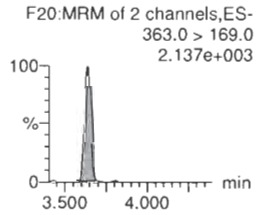
5:3 FTCA





PFHpA





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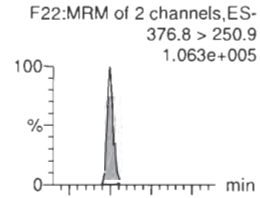

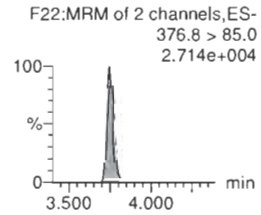

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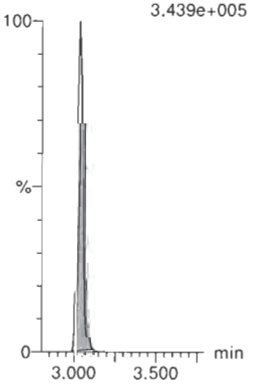
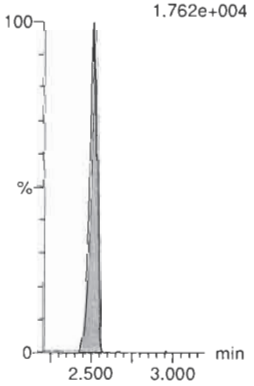
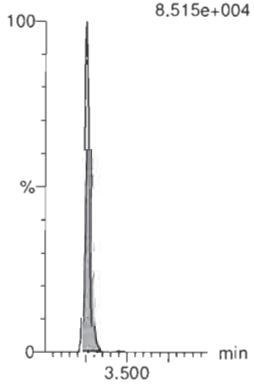


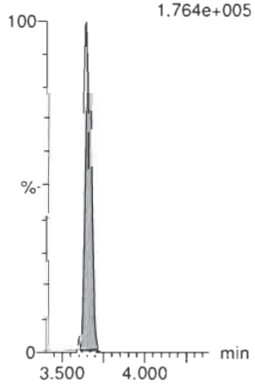
13C3-PFBS-EIS



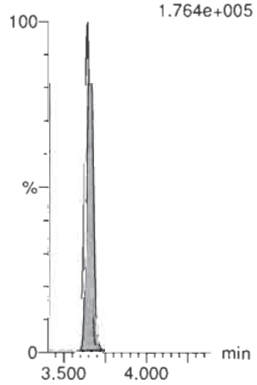
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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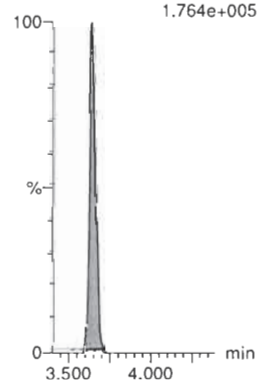

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

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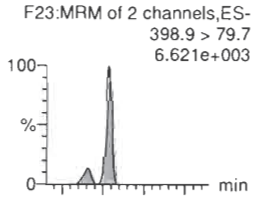
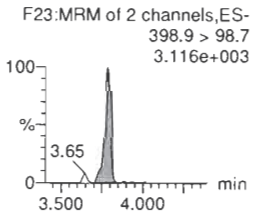
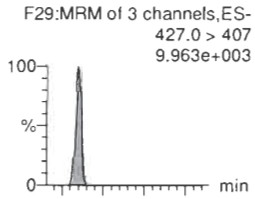
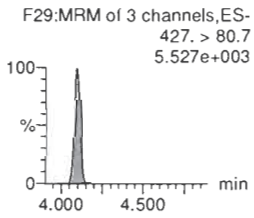




6:2 FTS





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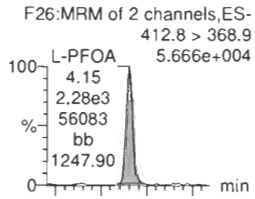

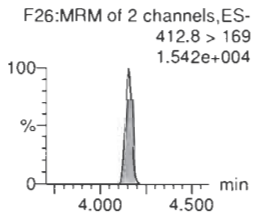

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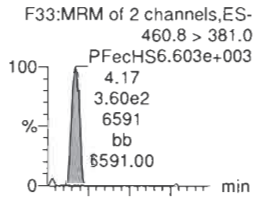

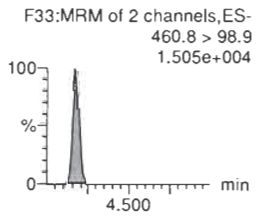

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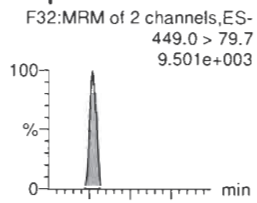
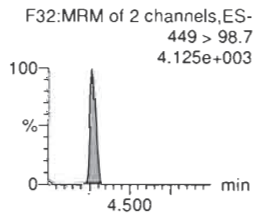
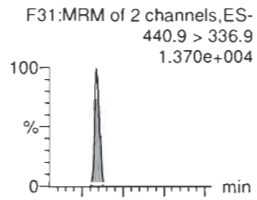
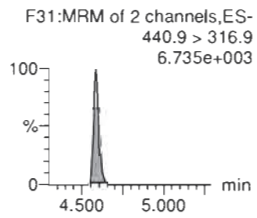


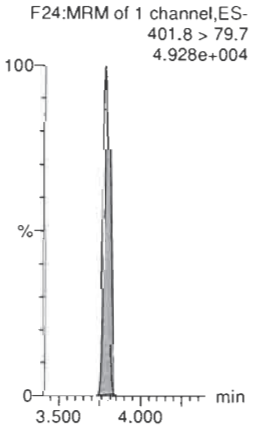


7:3 FTCA

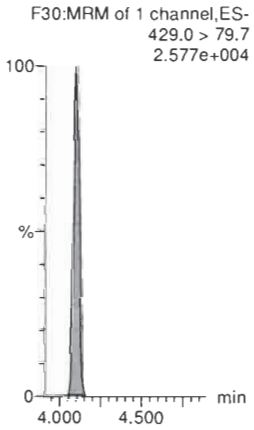




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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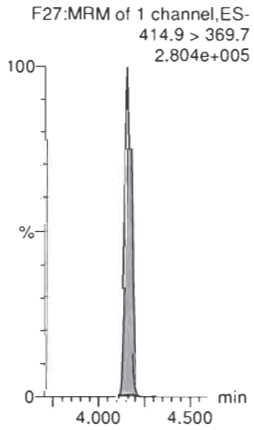

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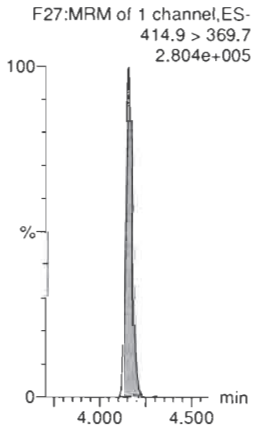
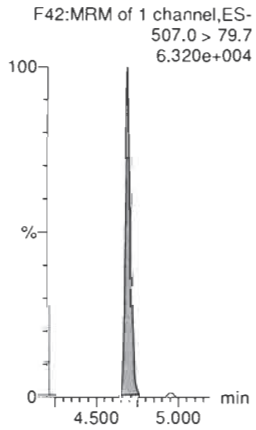
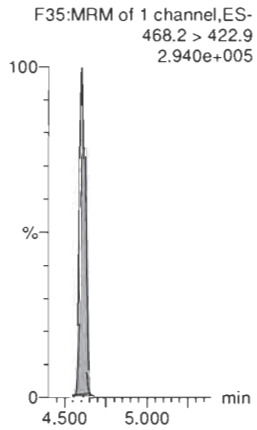


13C8-PFOS-EIS



13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

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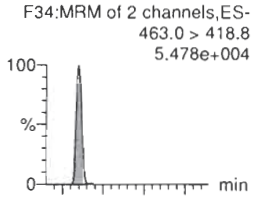

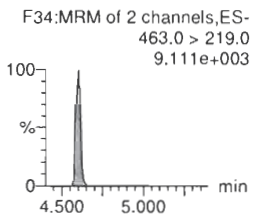

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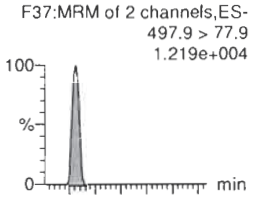
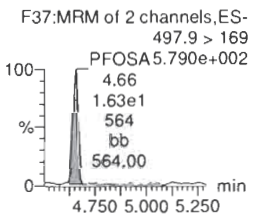
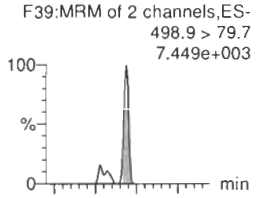
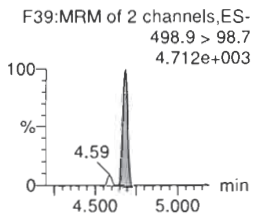




L-PFOS





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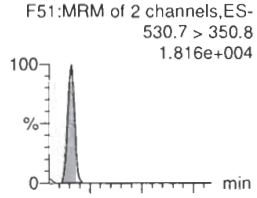

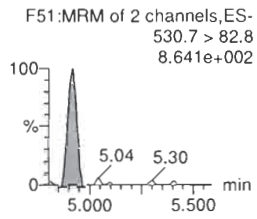

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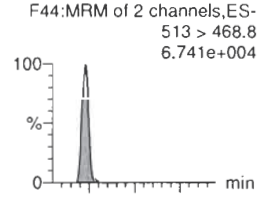
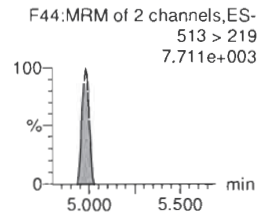
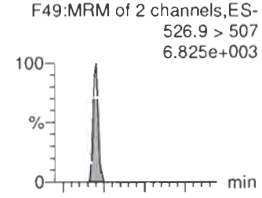
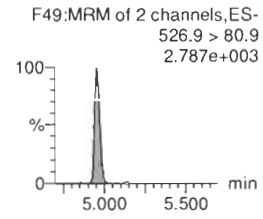




8:2 FTS





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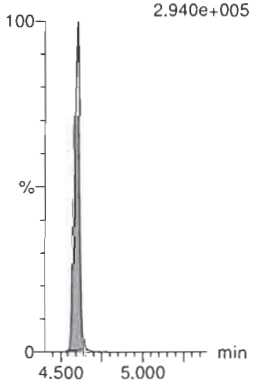

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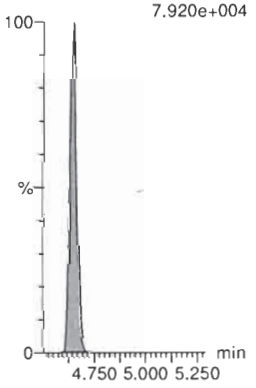

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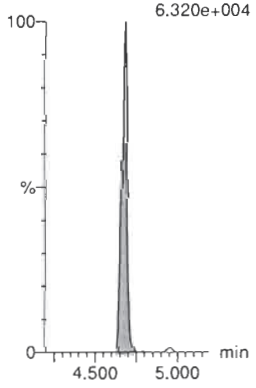

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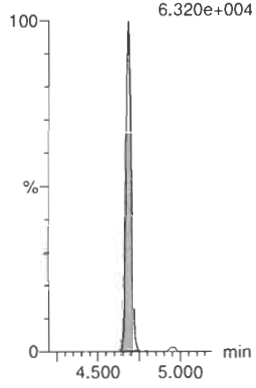

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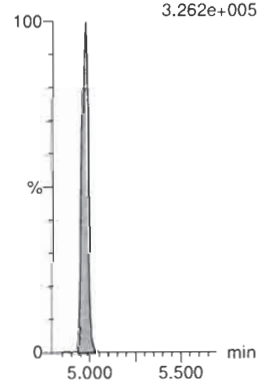
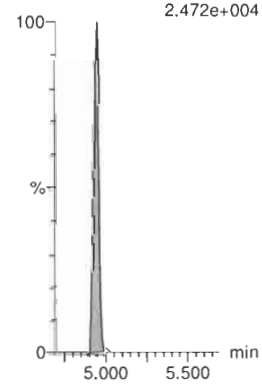


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

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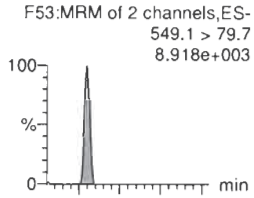

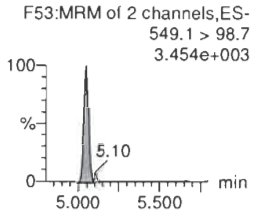

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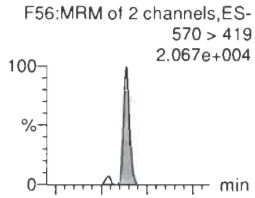
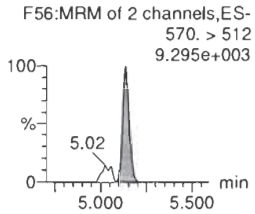
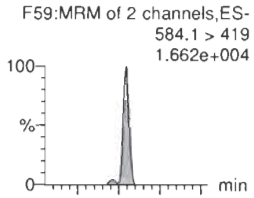
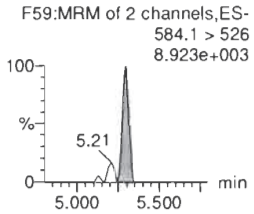




L-EtFOSAA





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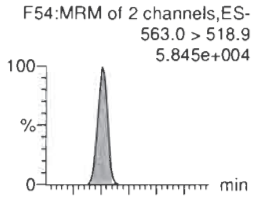

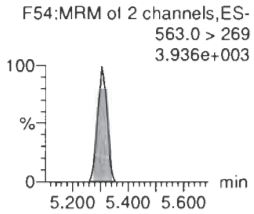

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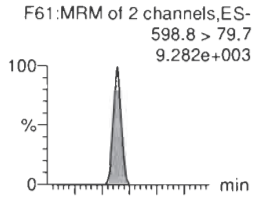

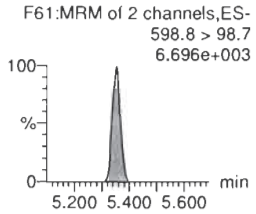

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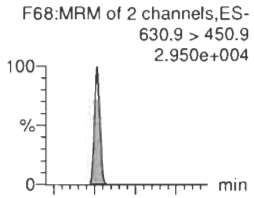

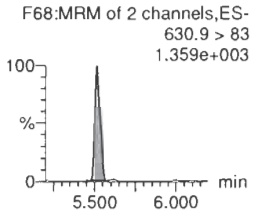

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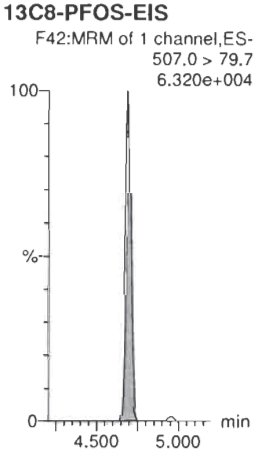

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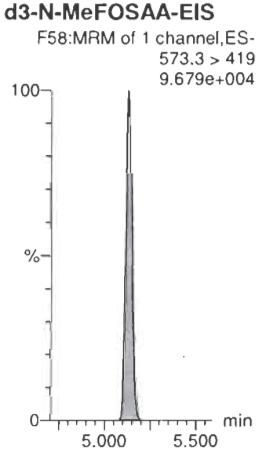

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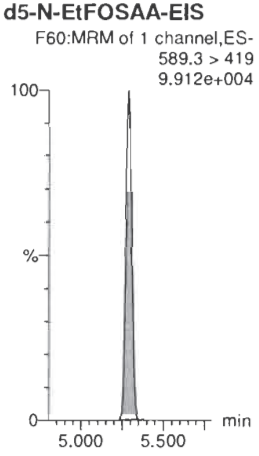

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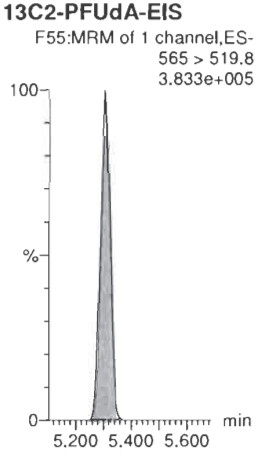

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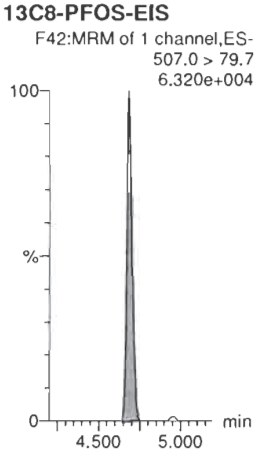

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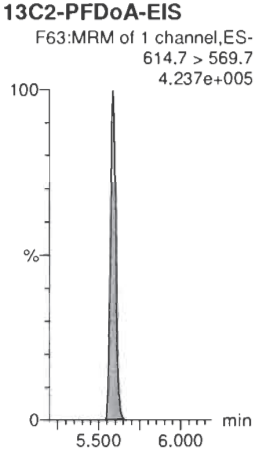

Quantify Sample Report **MassLynx V4.2 SCN977**

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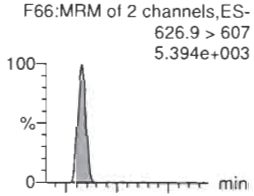
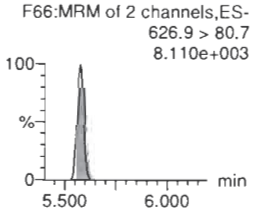
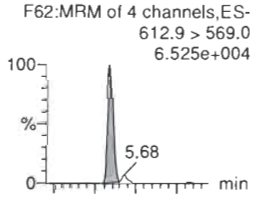
Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

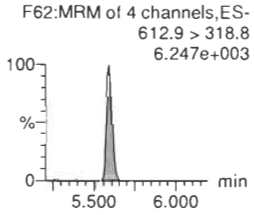
10:2 FTS



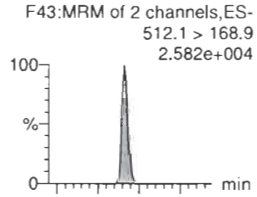


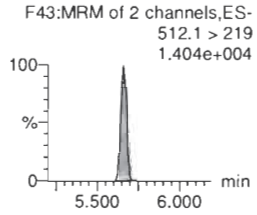
PFDoA



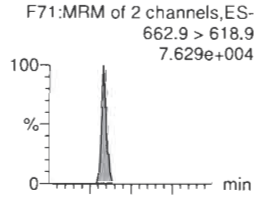


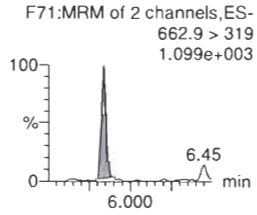
N-MeFOSA



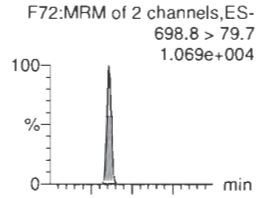


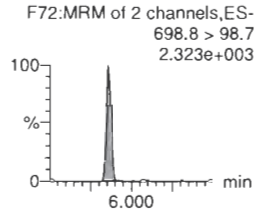
PFTrDA



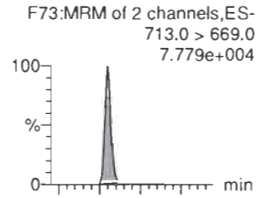


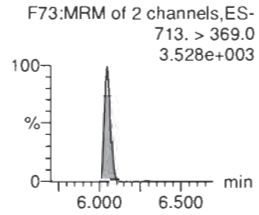
PFDoS



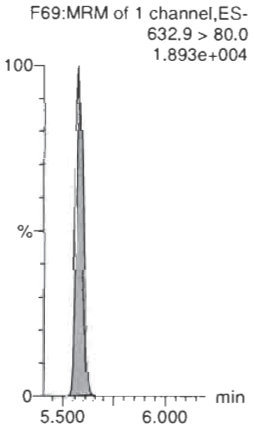


PFTeDA

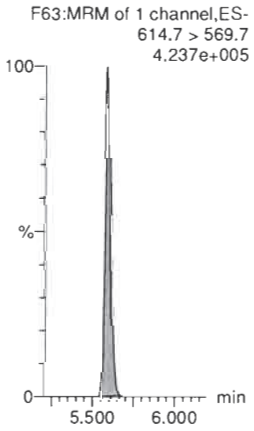




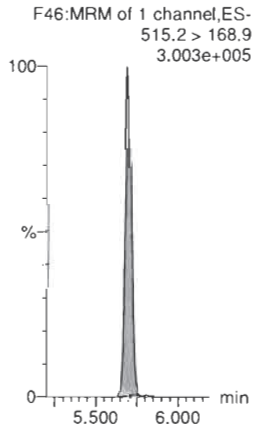
13C2-10:2 FTS-EIS



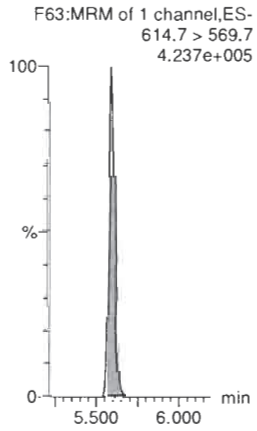
13C2-PFDoA-EIS



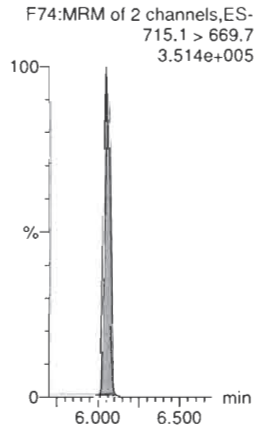
d3-N-MeFOSA-EIS



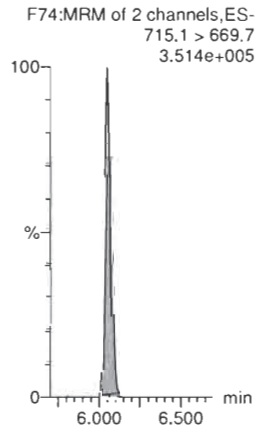
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

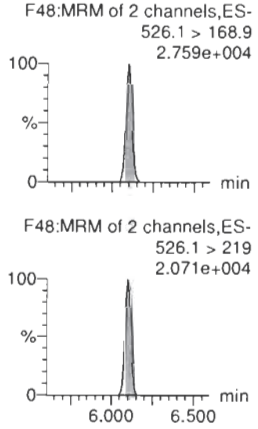
Vista Analytical Laboratory

Dataset: Untitled

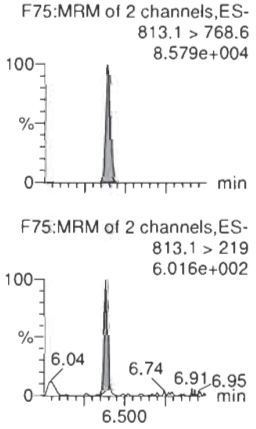
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

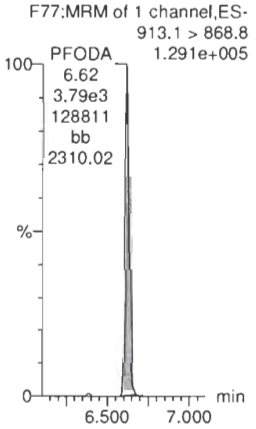
N-EtFOSA



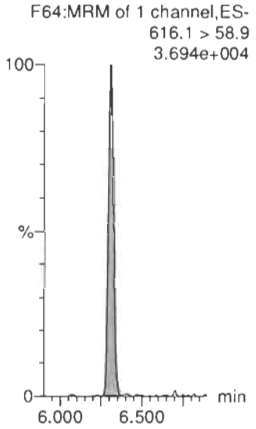
PFHxDA



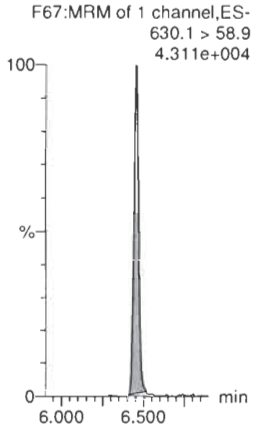
PFODA



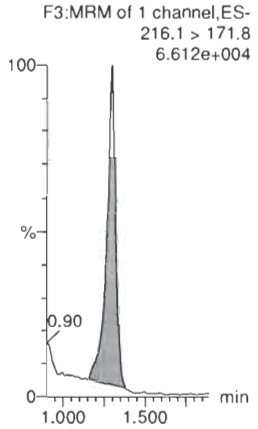
N-MeFOSE



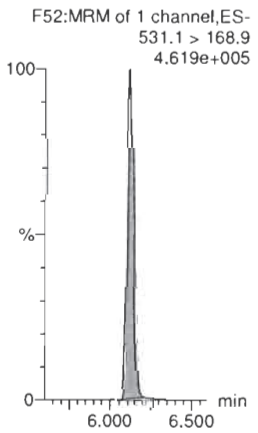
N-EtFOSE



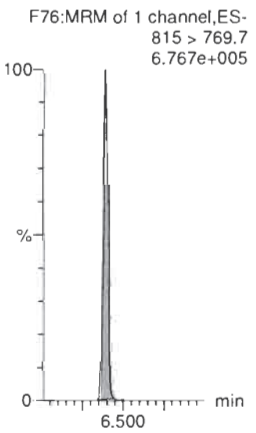
13C3-PFBA-RSD



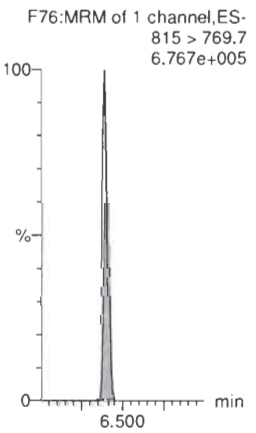
d5-N-ETFOSA-EIS



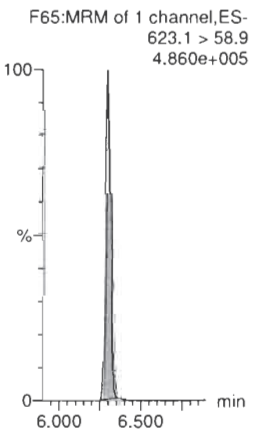
13C2-PFHxDA-EIS



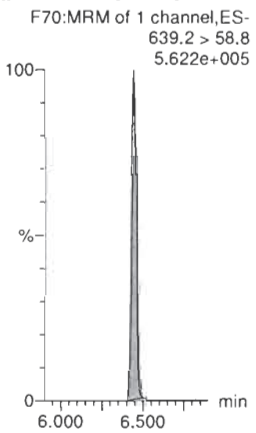
13C2-PFHxDA-EIS



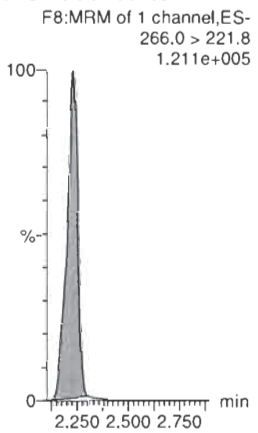
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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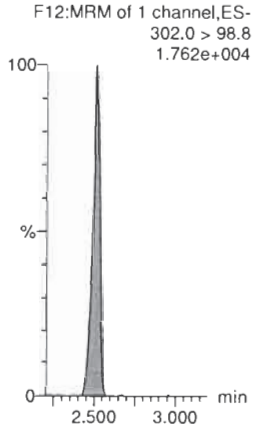
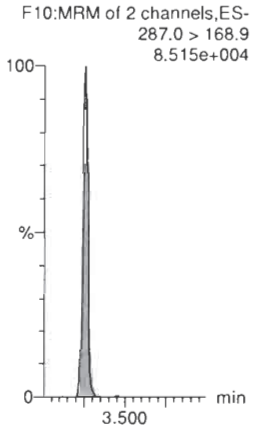
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

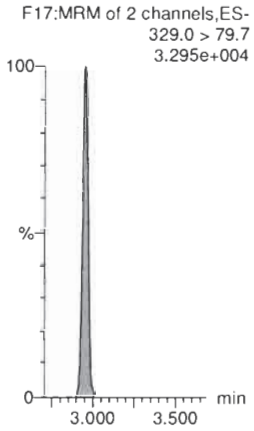
13C3-PFBS-RSD



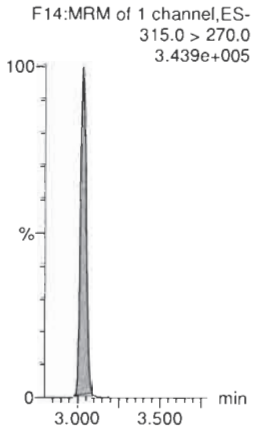
13C3-HFPO-DA-RSD



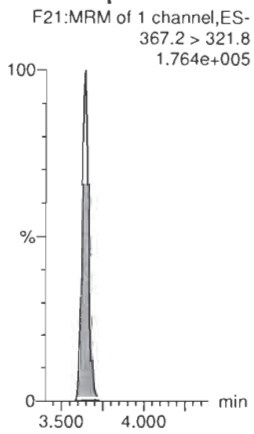
13C2-4:2 FTS-RSD



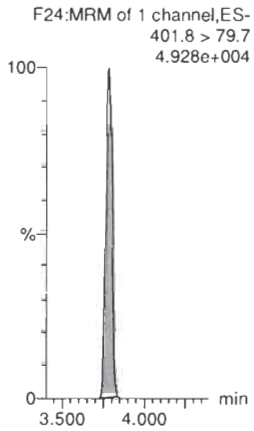
13C2-PFHxA-RSD



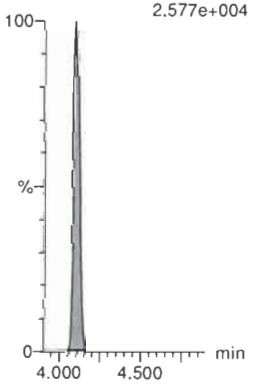
13C4-PFHpA-RSD



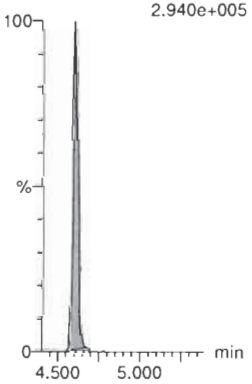
13C3-PFHxS-RSD



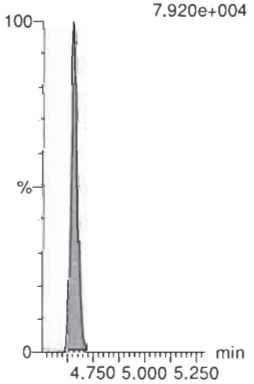
13C2-6:2 FTS-RSD



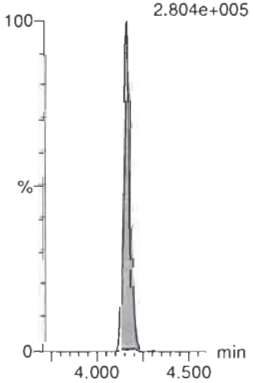
13C5-PFNA-RSD



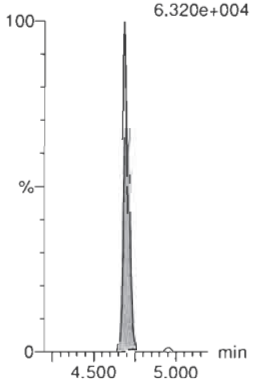
13C8-PFOSA-RSD



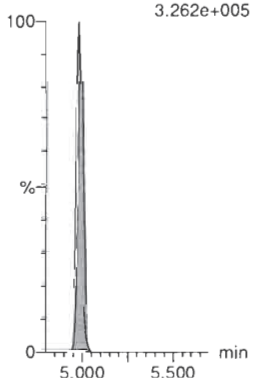
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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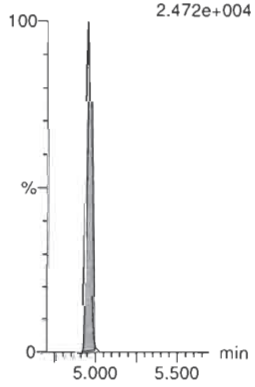
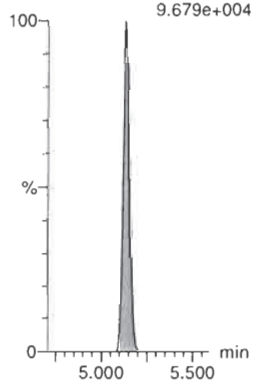
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

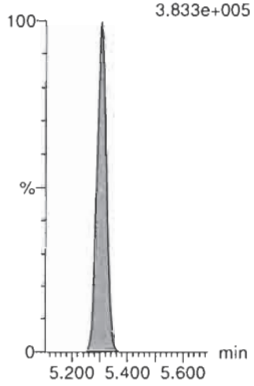
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.472e+004



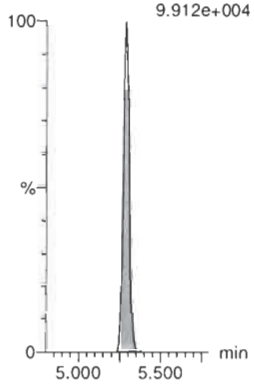
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
9.679e+004



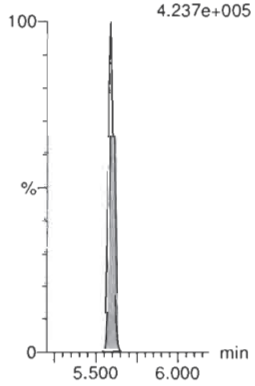
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.833e+005



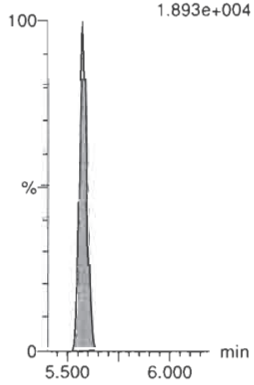
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
9.912e+004



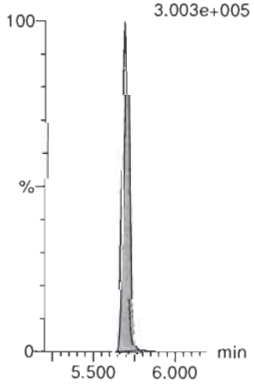
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.237e+005



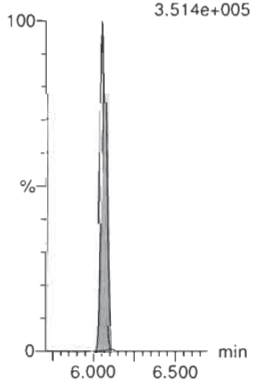
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.893e+004



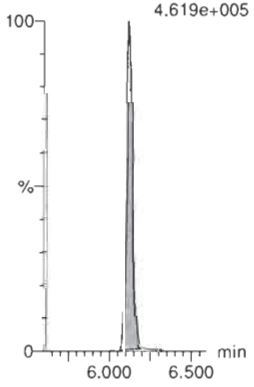
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.003e+005



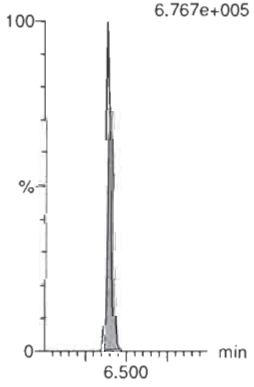
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.514e+005



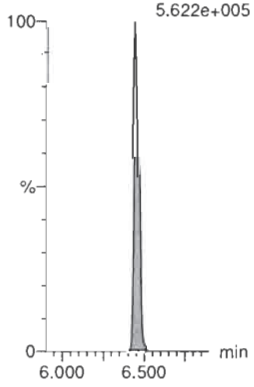
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.619e+005



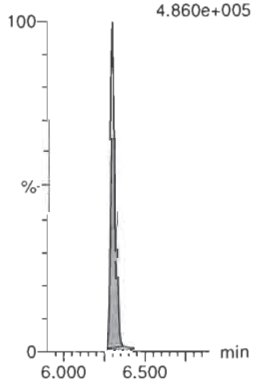
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.767e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.622e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.860e+005



Quantify Sample Report **MassLynx V4.2 SCN977** Page 40 of 100
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-6, Date: 29-Feb-2020, Time: 16:17:29, ID: ST200229P1-4 PFC CS1 20B1105, Description: PFC CS1 20B1105

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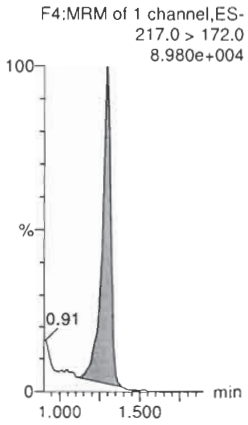

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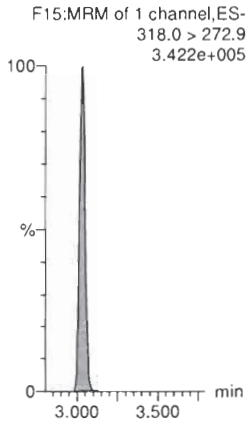

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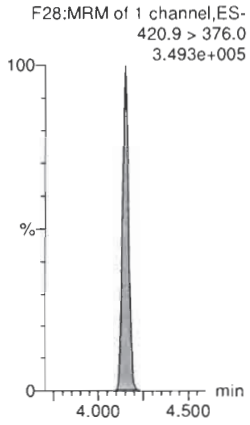

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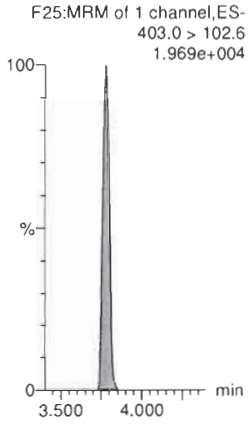

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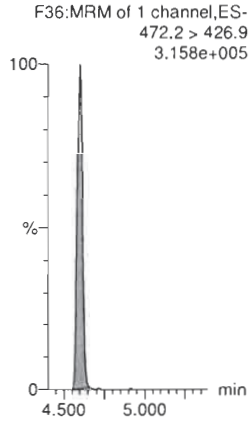

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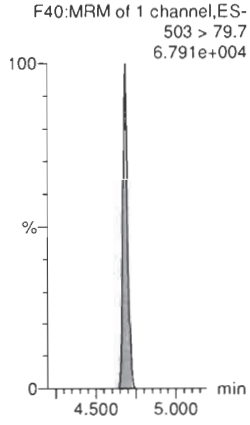

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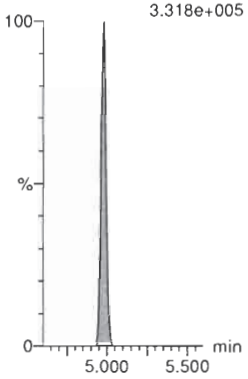

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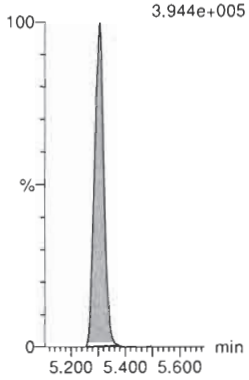

Quantify Sample Report **MassLynx V4.2 SCN977** Page 41 of 100
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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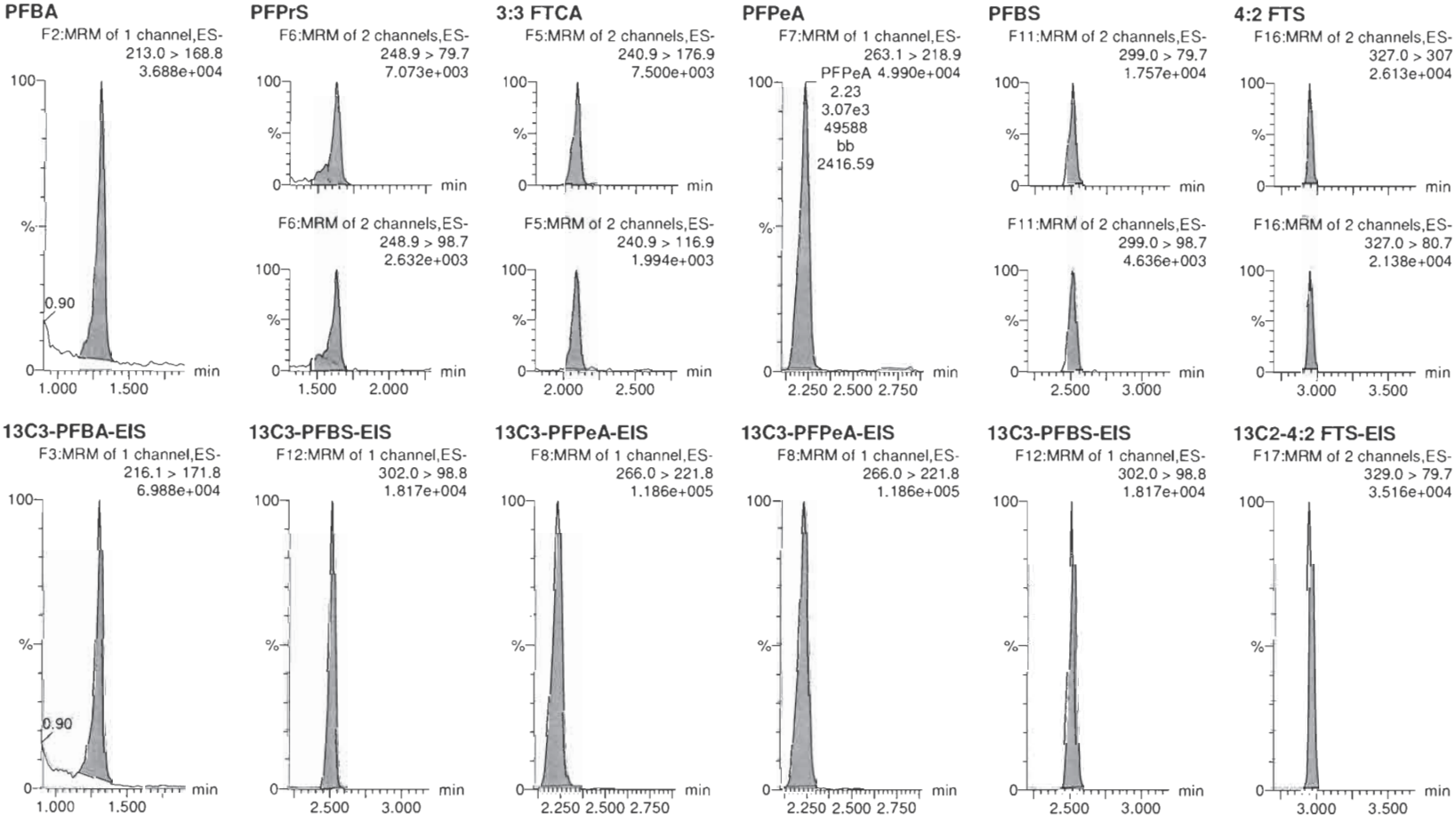

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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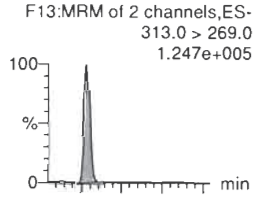

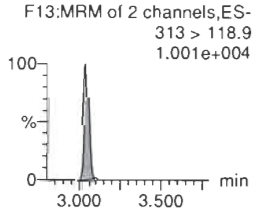

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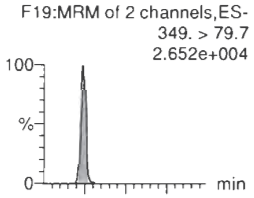

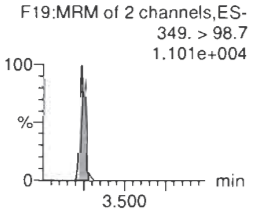

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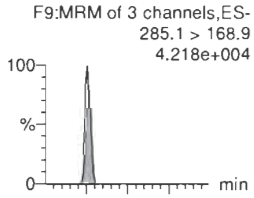

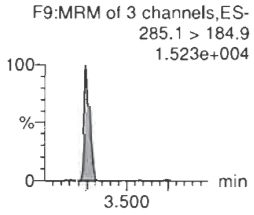

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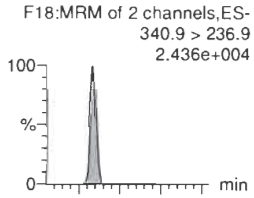

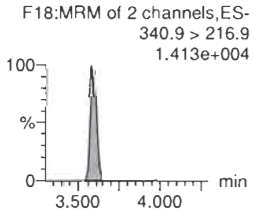

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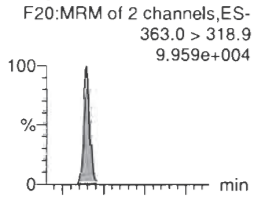

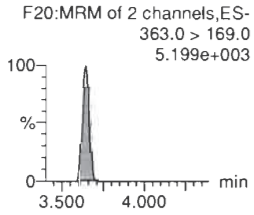

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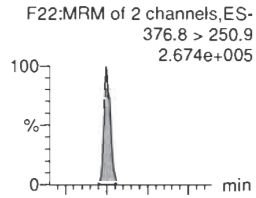

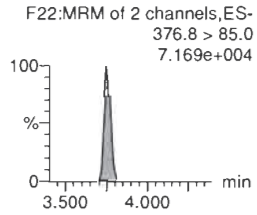

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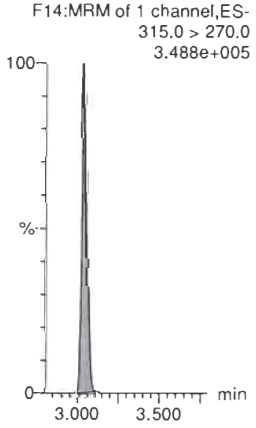

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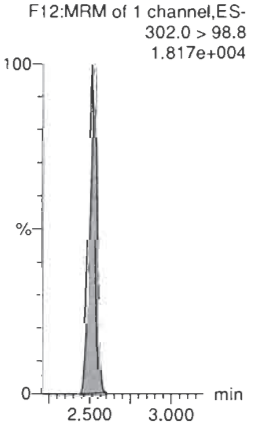

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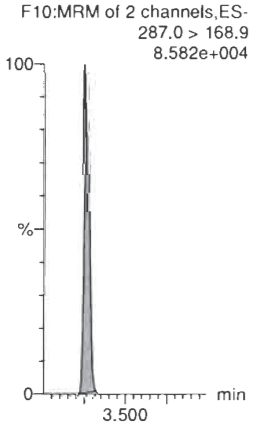

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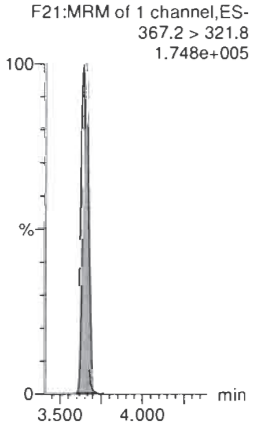

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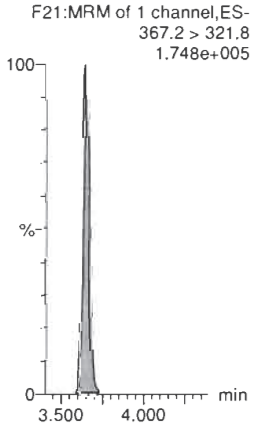

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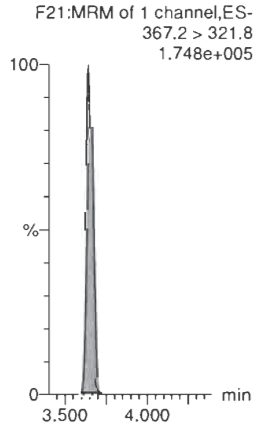

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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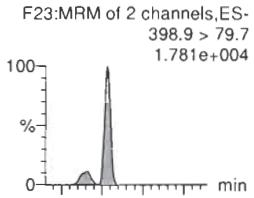
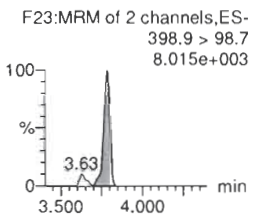
L-PFHxS





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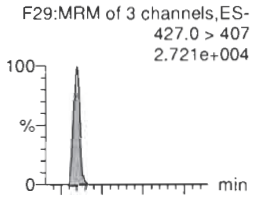
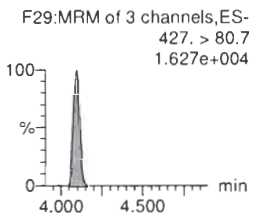
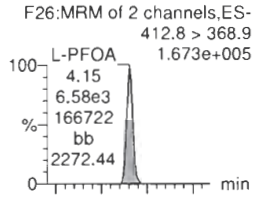
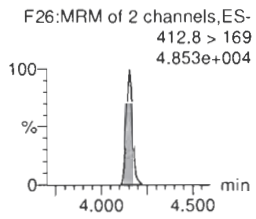




L-PFOA





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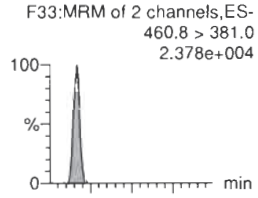

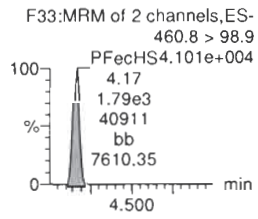

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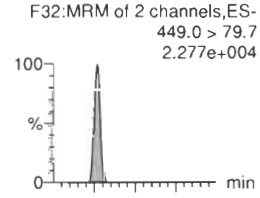

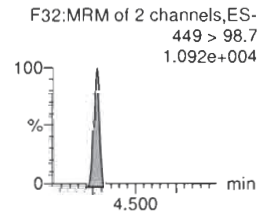

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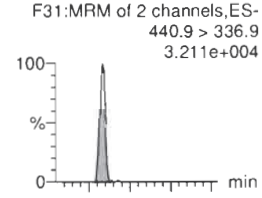

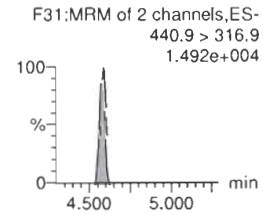

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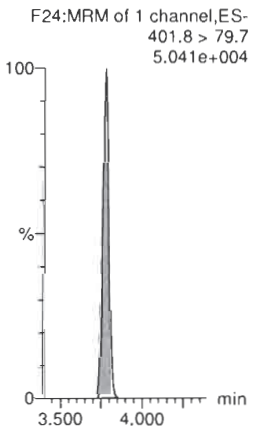

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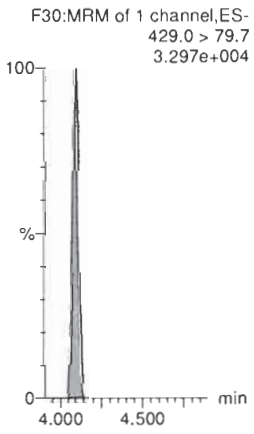

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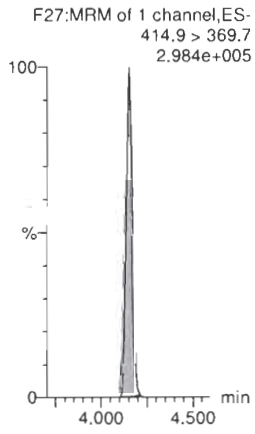

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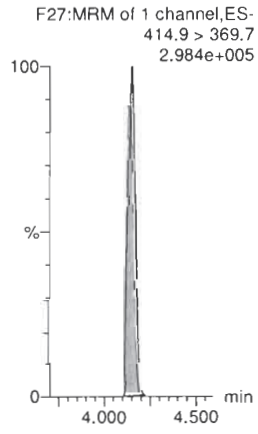

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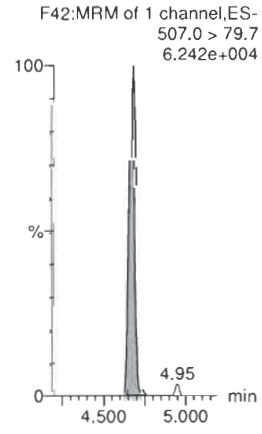
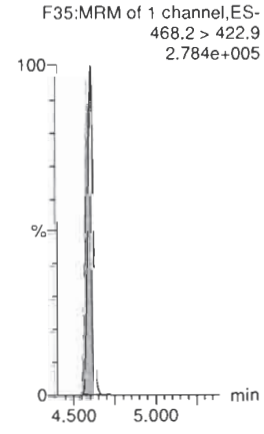


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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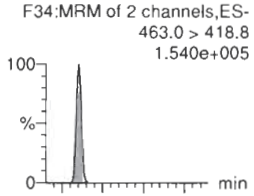
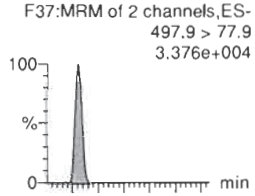
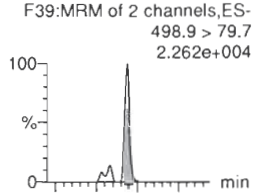
PFNA



PFOSA



L-PFOS



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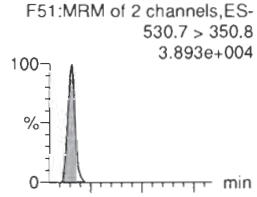

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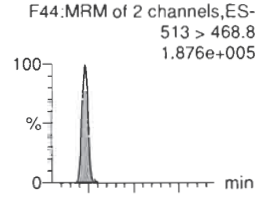

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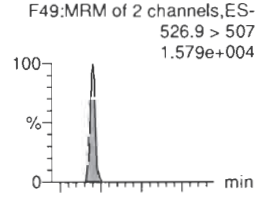
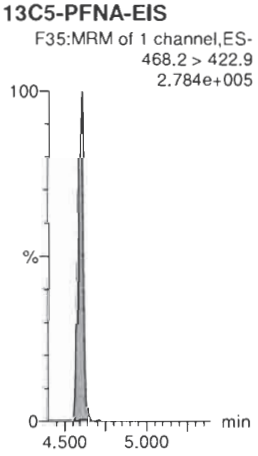
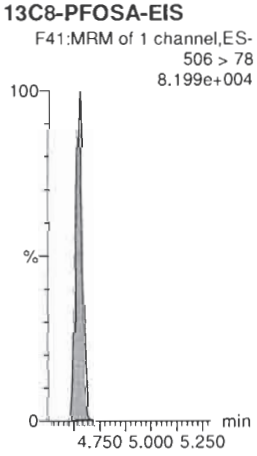


13C5-PFNA-EIS



13C8-PFOSA-EIS



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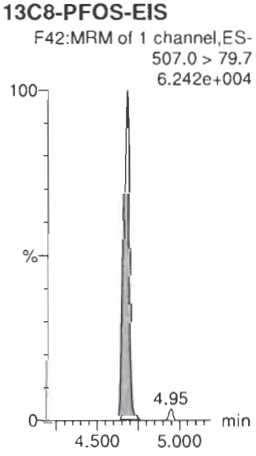

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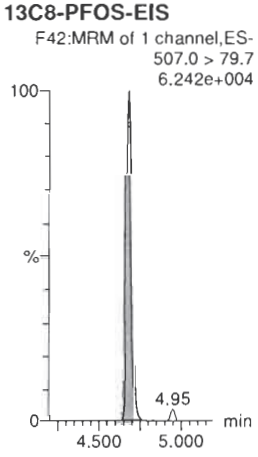

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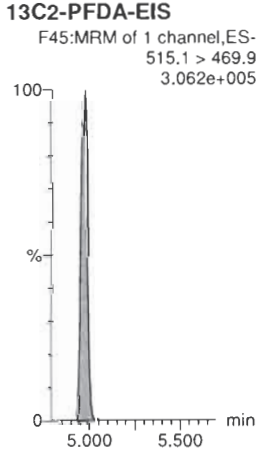
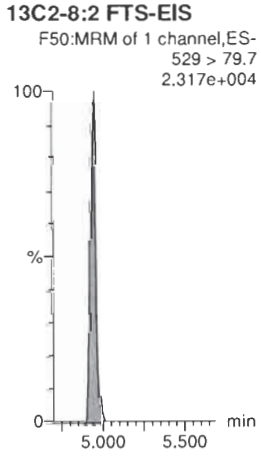


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-7, Date: 29-Feb-2020, Time: 16:28:00, ID: ST200229P1-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

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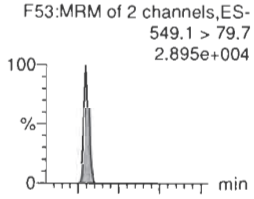

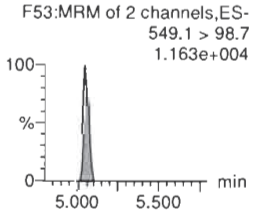

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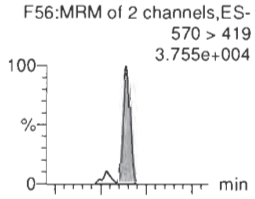

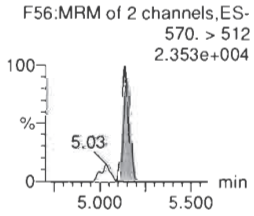

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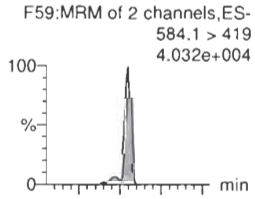

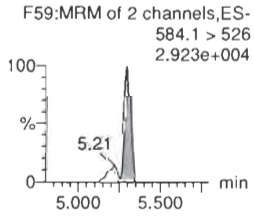

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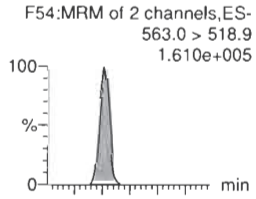

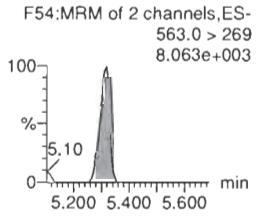

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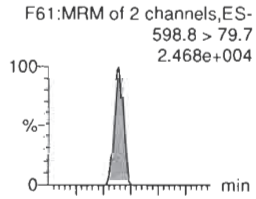

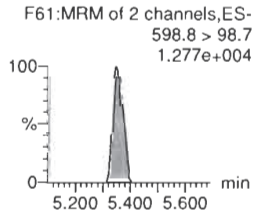

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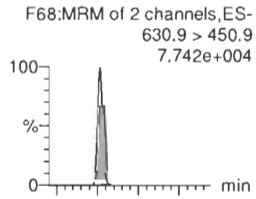

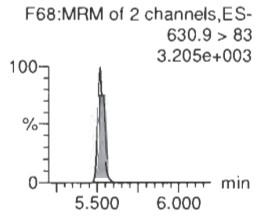

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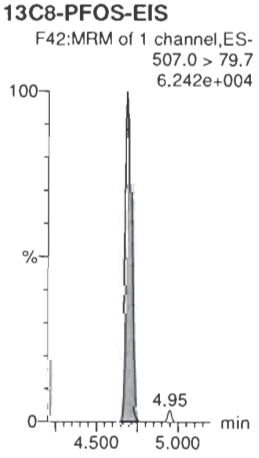

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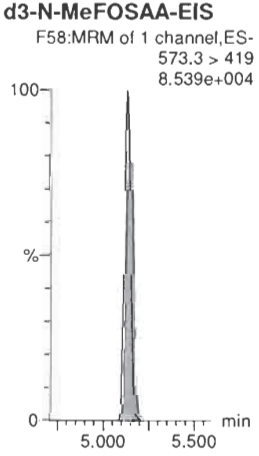

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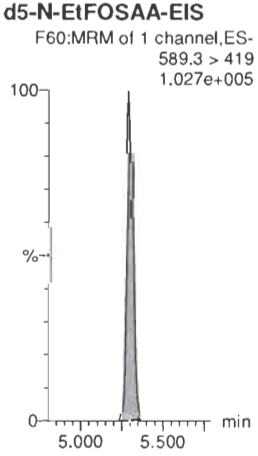

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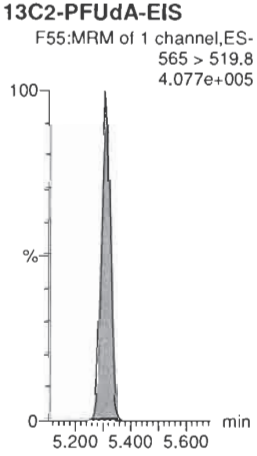

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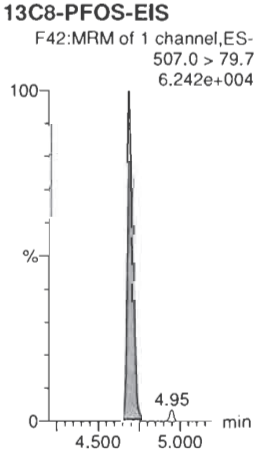

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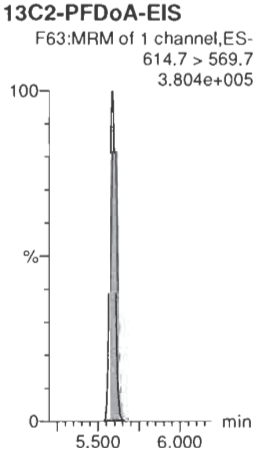

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-7, Date: 29-Feb-2020, Time: 16:28:00, ID: ST200229P1-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

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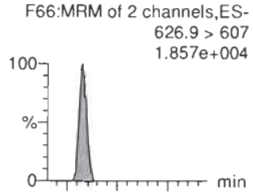

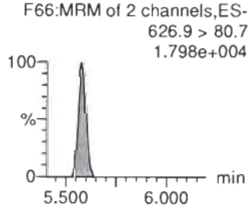

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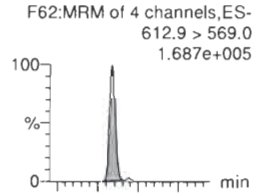

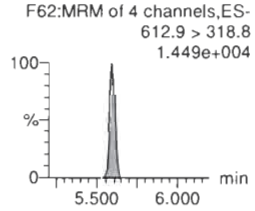

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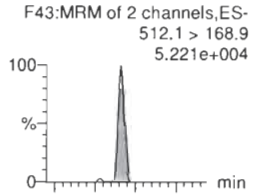

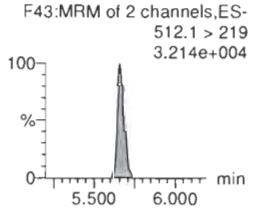

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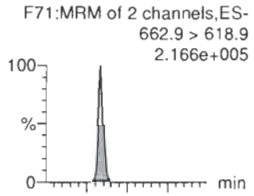

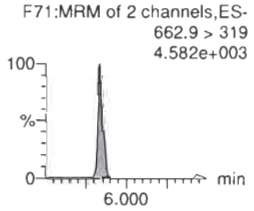

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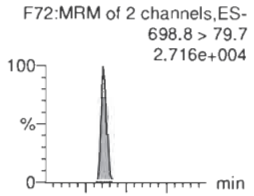

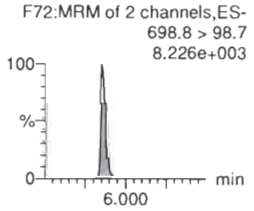

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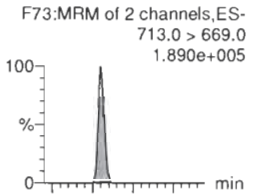

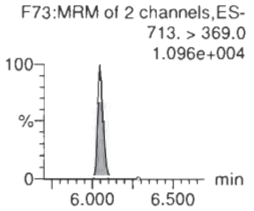

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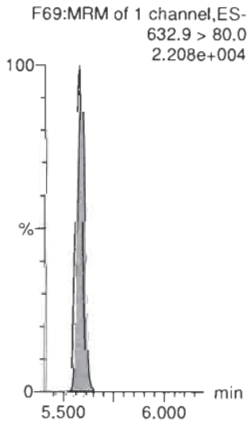

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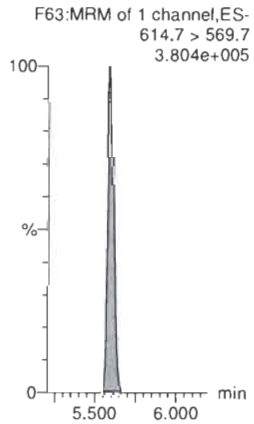

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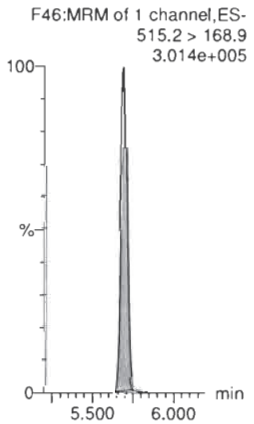

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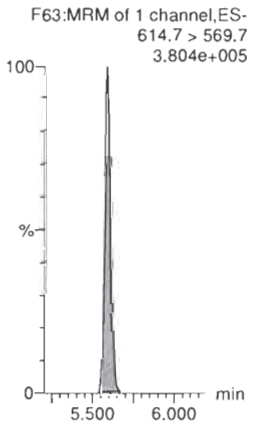

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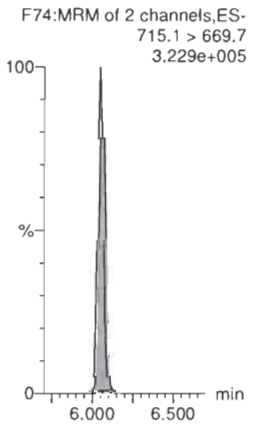

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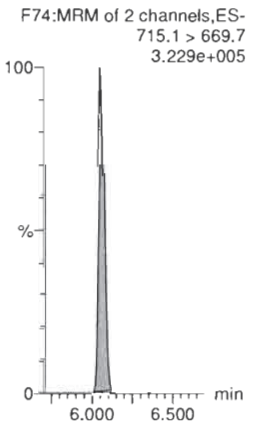

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-7, Date: 29-Feb-2020, Time: 16:28:00, ID: ST200229P1-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

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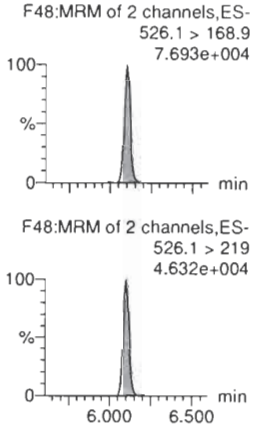

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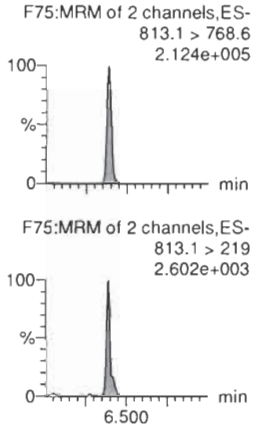

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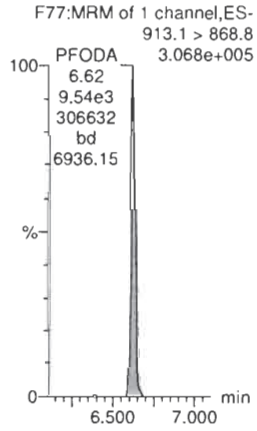

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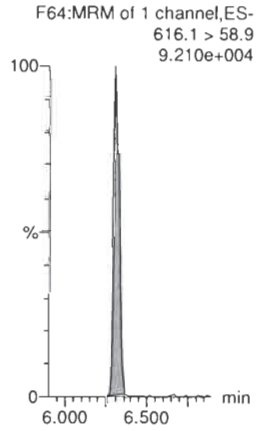

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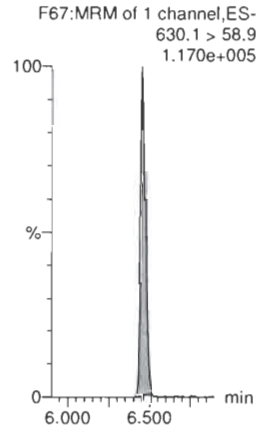

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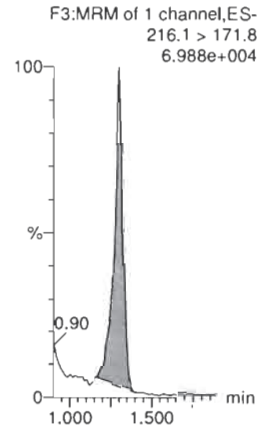
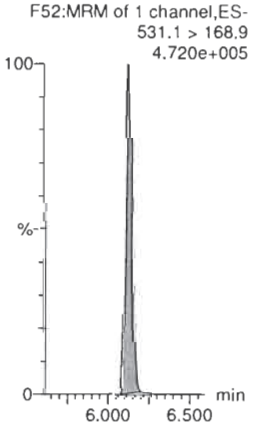
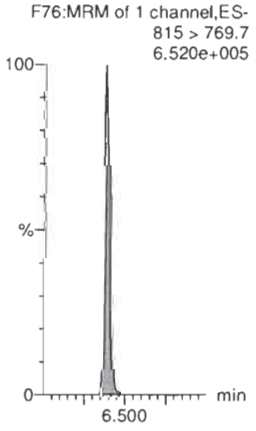


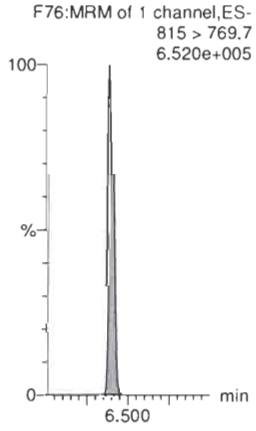
d5-N-ETFOSA-EIS



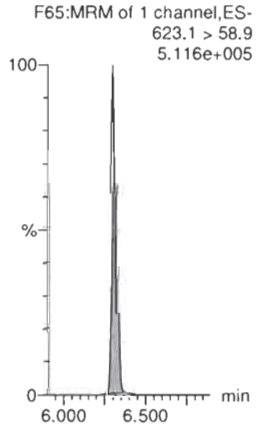
13C2-PFHxDA-EIS



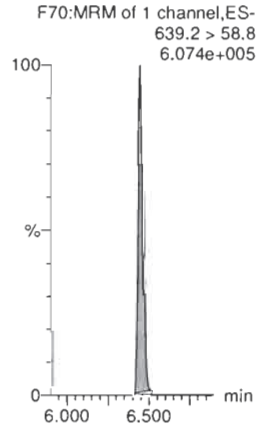
13C2-PFHxDA-EIS



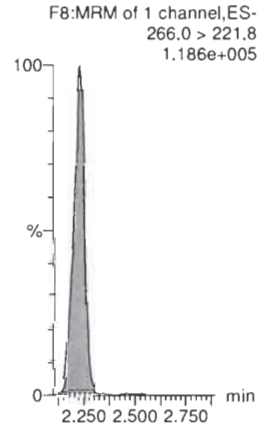
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

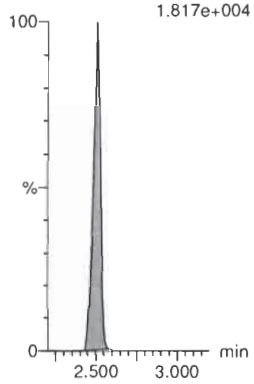
Vista Analytical Laboratory

Dataset: Untitled

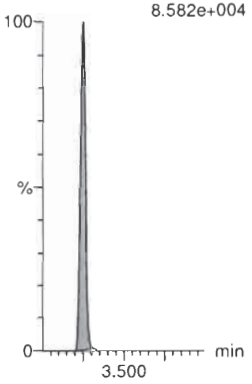
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-7, Date: 29-Feb-2020, Time: 16:28:00, ID: ST200229P1-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

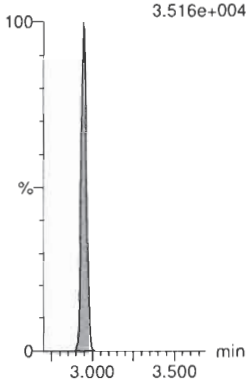
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.817e+004



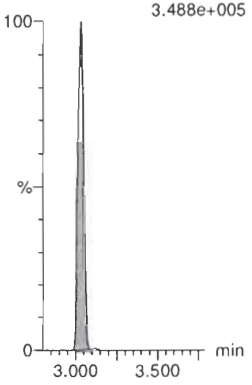
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.582e+004



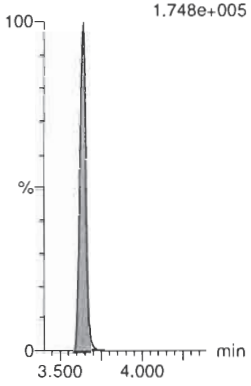
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.516e+004



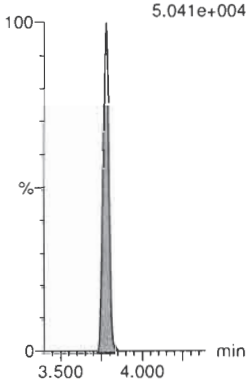
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.488e+005



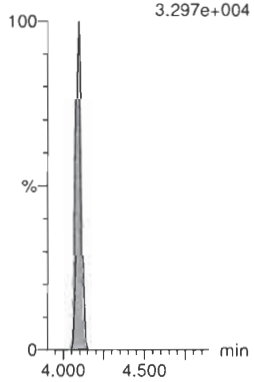
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.748e+005



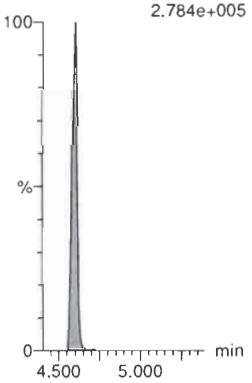
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
5.041e+004



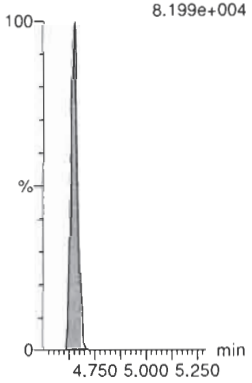
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.297e+004



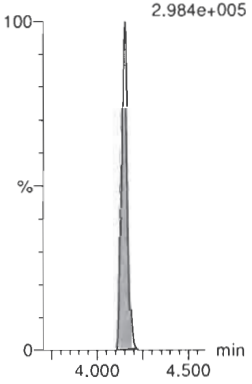
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.784e+005



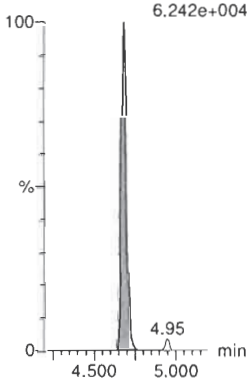
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.199e+004



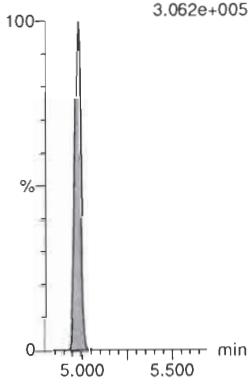
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.984e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.242e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.062e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

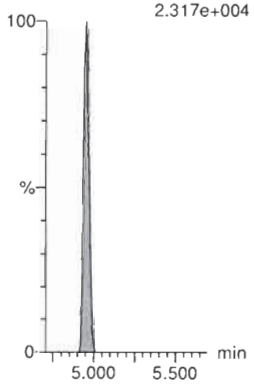
Vista Analytical Laboratory

Dataset: Untitled

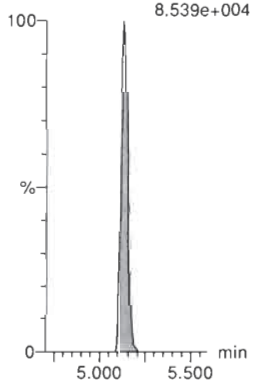
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-7, Date: 29-Feb-2020, Time: 16:28:00, ID: ST200229P1-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

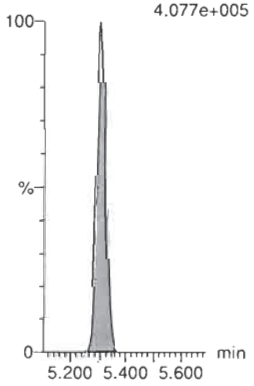
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.317e+004



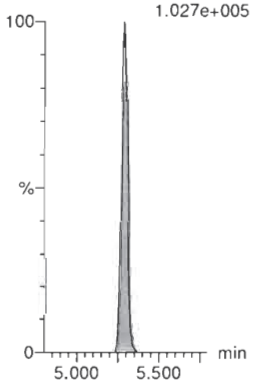
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
8.539e+004



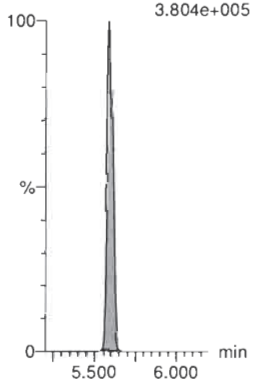
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.077e+005



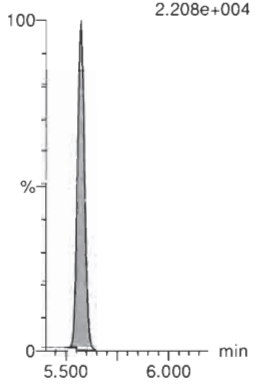
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.027e+005



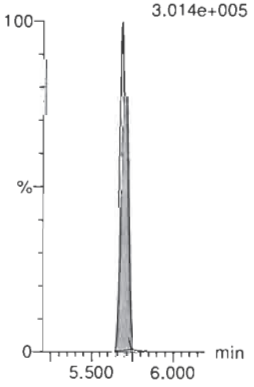
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.804e+005



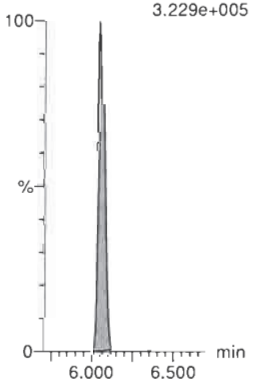
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.208e+004



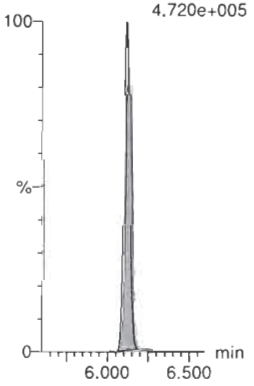
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.014e+005



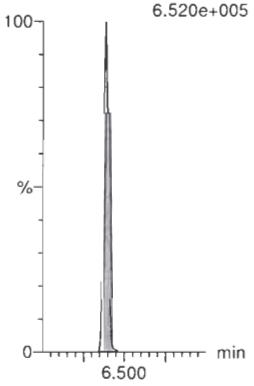
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.229e+005



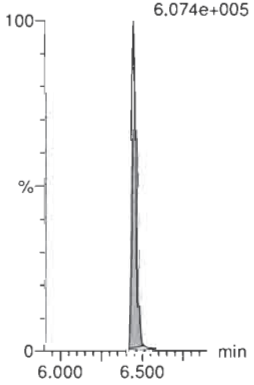
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.720e+005



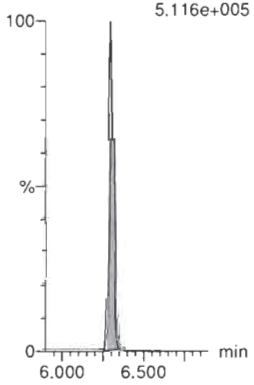
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.520e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.074e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.116e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

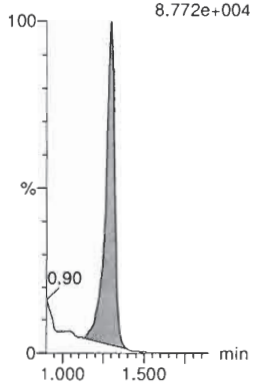
Vista Analytical Laboratory

Dataset: Untitled

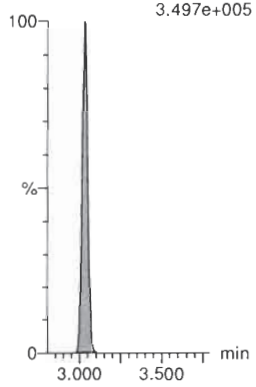
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-7, Date: 29-Feb-2020, Time: 16:28:00, ID: ST200229P1-5 PFC CS2 20B1106, Description: PFC CS2 20B1106

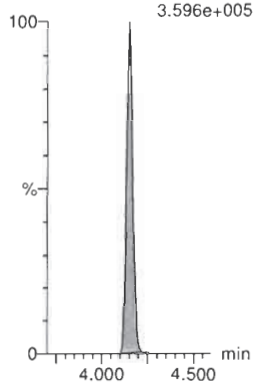
13C4-PFBA



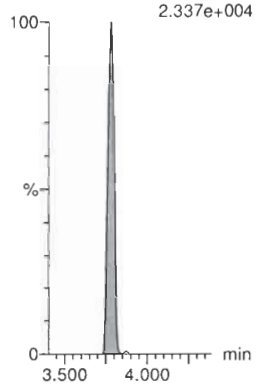
13C5-PFHxA



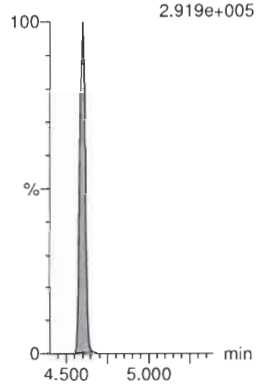
13C8-PFOA



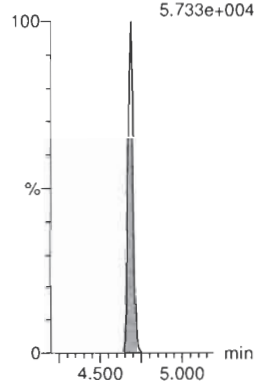
18O2-PFHxS



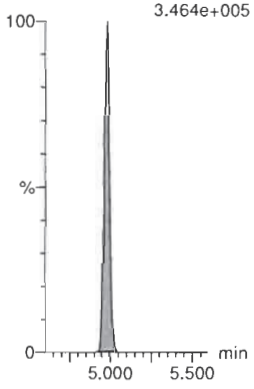
13C9-PFNA



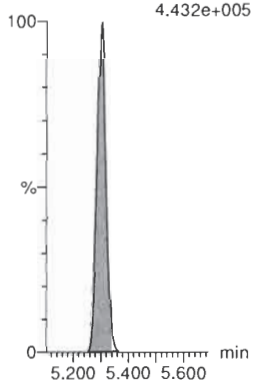
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

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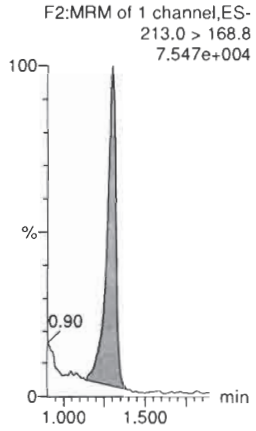
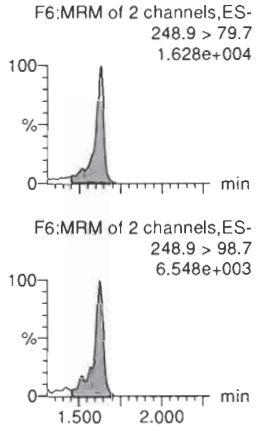
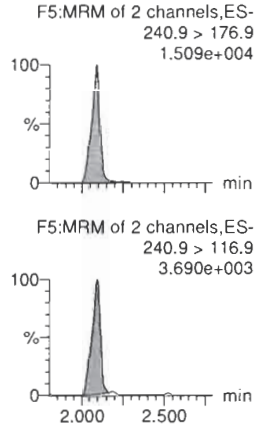
PFBA



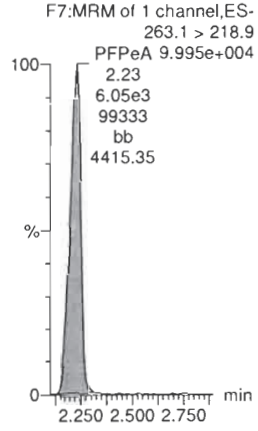
PFPrS



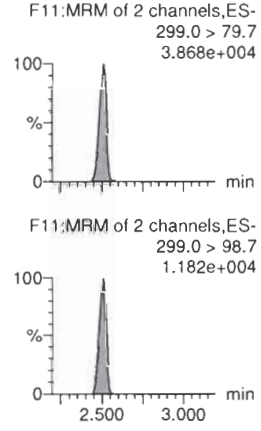
3:3 FTCA



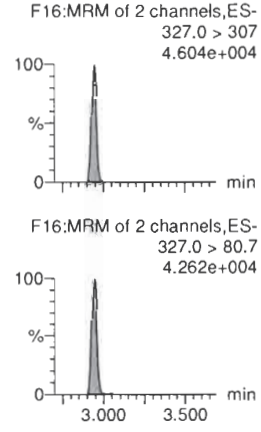
PFPeA



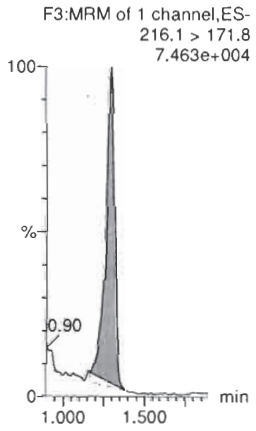
PFBS



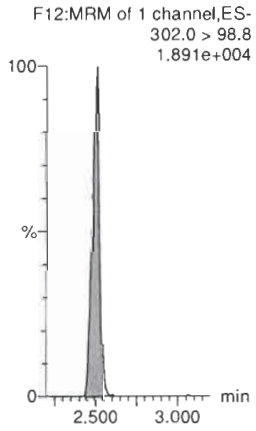
4:2 FTS



13C3-PFBA-EIS



13C3-PFBS-EIS



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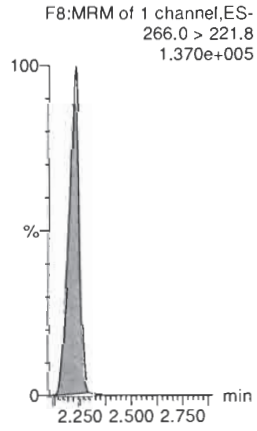

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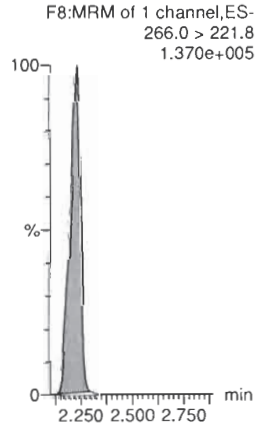

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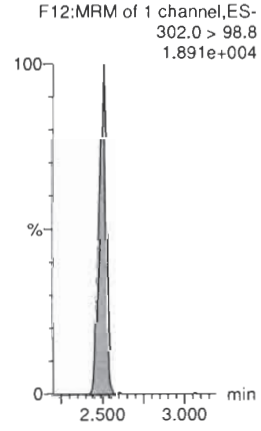

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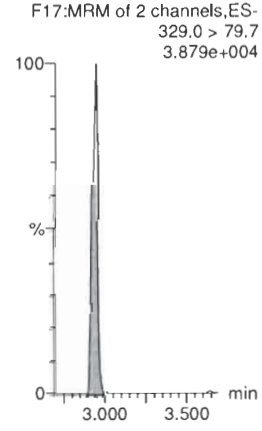

Quantify Sample Report **MassLynx V4.2 SCN977** Page 52 of 100
Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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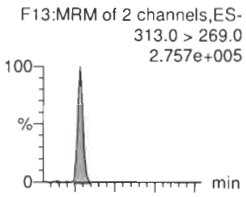

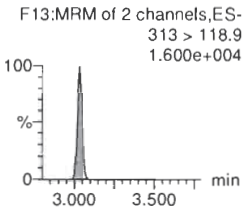

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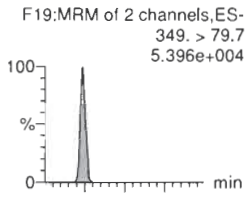

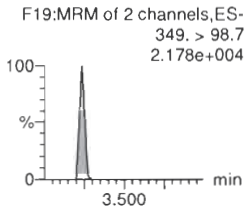

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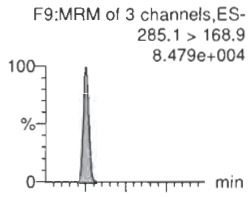

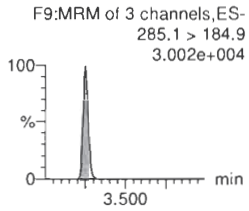

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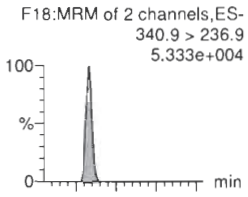

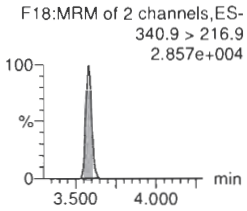

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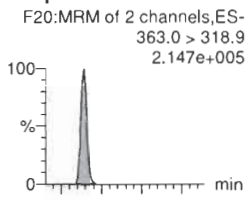

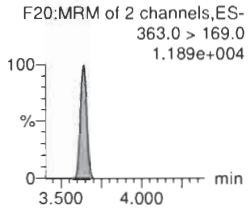

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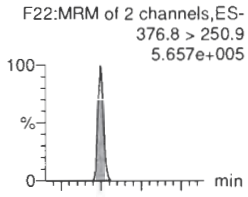

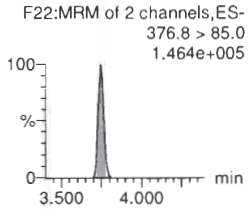

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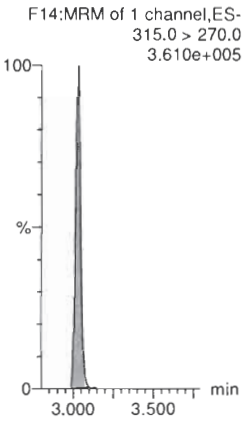

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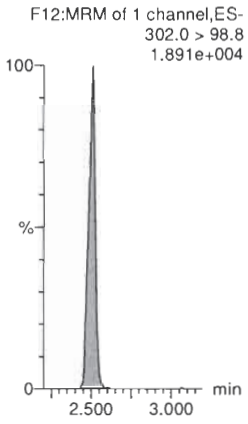

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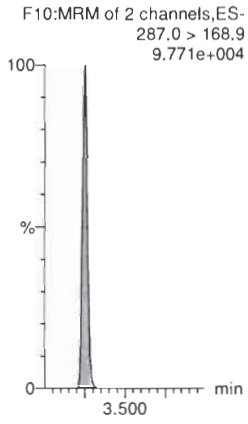

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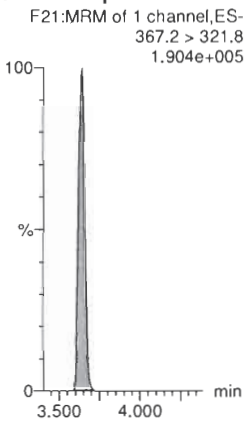

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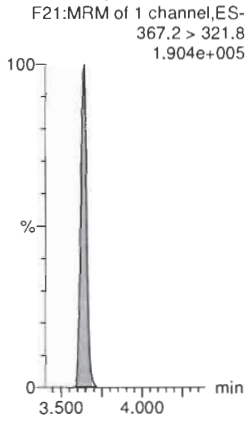

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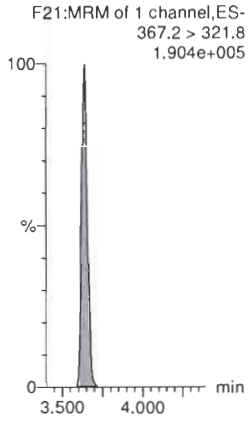

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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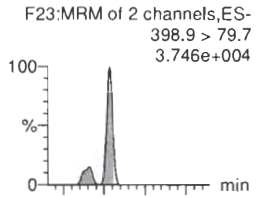

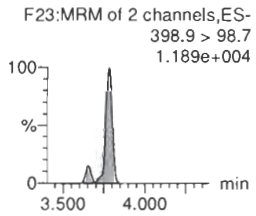

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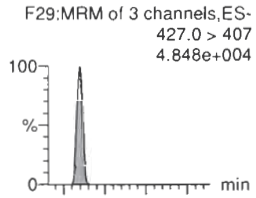

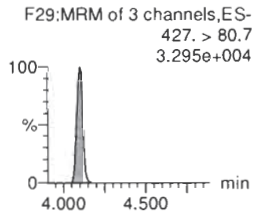

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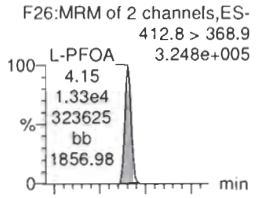

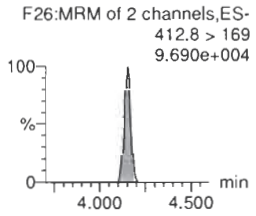

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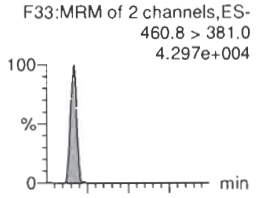

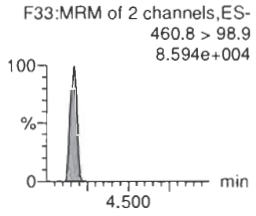

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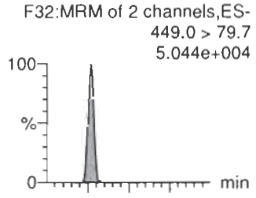

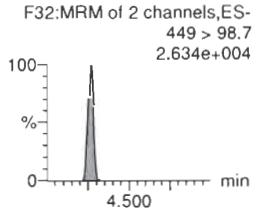

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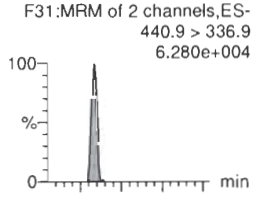

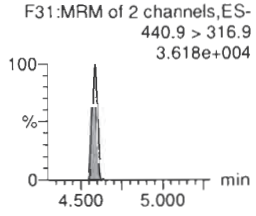

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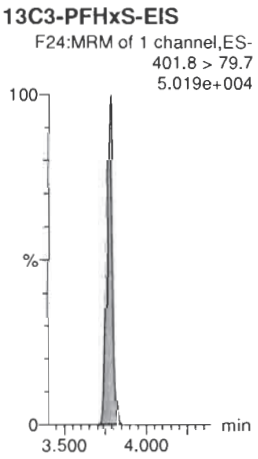

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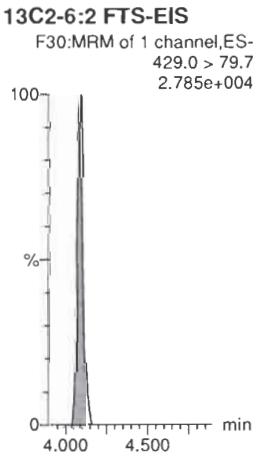

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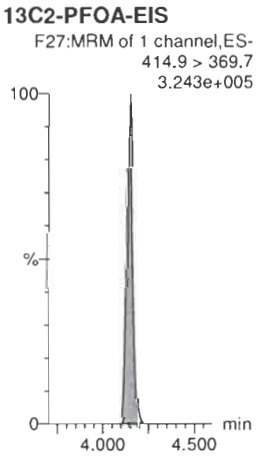

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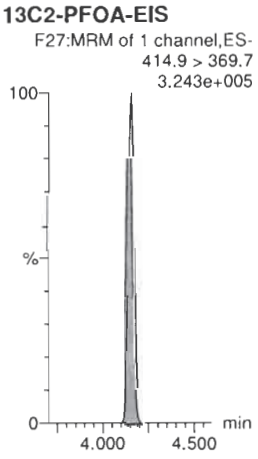

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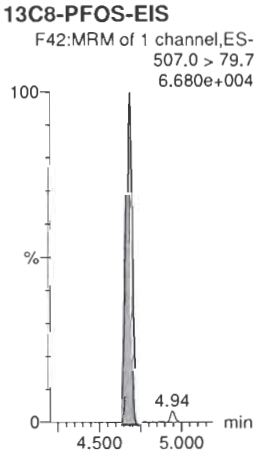

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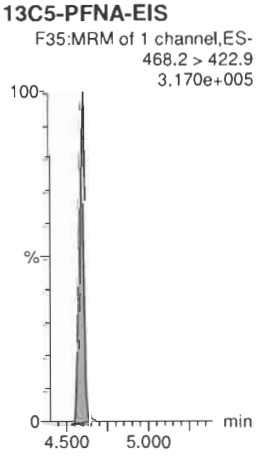

Quantify Sample Report **MassLynx V4.2 SCN977**

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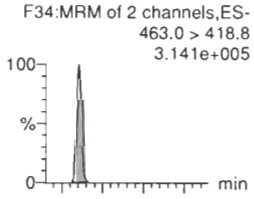

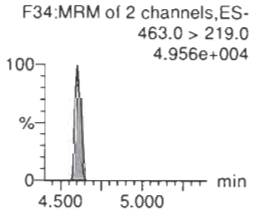

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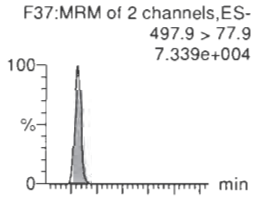

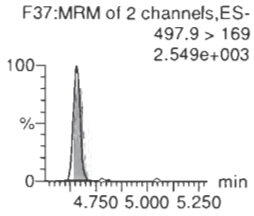

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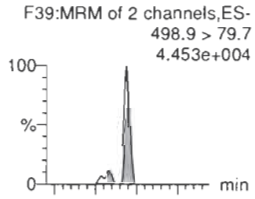

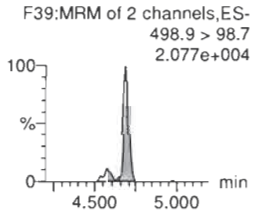

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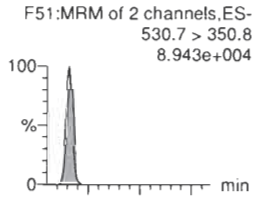

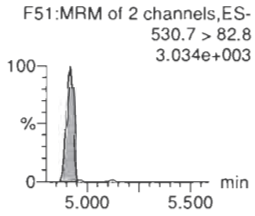

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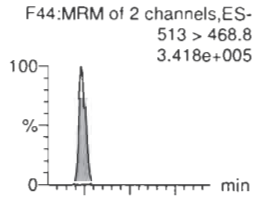

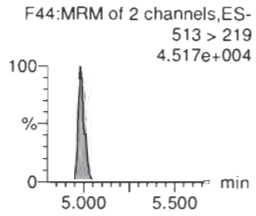

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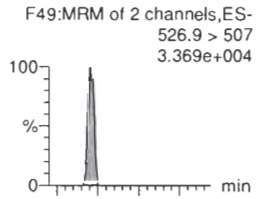
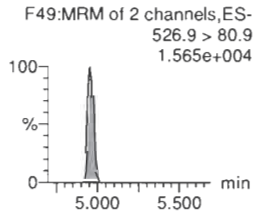
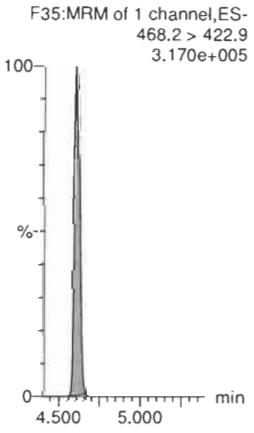
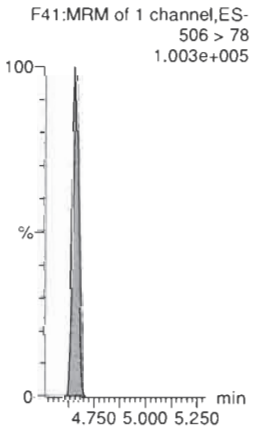




13C5-PFNA-EIS



13C8-PFOSA-EIS



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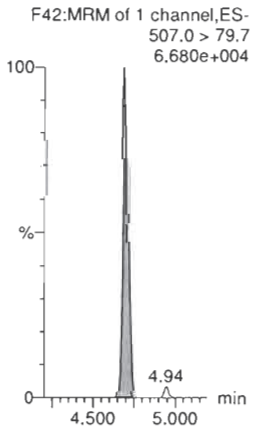

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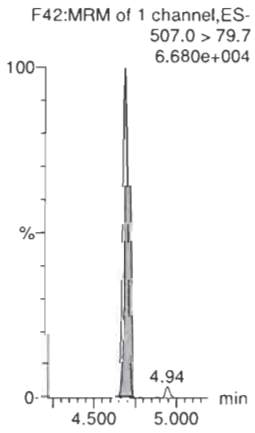

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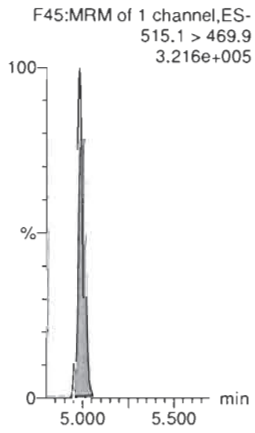
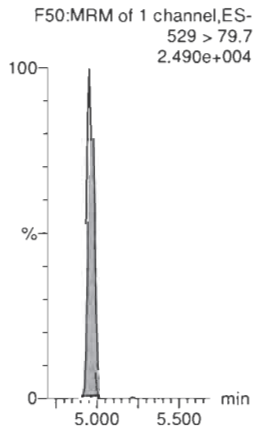


13C2-8:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

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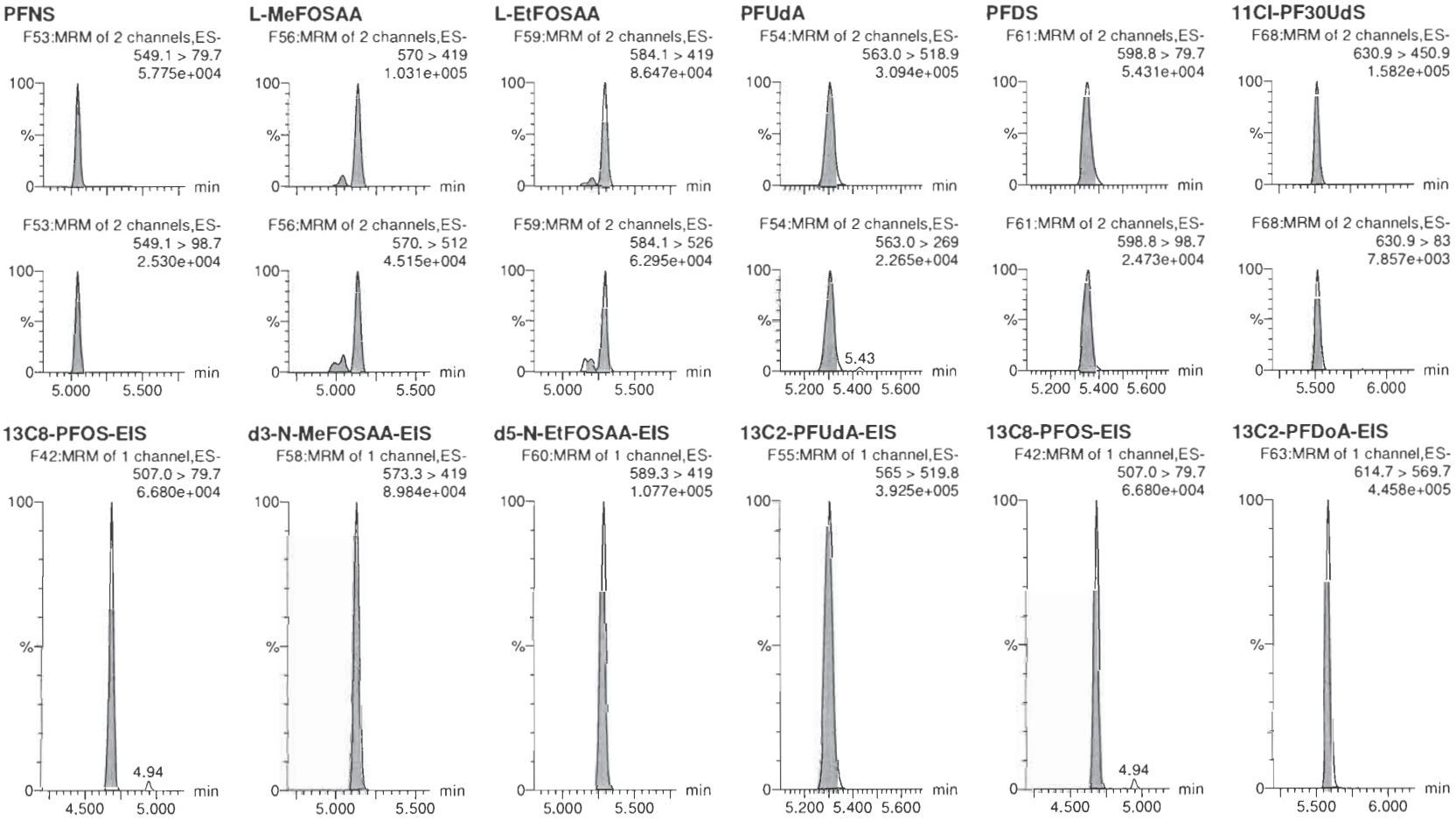

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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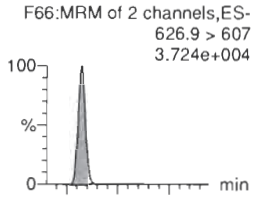
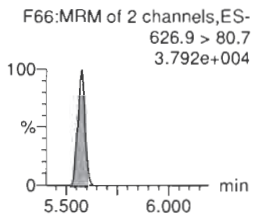
10:2 FTS





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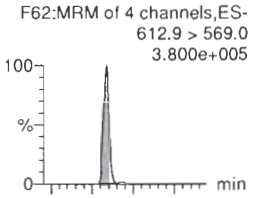

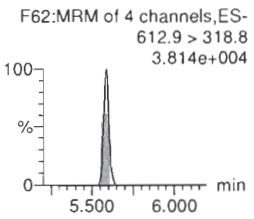

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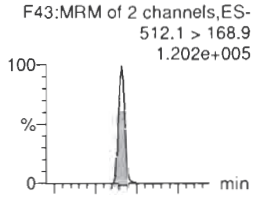

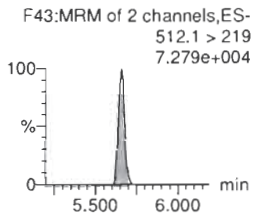

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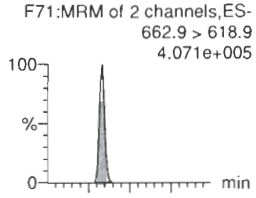

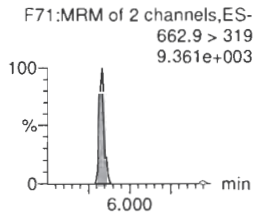

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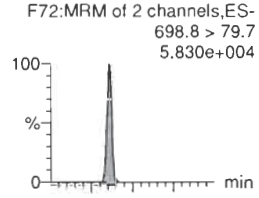

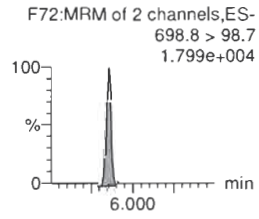

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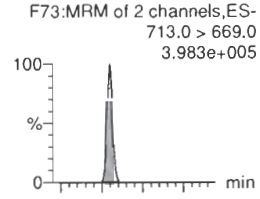

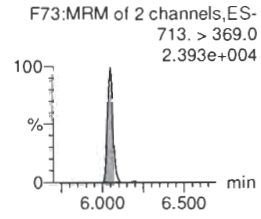

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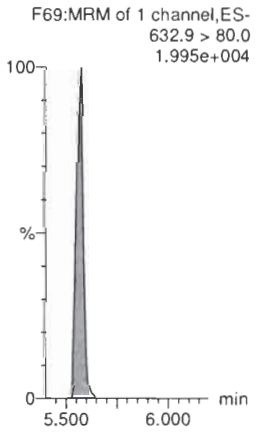
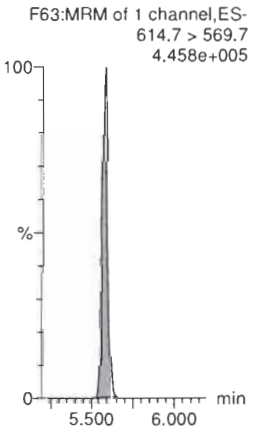


13C2-PFDoA-EIS



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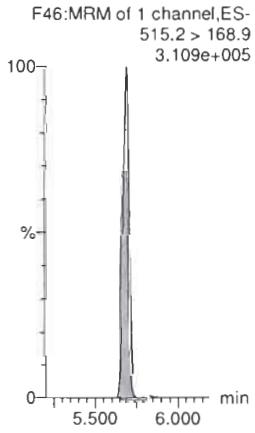

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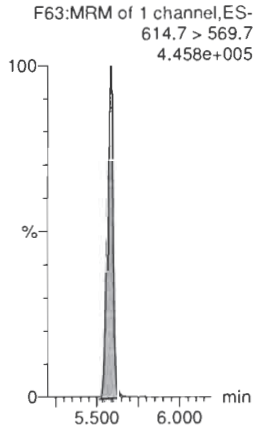

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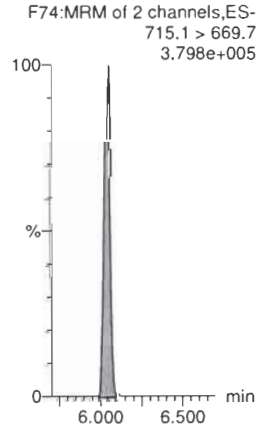

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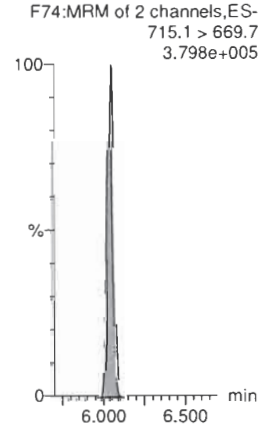

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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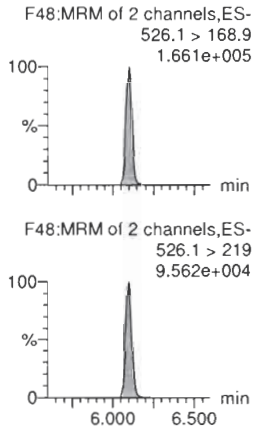

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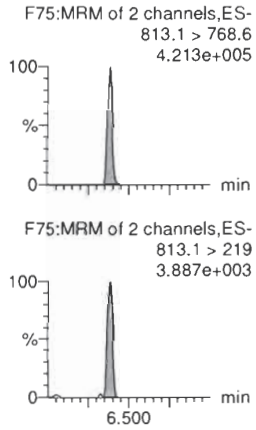

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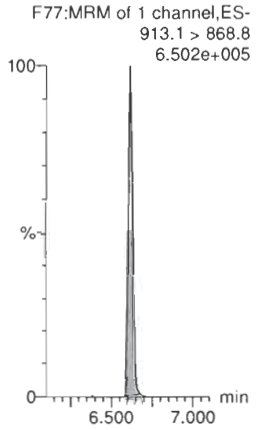

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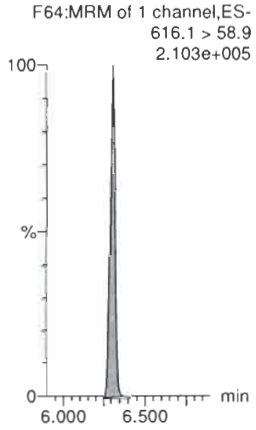

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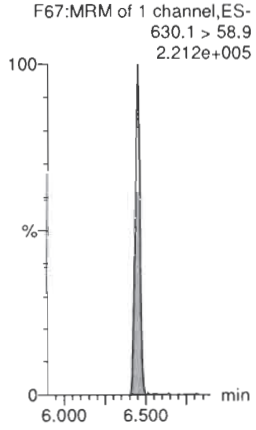

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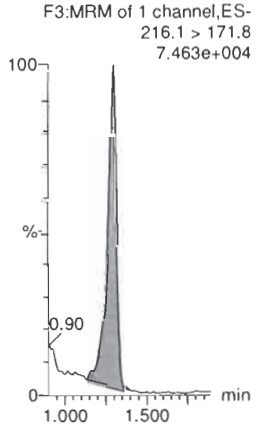
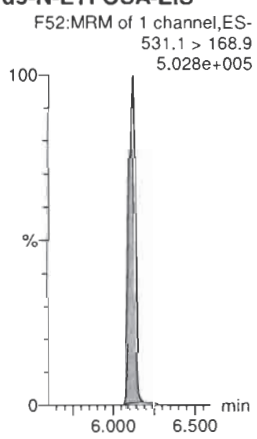


d5-N-ETFOSA-EIS



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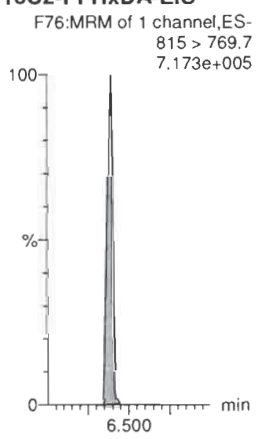

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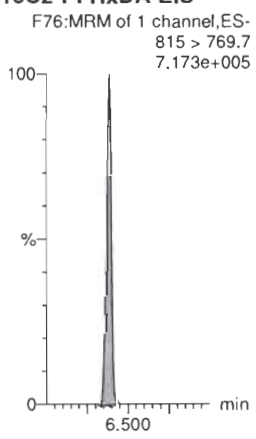

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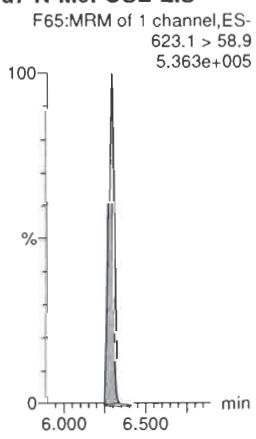

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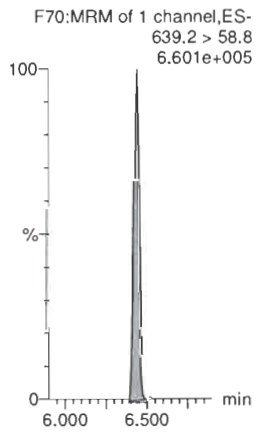

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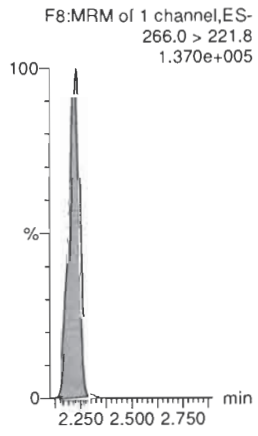

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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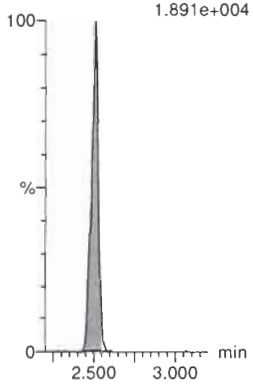

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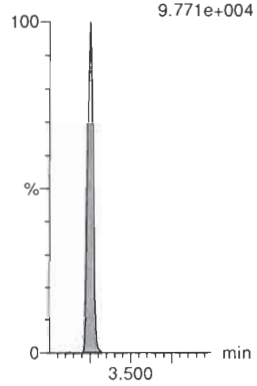

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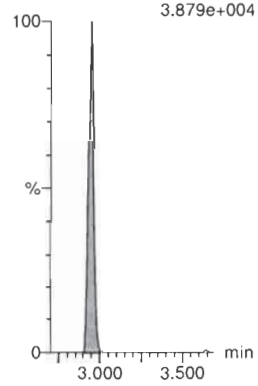

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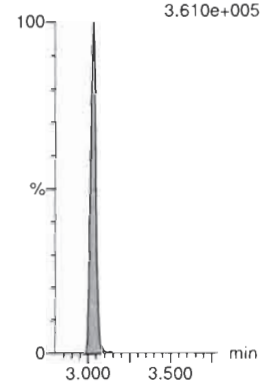

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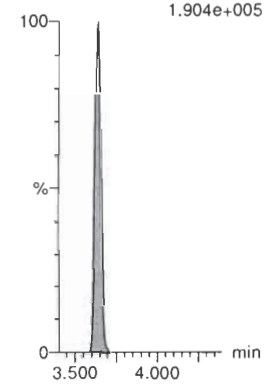

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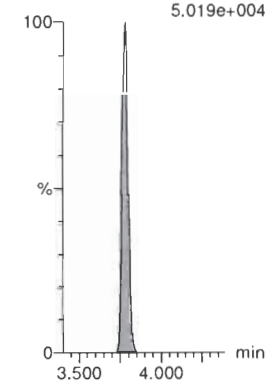

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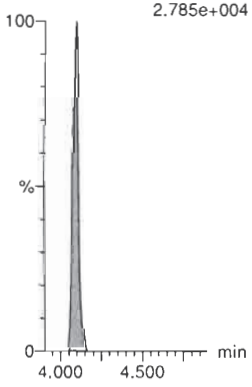
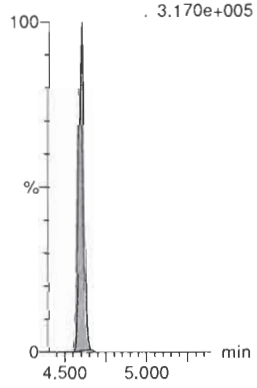
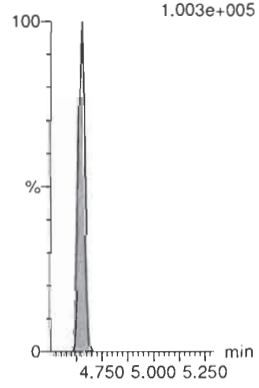


13C5-PFNA-RSD



13C8-PFOSA-RSD



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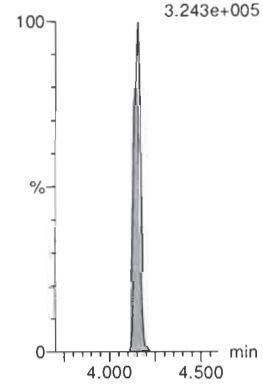
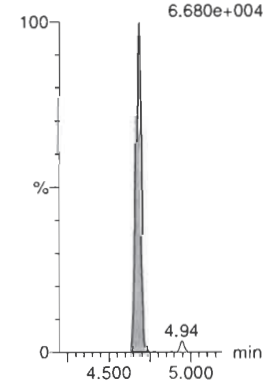


13C8-PFOS-RSD



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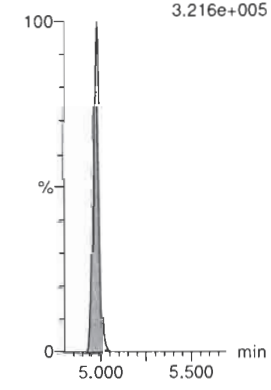

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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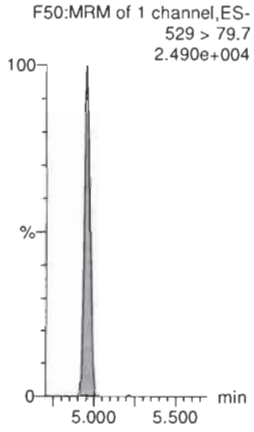
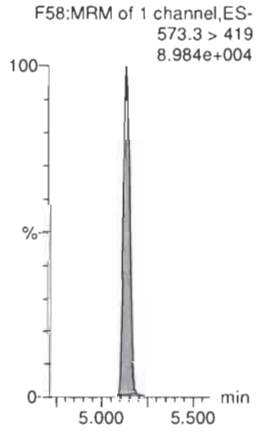
Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

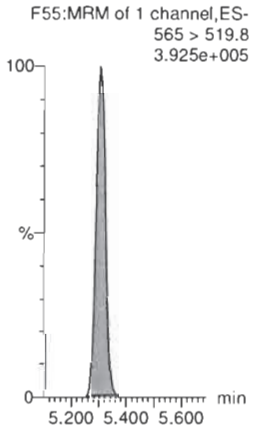
13C2-8:2 FTS-RSD



d3-N-MeFOSAA-RSD



13C2-PFUdA-RSD



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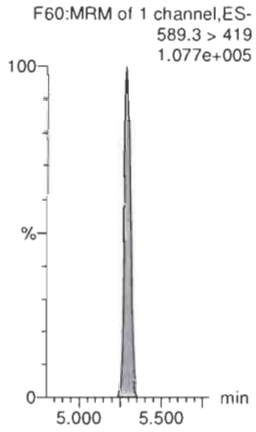

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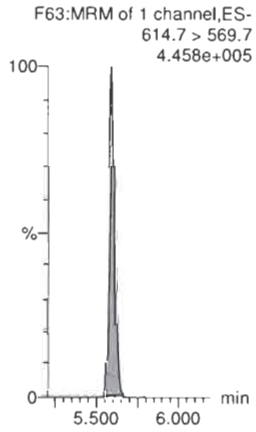

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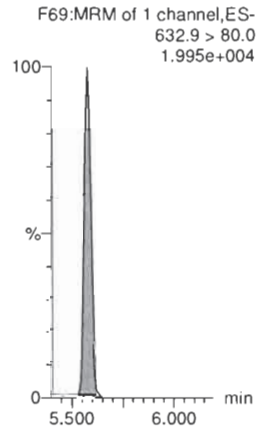

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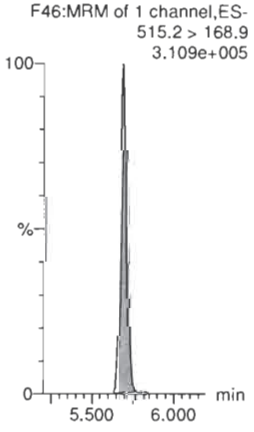

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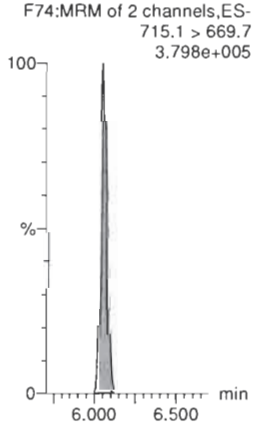

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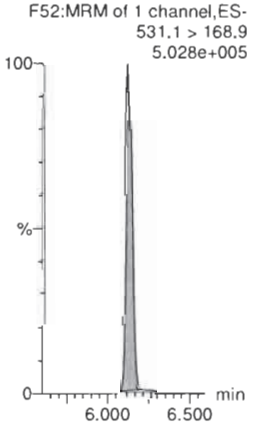

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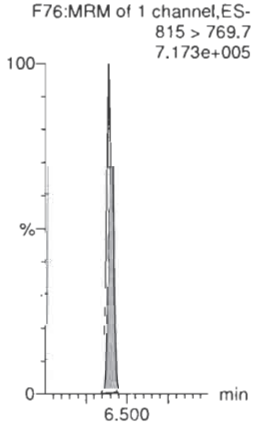

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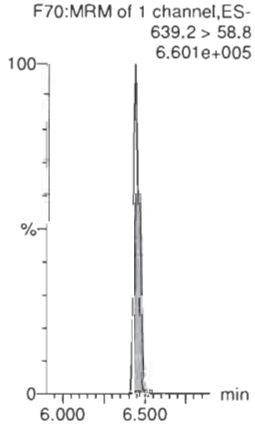

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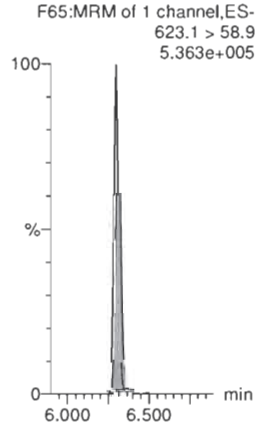

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-8, Date: 29-Feb-2020, Time: 16:38:28, ID: ST200229P1-6 PFC CS3 20B1107, Description: PFC CS3 20B1107

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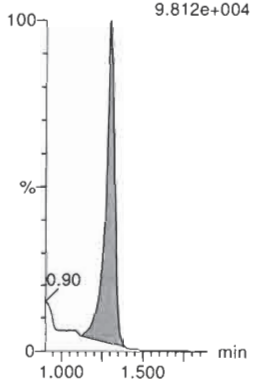

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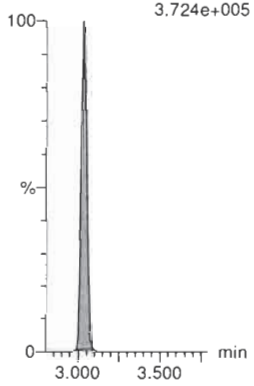

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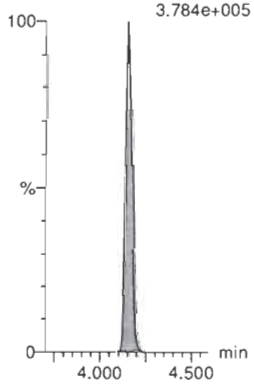
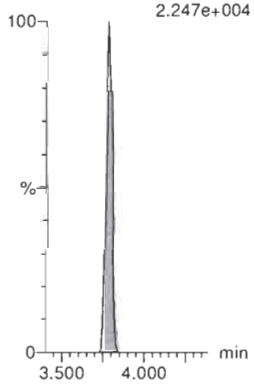


18O2-PFHxS



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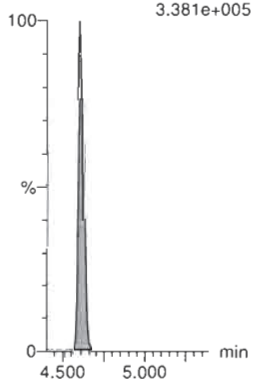

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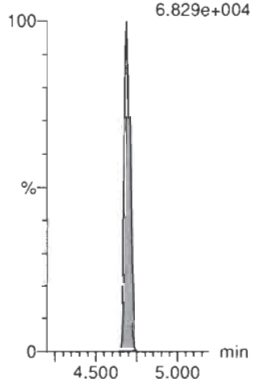

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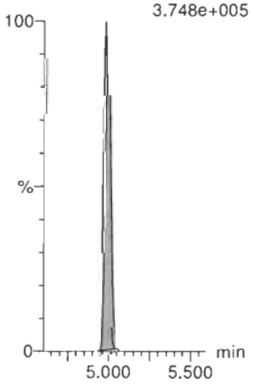

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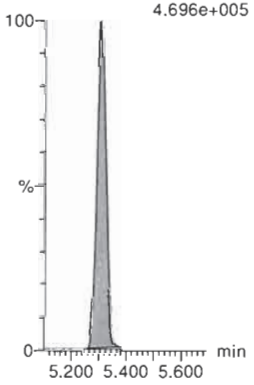


Quantify Sample Report **MassLynx V4.2 SCN977**

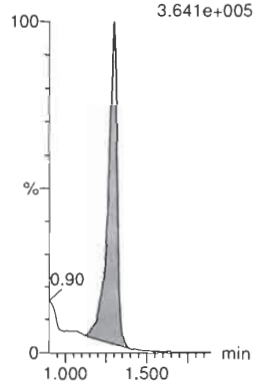
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

PFBA



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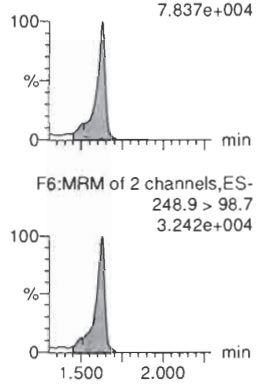
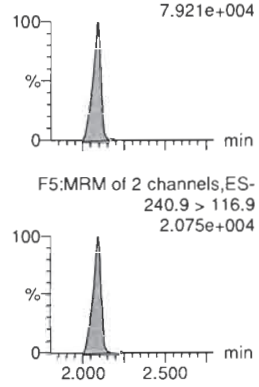


3:3 FTCA



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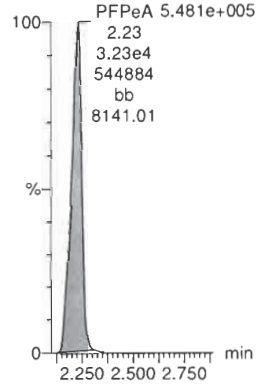

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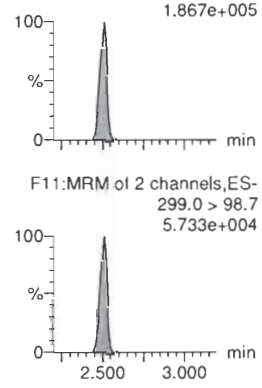
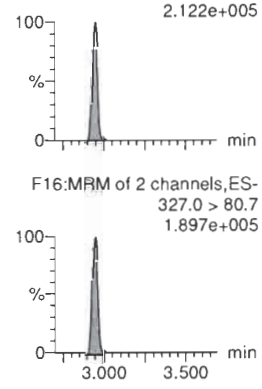


4:2 FTS



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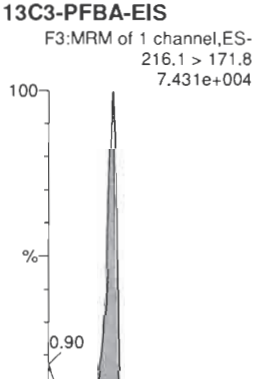

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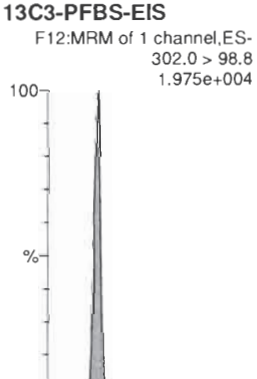

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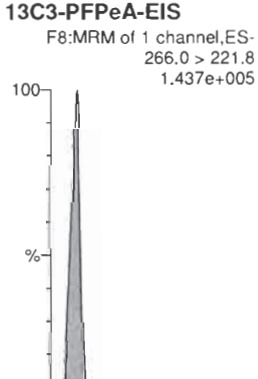

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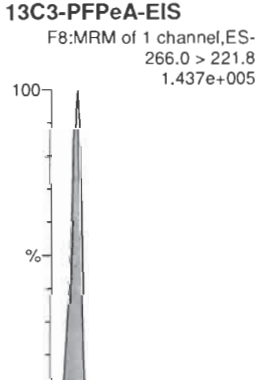

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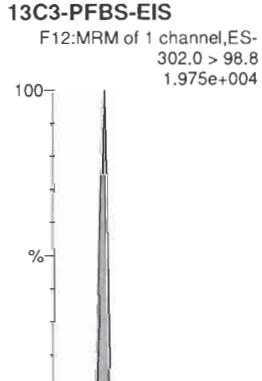
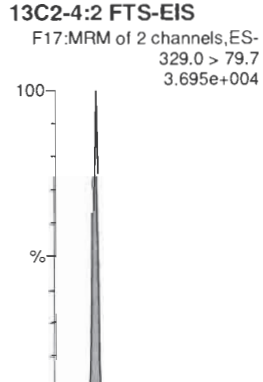


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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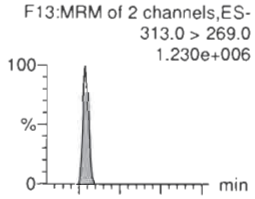

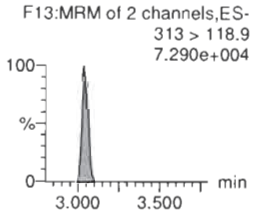

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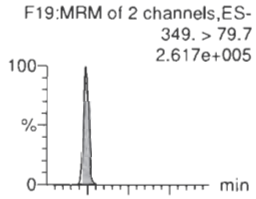

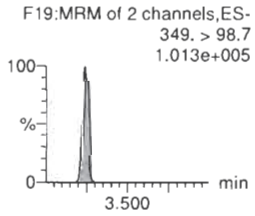

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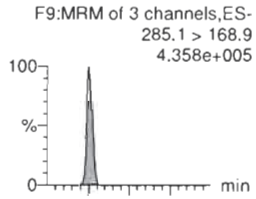

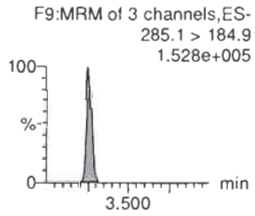

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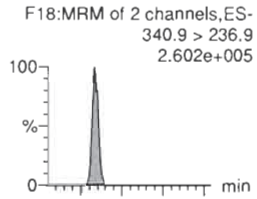

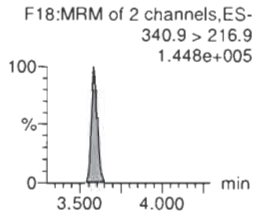

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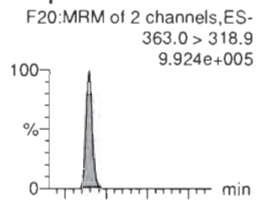

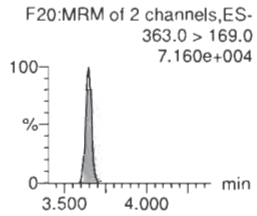

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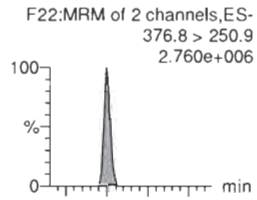

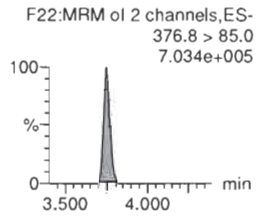

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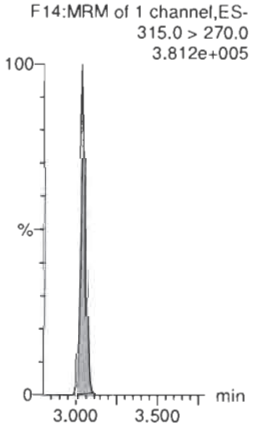

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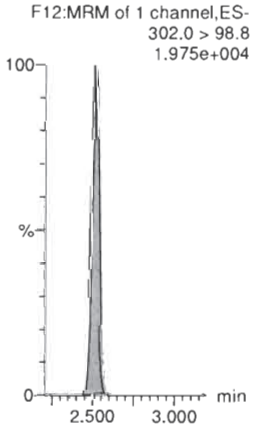
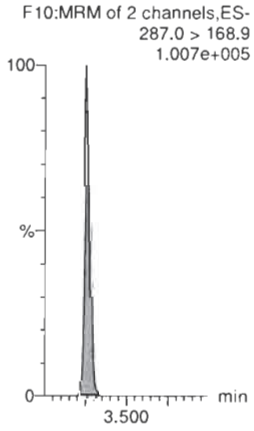


13C3-HFPO-DA-EIS



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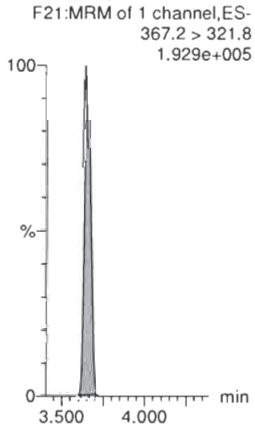

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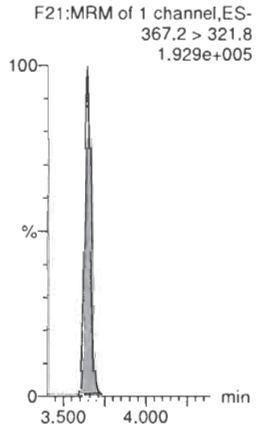

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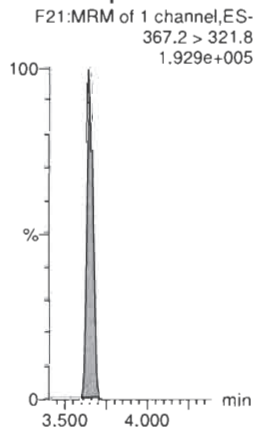


Quantify Sample Report **MassLynx V4.2 SCN977**

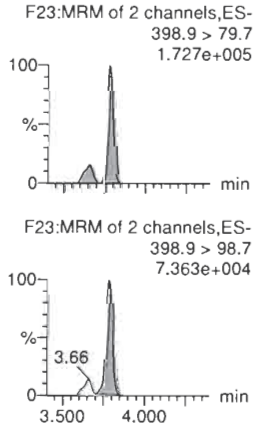
Vista Analytical Laboratory

Dataset: Untitled

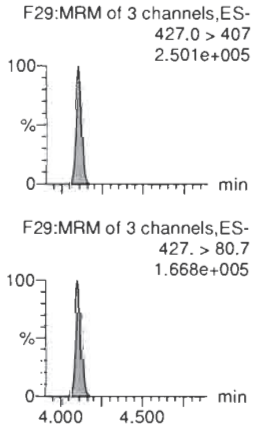
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

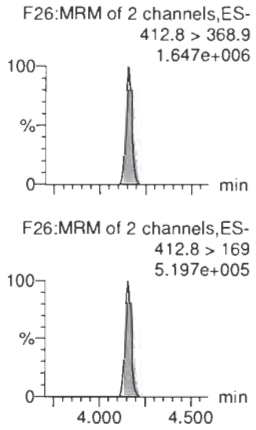
L-PFHxS



6:2 FTS



L-PFOA



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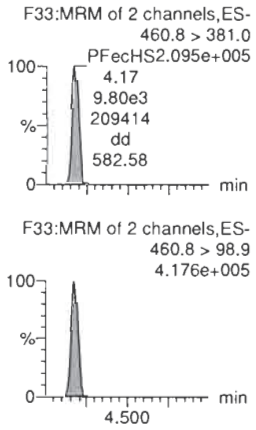

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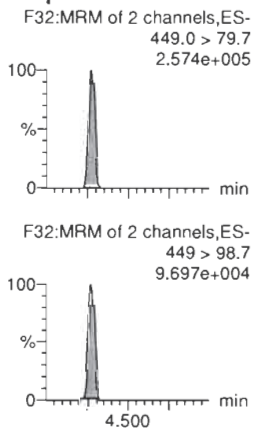

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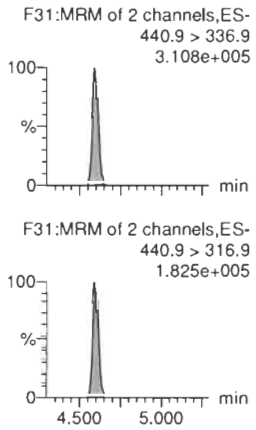
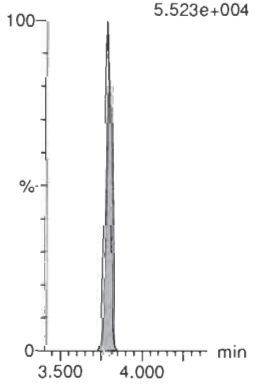
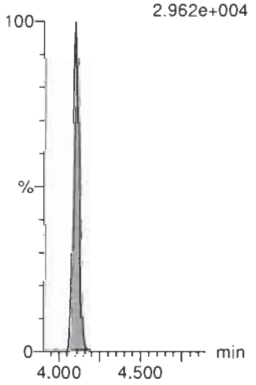


13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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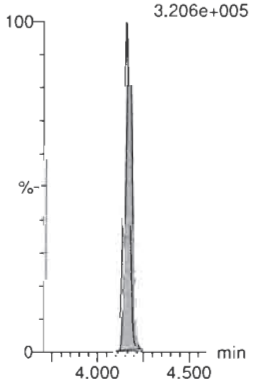

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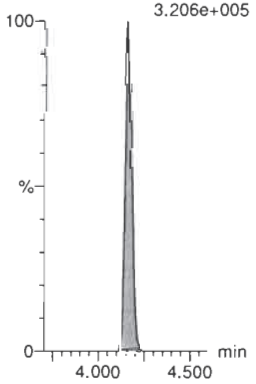

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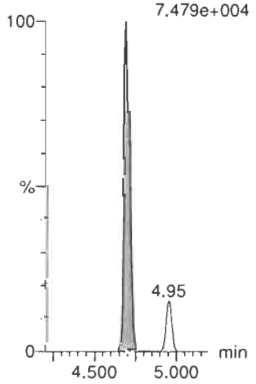
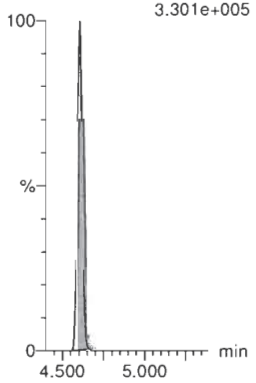


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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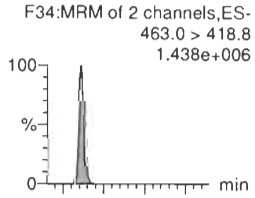

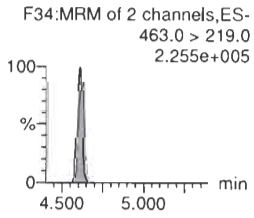

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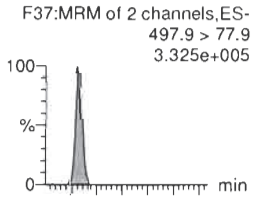

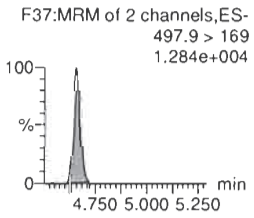

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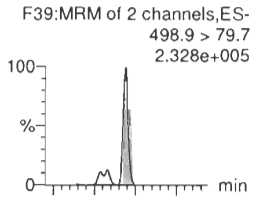

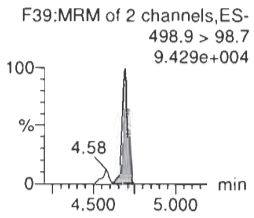

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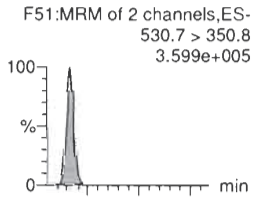

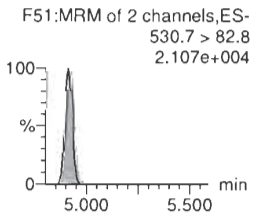

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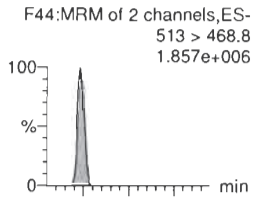
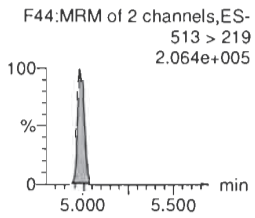
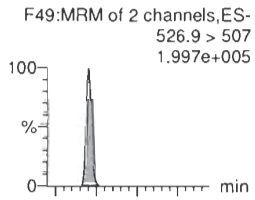
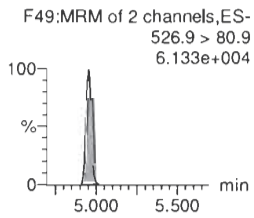


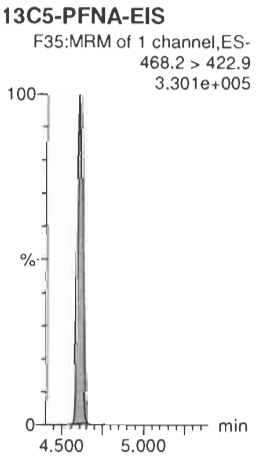


8:2 FTS





13C5-PFNA-EIS



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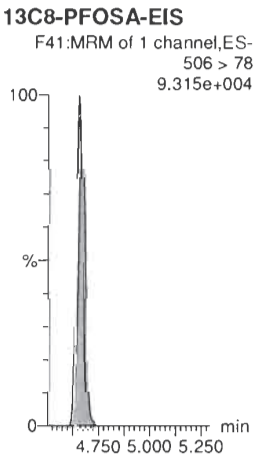

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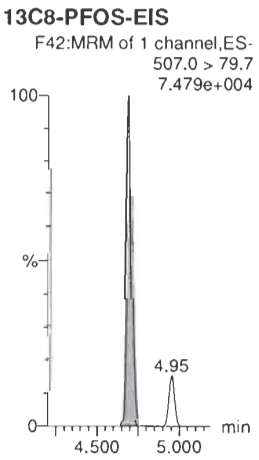

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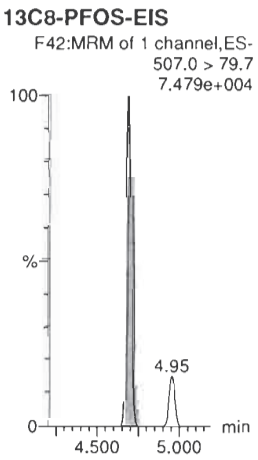

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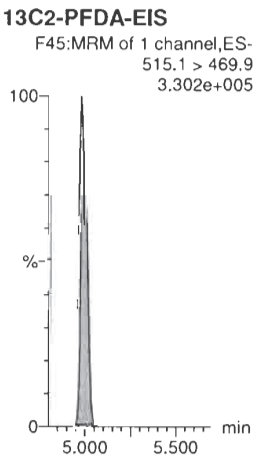

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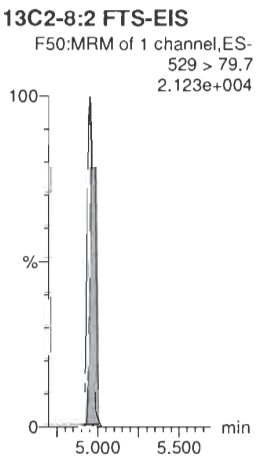

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

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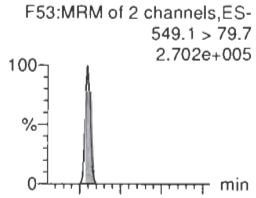

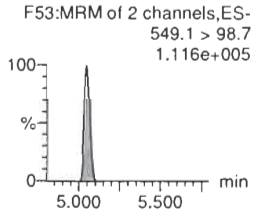

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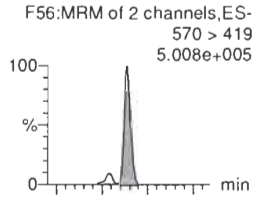

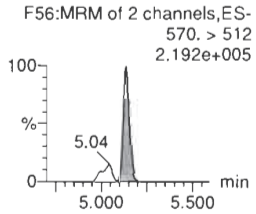

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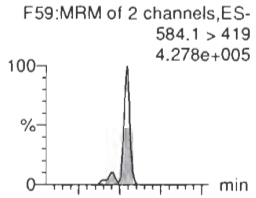

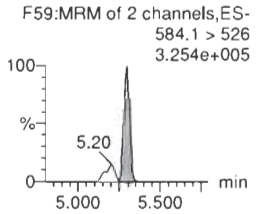

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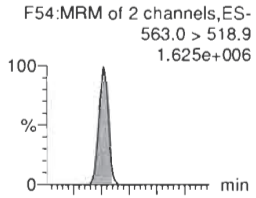

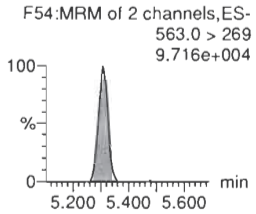

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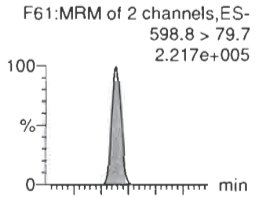

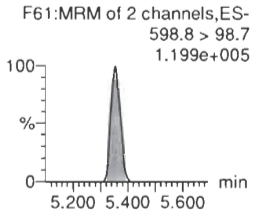

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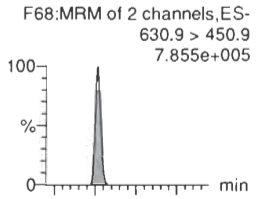
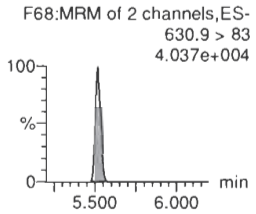
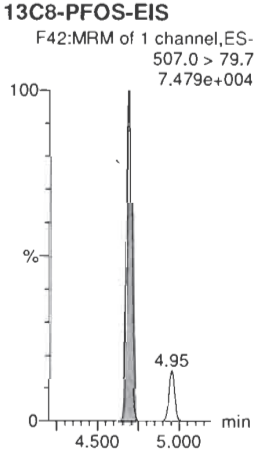
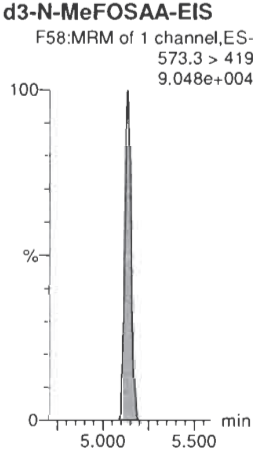




13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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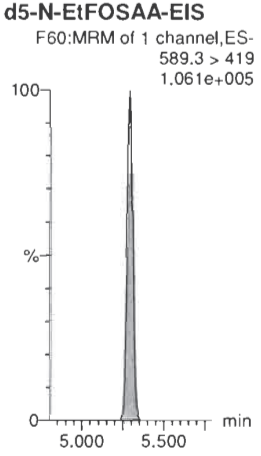

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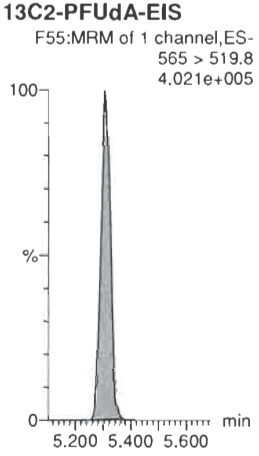

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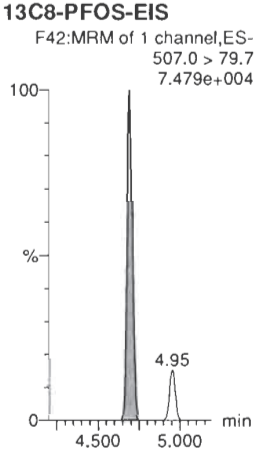

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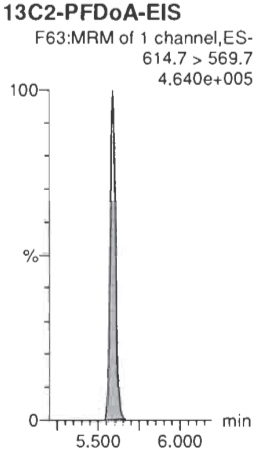

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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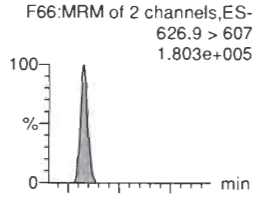
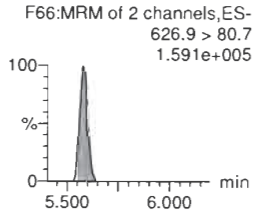
Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

10:2 FTS





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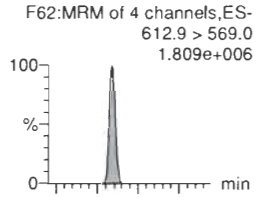

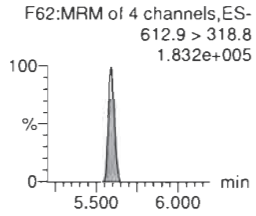

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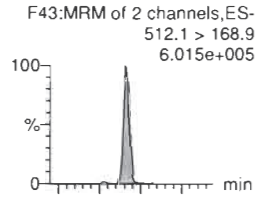

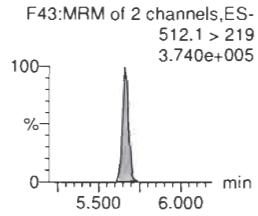

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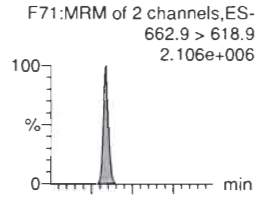
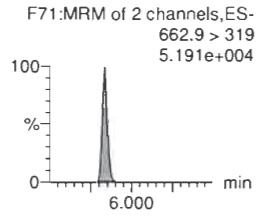
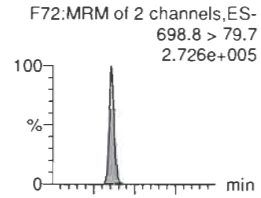
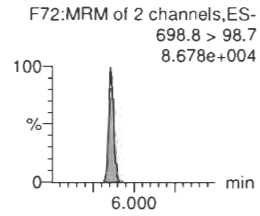


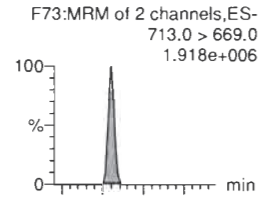


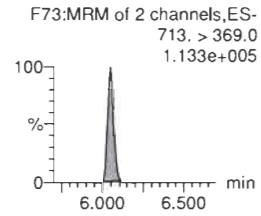
PFDoS



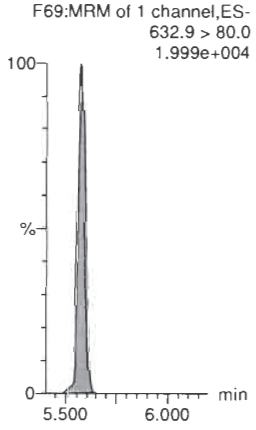


PFTeDA

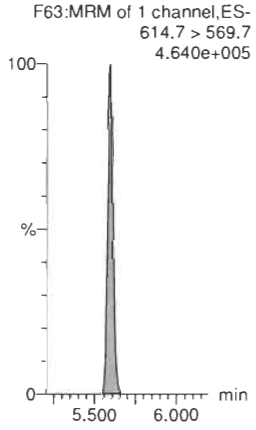




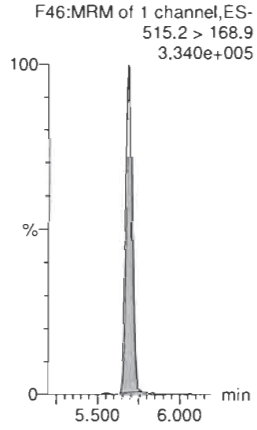
13C2-10:2 FTS-EIS



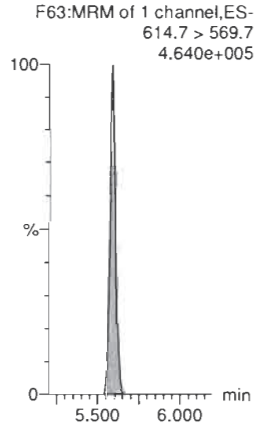
13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



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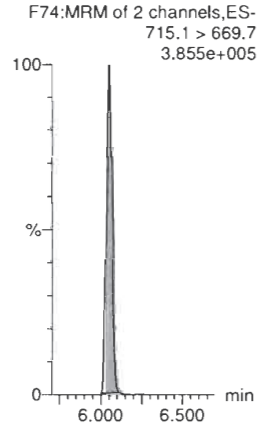
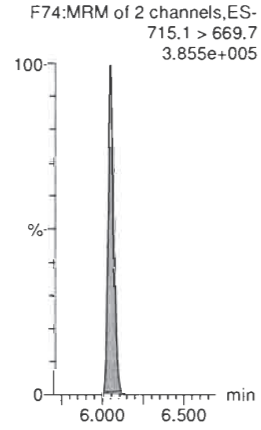


13C2-PFTeDA-EIS



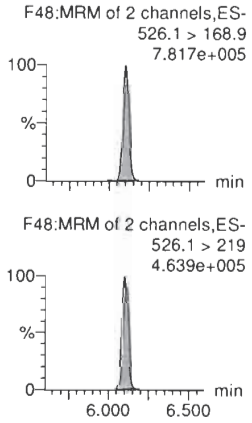
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

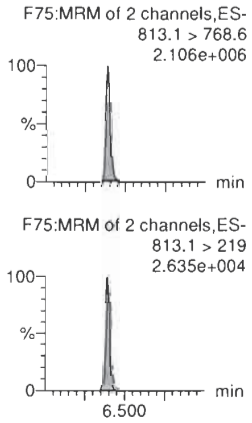
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

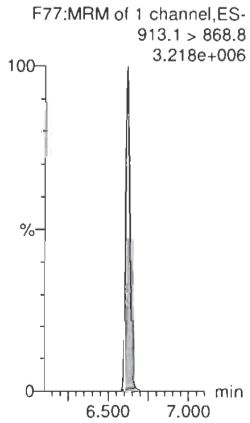
N-EtFOSA



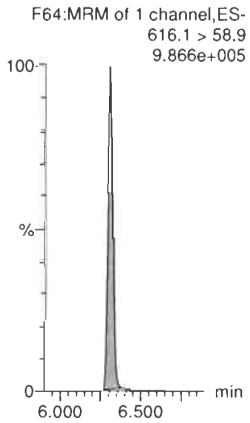
PFHxDA



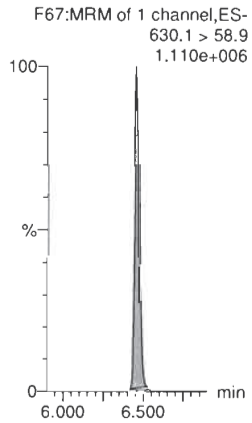
PFODA



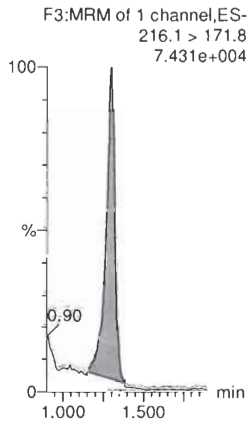
N-MeFOSE



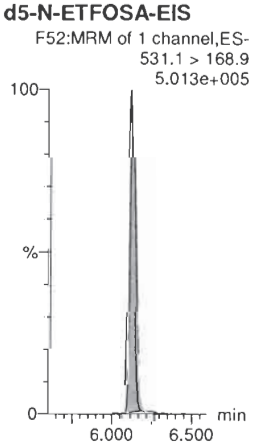
N-EtFOSE



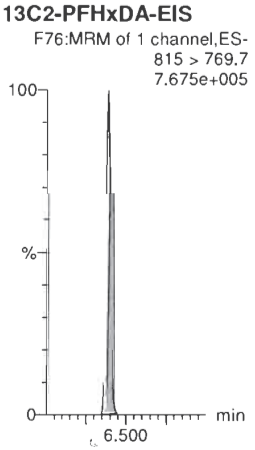
13C3-PFBA-RSD



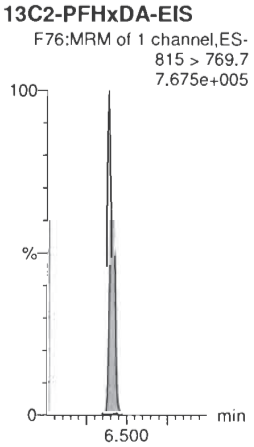
d5-N-ETFOSA-EIS



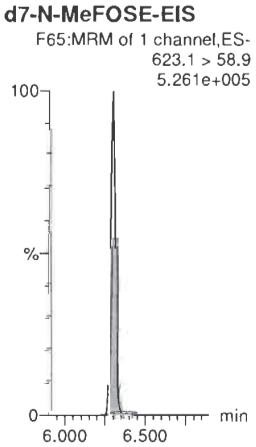
13C2-PFHxDA-EIS



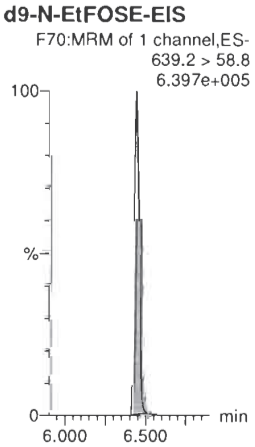
13C2-PFHxDA-EIS



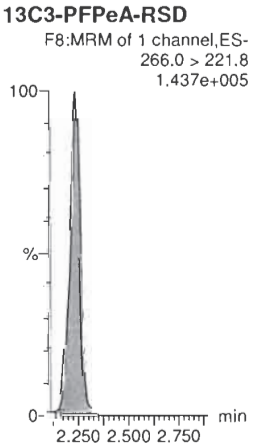
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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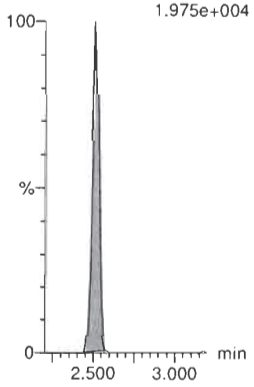
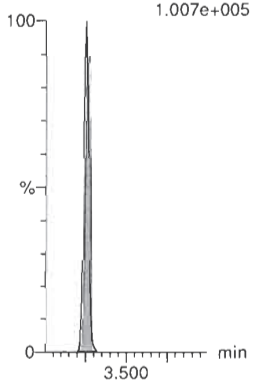
Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

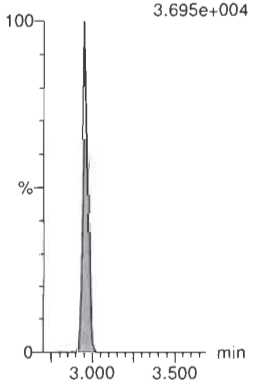
13C3-PFBS-RSD



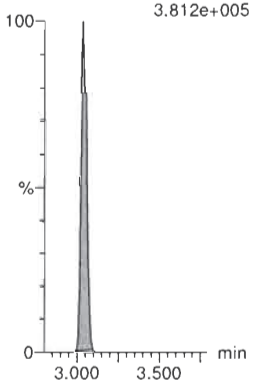
13C3-HFPO-DA-RSD



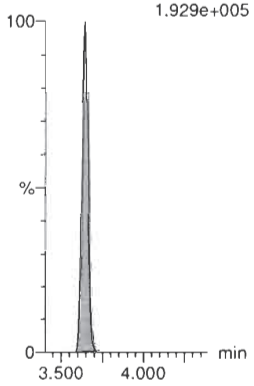
13C2-4:2 FTS-RSD



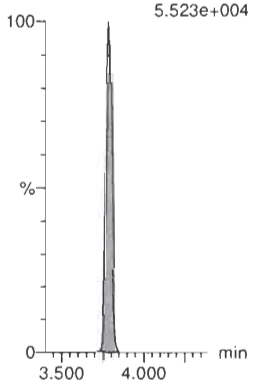
13C2-PFHxA-RSD



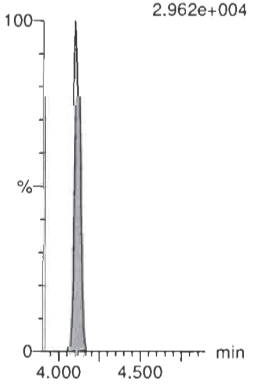
13C4-PFHpA-RSD



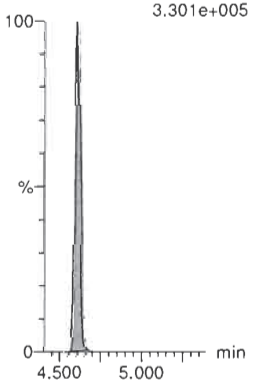
13C3-PFHxS-RSD



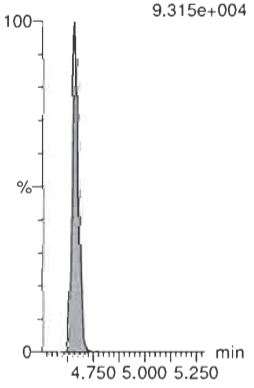
13C2-6:2 FTS-RSD



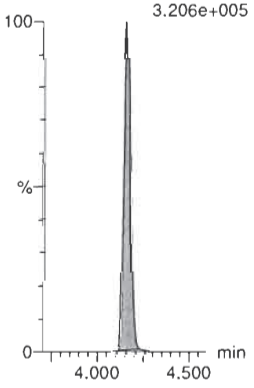
13C5-PFNA-RSD



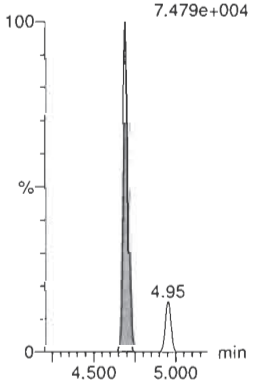
13C8-PFOSA-RSD



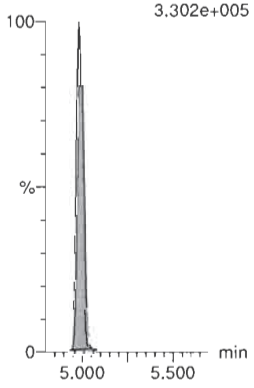
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

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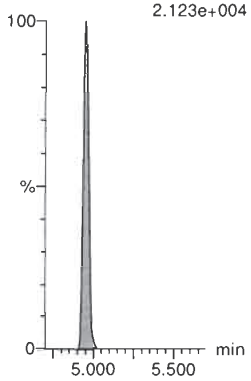
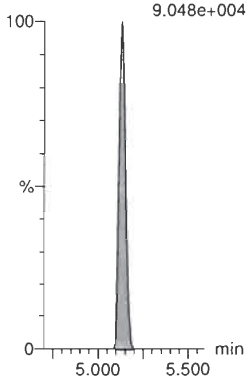
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

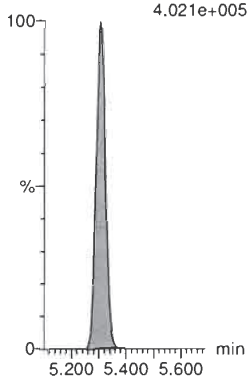
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.123e+004



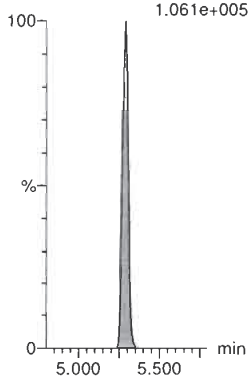
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
9.048e+004



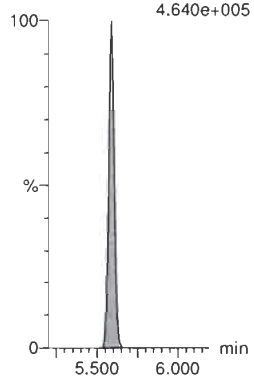
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
4.021e+005



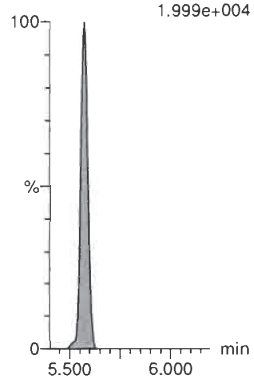
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.061e+005



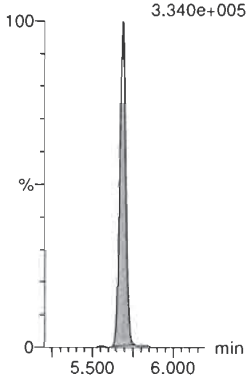
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.640e+005



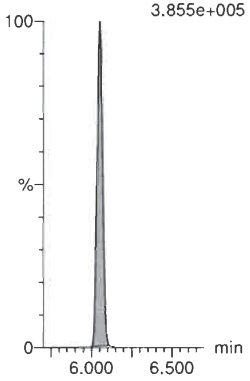
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.999e+004



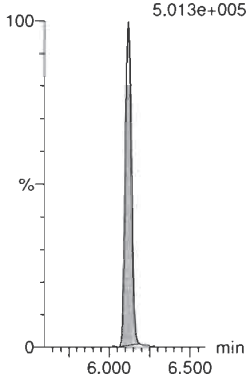
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.340e+005



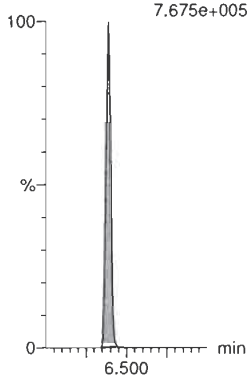
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.855e+005



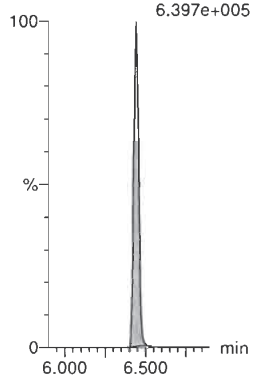
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.013e+005



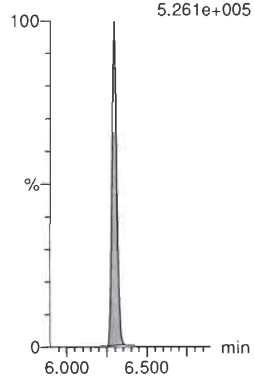
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
7.675e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.397e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.261e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
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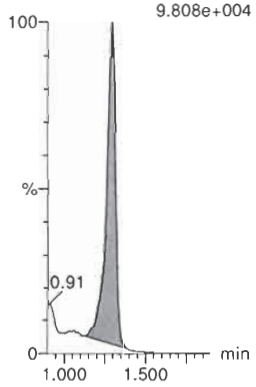
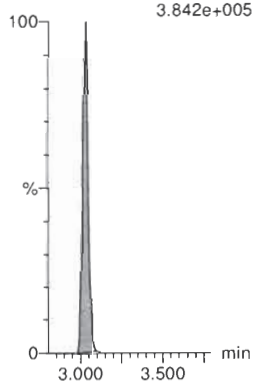
Name: 200229P1-9, Date: 29-Feb-2020, Time: 16:49:00, ID: ST200229P1-7 PFC CS4 20B1108, Description: PFC CS4 20B1108

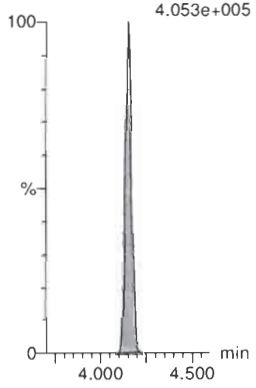
13C4-PFBA



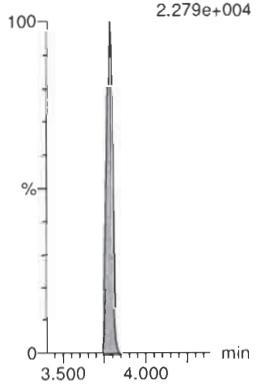
13C5-PFHxA



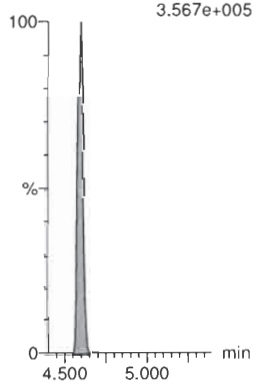
13C8-PFOA



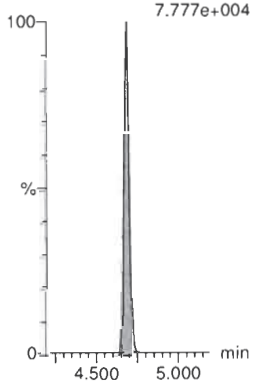
18O2-PFHxS



13C9-PFNA



13C4-PFOS



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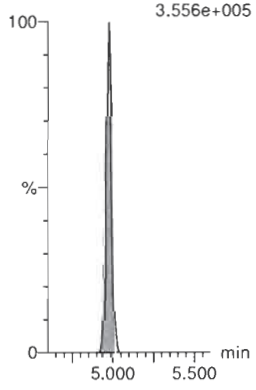

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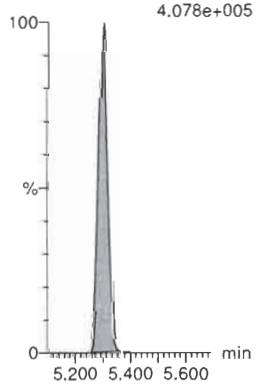

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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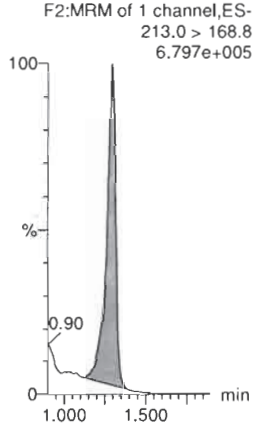
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

PFBA



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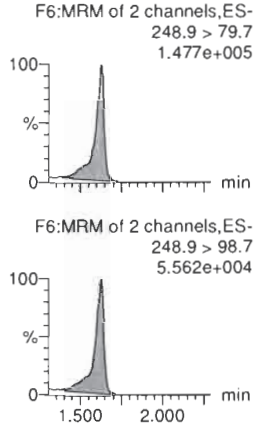

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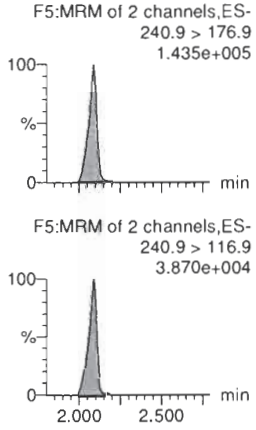

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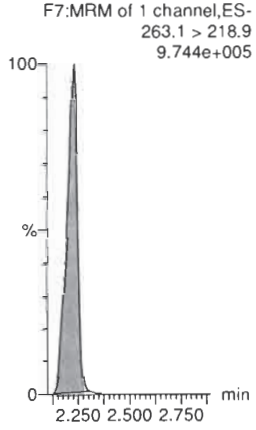

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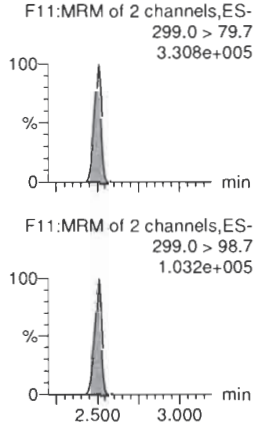
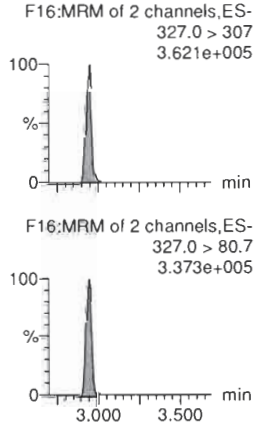


4:2 FTS



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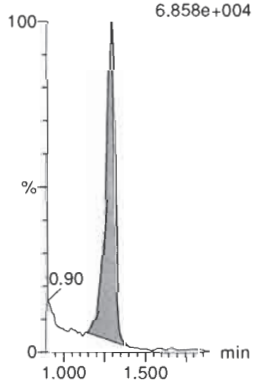

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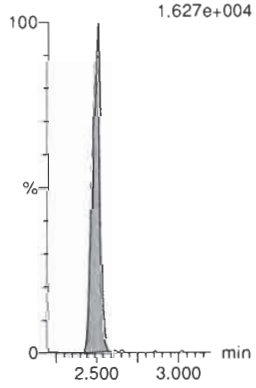

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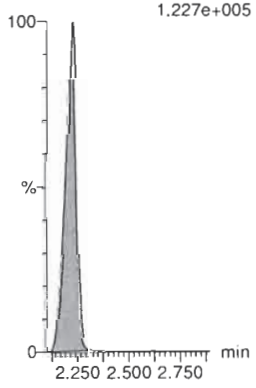

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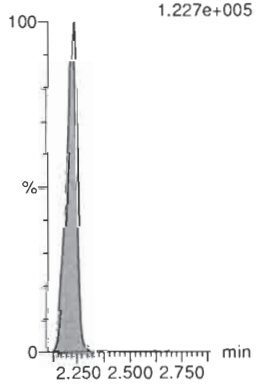

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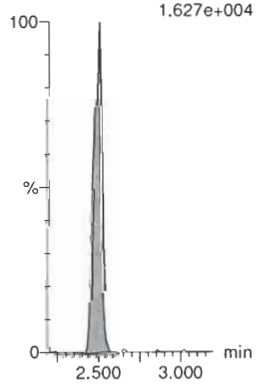
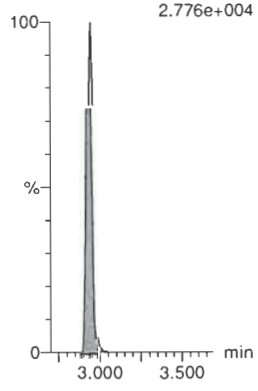


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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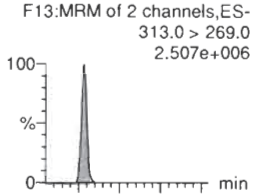
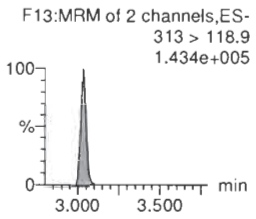
Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

PFHxA





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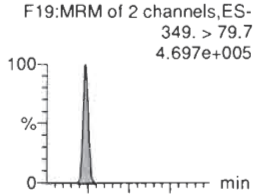

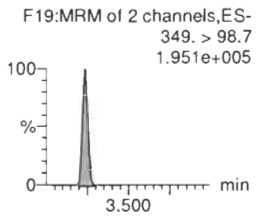

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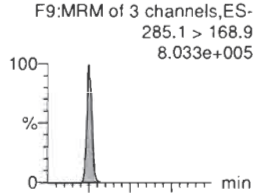

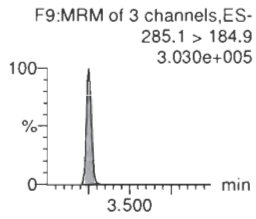

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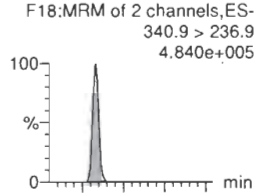

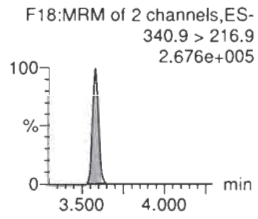

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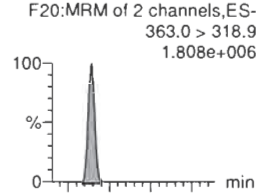

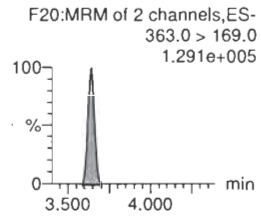

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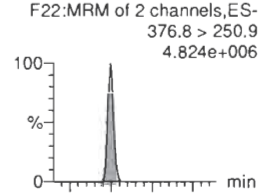

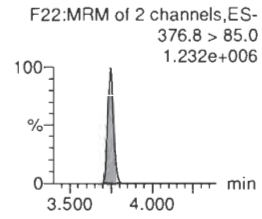

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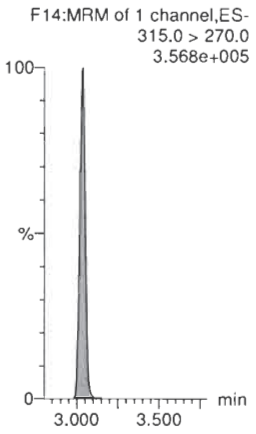
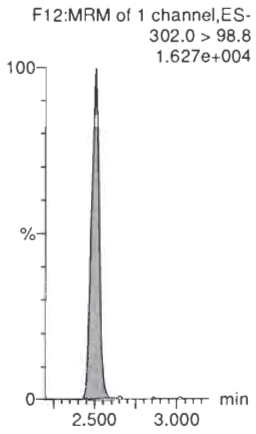
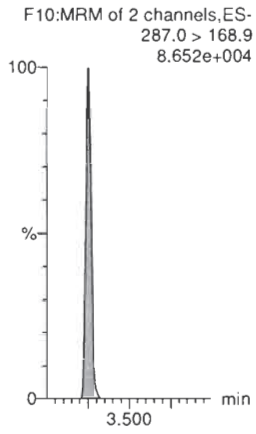


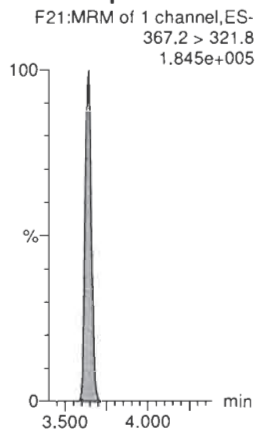
13C3-PFBS-EIS



13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



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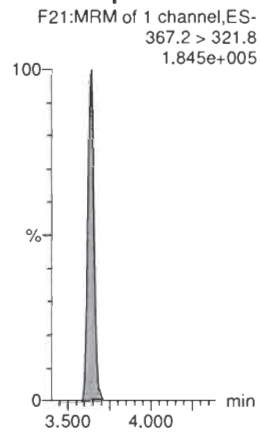

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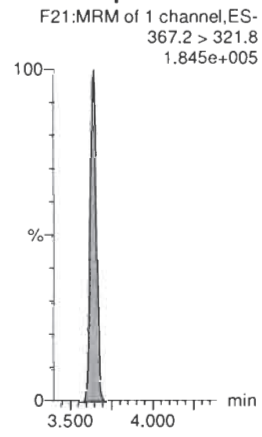

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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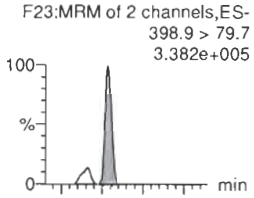
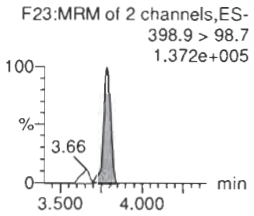
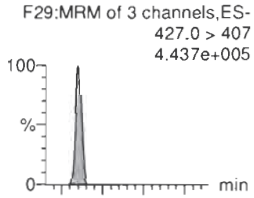
Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

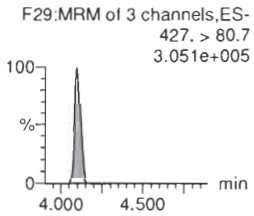
L-PFHxS



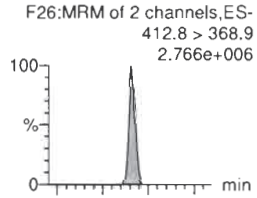


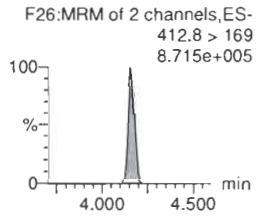
6:2 FTS





L-PFOA





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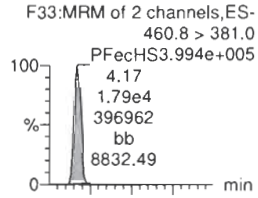

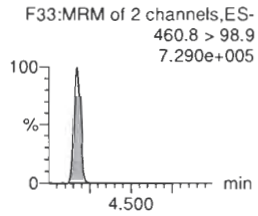

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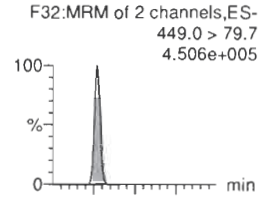
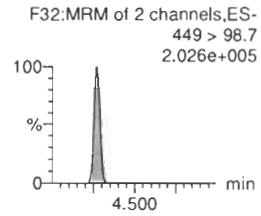
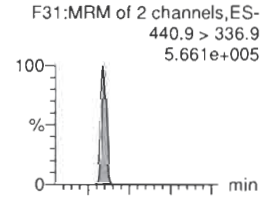
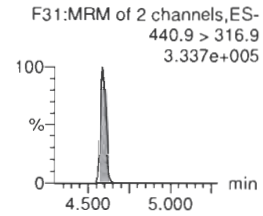


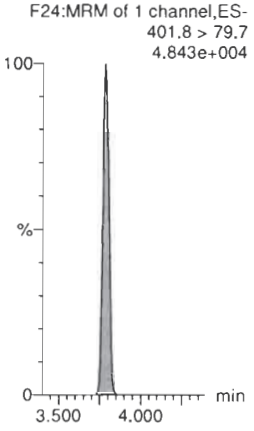


7:3 FTCA

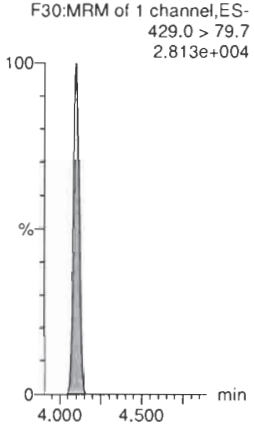




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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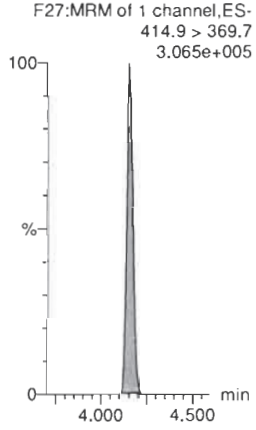
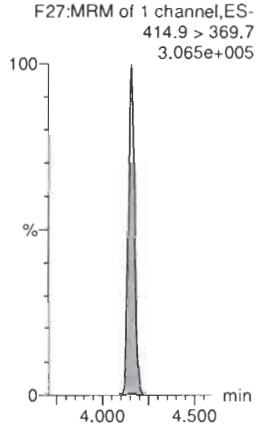
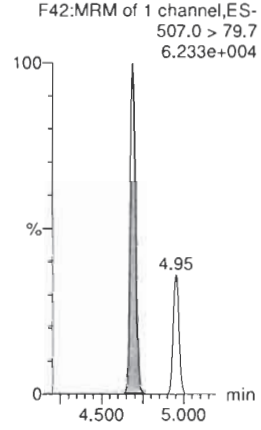


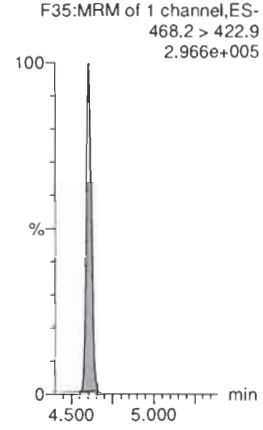
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

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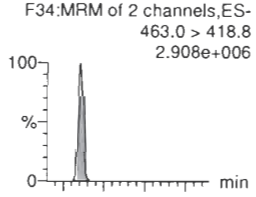

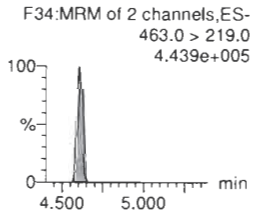

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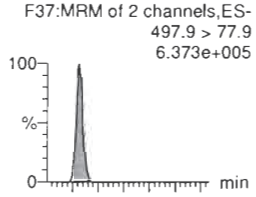

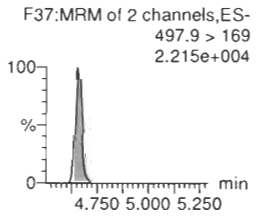

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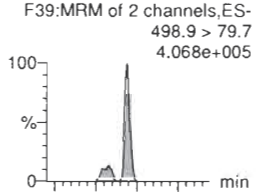

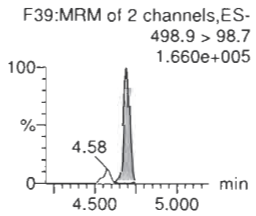

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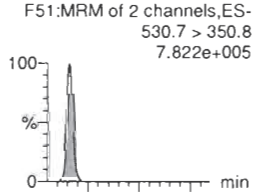

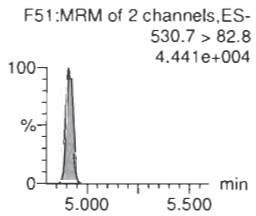

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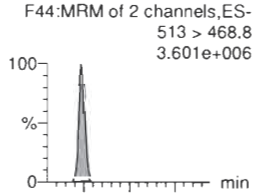
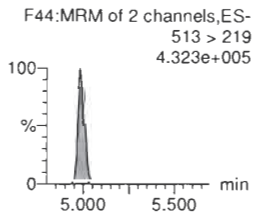
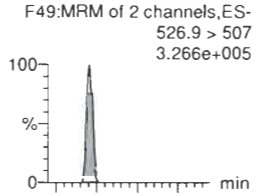
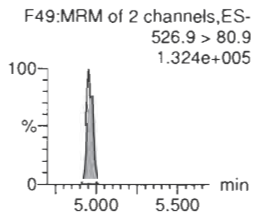




8:2 FTS





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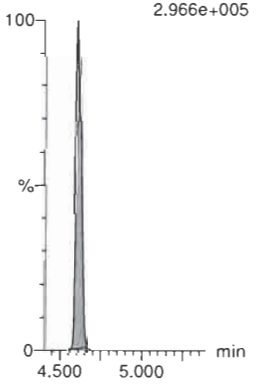

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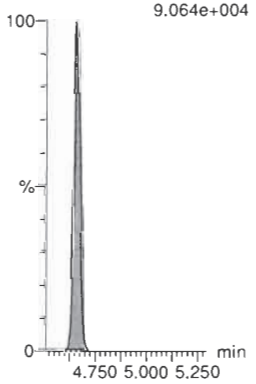

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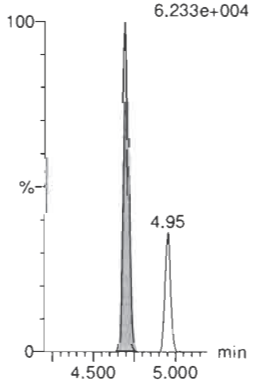

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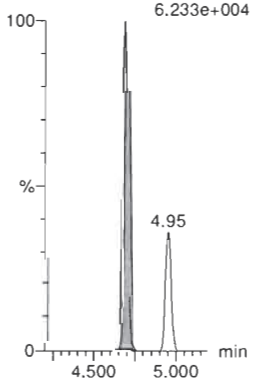

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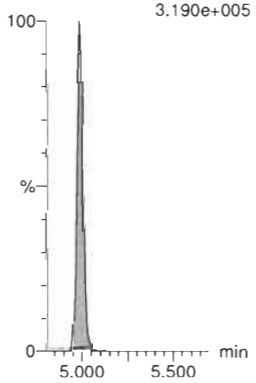

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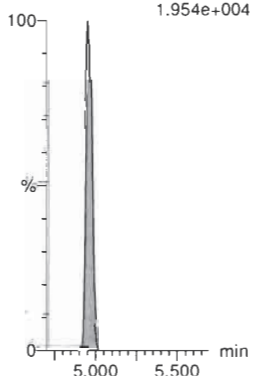

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

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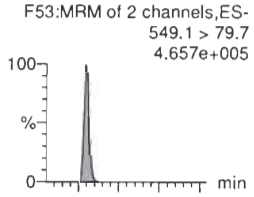

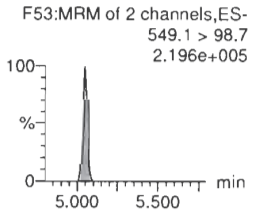

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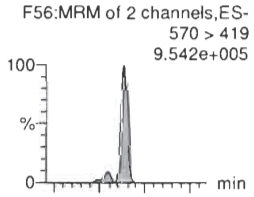

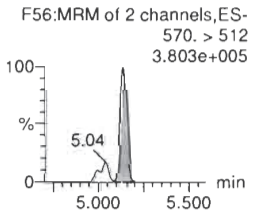

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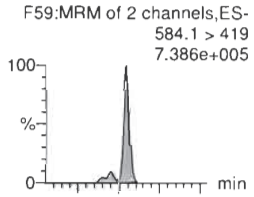

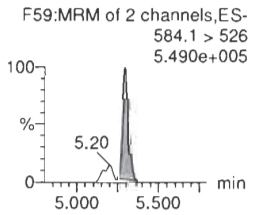

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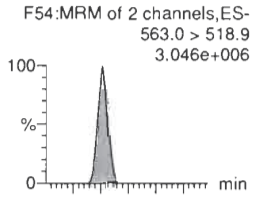

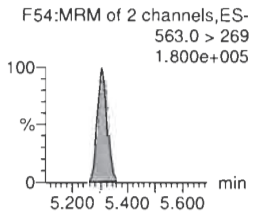

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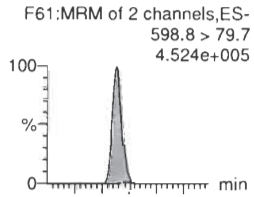

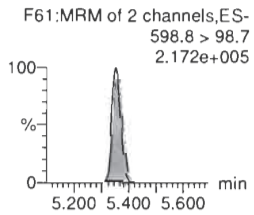

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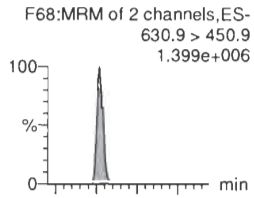

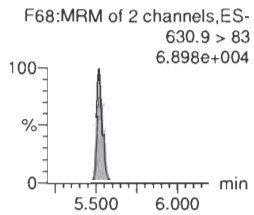

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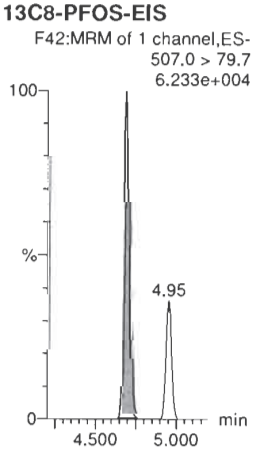

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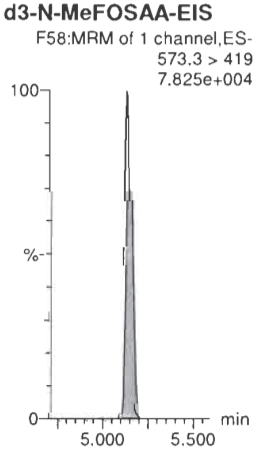

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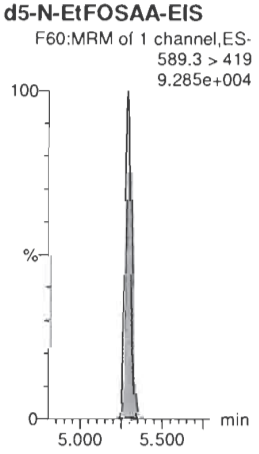

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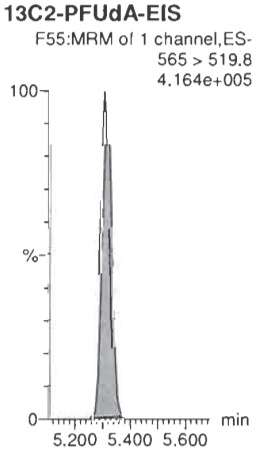

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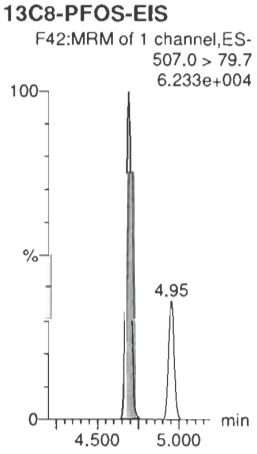

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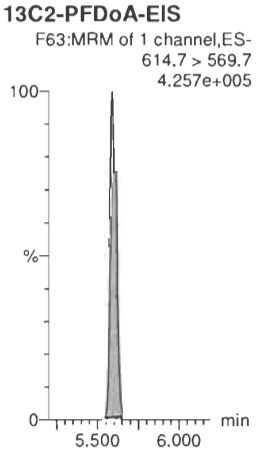


Quantify Sample Report **MassLynx V4.2 SCN977**

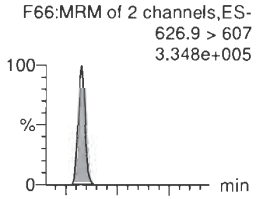
Vista Analytical Laboratory

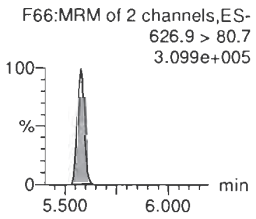
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

10:2 FTS





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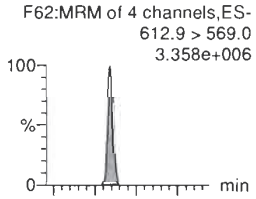

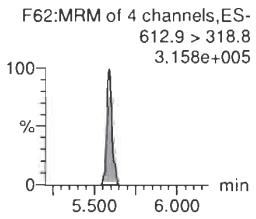

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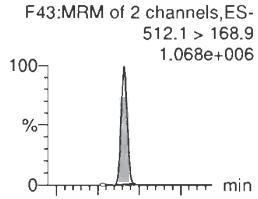

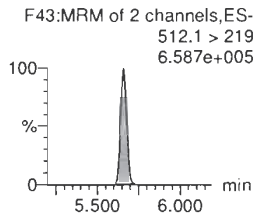

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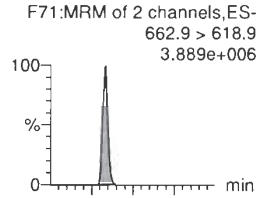

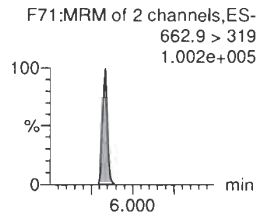

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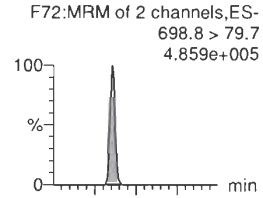

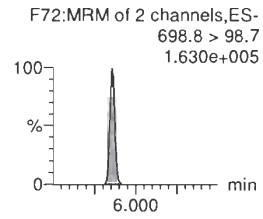

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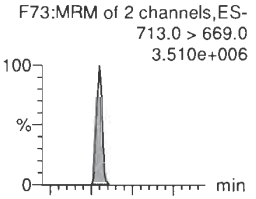

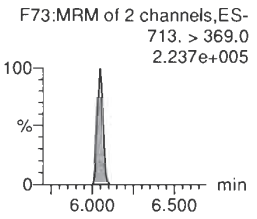

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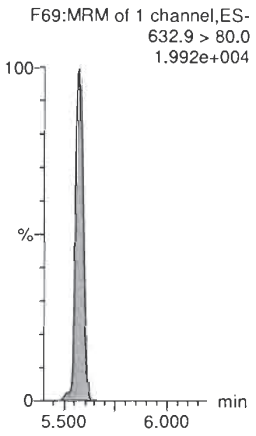

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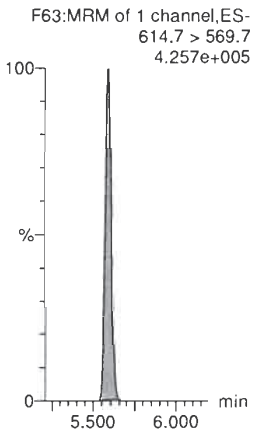
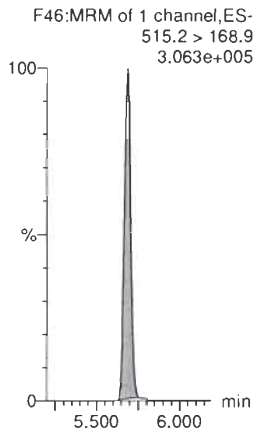


d3-N-MeFOSA-EIS



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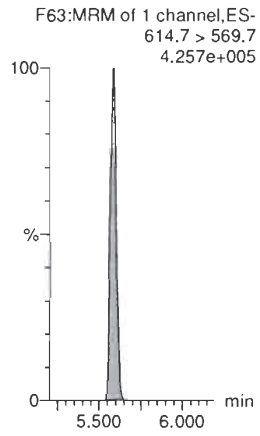

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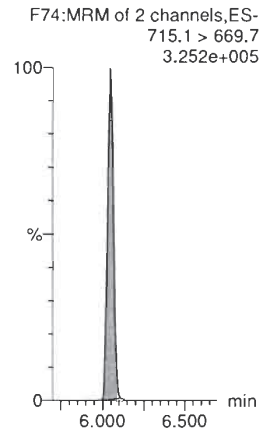

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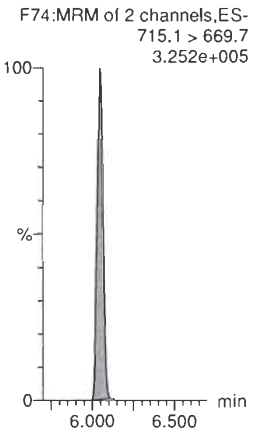

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

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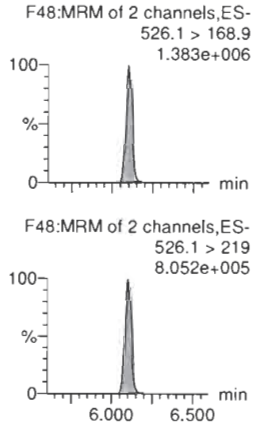

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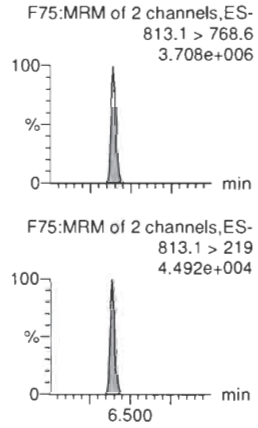

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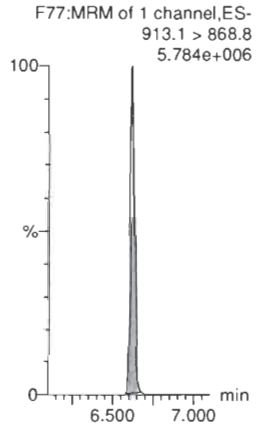

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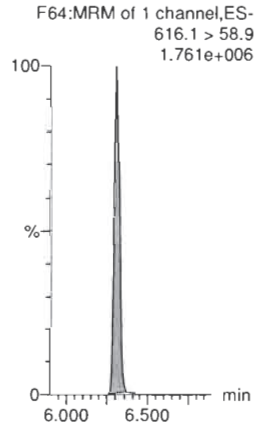

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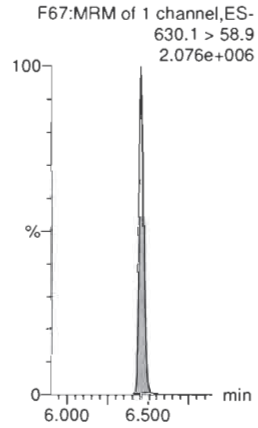

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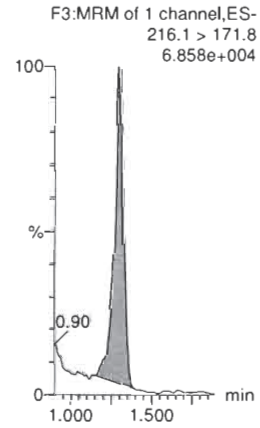

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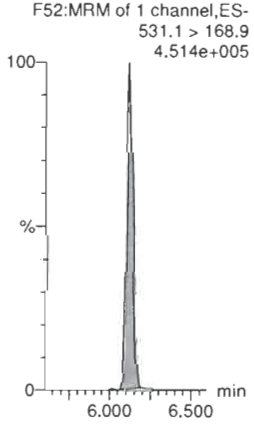

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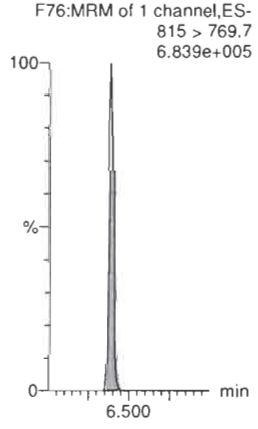

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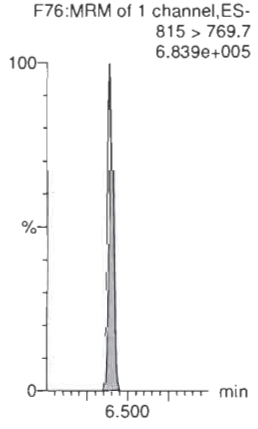

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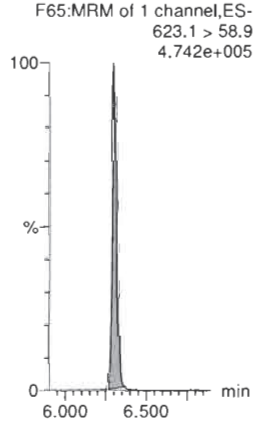

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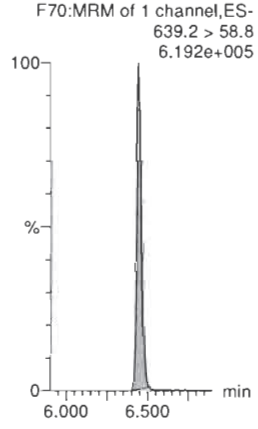

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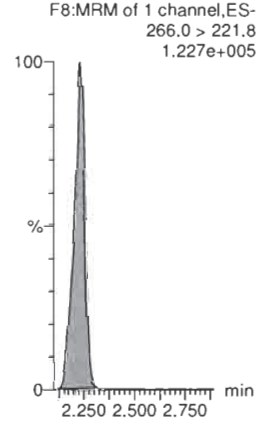

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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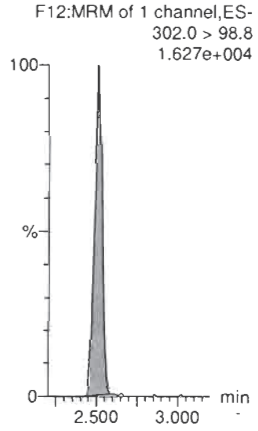
Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

13C3-PFBS-RSD



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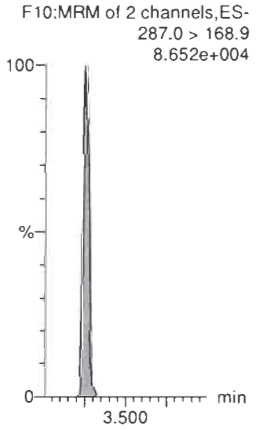

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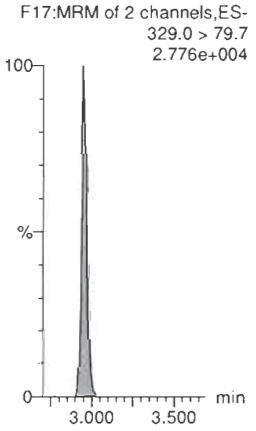

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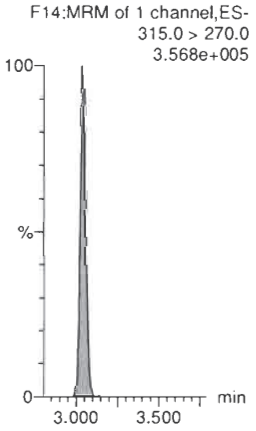

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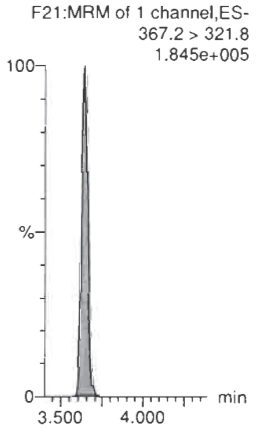

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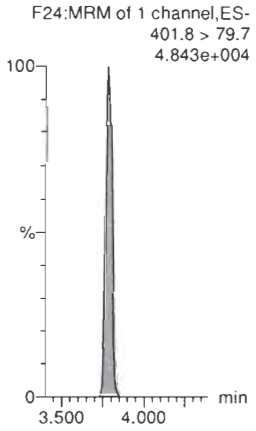

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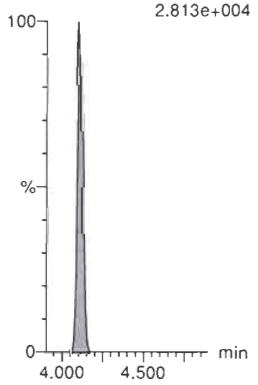

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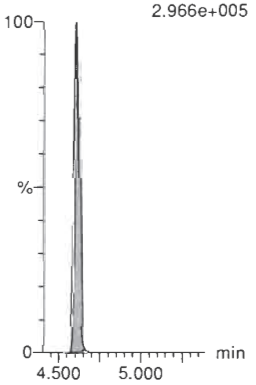

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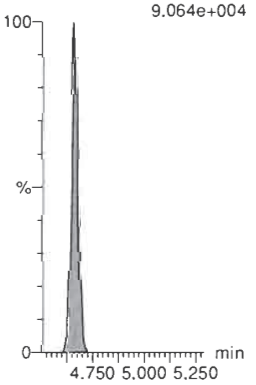

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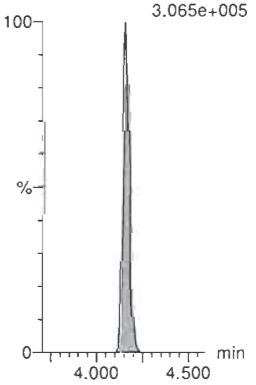

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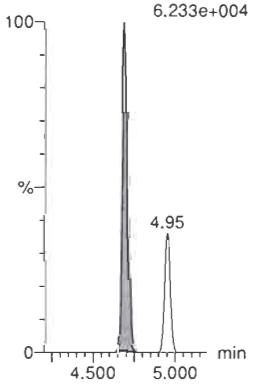

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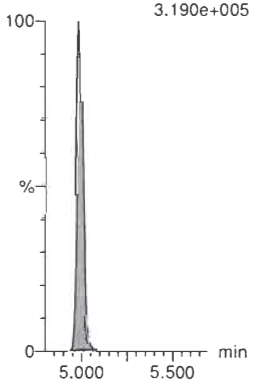

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-10, Date: 29-Feb-2020, Time: 16:59:31, ID: ST200229P1-8 PFC CS5 20B1109, Description: PFC CS5 20B1109

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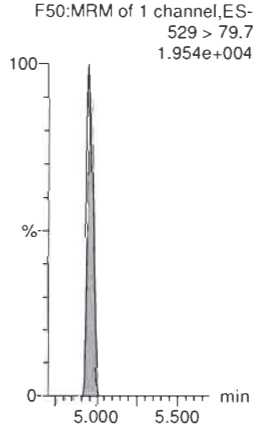

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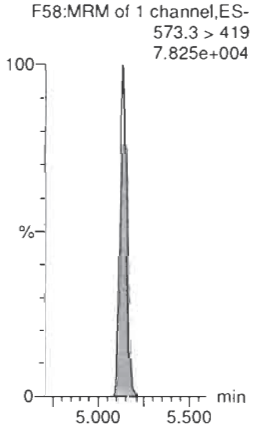

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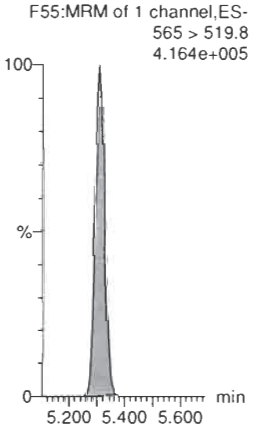

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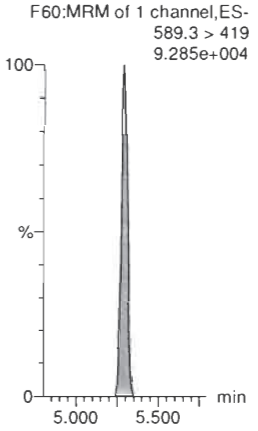

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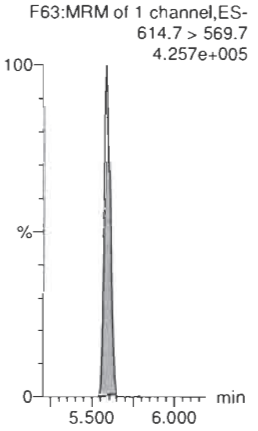

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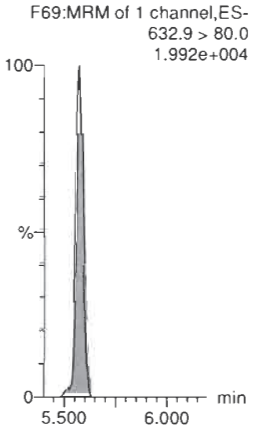

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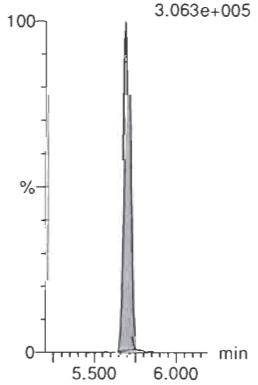

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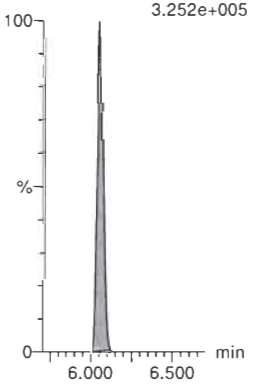

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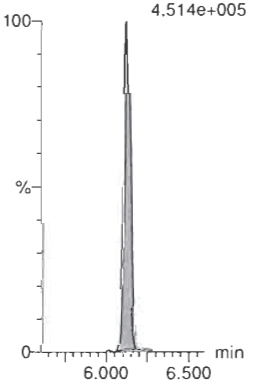

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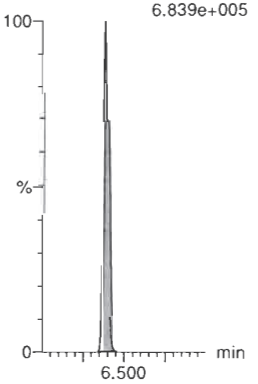

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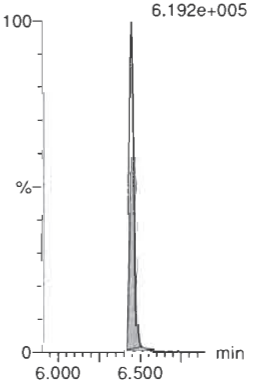

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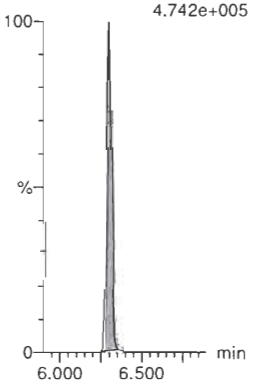

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

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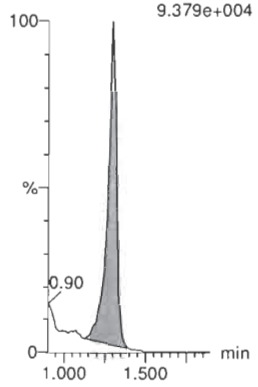

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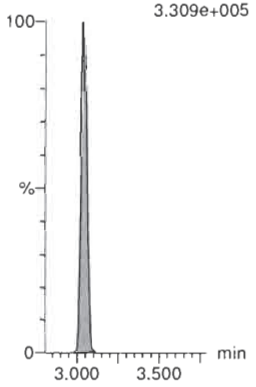

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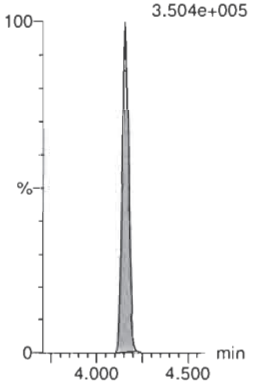

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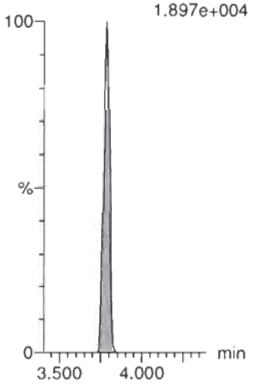

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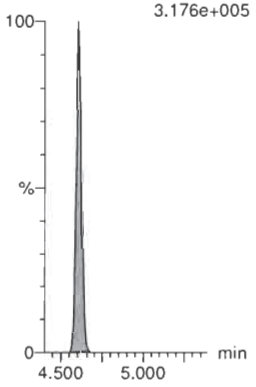

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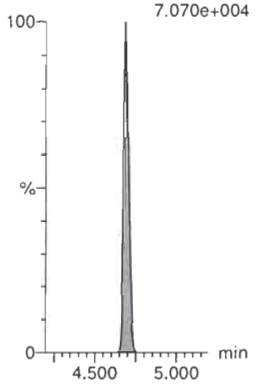

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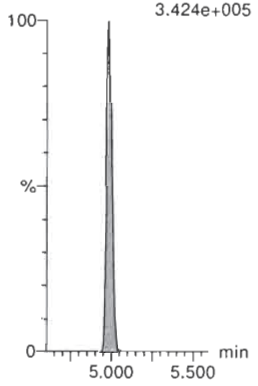

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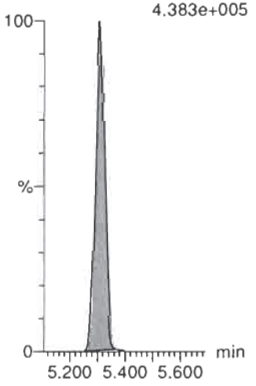

Quantify Sample Report **MassLynx V4.2 SCN977**

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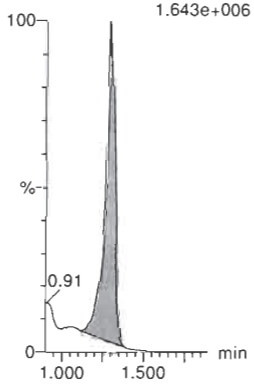
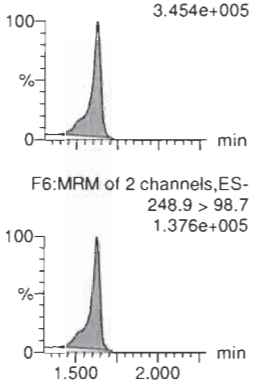


PFPrS



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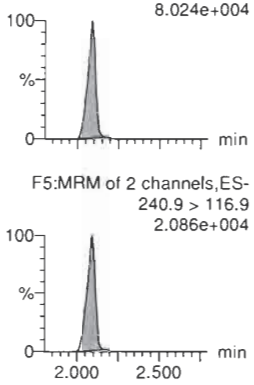

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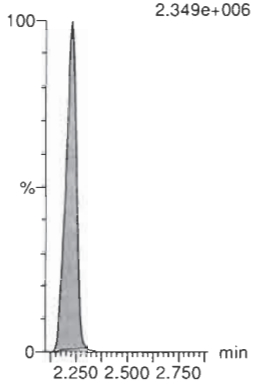

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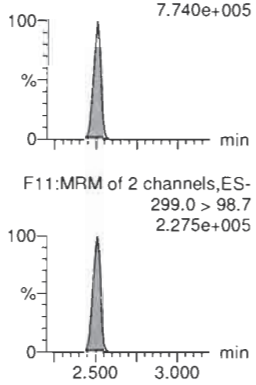
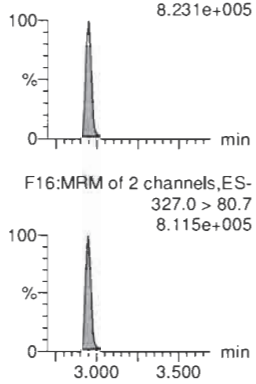
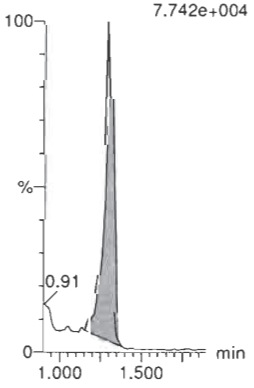


4:2 FTS



13C3-PFBA-EIS



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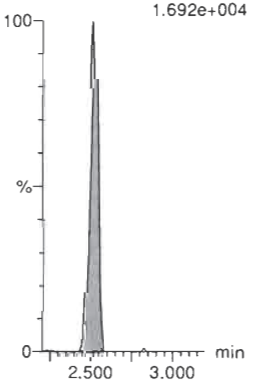

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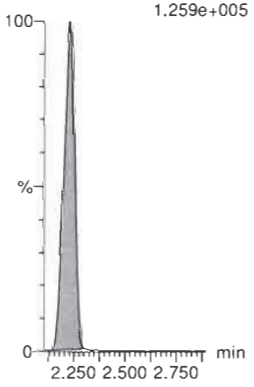

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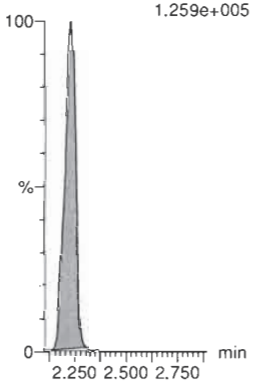

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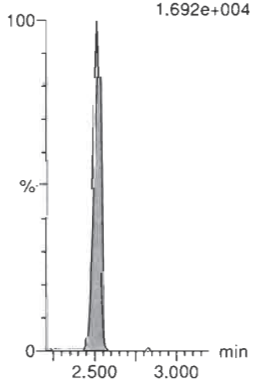
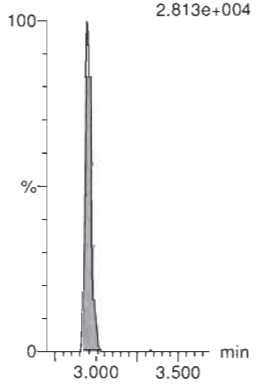


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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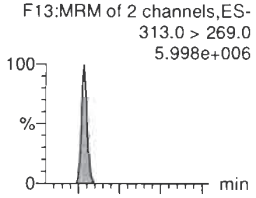

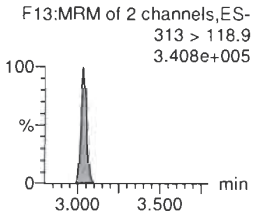

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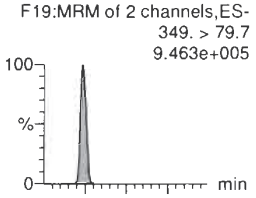
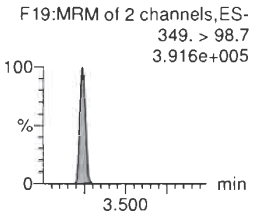
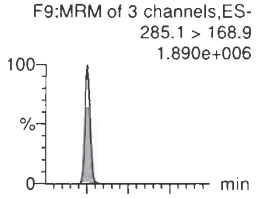
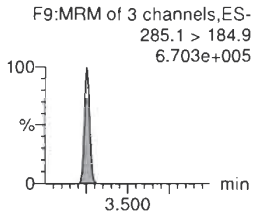


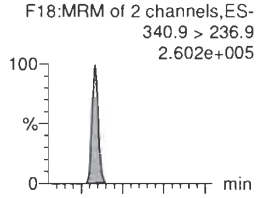


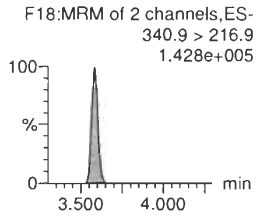
HFPO-DA





5:3 FTCA





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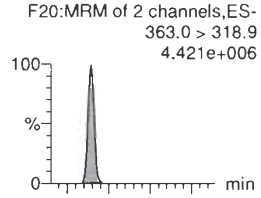

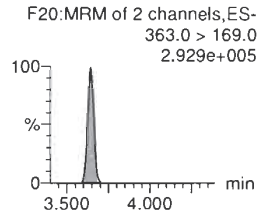

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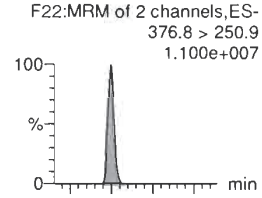

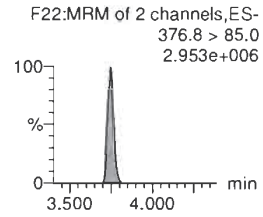

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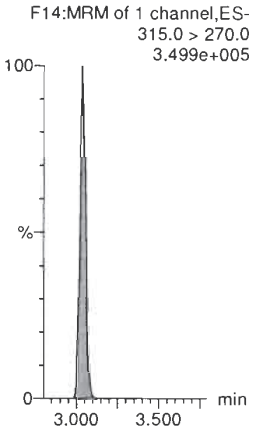
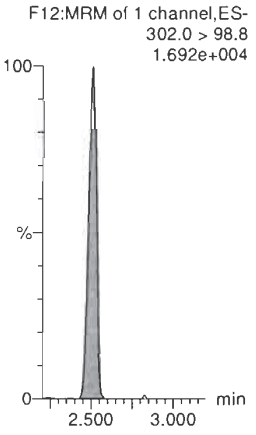


13C3-PFBS-EIS



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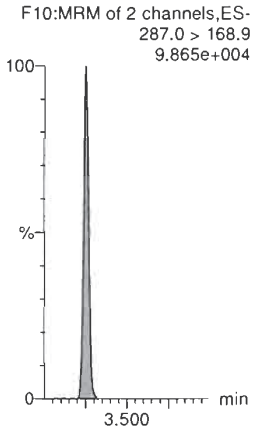

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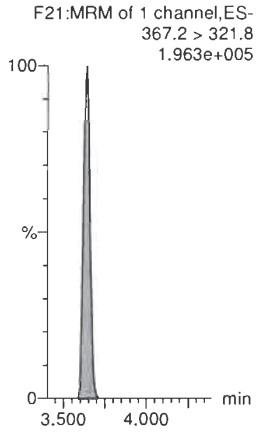

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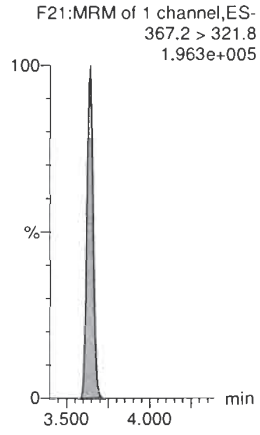

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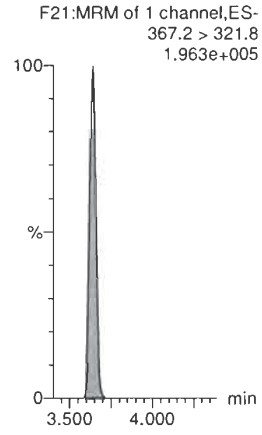

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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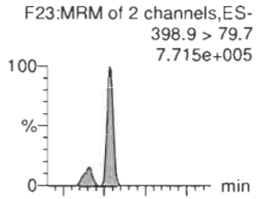
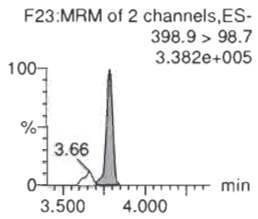
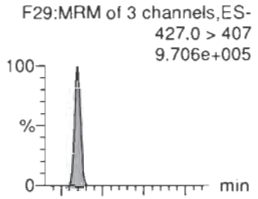
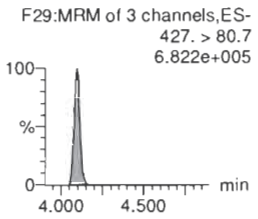




6:2 FTS





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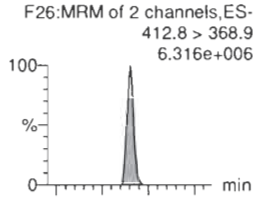

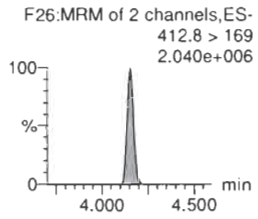

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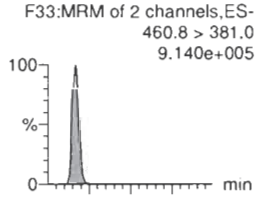

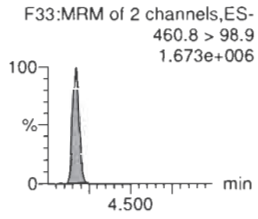

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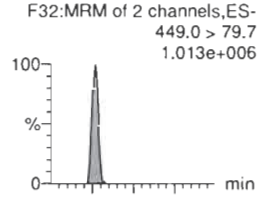
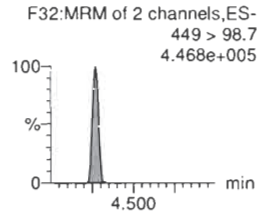
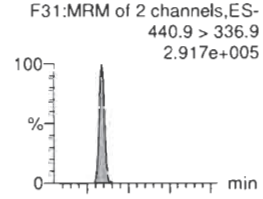
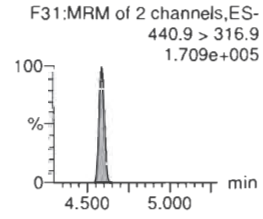




7:3 FTCA





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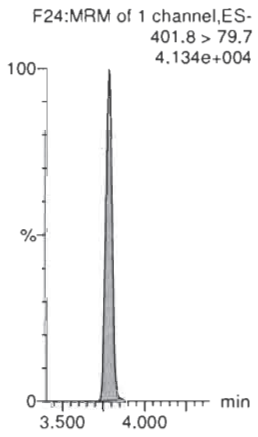
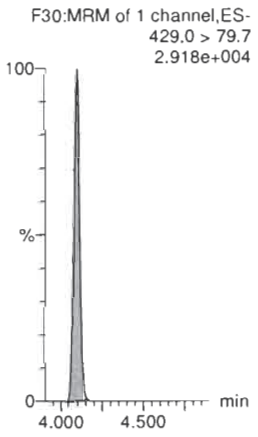


13C2-6:2 FTS-EIS



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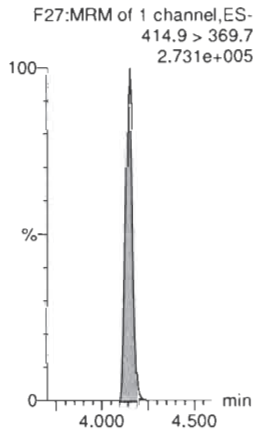

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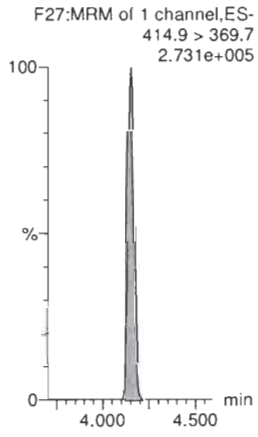

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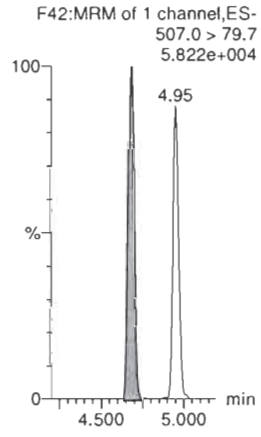

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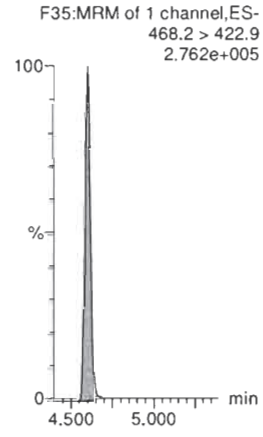

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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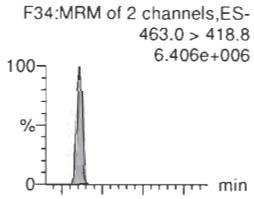

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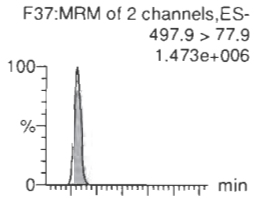

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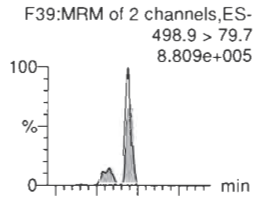

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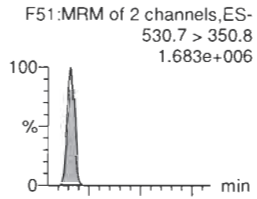
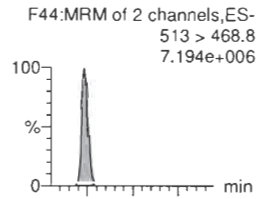
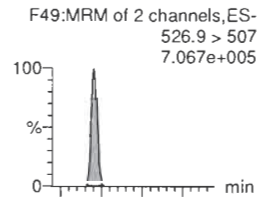


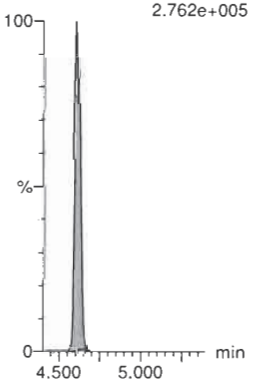
PFDA



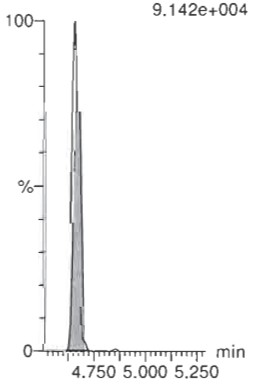
8:2 FTS



13C5-PFNA-EIS



13C8-PFOSA-EIS



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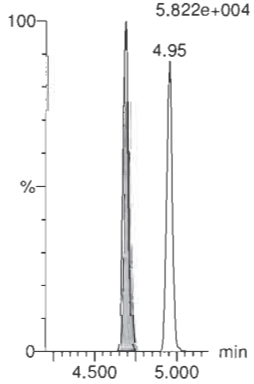

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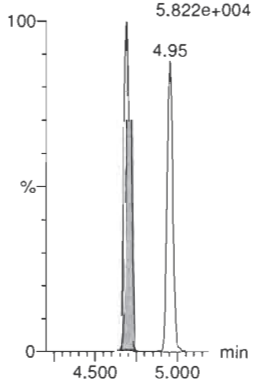

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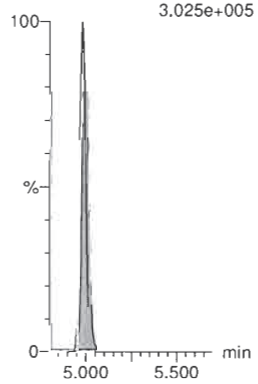

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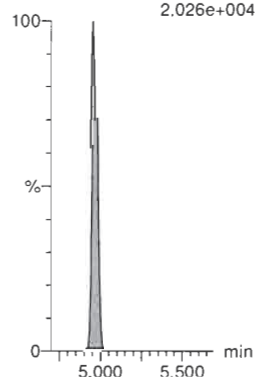

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

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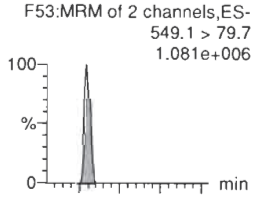

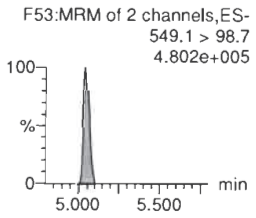

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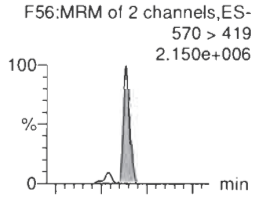

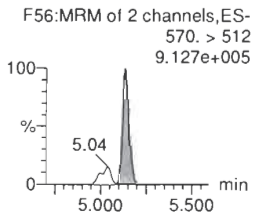

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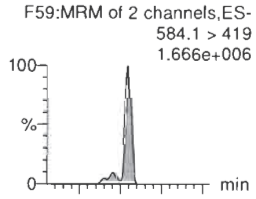

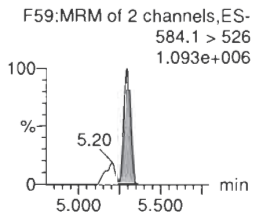

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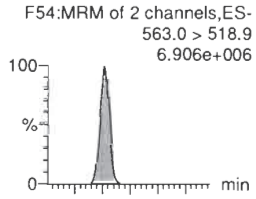

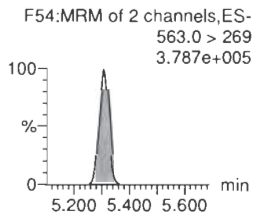

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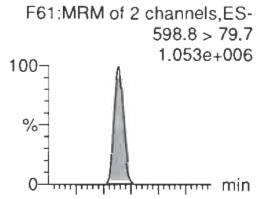

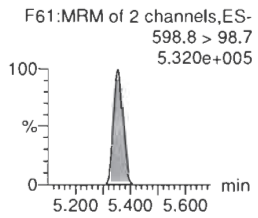

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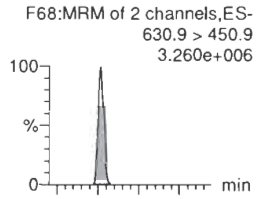

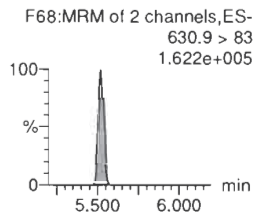

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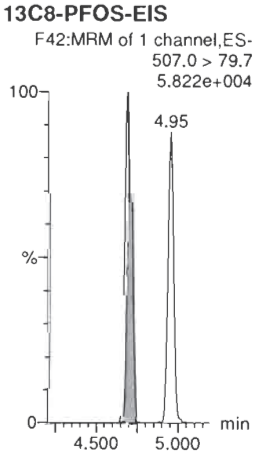

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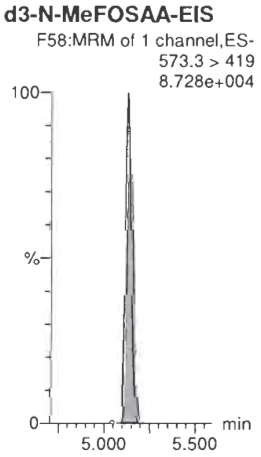

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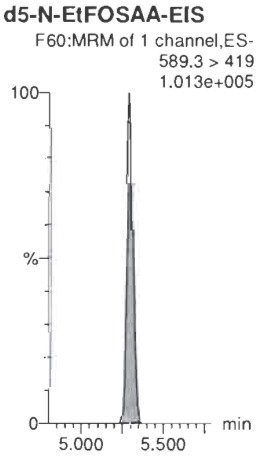

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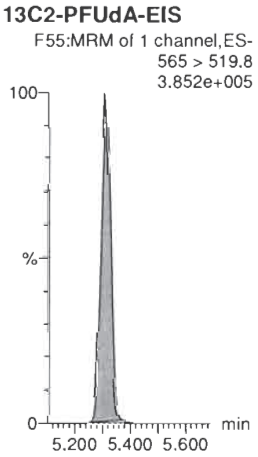

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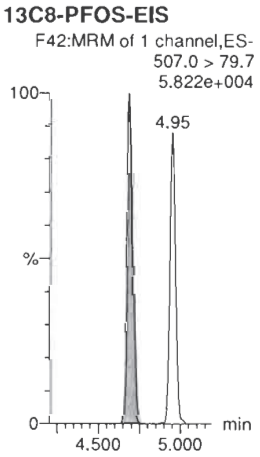

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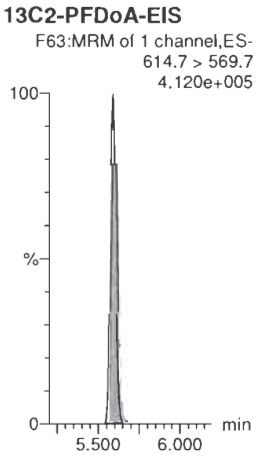


Quantify Sample Report **MassLynx V4.2 SCN977**

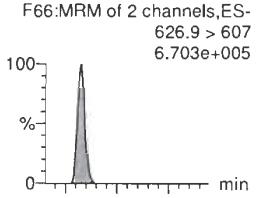
Vista Analytical Laboratory

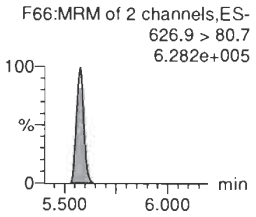
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

10:2 FTS





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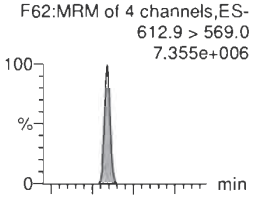

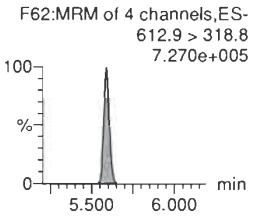

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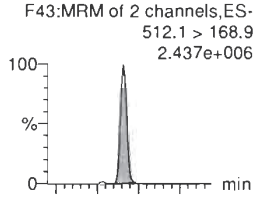

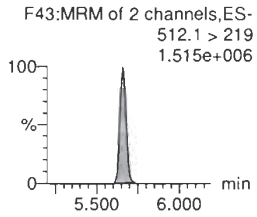

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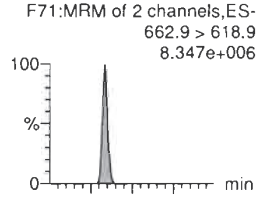

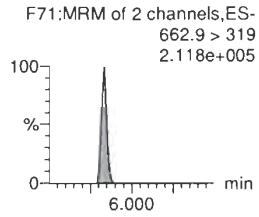

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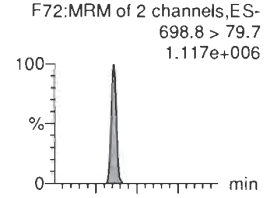

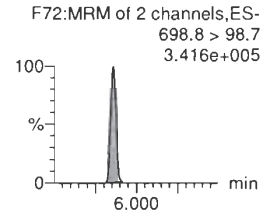

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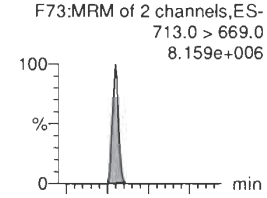

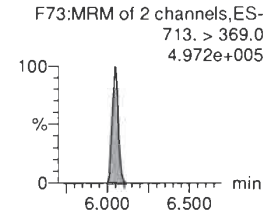

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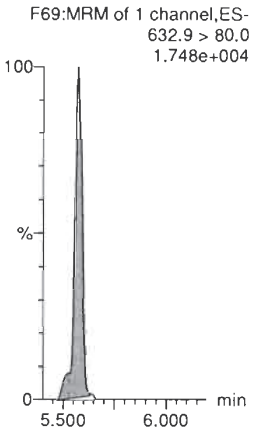

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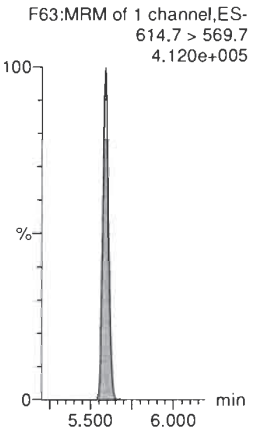

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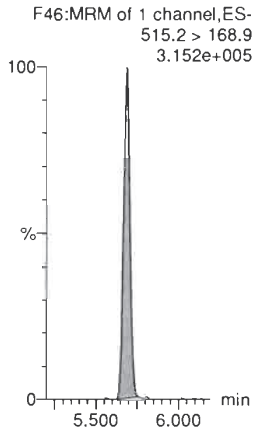

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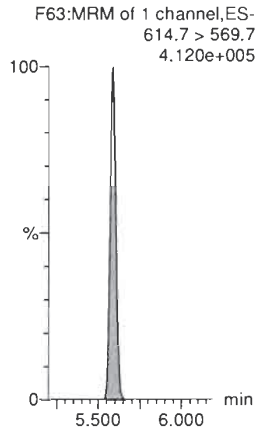

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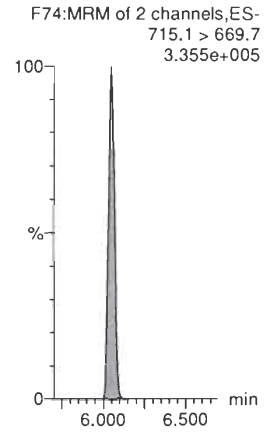

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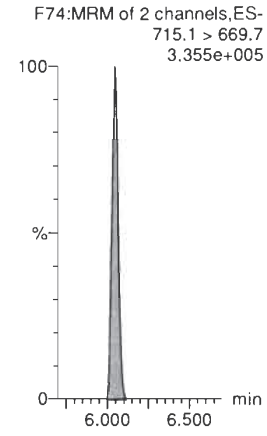


Quantify Sample Report **MassLynx V4.2 SCN977**

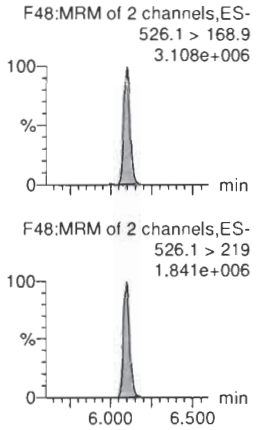
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

N-EtFOSA



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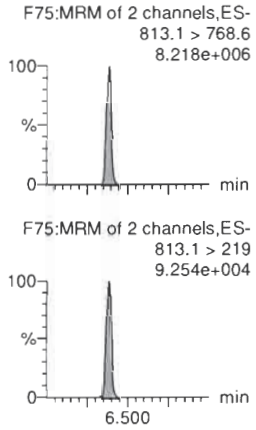

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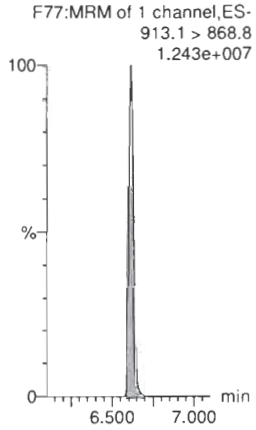

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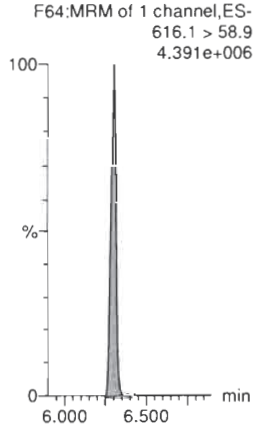

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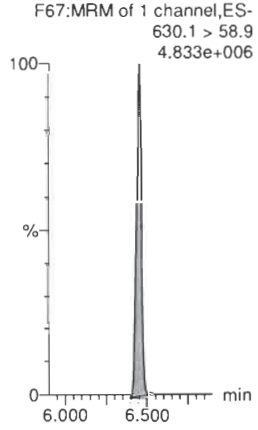

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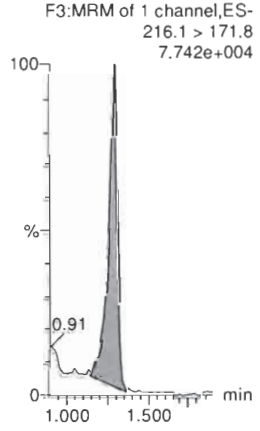
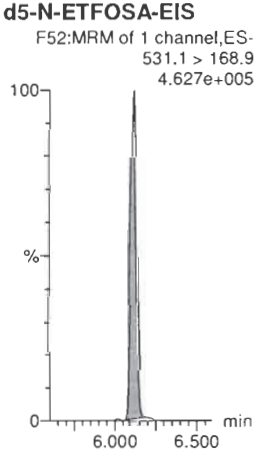


d5-N-ETFOSA-EIS



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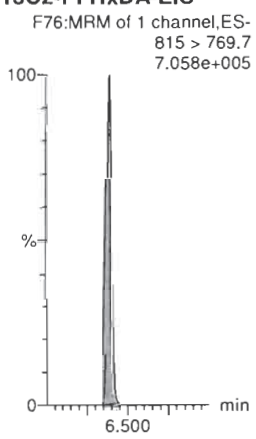

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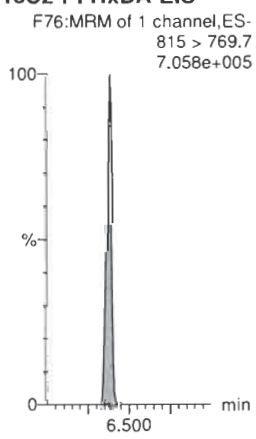
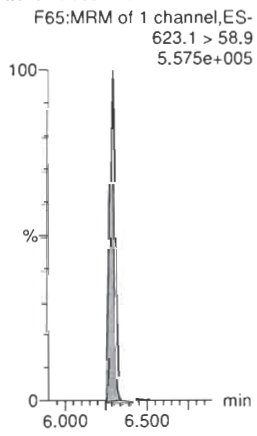
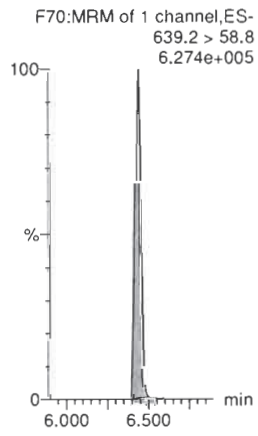


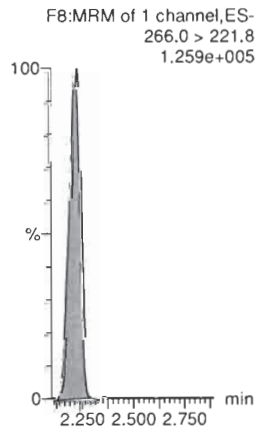
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

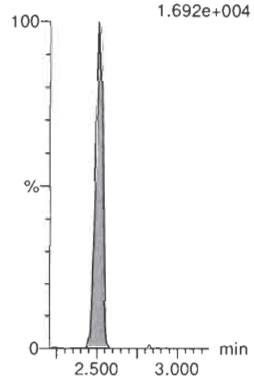
Vista Analytical Laboratory

Dataset: Untitled

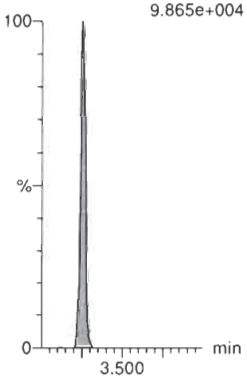
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

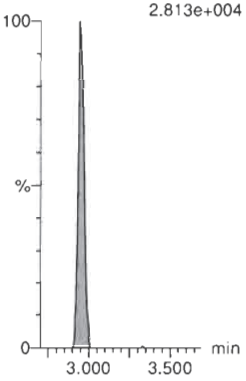
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.692e+004



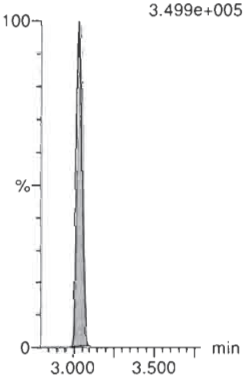
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.865e+004



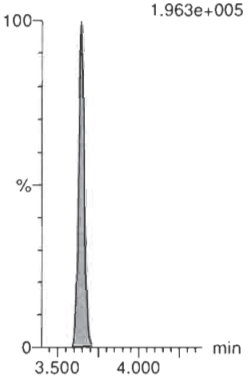
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.813e+004



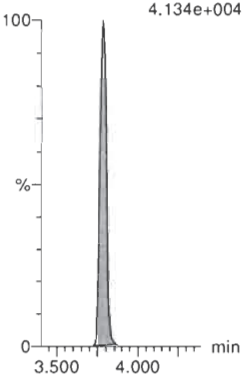
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.499e+005



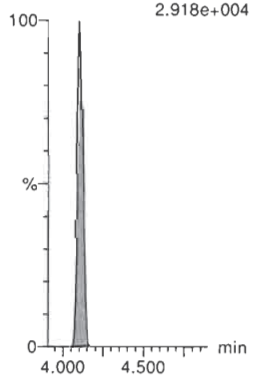
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.963e+005



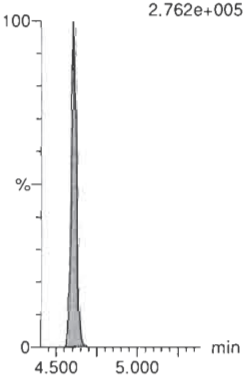
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.134e+004



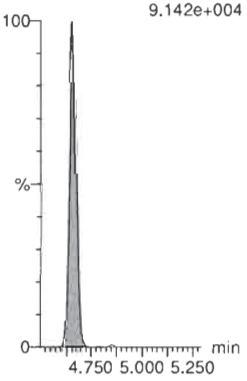
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.918e+004



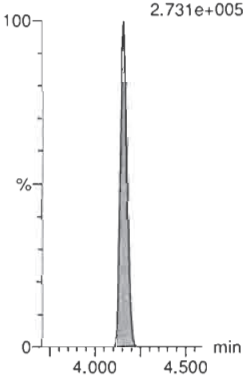
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.762e+005



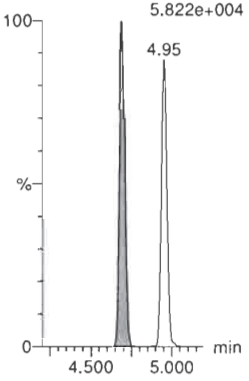
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
9.142e+004



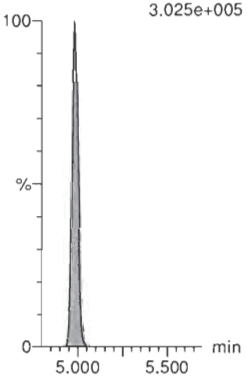
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.731e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
5.822e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.025e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

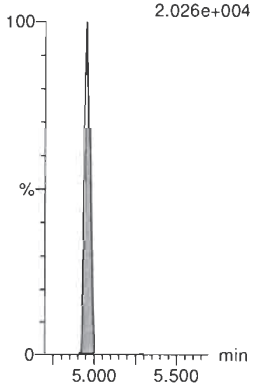
Vista Analytical Laboratory

Dataset: Untitled

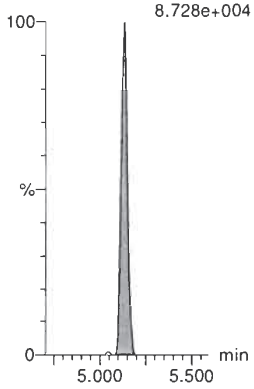
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

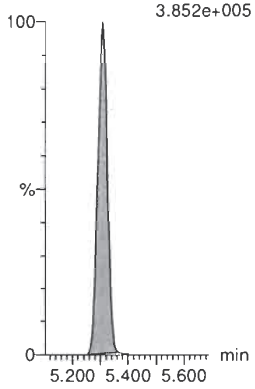
13C2-8:2 FTS-RSD



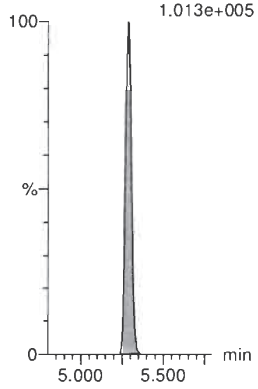
d3-N-MeFOSAA-RSD



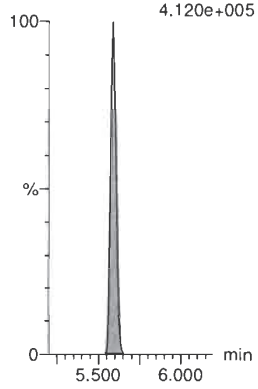
13C2-PFUdA-RSD



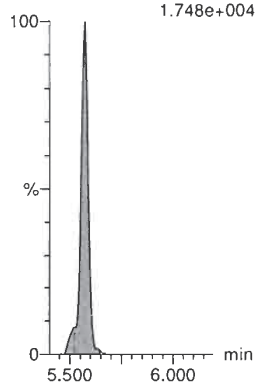
d5-N-EtFOSAA-RSD



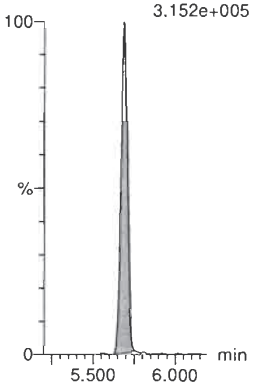
13C2-PFDoA-RSD



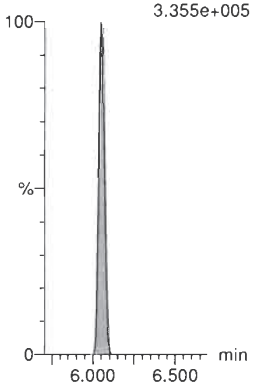
13C2-10:2 FTS-RSD



d3-N-MeFOSA-RSD



13C2-PFTeDA-RSD



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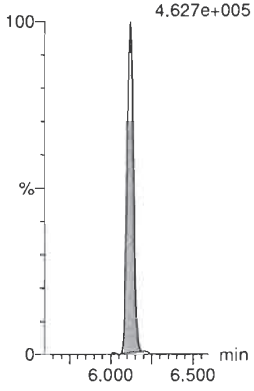

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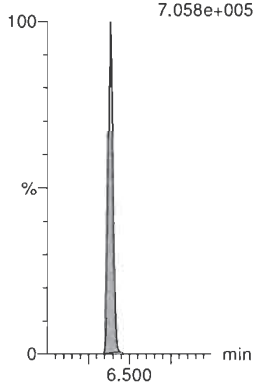
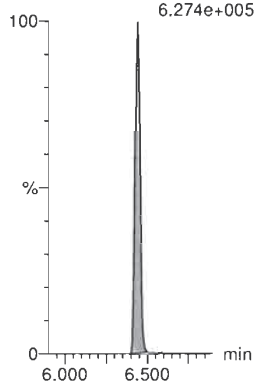
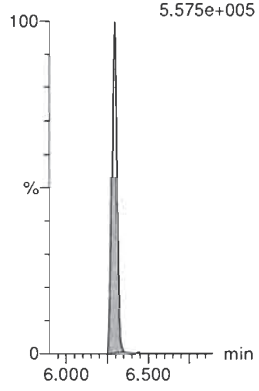


d9-N-EtFOSE-RSD



d7-N-MeFOSE-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

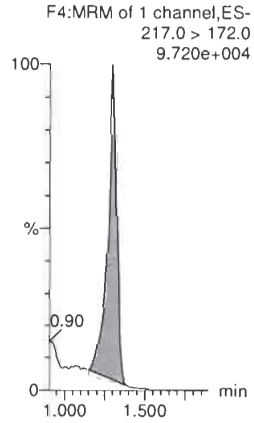
Vista Analytical Laboratory

Dataset: Untitled

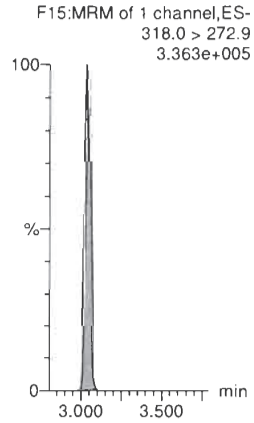
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-11, Date: 29-Feb-2020, Time: 17:10:00, ID: ST200229P1-9 PFC CS6 20B1110, Description: PFC CS6 20B1110

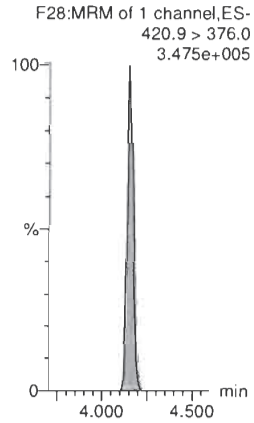
13C4-PFBA



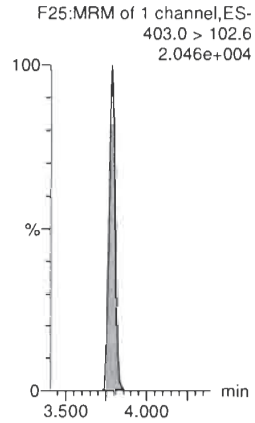
13C5-PFHxA



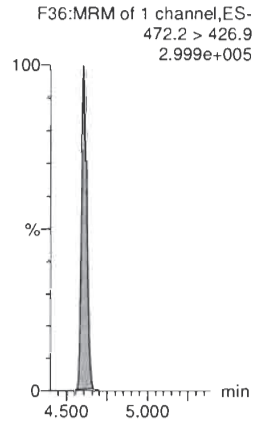
13C8-PFOA



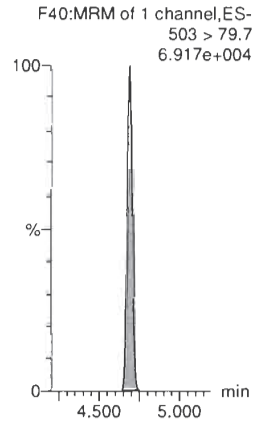
18O2-PFHxS



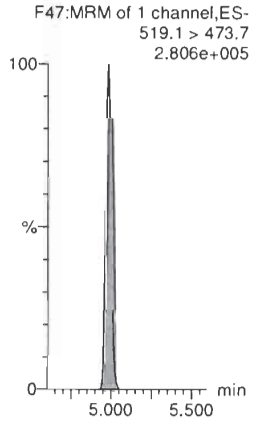
13C9-PFNA



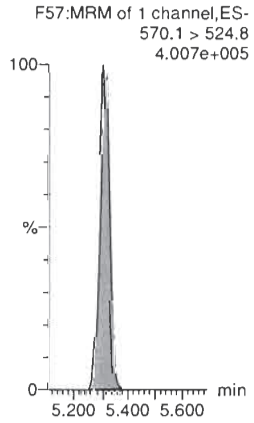
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

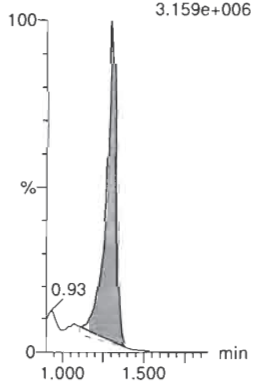
Vista Analytical Laboratory

Dataset: Untitled

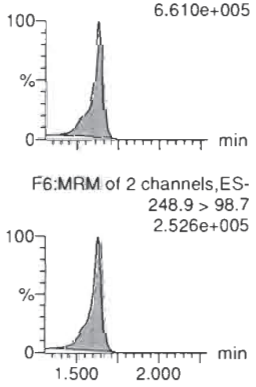
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

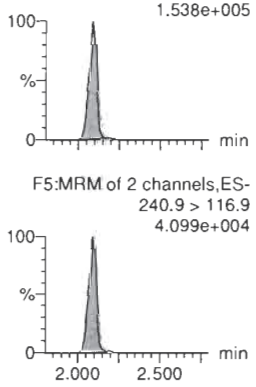
PFBA



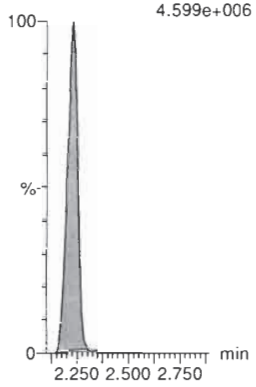
PFPrS



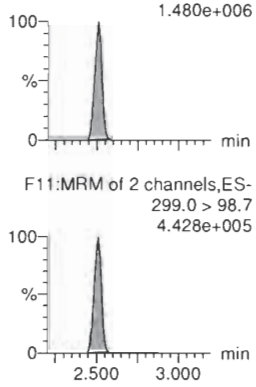
3:3 FTCA



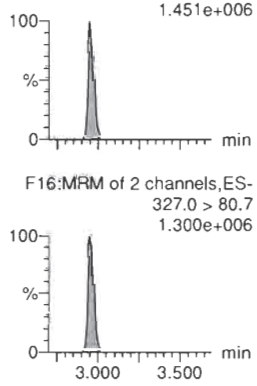
PFPeA



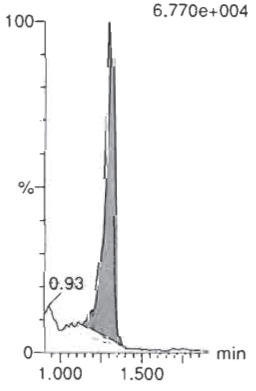
PFBS



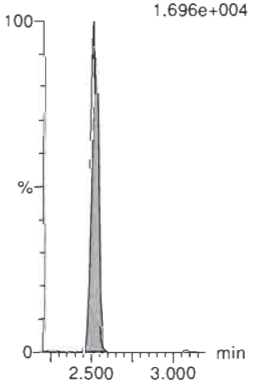
4:2 FTS



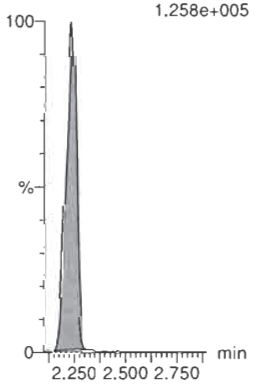
13C3-PFBA-EIS



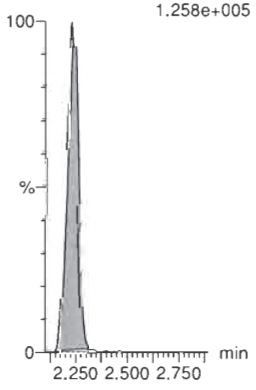
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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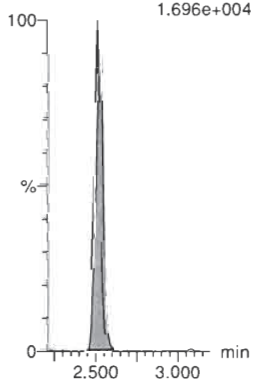
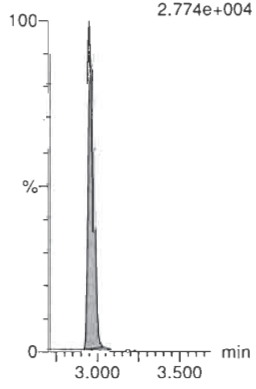


13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

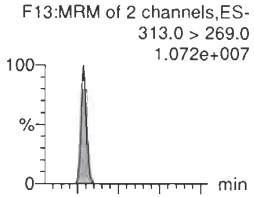
Vista Analytical Laboratory

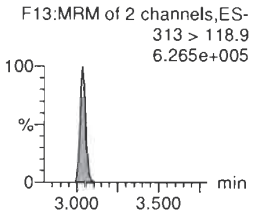
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

PFHxA





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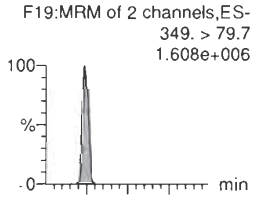

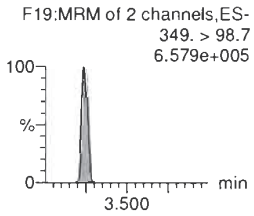

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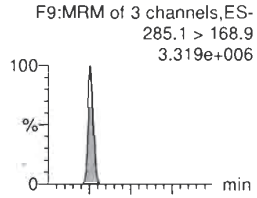

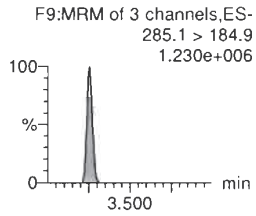

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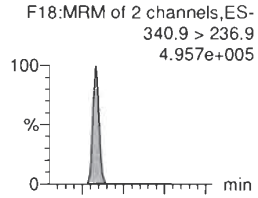

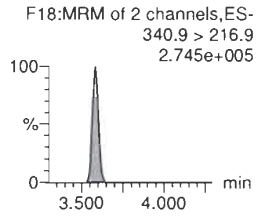

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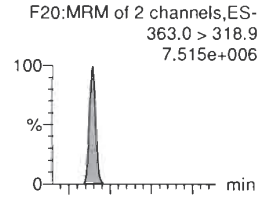

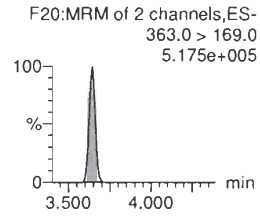

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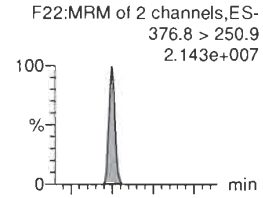

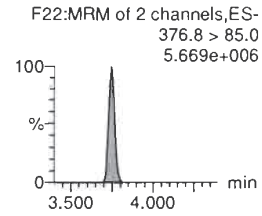

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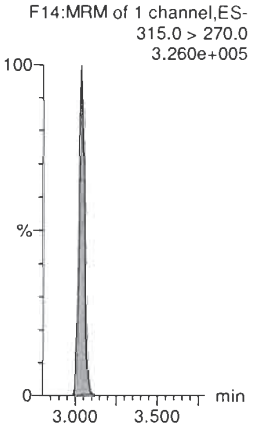

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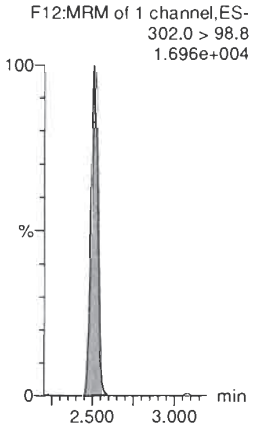

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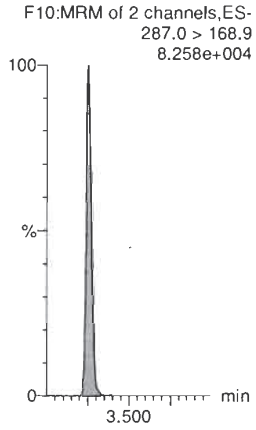

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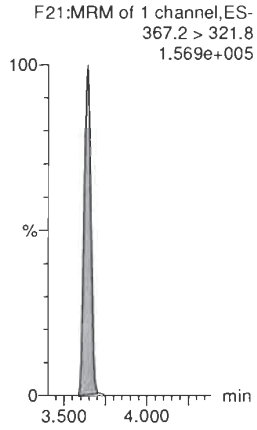

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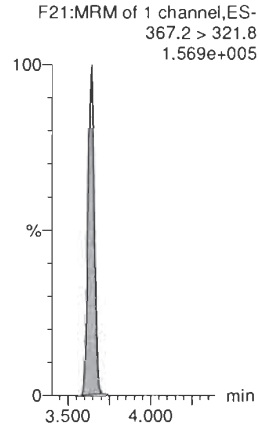

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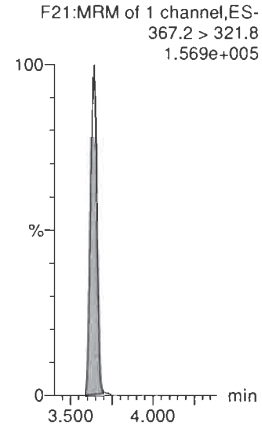

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

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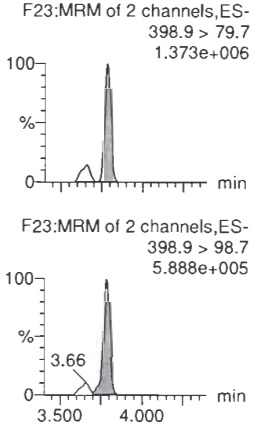
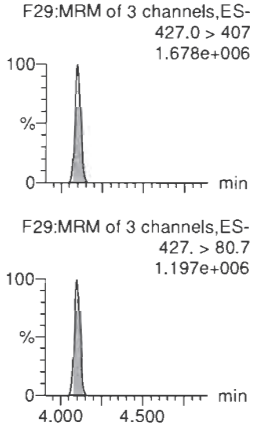


6:2 FTS



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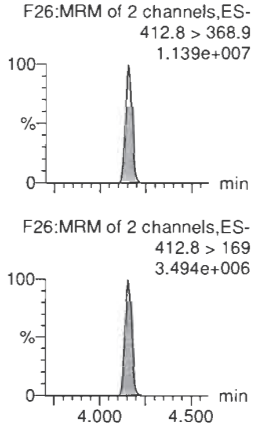

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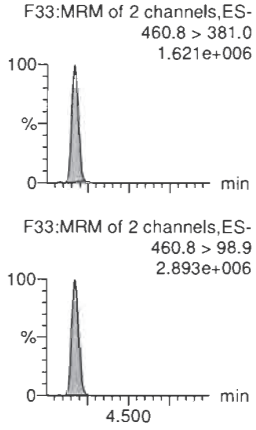

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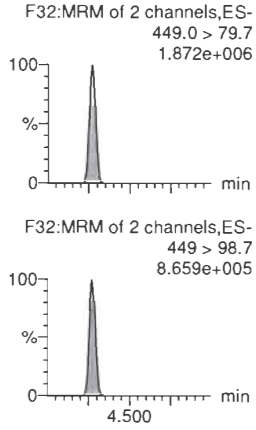
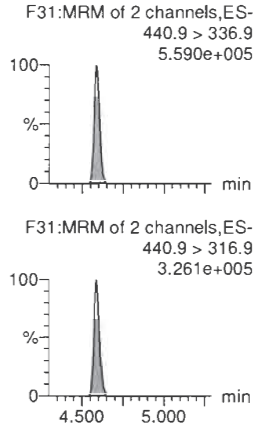


7:3 FTCA



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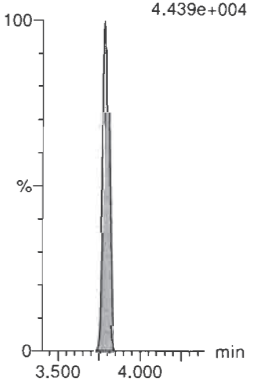

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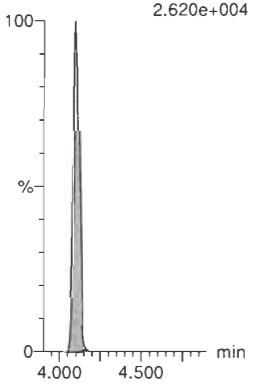

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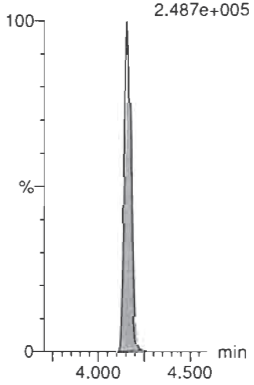

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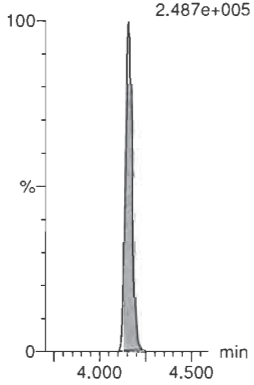

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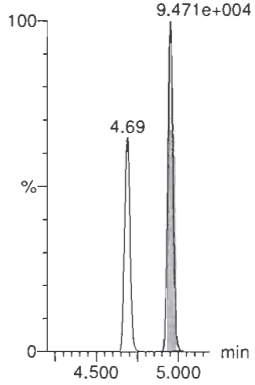

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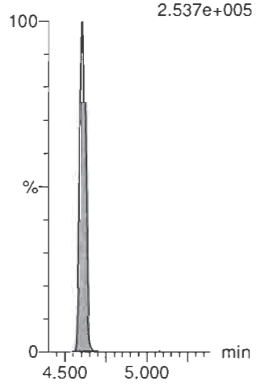

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

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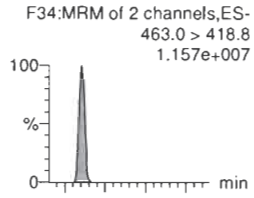

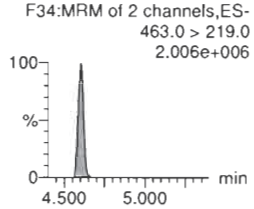

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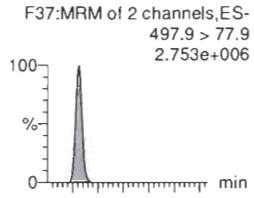
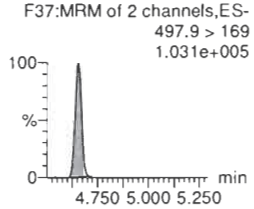
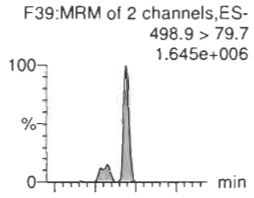
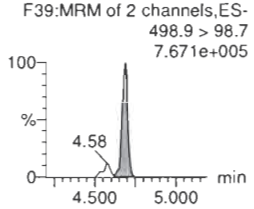




L-PFOS





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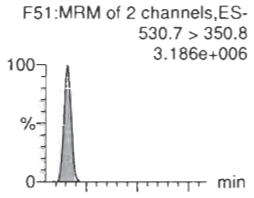

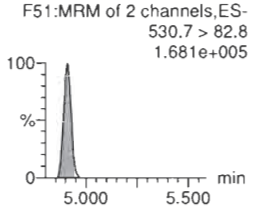

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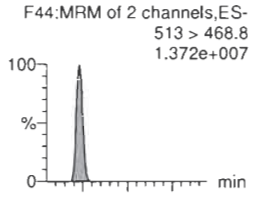

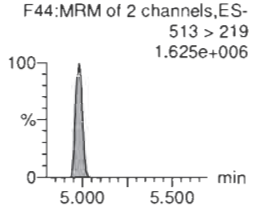

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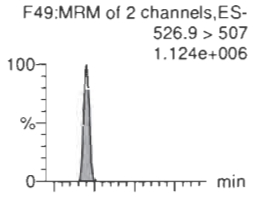

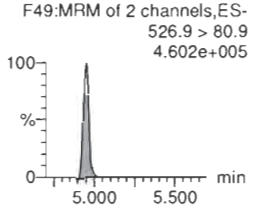

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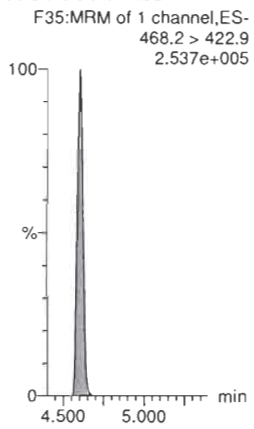

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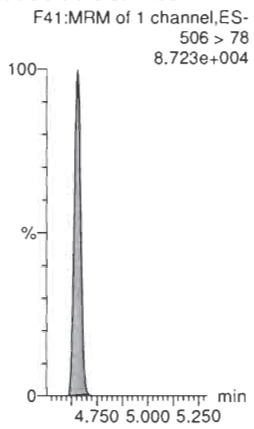

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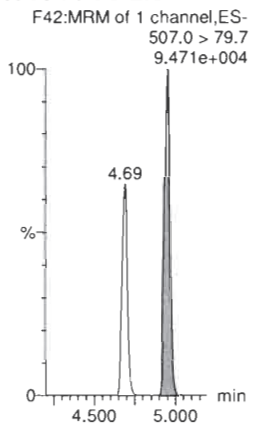

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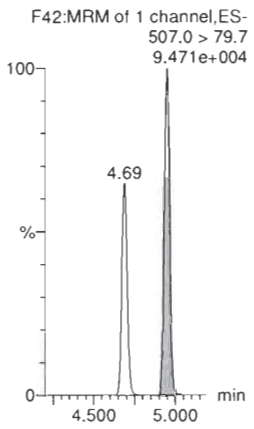

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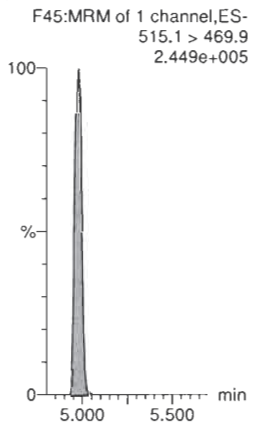

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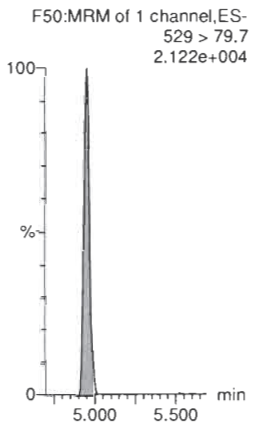


Quantify Sample Report **MassLynx V4.2 SCN977**

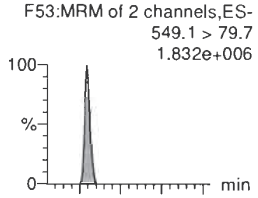
Vista Analytical Laboratory

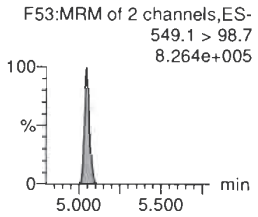
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

PFNS





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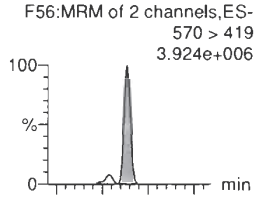

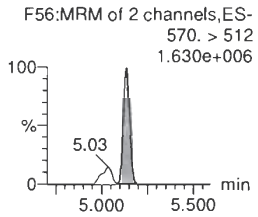

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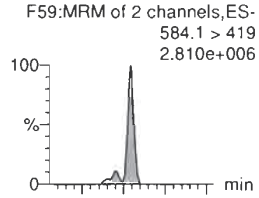
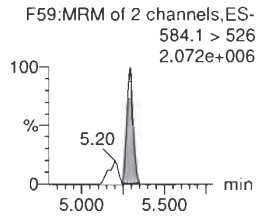
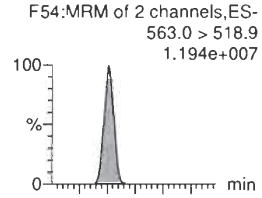
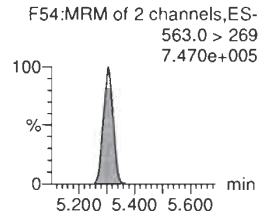


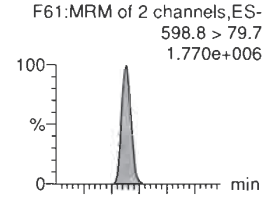


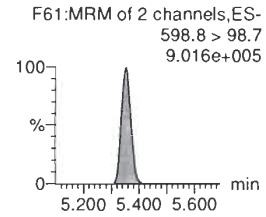
PFUdA



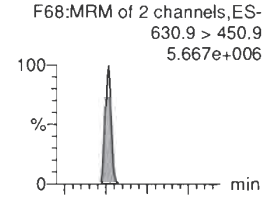


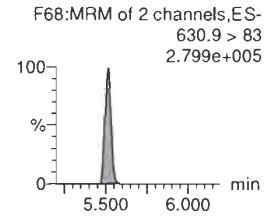
PFDS



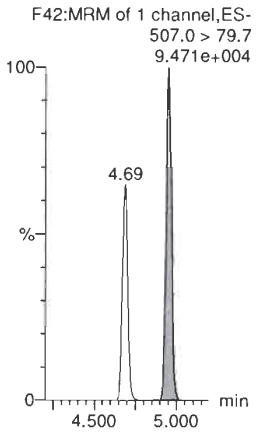


11Cl-PF30UdS

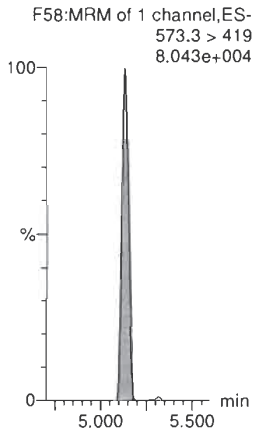




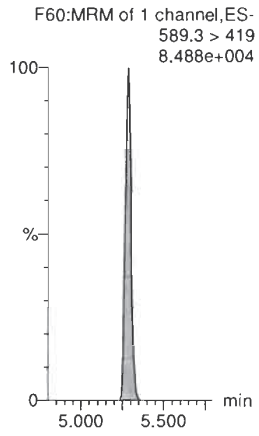
13C8-PFOS-EIS



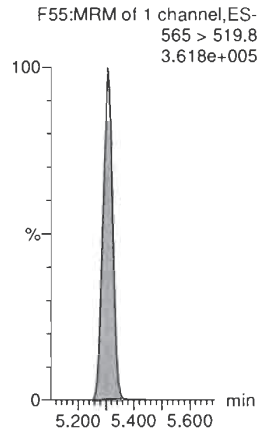
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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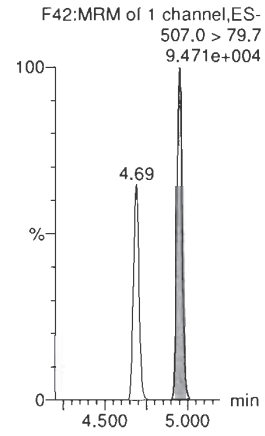
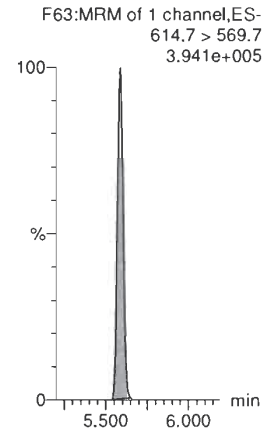


13C2-PFDoA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

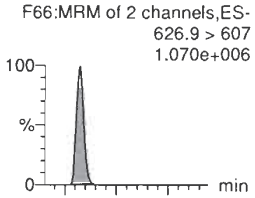
Vista Analytical Laboratory

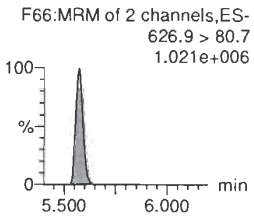
Dataset: Untitled

Last Altered: Monday, March 02, 2020 09:57:42 Pacific Standard Time
Printed: Monday, March 02, 2020 09:58:33 Pacific Standard Time

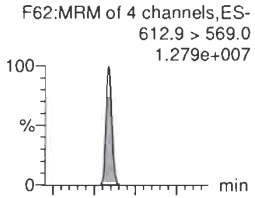
Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

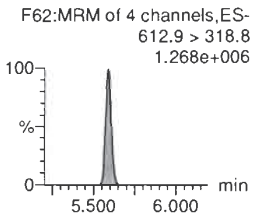
10:2 FTS



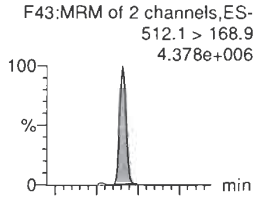


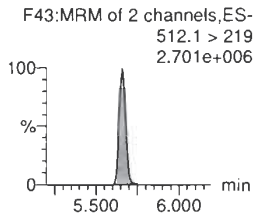
PFDoA





N-MeFOSA





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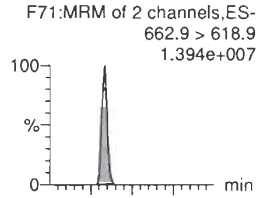

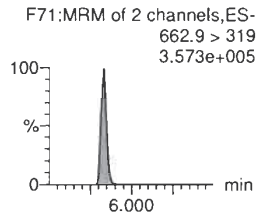

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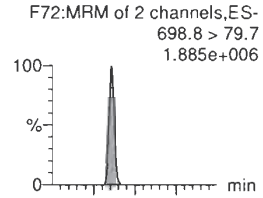

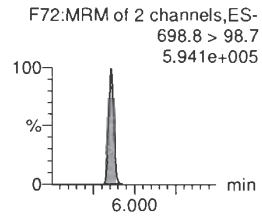

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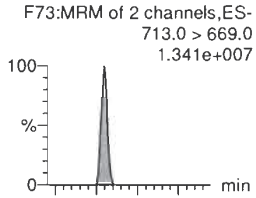
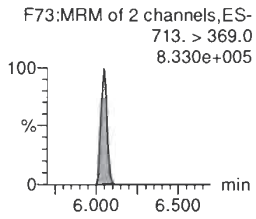
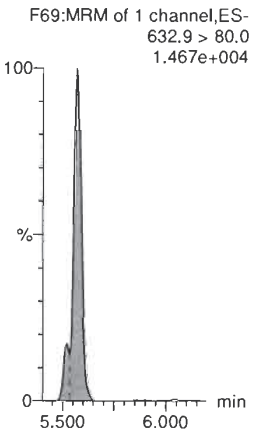
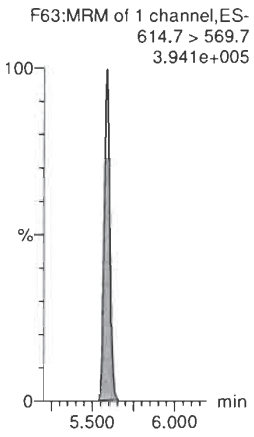




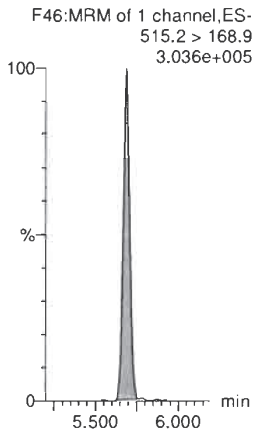
13C2-10:2 FTS-EIS



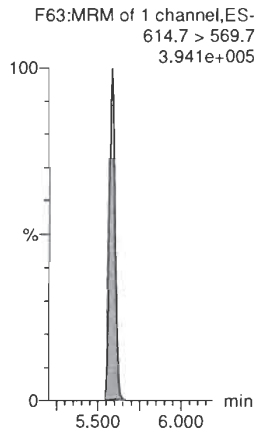
13C2-PFDoA-EIS



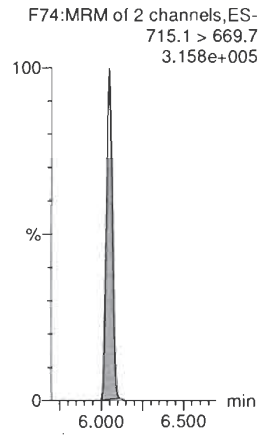
d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



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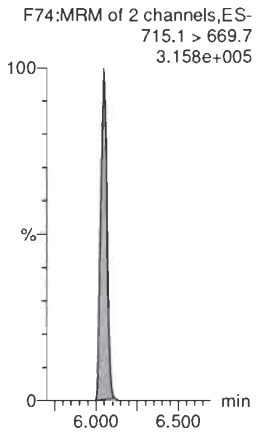


Quantify Sample Report **MassLynx V4.2 SCN977**

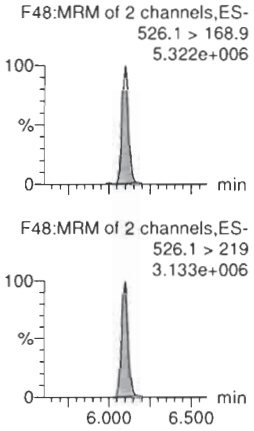
Vista Analytical Laboratory

Dataset: Untitled

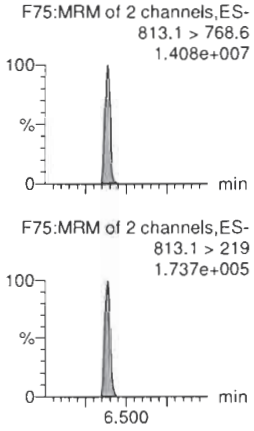
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

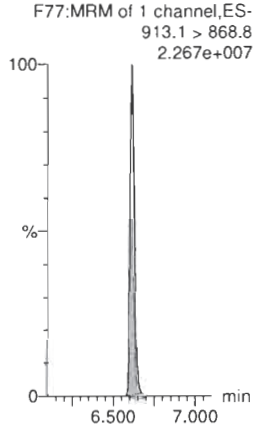
N-EtFOSA



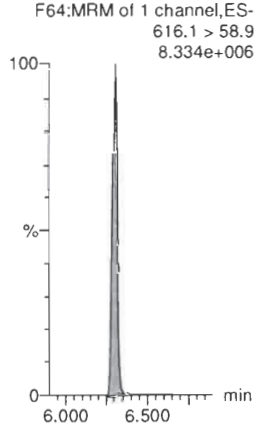
PFHxDA



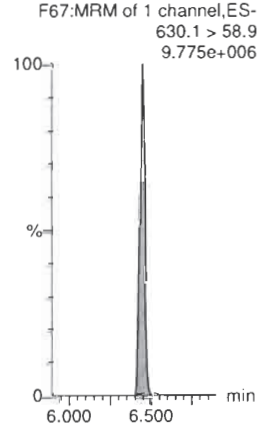
PFODA



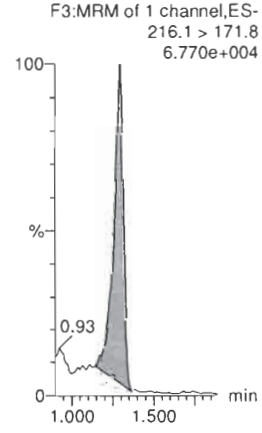
N-MeFOSE



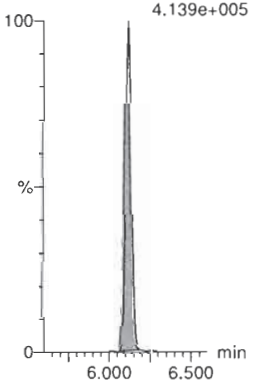
N-EtFOSE



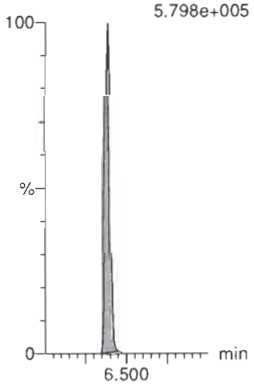
13C3-PFBA-RSD



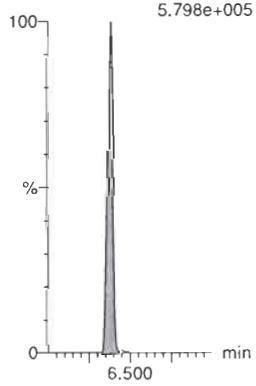
d5-N-ETFOSA-EIS



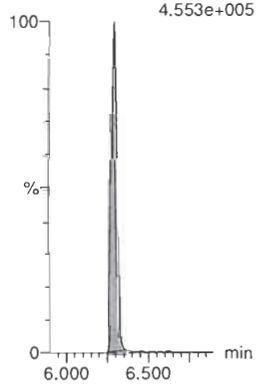
13C2-PFHxDA-EIS



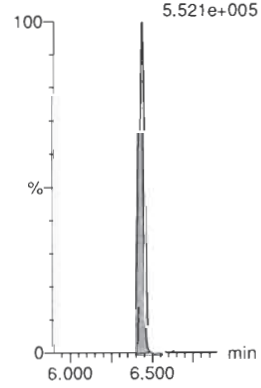
13C2-PFHxDA-EIS



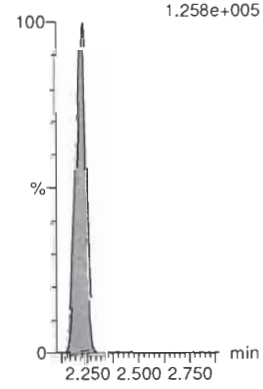
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

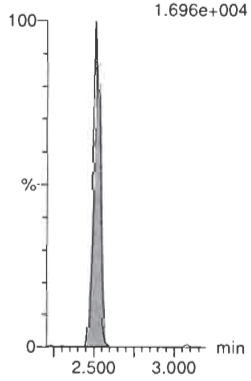
Vista Analytical Laboratory

Dataset: Untitled

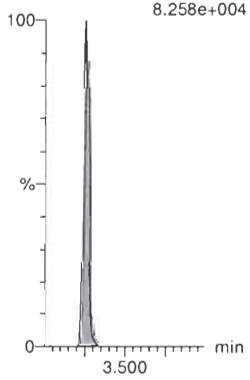
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

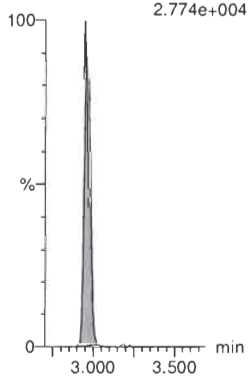
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.696e+004



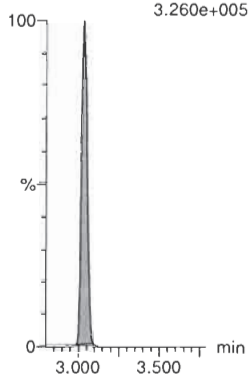
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.258e+004



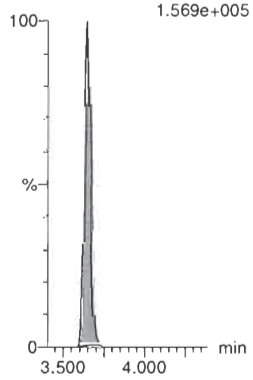
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.774e+004



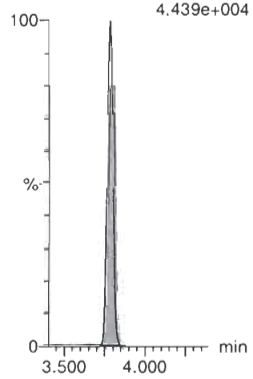
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.260e+005



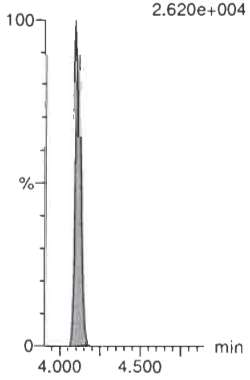
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.569e+005



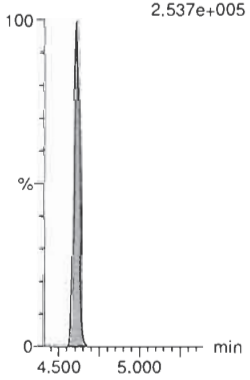
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.439e+004



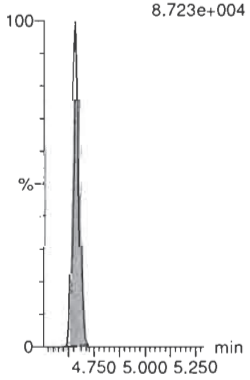
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.620e+004



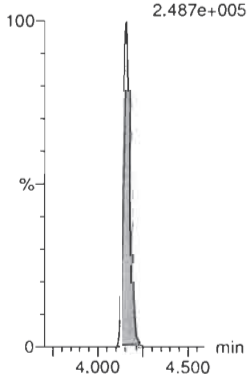
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.537e+005



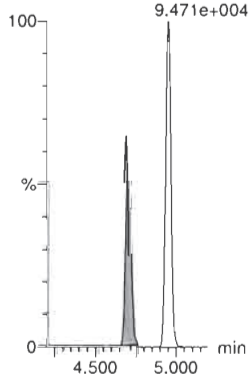
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.723e+004



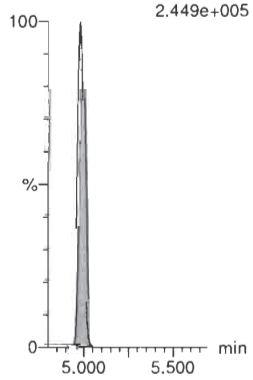
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.487e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
9.471e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.449e+005



Quantify Sample Report **MassLynx V4.2 SCN977**

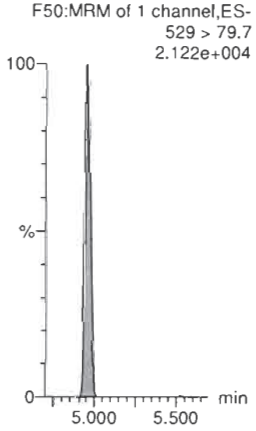
Vista Analytical Laboratory

Dataset: Untitled

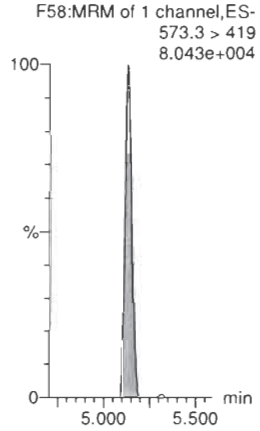
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

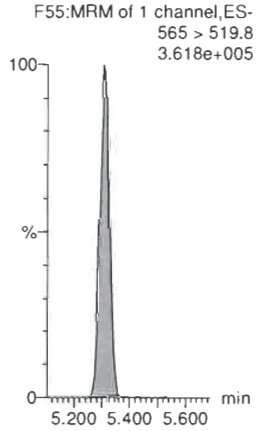
13C2-8:2 FTS-RSD



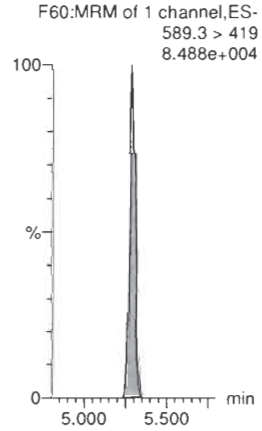
d3-N-MeFOSAA-RSD



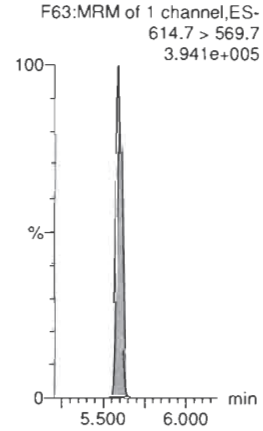
13C2-PFUdA-RSD



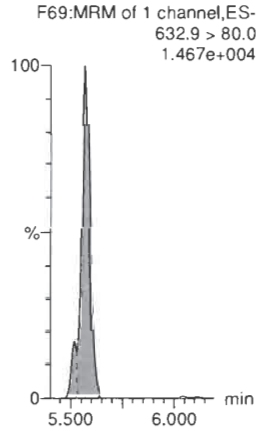
d5-N-EtFOSAA-RSD



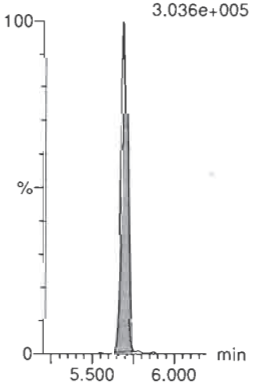
13C2-PFDoA-RSD



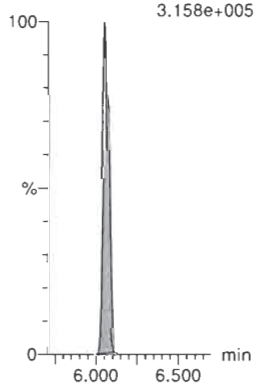
13C2-10:2 FTS-RSD



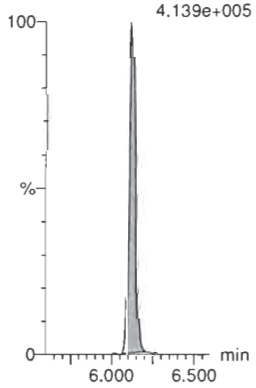
d3-N-MeFOSA-RSD



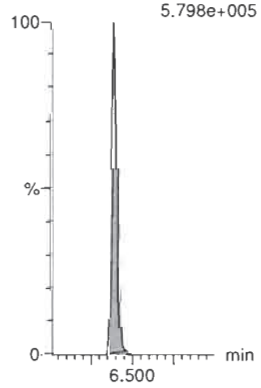
13C2-PFTeDA-RSD



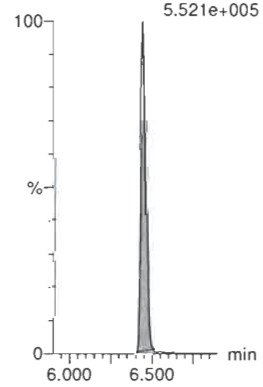
d5-N-ETFOSA-RSD



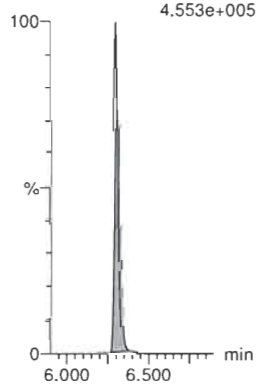
13C2-PFHxDA-RSD



d9-N-EtFOSE-RSD



d7-N-MeFOSE-RSD



Quantify Sample Report **MassLynx V4.2 SCN977** Page 100 of 100
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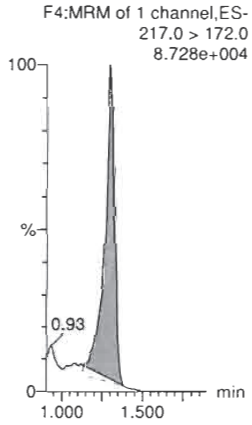
Dataset: Untitled

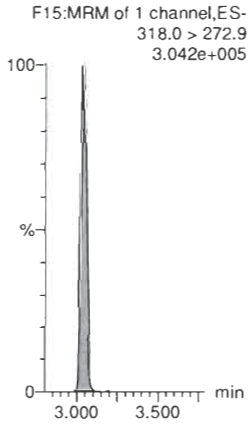
Last Altered: Monday, March 02, 2020 09:31:37 Pacific Standard Time
Printed: Monday, March 02, 2020 09:34:32 Pacific Standard Time

Name: 200229P1-12, Date: 29-Feb-2020, Time: 17:20:30, ID: ST200229P1-10 PFC CS7 20B1111, Description: PFC CS7 20B1111

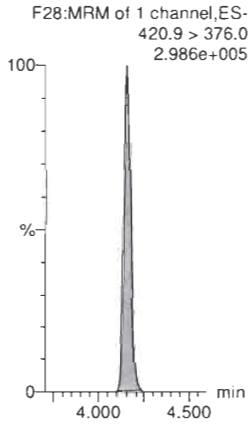
13C4-PFBA



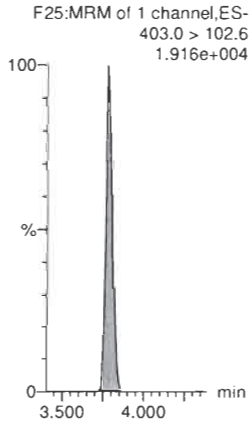
13C5-PFHxA



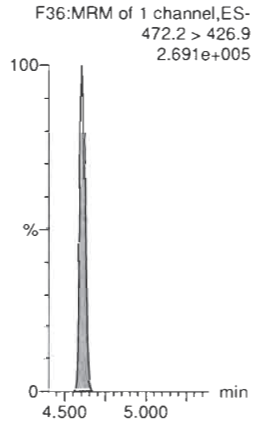
13C8-PFOA



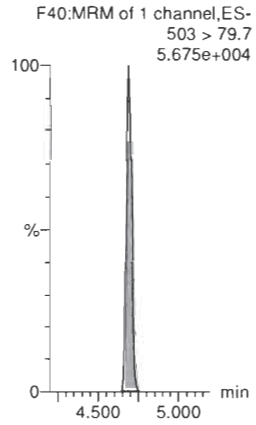
18O2-PFHxS



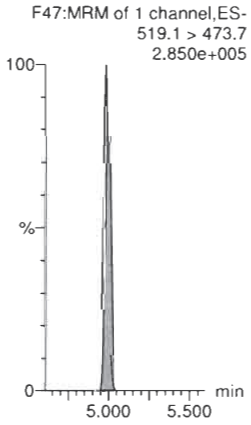
13C9-PFNA



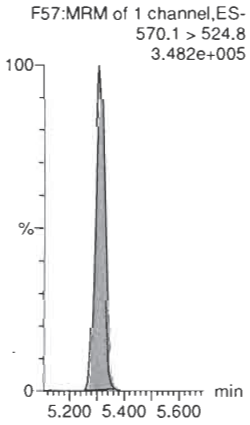
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

(A) not in ICV

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	4148.566	4288.024	1.00	1.30	12.093	10.000	9.97	99.7	NO		
2	2	PFPrS	248.9 > 79.7		833.313	1.00			10.000		(A)	NO		YES
3	3	3:3 FTCA	240.9 > 176.9		7416.849	1.00			10.000		↓	NO		YES
4	4	PFPeA	263.1 > 218.9	6018.801	7416.849	1.00	2.23	10.144	10.000	10.5	104.9	NO		
5	5	PFBS	299.0 > 79.7	1549.574	833.313	1.00	2.52	23.244	8.840	8.91	100.8	NO	3.431	NO
6	6	4:2 FTS	327.0 > 307	1523.445	1370.667	1.00	2.95	13.893	9.360	8.94	95.5	NO	1.084	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4288.024		1.00	1.30	4288.024	12.500	12.3	98.6	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	833.313		1.00	2.51	833.313	12.500	11.2	89.3	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	7416.849		1.00	2.23	7416.849	12.500	11.5	92.1	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	7416.849		1.00	2.23	7416.849	12.500	11.5	92.1	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	833.313		1.00	2.51	833.313	12.500	11.2	89.3	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1370.667		1.00	2.95	1370.667	12.500	11.8	94.1	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	11175.255	14140.643	1.00	3.03	9.879	10.000	11.7	116.5	NO	19.343	NO
15	8	PFPeS	349.>79.7	1657.875	833.313	1.00	3.24	24.869	9.360	9.18	98.0	NO	2.429	NO
16	9	HFPO-DA	285.1 > 168.9	2835.297	3136.568	1.00	3.25	11.299	10.000	10.7	106.7	NO	2.602	NO
17	10	5:3 FTCA	340.9 > 236.9		7378.397	1.00			10.000		(A)	NO		YES
18	11	PFHpA	363.0 > 318.9	8495.516	7378.397	1.00	3.64	14.393	10.000	11.8	118.4	NO	16.718	NO
19	12	ADONA	376.8 > 250.9	21913.801	7378.397	1.00	3.75	37.125	10.000	12.0	119.9	NO	4.046	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	14140.643		1.00	3.03	14140.643	12.500	12.4	99.0	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	833.313		1.00	2.51	833.313	12.500	11.2	89.3	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3136.568		1.00	3.25	3136.568	12.500	11.0	87.9	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	7378.397		1.00	3.64	7378.397	12.500	11.3	90.8	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	7378.397		1.00	3.64	7378.397	12.500	11.3	90.8	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	7378.397		1.00	3.64	7378.397	12.500	11.3	90.8	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	1668.992	1926.065	1.00	3.78	10.832	9.120	10.0	109.8	NO	2.565	NO
28	15	6:2 FTS	427.0 > 407	1883.392	1207.833	1.00	4.10	19.491	9.480	8.98	94.8	NO	1.261	NO
29	16	L-PFOA	412.8 > 368.9	12268.184	12124.160	1.00	4.15	12.648	10.000	10.4	103.5	NO	3.145	NO
30	18	PFecHS	460.8 > 381.0		12124.160	1.00			10.000		(A)	NO		YES
31	19	PFHpS	449.0 > 79.7	1921.474	2380.266	1.00	4.27	10.091	9.480	8.92	94.1	NO	2.289	NO
32	20	7:3 FTCA	440.9 > 336.9		10465.935	1.00			10.000		(A)	NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	1926.065		1.00	3.78	1926.065	12.500	11.4	90.8	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1207.833		1.00	4.10	1207.833	12.500	13.0	104.1	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12124.160		1.00	4.15	12124.160	12.500	11.9	95.1	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12124.160		1.00	4.15	12124.160	12.500	11.9	95.1	NO		

VL 03/24/20

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2380.266		1.00	4.69	2380.266	12.500	12.1	97.1	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	10465.935		1.00	4.60	10465.935	12.500	11.3	90.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	10728.196	10465.935	1.00	4.60	12.813	10.000	11.4	113.9	NO	6.195	NO
41	22	PFOSA	497.9 > 77.9	2538.943	3199.073	1.00	4.66	9.921	10.000	11.6	116.0	NO	30.620	NO
42	23	L-PFOS	498.9 > 79.7	1590.971	2380.266	1.00	4.69	8.355	9.280	8.63	93.0	NO	2.231	NO
43	25	9Cl-PF30NS	530.7 > 350.8	2991.537	2380.266	1.00	4.91	15.710	9.280	10.1	109.2	NO	17.209	NO
44	26	PFDA	513 > 468.8	13297.075	12017.090	1.00	4.99	13.831	10.000	10.5	105.1	NO	8.212	NO
45	27	8:2 FTS	526.9 > 507	1271.184	948.210	1.00	4.95	16.758	9.600	9.28	96.7	NO	2.457	YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	10465.935		1.00	4.60	10465.935	12.500	11.3	90.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3199.073		1.00	4.65	3199.073	12.500	10.8	86.7	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2380.266		1.00	4.69	2380.266	12.500	12.1	97.1	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2380.266		1.00	4.69	2380.266	12.500	12.1	97.1	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	12017.090		1.00	4.99	12017.090	12.500	12.1	97.1	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	948.210		1.00	4.95	948.210	12.500	11.2	89.9	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1931.726	2380.266	1.00	5.05	10.144	9.600	10.9	113.4	NO	2.648	NO
54	29	L-MeFOSAA	570 > 419	4462.672	3409.273	1.00	5.14	16.362	10.000	10.1	101.3	NO	2.295	NO
55	31	L-EtFOSAA	584.1 > 419	3703.741	4362.589	1.00	5.29	10.612	10.000	9.87	98.7	NO	1.236	NO
56	33	PFUdA	563.0 > 518.9	12571.445	15468.412	1.00	5.31	10.159	10.000	9.76	97.6	NO	14.234	YES
57	34	PFDS	598.8 > 79.7	1760.107	2380.266	1.00	5.36	9.243	9.600	10.6	109.9	NO	2.214	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	5304.985	16946.885	1.00	5.52	3.913	9.440	9.35	99.1	NO	21.491	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	2380.266		1.00	4.69	2380.266	12.500	12.1	97.1	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	3409.273		1.00	5.13	3409.273	12.500	11.9	95.4	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	4362.589		1.00	5.29	4362.589	12.500	11.6	92.7	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15468.412		1.00	5.31	15468.412	12.500	12.4	99.1	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2380.266		1.00	4.69	2380.266	12.500	12.1	97.1	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	16946.885		1.00	5.59	16946.885	12.500	12.1	96.7	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		773.902	1.00			10.000		(A)	NO		YES
67	37	PFDoA	612.9 > 569.0	13728.385	16946.885	1.00	5.59	10.126	10.000	10.4	104.1	NO	9.464	NO
68	38	N-MeFOSA	512.1 > 168.9		13262.215	1.00			9.600		(A)	NO		YES
69	39	PFTrDA	662.9 > 618.9	15671.931	16946.885	1.00	5.83	11.560	10.000	10.9	108.6	NO	39.075	NO
70	40	PFDoS	698.8 > 79.7		14450.867	1.00			10.000		(A)	NO		YES
71	41	PFTeDA	713.0 > 669.0	14901.218	14450.867	1.00	6.05	12.890	10.000	9.68	96.8	NO	16.202	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	773.902		1.00	5.57	773.902	12.500	11.9	95.1	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

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Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	16946.885		1.00	5.59	16946.885	12.500	12.1	96.7	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	13262.215		1.00	5.69	13262.215	149.200	147	98.3	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	16946.885		1.00	5.59	16946.885	12.500	12.1	96.7	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	14450.867		1.00	6.05	14450.867	12.500	11.4	90.9	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	14450.867		1.00	6.05	14450.867	12.500	11.4	90.9	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9		20914.270	1.00			9.600			NO		YES
80	43	PFHxDA	813.1 > 768.6		22833.469	1.00			10.000			NO		YES
81	44	PFODA	913.1 > 868.8		22833.469	1.00			10.000			NO		
82	45	N-MeFOSE	616.1 > 58.9		17397.615	1.00			9.600			NO		
83	46	N-EtFOSE	630.1 > 58.9		19640.764	1.00			9.600			NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	20914.270		1.00	6.12	20914.270	149.200	141	94.8	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	22833.469		1.00	6.39	22833.469	12.500	11.7	93.7	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	22833.469		1.00	6.39	22833.469	12.500	11.7	93.7	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17397.615		1.00	6.30	17397.615	149.200	140	93.5	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19640.764		1.00	6.44	19640.764	149.200	134	89.6	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2380.266		1.00	4.69	2380.266	12.500	12.1	97.1	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	4267.563	5576.041	1.00	1.30	9.567	12.500	12.8	102.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	7416.849	14214.949	1.00	2.23	6.522	12.500	11.9	95.3	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	833.313	860.064	1.00	2.51	12.111	12.500	12.2	97.3	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3136.568	14214.949	1.00	3.25	2.758	12.500	11.5	91.7	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1368.098	860.064	1.00	2.95	19.884	12.500	13.8	110.1	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	13995.289	14214.949	1.00	3.03	12.307	12.500	12.2	97.4	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	7378.397	14214.949	1.00	3.64	6.488	12.500	11.4	91.5	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	1910.160	860.064	1.00	3.78	27.762	12.500	11.7	93.3	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1210.567	2516.384	1.00	4.10	6.013	12.500	12.9	103.3	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	10465.935	11054.983	1.00	4.60	11.834	12.500	12.4	99.4	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3199.073	16732.479	1.00	4.65	2.390	12.500	11.8	94.7	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12124.160	15351.857	1.00	4.15	9.872	12.500	12.0	95.9	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2362.960	2516.384	1.00	4.69	11.738	12.500	12.2	97.9	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	12017.090	13044.691	1.00	4.99	11.515	12.500	12.4	99.4	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	948.210	2516.384	1.00	4.95	4.710	12.500	12.8	102.8	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	3408.903	16732.479	1.00	5.13	2.547	12.500	11.9	94.9	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	15323.069	16732.479	1.00	5.31	11.447	12.500	12.0	95.9	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	4346.567	16732.479	1.00	5.29	3.247	12.500	12.5	100.3	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	16698.979	13044.691	1.00	5.59	16.002	12.500	12.4	99.0	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	773.902	2516.384	1.00	5.57	3.844	12.500	11.5	91.9	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	13189.632	16732.479	1.00	5.69	9.853	149.200	146	97.6	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	14316.622	16732.479	1.00	6.05	10.695	12.500	12.0	96.1	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	20801.883	16732.479	1.00	6.12	15.540	149.200	150	100.4	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	22605.750	16732.479	1.00	6.39	16.888	12.500	11.6	93.0	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17290.746	16732.479	1.00	6.30	12.917	149.200	143	95.9	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19492.027	16732.479	1.00	6.44	14.562	149.200	140	93.7	NO		
119	99	13C4-PFBA	217.0 > 172.0	5576.041	5576.041	1.00	1.30	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	14214.949	14214.949	1.00	3.03	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	15351.857	15351.857	1.00	4.15	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	860.064	860.064	1.00	3.78	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11054.983	11054.983	1.00	4.60	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2516.384	2516.384	1.00	4.69	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	13044.691	13044.691	1.00	4.99	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	16732.479	16732.479	1.00	5.31	12.500	12.500	12.5	100.0	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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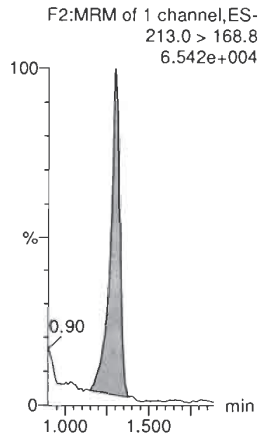
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

PFBA



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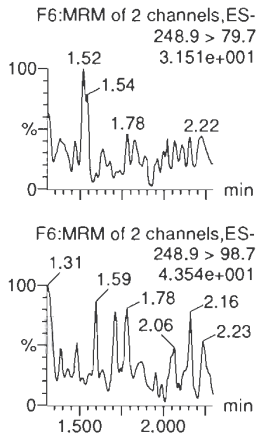
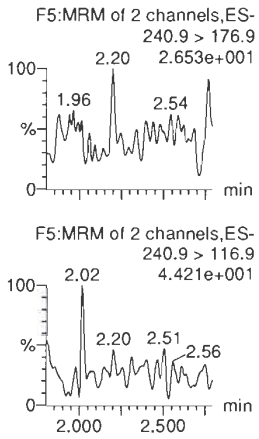


3:3 FTCA



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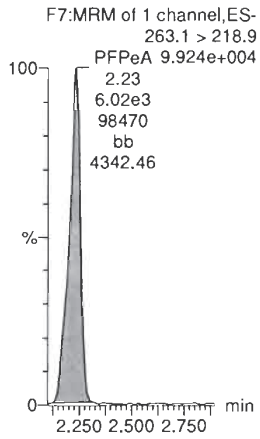

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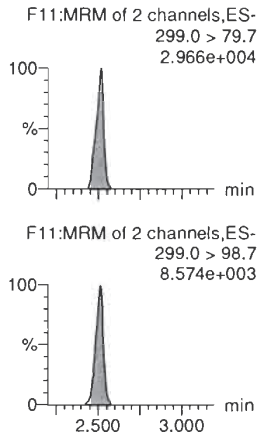
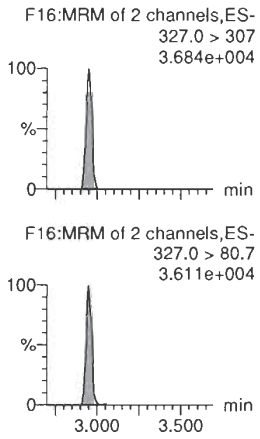


4:2 FTS



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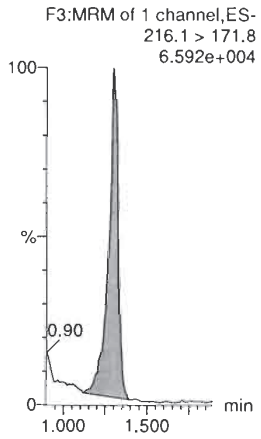

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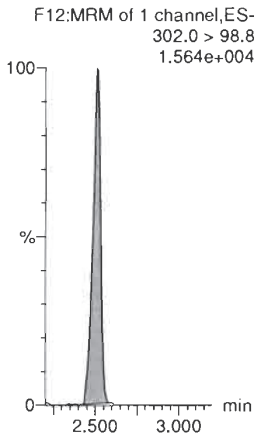

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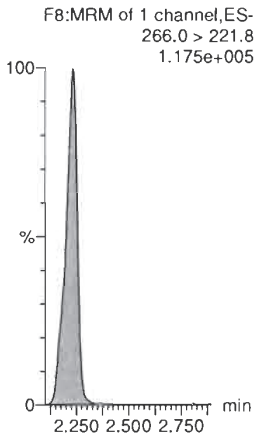

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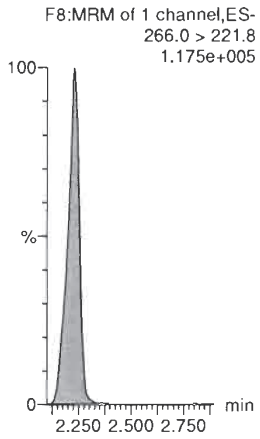

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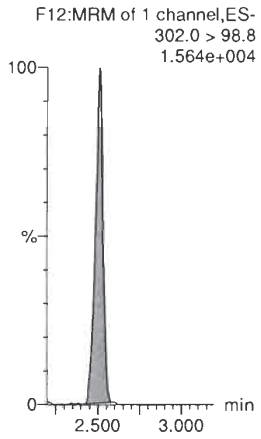

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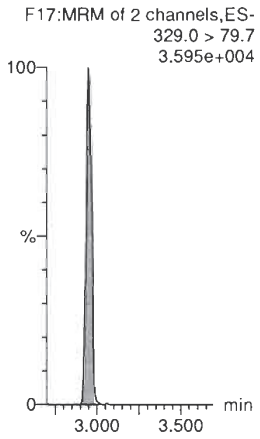

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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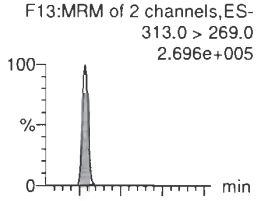
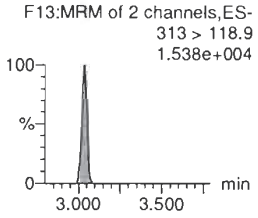
Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

PFHxA





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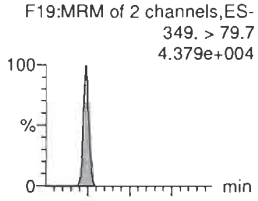
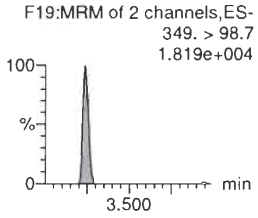
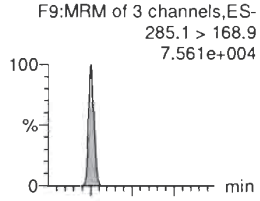
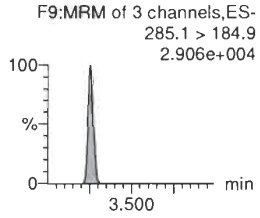


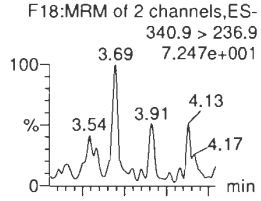


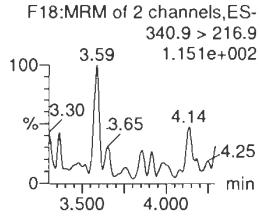
HFPO-DA





5:3 FTCA





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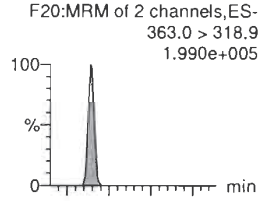

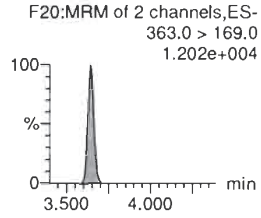

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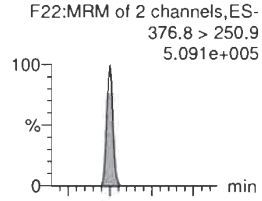

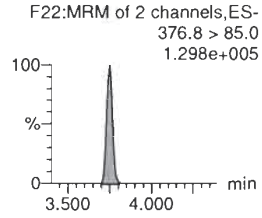

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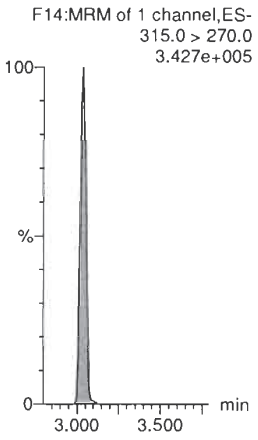

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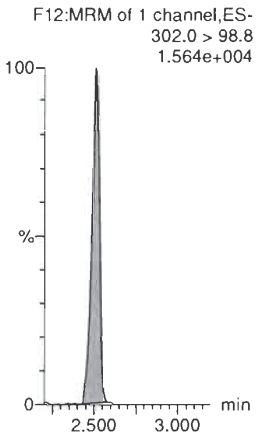

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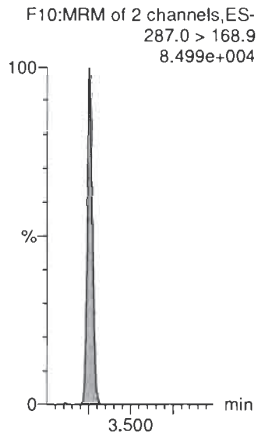

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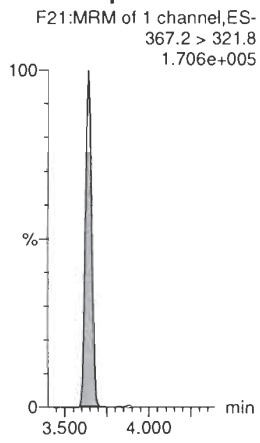
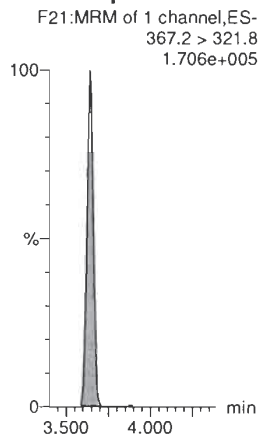


13C4-PFHpA-EIS



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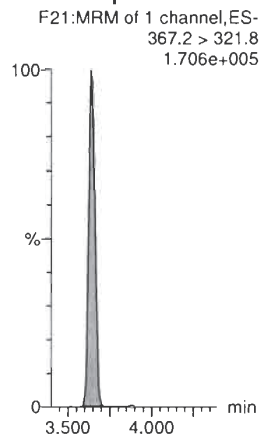

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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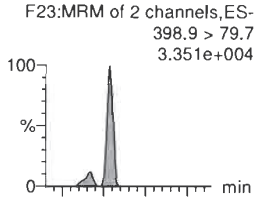

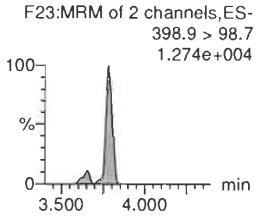

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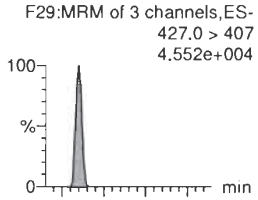

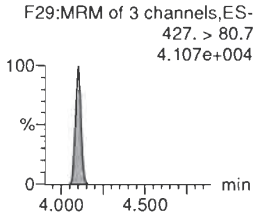

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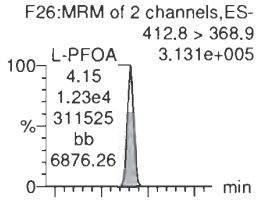

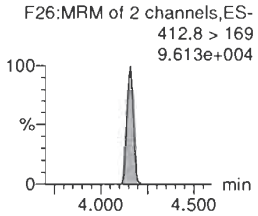

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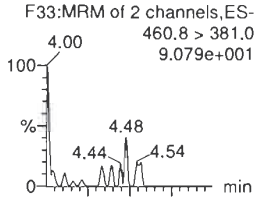

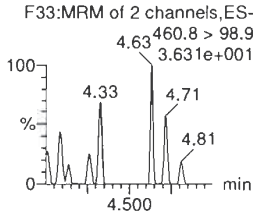

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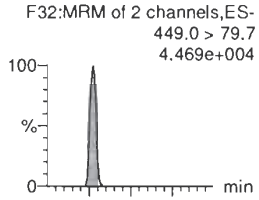

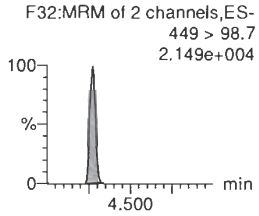

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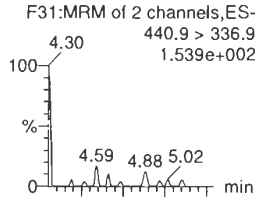

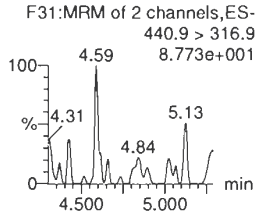

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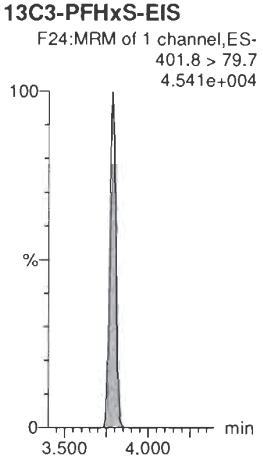

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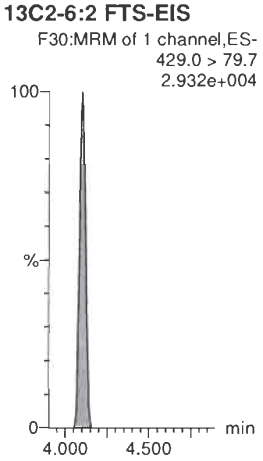

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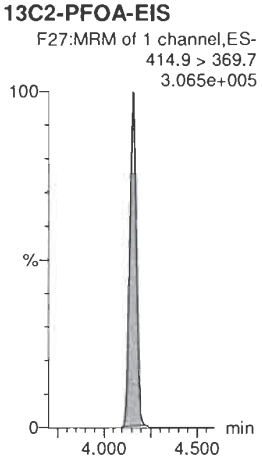

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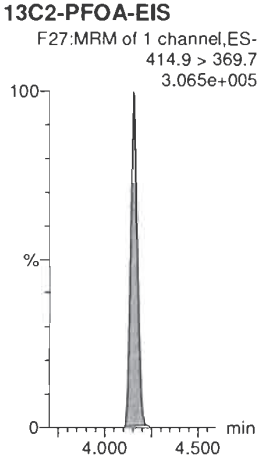

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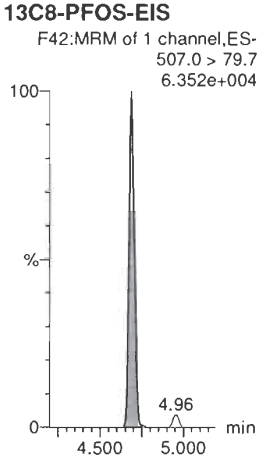

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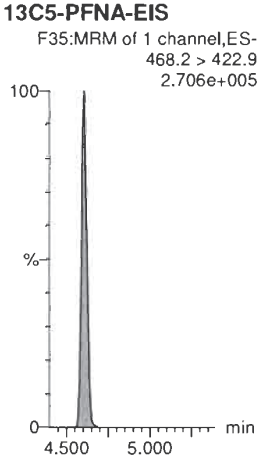

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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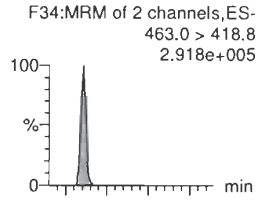

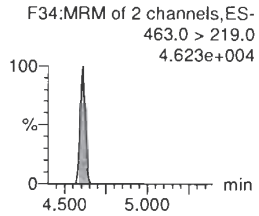

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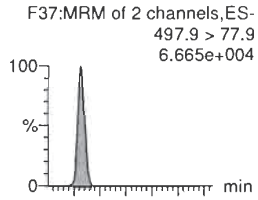

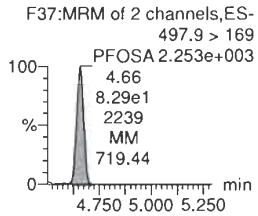

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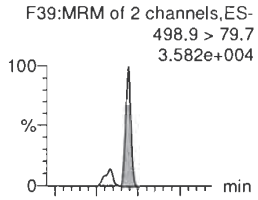

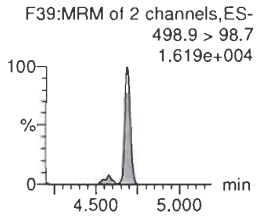

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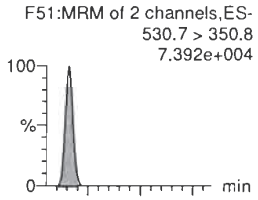

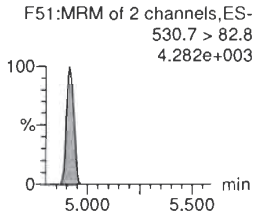

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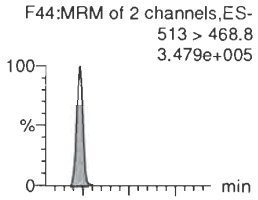

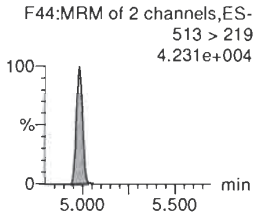

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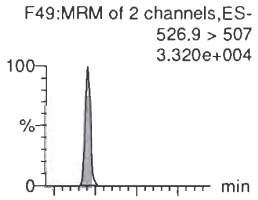

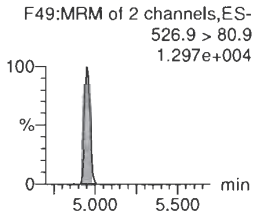

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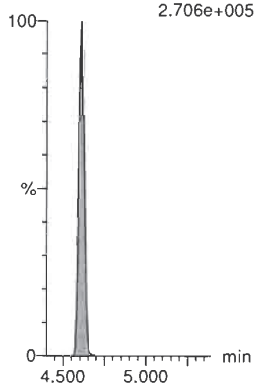

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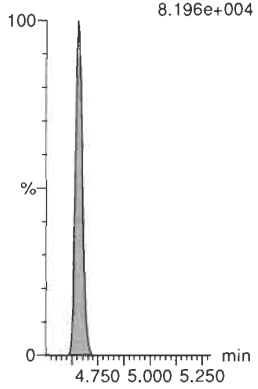

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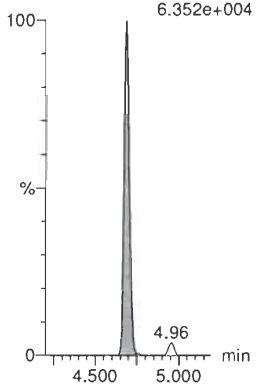

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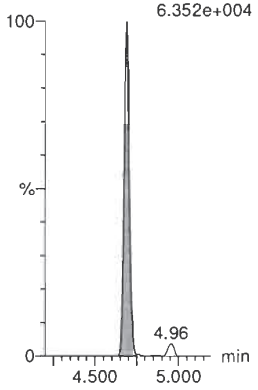

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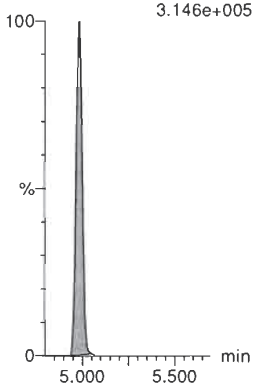

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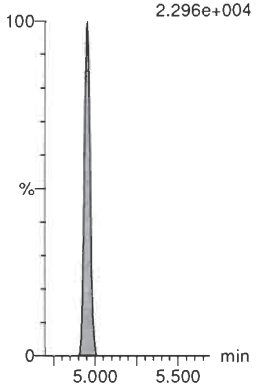

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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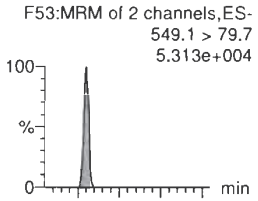

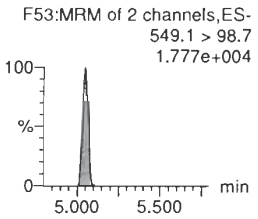

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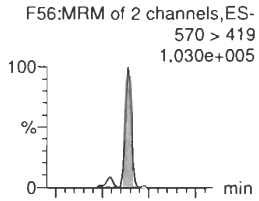

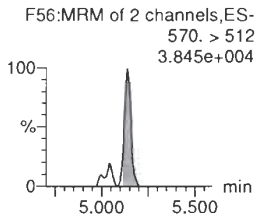

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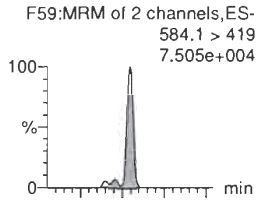

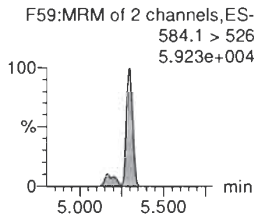

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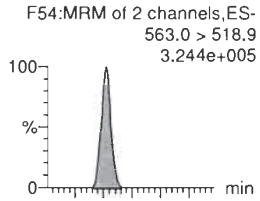

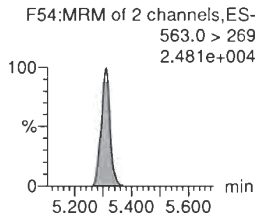

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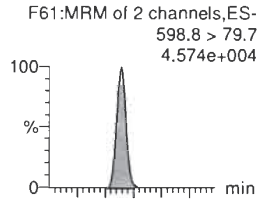

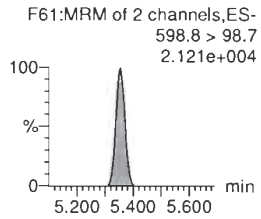

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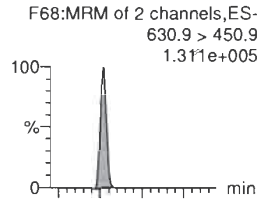

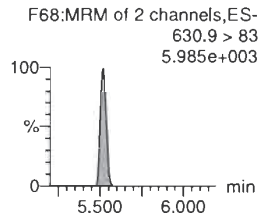

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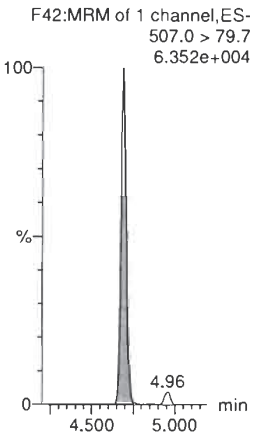

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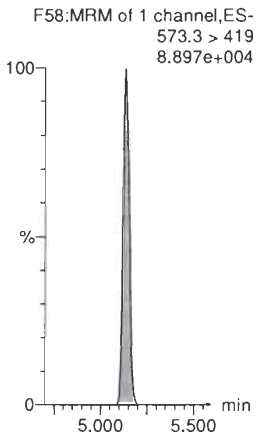

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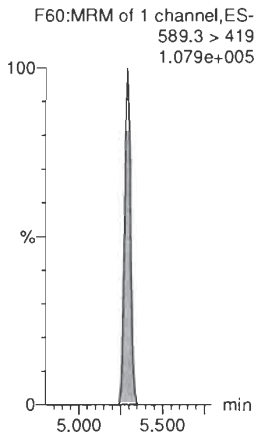

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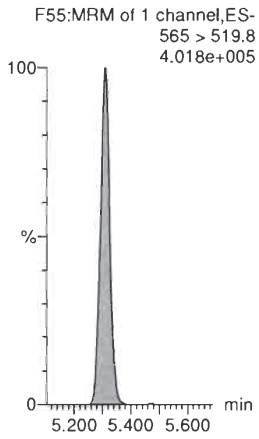

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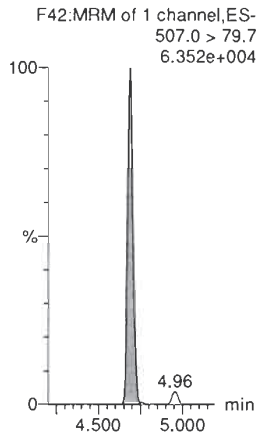

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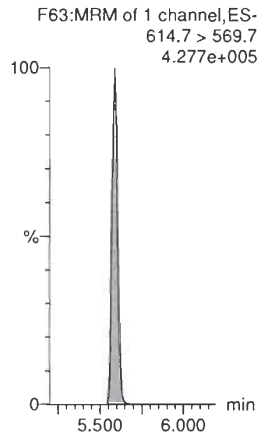

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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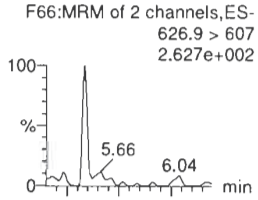
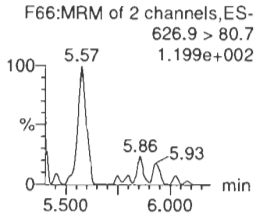
Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

10:2 FTS





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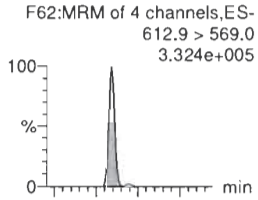

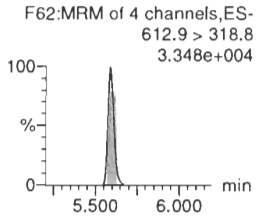

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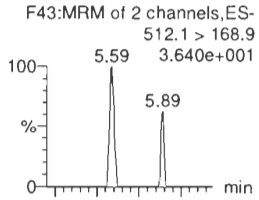

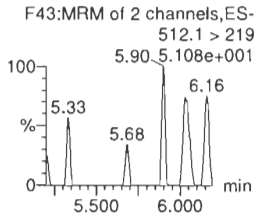

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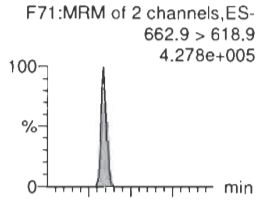

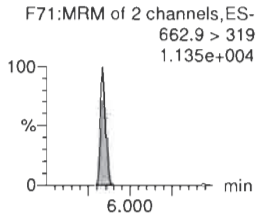

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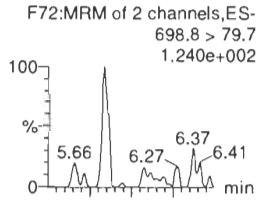

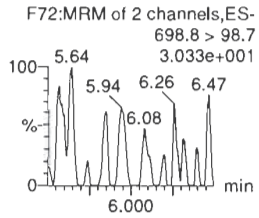

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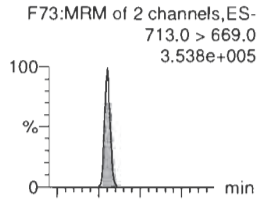

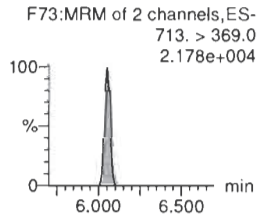

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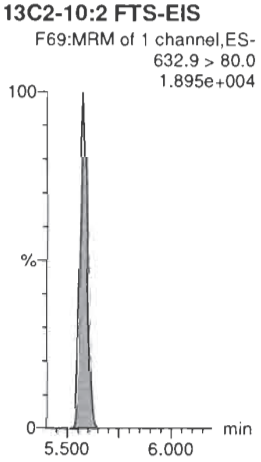

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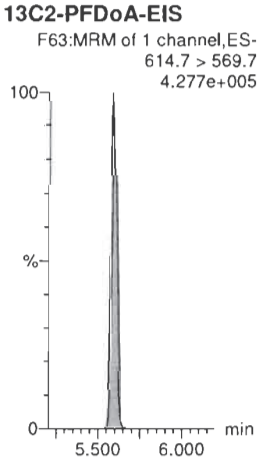

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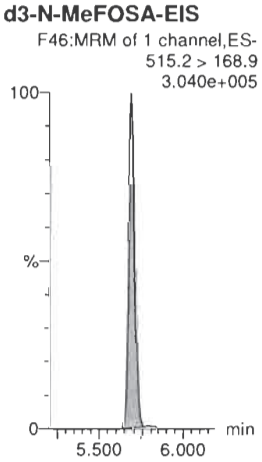

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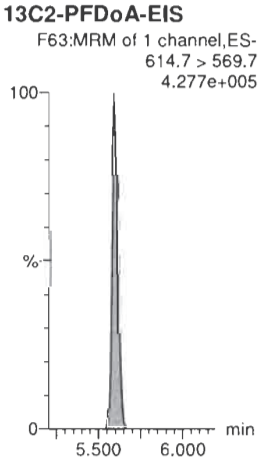

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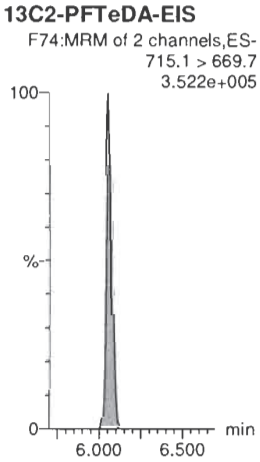

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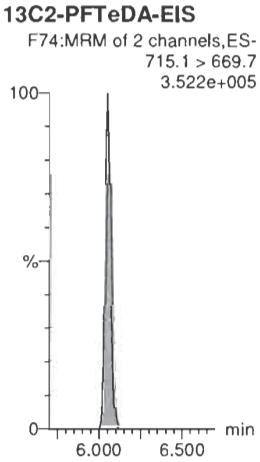

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

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Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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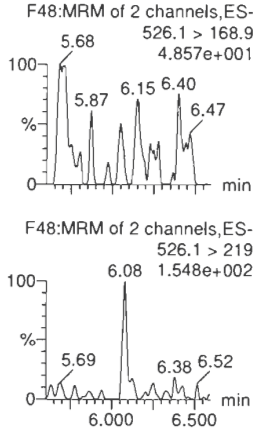

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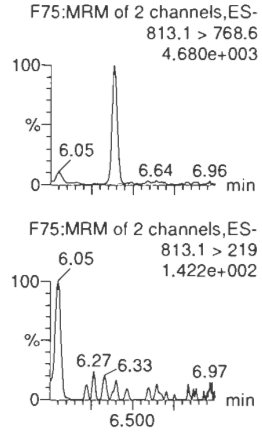

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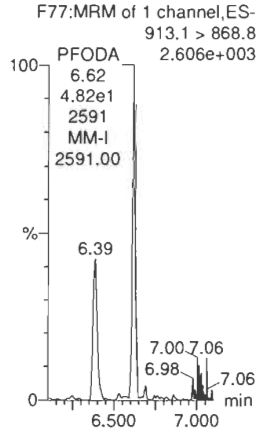

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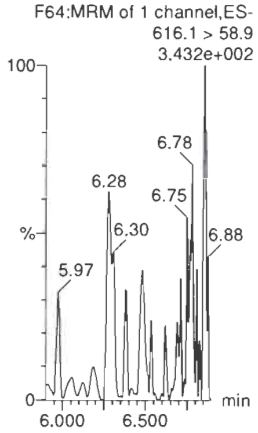

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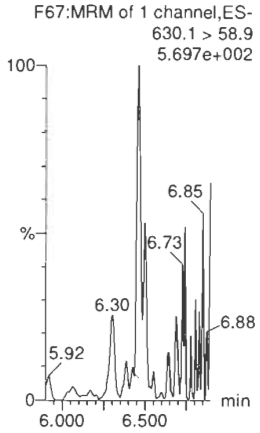

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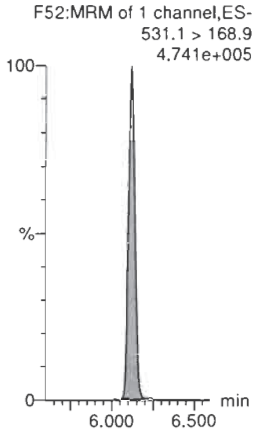

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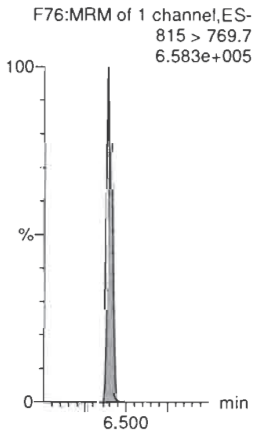

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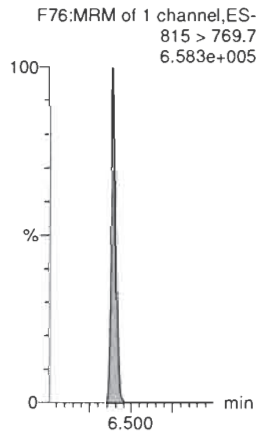

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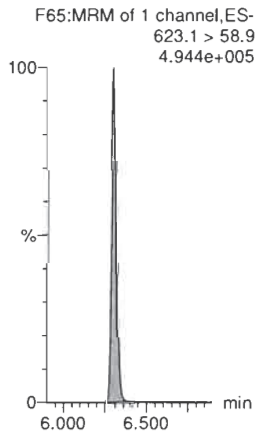

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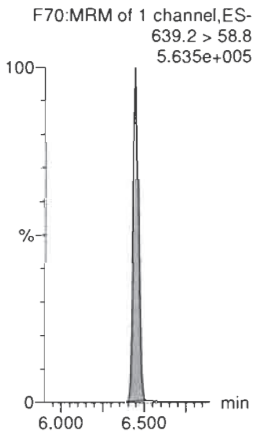

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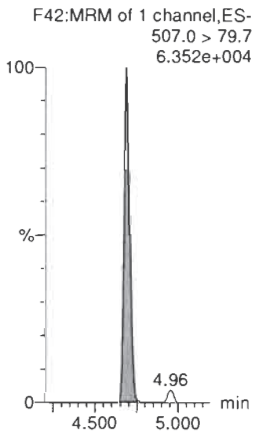

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

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Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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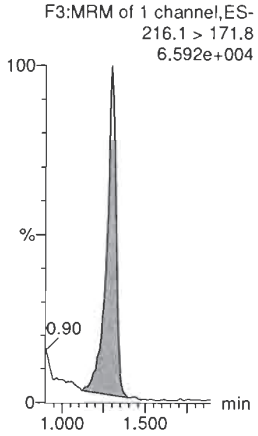

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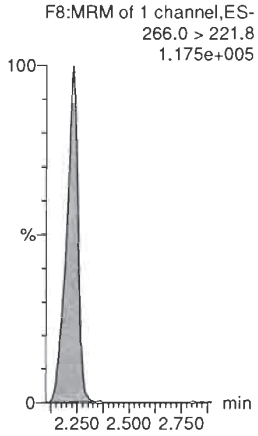

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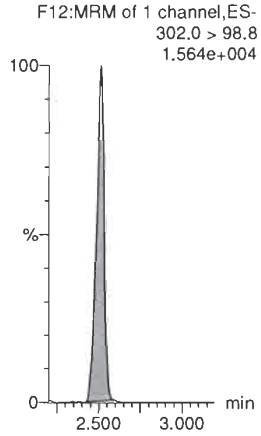

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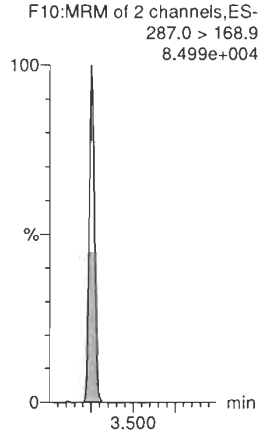

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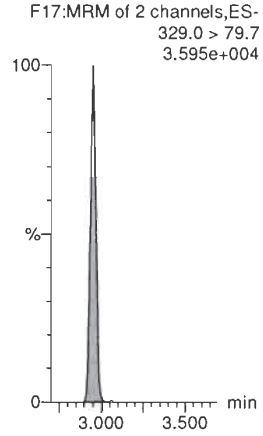

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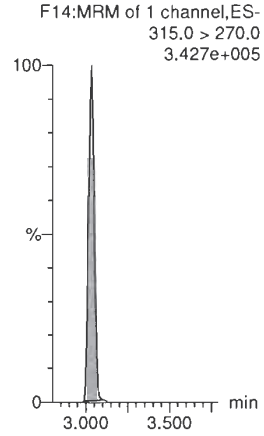

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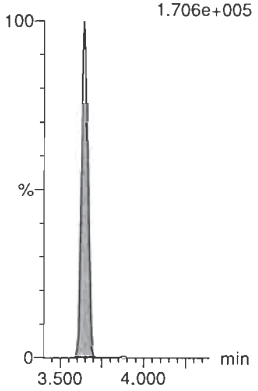

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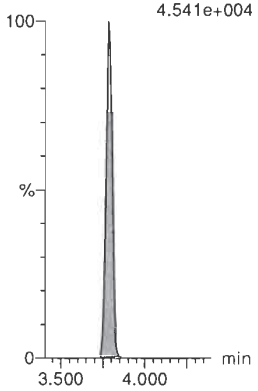

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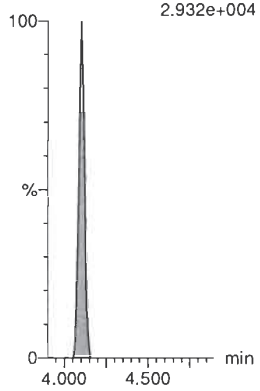

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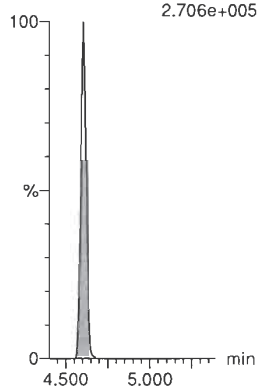

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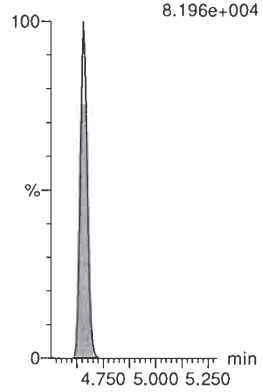

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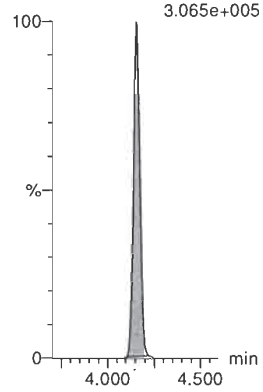

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

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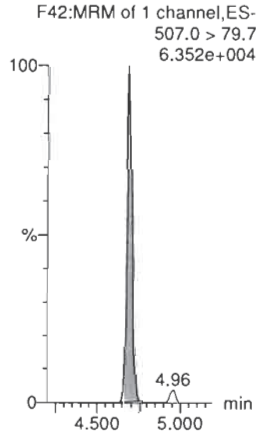

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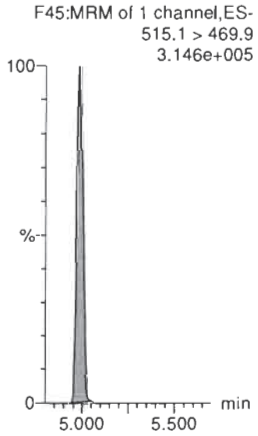

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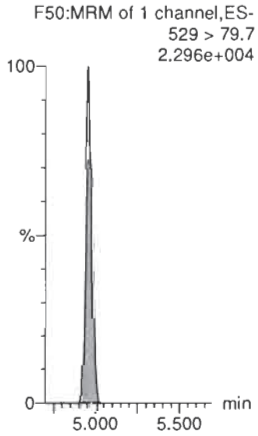
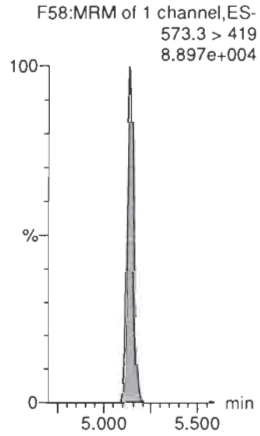


d3-N-MeFOSAA-RSD



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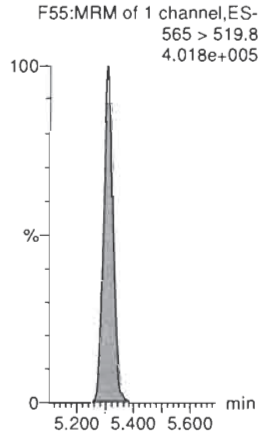
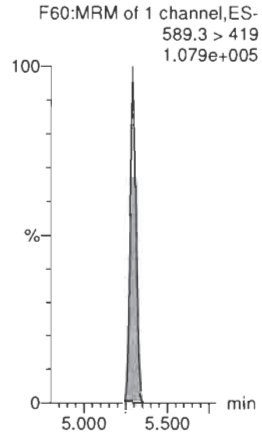
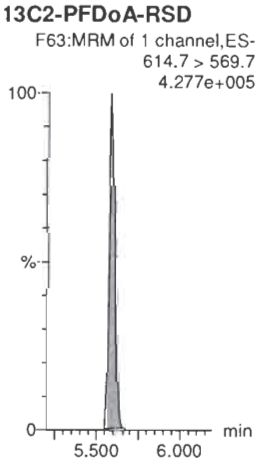


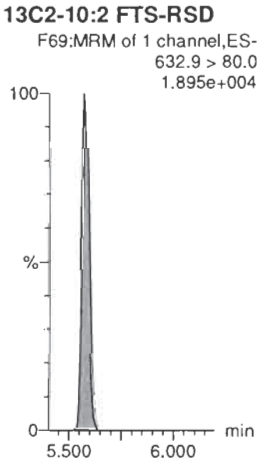
d5-N-EtFOSAA-RSD



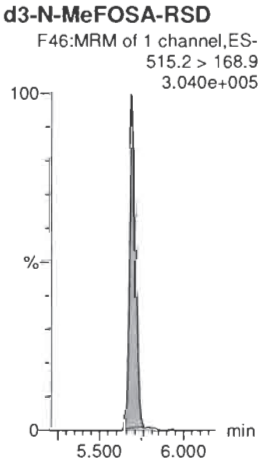
13C2-PFDoA-RSD



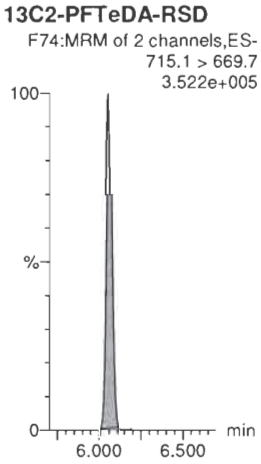
13C2-10:2 FTS-RSD



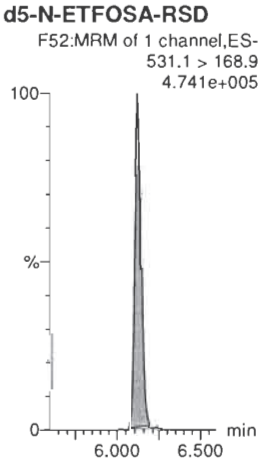
d3-N-MeFOSA-RSD



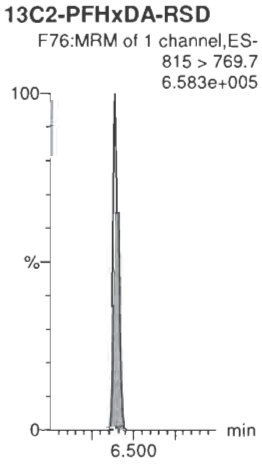
13C2-PFTeDA-RSD



d5-N-ETFOSA-RSD



13C2-PFHxDA-RSD



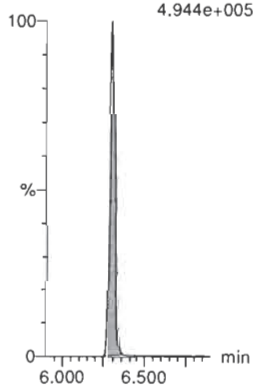
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200229P1\200229P1-ICV.qld

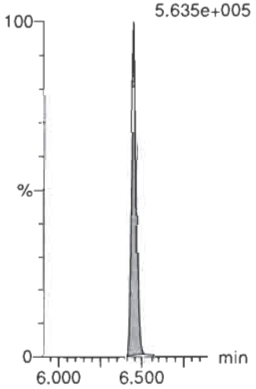
Last Altered: Monday, March 02, 2020 11:53:47 Pacific Standard Time
Printed: Monday, March 02, 2020 11:54:32 Pacific Standard Time

Name: 200229P1-14, Date: 29-Feb-2020, Time: 17:41:30, ID: ICV200229P1-1 PFC ICV 20B1112, Description: PFC ICV 20B1112

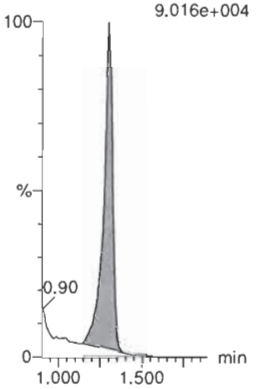
d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.944e+005



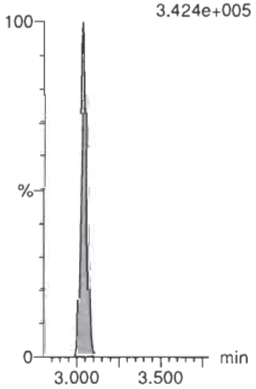
d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.635e+005



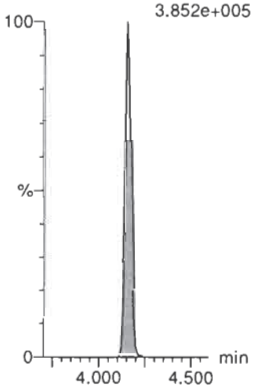
13C4-PFBA
F4:MRM of 1 channel,ES-
217.0 > 172.0
9.016e+004



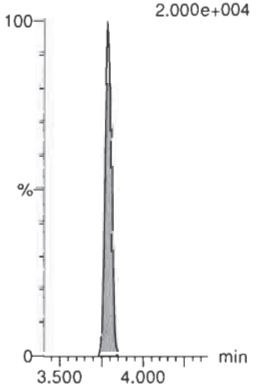
13C5-PFHxA
F15:MRM of 1 channel,ES-
318.0 > 272.9
3.424e+005



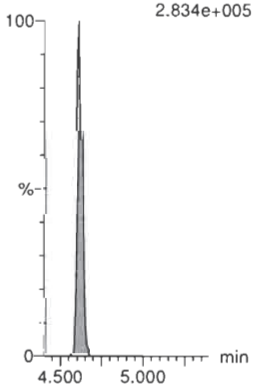
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
3.852e+005



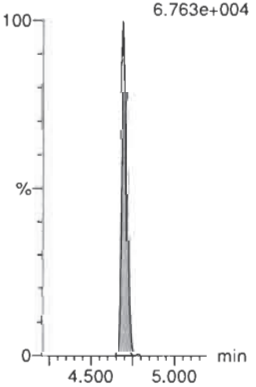
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
2.000e+004



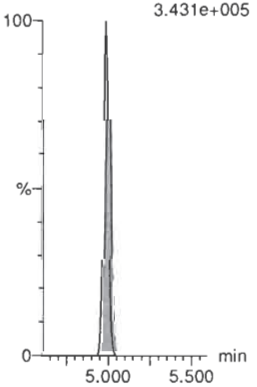
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
2.834e+005



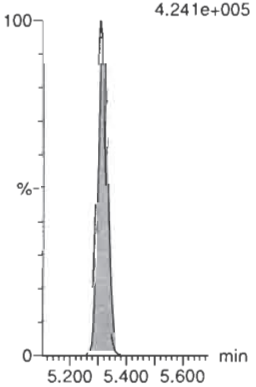
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.7
6.763e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
3.431e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
4.241e+005



Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

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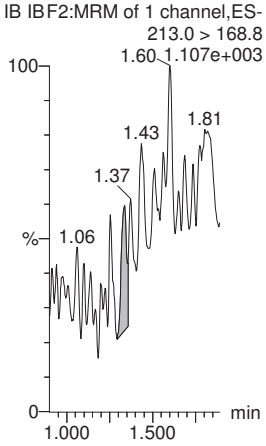
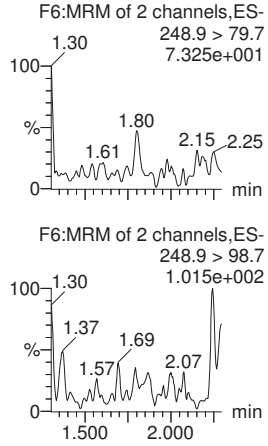
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_02-29-20.cdb 02 Mar 2020 10:55:04

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

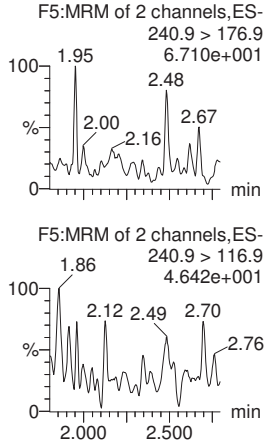
PFBA



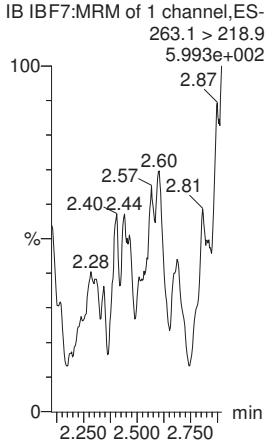
PFPrS



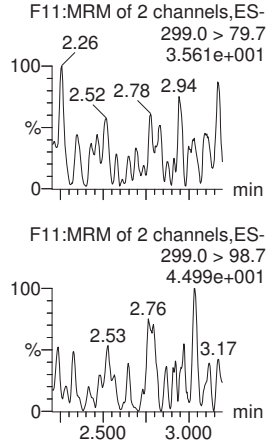
3:3 FTCA



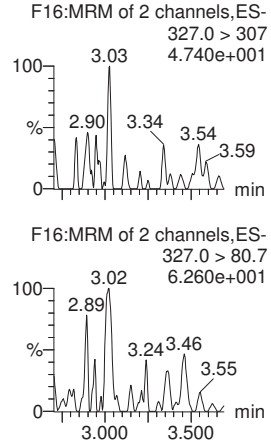
PFPeA



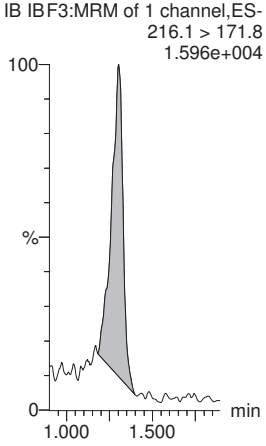
PFBS



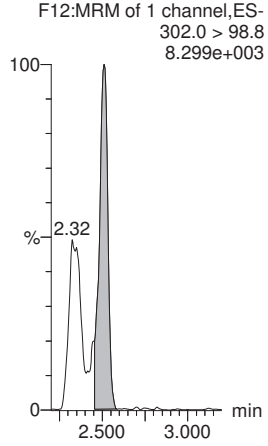
4:2 FTS



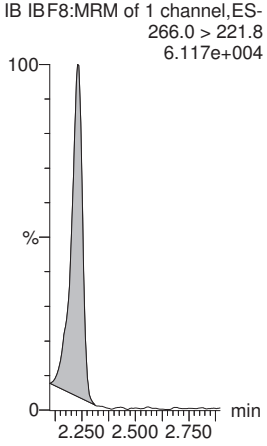
13C3-PFBA-EIS



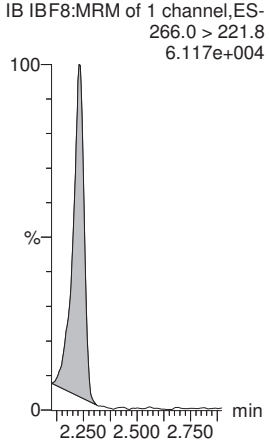
13C3-PFBS-EIS



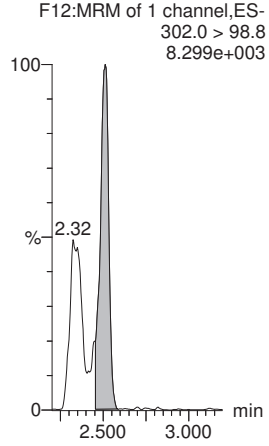
13C3-PFPeA-EIS



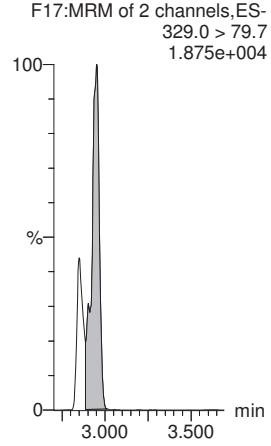
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

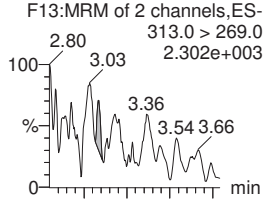
Vista Analytical Laboratory

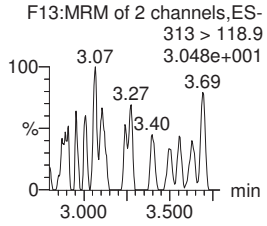
Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

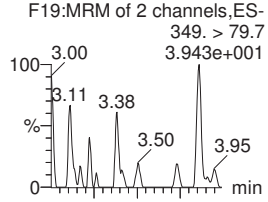
Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

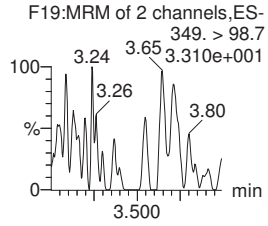
PFHxA



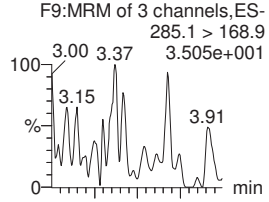


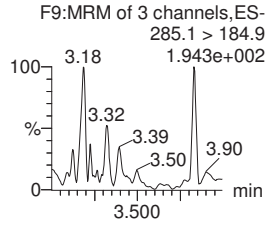
PFPeS



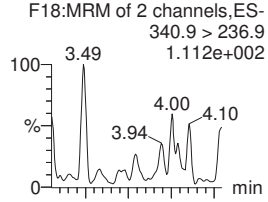


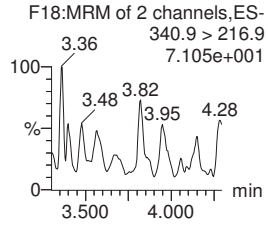
HFPO-DA





5:3 FTCA





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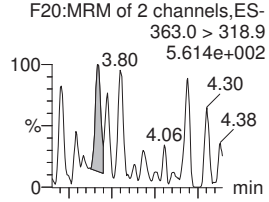
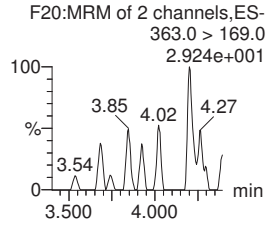
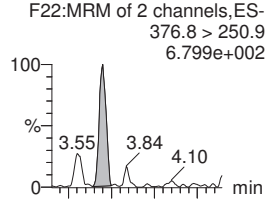
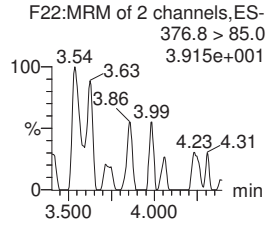


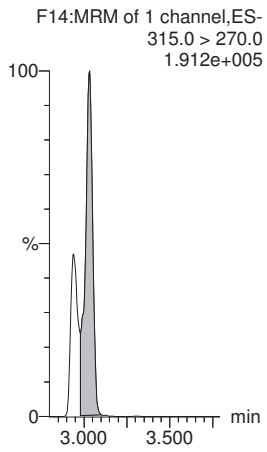


ADONA

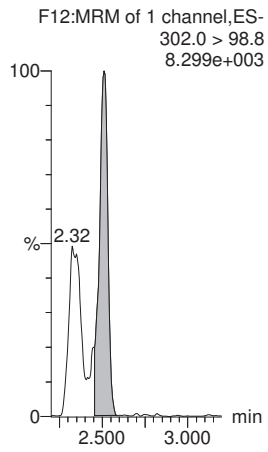




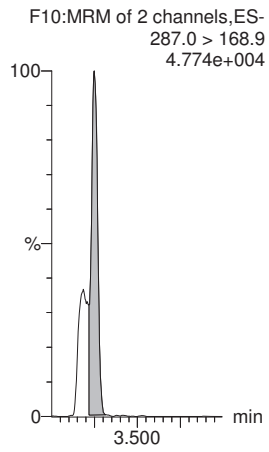
13C2-PFHxA-EIS



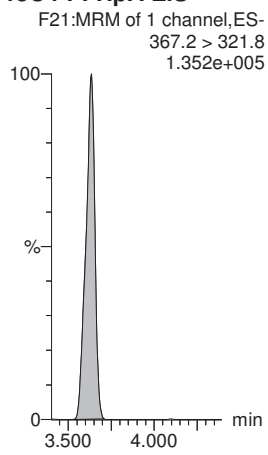
13C3-PFBS-EIS



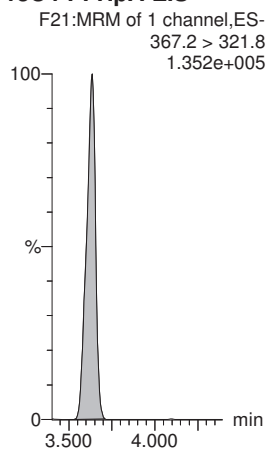
13C3-HFPO-DA-EIS



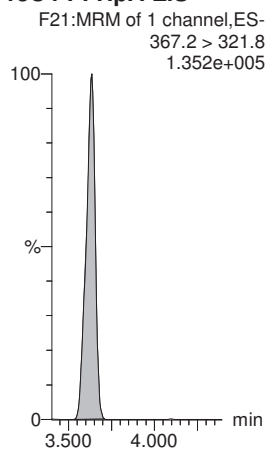
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



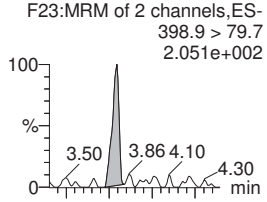
Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

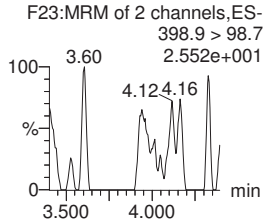
Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

L-PFHxS





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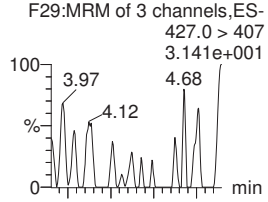

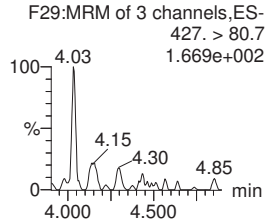

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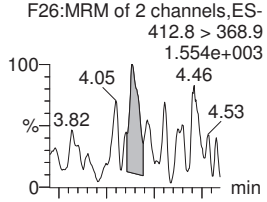

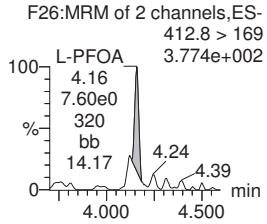

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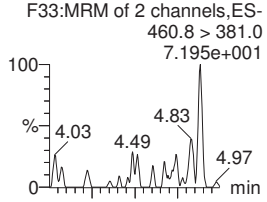

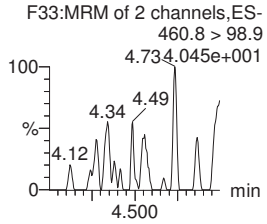

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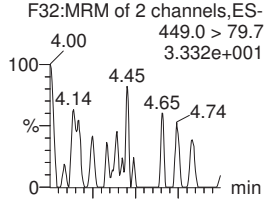

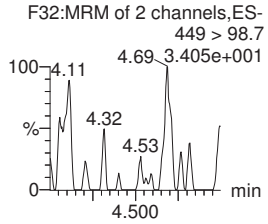

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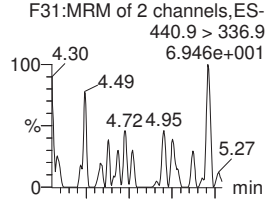

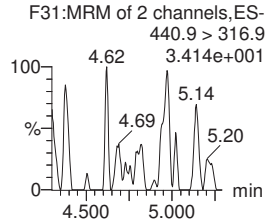

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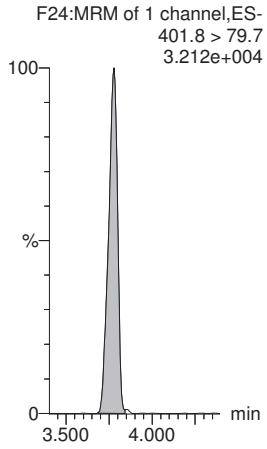
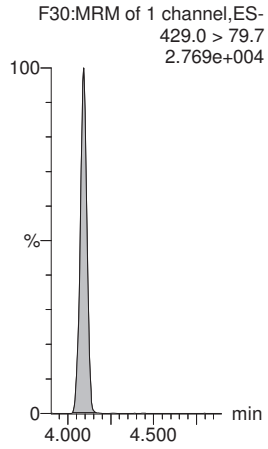


13C2-6:2 FTS-EIS



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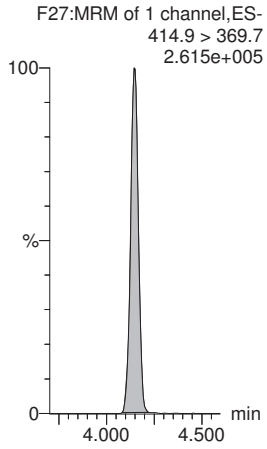

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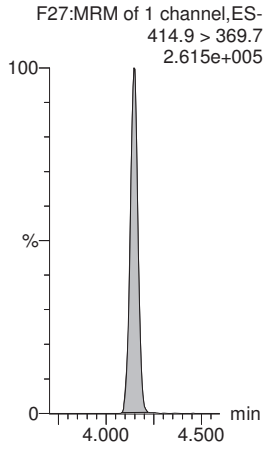

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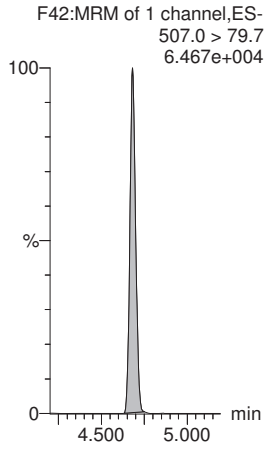
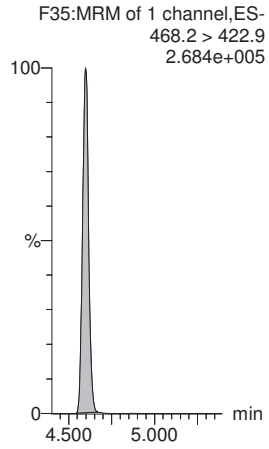


13C5-PFNA-EIS



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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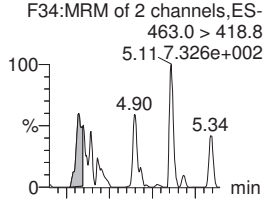

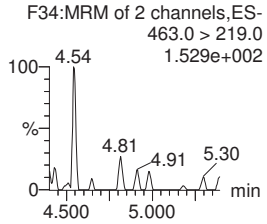

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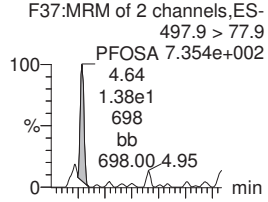

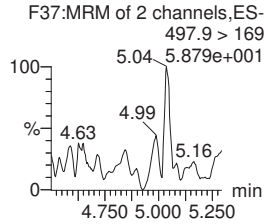

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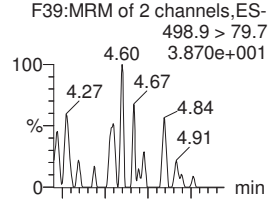

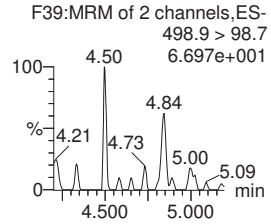

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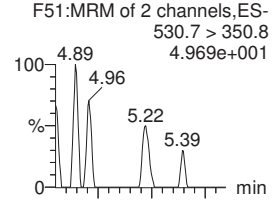

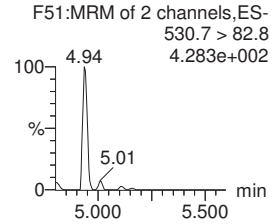

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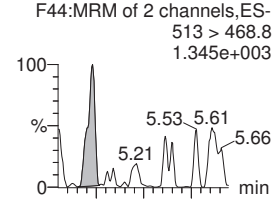

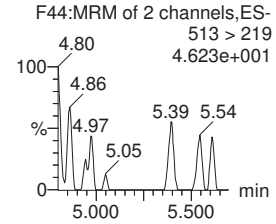

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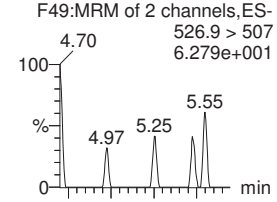

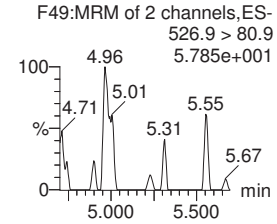

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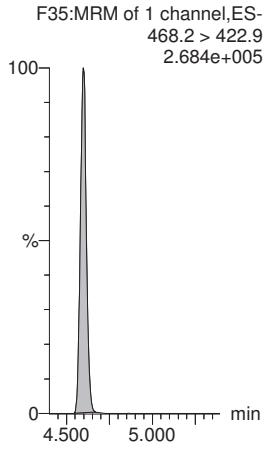

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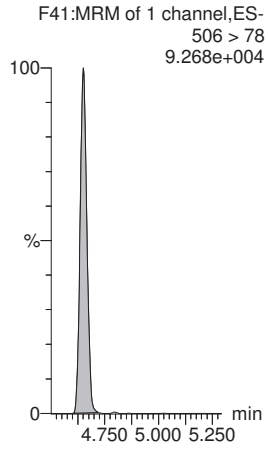

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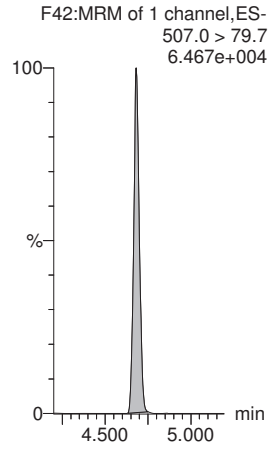

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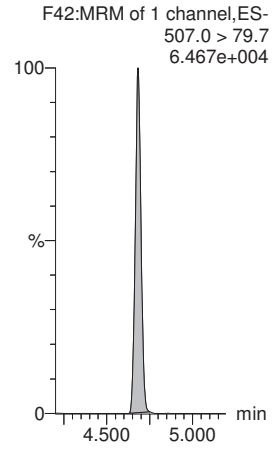

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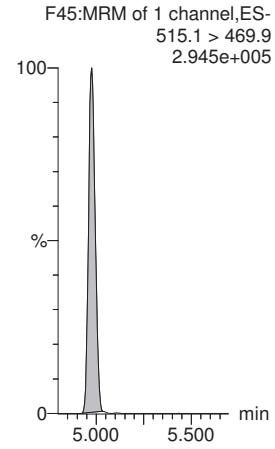

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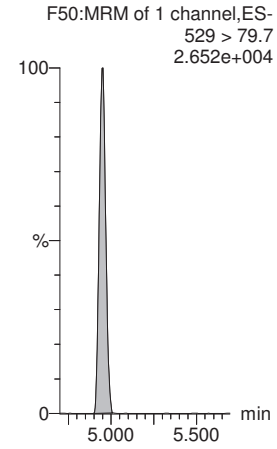

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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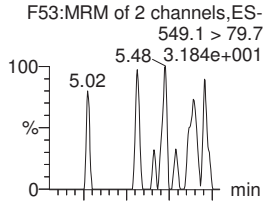

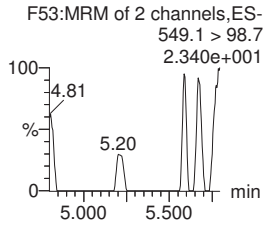

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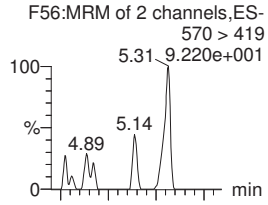
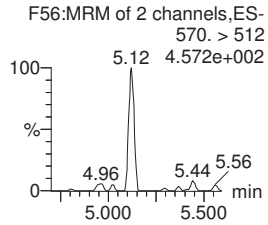
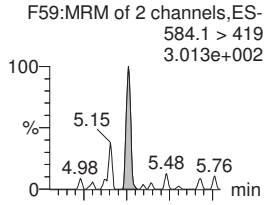
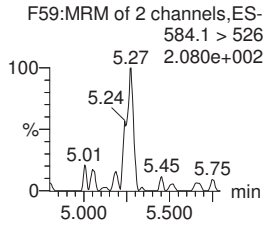




L-EtFOSAA





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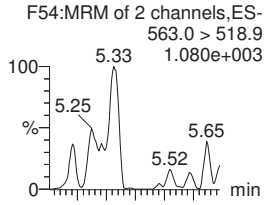

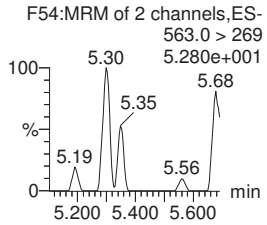

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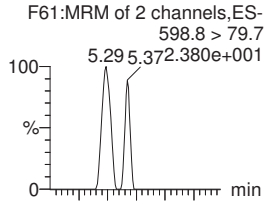

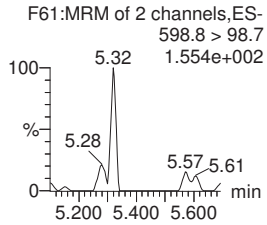

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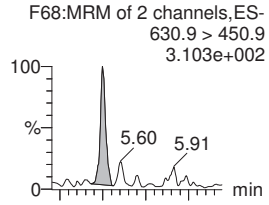

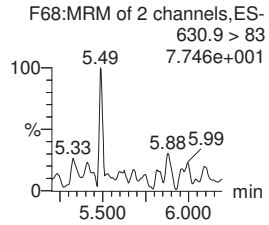

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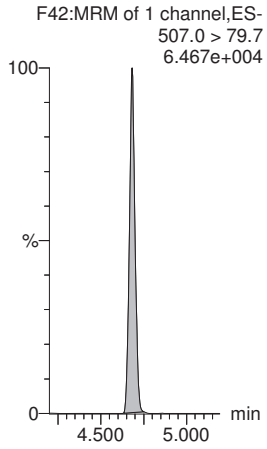

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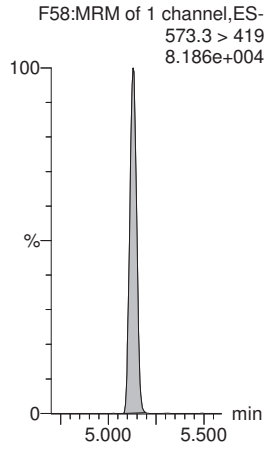

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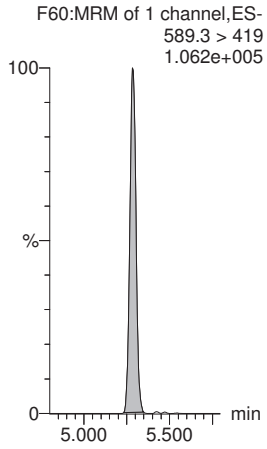

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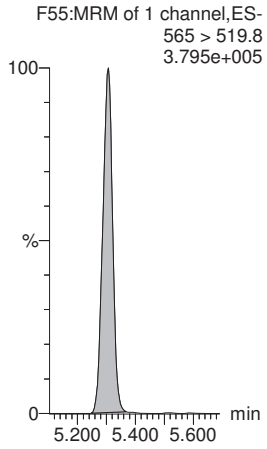

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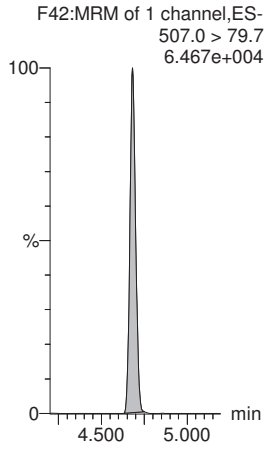

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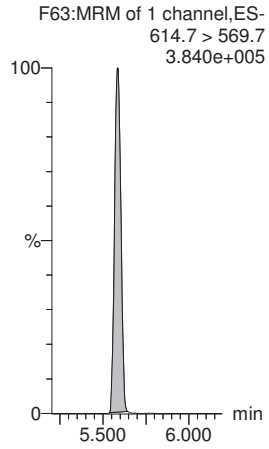

Quantify Sample Report **MassLynx V4.2 SCN977**
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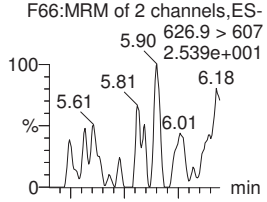
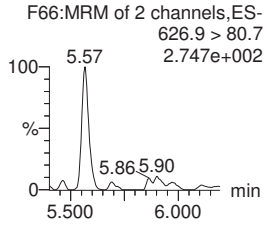
Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

10:2 FTS





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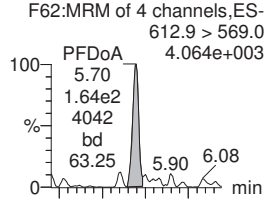

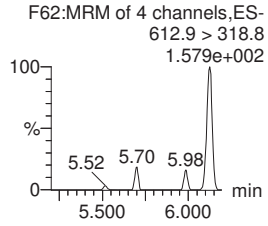

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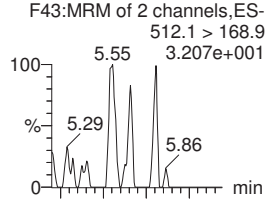

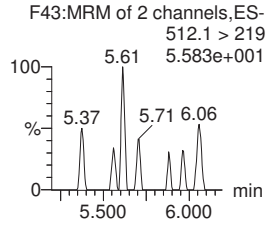

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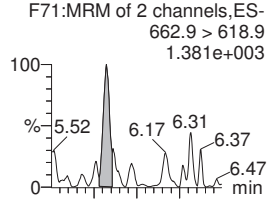

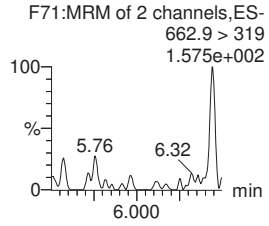

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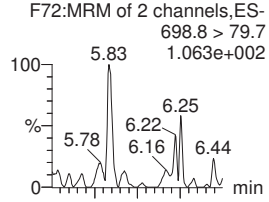

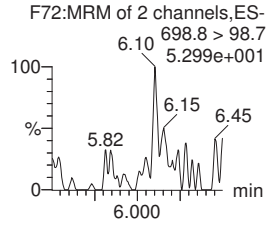

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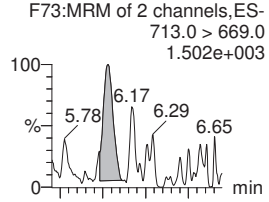

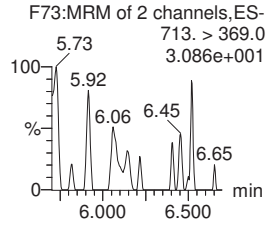

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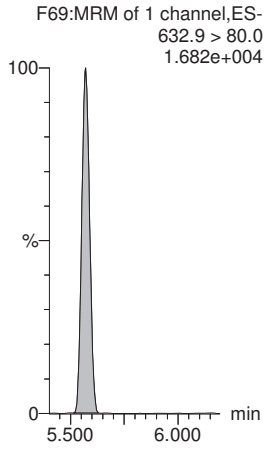

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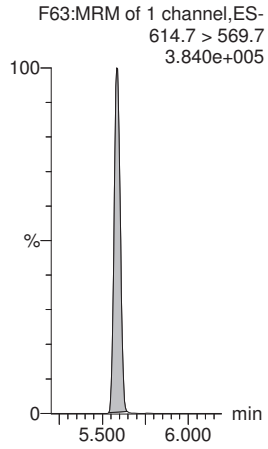

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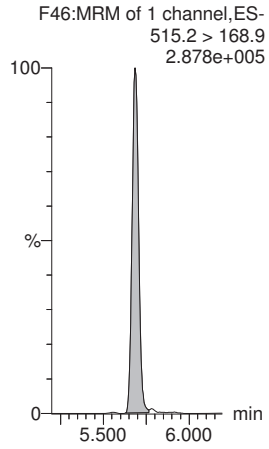

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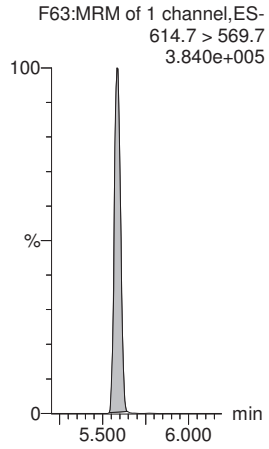

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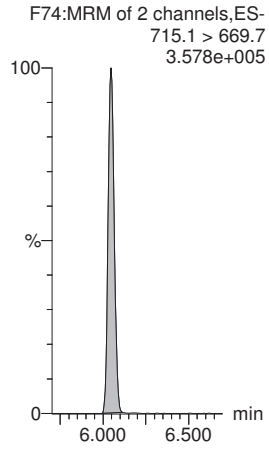

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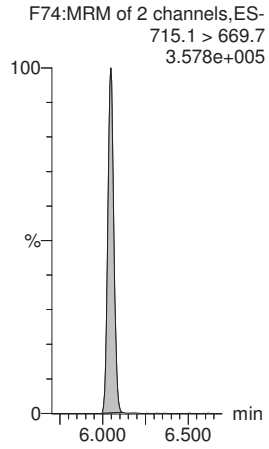

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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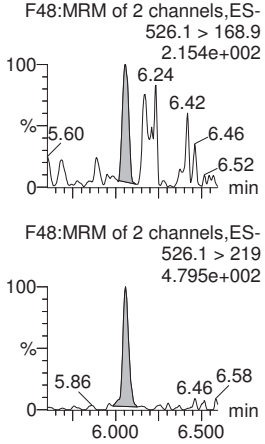

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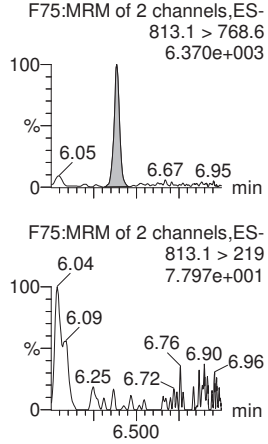

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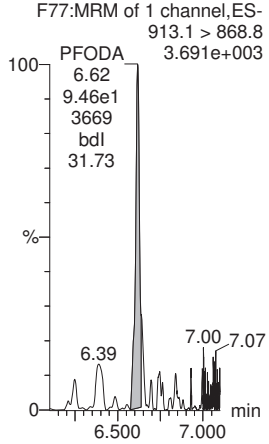

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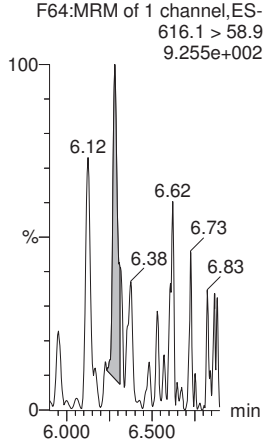

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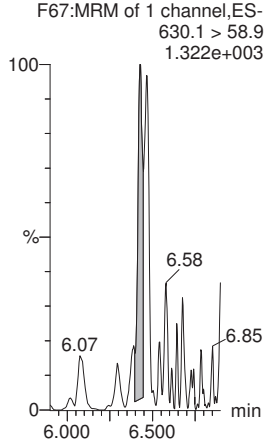

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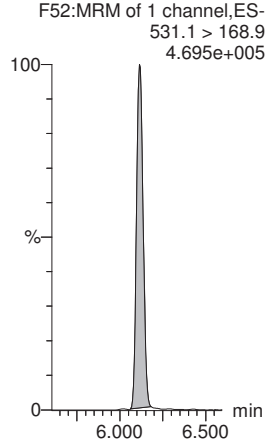

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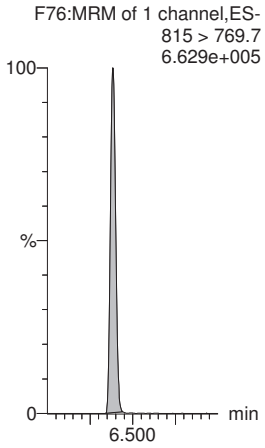

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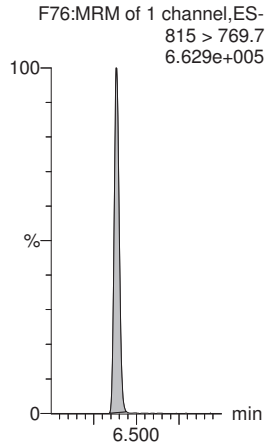

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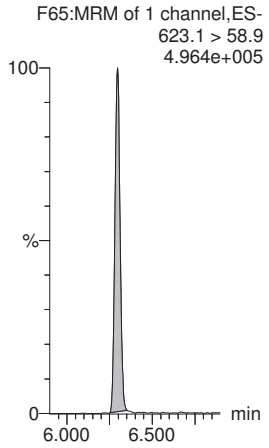

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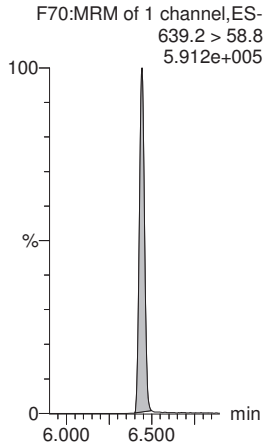

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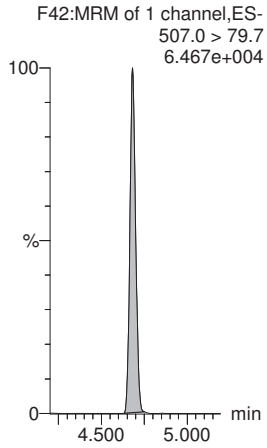

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

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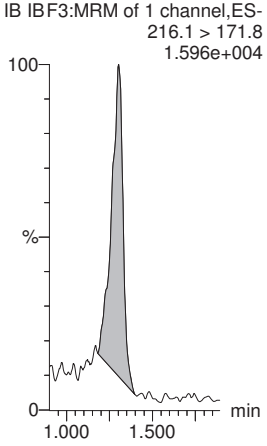

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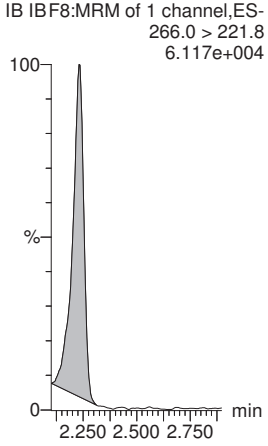

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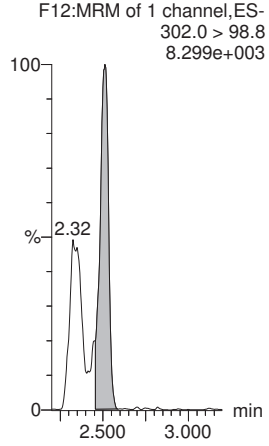

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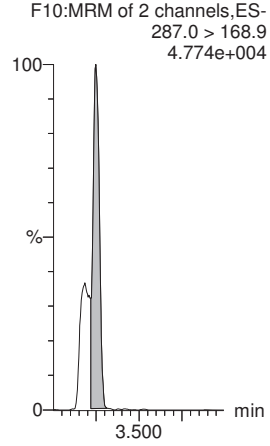

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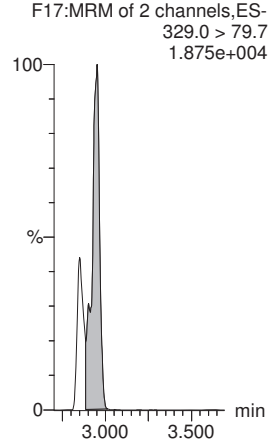

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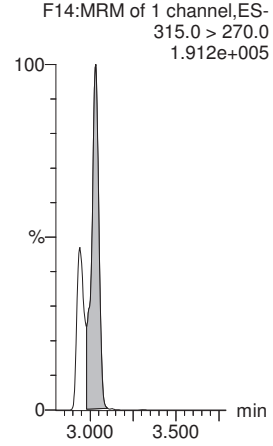

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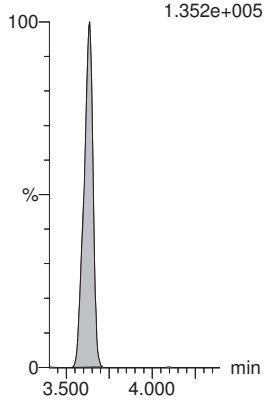

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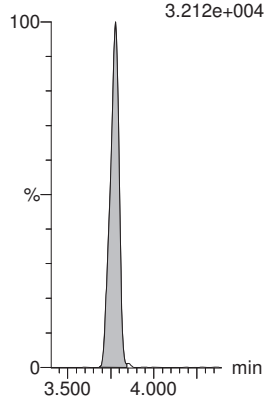

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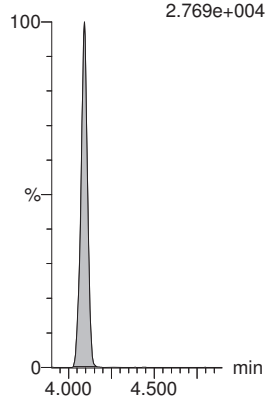

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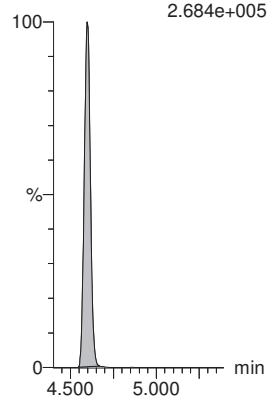

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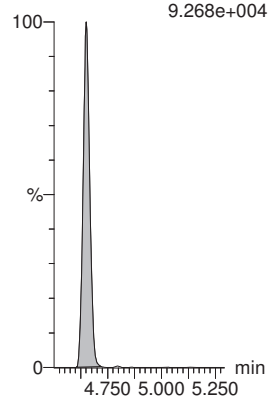

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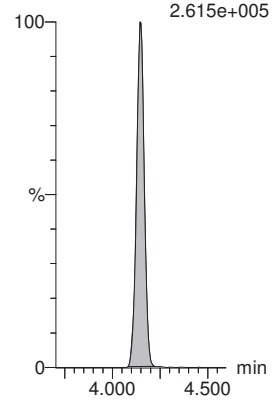

Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, March 02, 2020 11:34:34 Pacific Standard Time
Printed: Monday, March 02, 2020 11:34:50 Pacific Standard Time

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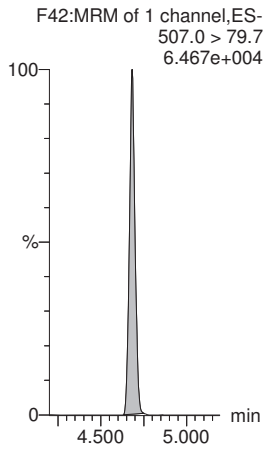

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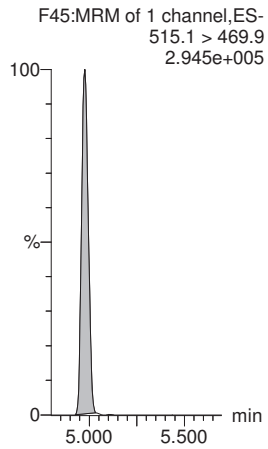
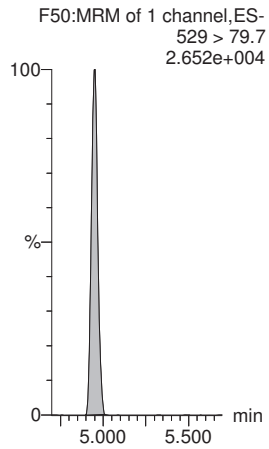


13C2-8:2 FTS-RSD



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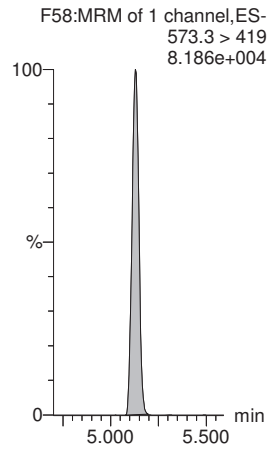

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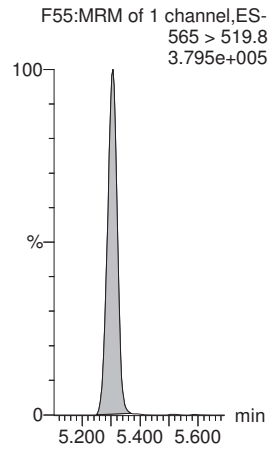

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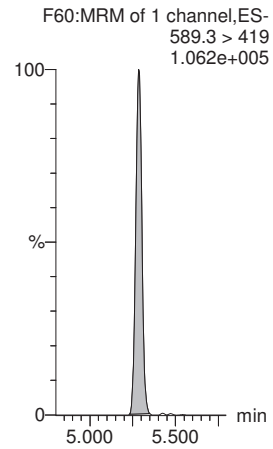

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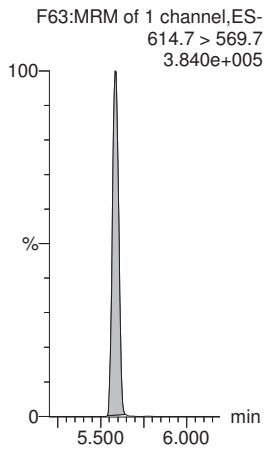

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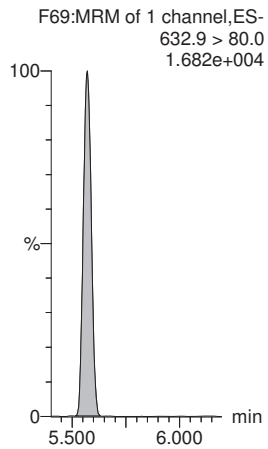

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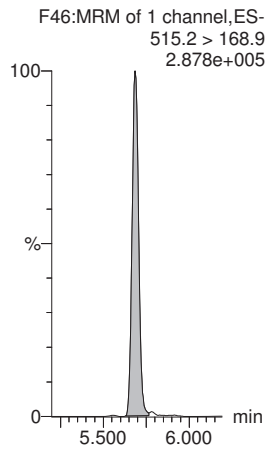

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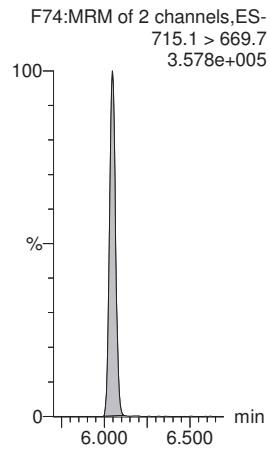

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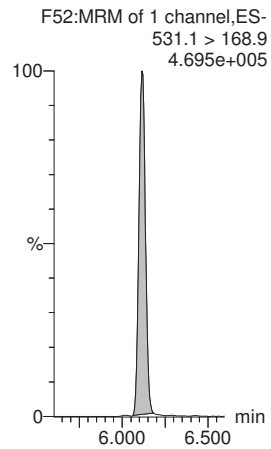
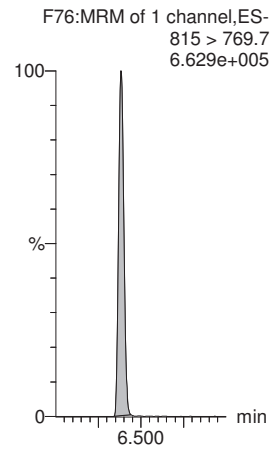


13C2-PFHxDA-RSD



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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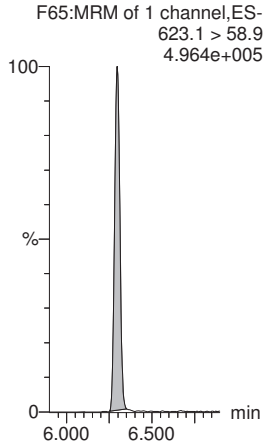
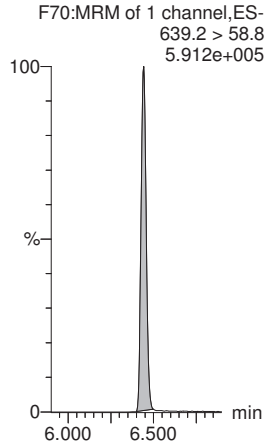
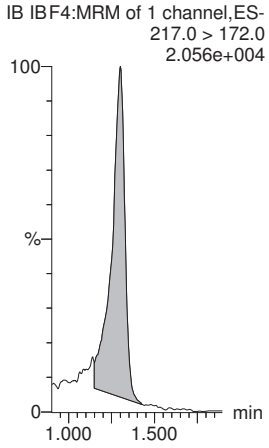
d7-N-MeFOSE-RSD



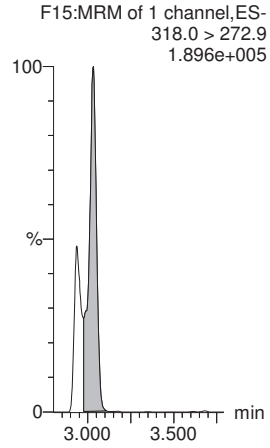
d9-N-EtFOSE-RSD



13C4-PFBA



13C5-PFHxA



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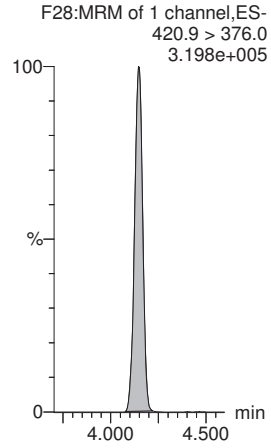
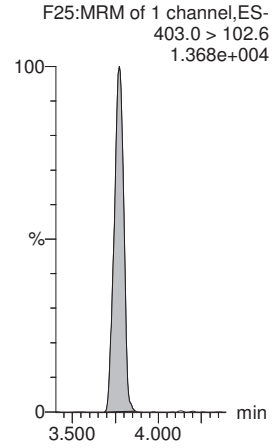
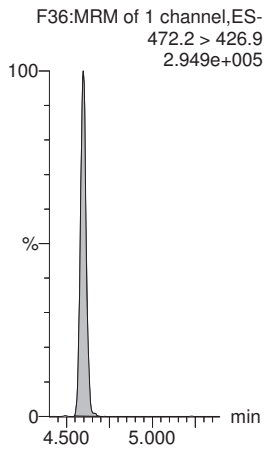


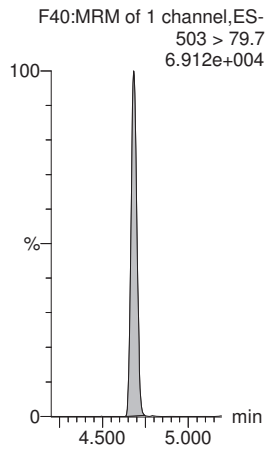
18O2-PFHxS



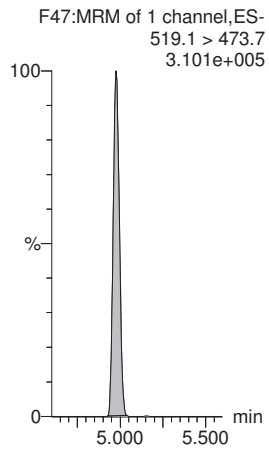
13C9-PFNA



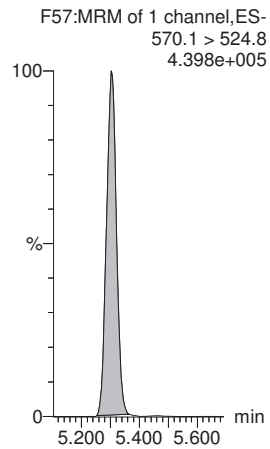
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Quantify Sample Report **MassLynx V4.2 SCN977**

Vista Analytical Laboratory

Dataset: Untitled

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Name: 200229P1-13, Date: 29-Feb-2020, Time: 17:31:01, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	14.157	1115.262	1.00	1.34	0.159		0.0867		NO		
2	2	PFPrS	248.9 > 79.7		473.731	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		3554.875	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9		3554.875	1.00						NO		
5	5	PFBS	299.0 > 79.7		473.731	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		951.418	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1115.262		1.00	1.30	1115.262	12.500	3.20	25.6	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	473.731		1.00	2.51	473.731	12.500	6.34	50.8	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	3554.875		1.00	2.23	3554.875	12.500	5.52	44.2	YES		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	3554.875		1.00	2.23	3554.875	12.500	5.52	44.2	YES		
11	51	13C3-PFBS-EIS	302.0 > 98.8	473.731		1.00	2.51	473.731	12.500	6.34	50.8	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	951.418		1.00	2.95	951.418	12.500	8.16	65.3	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	21.225	9208.006	1.00	3.08	0.029				NO		YES
15	8	PFPeS	349.>79.7		473.731	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2012.123	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		8097.259	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	18.369	8097.259	1.00	3.67	0.028				NO		YES
19	12	ADONA	376.8 > 250.9	30.956	8097.259	1.00	3.70	0.048				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	9208.006		1.00	3.03	9208.006	12.500	8.06	64.5	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	473.731		1.00	2.51	473.731	12.500	6.34	50.8	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2012.123		1.00	3.25	2012.123	12.500	7.05	56.4	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8097.259		1.00	3.64	8097.259	12.500	12.5	99.6	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8097.259		1.00	3.64	8097.259	12.500	12.5	99.6	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8097.259		1.00	3.64	8097.259	12.500	12.5	99.6	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	8.996	1915.874	1.00	3.79	0.059		0.186		NO		YES
28	15	6:2 FTS	427.0 > 407		1221.489	1.00						NO		YES
29	16	L-PFOA	412.8 > 368.9	77.457	12178.052	1.00	4.13	0.080				NO	10.197	YES
30	18	PFecHS	460.8 > 381.0		12178.052	1.00						NO		YES
31	19	PFHpS	449.0 > 79.7		2456.501	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		10870.944	1.00						NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	1915.874		1.00	3.78	1915.874	12.500	11.3	90.4	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1221.489		1.00	4.09	1221.489	12.500	13.2	105.3	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12178.052		1.00	4.15	12178.052	12.500	11.9	95.5	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12178.052		1.00	4.15	12178.052	12.500	11.9	95.5	NO		

Quantify Sample Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	10870.944		1.00	4.60	10870.944	12.500	11.7	93.7	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	16.738	10870.944	1.00	4.57	0.019				NO		YES
41	22	PFOSA	497.9 > 77.9	13.824	3299.818	1.00	4.64	0.052		0.0121		NO		YES
42	23	L-PFOS	498.9 > 79.7		2456.501	1.00						NO		YES
43	25	9Cl-PF30NS	530.7 > 350.8		2456.501	1.00						NO		YES
44	26	PFDA	513 > 468.8	58.675	11710.319	1.00	4.98	0.063				NO		YES
45	27	8:2 FTS	526.9 > 507		1127.206	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	10870.944		1.00	4.60	10870.944	12.500	11.7	93.7	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3299.818		1.00	4.65	3299.818	12.500	11.2	89.5	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	11710.319		1.00	4.98	11710.319	12.500	11.8	94.6	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1127.206		1.00	4.95	1127.206	12.500	13.4	106.8	NO		
52	-1													
53	28	PFNS	549.1 > 79.7		2456.501	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		3341.979	1.00						NO		YES
55	31	L-EtFOSAA	584.1 > 419	8.949	4420.043	1.00	5.26	0.025		0.0476		NO		YES
56	33	PFUdA	563.0 > 518.9		14715.999	1.00						NO		YES
57	34	PFDS	598.8 > 79.7		2456.501	1.00						NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9	10.712	15840.331	1.00	5.50	0.008				NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	3341.979		1.00	5.13	3341.979	12.500	11.7	93.5	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	4420.043		1.00	5.28	4420.043	12.500	11.7	93.9	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	14715.999		1.00	5.31	14715.999	12.500	11.8	94.3	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	15840.331		1.00	5.58	15840.331	12.500	11.3	90.4	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		710.394	1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	164.316	15840.331	1.00	5.70	0.130		0.0957		NO		YES
68	38	N-MeFOSA	512.1 > 168.9		12609.581	1.00						NO		YES
69	39	PFTrDA	662.9 > 618.9	58.097	15840.331	1.00	5.82	0.046				NO		YES
70	40	PFDoS	698.8 > 79.7		14604.578	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	93.868	14604.578	1.00	6.03	0.080		0.0588		NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	710.394		1.00	5.57	710.394	12.500	10.9	87.3	NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	15840.331		1.00	5.58	15840.331	12.500	11.3	90.4	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	12609.581		1.00	5.69	12609.581	149.200	139	93.4	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	15840.331		1.00	5.58	15840.331	12.500	11.3	90.4	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	14604.578		1.00	6.05	14604.578	12.500	11.5	91.9	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	14604.578		1.00	6.05	14604.578	12.500	11.5	91.9	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	8.454	20283.383	1.00	6.06	0.062				NO	0.465	YES
80	43	PFHxDA	813.1 > 768.6	241.646	22783.920	1.00	6.39	0.133				NO		YES
81	44	PFODA	913.1 > 868.8	94.619	22783.920	1.00	6.62	0.052				NO		
82	45	N-MeFOSE	616.1 > 58.9	26.283	17286.043	1.00	6.28	0.227				NO		
83	46	N-EtFOSE	630.1 > 58.9	39.785	19829.824	1.00	6.43	0.299				NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	20283.383		1.00	6.11	20283.383	149.200	137	91.9	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	22783.920		1.00	6.38	22783.920	12.500	11.7	93.5	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	22783.920		1.00	6.38	22783.920	12.500	11.7	93.5	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17286.043		1.00	6.29	17286.043	149.200	139	92.9	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19829.824		1.00	6.44	19829.824	149.200	135	90.4	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2456.501		1.00	4.68	2456.501	12.500	12.5	100.2	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1115.262	1747.093	1.00	1.30	7.979	12.500	10.7	85.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	3554.875	9488.963	1.00	2.23	4.683	12.500	8.55	68.4	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	473.731	868.893	1.00	2.51	6.815	12.500	6.84	54.7	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2012.123	9488.963	1.00	3.25	2.651	12.500	11.0	88.1	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	951.418	868.893	1.00	2.95	13.687	12.500	9.48	75.8	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	9208.006	9488.963	1.00	3.03	12.130	12.500	12.0	96.0	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8097.259	9488.963	1.00	3.64	10.667	12.500	18.8	150.4	YES		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	1915.874	868.893	1.00	3.78	27.562	12.500	11.6	92.7	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1221.489	2678.392	1.00	4.09	5.701	12.500	12.2	97.9	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	10870.944	11558.146	1.00	4.60	11.757	12.500	12.3	98.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3299.818	17157.313	1.00	4.65	2.404	12.500	11.9	95.3	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12178.052	15383.705	1.00	4.15	9.895	12.500	12.0	96.1	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2456.501	2678.392	1.00	4.68	11.464	12.500	11.9	95.6	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	11710.319	12556.789	1.00	4.98	11.657	12.500	12.6	100.6	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1127.206	2678.392	1.00	4.95	5.261	12.500	14.4	114.8	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	3341.979	17157.313	1.00	5.13	2.435	12.500	11.3	90.8	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	14715.999	17157.313	1.00	5.31	10.721	12.500	11.2	89.8	NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	4420.043	17157.313	1.00	5.28	3.220	12.500	12.4	99.5	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	15840.331	12556.789	1.00	5.58	15.769	12.500	12.2	97.5	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	710.394	2678.392	1.00	5.57	3.315	12.500	9.91	79.3	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	12609.581	17157.313	1.00	5.69	9.187	149.200	136	91.0	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	14604.578	17157.313	1.00	6.05	10.640	12.500	11.9	95.6	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	20283.383	17157.313	1.00	6.11	14.778	149.200	142	95.5	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	22783.920	17157.313	1.00	6.38	16.599	12.500	11.4	91.4	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17286.043	17157.313	1.00	6.29	12.594	149.200	140	93.5	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19829.824	17157.313	1.00	6.44	14.447	149.200	139	93.0	NO		
119	99	13C4-PFBA	217.0 > 172.0	1747.093	1747.093	1.00	1.30	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	9488.963	9488.963	1.00	3.03	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	15383.705	15383.705	1.00	4.15	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	868.893	868.893	1.00	3.77	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11558.146	11558.146	1.00	4.60	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2678.392	2678.392	1.00	4.68	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	12556.789	12556.789	1.00	4.98	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	17157.313	17157.313	1.00	5.30	12.500	12.500	12.5	100.0	NO		

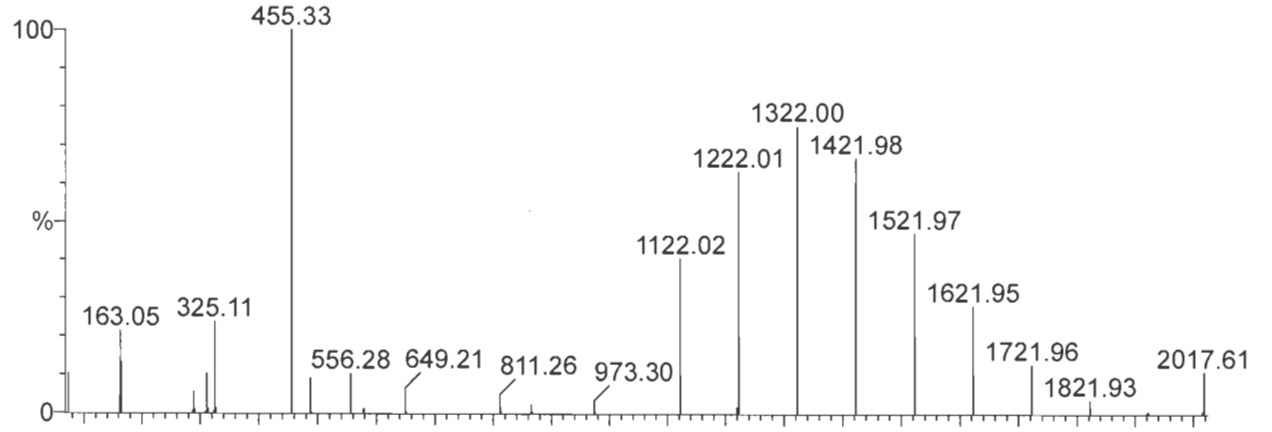
TUNE CHECKS

Q(5)P Tune Check 02/28/20 20200226

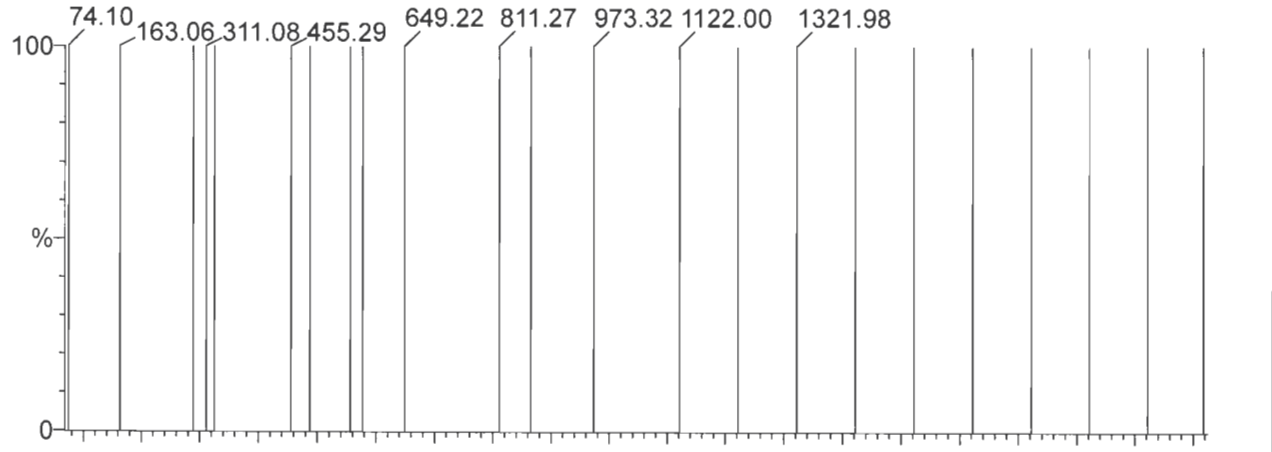
Calibration Report - MS1 Static **Page 1 of 6**

Printed: **Fri Feb 28 10:18:38 2020**

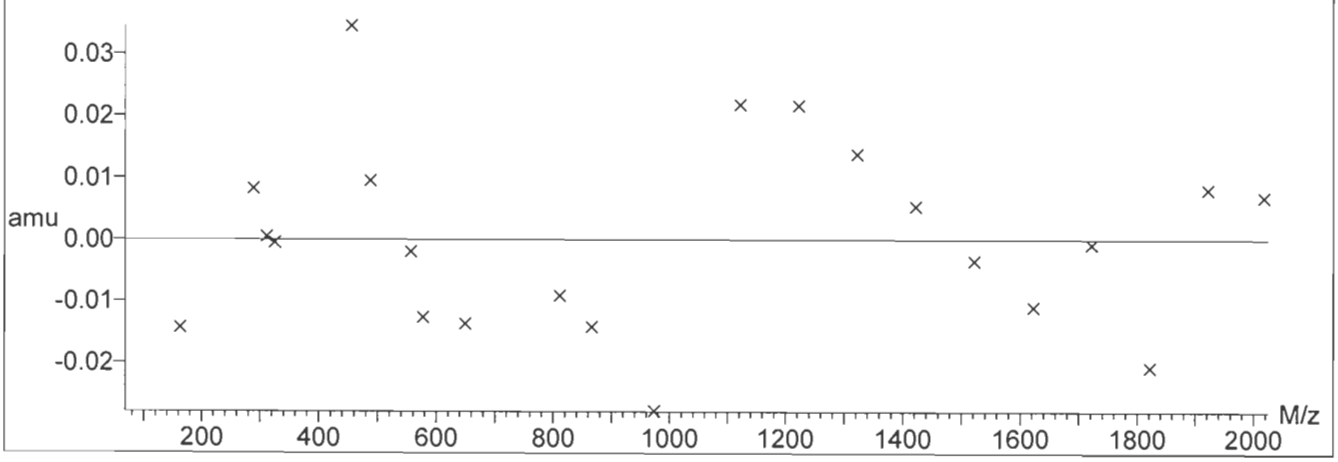
Data file: STATMS1 - Calibrated 22 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0119 amu

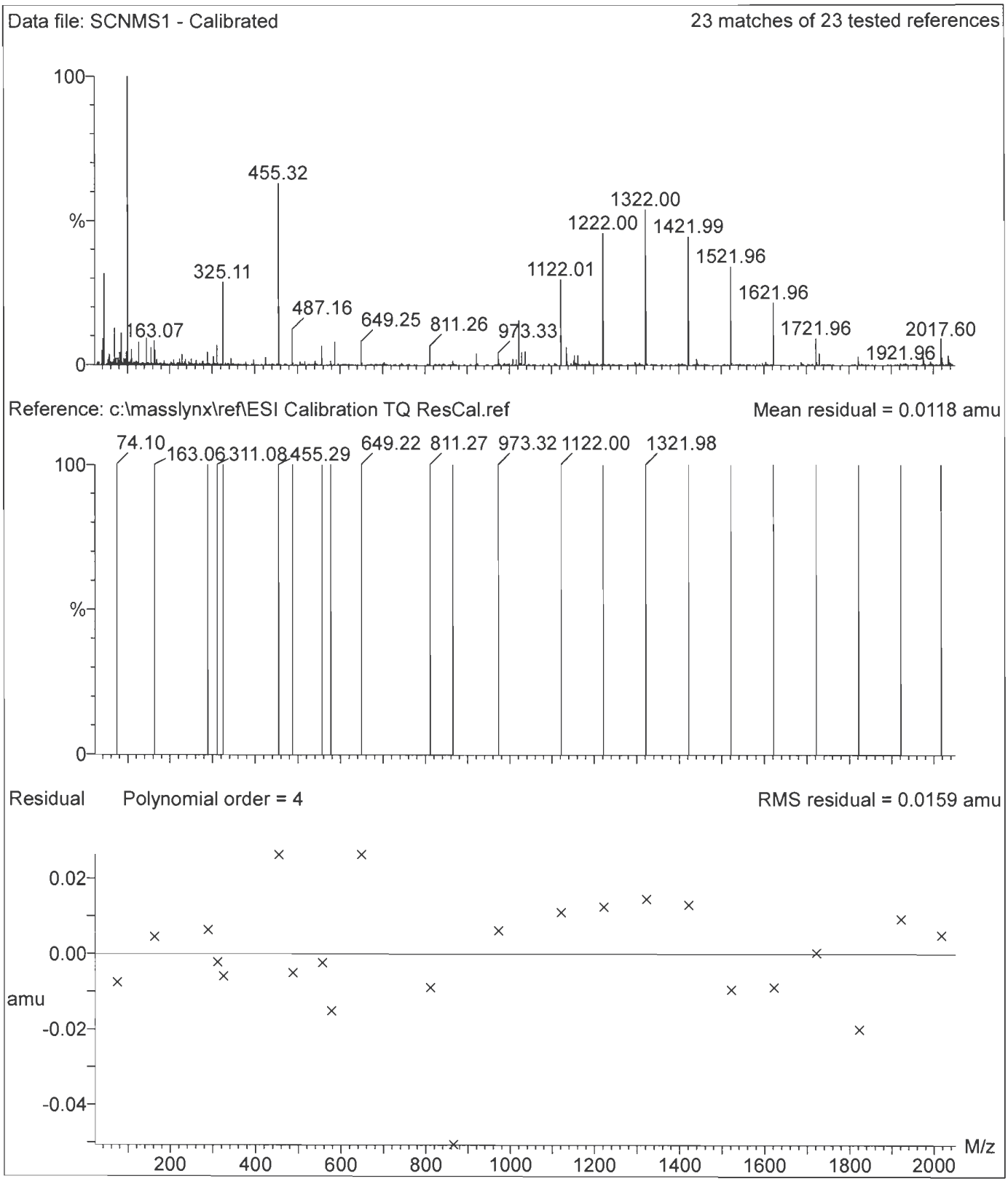


Residual Polynomial order = 4 RMS residual = 0.0148 amu



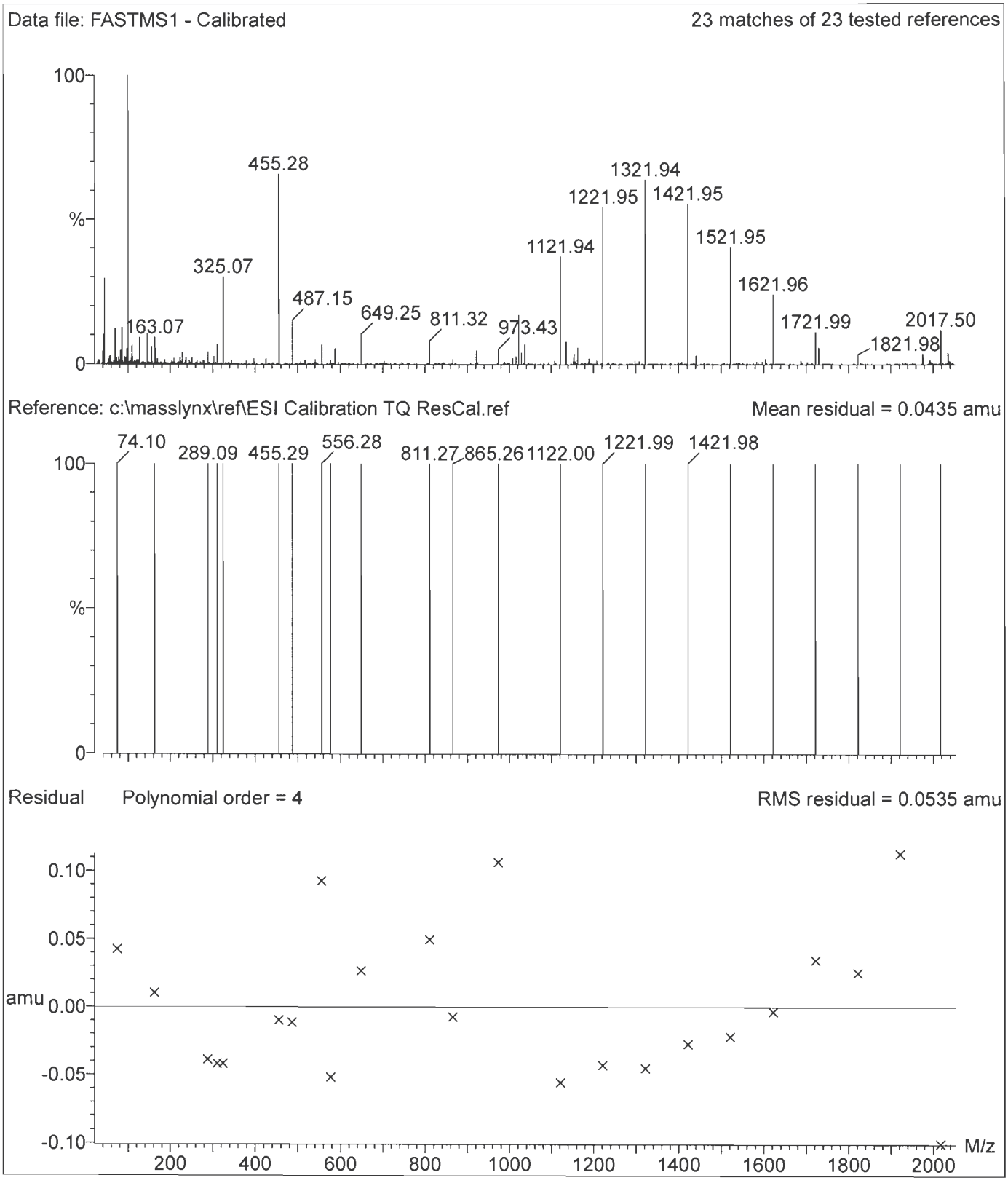
Calibration Report - MS1 Scanning **Page 2 of 6**

Printed: **Fri Feb 28 10:19:47 2020**



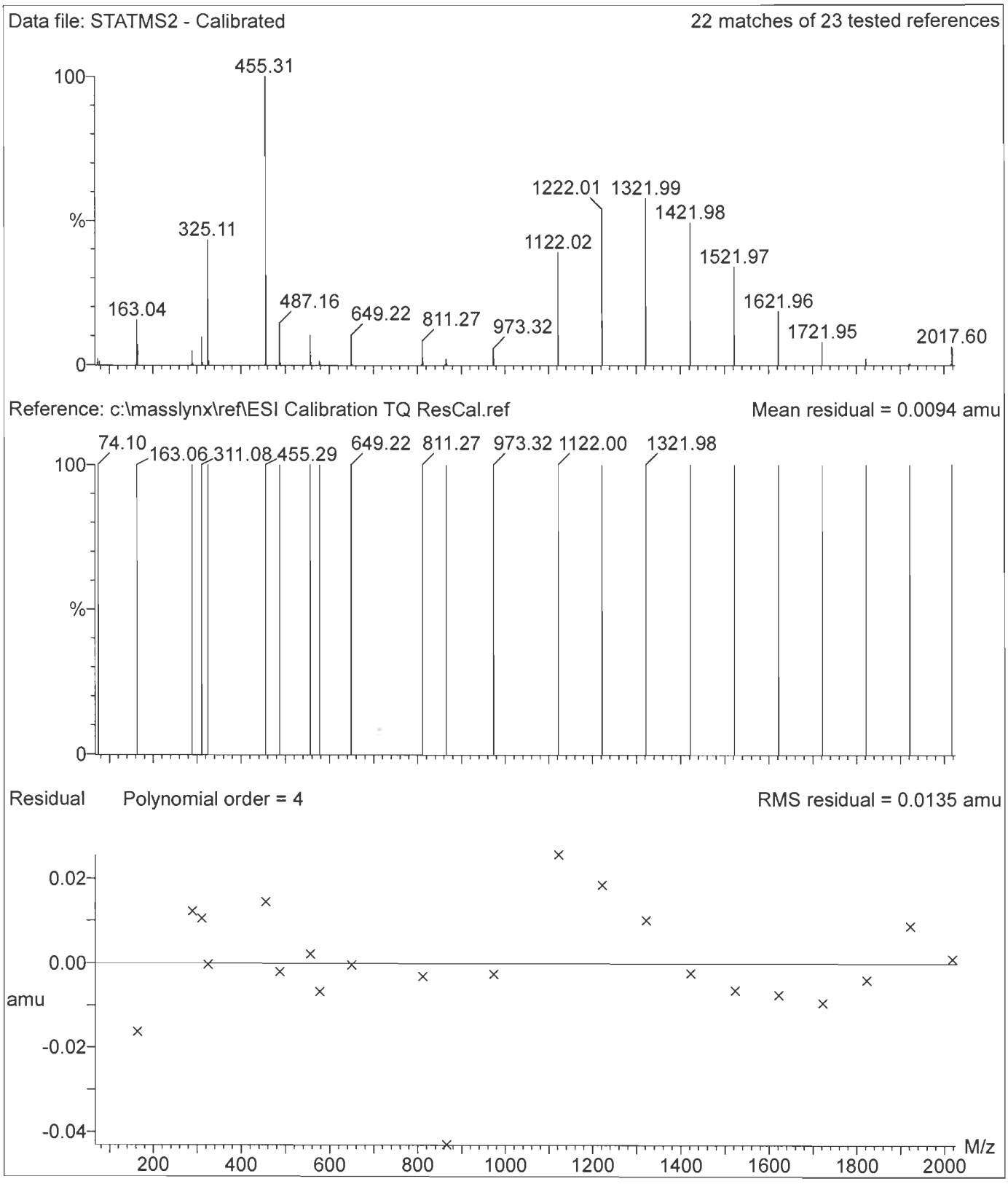
Calibration Report - MS1 Scan Speed Compensation **Page 3 of 6**

Printed: **Fri Feb 28 10:20:59 2020**



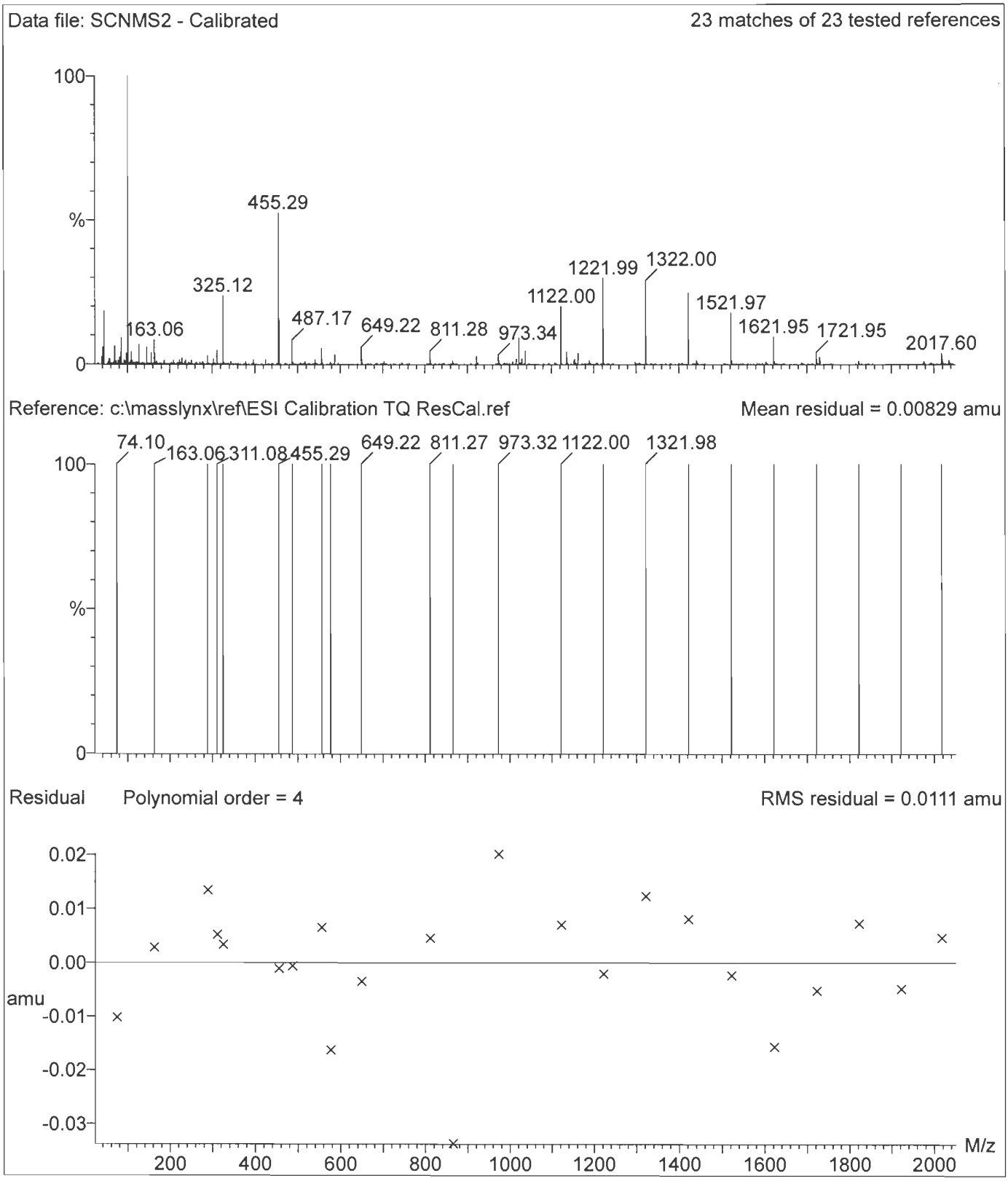
Calibration Report - MS2 Static **Page 4 of 6**

Printed: **Fri Feb 28 10:22:07 2020**



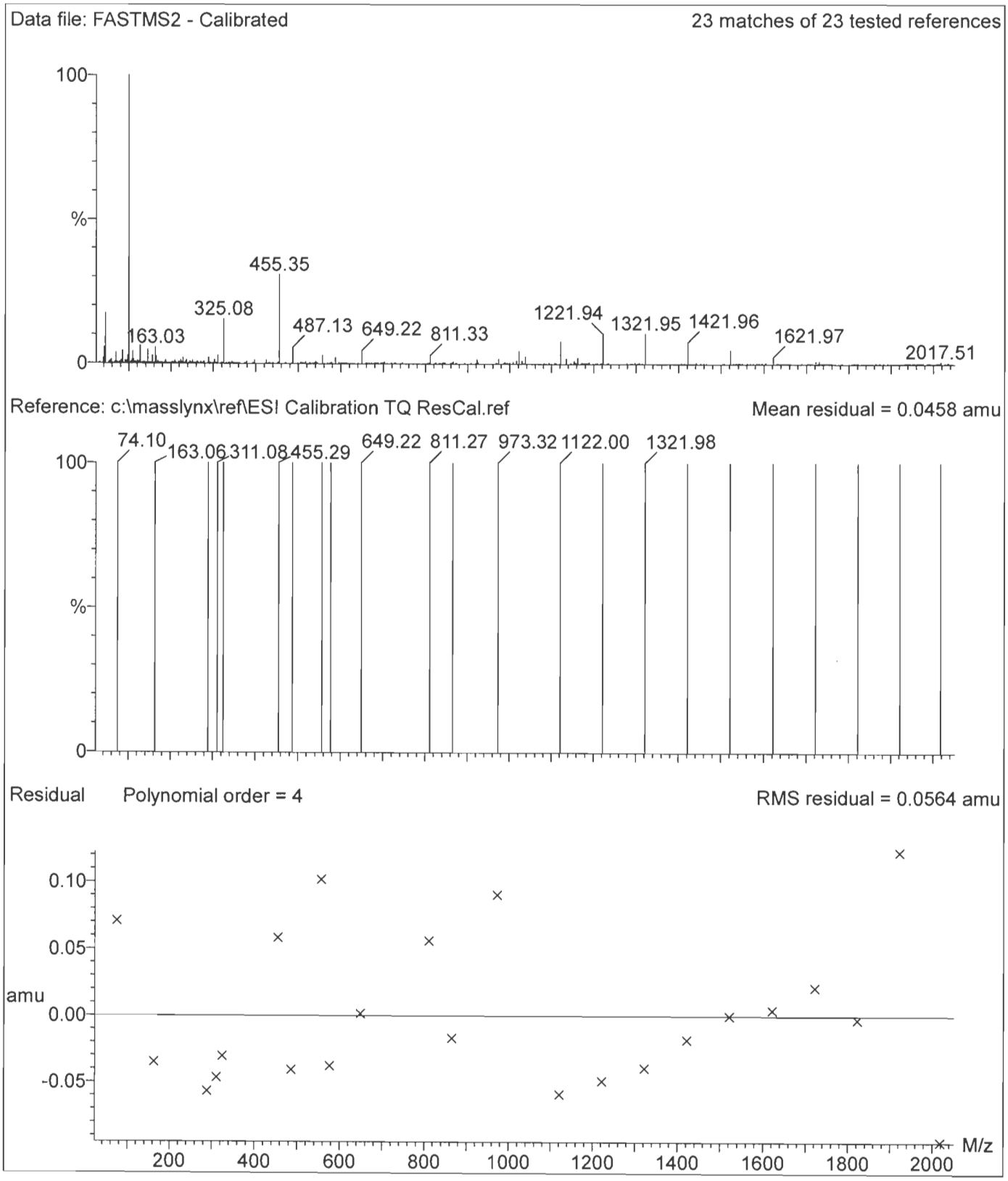
Calibration Report - MS2 Scanning **Page 5 of 6**

Printed: **Fri Feb 28 10:23:16 2020**



Calibration Report - MS2 Scan Speed Compensation **Page 6 of 6**

Printed: **Fri Feb 28 10:24:41 2020**



Q5(P)

Tune check 02/29/20

Calibration Verification Report - MS1 Static

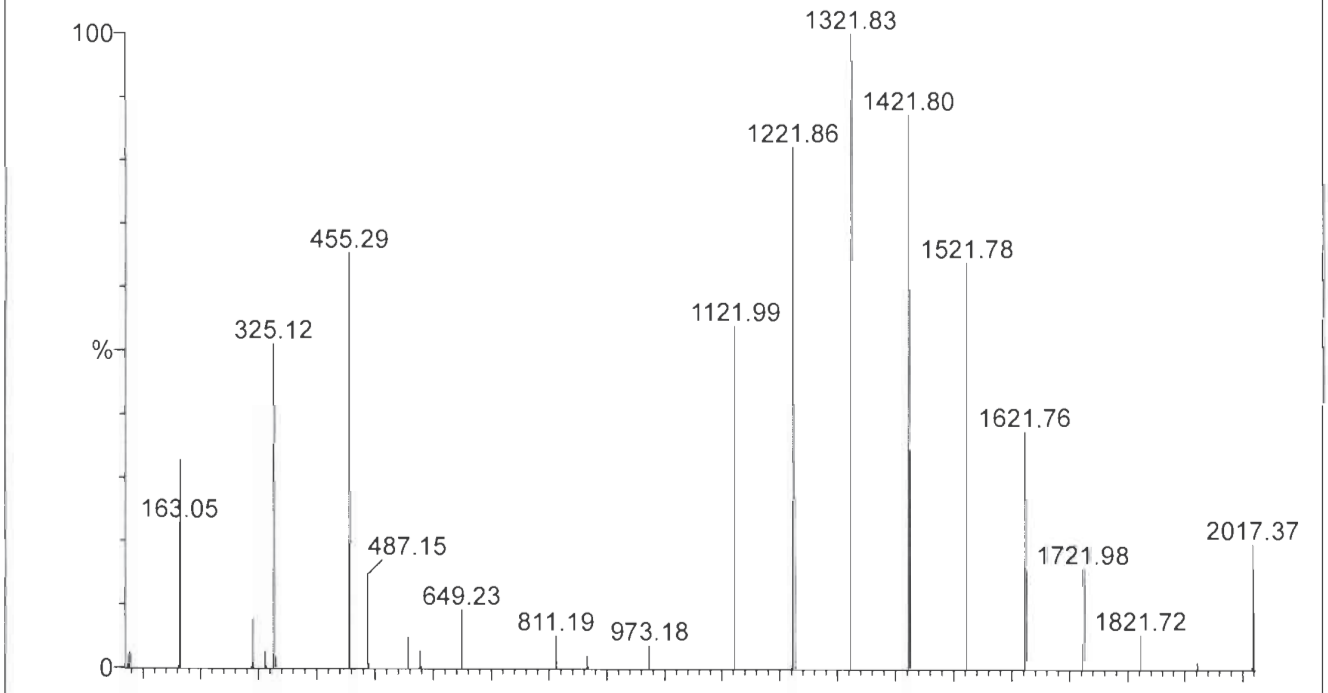
Page 1 of 6

Printed: **Sat Feb 29 14:23:58 2020**

20200228

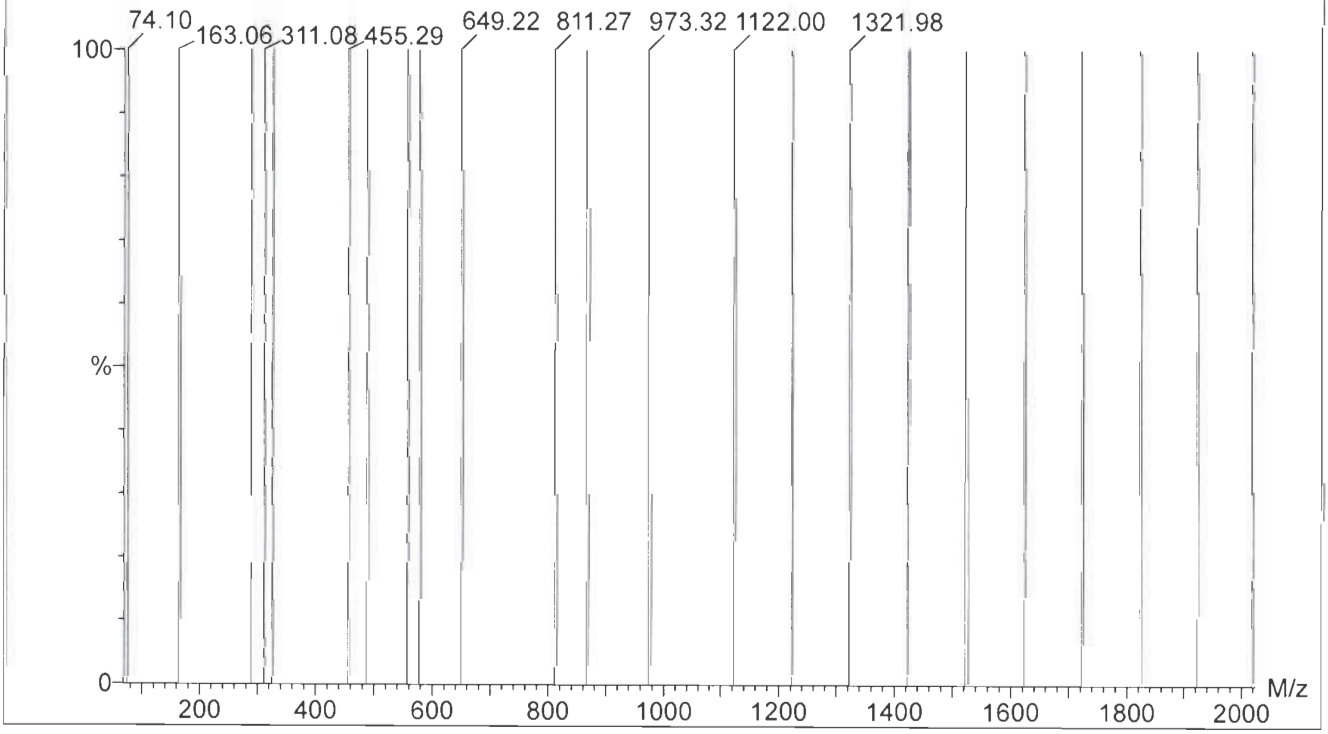
Data file: STATMS1V - Calibrated

22 matches of 23 tested references



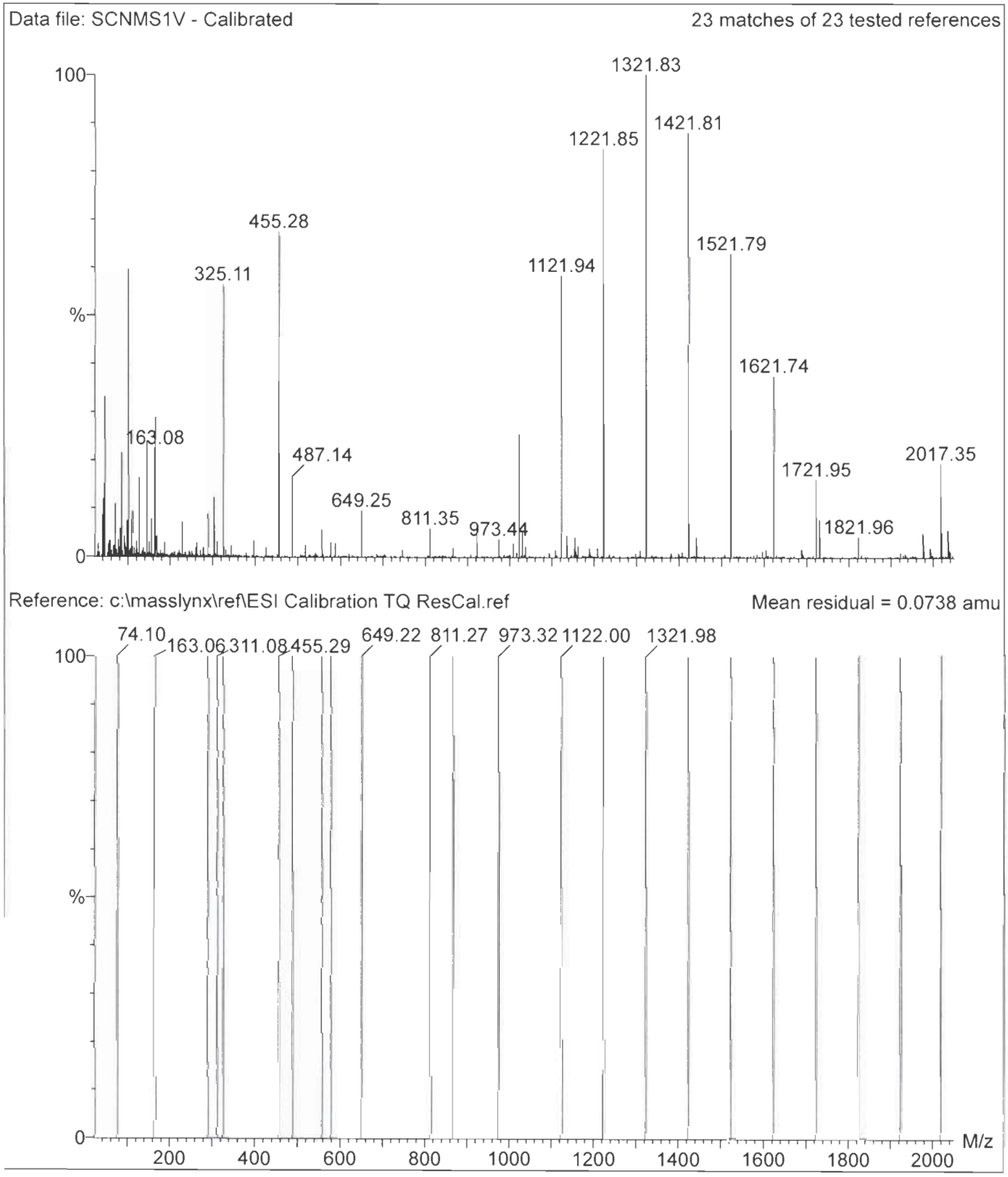
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

Mean residual = 0.0941 amu



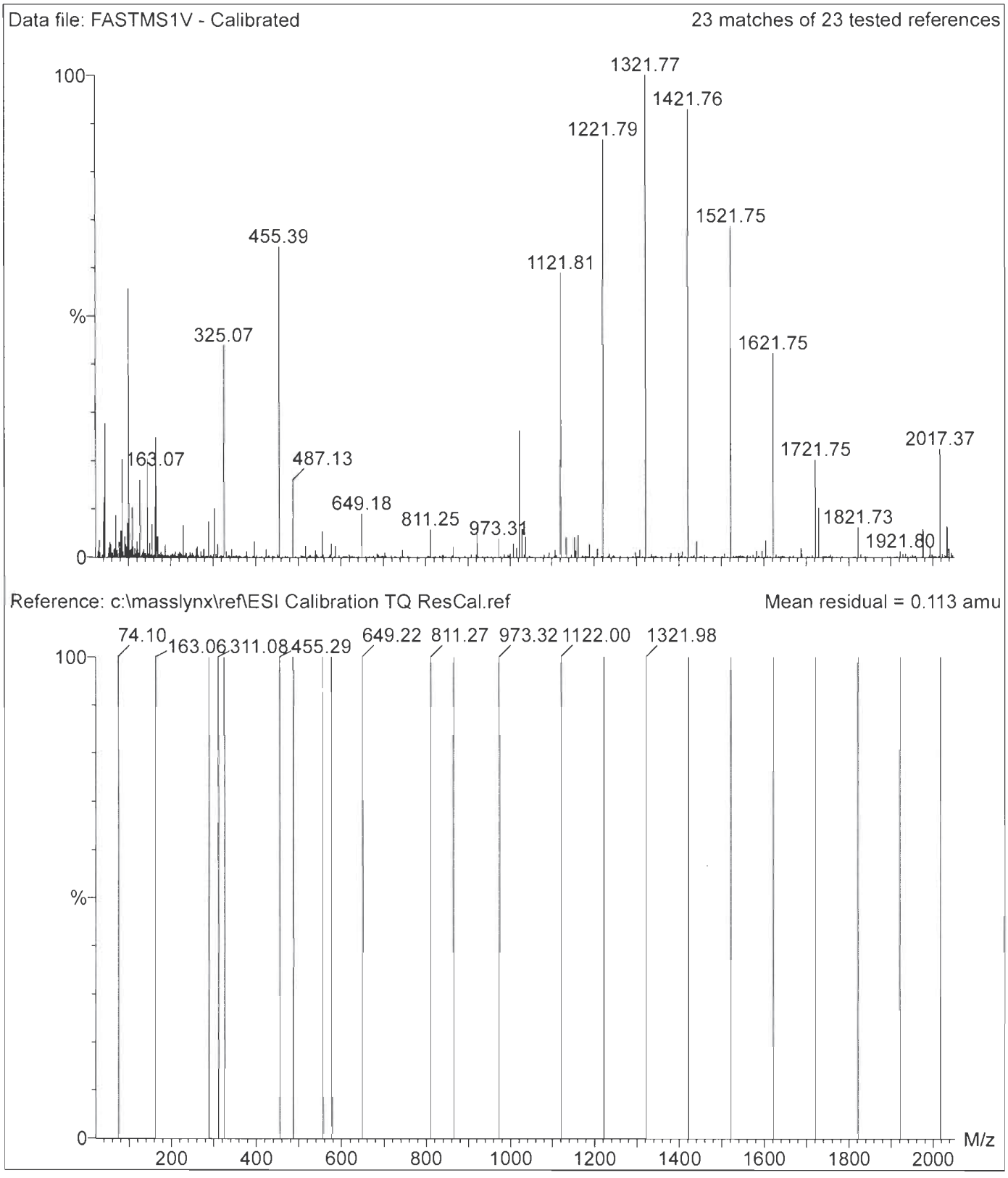
Calibration Verification Report - MS1 Scanning **Page 2 of 6**

Printed: **Sat Feb 29 14:25:07 2020**



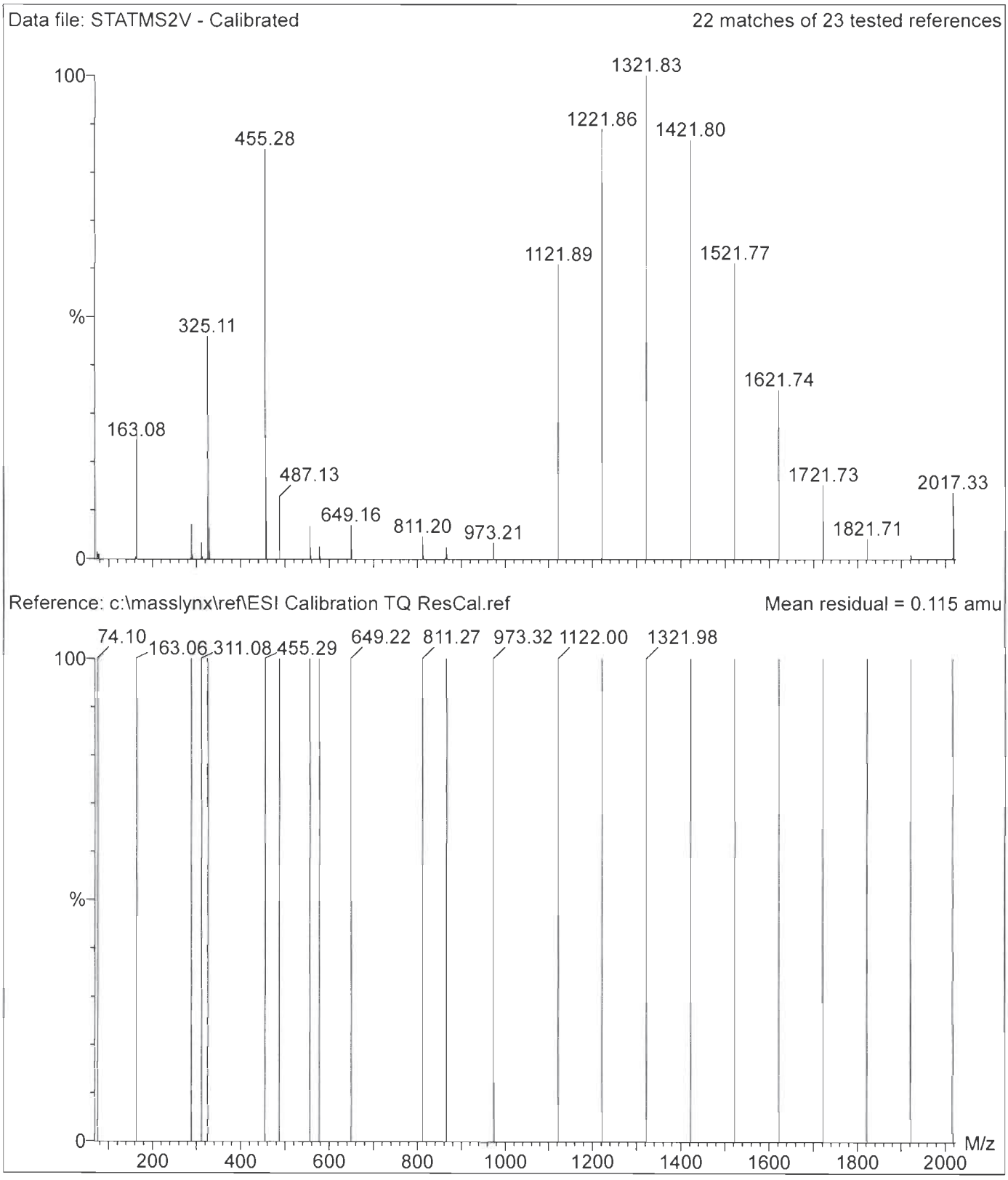
Calibration Verification Report - MS1 Scan Speed Compensation **Page 3 of 6**

Printed: **Sat Feb 29 14:26:19 2020**



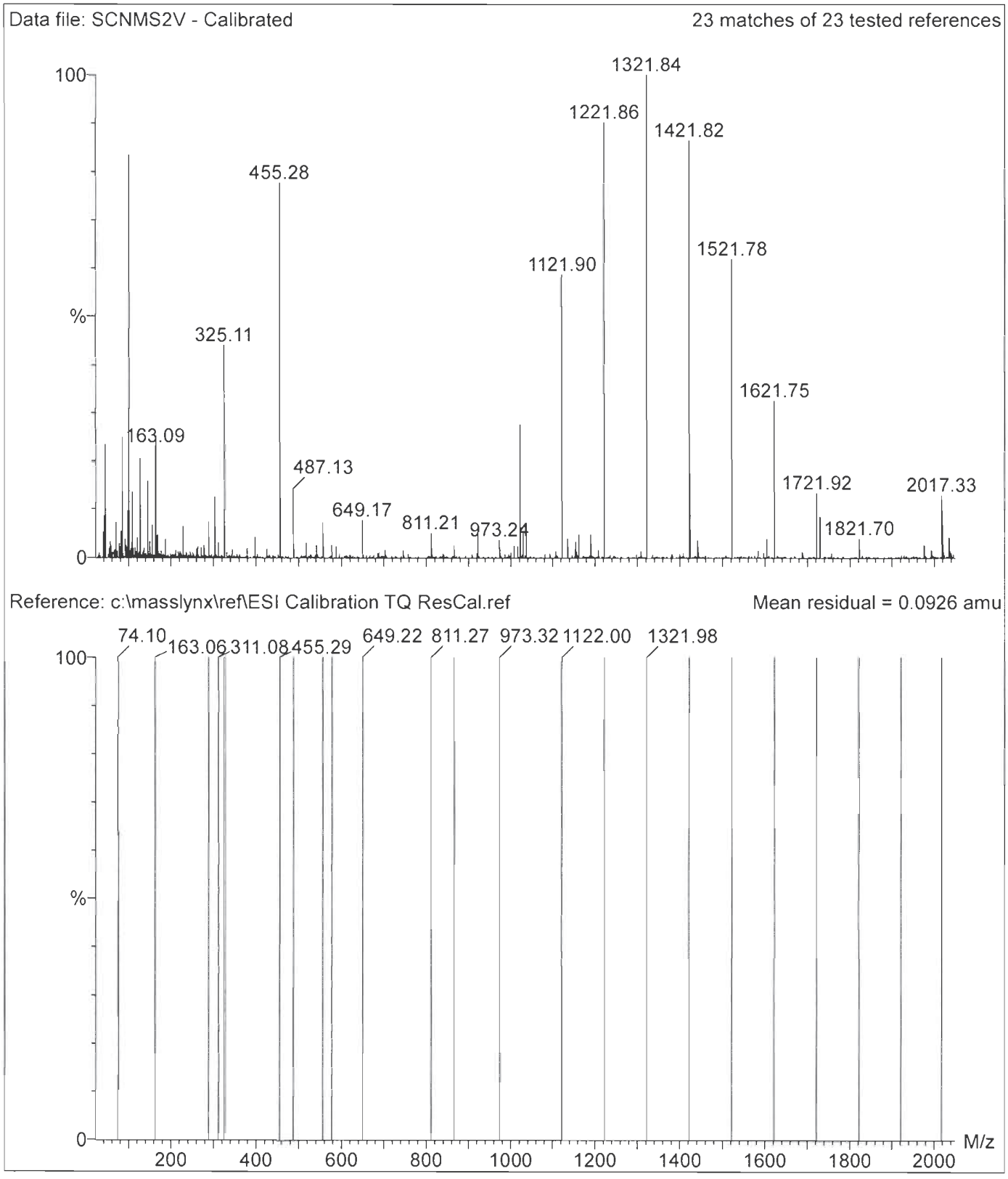
Calibration Verification Report - MS2 Static **Page 4 of 6**

Printed: **Sat Feb 29 14:27:28 2020**



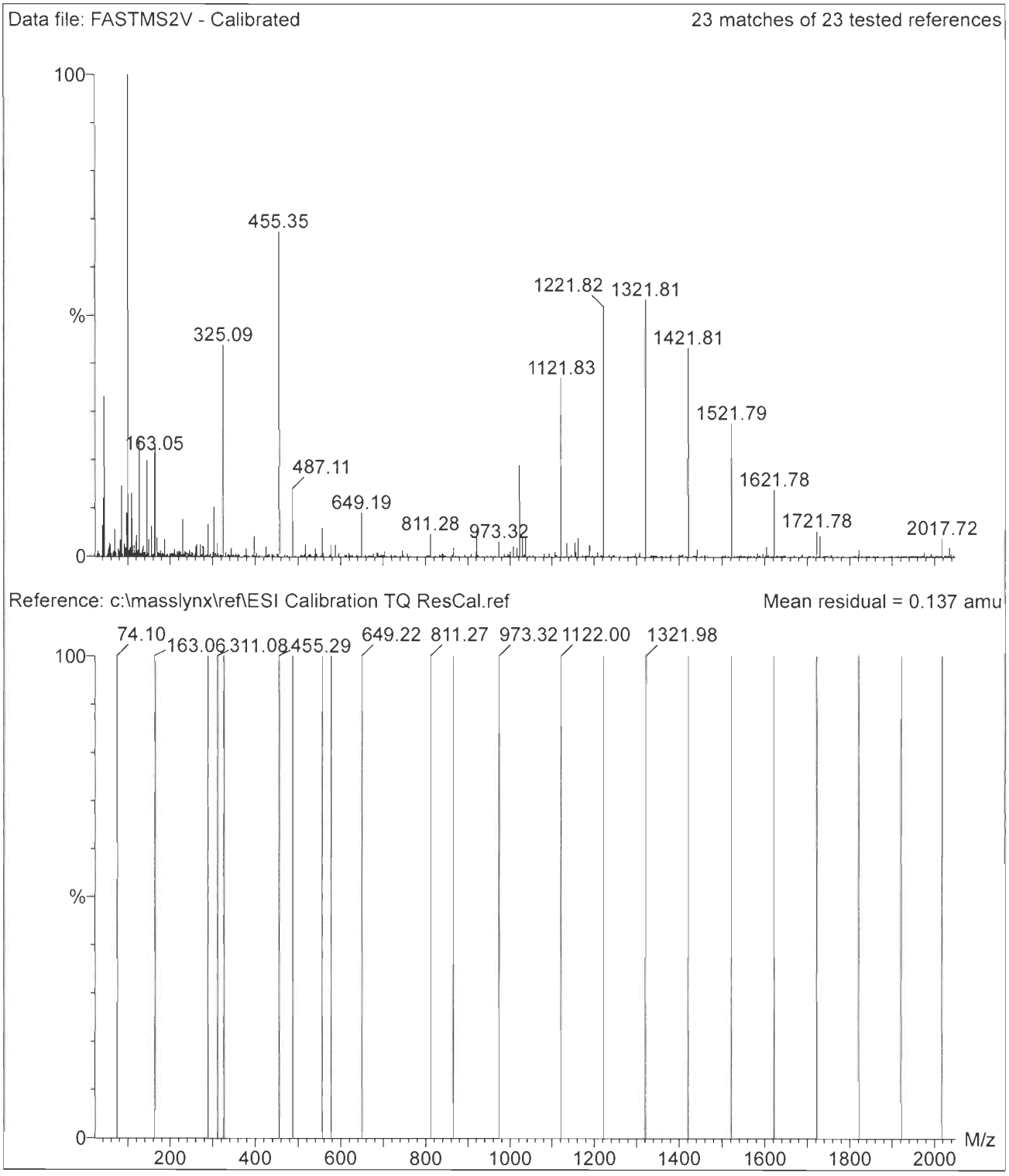
Calibration Verification Report - MS2 Scanning **Page 5 of 6**

Printed: **Sat Feb 29 14:28:36 2020**



Calibration Verification Report - MS2 Scan Speed Compensation **Page 6 of 6**

Printed: **Sat Feb 29 14:30:01 2020**



STANDARDS

Analytical Standard Record

Vista Analytical Laboratory

20A0801

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
19H2706	13C2-10:2 FTS	21-Aug-19	** Vendor **	21-Aug-24	1
19L0601	13C2-4:2 FTS	06-Dec-19	** Vendor **	29-Oct-24	1.07
19L0602	13C2-6:2 FTS	06-Dec-19	** Vendor **	21-Nov-24	1.05
19L0603	13C2-8:2 FTS	06-Dec-19	** Vendor **	11-Oct-24	1.04
19L0604	13C3-PFBA	06-Dec-19	** Vendor **	14-Dec-22	1
19L0605	13C2-PFDA	06-Dec-19	** Vendor **	05-Sep-24	1
19L0606	13C2-PFUdA	06-Dec-19	** Vendor **	04-Jul-24	1
19L0607	13C2-PFTeDA	06-Dec-19	** Vendor **	11-Dec-23	1
19L0608	13C5-PFNA	06-Dec-19	** Vendor **	05-Dec-23	1
19L0609	13C2-PFDoA	06-Dec-19	** Vendor **	11-Dec-23	1
19L0610	13C4-PFHpA	06-Dec-19	** Vendor **	06-May-24	1
19L0611	13C2-PFOA	06-Dec-19	** Vendor **	21-Jun-24	1
19L0612	13C3-PFPeA	06-Dec-19	** Vendor **	08-Mar-24	1
19L0613	13C8-FOSA-I	06-Dec-19	** Vendor **	19-Jun-24	1
19L0614	d3-N-Me-FOSAA	06-Dec-19	** Vendor **	24-Jul-24	1
19L0615	d5-N-EtFOSAA	06-Dec-19	** Vendor **	25-Jul-24	1
19L0616	13C3-PFBS	06-Dec-19	** Vendor **	29-Oct-24	1.075
19L0617	13C8-PFOS	06-Dec-19	** Vendor **	06-May-24	1.045
19L0618	13C3-PFHxS	06-Dec-19	** Vendor **	15-Oct-24	1.06
19L0619	13C2-PFHxA	06-Dec-19	** Vendor **	11-Oct-24	1
19L0620	13C2-PFHxDA	06-Dec-19	** Vendor **	11-Oct-24	1
19L0621	13C3-HFPO-DA	06-Dec-19	** Vendor **	20-Sep-22	1

Description:	PFC - IS	Expires:	07-Jan-21
Standard Type:	Reagent	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	23-Jan-20 14:53 by BML

10:2 added
10 uL spike

Analyte	CAS Number	Concentration	Units
13C3-HFPO-DA		1.25	ug/mL
13C2-4:2 FTS		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		1.25	ug/mL
13C2-PFHxDA		1.25	ug/mL
13C2-PFOA		1.25	ug/mL
13C2-10:2 FTS		1.25	ug/mL
13C2-PFUnA		1.25	ug/mL
d5-EtFOSAA		1.25	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

20A0801

Description:	PFC - IS	Expires:	07-Jan-21
Standard Type:	Reagent	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	23-Jan-20 14:53 by BML

10:2 added
10 uL spike

Analyte	CAS Number	Concentration	Units
13C3-PFBA		1.25	ug/mL
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-PFTeDA		1.25	ug/mL

19H2706

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Product Name: (Isotopic Label & Enrichment Specification)	1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH
Lot Number:	SDIJ-019A
Catalog Number:	CDLM-10750-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: ** For isotopically labeled compounds, MW listed is for the fully enriched product.*	656.19
Labeled CAS Number:	NA
Unlabeled CAS Number:	108026-35-3
Chemical Formula:	C10*C2D4F21NaO3S
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

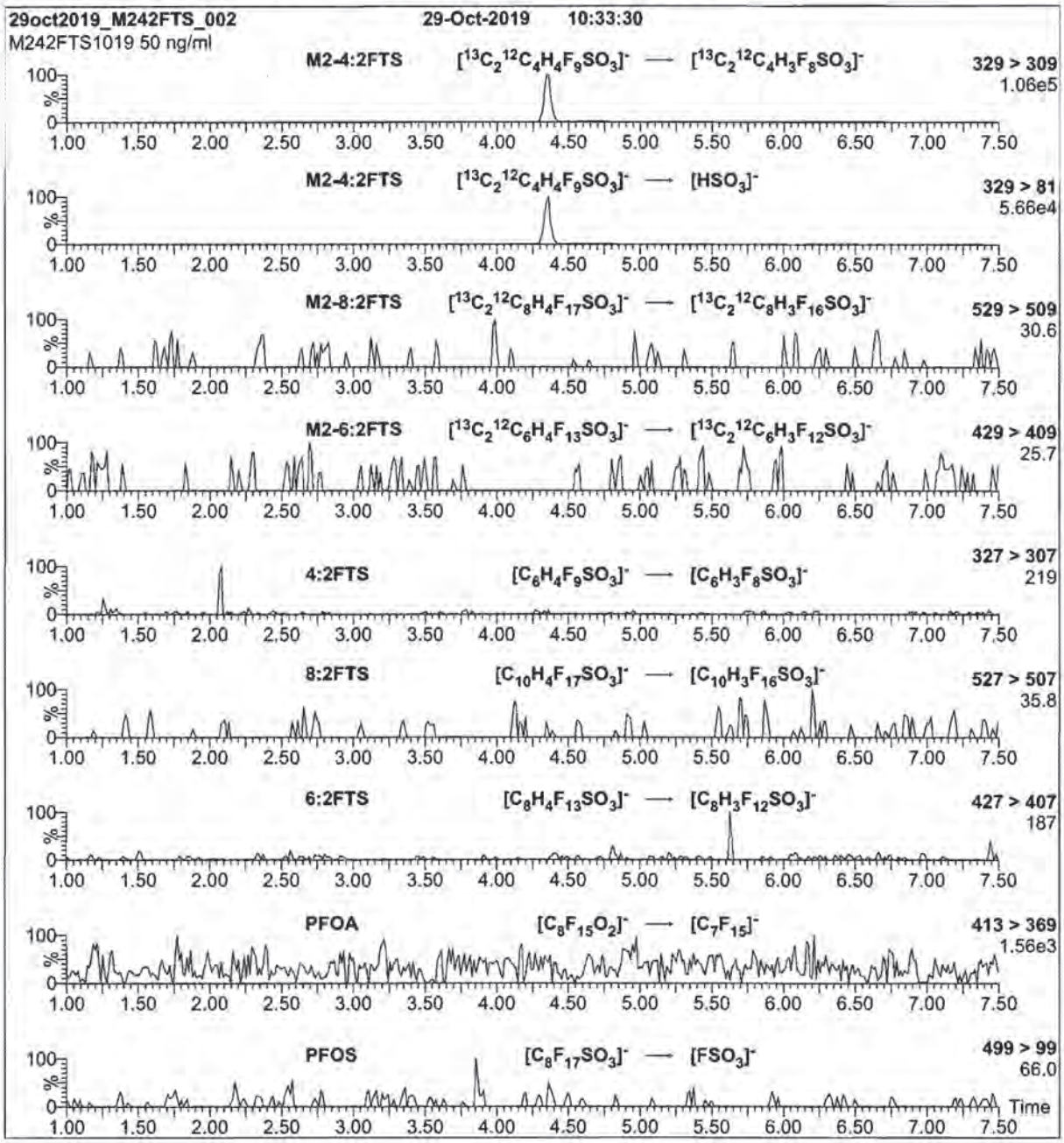
Quality Control Tests and Results

QC Release Date	8/21/2019
Expiration Date	8/21/2024
Concentration Based on Gravimetry	50.0 ± 0.5 µg/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

CIL subscribes to the following standards for different products: ISO Guide 34, ISO/IEC 17025, ISO 13485 and cGMP as appropriate.

19L0601

Figure 2: **M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

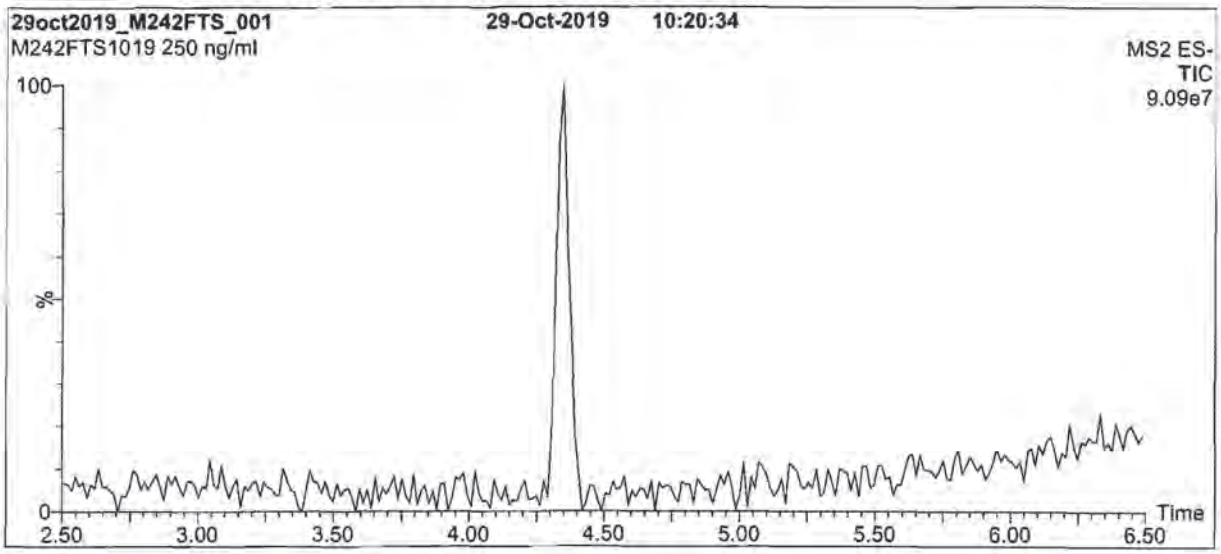
Collision Gas (mbar) = 3.51e-3
Collision Energy (eV) = 18

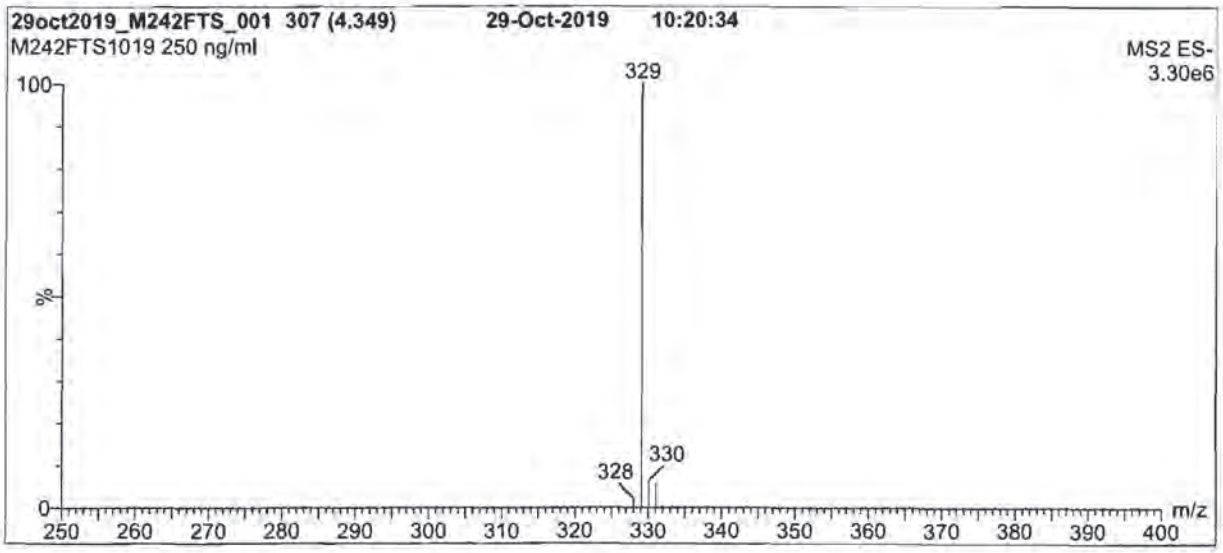
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M242FTS1019 (4 of 4)
rev0

19L0601

Figure 1: M2-4:2FTS; 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: 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 (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) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M242FTS1019 (3 of 4)
rev0

19L0601

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

19L0601

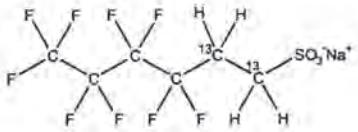
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-4:2FTS **LOT NUMBER:** M242FTS1019

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)	10/29/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2024		
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).

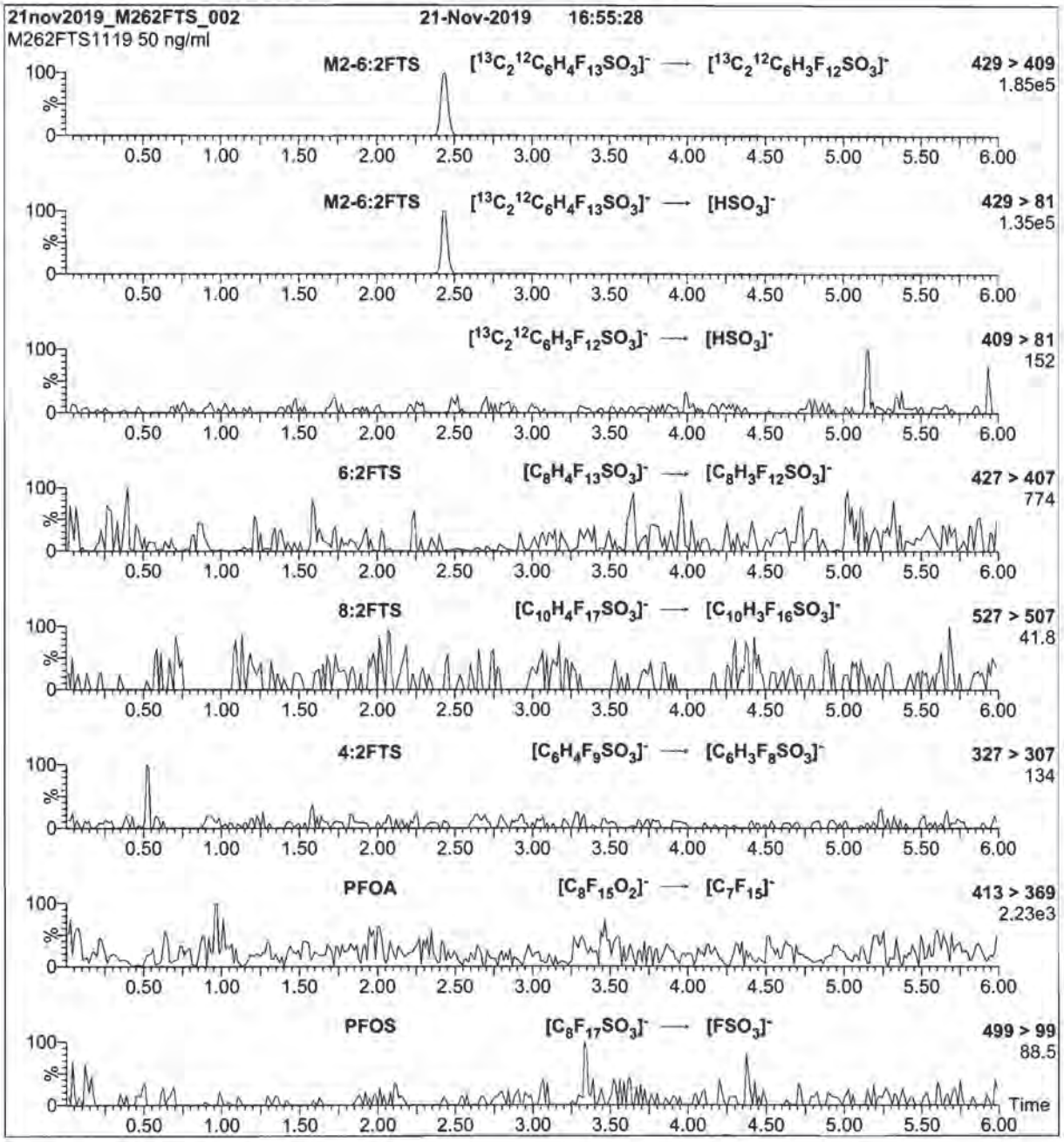
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/05/2019 (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

19L0602

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

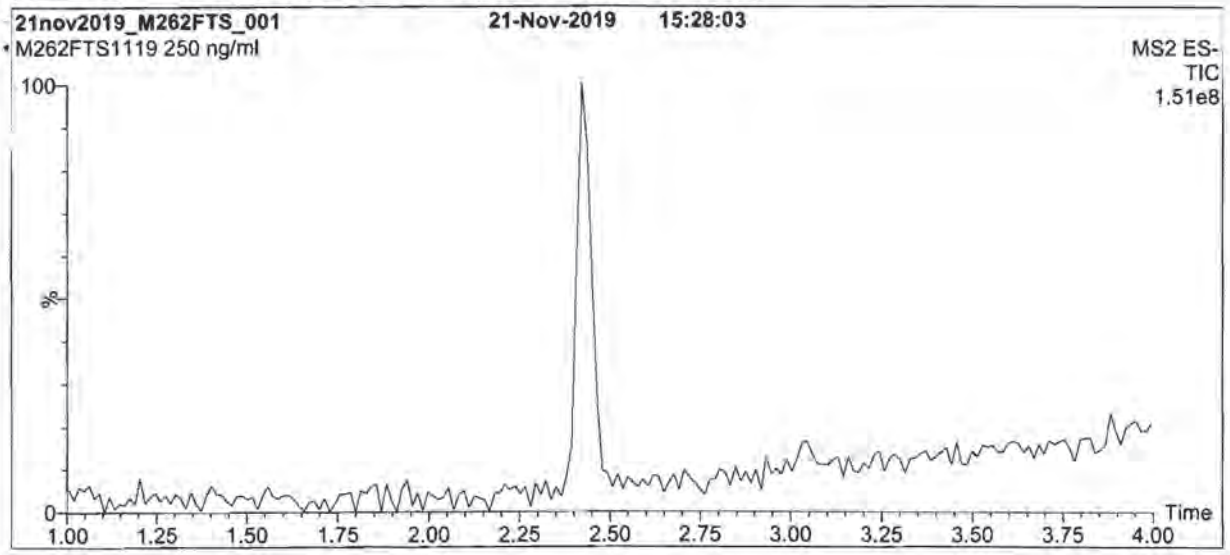
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 20

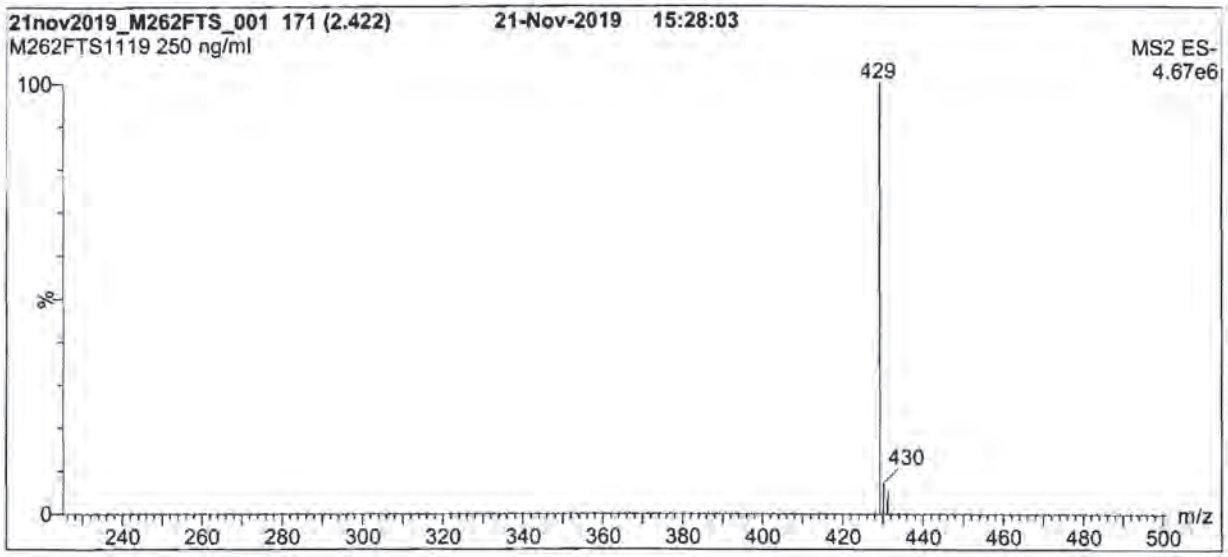
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M262FTS1119 (4 of 4)
rev0

19L0602

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: 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) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M262FTS1119 (3 of 4)
rev0

19L0602

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. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0602

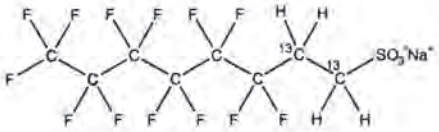
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS1119

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)	11/21/2019		
EXPIRY DATE: (mm/dd/yyyy)	11/21/2024		
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:** 11/25/2019 (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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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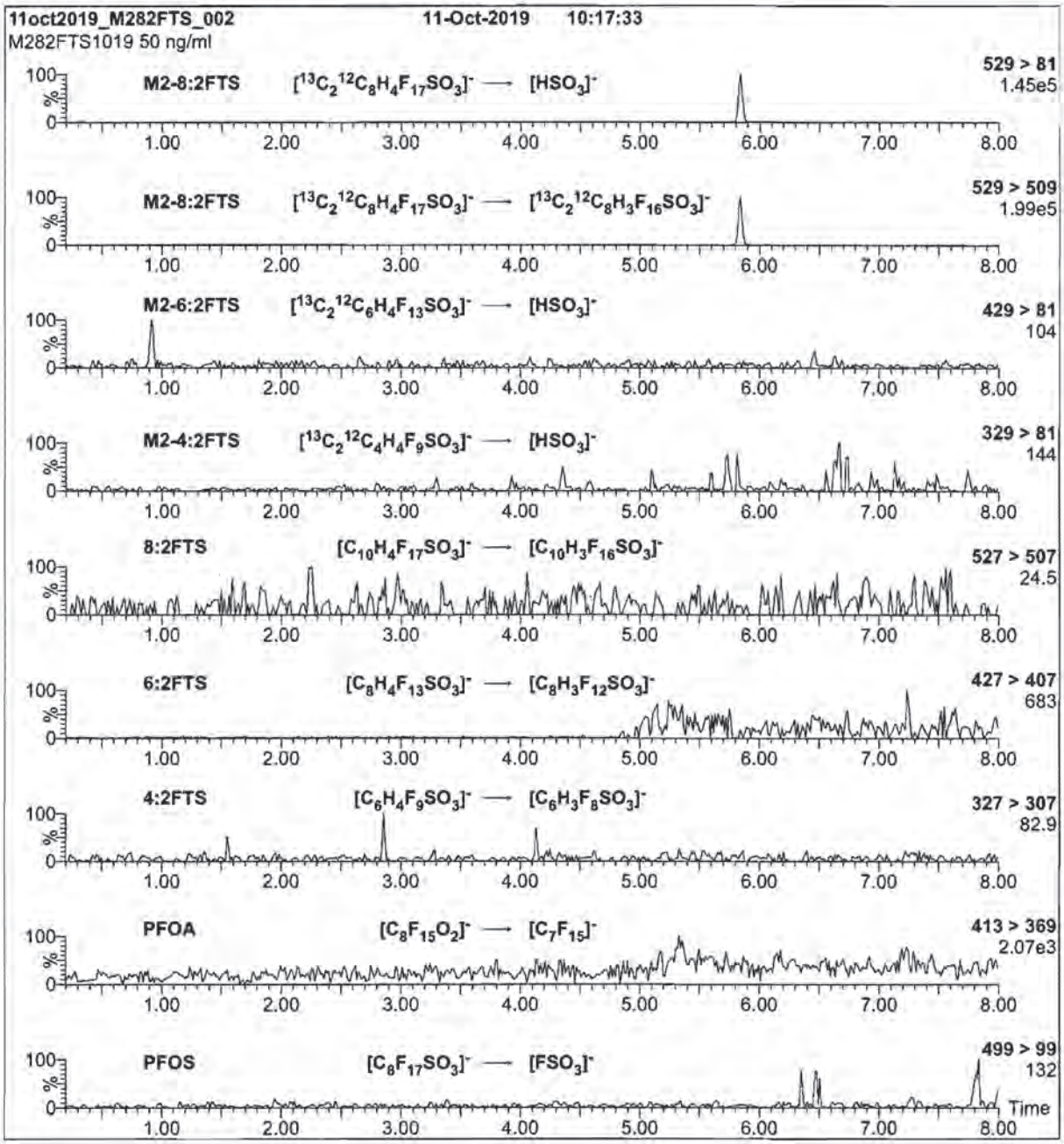
Figure 2: **M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

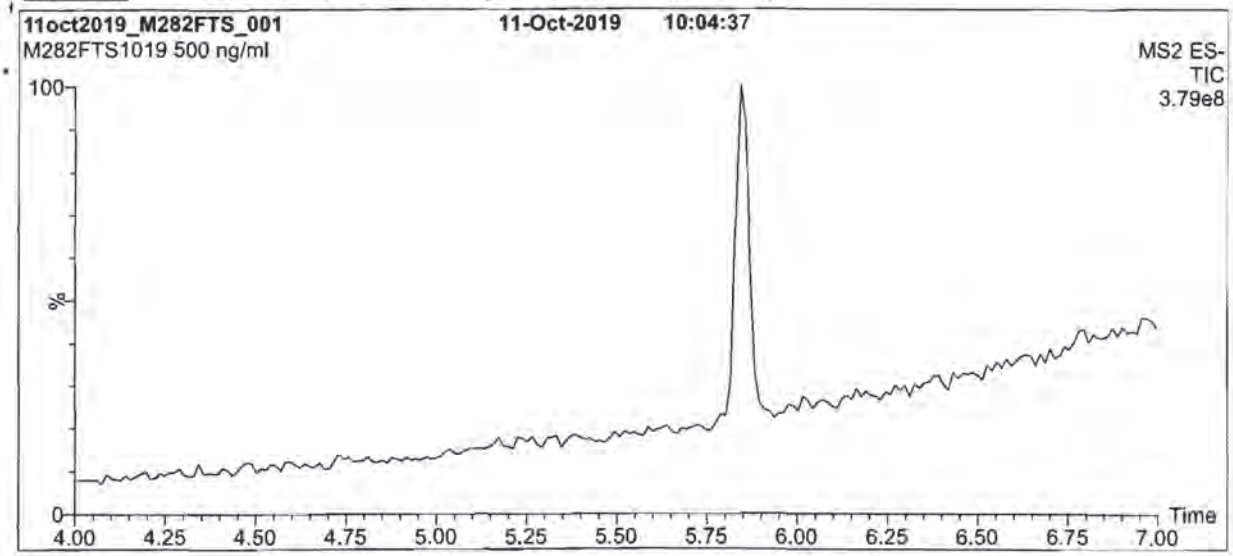
Collision Gas (mbar) = 3.87e-3
Collision Energy (eV) = 26

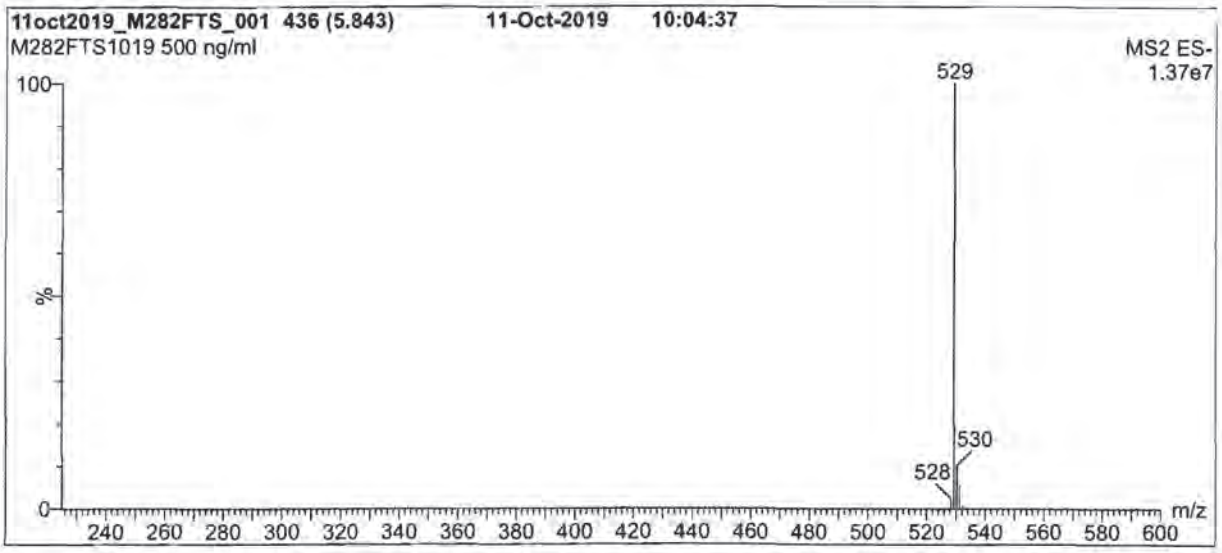
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M282FTS1019 (4 of 4)
rev0

19L0603

Figure 1: M2-8:2FTS; 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) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M282FTS1019 (3 of 4)
rev0

19L0603

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 REFERENCE MATERIAL PRODUCER

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19L0603

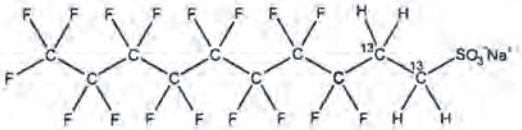
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS1019

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) 47.9 ± 2.4 µg/ml (M2-8:2FTS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/11/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2024		
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).

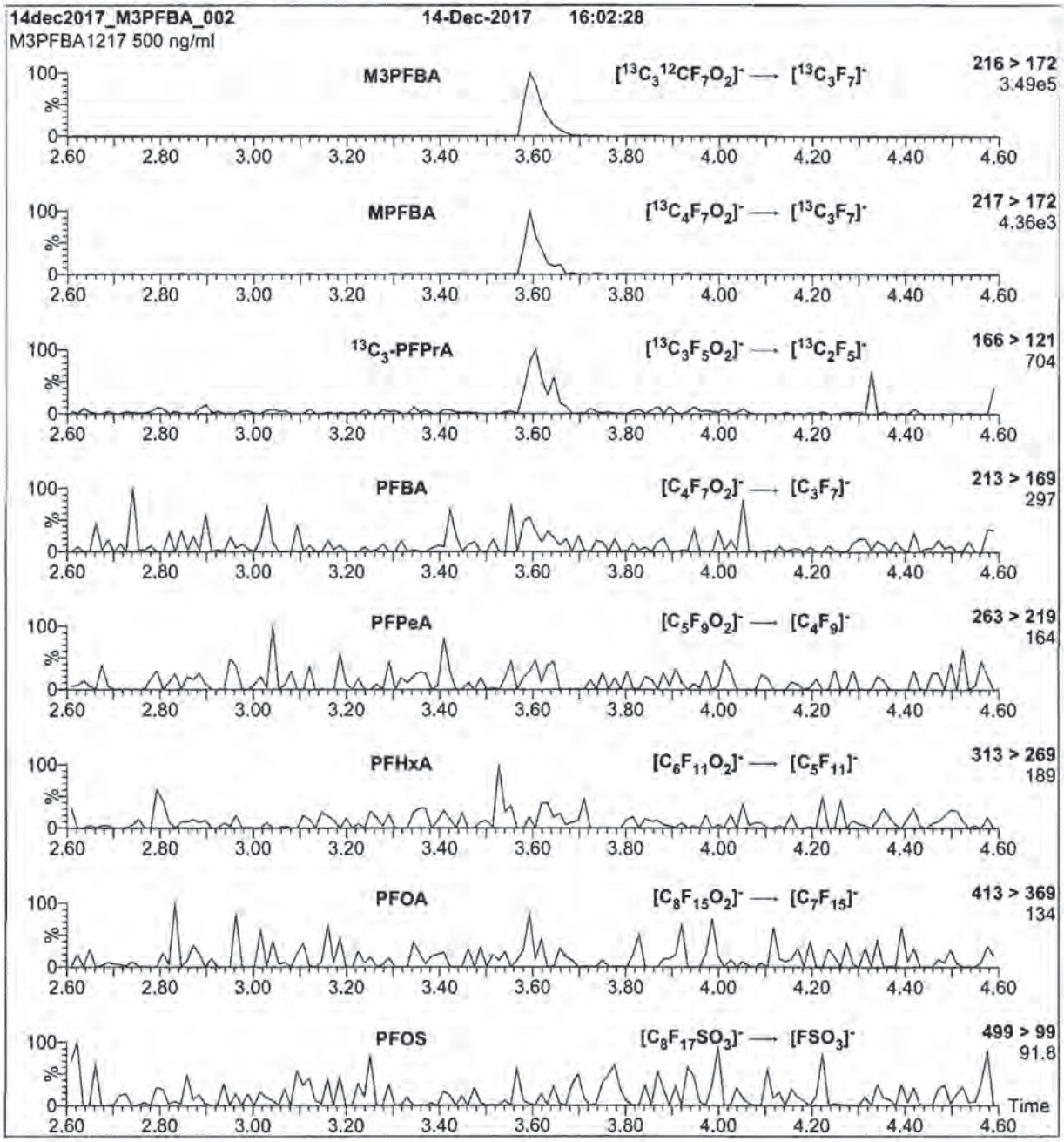
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/15/2019 (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

19L0604

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

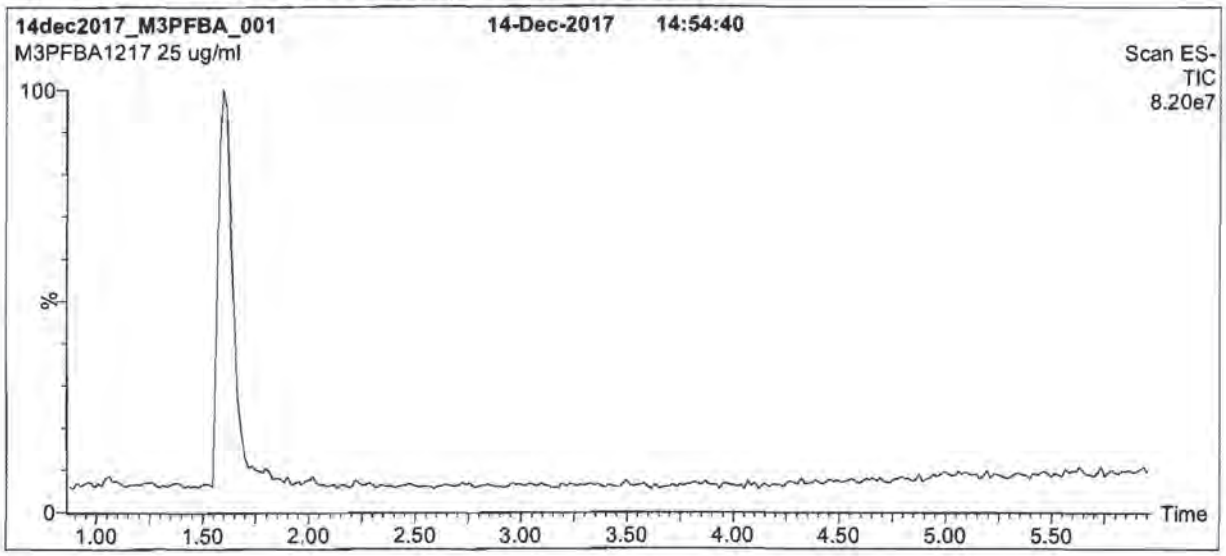
Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

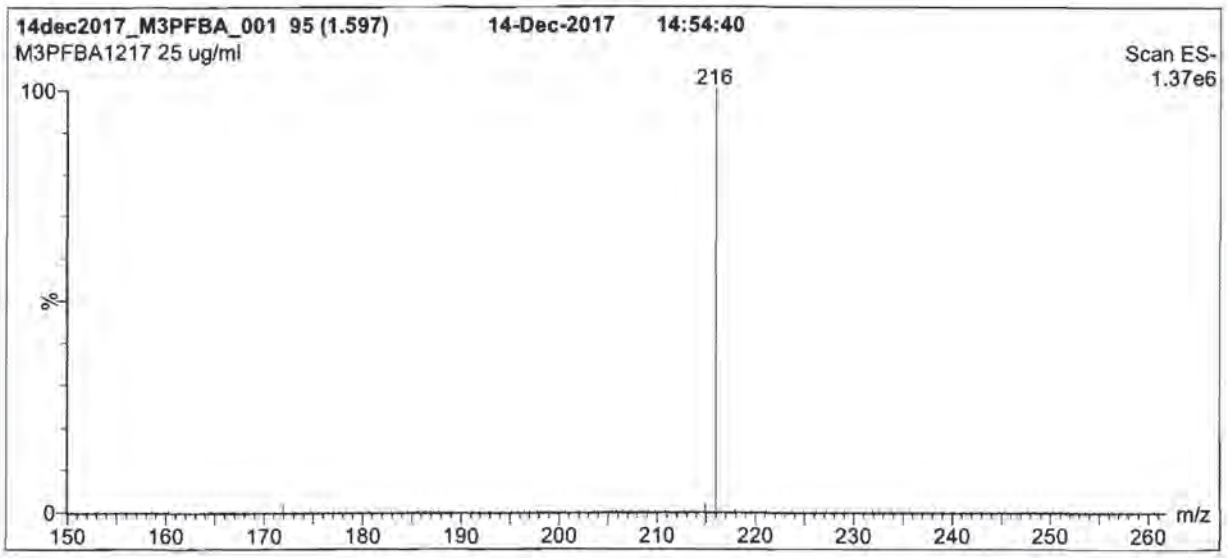
Form#:27, Issued 2004-11-10
Revision#:4, Revised 2017-03-06

M3PFBA1217 (4 of 4)
rev0

19L0604

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

19L0604

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

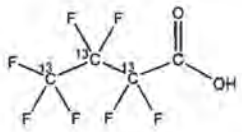
ANAB ACCREDITED

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

19L0604

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFBA	**LOT NUMBER:**	M3PFBA1217
COMPOUND:	Perfluoro-n-[2,3,4-$^{13}C_3$]butanoic acid		
STRUCTURE:		**CAS #:**	Not available
MOLECULAR FORMULA:	$^{13}C_3{}^{12}CHF_7O_2$	**MOLECULAR WEIGHT:**	217.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (2,3,4-$^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	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

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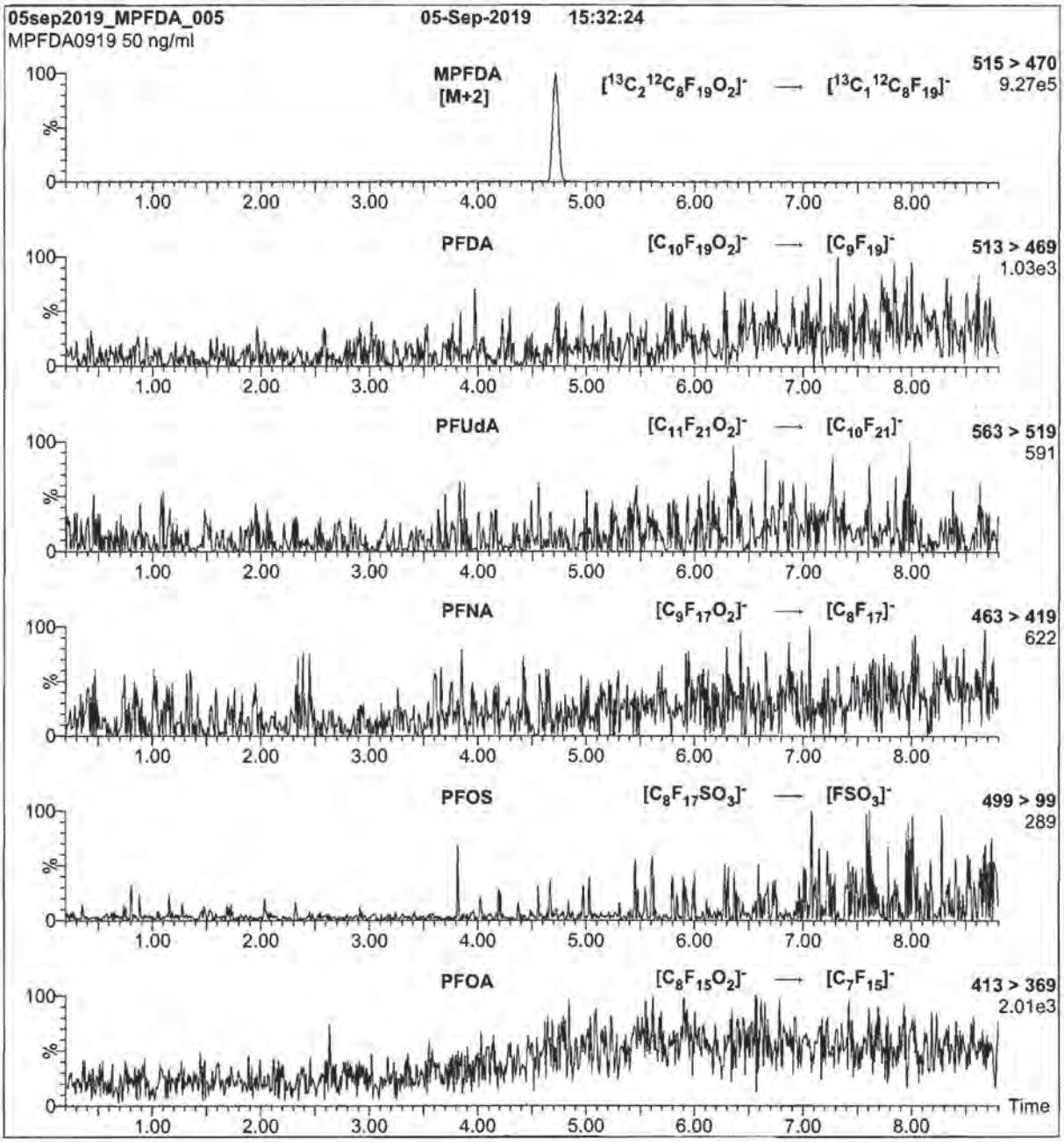
Figure 2: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

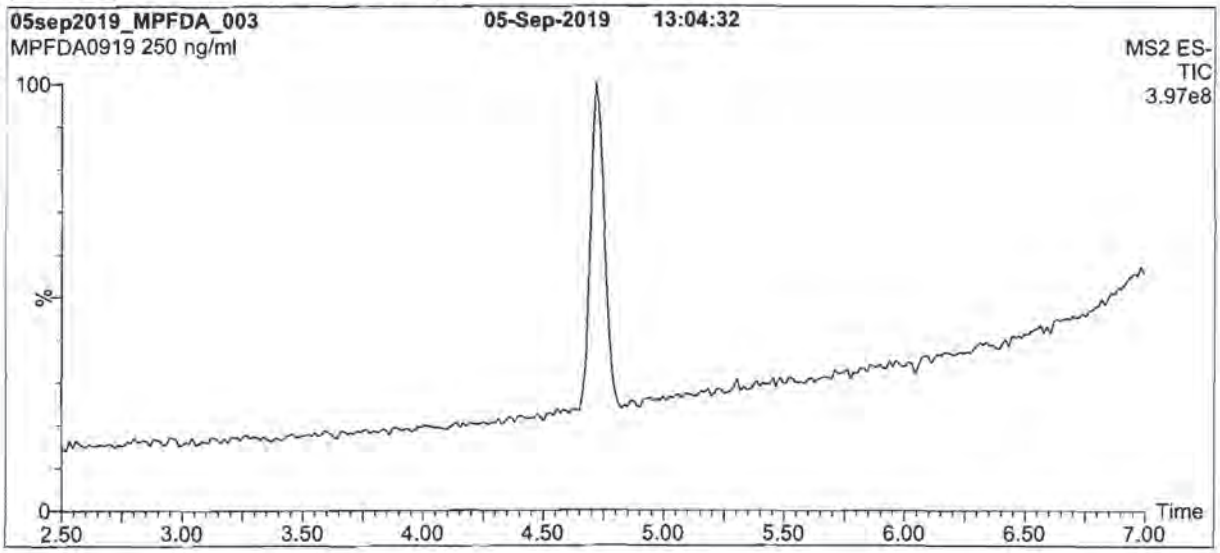
Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 10

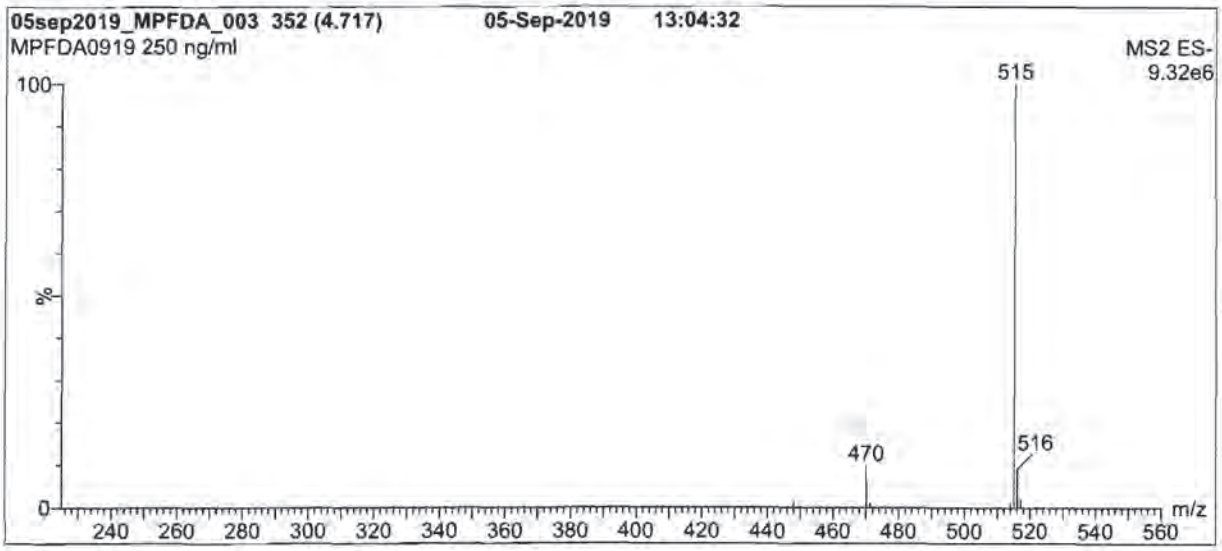
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFDA0919 (4 of 4)
rev0

1910605

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: 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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19L0605

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:

$$u_r(y(x_1, x_2,...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

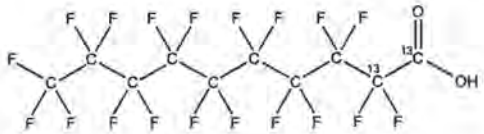
19L0605

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid
LOT NUMBER: MPFDA0919

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 ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy) 09/05/2019
EXPIRY DATE: (mm/dd/yyyy) 09/05/2024
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:** 09/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

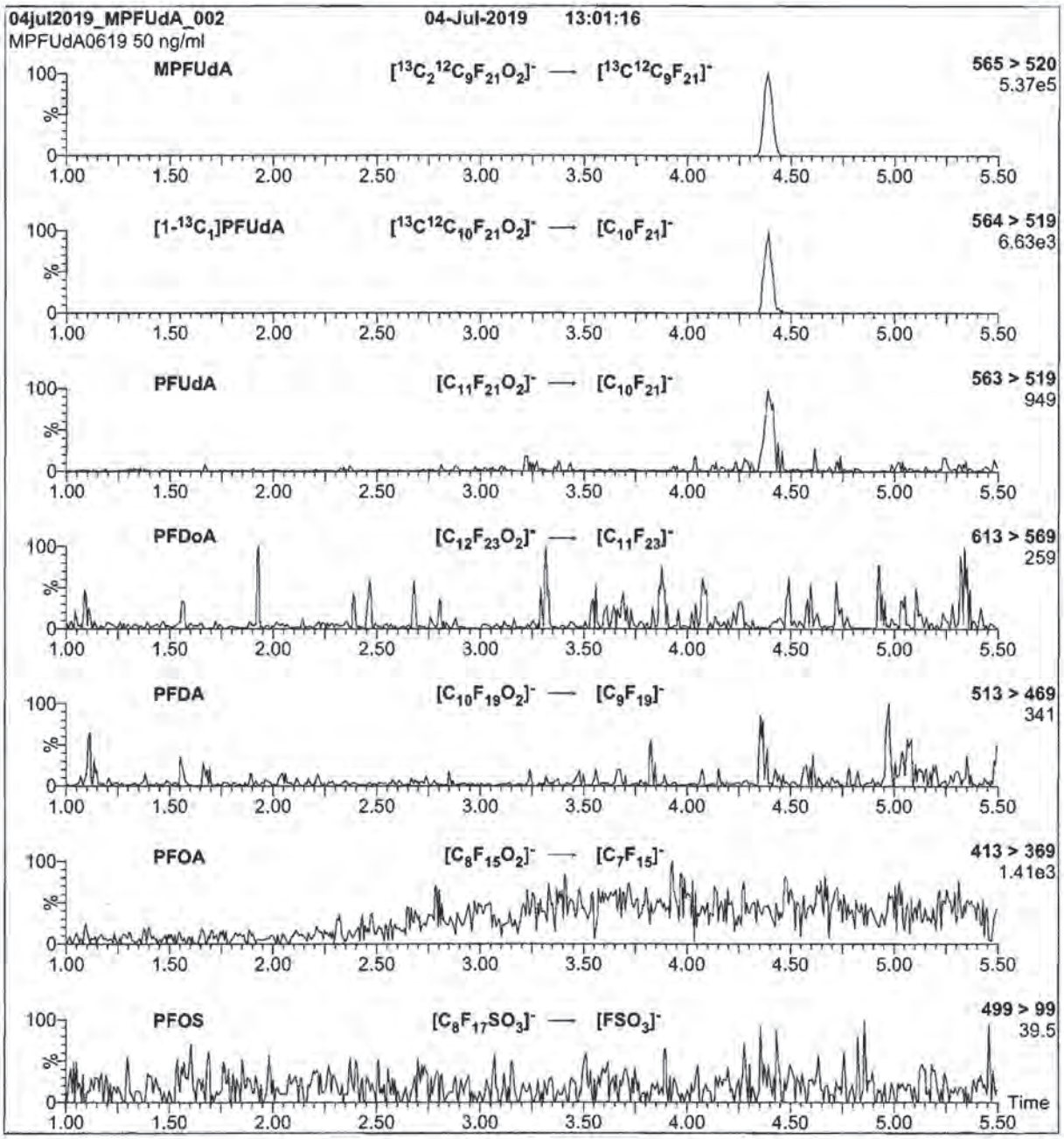
Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFDA0919 (1 of 4)
rev0

19L0606

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) = 3.39e-3
Collision Energy (eV) = 12

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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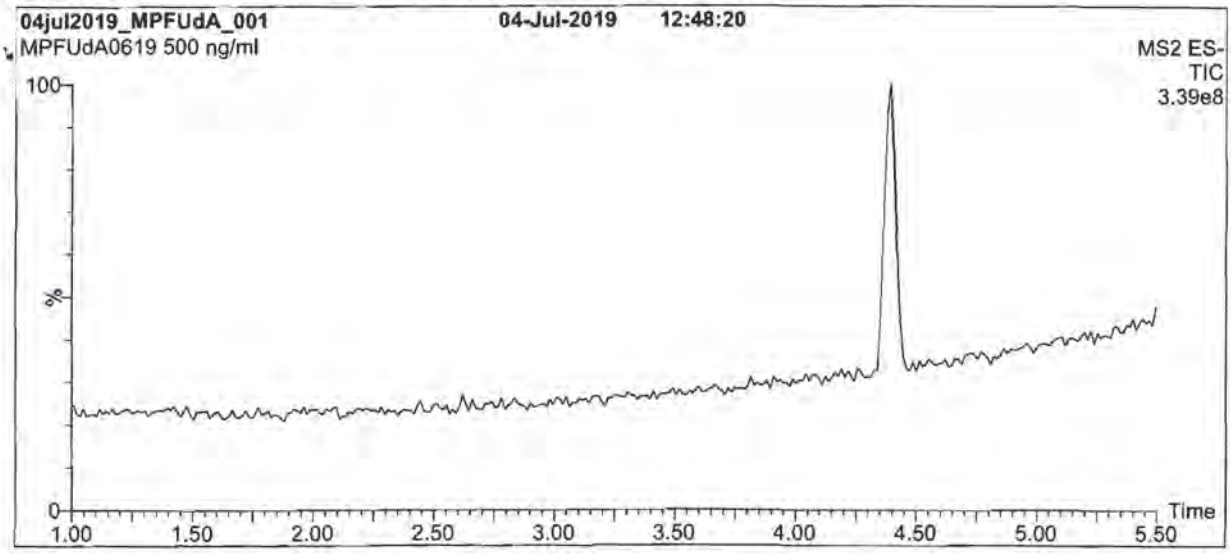
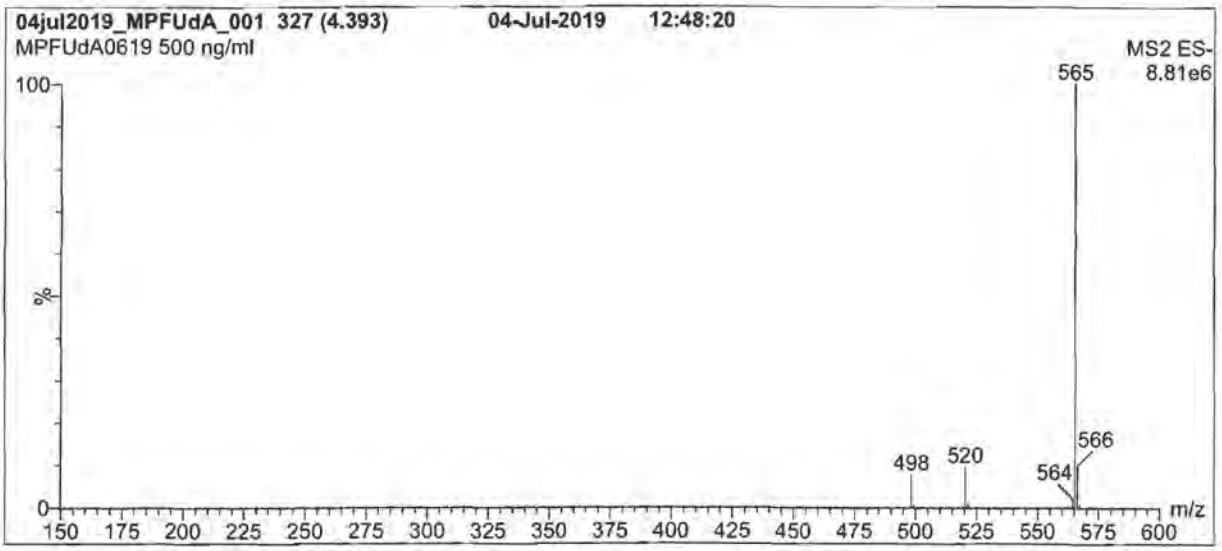
19L0606

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: 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 (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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFUdA0619 (3 of 4)
rev0

19L0606

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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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.

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:

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 REFERENCE MATERIAL PRODUCER

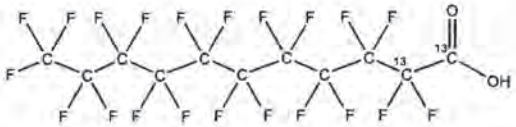
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0606

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFUdA	**LOT NUMBER:**	MPFUdA0619
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)	07/04/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/04/2024		
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.

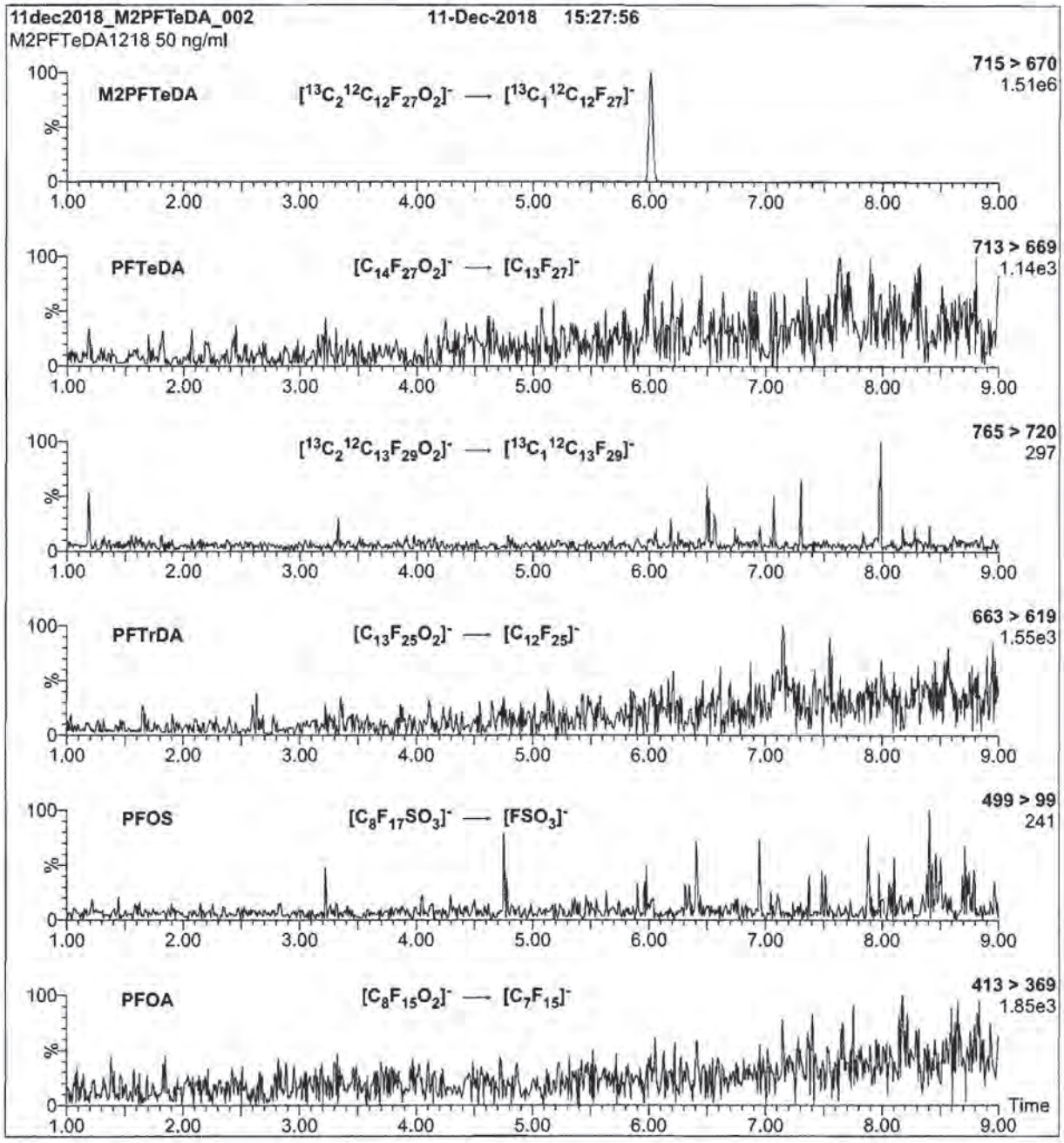
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/05/2019 (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

19L0607

Figure 2: **M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFTeDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 14

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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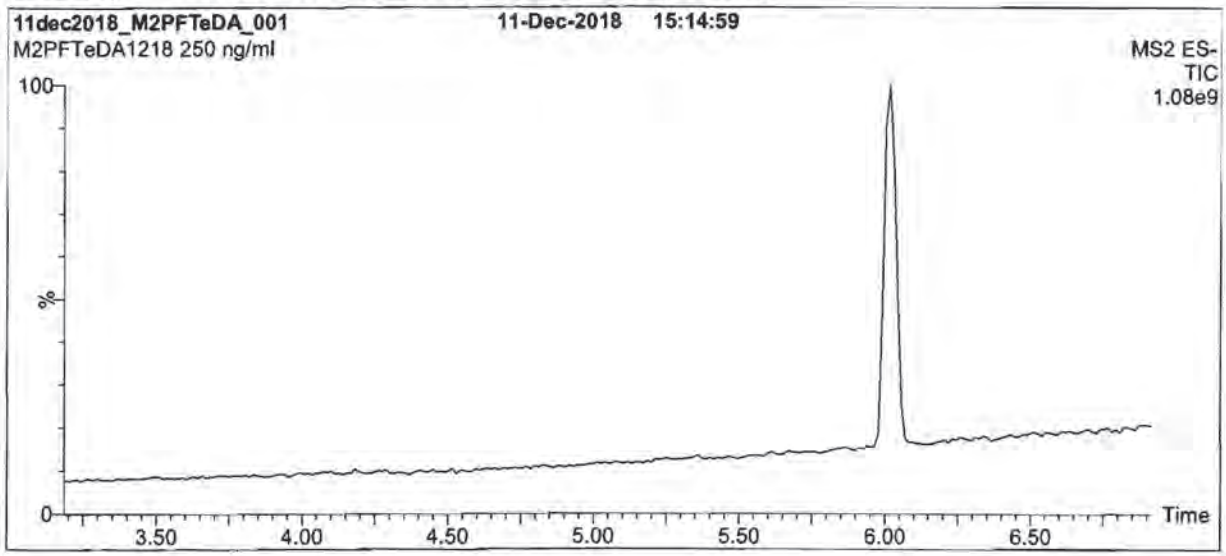
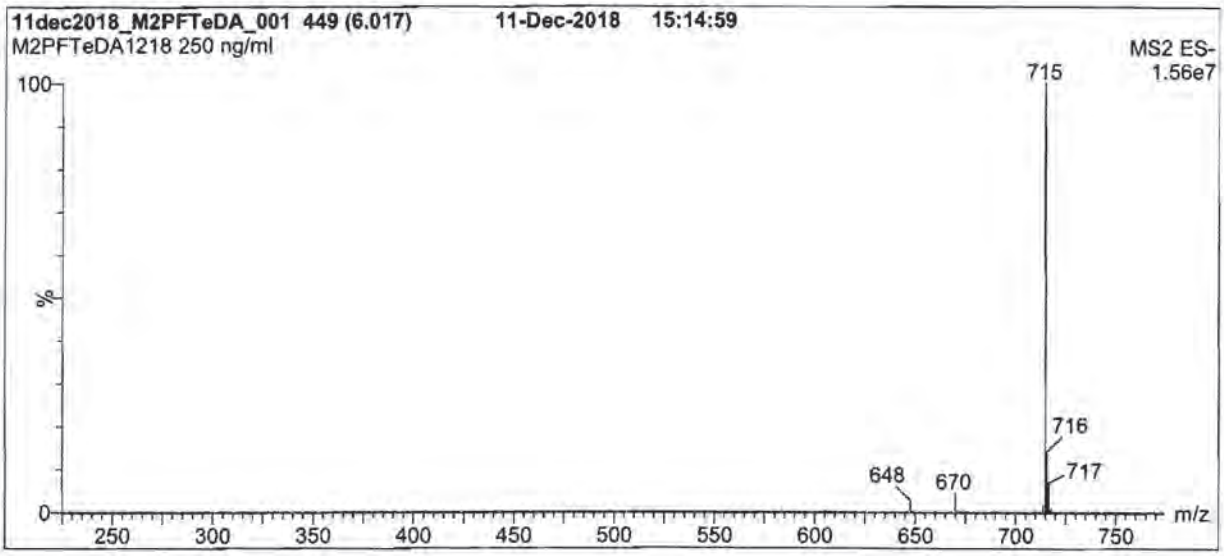
rev0

19L0607

Figure 1: **M2PFTeDA; 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) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

M2PFTeDA1218 (3 of 4)
rev0

19L0607

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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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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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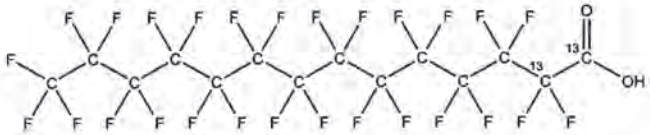
19L0607

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFTeDA
LOT NUMBER: M2PFTeDA1218
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)	12/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/11/2023		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

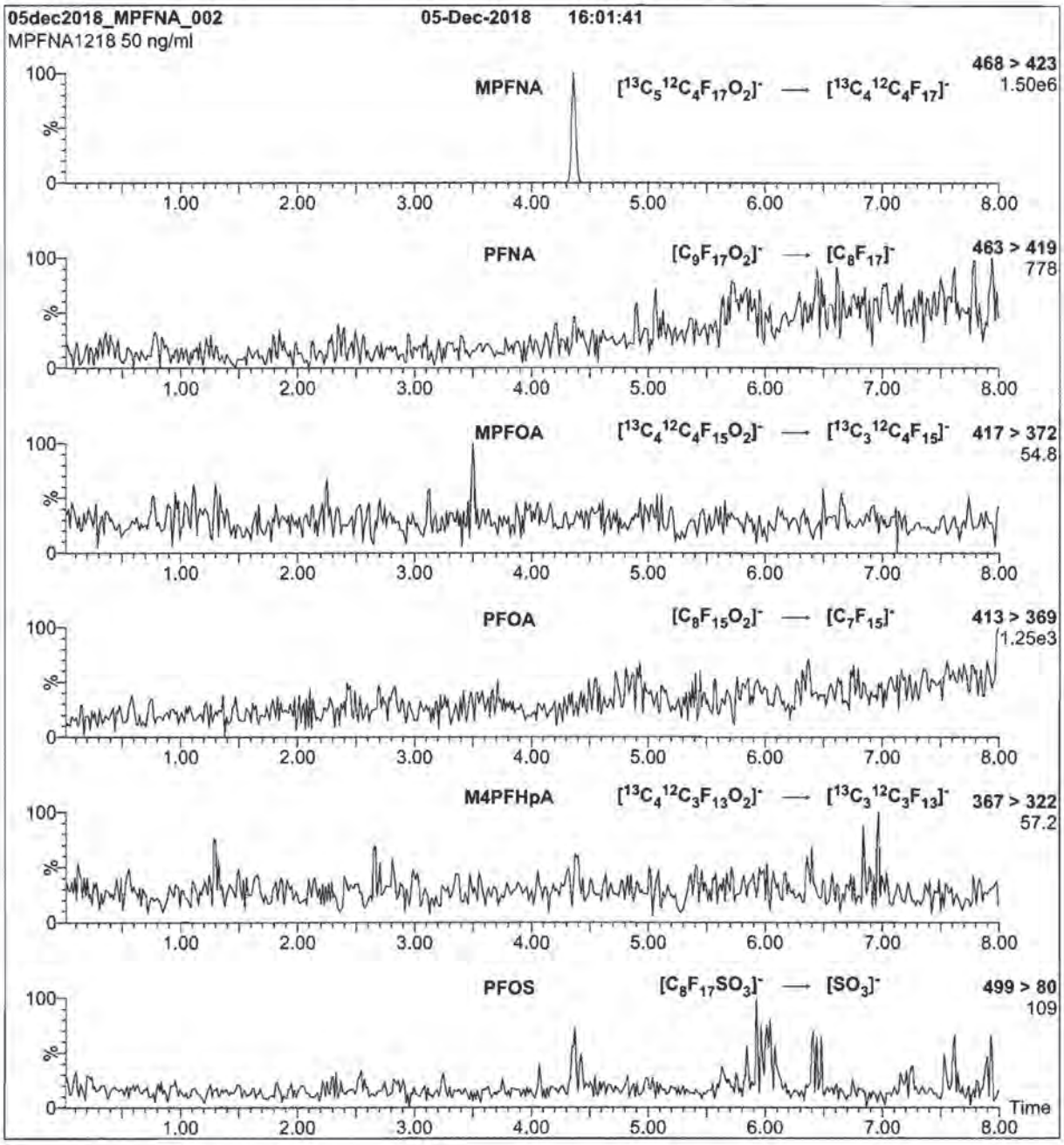
Certified By: _____ **Date:** 12/20/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0608

Figure 2: **MPFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

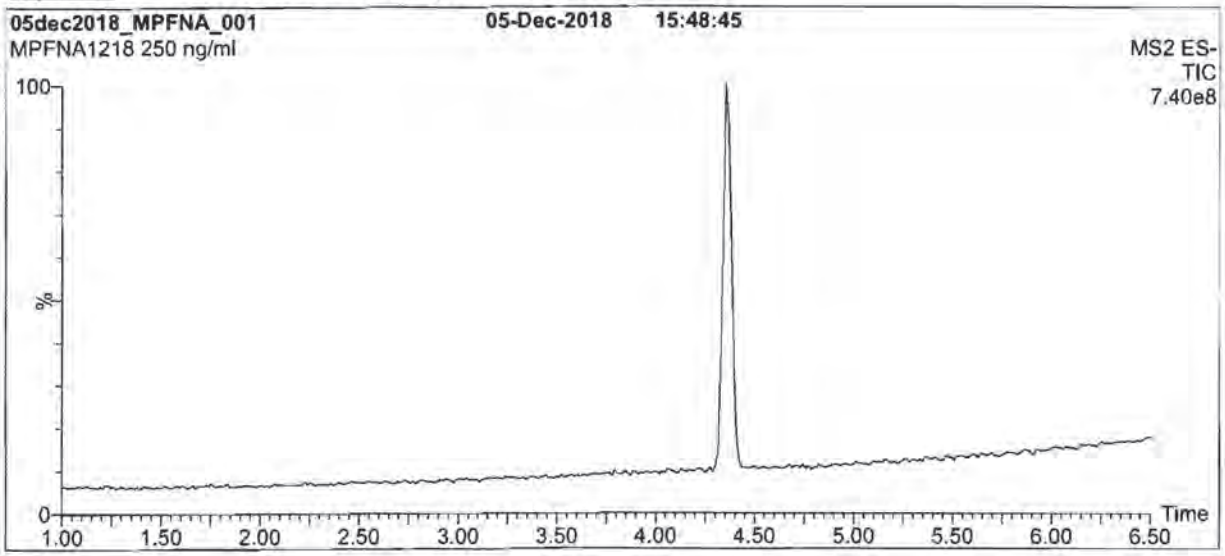
Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 10

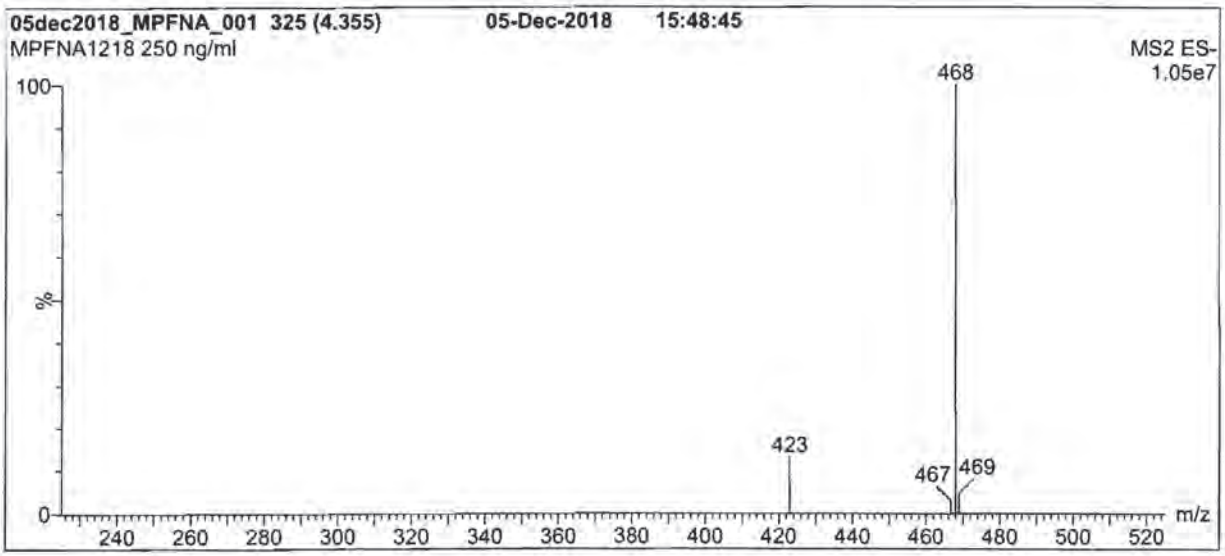
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFNA1218 (4 of 4)
rev0

1912608

Figure 1: MPFNA; 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFNA1218 (3 of 4)
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19L0608

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 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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rev0

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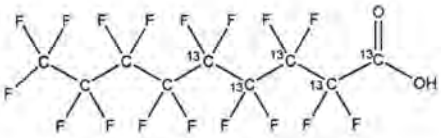
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFNA	**LOT NUMBER:**	MPFNA1218
COMPOUND:	Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]nonanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_4HF_{17}O_2$	**MOLECULAR WEIGHT:**	469.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4,5$-$^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	12/05/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/05/2023		
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 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0609

WELLINGTON LABORATORIES

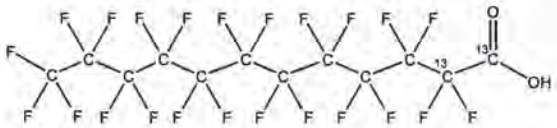
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDoA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid

LOT NUMBER: MPFDoA1218

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)	12/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/11/2023		
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/18/2018 (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

19L0609

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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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:

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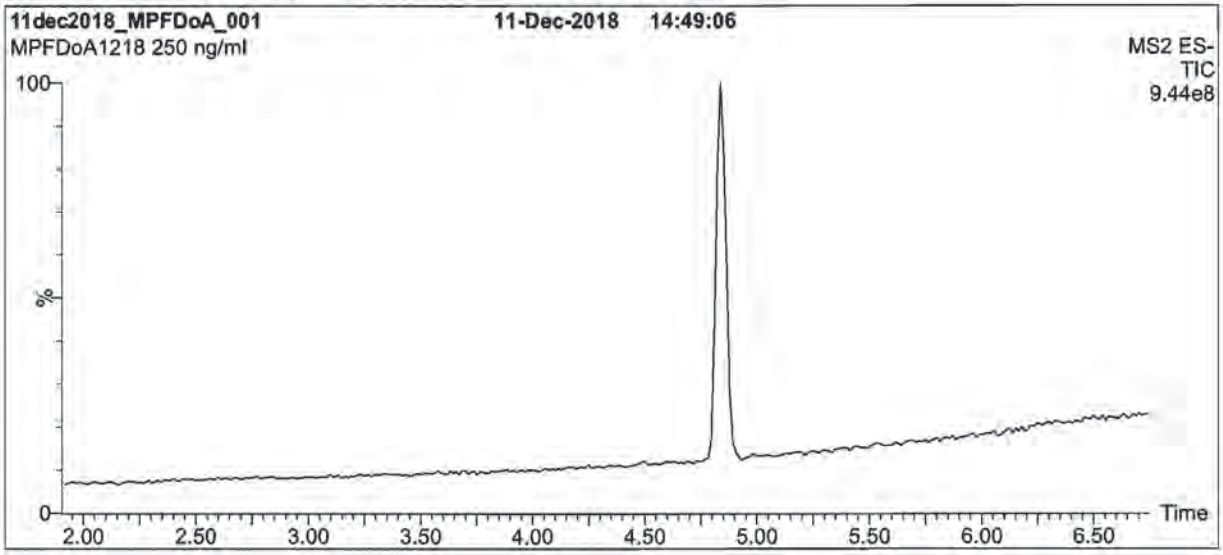
CALA Testing Accreditation No. A 1226

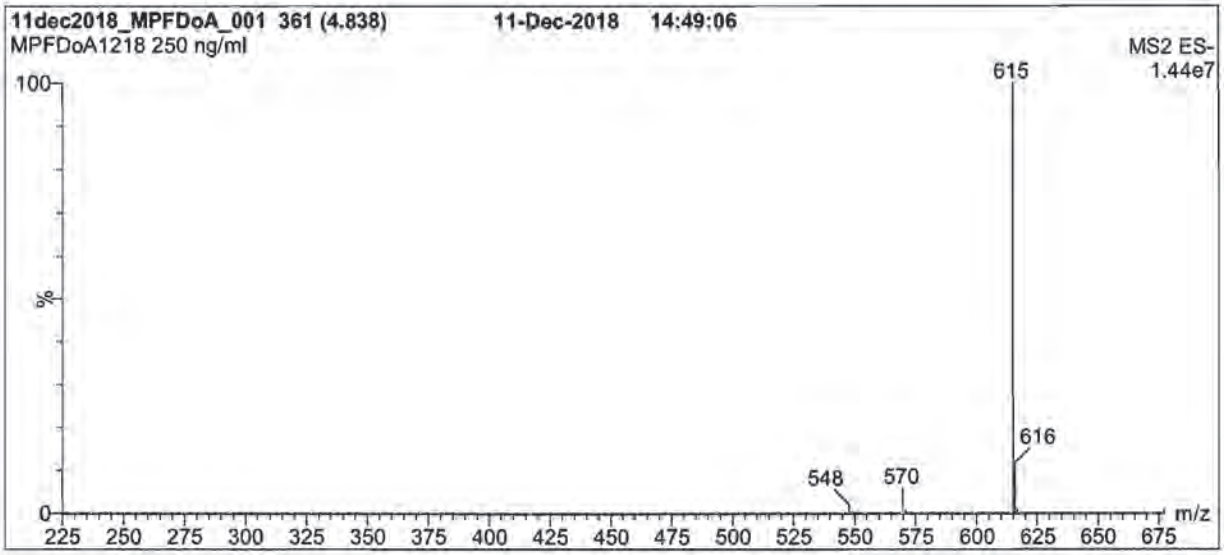
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0609

Figure 1: **MPFDoA; 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) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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Revision#:6, Revised 2018-08-14

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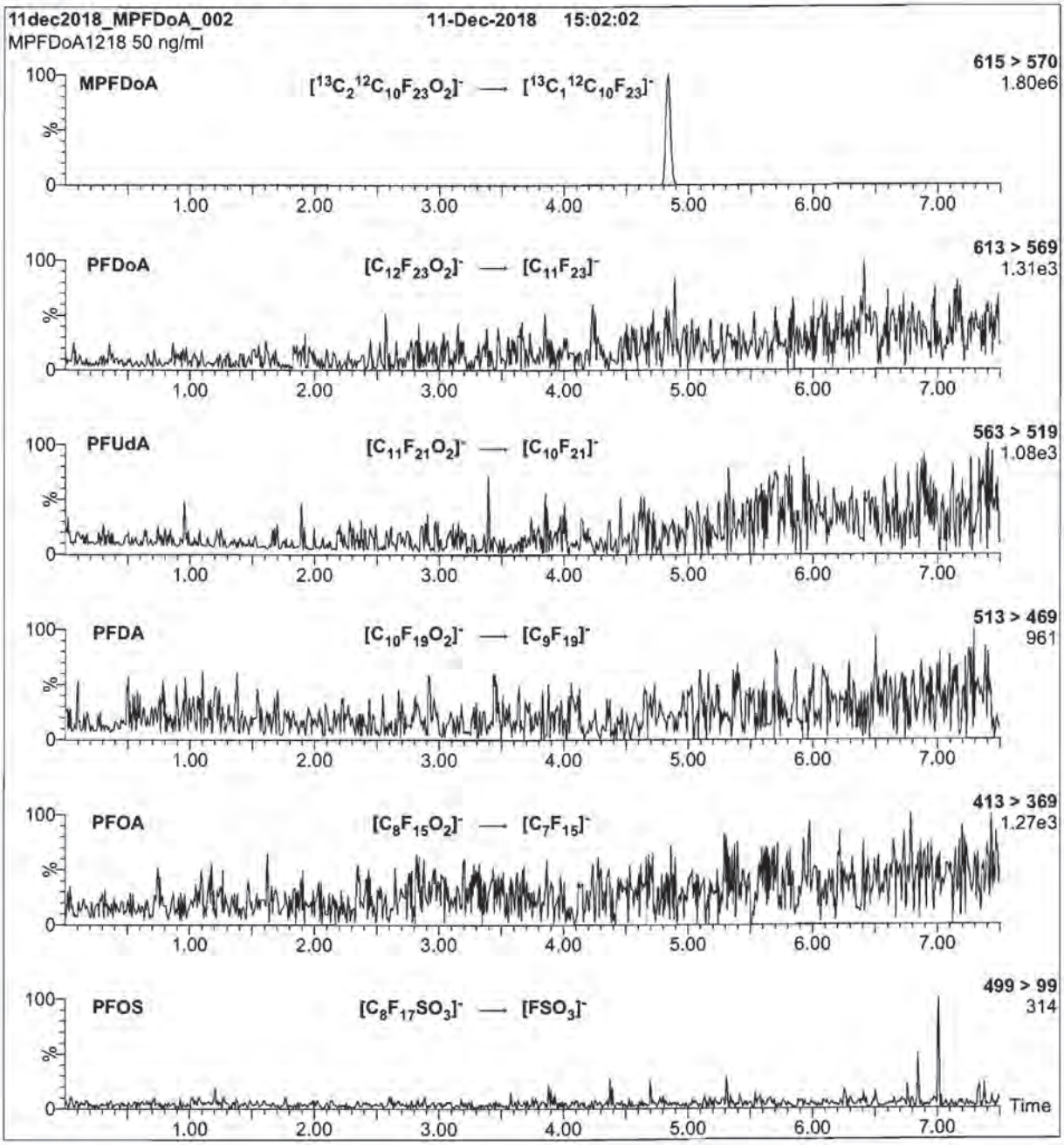
rev0

19L0609

Figure 2: **MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDoA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

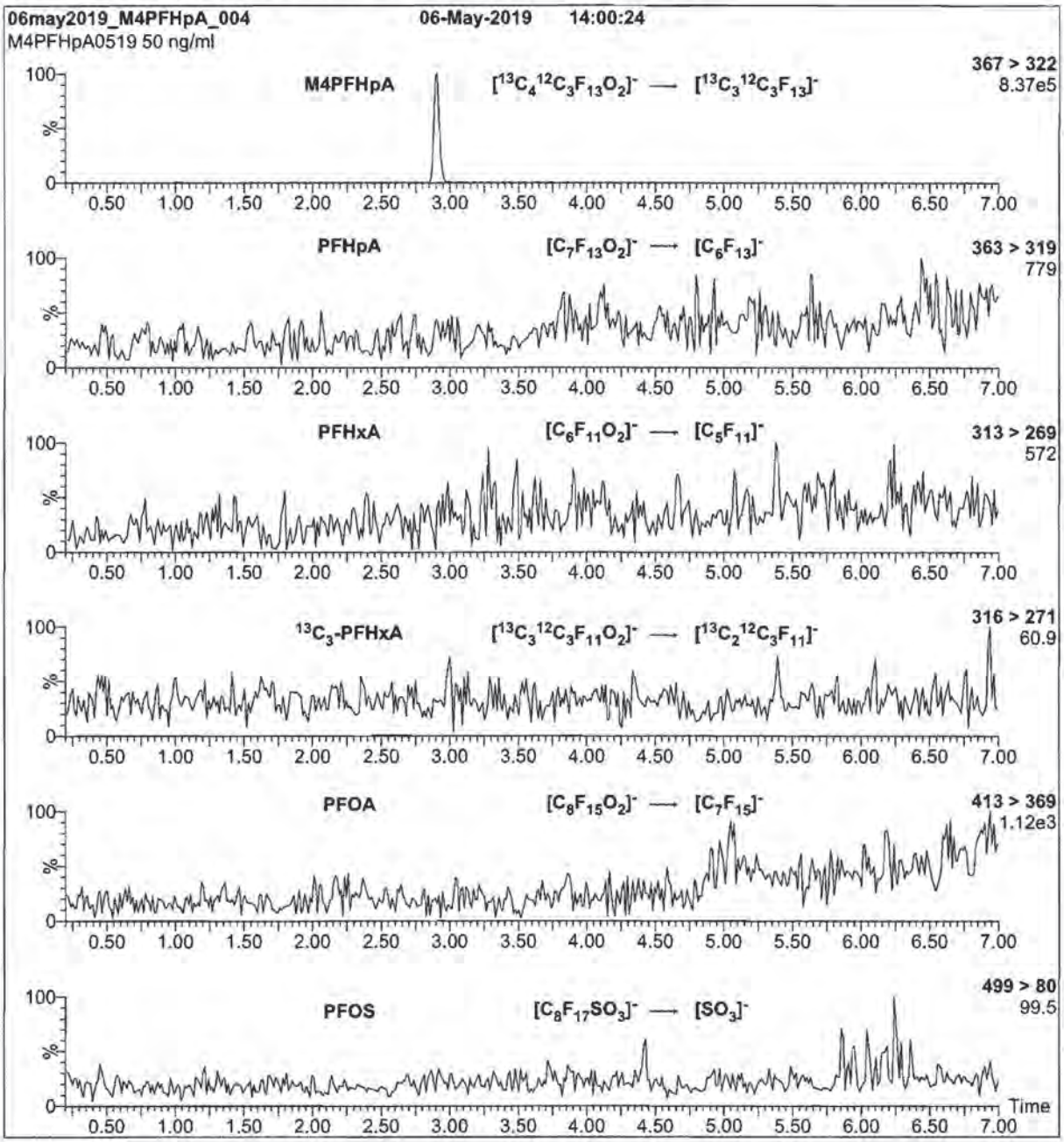
Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 12

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFDoA1218 (4 of 4)
rev0

19L0610

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

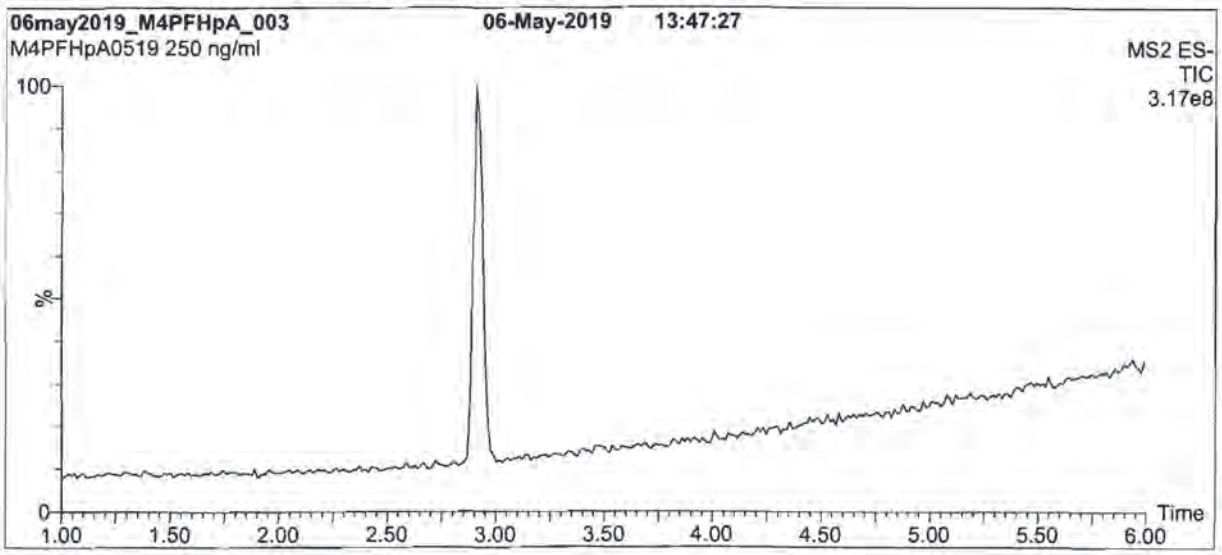
Collision Gas (mbar) = 2.87e-3
Collision Energy (eV) = 8

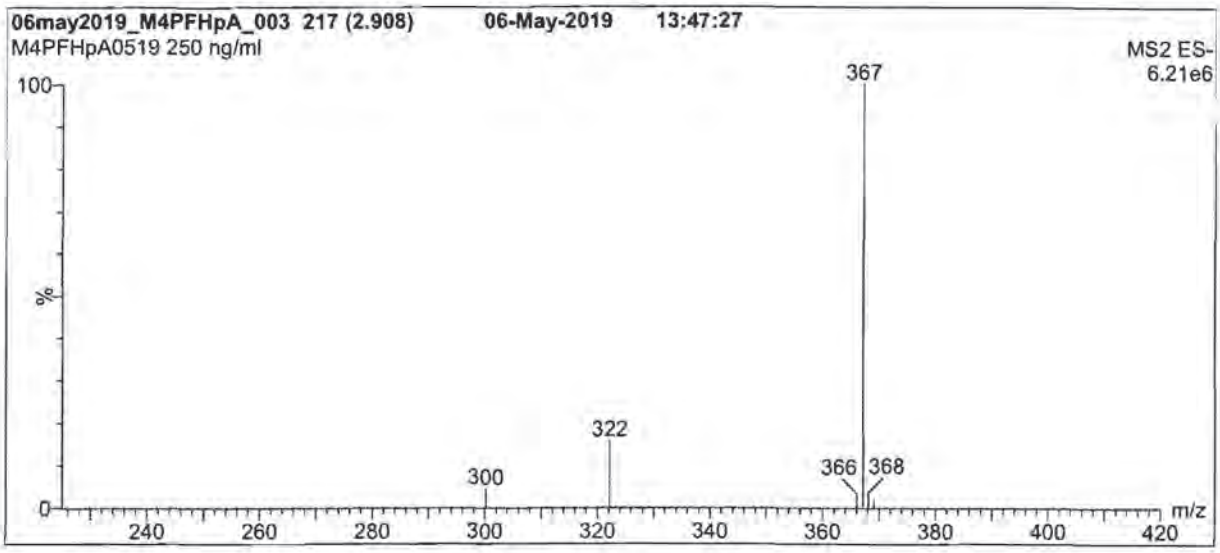
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M4PFHpA0519 (4 of 4)
rev0

19L0610

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 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 11 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M4PFHpA0519 (3 of 4)
rev0

19L0090

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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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19L0610

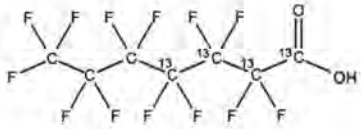
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M4PFHpA
COMPOUND: Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid
LOT NUMBER: M4PFHpA0519

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_3HF_{13}O_2$	**MOLECULAR WEIGHT:**	368.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	05/06/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/06/2024		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/17/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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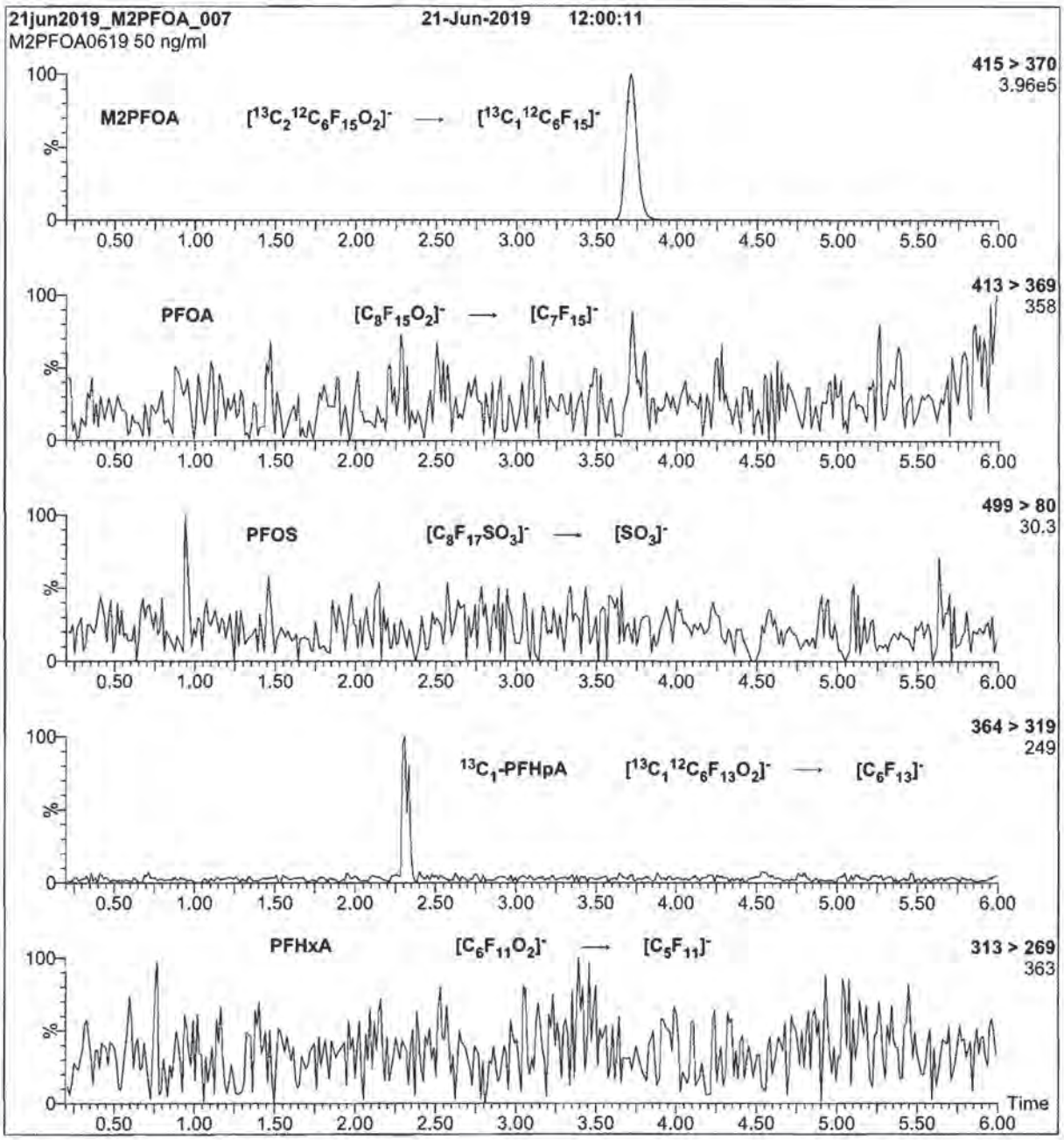
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0611

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

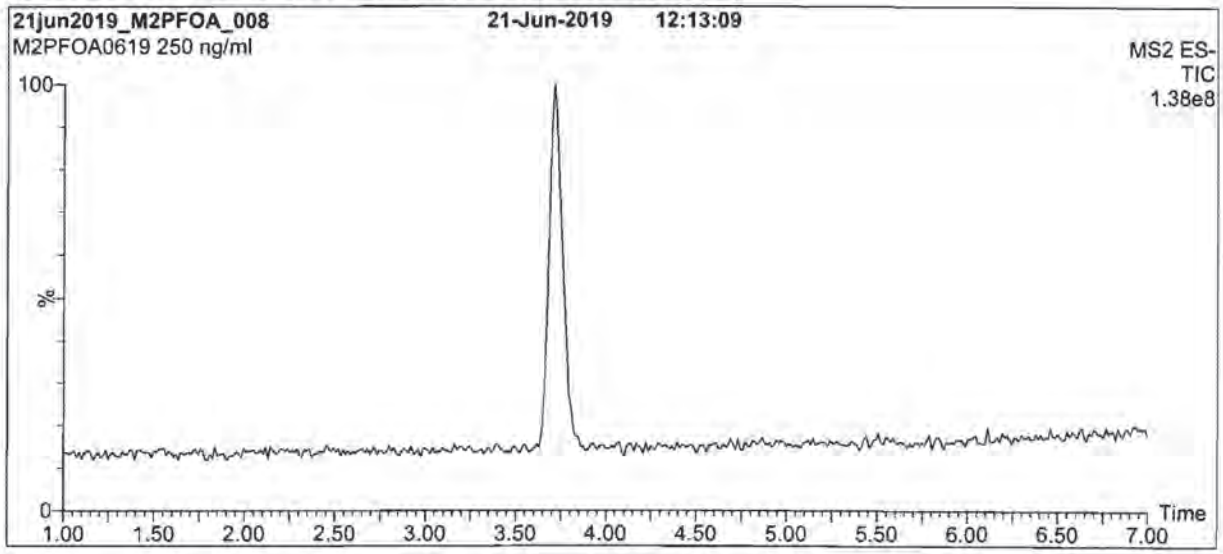
Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 8

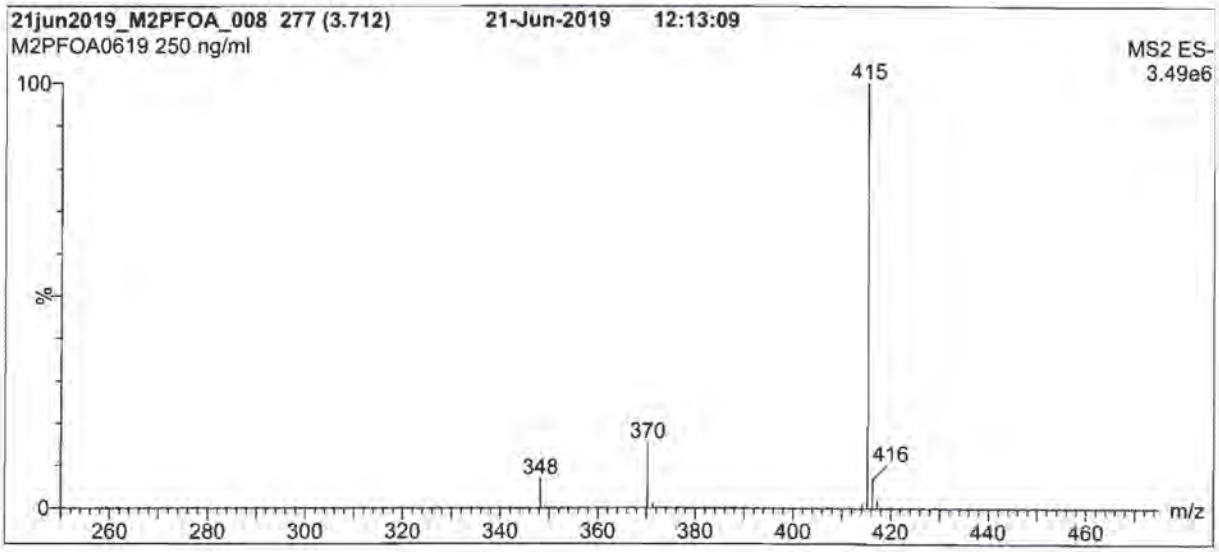
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M2PFOA0619 (4 of 4)
rev0

19L0611

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: 55% (80:20 MeOH:ACN) / 45% 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 (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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M2PFOA0619 (3 of 4)
rev0

1920611

INTENDED USE:

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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:

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 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

19L 0611

WELLINGTON LABORATORIES

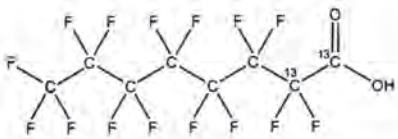
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid

LOT NUMBER: M2PFOA0619

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)	06/21/2019		
EXPIRY DATE: (mm/dd/yyyy)	06/21/2024		
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

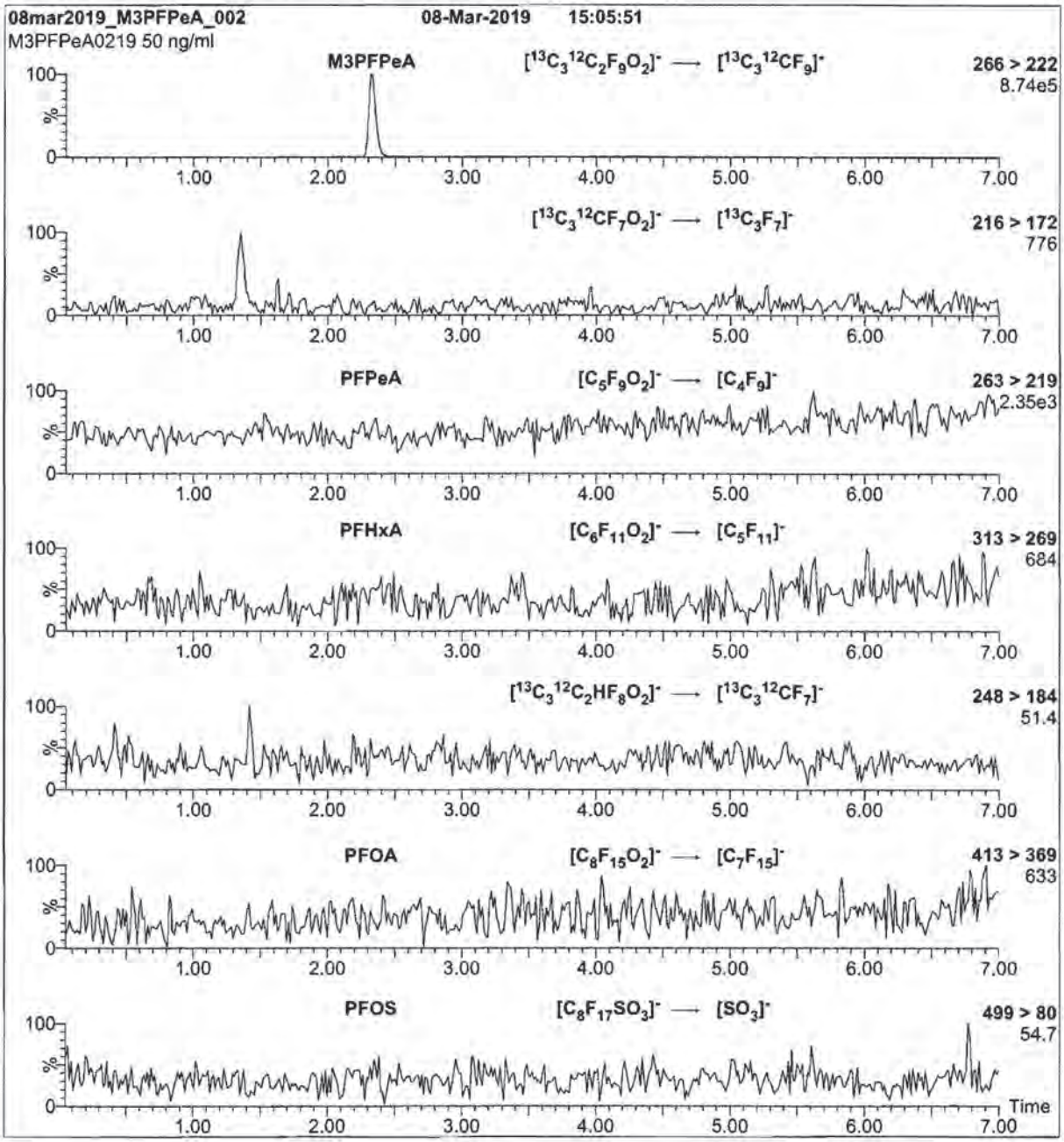
Certified By: _____ **Date:** 06/21/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0612

Figure 2: **M3PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

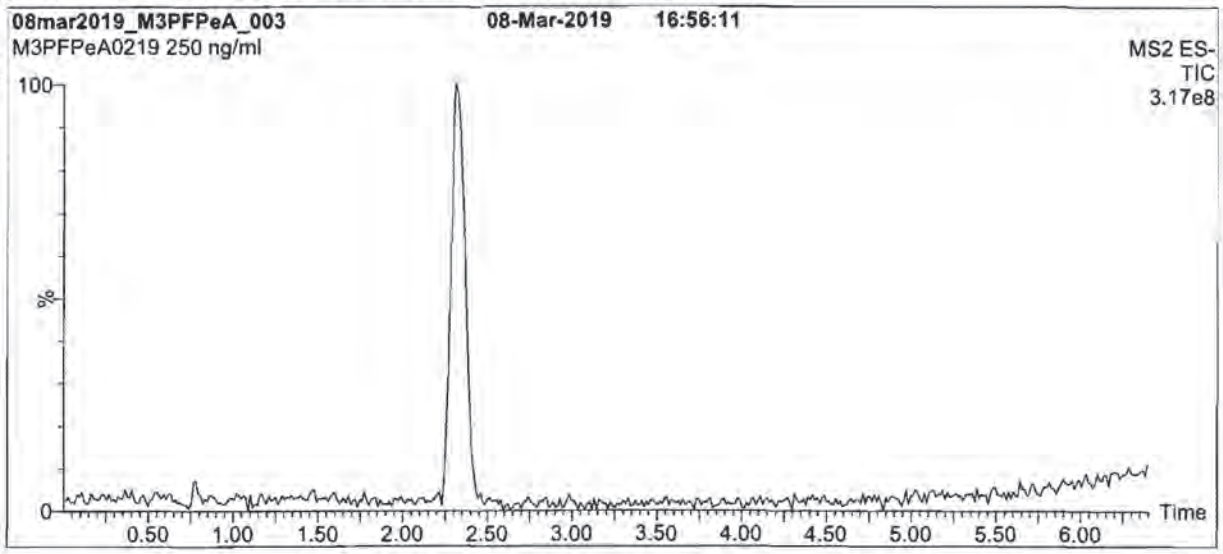
Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 8

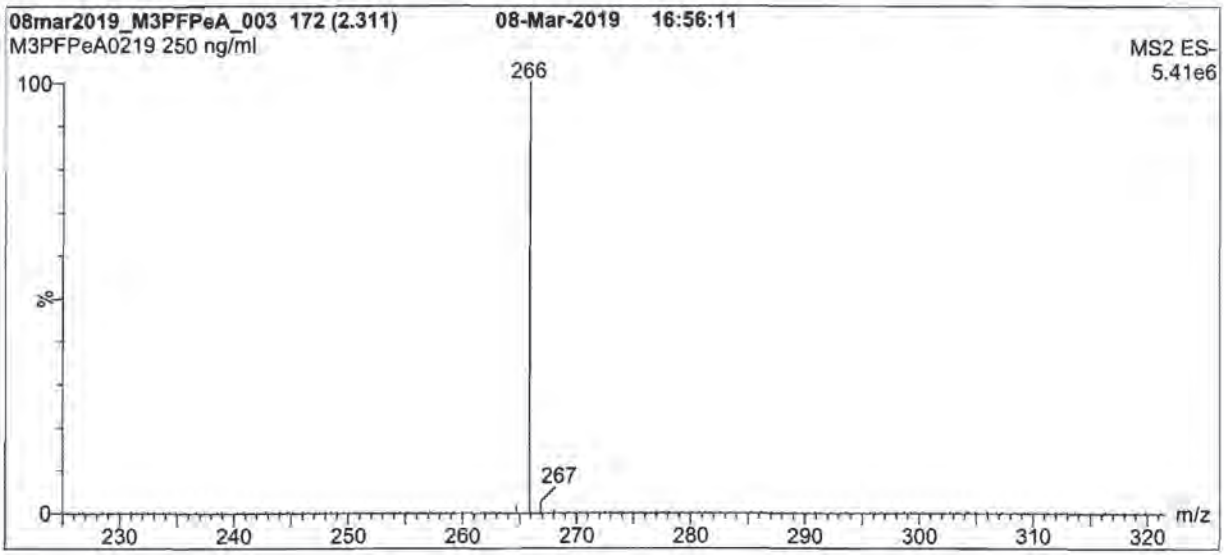
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFPeA0219 (4 of 4)
rev0

19L0612

Figure 1: M3PFPeA; 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFPeA0219 (3 of 4)
rev0

19L0612

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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$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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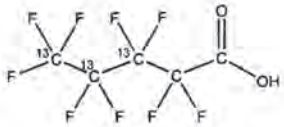
19L0612

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFPeA	**LOT NUMBER:**	M3PFPeA0219
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)	03/08/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/08/2024		
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.

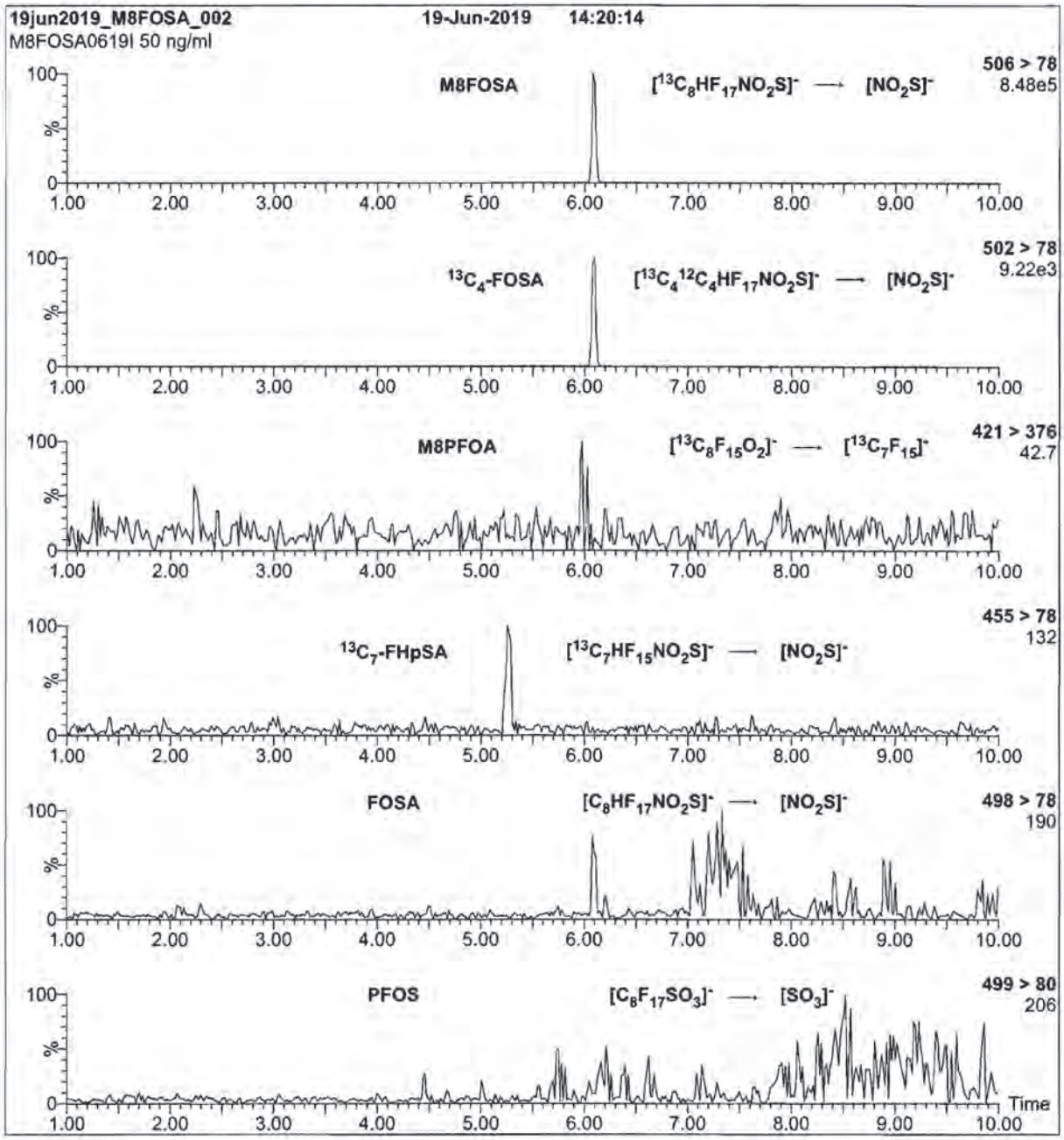
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/19/2019 (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

19L0613

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

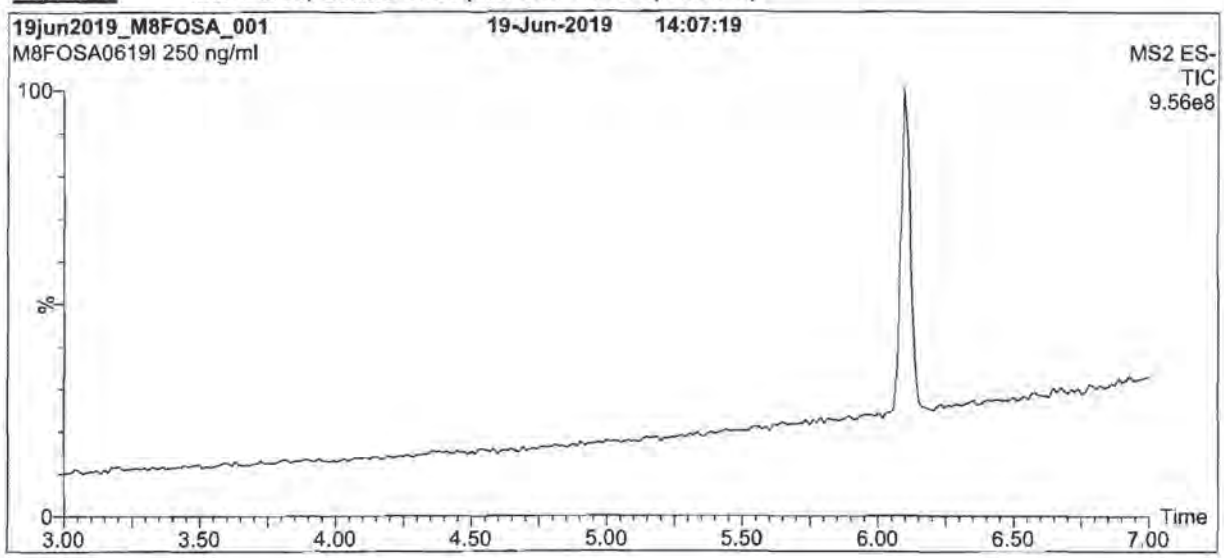
Collision Gas (mbar) = 2.94e-3
Collision Energy (eV) = 30

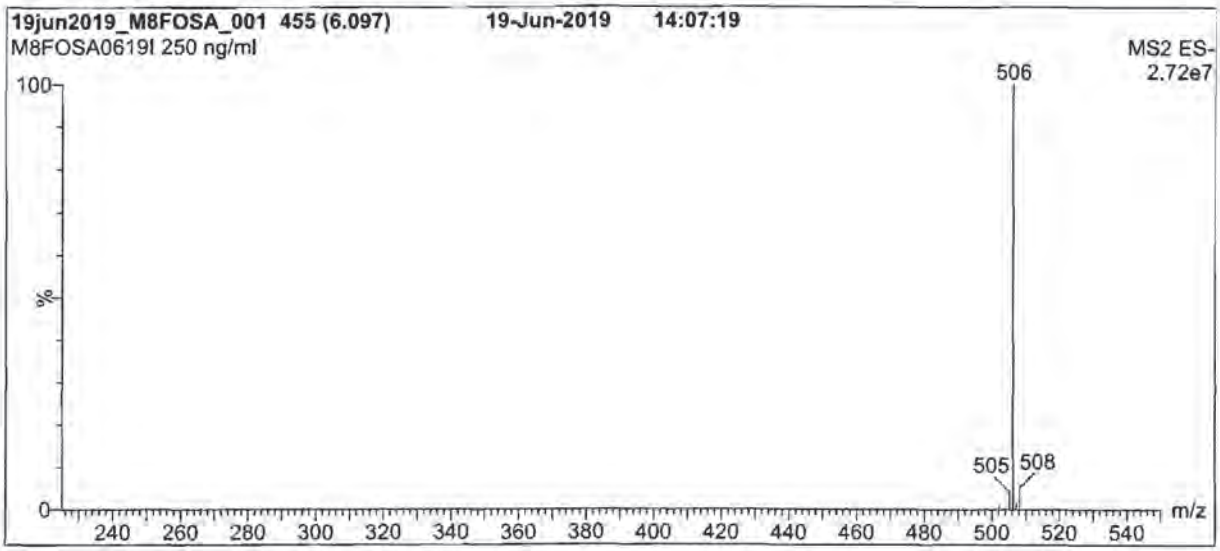
Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

M8FOSA0619I (4 of 4)
rev0

19L0613

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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M8FOSA0619I (3 of 4)
rev0

19L0613

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:

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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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$$u_c(y(x_1, x_2,...,x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

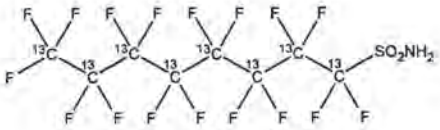
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0613

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M8FOSA-I	**LOT NUMBER:**	M8FOSA0619I
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)	06/19/2019		
EXPIRY DATE: (mm/dd/yyyy)	06/19/2024		
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 ~ 1.2% of perfluoro-1-[$^{13}C_4$]octanesulfonamide and ~ 0.02% of perfluoro-1-[$^{13}C_7$]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/21/2019 (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

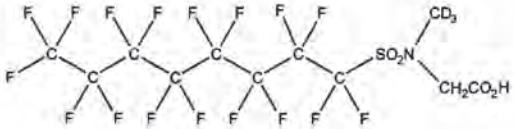
19L0614

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA0719
COMPOUND: N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 1400690-70-1



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) 07/24/2019
EXPIRY DATE: (mm/dd/yyyy) 07/24/2024
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 07/26/2019 (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

19LC06H

INTENDED USE:

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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:

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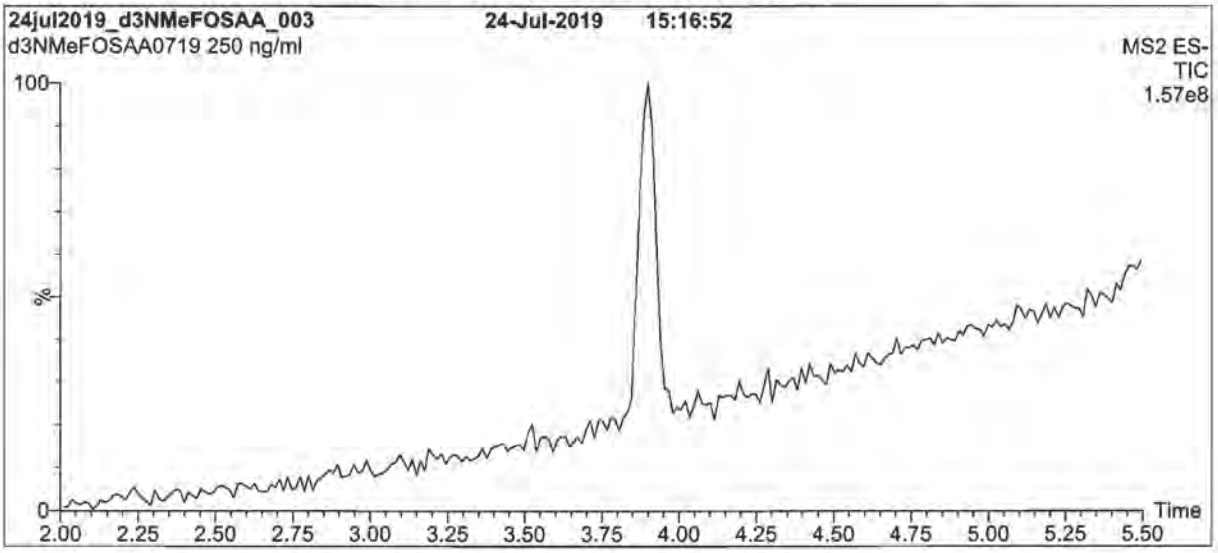
CALA Testing Accreditation No. A1226

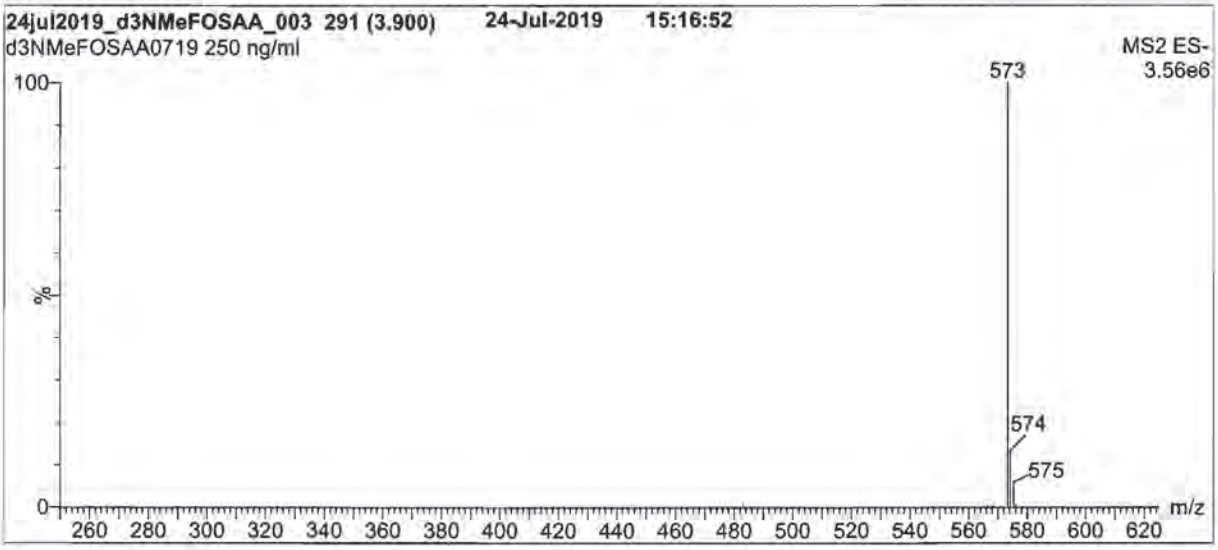
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0614

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: 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)

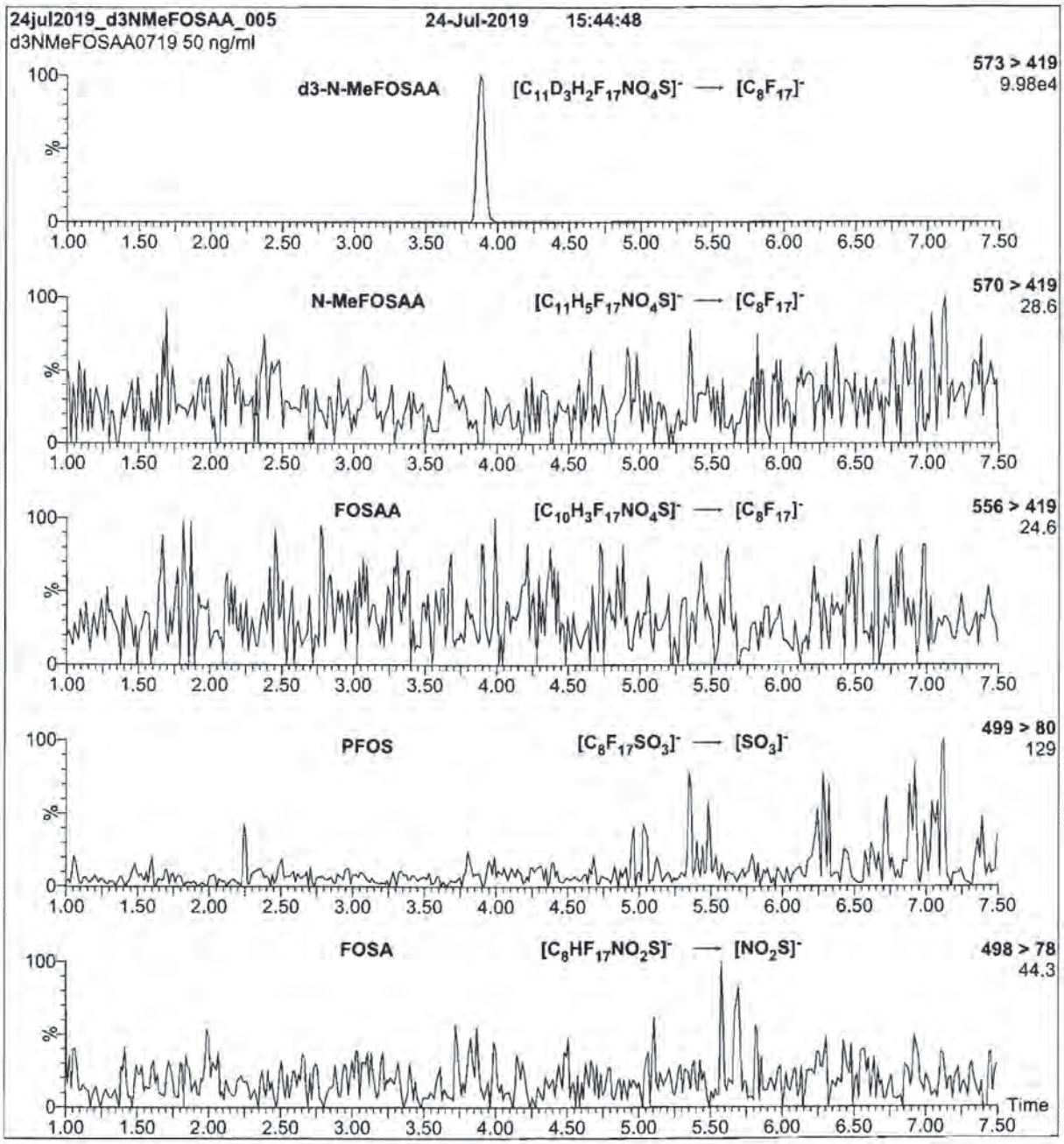
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

d3NMeFOSAA0719 (3 of 4)
rev0

19L0614

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

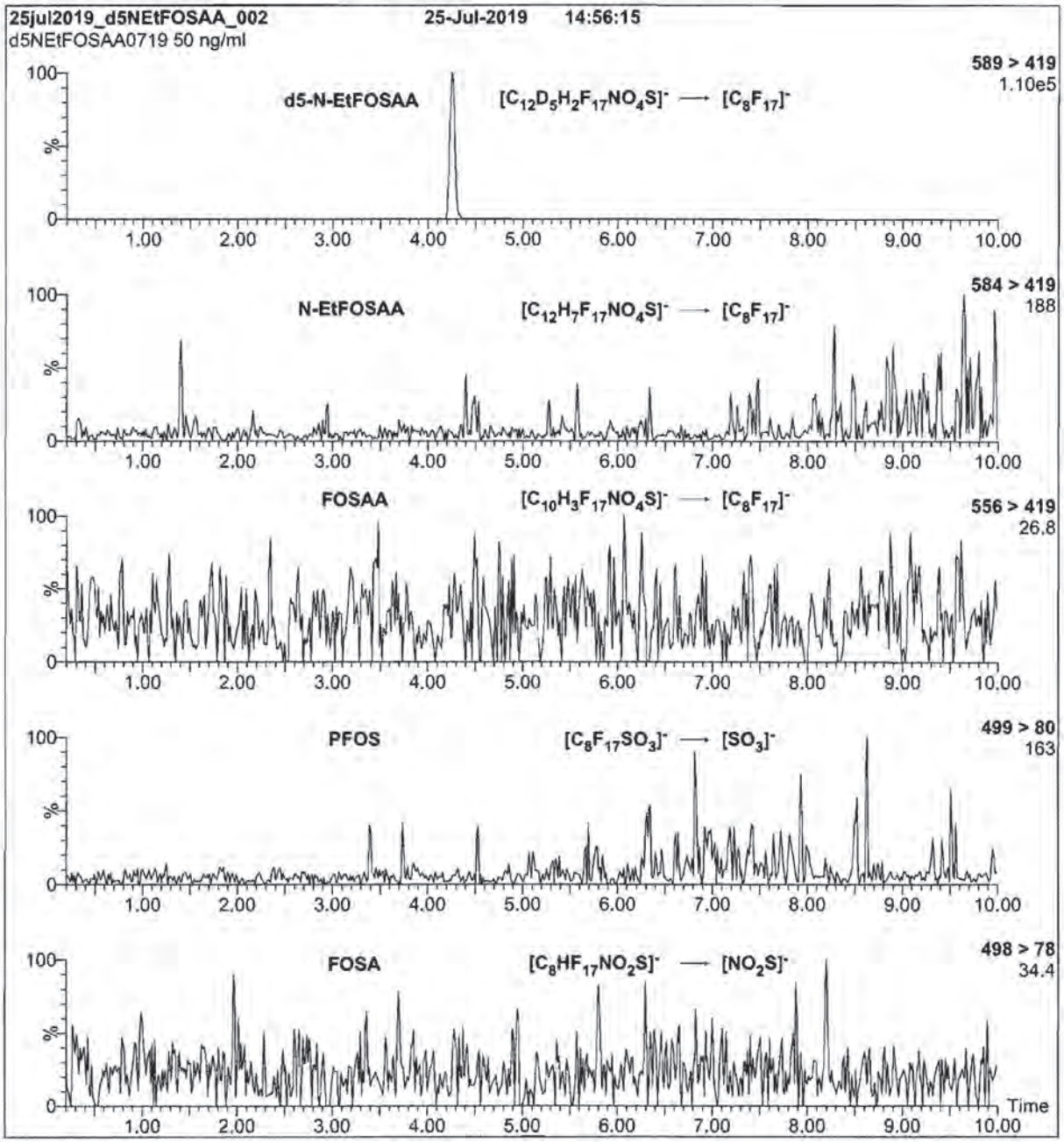
Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 18

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

d3NMeFOSAA0719 (4 of 4)
rev0

19L0615

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

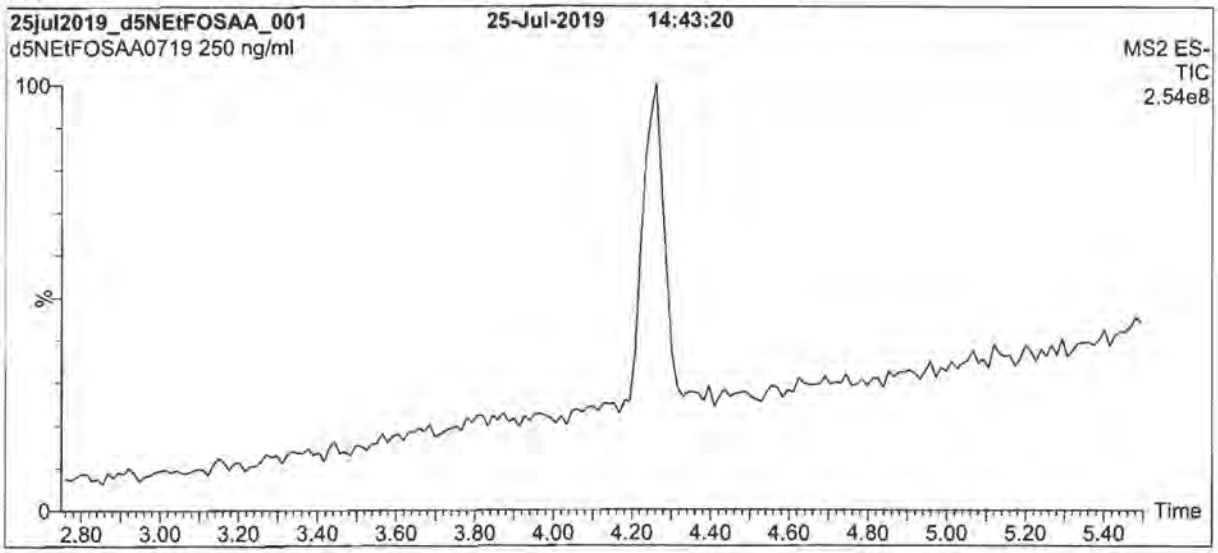
Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 18

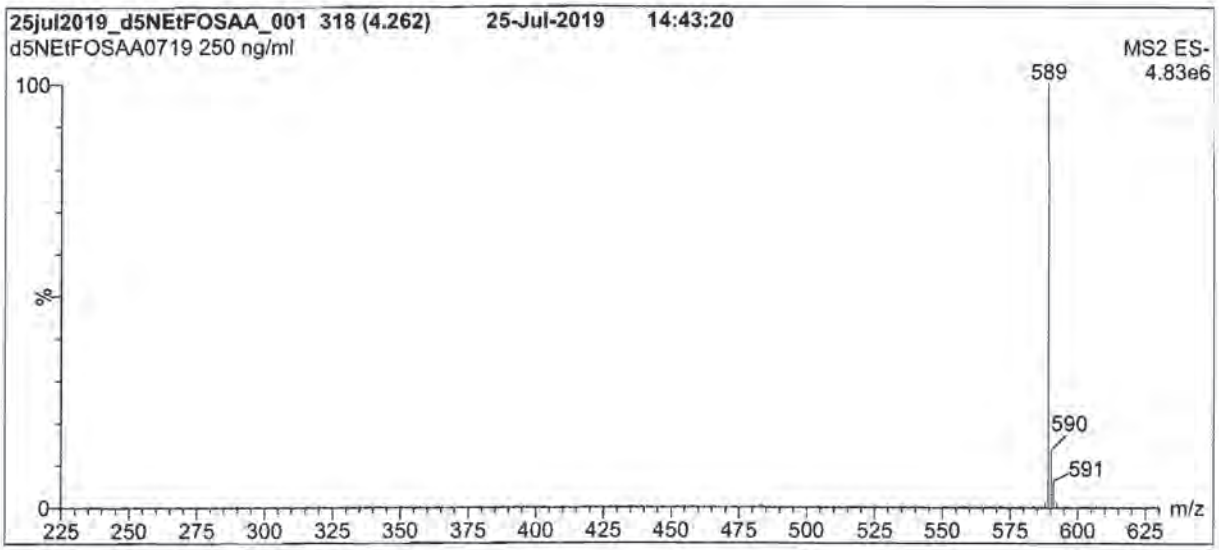
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

d5NEtFOSAA0719 (4 of 4)
rev0

19L0615

Figure 1: **d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





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Chromatographic Conditions

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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) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

d5NEtFOSAA0719 (3 of 4)
rev0

19L0615

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HANDLING:

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UNCERTAINTY:

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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.

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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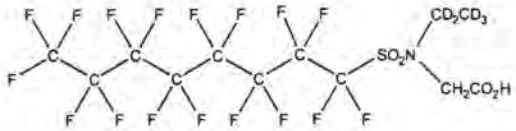
19L0615

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0719
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)	07/25/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/25/2024		
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

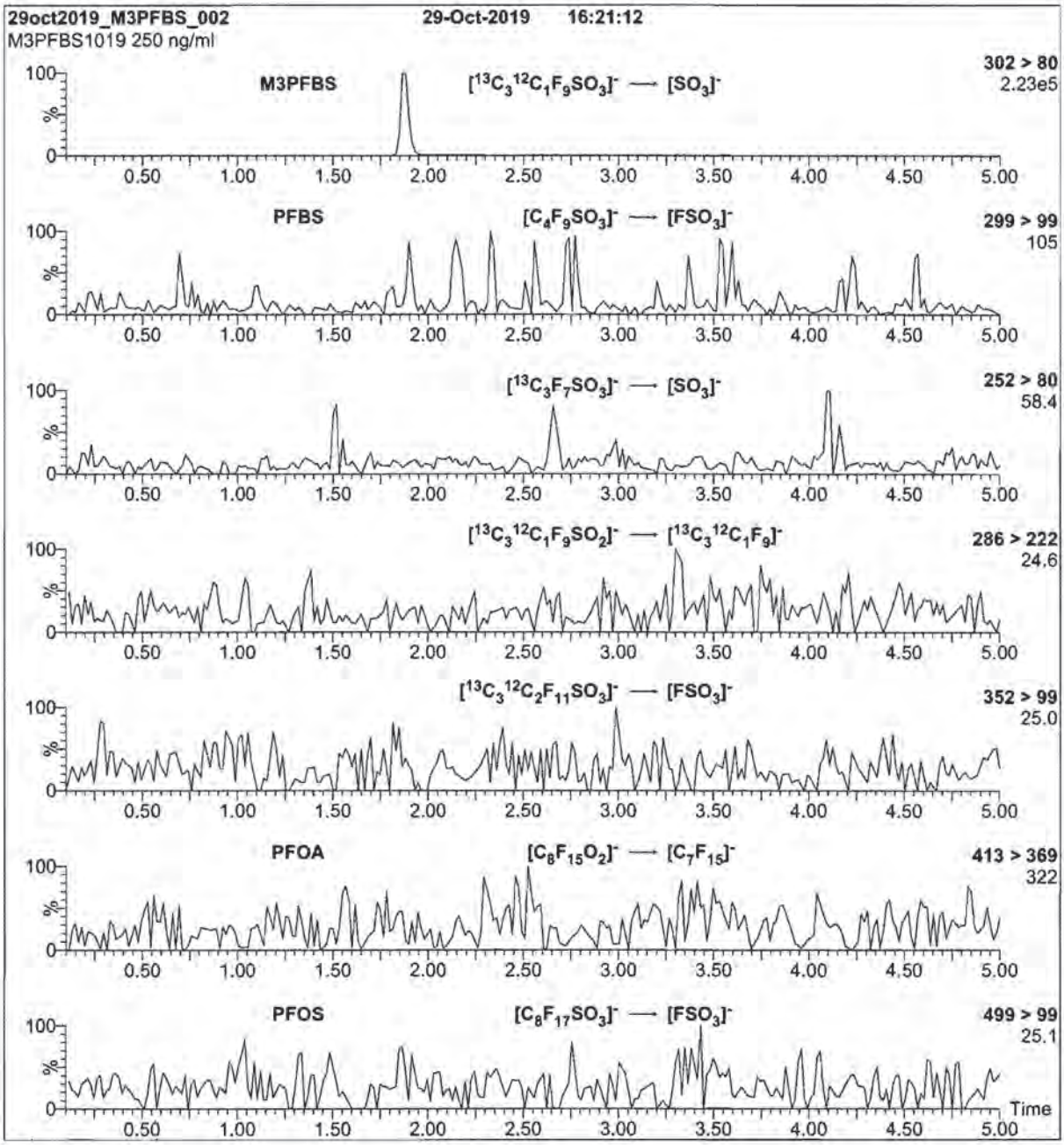
Certified By: _____ **Date:** 07/26/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0616

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

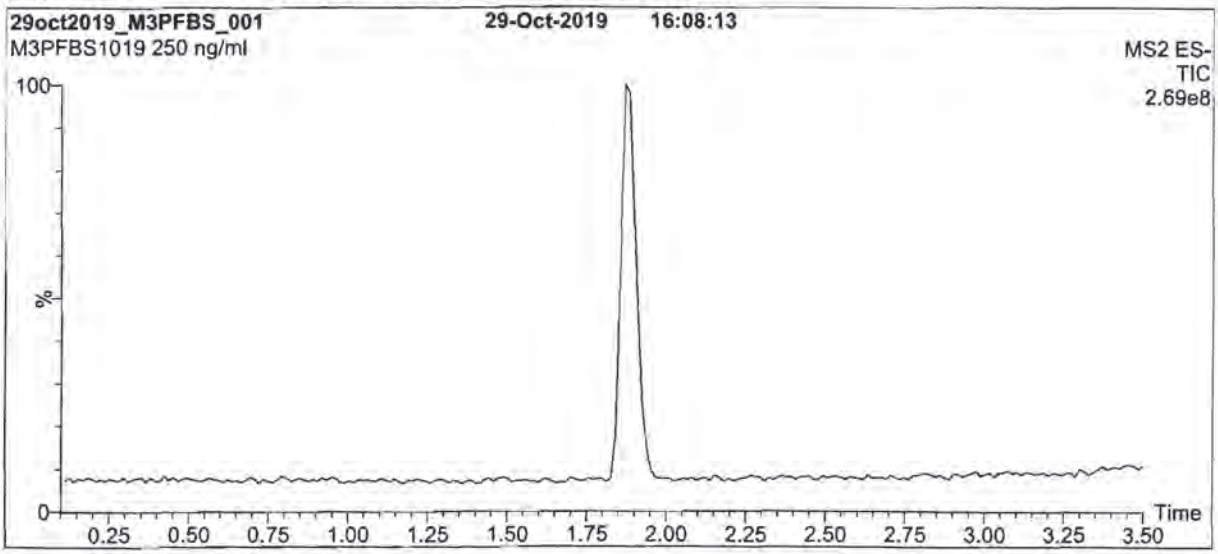
Collision Gas (mbar) = 3.57e-3
Collision Energy (eV) = 30

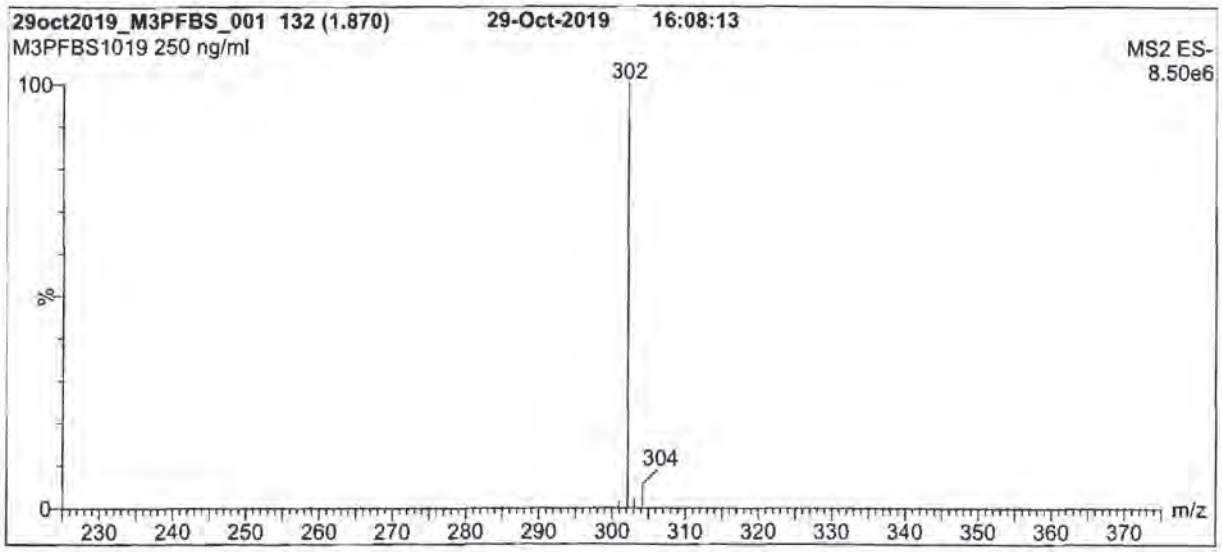
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFBS1019 (4 of 4)
rev0

191L0616

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: 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFBS1019 (3 of 4)
rev0

19L0616

INTENDED USE:

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HANDLING:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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19L0616

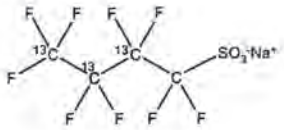
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS1019

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)	10/29/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2024		
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% of perfluoro-1-butanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/08/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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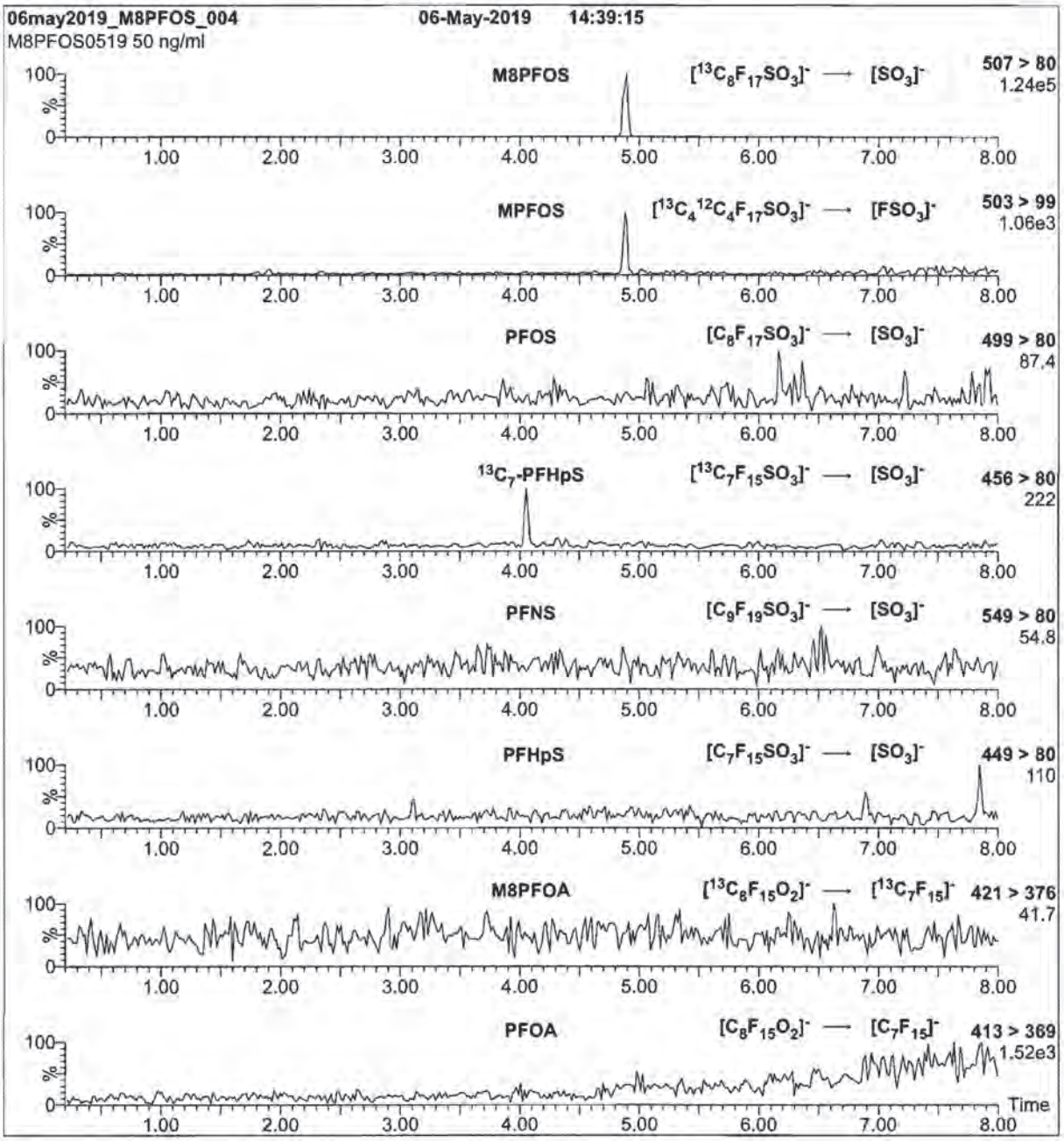
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFBS1019 (1 of 4)
rev0

19L0617

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

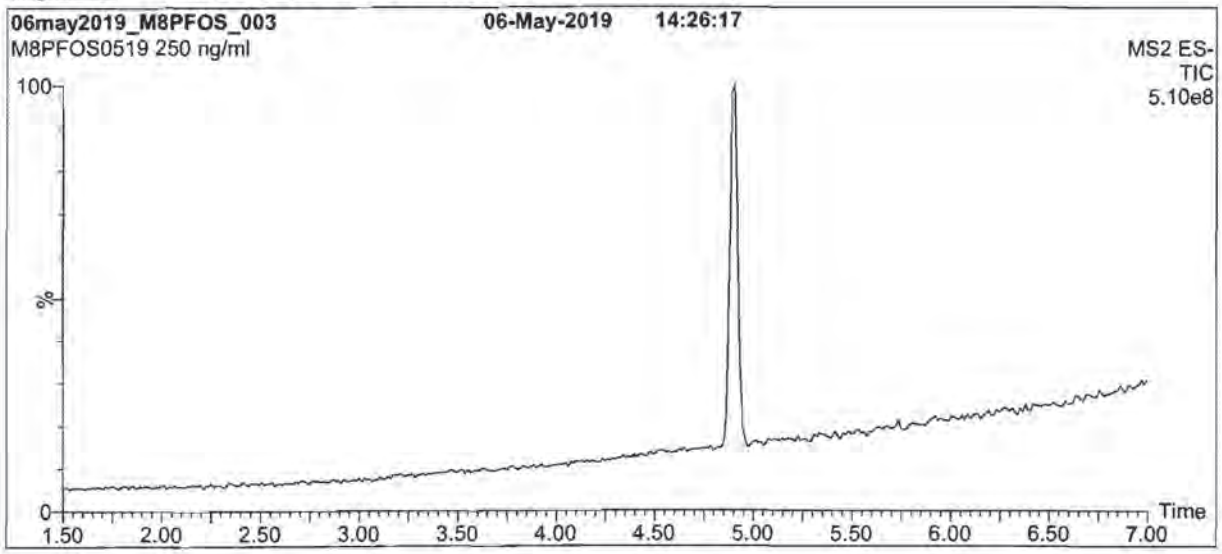
Collision Gas (mbar) = 2.85e-3
Collision Energy (eV) = 42

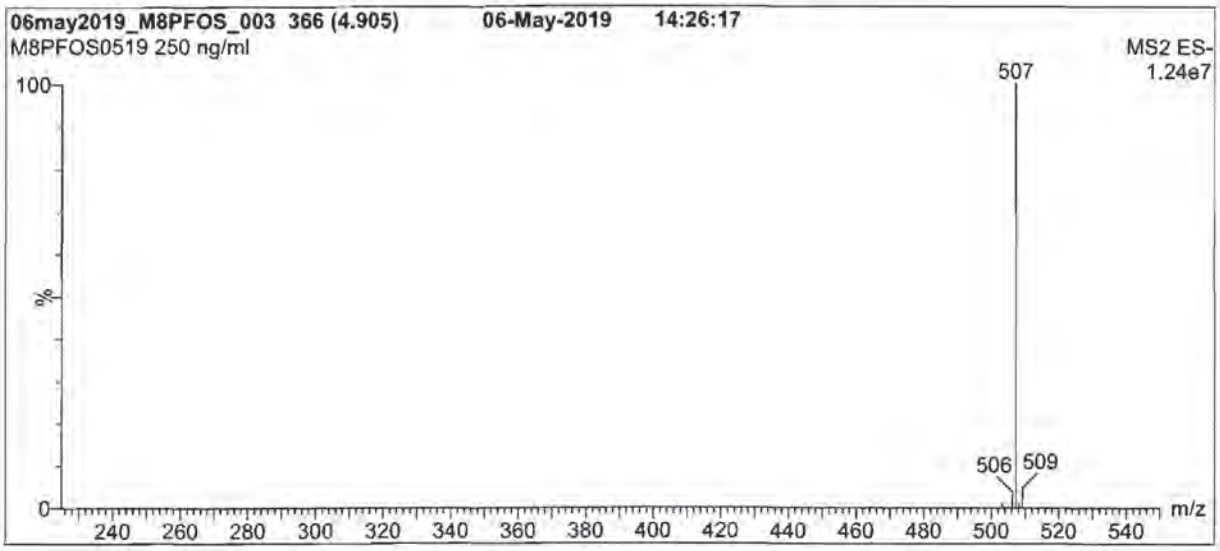
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M8PFOS0519 (4 of 4)
rev0

19L067

Figure 1: **M8PFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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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: 11 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M8PFOS0519 (3 of 4)
rev0

19L0617

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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 Reference Material Producer

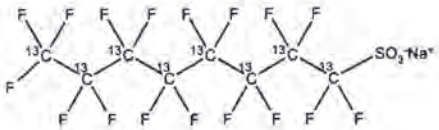
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0617

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8PFOS	**LOT NUMBER:**	M8PFOS0519
COMPOUND:	Sodium perfluoro-1-[$^{13}C_8$]octanesulfonate		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_6F_{17}SO_3Na$	**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 ($^{13}C_6$)
LAST TESTED: (mm/dd/yyyy)	05/06/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/06/2024		
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).

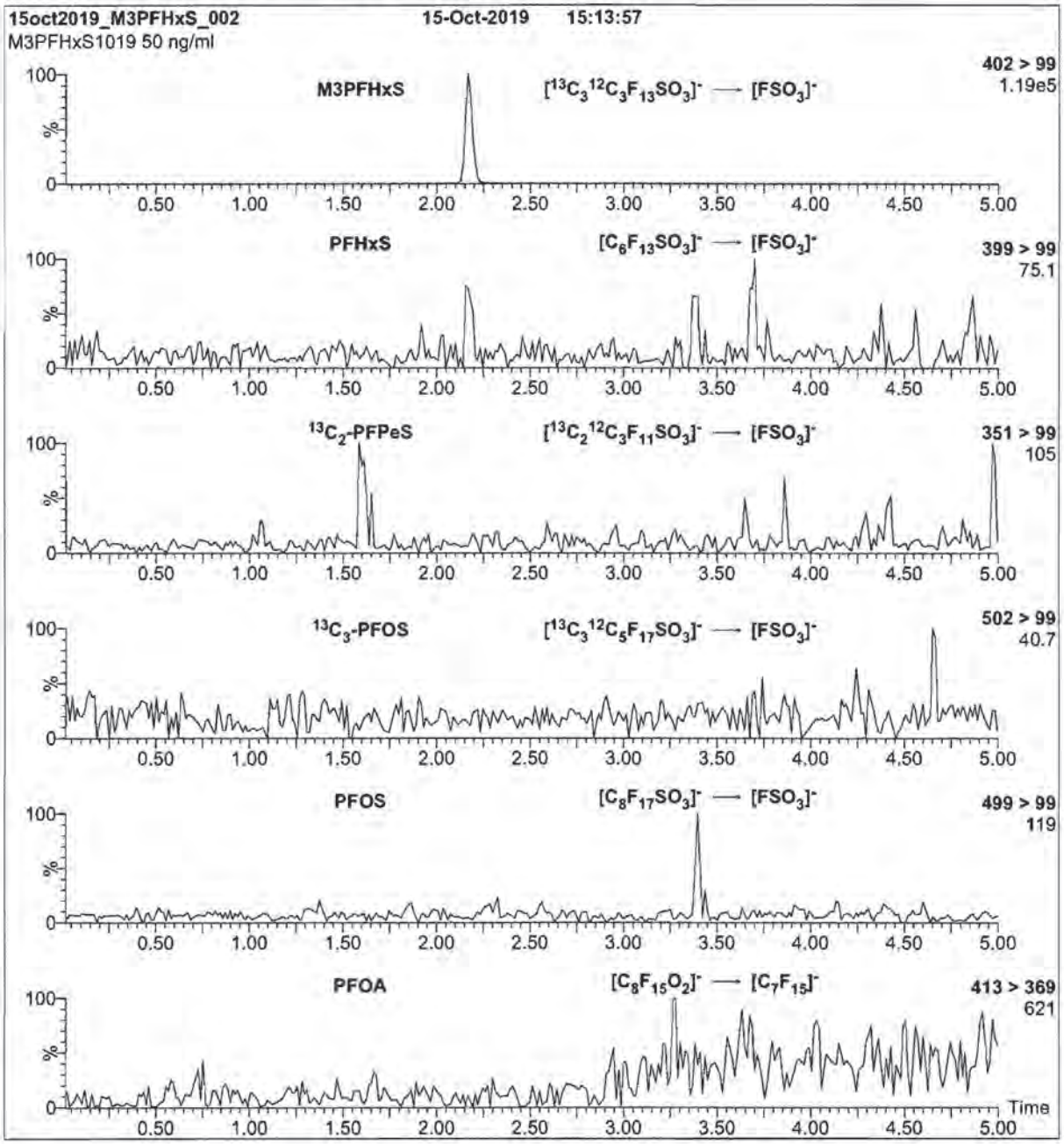
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/23/2019 (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

19L0618

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

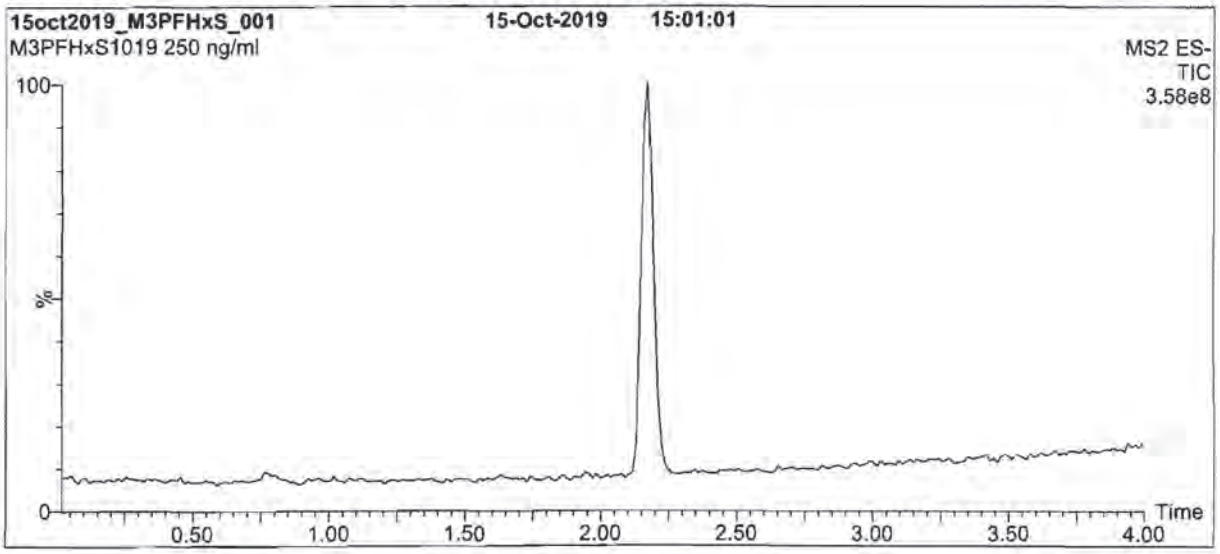
Collision Gas (mbar) = 3.91e-3
Collision Energy (eV) = 32

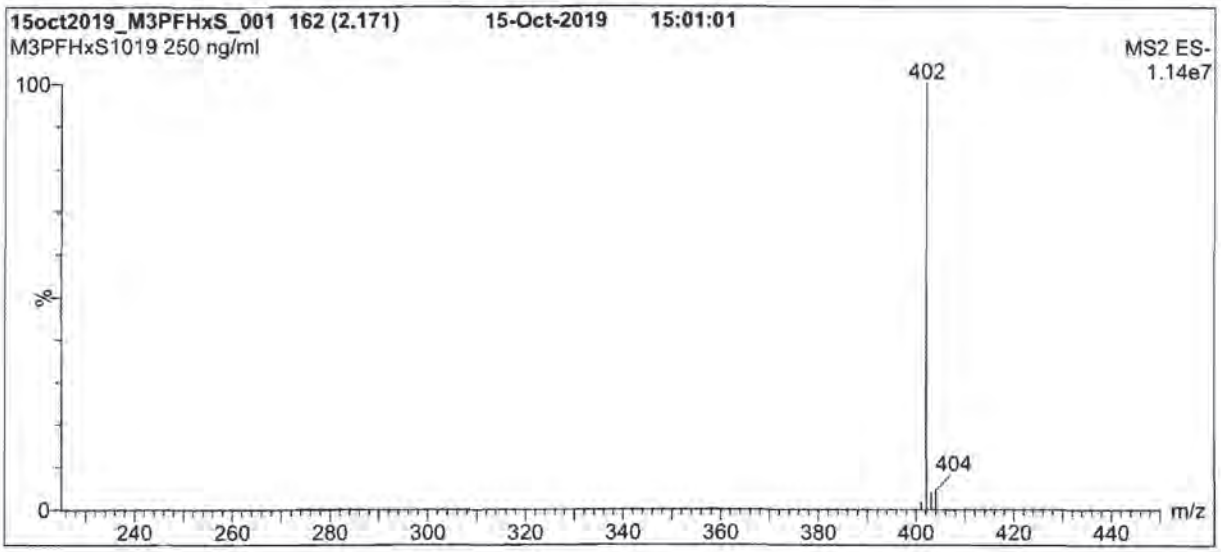
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFHxS1019 (4 of 4)
rev0

19LC0618

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: 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3PFHxS1019 (3 of 4)
rev0

19L0618

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 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

19L0e18

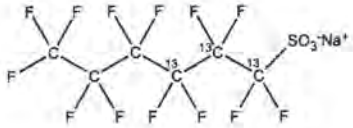
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFHxS **LOT NUMBER:** M3PFHxS1019

COMPOUND: Sodium perfluoro-1-[1,2,3-$^{13}C_3$]hexanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3F_{13}SO_3Na$	**MOLECULAR WEIGHT:**	425.07
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.3 ± 2.4 µg/ml (M3PFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3\text{-}^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	10/15/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/15/2024		
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:** 10/16/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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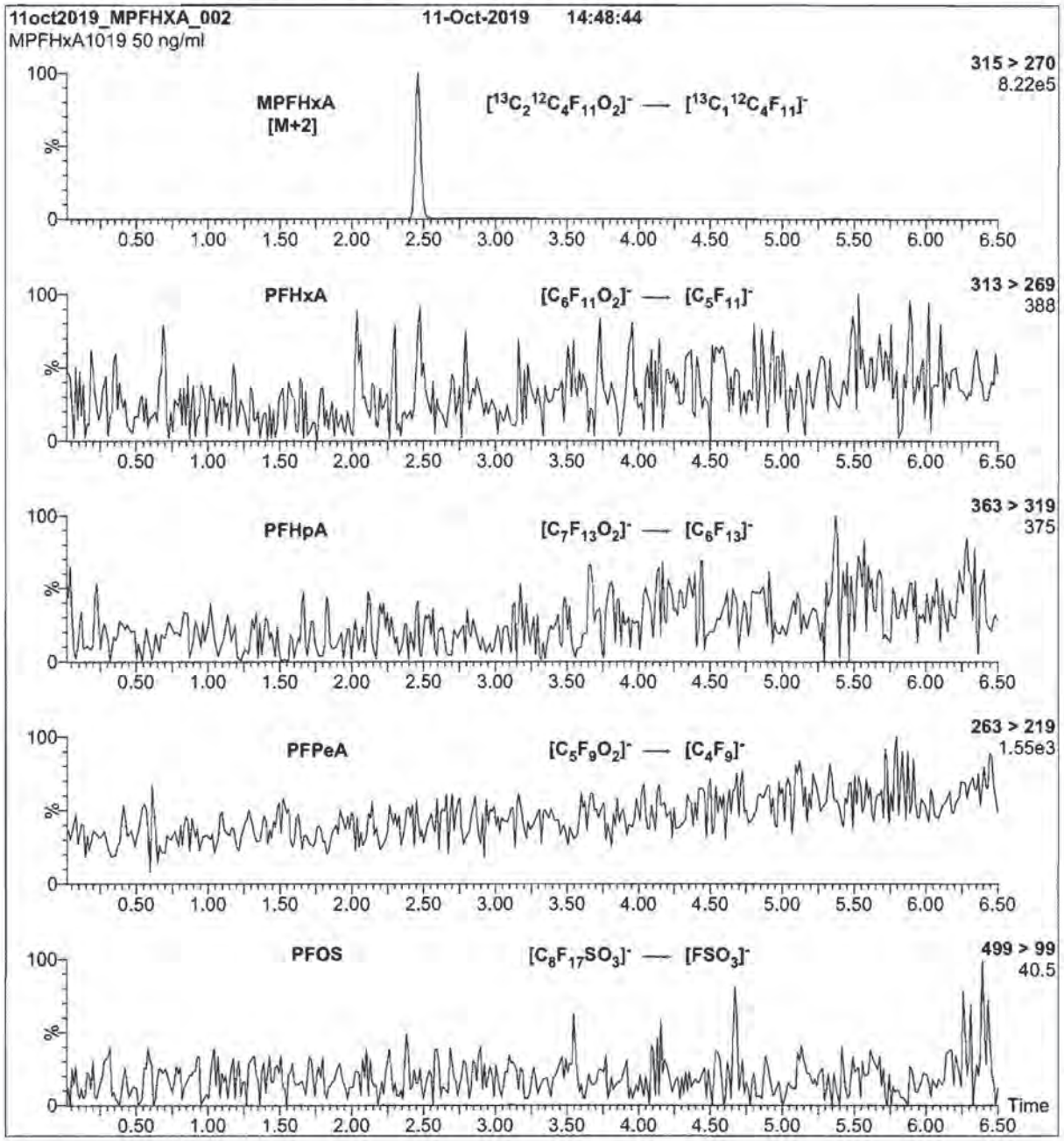
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0619

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

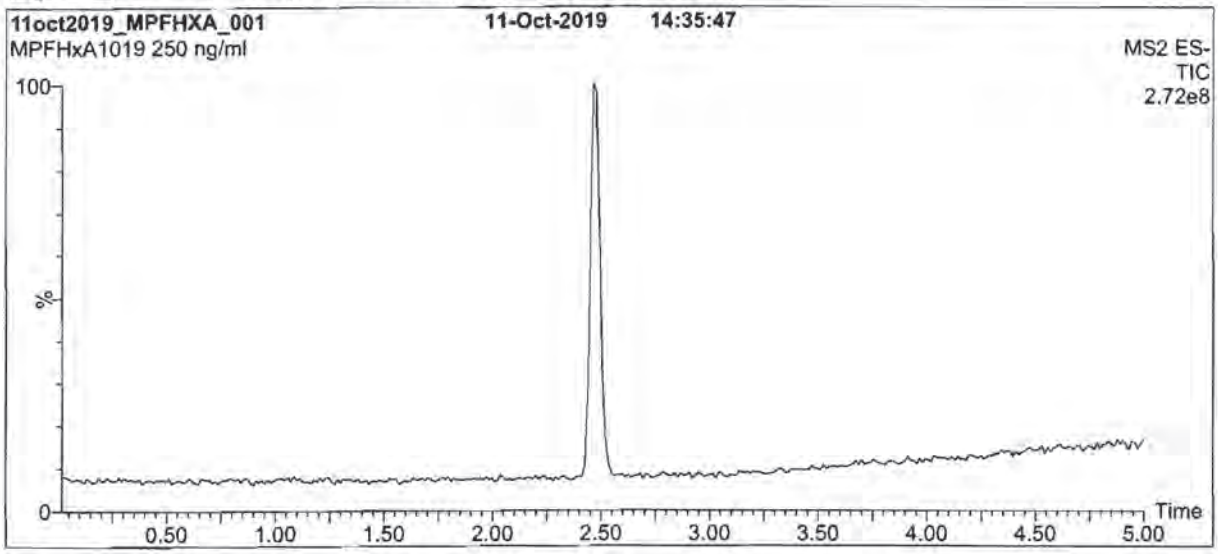
Collision Gas (mbar) = 3.80e-3
Collision Energy (eV) = 8

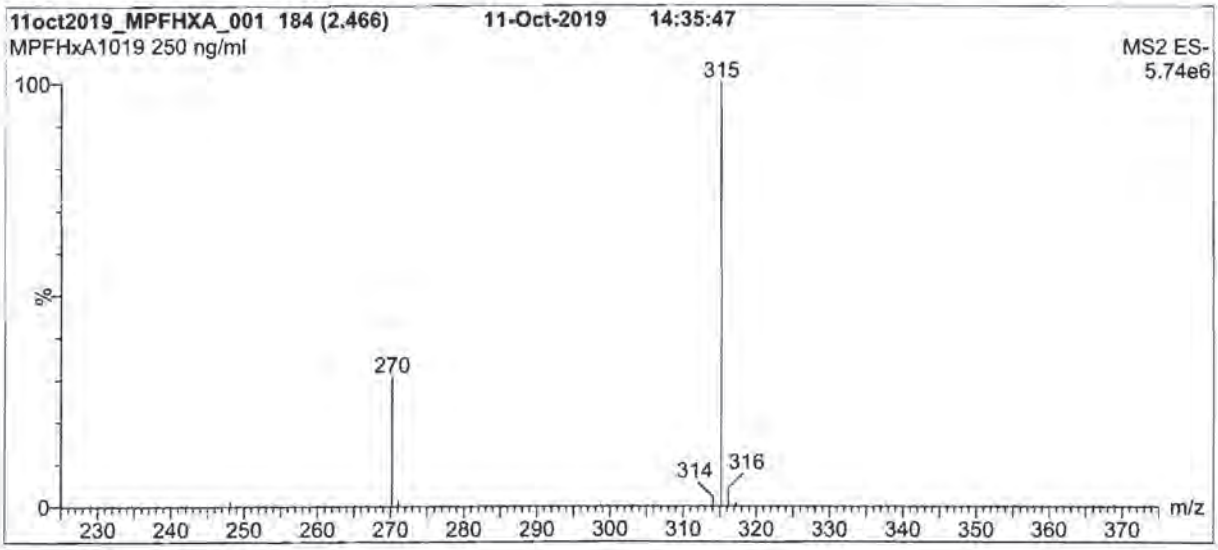
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFHxA1019 (4 of 4)
rev0

19L0619

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 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFHxA1019 (3 of 4)
rev0

19L0619

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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 REFERENCE MATERIAL PRODUCER

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19L0619

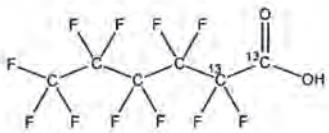
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid
LOT NUMBER: MPFHxA1019

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)	10/11/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2024		
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:** 10/22/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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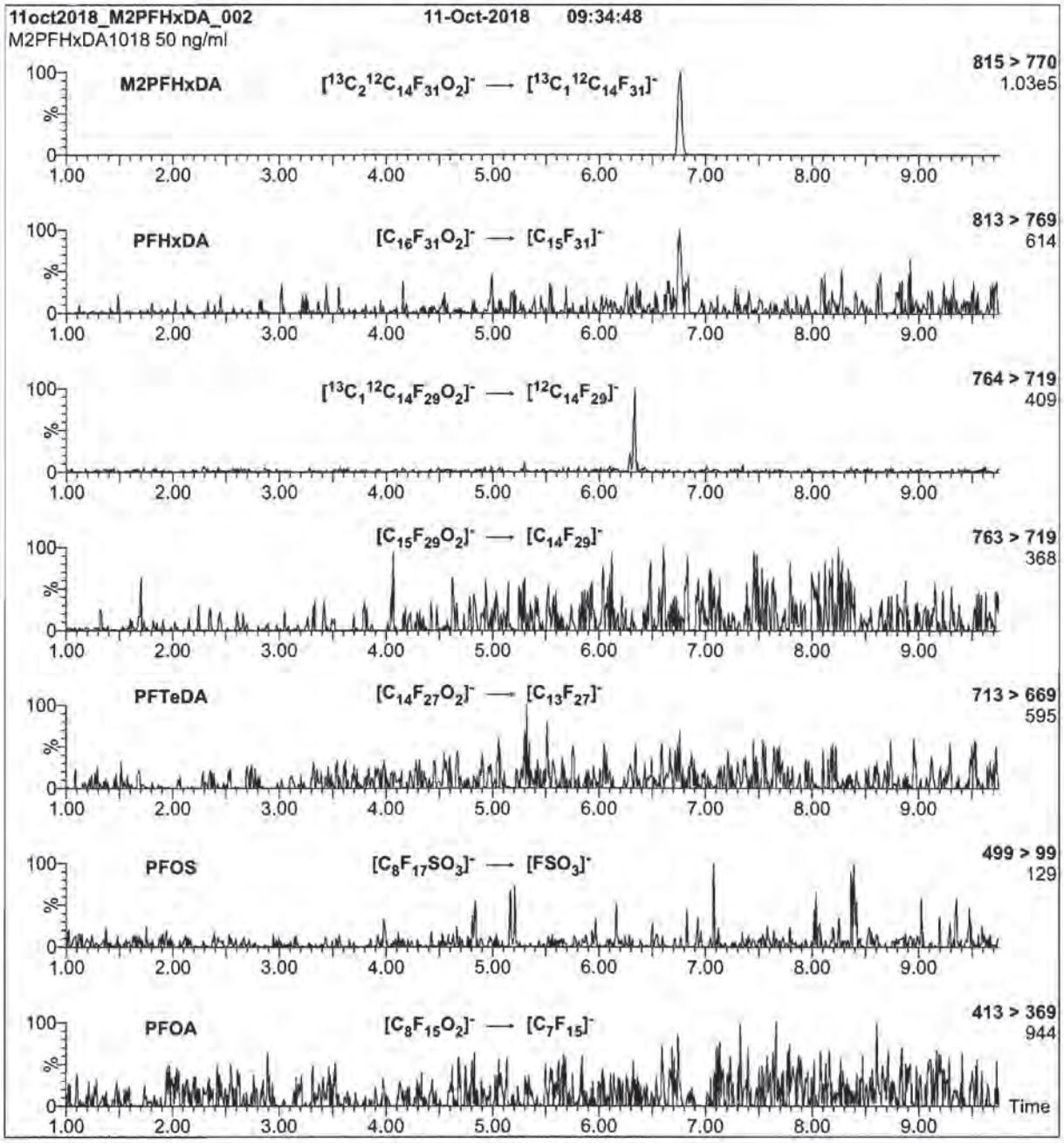
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0620

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

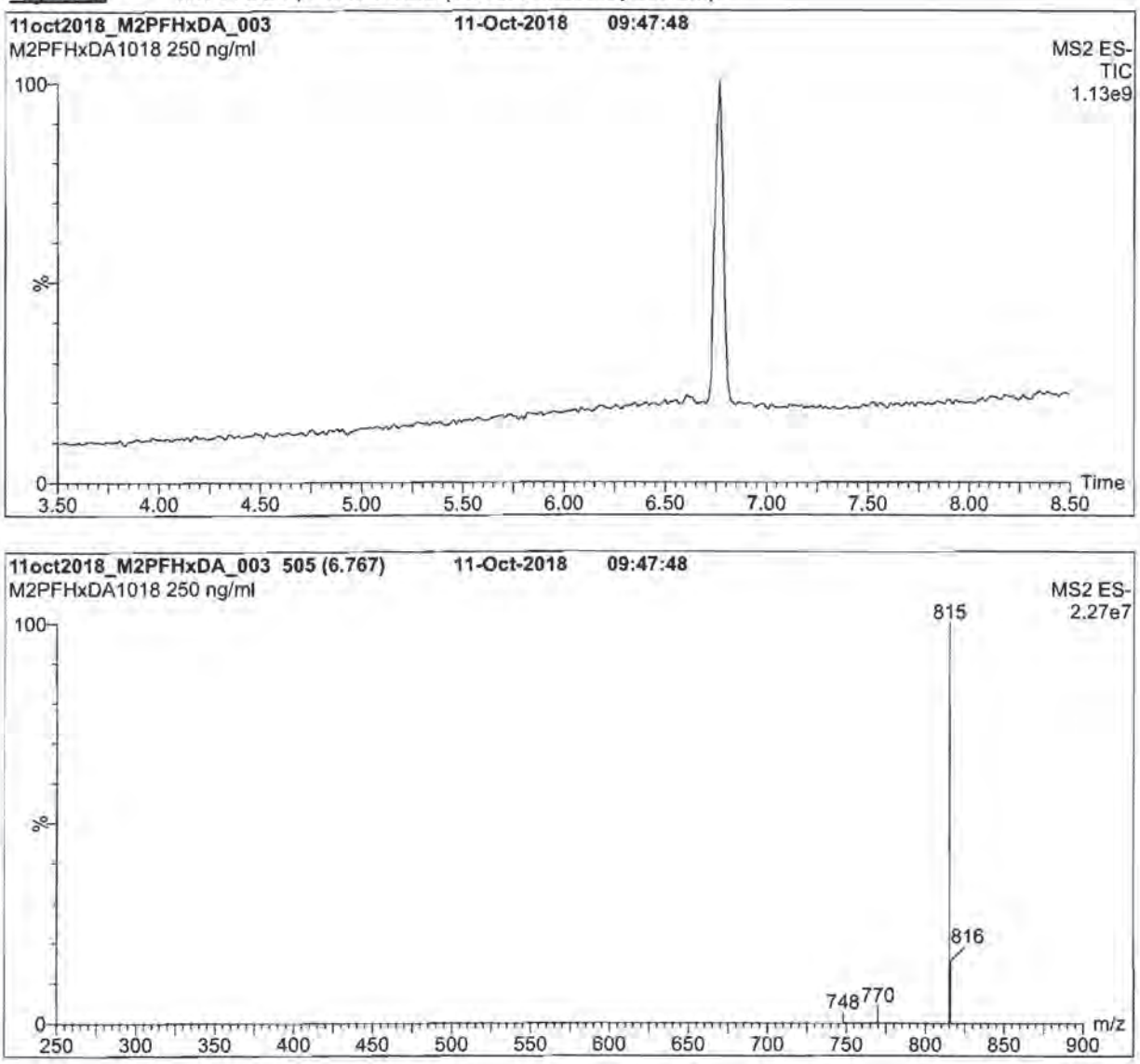
Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 15

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M2PFHxDA1018 (4 of 4)
rev0

19L0620

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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M2PFHxDA1018 (3 of 4)
rev0

19L0620

INTENDED USE:

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HANDLING:

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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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$$u_c(y(x_1, x_2, \ldots, x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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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 REFERENCE MATERIAL PRODUCER

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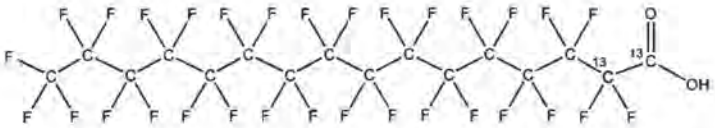
19L0620

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2PFHxDA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]hexadecanoic acid
LOT NUMBER: M2PFHxDA1018

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

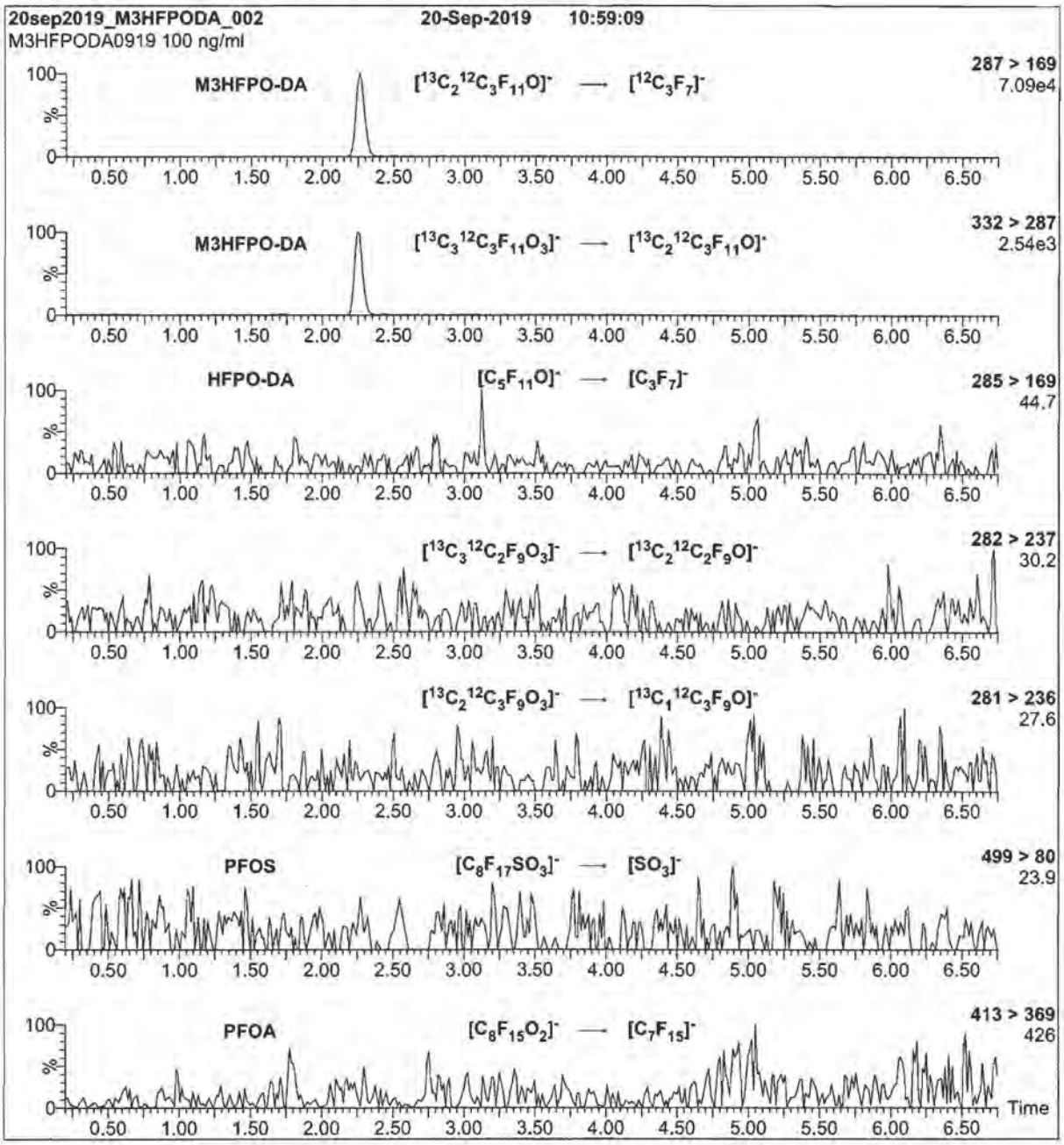
Certified By: _____ **Date:** 10/19/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0621

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

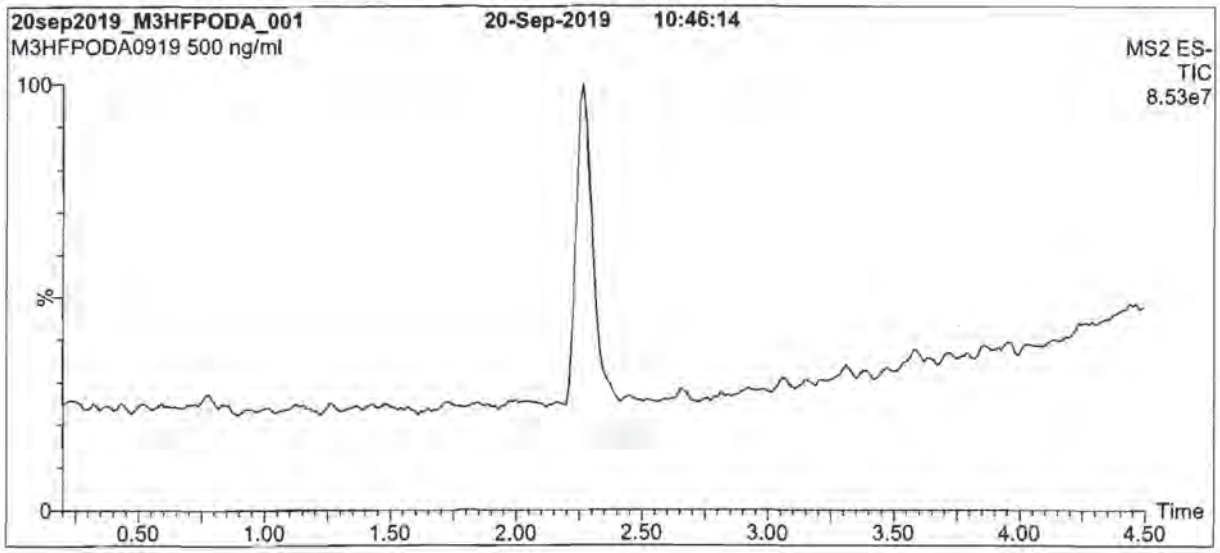
Collision Gas (mbar) = 3.60e-3
Collision Energy (eV) = 8

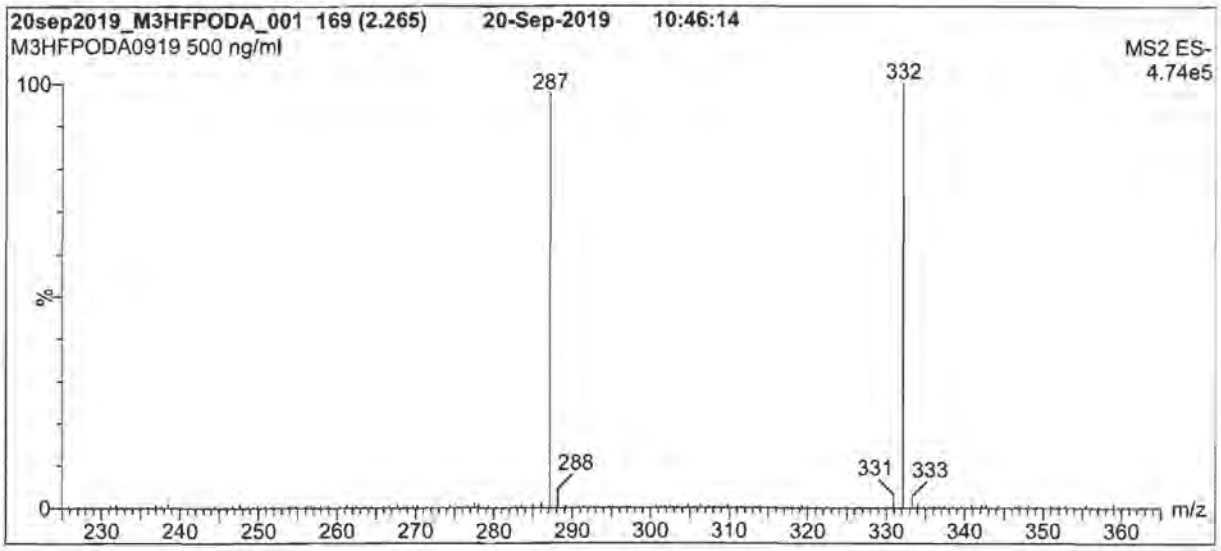
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3HFPODA0919 (4 of 4)
rev0

194621

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: 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) = 3.00
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M3HFPODA0919 (3 of 4)
rev0

19L0621

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 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

19L0621

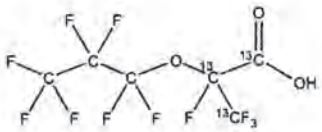
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA0919

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)	09/20/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/20/2022		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- 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:** 09/30/2019 (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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

Analytical Standard Record

Vista Analytical Laboratory

20A0803

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
19L0635	PFDoA	06-Dec-19	** Vendor **	23-Jan-24	0.4
19L0636	PFBA	06-Dec-19	** Vendor **	10-Jul-24	0.4
19L0637	PFPeA	06-Dec-19	** Vendor **	04-Sep-24	0.4
19L0638	PFHxA	06-Dec-19	** Vendor **	08-Aug-24	0.4
19L0639	PFDA	06-Dec-19	** Vendor **	01-May-24	0.4
19L0640	PFUdA	06-Dec-19	** Vendor **	19-Mar-24	0.4
19L0641	PFTrDA	06-Dec-19	** Vendor **	26-Sep-24	0.4
19L0642	PFHpA	06-Dec-19	** Vendor **	05-Mar-24	0.4
19L0643	PFOA	06-Dec-19	** Vendor **	06-Sep-24	0.4
19L0644	PFNA	06-Dec-19	** Vendor **	08-Jul-24	0.4
19L0645	PFTeDA	06-Dec-19	** Vendor **	11-Mar-24	0.4
19L0646	PFHxDA	06-Dec-19	** Vendor **	03-Nov-24	0.4
19L0647	PFODA	06-Dec-19	** Vendor **	02-May-24	0.4
19L0648	L-PFBS	06-Dec-19	** Vendor **	10-Jul-24	0.454
19L0649	L-PFPeS	06-Dec-19	** Vendor **	08-Jul-24	0.428
19L0650	L-PFHpS	06-Dec-19	** Vendor **	16-Aug-24	0.42
19L0651	L-PFNS	06-Dec-19	** Vendor **	06-Aug-24	0.418
19L0652	L-PFDS	06-Dec-19	** Vendor **	04-Apr-24	0.415
19L0653	br-PFHxSK	06-Dec-19	** Vendor **	02-Oct-23	0.44
19L0654	br-PFOSK anion	06-Dec-19	** Vendor **	07-Jun-24	0.431
19L0655	4:2 FTS	06-Dec-19	** Vendor **	08-May-24	0.43
19L0656	6:2FTS	06-Dec-19	** Vendor **	09-Sep-24	0.422
19L0657	8:2FTS	06-Dec-19	** Vendor **	11-Sep-24	0.418
19L0658	FOSA-I	06-Dec-19	** Vendor **	12-Sep-24	0.4
19L0659	br-NMeFOSAA	06-Dec-19	** Vendor **	08-Jan-24	0.4
19L0660	br-NEtFOSAA	06-Dec-19	** Vendor **	20-Aug-24	0.4
19L0661	N-MeFOSA-M	06-Dec-19	** Vendor **	07-May-24	2
19L0662	N-EtFOSA-M	06-Dec-19	** Vendor **	07-May-24	2
19L0663	N-MeFOSE-M	06-Dec-19	** Vendor **	08-Apr-24	2
19L0664	N-EtFOSE-M	06-Dec-19	** Vendor **	08-Apr-24	2
19L0665	10:2FTS	06-Dec-19	** Vendor **	11-Jun-22	0.415
19L0666	HFPO-DA	06-Dec-19	** Vendor **	20-Sep-22	0.4
19L0667	11Cl-PF3OUdS	06-Dec-19	** Vendor **	23-Nov-24	0.425
19L0668	9Cl-PF3ONS	06-Dec-19	** Vendor **	30-Oct-24	0.43
19L0669	NaDONA	06-Dec-19	** Vendor **	15-Jul-24	0.425
19L0670	PFECHS	06-Dec-19	** Vendor **	04-Apr-24	0.435
19L0671	L-PFPrS	06-Dec-19	** Vendor **	14-Dec-24	0.438
19L1707	L-PFDoS	17-Dec-19	** Vendor **	06-Dec-23	0.415

Analytical Standard Record

Vista Analytical Laboratory

20A0803

Description:	PFC NS Stock	Expires:	07-Jan-21
Standard Type:	Analyte Spike	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 14:18 by BML

Analyte	CAS Number	Concentration	Units
L-PFHpA		1	ug/mL
L-PFOS		0.789	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
10:2 FTS	120226-60-0	1	ug/mL
L-PFDoS		1	ug/mL
cis-PFECHS		0.668	ug/mL
11Cl-PF3OUdS	763051-92-9	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
9Cl-PF3ONS	756426-58-1	1	ug/mL
ADONA	919005-14-4	1	ug/mL
Br-EtFOSAA		0.224	ug/mL
Br-MeFOSAA		0.24	ug/mL
L-EtFOSE	1691-99-2	5	ug/mL
Br-PFOS	2795-39-3	0.211	ug/mL
L-PFOSA		1	ug/mL
EtFOSA	4151-50-2	5	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

20A0803

Description:	PFC NS Stock	Expires:	07-Jan-21
Standard Type:	Analyte Spike	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 14:18 by BML

Analyte	CAS Number	Concentration	Units
EtFOSAA	2991-50-6	1	ug/mL
EtFOSE	1691-99-2	5	ug/mL
F-53B Total		2	ug/mL
HFPO-DA	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
Br-PFHxS	3871-99-6	0.189	ug/mL
Total 6:2 FTS		1	ug/mL
L-PFODA		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
PFNS	68259-12-1	1	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFNA	375-95-1	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
L-PFPeA		1	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

20A0803

Description:	PFC NS Stock	Expires:	07-Jan-21
Standard Type:	Analyte Spike	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 14:18 by BML

Analyte	CAS Number	Concentration	Units
L-PFUnA		1	ug/mL
MeFOSA	31506-32-8	5	ug/mL
MeFOSAA	2355-31-9	1	ug/mL
MeFOSE	24448-09-7	5	ug/mL
PFOA	335-67-1	1	ug/mL
PFBS	375-73-5	1	ug/mL
trans-PFECHS		0.335	ug/mL
PFDoA	307-55-1	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
PFHxS	355-46-4	1	ug/mL
PFBA	375-22-4	1	ug/mL

19L0635

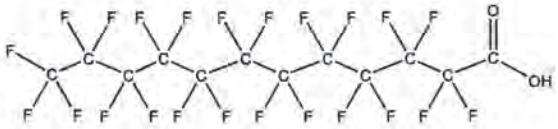
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFDoA
COMPOUND: Perfluoro-n-dodecanoic acid
LOT NUMBER: PFDoA0119

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) 01/23/2019
EXPIRY DATE: (mm/dd/yyyy) 01/23/2024
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:** 01/30/2019 (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

19L0635

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).

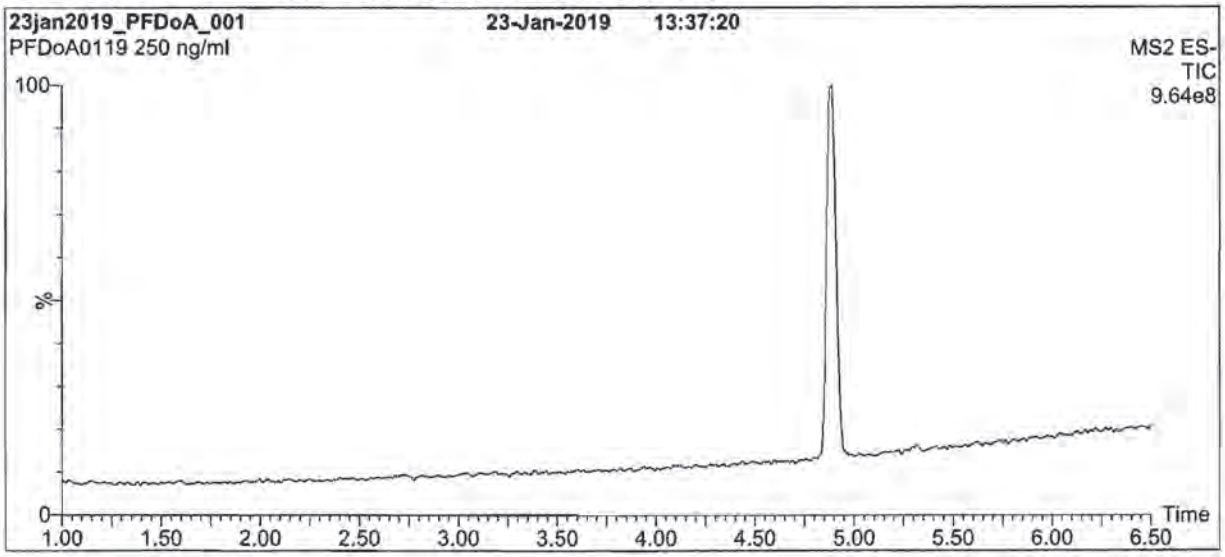
CALA Testing Accreditation No. A 1226

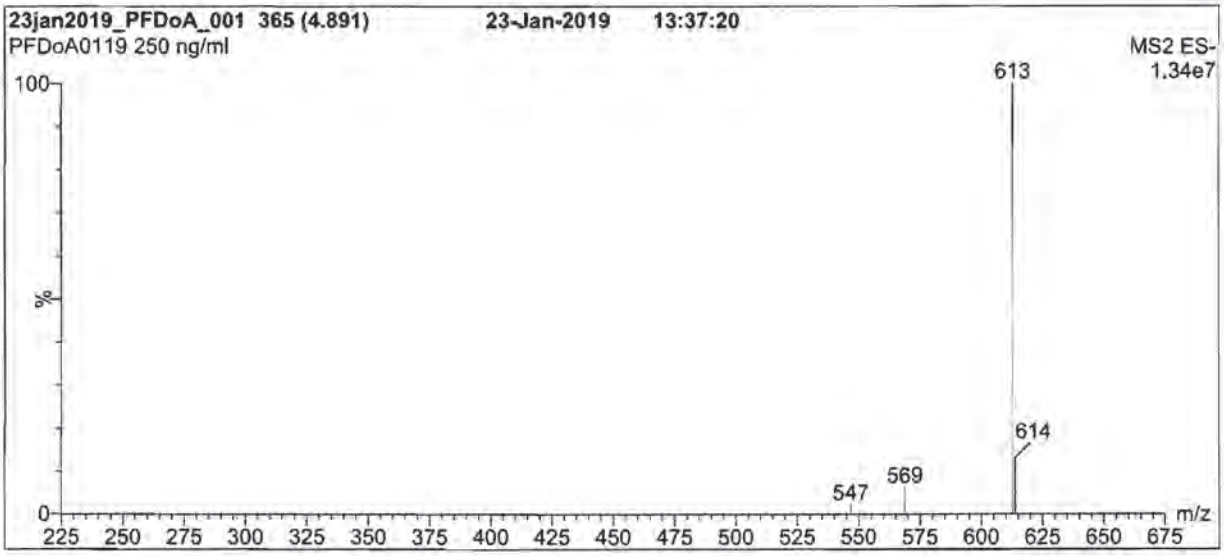
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

19L0635

- **Figure 1: PFDoA; 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) = 2.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 500
Desolvation Gas Flow (l/hr) = 1000

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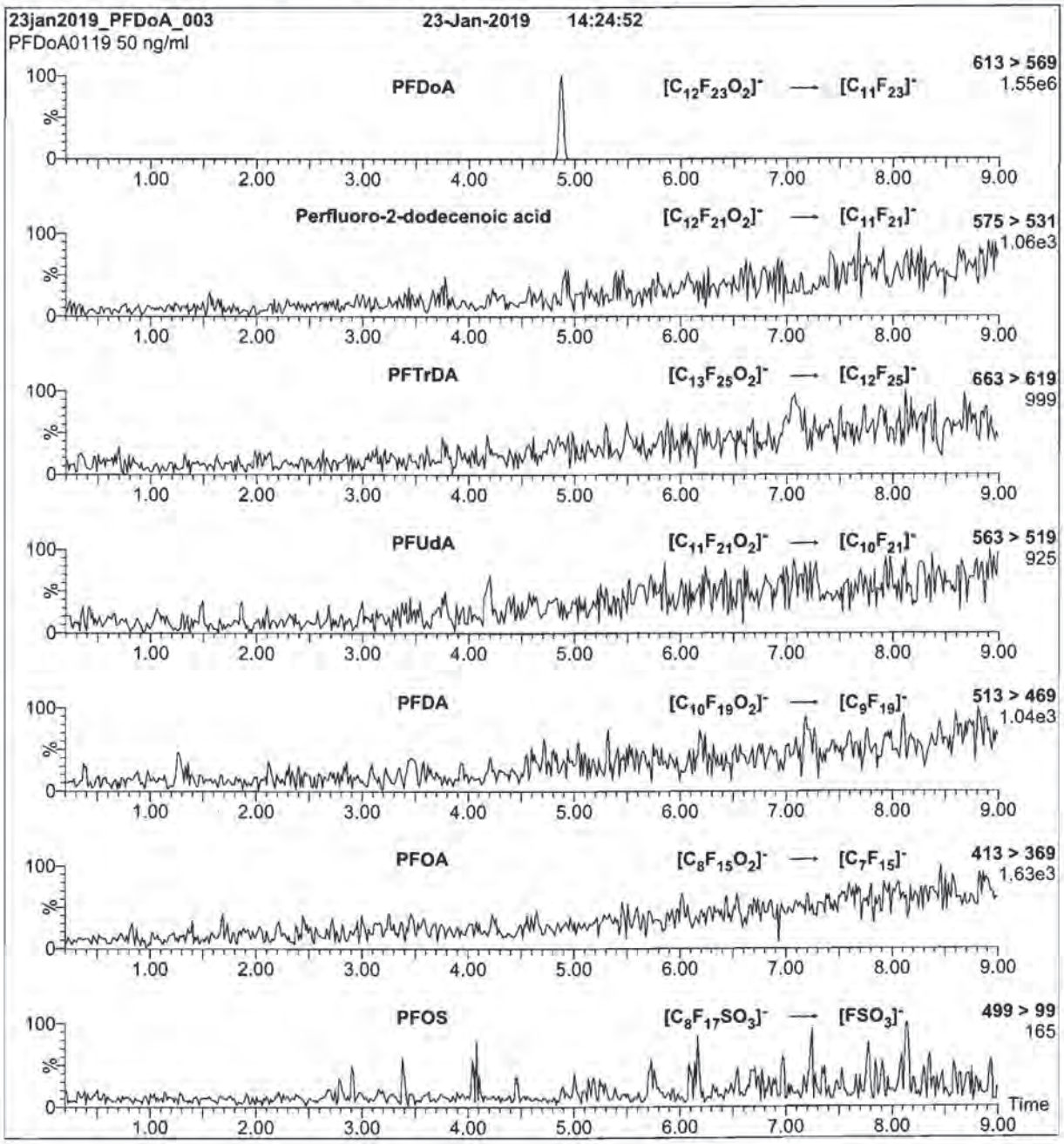
Revision#:6, Revised 2018-08-14

PFDoA0119 (3 of 4)
rev0

19L0635

Figure 2: **PFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFDoA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

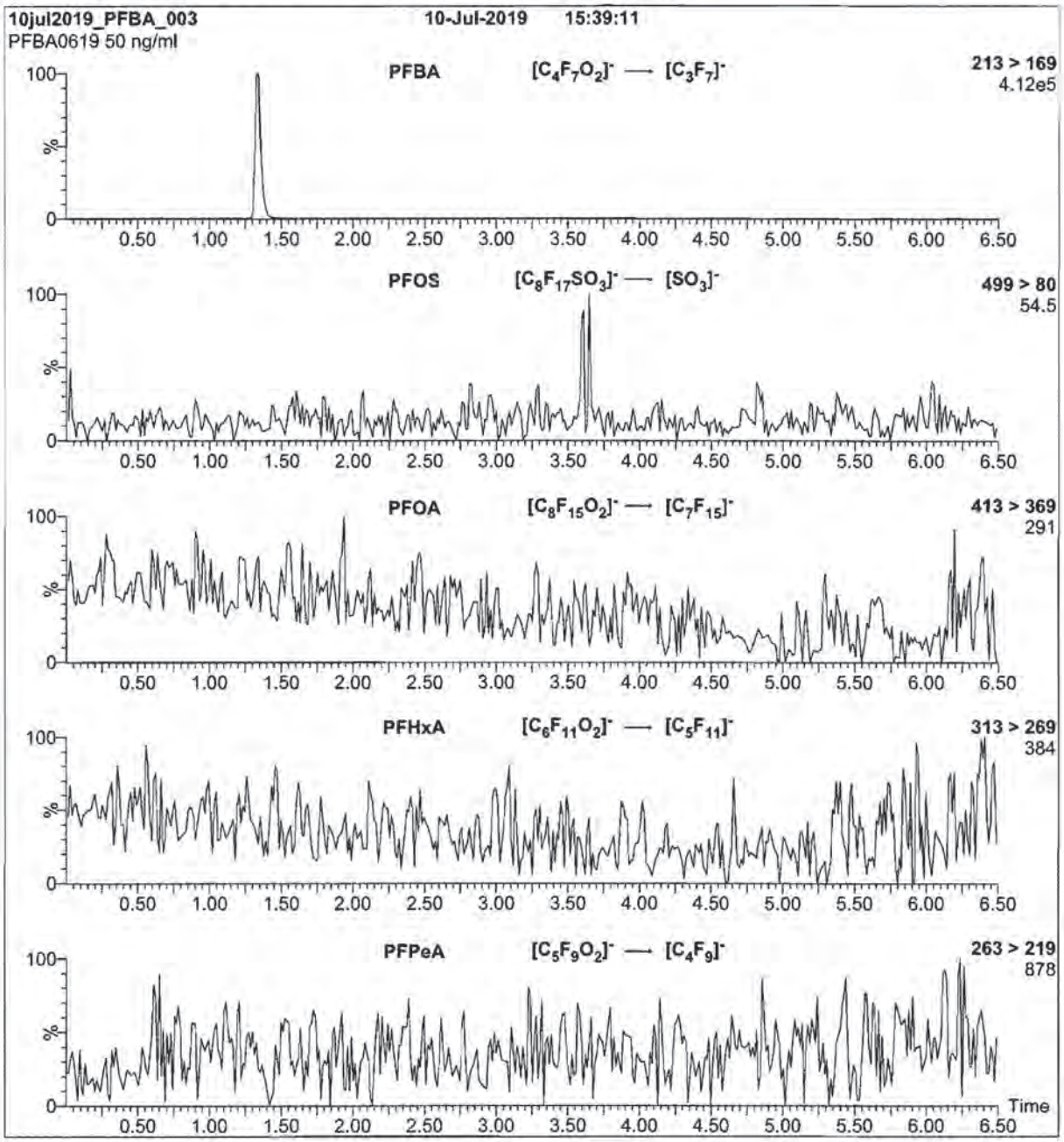
Collision Gas (mbar) = 2.72e-3
Collision Energy (eV) = 12

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFDoA0119 (4 of 4)
rev0

19L0636

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

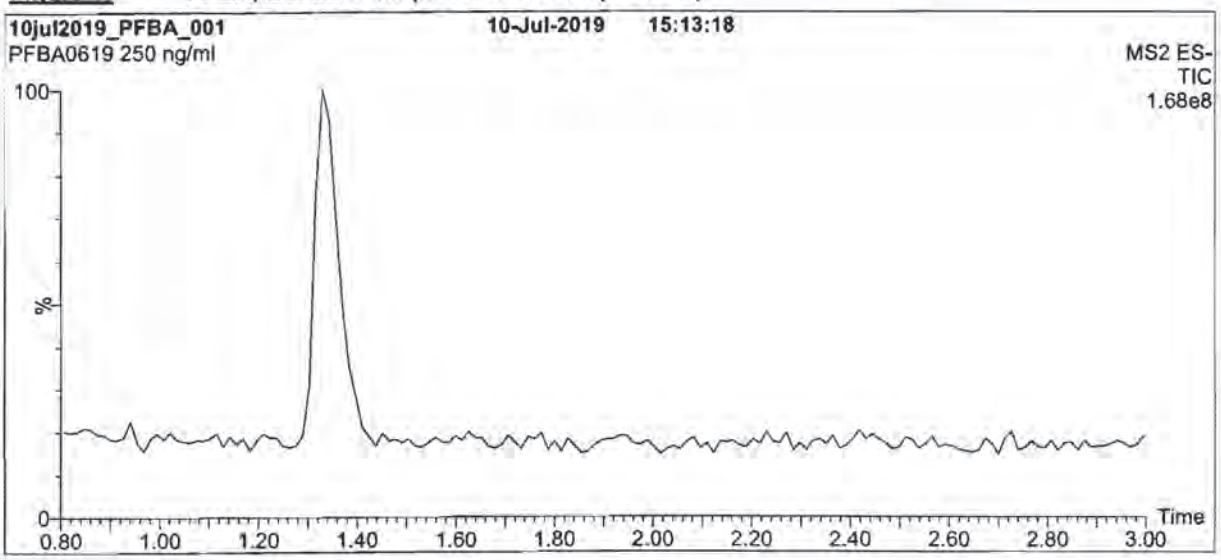
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 8

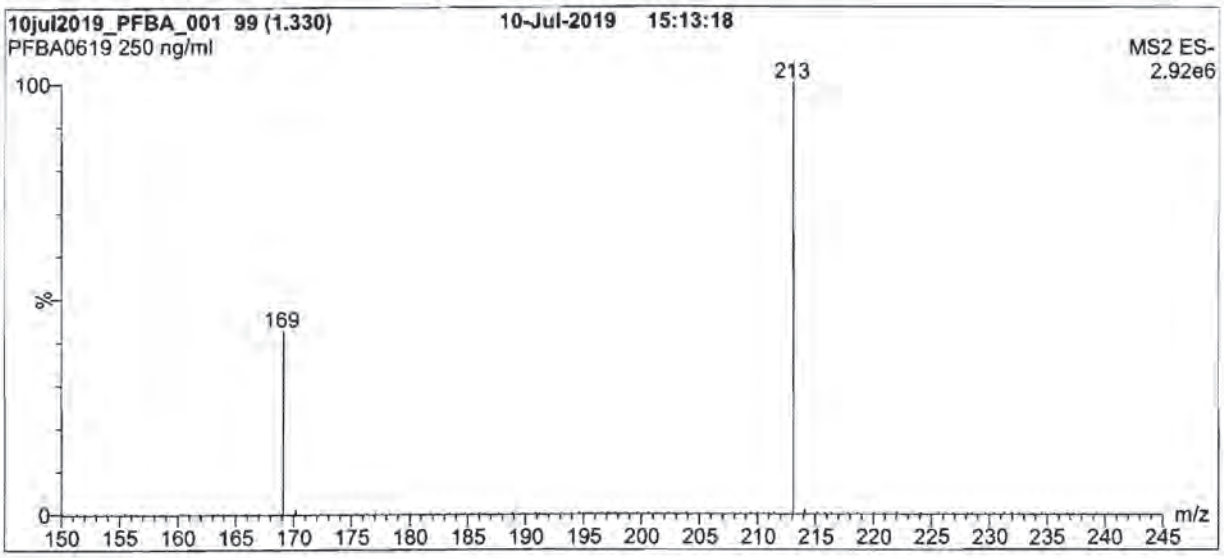
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFBA0619 (4 of 4)
rev0

1910636

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 70% organic over 7 min.
Ramp to 90% organic over 2 min and hold for
1.5 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFBA0619 (3 of 4)
rev0

19L0636

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 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 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

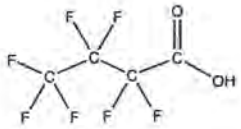
19L0636

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFBA
COMPOUND: Perfluoro-n-butanoic acid
LOT NUMBER: PFBA0619

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) 07/10/2019
EXPIRY DATE: (mm/dd/yyyy) 07/10/2024
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:** 07/22/2019 (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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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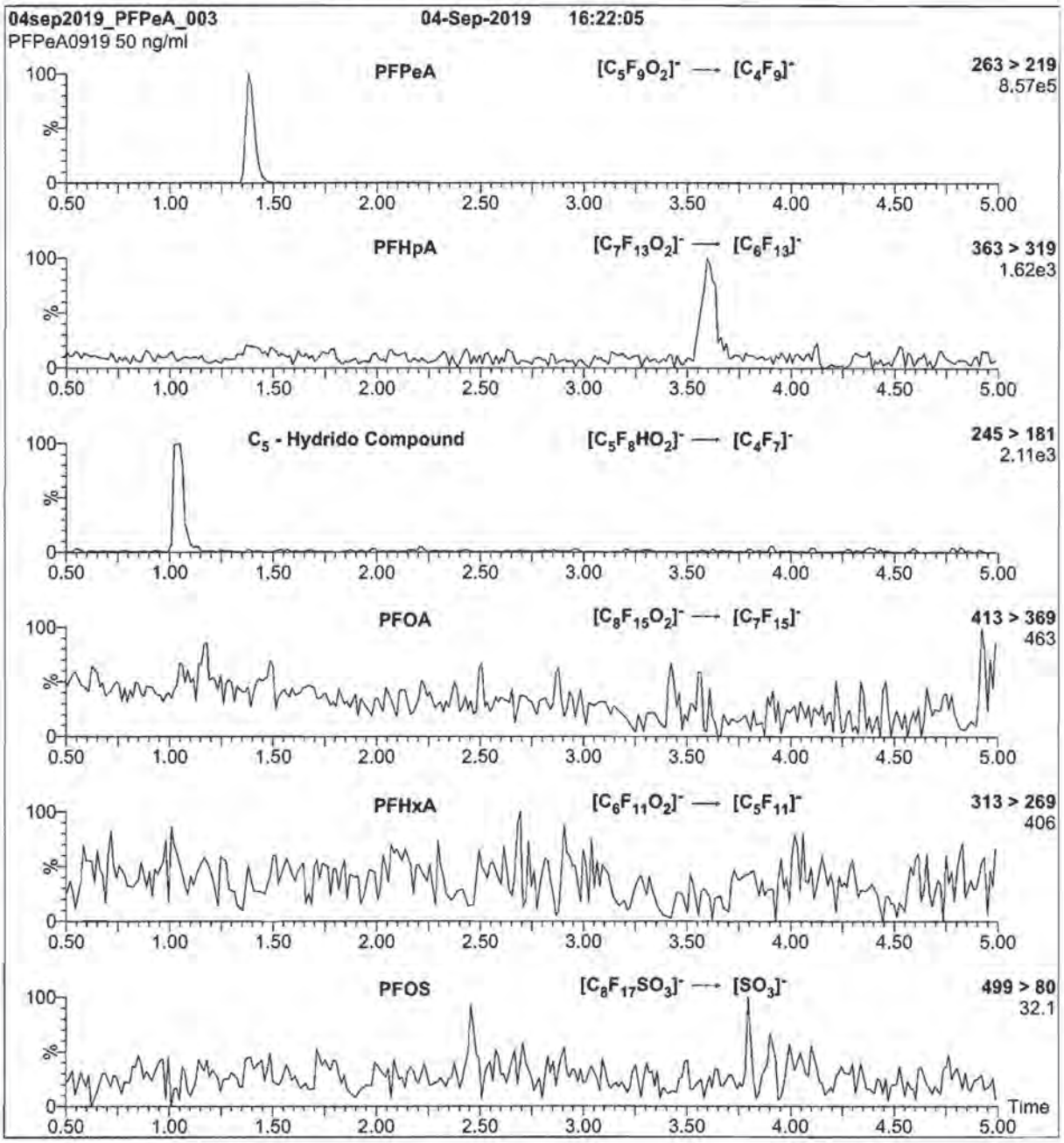
Figure 2: **PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

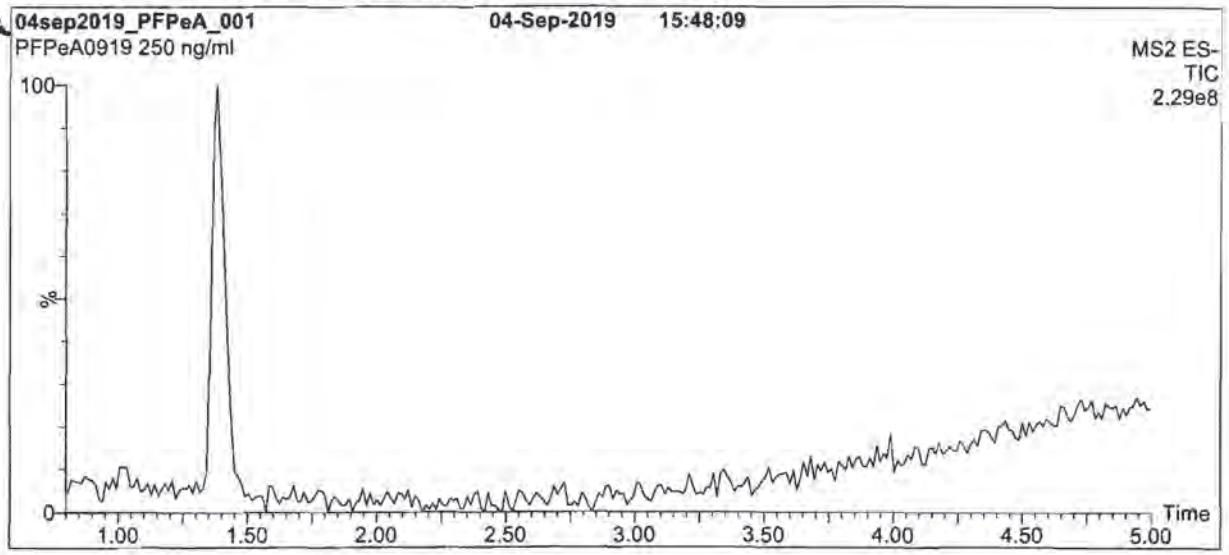
Collision Gas (mbar) = 3.51e-3
Collision Energy (eV) = 8

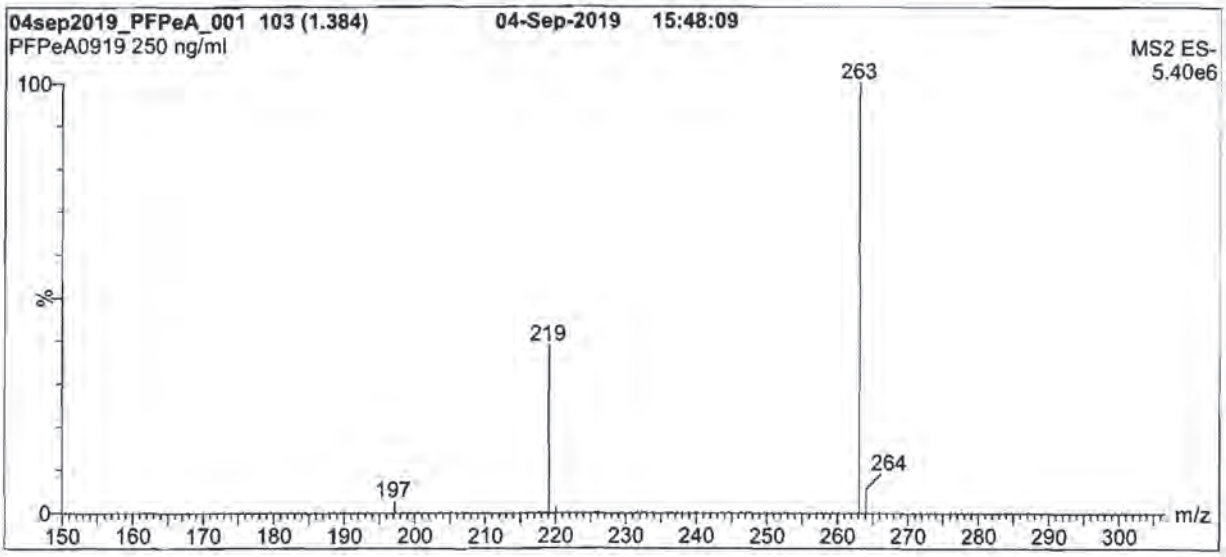
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFPeA0919 (4 of 4)
rev0

1920637

Figure 1: **PFPeA; 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 (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

PFPeA0919 (3 of 4)
rev0

1910637

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:

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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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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 REFERENCE MATERIAL PRODUCER

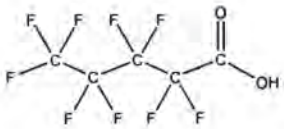
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0637

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFPeA	**LOT NUMBER:**	PFPeA0919
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)	09/04/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/04/2024		
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.

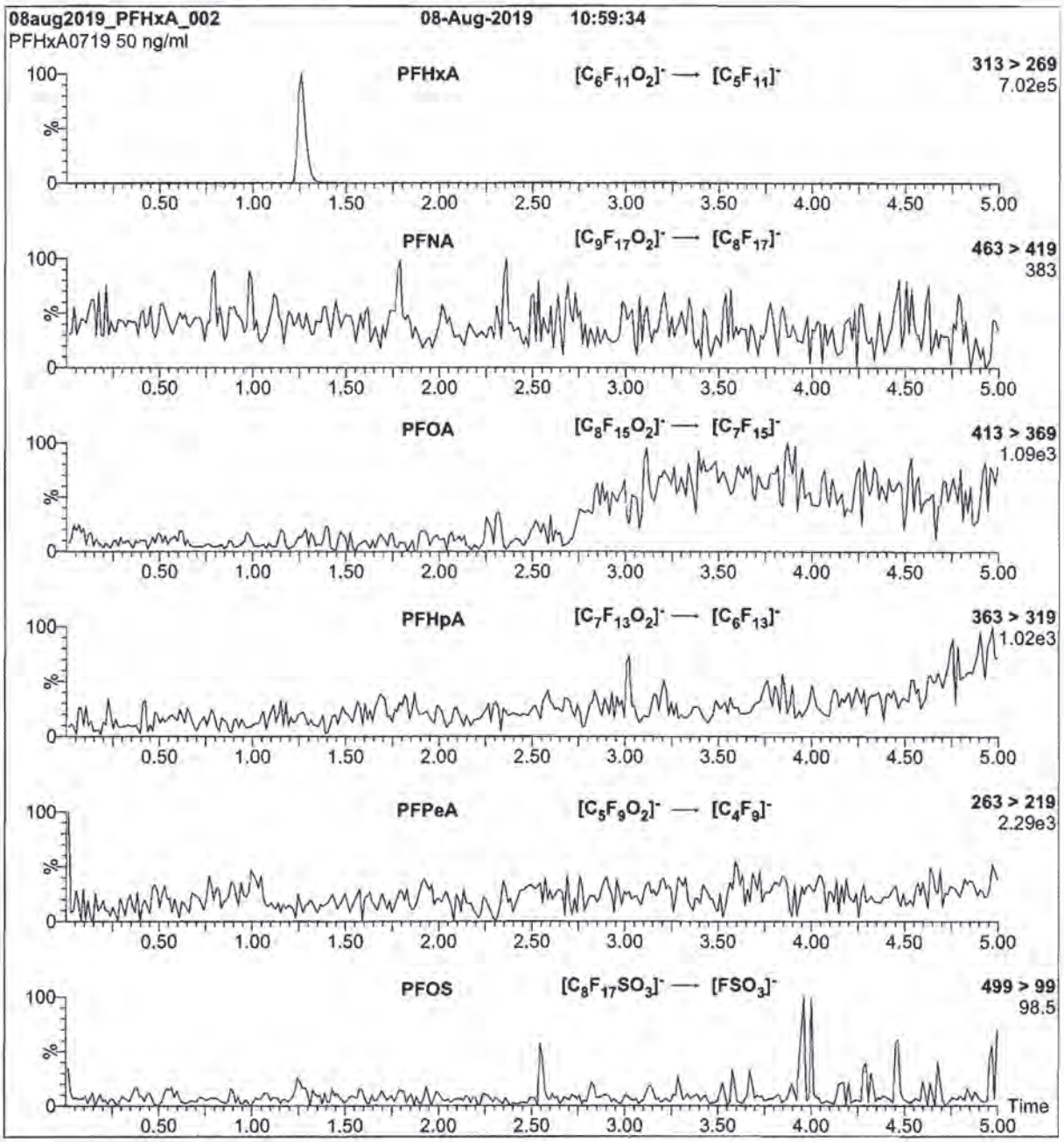
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/05/2019 (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

19L0638

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

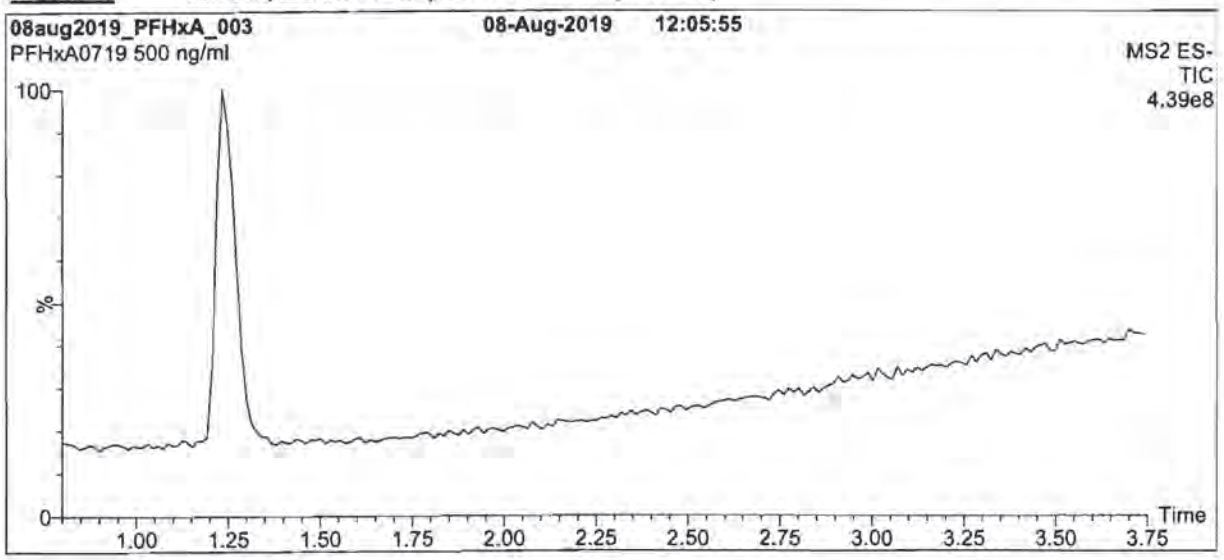
Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 8

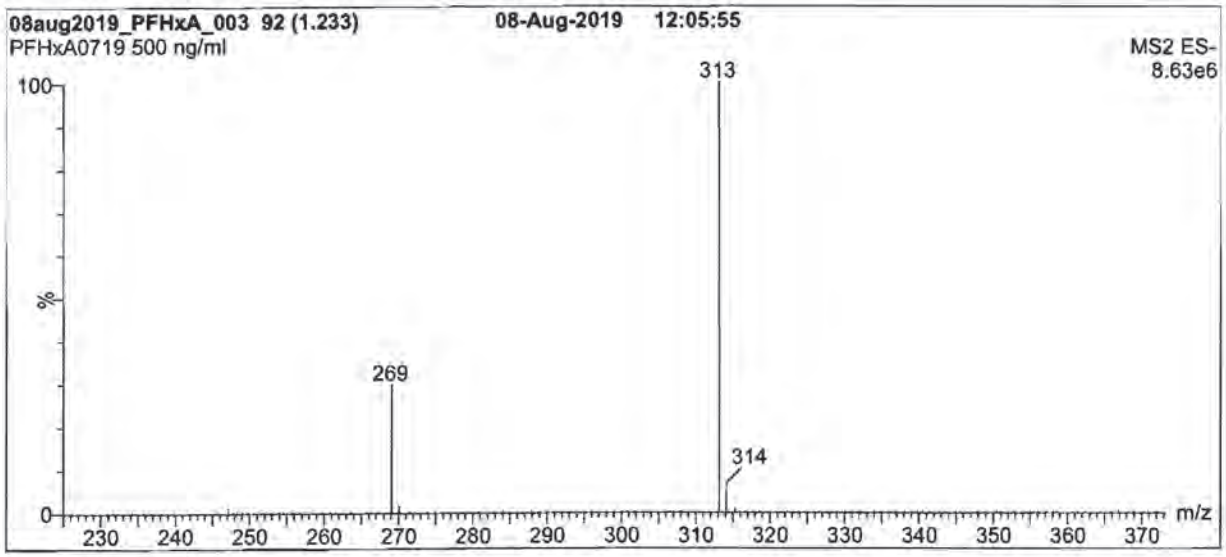
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFHxA0719 (4 of 4)
rev0

19L0638

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: 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFHxA0719 (3 of 4)
rev0

19L0638

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where x is expressed as a relative standard uncertainty of the individual parameter.

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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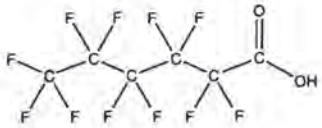
19L0638

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxA
COMPOUND: Perfluoro-n-hexanoic acid
LOT NUMBER: PFHxA0719

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) 08/08/2019
EXPIRY DATE: (mm/dd/yyyy) 08/08/2024
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.

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Certified By: B.G. Chittim, General Manager **Date:** 08/15/2019 (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

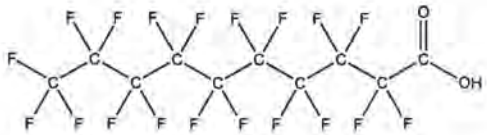
19L0639

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFDA
COMPOUND: Perfluoro-n-decanoic acid
LOT NUMBER: PFDA0419

STRUCTURE:
CAS #: 335-76-2



MOLECULAR FORMULA: $C_{10}HF_{19}O_2$
MOLECULAR WEIGHT: 514.08
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/01/2019
EXPIRY DATE: (mm/dd/yyyy) 05/01/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/02/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Revision#:6, Revised 2018-08-14

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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:

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).

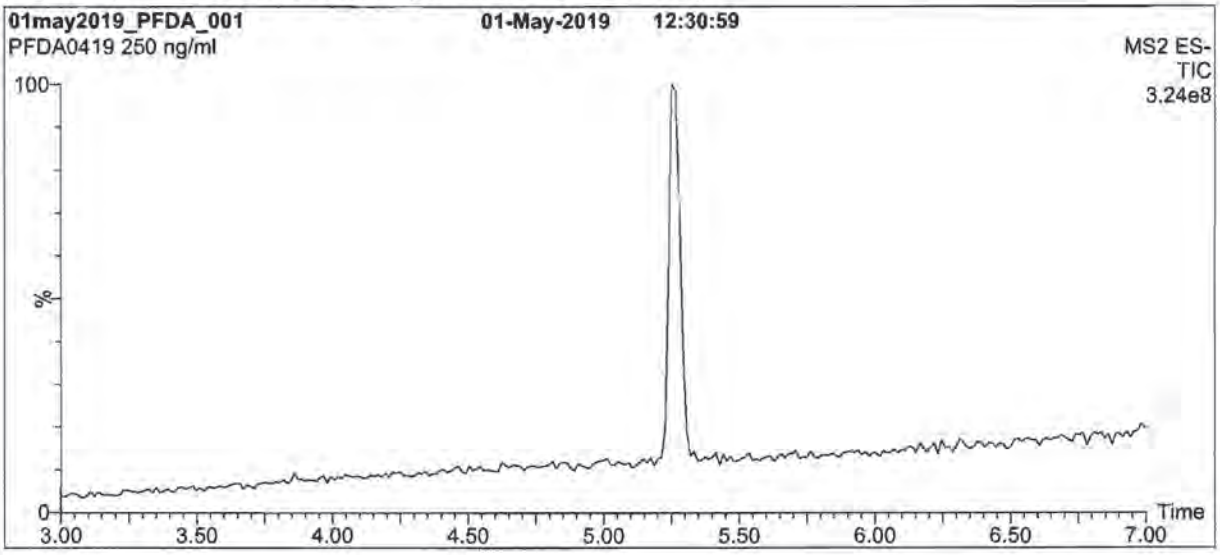
CALA Testing Accreditation No. A 1226

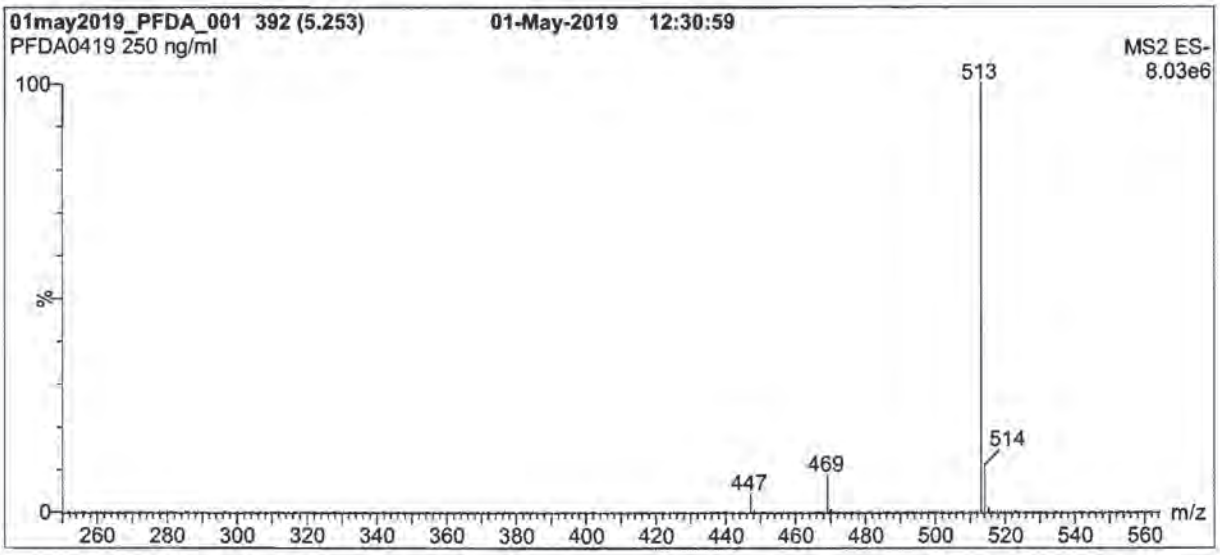
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

19L0639

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: 11 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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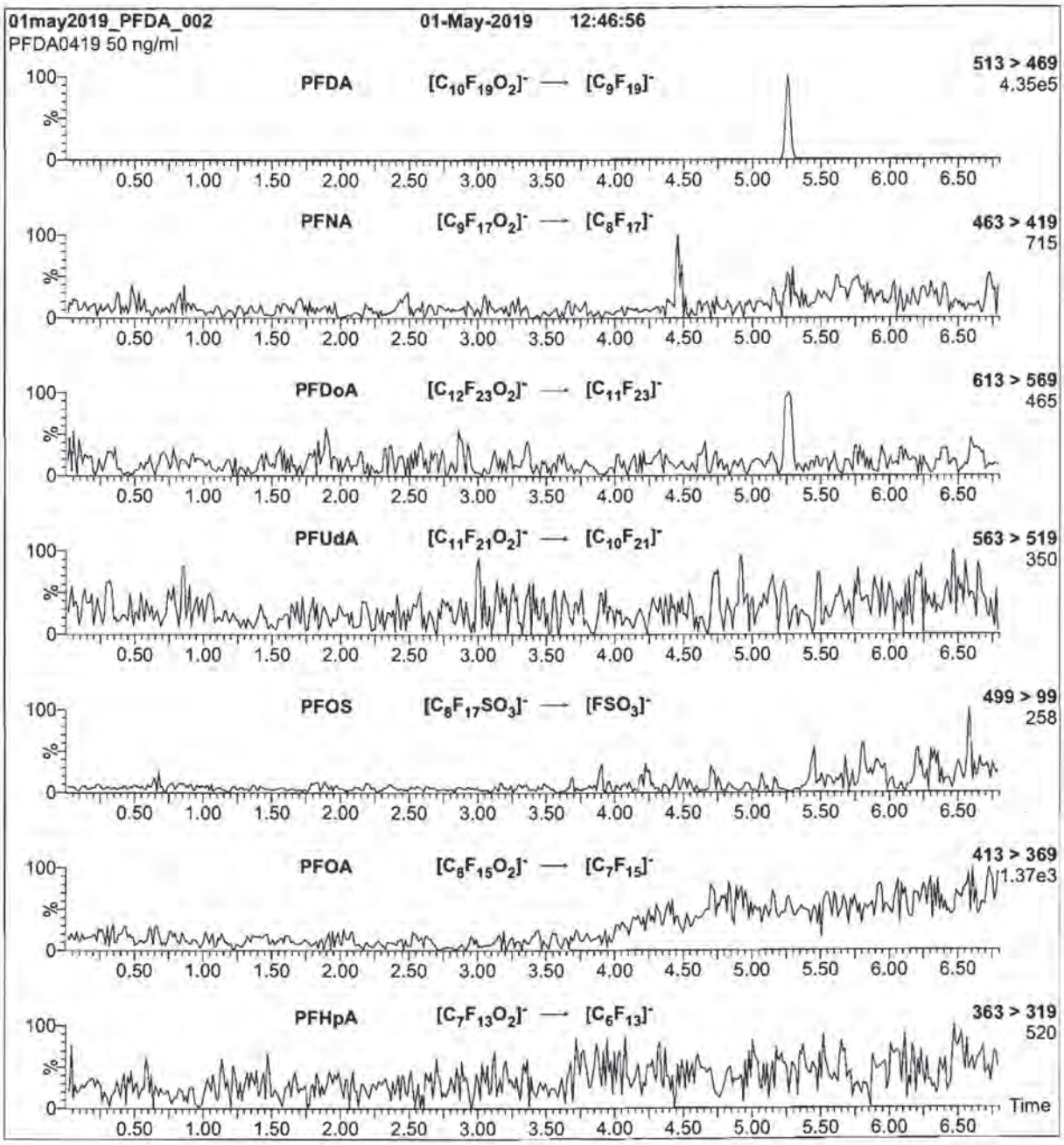
PFDA0419 (3 of 4)
rev0

19L0639

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

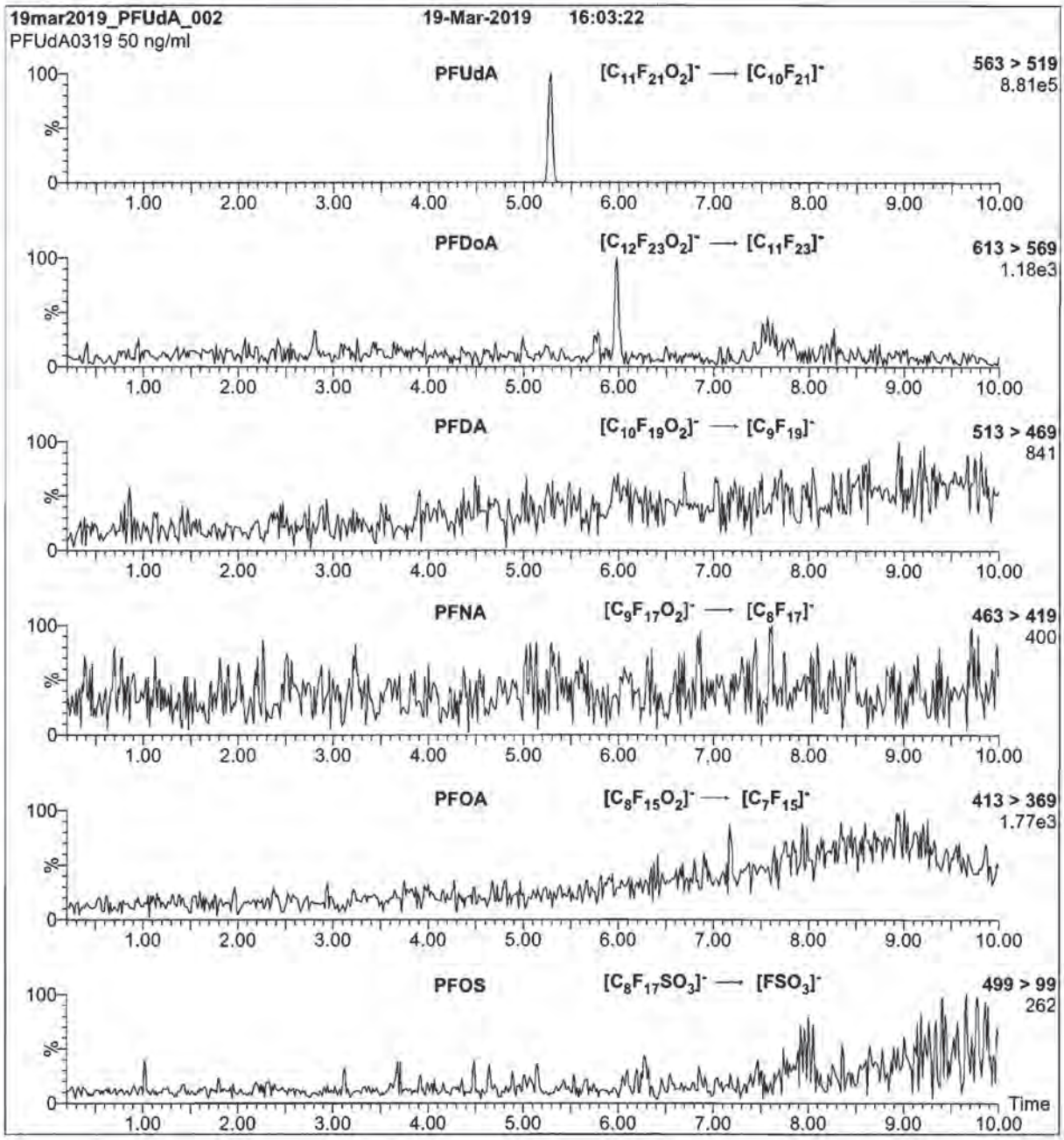
Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 10

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

PFDA0419 (4 of 4)
rev0

19L0640

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

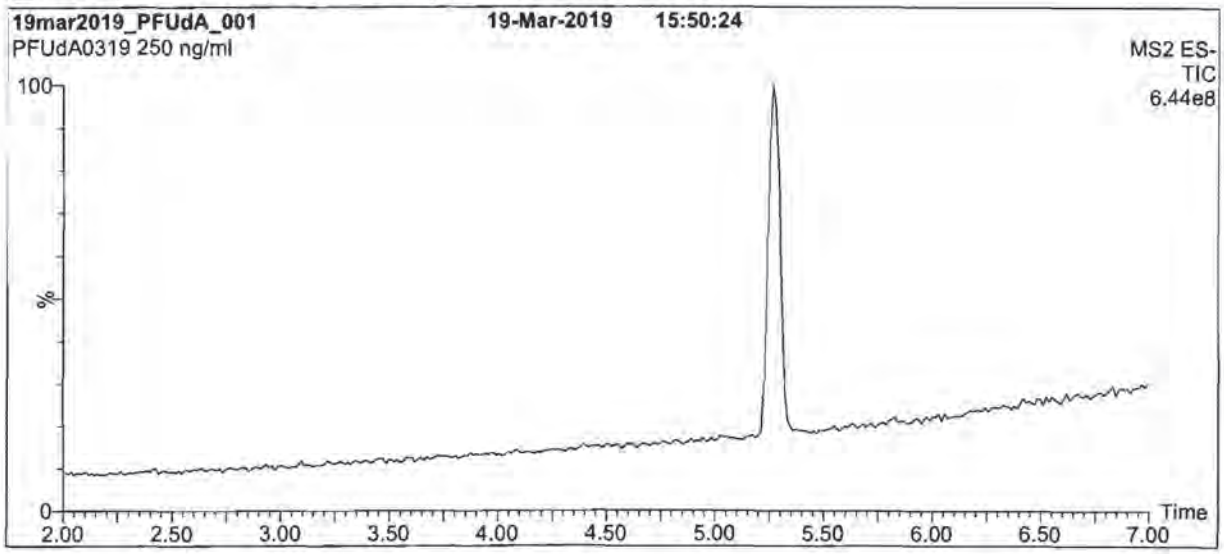
Collision Gas (mbar) = 3.04e-3
Collision Energy (eV) = 12

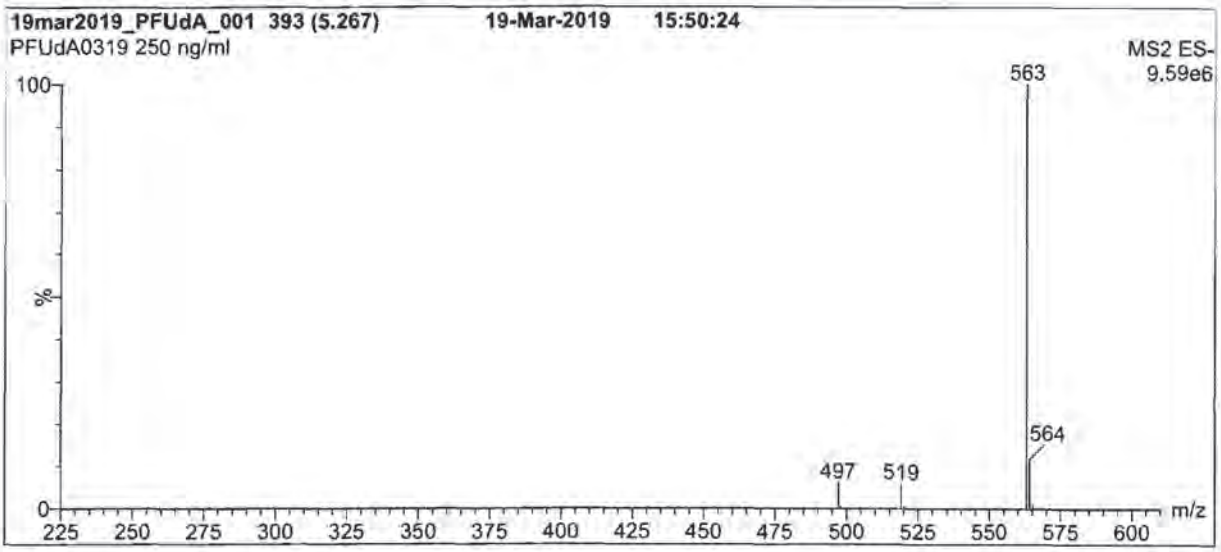
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFUdA0319 (4 of 4)
rev0

19L0640

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: 55% (80:20 MeOH:ACN) / 45% 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFUdA0319 (3 of 4)
rev0

19L0640

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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$$u_c(y(x_1, x_2, ... x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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. A1226

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1910640

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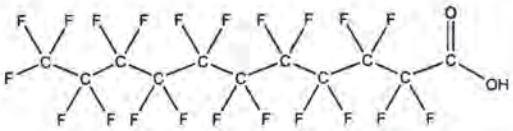
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFUdA
COMPOUND: Perfluoro-n-undecanoic acid
LOT NUMBER: PFUdA0319

STRUCTURE:
CAS #: 2058-94-8



MOLECULAR FORMULA: $C_{11}HF_{21}O_2$
MOLECULAR WEIGHT: 564.09
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/19/2019
EXPIRY DATE: (mm/dd/yyyy) 03/19/2024
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 pefluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 03/21/2019 (mm/dd/yyyy)

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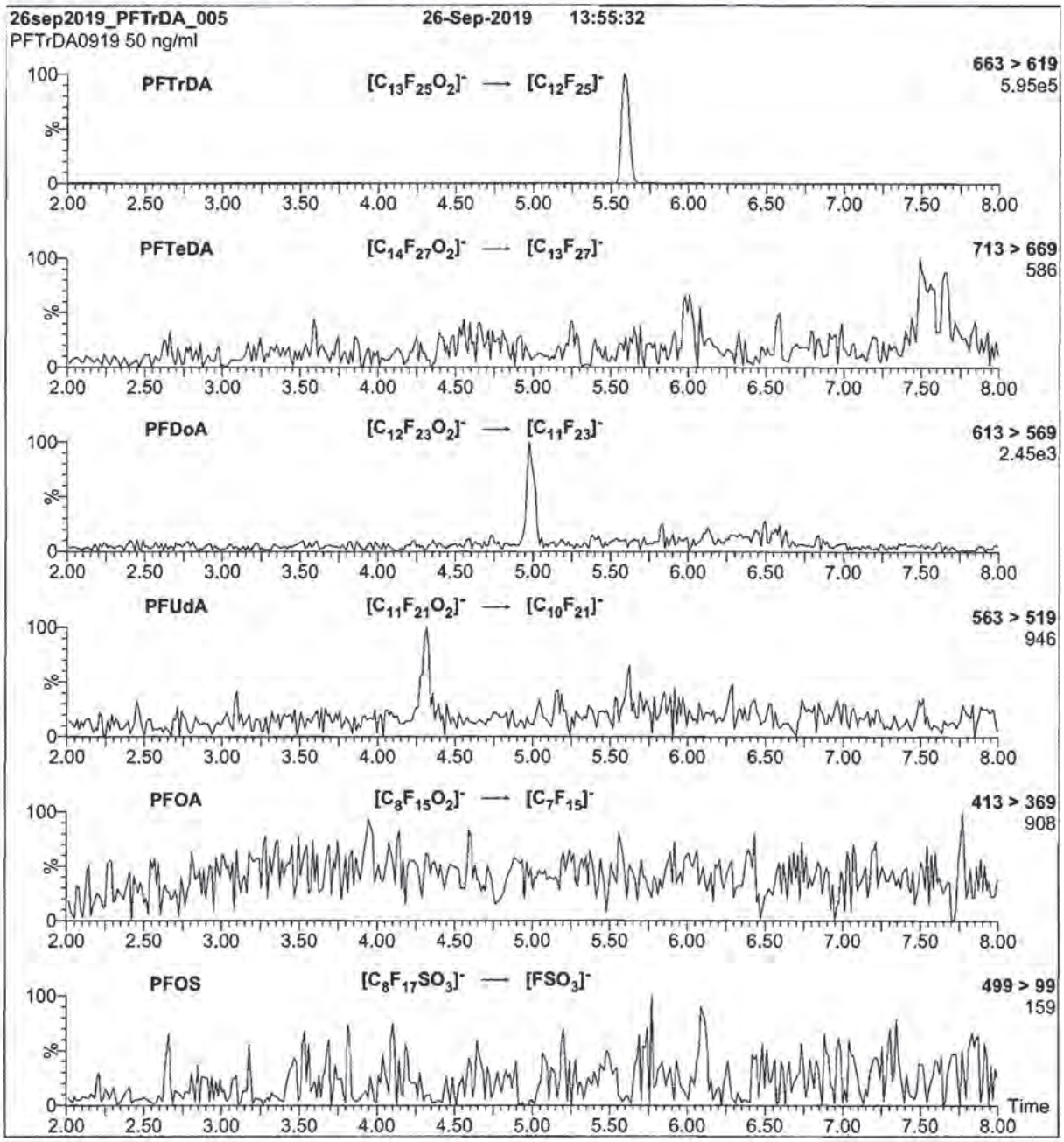
Revision#:6, Revised 2018-08-14

19L0641

Figure 2: **PFTrDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFTrDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3,73e-3
Collision Energy (eV) = 12

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFTrDA0919 (4 of 4)
rev0

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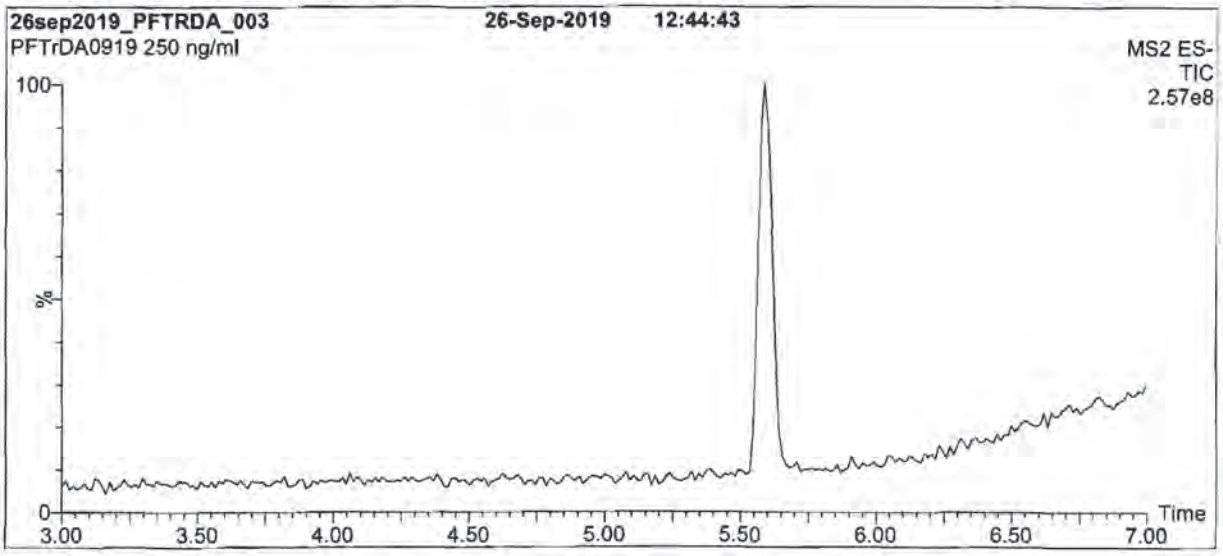
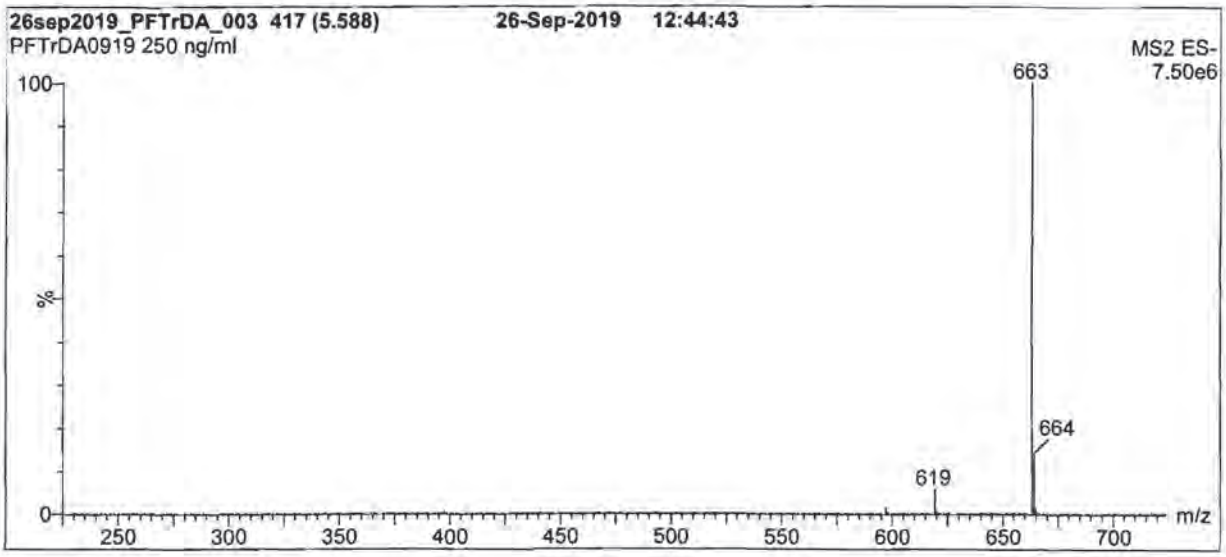
Figure 1: PFTrDA; LC/MS Data (TIC and Mass Spectrum)





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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFTrDA0919 (3 of 4)
rev0

19L0641

INTENDED USE:

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HANDLING:

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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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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. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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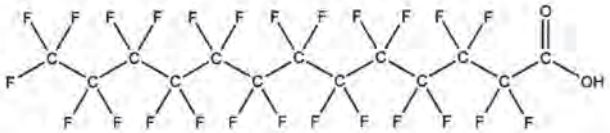
19L0691

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFTrDA
COMPOUND: Perfluoro-n-tridecanoic acid
LOT NUMBER: PFTrDA0919

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) 09/26/2019
EXPIRY DATE: (mm/dd/yyyy) 09/26/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA ($C_{11}HF_{21}O_2$), ~ 0.4% of PFDoA ($C_{12}HF_{23}O_2$), and ~ 0.1% of PFTeDA ($C_{14}HF_{27}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 10/03/2019 (mm/dd/yyyy)

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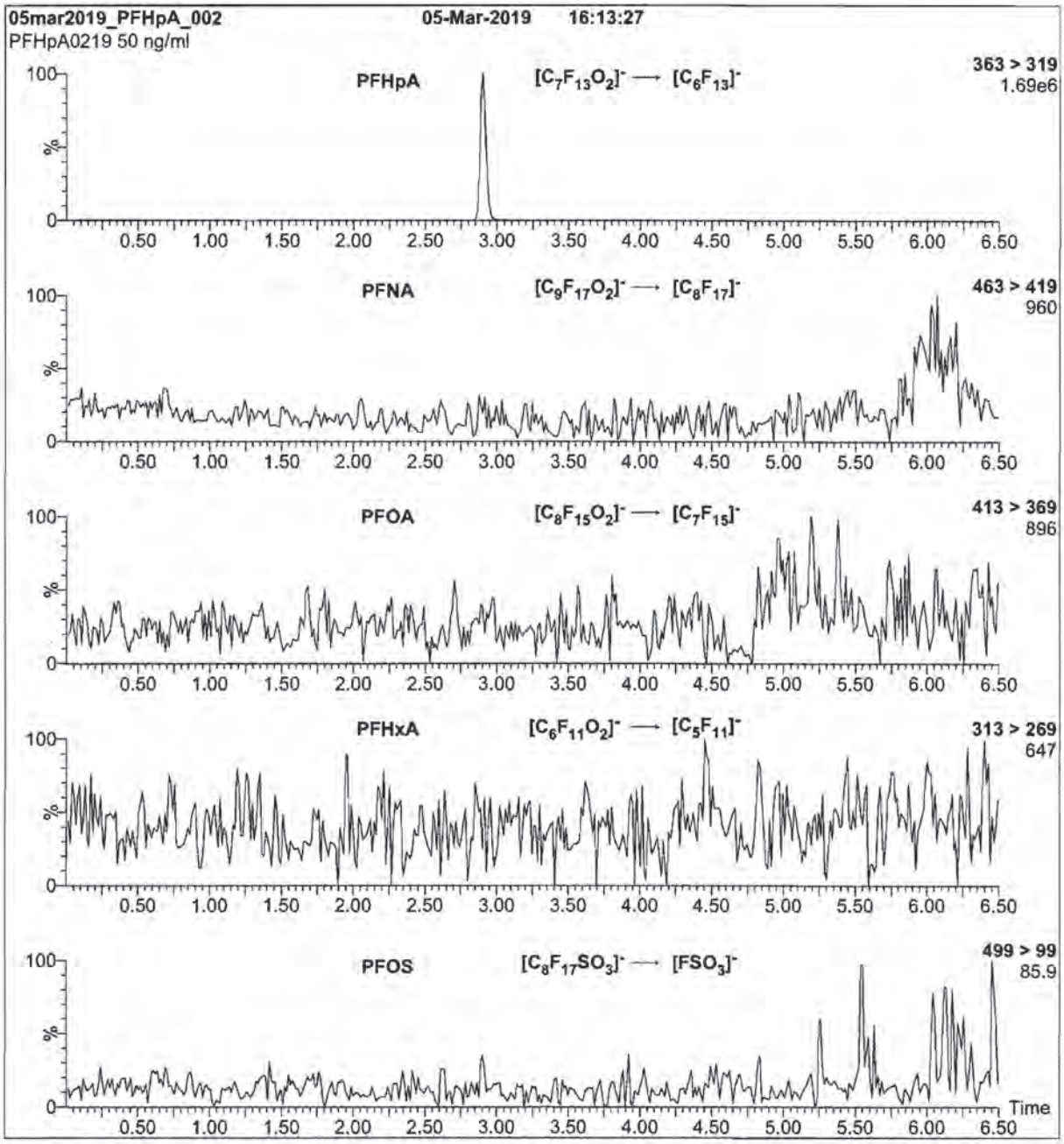
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0642

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

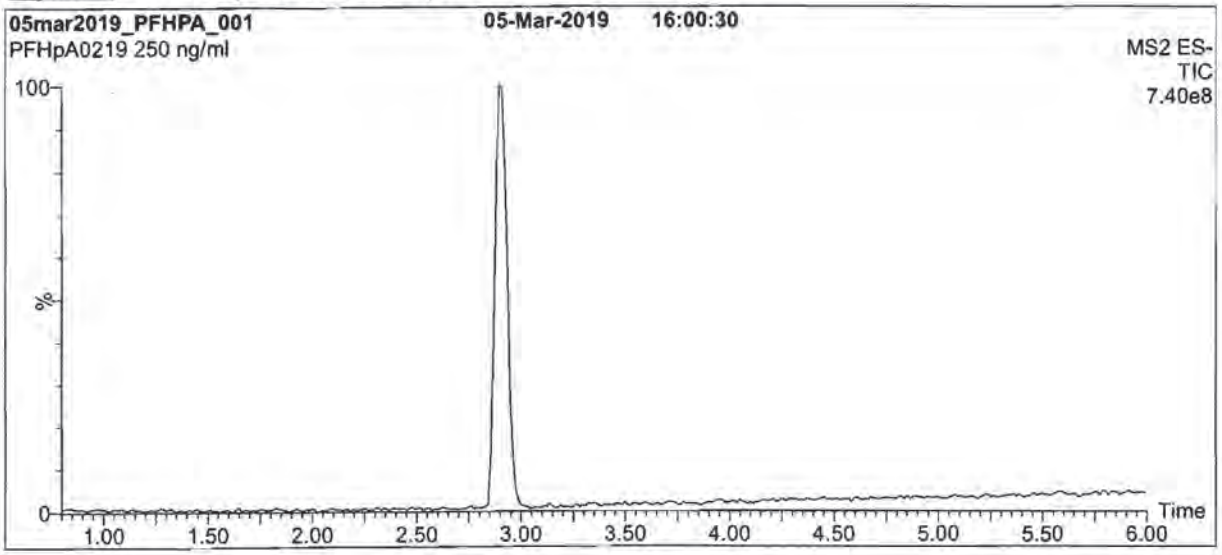
Collision Gas (mbar) = 2.74e-3
Collision Energy (eV) = 8

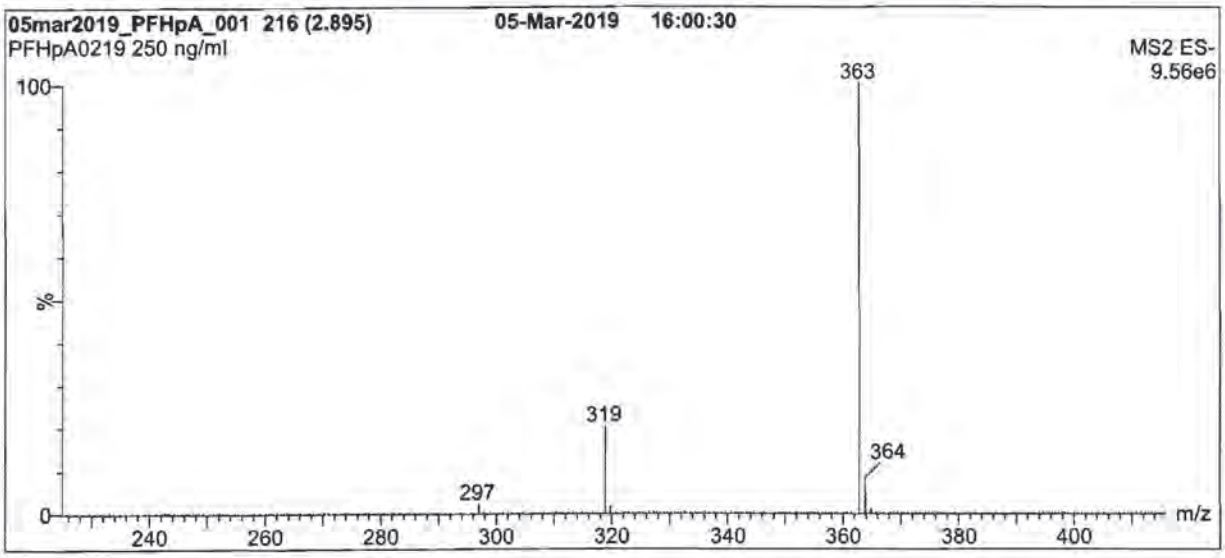
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFHpA0219 (4 of 4)
rev0

19L0642

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 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-06-14

PFHpA0219 (3 of 4)
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19L0642

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.

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 REFERENCE MATERIAL PRODUCER

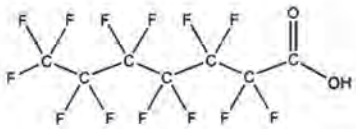
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0642

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFHpA	**LOT NUMBER:**	PFHpA0219
COMPOUND:	Perfluoro-n-heptanoic acid		
STRUCTURE:		**CAS #:**	375-85-9



MOLECULAR FORMULA:	$C_7HF_{13}O_2$	**MOLECULAR WEIGHT:**	364.06
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/05/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/05/2024		
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:** 03/18/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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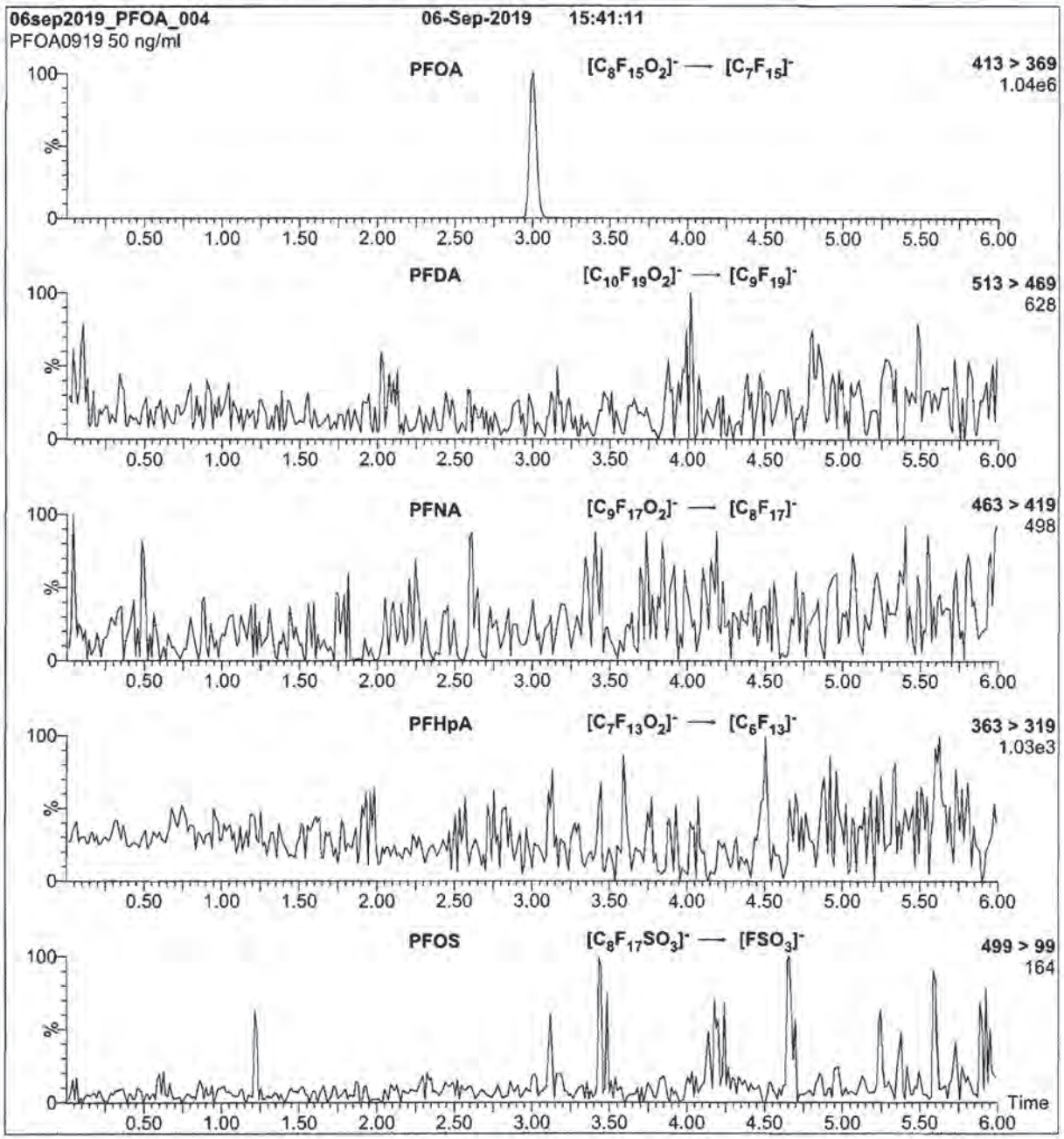
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0643

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) = 3.49e-3
Collision Energy (eV) = 8

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2016-08-14

PFOA0919 (4 of 4)
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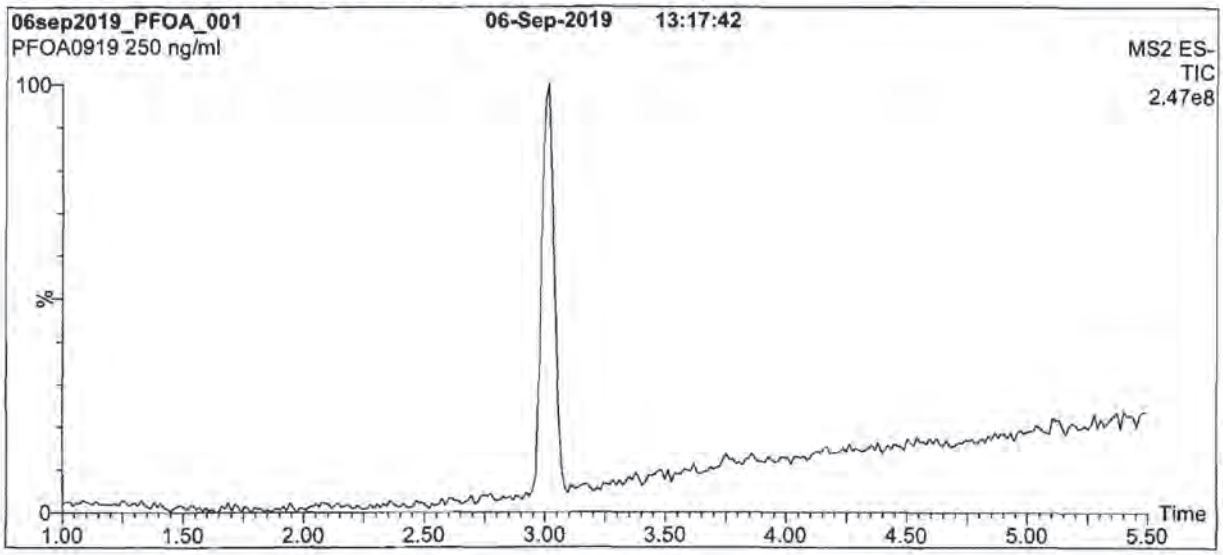
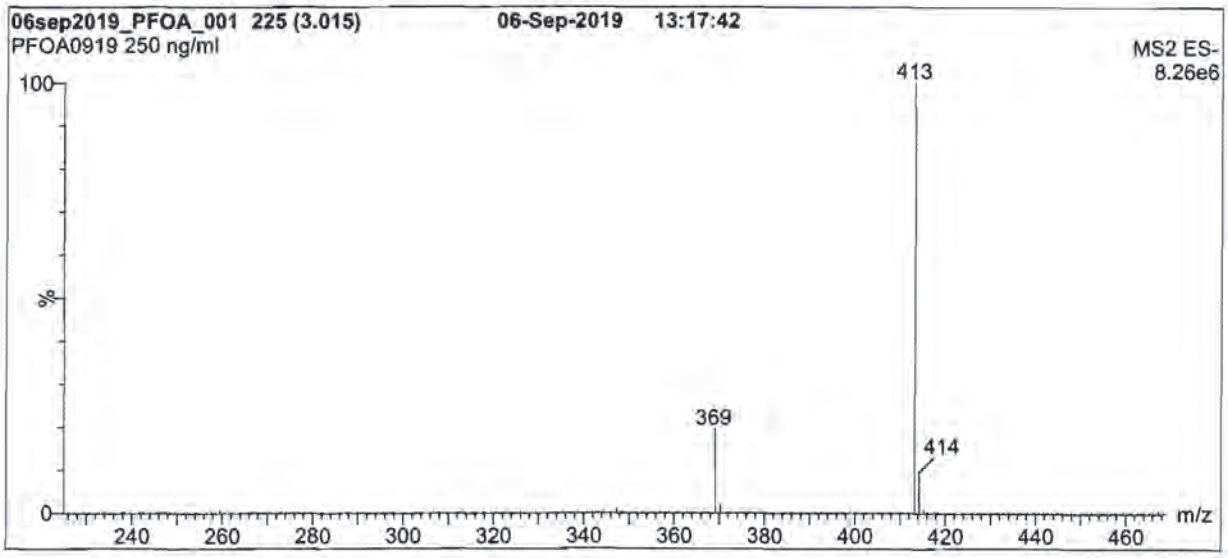
19L0643

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: 55% (80:20 MeOH:ACN) / 45% 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFOA0919 (3 of 4)
rev0

19L0643

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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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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 REFERENCE MATERIAL PRODUCER

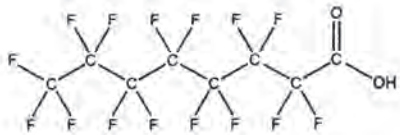
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0643

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFOA	**LOT NUMBER:**	PFOA0919
COMPOUND:	Perfluoro-n-octanoic acid		
STRUCTURE:		**CAS #:**	335-67-1



MOLECULAR FORMULA:	$C_8HF_{15}O_2$	**MOLECULAR WEIGHT:**	414.07
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/06/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/06/2024		
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:** 09/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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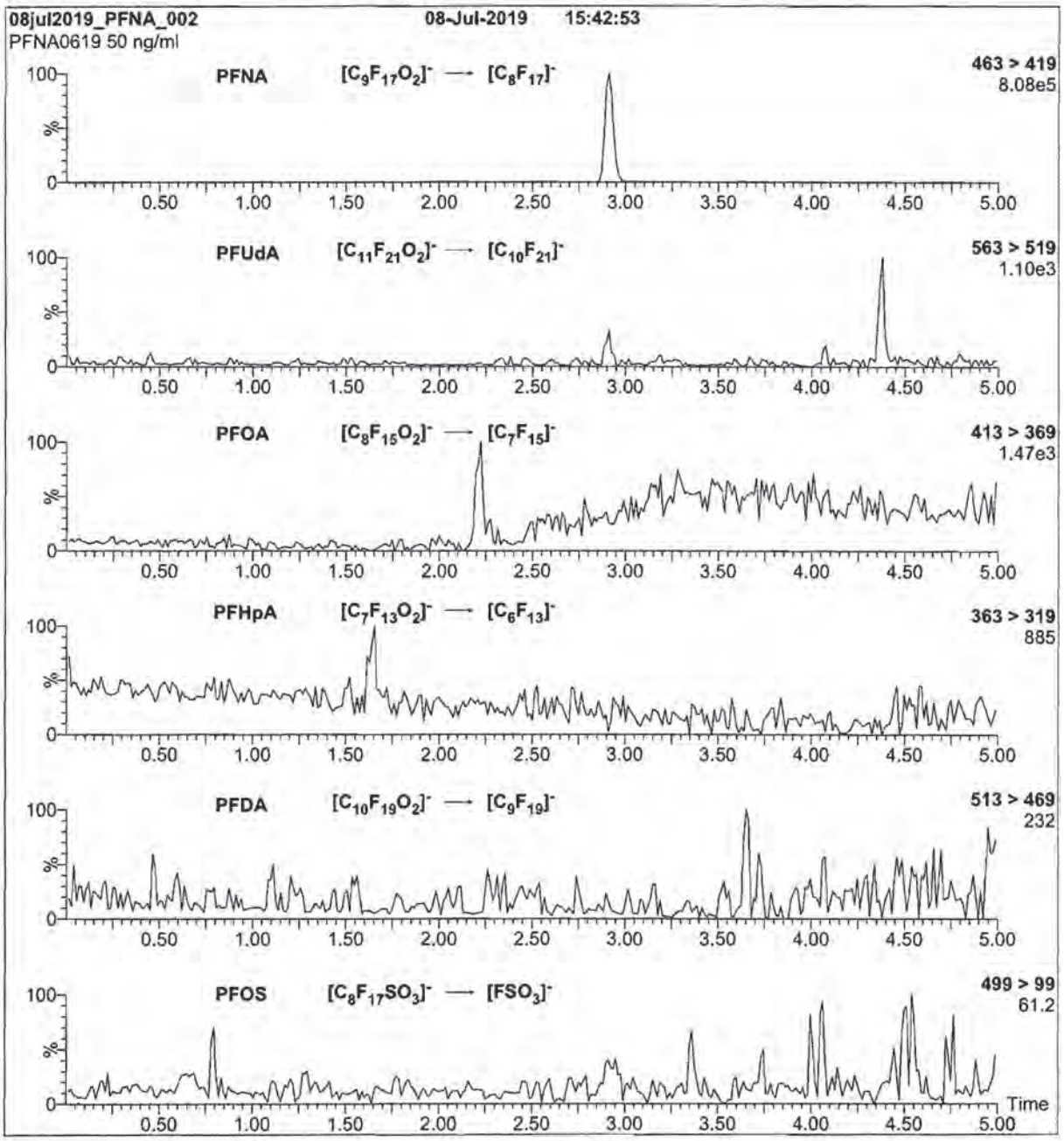
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0644

Figure 2: **PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFNA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 10

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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rev0

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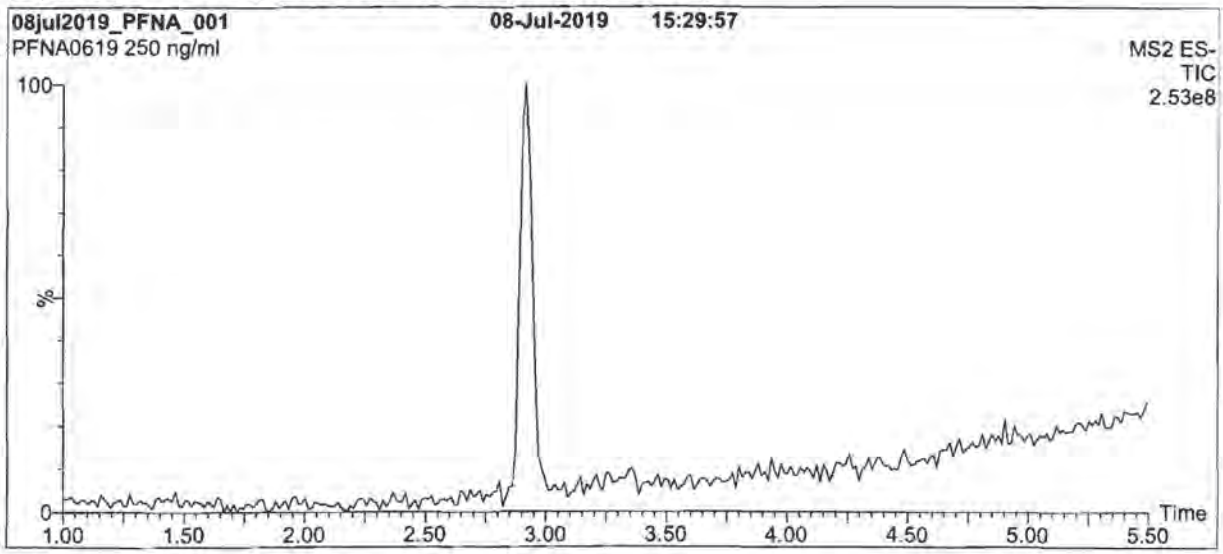
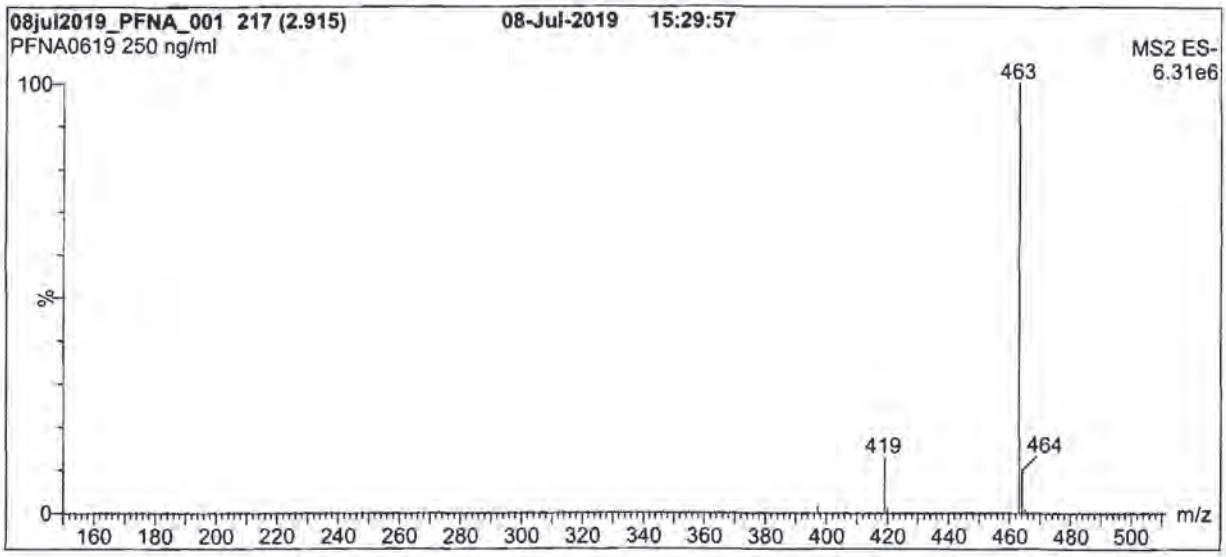
Figure 1: **PFNA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

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Start: 60% (80:20 MeOH:ACN) / 40% H_2O
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3 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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19L0644

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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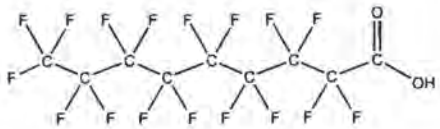
19L0644

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFNA
COMPOUND: Perfluoro-n-nonanoic acid
LOT NUMBER: PFNA0619
STRUCTURE:
CAS #: 375-95-1



MOLECULAR FORMULA: $C_9HF_{17}O_2$
MOLECULAR WEIGHT: 464.08
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/08/2019
EXPIRY DATE: (mm/dd/yyyy) 07/08/2024
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: B.G. Chittim, General Manager **Date:** 07/11/2019 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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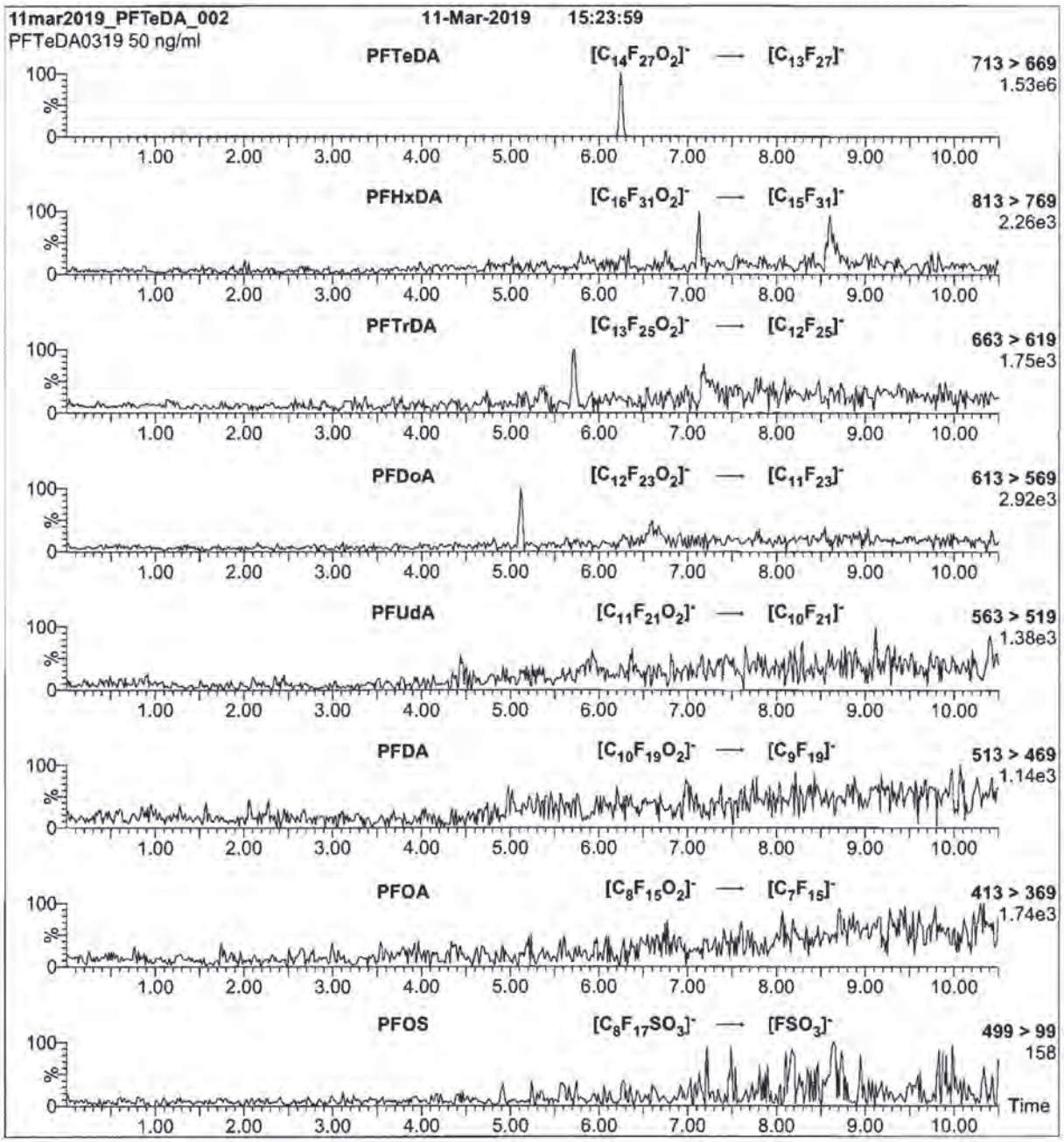
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0645

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) = 3.03e-3
Collision Energy (eV) = 14

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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rev0

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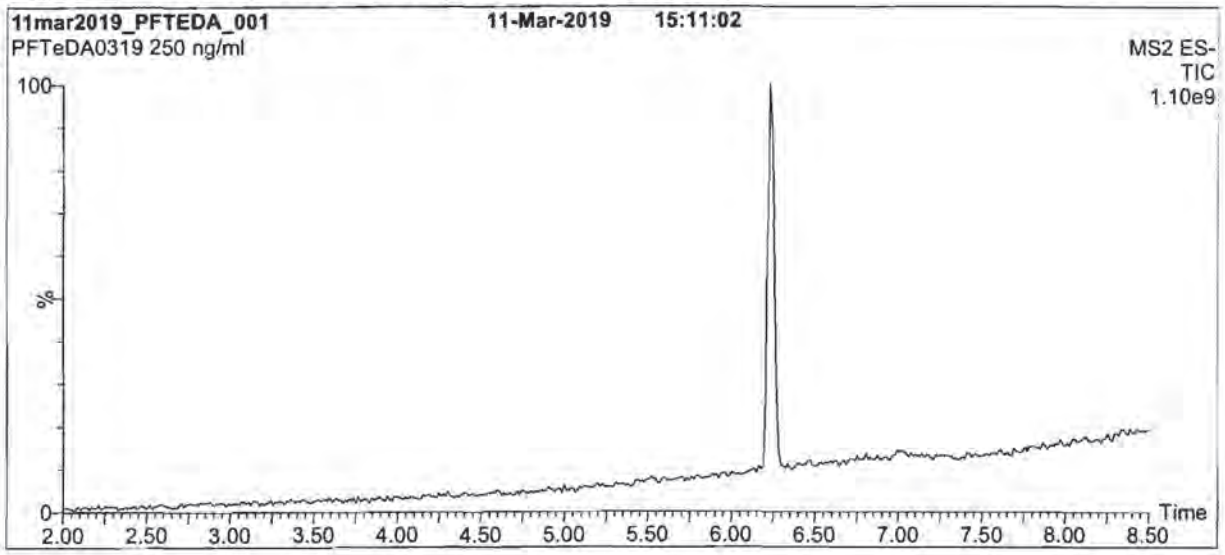
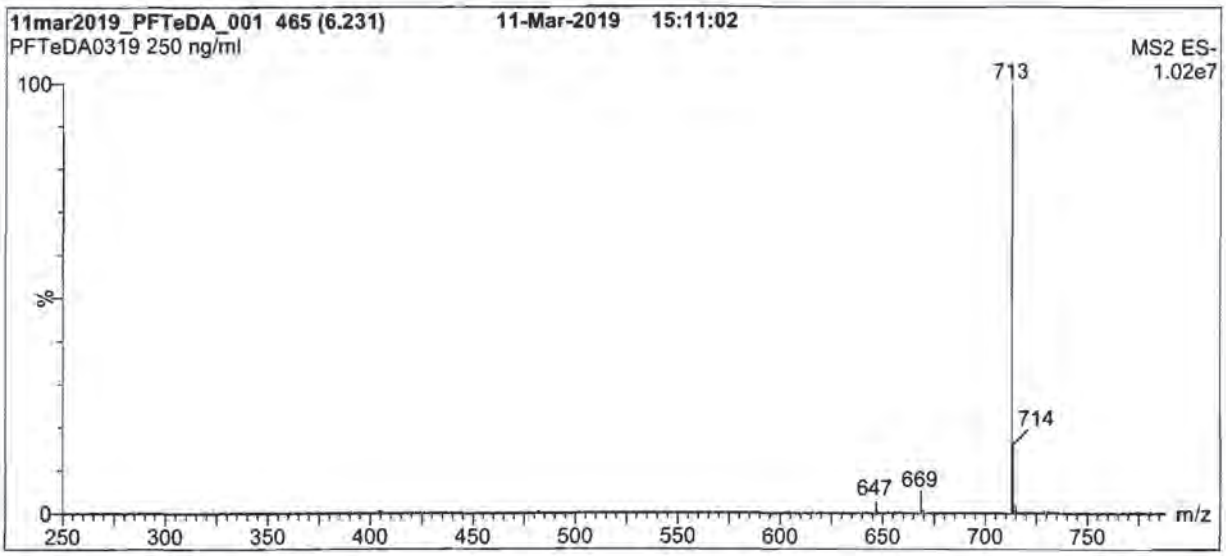
Figure 1: **PFTeDA; LC/MS Data (TIC and Mass Spectrum)**





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: 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

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

PFTeDA0319 (3 of 4)
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19L0645

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 3226

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

19L0645

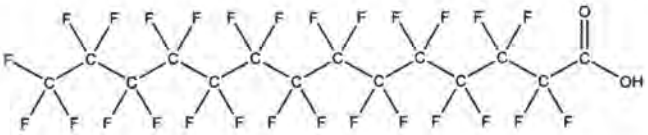
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFTeDA
COMPOUND: Perfluoro-n-tetradecanoic acid
LOT NUMBER: PFTeDA0319

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) 03/11/2019
EXPIRY DATE: (mm/dd/yyyy) 03/11/2024
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 PFHxDA ($C_{16}HF_{31}O_2$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 03/28/2019 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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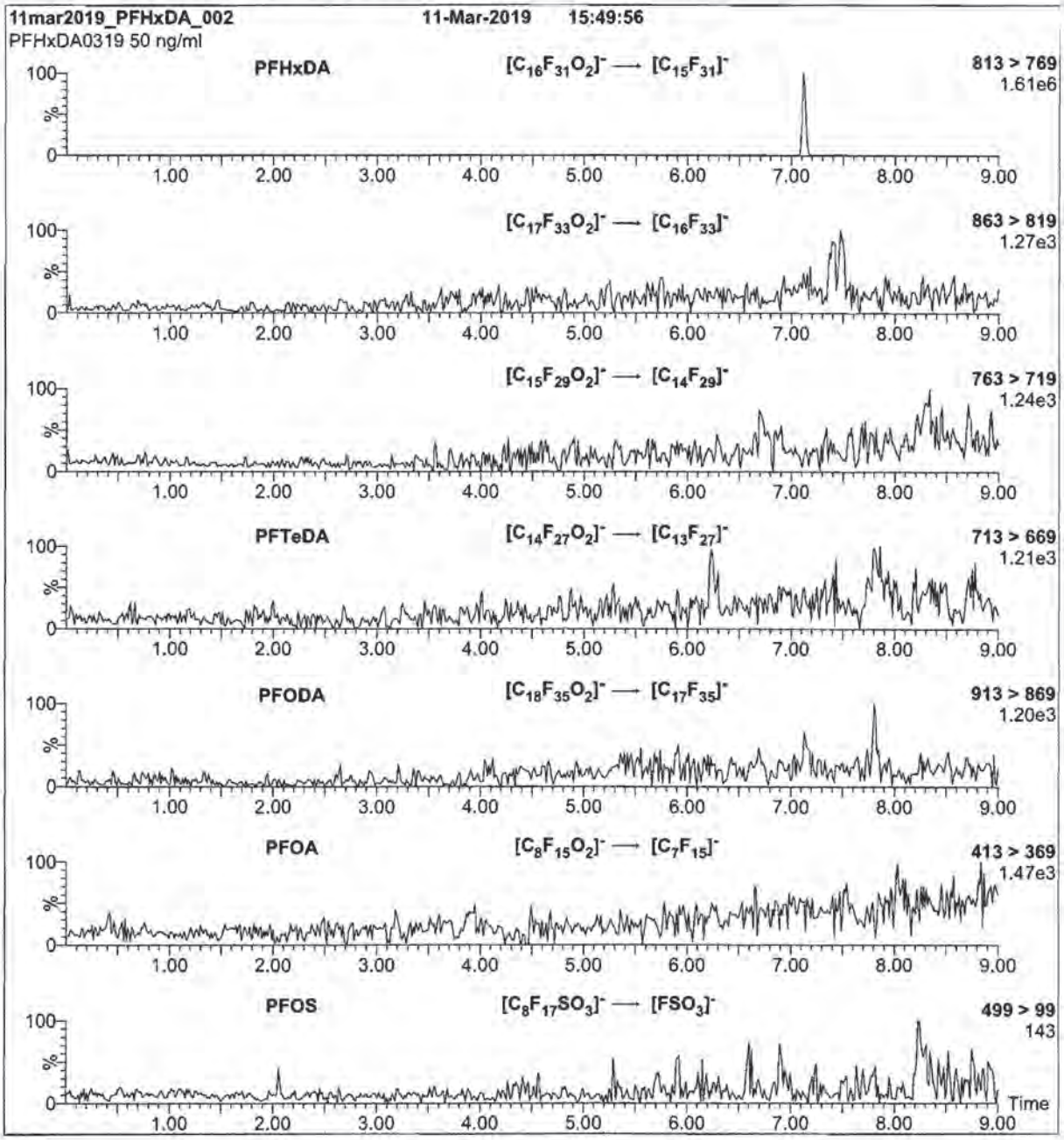
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0646

Figure 2: **PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHxDA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

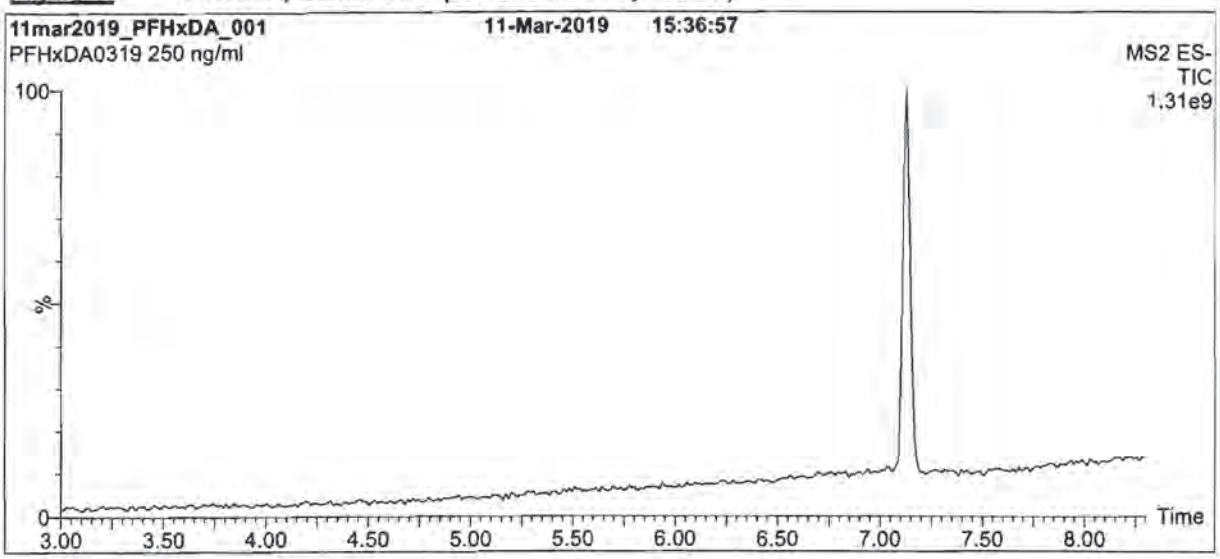
Collision Gas (mbar) = 3.03e-3
Collision Energy (eV) = 15

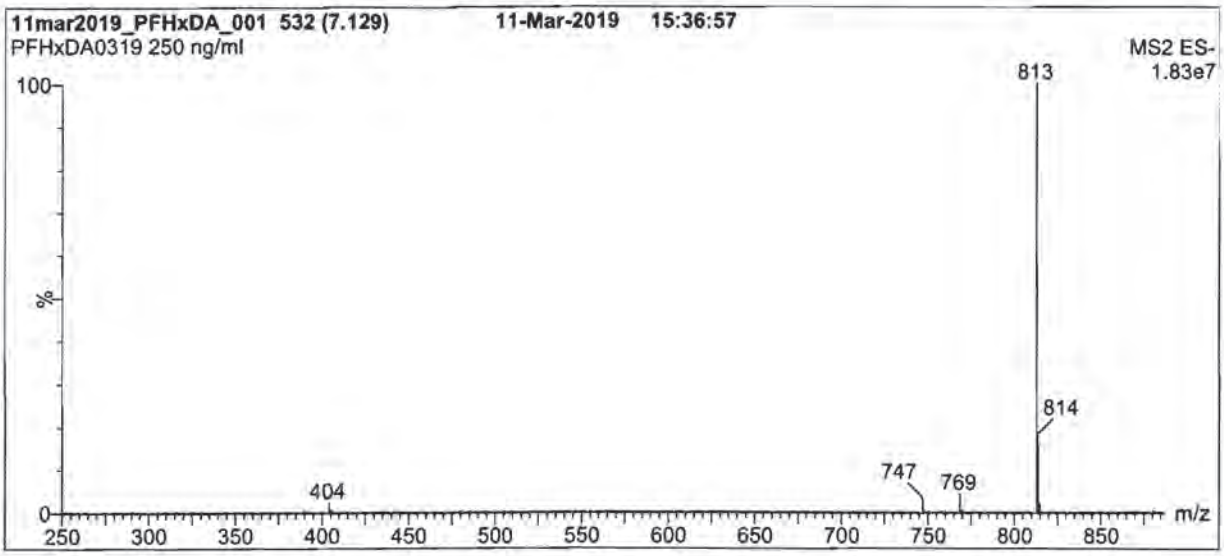
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFHxDA0319 (4 of 4)
rev0

19L0646

Figure 1: **PFHxDA; 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFHxDA0319 (3 of 4)
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19L0646

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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.

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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. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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19L0646

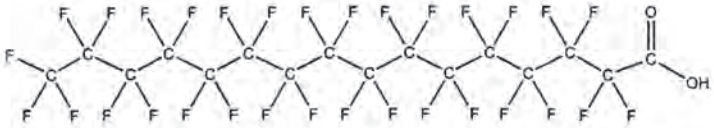
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxDA
COMPOUND: Perfluoro-n-hexadecanoic acid
LOT NUMBER: PFHxDA0319

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) 03/11/2019
EXPIRY DATE: (mm/dd/yyyy) 03/11/2024
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:** 03/28/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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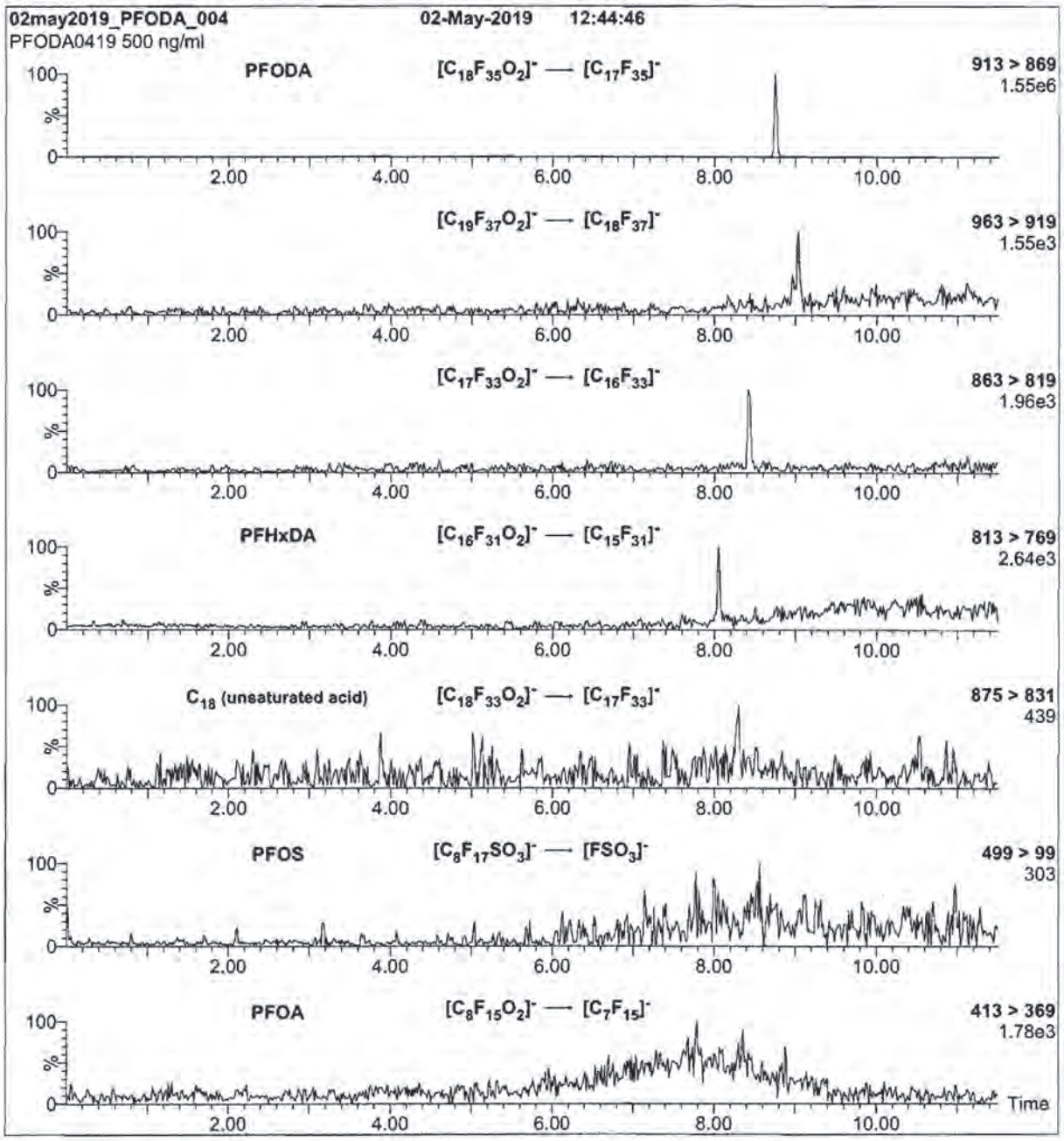
19L0647

Figure 2: **PFODA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFODA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.92e-3
Collision Energy (eV) = 15

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFODA0419 (4 of 4)
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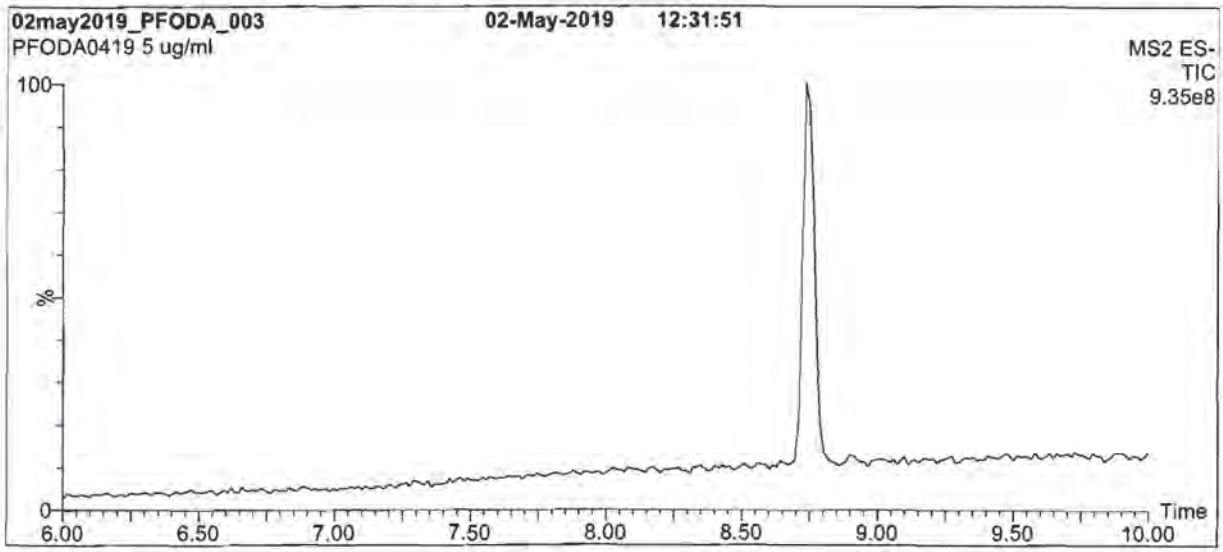
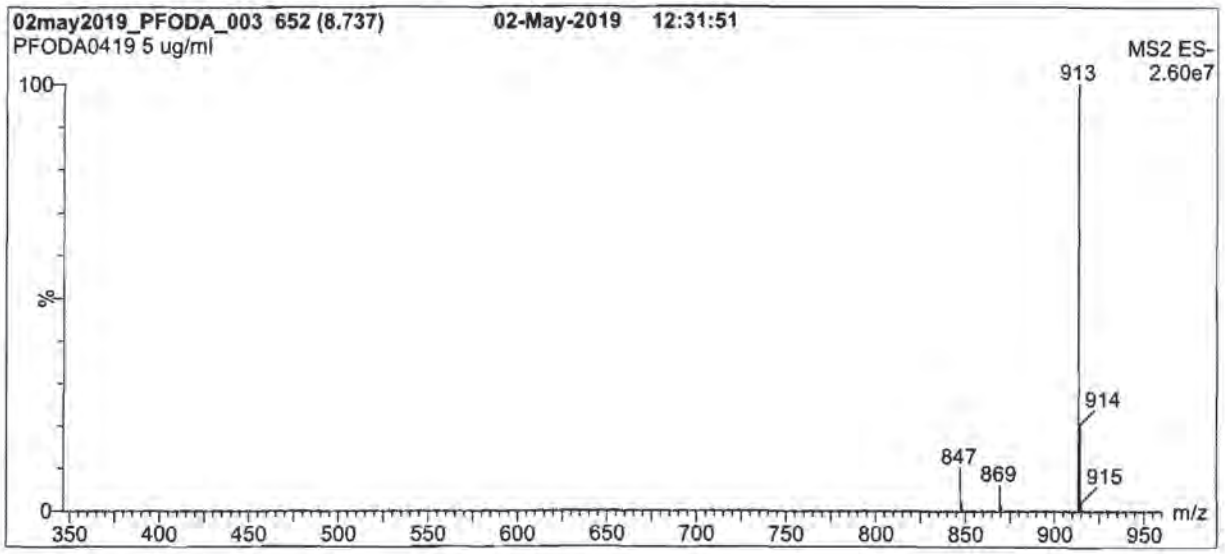
Figure 1: PFODA; LC/MS Data (TIC and Mass Spectrum)





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: 55% (80:20 MeOH:ACN) / 45% 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: 11 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

PFODA0419 (3 of 4)
rev0

19L0647

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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 REFERENCE MATERIAL PRODUCER

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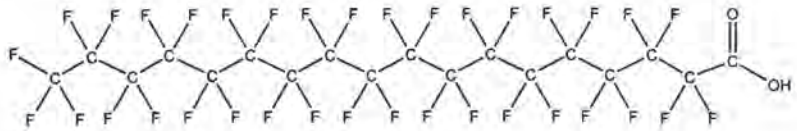
19L0647

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid
LOT NUMBER: PFODA0419

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) 05/02/2019
EXPIRY DATE: (mm/dd/yyyy) 05/02/2024
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 PFHxDA ($C_{16}HF_{31}O_2$) and ~ 0.1% of PFHpDA ($C_{17}HF_{33}O_2$)

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 05/16/2019 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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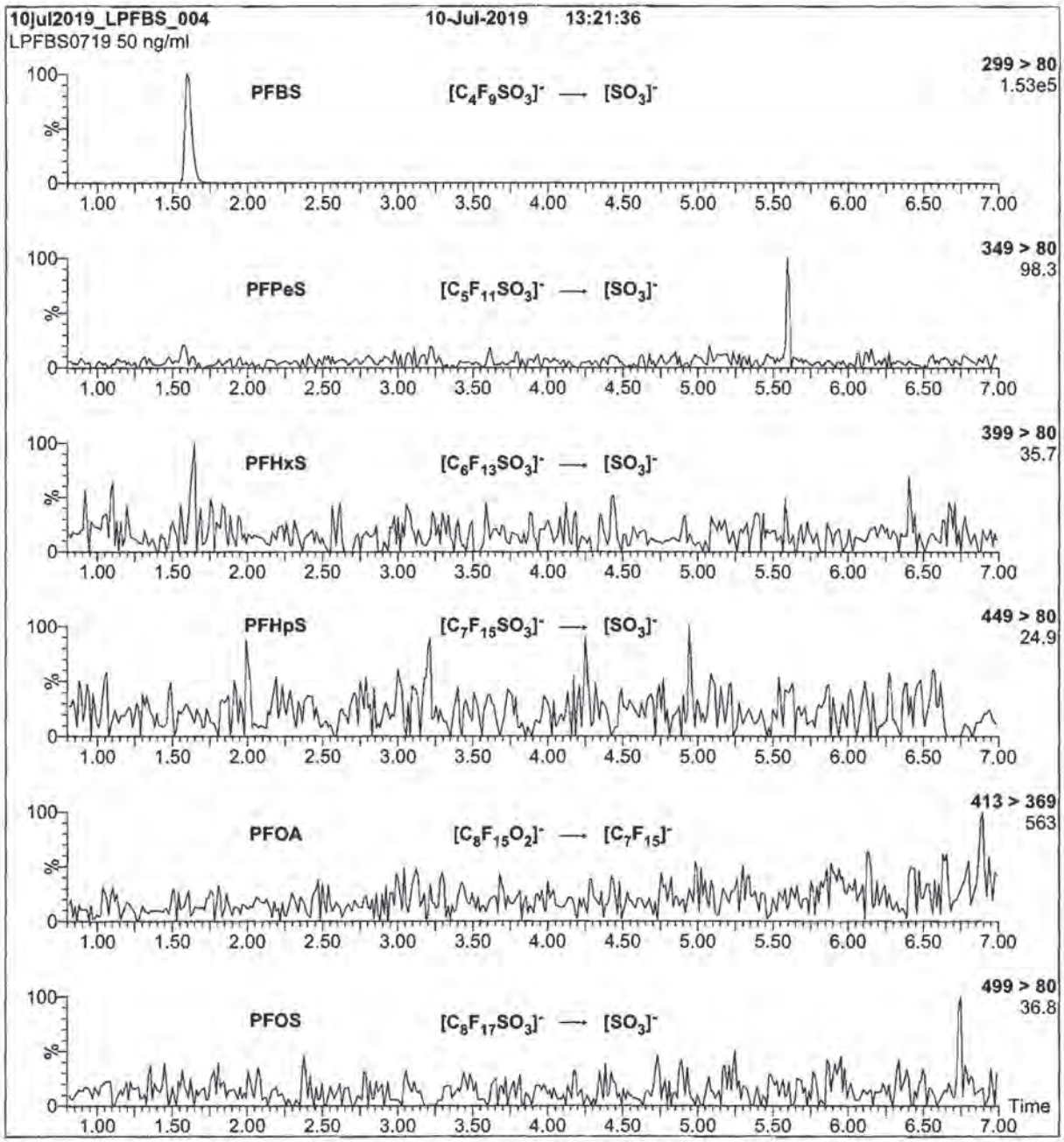
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0648

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) = 3.25e-3
Collision Energy (eV) = 30

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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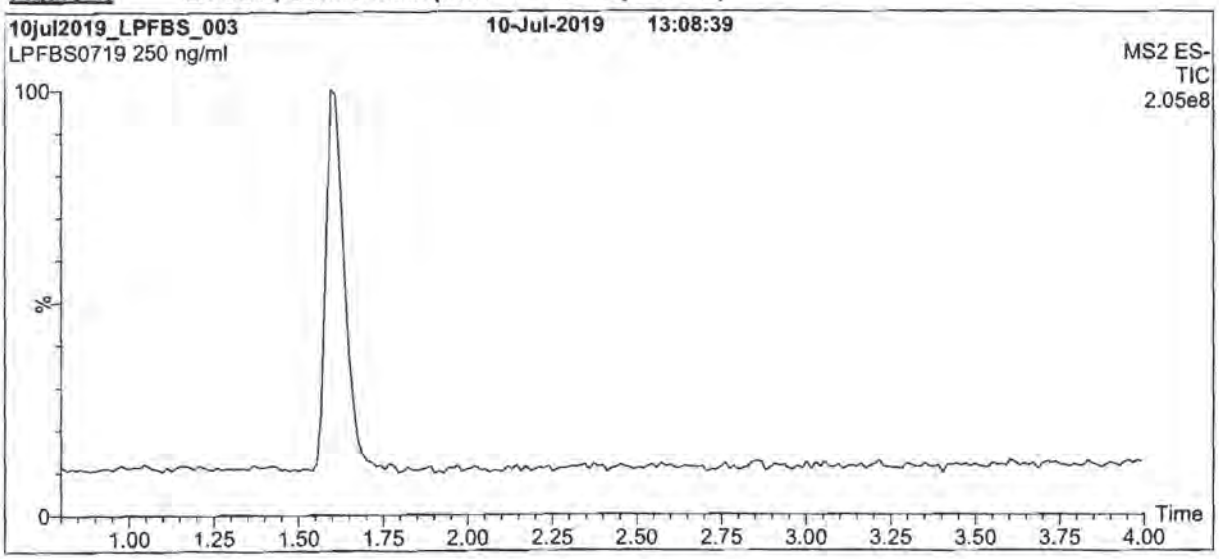
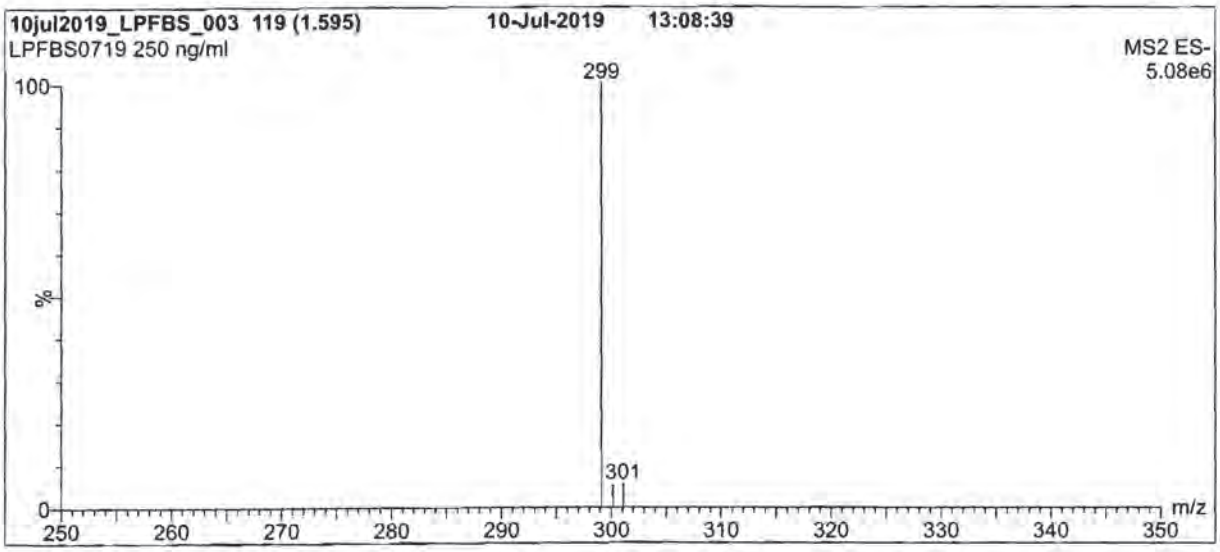
rev0

19L0648

Figure 1: L-PFBS; LC/MS Data (TIC and Mass Spectrum)





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Flow: 300 µl/min

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Experiment: Full Scan (250 - 850 amu)

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LPFBS0719 (3 of 4)
rev0

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly 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 REFERENCE MATERIAL PRODUCER

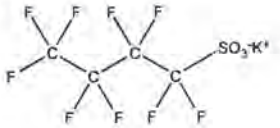
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0648

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFBS
LOT NUMBER: LPFBS0719
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) 07/10/2019
EXPIRY DATE: (mm/dd/yyyy) 07/10/2024
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-nonanesulfonate (L-PFNS).

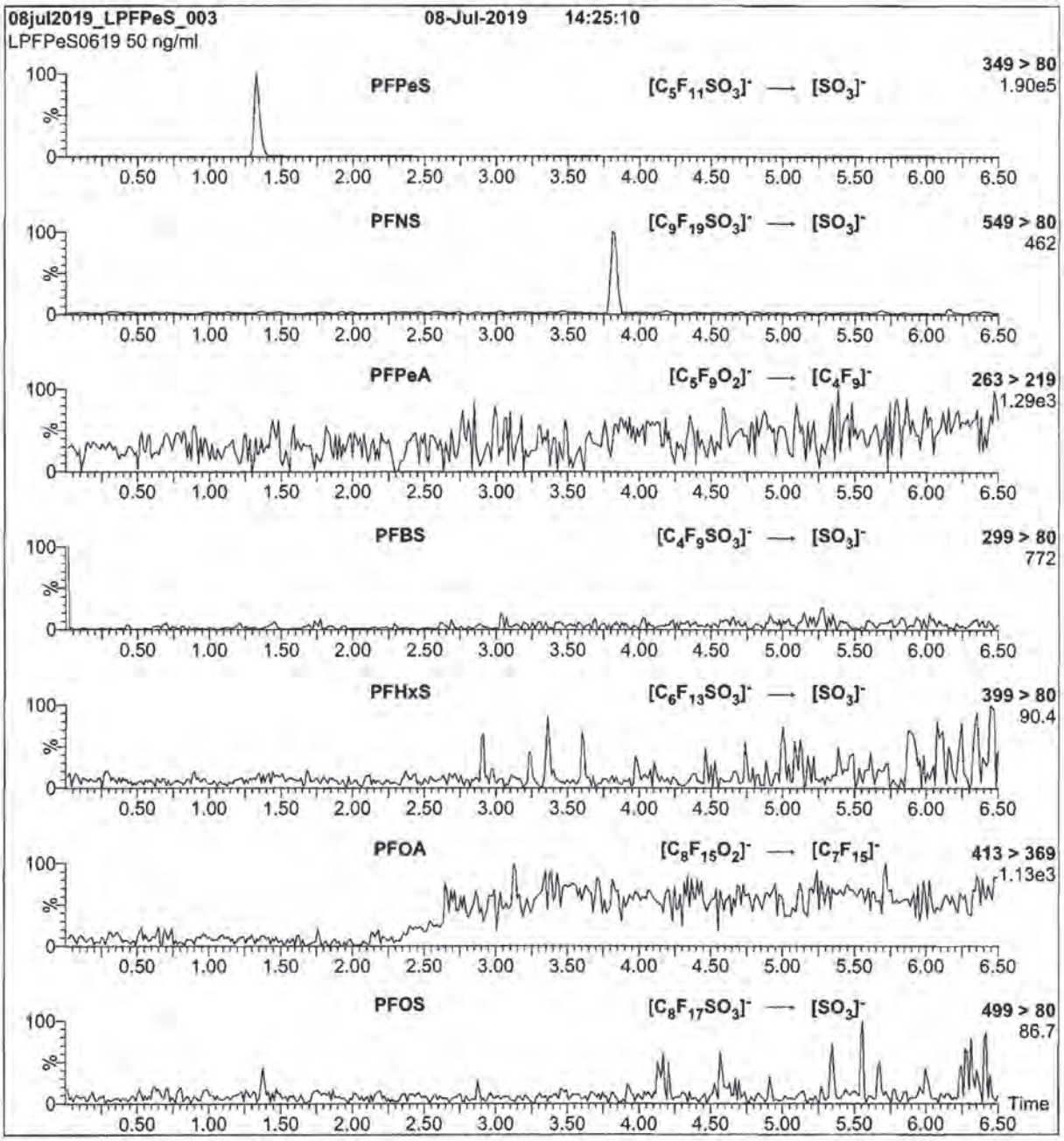
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 08/06/2019 (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

19L0649

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) = 3.37e-3
Collision Energy (eV) = 32

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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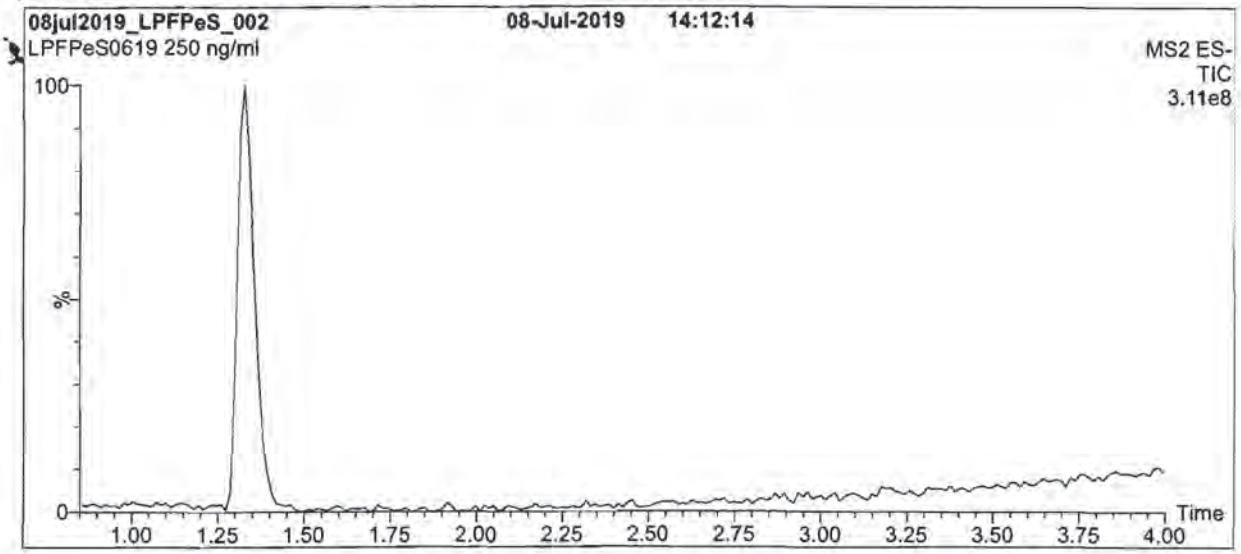
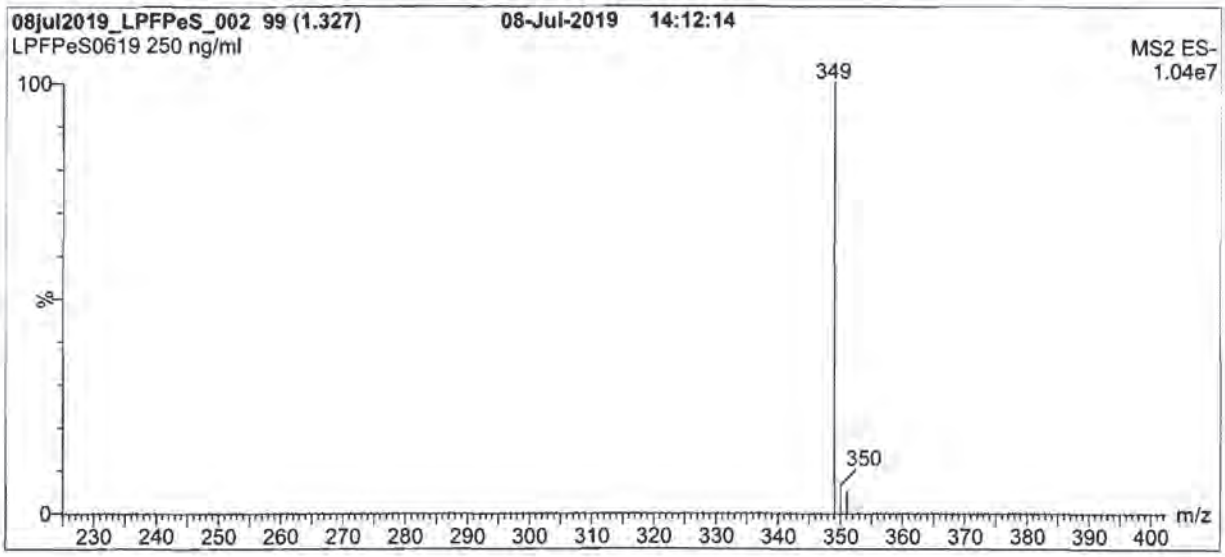
19L0649

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: 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0649

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 0226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

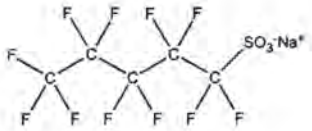
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0619

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	L-PFPeS	**LOT NUMBER:**	LPFPeS0619
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)	07/08/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/08/2024		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/11/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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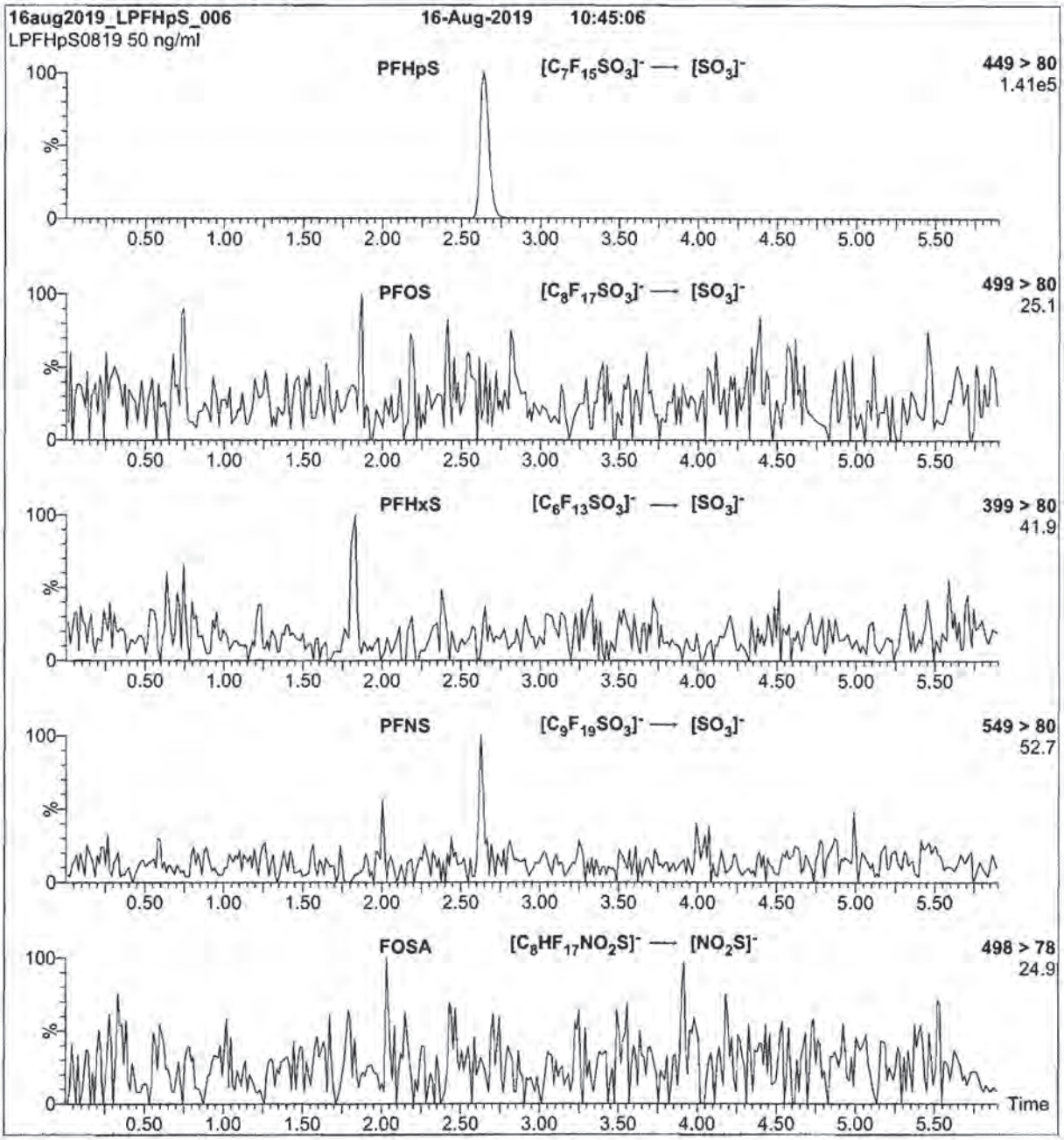
19L0650

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) = 3.61e-3
Collision Energy (eV) = 42

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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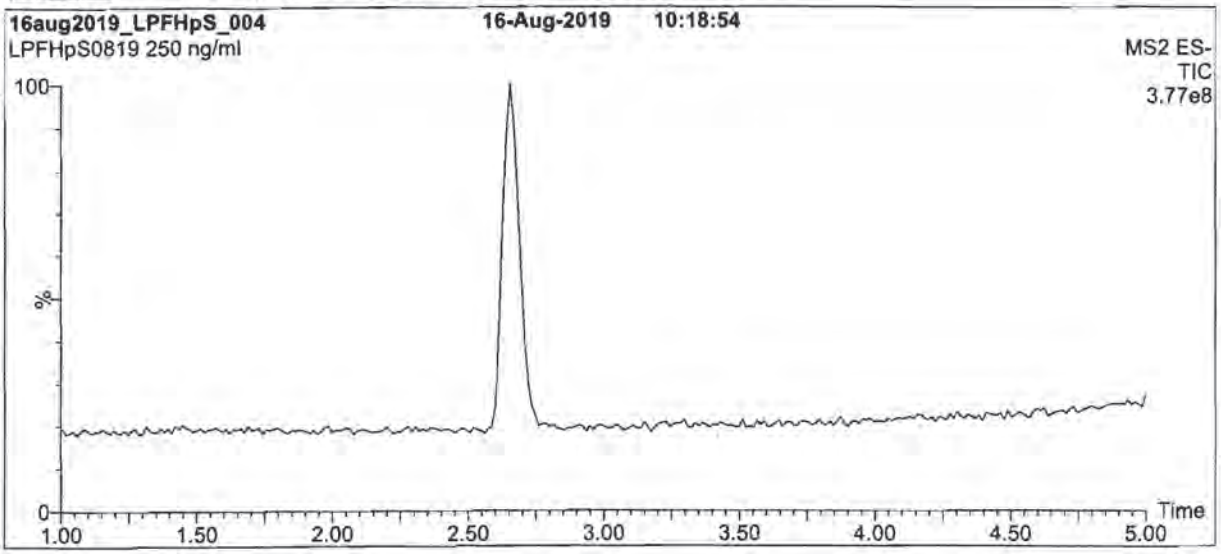
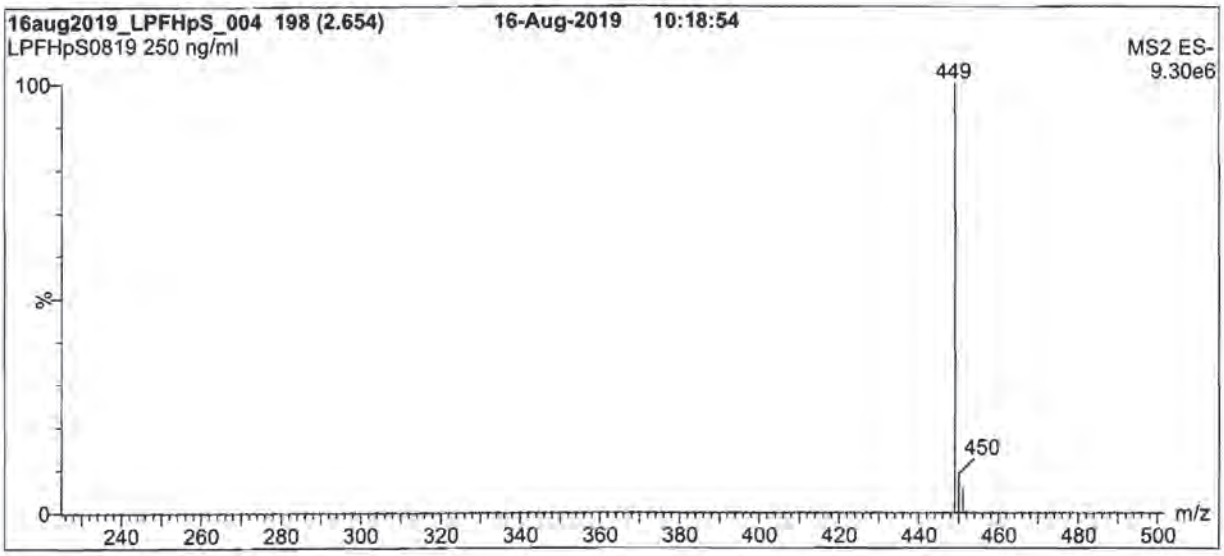
1910650

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: 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

LPFHpS0819 (3 of 4)
rev0

19L0650

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:

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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:

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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:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED Reference Material Producer

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

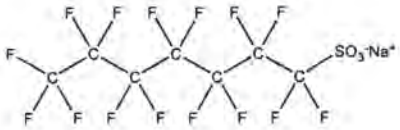
1910650

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFHpS
COMPOUND: Sodium perfluoro-1-heptanesulfonate
LOT NUMBER: LPFHpS0819

STRUCTURE:
CAS #: 21934-50-9



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)	08/16/2019		
EXPIRY DATE: (mm/dd/yyyy)	08/16/2024		
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:** 08/29/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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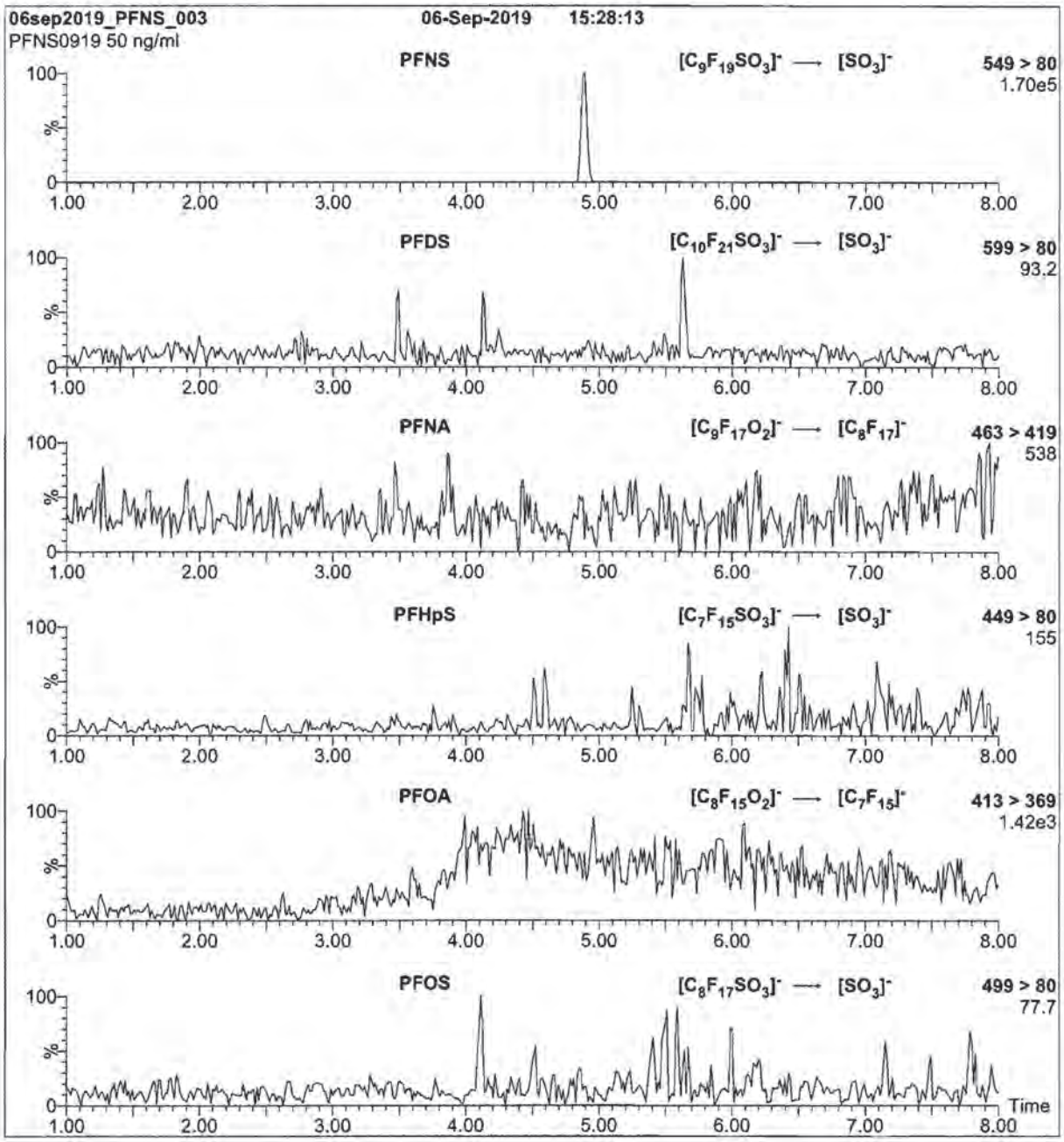
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0651

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) = 3.49e-3
Collision Energy (eV) = 64

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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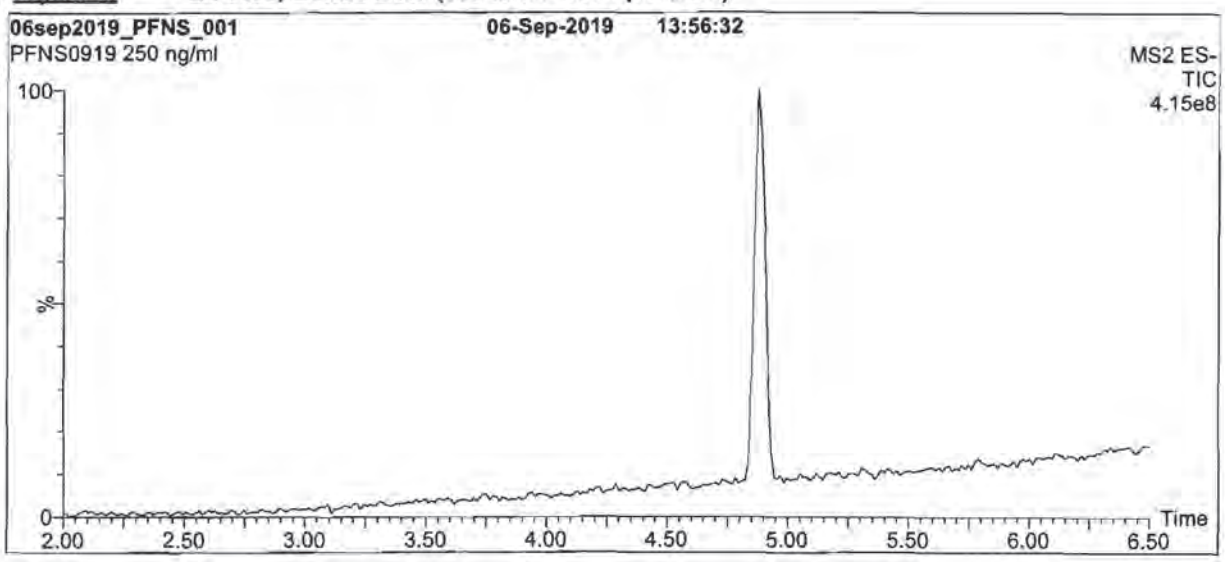
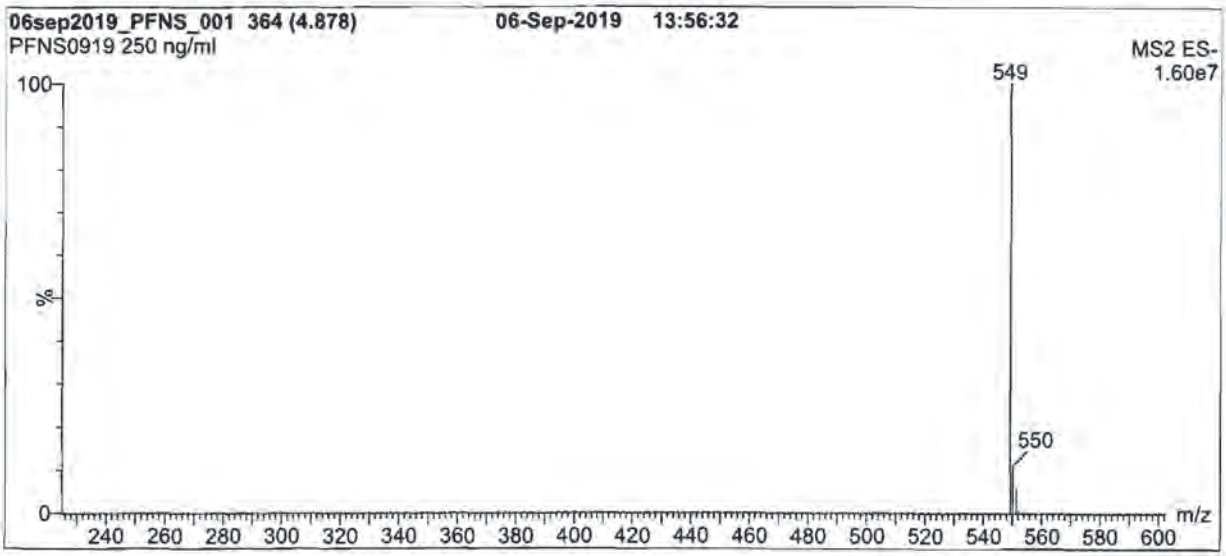
rev0

19L0651

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

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Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

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Start: 55% (80:20 MeOH:ACN) / 45% H_2O
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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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

LPFNS0919 (3 of 4)
rev0

19L0651

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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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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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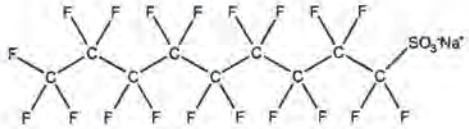
19L0651

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFNS
LOT NUMBER: LPFNS0919
COMPOUND: Sodium perfluoro-1-nonanesulfonate
STRUCTURE:
CAS #: 98789-57-2



MOLECULAR FORMULA: $C_9F_{19}SO_3Na$
MOLECULAR WEIGHT: 572.12
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt)
48.0 ± 2.4 µg/ml (PFNS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/06/2019
EXPIRY DATE: (mm/dd/yyyy) 09/06/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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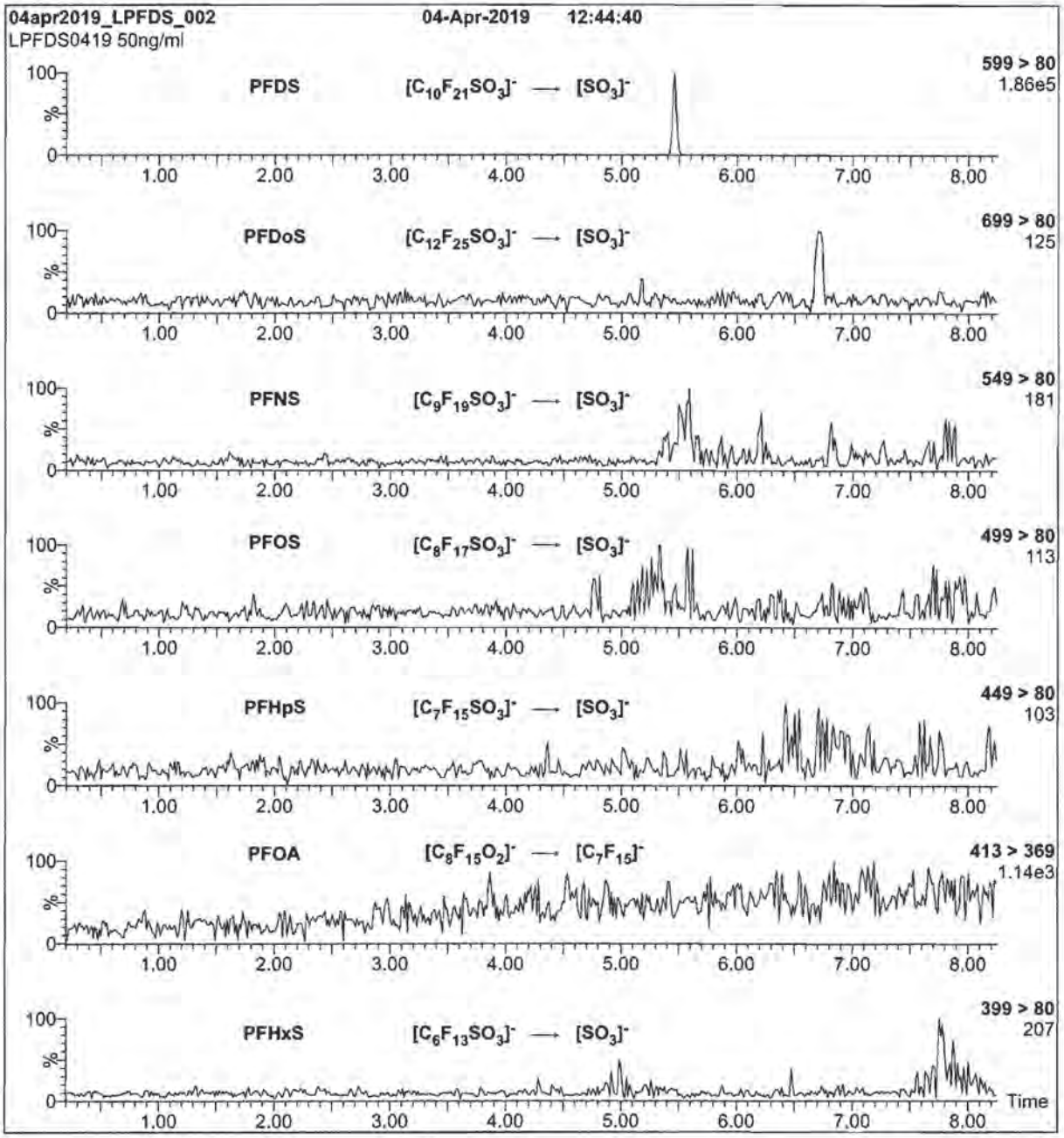
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0652

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) = 2.99e-3
Collision Energy (eV) = 56

Form#:27, Issued 2004-11-10
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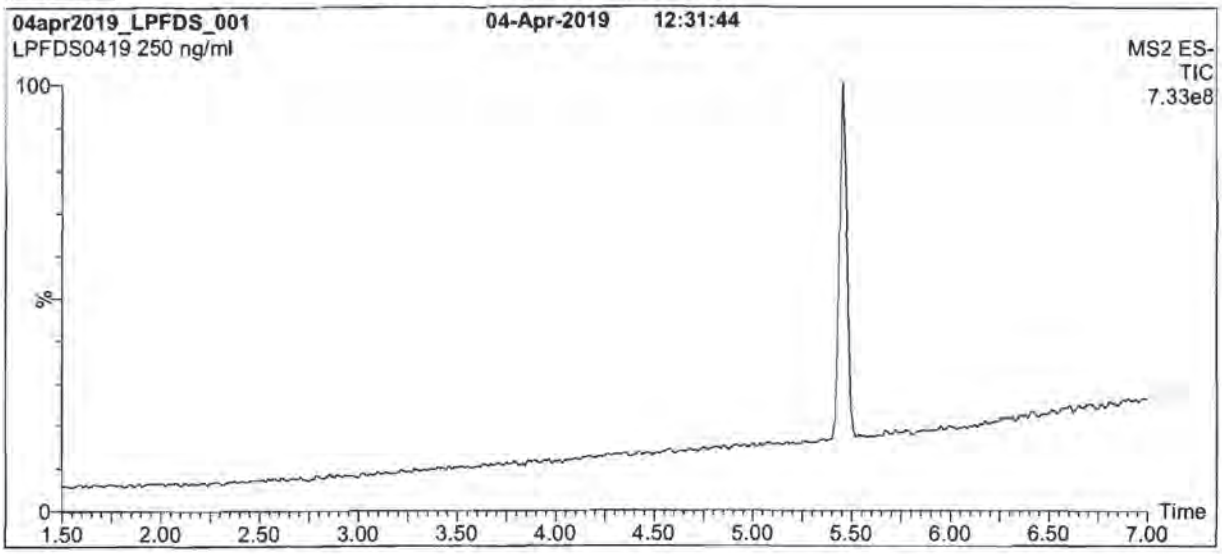
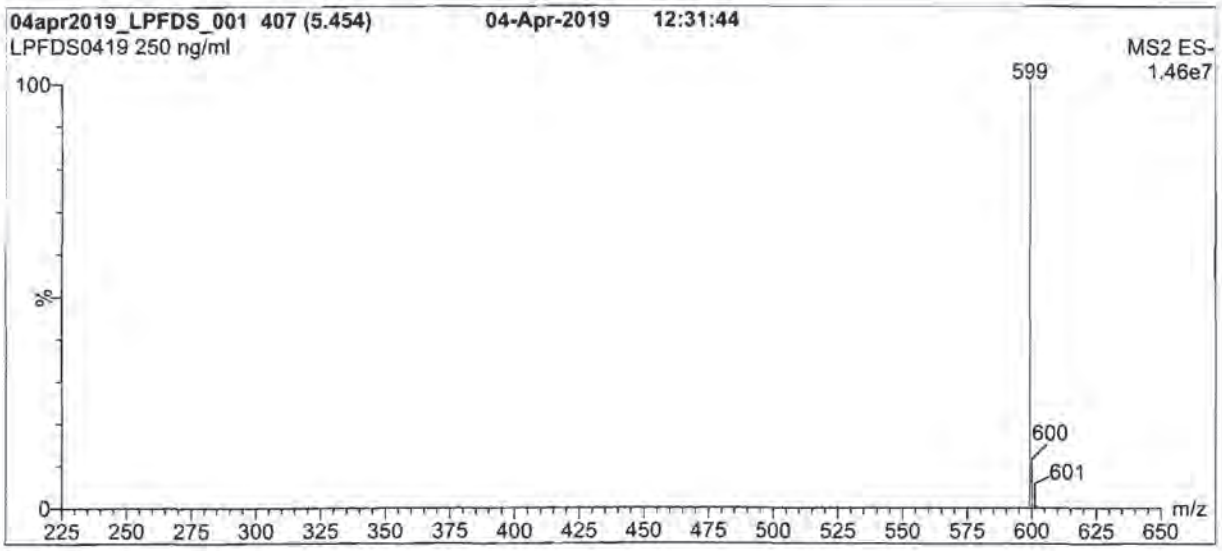
LPFDS0419 (4 of 4)
rev0

19L0652

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: 55% (80:20 MeOH:ACN) / 45% 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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19L0652

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 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

19L0652

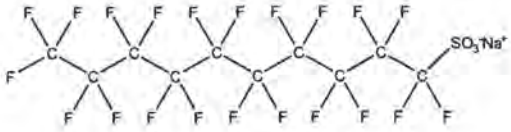
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFDS
COMPOUND: Sodium perfluoro-1-decanesulfonate
LOT NUMBER: LPFDS0419

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)	04/04/2019		
EXPIRY DATE: (mm/dd/yyyy)	04/04/2024		
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:** 04/30/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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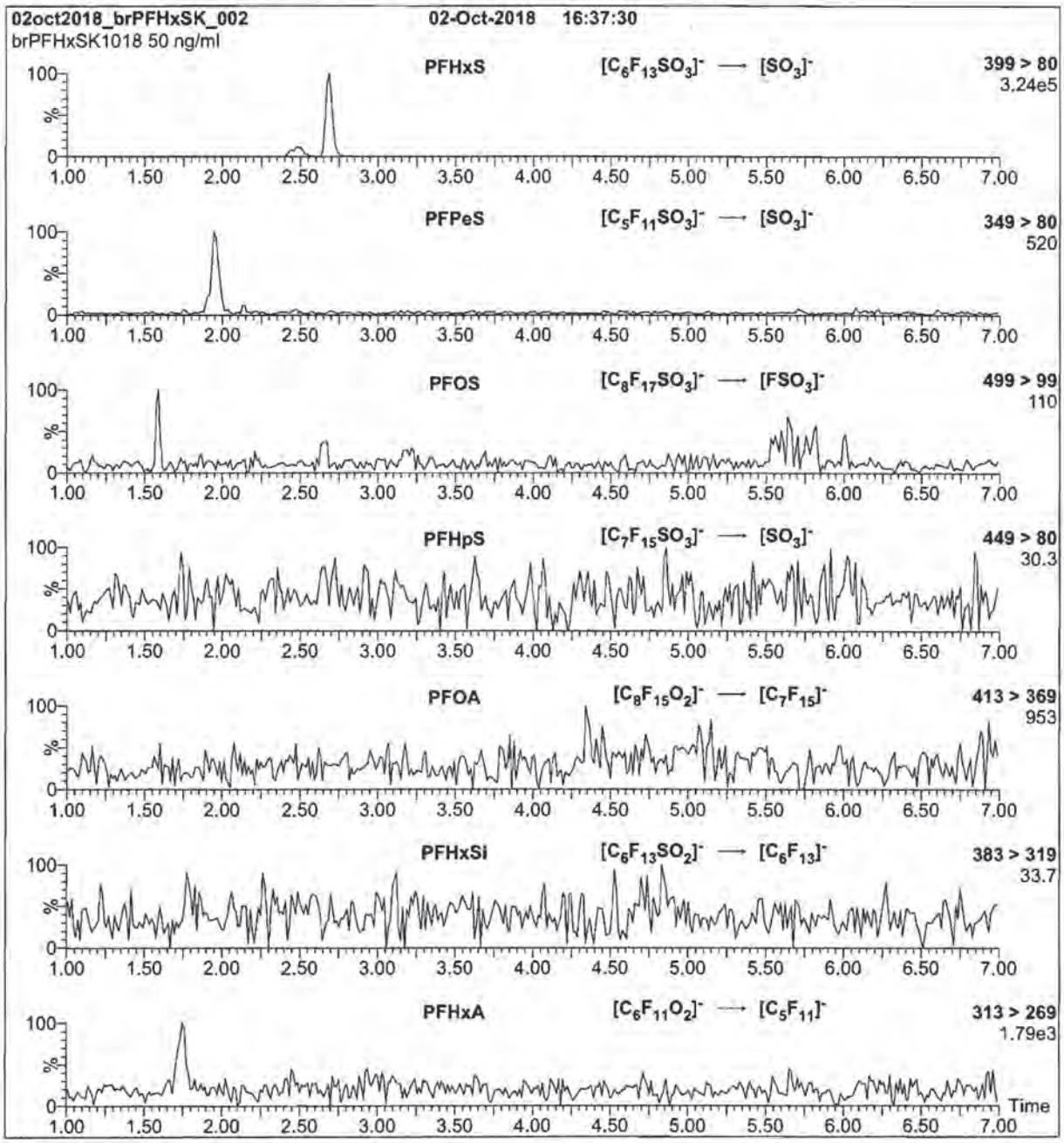
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0653

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

Form#:13, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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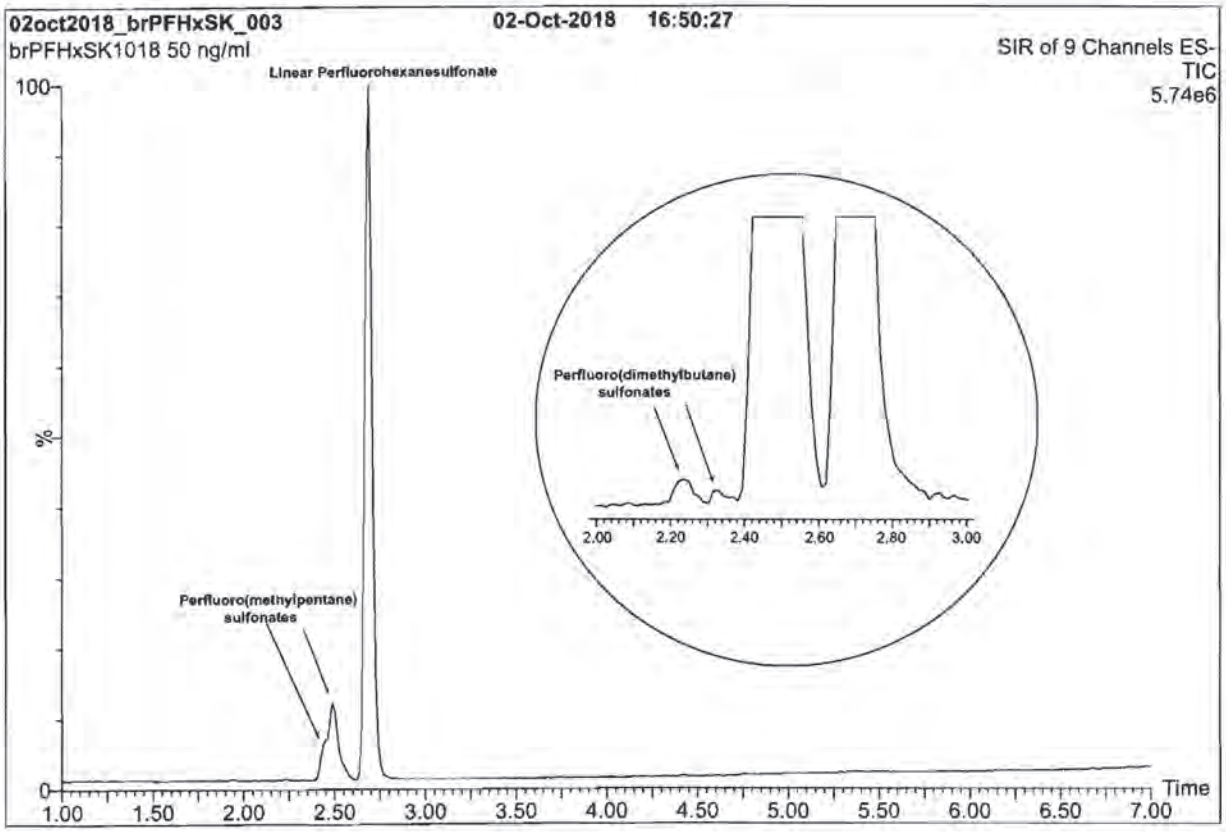
rev0

192653

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

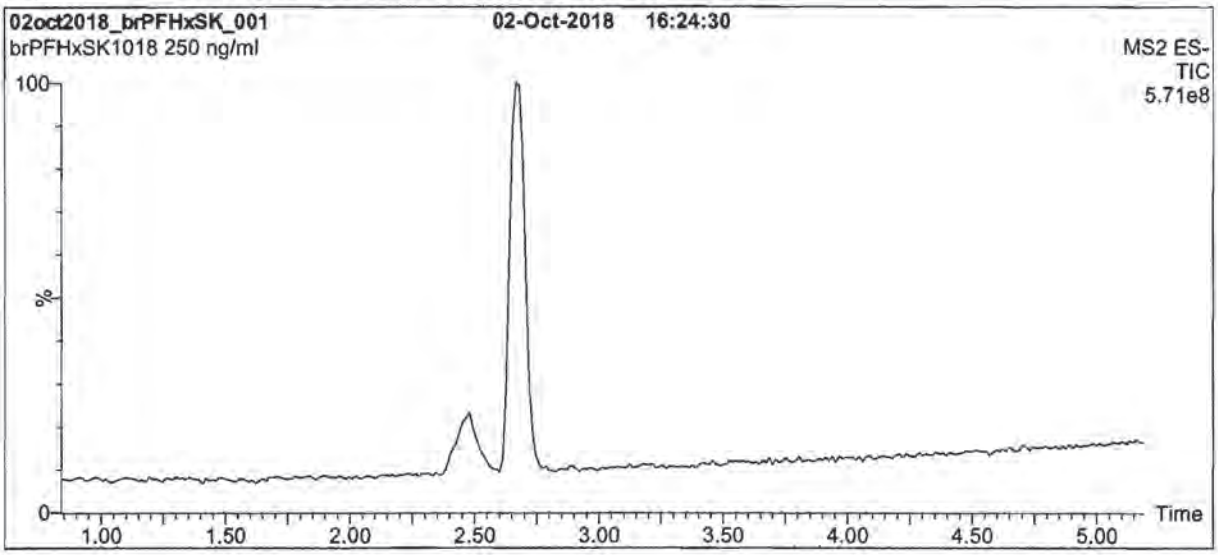
MS Parameters

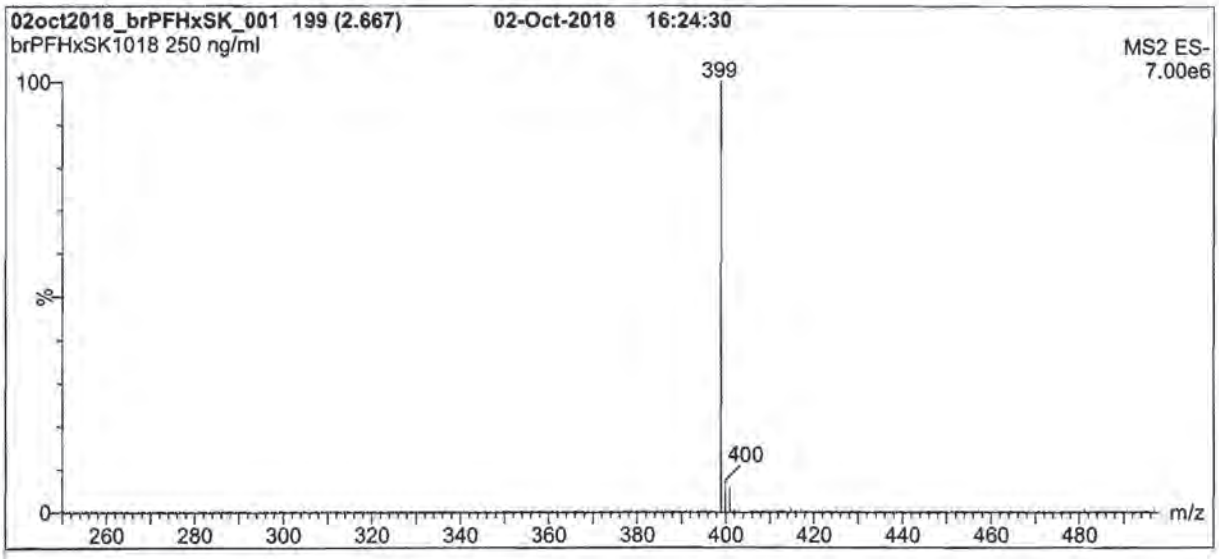
Experiment: SIR (9 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2 - 6)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0653

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

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rev0

19L0653

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**	$CF_3CF_2CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FSO_3^-K^+$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2SO_3^-K^+$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2CF_2SO_3^-K^+$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2CF_2CF_2SO_3^-K^+$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3\underset{\displaystyle CF_3}{\underset{\vert}{\overset{\displaystyle CF_3}{\overset{\vert}{C}}}}CF_2CF_2SO_3^-K^+$	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

Form#:13, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

brPFHxSK1018 (3 of 6)
rev0

19L0653

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:

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 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

19L0653

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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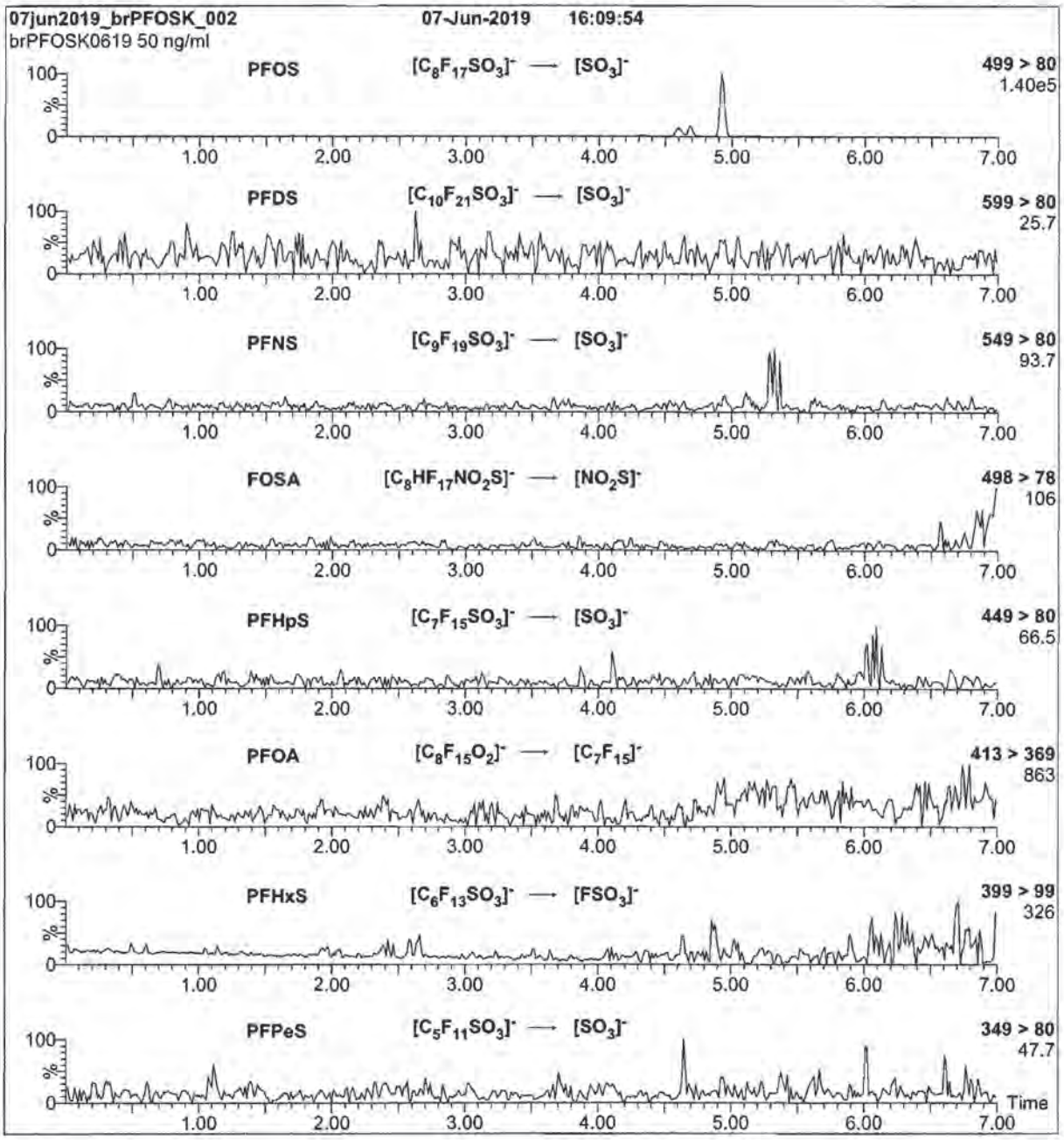
19L0654

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) = 2.97e-3
Collision Energy (eV) = 64

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Revision#:6, Revised 2018-08-14

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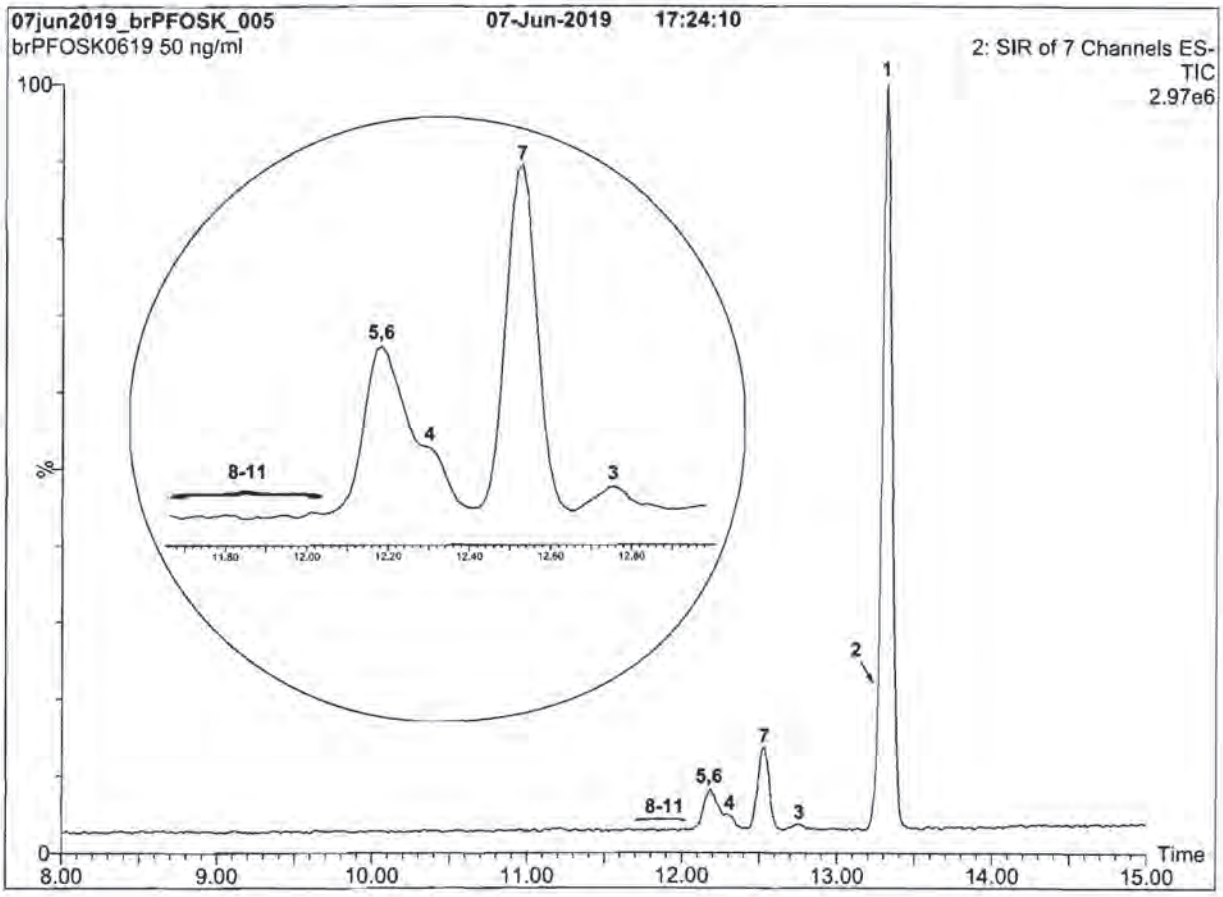
19L0654

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:

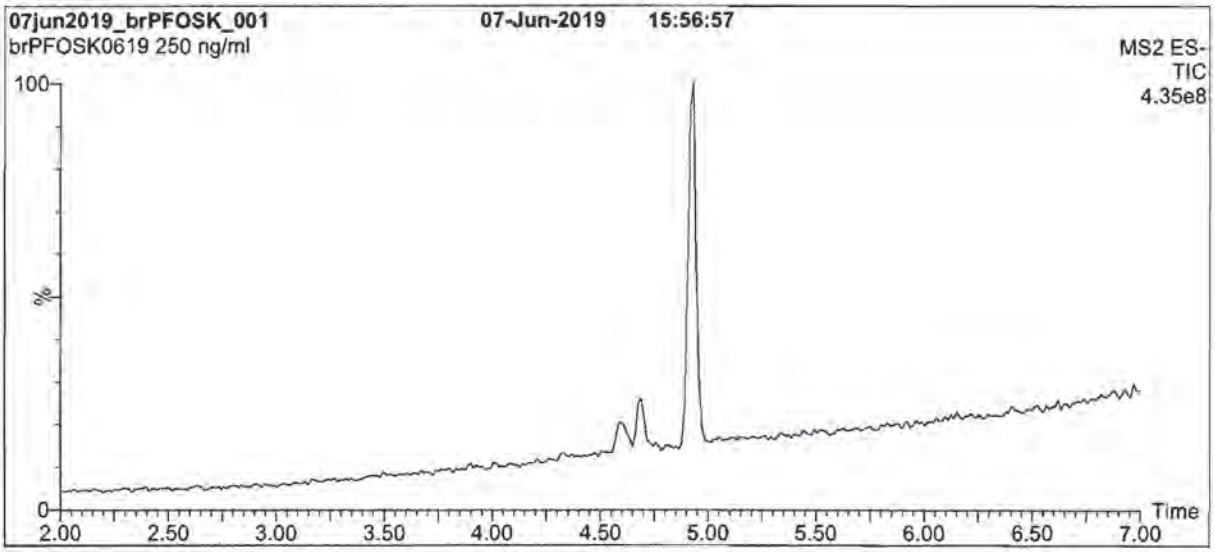
Column:	Acquity UPLC BEH Shield RP_{18} (1.7 µm, 2.1 x 100 mm)
Injection:	50 ng/ml of br-PFOSK
Mobile Phase:	Gradient 50% (80:20 MeOH:ACN) / 50% H_2O (both with 10 mM NH_4OAc buffer) Ramp to 90% organic over 8 min and hold for 2 min. Return to initial conditions over 0.75 min. Time: 12 min
Flow:	300 µl/min

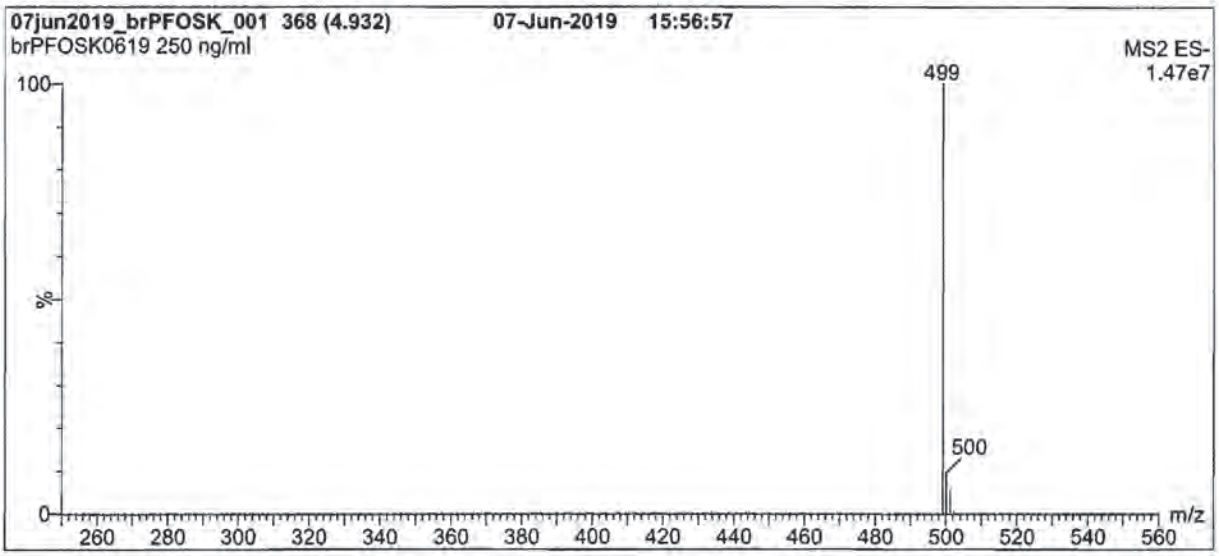
MS Conditions:

SIR (ES^-)
Source = 120 °C
Desolvation = 500 °C
Cone Voltage = 2.00V

1910654

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: 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.
Return to initial conditions over 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

Form#:13, Issued 2004-11-10
Revision#:6, Revised 2018-03-14

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rev0

19L0654

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	$CF_3C(CF_3)_2CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)_2CF_2CF_2CF_2SO_3^-K^+$	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:** 06/17/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

19L0654

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:

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 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

19L0654

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-PFOSK

**Potassium Perfluorooctanesulfonate
Solution/Mixture of Linear and
Branched Isomers**

PRODUCT CODE:	br-PFOSK
LOT NUMBER:	brPFOSK0619
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)	06/03/2019
LAST TESTED: (mm/dd/yyyy)	06/07/2019
EXPIRY DATE: (mm/dd/yyyy)	06/07/2024
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).

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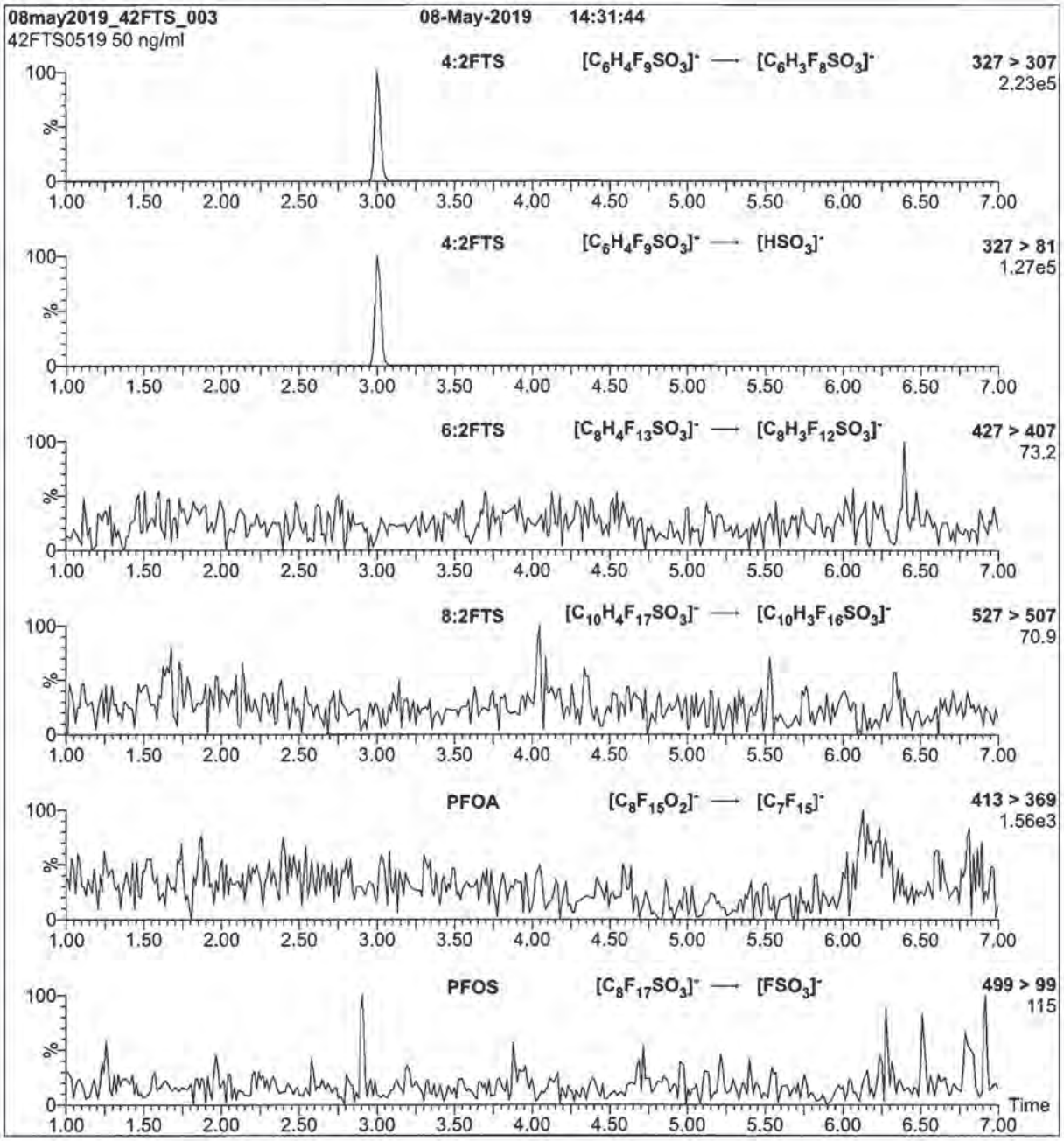
19L0655

Figure 2: **4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters
Collision Gas (mbar) = 3.07e-3
Collision Energy (eV) = 18

Form#:27, Issued 2004-11-10
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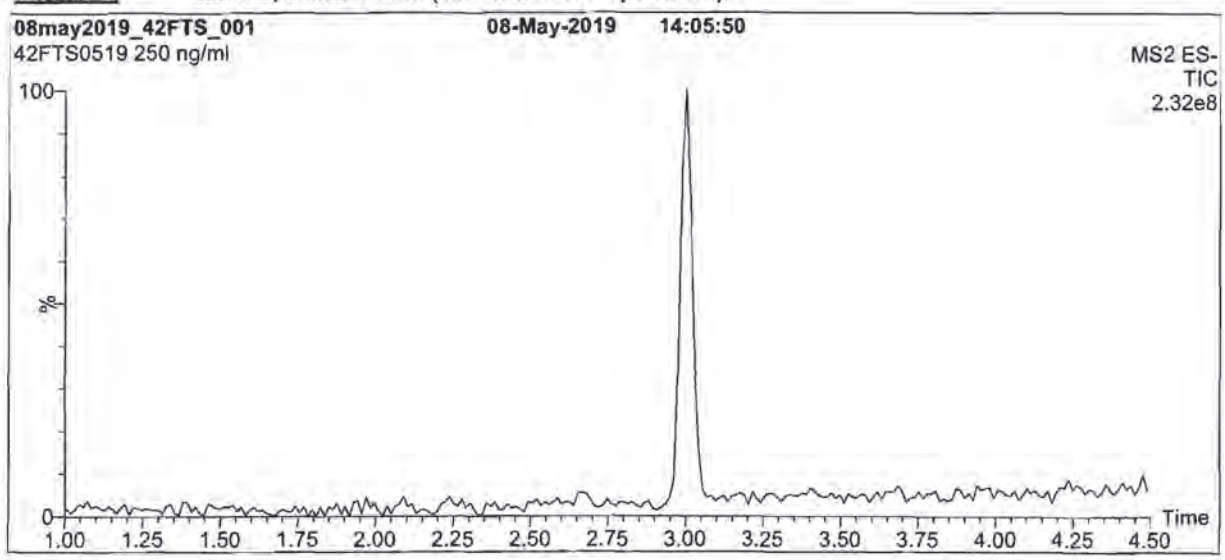
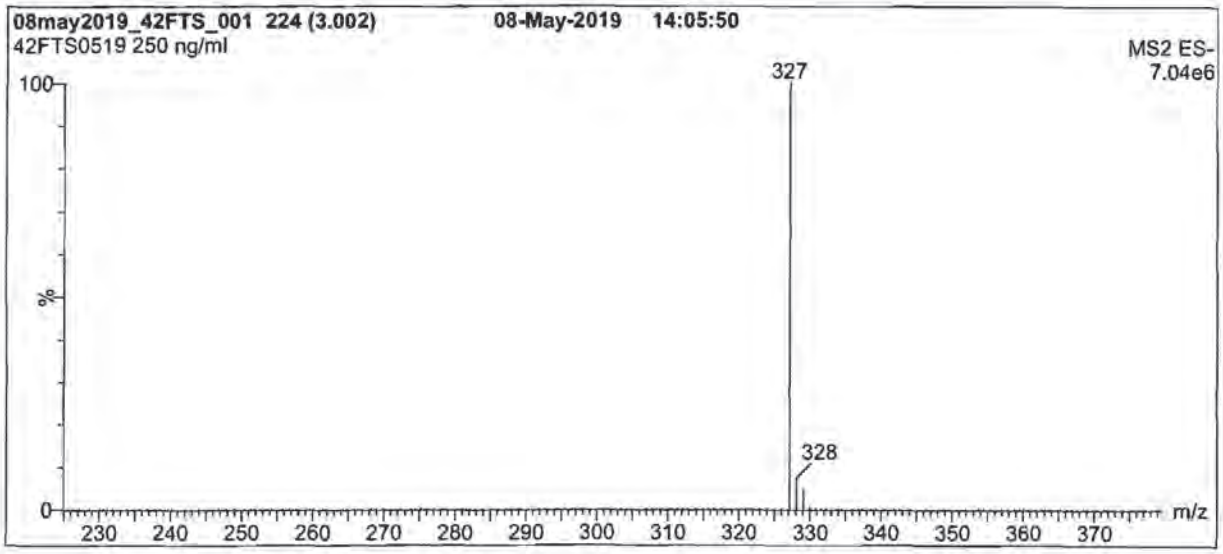
19L0655

Figure 1: 4:2FTS; 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: 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: 11 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) = 1000

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Revision#:6, Revised 2018-06-14

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HANDLING:

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly 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 REFERENCE MATERIAL PRODUCER

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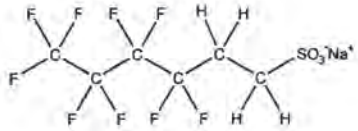
19L0655

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 4:2FTS **LOT NUMBER:** 42FTS0519
COMPOUND: Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

STRUCTURE: **CAS #:** 27619-93-8



MOLECULAR FORMULA: $C_6H_4F_8SO_3Na$ **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) 05/08/2019
EXPIRY DATE: (mm/dd/yyyy) 05/08/2024
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.

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Certified By: _____ **Date:** 05/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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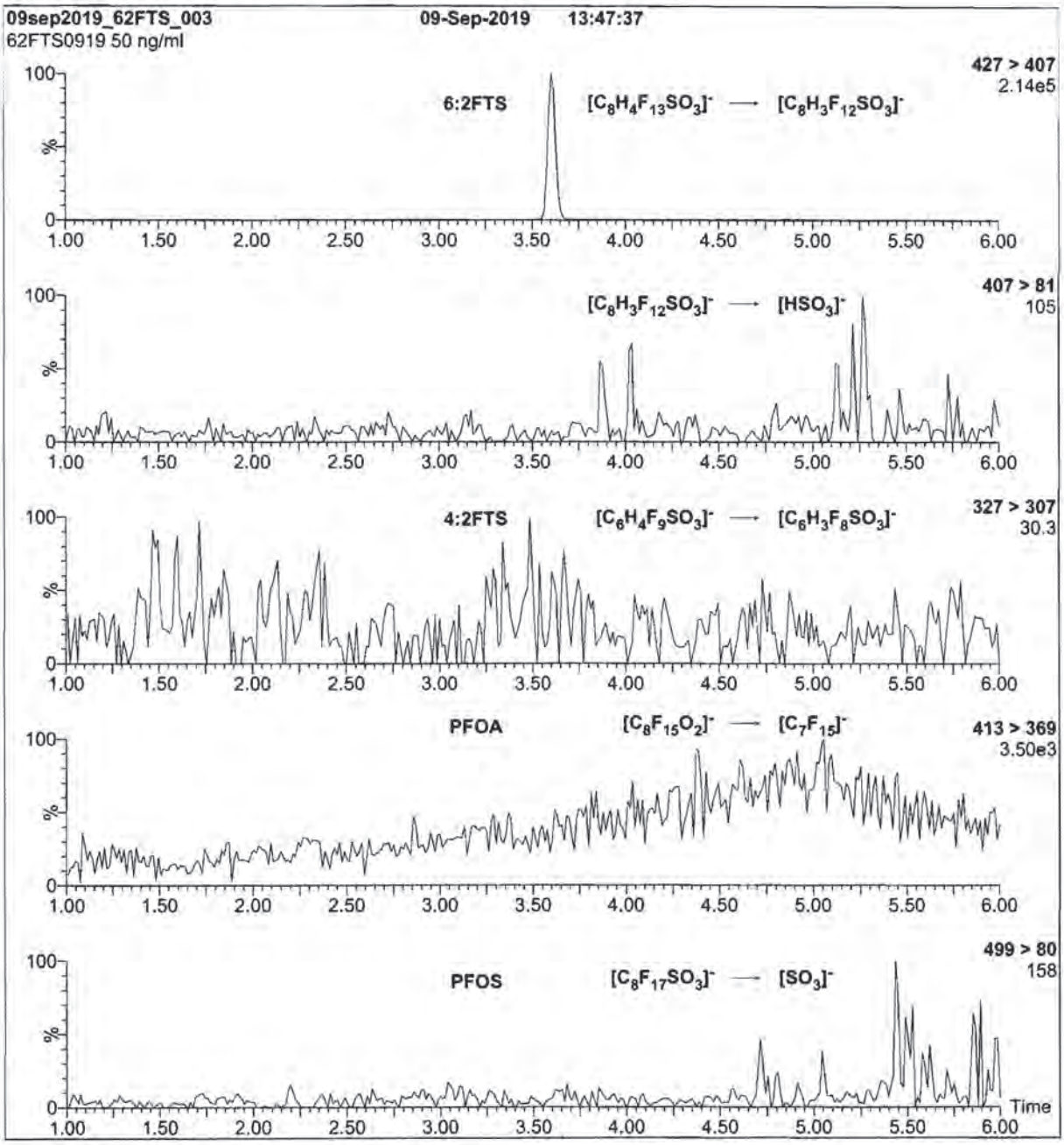
Revision#:6, Revised 2018-08-14

19L0656

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) = 3.61e-3
Collision Energy (eV) = 20

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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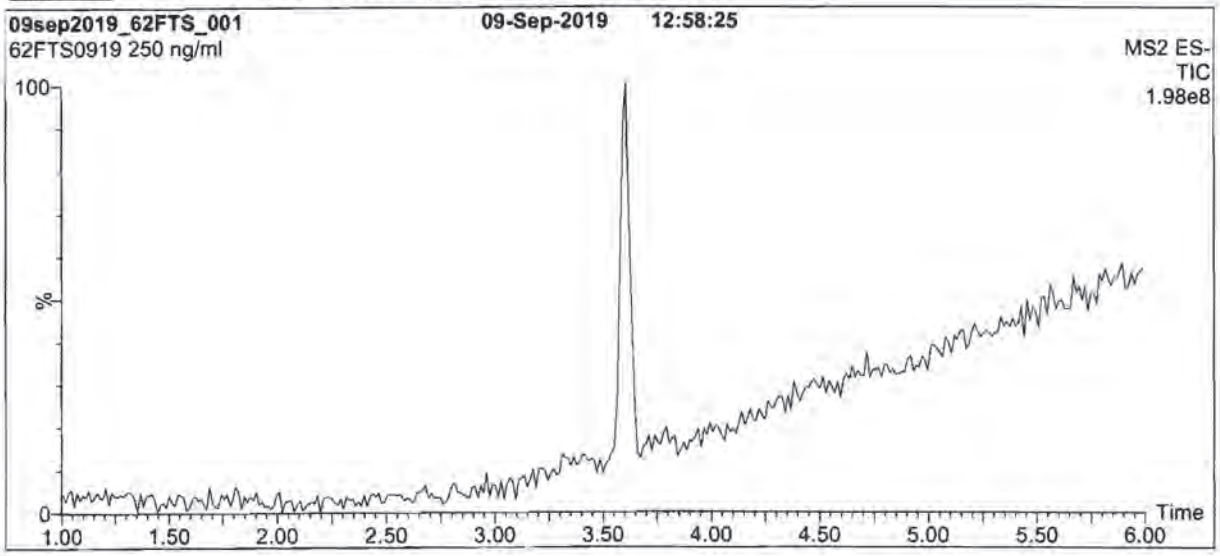
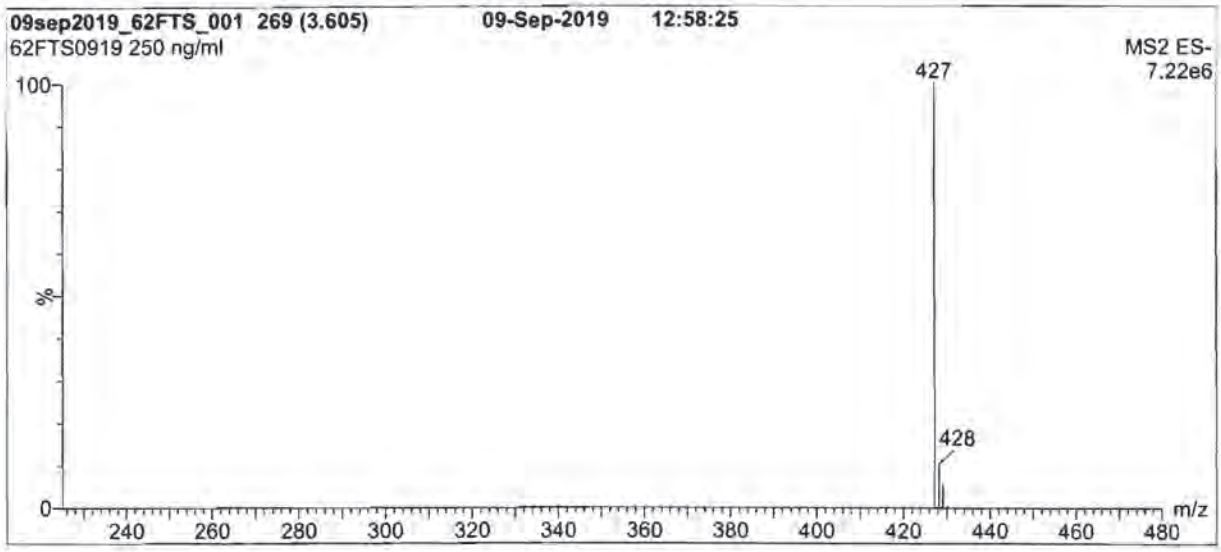
19L0656

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 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) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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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:

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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 REFERENCE MATERIAL PRODUCER

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Revision#:6, Revised 2018-08-14

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rev0

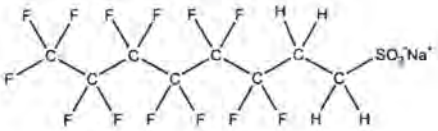
19L0656

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 6:2FTS **LOT NUMBER:** 62FTS0919
COMPOUND: Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

STRUCTURE: **CAS #:** 27619-94-9



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) 09/09/2019
EXPIRY DATE: (mm/dd/yyyy) 09/09/2024
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 09/09/2019 (mm/dd/yyyy)

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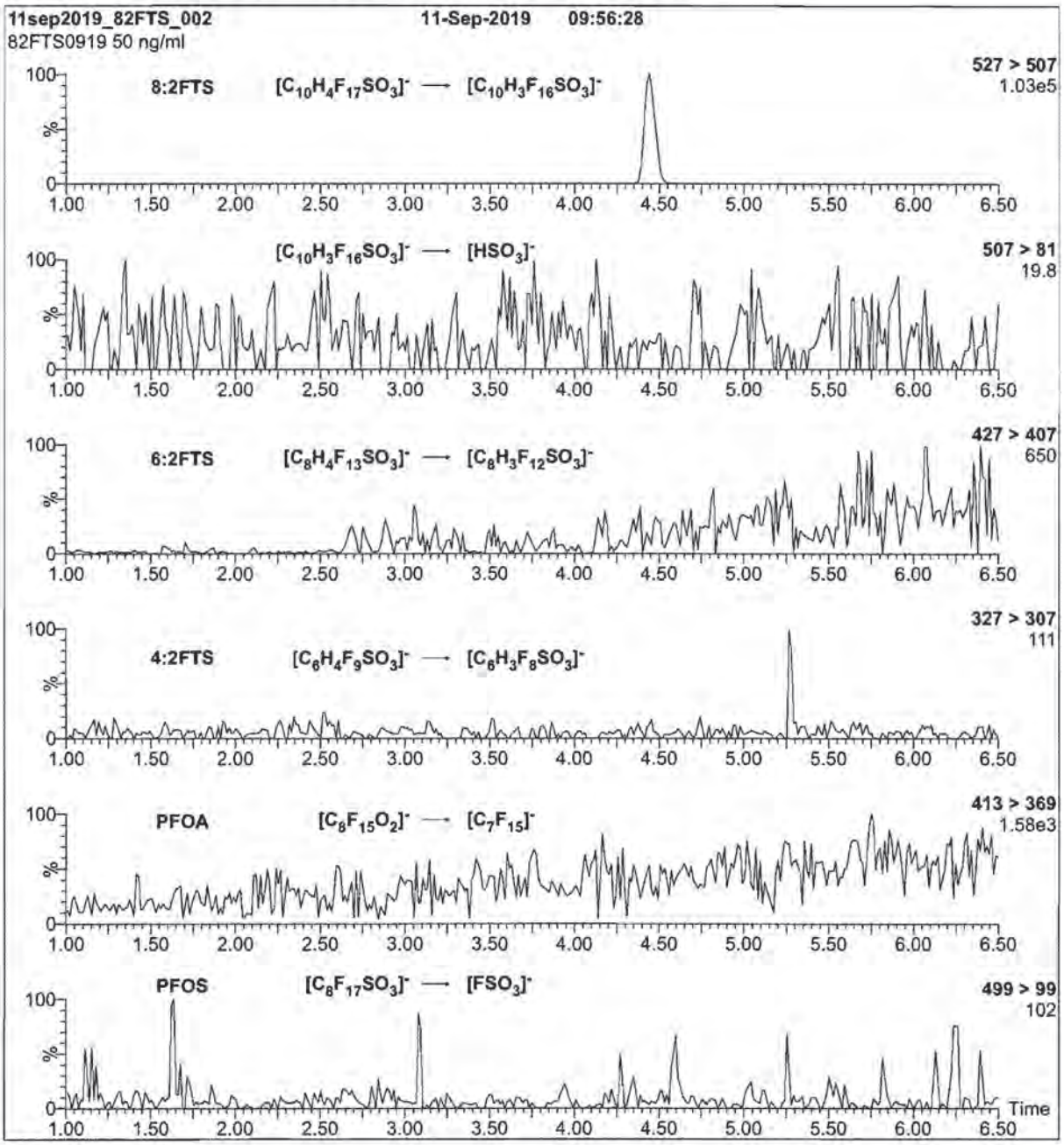
Revision#:6, Revised 2018-08-14

19L0657

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) = 3.49e-3
Collision Energy (eV) = 26

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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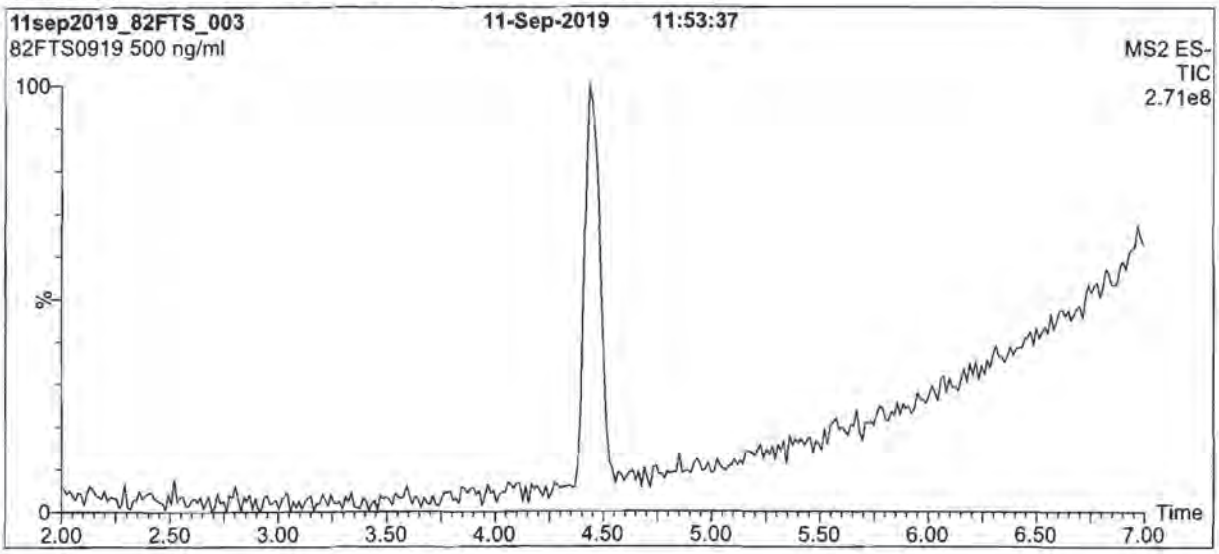
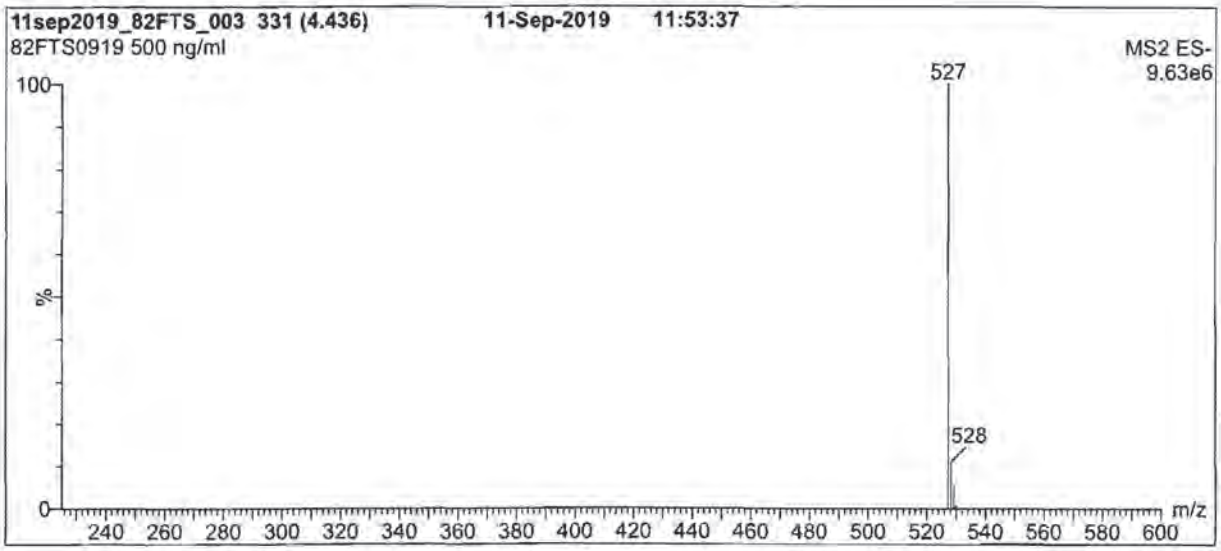
rev0

19L0657

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: 60% (80:20 MeOH:ACN) / 40% H_2O
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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) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

82FTS0919 (3 of 4)
rev0

19L0657

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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).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

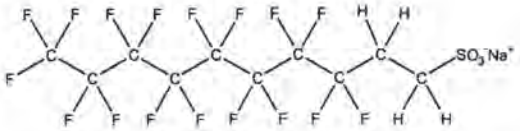
19L0657

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS0919
COMPOUND: Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

STRUCTURE: **CAS #:** 27619-96-1



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) 09/11/2019
EXPIRY DATE: (mm/dd/yyyy) 09/11/2024
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/11/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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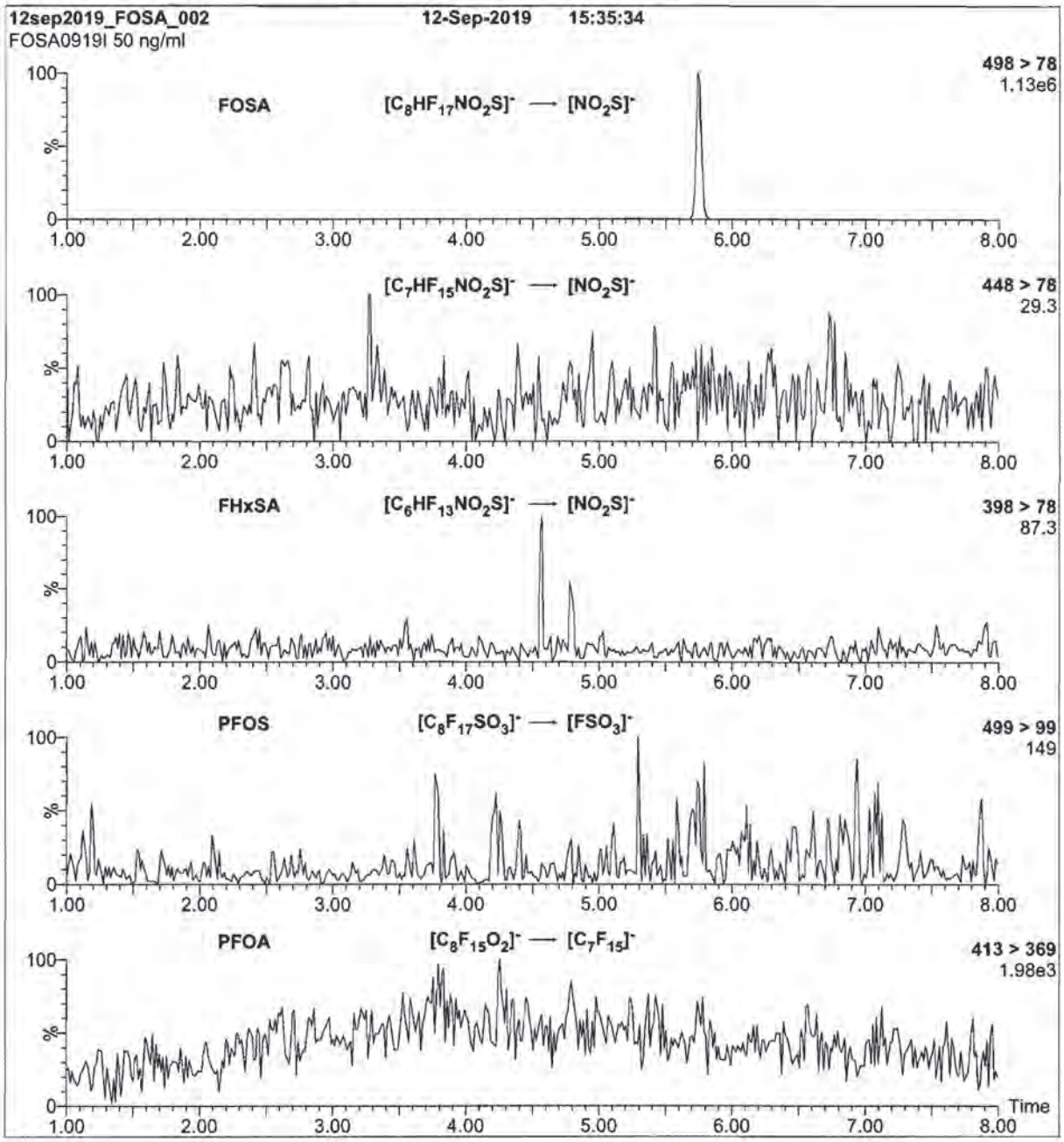
19L0658

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) = 3.57e-3
Collision Energy (eV) = 30

Form#:27, Issued 2004-11-10
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FOSA0919I (4 of 4)
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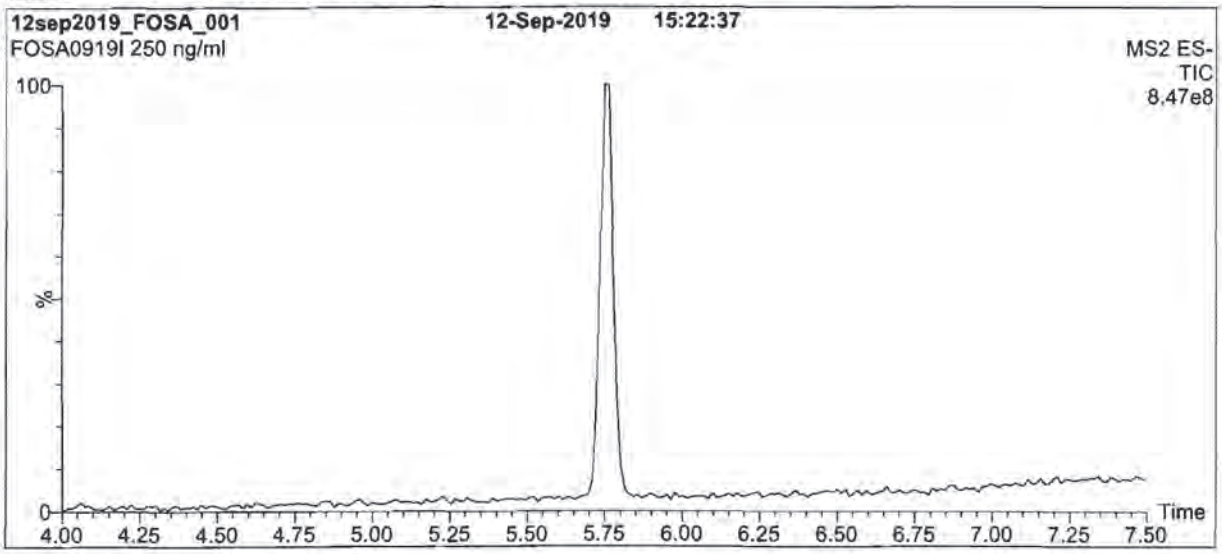
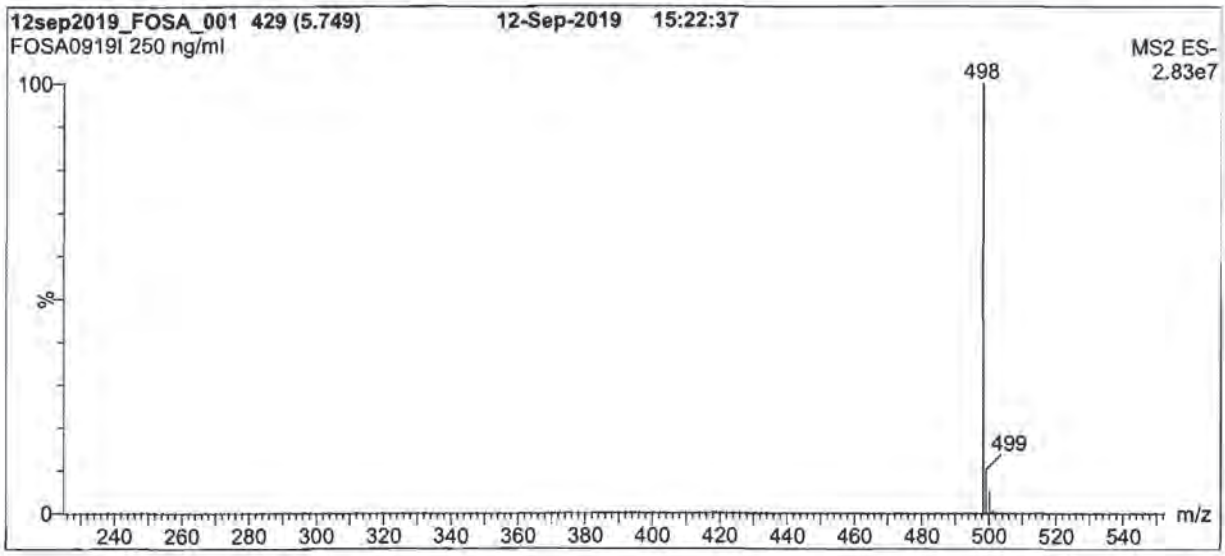
19L0658

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: 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) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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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:

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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 REFERENCE MATERIAL PRODUCER

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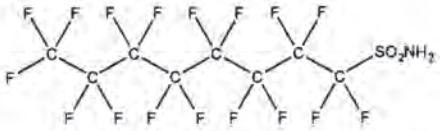
19L0658

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide
LOT NUMBER: FOSA0919I

STRUCTURE:
CAS #: 754-91-6



MOLECULAR FORMULA:	$C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	499.14
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/12/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/12/2024		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/13/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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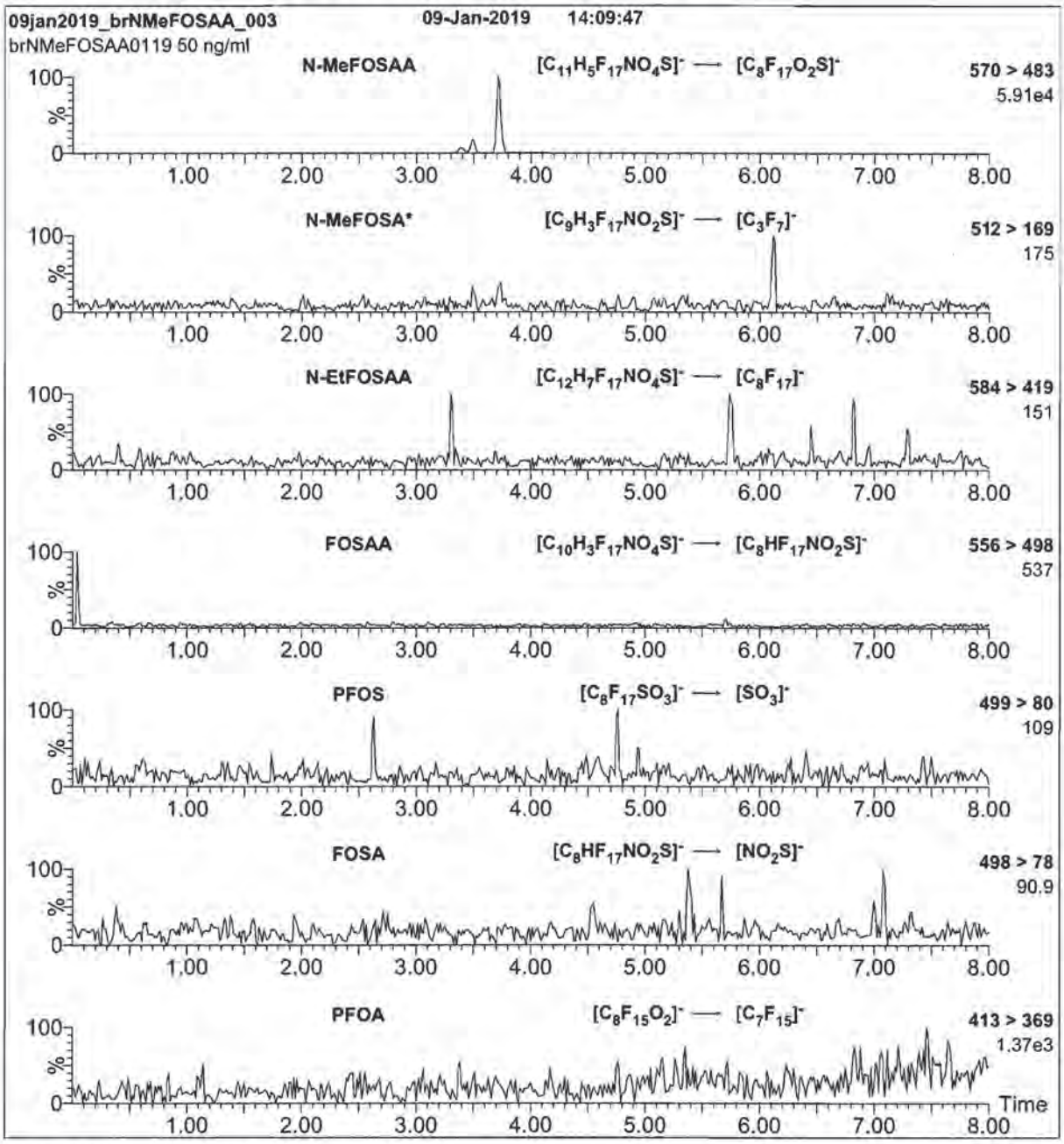
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0659

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 (br-NMeFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.79e-3
Collision Energy (eV) = 16

Form#:13, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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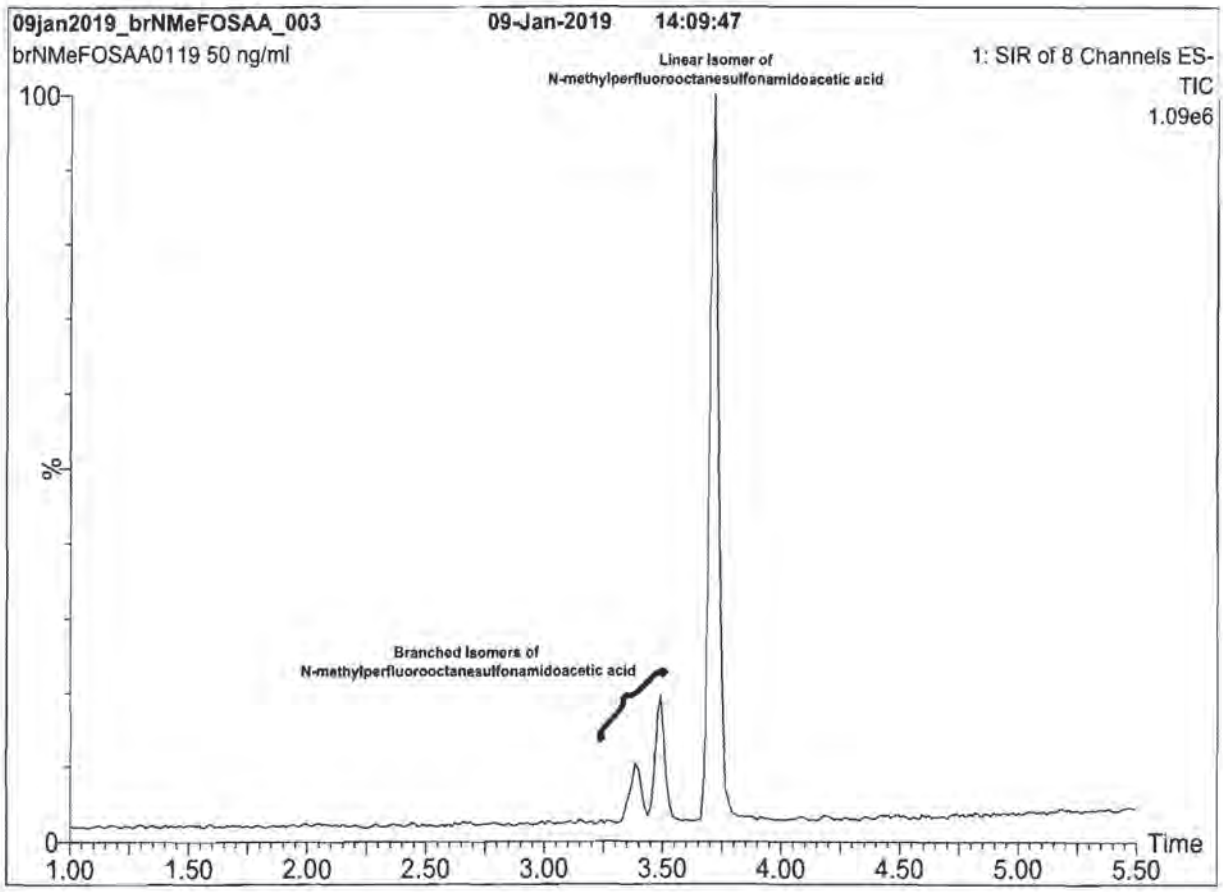
Figure 2: **br-NMeFOSAA; LC/MS Data (SIR)**



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) = 2.00
Cone Voltage (V) = 2-64
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:13, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

brNMeFOSAA0119 (5 of 6)
rev0

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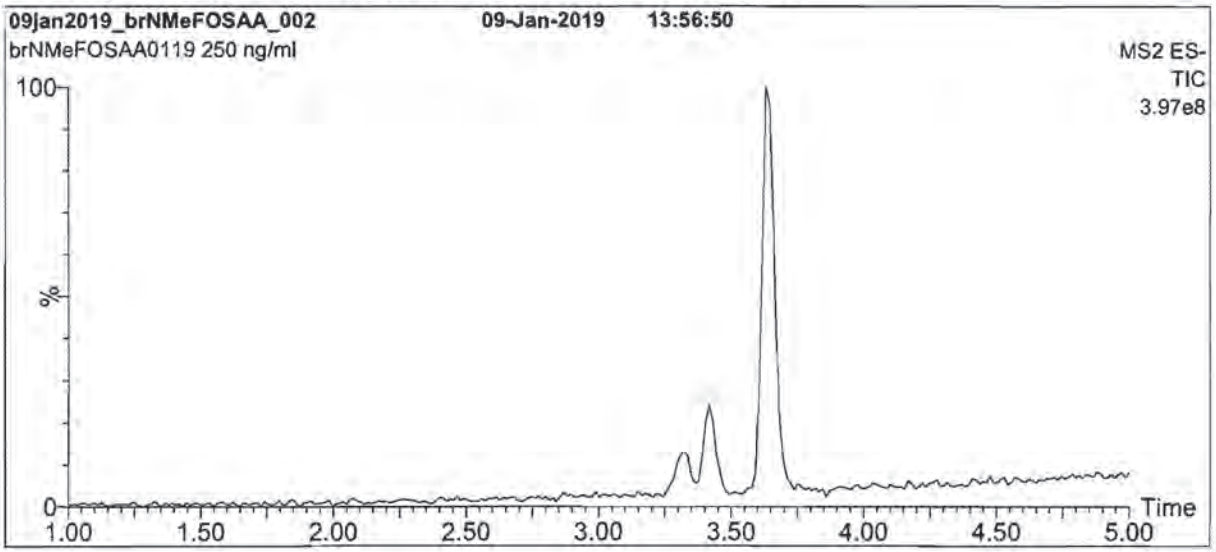
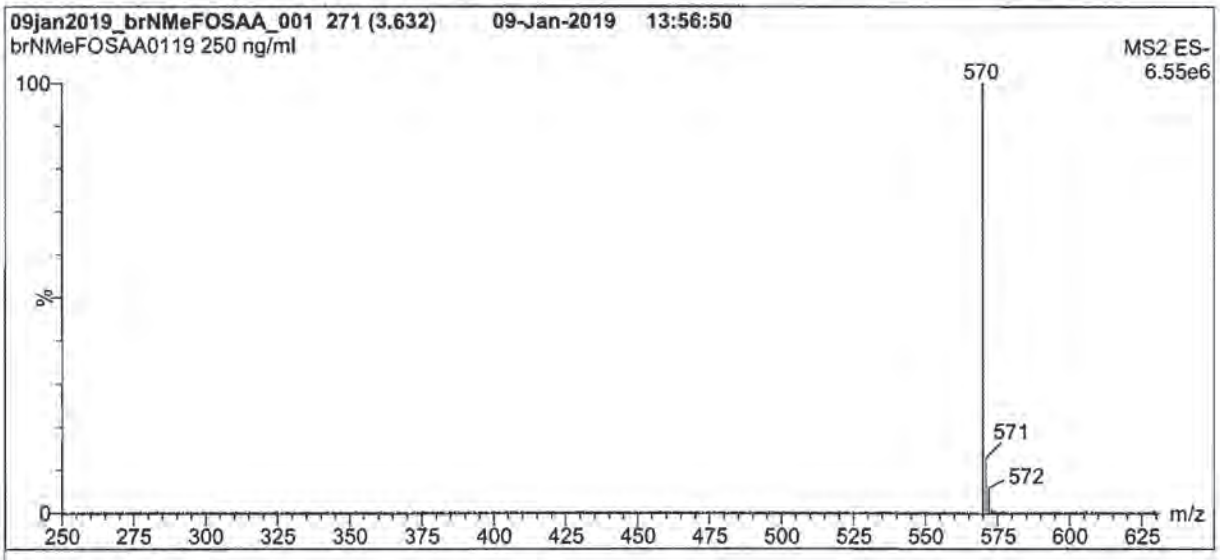
Figure 1: **br-NMeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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MS: **Waters Xevo TQ-S micro MS**

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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) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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Revision#:5, Revised 2016-08-14

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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:** 01/16/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

brNMeFOSAA0119 (3 of 6)
rev0

19L0659

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HANDLING:

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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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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 REFERENCE MATERIAL PRODUCER

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19L0659

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSAA

N-Methylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-NMeFOSAA
LOT NUMBER:	brNMeFOSAA0119
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/02/2019
LAST TESTED: (mm/dd/yyyy)	01/09/2019
EXPIRY DATE: (mm/dd/yyyy)	01/09/2024
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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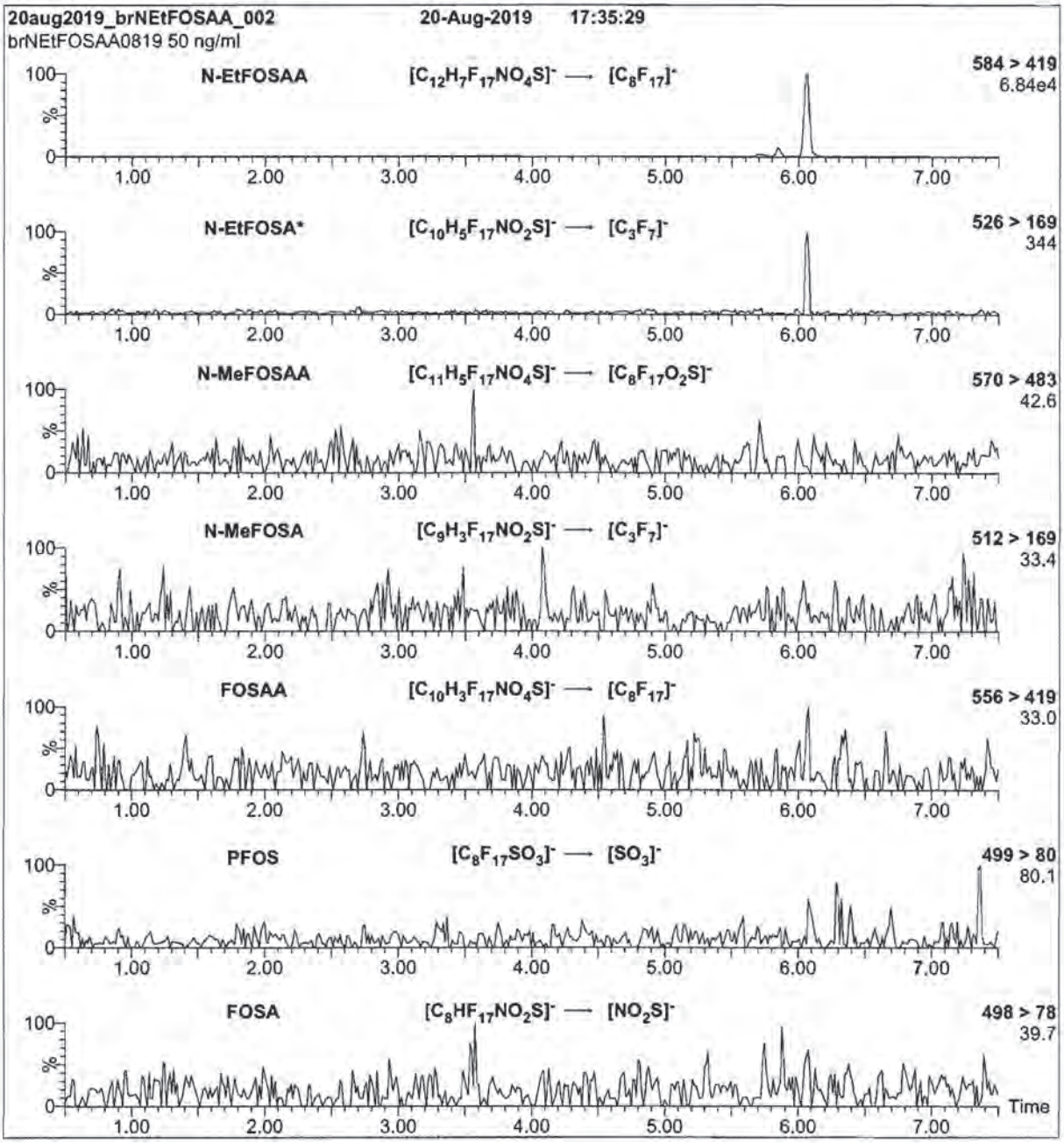
1920660

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) = 3.53e-3
Collision Energy (eV) = 18

Form#:13, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

brNEtFOSAA0819 (6 of 6)
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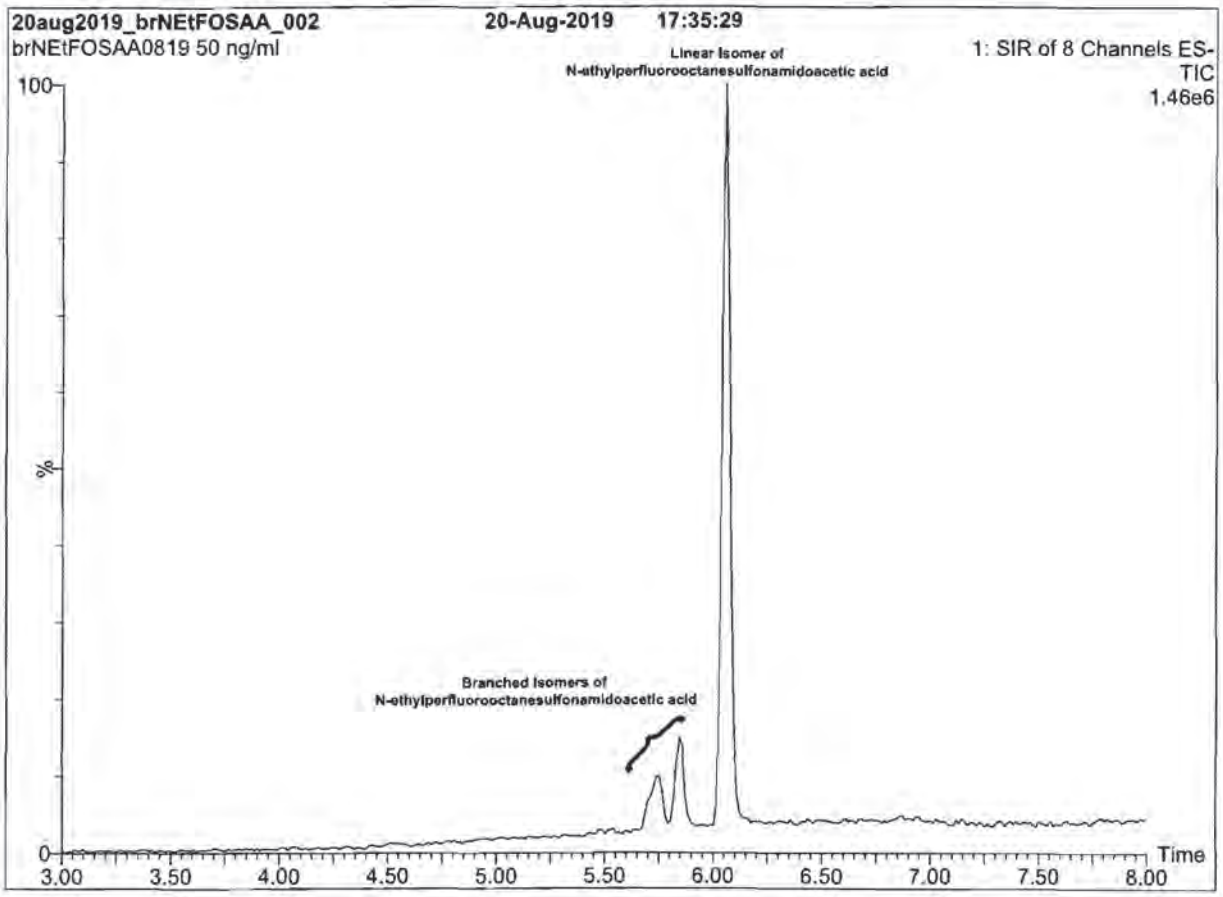
19L0660

Figure 2: **br-NEtFOSAA; LC/MS Data (SIR)**



Conditions for Figure 2:

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Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

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(both with 10 mM NH_4OAc buffer)
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2 min before returning to initial conditions in 0.75 min.
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Flow: 300 µl/min

MS Parameters

Experiment: SIR (8 channels)

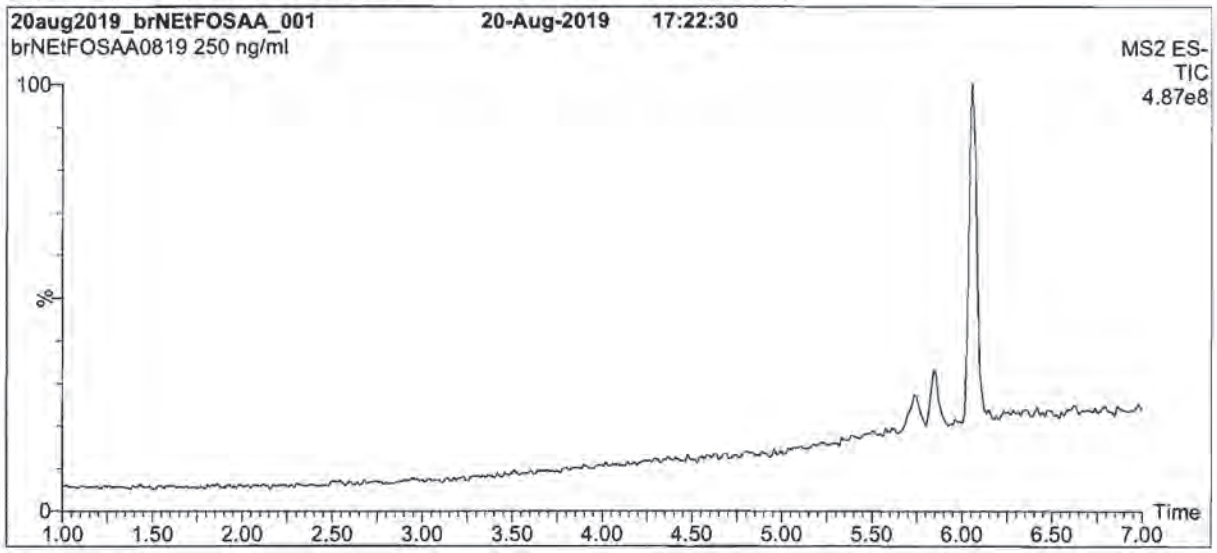
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-64)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

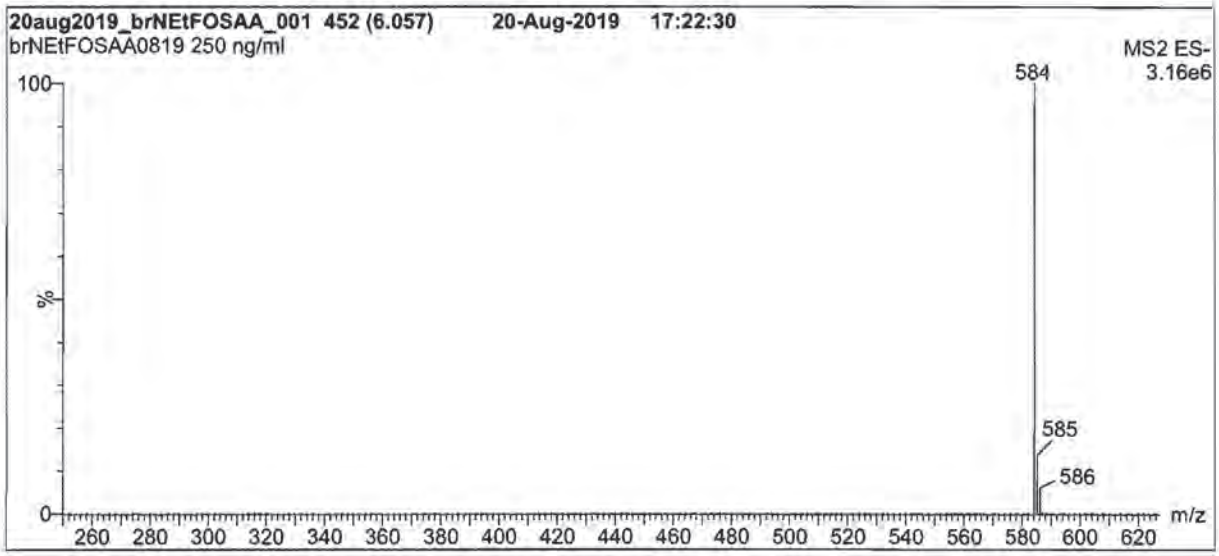
Form#:13, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

brNEtFOSAA0819 (5 of 6)
rev0

19L0660

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: 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
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:13, Issued 2004-11-10
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brNEtFOSAA0819 (4 of 6)
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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:** 08/29/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:8, Revised 2018-08-14

brNEtFOSAA0819 (3 of 6)
rev0

19L0660

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 $x_1, x_2,...x_n$ 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 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

19L0660

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSAA

N-Ethylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-NEtFOSAA
LOT NUMBER:	brNEtFOSAA0819
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	08/20/2019
LAST TESTED: (mm/dd/yyyy)	08/20/2019
EXPIRY DATE: (mm/dd/yyyy)	08/20/2024
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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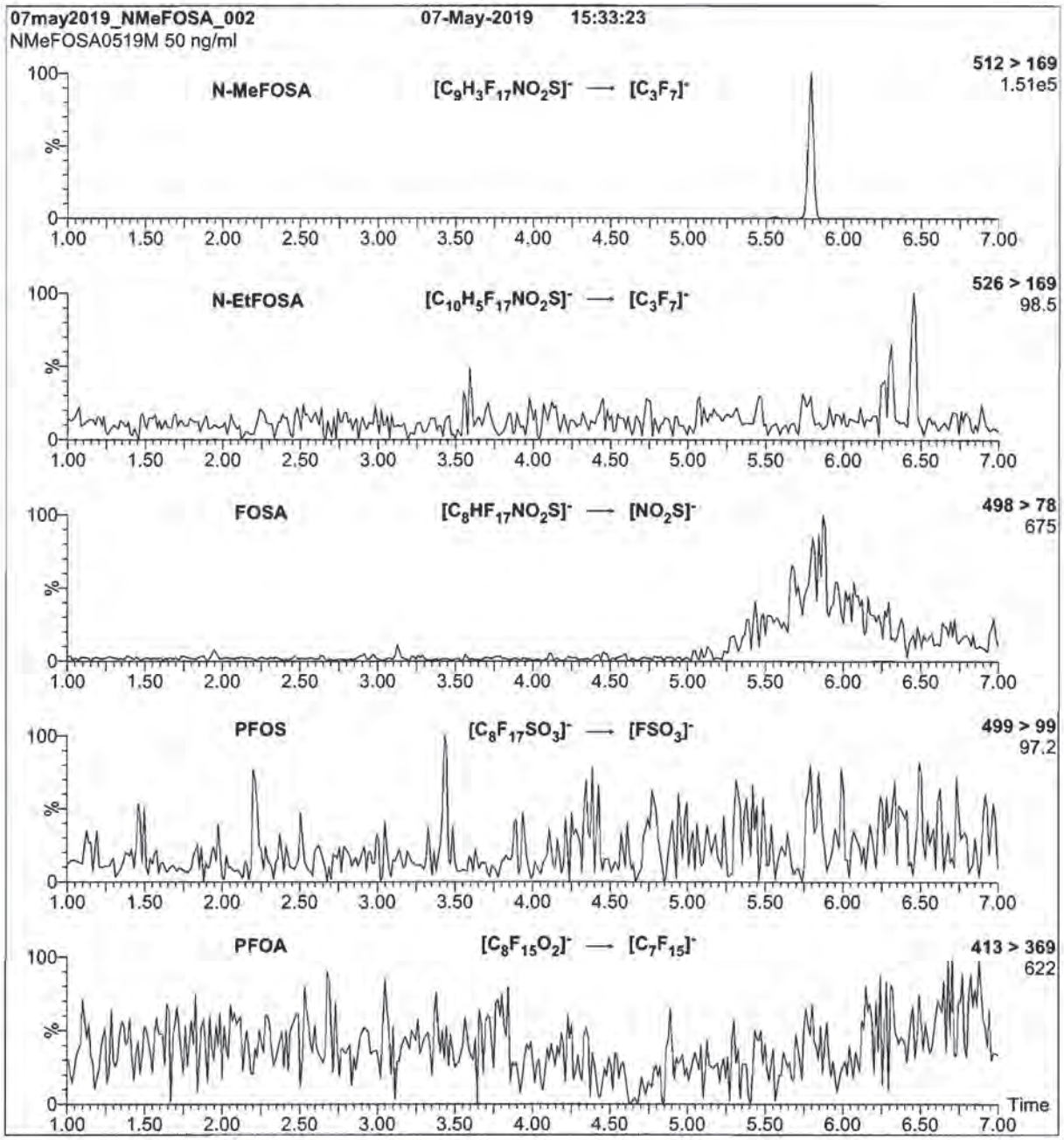
19L0661

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

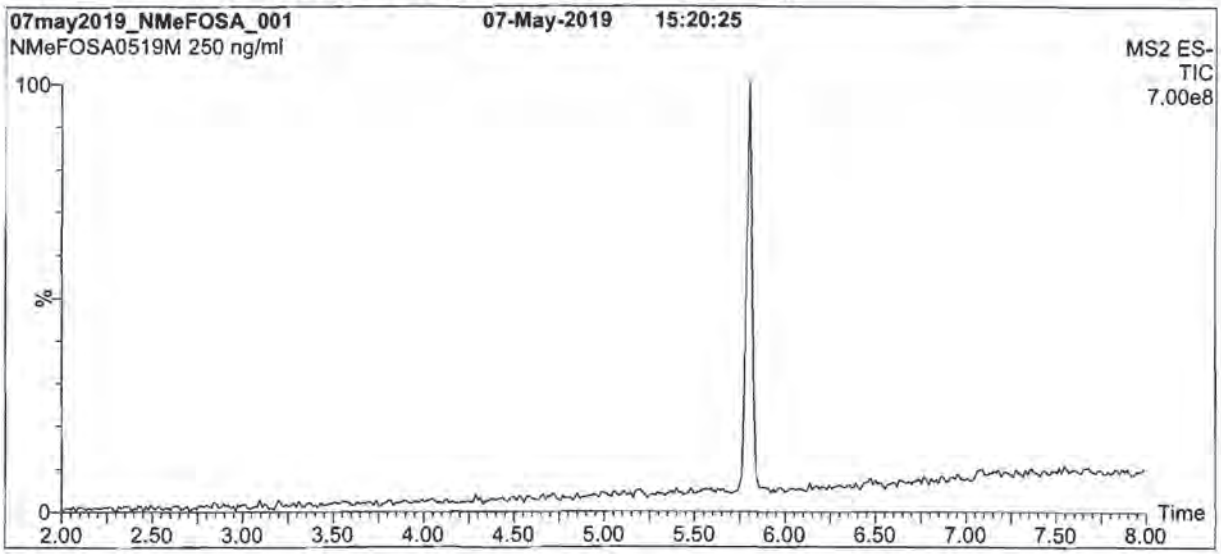
Collision Gas (mbar) = 2.99e-3
Collision Energy (eV) = 24

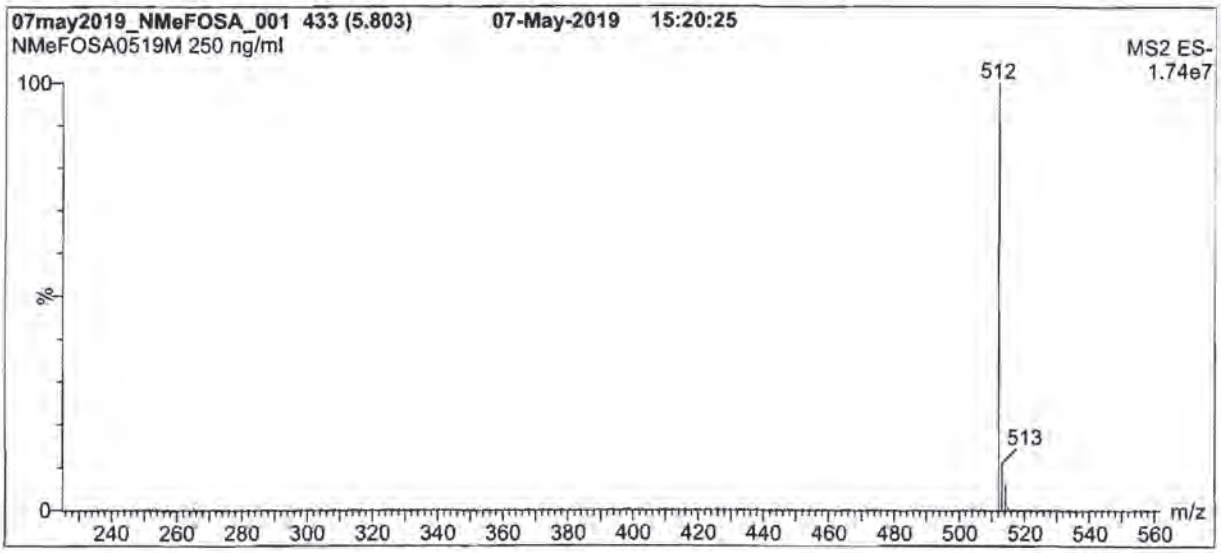
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

NMeFOSA0519M (4 of 4)
rev0

19L0661

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 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: 11 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

NMeFOSA0519M (3 of 4)
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INTENDED USE:

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HANDLING:

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UNCERTAINTY:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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19L0661

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide
LOT NUMBER: NMeFOSA0519M

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)	05/07/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/07/2024		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 05/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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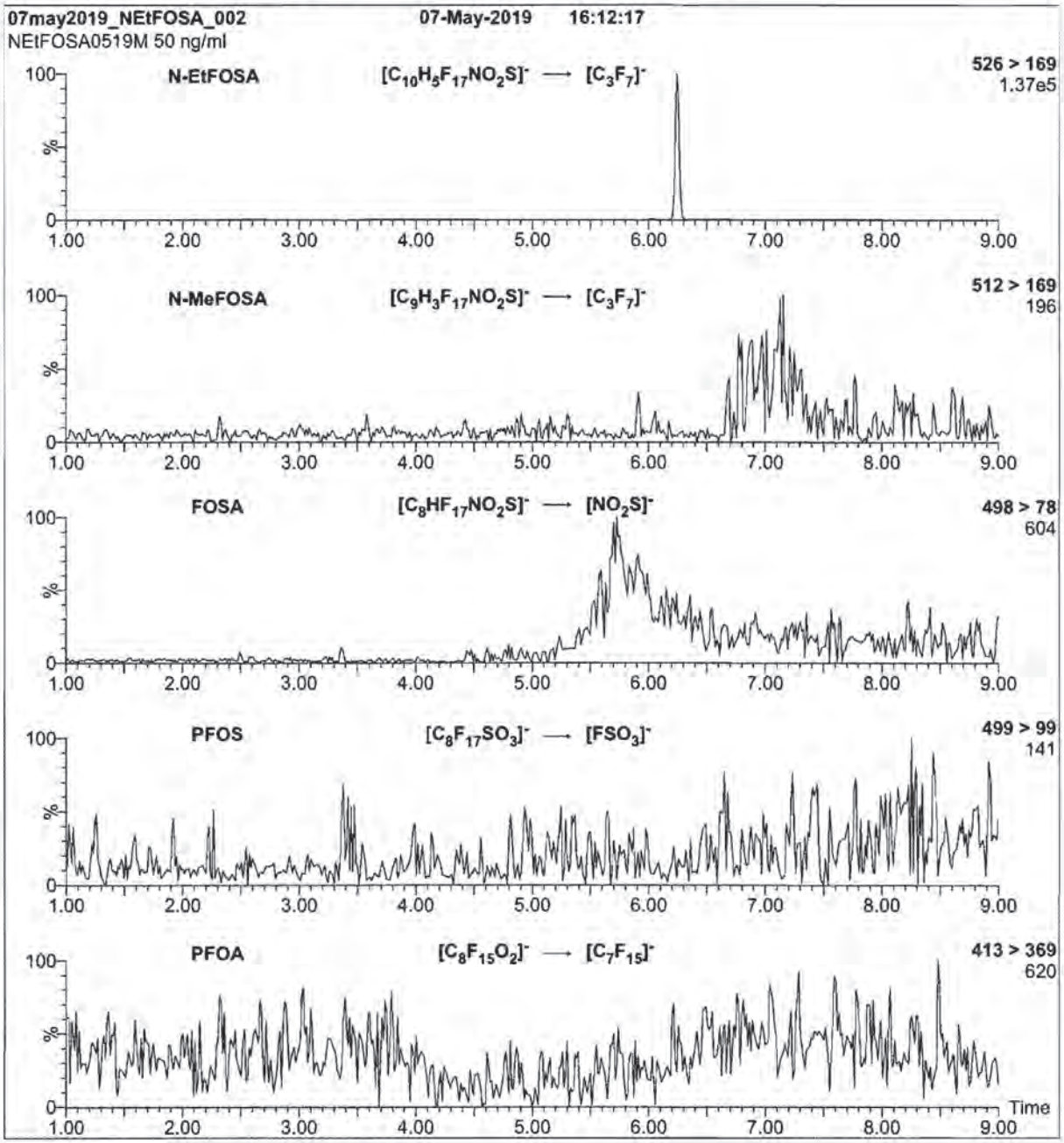
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0662

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) = 3.00e-3
Collision Energy (eV) = 24

Form#:27, Issued 2004-11-10
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NEtFOSA0519M (4 of 4)
rev0

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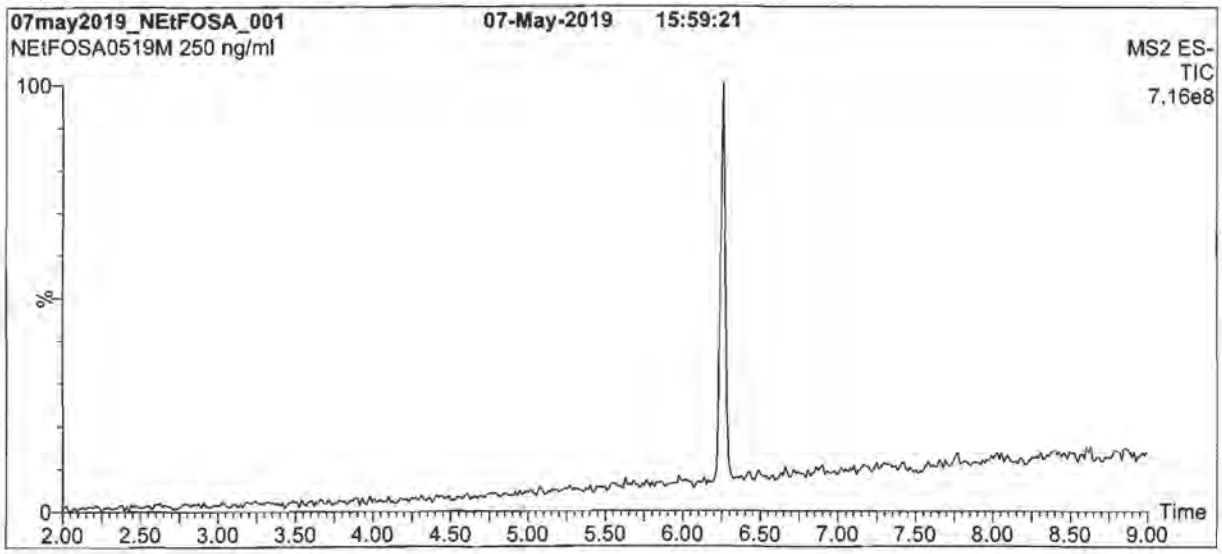
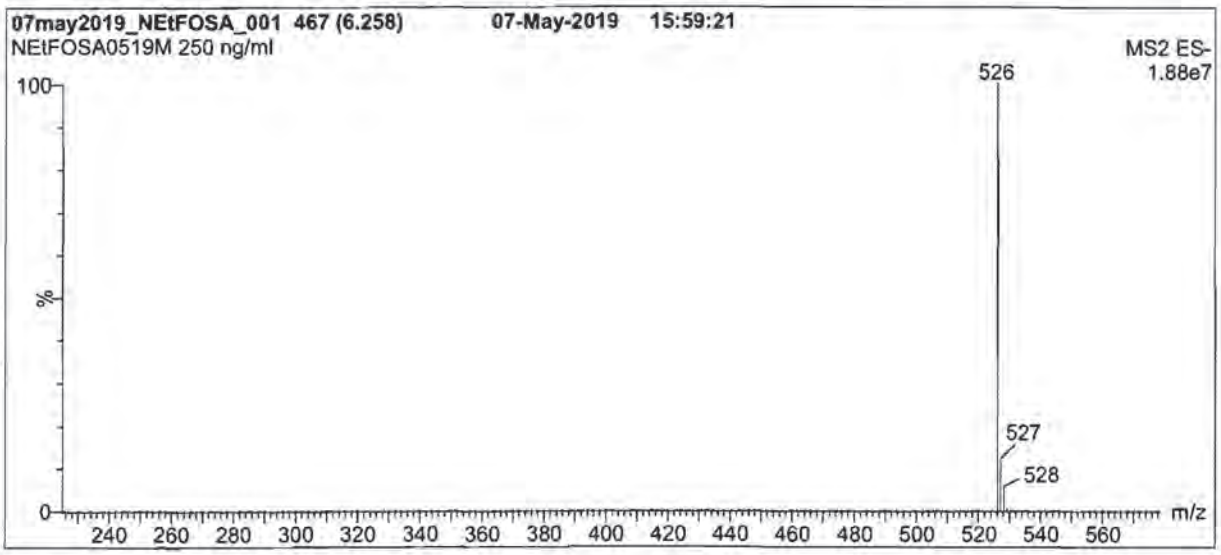
Figure 1: **N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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MS: **Waters Xevo TQ-S micro MS**

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3 min before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
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Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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rev0

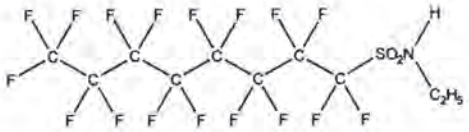
19L0662

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide
LOT NUMBER: NEtFOSA0519M

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)	05/07/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/07/2024		
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:** 05/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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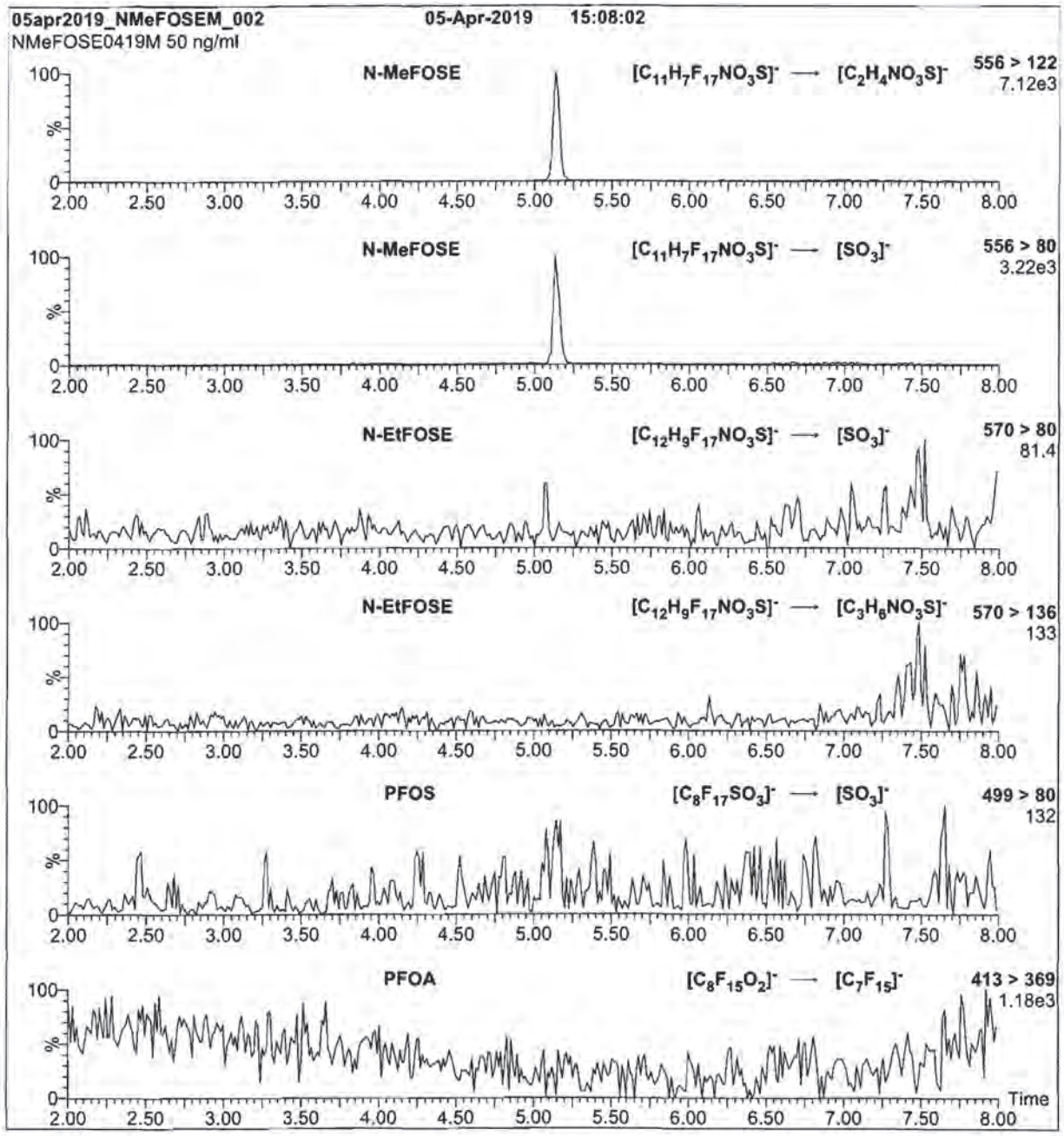
19L0663

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

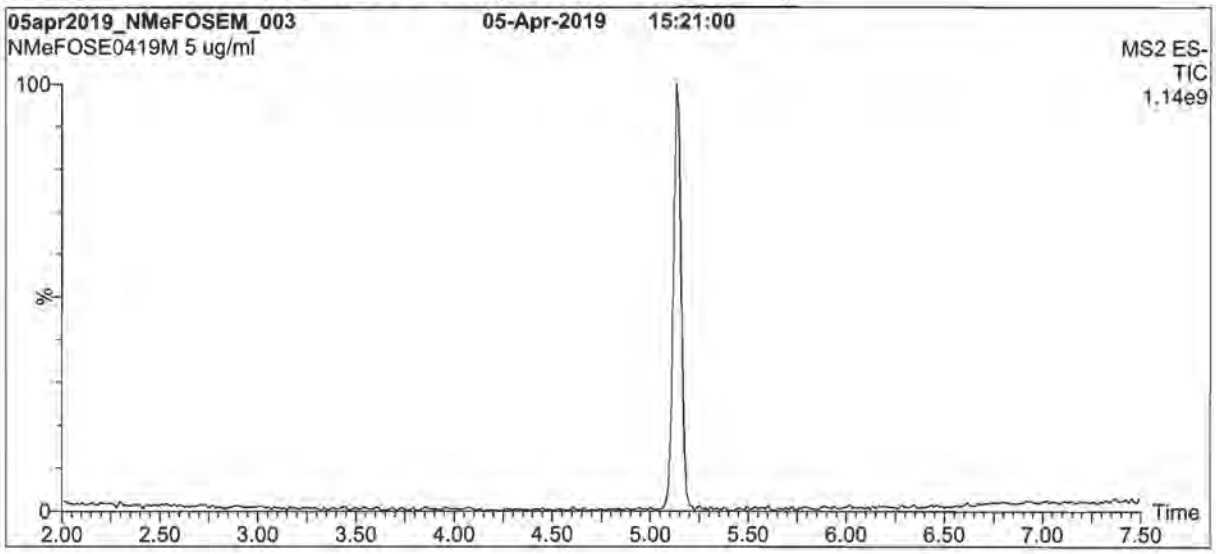
MS Parameters

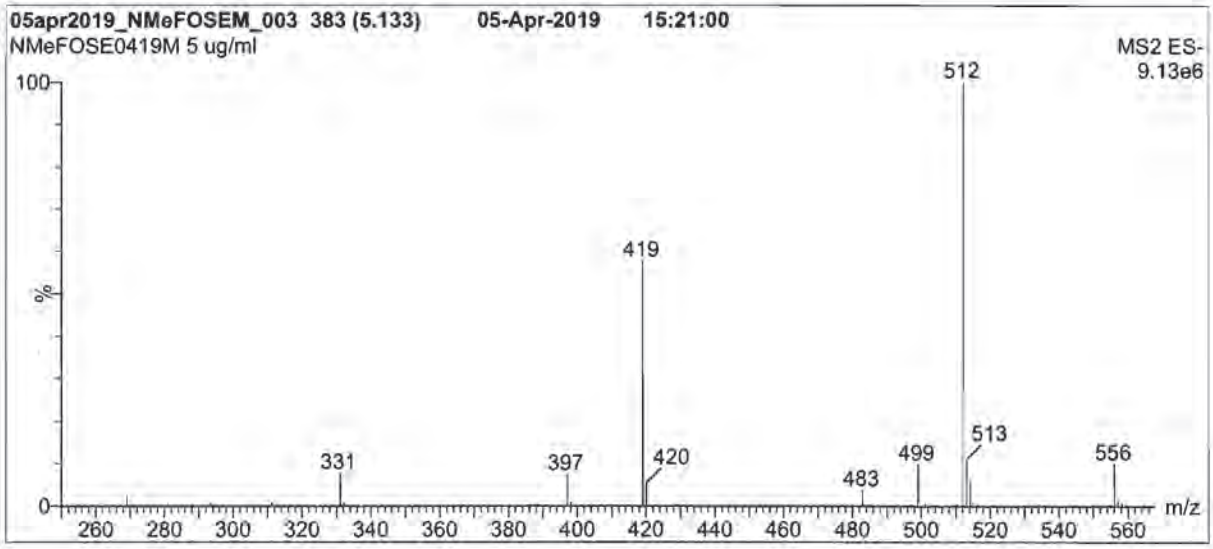
Collision Gas (mbar) = 2.94e-3
Collision Energy (eV) = 36

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

NMeFOSE0419M (5 of 5)
rev0

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 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)

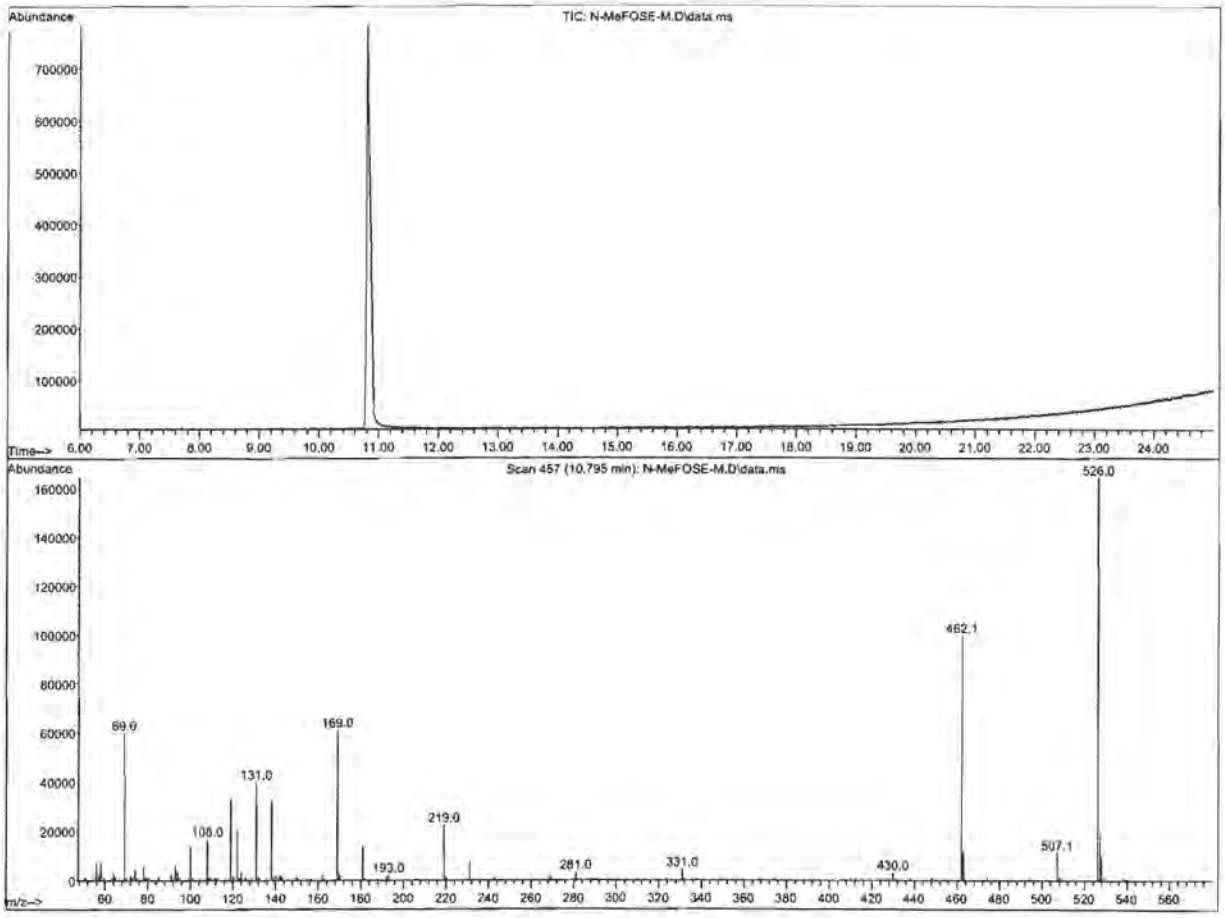
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

NMeFOSE0419M (4 of 5)
rev0

1910663

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)

19L0663

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. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

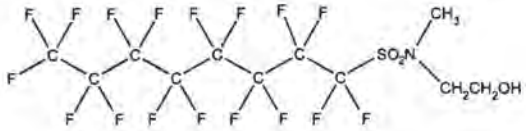
1910663

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0419M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 24448-09-7



MOLECULAR FORMULA: $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:** 557.22
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/08/2019 (HRGC/LRMS)
04/05/2019 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 04/08/2024
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: B.G. Chittim, General Manager **Date:** 04/12/2019 (mm/dd/yyyy)

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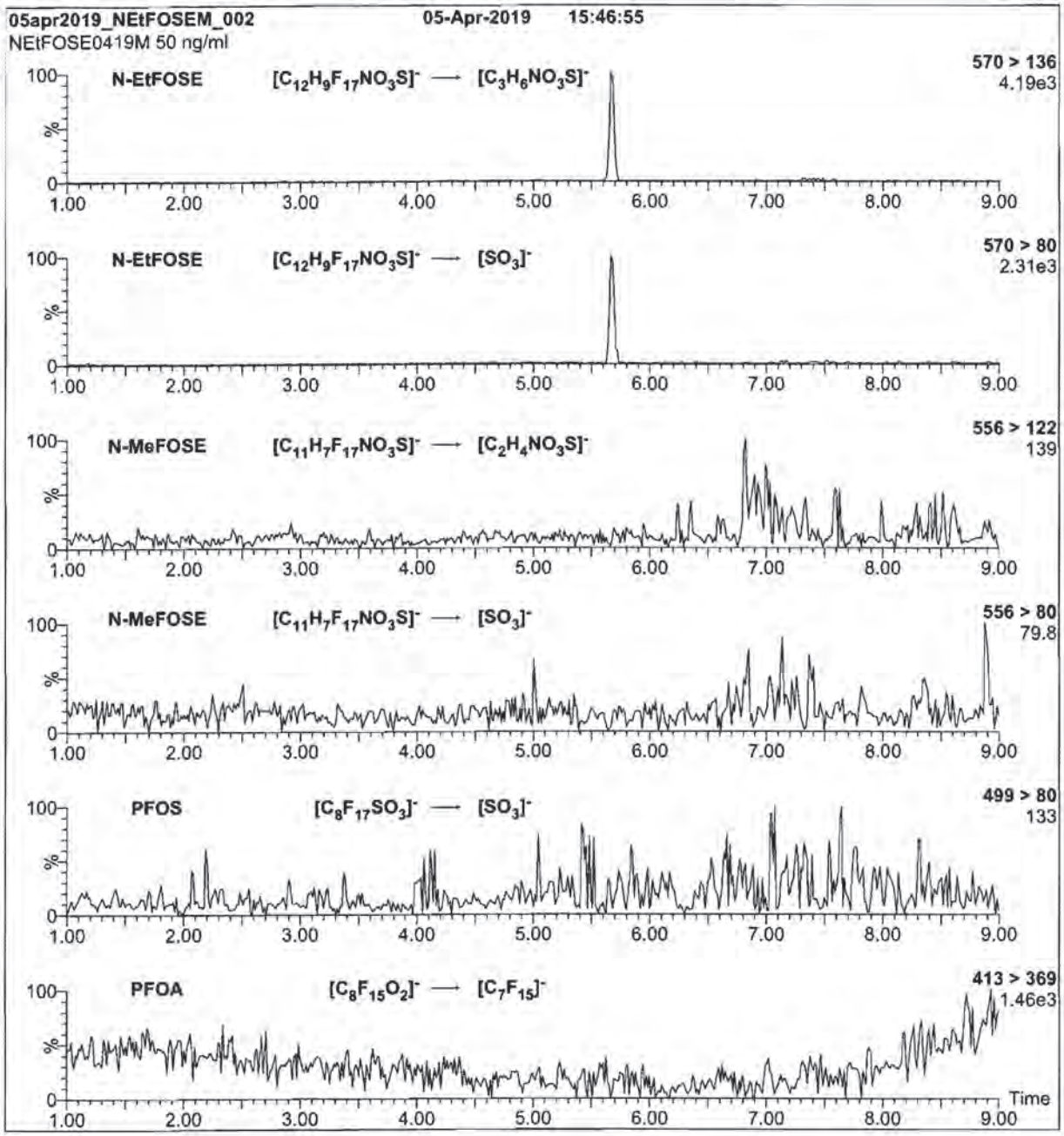
19L0664

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) = 2.76e-3
Collision Energy (eV) = 32

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

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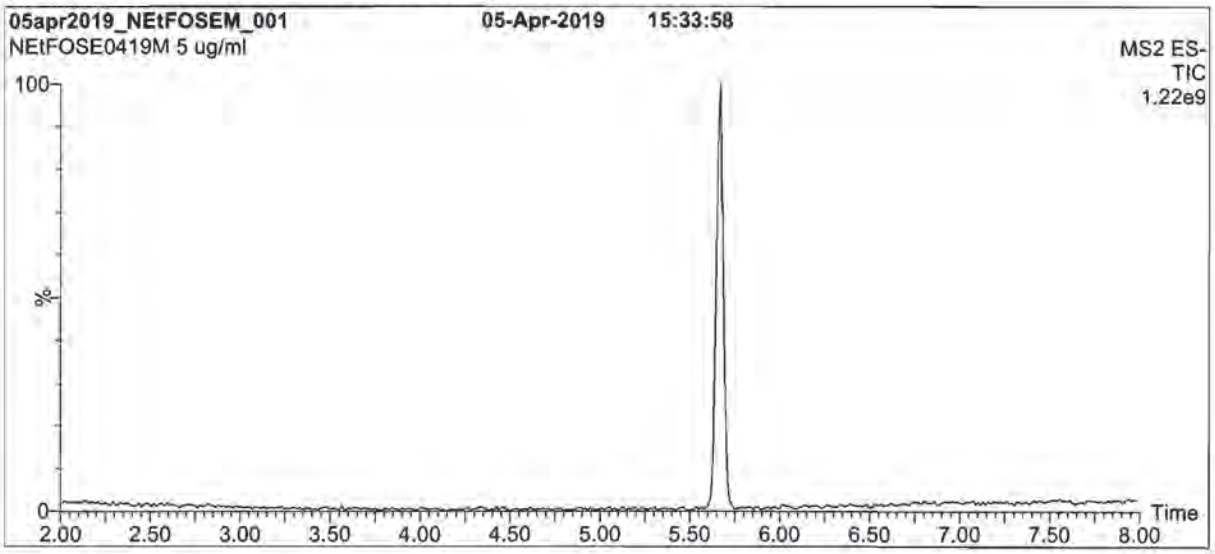
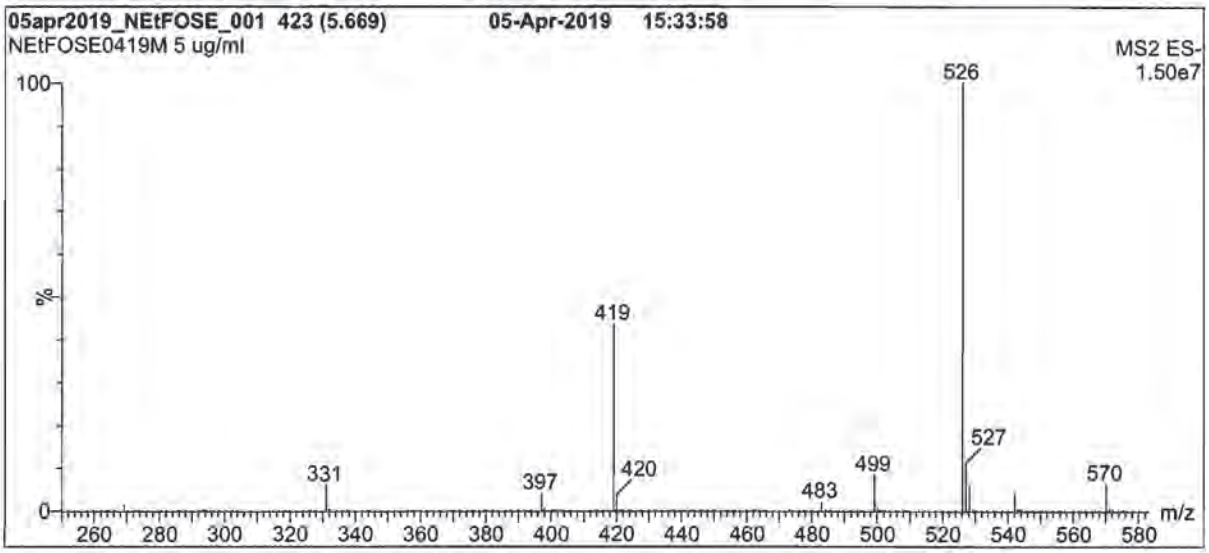
Figure 2: **N-EtFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP$_{18}$
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% MeOH / 35% H_2O
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)

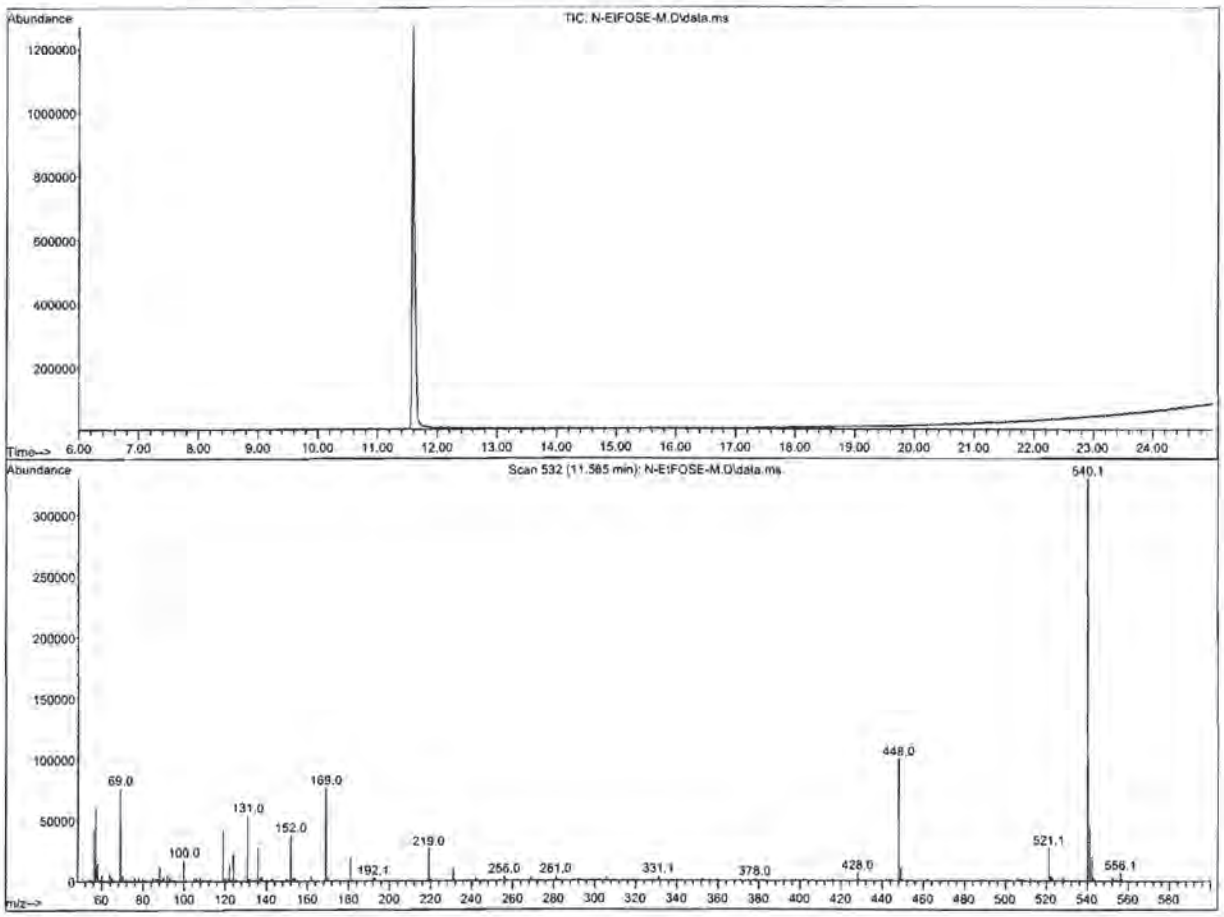
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

NEtFOSE0419M (4 of 5)
rev0

19L0564

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)

19L0564

INTENDED USE:

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HANDLING:

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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:

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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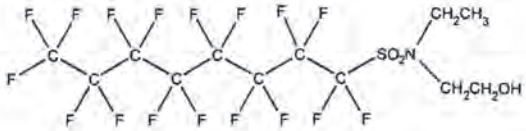
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0419M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: $C_{12}H_{10}F_{17}NO_3S$ **MOLECULAR WEIGHT:** 571.25
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 04/08/2019 (HRGC/LRMS)
04/05/2019 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 04/08/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/15/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Revision#:6, Revised 2018-08-14

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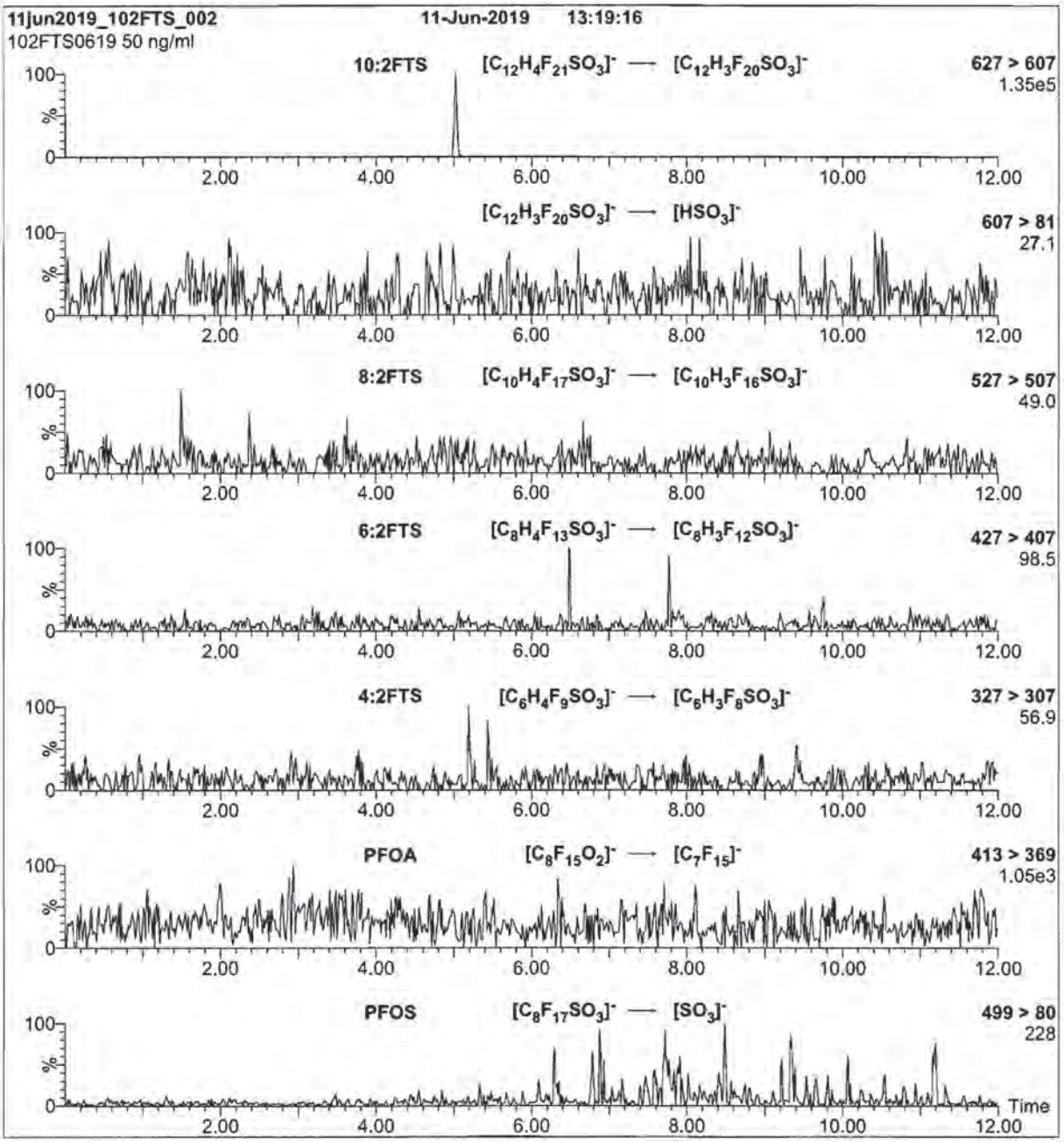
Figure 2: **10:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (10:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.92e-3
Collision Energy (eV) = 25

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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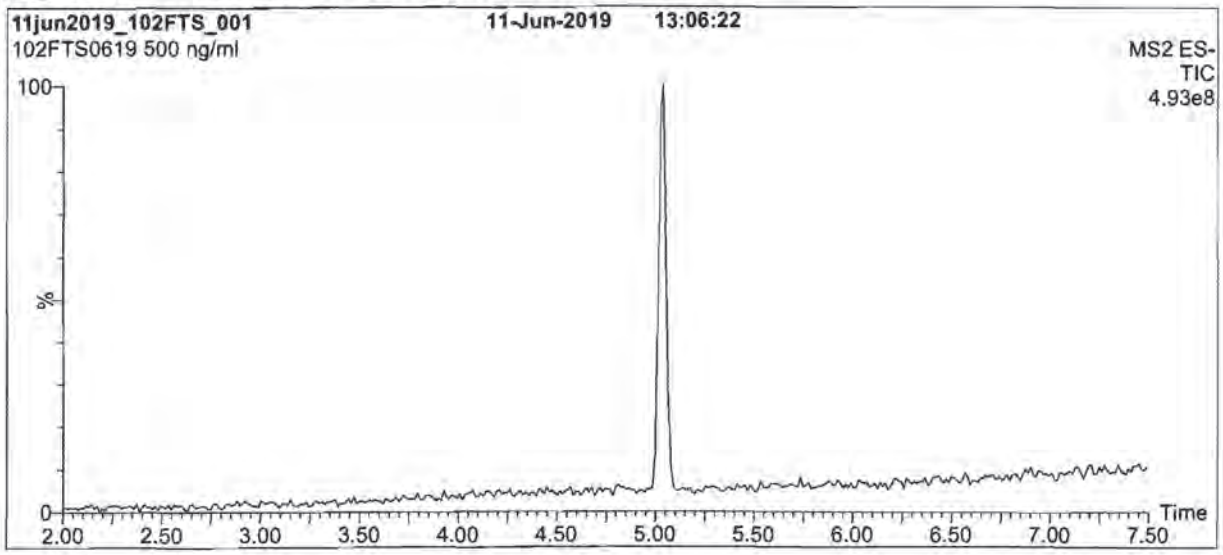
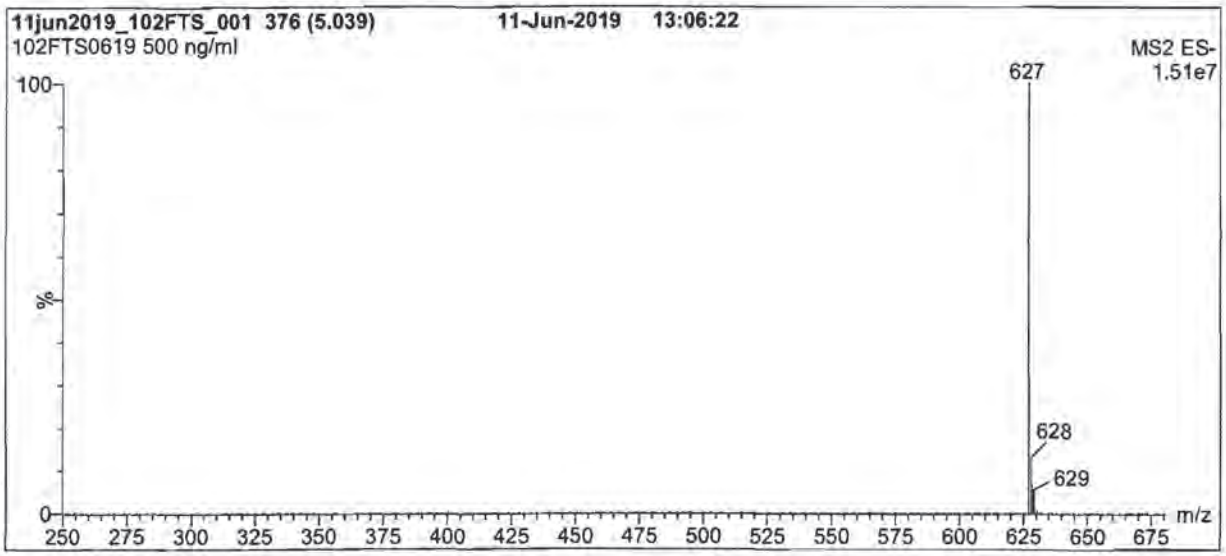
rev0

19L0665

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 (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) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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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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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

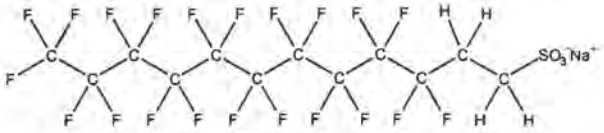
19L0665

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0619
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) 06/11/2019
EXPIRY DATE: (mm/dd/yyyy) 06/11/2022
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/18/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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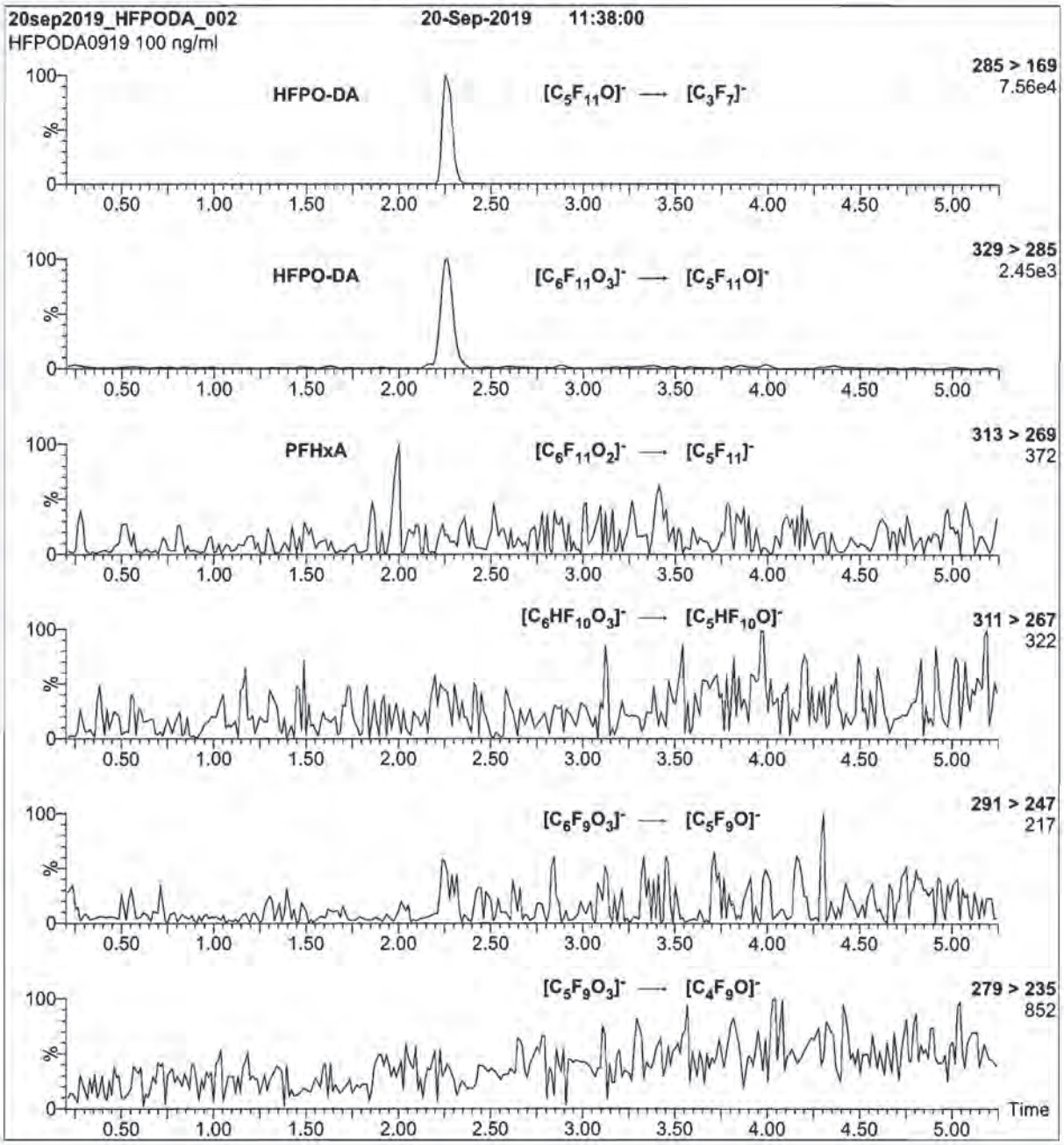
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0666

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) = 3.60e-3
Collision Energy (eV) = 8

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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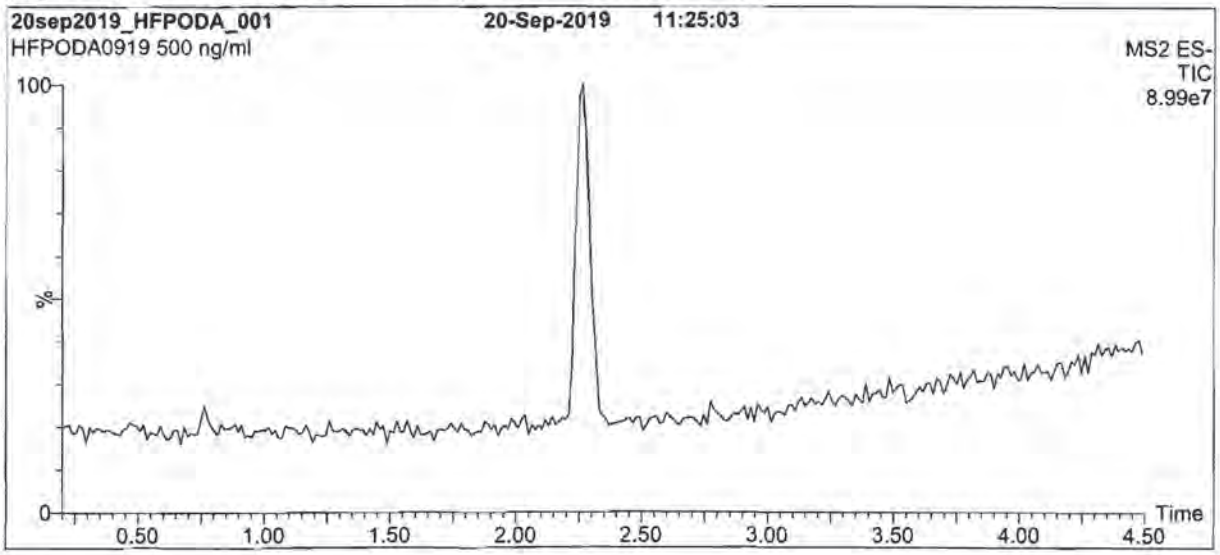
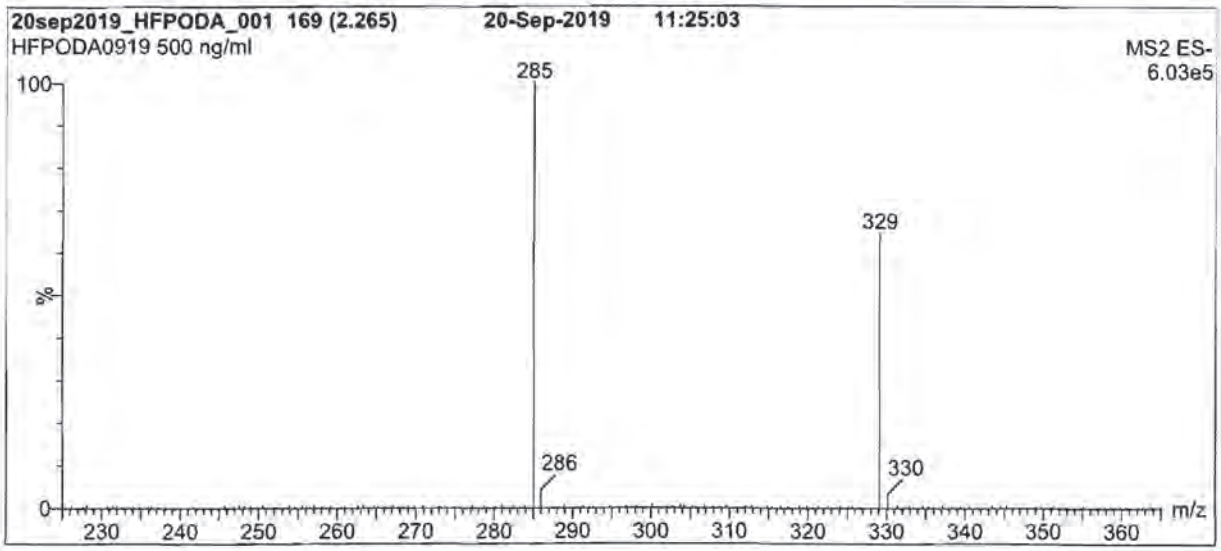
Figure 1: HFPO-DA; LC/MS Data (TIC and Mass Spectrum)





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: 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) = 3.00
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
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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 $x_1, x_2,...x_n$ 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 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

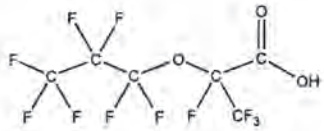
19L0666

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: HFPO-DA **LOT NUMBER:** HFPODA0919
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) 09/20/2019
EXPIRY DATE: (mm/dd/yyyy) 09/20/2022
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 09/30/2019 (mm/dd/yyyy)

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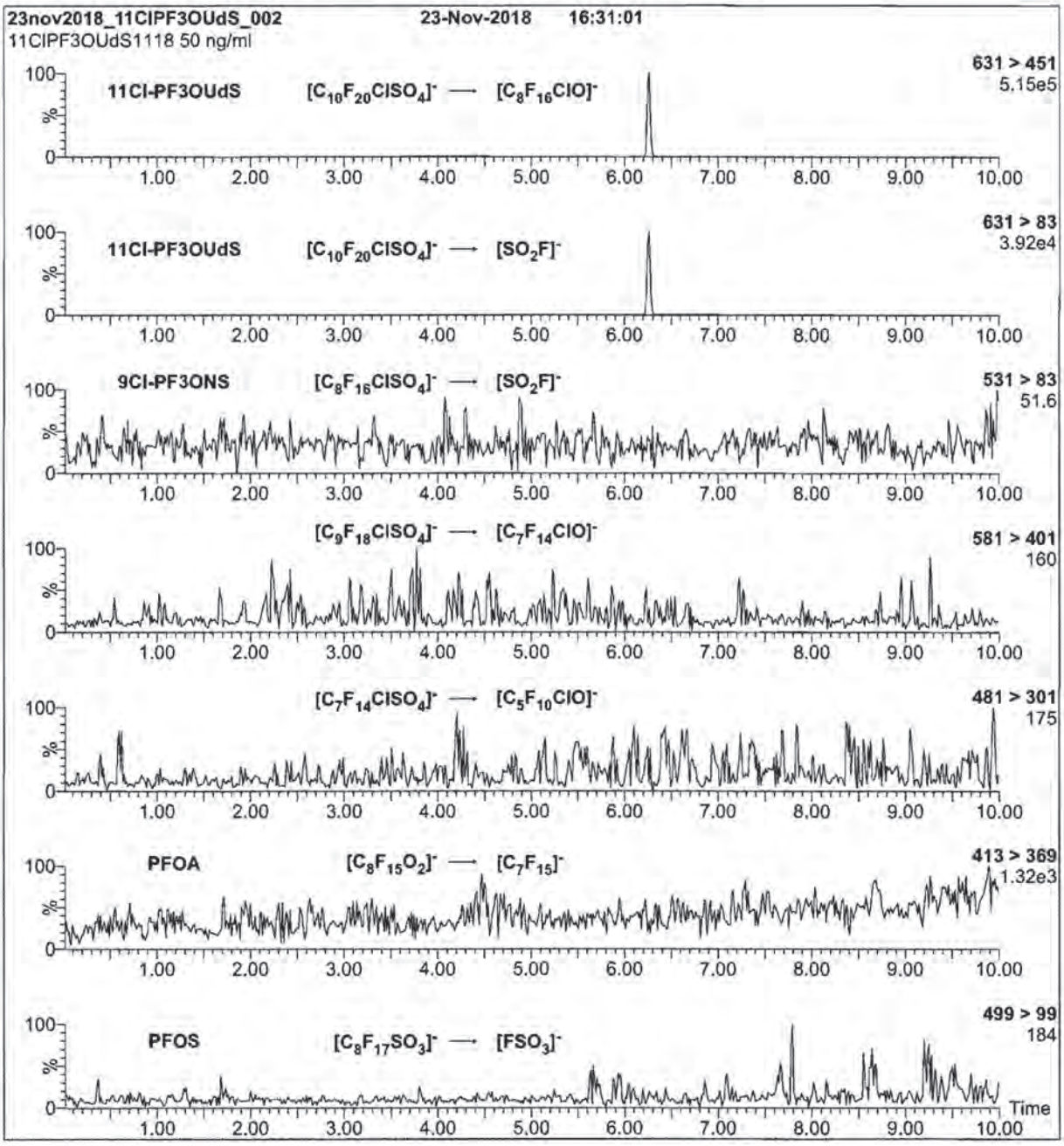
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0667

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

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11ClPF3OUdS1118 (4 of 4)
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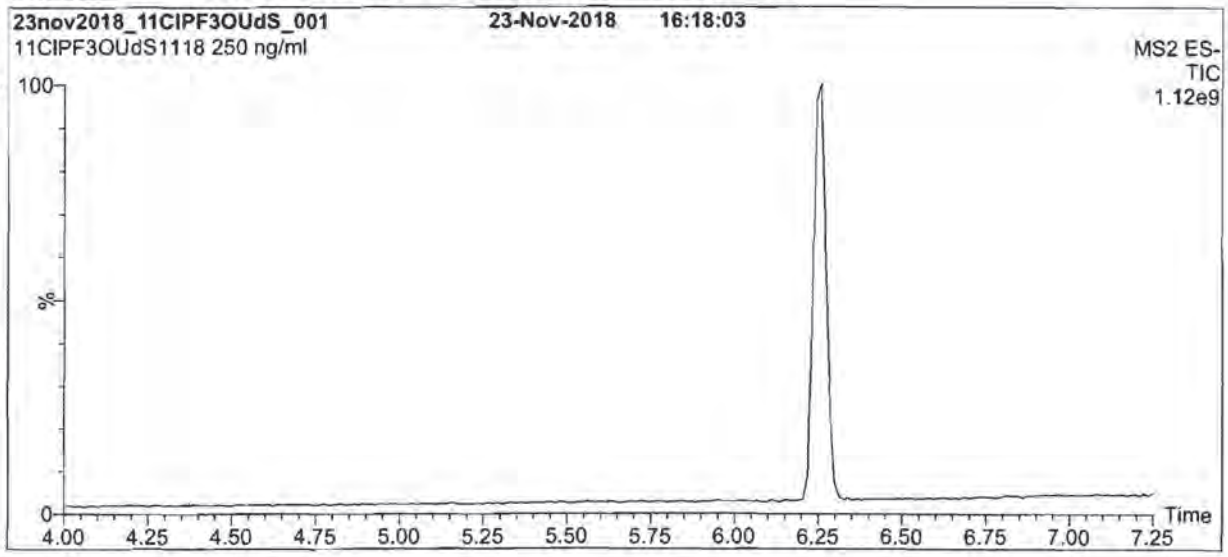
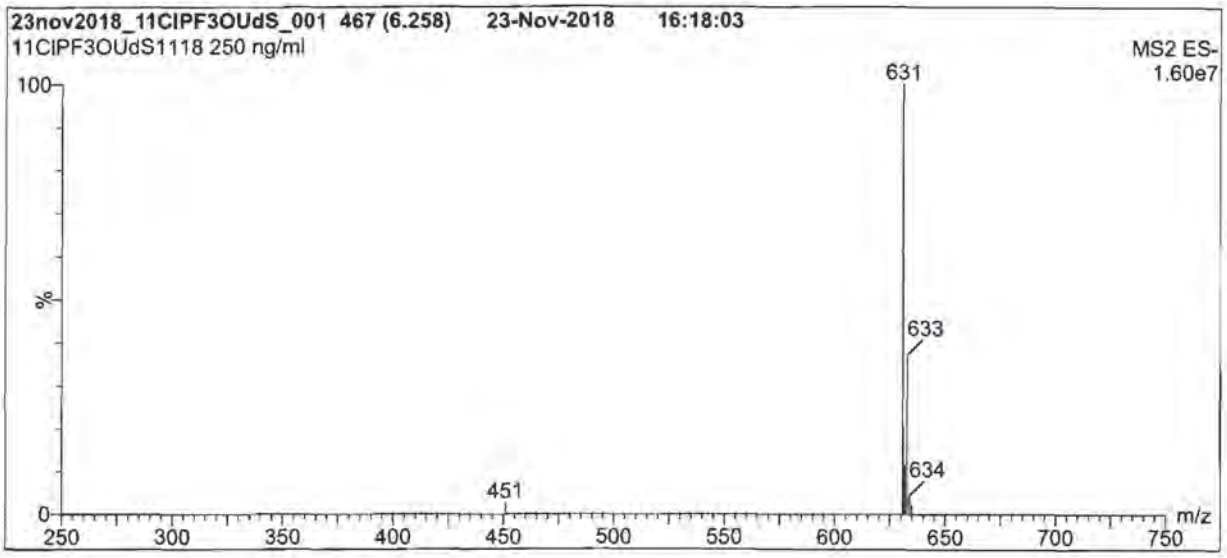
Figure 1: **11Cl-PF3OUdS; LC/MS Data (TIC and Mass Spectrum)**





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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

11ClPF3OUdS1118 (3 of 4)
rev0

19L0667

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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UNCERTAINTY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly 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 REFERENCE MATERIAL PRODUCER

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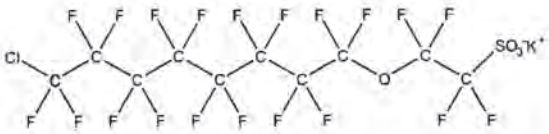
WELLINGTON LABORATORIES

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: B.G. Chittim, General Manager **Date:** 11/28/2018 (mm/dd/yyyy)

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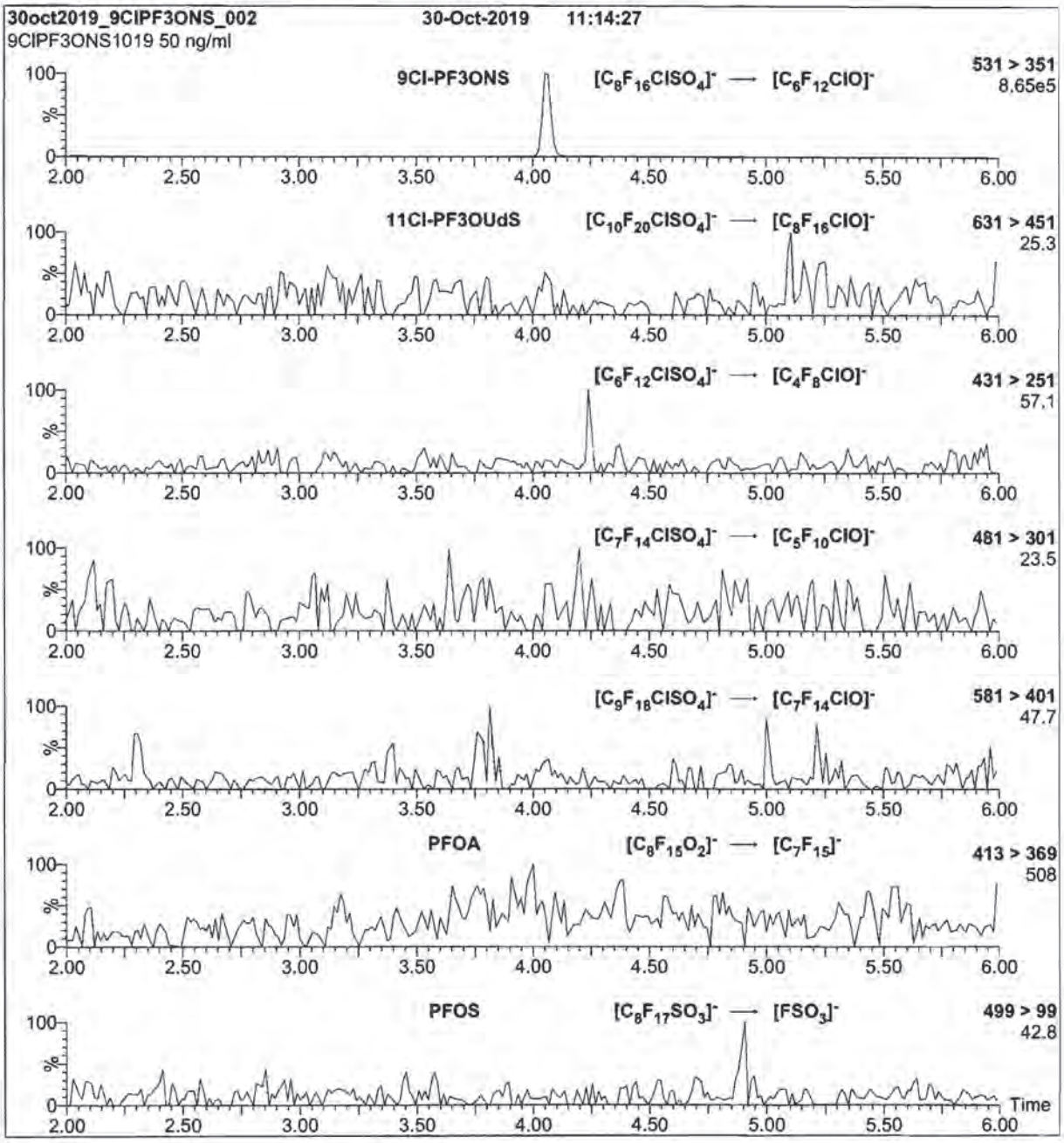
Figure 2: **9Cl-PF3ONS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (9Cl-PF3ONS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 20

Form#:27, Issued 2004-11-10
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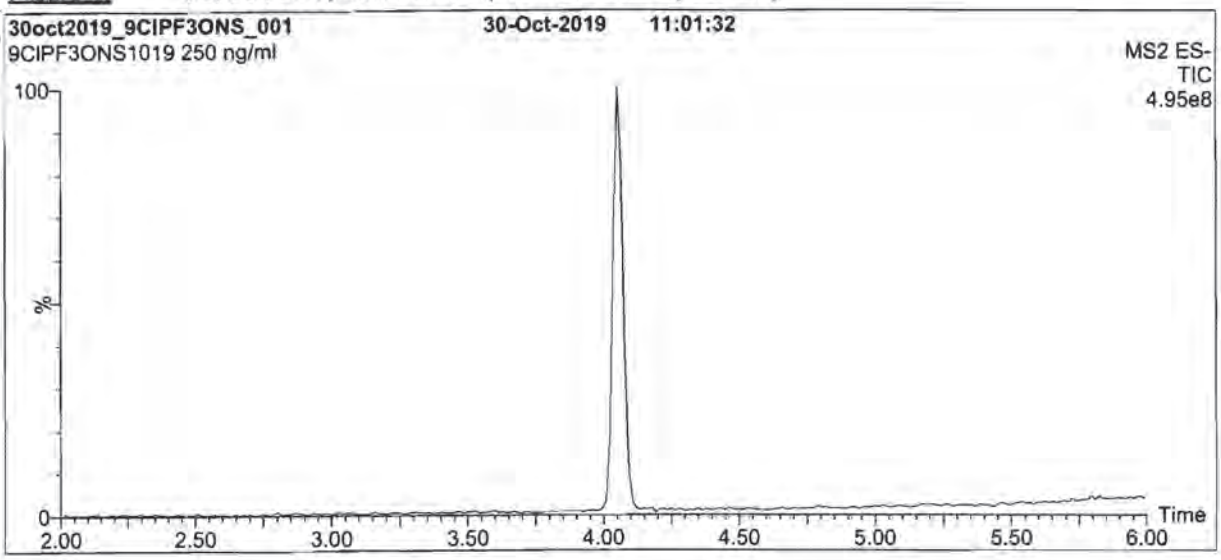
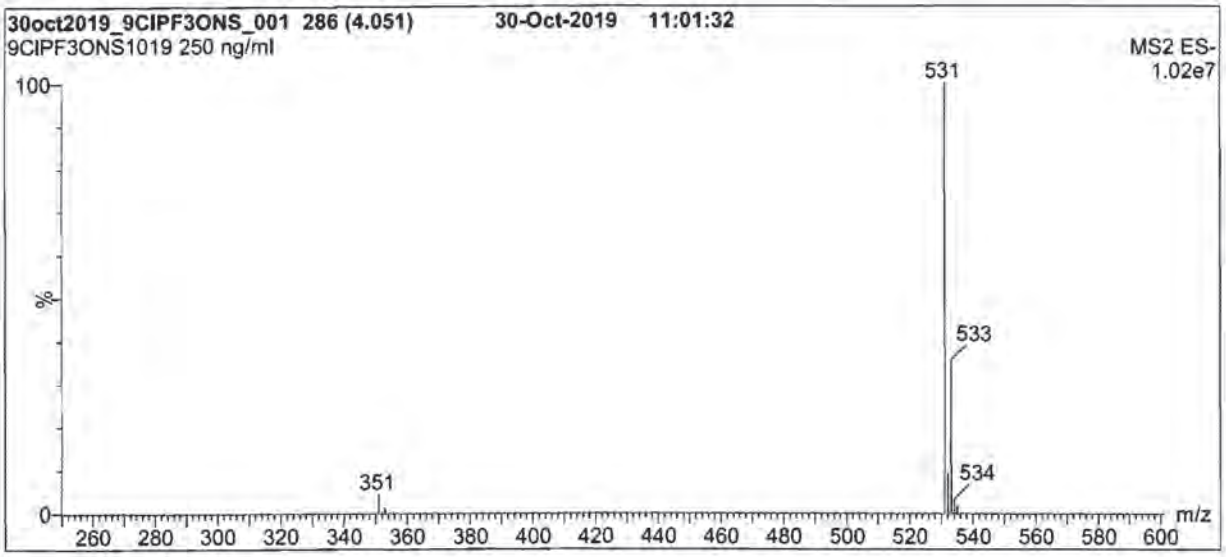
Figure 1: 9Cl-PF3ONS; LC/MS Data (TIC and Mass Spectrum)





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: 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) = 70.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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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 REFERENCE MATERIAL PRODUCER

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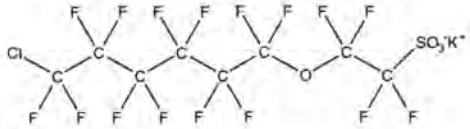
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 9Cl-PF3ONS **LOT NUMBER:** 9ClPF3ONS1019
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) **SOLVENT(S):** Methanol
46.6 ± 2.3 µg/ml (9Cl-PF3ONS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/30/2019
EXPIRY DATE: (mm/dd/yyyy) 10/30/2024
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:** 11/04/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Revision#:6, Revised 2018-08-14

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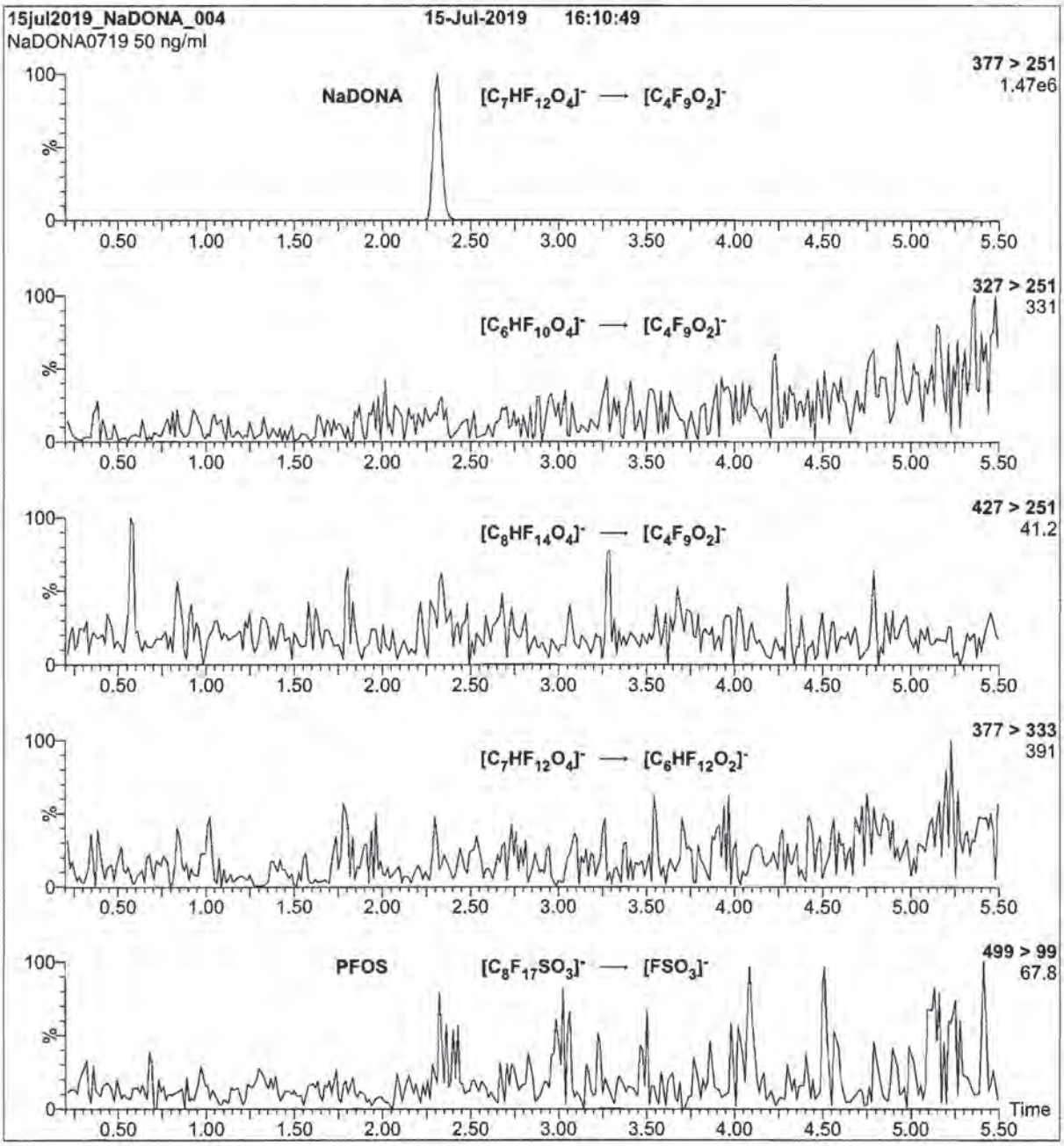
Figure 2: **NaDONA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (NaDONA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 10

Form#:27, Issued 2004-11-10
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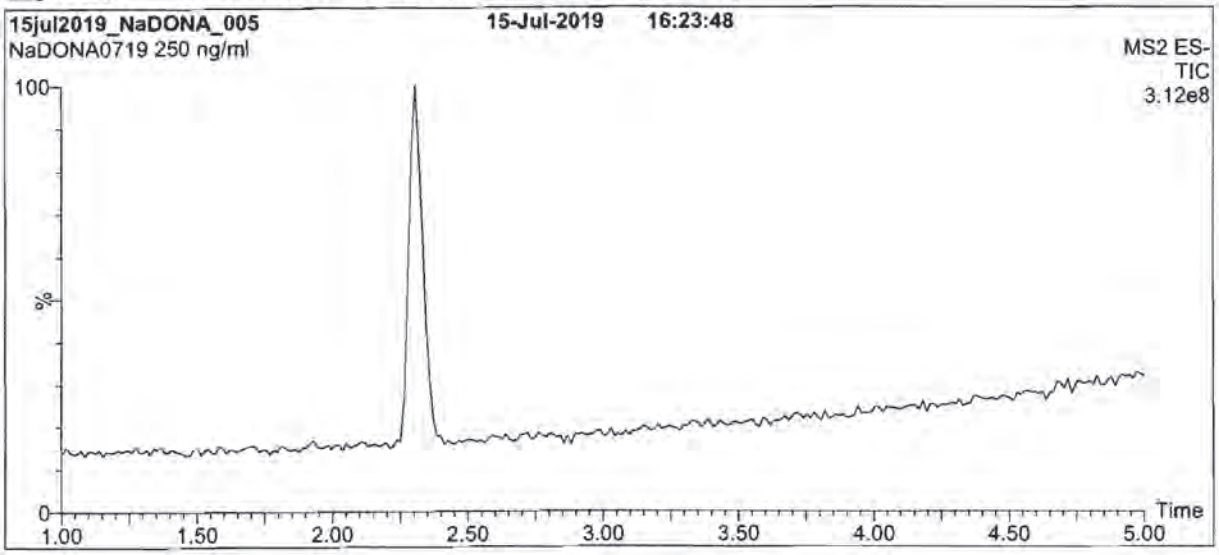
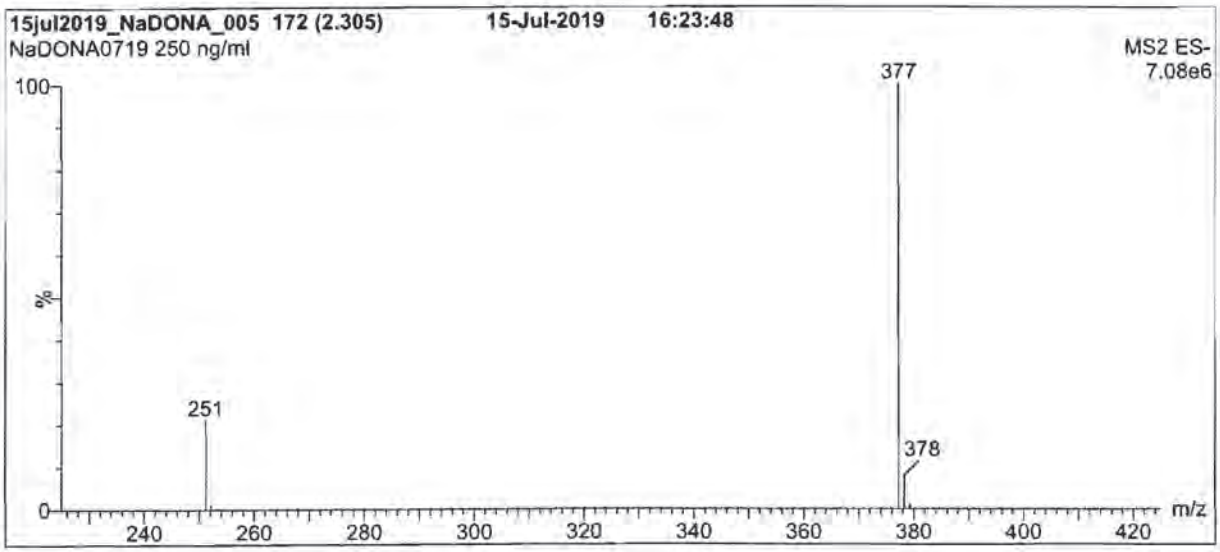
Figure 1: **NaDONA; LC/MS Data (TIC and Mass Spectrum)**





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: 55% (80:20 MeOH:ACN) / 45% 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) = 2.70
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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19L0669

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 0136

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

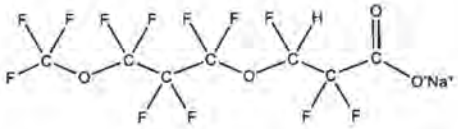
19L0669

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: NaDONA
LOT NUMBER: NaDONA0719
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) 47.1 ± 2.4 µg/ml (NaDONA anion)
SOLVENT(S):	Methanol Water (<1%)
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	07/15/2019
EXPIRY DATE: (mm/dd/yyyy)	07/15/2024
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: B.G. Chittim, General Manager **Date:** 07/25/2019 (mm/dd/yyyy)

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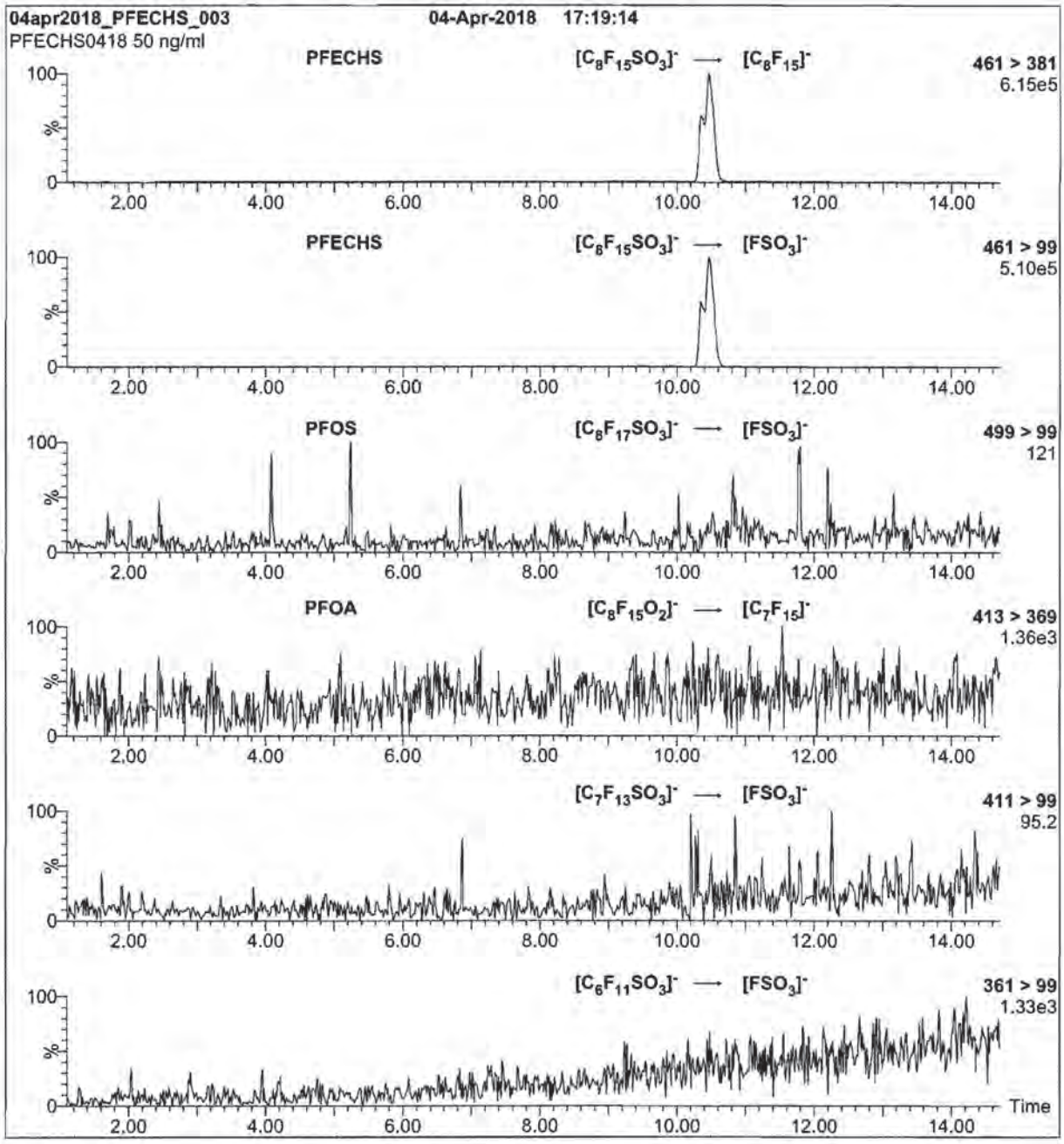
1910670

Figure 2: **PFECHS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFECHS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

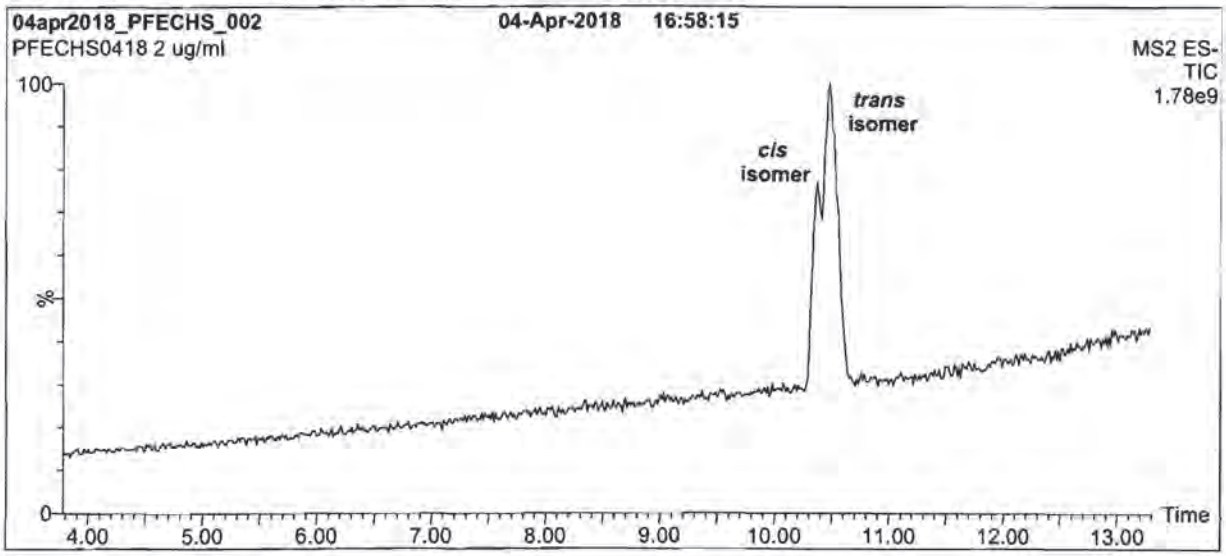
Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 24

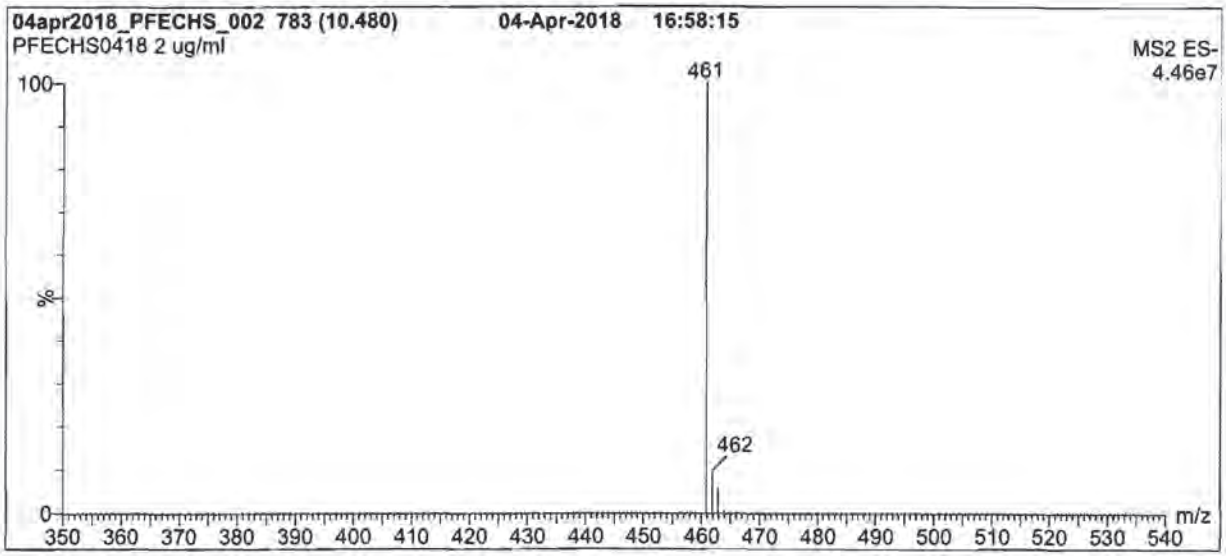
Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-01-22

PFECHS0418 (4 of 4)
rev0

19L0670

Figure 1: **PFECHS; 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 CSH Fluoro-Phenyl
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 25% (80:20 MeOH:ACN) / 75% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 60% organic over 13 min.
Ramp to 80% organic over 2 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 20 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (350 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 45.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-01-22

PFECHS0418 (3 of 4)
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19L0670

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. 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 Inc. A-1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-01-22

PFECHS0418 (2 of 4)
rev0

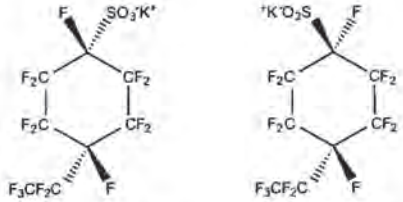
19L0670

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS0418
COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:



cis-isomer *trans*-isomer

CAS #: 67584-42-3

MOLECULAR FORMULA: $C_9F_{15}SO_3K$ **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) 04/04/2018
EXPIRY DATE: (mm/dd/yyyy) 04/04/2023
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 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:** 04/09/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

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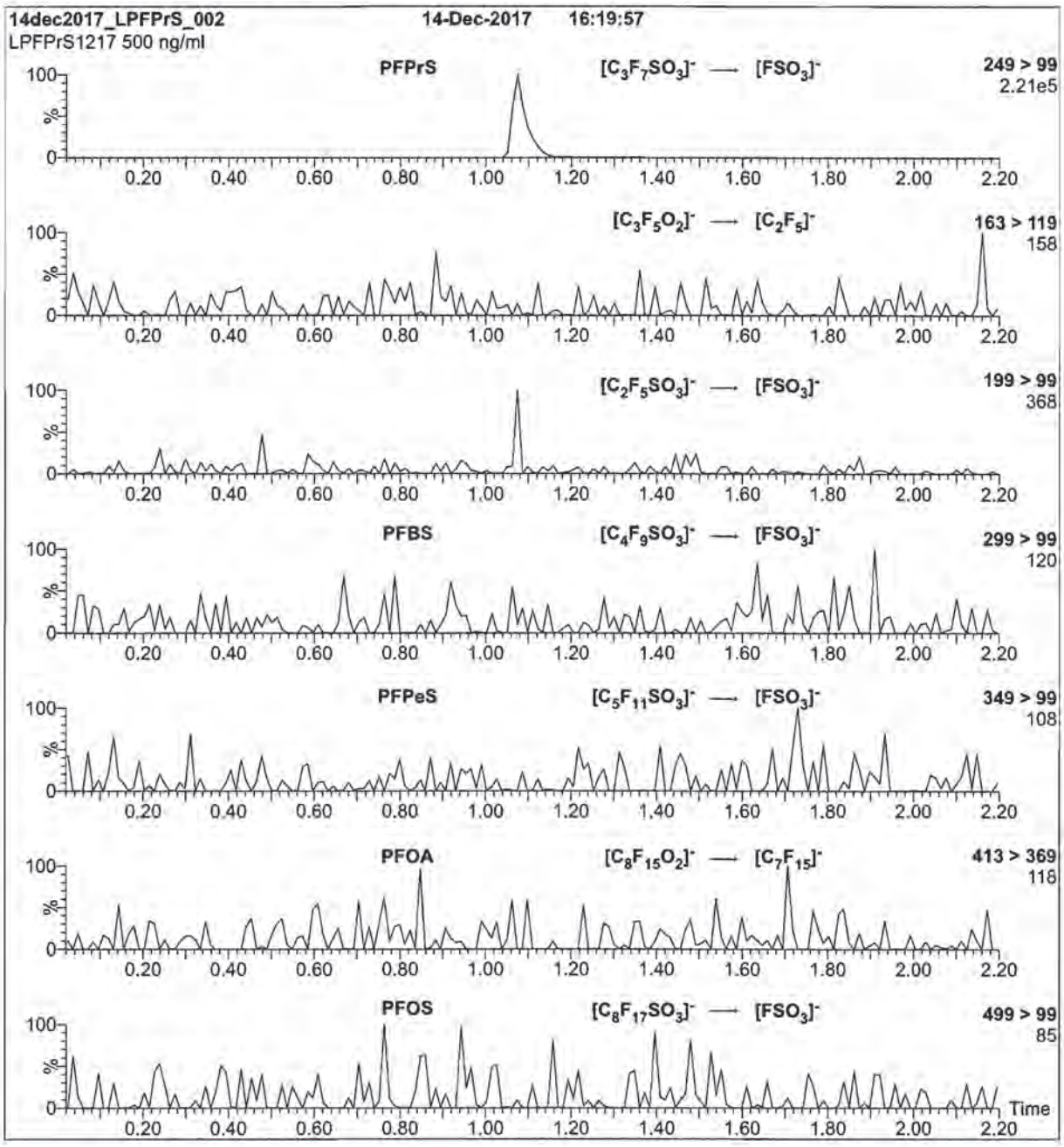
Figure 2: **L-PFPrS; LC/MS/MS Data (Selected MRM Transitions)**



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

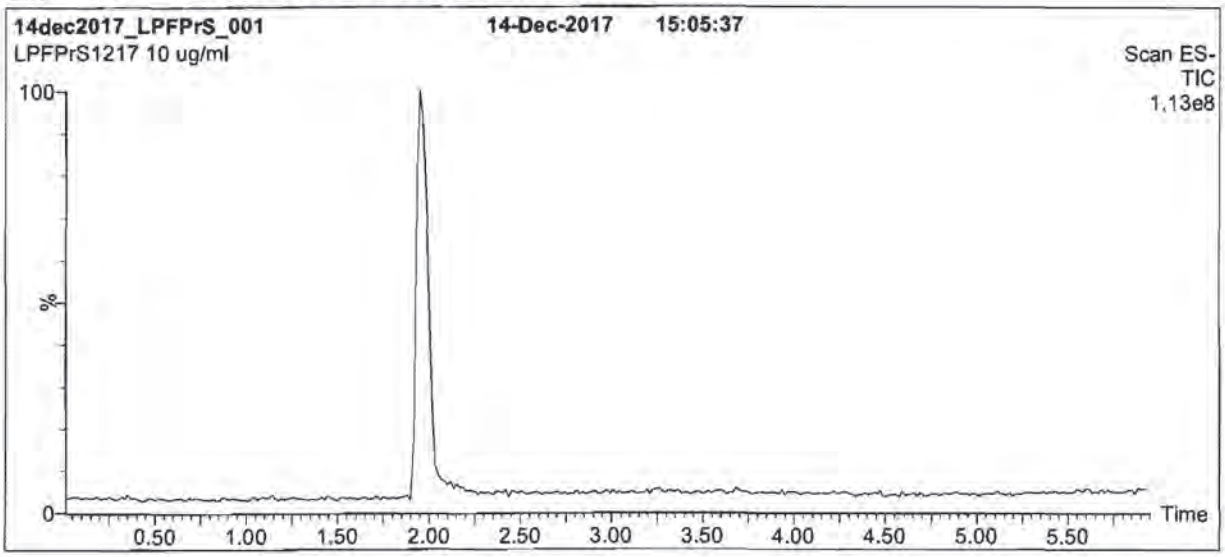
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 25

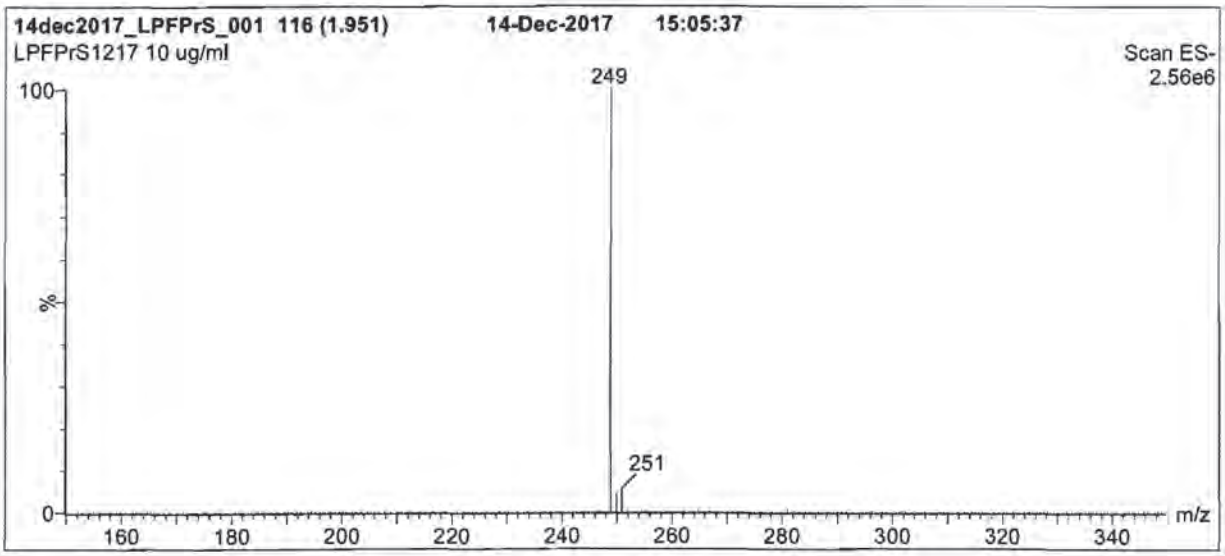
Form#:27, Issued 2004-11-10
Revision#:4, Revised 2017-03-06

LPFPrS1217 (4 of 4)
rev0

1910671

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

Form#:27, Issued 2004-11-10
Revision#:4, Revised 2017-03-06

LPFPrS1217 (3 of 4)
rev0

191067

INTENDED USE:

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HAZARDS:

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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 tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED Reference Material Producer

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1910671

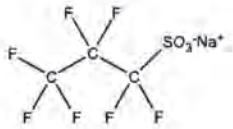
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate
LOT NUMBER: LPFPrS1217

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

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Form#:27, Issued 2004-11-10
Revision#:4, Revised 2017-03-06

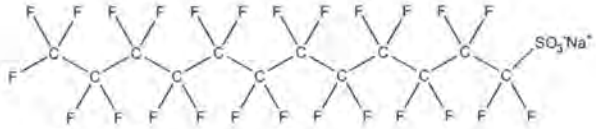
19L1707

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFDoS
LOT NUMBER: LPFDoS1218
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

STRUCTURE:
CAS #: 1260224-54-1



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)	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 ~ 0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/20/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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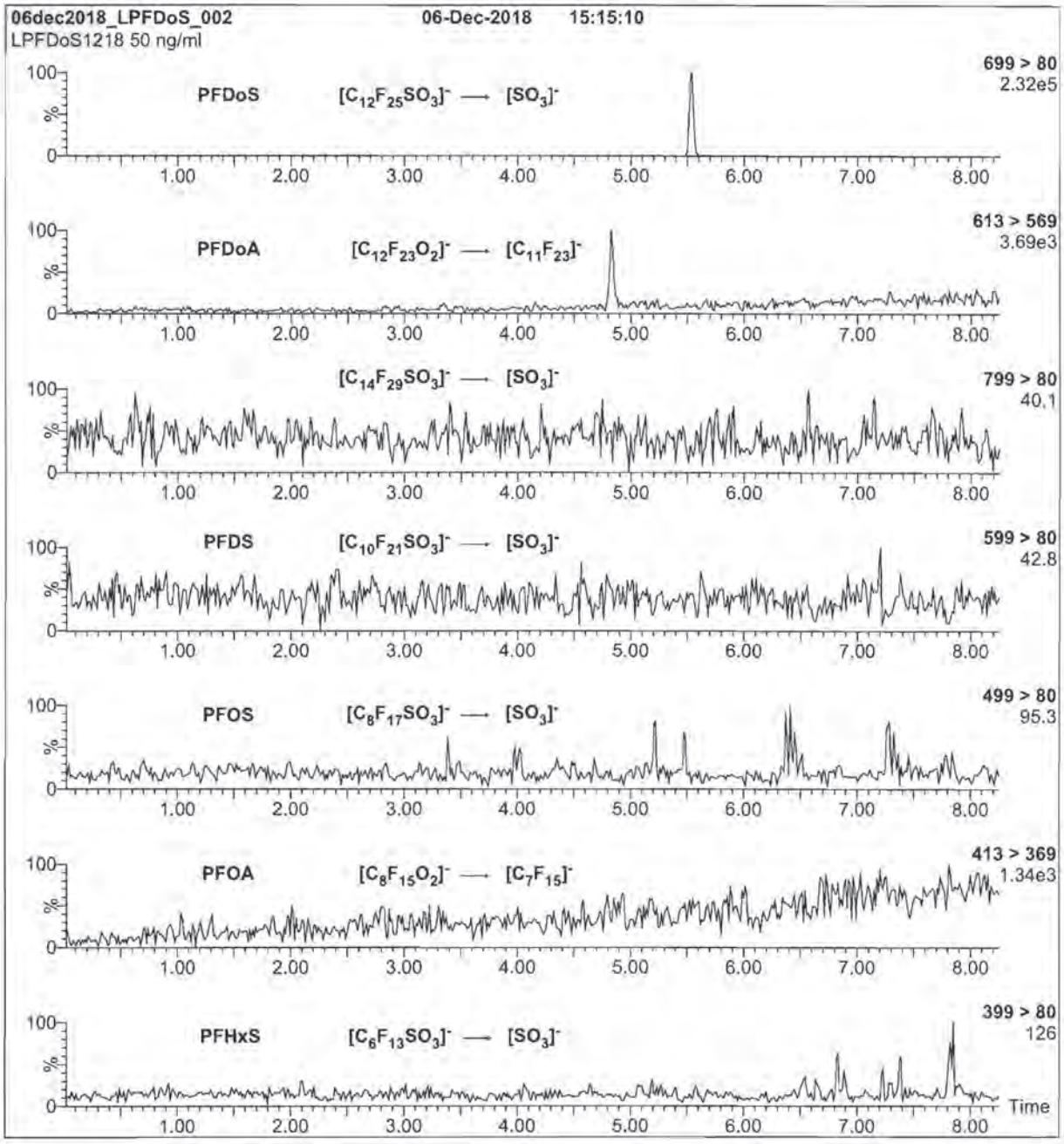
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L1707

Figure 2: **L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDoS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

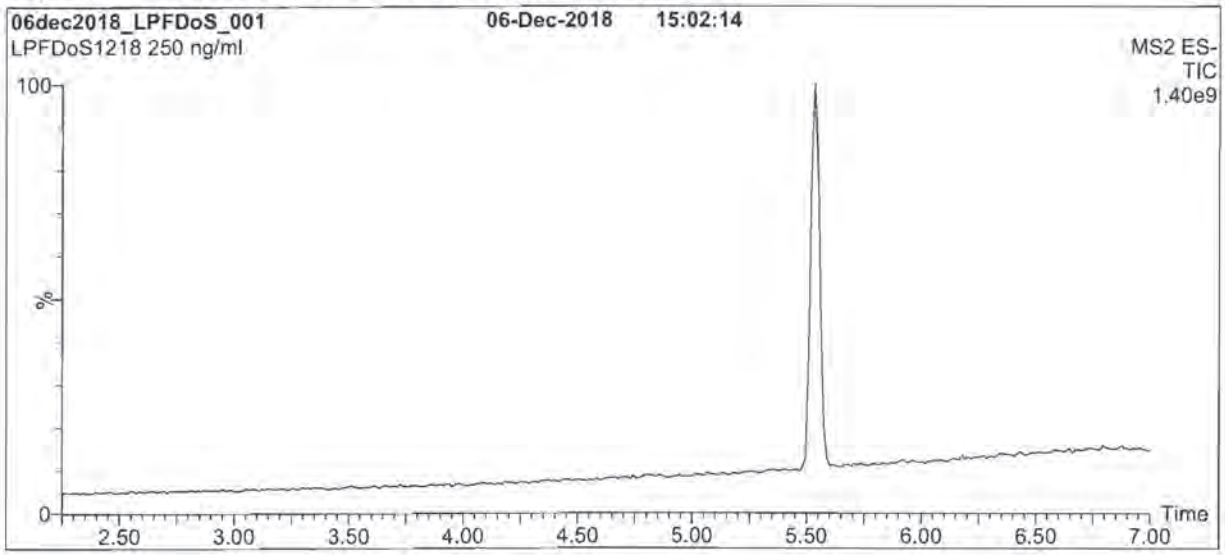
Collision Gas (mbar) = 3.27e-3
Collision Energy (eV) = 60

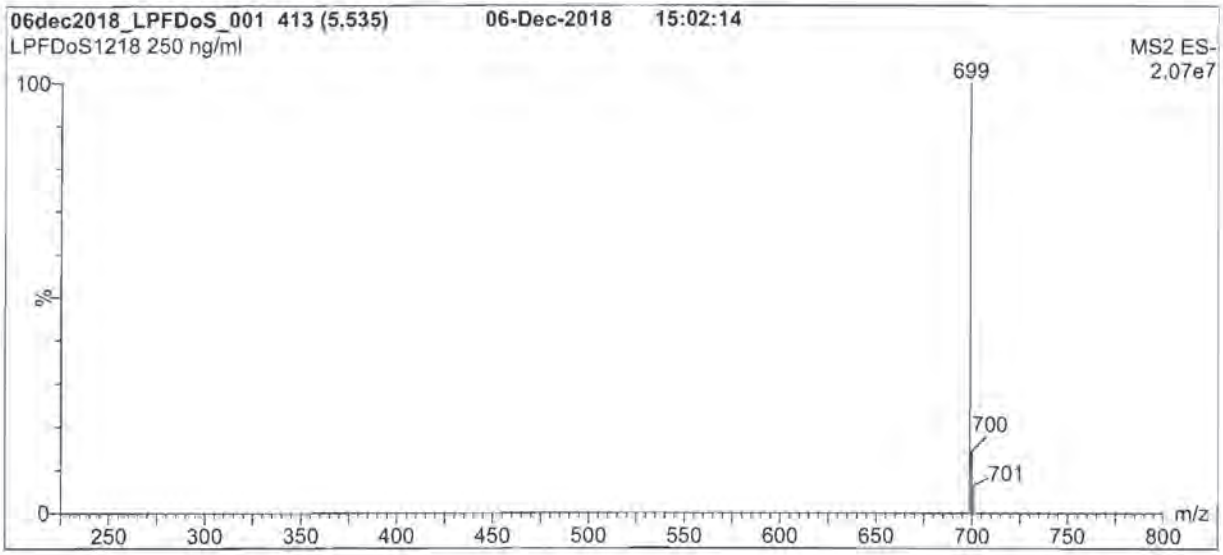
Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

LPFDoS1218 (4 of 4)
rev0

19L1707

Figure 1: **L-PFDoS; 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) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

LPFDoS1218 (3 of 4)
rev0

19L1707

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

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

Analytical Standard Record

Vista Analytical Laboratory

20A0804

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
19L0626	13C2-FOUEA	06-Dec-19	** Vendor **	29-Mar-21	1
19L0627	13C4-PFBA	06-Dec-19	** Vendor **	15-Nov-24	1
19L0628	13C6-PFDA	06-Dec-19	** Vendor **	25-Jul-24	1
19L0629	13C9-PFNA	06-Dec-19	** Vendor **	08-Sep-23	1
19L0630	13C7-PFUdA	06-Dec-19	** Vendor **	22-Jul-24	1
19L0631	13C5-PFHxA	06-Dec-19	** Vendor **	27-Sep-23	1
19L0632	18O2-PFHxS	06-Dec-19	** Vendor **	10-Jan-24	1.06
19L0633	13C4-PFOS	06-Dec-19	** Vendor **	01-Nov-24	1.05
19L0634	13C8-PFOA	06-Dec-19	** Vendor **	05-Mar-24	1.02

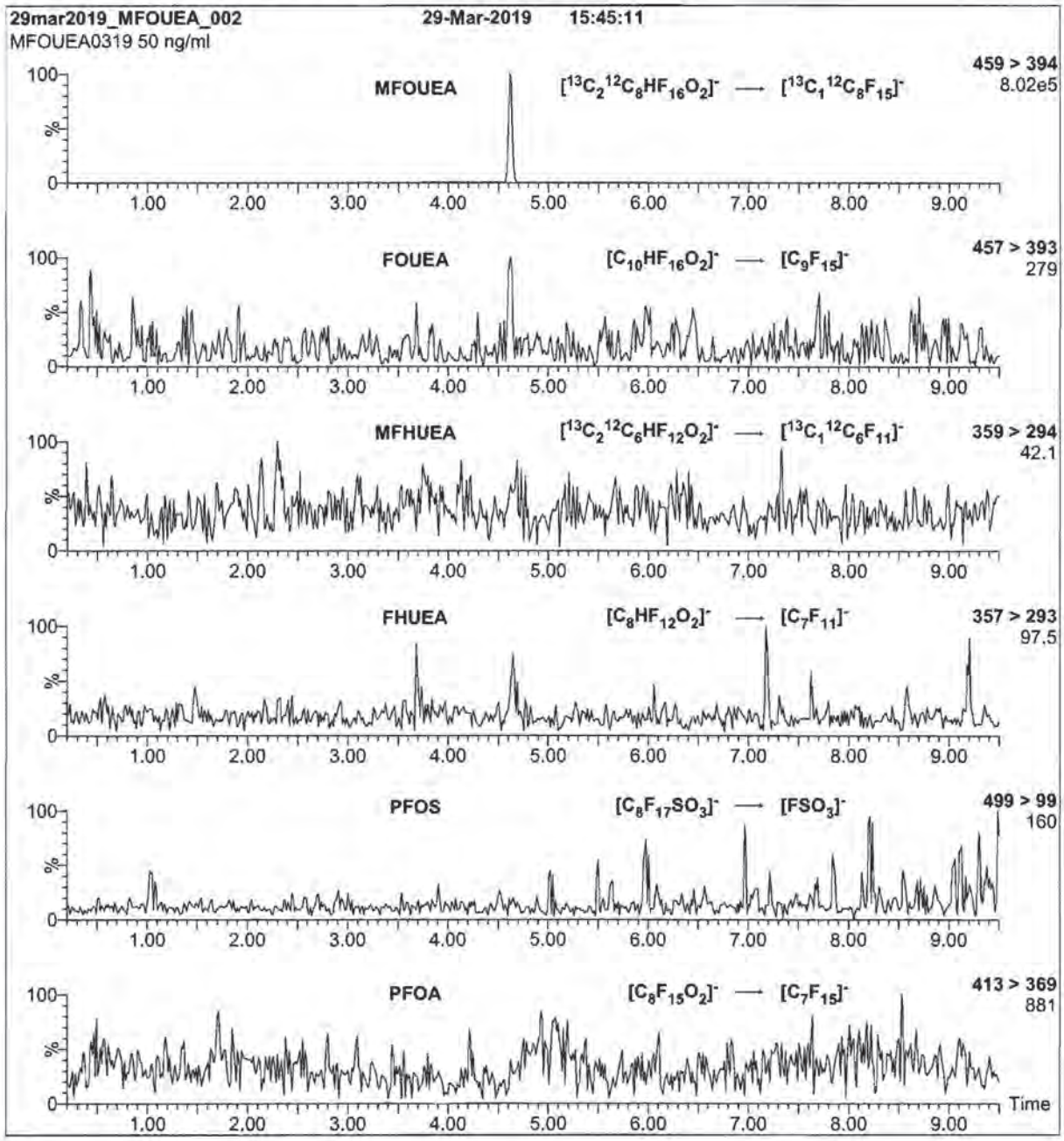
Description:	PFC-RS	Expires:	09-Jan-21
Standard Type:	Reagent	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 12:43 by BML

10 uL spike

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

19L0626

Figure 2: **MFOUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFOUEA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

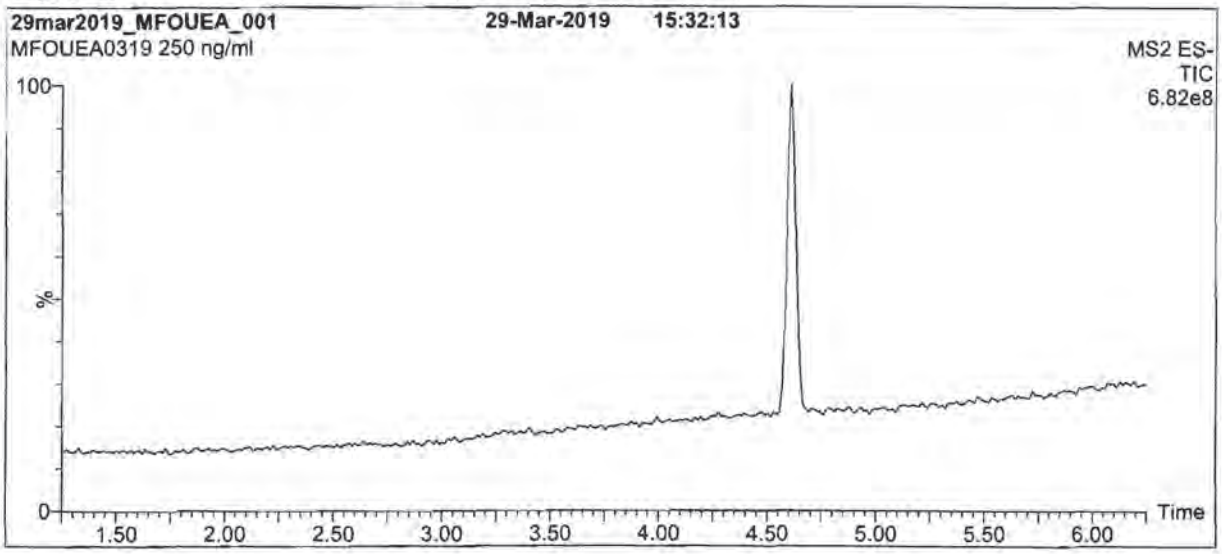
Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 10

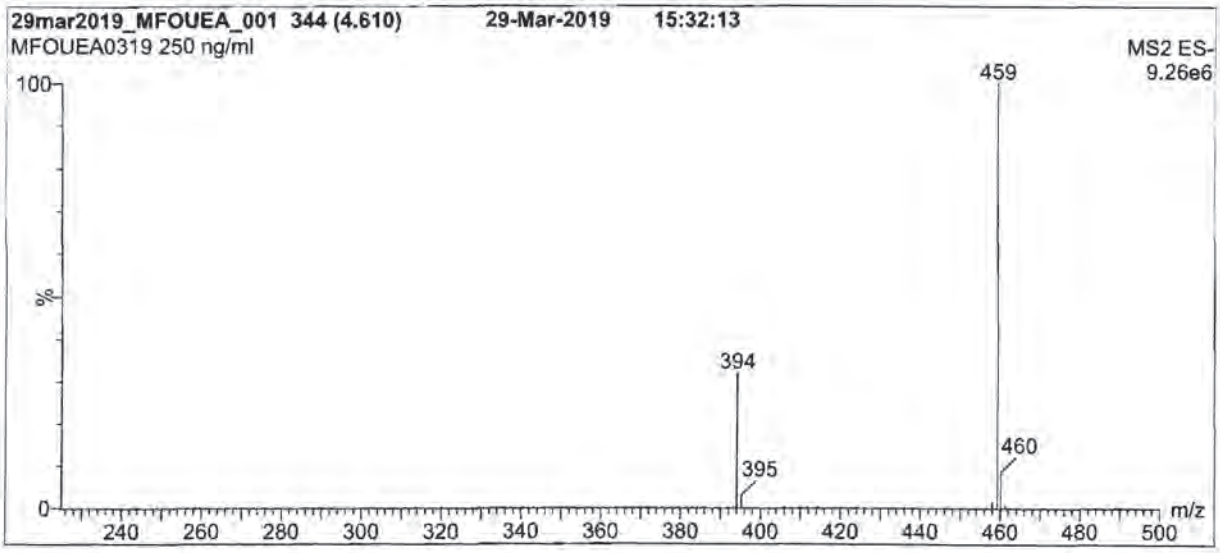
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MFOUEA0319 (4 of 4)
rev0

19L0626

Figure 1: MFOUEA; 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) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MFOUEA0319 (3 of 4)
rev0

19L0626

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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 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

19L0626

WELLINGTON LABORATORIES

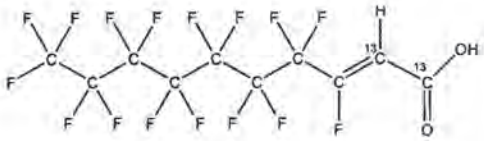
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFOUEA
COMPOUND: 2H-Perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid

LOT NUMBER: MFOUEA0319

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)	03/29/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/29/2021		
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.
- 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.

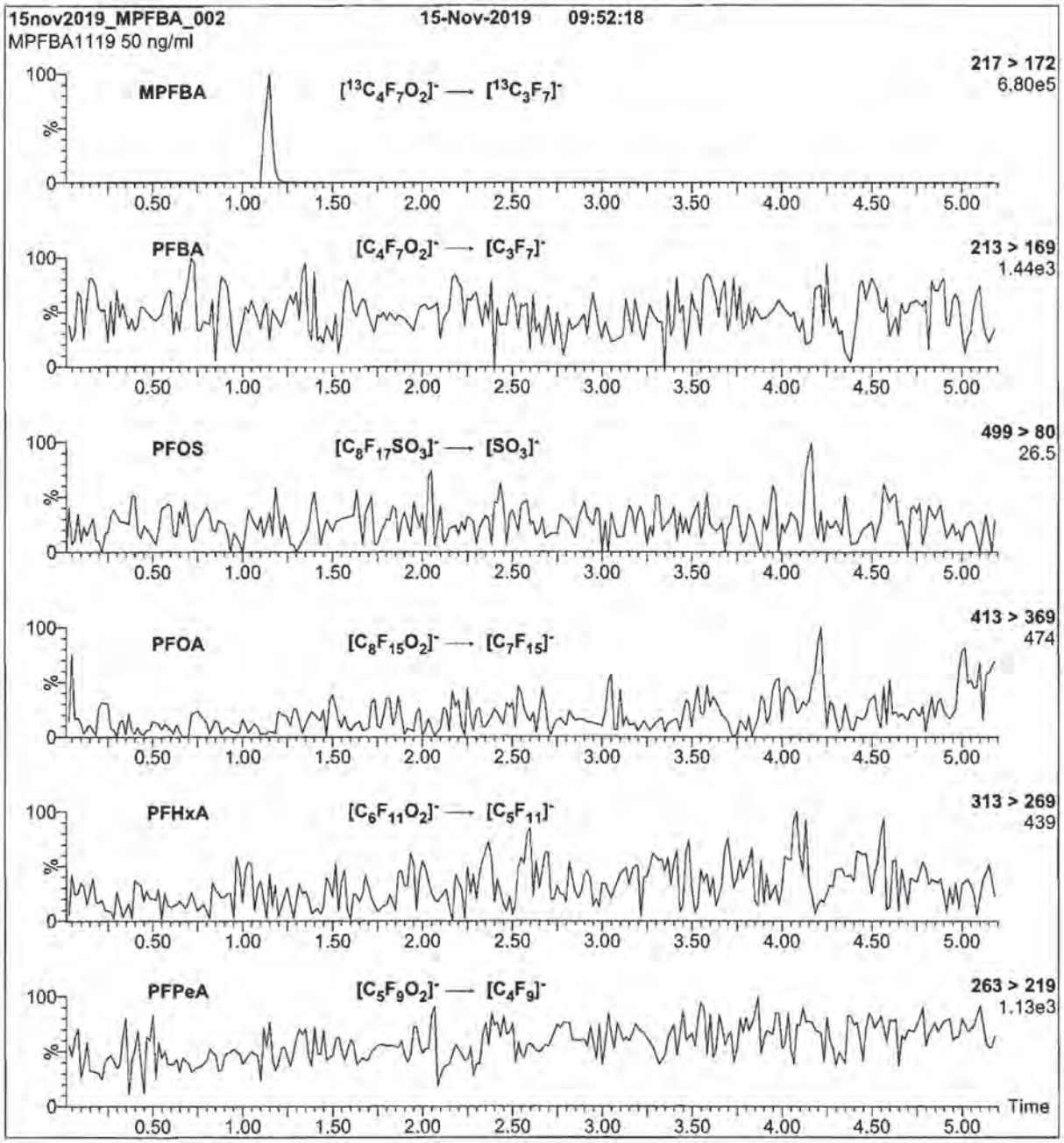
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/15/2019 (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

19L0627

Figure 2: **MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFBA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

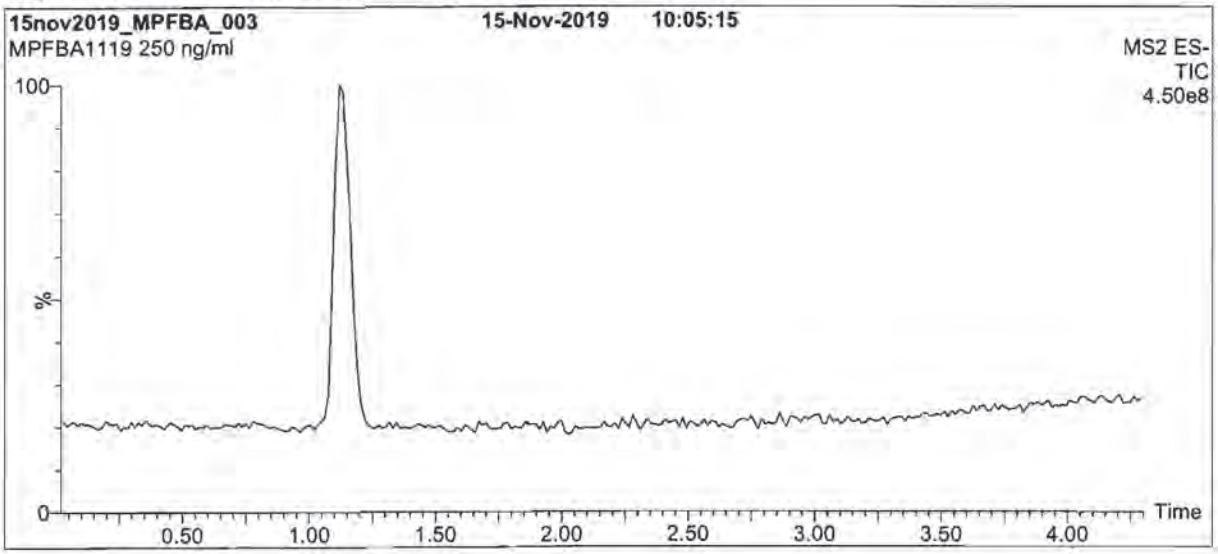
Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 8

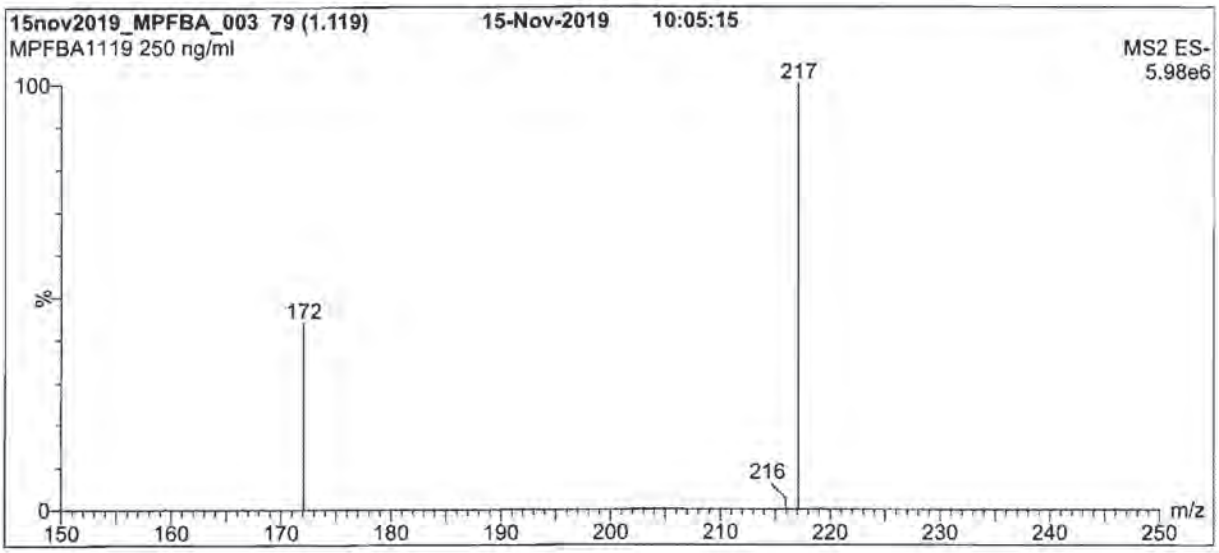
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFBA1119 (4 of 4)
rev0

19L0627

Figure 1: **MPFBA; 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 (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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFBA1119 (3 of 4)
rev0

19LC627

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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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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 REFERENCE MATERIAL PRODUCER

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19L0627

WELLINGTON LABORATORIES

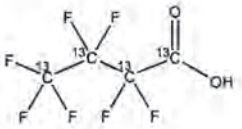
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFBA
COMPOUND: Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid

LOT NUMBER: MPFBA1119

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_4HF_7O_2$
CONCENTRATION: 50 ± 2.5 µg/ml
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/15/2019
EXPIRY DATE: (mm/dd/yyyy) 11/15/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 218.01
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥99% ^{13}C ($1,2,3,4\text{-}^{13}C_4$)

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

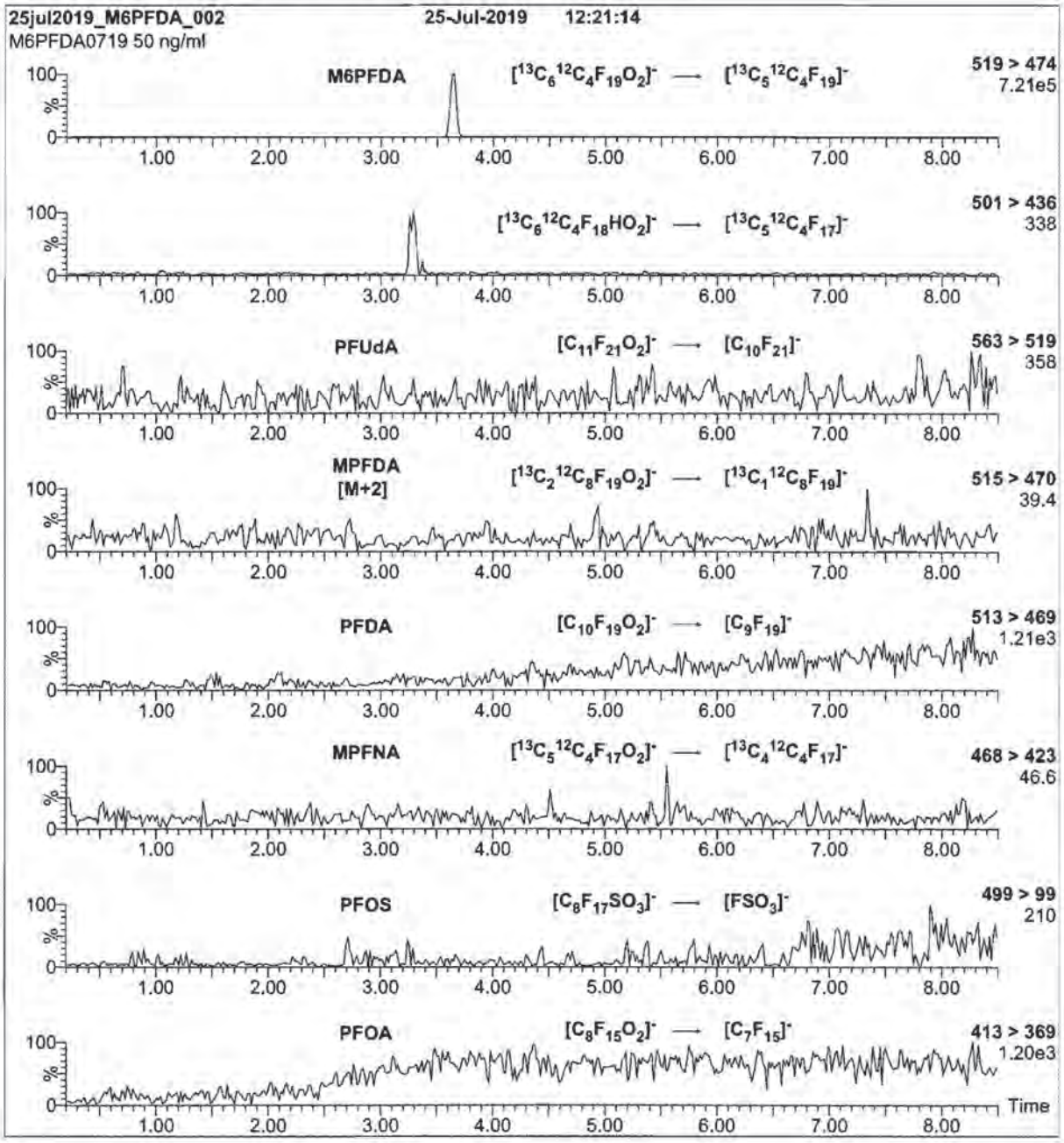
Certified By: _____ **Date:** 11/15/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-18

19L0628

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

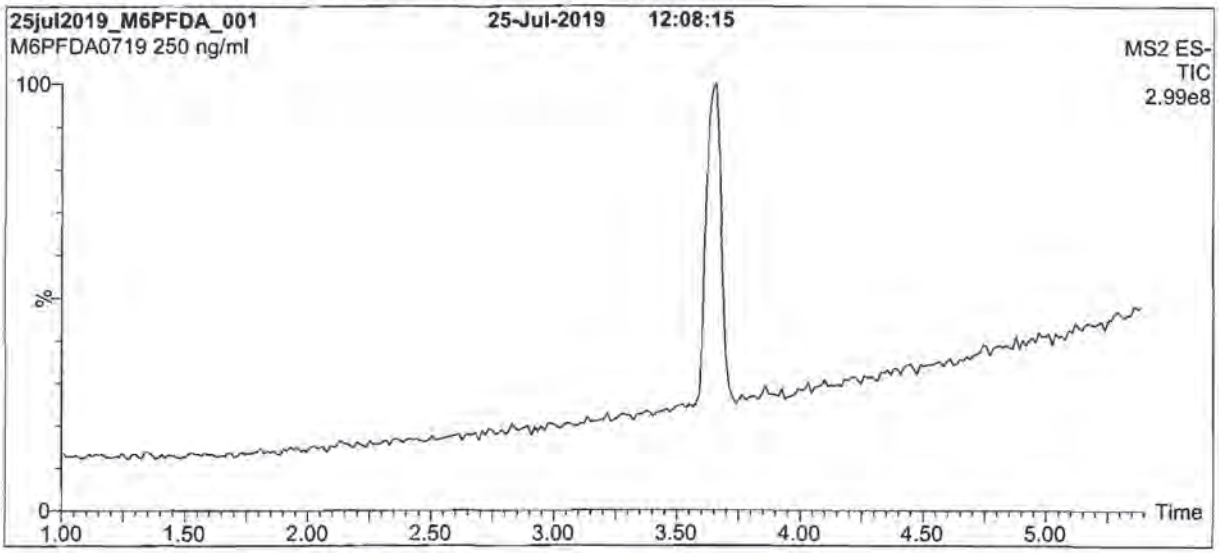
Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 10

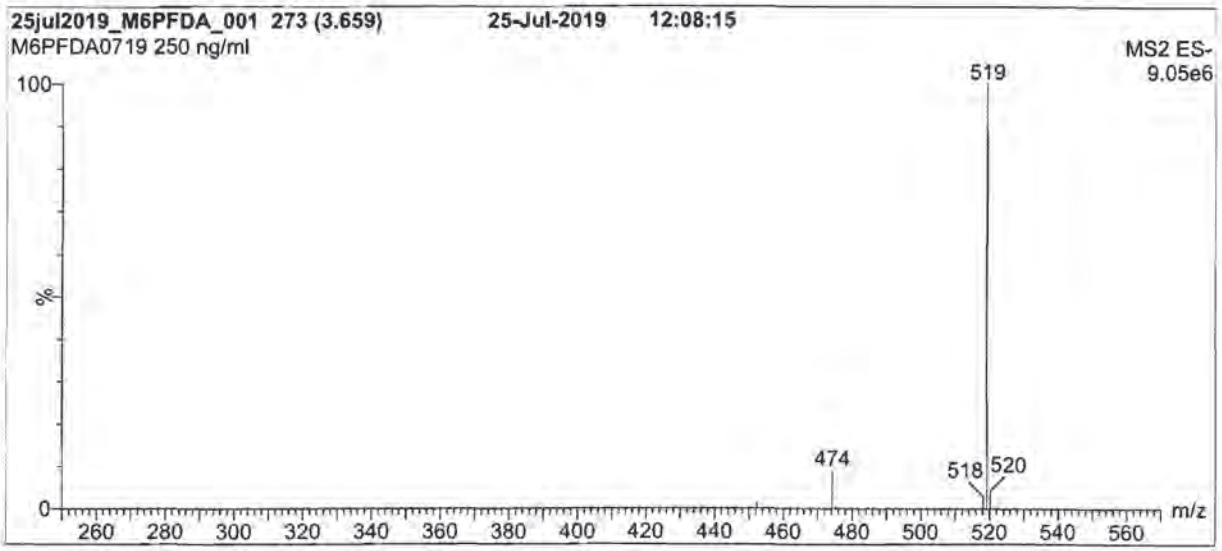
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M6PFDA0719 (4 of 4)
rev0

19L0628

Figure 1: **M6PFDA; LC/MS Data (TIC and Mass Spectrum)**





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Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M6PFDA0719 (3 of 4)
rev0

19L0628

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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).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M6PFDA0719 (2 of 4)
rev0

19L0628

WELLINGTON LABORATORIES

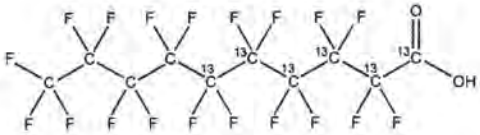
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M6PFDA
COMPOUND: Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid

LOT NUMBER: M6PFDA0719

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)	07/25/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/25/2024		
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

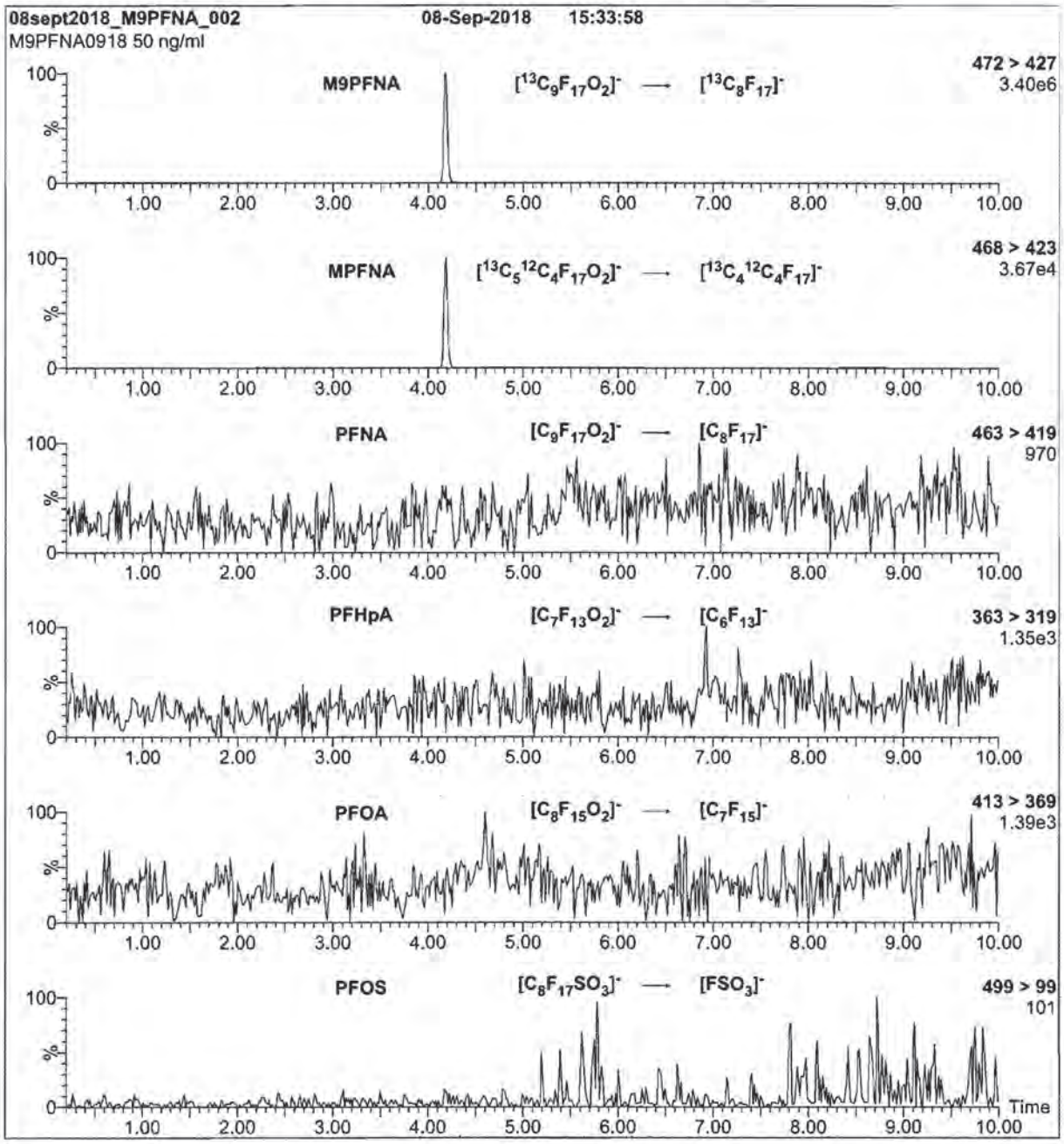
Certified By: _____ **Date:** 07/26/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0629

Figure 2: **M9PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M9PFNA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

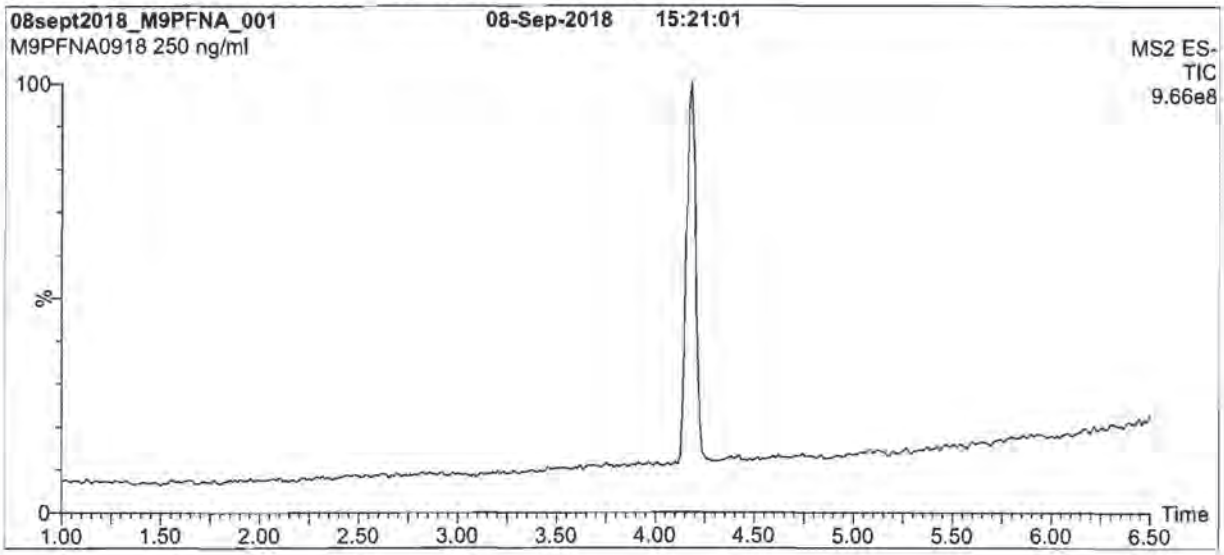
Collision Gas (mbar) = 2.95e-3
Collision Energy (eV) = 10

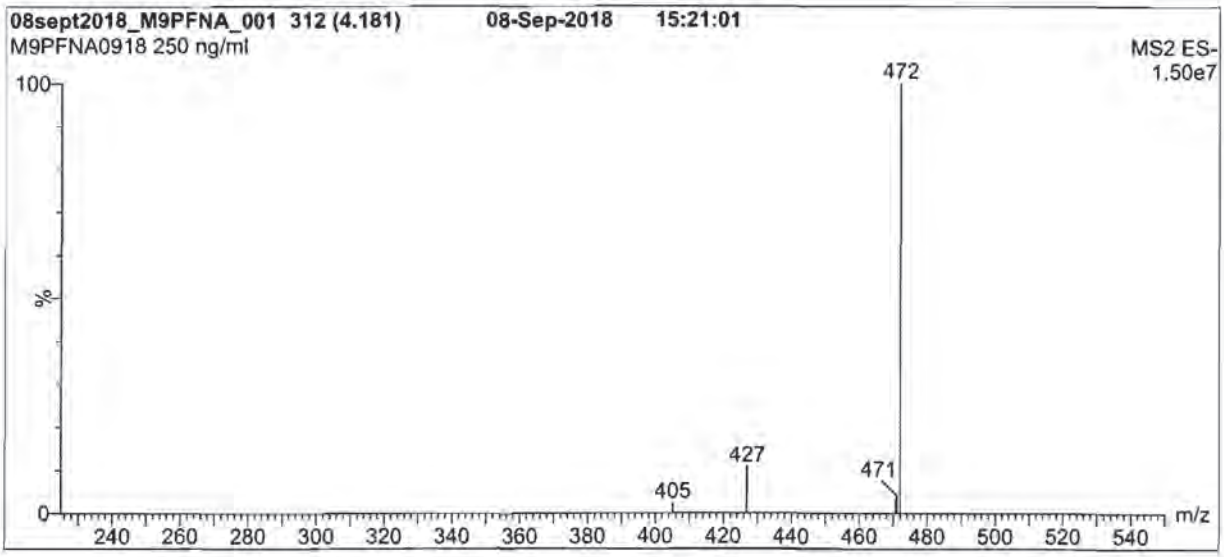
Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

M9PFNA0918 (4 of 4)
rev0

19L0629

Figure 1: M9PFNA; 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M9PFNA0918 (3 of 4)
rev0

19L0629

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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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. 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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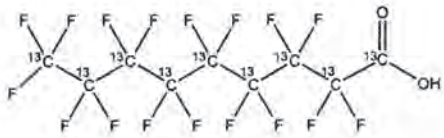
19L0629

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M9PFNA
COMPOUND: Perfluoro-n-[$^{13}C_9$]nonanoic acid
LOT NUMBER: M9PFNA0918

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)	09/08/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/08/2023		
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 $^{13}C_5{}^{12}C_4HF_{17}O_2$ (MPFNA).

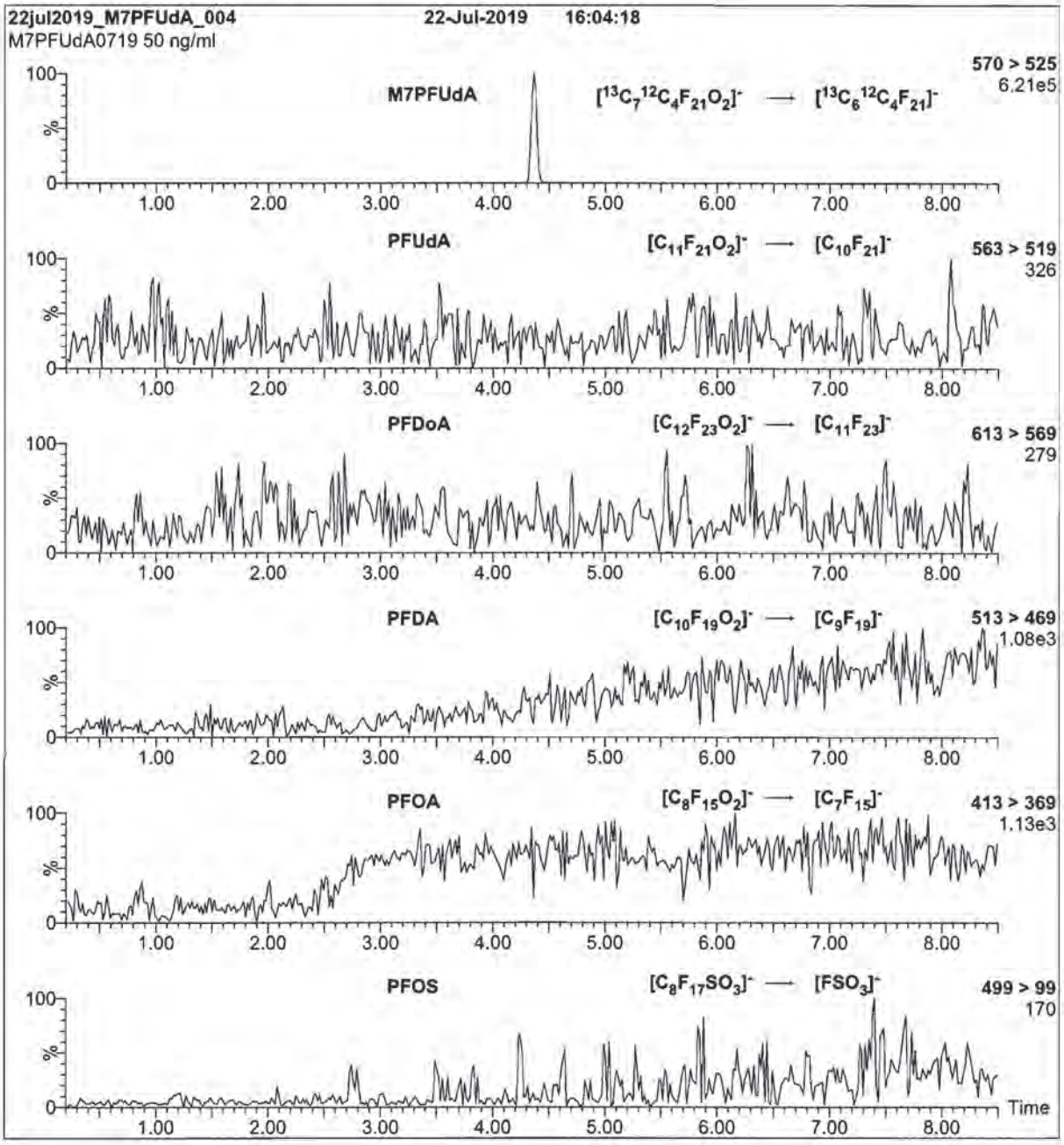
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/19/2018 (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

19L0630

Figure 2: **M7PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M7PFUdA)

Mobile phase: Same as Figure 1

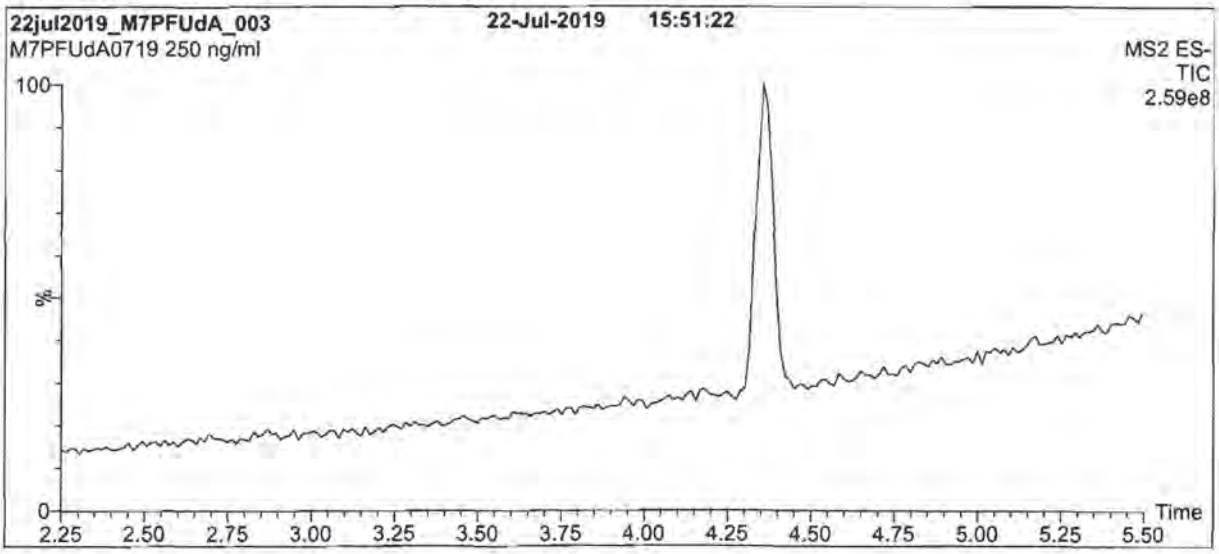
Flow: 300 µl/min

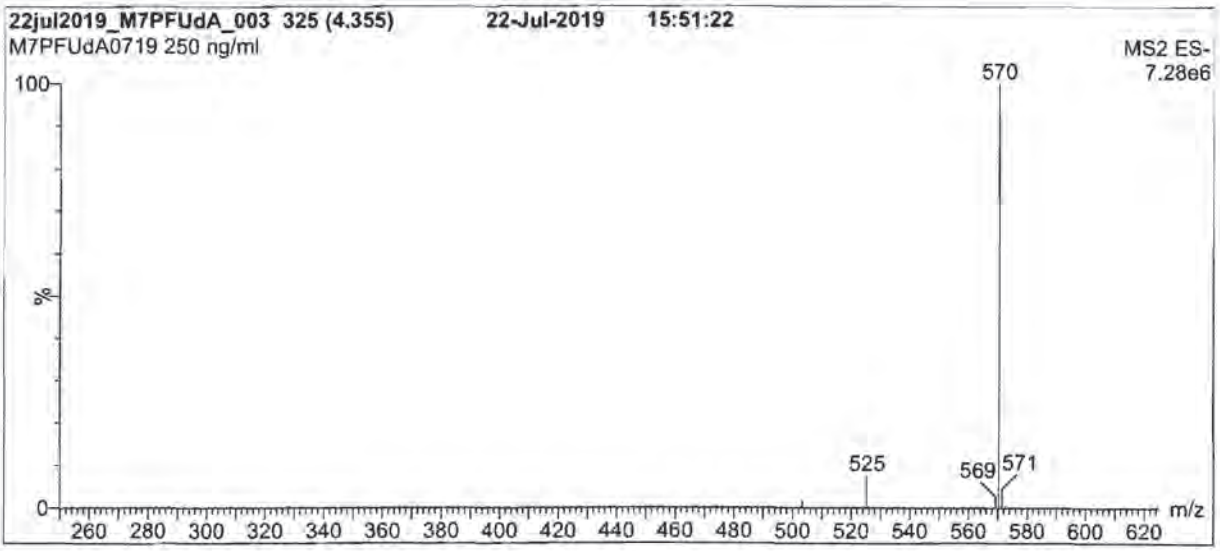
MS Parameters

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 12

19L0630

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: 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M7PFUdA0719 (3 of 4)
rev0

19L0630

INTENDED USE:

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HANDLING:

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CALA Testing Accreditation No.: A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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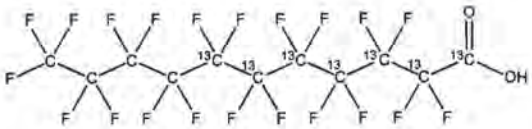
19L0630

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M7PFUdA	**LOT NUMBER:**	M7PFUdA0719
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)	07/22/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/22/2024		
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

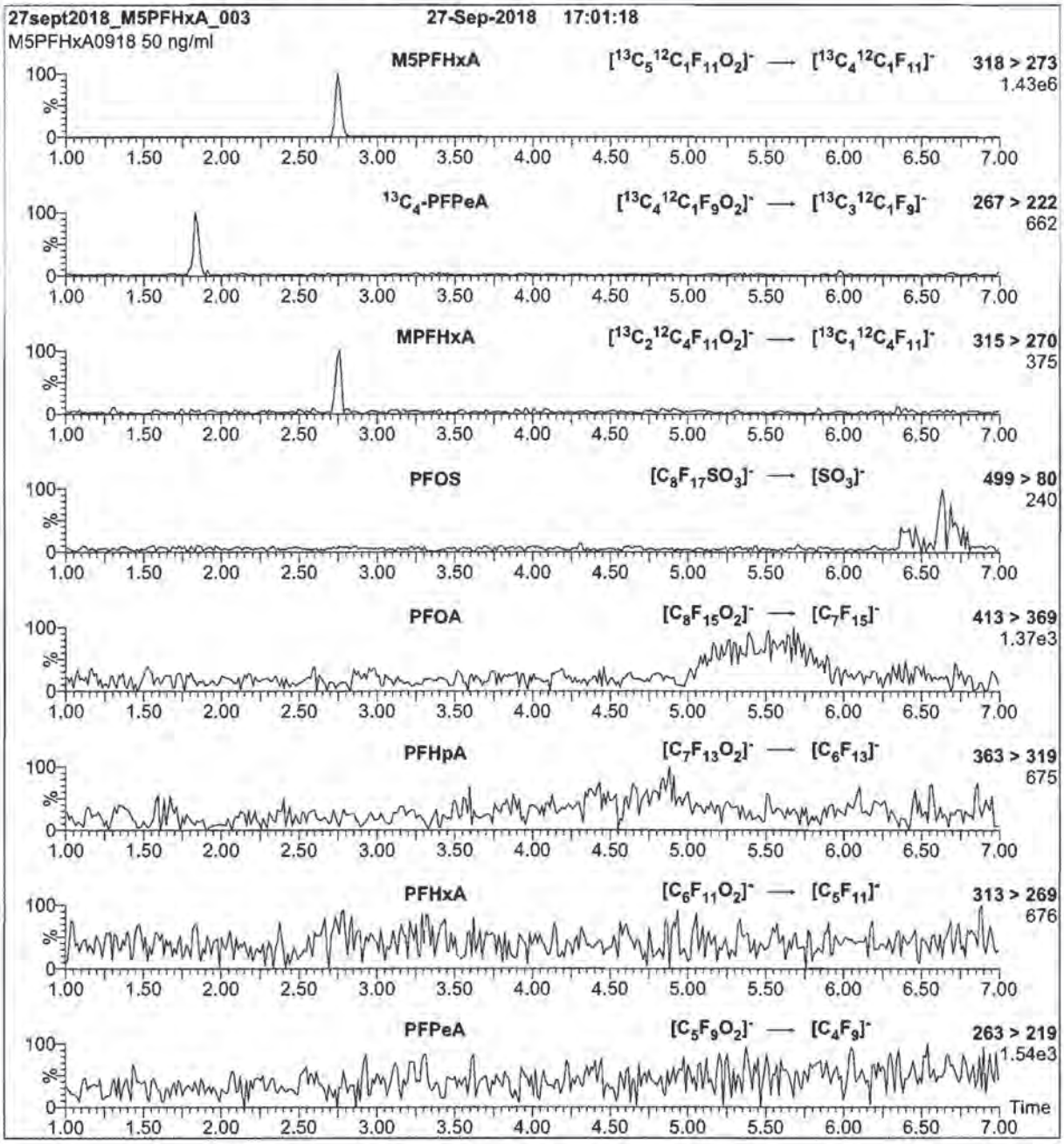
Certified By: _____ **Date:** 09/12/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0631

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

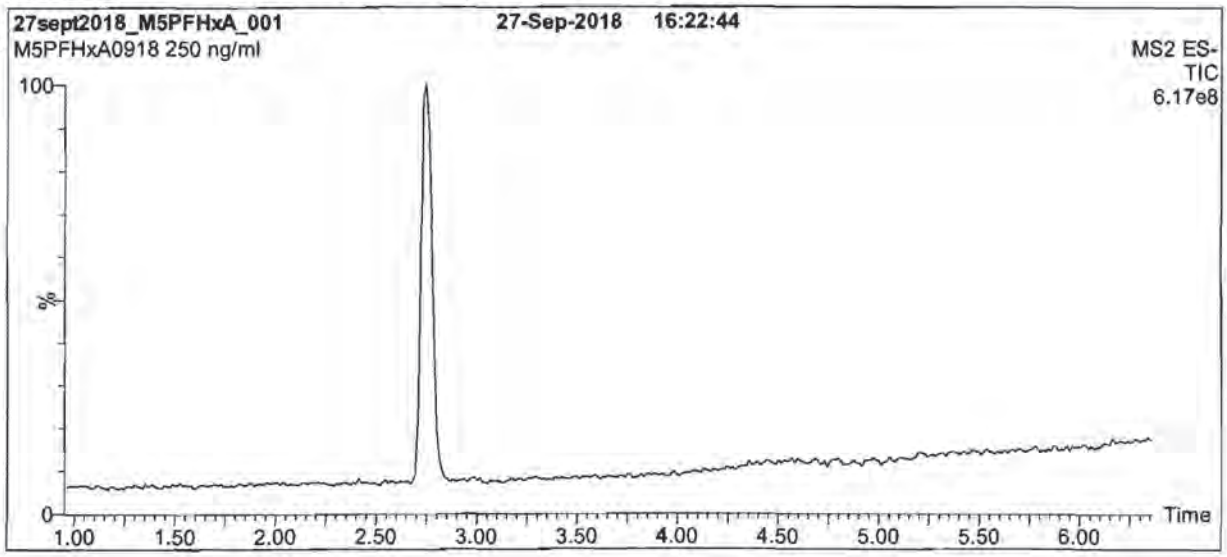
MS Parameters

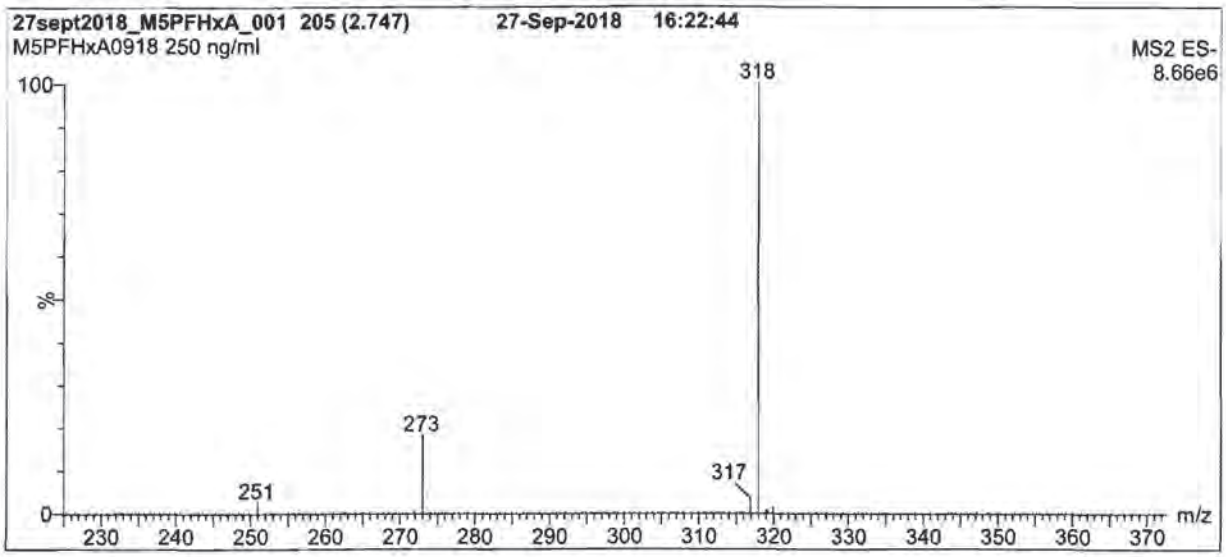
Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 8

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0631

Figure 1: M5PFHxA; LC/MS Data (TIC and Mass Spectrum)





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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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M5PFHxA0918 (3 of 4)
rev0

19L0631

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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.

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 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

19L0631

WELLINGTON LABORATORIES

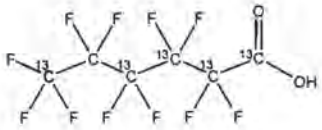
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFHxA
COMPOUND: Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid

LOT NUMBER: M5PFHxA0918

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

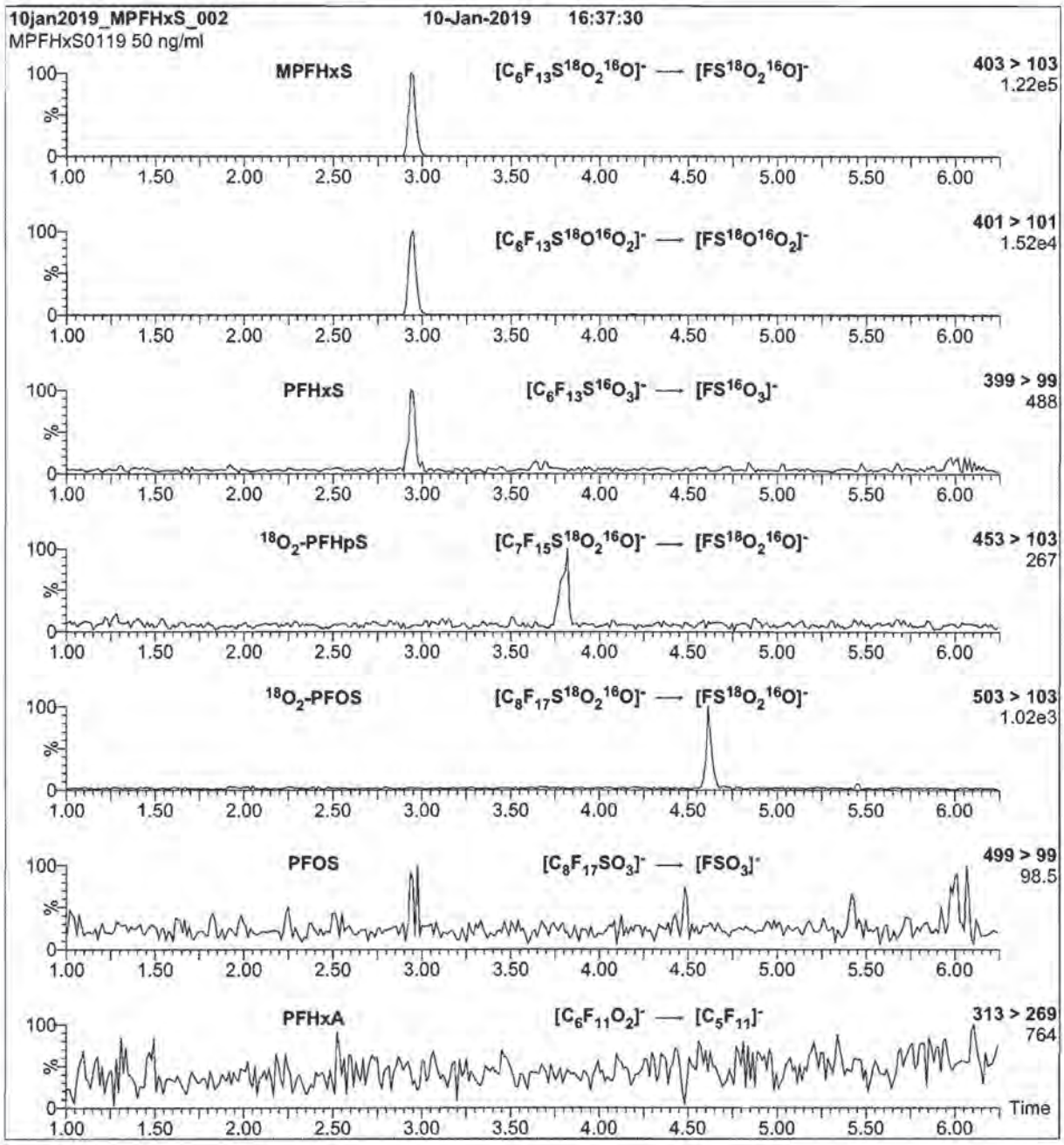
Certified By: _____ **Date:** 10/01/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0632

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) = 2.88e-3
Collision Energy (eV) = 32

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFHxS0119 (4 of 4)
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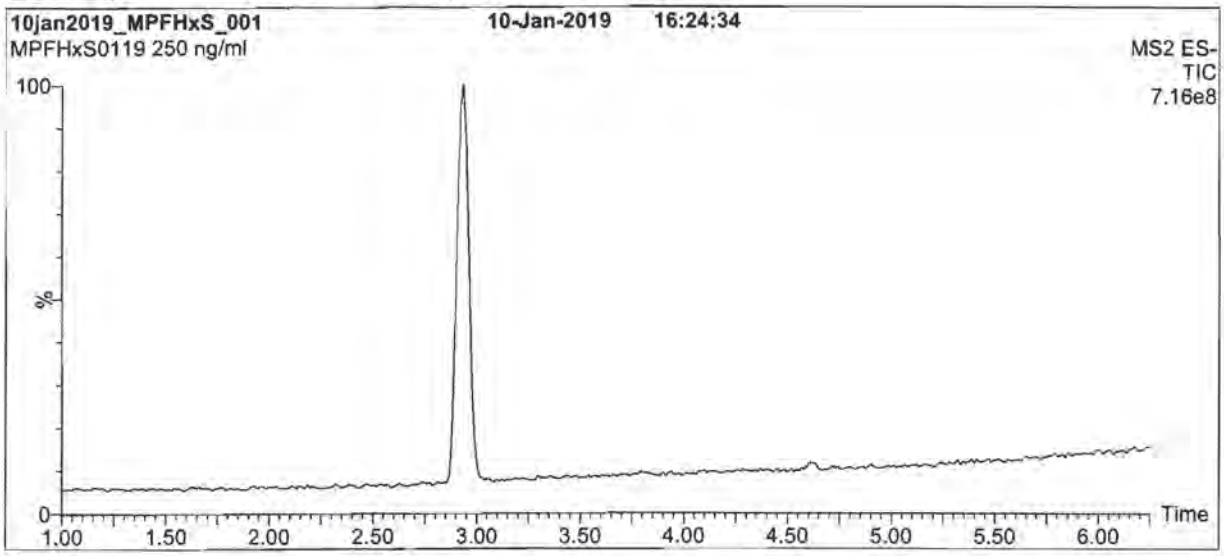
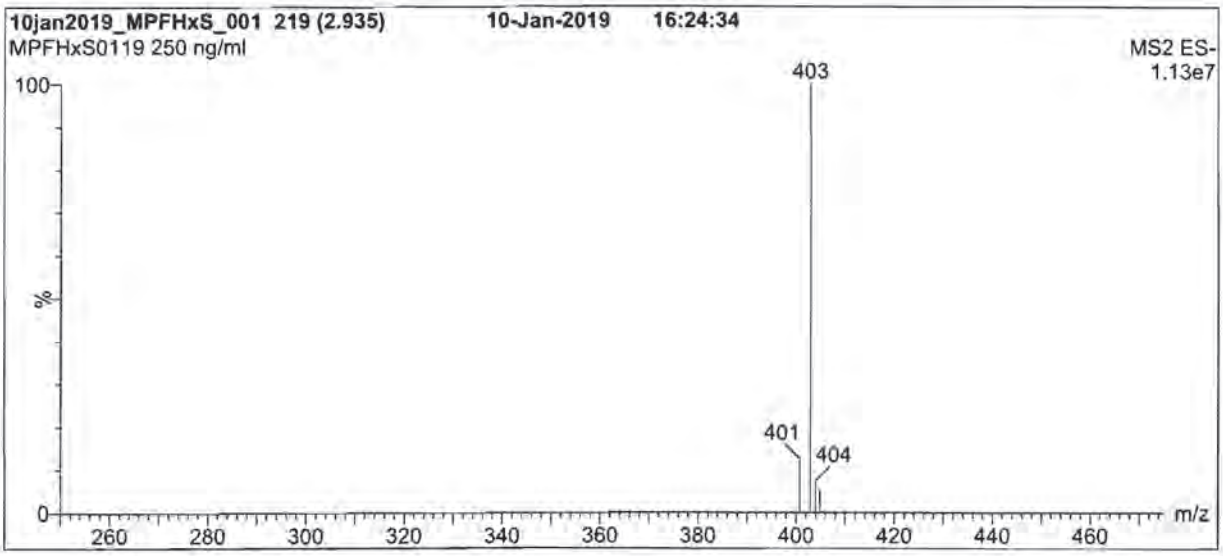
19L0632

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 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFHxS0119 (3 of 4)
rev0

19L0632

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

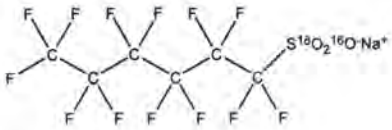
19L0632

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS
COMPOUND: Sodium perfluoro-1-hexane[$^{18}O_2$]sulfonate
LOT NUMBER: MPFHxS0119

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)	01/10/2019		
EXPIRY DATE: (mm/dd/yyyy)	01/10/2024		
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 ~ 0.6% of sodium perfluoro-1-octane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFOS) and ~ 0.2% 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:** 01/21/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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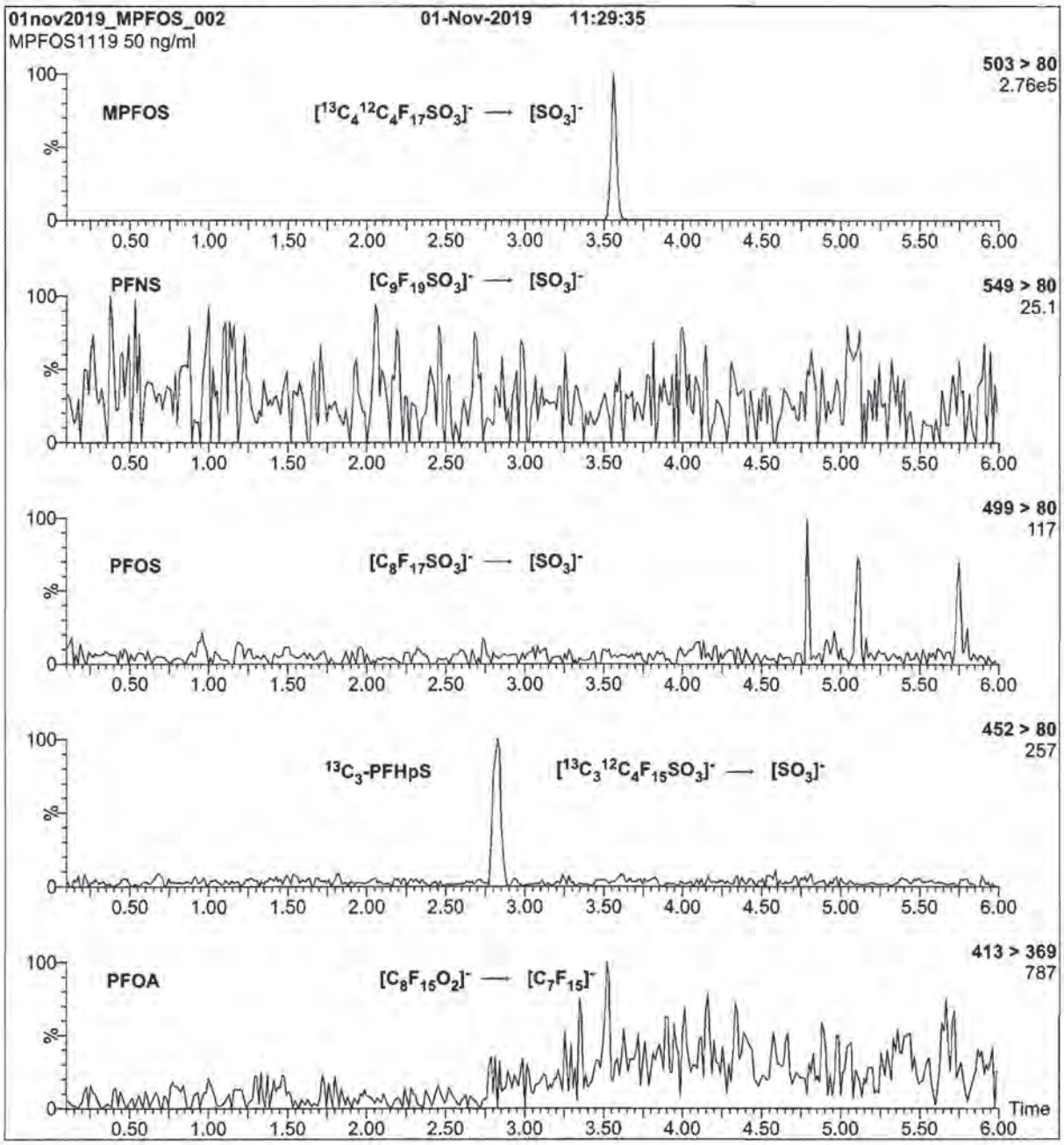
19L0633

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) = 3.39e-3
Collision Energy (eV) = 42

Form#:27, Issued 2004-11-10
Revision#:5, Revised 2018-08-14

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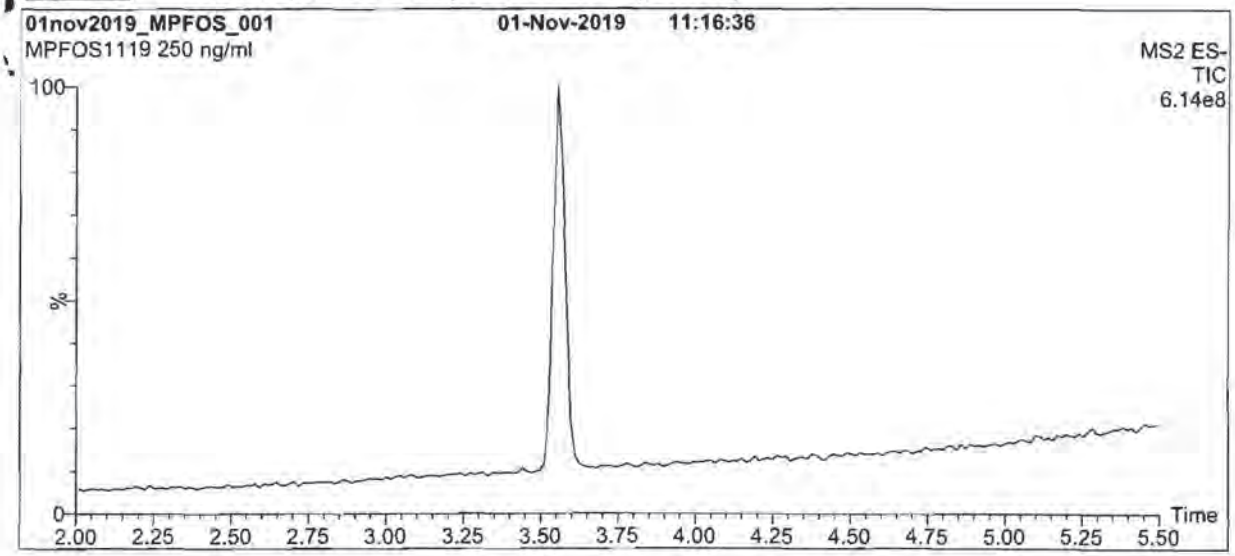
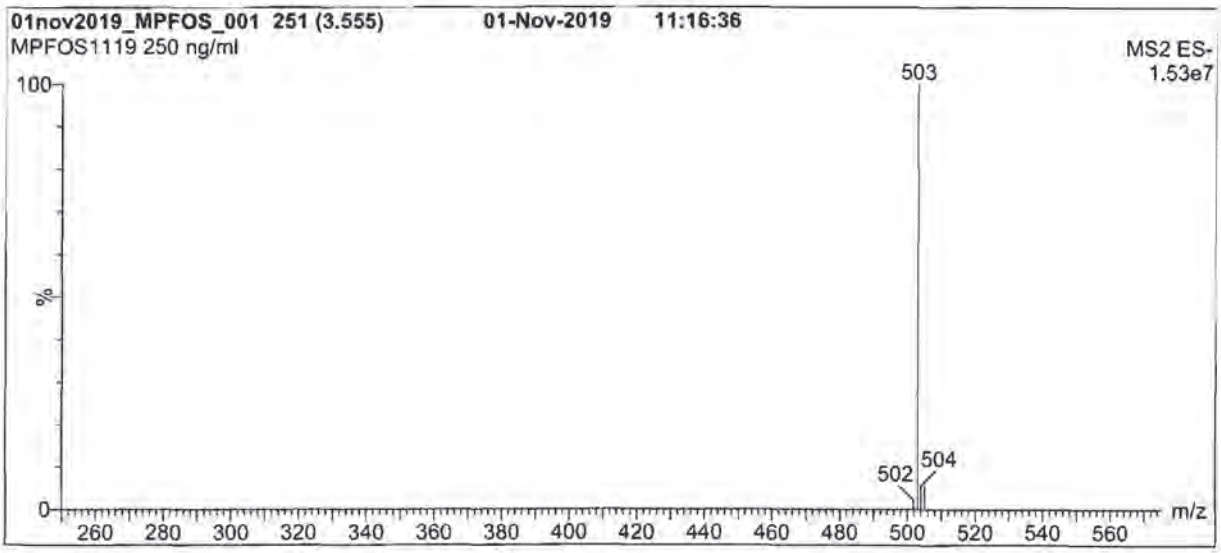
19L0633

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: 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

MPFOS1119 (3 of 4)
rev0

19L0633

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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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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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 REFERENCE MATERIAL PRODUCER

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Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

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rev0

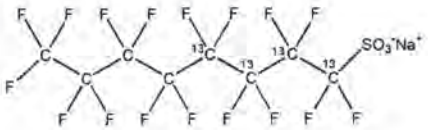
19L0633

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS
LOT NUMBER: MPFOS1119
COMPOUND: Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate

STRUCTURE:
CAS #: 960315-53-1



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)	11/01/2019		
EXPIRY DATE: (mm/dd/yyyy)	11/01/2024		
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:** 11/05/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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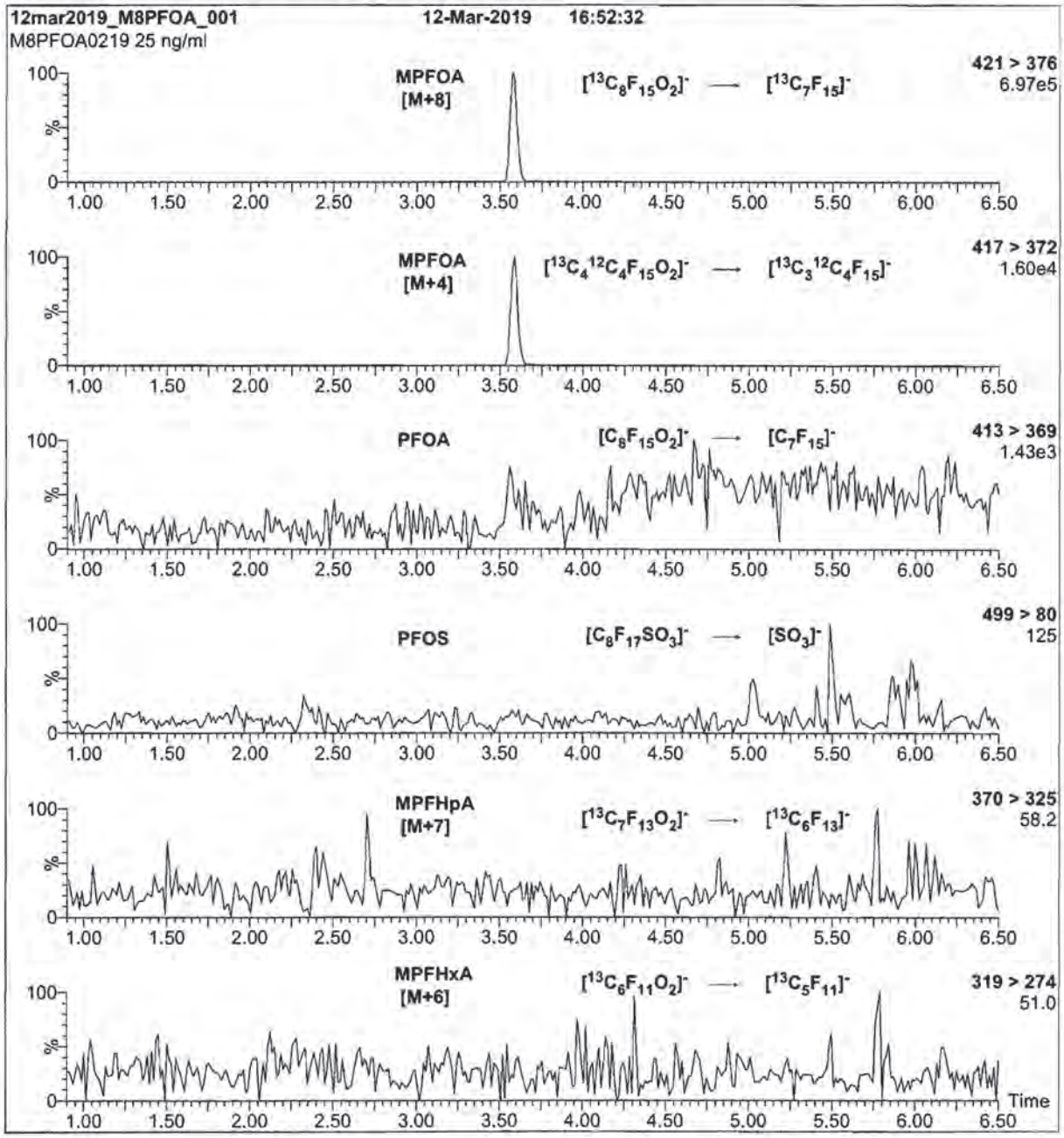
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0634

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

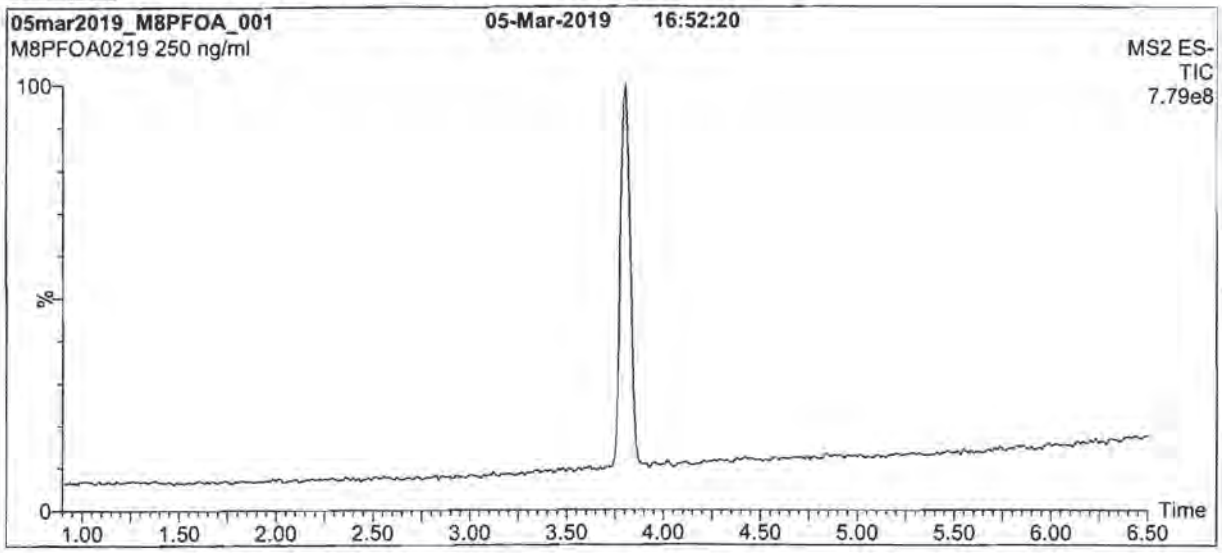
Collision Gas (mbar) = 2.74e-3
Collision Energy (eV) = 8

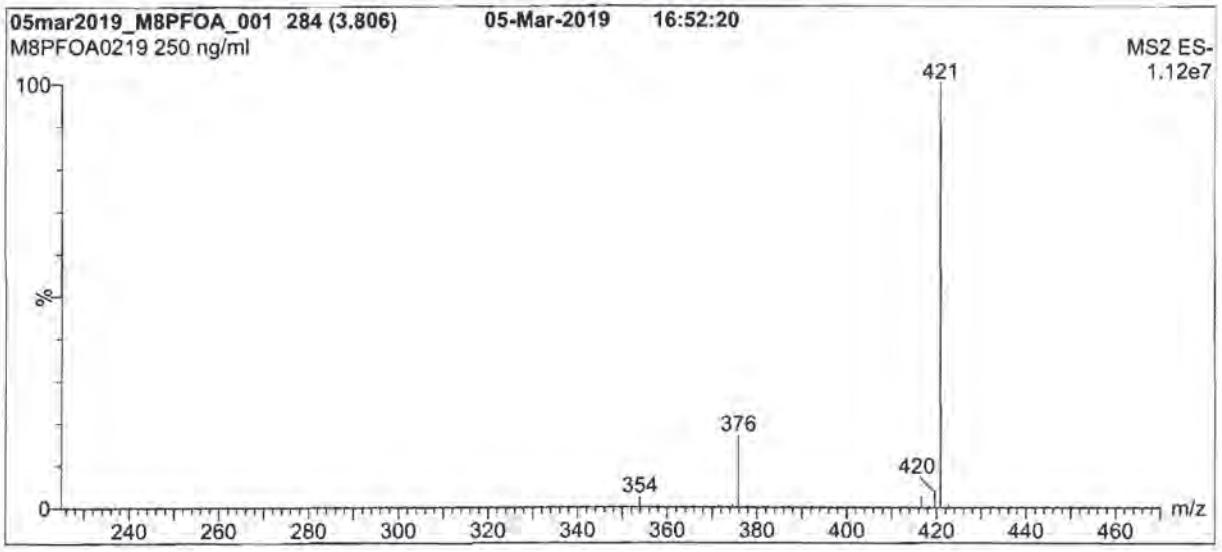
Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M8PFOA0219 (4 of 4)
rev1

19L0634

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 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

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

M8PFOA0219 (3 of 4)
rev1

19L0634

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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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:

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 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

Form#:27, Issued 2004-11-10
Revision#:8, Revised 2018-08-14

M8PFOA0219 (2 of 4)
rev1

19L0634

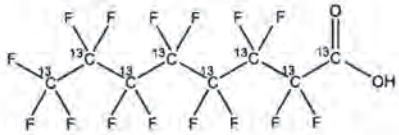
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOA
COMPOUND: Perfluoro-n-[$^{13}C_8$]octanoic acid
LOT NUMBER: M8PFOA0219

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_8HF_{15}O_2$	**MOLECULAR WEIGHT:**	422.01
CONCENTRATION:	48.9 ± 2.4 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	97.8% (M8PFOA) 2.2% (MPFOA [M+4])	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	03/05/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/05/2024		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of native perfluoro-n-octanoic acid (PFOA) and ~ 2.2% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/07/2019 (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

"sys_sample_code","lab_anl_method_name","analysis_date","analysis_time","total_or_dissolved","column_number","test_type","cas_rn","chemical_name","result_value","result_error_delta","result_type_code","reportable_result","detect_flag","lab_qualifiers","organic_yn","method_detection_limit","reporting_detection_limit","quantatation_limit","result_unit","detection_limit_unit","tic_retention_time","result_comment","qc_original_conc","qc_spike_added","qc_spike_measured","qc_spike_recovery","qc_dup_original_conc","qc_dup_spike_added","qc_dup_spike_measured","qc_dup_spike_recovery","qc_rpd","qc_spike_lcl","qc_spike_ucl","qc_rpd_cl","qc_spike_status","qc_dup_spike_status","qc_rpd_status"
"EB02-20200217","537_MOD","02/28/20","22:27","N","NA","000","375-73-5","PFBS","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","

(PFUNA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","

"EB02-20200217","537_MOD","02/28/20","22:27","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","","","","",""
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"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00235","0.00293","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L",""
"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID

(PFUNA)","","","TRG","Yes","N","U","Y","0.00134","0.00195","0.00390","UG_L","UG_L","","","

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"18-GW-18BGMP10E-20200217","537_MOD","02/29/20","18:13","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","81.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","81.8","81.8","","","","","","50","150","","","","",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","375-73-5","PFBS","0.00151","","TRG","Yes","Y","J","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.00316","","TRG","Yes","Y","J","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00243","0.00302","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.00195","","TRG","Yes","Y","J","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L",""
"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","2058-94-

8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","","","","","","","","
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","763051-92-9","11-
CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-
PF3OUdS)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","","","","","","","","
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","307-55-
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(PFDOA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","","","","","","","","
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","","","","","","","","
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7","PFTeDA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00403","UG_L","UG_L","","","","","","","","","","
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DA","94.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.4","94.4","","","","","","50","150","","","
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","13C3-PFHxS","13C3-
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","13C5-PFNA","13C5-
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","13C2-PFUnA","13C2-
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","96.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.5","96.5","","","","","","50","150
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"18-GW-18BGMP10F-20200217","537_MOD","02/29/20","18:23","N","NA","000","13C2-PFDoA","13C2-

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"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","375-73-5","PFBS","","","TRG","Yes","N","U","Y","0.00133","0.00195","0.00390","UG_L","UG_L","","","","","","

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"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","","","TRG","Yes","N","U","Y","0.00133","0.00195","0.00390","UG_L","UG_L","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.00133","0.00195","0.00390","UG_L","UG_L","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","72629-94-8","PFTrDA","","","TRG","Yes","N","U","Y","0.00133","0.00195","0.00390","UG_L","UG_L","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","376-06-7","PFTeDA","","","TRG","Yes","N","U","Y","0.00133","0.00195","0.00390","UG_L","UG_L","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C3-PFBS","13C3-PFBS","96.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.7","96.7","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","85.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","85.5","85.5","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C2-PFHxA","13C2-PFHxA","96.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.7","96.7","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C4-PFHpA","13C4-PFHpA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C3-PFHxS","13C3-PFHxS","105","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","105","105","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C5-PFNA","13C5-PFNA","96.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.6","96.6","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C2-PFOA","13C2-PFOA","96.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.4","96.4","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C8-PFOS","13C8-PFOS","98.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","98.7","98.7","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C2-PFDA","13C2-PFDA","95.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.5","95.5","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","99.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","99.4","99.4","","","","","","50","150","","","","","
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"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","84.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.0","84.0","","","","","","50","150","","","","","
"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C2-PFDoA","13C2-PFDoA","89.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","89.1","89.1","","","","","","50","150","","","","","

"18-GW-18BGMP08C-20200217","537_MOD","02/29/20","18:34","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","74.5","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","74.5","74.5","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","375-73-5","PFBS","0.00205","","TRG","Yes","Y","J","Y","0.00135","0.00198","0.00395","UG_L","UG_L","","","","","","

","","","","","","","","","
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00395","UG_L","UG_L","
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00395","UG_L","UG_L","
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","72629-94-8","PFTrDA","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00395","UG_L","UG_L","
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","376-06-7","PFTeDA","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00395","UG_L","UG_L","
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C3-PFBS","13C3-PFBS","112","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","112","112","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","94.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.1","94.1","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C2-PFHxA","13C2-PFHxA","97.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","97.0","97.0","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C4-PFHpA","13C4-PFHpA","99.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","99.5","99.5","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C3-PFHxS","13C3-PFHxS","109","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C5-PFNA","13C5-PFNA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C2-PFOA","13C2-PFOA","95.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.3","95.3","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C8-PFOS","13C8-PFOS","109","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C2-PFDA","13C2-PFDA","110","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","110","110","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","94.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.5","94.5","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C2-PFUnA","13C2-PFUnA","104","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","104","104","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","89.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","89.8","89.8","","","","","","50","150","","","","",""
"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C2-PFDoA","13C2-PFDoA","87.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.3","87.3","","","","","","50","150","","","","",""

"24-GW-18BGMP08D-20200217","537_MOD","02/29/20","18:44","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","86.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.1","86.1","","","","","","50","150","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","375-73-5","PFBS","0.0266","","TRG","Yes","Y","","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.0750","","TRG","Yes","Y","","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00238","0.00296","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0237","","TRG","Yes","Y","Q","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.161","","TRG","Yes","Y","","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.146","","TRG","Yes","Y","","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.168","","TRG","Yes","Y","","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","","","","","","","","","","","","","","",""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID

(PFUNA)","","","TRG","Yes","N","U","Y","0.00135","0.00198","0.00396","UG_L","UG_L","","","

",""," ","""
"24-GW-18BGMP08E-20200217","537_MOD","02/29/20","18:55","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","78.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","78.9","78.9","","","","","","50","150",""," ","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","375-73-5","PFBS","0.0277","","TRG","Yes","Y","","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.103","","TRG","Yes","Y","","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00243","0.00302","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.00883","","TRG","Yes","Y","Q","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0736","","TRG","Yes","Y","","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.0323","","TRG","Yes","Y","","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","2058-94-

8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","763051-92-9","11-
CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-
PF3OUdS)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C3-PFBS","13C3-
PFBS","104","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","104","104","","","","","","50","150","","","
","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C3-HFPO-DA","13C3-HFPO-
DA","95.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.3","95.3","","","","","","50","150","","","
","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C2-PFHxA","13C2-
PFHxA","98.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","98.3","98.3","","","","","","50","150","
","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C4-PFHpA","13C4-
PFHpA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","","
","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C3-PFHxS","13C3-
PFHxS","113","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","113","113","","","","","","50","150","","
","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C5-PFNA","13C5-
PFNA","95.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.1","95.1","","","","","","50","150","","
","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C2-PFOA","13C2-
PFOA","100","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","100","100","","","","","","50","150","","
","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C8-PFOS","13C8-
PFOS","109","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","","","
","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C2-PFDA","13C2-
PFDA","106","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","106","106","","","","","","50","150","","
","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","94.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.8","94.8","","","","","","50","15
0","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C2-PFUnA","13C2-
PFUnA","96.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.9","96.9","","","","","","50","150","
","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","79.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","79.9","79.9","","","","","","50","150
","","","","","
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C2-PFDoA","13C2-

PFDoA","86.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.4","86.4","","","","","","50","150","
","","","",""
"24-GW-18PS1-20200217","537_MOD","02/29/20","19:05","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","82.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","82.7","82.7","","","","","","50","150"
,"","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","375-73-
5","PFBS","0.0261","","TRG","Yes","Y","","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","0.113","","TRG","Yes","Y","","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE
OXIDE DIMER ACID (HFPO-
DA)","","","TRG","Yes","N","U","Y","0.00242","0.00301","0.00402","UG_L","UG_L","","","","","","","","","","","","
","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","0.00935","","TRG","Yes","Y","Q","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","919005-14-4","4,8-DIOXA-3H-
PERFLUORONONANOIC ACID
(ADONA)","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","355-46-
4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","0.0690","","TRG","Yes","Y","","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","0.0308","","TRG","Yes","Y","","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","","","","","
","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","756426-58-1","9-
CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-
PF3ONS)","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC
ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","",""
"DUP01-20200217","537_MOD","02/29/20","19:16","N","NA","000","763051-92-9","11-

CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","","","TRG","Yes","N","U","Y","0.00138","0.00201","0.00402","UG_L","UG_L","","","

,"","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE
OXIDE DIMER ACID (HFPO-
DA)","","","TRG","Yes","N","U","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","","","","","","","","
","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","919005-14-4","4,8-DIOXA-3H-
PERFLUORONONANOIC ACID
(ADONA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC
ACID
(PFHXS)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","","","","
","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","756426-58-1","9-
CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-
PF3ONS)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC
ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-
3-OXAUNDECANE-1-SULFONIC ACID (11Cl-
PF3OUdS)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","","","","","
","","","","","","","",""
"B0B0155-BLK1","537_MOD","02/28/20","21:55","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID

(PFDOA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","

(PFHXA)","0.0428","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0428","107","","","","","","72","129","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","0.0419","","TRG","Yes","Y","","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","0.0400","0.0419","105","","","","","","70","130","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0433","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0433","108","","","","","","72","130","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","0.0424","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0424","106","","","","","","70","130","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0423","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0423","106","","","","","","68","131","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.0399","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0399","99.7","","","","","","71","133","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","0.0441","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0441","110","","","","","","69","130","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.0396","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0396","99.0","","","","","","65","140","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","0.0358","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0358","89.6","","","","","","70","130","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","0.0396","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0396","99.0","","","","","","71","129","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","2355-31-9","MeFOSAA","0.0403","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0403","101","","","","","","65","136","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","2991-50-6","EtFOSAA","0.0375","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0375","93.8","","","","","","61","135","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","0.0406","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0406","102","","","","","","69","133","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","0.0435","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0435","109","","","","","","70","130","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","0.0377","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0377","94.3","","","","","","72","134","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","72629-94-8","PFTrDA","0.0376","","TRG","Yes","Y","Q","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0376","93.9","","","","","","65","144","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","376-06-

7","PFTeDA","0.0392","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400",
"0.0392","98.1","","","","","","71","132","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C3-PFBS","13C3-
PFBS","112","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","112","112","","","","","","50","150","","",
"","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C3-HFPO-DA","13C3-HFPO-
DA","96.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.7","96.7","","","","","","50","150","","",
"","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C2-PFHxA","13C2-
PFHxA","96.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.8","96.8","","","","","","50","150","
","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C4-PFHpA","13C4-
PFHpA","95.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.5","95.5","","","","","","50","150","
","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C3-PFHxS","13C3-
PFHxS","108","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","108","108","","","","","","50","150","","
","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C5-PFNA","13C5-
PFNA","98.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","98.1","98.1","","","","","","50","150","","
","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C2-PFOA","13C2-
PFOA","91.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.4","91.4","","","","","","50","150","","
","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C8-PFOS","13C8-
PFOS","107","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","107","107","","","","","","50","150","","","
","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C2-PFDA","13C2-
PFDA","108","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","108","108","","","","","","50","150","","","
","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","84.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.3","84.3","","","","","","50","15
0","","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C2-PFUnA","13C2-
PFUnA","91.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.2","91.2","","","","","","50","150","
","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","79.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","79.1","79.1","","","","","","50","150
","","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C2-PFDoA","13C2-
PFDoA","88.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.5","88.5","","","","","","50","150","
","","","",""
"B0B0155-BS1","537_MOD","02/28/20","22:06","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","85.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","85.1","85.1","","","","","","50","150"
,"","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","375-73-
5","PFBS","0.0396","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.
0396","99.0","","","","","9.48","72","130","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","0.0424","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.
0424","106","","","","","0.794","72","129","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE
OXIDE DIMER ACID (HFPO-
DA)","0.0403","","TRG","Yes","Y","","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","0.0400","0.0403
","101","","","","","3.88","70","130","","","",""

"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0408","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0408","102","","","","","5.91","72","130","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","0.0424","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0424","106","","","","","0.0341","70","130","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0331","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0331","82.8","","","","","24.3","68","131","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.0363","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0363","90.8","","","","","9.37","71","133","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","0.0414","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0414","103","","","","","6.40","69","130","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.0405","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0405","101","","","","","2.27","65","140","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","0.0397","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0397","99.2","","","","","10.2","70","130","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","0.0421","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0421","105","","","","","6.03","71","129","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","2355-31-9","MeFOSAA","0.0358","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0358","89.4","","","","","11.8","65","136","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","2991-50-6","EtFOSAA","0.0367","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0367","91.7","","","","","2.27","61","135","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","0.0403","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0403","101","","","","","0.793","69","133","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","0.0443","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0443","111","","","","","1.71","70","130","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","0.0407","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0407","102","","","","","7.62","72","134","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","72629-94-8","PFTrDA","0.0403","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0403","101","","","","","6.87","65","144","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","376-06-7","PFTeDA","0.0378","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0378","94.5","","","","","3.67","71","132","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C3-PFBS","13C3-PFBS","130","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","130","130","","","","","","50","150","","","","",""

"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","109","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C2-PFHxA","13C2-PFHxA","100","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","100","100","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C4-PFHpA","13C4-PFHpA","108","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","108","108","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C3-PFHxS","13C3-PFHxS","135","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","135","135","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C5-PFNA","13C5-PFNA","116","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","116","116","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C2-PFOA","13C2-PFOA","101","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","101","101","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C8-PFOS","13C8-PFOS","109","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C2-PFDA","13C2-PFDA","100","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","100","100","","","","","","50","150","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","103","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","103","103","","","","","","50","150","","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C2-PFUnA","13C2-PFUnA","90.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.6","90.6","","","","","","50","150","","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","90.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.7","90.7","","","","","","50","150","","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C2-PFDoA","13C2-PFDoA","96.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.4","96.4","","","","","","50","150","","","","","",""
"B0B0155-BSD1","537_MOD","02/28/20","22:16","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","96.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.0","96.0","","","","","","50","150","","","","","",""

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Wood Environment & Infrastructure Solutions, Inc. April 13, 2020
7376 SW Durham Road
Portland, OR 97224
Attn: Ms. Kimberly Shiroodi
Kimberly.Shiroodi@woodplc.com

SUBJECT: REVISED MCAS El Toro & Tustin PFAs, Data Validation

Dear Ms. Shiroodi,

Enclosed are the revised validation reports for the fraction listed below. These SDGs were received on March 10, 2020. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #47500_RV1:

SDG #	**Fraction**
2000247, 2000333, 2000346	Perfluoroalkyl & Polyfluoroalkyl Substances

- Revision: Updated QAPP

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 for Initial Basewide Assessmnet of Perfluorinated Compounds or Per- and Polyfluoroalkyl Substances in Groundwater, Former Marine Corps Air Station El Toro, Irvine, California; June 2017
- Field Change Request Form No. FCRF-2405-008-01-0066; January 2020
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.3, 2019
- DoD General Validation Guidelines, February 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Pgeng@lab-data.com
Project Manager/Senior Chemist

2,524 pages-ADV (100% Stage 4 for this job)

Attachment 1

Client Select / Stage 2B/4 **LDC #47500 (Wood/KMEA - National City, CA / MCAS El Toro & Tustin PFAs)** **PO001184**

LDC	SDG#	DATE REC'D	(2) DATE DUE	PFAs (537M/ QSM 5.3)																															
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
A	2000247	03/10/20	03/24/20	9	0																														
B	2000333	03/10/20	03/24/20	7	0																														
C	2000346	03/10/20	03/24/20	4	0																														
Total	J/PG			20	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	20

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

L:\Wood Environmental\El Toro\47500ST.wpd

LDC Report# 47500A96_RV1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 24, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000247

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
SGU-GW-SGUTPINF-20200204	2000247-03	Water	02/04/20
DUP02-20200204	2000247-04	Water	02/04/20
SGU-GW-SGUTPEFL-20200204	2000247-05	Water	02/04/20
24-GW-21UGMW37-20200204	2000247-06	Water	02/04/20
24-GW-24EX30B1-20200204	2000247-07	Water	02/04/20
24-GW-24NEW7-20200204	2000247-08	Water	02/04/20
24-GW-24MW10B-20200204	2000247-09	Water	02/04/20
24-GW-24EX20B-20200204	2000247-10	Water	02/04/20
24-GW-24MW05BR-20200204	2000247-11	Water	02/04/20
SGU-GW-SGUTPINF-20200204MS	2000247-03MS	Water	02/04/20
SGU-GW-SGUTPINF-20200204MSD	2000247-03MSD	Water	02/04/20

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) for Initial Basewide Assessment of Perfluorinated Compounds or Per- and Polyfluoroalkyl Substances in Groundwater, Former Marine Corps Air Station El Toro, Irvine, California (June 2017), Field Change Request Form No. FCRF-2405-0008-01-0066 (January 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). 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 methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

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 methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were 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.

Retention time windows were established as required by the methods.

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 and Instrument Sensitivity Check

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.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB01-20200204 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200204 was identified as a source blank. 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. For SGU-GW-SGUTPINF-20200204MS/MSD, no data were qualified for perfluorohexanoic acid (PFHxA), perfluorooctanoic acid (PFOA), and perfluorooctanesulfonic acid (PFOS) percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
SGU-GW-SGUTPINF-20200204MS/MSD (SGU-GW-SGUTPEFL-20200204)	Perfluorohexanoic acid (PFHxA)	31.3 (≤30)	J (all detects)	A

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples SGU-GW-SGUTPINF-20200204 and DUP02-20200204 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	SGU-GW-SGUTPINF-20200204	DUP02-20200204				
Perfluorobutanesulfonic acid (PFBS)	0.0548	0.0599	9 (≤30)	-	-	-
Perfluorohexanoic acid (PFHxA)	0.190	0.196	3 (≤30)	-	-	-
Perfluoroheptanoic acid (PFHpA)	0.0335	0.0344	3 (≤30)	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	0.237	0.249	5 (≤30)	-	-	-
Perfluorooctanoic acid (PFOA)	0.241	0.252	4 (≤30)	-	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	SGU-GW-SGUTPINF-20200204	DUP02-20200204				
Perfluorononanoic acid (PFNA)	0.00408	0.00404	-	0 (≤0.00397)	-	-
Perfluorooctanesulfonic acid (PFOS)	0.175	0.196	11 (≤30)	-	-	-

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
24-GW-24MW10B-20200204	13C2-PFDoA 13C2-PFTeDA	43.0 (50-150) 39.3 (50-150)	Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriDA) Perfluorotetradecanoic acid (PFTeDA)	J (all detects) J (all detects) J (all detects)	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
24-GW-21UGMW37-20200204	Perfluorooctanesulfonic acid (PFOS)	4.03 (1.342-4.026)	J (all detects)	A
24-GW-24NEW7-20200204	Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA)	21.615 (6.3755-19.1265) 17.462 (5.0445-15.1335)	J (all detects) J (all detects)	A

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to MS/MSD RPD, labeled compound %R, and ion abundance ratio, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2000247

Sample	Compound	Flag	A or P	Reason
SGU-GW-SGUTPEFL-20200204	Perfluorohexanoic acid (PFHxA)	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
24-GW-24MW10B-20200204	Perfluorododecanoic acid (PFDoA) Perfluorotridecanoic acid (PFTriDA) Perfluorotetradecanoic acid (PFTeDA)	J (all detects) J (all detects) J (all detects)	P	Labeled compounds (%R)
24-GW-21UGMW37-20200204	Perfluorooctanesulfonic acid (PFOS)	J (all detects)	A	Target compound identification (ion abundance ratio)
24-GW-24NEW7-20200204	Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA)	J (all detects) J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000247

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000247

No Sample Data Qualified in this SDG

LDC #: 47500A96
SDG #: 2000247
Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET
Stage 4

Date: 3/12/20
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

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	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD ≤ 20%, r^2 TMC/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SB=1, EB=2.
VII.	Matrix spike/Matrix spike duplicates	TW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	TW	D=3+4
X.	Labeled Compounds	TW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	TW	
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:

	Client ID	Lab ID	Matrix	Date
~~1~~	~~SB01-20200204~~	~~2000247-01~~	~~Water~~	~~02/04/20~~
~~2~~	~~EB01-20200204~~	~~2000247-02~~	~~Water~~	~~02/04/20~~
3	SGU-GW-SGUTPINF-20200204	2000247-03	Water	02/04/20
4	DUP02-20200204	2000247-04	Water	02/04/20
5	SGU-GW-SGUTPEFL-20200204	2000247-05	Water	02/04/20
6	24-GW-21UGMW37-20200204	2000247-06	Water	02/04/20
7	24-GW-24EX30B1-20200204	2000247-07	Water	02/04/20
8	24-GW-24NEW7-20200204	2000247-08	Water	02/04/20
9	24-GW-24MW10B-20200204	2000247-09	Water	02/04/20
10	24-GW-24EX20B-20200204	2000247-10	Water	02/04/20
11	24-GW-24MW05BR-20200204	2000247-11	Water	02/04/20
12	SGU-GW-SGUTPINF-20200204MS	2000247-03MS	Water	02/04/20
13	SGU-GW-SGUTPINF-20200204MSD	2000247-03MSD	Water	02/04/20
14				
15	BOB0041-BK1			

LDC #: 47908B96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: M

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

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?	✓			
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) of the initial calibration verification ≤ 30%?	✓			
IV. Continuing calibration and Instrument Sensitivity Check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 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?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		

Level IV checklist_LCMS_PFAS_QSM5.3_Table B-15.wpd

LDC #: 4T500A96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
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 retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?		✓		
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

Level IV checklist_LCMS_PFAS_QSM5.3_Table B-15.wpd

LDC #: ~~47300A-96~~

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 9

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 a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?
~~Y N N/A~~ Was a MS/MSD analyzed every 20 samples of each matrix?
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
		1>/13>	~~PFHxA~~	137 (72-129)	( )	( )	3	No Qual ~~AX~~
			~~PFOA~~	166 (71-133)	( )	( )		
			~~PFOS~~	51.5 (65-140)	39.6 (65-140)	( )		
			~~PFHxA~~	( )	( )	31.3 (≤30)	(1 det>)	~~No Qual~~ /A
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

MSD.wpd

LDC#: 47500A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: 1
2nd Reviewer: 1

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	3	4				
PFBS	0.0548	0.0599	9			
PFHxA	0.190	0.196	3			
PFHpA	0.0335	0.0344	3			
PFHxS	0.237	0.249	5			
PFOA	0.241	0.252	4			
PFNA	0.00408	0.00404		0	≤0.00397	
PFOS	0.175	0.196	11			

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2020\47500A96_WOOD.wpd

LDC #: 47000A96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery	(Limit)	Qualifications
		9 (dot3)	13C2-PFDoA	43.0	(50-150)	dot3/P (PFDoA,
			13C2-PFTeDA	39.3	(V)	PFTyDA,
					( )	PFTeDA)
					( )	
					( )	
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V:\Validation Worksheets\PFAS-537MTable B15\LC_INTST.wpd

LDC #: 4T520A96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1.1

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y N N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y N N/A Were ion ratios between 50-150%?

#	Date	Sample ID	Associated Samples	Finding (ion ratio ~~[illegible]~~ (50-150%))	Qualifications
		6	PFOS	4.03 (1.342 - 4.026)	Idets / A
		8	PFHxA	21.615 (6.3755 - 19.1265)	↓
			PFHpA	17.462 (5.0445 - 15.1335)	↓

V:\Validation Worksheets\PFAS-537M\Table B15\TCI.wpd

LDC#: 41522K90

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 2
Reviewer: 9
2nd Reviewer:

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/12/2020	MQ4	PFOA	0	0.4819612	0.250
			s1	0.8324725	0.500
			s2	1.7177625	1.000
			s3	3.0968212	2.000
			s4	8.5584237	5.000
			s5	15.164858	10.000
			s6	73.000638	50.000
			s7	144.783710	100.000
			s8	361.31753	250.000

Regression Output		***Reported***
Constant	*0.497703*	*0.116170*
Std Err of Y Est		
R Squared	*0.999989*	*0.999534*
Degrees of Freedom		
X Coefficient(s)	*1.443522*	*1.451720*
Std Err of Coef.		
Correlation Coefficient	*0.999994*	
Coefficient of Determination (r^2)	*0.999989*	*0.999534*

Vosta_96_021220_L_PFOA

LDC #: 47500A-96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Page: 2 of 2
Reviewer:
2nd Reviewer:

Method: LC/MS PFCs (EPA Method 537)

Date	System	Compound	Level	(Y) Response	(X) Conc.	(X^2) Conc.
2/12/2020	MQ4	PFOS	1	0.2323075	0.25	0.0625
			2	0.6064862	0.50	0.2500
			3	1.0047412	1.00	1.0000
			4	3.0121825	2.00	4.0000
			5	5.7636662	5.00	25.000
			6	11.650315	10.0	100.00
			7	54.999626	50.0	2500.0
			8	116.54944	100.0	10000.0
			9	281.15975	250.0	62500.0

Regression Output			Reported
Constant	c =	0.0000	0
Std Err of Y Est			
R Squared		0.9998820	0.9998
Degrees of Freedom			
	B =	A =	B=
X Coefficient(s)	1.16219E+00	-1.4732E-04	1.16219
Std Err of Coef.			A=
			-0.000147321
Correlation Coefficient		0.999941	
Coefficient of Determination (r^2)	r^ 2	0.999882	1

LDC #: 4T500A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537M)

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 = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	20021242.31	2/13/10	PFOA ($^{13}C_2$-PFOA)	10.0	10.5	10.5	5.0	5.0
			PFOS ($^{13}C_8$-PFOS)	↓	9.77	9.77	2.3	2.3
2			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

CONCLC-LCMS.wpd

Privileged and Confidential

LDC #41522A90

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: FA

METHOD: LC/MS PFAS (EPA Method 537M)

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: 12/13

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD *	
	MS	MSD	-----	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	0.0397	0.0394	0.241	0.307	0.291	166	166	127	127	26.6	26.6
PFOS	↓	↓	0.175	0.196	0.191	51.5	52.9	39.6	40.6	26.1	26.2

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.
* Use %R to calculate RPD

LDC #: 47200A96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 77

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: 800041-BS1

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	NA	0.0369	NA	92.2	92.2				
PFOS	↓	↓	0.0336	↓	84.0	84.0				

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 #: 47500A96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: PT

METHOD: LC/MS PFOS/PFOAs (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 = $\frac{(A_x)(I_s)(V_i)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_t)(\%S)}$

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. 3 , PFOA:

Conc. = $\frac{2.38e4 \times 125}{3.333} - 0.11617$ ( ) ( ) ( )
(1.45172) (~~250~~ 255.5) (8)

= 0.2405 ng/L

#	Sample ID	Compound	Reported Concentration (ng/L)	Calculated Concentration ( )	Qualification
	3	PFOA	0.241		

LDC Report# 47500B96

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 18, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000333

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
18-GW-18BGMP10E-20200217	2000333-02	Water	02/17/20
18-GW-18BGMP10F-20200217	2000333-03	Water	02/17/20
18-GW-18BGMP08C-20200217	2000333-04	Water	02/17/20
24-GW-18BGMP08D-20200217	2000333-05	Water	02/17/20
24-GW-18BGMP08E-20200217	2000333-06	Water	02/17/20
24-GW-18PS1-20200217	2000333-07	Water	02/17/20
DUP01-20200217	2000333-08	Water	02/17/20

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) for Initial Basewide Assessment of Perfluorinated Compounds or Per- and Polyfluoroalkyl Substances in Groundwater, Former Marine Corps Air Station El Toro, Irvine, California (June 2017), Field Change Request Form No. FCRF-2405-0008-01-0066 (January 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). 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 methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

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 methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were 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.

Retention time windows were established as required by the methods.

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 and Instrument Sensitivity Check

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.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB02-20200217 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200204 (from SDG 2000247) was identified as a source 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 methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

Samples 24-GW-18PS1-20200217 and DUP01-20200217 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	24-GW-18PS1-20200217	DUP01-20200217				
Perfluorobutanesulfonic acid (PFBS)	0.0277	0.0261	6 (≤30)	-	-	-
Perfluorohexanoic acid (PFHxA)	0.103	0.113	9 (≤30)	-	-	-
Perfluoroheptanoic acid (PFHpA)	0.00883	0.00935	-	0.0005 (≤0.00404)	-	-
Perfluorohexanesulfonic acid (PFHxS)	0.0736	0.0690	6 (≤30)	-	-	-
Perfluorooctanoic acid (PFOA)	0.0323	0.0308	5 (≤30)	-	-	-

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.

XII. Target Compound Identifications

All target compound identifications met validation criteria with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
18-GW-18BGMP08C-20200217	Perfluorohexanoic acid (PFHxA) Perfluorooctanoic acid (PFOA) Perfluorooctanesulfonic acid (PFOS)	29.160 (8.4655-25.3965) 5.037 (1.400-4.200) 5.674 (1.304-3.912)	J (all detects) J (all detects) J (all detects)	A
24-GW-18BGMP08D-20200217	Perfluoroheptanoic acid (PFHpA) Perfluorooctanesulfonic acid (PFOS)	64.776 (16.8465-50.5395) 4.167 (1.304-3.912)	J (all detects) J (all detects)	A
24-GW-18BGMP08E-20200217	Perfluoroheptanoic acid (PFHpA)	12.942 (16.8465-50.5395)	J (all detects)	A
24-GW-18PS1-20200217	Perfluoroheptanoic acid (PFHpA)	11.026 (16.8465-50.5395)	J (all detects)	A
DUP01-20200217	Perfluoroheptanoic acid (PFHpA)	16.161 (16.8465-50.5395)	J (all detects)	A

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to ion abundance ratio, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2000333

Sample	Compound	Flag	A or P	Reason
18-GW-18BGMP08C-20200217	Perfluorohexanoic acid (PFHxA) Perfluorooctanoic acid (PFOA) Perfluorooctanesulfonic acid (PFOS)	J (all detects) J (all detects) J (all detects)	A	Target compound identification (ion abundance ratio)
24-GW-18BGMP08D-20200217	Perfluoroheptanoic acid (PFHpA) Perfluorooctanesulfonic acid (PFOS)	J (all detects) J (all detects)	A	Target compound identification (ion abundance ratio)
24-GW-18BGMP08E-20200217 24-GW-18PS1-20200217 DUP01-20200217	Perfluoroheptanoic acid (PFHpA)	J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000333

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000333

No Sample Data Qualified in this SDG

LDC #: 47500B96
SDG #: 2000333
Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET
Stage 4

Date: 3/12/20
Page: 1 of 1
Reviewer:
2nd Reviewer: PT

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

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	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD≤20%, r^2 TML/ICV≤30%
IV.	Continuing calibration/ISC	A	CCV/ISC≤30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=1. SB=SB01-20200204 (2000247)
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	TW	D=T+8
X.	Labeled Compounds	A	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	TW	
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:

	Client ID	Lab ID	Matrix	Date
~~1~~	~~EB02-20200217~~	~~2000333-01~~	~~Water~~	~~02/17/20~~
2	18-GW-18BGMP10E-20200217	2000333-02	Water	02/17/20
3	18-GW-18BGMP10F-20200217	2000333-03	Water	02/17/20
4	18-GW-18BGMP08C-20200217	2000333-04	Water	02/17/20
5	24-GW-18BGMP08D-20200217	2000333-05	Water	02/17/20
6	24-GW-18BGMP08E-20200217	2000333-06	Water	02/17/20
7	24-GW-18PS1-20200217	2000333-07	Water	02/17/20
8	DUP01-20200217	2000333-08	Water	02/17/20
9				
10				

Notes:

	B0B0155-B4c1						

LDC #: 47502B96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: 1

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

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?	✓			
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) of the initial calibration verification ≤ 30%?	✓			
IV. Continuing calibration and Instrument Sensitivity Check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 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?		✓		
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Level IV checklist_LCMS_PFAS_QSM5.3_Table B-15.wpd

LDC #: 47506B96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: Q
2nd Reviewer: RT

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	✓			
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
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 retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?		✓		
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

Level IV checklist_LCMS_PFAS_QSM5.3_Table B-15.wpd

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

COMPNDL_PFAS.wpd

LDC#: 47500B96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 9

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	7	8				
PFBS	0.0277	0.0261	6			
PFHxA	0.103	0.113	9			
PFHpA	0.00883	0.00935		0.0005	≤0.00404	
PFHxS	0.0736	0.0690	6			
PFOA	0.0323	0.0308	5			

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LDC #: ~~41500B46~~

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1.1

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y N N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y N N/A Were ion ratios between 50-150%?

#	Date	Sample ID	Associated Samples	Ion Ratio ~~30-D~~ Finding (50-150%)	Qualifications
		4	PFHxA	29.161 (8.4655 - 25.3965)	J detects/A
			PFOA	5.037 (1.400 - 4.200)	
			PFOS	5.674 (1.304 - 3.912)	
		5	PFHpA	64.776 (16.8465 - 50.5395)	
			PFOS	4.167 (1.304 - 3.912)	
		6	PFHpA	12.942 (16.8465 - 50.5395)	
		7	PFHpA	11.026 (	
		8	PFHpA	16.161 ( )	

V:\Validation Worksheets\PFAS-537M\Table B15\TCI.wpd

LDC#: 47520B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 4
Reviewer: 9
2nd Reviewer: 19

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/28/2020	MQ4	PFHxA	1	0.303600128	0.250
			2	0.597584798	0.500
			3	1.164206205	1.000
			4	1.968289604	2.000
			5	5.098500037	5.000
			6	9.640800994	10.000
			7	47.14252829	50.000
			8	95.7879666	100.000
			9	219.0447367	250.000
			10	420.3159336	500.000

Regression Output		***Reported***
Constant	*2.481143*	*0.122807*
Std Err of Y Est		
R Squared	*0.999080*	*0.997551*
Degrees of Freedom		
X Coefficient(s)	*0.844901*	*0.870570*
Std Err of Coef.		
Correlation Coefficient	*0.999540*	
Coefficient of Determination (r^2)	*0.999080*	*0.997551*

Vosta_96_022820_L_PFHxA

LDC #: 47500B46

Validation Findings Worksheet
Initial Calibration Calculation Verification

Page: 2 of 4
Reviewer: A
2nd Reviewer: F

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/28/2020	MQ4	PFHxS	1	0.12583571	0.250	0.0625
			2	0.546220095	0.500	0.25
			3	1.100093989	1.000	1
			4	2.268965029	2.000	4
			5	5.842901742	5.000	25
			6	12.00998324	10.000	100
			7	51.40861626	50.000	2500
			8	106.1284785	100.000	10000
			9	267.918899	250.000	62500
			10	468.4202122	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	-1.04004		-0.0812317
Std Err of Y Est				
R Squared		0.9996150		0.9990280
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.170779375	-0.000459763	1.12704	-0.00036565
Std Err of Coef.				
Correlation Coefficient		0.999807		
Coefficient of Determination (r^2)		0.999615		

LDC#: 47520B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 7 of 7
Reviewer: 9
2nd Reviewer: FT

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/29/2020	MQ4	PFHxA	1	0.336760587	0.250
			2	0.525808004	0.500
			3	1.059053993	1.000
			4	1.789563772	2.000
			5	4.533320243	5.000
			6	9.543637384	10.000
			7	43.43257984	50.000
			8	87.66842719	100.000
			9	211.5450436	250.000
			10	411.3908911	500.000

Regression Output		***Reported***
Constant	*1.333075*	*0.104630*
Std Err of Y Est		
R Squared	*0.999735*	*0.999222*
Degrees of Freedom		
X Coefficient(s)	*0.825572*	*0.838943*
Std Err of Coef.		
Correlation Coefficient	*0.999868*	
Coefficient of Determination (r^2)	*0.999735*	*0.999222*

Vosta_96_022920_L_PFHxA

LDC #: 47500B96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Page: 4 of 4
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/29/2020	MQ4	PFHxS	1	0.090312611	0.250	0.0625
			2	0.554619134	0.500	0.25
			3	0.879094479	1.000	1
			4	1.88339845	2.000	4
			5	5.243644386	5.000	25
			6	11.85984225	10.000	100
			7	50.53408586	50.000	2500
			8	102.9247442	100.000	10000
			9	270.4999765	250.000	62500
			10	481.5067366	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	-1.40260		-0.145925
Std Err of Y Est				
R Squared		0.9994316		0.9986790
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.155909744	-0.000375202	1.09858	-0.000251852
Std Err of Coef.				
Correlation Coefficient		0.999716		
Coefficient of Determination (r^2)		0.999432		

LDC #: ~~41500B90~~

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 5

METHOD: LC/MS PFAS (EPA Method 537M)

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
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	20022801-13	2/28/20	~~PFOA ($^{13}C_2$-PFOA)~~ ~~PFHxA~~	10.00	11.0	11.0	10.5	10.5
			~~PFOS ($^{13}C_8$-PFOS)~~ ~~PFHxS~~	10.00	10.3	10.3	3.2	3.2
2			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

LDC #: 47592B96

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: FJ

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: 280155-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	Recalculated
~~PFOA~~ PFHxA	0.0400	0.0400	0.0428	0.0424	107	107	106	106	0.794	0.939
~~PFOS~~ PFHxS	V	V	0.0423	0.0331	106	106	82.8	82.8	24.3	24.4

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 #: ~~47528~~96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: RM

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1

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. 3 PFHxA

Conc. = $\frac{(\frac{438 \times 12.5}{15400} - 0.10463)(1)}{(0.838943)(248)}$

= 0.00316 µg/L

#	Sample ID	Compound	Reported Concentration (µg/L)	Calculated Concentration ( )	Qualification
	3	PFHxA	0.00316		

RECALC.wpd

LDC Report# 47500C96

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 18, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000346

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
18-GW-18BGMW19C-20200218	2000346-02	Water	02/18/20
18-GW-18IDP2-D-20200218	2000346-03	Water	02/18/20
18-GW-18DW540-20200218	2000346-04	Water	02/18/20
18-GW-18DW450-20200218	2000346-05	Water	02/18/20

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) for Initial Basewide Assessment of Perfluorinated Compounds or Per- and Polyfluoroalkyl Substances in Groundwater, Former Marine Corps Air Station El Toro, Irvine, California (June 2017), Field Change Request Form No. FCRF-2405-0008-01-0066 (January 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). 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 methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

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 methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were 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.

Retention time windows were established as required by the methods.

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 and Instrument Sensitivity Check

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.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB03-20200218 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200204 (from SDG 2000247) was identified as a source 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 methods. 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 with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
18-GW-18IDP2-D-20200218	13C2-PFTeDA	10.5 (50-150)	Perfluorotetradecanoic acid (PFTeDA)	NA	-

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
18-GW-18BGMW19C-20200218	Perfluoroheptanoic acid (PFHpA) Perfluorooctanesulfonic acid (PFOS)	14.502 (16.8465-50.5395) 11.242 (1.304-3.912)	J (all detects) J (all detects)	A

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
18-GW-18DW540-20200218	Perfluoroheptanoic acid (PFHpA)	16.623 (16.8465-50.5395)	J (all detects)	A
18-GW-18DW450-20200218	Perfluoroheptanoic acid (PFHpA)	12.832 (16.8465-50.5395)	J (all detects)	A

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to ion abundance ratio, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2000346

Sample	Compound	Flag	A or P	Reason
18-GW-18BGMW19C-20200218	Perfluoroheptanoic acid (PFHpA) Perfluorooctanesulfonic acid (PFOS)	J (all detects) J (all detects)	A	Target compound identification (ion abundance ratio)
18-GW-18DW540-20200218 18-GW-18DW450-20200218	Perfluoroheptanoic acid (PFHpA)	J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000346

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000346

No Sample Data Qualified in this SDG

LDC #: 47500C96
SDG #: 2000346
Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET
Stage 4

Date: 3/20/20
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

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	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 30% or r² True/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=4. SB=SB01-20200204 (2000247)
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	SW	
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:

	Client ID	Lab ID	Matrix	Date
~~1~~	~~EB03-20200218~~	~~2000346-01~~	~~Water~~	~~02/18/20~~
2	18-GW-18BGMW19C-20200218	2000346-02	Water	02/18/20
3	18-GW-18IDP2-D-20200218	2000346-03	Water	02/18/20
4	18-GW-18DW540-20200218	2000346-04	Water	02/18/20
5	18-GW-18DW450-20200218	2000346-05	Water	02/18/20
6				
7				
8				
9				
10				

Notes:

	B0B0160-BK1						

LDC #: 47500C96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: 19

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

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?	✓			
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) of the initial calibration verification ≤ 30%?	✓			
IV. Continuing calibration and Instrument Sensitivity Check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 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?		✓		
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

Level IV checklist_LCMS_PFAS_QSM5.3_Table B-15.wpd

LDC #: 47520c96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 4
2nd Reviewer: 5

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
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 retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?		✓		
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

Level IV checklist_LCMS_PFAS_QSM5.3_Table B-15.wpd

TARGET COMPOUND WORKSHEET

METHOD: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

COMPNDL_PFAS.wpd

LDC #: 47500C96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 5

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery	(Limit)	Qualifications
		3 (1/0)	13C2-PFTeDA	10.5	(50-150)	J- (all dets) / UJ (PFTeDA)
					( )	
					( )	
					( )	
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					( )	
					( )	

V:\Validation Worksheets\PFAS-537M\Table B15\LC_INTST.wpd

LDC #: 47500C96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1.1

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y N N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y N N/A Were ion ratios between 50-150%?

#	Date	Sample ID	Associated Samples	Ion Ratio (50-150%) Finding	Qualifications
		2	PFHpA	14.502 (16.8465 - 50.5395	Ldets/A
			PFOS	11.242 (1.304 - 3.912)	
		4	PFHpA	16.623 (16.8465 - 50.5395)	
		5	PFHpA	12.832	

V:\Validation Worksheets\PFAS-537M\Table B15\TCI.wpd

LDC#: 47500C96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 4
Reviewer: 9
2nd Reviewer: 9

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/28/2020	MQ4	PFHxA	1	0.303600128	0.250
			2	0.597584798	0.500
			3	1.164206205	1.000
			4	1.968289604	2.000
			5	5.098500037	5.000
			6	9.640800994	10.000
			7	47.14252829	50.000
			8	95.7879666	100.000
			9	219.0447367	250.000
			10	420.3159336	500.000

Regression Output		***Reported***
Constant	*2.481143*	*0.122807*
Std Err of Y Est		
R Squared	*0.999080*	*0.997551*
Degrees of Freedom		
X Coefficient(s)	*0.844901*	*0.870570*
Std Err of Coef.		
Correlation Coefficient	*0.999540*	
Coefficient of Determination (r^2)	*0.999080*	*0.997551*

Vosta_96_022820_L_PFHxA

LDC #: 46247500c96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/28/2020	MQ4	PFHxS	1	0.12583571	0.250	0.0625
			2	0.546220095	0.500	0.25
			3	1.100093989	1.000	1
			4	2.268965029	2.000	4
			5	5.842901742	5.000	25
			6	12.00998324	10.000	100
			7	51.40861626	50.000	2500
			8	106.1284785	100.000	10000
			9	267.918899	250.000	62500
			10	468.4202122	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	-1.04004		-0.0812317
Std Err of Y Est				
R Squared		0.9996150		0.9990280
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.170779375	-0.000459763	1.12704	-0.00036565
Std Err of Coef.				
Correlation Coefficient		0.999807		
Coefficient of Determination (r^2)		0.999615		

LDC#: 47500C96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 3 of 4
Reviewer:
2nd Reviewer:

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/29/2020	MQ4	PFHxA	1	0.336760587	0.250
			2	0.525808004	0.500
			3	1.059053993	1.000
			4	1.789563772	2.000
			5	4.533320243	5.000
			6	9.543637384	10.000
			7	43.43257984	50.000
			8	87.66842719	100.000
			9	211.5450436	250.000
			10	411.3908911	500.000

Regression Output		***Reported***
Constant	*1.333075*	*0.104630*
Std Err of Y Est		
R Squared	*0.999735*	*0.999222*
Degrees of Freedom		
X Coefficient(s)	*0.825572*	*0.838943*
Std Err of Coef.		
Correlation Coefficient	*0.999868*	
Coefficient of Determination (r^2)	*0.999735*	*0.999222*

Vosta_96_022920_L_PFHxA

LDC #: 47500C96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Page: 4 of 4
Reviewer:
2nd Reviewer:

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/29/2020	MQ4	PFHxS	1	0.090312611	0.250	0.0625
			2	0.554619134	0.500	0.25
			3	0.879094479	1.000	1
			4	1.88339845	2.000	4
			5	5.243644386	5.000	25
			6	11.85984225	10.000	100
			7	50.53408586	50.000	2500
			8	102.9247442	100.000	10000
			9	270.4999765	250.000	62500
			10	481.5067366	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	-1.40260		-0.145925
Std Err of Y Est				
R Squared		0.9994316		0.9986790
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.155909744	-0.000375202	1.09858	-0.000251852
Std Err of Coef.				
Correlation Coefficient		0.999716		
Coefficient of Determination (r^2)		0.999432		

LDC #: ~~47500c-96~~

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 3

METHOD: LC/MS PFAS (EPA Method 537M)

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
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	~~20022SP243~~	3/28/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFHxA	10.000	11.0	11.0	10.5	10.5
			~~PFOS ($^{13}C_8$-PFOS)~~ PFHxS	↓	10.3	10.3	3.2	3.2
2	~~20022911-2~~	3/29/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFHxA	10.000	10.9	10.9	9.5	9.5
			~~PFOS ($^{13}C_8$-PFOS)~~ PFHxS	↓	10.2	10.2	1.5	1.5
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

LDC #: 47502C90

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 7

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: 280160-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	Recalculated
~~PFOA~~ PFHxA	0.0400	0.0400	0.0431	0.0458	108	108	115	115	6.0	6.0
~~PFOS~~ PFHxS	↓	↓	0.0366	0.0389	91.4	91.4	97.2	97.2	6.1	6.09

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 #: 4T500C96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: LC/MS PFOS/PFOAs (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. 1, PFHxA

Conc. = $\frac{18900 \times 12.5}{(11.860)(\quad)(-0.104630)(\quad)(1)(\quad)}$ / $(0.838943)(250.3)(1)(\quad)$

= ~~0.9~~ 0.0948 µg/L

#	Sample ID	Compound	Reported Concentration (µg/L)	Calculated Concentration ( )	Qualification
	1	PFHxA	0.0943		



Enthalpy Analytical
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900

enthalpy.com

Lab Job Number: 318380
Report Level: II
Report Date: 03/02/2020

Analytical Report *prepared for:*

Jade White D
Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762

Project: MCAS EL TORO - MCAS El Toro and Tustin, PFAS

Authorized for release by:



Patrick McCarthy, Project Manager
(510) 204-2236 ext 13115
patrick.mccarthy@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

Sample Summary

Jade White D
Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762

Lab Job #:	318380
Project No:	MCAS EL TORO
Location:	MCAS El Toro and Tustin, PFAS
Date Received:	02/19/20

Sample ID	Lab ID	Collected	Matrix
ET-LW01-20200218	318380-001	02/18/20 14:45	Water

ENTHALPY ANALYTICAL

Case Narrative

Vista Analytical Laboratory	Lab Job Number: 318380
1104 Windfield Way	Project No: MCAS EL TORO
El Dorado Hills, CA 95762	Location: MCAS El Toro and Tustin, PFAS
Jade White D	Date Received: 02/19/20

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/19/20. The sample was received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 278758; this analyte was not detected in the sample at or above the RL. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
Diesel C10-C24 was detected between the MDL and the RL in the method blank for batch 278763; this analyte was detected in the sample at a level at least 10 times that of the blank. ET-LW01-20200218 (lab # 318380-001) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
Chloroform was detected between the MDL and the RL in the method blank for batch 278813; this analyte was not detected in the sample at or above the RL. ET-LW01-20200218 (lab # 318380-001) was diluted due to foaming. No other analytical problems were encountered.

Metals (EPA 6010B and EPA 7470A):
Low recoveries were observed for antimony in the MS/MSD of ET-LW01-20200218 (lab # 318380-001); the BS/BSD were within limits, and the associated RPD was within limits. High recovery was observed for copper in the MSD of ET-LW01-20200218 (lab # 318380-001); the BS/BSD were within limits, and the associated RPD was within limits. No other analytical problems were encountered.

Temperature measurement (SM2550B):
No analytical problems were encountered.

Total Oil & Grease (HEM) (EPA 1664A):
Matrix spikes were not performed for this analysis due to insufficient sample volume. No analytical problems were encountered.

pH (EPA 9040C):
No analytical problems were encountered.

Flash Point (ASTM D93):
No analytical problems were encountered.

ENTHALPY ANALYTICAL

Detection Summary for 318380

Client: Vista Analytical Laboratory
Project: MCAS EL TORO
Location MCAS El Toro and Tustin, PFAS

Sample ID: ET-LW01-20200218 Lab ID: 318380-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	23	B,J	50	9.4	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	950	Y	540	180	ug/L	As Recd	10.00	EPA 8015B	EPA 3520C
Acetone	11	J	50	7.5	ug/L	As Recd	5.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	1.0	J	2.5	0.5	ug/L	As Recd	5.000	EPA 8260B	EPA 5030B
Chloroform	1.2	B,J	10	0.8	ug/L	As Recd	5.000	EPA 8260B	EPA 5030B
Trichloroethene	1.0	J	2.5	0.5	ug/L	As Recd	5.000	EPA 8260B	EPA 5030B
Arsenic	13		10	1.7	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Barium	140		5.0	0.85	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Beryllium	0.67	J	2.0	0.35	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Cadmium	0.75	J	5.0	0.31	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Chromium	1,900		5.0	0.67	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Cobalt	9.9		5.0	0.31	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Copper	310		5.0	1.4	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Lead	18		5.0	1.4	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Molybdenum	33		5.0	0.42	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Nickel	120		5.0	0.52	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Vanadium	65		5.0	0.65	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Zinc	260		20	4.2	ug/L	TOTAL	1.000	EPA 6010B	EPA 3010A
Flash Point	>212		1.0		deg F	TOTAL	1.000	ASTM D93	METHOD
pH	7.5		1.0		SU	TOTAL	1.000	EPA 9040C	METHOD
Temperature (for pH)	13.5				deg C	TOTAL	1.000	SM2550B	

>: Value exceeds indicated concentration
B: Contamination found in associated Method Blank
J: Estimated value
Y: Sample exhibits chromatographic pattern which does not resemble standard

Results for any subcontracted analyses are not included in this summary. Data qualifiers and additional information necessary for the interpretation of the test results are contained in the PDF file and may not be included in this summary.

318380

Vista Analytical
1104 Windfield Way
El Dorado Hills, CA 95762
TEL: 916-673-1520

Enthalphy, 2323 Fifth St., Berkeley, CA 94710
Enthalpy PM: Patrick McCarthy
Vista PM: Jade White-Dobbs

CHAIN OF CUSTODY RECORD

DATE: 2/18/2020
PAGE: 1 OF 1

LABORATORY CLIENT: KMEA
ADDRESS: 9210 Sky Park Court, Suite 220
CITY: San Diego, CA 92123
TEL: (619) 399-5900 | E-Mail: kimberly.shiroodi@woodplc.com | E-MAIL: brian.johnson@woodplc.com

CLIENT PROJECT NAME / NUMBER: MCAS El Toro and Tustin, PFAS
PROJECT CONTACT: Kimberly Shiroodi / Brian Johnson
SAMPLER(S): (SIGNATURE) Uly Ruiz

P.O. NO.: TO 008 Mod 4
CONTRACT NO.: N62473-16-D-2405
LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ ~~10 DAYS~~ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
* Total, not field filtered
Waste Sample, Separate SDG

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS	VOCs 8260B	TPH-g	TPH-d	Oil & Grease	TTLC CAM-17 Metals*	Ignitability	pH
	ET-LW01-20200218	2/18/20	14:45	WW	10			X	X	X	X	X	X	X

Uly Ruiz 2-18-20

Relinquished by: (Signature) Uly Ruiz	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 2/18/20	Time: 17:00
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/19/20	Time: 10:15
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

SAMPLE RECEIPT CHECKLIST

Section 1: Login # 318380 Client: Vista

Date Received: 2/19/20 Project: _____

Section 2: Shipping info (if applicable) Fed Ex 8101 0952 1862

Are custody seals present? ☑ No, or ☐ Yes. If yes, where? ☐ on cooler, ☐ on samples, ☐ on package

☐ Date: _____ How many _____ ☐ Signature, ☐ Initials, ☐ None

Were custody seals intact upon arrival? ☐ Yes ☐ No ☐ N/A

Samples received in a cooler? ☑ Yes, how many? 1 ☐ No (**skip Section 3 below**)

If no cooler Sample Temp (°C): _____ using IR Gun # ☐ B, or ☐ C

☐ Samples received on ice directly from the field. Cooling process had begun

If in cooler: Date Opened 2/19/20 By (print) ZA (sign) _____

Section 3: ***Important*: Notify PM if temperature exceeds 6°C or arrive frozen.**

Packing in cooler: (if other, describe) _____

☑ Bubble Wrap, ☐ Foam blocks, ☑ Bags, ☐ None, ☐ Cloth material, ☐ Cardboard, ☐ Styrofoam, ☐ Paper towels

☐ Samples received on ice directly from the field. Cooling process had begun

Type of ice used : ☑ Wet, ☐ Blue/Gel, ☐ None Temperature blank(s) included? ☐ Yes, ☐ No

Temperature measured using ☐ Thermometer ID: _____, or IR Gun # ☐ B ☑ C

Cooler Temp (°C): #1: 1.5, #2: _____, #3: _____, #4: _____, #5: _____, #6: _____, #7: _____

Section 4:	YES	NO	N/A
Were custody papers dry, filled out properly, and the project identifiable	✓		
Were Method 5035 sampling containers present?		✓	
If YES, what time were they transferred to freezer? _____			
Did all bottles arrive unbroken/unopened?	✓		
Are there any missing / extra samples?		✓	
Are samples in the appropriate containers for indicated tests?	✓		
Are sample labels present, in good condition and complete?	✓		
Does the container count match the COC?	✓		
Do the sample labels agree with custody papers?	✓		
Was sufficient amount of sample sent for tests requested?	✓		
Did you change the hold time in LIMS for unpreserved VOAs?			✓
Did you change the hold time in LIMS for preserved terracores?			✓
Are bubbles > 6mm present in VOA samples?		✓	
Was the client contacted concerning this sample delivery?		✓	
If YES, who was called? _____ By _____ Date: _____			

Section 5:	YES	NO	N/A
Are the samples appropriately preserved? (if N/A, skip the rest of section 5)	✓		
Did you check preservatives for all bottles for each sample?		✓	
Did you document your preservative check?	✓		

pH strip lot# 50B0173191, pH strip lot# _____, pH strip lot# _____

Preservative added:

☐ H2SO4 lot# _____ added to samples _____ on/at _____

☐ HCL lot# _____ added to samples _____ on/at _____

☐ HNO3 lot# _____ added to samples _____ on/at _____

☐ NaOH lot# _____ added to samples _____ on/at _____

Section 6:

Explanations/Comments: _____

Date Logged in 2/19/20 **By (print)** ZA **(sign)** _____

Date Labeled 2/20/20 **By (print)** ZA **(sign)** _____

Enthalpy Analytical - Berkeley Rev.15.1, 09/13/2019

Enthalpy Sample Preservation for 318380

Sample	pH: <2	>9	>12	Other
-001a	[ ]	[ ]	[ ]	_____
b	[ ]	[ ]	[ ]	_____
c	[ ]	[ ]	[ ]	_____
d	[ ]	[ ]	[ ]	_____
e	[ ]	[ ]	[ ]	_____
f	[✓]	[ ]	[ ]	_____
g	[ ]	[ ]	[ ]	_____
h	[ ]	[ ]	[ ]	_____
i	[ ]	[ ]	[ ]	_____
j	[ ]	[ ]	[ ]	_____

Analyst: W
Date: 2/20/20

Page 1 of 1

ENTHALPY ANALYTICAL

Total Volatile Hydrocarbons

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Diln Fac:** 1.000 **Analyzed:** 02/20/20

Type: SAMPLE **Batch#:** 278758 **Prep:** EPA 5030B

Lab ID: 318380-001 **Sampled:** 02/18/20 **Analysis:** EPA 8015B

Matrix: Water **Received:** 02/19/20

Analyte	Result	RL	MDL	Units	Qual
Gasoline C7-C12	**23 J**	50	9.4	ug/L	B

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	80-120

Type: BLANK **Matrix:** Water **Batch#:** 278758 **Prep:** EPA 5030B

Lab ID: QC1010096 **Diln Fac:** 1.000 **Analyzed:** 02/20/20 **Analysis:** EPA 8015B

Analyte	Result	RL	MDL	Units
Gasoline C7-C12	**9.5 J**	50	9.4	ug/L

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	80-120

Legend

B: Contamination found in associated Method Blank

J: Estimated value

MDL: Method Detection Limit

RL: Reporting Limit

ENTHALPY ANALYTICAL

Total Volatile Hydrocarbons: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Matrix:** Water **Batch#:** 278758 **Prep:** EPA 5030B

Lab ID: QC1010097 **Diln Fac:** 1.000 **Analyzed:** 02/20/20 **Analysis:** EPA 8015B

Analyte	Spiked	Result	%REC	Limits	Units
Gasoline C7-C12	1,000	960.3	96	80-123	ug/L

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	80-120

Type: BSD **Matrix:** Water **Batch#:** 278758 **Prep:** EPA 5030B

Lab ID: QC1010098 **Diln Fac:** 1.000 **Analyzed:** 02/20/20 **Analysis:** EPA 8015B

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Gasoline C7-C12	1,000	921.9	92	80-123	ug/L	4	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	80-120

Legend

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

Total Volatile Hydrocarbons: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ZZZZZZZZZZ **Matrix:** Water **Received:** 02/18/20
Type: MS **Diln Fac:** 1.000 **Analyzed:** 02/20/20
MSS Lab ID: 318371-005 **Batch#:** 278758 **Prep:** EPA 5030B
Lab ID: QC1010099 **Sampled:** 02/18/20 **Analysis:** EPA 8015B

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units
Gasoline C7-C12	26.24	2,000	1,847	91	80-124	ug/L

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	80-120

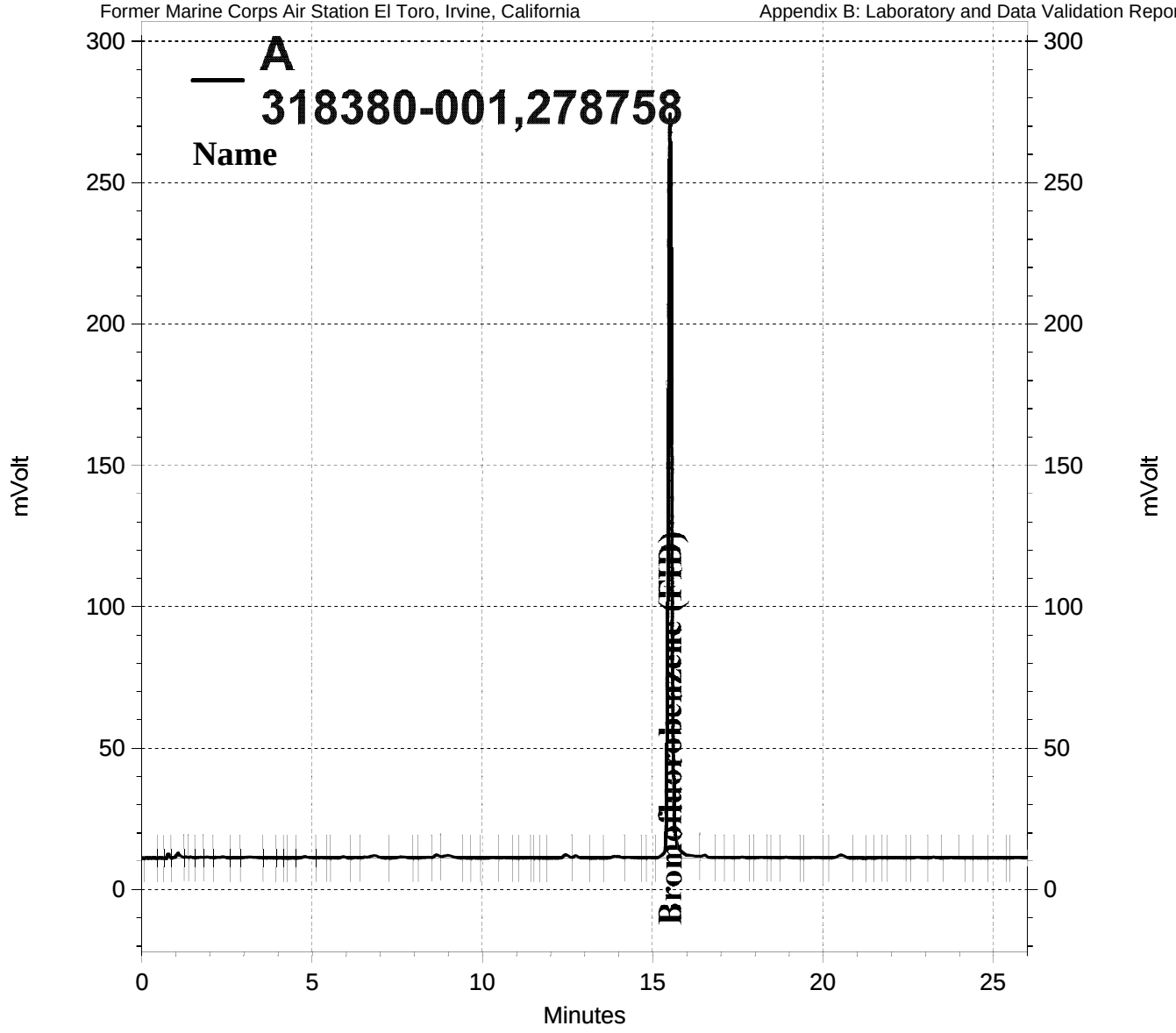
Field ID: ZZZZZZZZZZ **Matrix:** Water **Received:** 02/18/20
Type: MSD **Diln Fac:** 1.000 **Analyzed:** 02/20/20
MSS Lab ID: 318371-005 **Batch#:** 278758 **Prep:** EPA 5030B
Lab ID: QC1010100 **Sampled:** 02/18/20 **Analysis:** EPA 8015B

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Gasoline C7-C12	2,000	1,819	90	80-124	ug/L	2	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	80-120

Legend

RPD: Relative Percent Difference



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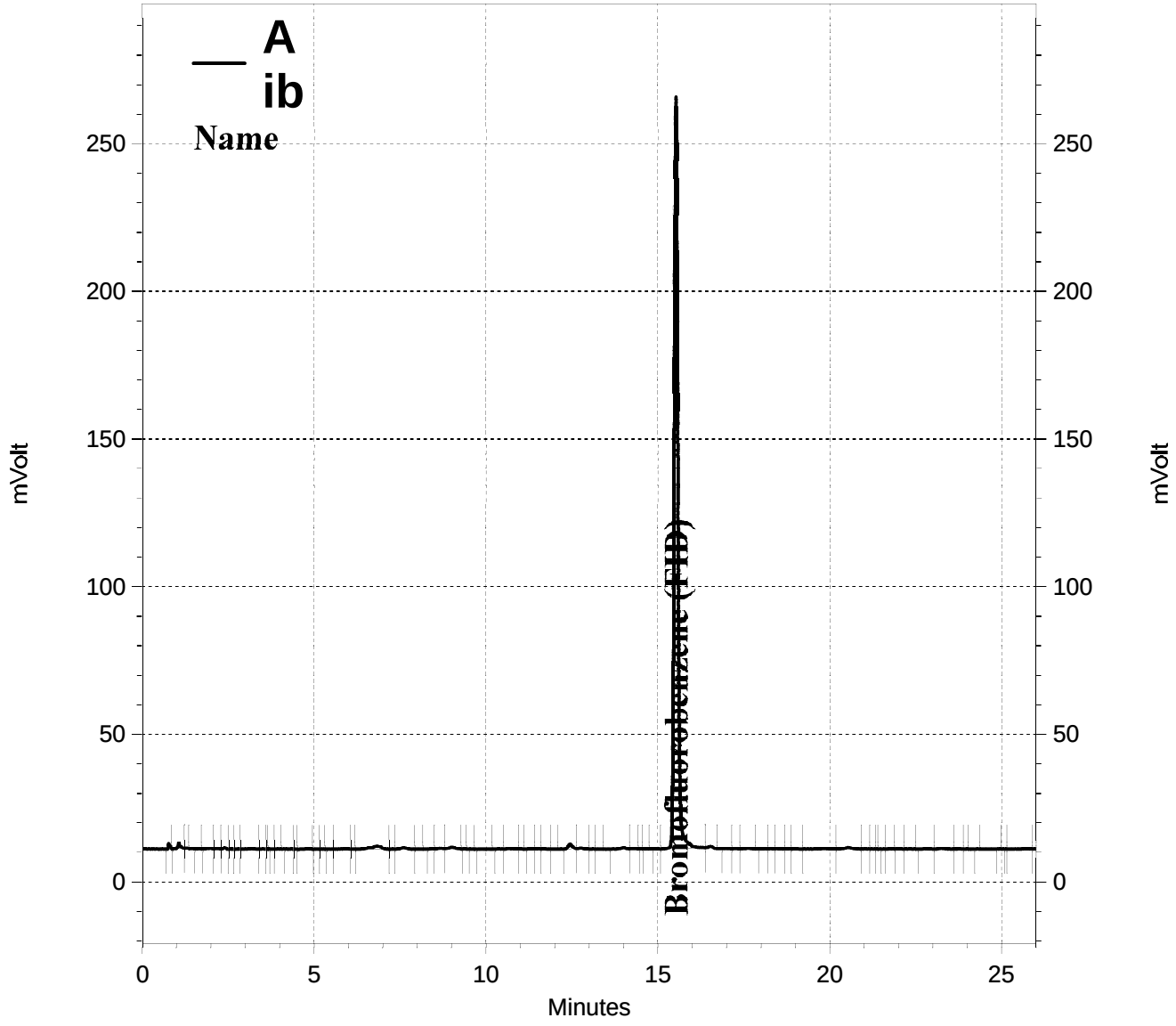
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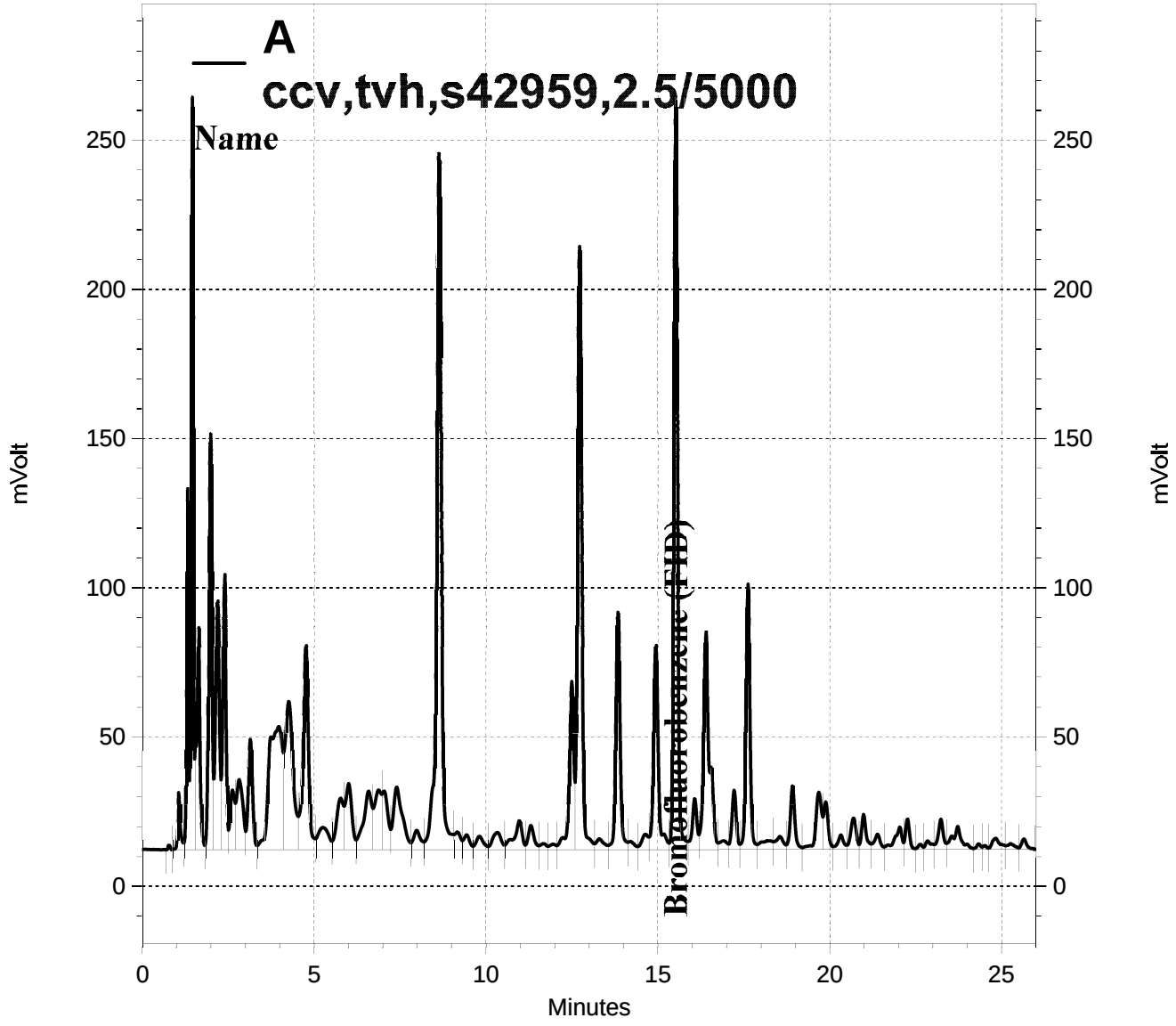

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ENTHALPY ANALYTICAL

Total Extractable Hydrocarbons

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Diln Fac:** 10.00 **Prepared:** 02/20/20

Type: SAMPLE **Batch#:** 278763 **Analyzed:** 02/21/20

Lab ID: 318380-001 **Sampled:** 02/18/20 **Prep:** EPA 3520C

Matrix: Water **Received:** 02/19/20 **Analysis:** EPA 8015B

Analyte	Result	RL	MDL	Units	Qual
Diesel C10-C24	**950**	540	180	ug/L	Y

Surrogate	%REC	Limits
o-Terphenyl	DO	66-142

Type: BLANK **Diln Fac:** 1.000 **Analyzed:** 02/21/20

Lab ID: QC1010119 **Batch#:** 278763 **Prep:** EPA 3520C

Matrix: Water **Prepared:** 02/20/20 **Analysis:** EPA 8015B

Analyte	Result	RL	MDL	Units
Diesel C10-C24	**22 J**	50	16	ug/L

Surrogate	%REC	Limits
o-Terphenyl	104	66-142

Legend

DO: Diluted Out
J: Estimated value
MDL: Method Detection Limit
RL: Reporting Limit
Y: Sample exhibits chromatographic pattern which does not resemble standard

ENTHALPY ANALYTICAL

Total Extractable Hydrocarbons: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Dil Fac:** 1.000 **Analyzed:** 02/21/20

Lab ID: QC1010120 **Batch#:** 278763 **Prep:** EPA 3520C

Matrix: Water **Prepared:** 02/20/20 **Analysis:** EPA 8015B

Analyte	Spiked	Result	%REC	Limits	Units
Diesel C10-C24	2,500	2,504	100	50-132	ug/L

Surrogate	%REC	Limits
o-Terphenyl	111	66-142

Type: BSD **Dil Fac:** 1.000 **Analyzed:** 02/21/20

Lab ID: QC1010121 **Batch#:** 278763 **Prep:** EPA 3520C

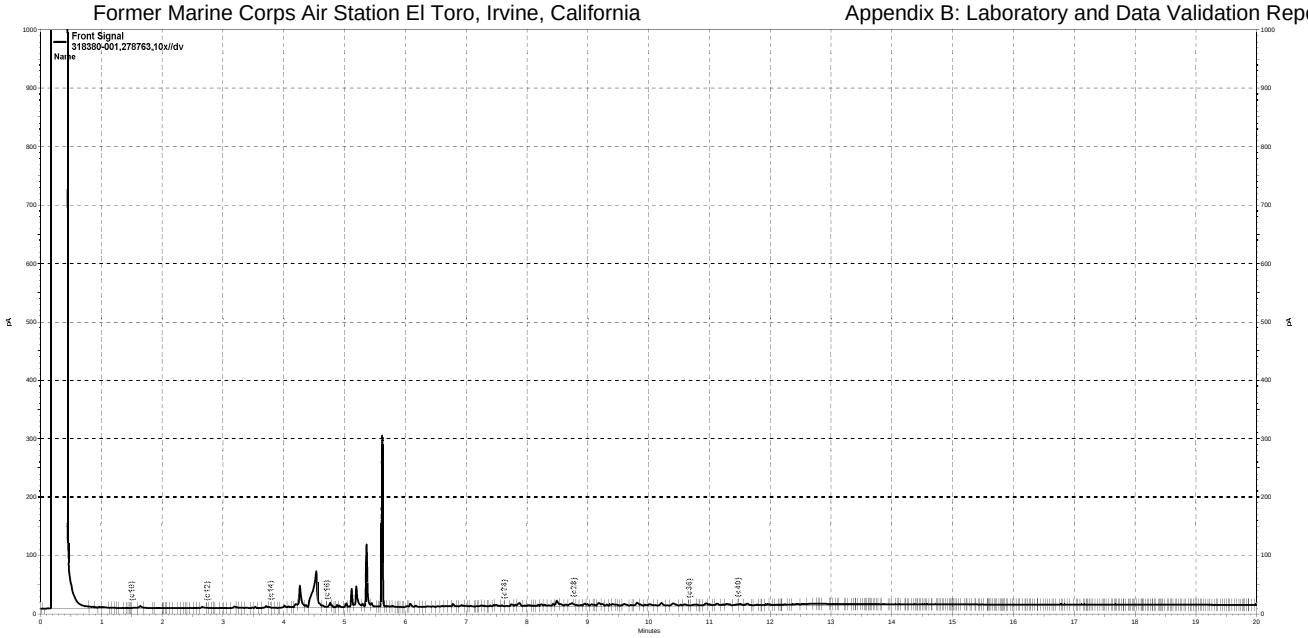
Matrix: Water **Prepared:** 02/20/20 **Analysis:** EPA 8015B

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Diesel C10-C24	2,500	2,457	98	50-132	ug/L	2	56

Surrogate	%REC	Limits
o-Terphenyl	111	66-142

Legend

RPD: Relative Percent Difference



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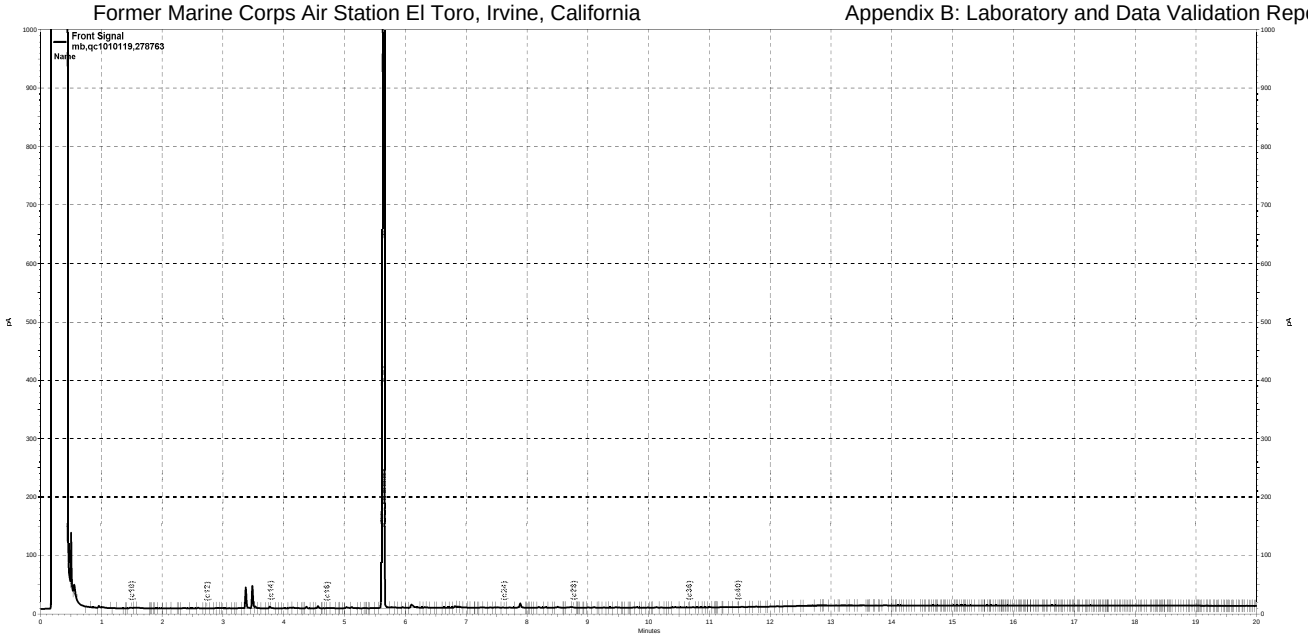

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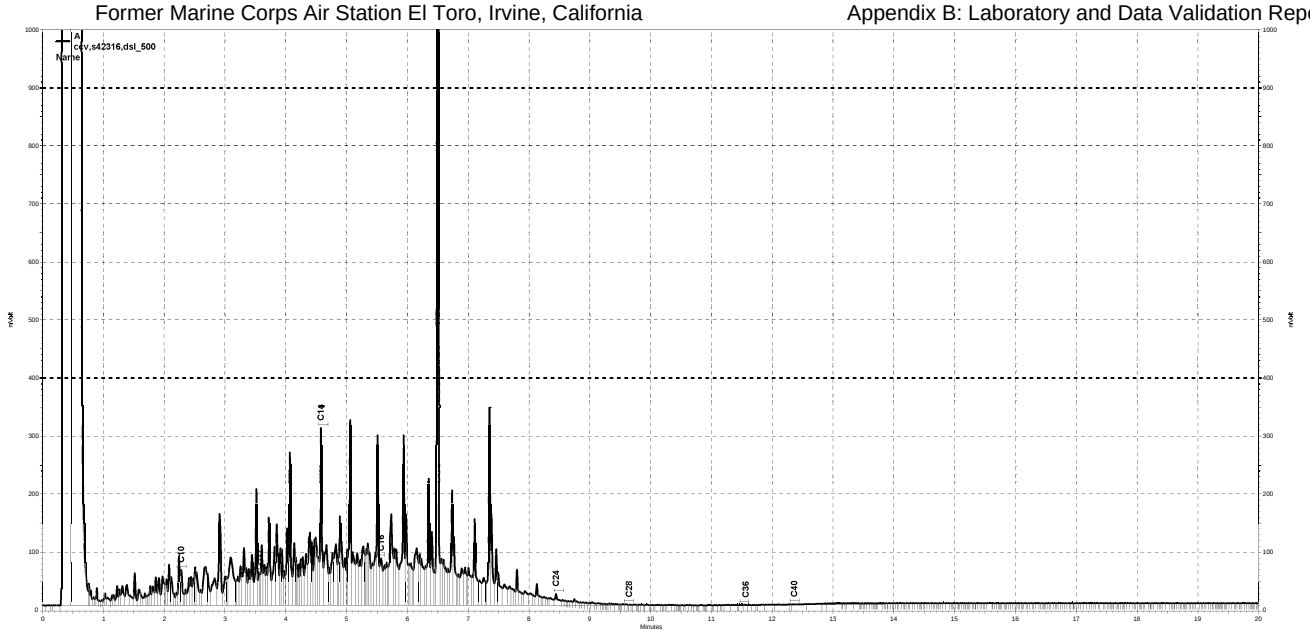

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ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Batch#:** 278813 **Prep:** EPA 5030B

Lab ID: 318380-001 **Sampled:** 02/18/20 **Analysis:** EPA 8260B

Matrix: Water **Received:** 02/19/20

DilN Fac: 5.000 **Analyzed:** 02/23/20

Analyte	Result	RL	MDL	Units	Qual
Freon 12	ND	5.0	0.5	ug/L	
Chloromethane	ND	5.0	1.0	ug/L	
Vinyl Chloride	ND	2.5	0.5	ug/L	
Bromomethane	ND	5.0	1.0	ug/L	
Chloroethane	ND	5.0	1.0	ug/L	
Trichlorofluoromethane	ND	5.0	0.5	ug/L	
Acetone	**11 J**	50	7.5	ug/L	
Freon 113	ND	10	0.7	ug/L	
1,1-Dichloroethene	ND	2.5	0.5	ug/L	
Methylene Chloride	ND	50	4.3	ug/L	
Carbon Disulfide	ND	2.5	0.5	ug/L	
MTBE	ND	2.5	0.5	ug/L	
trans-1,2-Dichloroethene	ND	2.5	0.5	ug/L	
Vinyl Acetate	ND	50	2.5	ug/L	
1,1-Dichloroethane	ND	2.5	0.5	ug/L	
2-Butanone	ND	50	10	ug/L	
cis-1,2-Dichloroethene	**1.0 J**	2.5	0.5	ug/L	
2,2-Dichloropropane	ND	2.5	0.6	ug/L	
Chloroform	**1.2 J**	10	0.8	ug/L	B
Bromochloromethane	ND	2.5	0.5	ug/L	
1,1,1-Trichloroethane	ND	2.5	0.5	ug/L	
1,1-Dichloropropene	ND	2.5	0.5	ug/L	
Carbon Tetrachloride	ND	2.5	0.5	ug/L	
1,2-Dichloroethane	ND	2.5	0.8	ug/L	
Benzene	ND	2.5	0.5	ug/L	
Trichloroethene	**1.0 J**	2.5	0.5	ug/L	
1,2-Dichloropropane	ND	2.5	0.5	ug/L	
Bromodichloromethane	ND	2.5	0.5	ug/L	
Dibromomethane	ND	2.5	0.5	ug/L	
4-Methyl-2-Pentanone	ND	50	0.6	ug/L	
cis-1,3-Dichloropropene	ND	2.5	0.5	ug/L	
Toluene	ND	2.5	0.5	ug/L	
trans-1,3-Dichloropropene	ND	2.5	0.5	ug/L	
1,1,2-Trichloroethane	ND	2.5	0.5	ug/L	
2-Hexanone	ND	50	1.2	ug/L	
1,3-Dichloropropane	ND	2.5	0.5	ug/L	
Tetrachloroethene	ND	2.5	0.6	ug/L	
Dibromochloromethane	ND	2.5	0.5	ug/L	
1,2-Dibromoethane	ND	2.5	0.5	ug/L	
Chlorobenzene	ND	2.5	0.5	ug/L	
1,1,1,2-Tetrachloroethane	ND	2.5	0.5	ug/L	

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Analyte	Result	RL	MDL	Units	Qual
Ethylbenzene	ND	2.5	0.5	ug/L	
m,p-Xylenes	ND	2.5	0.5	ug/L	
o-Xylene	ND	2.5	0.5	ug/L	
Styrene	ND	2.5	0.5	ug/L	
Bromoform	ND	5.0	0.5	ug/L	
Isopropylbenzene	ND	2.5	0.5	ug/L	
1,1,2,2-Tetrachloroethane	ND	2.5	0.5	ug/L	
1,2,3-Trichloropropane	ND	2.5	0.5	ug/L	
Propylbenzene	ND	2.5	0.6	ug/L	
Bromobenzene	ND	2.5	0.5	ug/L	
1,3,5-Trimethylbenzene	ND	2.5	0.6	ug/L	
2-Chlorotoluene	ND	2.5	0.6	ug/L	
4-Chlorotoluene	ND	2.5	0.5	ug/L	
tert-Butylbenzene	ND	2.5	0.5	ug/L	
1,2,4-Trimethylbenzene	ND	2.5	0.6	ug/L	
sec-Butylbenzene	ND	2.5	0.5	ug/L	
para-Isopropyl Toluene	ND	2.5	0.5	ug/L	
1,3-Dichlorobenzene	ND	2.5	0.6	ug/L	
1,4-Dichlorobenzene	ND	2.5	0.6	ug/L	
n-Butylbenzene	ND	2.5	0.5	ug/L	
1,2-Dichlorobenzene	ND	2.5	0.5	ug/L	
1,2-Dibromo-3-Chloropropane	ND	10	1.1	ug/L	
1,2,4-Trichlorobenzene	ND	5.0	1.0	ug/L	
Hexachlorobutadiene	ND	10	1.0	ug/L	
Naphthalene	ND	10	2.1	ug/L	
1,2,3-Trichlorobenzene	ND	5.0	1.3	ug/L	

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	96	80-120
Toluene-d8	106	80-120
Bromofluorobenzene	107	80-120

Legend

B: Contamination found in associated Method Blank
J: Estimated value
MDL: Method Detection Limit
ND: Not Detected at or above MDL
RL: Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BLANK **Matrix:** Water **Batch#:** 278813 **Prep:** EPA 5030B

Lab ID: QC1010311 **Dil'n Fac:** 1.000 **Analyzed:** 02/22/20 **Analysis:** EPA 8260B

Analyte	Result	RL	MDL	Units
Freon 12	ND	1.0	0.1	ug/L
Chloromethane	ND	1.0	0.2	ug/L
Vinyl Chloride	ND	0.5	0.1	ug/L
Bromomethane	ND	1.0	0.2	ug/L
Chloroethane	ND	1.0	0.2	ug/L
Trichlorofluoromethane	ND	1.0	0.1	ug/L
Acetone	ND	10	1.5	ug/L
Freon 113	ND	2.0	0.1	ug/L
1,1-Dichloroethene	ND	0.5	0.1	ug/L
Methylene Chloride	ND	10	0.9	ug/L
Carbon Disulfide	ND	0.5	0.1	ug/L
MTBE	ND	0.5	0.1	ug/L
trans-1,2-Dichloroethene	ND	0.5	0.1	ug/L
Vinyl Acetate	ND	10	0.5	ug/L
1,1-Dichloroethane	ND	0.5	0.1	ug/L
2-Butanone	ND	10	2.0	ug/L
cis-1,2-Dichloroethene	ND	0.5	0.1	ug/L
2,2-Dichloropropane	ND	0.5	0.1	ug/L
Chloroform	**0.3 J**	2.0	0.2	ug/L
Bromochloromethane	ND	0.5	0.1	ug/L
1,1,1-Trichloroethane	ND	0.5	0.1	ug/L
1,1-Dichloropropene	ND	0.5	0.1	ug/L
Carbon Tetrachloride	ND	0.5	0.1	ug/L
1,2-Dichloroethane	ND	0.5	0.2	ug/L
Benzene	ND	0.5	0.1	ug/L
Trichloroethene	ND	0.5	0.1	ug/L
1,2-Dichloropropane	ND	0.5	0.1	ug/L
Bromodichloromethane	ND	0.5	0.1	ug/L
Dibromomethane	ND	0.5	0.1	ug/L
4-Methyl-2-Pentanone	ND	10	0.1	ug/L
cis-1,3-Dichloropropene	ND	0.5	0.1	ug/L
Toluene	ND	0.5	0.1	ug/L
trans-1,3-Dichloropropene	ND	0.5	0.1	ug/L
1,1,2-Trichloroethane	ND	0.5	0.1	ug/L
2-Hexanone	ND	10	0.2	ug/L
1,3-Dichloropropane	ND	0.5	0.1	ug/L
Tetrachloroethene	ND	0.5	0.1	ug/L
Dibromochloromethane	ND	0.5	0.1	ug/L
1,2-Dibromoethane	ND	0.5	0.1	ug/L
Chlorobenzene	ND	0.5	0.1	ug/L
1,1,1,2-Tetrachloroethane	ND	0.5	0.1	ug/L
Ethylbenzene	ND	0.5	0.1	ug/L
m,p-Xylenes	ND	0.5	0.1	ug/L

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Analyte	Result	RL	MDL	Units
o-Xylene	ND	0.5	0.1	ug/L
Styrene	ND	0.5	0.1	ug/L
Bromoform	ND	1.0	0.1	ug/L
Isopropylbenzene	ND	0.5	0.1	ug/L
1,1,2,2-Tetrachloroethane	ND	0.5	0.1	ug/L
1,2,3-Trichloropropane	ND	0.5	0.1	ug/L
Propylbenzene	ND	0.5	0.1	ug/L
Bromobenzene	ND	0.5	0.1	ug/L
1,3,5-Trimethylbenzene	ND	0.5	0.1	ug/L
2-Chlorotoluene	ND	0.5	0.1	ug/L
4-Chlorotoluene	ND	0.5	0.1	ug/L
tert-Butylbenzene	ND	0.5	0.1	ug/L
1,2,4-Trimethylbenzene	ND	0.5	0.1	ug/L
sec-Butylbenzene	ND	0.5	0.1	ug/L
para-Isopropyl Toluene	ND	0.5	0.1	ug/L
1,3-Dichlorobenzene	ND	0.5	0.1	ug/L
1,4-Dichlorobenzene	ND	0.5	0.1	ug/L
n-Butylbenzene	ND	0.5	0.1	ug/L
1,2-Dichlorobenzene	ND	0.5	0.1	ug/L
1,2-Dibromo-3-Chloropropane	ND	2.0	0.2	ug/L
1,2,4-Trichlorobenzene	ND	1.0	0.2	ug/L
Hexachlorobutadiene	ND	2.0	0.2	ug/L
Naphthalene	ND	2.0	0.4	ug/L
1,2,3-Trichlorobenzene	ND	1.0	0.3	ug/L

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	96	80-120
Toluene-d8	106	80-120
Bromofluorobenzene	106	80-120

Legend

J: Estimated value

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

Purgeable Organics by GC/MS: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Matrix:** Water **Batch#:** 278813 **Prep:** EPA 5030B

Lab ID: QC1010312 **Diln Fac:** 1.000 **Analyzed:** 02/22/20 **Analysis:** EPA 8260B

Analyte	Spiked	Result	%REC	Limits	Units
1,1-Dichloroethene	10.00	8.233	82	71-129	ug/L
Benzene	10.00	9.413	94	77-120	ug/L
Trichloroethene	10.00	9.415	94	73-120	ug/L
Toluene	10.00	9.727	97	78-120	ug/L
Chlorobenzene	10.00	9.894	99	80-120	ug/L

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	99	80-120
Toluene-d8	104	80-120
Bromofluorobenzene	95	80-120

Type: BSD **Matrix:** Water **Batch#:** 278813 **Prep:** EPA 5030B

Lab ID: QC1010313 **Diln Fac:** 1.000 **Analyzed:** 02/22/20 **Analysis:** EPA 8260B

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
1,1-Dichloroethene	10.00	8.174	82	71-129	ug/L	1	20
Benzene	10.00	8.964	90	77-120	ug/L	5	20
Trichloroethene	10.00	9.079	91	73-120	ug/L	4	20
Toluene	10.00	9.481	95	78-120	ug/L	3	20
Chlorobenzene	10.00	9.957	100	80-120	ug/L	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	98	80-120
Toluene-d8	105	80-120
Bromofluorobenzene	98	80-120

Legend

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

California Title 22 Metals

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Matrix:** Water **Sampled:** 02/18/20

Lab ID: 318380-001 **Dil'n Fac:** 1.000 **Received:** 02/19/20

Analyte	Result	RL	MDL	Units	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	10	1.4	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Arsenic	**13**	10	1.7	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Barium	**140**	5.0	0.85	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Beryllium	**0.67 J**	2.0	0.35	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Cadmium	**0.75 J**	5.0	0.31	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Chromium	**1,900**	5.0	0.67	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Cobalt	**9.9**	5.0	0.31	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Copper	**310**	5.0	1.4	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Lead	**18**	5.0	1.4	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Mercury	ND	0.20	0.040	ug/L	278825	02/24/20	02/24/20	METHOD	EPA 7470A
Molybdenum	**33**	5.0	0.42	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Nickel	**120**	5.0	0.52	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Selenium	ND	10	2.4	ug/L	278762	02/20/20	02/21/20	EPA 3010A	EPA 6010B
Silver	ND	5.0	0.52	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Thallium	ND	10	2.2	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Vanadium	**65**	5.0	0.65	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B
Zinc	**260**	20	4.2	ug/L	278762	02/20/20	02/24/20	EPA 3010A	EPA 6010B

Legend

J: Estimated value

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BLANK **Matrix:** Water **Batch#:** 278762 **Prep:** EPA 3010A

Lab ID: QC1010112 **Diln Fac:** 1.000 **Prepared:** 02/20/20 **Analysis:** EPA 6010B

Analyte	Result	RL	MDL	Units	Analyzed
Antimony	ND	10	1.4	ug/L	02/24/20
Arsenic	ND	10	1.7	ug/L	02/24/20
Barium	ND	5.0	0.85	ug/L	02/24/20
Beryllium	ND	2.0	0.35	ug/L	02/24/20
Cadmium	ND	5.0	0.31	ug/L	02/24/20
Chromium	ND	5.0	0.67	ug/L	02/24/20
Cobalt	ND	5.0	0.31	ug/L	02/24/20
Copper	ND	5.0	1.4	ug/L	02/24/20
Lead	ND	5.0	1.4	ug/L	02/24/20
Molybdenum	ND	5.0	0.42	ug/L	02/24/20
Nickel	ND	5.0	0.52	ug/L	02/24/20
Selenium	ND	10	2.4	ug/L	02/21/20
Silver	ND	5.0	0.52	ug/L	02/24/20
Thallium	ND	10	2.2	ug/L	02/24/20
Vanadium	ND	5.0	0.65	ug/L	02/24/20
Zinc	ND	20	4.2	ug/L	02/24/20

Legend

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Matrix:** Water **Batch#:** 278762 **Prep:** EPA 3010A

Lab ID: QC1010113 **Diln Fac:** 1.000 **Prepared:** 02/20/20 **Analysis:** EPA 6010B

Analyte	Spiked	Result	%REC	Limits	Units	Analyzed
Antimony	100.0	105.1	105	80-120	ug/L	02/24/20
Arsenic	100.0	104.3	104	80-120	ug/L	02/24/20
Barium	100.0	103.4	103	80-120	ug/L	02/24/20
Beryllium	100.0	101.8	102	80-120	ug/L	02/24/20
Cadmium	100.0	100.0	100	80-120	ug/L	02/24/20
Chromium	100.0	105.9	106	80-120	ug/L	02/24/20
Cobalt	100.0	104.2	104	80-120	ug/L	02/24/20
Copper	100.0	97.80	98	80-120	ug/L	02/24/20
Lead	100.0	103.4	103	80-120	ug/L	02/24/20
Molybdenum	100.0	104.3	104	80-120	ug/L	02/24/20
Nickel	100.0	104.0	104	80-120	ug/L	02/24/20
Selenium	100.0	95.99	96	80-120	ug/L	02/21/20
Silver	100.0	98.86	99	80-120	ug/L	02/24/20
Thallium	50.00	52.59	105	80-120	ug/L	02/24/20
Vanadium	100.0	105.6	106	80-120	ug/L	02/24/20
Zinc	100.0	103.1	103	80-120	ug/L	02/24/20

Type: BSD **Matrix:** Water **Batch#:** 278762 **Prep:** EPA 3010A

Lab ID: QC1010114 **Diln Fac:** 1.000 **Prepared:** 02/20/20 **Analysis:** EPA 6010B

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim	Analyzed
Antimony	100.0	103.4	103	80-120	ug/L	2	20	02/24/20
Arsenic	100.0	104.2	104	80-120	ug/L	0	20	02/24/20
Barium	100.0	102.4	102	80-120	ug/L	1	20	02/24/20
Beryllium	100.0	101.4	101	80-120	ug/L	0	20	02/24/20
Cadmium	100.0	99.20	99	80-120	ug/L	1	20	02/24/20
Chromium	100.0	105.6	106	80-120	ug/L	0	20	02/24/20
Cobalt	100.0	102.8	103	80-120	ug/L	1	20	02/24/20
Copper	100.0	97.59	98	80-120	ug/L	0	20	02/24/20
Lead	100.0	103.0	103	80-120	ug/L	0	20	02/24/20
Molybdenum	100.0	103.4	103	80-120	ug/L	1	20	02/24/20
Nickel	100.0	103.3	103	80-120	ug/L	1	20	02/24/20
Selenium	100.0	92.17	92	80-120	ug/L	4	20	02/21/20
Silver	100.0	97.88	98	80-120	ug/L	1	20	02/24/20
Thallium	50.00	52.85	106	80-120	ug/L	0	20	02/24/20
Vanadium	100.0	103.7	104	80-120	ug/L	2	20	02/24/20
Zinc	100.0	102.2	102	80-120	ug/L	1	20	02/24/20

Legend

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Matrix:** Water **Received:** 02/19/20
Type: MS **Diln Fac:** 1.000 **Prepared:** 02/20/20
MSS Lab ID: 318380-001 **Batch#:** 278762 **Prep:** EPA 3010A
Lab ID: QC1010115 **Sampled:** 02/18/20 **Analysis:** EPA 6010B

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units	Analyzed	Qual
Antimony	<1.362	100.0	54.93	55 *	75-125	ug/L	02/24/20	
Arsenic	13.33	100.0	126.0	113	80-125	ug/L	02/24/20	
Barium	143.8	100.0	243.3	100	78-120	ug/L	02/24/20	
Beryllium	0.6736	100.0	108.2	108	80-120	ug/L	02/24/20	
Cadmium	0.7467	100.0	108.0	107	80-120	ug/L	02/24/20	
Chromium	1,942	100.0	2,150	208	80-120	ug/L	02/24/20	NM
Cobalt	9.856	100.0	117.7	108	80-120	ug/L	02/24/20	
Copper	314.9	100.0	432.9	118	80-120	ug/L	02/24/20	
Lead	17.67	100.0	123.8	106	80-120	ug/L	02/24/20	
Molybdenum	33.49	100.0	147.0	114	80-120	ug/L	02/24/20	
Nickel	124.6	100.0	235.2	111	80-120	ug/L	02/24/20	
Selenium	<2.444	100.0	95.13	95	75-125	ug/L	02/21/20	
Silver	<0.5225	100.0	105.4	105	80-120	ug/L	02/24/20	
Thallium	<2.180	50.00	52.14	104	75-120	ug/L	02/24/20	
Vanadium	65.42	100.0	178.7	113	80-122	ug/L	02/24/20	
Zinc	257.2	100.0	361.0	104	80-122	ug/L	02/24/20	

Field ID: ET-LW01-20200218 **Matrix:** Water **Received:** 02/19/20
Type: MSD **Diln Fac:** 1.000 **Prepared:** 02/20/20
MSS Lab ID: 318380-001 **Batch#:** 278762 **Prep:** EPA 3010A
Lab ID: QC1010116 **Sampled:** 02/18/20 **Analysis:** EPA 6010B

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim	Analyzed	Qual
Antimony	100.0	56.99	57 *	75-125	ug/L	4	32	02/24/20	
Arsenic	100.0	128.4	115	80-125	ug/L	2	22	02/24/20	
Barium	100.0	248.2	104	78-120	ug/L	2	20	02/24/20	
Beryllium	100.0	108.1	107	80-120	ug/L	0	20	02/24/20	
Cadmium	100.0	108.2	107	80-120	ug/L	0	20	02/24/20	
Chromium	100.0	2,184	243	80-120	ug/L	2	20	02/24/20	NM
Cobalt	100.0	118.0	108	80-120	ug/L	0	20	02/24/20	
Copper	100.0	442.7	128 *	80-120	ug/L	2	20	02/24/20	
Lead	100.0	124.3	107	80-120	ug/L	0	20	02/24/20	
Molybdenum	100.0	146.5	113	80-120	ug/L	0	20	02/24/20	
Nickel	100.0	239.8	115	80-120	ug/L	2	20	02/24/20	
Selenium	100.0	100.4	100	75-125	ug/L	5	43	02/21/20	
Silver	100.0	105.7	106	80-120	ug/L	0	20	02/24/20	
Thallium	50.00	51.81	104	75-120	ug/L	1	20	02/24/20	
Vanadium	100.0	180.8	115	80-122	ug/L	1	20	02/24/20	
Zinc	100.0	366.9	110	80-122	ug/L	2	20	02/24/20	

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Legend

***:** Value is outside QC limits

NM: Not Meaningful: Sample concentration > 4X spike concentration

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Matrix:** Water **Received:** 02/19/20

Type: Serial Dilution **Diln Fac:** 5.000 **Prep:** EPA 3010A

MSS Lab ID: 318380-001 **Batch#:** 278762 **Analysis:** EPA 6010B

Lab ID: QC1010117 **Sampled:** 02/18/20

Analyte	MSS Result	MSS RL	Result	RL	Units	% Diff	Lim	Analyzed
Antimony	ND	10.00	ND	50.00	ug/L	NC	10	02/24/20
Arsenic	13.33	10.00	**20.67 J**	25.48	ug/L	NC	10	02/24/20
Barium	143.8	5.000	**140.7**	25.00	ug/L	2	10	02/24/20
Beryllium	0.6736	2.000	ND	10.00	ug/L	NC	10	02/24/20
Cadmium	0.7467	5.000	ND	25.00	ug/L	NC	10	02/24/20
Chromium	1,942	5.000	**1,804**	25.00	ug/L	7	10	02/24/20
Cobalt	9.856	5.000	**10.13 J**	25.00	ug/L	NC	10	02/24/20
Copper	314.9	5.000	**317.2**	25.00	ug/L	1	10	02/24/20
Lead	17.67	5.000	**19.88 J**	25.00	ug/L	NC	10	02/24/20
Molybdenum	33.49	5.000	**35.12**	25.00	ug/L	5	10	02/24/20
Nickel	124.6	5.000	**126.7**	25.00	ug/L	2	10	02/24/20
Selenium	ND	10.00	ND	50.00	ug/L	NC	10	02/21/20
Silver	ND	5.000	ND	25.00	ug/L	NC	10	02/24/20
Thallium	ND	10.00	ND	50.00	ug/L	NC	10	02/24/20
Vanadium	65.42	5.000	**63.61**	25.00	ug/L	3	10	02/24/20
Zinc	257.2	20.00	**252.7**	100.0	ug/L	2	10	02/24/20

Legend

J: Estimated value

NC: Not Calculated

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Matrix:** Water **Received:** 02/19/20

Type: Post Digest Spike **Diln Fac:** 1.000 **Prep:** EPA 3010A

MSS Lab ID: 318380-001 **Batch#:** 278762 **Analysis:** EPA 6010B

Lab ID: QC1010118 **Sampled:** 02/18/20

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units	Analyzed	Qual
Antimony	<1.362	100.0	105.7	106	75-125	ug/L	02/24/20	
Arsenic	13.33	100.0	122.0	109	75-125	ug/L	02/24/20	
Barium	143.8	100.0	229.5	86	75-125	ug/L	02/24/20	
Beryllium	0.6736	100.0	104.2	104	75-125	ug/L	02/24/20	
Cadmium	0.7467	100.0	103.9	103	75-125	ug/L	02/24/20	
Chromium	1,942	100.0	1,973	32	75-125	ug/L	02/24/20	NM
Cobalt	9.856	100.0	112.7	103	75-125	ug/L	02/24/20	
Copper	314.9	100.0	404.9	90	75-125	ug/L	02/24/20	
Lead	17.67	100.0	117.6	100	75-125	ug/L	02/24/20	
Molybdenum	33.49	100.0	139.2	106	75-125	ug/L	02/24/20	
Nickel	124.6	100.0	223.2	99	75-125	ug/L	02/24/20	
Selenium	<2.444	100.0	89.11	89	75-125	ug/L	02/21/20	
Silver	<0.5225	100.0	101.7	102	75-125	ug/L	02/24/20	
Thallium	<2.180	50.00	50.09	100	75-125	ug/L	02/24/20	
Vanadium	65.42	100.0	168.2	103	75-125	ug/L	02/24/20	
Zinc	257.2	100.0	341.4	84	75-125	ug/L	02/24/20	

Legend

NM: Not Meaningful: Sample concentration > 4X spike concentration

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BLANK **Diln Fac:** 1.000 **Analyzed:** 02/24/20

Lab ID: QC1010360 **Batch#:** 278825 **Prep:** METHOD

Matrix: Water **Prepared:** 02/24/20 **Analysis:** EPA 7470A

Analyte	Result	RL	MDL	Units
Mercury	ND	0.20	0.040	ug/L

Legend

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Dil'n Fac:** 1.000 **Analyzed:** 02/24/20

Lab ID: QC1010361 **Batch#:** 278825 **Prep:** METHOD

Matrix: Water **Prepared:** 02/24/20 **Analysis:** EPA 7470A

Analyte	Spiked	Result	%REC	Limits	Units
Mercury	2.000	2.048	102	80-120	ug/L

Type: BSD **Dil'n Fac:** 1.000 **Analyzed:** 02/24/20

Lab ID: QC1010362 **Batch#:** 278825 **Prep:** METHOD

Matrix: Water **Prepared:** 02/24/20 **Analysis:** EPA 7470A

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Mercury	2.000	2.094	105	80-120	ug/L	2	20

Legend

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ZZZZZZZZZZ **Diln Fac:** 1.000 **Analyzed:** 02/24/20
Type: MS **Batch#:** 278825 **Prep:** METHOD
MSS Lab ID: 318425-002 **Sampled:** 02/18/20 **Analysis:** EPA 7470A
Lab ID: QC1010363 **Received:** 02/20/20
Matrix: Water **Prepared:** 02/24/20

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units
Mercury	<0.04000	2.000	2.088	104	62-120	ug/L

Field ID: ZZZZZZZZZZ **Diln Fac:** 1.000 **Analyzed:** 02/24/20
Type: MSD **Batch#:** 278825 **Prep:** METHOD
MSS Lab ID: 318425-002 **Sampled:** 02/18/20 **Analysis:** EPA 7470A
Lab ID: QC1010364 **Received:** 02/20/20
Matrix: Water **Prepared:** 02/24/20

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Mercury	2.000	2.065	103	62-120	ug/L	1	46

Legend
RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

California Title 22 Metals: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID:	ZZZZZZZZZZ	**Matrix:**	Water	**Received:**	02/20/20
Type:	Serial Dilution	**DiIn Fac:**	5.000	**Analyzed:**	02/24/20
MSS Lab ID:	318425-002	**Batch#:**	278825	**Prep:**	METHOD
Lab ID:	QC1010365	**Sampled:**	02/18/20	**Analysis:**	EPA 7470A

Analyte	MSS Result	MSS RL	Result	RL	Units	% Diff	Lim
Mercury	ND	0.2000	ND	1.000	ug/L	NC	10

Legend

NC: Not Calculated

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

Total Oil & Grease (HEM)

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Diln Fac:** 1.075 **Analyzed:** 02/19/20 10:00

Type: SAMPLE **Batch#:** 278708 **Prep:** METHOD

Lab ID: 318380-001 **Sampled:** 02/18/20 14:45 **Analysis:** EPA 1664A

Matrix: Water **Received:** 02/19/20

Analyte	Result	RL	MDL	Units
Oil & Grease (HEM)	ND	5.38	1.83	mg/L

Type: BLANK **Matrix:** Water **Batch#:** 278708 **Prep:** METHOD

Lab ID: QC1009885 **Diln Fac:** 1.000 **Analyzed:** 02/18/20 16:33 **Analysis:** EPA 1664A

Analyte	Result	RL	MDL	Units
Oil & Grease (HEM)	ND	5.00	1.70	mg/L

Legend

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

ENTHALPY ANALYTICAL

Total Oil & Grease (HEM): Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Matrix:** Water **Batch#:** 278708 **Prep:** METHOD

Lab ID: QC1009886 **DiIn Fac:** 1.000 **Analyzed:** 02/18/20 16:33 **Analysis:** EPA 1664A

Analyte	Spiked	Result	%REC	Limits	Units
Oil & Grease (HEM)	40.00	36.70	92	78-114	mg/L

Type: BSD **Matrix:** Water **Batch#:** 278708 **Prep:** METHOD

Lab ID: QC1009887 **DiIn Fac:** 1.000 **Analyzed:** 02/18/20 16:33 **Analysis:** EPA 1664A

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Oil & Grease (HEM)	40.00	36.20	91	78-114	mg/L	1	18

Legend

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

Flash Point

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID:	ET-LW01-20200218	**Batch#:**	278828	**Prep:**	METHOD
Lab ID:	318380-001	**Sampled:**	02/18/20	**Analysis:**	ASTM D93
Matrix:	Water	**Received:**	02/19/20		
DiIn Fac:	1.000	**Analyzed:**	02/24/20		

Analyte	Result	RL	Units
Flash Point	**>212**	1.0	deg F

Legend
RL: Reporting Limit

ENTHALPY ANALYTICAL

Flash Point: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Type: BS **Matrix:** Water **Batch#:** 278828 **Prep:** METHOD

Lab ID: QC1010375 **Diln Fac:** 1.000 **Analyzed:** 02/24/20 **Analysis:** ASTM D93

Analyte	Spiked	Result	%REC	Limits	Units
Flash Point	81.00	81.00	100	98-103	deg F

Type: BSD **Matrix:** Water **Batch#:** 278828 **Prep:** METHOD

Lab ID: QC1010376 **Diln Fac:** 1.000 **Analyzed:** 02/24/20 **Analysis:** ASTM D93

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Flash Point	81.00	81.00	100	98-103	deg F	0	10

Legend

RPD: Relative Percent Difference

ENTHALPY ANALYTICAL

pH

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Matrix:** Water **Batch#:** 278731 **Received:** 02/19/20

Lab ID: 318380-001 **Diln Fac:** 1.000 **Sampled:** 02/18/20 14:45 **Analyzed:** 02/19/20 10:15

Analyte	Result	RL	Units	Prep	Analysis
pH	**7.5**	1.0	SU	METHOD	EPA 9040C
Temperature (for pH)	**13.5**		deg C		SM2550B

Legend

RL: Reporting Limit

ENTHALPY ANALYTICAL

pH: Batch QC

Lab #: 318380 **Project#:** MCAS EL TORO

Client: Vista Analytical Laboratory **Location:** MCAS El Toro and Tustin, PFAS

Field ID: ET-LW01-20200218 **Matrix:** Water **Received:** 02/19/20

Type: SDUP **Diln Fac:** 1.000 **Analyzed:** 02/19/20 10:15

MSS Lab ID: 318380-001 **Batch#:** 278731

Lab ID: QC1009977 **Sampled:** 02/18/20 14:45

Analyte	MSS Result	Result	RL	Units	RPD	Lim	Prep	Analysis
pH	7.530	**7.560**	1.000	SU	0	20	METHOD	EPA 9040C
Temperature (for pH)	13.50	**13.50**		deg C	0			SM2550B

Legend

RL: Reporting Limit

RPD: Relative Percent Difference

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Appendix C:
Waste Manifest

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NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
CA5170023208	1	800-424-9300-CHEMTREC	62561

GENERATOR

5. Generator's Name and Mailing Address
US NAVY BRAC, PMO - W (EL TORO)
1 AVE OF THE PALMS, SUITE - 161
SAN FRANCISCO, CA 94130
Generator's Phone: 415-743-4713-DOUGLAS DELONG

Generator's Site Address (if different than mailing address)
MAGAZINE RD & IRVINE BLVD, SITES 18 & 24
IRVINE, CA 92618

6. Transporter 1 Company Name: EFR ENVIRONMENTAL SERVICES, INC
U.S. EPA ID Number: CAR000011205

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CROSBY & OVERTON PLANT #1
1630 W. 17TH ST
LONG BEACH, CA 90813 USA
Facility's Phone: 562-432-5445
U.S. EPA ID Number: CAD028409019

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS WASTE LIQUID (PURGE WATER)	1	DM	50	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
9-1 PROFILE #115340 (PURGE WATER) TRACKING # ET-12076
ALWAYS WEAR APPROPRIATE PPE AND USE SAFE HANDLING METHODS
CHEMTREC CUSTOMER #7429

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Jeff McGovern — Signature — Month 6 Day 26 Year 20

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Devin Austin — On behalf of — Signature — Month 6 Day 26 Year 20

Transporter 2 Printed/Typed Name: — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

169-BLC-O 5 11977 (Rev. 9/09) GENERATOR'S/SHIPPER'S INITIAL COPY

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INSTALLATION_ID	SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	SAMPLE_NAME	SAMPLE_MATRIX_DESC	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC	SDG
EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18_BGMW19C	Well	6104540.8	2194471.73	18 -GW-18BGMW19C-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18IDP2-S	Monitoring well	6106015.61	2193082.31	18-GW-18IDP2-D-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18IDP2-S	Monitoring well	6106015.61	2193082.31	18-GW-18IDP2-D-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
EL_TORO_MCAS	SITE 00018	18DW450	Monitoring well	6107442.97	2191956.76	18-GW-18DW450-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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EL_TORO_MCAS	SITE 00018	18DW540	Monitoring well	6107456.6	2191955.78	18-GW-18DW540-20200218	Ground water	18-Feb-20	Perfluoroalkyl Compounds	2000346
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