NAVFAC
Naval Facilities Engineering Command

Off-Base Drinking Water Sample Results, Combined Level 2 and Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Figure, SDG 1700503

Naval Air Warfare Center Trenton
Trenton, New Jersey

August 2019

N62376_001205
NAWC TRENTON, NJ
SSIC 5000-33c

LABORATORY DATA PACKAGE, 1700503, NAWC TRENTON NJ

06/19/2017

VISTA ANALYTICAL LABORATORY

Approved for public release: distribution unlimited.

June 19, 2017

Vista Work Order No. 1700503

Ms. Mary Mang
Tetra Tech
661 Andersen Drive, Foster Plaza 7
Pittsburgh, PA 15220

Dear Ms. Mang,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on April 21, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'NAWC Trenton, NJ'. The SDG Number is WE08.

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,

Karen Lopez for

Martha Maier
Laboratory Director

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

SDG Number WE08
Vista Work Order No. 1700503
Case Narrative

Sample Condition on Receipt:

Ten drinking water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. As requested, this report was amended to include Vista's company logo to each individual sample analytical results page.

Analytical Notes:

EPA Method 537

The samples were extracted and analyzed for the UCMR list of six PFAS using EPA Method 537.

Holding Times

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

Quality Control

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

A Laboratory Fortified Blank (LFB) and Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the LRB above 1/2 the LOQ. The LFB recoveries were within the method acceptance criteria.

The surrogate recoveries for all QC and field samples outside the acceptance criteria are listed in the table below.

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were prepared and analyzed using sample "RW17-20170420".

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1700503-05	FRB-27-20170420	EPA Method 537	13C2-PFDA	H	144
1700503-07	FRB-17-20170420	EPA Method 537	13C2-PFDA	H	142
1700503-08	RW23-20170420	EPA Method 537	13C2-PFDA	H	139
B7D0109-MSD1	B7D0109-MSD1	EPA Method 537	13C2-PFDA	H	134

H = Recovery was outside laboratory acceptance criteria.

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

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

Signature: Martha Maier Title: Acting QA Manager Date: 01/25/17

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1700503-01	DUP01-20170418		18-Apr-17 16:00	19-Apr-17 09:04	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-02	RW15-20170420		20-Apr-17 12:20	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-03	FRB-15-20170420		20-Apr-17 12:15	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-04	RW27-20170420		20-Apr-17 12:50	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-05	FRB-27-20170420		20-Apr-17 12:45	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-06	RW17-20170420	MS/MSD	20-Apr-17 14:50	21-Apr-17 09:34	HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
1700503-07	FRB-17-20170420		20-Apr-17 14:45	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-08	RW23-20170420		20-Apr-17 17:25	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-09	FRB-23-20170420		20-Apr-17 17:20	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL
1700503-10	DUP02-20170420		20-Apr-17 12:00	21-Apr-17 09:34	HDPE Bottle, 250 mL
					HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB

EPA Method 537

Matrix: Drinking Water
Sample Size: 0.250 L

QC Batch: B7D0109
Date Extracted: 24-Apr-2017 8:04

Lab Sample: B7D0109-BLK1
Date Analyzed: 27-Apr-17 04:19 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.51	10.0	20.0	
PFHpA	ND	3.20	10.0	20.0	
PFHxS	ND	1.77	10.0	20.0	
PFOA	ND	4.27	10.0	20.0	
PFNA	ND	3.49	10.0	20.0	
PFOS	ND	1.96	10.0	20.0	

Labeled Standard		%R	LCL-UCL	Qualifiers
SUR	13C2-PFHxA	118	70 - 130	
SUR	13C2-PFDA	115	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: LFB

EPA Method 537

Matrix:	Drinking Water	QC Batch:	B7D0109	Lab Sample:	B7D0109-BS1
Sample Size:	0.250 L	Date Extracted:	24-Apr-2017 8:04	Date Analyzed:	27-Apr-17 03:42 Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits
PFBS	77.4	70.8	109	70 - 130
PFHpA	84.3	80.0	105	70 - 130
PFHxS	81.6	72.8	112	70 - 130
PFOA	83.5	80.0	104	70 - 130
PFNA	87.2	80.0	109	70 - 130
PFOS	86.0	74.0	116	70 - 130

	Labeled Standard	%R	LCL-UCL
SUR	13C2-PFHxA	122	70 - 130
SUR	13C2-PFDA	129	70 - 130

LCL-UCL - Lower control limit - upper control limit

Sample ID: DUP01-20170418

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 18-Apr-2017 16:00
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.285 L

Laboratory Data

Lab Sample: 1700503-01 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 04:31 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.20	8.77	17.5	
PFHpA	ND	2.81	8.77	17.5	
PFHxS	2.10	1.55	8.77	17.5	J
PFOA	8.31	3.75	8.77	17.5	J
PFNA	ND	3.06	8.77	17.5	
PFOS	4.14	1.72	8.77	17.5	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	117	70 - 130	
SUR 13C2-PFDA	98.0	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: RW15-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 12:20
Location:	Pressure Tank

Sample Data

Matrix:	Drinking Water
Sample Size:	0.265 L

Laboratory Data

Lab Sample:	1700503-02	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 04:43	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.37	9.44	18.9	
PFHpA	ND	3.02	9.44	18.9	
PFHxS	3.66	1.67	9.44	18.9	J
PFOA	11.2	4.03	9.44	18.9	J
PFNA	ND	3.29	9.44	18.9	
PFOS	4.87	1.85	9.44	18.9	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	118	70 - 130	
SUR 13C2-PFDA	129	70 - 130	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: FRB-15-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 12:15
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.276 L

Laboratory Data

Lab Sample:	1700503-03	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 04:55	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.28	9.07	18.1	
PFHpA	ND	2.90	9.07	18.1	
PFHxS	ND	1.60	9.07	18.1	
PFOA	ND	3.87	9.07	18.1	
PFNA	ND	3.16	9.07	18.1	
PFOS	ND	1.78	9.07	18.1	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	112	70 - 130	
SUR 13C2-PFDA	105	70 - 130	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: RW27-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 12:50
Location:	Pressure Tank

Sample Data

Matrix:	Drinking Water
Sample Size:	0.287 L

Laboratory Data

Lab Sample:	1700503-04	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 05:08	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.18	8.70	17.4	
PFHpA	ND	2.78	8.70	17.4	
PFHxS	2.80	1.54	8.70	17.4	J
PFOA	9.05	3.71	8.70	17.4	J
PFNA	ND	3.04	8.70	17.4	
PFOS	5.01	1.70	8.70	17.4	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	118	70 - 130	
SUR 13C2-PFDA	106	70 - 130	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: FRB-27-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 12:45
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.284 L

Laboratory Data

Lab Sample:	1700503-05	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 05:20	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.21	8.81	17.6	
PFHpA	ND	2.82	8.81	17.6	
PFHxS	ND	1.56	8.81	17.6	
PFOA	ND	3.76	8.81	17.6	
PFNA	ND	3.07	8.81	17.6	
PFOS	ND	1.73	8.81	17.6	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	127	70 - 130	
SUR 13C2-PFDA	144	70 - 130	H

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: RW17-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 14:50
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.286 L

Laboratory Data

Lab Sample: 1700503-06 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 05:32 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.19	8.73	17.5	
PFHpA	ND	2.79	8.73	17.5	
PFHxS	1.61	1.54	8.73	17.5	J
PFOA	9.17	3.73	8.73	17.5	J
PFNA	ND	3.05	8.73	17.5	
PFOS	4.38	1.71	8.73	17.5	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	117	70 - 130	
SUR 13C2-PFDA	118	70 - 130	

DL - Detection limit
RL - Reporting limit

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

LFSM Results

EPA Method 537

Source Client ID: RW17-20170420
Source LabNumber: 1700503-06
Matrix: Drinking Water
Sample Size: 0.280/0.279 L

QC Batch: B7D0109
Date Extracted: 24-Apr-2017 8:04

Lab Sample: B7D0109-MS1/B7D0109-MSD1
Date Analyzed: 27-Apr-17 05:44 Column: BEH C18
27-Apr-17 05:57 Column: BEH C18

Analyte	Spike-MS (ng/L)	MS %R	MS Qual.	Spike-MSD (ng/L)	MSD %R	RPD	MSD Qual.	%R Limit	%RPD Limit
PFBS	63.1	100.0		63.5	106	5.83		70 - 130	30
PFHpA	71.3	106		71.7	110	3.70		70 - 130	30
PFHxS	64.9	97.4		65.3	110	12.2		70 - 130	30
PFOA	71.3	112		71.7	111	0.897		70 - 130	30
PFNA	71.3	101		71.7	109	7.62		70 - 130	30
PFOS	66.0	106		66.4	109	2.79		70 - 130	30

Labeled Standard	MS %R	MS Qualifiers	MSD %R	MSD Qual.
SUR 13C2-PFHxA	119		122	
SUR 13C2-PFDA	114		134	H

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

Sample ID: FRB-17-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 14:45
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.278 L

Laboratory Data

Lab Sample:	1700503-07	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 06:09	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.26	9.00	18.0	
PFHpA	ND	2.88	9.00	18.0	
PFHxS	ND	1.59	9.00	18.0	
PFOA	ND	3.84	9.00	18.0	
PFNA	ND	3.14	9.00	18.0	
PFOS	ND	1.76	9.00	18.0	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	123	70 - 130	
SUR 13C2-PFDA	142	70 - 130	H

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: RW23-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 17:25
Location:	Pressure Tank

Sample Data

Matrix:	Drinking Water
Sample Size:	0.283 L

Laboratory Data

Lab Sample:	1700503-08	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 06:21	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	9.09	2.22	8.84	17.7	J
PFHpA	4.32	2.83	8.84	17.7	J
PFHxS	2.59	1.56	8.84	17.7	J
PFOA	16.7	3.77	8.84	17.7	J
PFNA	ND	3.08	8.84	17.7	
PFOS	12.5	1.73	8.84	17.7	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	121	70 - 130	
SUR 13C2-PFDA	139	70 - 130	H

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: FRB-23-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 17:20
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.281 L

Laboratory Data

Lab Sample:	1700503-09	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 06:33	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.23	8.88	17.8	
PFHpA	ND	2.84	8.88	17.8	
PFHxS	ND	1.57	8.88	17.8	
PFOA	ND	3.79	8.88	17.8	
PFNA	ND	3.10	8.88	17.8	
PFOS	ND	1.74	8.88	17.8	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	124	70 - 130	
SUR 13C2-PFDA	111	70 - 130	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: DUP02-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 12:00
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.287 L

Laboratory Data

Lab Sample: 1700503-10 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 06:46 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	8.57	2.19	8.71	17.4	J
PFHpA	4.14	2.79	8.71	17.4	J
PFHxS	2.58	1.54	8.71	17.4	J
PFOA	15.3	3.72	8.71	17.4	J
PFNA	ND	3.04	8.71	17.4	
PFOS	11.6	1.71	8.71	17.4	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	127	70 - 130	
SUR 13C2-PFDA	109	70 - 130	

DL - Detection limit
RL - Reporting limit

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
Nevada Division of Environmental Protection	CA004132017-1
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

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

NELAP Accredited Test Methods

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

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
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

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	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Laboratory Project ID: 1700503 Temp: 0.3 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: NAWC Trenton P.O.#: 113571O Sampler: Charles Meyer (name)

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

Invoice to: Name / Company / Address / City / State / Ph# / Fax#
Accounts Payable Tetra Tech Inc 661 Andersen Drive Foster Plaza 7 Pittsburgh PA 15220

Relinquished by (printed name and signature) / Date / Time: Charles Meyer 4/18/17 18:00
Received by (printed name and signature) / Date / Time: Bettina Burodi 04/19/17 0907
Relinquished by (printed name and signature) / Date / Time:
Received by (printed name and signature) / Date / Time:

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

ATTN: Sample Custodian

Method of Shipment: Fed Ex
Tracking No.: 8109 8153 9152

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA 1613 2378-TCDD	EPA 1613 2378 TCDD/TCDF	EPA 1613 PCDD/PCDF	EPA 8290 2378-TCDD	EPA 8290 2378 TCDD/TCDF	EPA 8290 PCDD/PCDF	EPA 8280 2378-TCDD	EPA 8280 2378 TCDD/TCDF	EPA 8280 PCDD/PCDF	EPA 1668 TOTALS	EPA 1668 COPLANAR PCB's	EPA 1668 209 CONGENERS	EPA 1668 PBDE	EPA 1614 PAH	CARB429 WHO-29	UCMR3 List Mod. EPA 537	Comments
DUP01-20170418	4/18/17	16:00	Pressure Tank	2	PW	DW															✓		

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:
Name: Mary Mang
Company: Tetra Tech
Address: 234 Mall Boulevard Suite 260
City: King of Prussia State: PA Zip: 19406
Phone: 610 392 1874 Fax: 610 491 9645
Email: mary.mang at tetratech.com

Container Types: A = 1 Liter Amber, G = Glass Jar, P = HDPE, O = Other:
Bottle Preservation Type: T = Thiosulfate, TZ = Trizma: 2 bottles
Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Laboratory Project ID: 1700503 Temp: 3.1 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: NAWC Trenton P.O.#: 1135710 Sampler: Charles Meyer (name)

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

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Accounts Payable	Tetra Tech Inc	661 Andersen Drive	Foster Plaza 7	Pittsburgh	PA	15220

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Charles Meyer Charles Meyer	4/20/17	20:00	B. Benedict Beth Benedict	04/21/17	0958
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Method of Shipment: Fed Ex

ATTN: Sample Custodian

Tracking No.: 8109 8153 9022

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA 1613 2378-TCDD	EPA 1613 2378 TCDD/TCDF PCDD/PCDF	EPA 8290 2378-TCDD	EPA 8290 2378-TCDD/TCDF PCDD/PCDF	EPA 8280 2378-TCDD	EPA 8280 2378 TCDD/TCDF PCDD/PCDF	EPA 1668 TOTALS	EPA 1668 COPLANAR PCB's	EPA 1668 209 CONGENERS	EPA 1614 PBDE	CARB429 PAH	UCMR3 List 1 WHO-29	UCMR3 List 1 Mod. EPA 537	Comments
RW15-20170420	4/20/17	12:20	Pressure Tank	2	P	DW														
FRB-15-20170420	4/20/17	12:15	Pump Room	2	P	BLK														
RW27-20170420	4/20/17	12:50	Pressure Tank	2	P	DW														
FRB-27-20170420	4/20/17	12:45	Pump Room	2	P	BLK														
RW17-20170420	4/20/17	14:50	Pressure Tank	6	P	DW														DO MS/MSD
FRB-17-20170420	4/20/17	14:45	Pump Room	2	P	BLK														
RW23-20170420	4/20/17	17:25	Pressure Tank	2	P	DW														
FRB-23-20170420	4/20/17	17:20	Pump Room	2	P	BLK														
DUP02-20170420	4/20/17	12:00	Pressure Tank	2	P	DW														

Special Instructions/Comments: ____

SEND DOCUMENTATION AND RESULTS TO:

Name: Mary Mang
Company: Tetra Tech
Address: 234 Mall Boulevard Suite 260
City: King of Prussia State: PA Zip: 19406
Phone: 610 382 1174 Fax: 610 491 9645
Email: mary.mang@tetratech.com

Container Types: A = 1 Liter Amber, G = Glass Jar, P = HDPE, O = Other: ____

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma: 22 bottles

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

SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

Vista Project #: 1700503 **TAT** 6

Samples Arrival:	**Date/Time** 04/19/17 0904	**Initials:** JBJB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 04/21/17 1323	**Initials:** JBJB	**Location:** WR-2 **Shelf/Rack:** B6

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

Temp °C: 0.0	(uncorrected)	**Time:** 0905	**Thermometer ID:** IR-1
Temp °C: 0.3	(corrected)	**Probe used:** Yes☐ No☑	

	YES	NO	NA
Adequate Sample Volume Received? A/B	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 8109 81539152	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	

If Chlorinated or Drinking Water Samples, Acceptable Preservation?					✓		
Preservation Documented:	$Na_2S_2O_3$	Trizma			Yes	No	NA
Shipping Container	Vista	Client	Retain JBJB	Return		Dispose	

Comments: Sample label ID: DUP01-20170418 A/B container

SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

Vista Project #: 1700503 **TAT** 4

Samples Arrival:	**Date/Time** 04/21/17 0934	**Initials:** BRB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 04/21/17 1323	**Initials:** BLB	**Location:** WR-2 **Shelf/Rack:** B 6

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

Temp °C: 2.8	(uncorrected)	**Time:** 0958	**Thermometer ID:** IR-1
Temp °C: 3.1	(corrected)	**Probe used:** Yes ☐ No ☑	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 810981539027	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	

If Chlorinated or Drinking Water Samples, Acceptable Preservation?					✓	LABS 4/21/17
Preservation Documented:	$Na_2S_2O_3$	(Trizma)			Yes	No	NA
Shipping Container	Vista	(Client)	Retain	(Return)	Dispose		

Sample label ID: RW17-20170420 A-F (27, 15, 23) AB
FRW-17-20170420 (27, 15, 23) A/B
DUP02-20170420 A/B

Comments:

RLA 09/06/2016

EXTRACTION INFORMATION

RUSH

Process Sheet

Workorder: 1700503

Prep Expiration: 2017-May-02
Client: Tetra Tech

Workorder Due: 27-Apr-17 00:00
TAT: 6

Method: **537 PFAS DW DoD Unmodified**
Matrix: **Drinking Water**
Client Matrix: Drinking Water

Prep Batch: B7D0109

Prep Data Entered: 4/25/17 JTC
Date and Initials

Initial Sequence: _____

List of 6

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1700503-01	☒	DUP01-20170418	19-Apr-17 09:04	WR-2 B-6	
1700503-02	☒	RW15-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-03	☒	FRB-15-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-04	☒	RW27-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-05	☒	FRB-27-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-06	☒	RW17-20170420	21-Apr-17 09:34	WR-2 B-6	**MS/MSD**
1700503-07	☒	FRB-17-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-08	☒	RW23-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-09	☒	FRB-23-20170420	21-Apr-17 09:34	WR-2 B-6	
1700503-10	☒	DUP02-20170420	21-Apr-17 09:34	WR-2 B-6	

WO Comments: **QSM 5.0**

Vista PM:Martha Maier

Vial Box ID: (Tony) Nighthawk

Sample Reconciled By: _____ 4/24/17

Page 1 of 1

Batch: B7D0109

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1700503-01	0.28503	N/A	N/A	1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-02	0.2649			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-03	0.27574			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-04	0.2874			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-05	0.28379			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-06	0.28643			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-07	0.27787			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-08	0.28288			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-09	0.28138			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-10	0.28699			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
B7D0109-BLK1	0.25			1000	24-Apr-17 08:04	BAP				QC
B7D0109-BS1	0.25			1000	24-Apr-17 08:04	BAP	17D1705	20		QC
B7D0109-MS1	0.28034			1000	24-Apr-17 08:04	BAP	17D1705	20		QC
B7D0109-MSD1	0.27877			1000	24-Apr-17 08:04	BAP	17D1705	20		QC

4/25/17

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodifie

PREPARATION BENCH SHEET

B7D0109

Chemist: BP

Prep Date/Time: 24-Apr-17 08:04

Prepared using: LCMS - SPE Extraction-LCMS

C	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	~~IS~~/NS CHEM/WIT DATE (SS)	SPE (C7D0115)	RS CHEM/WIT DATE
☐	B7D0109-BLK1 (A)	N/A	N/A	0.250	BP HC 4.24.17	BP HC 4.24.17	BP HC 4/24/17
☐	B7D0109-BS1 (A)	N/A	↓	↓	↓	↓	↓
☐	B7D0109-MS1 1700503-06	308.08	27.74	0.28034			
☐	B7D0109-MSD1 1700503-06	306.40	27.63	0.27877			
☐	1700503-01	311.66	26.63	0.28503			
☐	1700503-02	292.03	27.13	0.2649			
☐	1700503-03	301.95	26.21	0.27574			
☐	1700503-04	314.82	27.42	0.28740			
☐	1700503-05	310.80	27.01	0.28379			
☐	1700503-06	313.52	27.09	0.28643			
☐	1700503-07	305.77	27.90	0.27787			
☐	1700503-08	309.43	26.55	0.28288			
☐	1700503-09	308.45	27.07	0.28138			
☐	1700503-10	313.70	26.71	0.28699			

(A) 0.625g trizma added HC 4/24/17

SS

~~IS~~ Name	NS Name	RS Name
17D1704, 50L (V4)	17D1705, 20uL (V3)	17D1706, 50uL (V4)

SPE Chem: strata-X 33um 500mg/6mL

Ele SOLV: MeOH

Final Volume(s) 1mL

Check Out: Chemist/Date: HC 4/24/17

Check In: Chemist/Date: N/A

Balance ID: HRAS-8

Comments: Assume 1 g = 1 mL

Vista Analytical Laboratory

BALANCE CALIBRATION CHECK

Weights # 22370 and 7718

Date	☑ for Weight # verification	Weight 1 1 g (0.9900 – 1.0100)	Weight 2 100 g (99.00 – 101.00)	Weight 3 2000 g (1980 – 2020)	Initials	Acceptable? (Y/N)
4/5/17	✓	1.00	100.00	2000.00	ZHC	Y
4/6/17	✓	1.00	99.99	2000.02	TVD	Y
4/6/17	✓	Balance calibrated for 500mg → reads 0.50g			TVD	Y
4/7/17	✓	1.00	100.01	2000.03	TVD	Y
4/10/17	✓	1.00	99.99	2000.01	ZHC	Y
4/11/17	✓	1.01	99.99	2000.03	ZHC	Y
4/12/17	✓	1.00	99.99	2000.00	OBF	Y
4.14.17	✓	1.00	99.99	2000.03	BP	Y
4.17.17	✓	1.01	100.01	2000.02	BP	Y
4/18/17	✓	1.01	100.01	2000.03	TVD	Y
4.19.17	✓	1.00	100.00	2000.04	BP	Y
4.20.17	✓	1.01	100.02	2000.02	ZHC	Y
4.21.17	✓	1.00	100.01	2000.01	BP	Y
4.24.17	✓	1.00	99.99	2000.03	ZHC	Y
4.25.17	✓	1.01	100.00	2000.00	ZHC	Y
4/26/17	✓	1.00	100.00	2000.01	OBF	Y
4/27/17	✓	1.00	99.98	2000.01	ZHC	Y

Comments:

Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762

SAMPLE DATA –EPA METHOD 537

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-17.qld

Last Altered: Thursday, April 27, 2017 11:13:25 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:00 Pacific Daylight Time

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Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-BLK1, Description: LRB, Name: 170426L2_17.wiff, Date: 27-Apr-2017, Time: 04:19:04

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	7.678e0	1.313e4		0.250	3.41	0.0400	
2	3	PFHpA	318.90	3.558e1	1.694e4		0.250	4.26	0.0999	
3	4	PFHxS	79.91		1.313e4		0.250			
4	5	PFOA	368.90	4.132e1	1.694e4		0.250	4.65	0.110	
5	6	PFNA	419.00	2.518e1	1.694e4		0.250	4.98	0.0627	
6	7	PFOS	79.92	1.019e1	1.313e4		0.250	5.04	0.0651	
7	15	13C2-PFHxA	269.90	1.122e4	1.694e4	0.560	0.250	3.79	47.3	118
8	16	13C2-PFDA	470.00	1.128e4	1.694e4	0.580	0.250	5.26	45.9	115
9	18	13C2-PFOA	369.90	1.694e4	1.694e4	1.000	0.250	4.65	40.0	100
10	19	13C4-PFOS	79.93	1.313e4	1.313e4	1.000	0.250	5.04	115	100

Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-17.qld

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Printed: Thursday, April 27, 2017 11:14:00 Pacific Daylight Time

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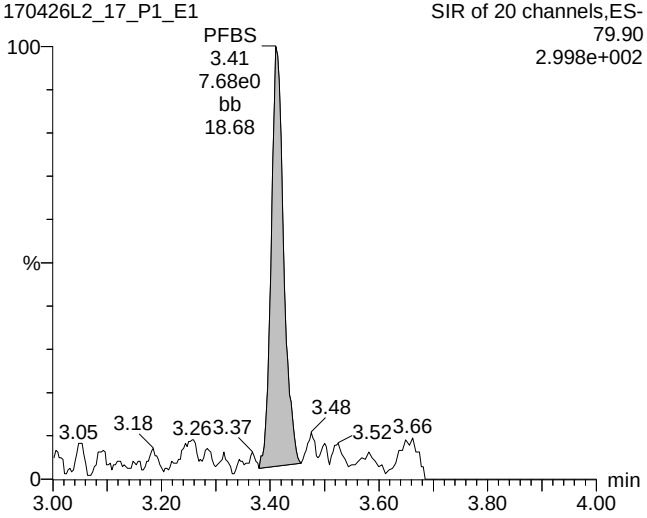
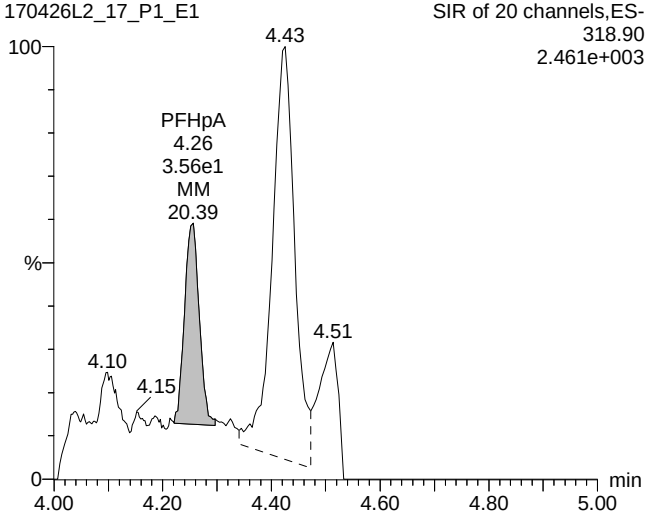
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-BLK1, Description: LRB, Name: 170426L2_17.wiff, Date: 27-Apr-2017, Time: 04:19:04, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFBS



PFHpA



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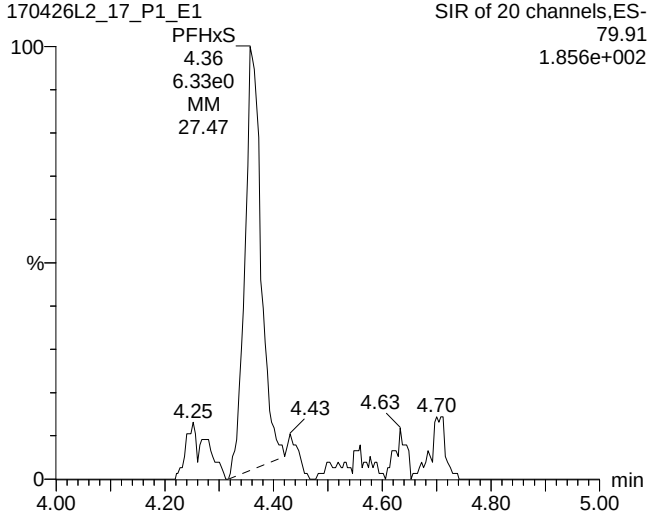

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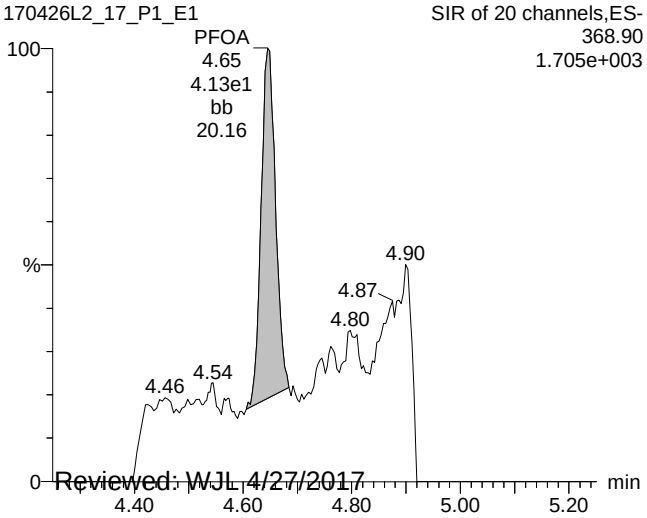

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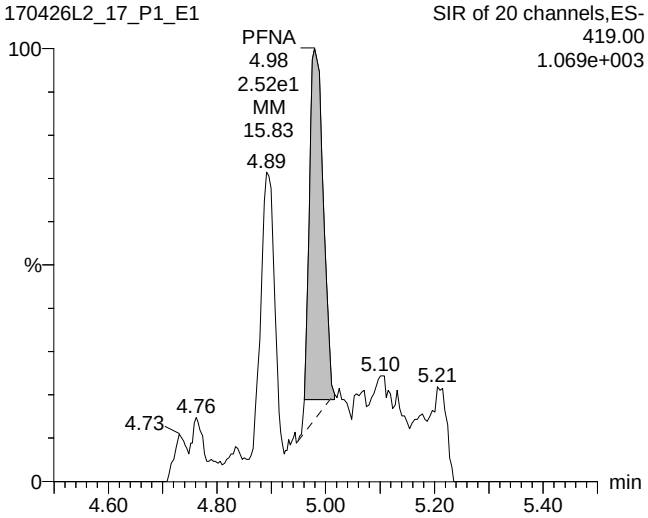

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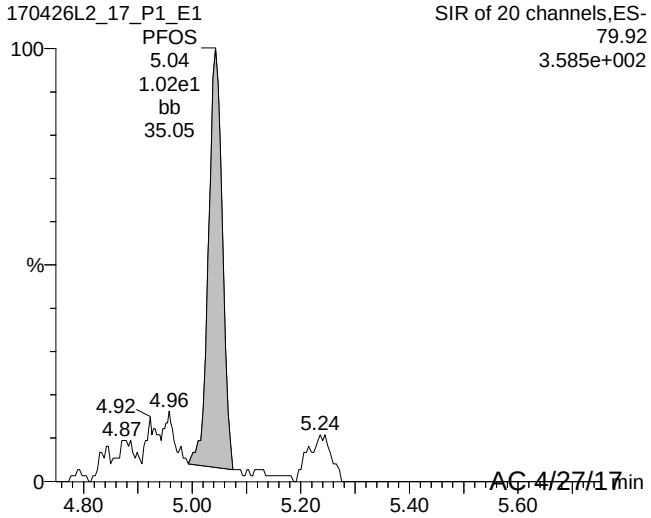

Reviewed: WJL 4/27/2017 AC 4/27/17

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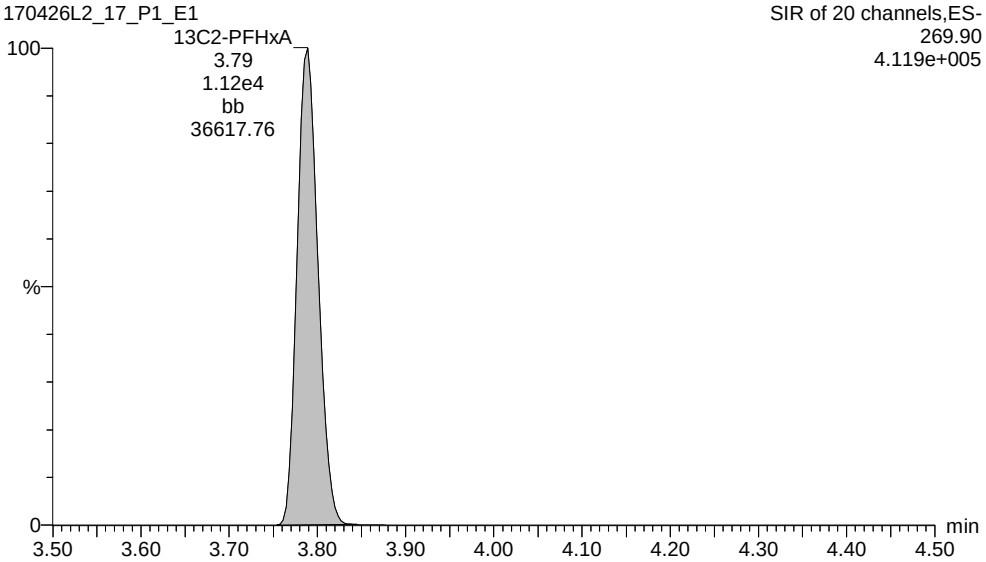
Printed: Thursday, April 27, 2017 11:14:00 Pacific Daylight Time

ID: B7D0109-BLK1, Description: LRB, Name: 170426L2_17.wiff, Date: 27-Apr-2017, Time: 04:19:04, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFHxA



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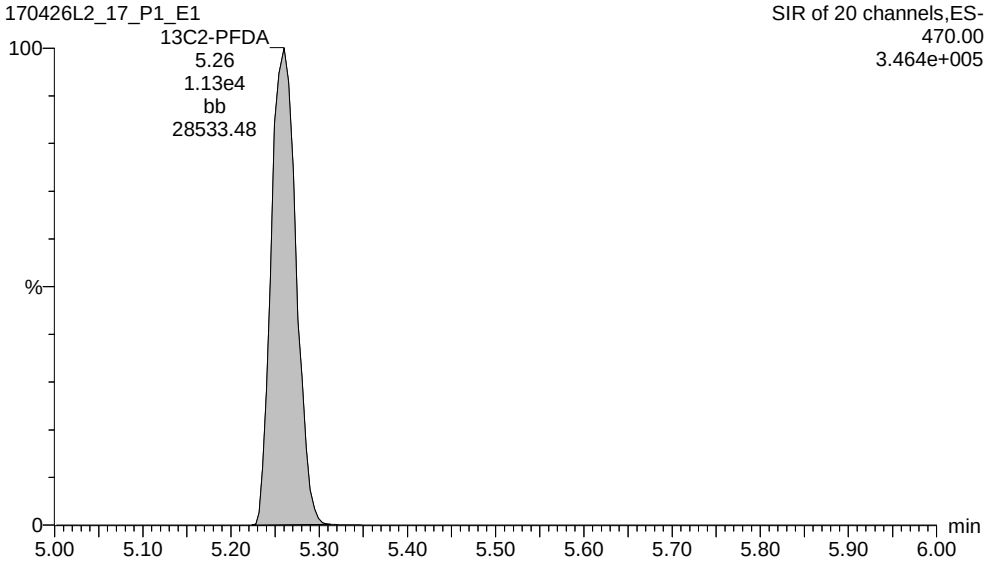

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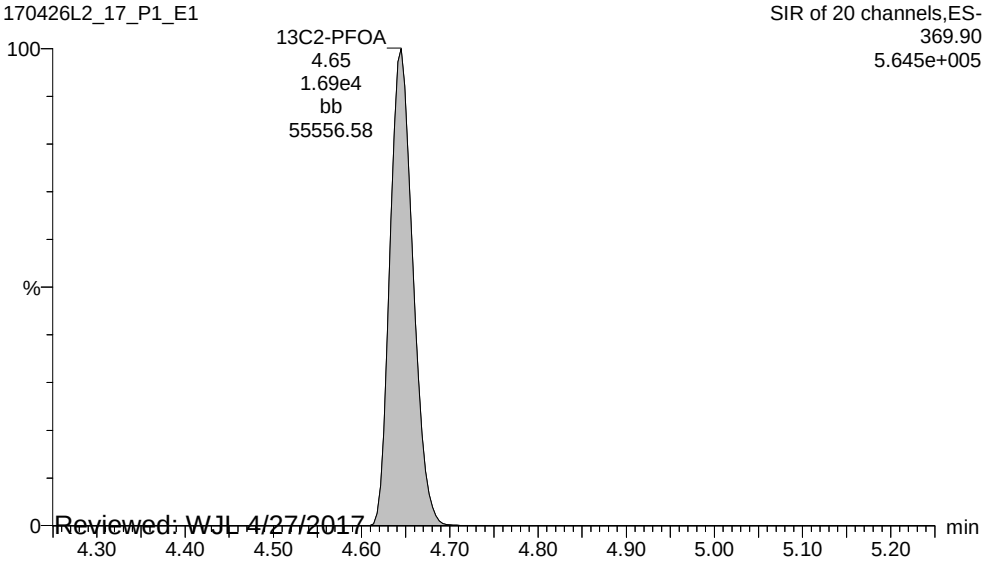

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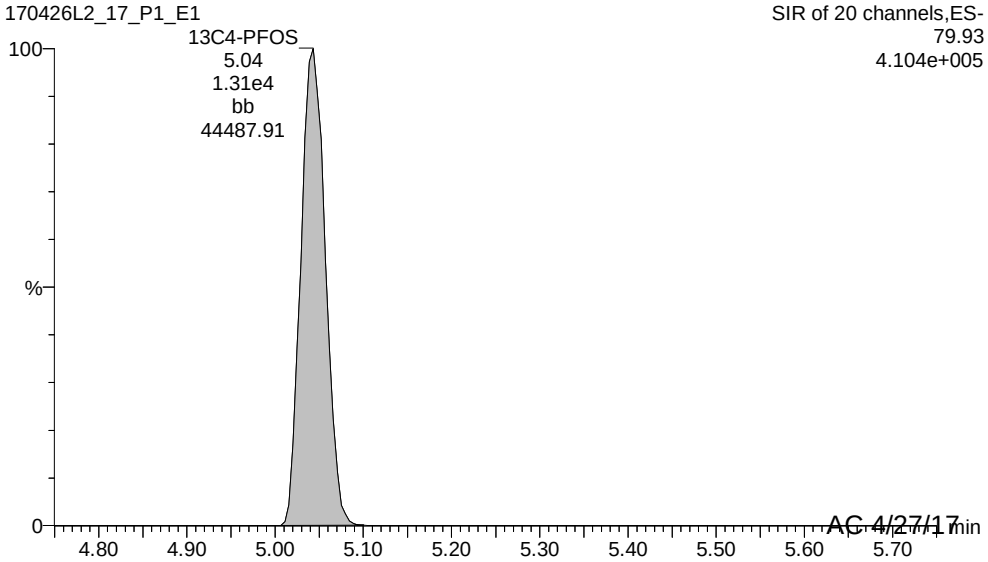


Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-14.qld

Last Altered: Thursday, April 27, 2017 11:07:19 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:09:24 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-BS1, Description: LFB, Name: 170426L2_14.wiff, Date: 27-Apr-2017, Time: 03:42:18

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.236e4	1.207e4		0.250	3.42	77.4	109
2	3	PFHpA	318.90	2.766e4	1.713e4		0.250	4.28	84.3	105
3	4	PFHxS	79.91	1.128e4	1.207e4		0.250	4.40	81.6	112
4	5	PFOA	368.90	2.881e4	1.713e4		0.250	4.66	83.5	104
5	6	PFNA	419.00	3.139e4	1.713e4		0.250	4.99	87.2	109
6	7	PFOS	79.92	1.162e4	1.207e4		0.250	5.04	86.0	116
7	15	13C2-PFHxA	269.90	1.168e4	1.713e4	0.560	0.250	3.80	48.7	122
8	16	13C2-PFDA	470.00	1.281e4	1.713e4	0.580	0.250	5.18	51.5	129
9	18	13C2-PFOA	369.90	1.713e4	1.713e4	1.000	0.250	4.65	40.0	100
10	19	13C4-PFOS	79.93	1.207e4	1.207e4	1.000	0.250	5.04	115	100

Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

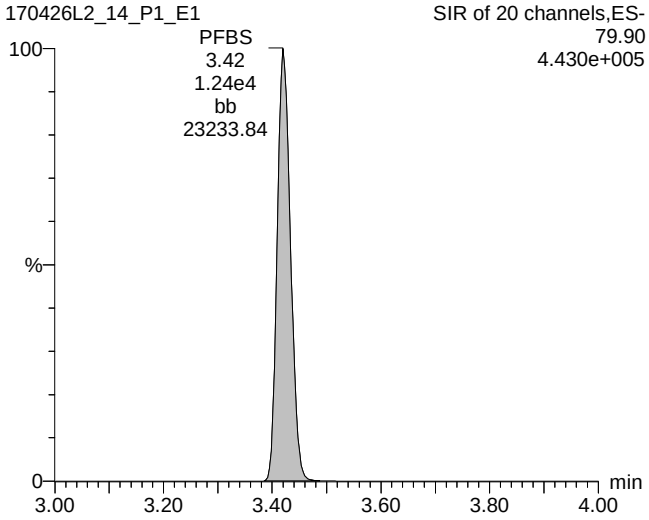
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-14.qld

Last Altered: Thursday, April 27, 2017 11:07:19 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:09:24 Pacific Daylight Time

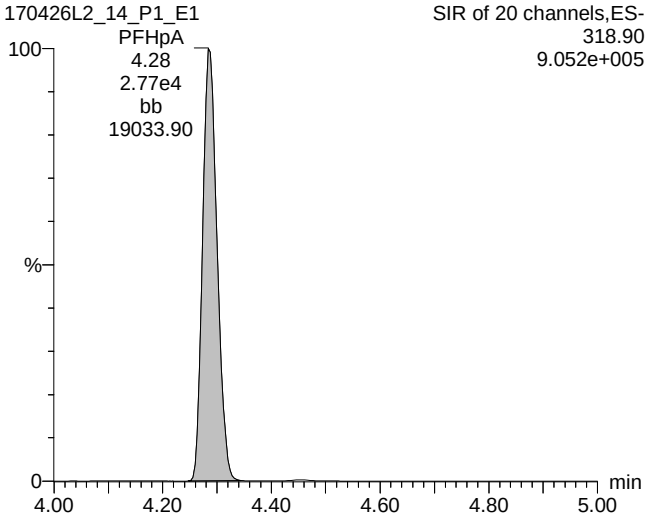
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-BS1, Description: LFB, Name: 170426L2_14.wiff, Date: 27-Apr-2017, Time: 03:42:18, Instrument: , Lab: ©PE-SCIEX, User: sciex

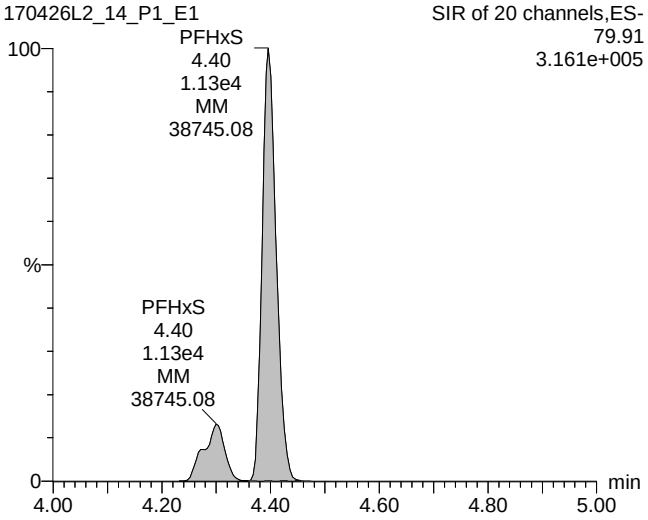
PFBS



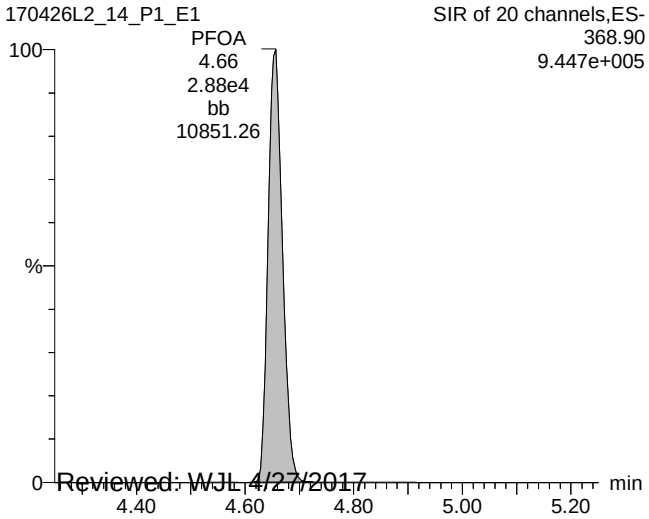
PFHpA



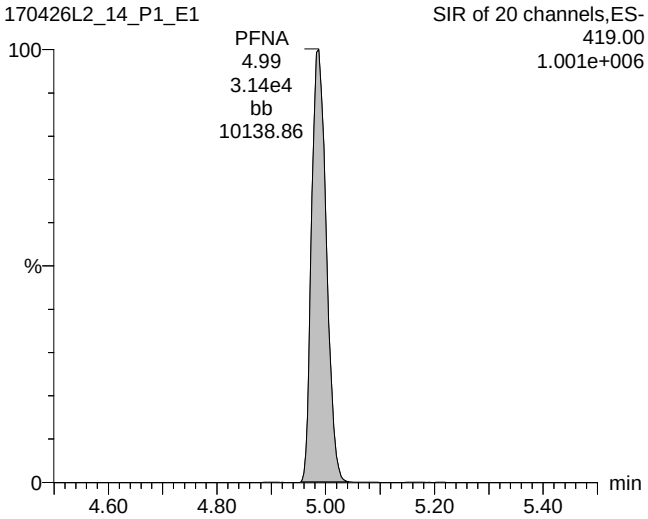
PFHxS



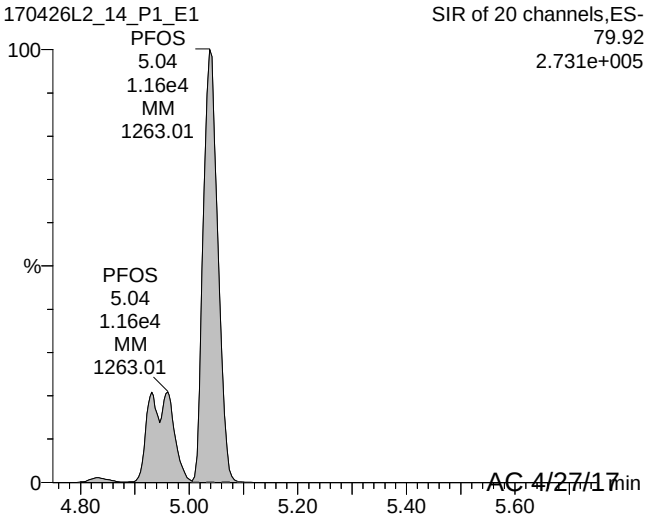
PFOA



PFNA



PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

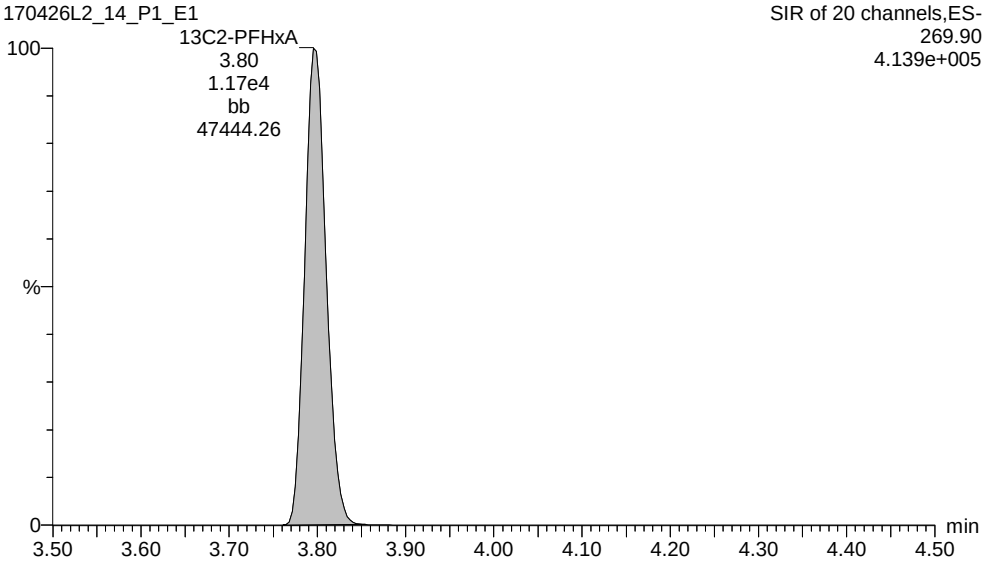
Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-14.qld

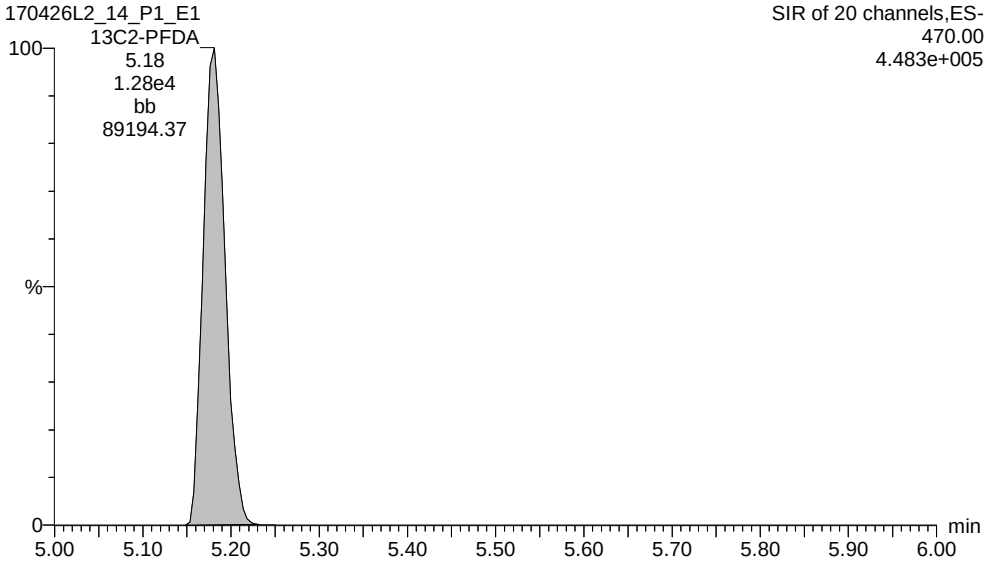
Last Altered: Thursday, April 27, 2017 11:07:19 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:09:24 Pacific Daylight Time

ID: B7D0109-BS1, Description: LFB, Name: 170426L2_14.wiff, Date: 27-Apr-2017, Time: 03:42:18, Instrument: , Lab: ©PE-SCIEX, User: sciex

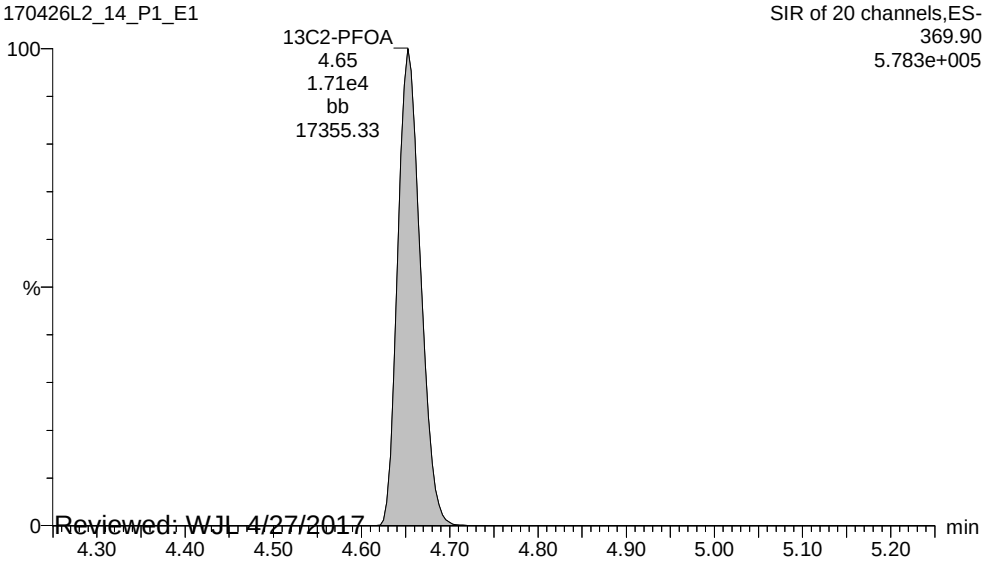
13C2-PFHxA



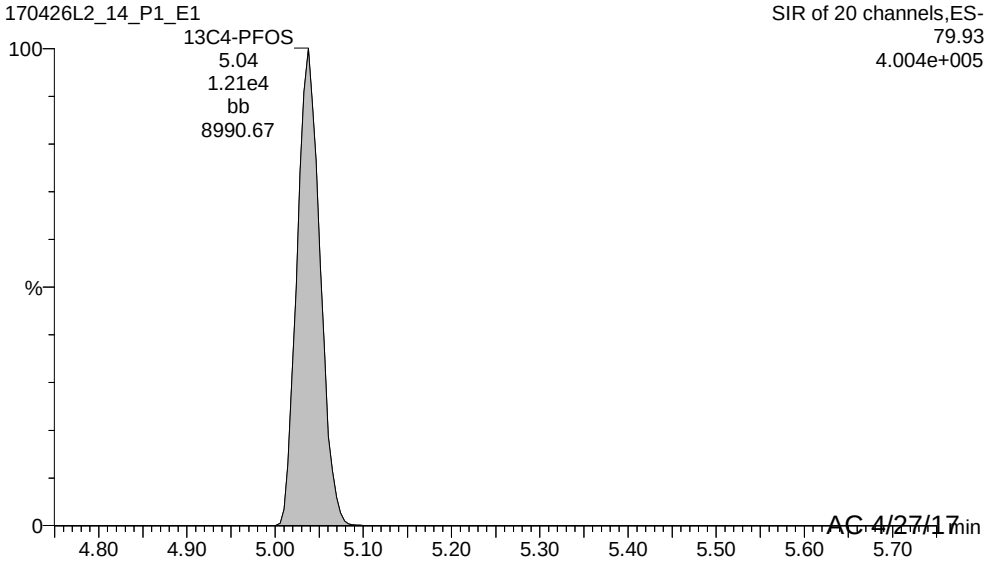
13C2-PFDA



13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-18.qld

Last Altered: Thursday, April 27, 2017 11:15:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:16:04 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-01, Description: DUP01-20170418, Name: 170426L2_18.wiff, Date: 27-Apr-2017, Time: 04:31:22

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	2.198e2	1.364e4		0.285	3.42	0.969	
2	3	PFHpA	318.90	9.649e2	1.743e4		0.285	4.27	2.32	
3	4	PFHxS	79.91	4.014e2	1.364e4		0.285	4.39	2.10	
4	5	PFOA	368.90	3.620e3	1.743e4		0.285	4.67	8.31	
5	6	PFNA	419.00	4.428e2	1.743e4		0.285	5.00	0.942	
6	7	PFOS	79.92	7.646e2	1.364e4		0.285	4.95	4.14	
7	15	13C2-PFHxA	269.90	1.143e4	1.743e4	0.560	0.285	3.79	41.1	117
8	16	13C2-PFDA	470.00	9.911e3	1.743e4	0.580	0.285	5.24	34.4	98.0
9	18	13C2-PFOA	369.90	1.743e4	1.743e4	1.000	0.285	4.67	35.1	100
10	19	13C4-PFOS	79.93	1.364e4	1.364e4	1.000	0.285	5.04	101	100

Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

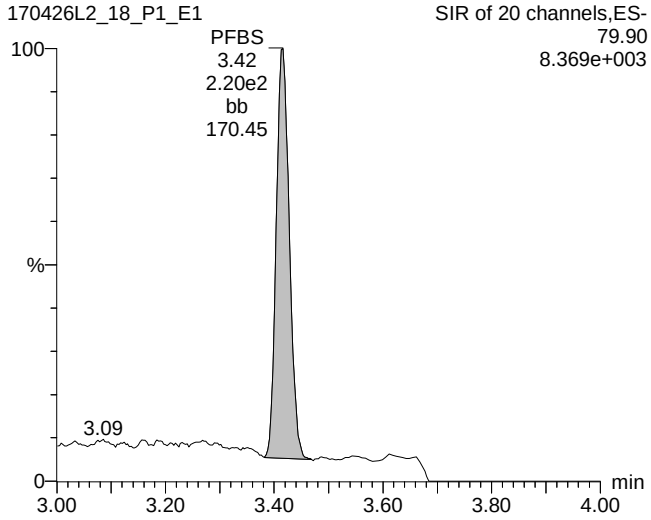
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-18.qld

Last Altered: Thursday, April 27, 2017 11:15:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:16:04 Pacific Daylight Time

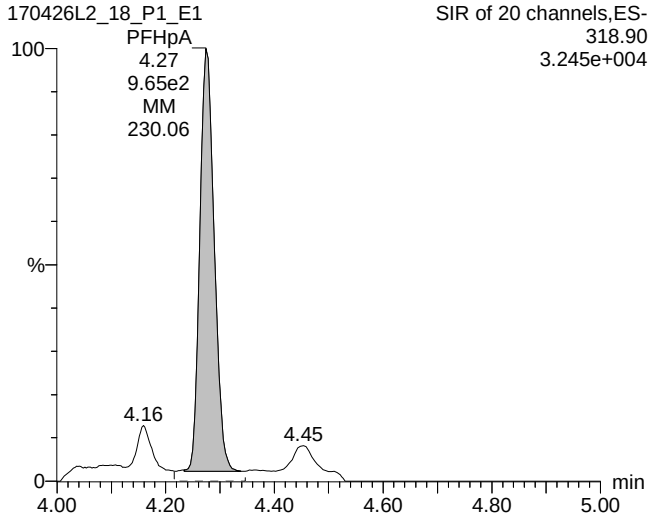
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-01, Description: DUP01-20170418, Name: 170426L2_18.wiff, Date: 27-Apr-2017, Time: 04:31:22, Instrument: , Lab: ©PE-SCIEX, User: sciex

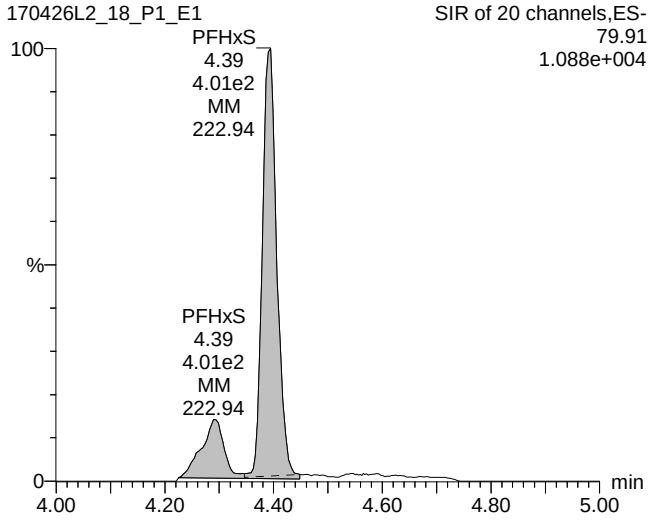
PFBS



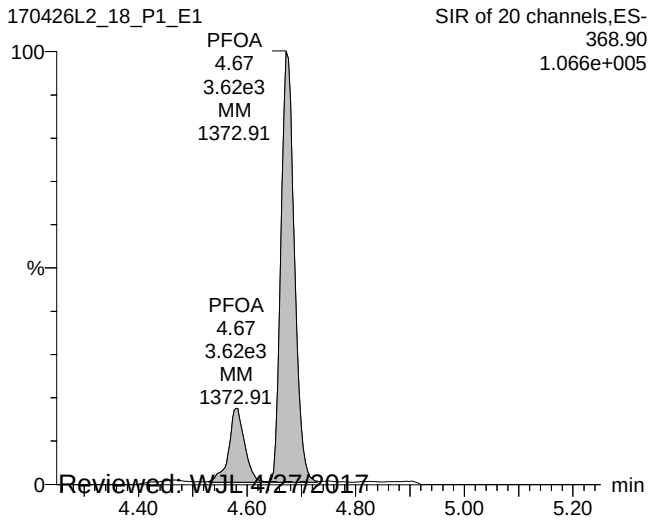
PFHpA



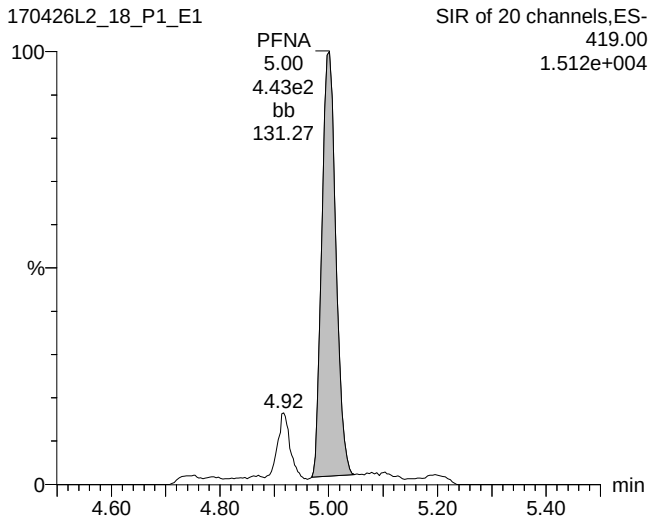
PFHxS



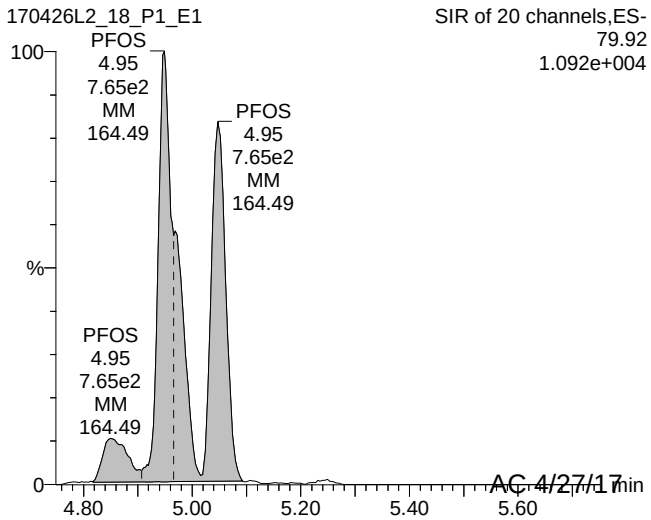
PFOA



PFNA



PFOS



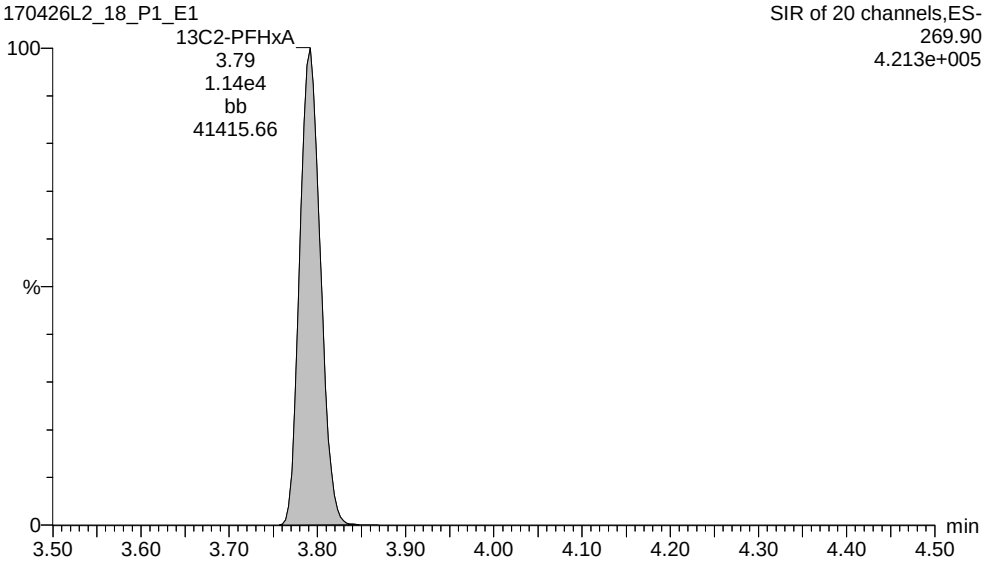
Reviewed: WJL 4/27/2017 AC 4/27/17

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-18.qld

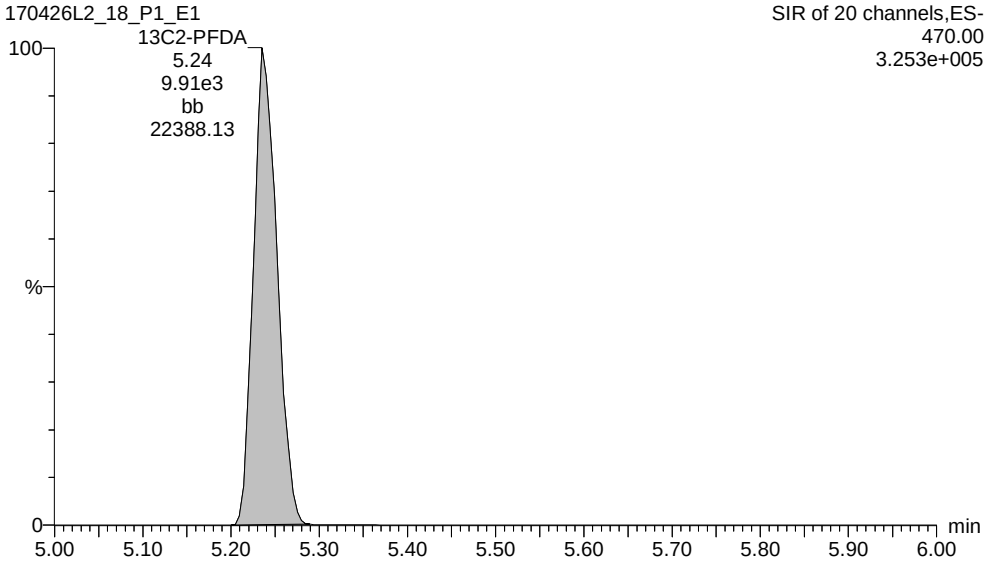
Last Altered: Thursday, April 27, 2017 11:15:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:16:04 Pacific Daylight Time

ID: 1700503-01, Description: DUP01-20170418, Name: 170426L2_18.wiff, Date: 27-Apr-2017, Time: 04:31:22, Instrument: , Lab: ©PE-SCIEX, User: sciex

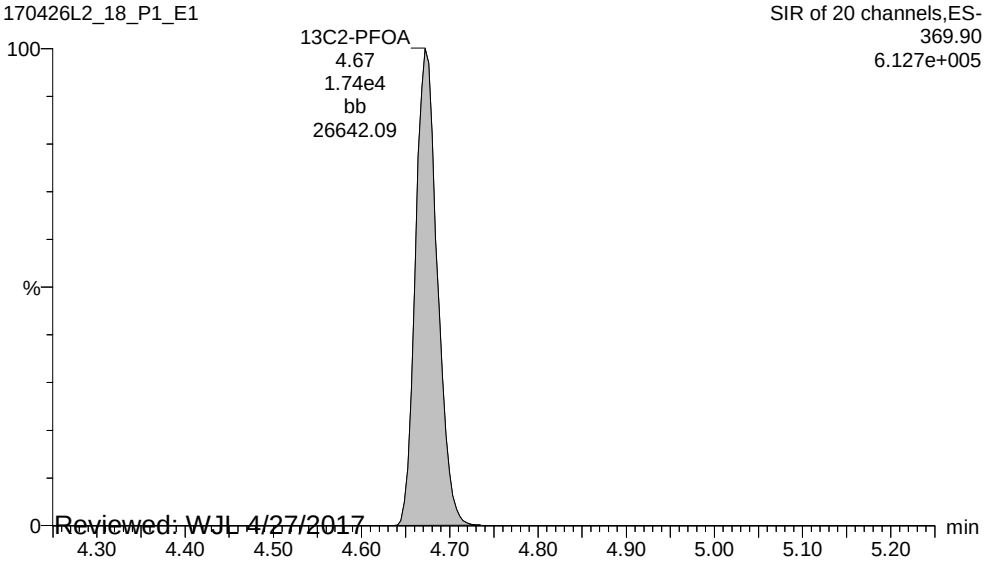
13C2-PFHxA



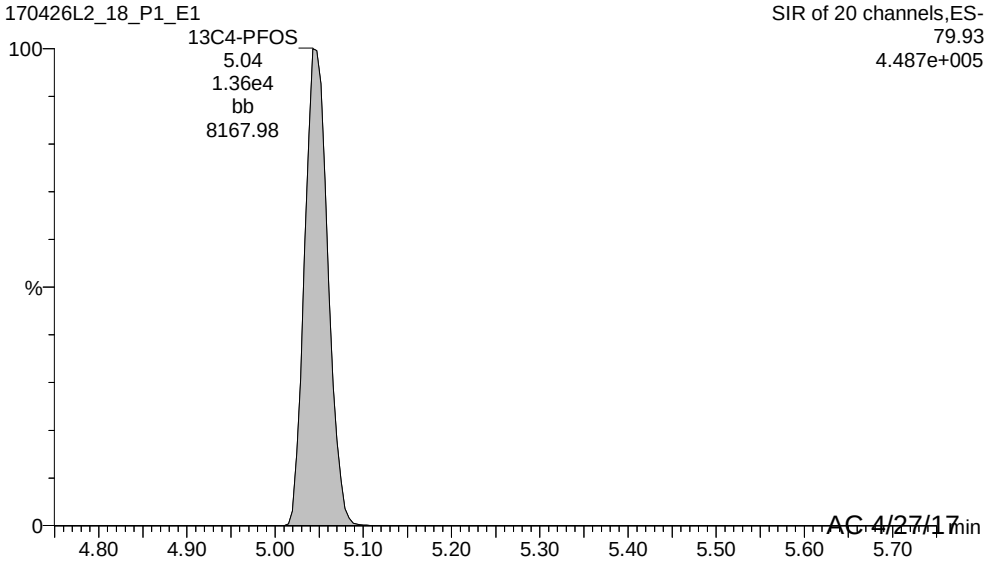
13C2-PFDA



13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-19.qld

Last Altered: Thursday, April 27, 2017 11:18:21 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:18:37 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-02, Description: RW15-20170420, Name: 170426L2_19.wiff, Date: 27-Apr-2017, Time: 04:43:37

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	2.272e2	1.370e4		0.265	3.42	1.07	
2	3	PFHpA	318.90	1.001e3	1.624e4		0.265	4.28	2.78	
3	4	PFHxS	79.91	6.525e2	1.370e4		0.265	4.39	3.66	
4	5	PFOA	368.90	4.221e3	1.624e4		0.265	4.68	11.2	
5	6	PFNA	419.00	3.611e2	1.624e4		0.265	5.01	0.887	
6	7	PFOS	79.92	8.394e2	1.370e4		0.265	4.95	4.87	
7	15	13C2-PFHxA	269.90	1.076e4	1.624e4	0.560	0.265	3.79	44.6	118
8	16	13C2-PFDA	470.00	1.213e4	1.624e4	0.580	0.265	5.26	48.6	129
9	18	13C2-PFOA	369.90	1.624e4	1.624e4	1.000	0.265	4.68	37.8	100
10	19	13C4-PFOS	79.93	1.370e4	1.370e4	1.000	0.265	5.06	108	100

Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

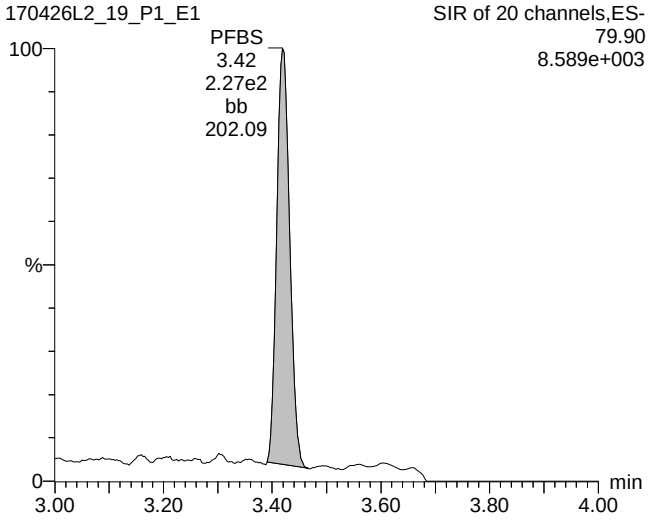
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-19.qld

Last Altered: Thursday, April 27, 2017 11:18:21 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:18:37 Pacific Daylight Time

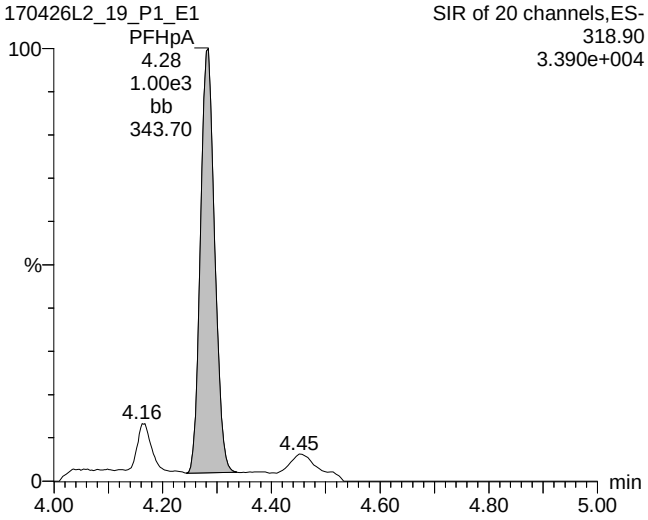
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-02, Description: RW15-20170420, Name: 170426L2_19.wiff, Date: 27-Apr-2017, Time: 04:43:37, Instrument: , Lab: ©PE-SCIEX, User: sciex

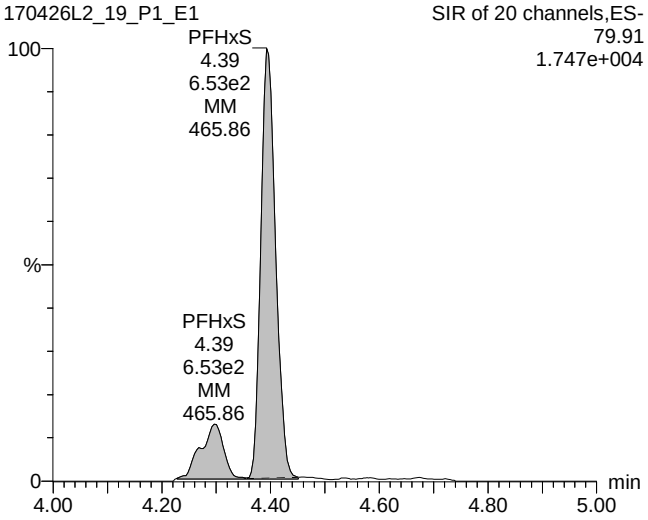
PFBS



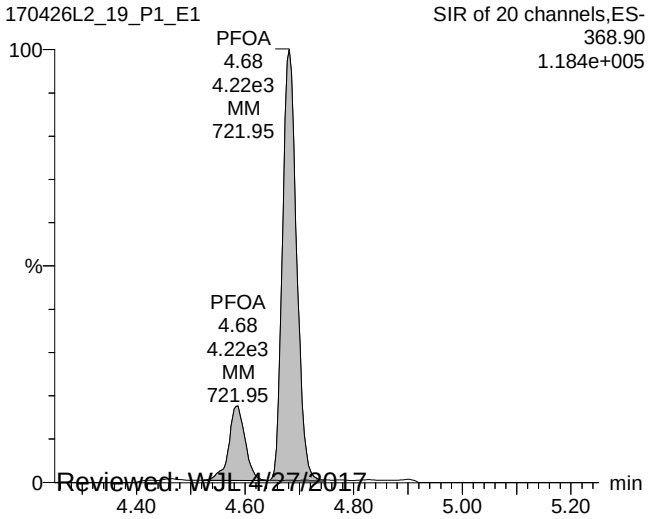
PFHpA



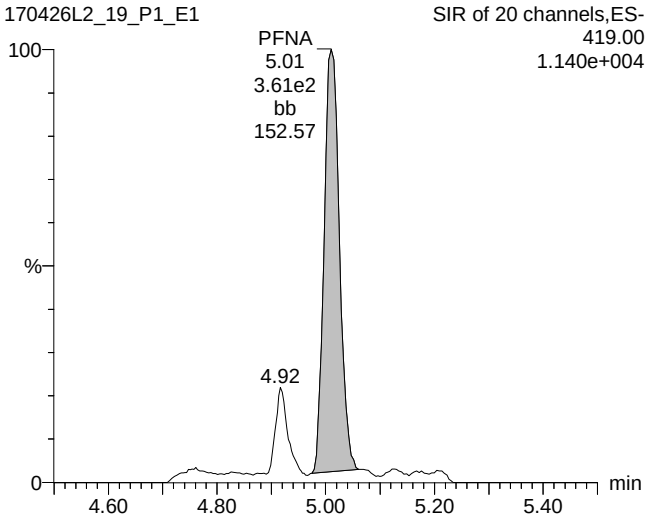
PFHxS



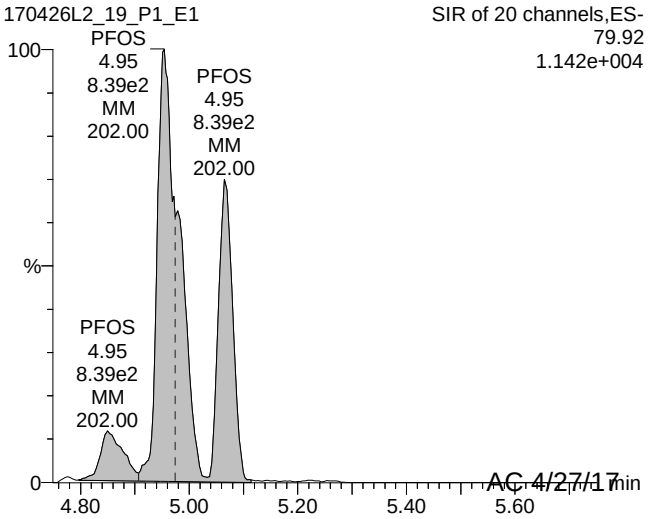
PFOA



PFNA



PFOS



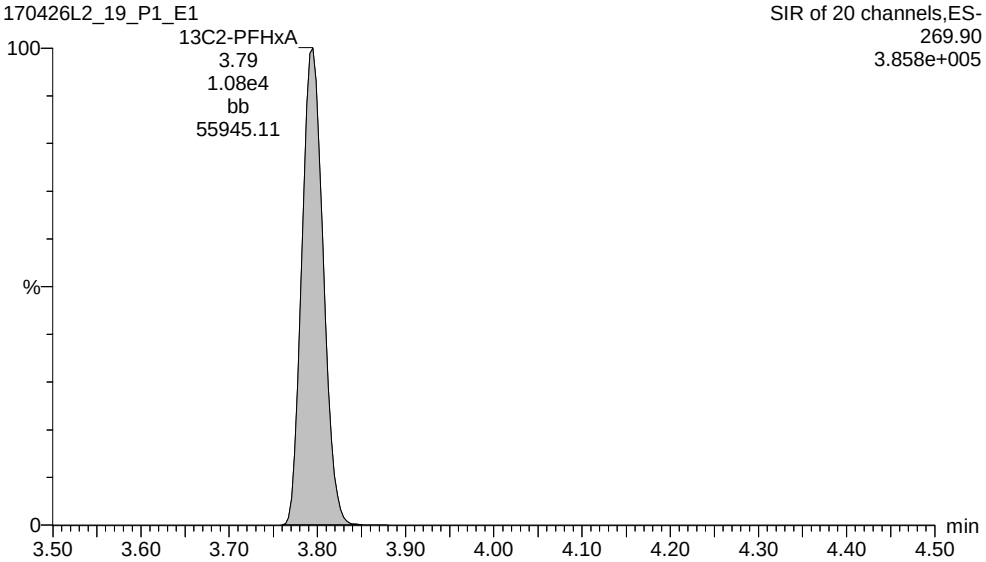
Reviewed: WJL 4/27/2017 AC 4/27/17

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-19.qld

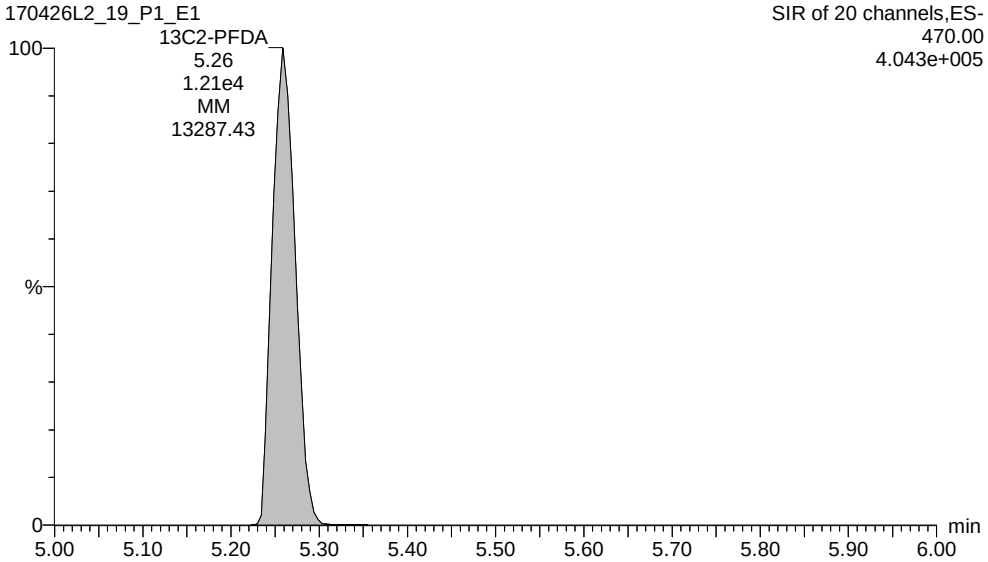
Last Altered: Thursday, April 27, 2017 11:18:21 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:18:37 Pacific Daylight Time

ID: 1700503-02, Description: RW15-20170420, Name: 170426L2_19.wiff, Date: 27-Apr-2017, Time: 04:43:37, Instrument: , Lab: ©PE-SCIEX, User: sciex

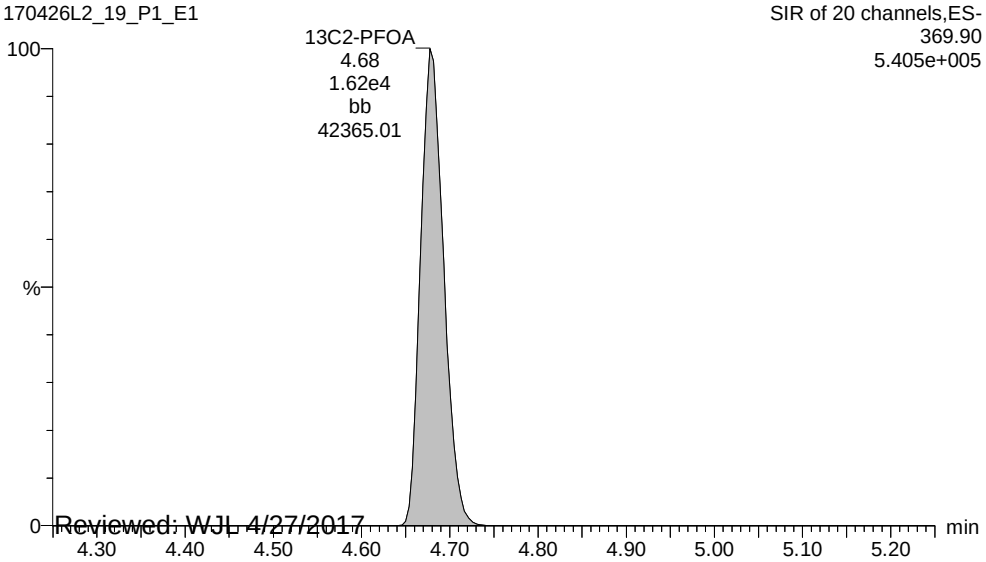
13C2-PFHxA



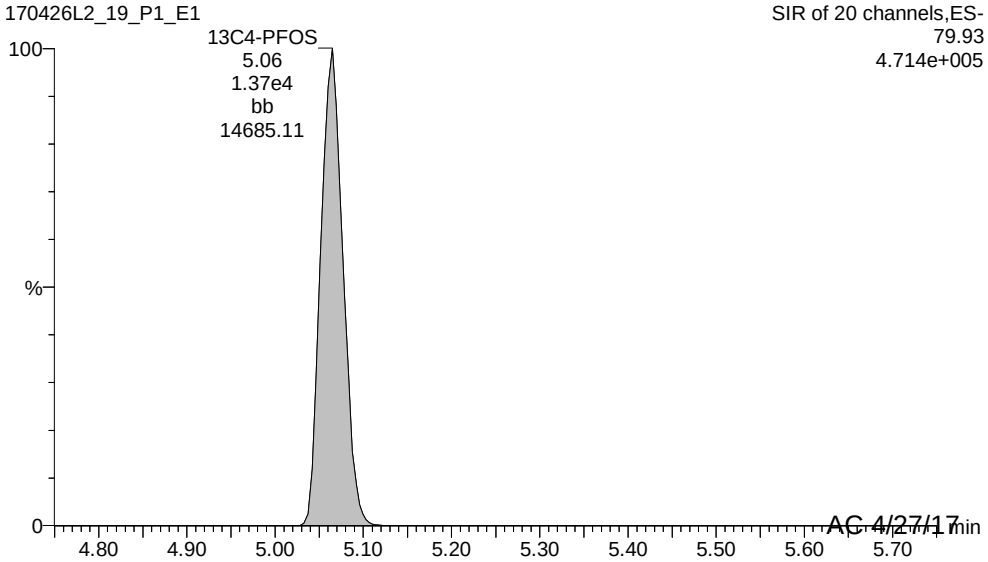
13C2-PFDA



13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-20.qld

Last Altered: Thursday, April 27, 2017 11:21:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:21:20 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-03, Description: FRB-15-20170420, Name: 170426L2_20.wiff, Date: 27-Apr-2017, Time: 04:55:52

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	5.003e0	1.288e4		0.276	3.42	0.0241	
2	3	PFHpA	318.90	2.213e1	1.914e4		0.276	4.26	0.0499	
3	4	PFHxS	79.91	3.380e0	1.288e4		0.276	4.37	0.0193	
4	5	PFOA	368.90	2.720e1	1.914e4		0.276	4.65	0.0582	
5	6	PFNA	419.00	1.259e1	1.914e4		0.276	4.98	0.0252	
6	7	PFOS	79.92	9.060e0	1.288e4		0.276	5.04	0.0535	
7	15	13C2-PFHxA	269.90	1.202e4	1.914e4	0.560	0.276	3.79	40.6	112
8	16	13C2-PFDA	470.00	1.167e4	1.914e4	0.580	0.276	5.27	38.1	105
9	18	13C2-PFOA	369.90	1.914e4	1.914e4	1.000	0.276	4.65	36.3	100
10	19	13C4-PFOS	79.93	1.288e4	1.288e4	1.000	0.276	5.05	104	100

Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

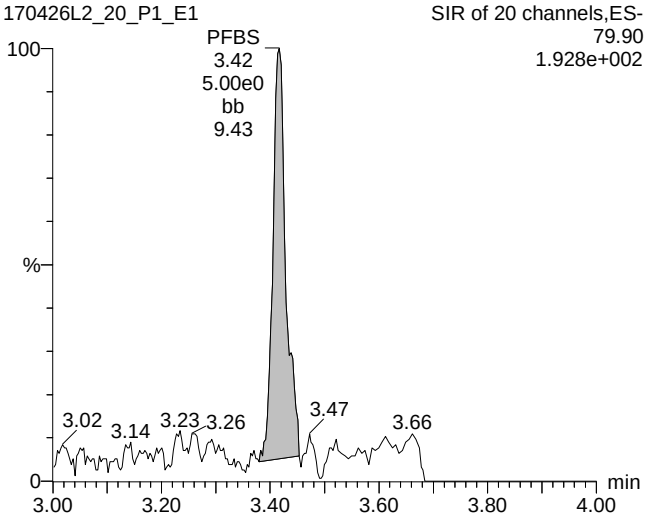
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-20.qld

Last Altered: Thursday, April 27, 2017 11:21:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:21:20 Pacific Daylight Time

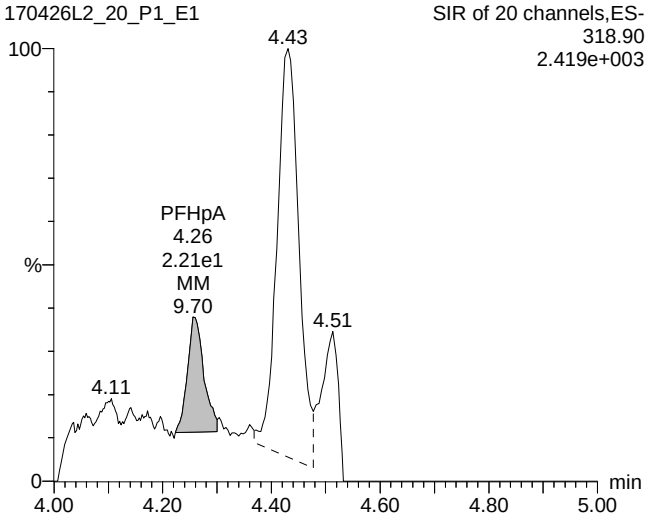
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-03, Description: FRB-15-20170420, Name: 170426L2_20.wiff, Date: 27-Apr-2017, Time: 04:55:52, Instrument: , Lab: ©PE-SCIEX, User: sciex

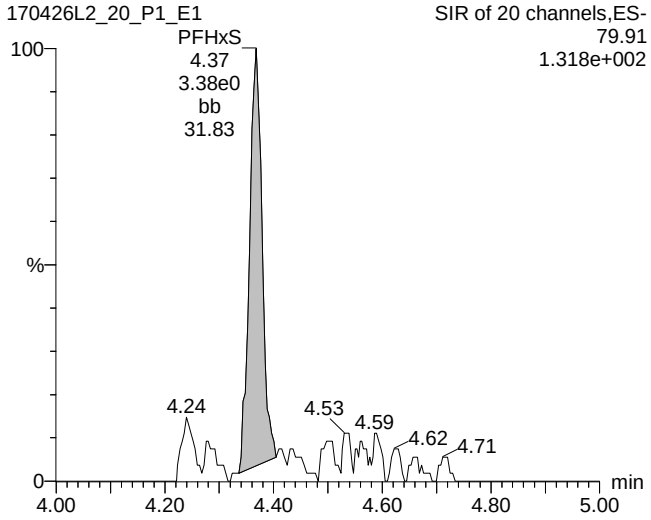
PFBS



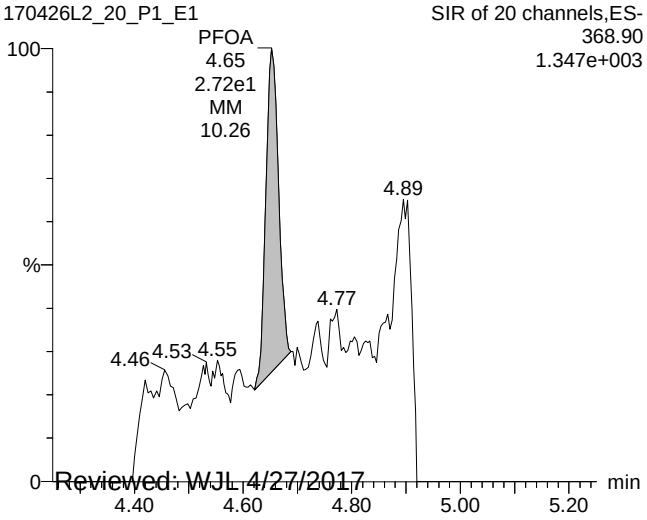
PFHpA



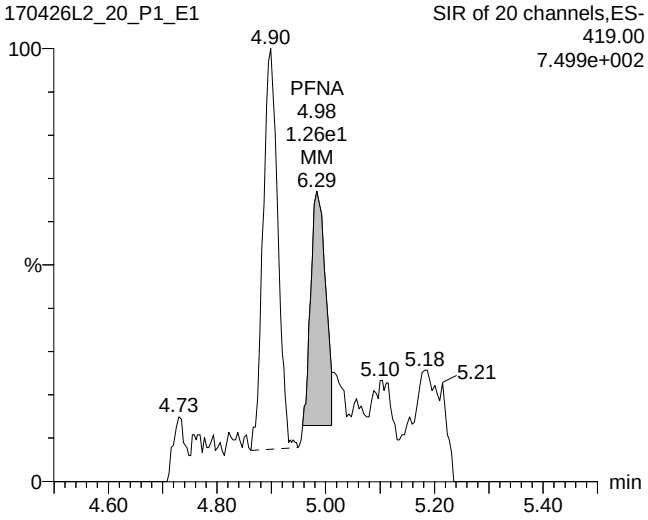
PFHxS



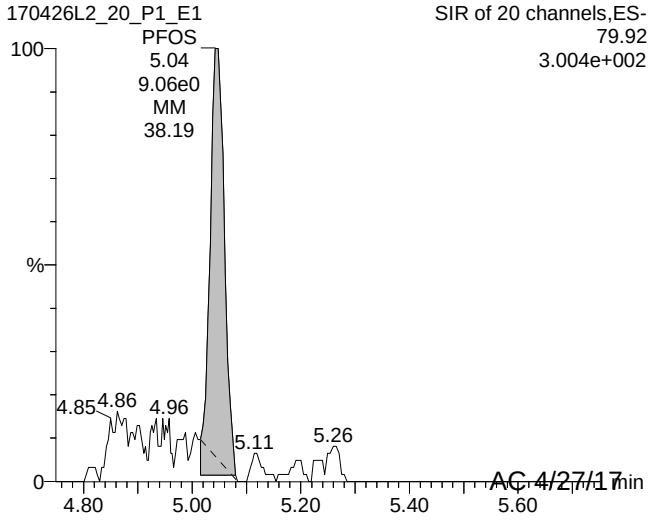
PFOA



PFNA



PFOS



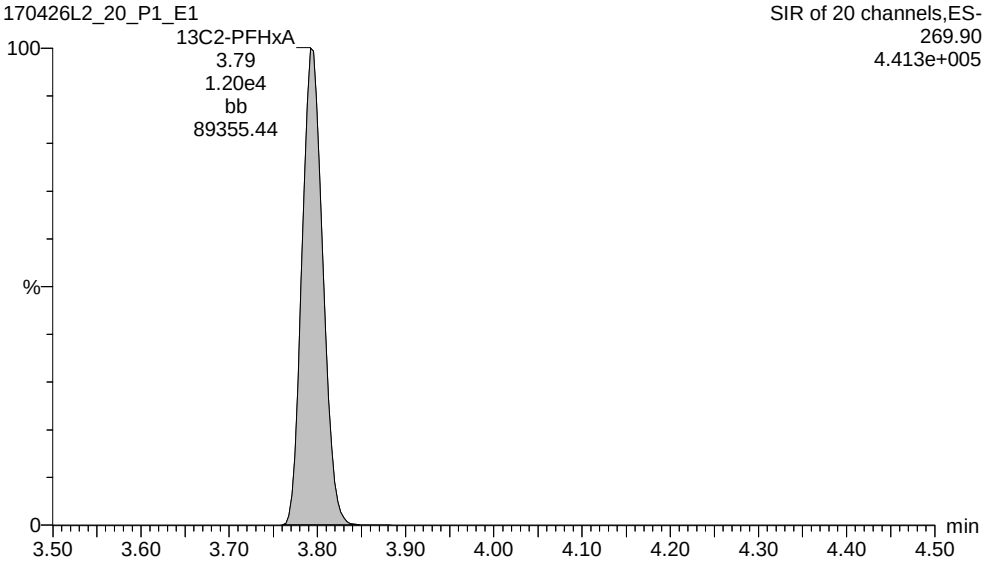
Reviewed: WJL 4/27/2017 AC 4/27/17

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-20.qld

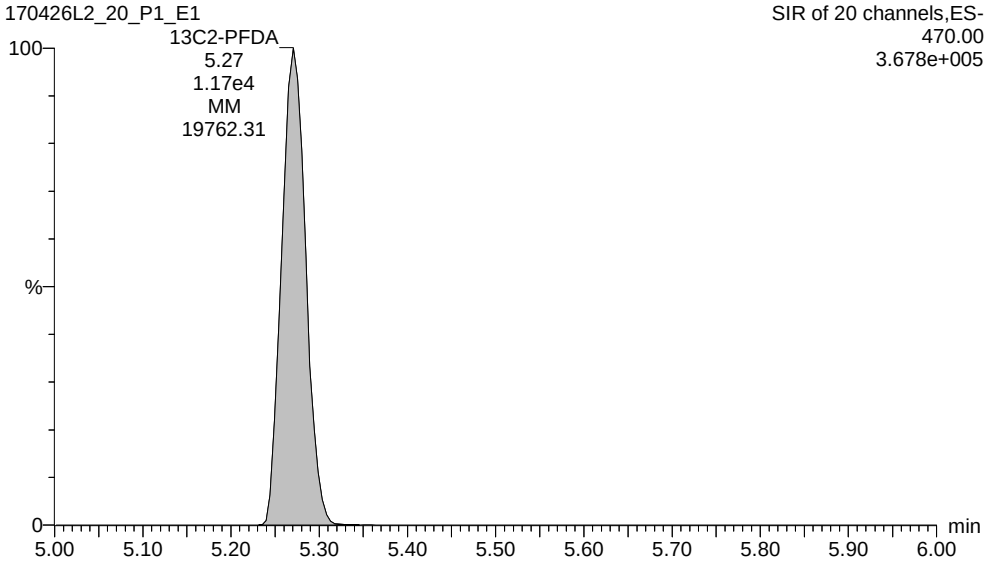
Last Altered: Thursday, April 27, 2017 11:21:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:21:20 Pacific Daylight Time

ID: 1700503-03, Description: FRB-15-20170420, Name: 170426L2_20.wiff, Date: 27-Apr-2017, Time: 04:55:52, Instrument: , Lab: ©PE-SCIEX, User: sciex

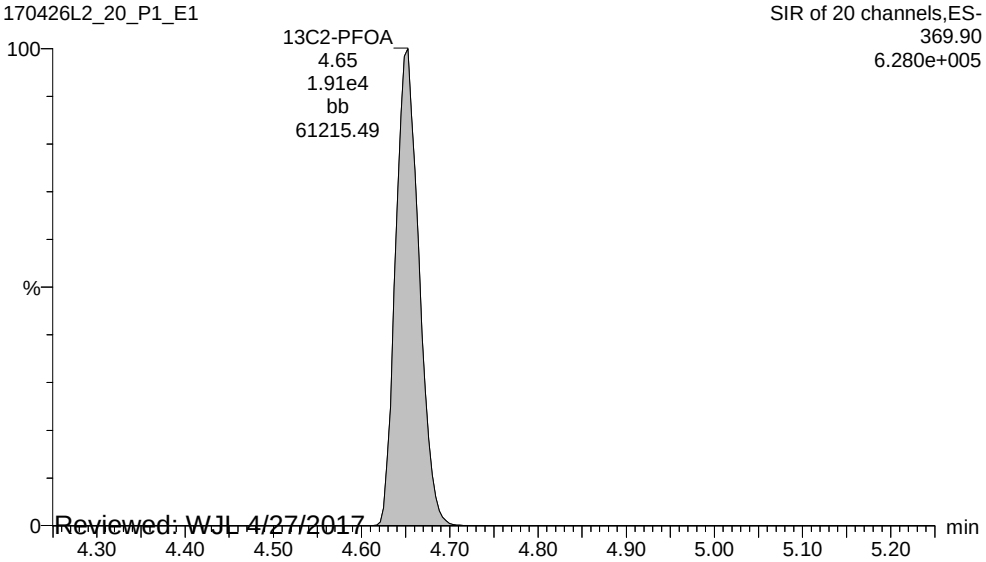
13C2-PFHxA



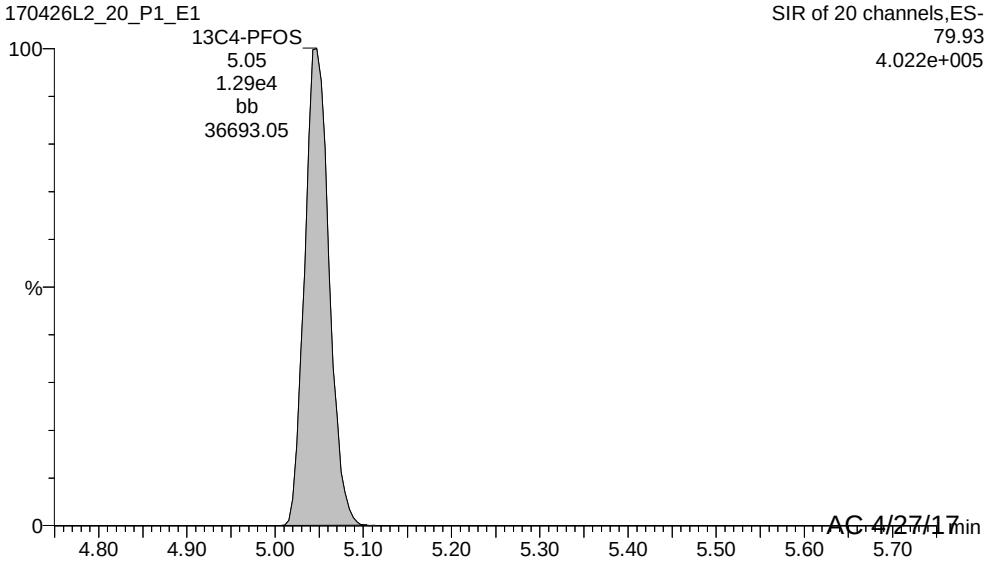
13C2-PFDA



13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-21.qld

Last Altered: Thursday, April 27, 2017 11:32:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:55 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-04, Description: RW27-20170420, Name: 170426L2_21.wiff, Date: 27-Apr-2017, Time: 05:08:06

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	2.134e2	1.320e4		0.287	3.42	0.964	
2	3	PFHpA	318.90	8.751e2	1.791e4		0.287	4.26	2.03	
3	4	PFHxS	79.91	5.223e2	1.320e4		0.287	4.38	2.80	
4	5	PFOA	368.90	4.080e3	1.791e4		0.287	4.66	9.05	
5	6	PFNA	419.00	3.844e2	1.791e4		0.287	5.00	0.789	
6	7	PFOS	79.92	9.041e2	1.320e4		0.287	4.95	5.01	
7	15	13C2-PFHxA	269.90	1.188e4	1.791e4	0.560	0.287	3.79	41.2	118
8	16	13C2-PFDA	470.00	1.098e4	1.791e4	0.580	0.287	5.28	36.7	106
9	18	13C2-PFOA	369.90	1.791e4	1.791e4	1.000	0.287	4.66	34.8	100
10	19	13C4-PFOS	79.93	1.320e4	1.320e4	1.000	0.287	5.06	99.8	100

Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory Q1

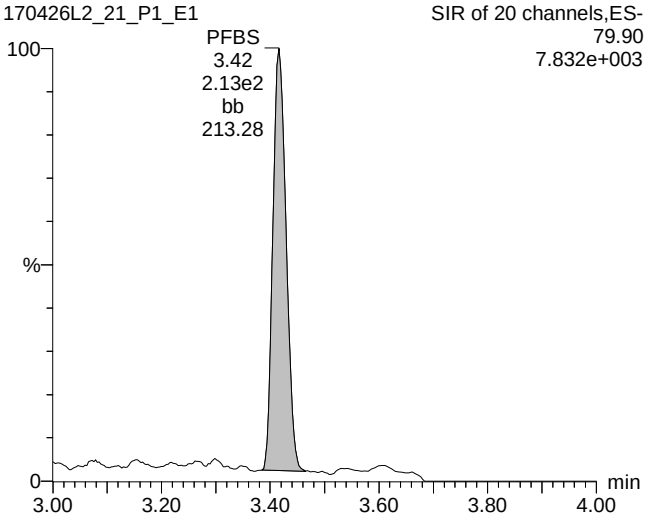
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-21.qld

Last Altered: Thursday, April 27, 2017 11:32:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:55 Pacific Daylight Time

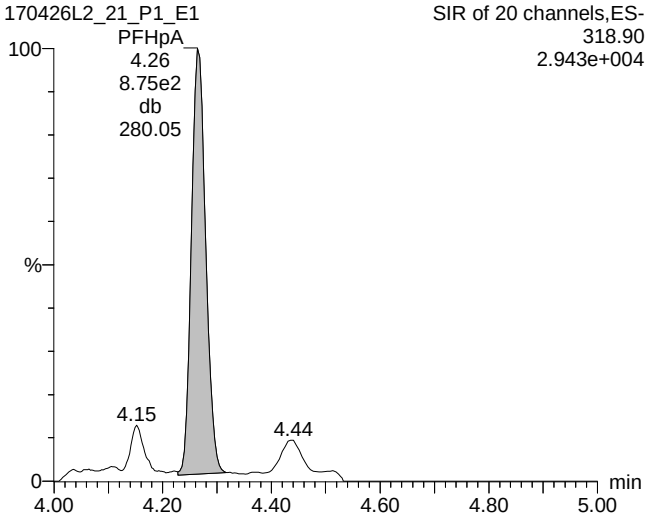
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-04, Description: RW27-20170420, Name: 170426L2_21.wiff, Date: 27-Apr-2017, Time: 05:08:06, Instrument: , Lab: ©PE-SCIEX, User: sciex

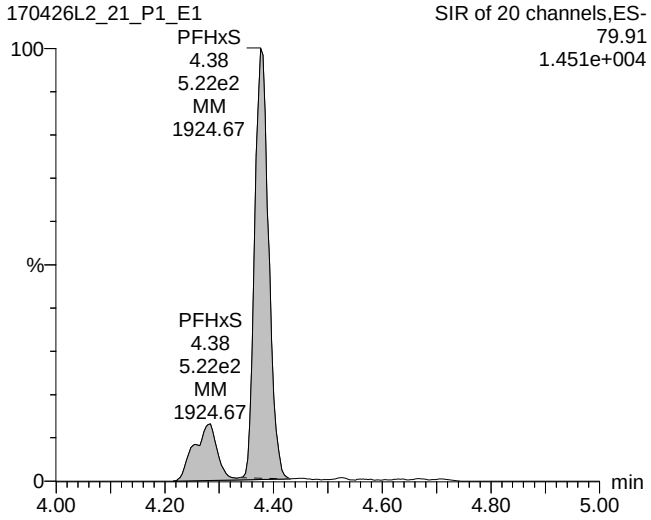
PFBS



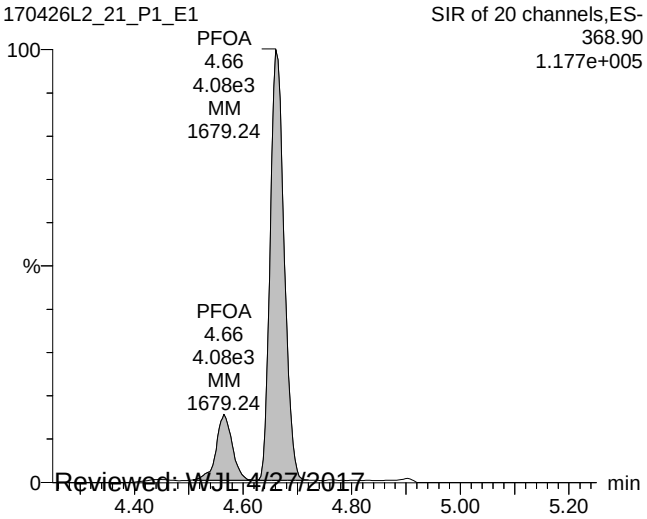
PFHpA



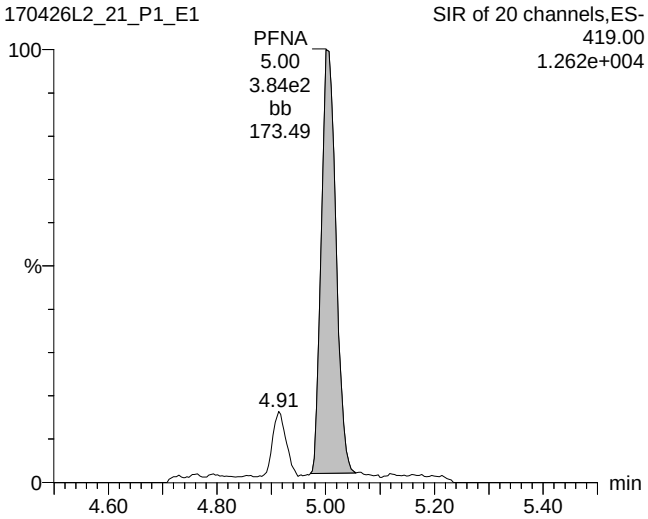
PFHxS



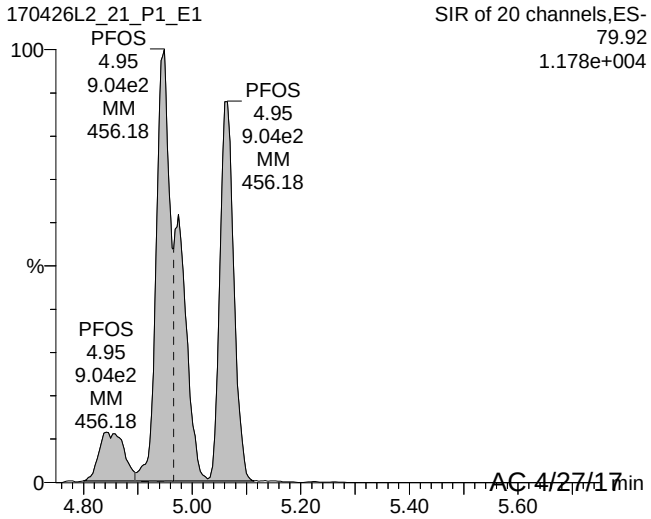
PFOA



PFNA



PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

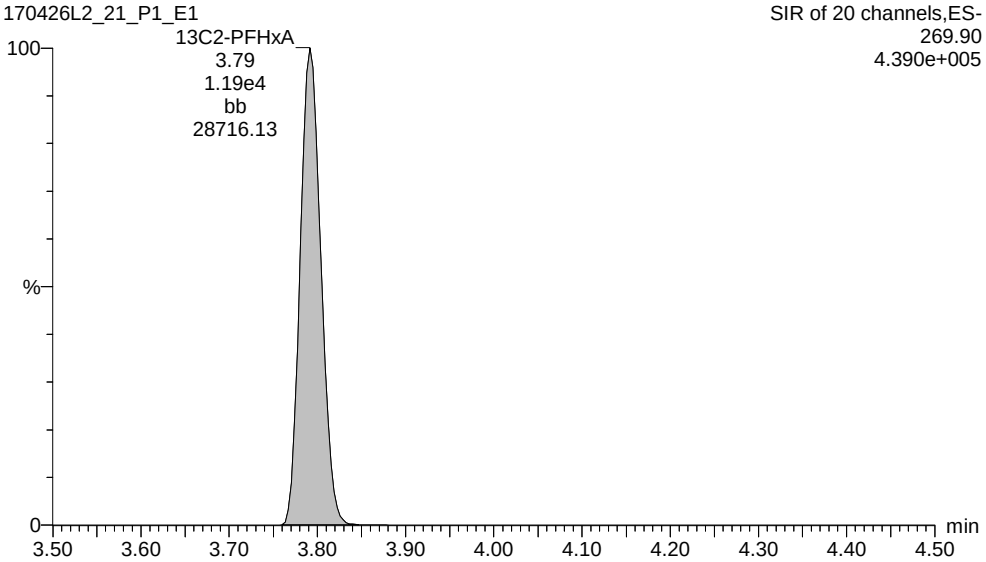
Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-21.qld

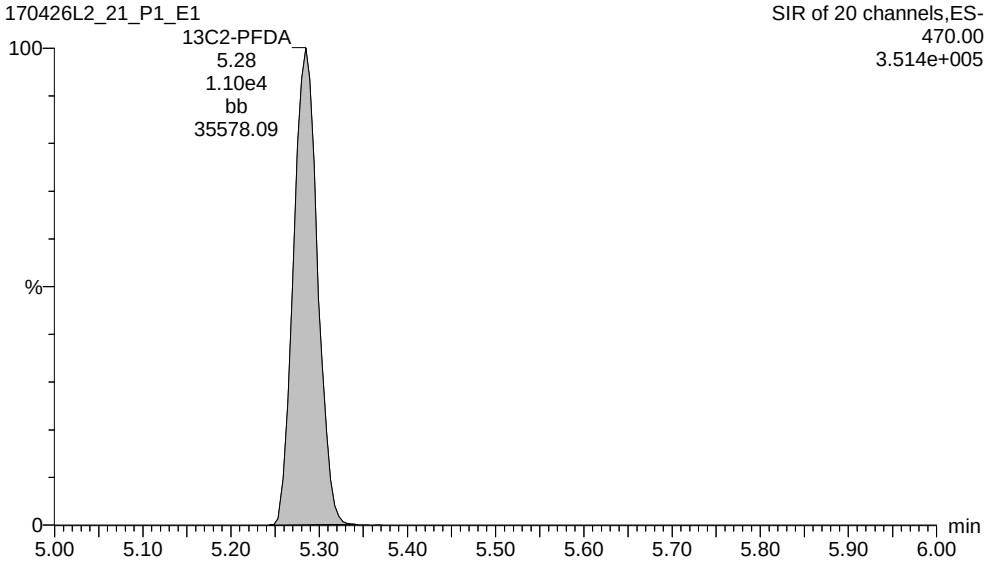
Last Altered: Thursday, April 27, 2017 11:32:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:55 Pacific Daylight Time

ID: 1700503-04, Description: RW27-20170420, Name: 170426L2_21.wiff, Date: 27-Apr-2017, Time: 05:08:06, Instrument: , Lab: ©PE-SCIEX, User: sciex

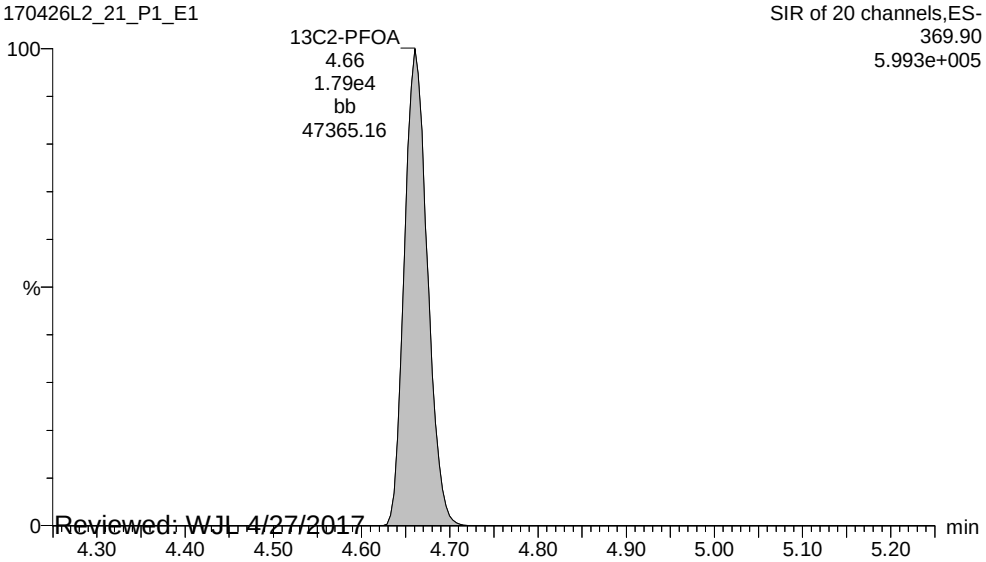
13C2-PFHxA



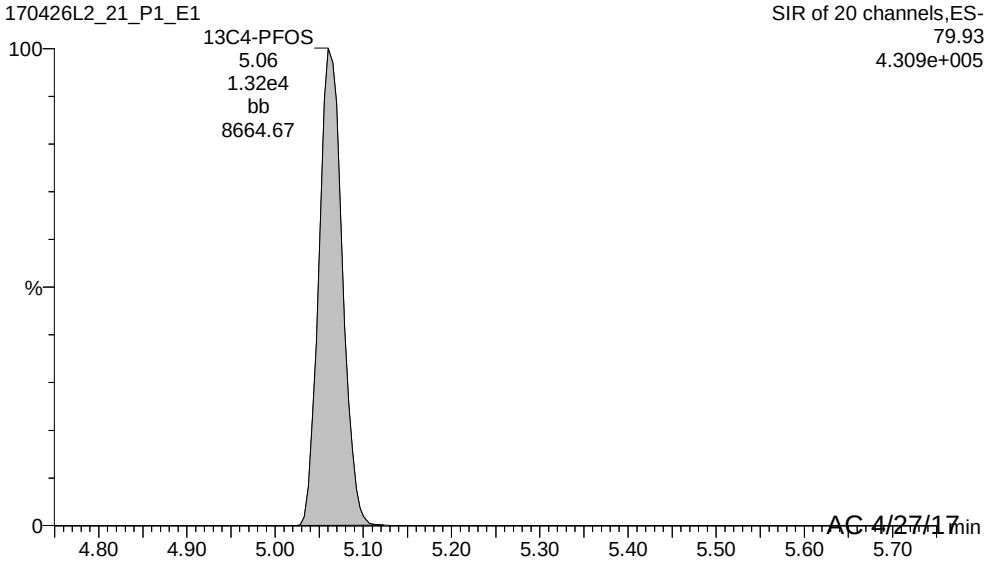
13C2-PFDA



13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AC 4/27/17

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-22.qld

Last Altered: Thursday, April 27, 2017 11:32:42 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:50 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-05, Description: FRB-27-20170420, Name: 170426L2_22.wiff, Date: 27-Apr-2017, Time: 05:20:21

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	4.003e0	1.223e4		0.284	3.42	0.0197	
2	3	PFHpA	318.90	2.165e1	1.631e4		0.284	4.28	0.0556	
3	4	PFHxS	79.91	3.622e0	1.223e4		0.284	4.39	0.0212	
4	5	PFOA	368.90	2.938e1	1.631e4		0.284	4.66	0.0716	
5	6	PFNA	419.00	1.548e1	1.631e4		0.284	4.99	0.0353	
6	7	PFOS	79.92	5.065e0	1.223e4		0.284	5.06	0.0306	
7	15	13C2-PFHxA	269.90	1.161e4	1.631e4	0.560	0.284	3.80	44.7	127
8	16	13C2-PFDA	470.00	1.365e4	1.631e4	0.580	0.284	5.25	50.8	144
9	18	13C2-PFOA	369.90	1.631e4	1.631e4	1.000	0.284	4.66	35.2	100
10	19	13C4-PFOS	79.93	1.223e4	1.223e4	1.000	0.284	5.06	101	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

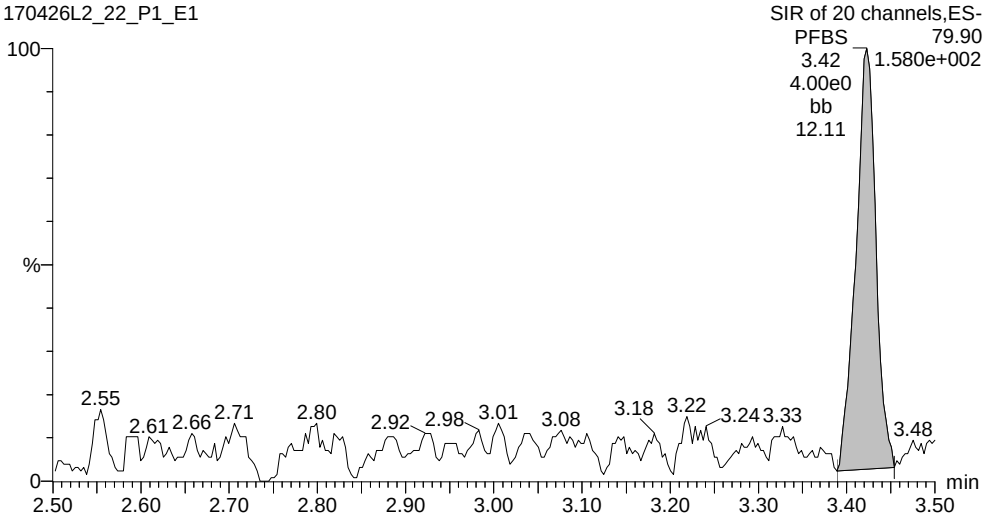
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-22.qld

Last Altered: Thursday, April 27, 2017 11:32:42 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:50 Pacific Daylight Time

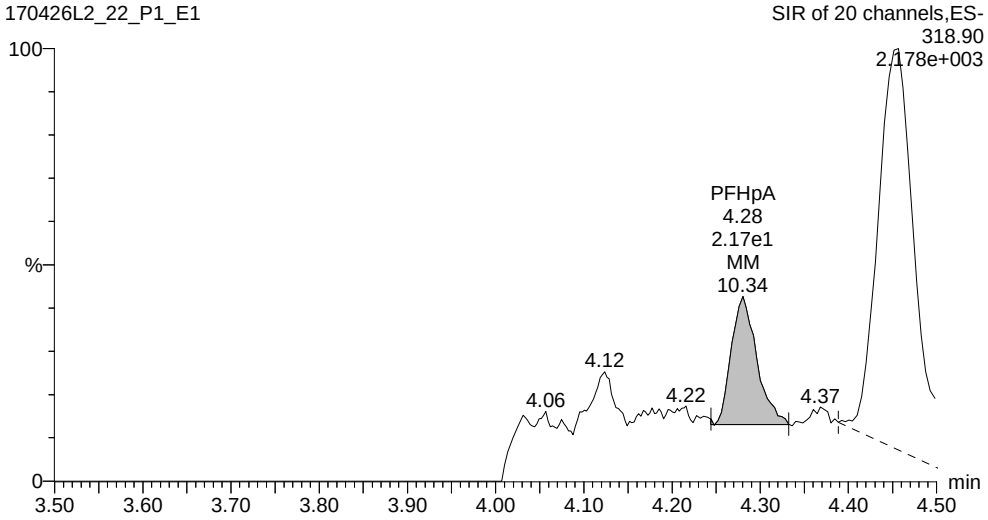
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-05, Description: FRB-27-20170420, Name: 170426L2_22.wiff, Date: 27-Apr-2017, Time: 05:20:21, Instrument: , Lab: ©PE-SCIEX, User: sciex

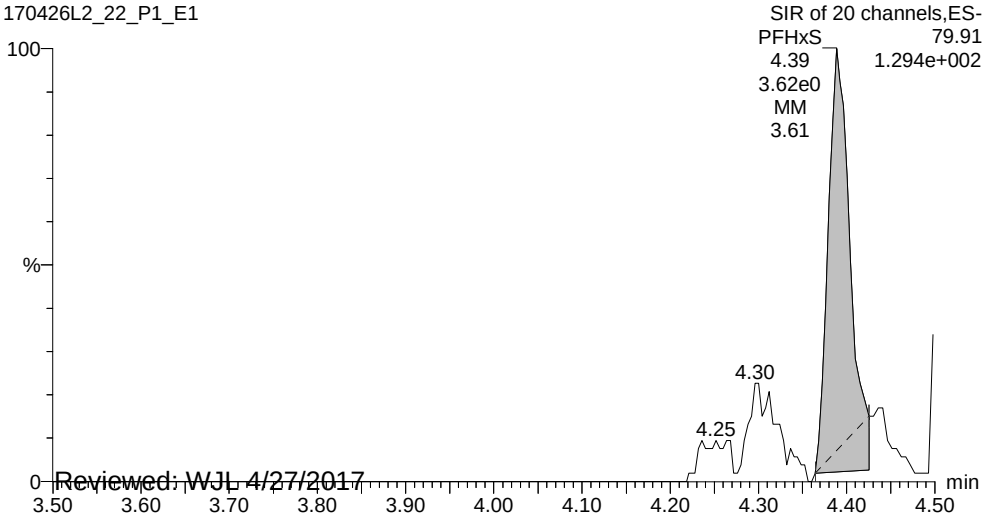
PFBS



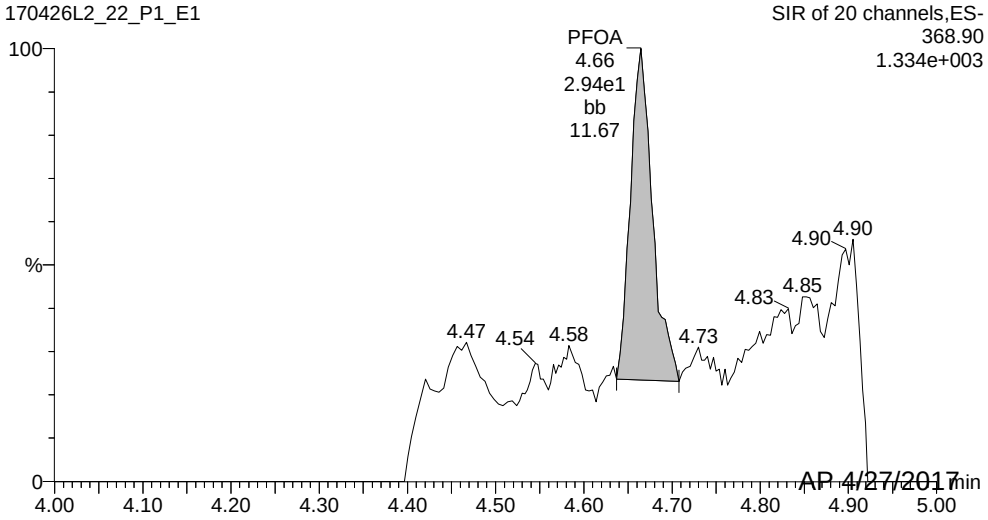
PFHpA



PFHxS



PFOA



Reviewed: WJL 4/27/2017 AP 4/27/2017

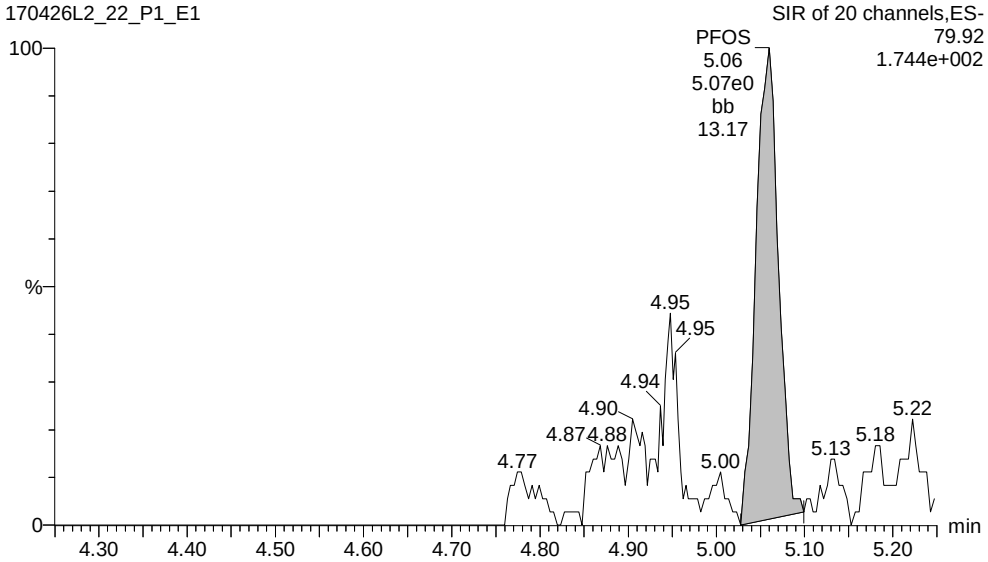
Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-22.qld

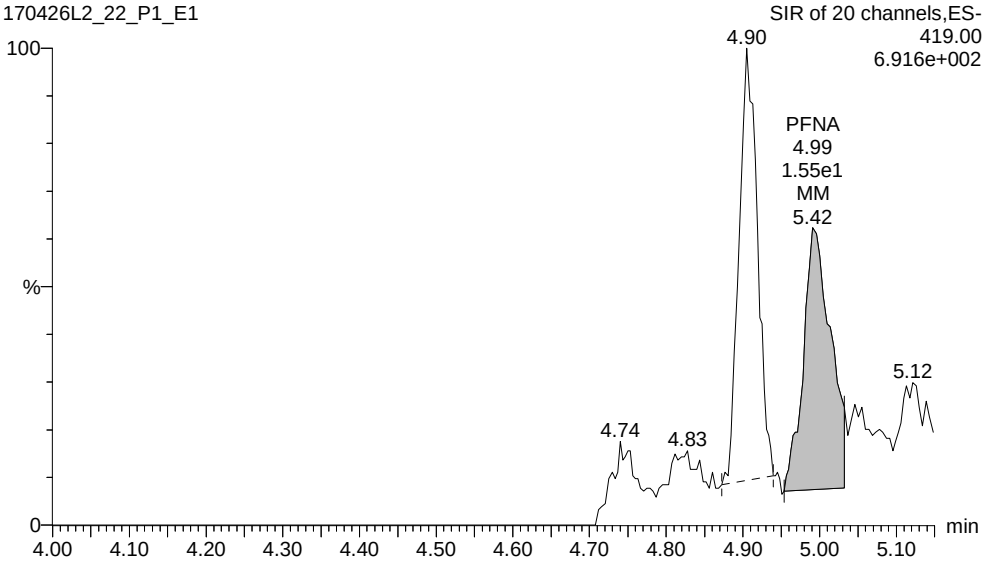
Last Altered: Thursday, April 27, 2017 11:32:42 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:50 Pacific Daylight Time

ID: 1700503-05, Description: FRB-27-20170420, Name: 170426L2_22.wiff, Date: 27-Apr-2017, Time: 05:20:21, Instrument: , Lab: ©PE-SCIEX, User: sciex

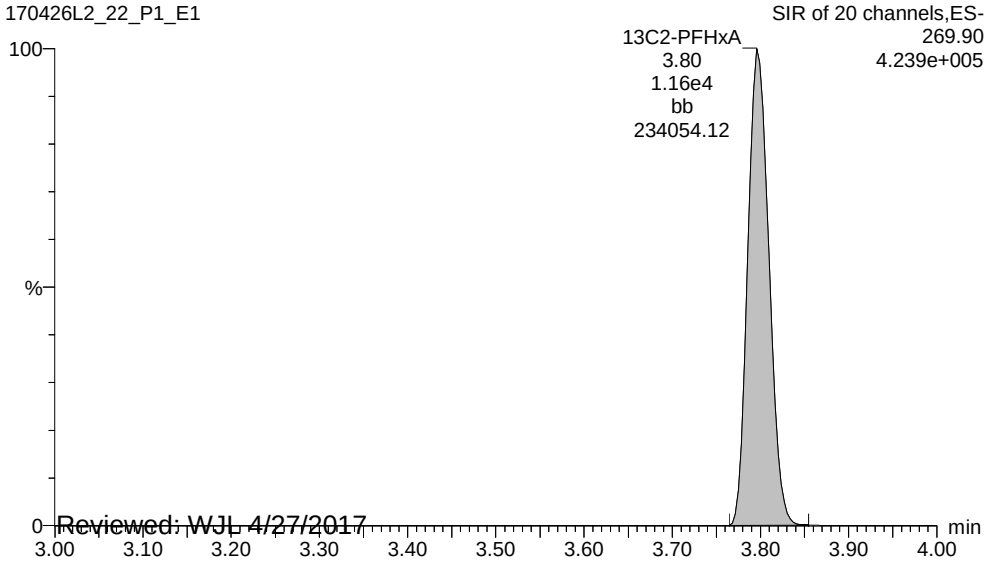
PFOS



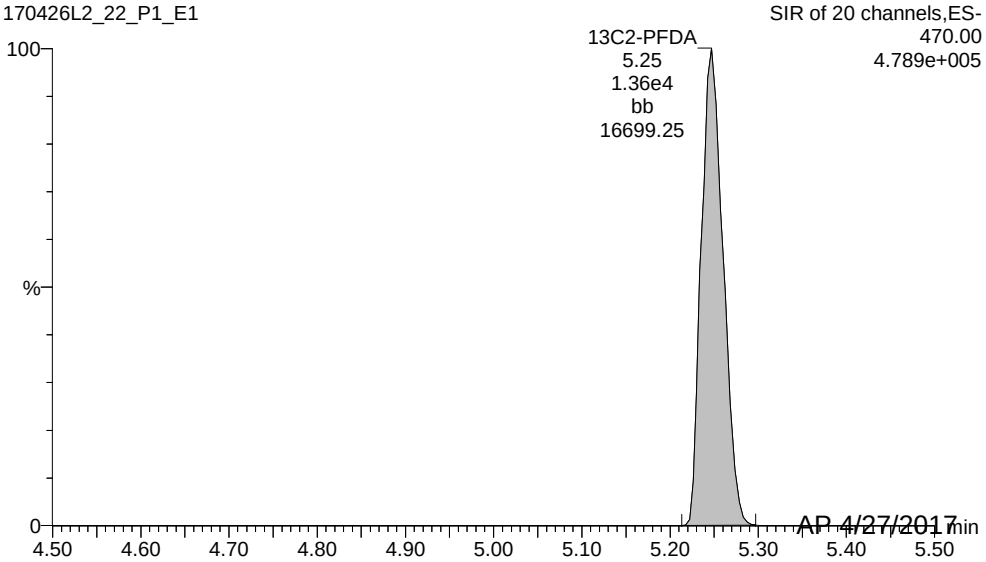
PFNA



13C2-PFHxA



13C2-PFDA



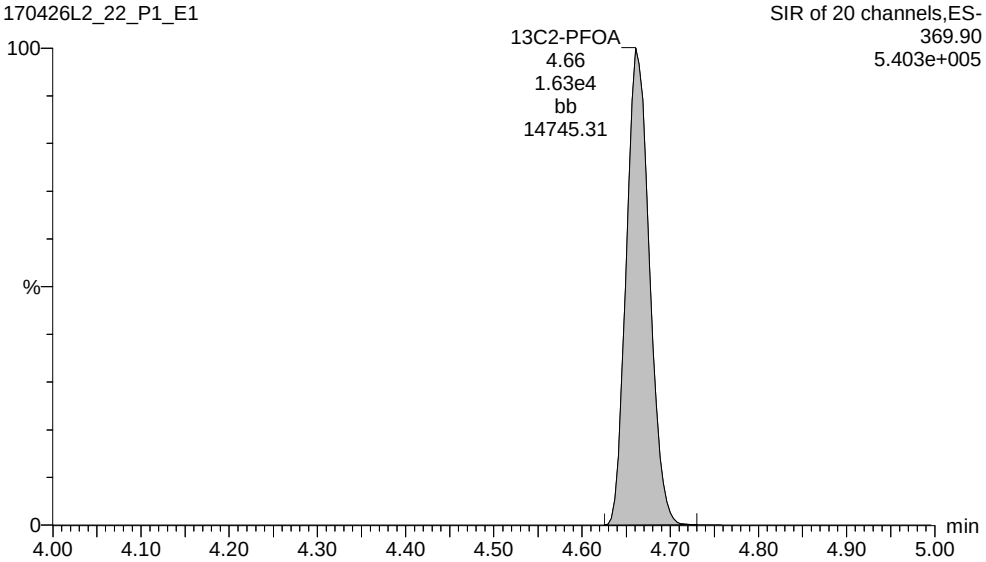
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-22.qld

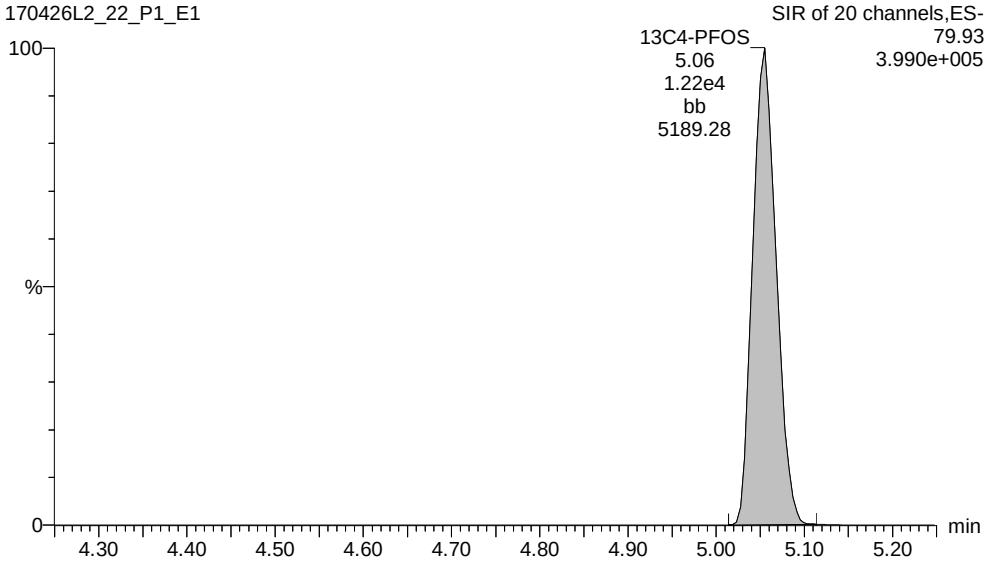
Last Altered: Thursday, April 27, 2017 11:32:42 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:32:50 Pacific Daylight Time

ID: 1700503-05, Description: FRB-27-20170420, Name: 170426L2_22.wiff, Date: 27-Apr-2017, Time: 05:20:21, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-23.qld

Last Altered: Thursday, April 27, 2017 11:26:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:26:26 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-06, Description: RW17-20170420, Name: 170426L2_23.wiff, Date: 27-Apr-2017, Time: 05:32:36

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	2.012e2	1.426e4		0.286	3.42	0.844	
2	3	PFHpA	318.90	9.145e2	1.911e4		0.286	4.27	1.99	
3	4	PFHxS	79.91	3.233e2	1.426e4		0.286	4.38	1.61	
4	5	PFOA	368.90	4.395e3	1.911e4		0.286	4.66	9.17	
5	6	PFNA	419.00	4.035e2	1.911e4		0.286	4.99	0.778	
6	7	PFOS	79.92	8.512e2	1.426e4		0.286	4.93	4.38	
7	15	13C2-PFHxA	269.90	1.253e4	1.911e4	0.560	0.286	3.79	40.8	117
8	16	13C2-PFDA	470.00	1.305e4	1.911e4	0.580	0.286	5.26	41.1	118
9	18	13C2-PFOA	369.90	1.911e4	1.911e4	1.000	0.286	4.66	34.9	100
10	19	13C4-PFOS	79.93	1.426e4	1.426e4	1.000	0.286	5.05	100	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

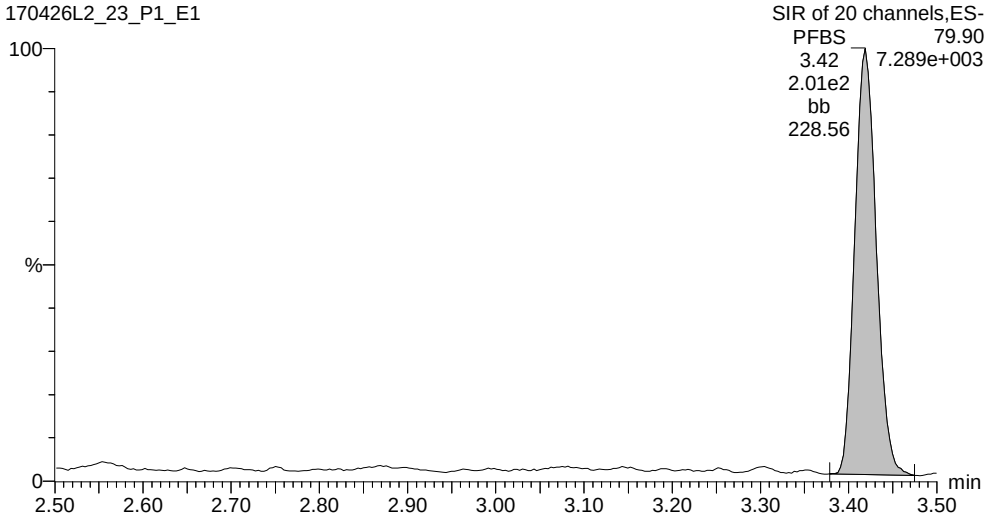
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-23.qld

Last Altered: Thursday, April 27, 2017 11:26:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:26:26 Pacific Daylight Time

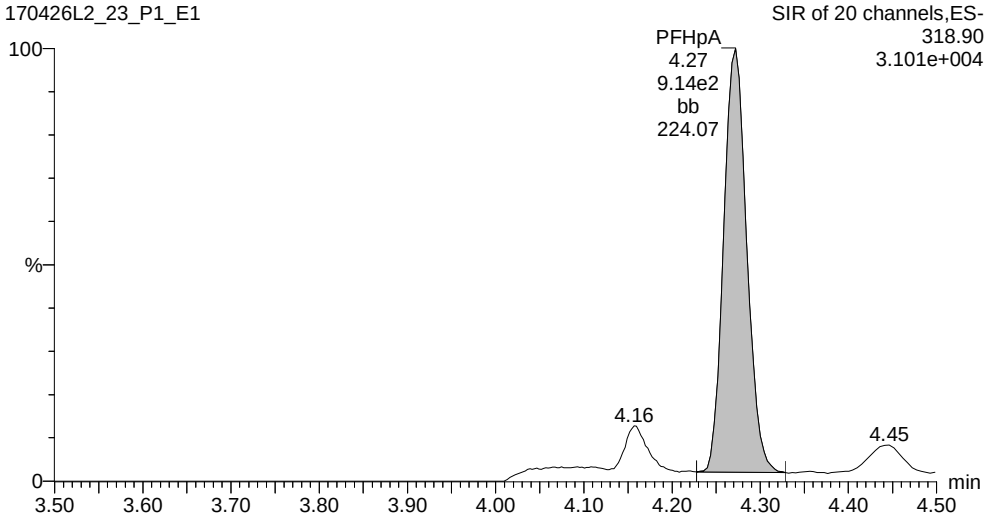
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-06, Description: RW17-20170420, Name: 170426L2_23.wiff, Date: 27-Apr-2017, Time: 05:32:36, Instrument: , Lab: ©PE-SCIEX, User: sciex

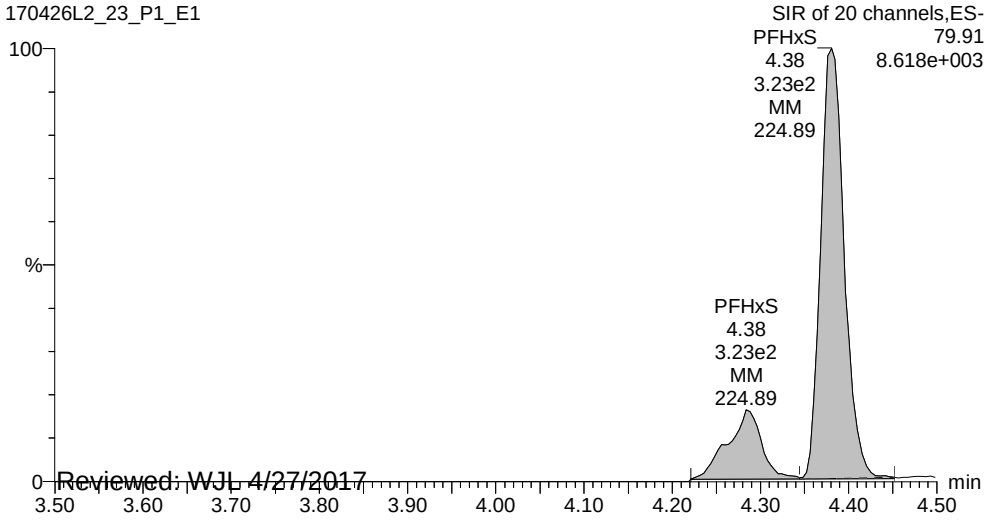
PFBS



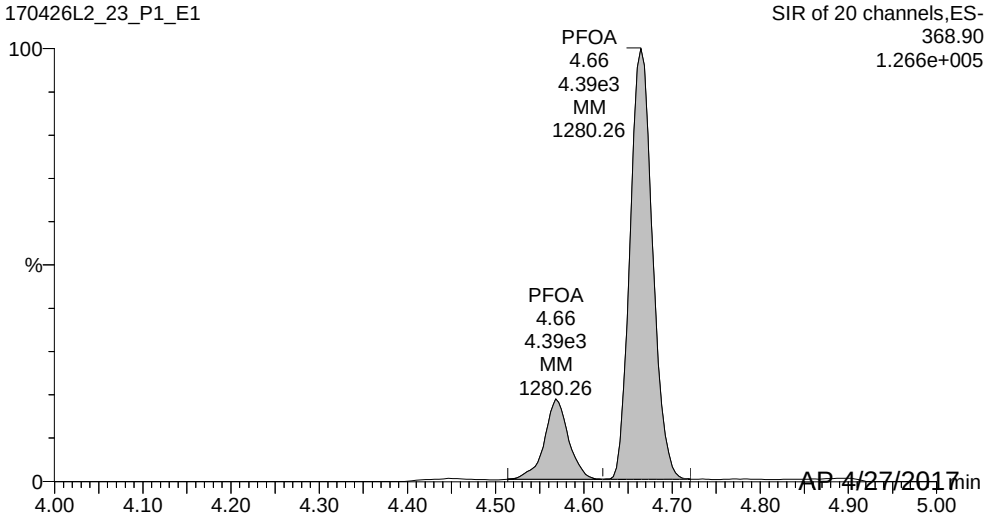
PFHpA



PFHxS



PFOA



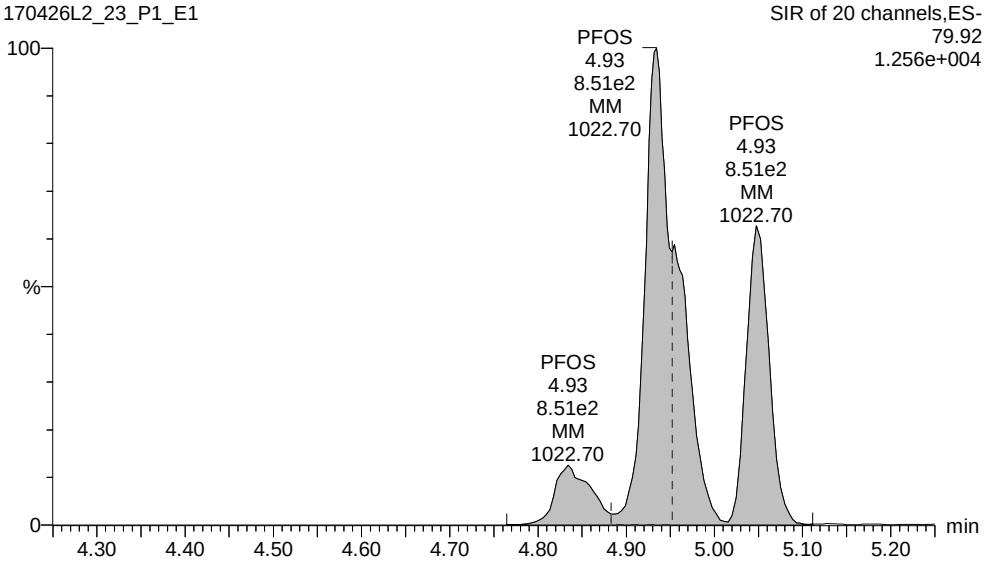
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-23.qld

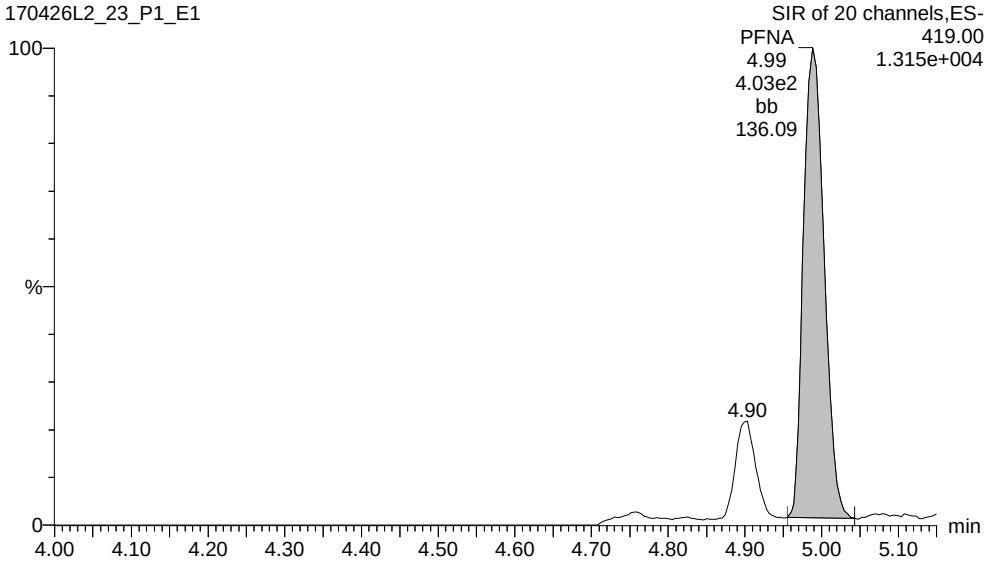
Last Altered: Thursday, April 27, 2017 11:26:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:26:26 Pacific Daylight Time

ID: 1700503-06, Description: RW17-20170420, Name: 170426L2_23.wiff, Date: 27-Apr-2017, Time: 05:32:36, Instrument: , Lab: ©PE-SCIEX, User: sciex

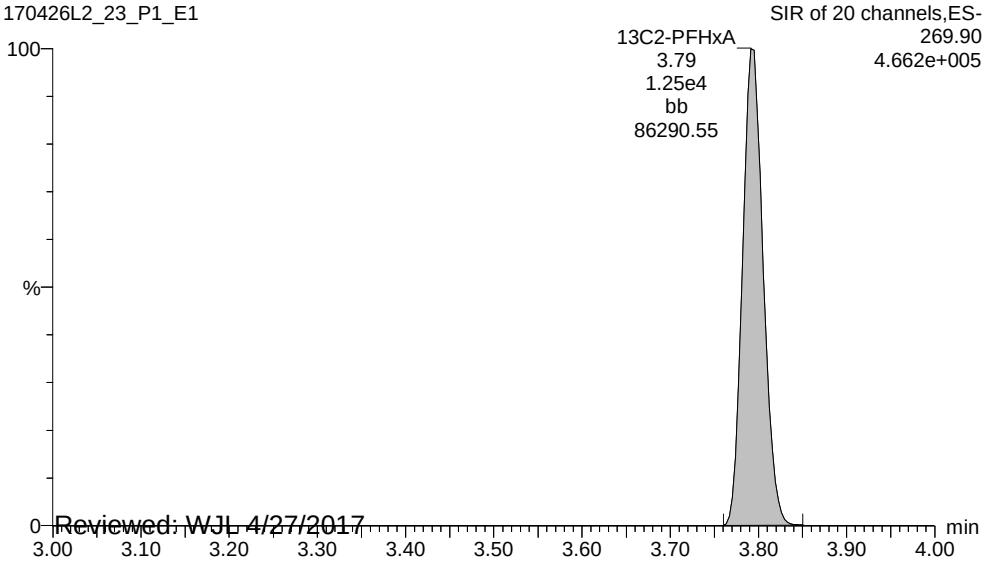
PFOS



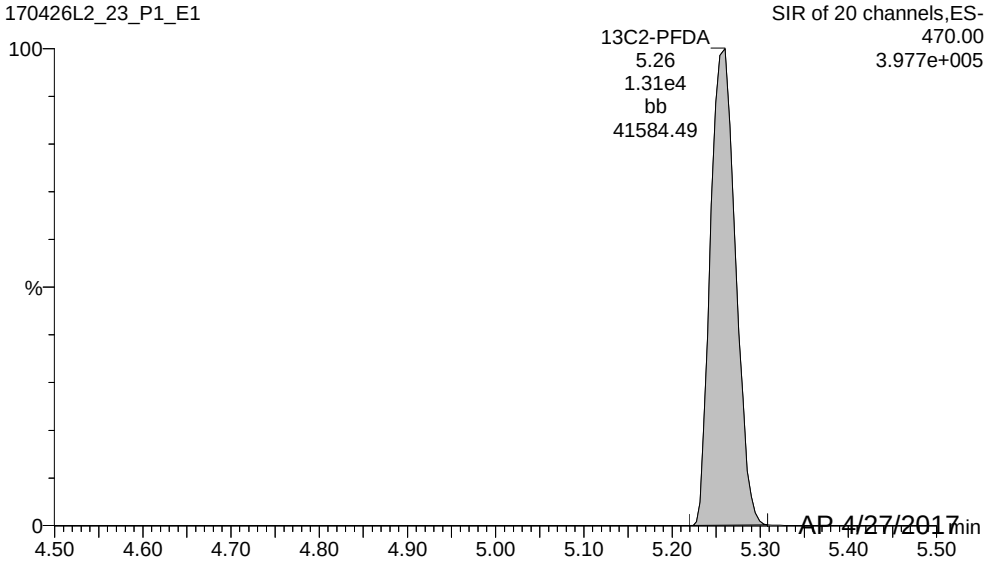
PFNA



13C2-PFHxA



13C2-PFDA



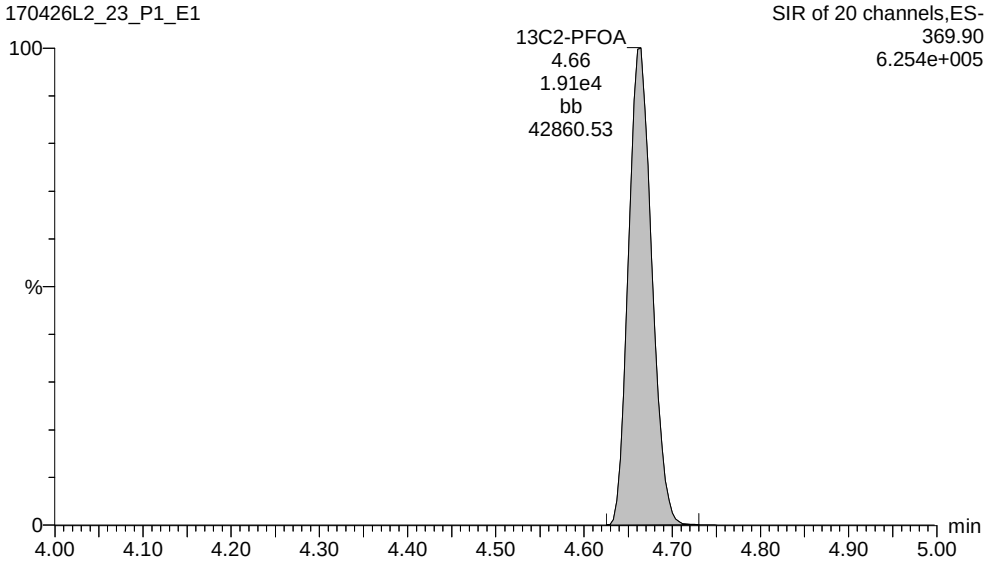
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-23.qld

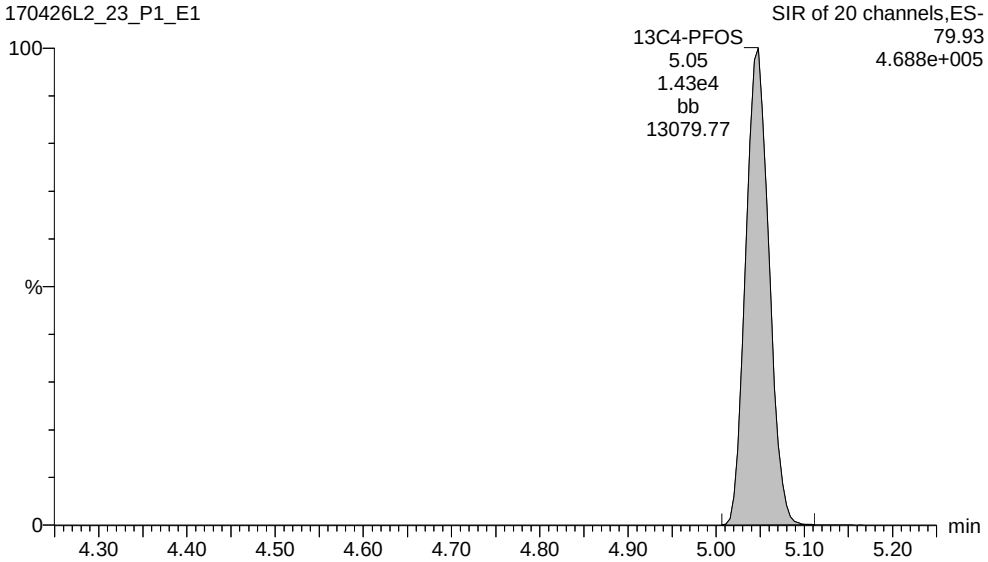
Last Altered: Thursday, April 27, 2017 11:26:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:26:26 Pacific Daylight Time

ID: 1700503-06, Description: RW17-20170420, Name: 170426L2_23.wiff, Date: 27-Apr-2017, Time: 05:32:36, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-24.qld

Last Altered: Thursday, April 27, 2017 11:24:43 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:24:52 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-MS1, Description: LFSM, Name: 170426L2_24.wiff, Date: 27-Apr-2017, Time: 05:44:48

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.172e4	1.226e4		0.280	3.41	63.9	
2	3	PFHpA	318.90	2.597e4	1.566e4		0.280	4.26	77.5	
3	4	PFHxS	79.91	1.029e4	1.226e4		0.280	4.38	64.8	
4	5	PFOA	368.90	3.087e4	1.566e4		0.280	4.68	89.0	
5	6	PFNA	419.00	2.712e4	1.566e4		0.280	5.01	72.9	
6	7	PFOS	79.92	1.145e4	1.226e4		0.280	5.07	74.3	
7	15	13C2-PFHxA	269.90	1.046e4	1.566e4	0.560	0.280	3.79	42.5	119
8	16	13C2-PFDA	470.00	1.033e4	1.566e4	0.580	0.280	5.28	40.5	114
9	18	13C2-PFOA	369.90	1.566e4	1.566e4	1.000	0.280	4.67	35.7	100
10	19	13C4-PFOS	79.93	1.226e4	1.226e4	1.000	0.280	5.07	102	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

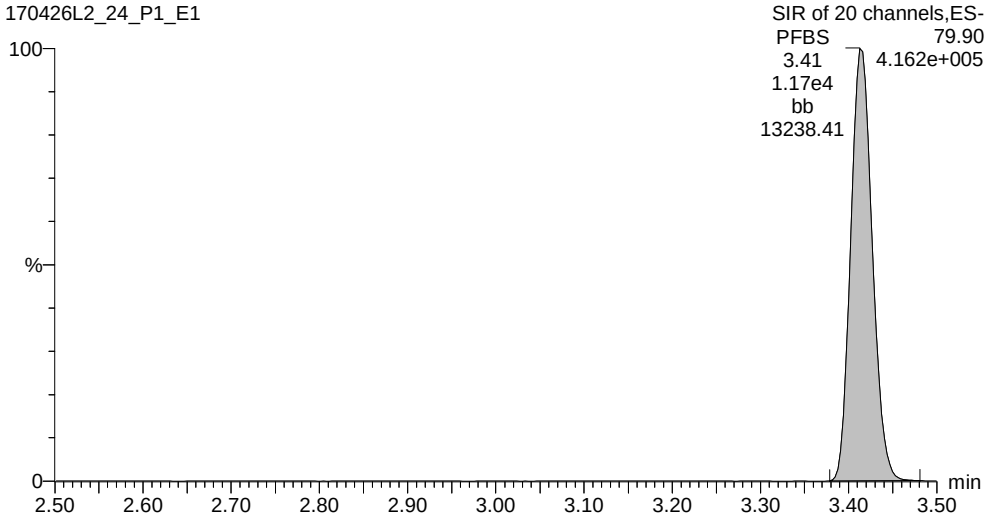
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-24.qld

Last Altered: Thursday, April 27, 2017 11:24:43 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:24:52 Pacific Daylight Time

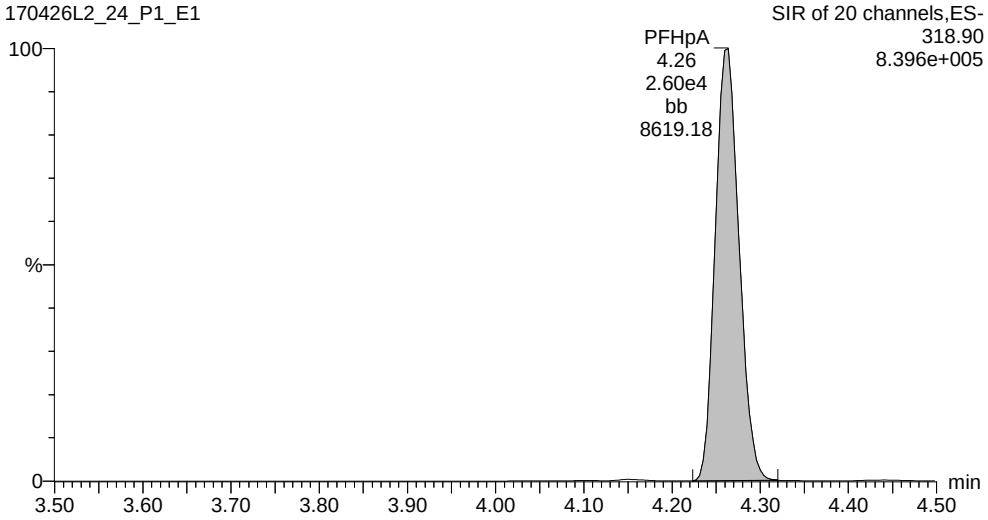
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-MS1, Description: LFSM, Name: 170426L2_24.wiff, Date: 27-Apr-2017, Time: 05:44:48, Instrument: , Lab: ©PE-SCIEX, User: sciex

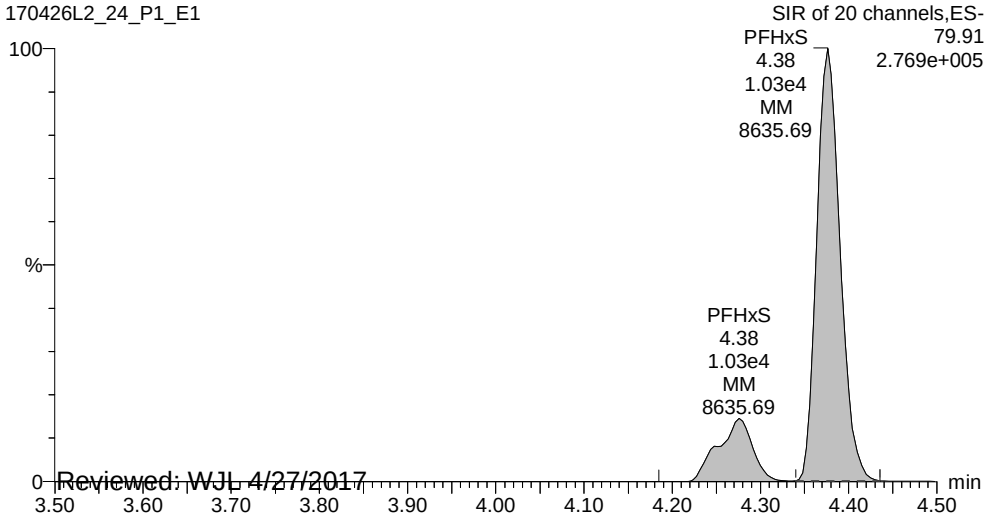
PFBS



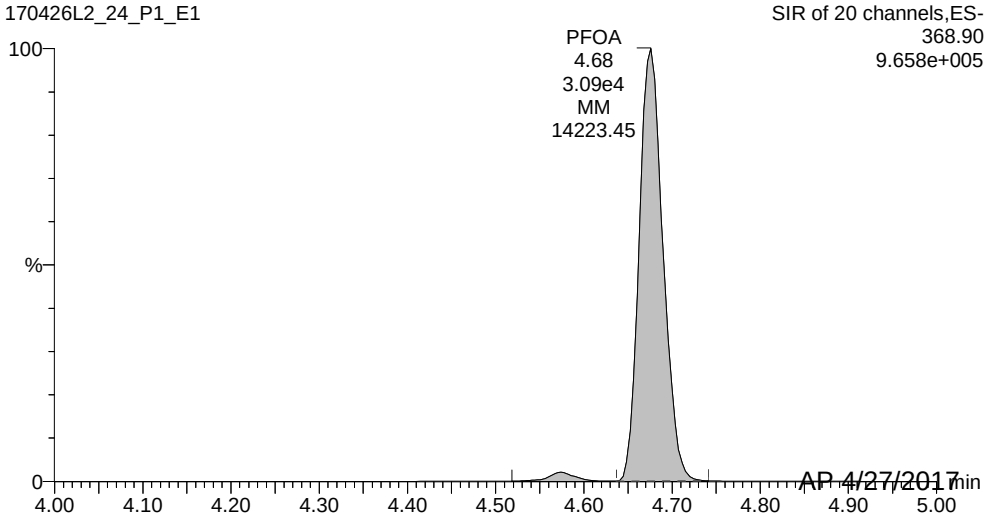
PFHpA



PFHxS



PFOA



Reviewed: WJL 4/27/2017 AP 4/27/2017

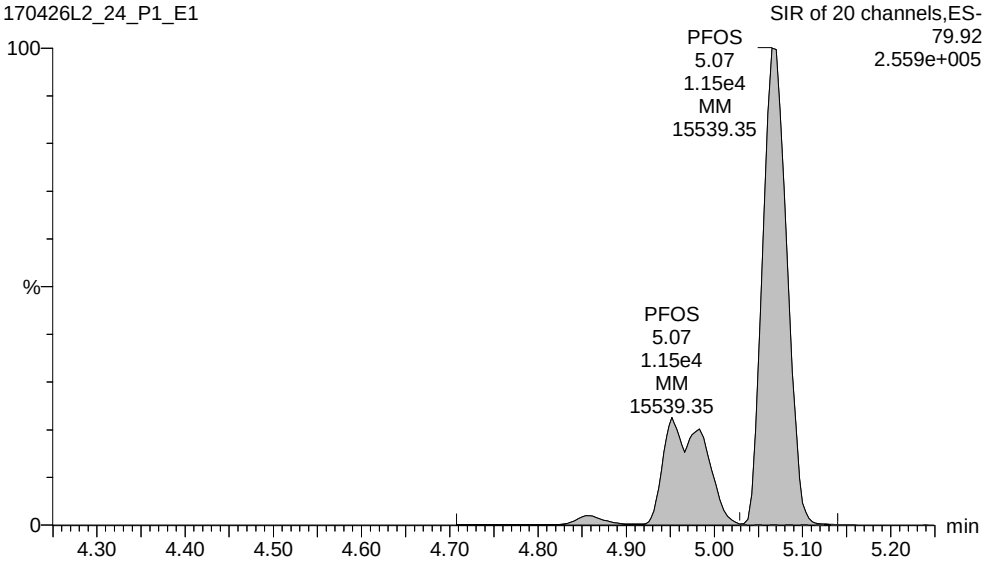
Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-24.qld

Last Altered: Thursday, April 27, 2017 11:24:43 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:24:52 Pacific Daylight Time

ID: B7D0109-MS1, Description: LFSM, Name: 170426L2_24.wiff, Date: 27-Apr-2017, Time: 05:44:48, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



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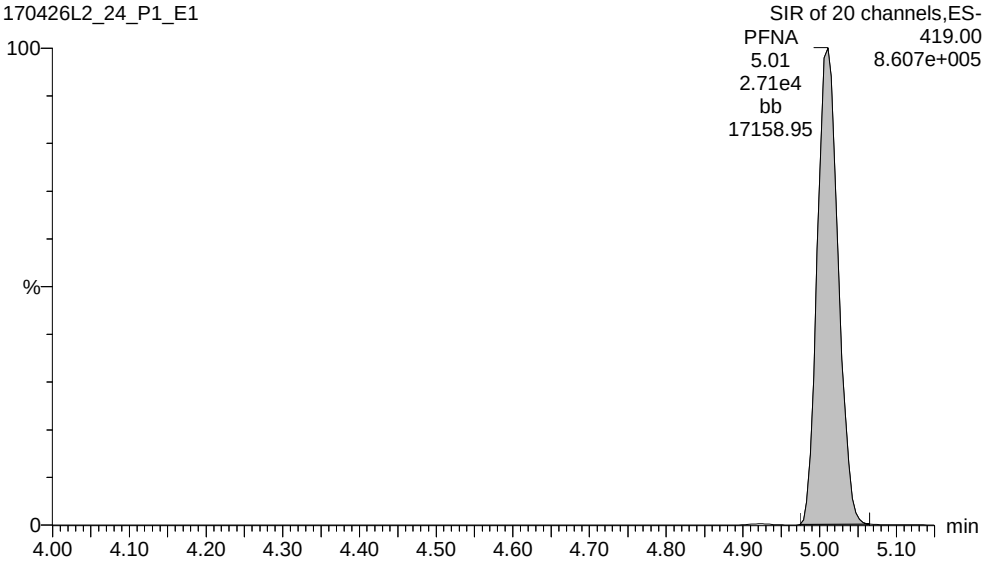
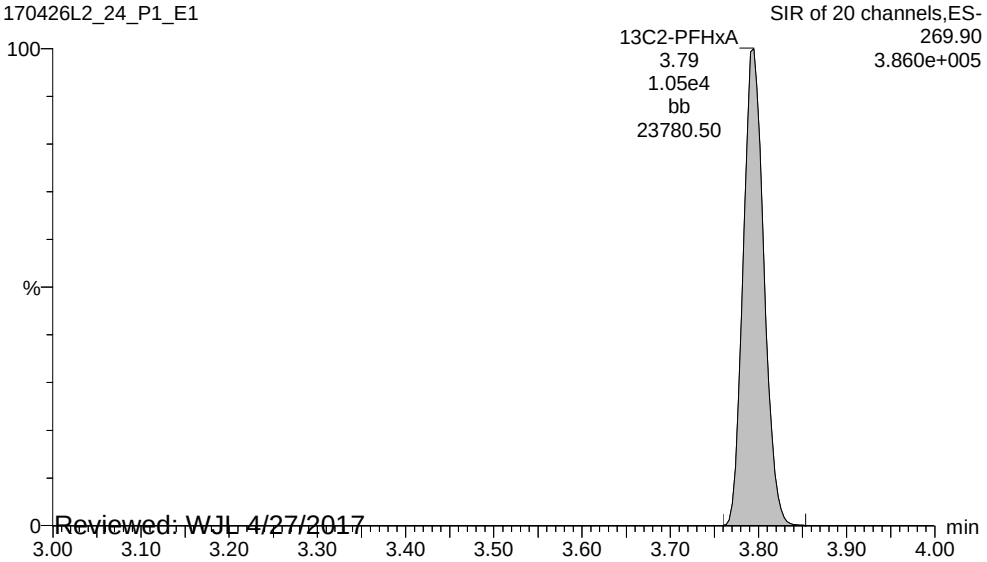
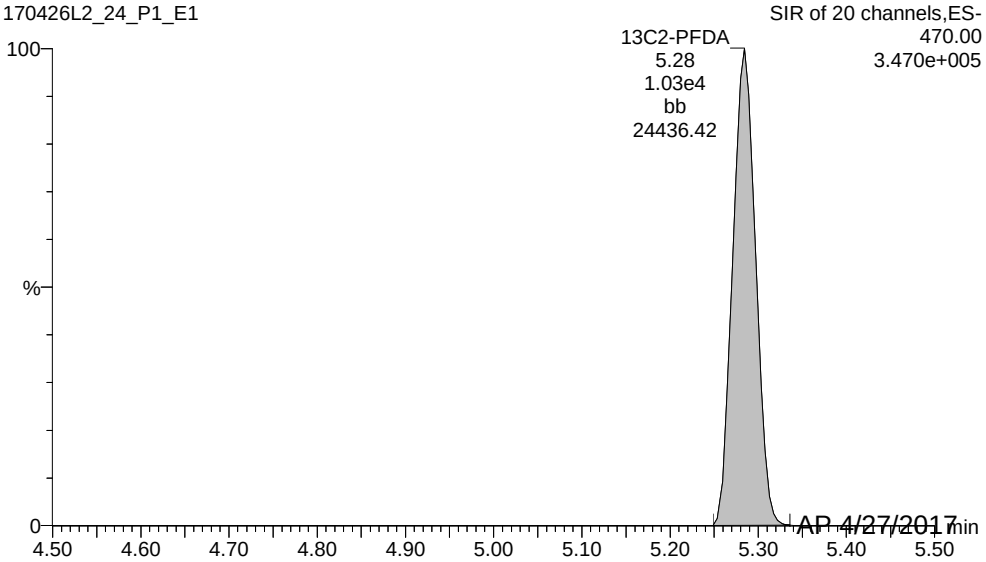


13C2-PFHxA



13C2-PFDA



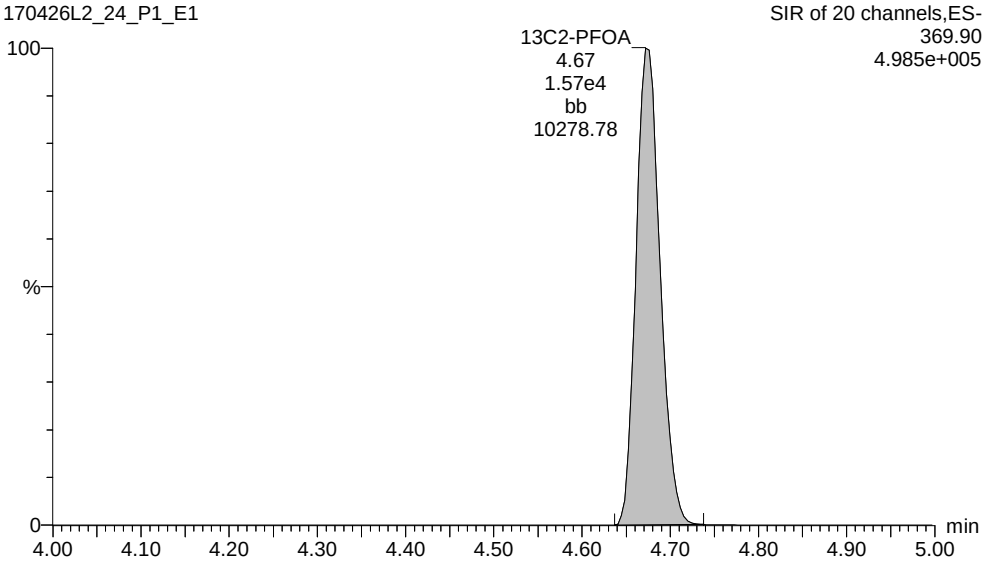
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-24.qld

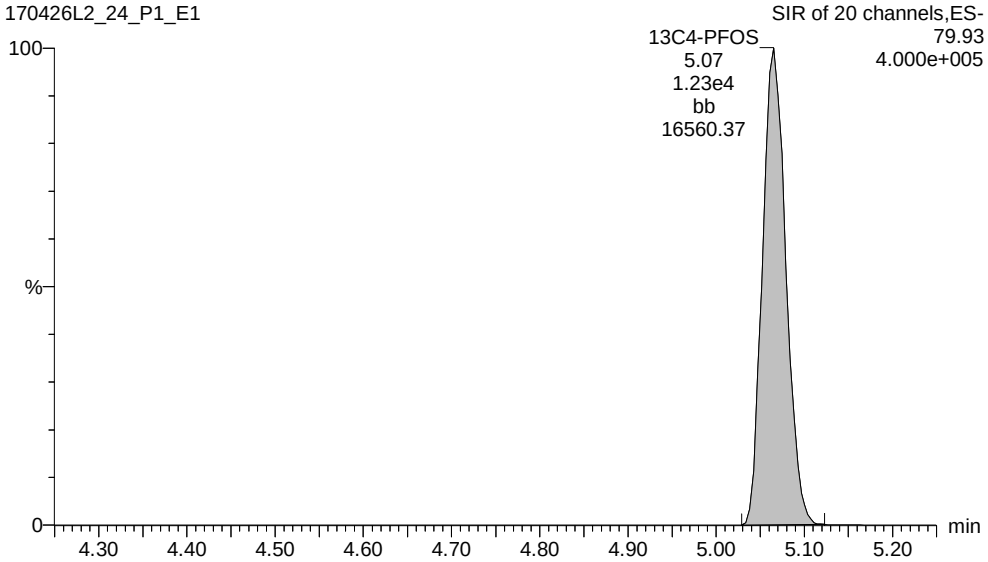
Last Altered: Thursday, April 27, 2017 11:24:43 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:24:52 Pacific Daylight Time

ID: B7D0109-MS1, Description: LFSM, Name: 170426L2_24.wiff, Date: 27-Apr-2017, Time: 05:44:48, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-25.qld

Last Altered: Thursday, April 27, 2017 11:22:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:22:48 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-MSD1, Description: LFSMD, Name: 170426L2_25.wiff, Date: 27-Apr-2017, Time: 05:57:04

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.180e4	1.168e4		0.279	3.43	68.3	
2	3	PFHpA	318.90	2.768e4	1.611e4		0.279	4.26	81.0	
3	4	PFHxS	79.91	1.098e4	1.168e4		0.279	4.37	73.6	
4	5	PFOA	368.90	3.154e4	1.611e4		0.279	4.64	88.8	
5	6	PFNA	419.00	2.983e4	1.611e4		0.279	4.95	79.1	
6	7	PFOS	79.92	1.122e4	1.168e4		0.279	5.01	77.0	
7	15	13C2-PFHxA	269.90	1.105e4	1.611e4	0.560	0.279	3.80	43.9	122
8	16	13C2-PFDA	470.00	1.256e4	1.611e4	0.580	0.279	5.24	48.2	134
9	18	13C2-PFOA	369.90	1.611e4	1.611e4	1.000	0.279	4.64	35.9	100
10	19	13C4-PFOS	79.93	1.168e4	1.168e4	1.000	0.279	5.01	103	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

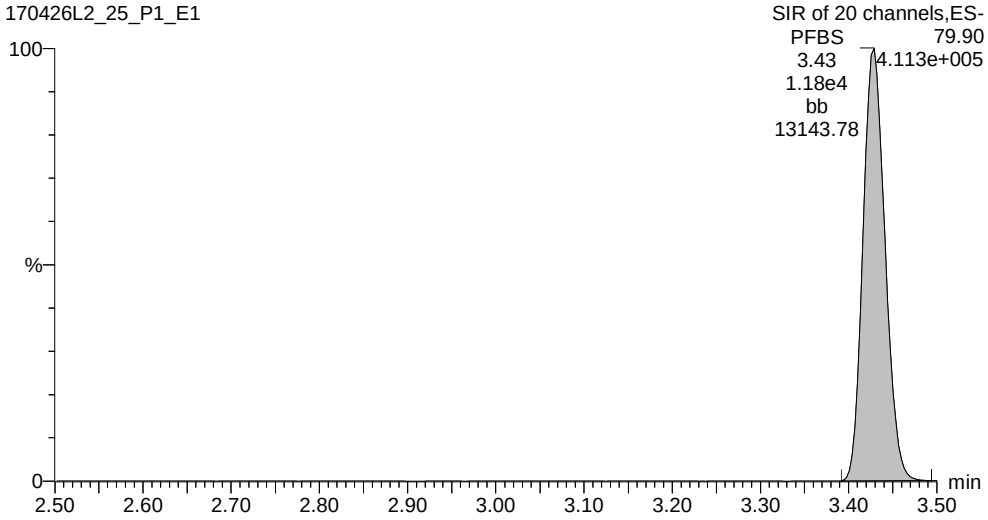
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-25.qld

Last Altered: Thursday, April 27, 2017 11:22:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:22:48 Pacific Daylight Time

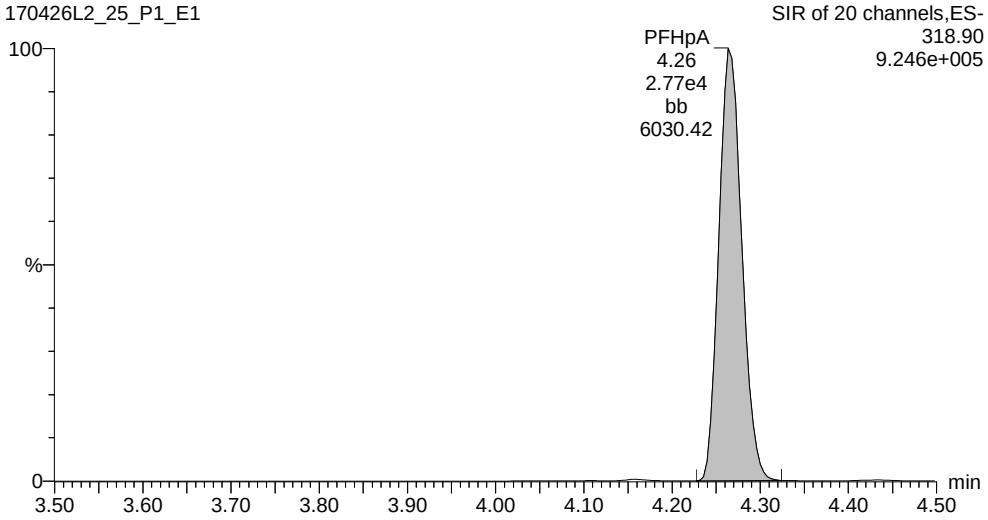
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: B7D0109-MSD1, Description: LFSMD, Name: 170426L2_25.wiff, Date: 27-Apr-2017, Time: 05:57:04, Instrument: , Lab: ©PE-SCIEX, User: sciex

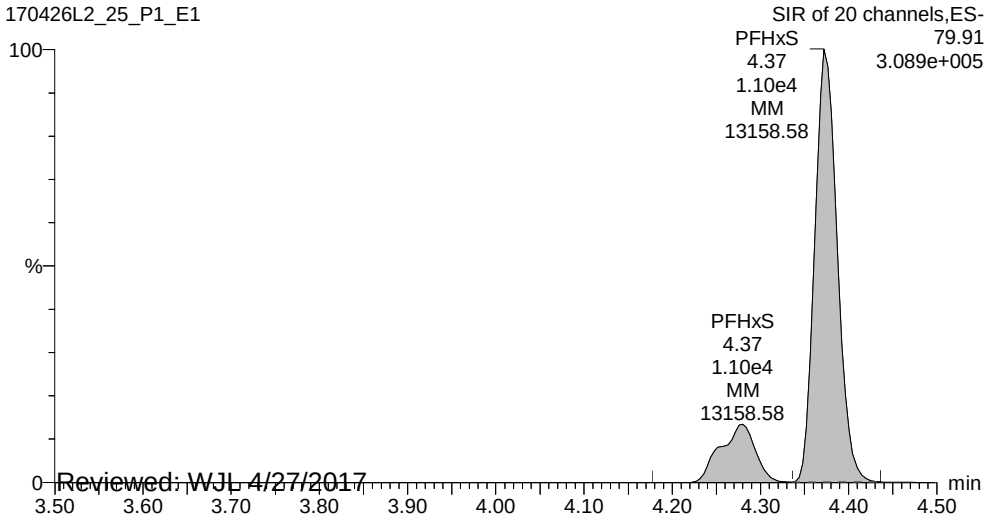
PFBS



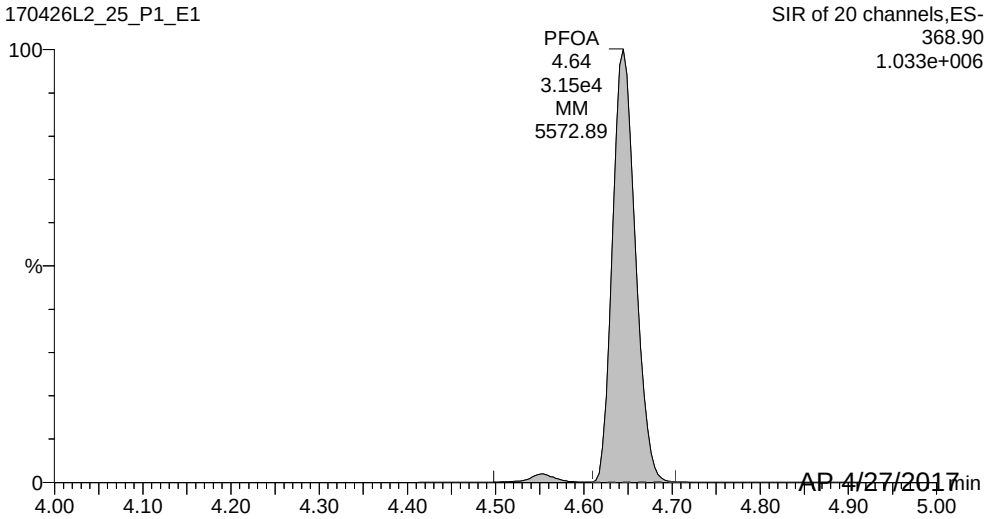
PFHpA



PFHxS



PFOA



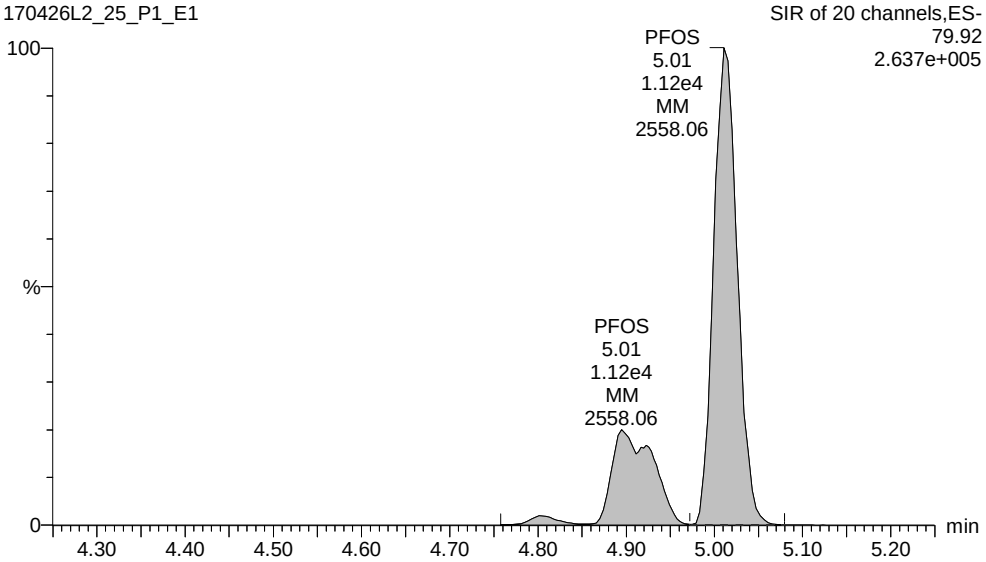
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-25.qld

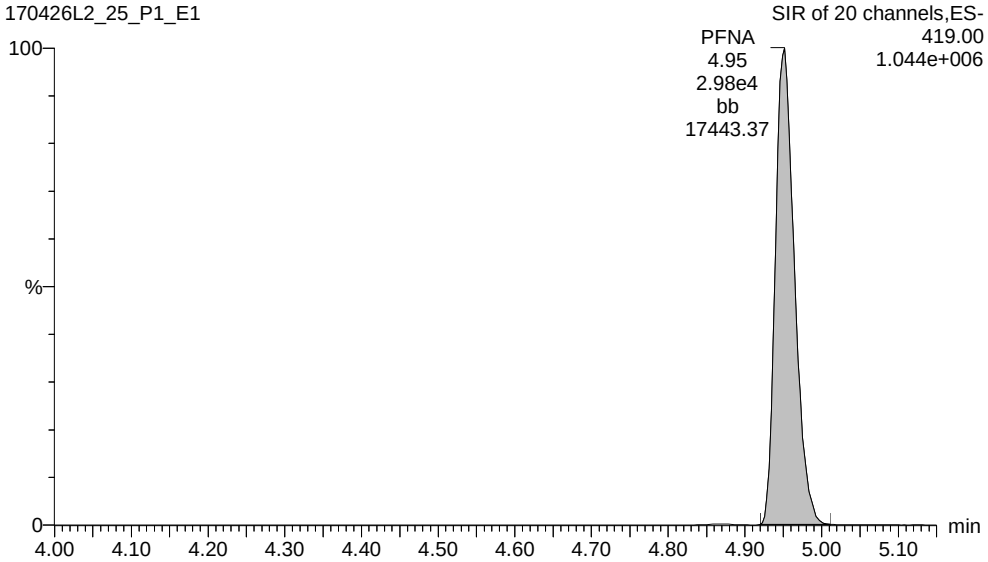
Last Altered: Thursday, April 27, 2017 11:22:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:22:48 Pacific Daylight Time

ID: B7D0109-MSD1, Description: LFSMD, Name: 170426L2_25.wiff, Date: 27-Apr-2017, Time: 05:57:04, Instrument: , Lab: ©PE-SCIEX, User: sciex

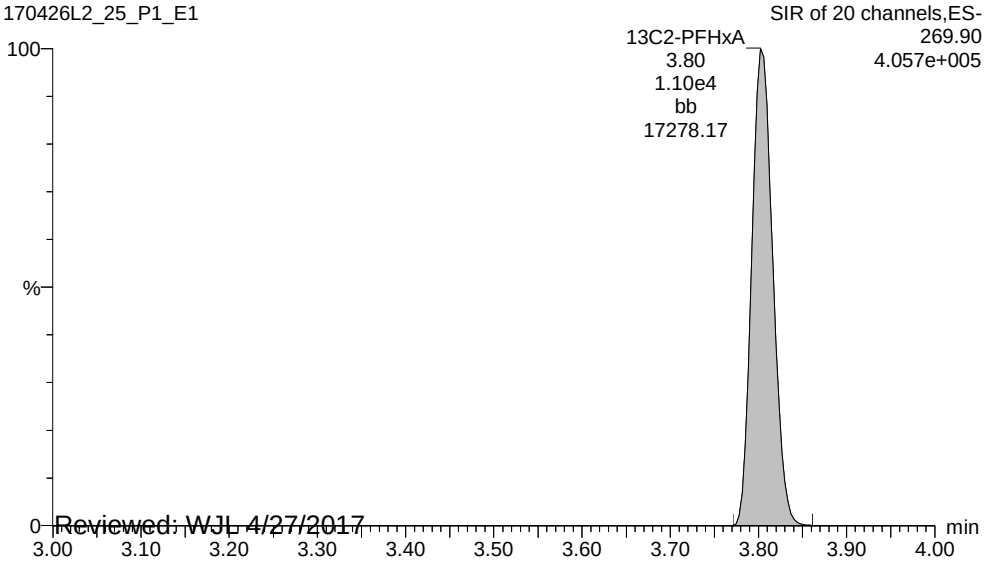
PFOS



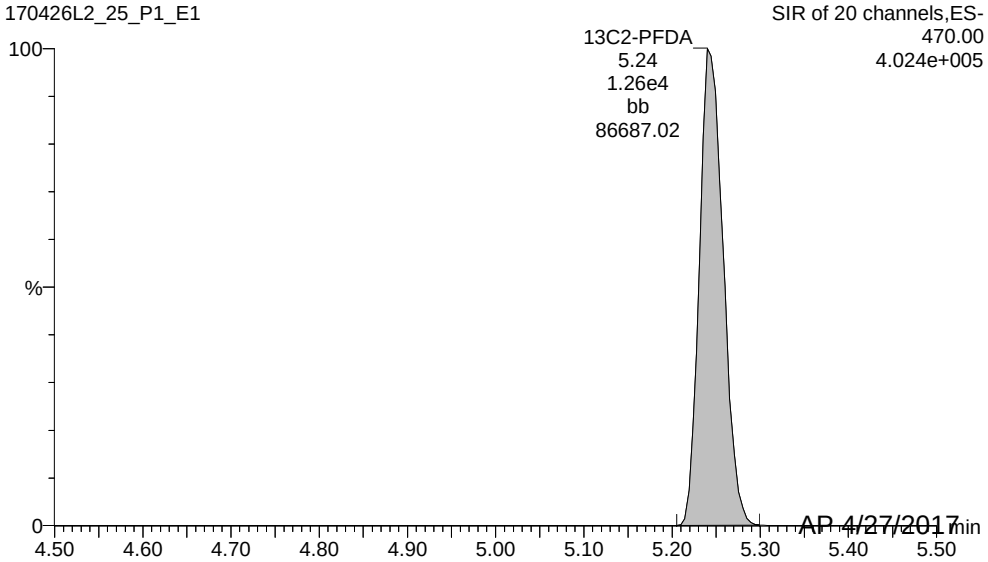
PFNA



13C2-PFHxA



13C2-PFDA



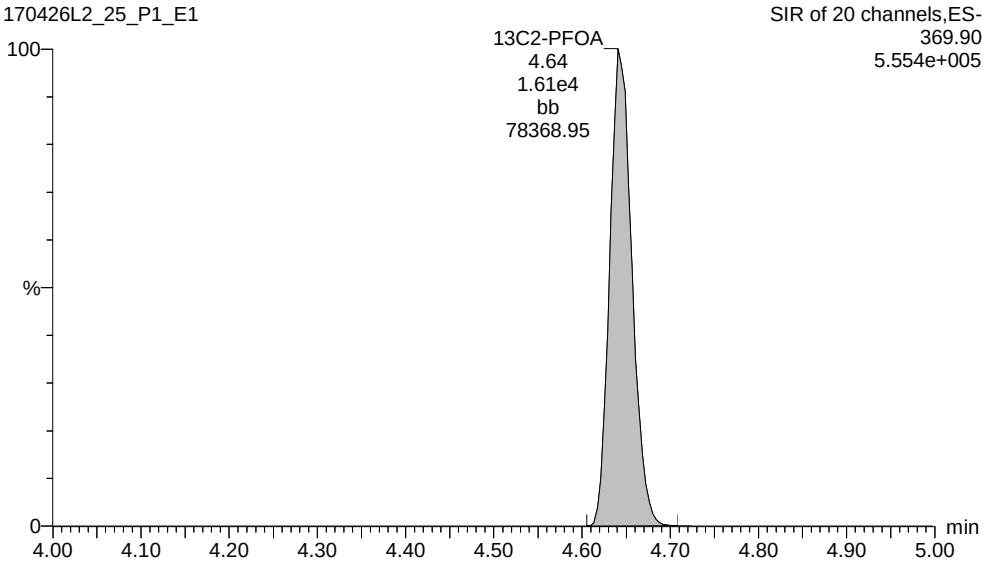
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-25.qld

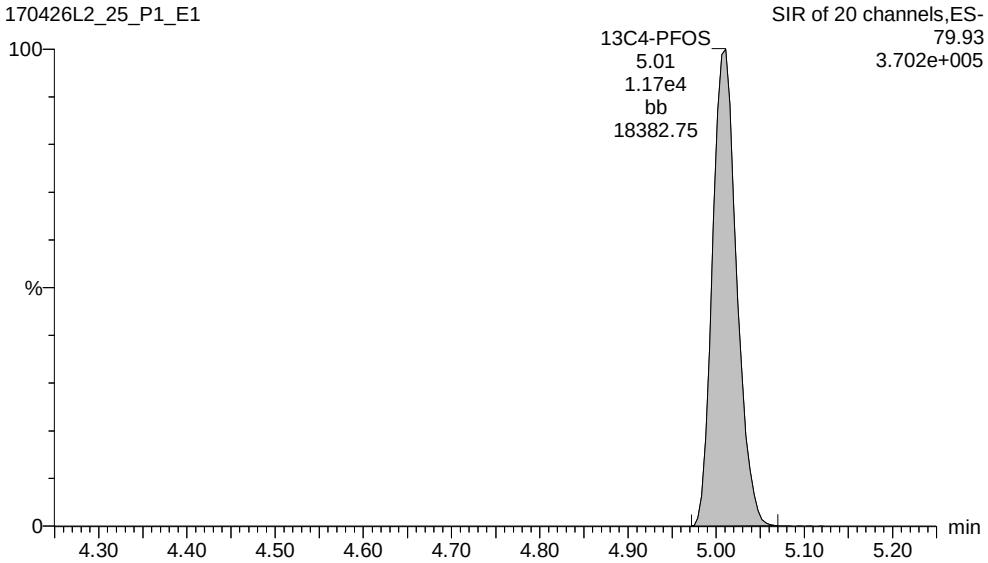
Last Altered: Thursday, April 27, 2017 11:22:39 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:22:48 Pacific Daylight Time

ID: B7D0109-MSD1, Description: LFSMD, Name: 170426L2_25.wiff, Date: 27-Apr-2017, Time: 05:57:04, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-26.qld

Last Altered: Thursday, April 27, 2017 13:58:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 13:59:51 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-07, Description: FRB-17-20170420, Name: 170426L2_26.wiff, Date: 27-Apr-2017, Time: 06:09:14

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	6.018e0	1.453e4		0.278	3.42	0.0255	
2	3	PFHpA	318.90	2.842e1	1.938e4		0.278	4.28	0.0628	
3	4	PFHxS	79.91	5.880e0	1.453e4		0.278	4.40	0.0296	
4	5	PFOA	368.90	4.309e1	1.938e4		0.278	4.68	0.0904	
5	6	PFNA	419.00	2.251e1	1.938e4		0.278	5.02	0.0441	
6	7	PFOS	79.92	7.558e0	1.453e4		0.278	5.07	0.0392	
7	15	13C2-PFHxA	269.90	1.332e4	1.938e4	0.560	0.278	3.80	44.2	123
8	16	13C2-PFDA	470.00	1.597e4	1.938e4	0.580	0.278	5.26	51.1	142
9	18	13C2-PFOA	369.90	1.938e4	1.938e4	1.000	0.278	4.68	36.0	100
10	19	13C4-PFOS	79.93	1.453e4	1.453e4	1.000	0.278	5.07	103	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

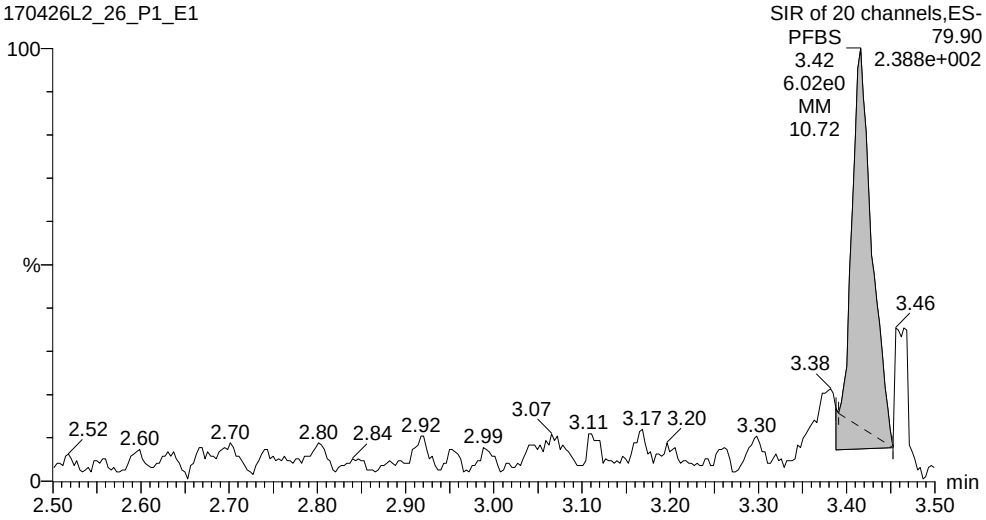
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-26.qld

Last Altered: Thursday, April 27, 2017 13:58:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 13:59:51 Pacific Daylight Time

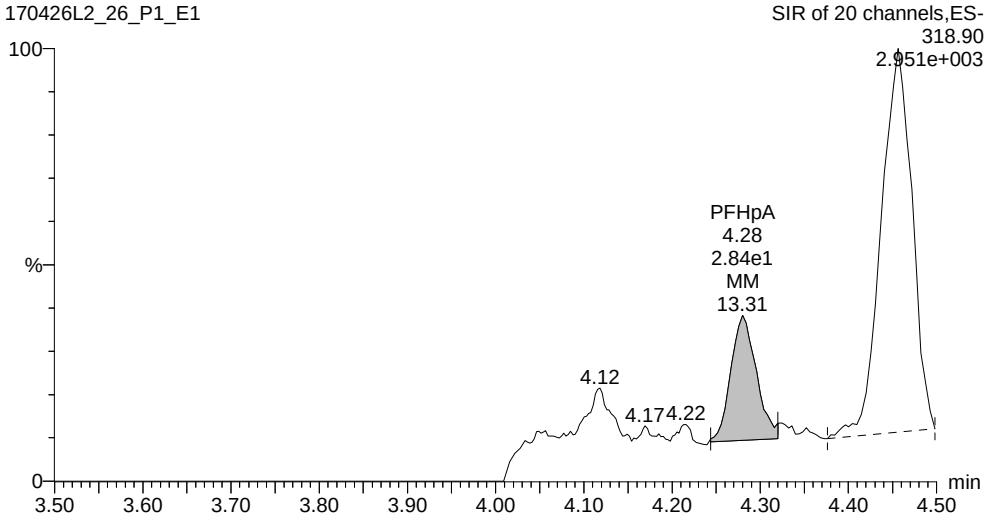
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-07, Description: FRB-17-20170420, Name: 170426L2_26.wiff, Date: 27-Apr-2017, Time: 06:09:14, Instrument: , Lab: ©PE-SCIEX, User: sciex

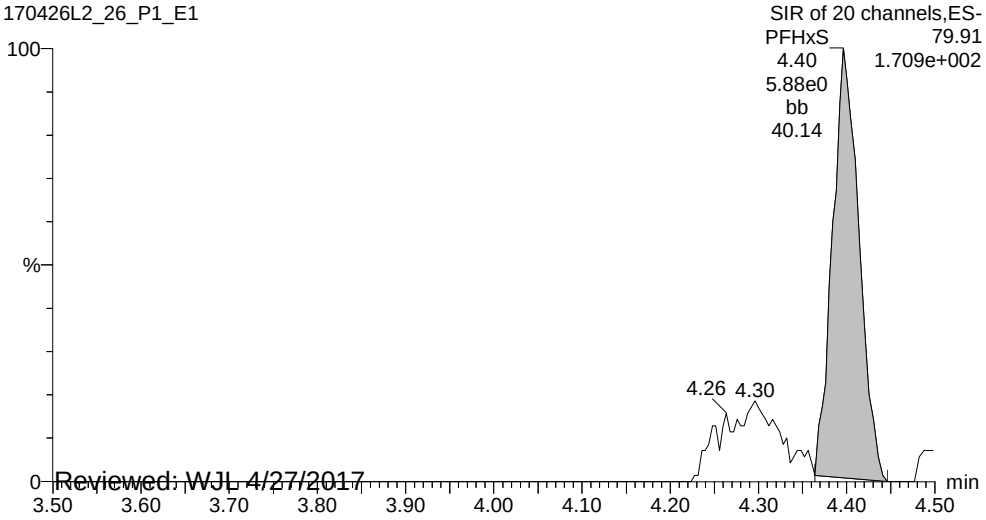
PFBS



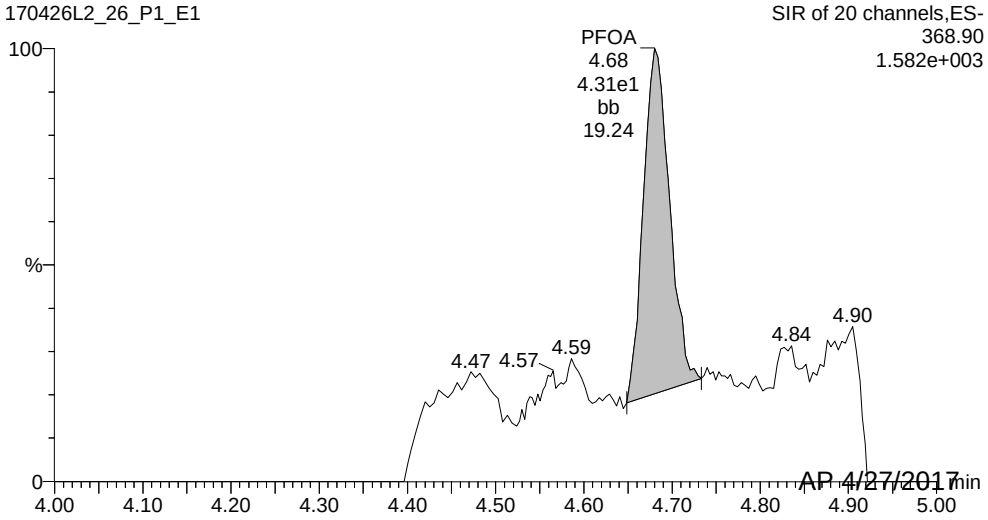
PFHpA



PFHxS



PFOA



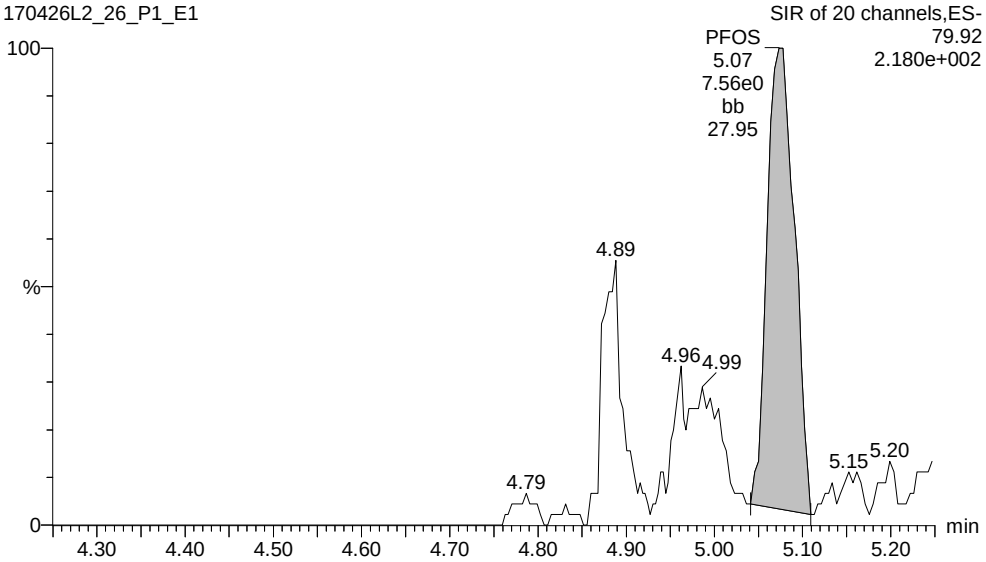
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-26.qld

Last Altered: Thursday, April 27, 2017 13:58:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 13:59:51 Pacific Daylight Time

ID: 1700503-07, Description: FRB-17-20170420, Name: 170426L2_26.wiff, Date: 27-Apr-2017, Time: 06:09:14, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



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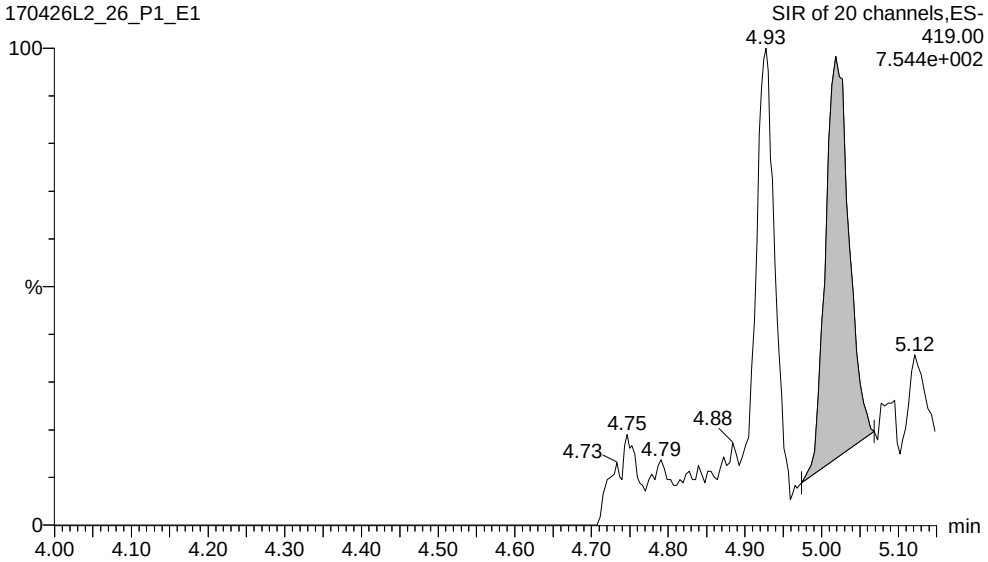
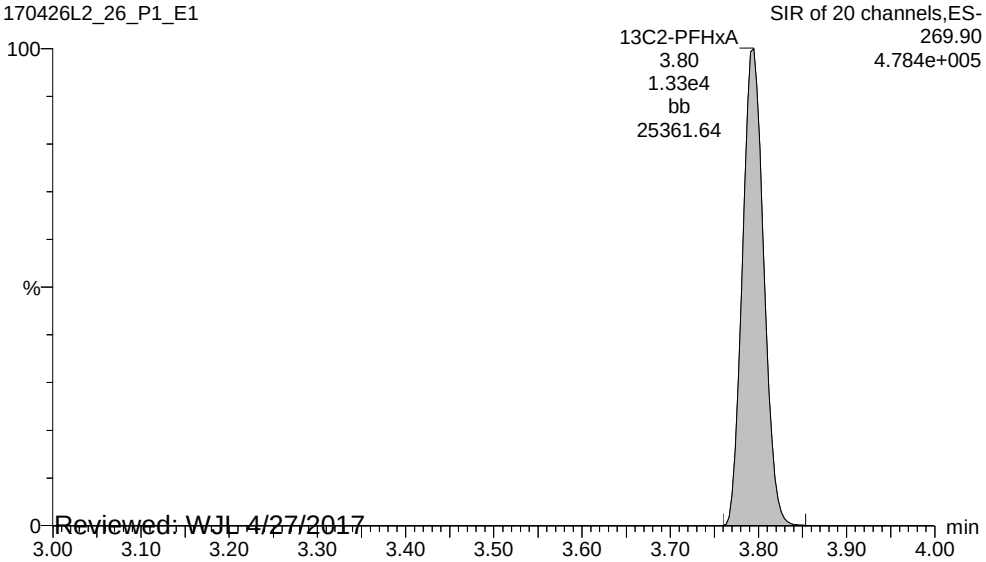
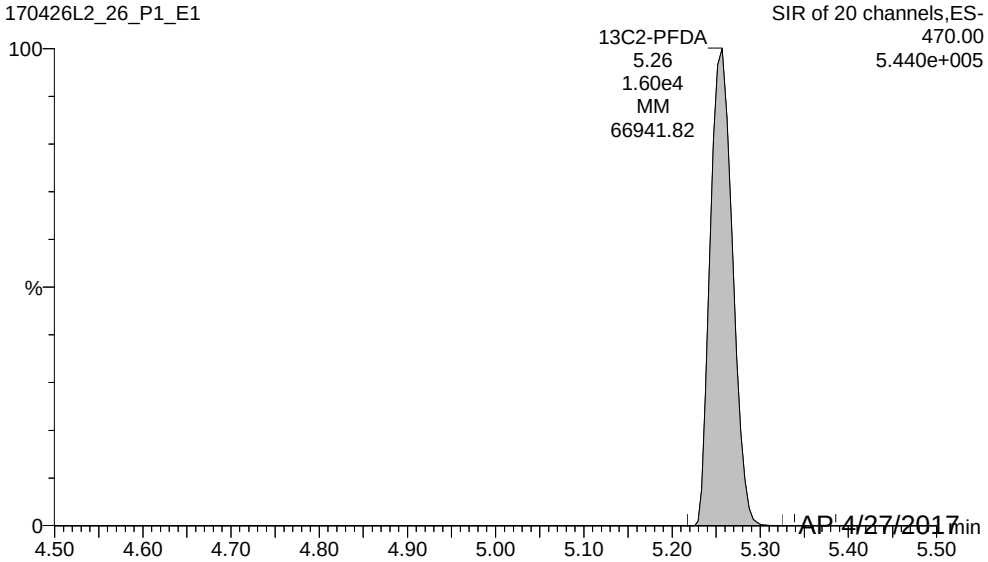


13C2-PFHxA



13C2-PFDA



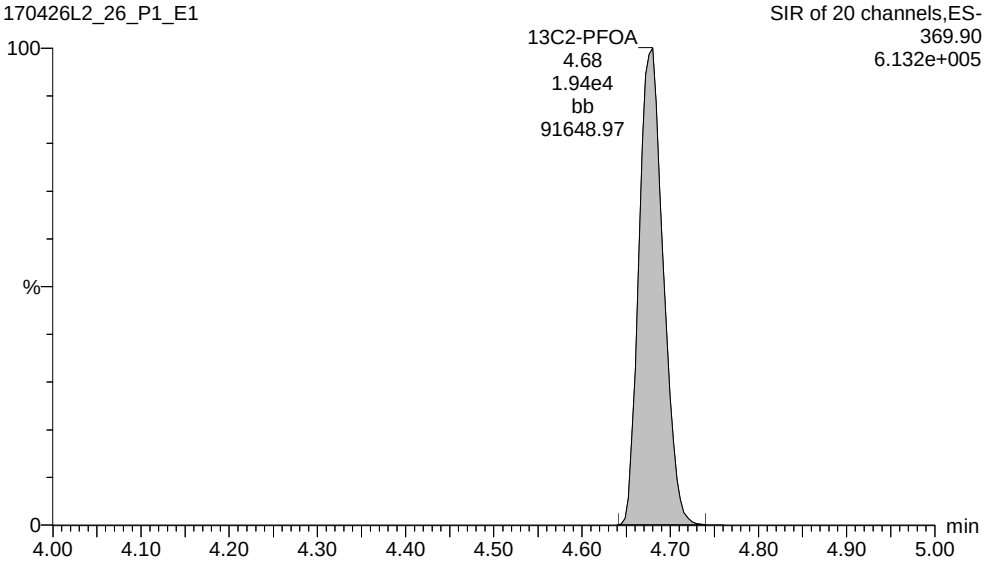
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-26.qld

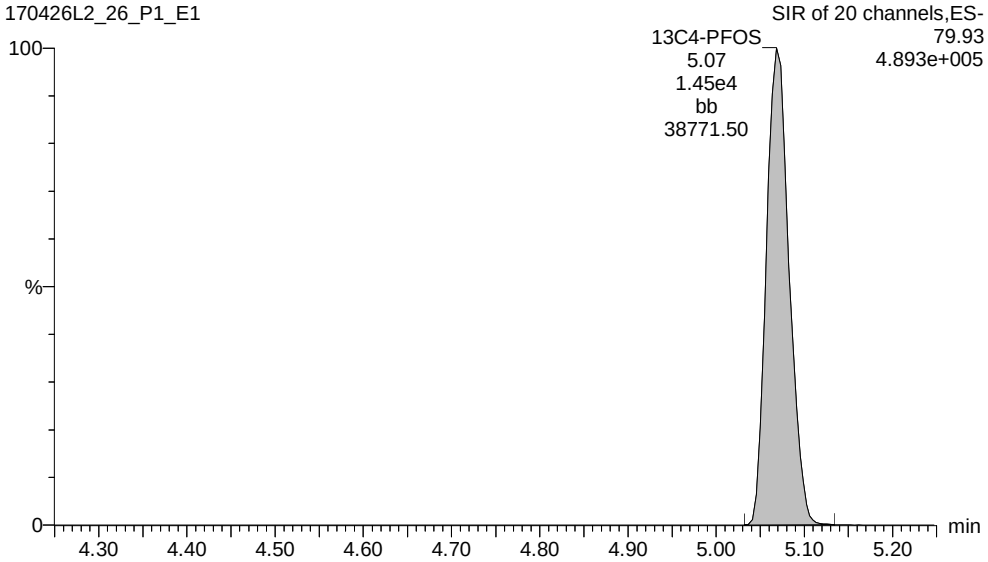
Last Altered: Thursday, April 27, 2017 13:58:03 Pacific Daylight Time
Printed: Thursday, April 27, 2017 13:59:51 Pacific Daylight Time

ID: 1700503-07, Description: FRB-17-20170420, Name: 170426L2_26.wiff, Date: 27-Apr-2017, Time: 06:09:14, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-27.qld

Last Altered: Thursday, April 27, 2017 11:01:50 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:12 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-08, Description: RW23-20170420, Name: 170426L2_27.wiff, Date: 27-Apr-2017, Time: 06:21:31

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.890e3	1.273e4		0.283	3.42	9.09	
2	3	PFHpA	318.90	1.706e3	1.669e4		0.283	4.26	4.32	
3	4	PFHxS	79.91	4.577e2	1.273e4		0.283	4.36	2.59	
4	5	PFOA	368.90	6.827e3	1.669e4		0.283	4.64	16.7	
5	6	PFNA	419.00	8.583e2	1.669e4		0.283	4.97	1.92	
6	7	PFOS	79.92	2.132e3	1.273e4		0.283	4.92	12.5	
7	15	13C2-PFHxA	269.90	1.129e4	1.669e4	0.560	0.283	3.79	42.7	121
8	16	13C2-PFDA	470.00	1.347e4	1.669e4	0.580	0.283	5.26	49.1	139
9	18	13C2-PFOA	369.90	1.669e4	1.669e4	1.000	0.283	4.64	35.4	100
10	19	13C4-PFOS	79.93	1.273e4	1.273e4	1.000	0.283	5.03	101	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

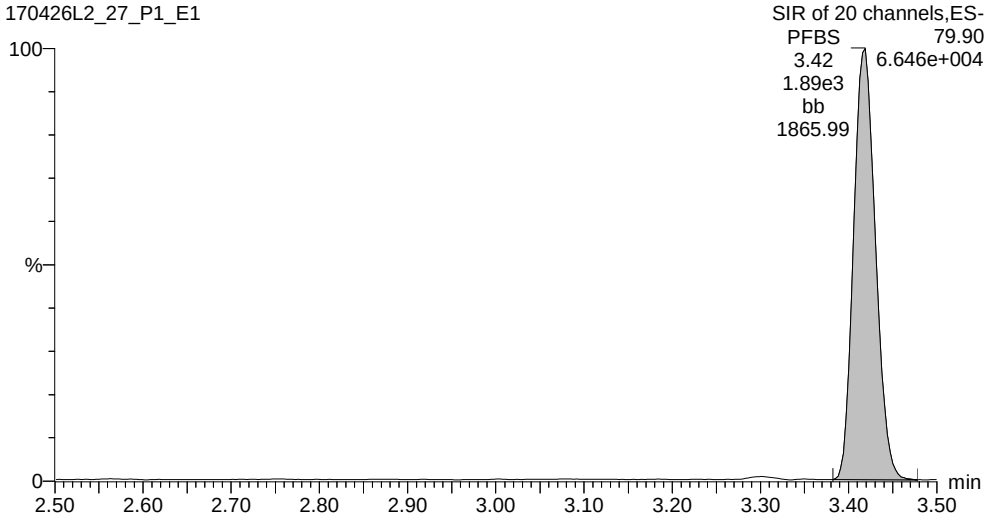
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-27.qld

Last Altered: Thursday, April 27, 2017 11:01:50 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:12 Pacific Daylight Time

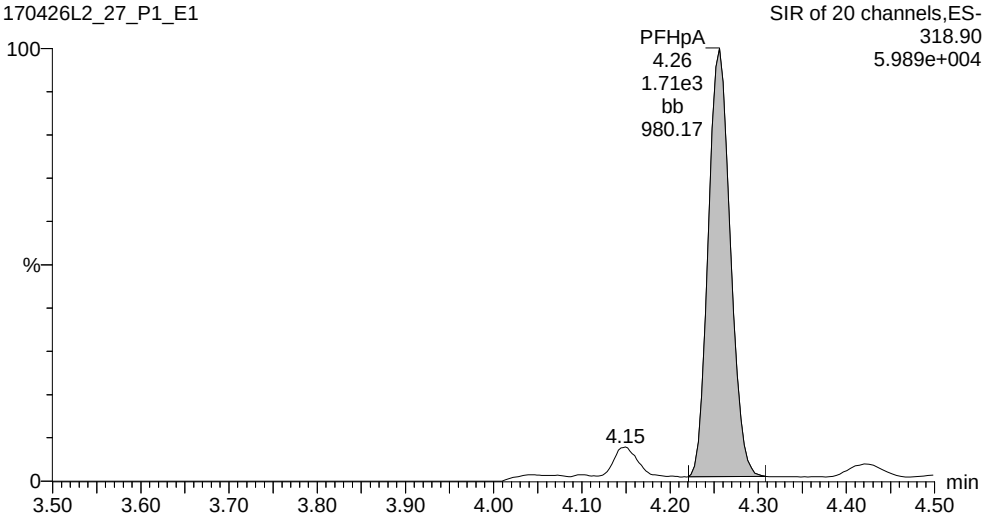
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-08, Description: RW23-20170420, Name: 170426L2_27.wiff, Date: 27-Apr-2017, Time: 06:21:31, Instrument: , Lab: ©PE-SCIEX, User: sciex

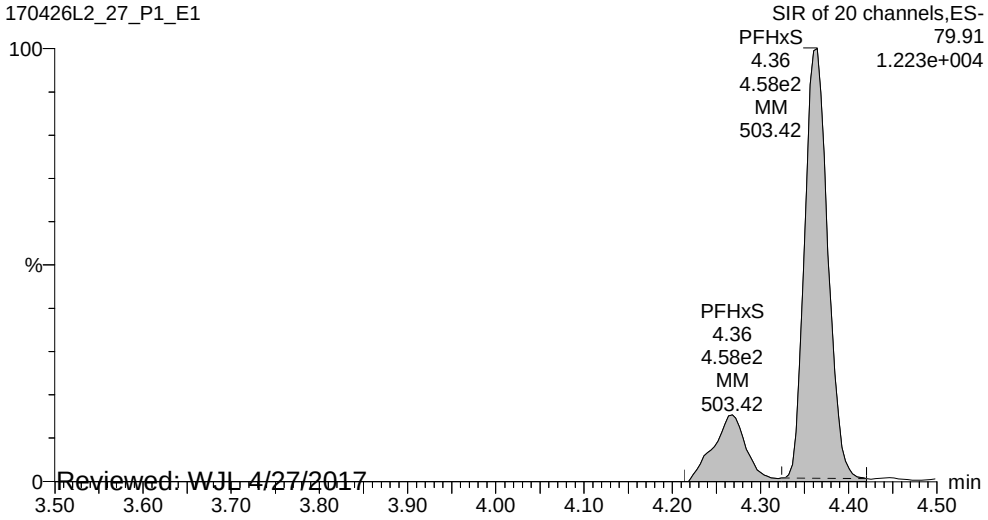
PFBS



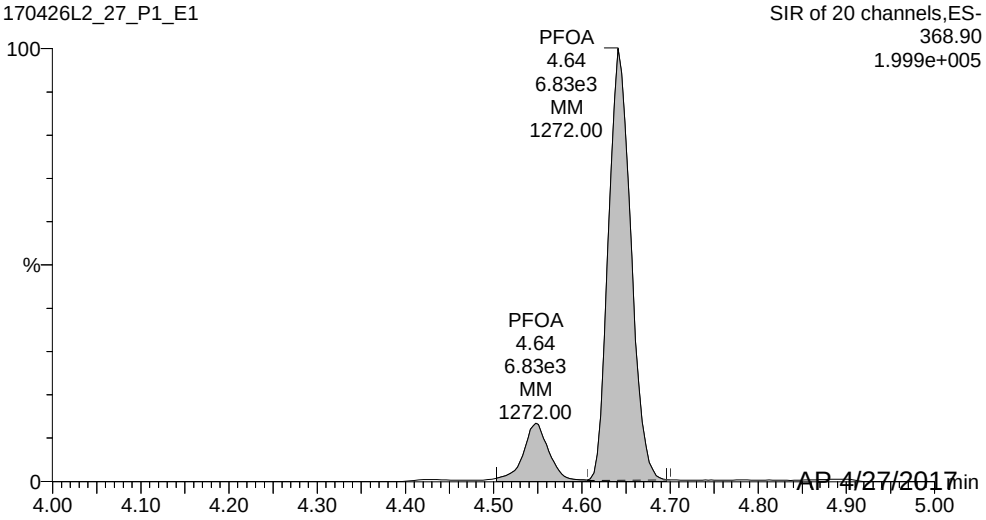
PFHpA



PFHxS



PFOA



Reviewed: WJL 4/27/2017 AP 4/27/2017

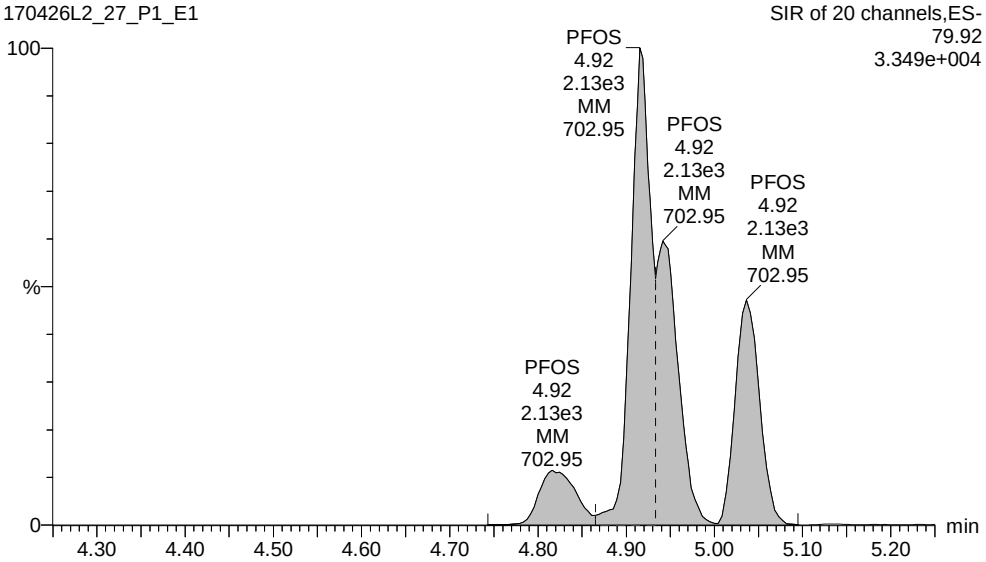
Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-27.qld

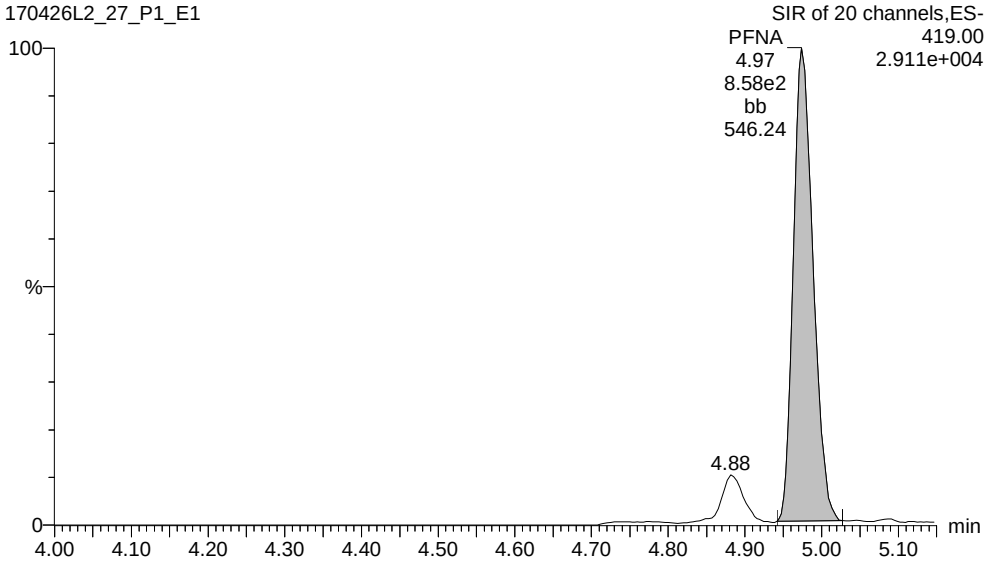
Last Altered: Thursday, April 27, 2017 11:01:50 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:12 Pacific Daylight Time

ID: 1700503-08, Description: RW23-20170420, Name: 170426L2_27.wiff, Date: 27-Apr-2017, Time: 06:21:31, Instrument: , Lab: ©PE-SCIEX, User: sciex

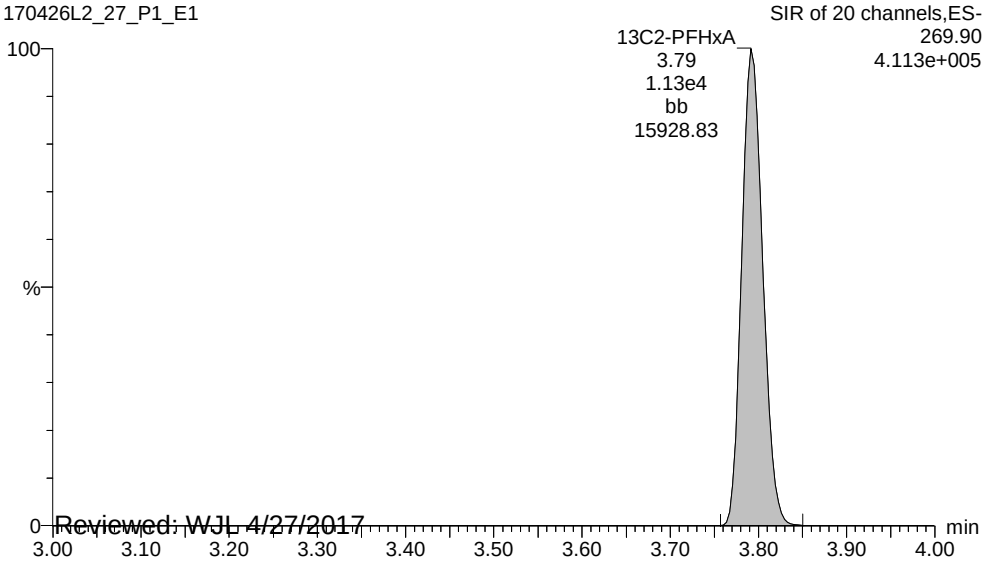
PFOS



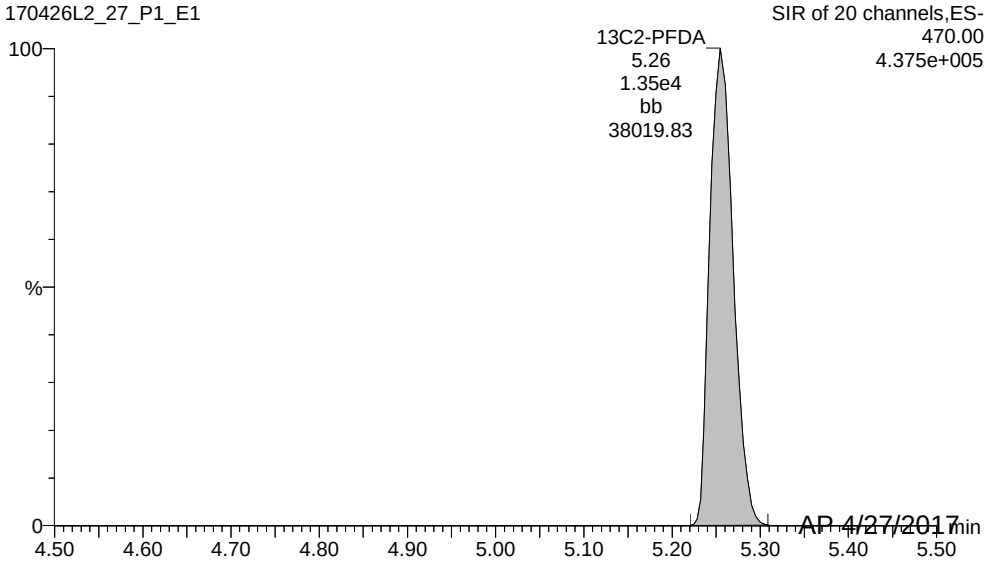
PFNA



13C2-PFHxA



13C2-PFDA



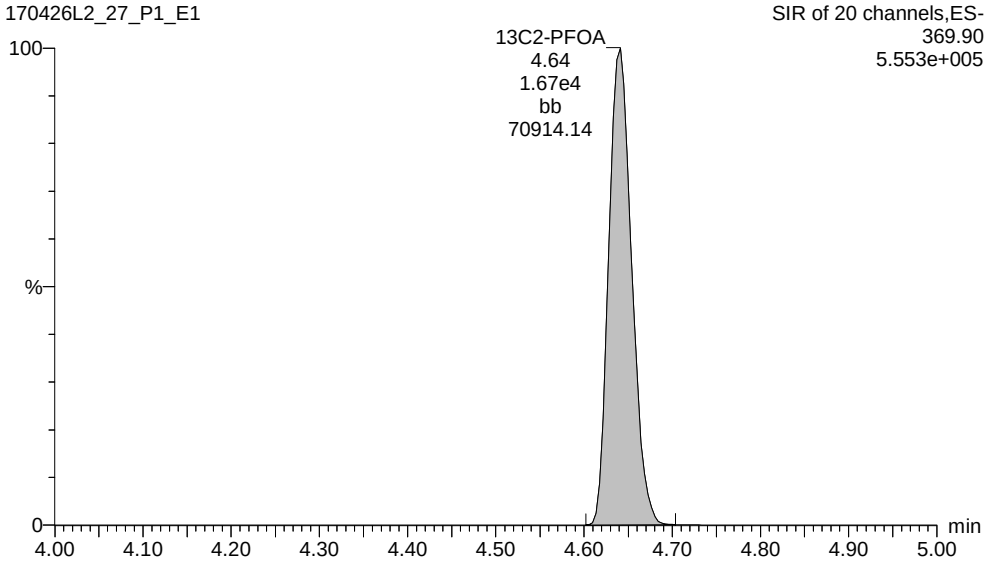
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-27.qld

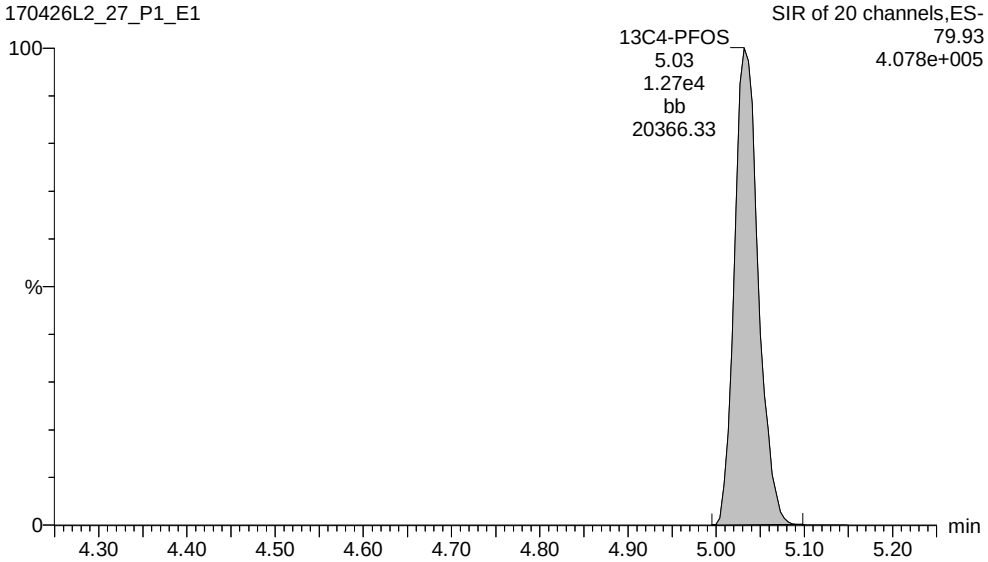
Last Altered: Thursday, April 27, 2017 11:01:50 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:12 Pacific Daylight Time

ID: 1700503-08, Description: RW23-20170420, Name: 170426L2_27.wiff, Date: 27-Apr-2017, Time: 06:21:31, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-28.qld

Last Altered: Thursday, April 27, 2017 11:12:44 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:13:16 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-09, Description: FRB-23-20170420, Name: 170426L2_28.wiff, Date: 27-Apr-2017, Time: 06:33:46

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	4.846e0	1.374e4		0.281	3.42	0.0215	
2	3	PFHpA	318.90	2.812e1	1.782e4		0.281	4.27	0.0667	
3	4	PFHxS	79.91	3.003e0	1.374e4		0.281	4.39	0.0158	
4	5	PFOA	368.90	3.052e1	1.782e4		0.281	4.66	0.0687	
5	6	PFNA	419.00	1.940e1	1.782e4		0.281	4.98	0.0408	
6	7	PFOS	79.92	8.488e0	1.374e4		0.281	5.04	0.0460	
7	15	13C2-PFHxA	269.90	1.241e4	1.782e4	0.560	0.281	3.80	44.1	124
8	16	13C2-PFDA	470.00	1.148e4	1.782e4	0.580	0.281	5.21	39.4	111
9	18	13C2-PFOA	369.90	1.782e4	1.782e4	1.000	0.281	4.66	35.5	100
10	19	13C4-PFOS	79.93	1.374e4	1.374e4	1.000	0.281	5.04	102	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

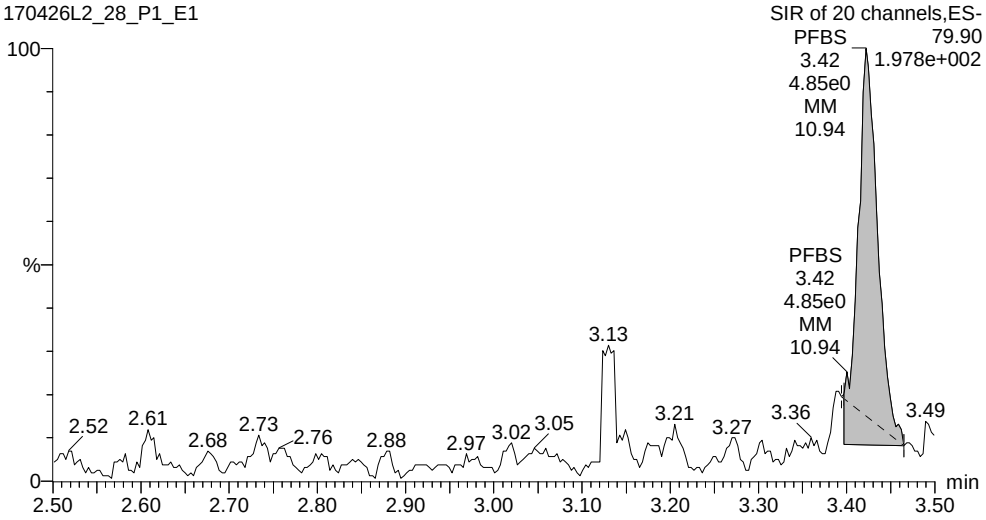
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-28.qld

Last Altered: Thursday, April 27, 2017 11:12:44 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:13:16 Pacific Daylight Time

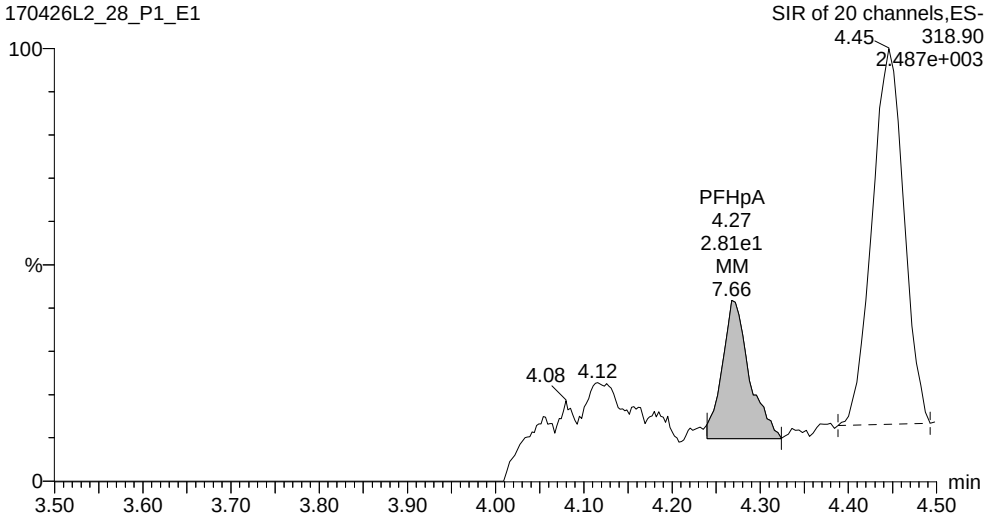
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-09, Description: FRB-23-20170420, Name: 170426L2_28.wiff, Date: 27-Apr-2017, Time: 06:33:46, Instrument: , Lab: ©PE-SCIEX, User: sciex

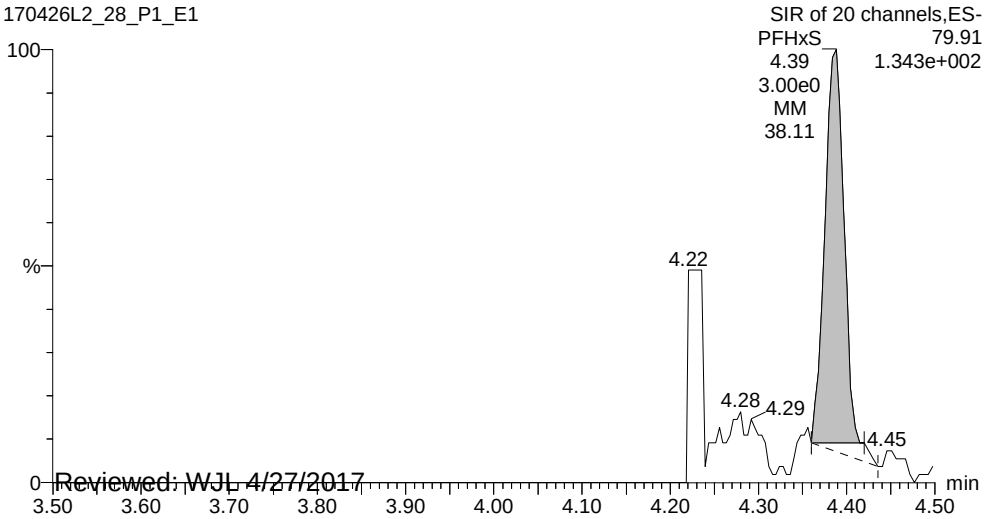
PFBS



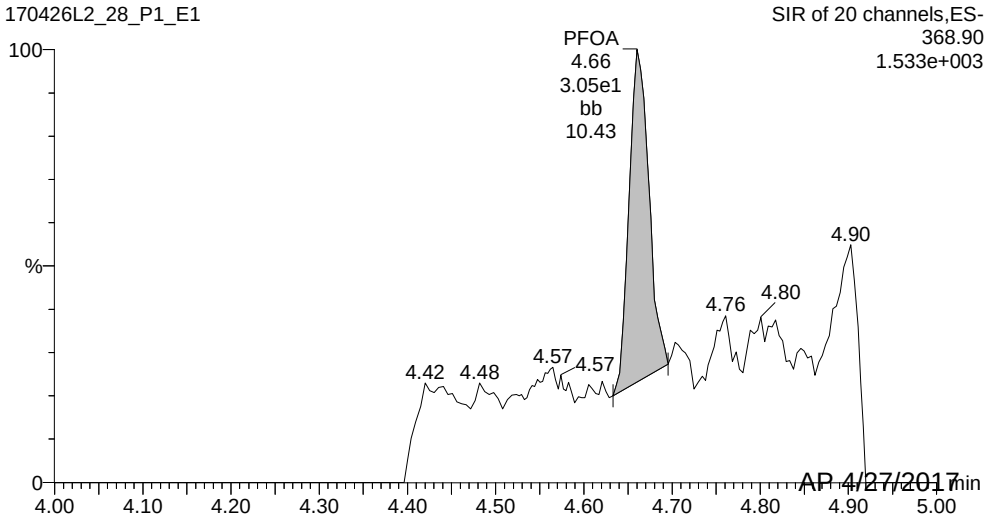
PFHpA



PFHxS



PFOA



Reviewed: WJL 4/27/2017 AP 4/27/2017

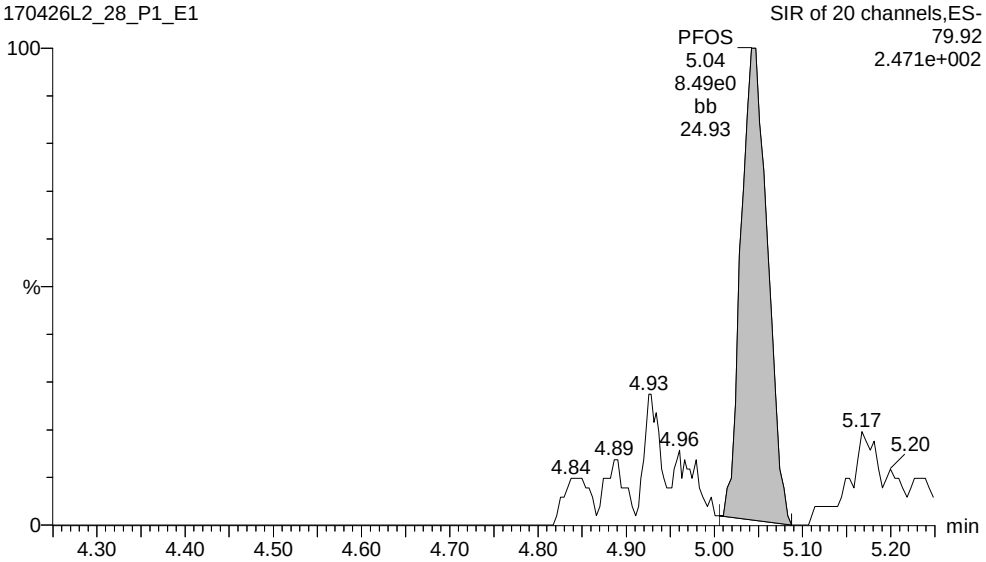
Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-28.qld

Last Altered: Thursday, April 27, 2017 11:12:44 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:13:16 Pacific Daylight Time

ID: 1700503-09, Description: FRB-23-20170420, Name: 170426L2_28.wiff, Date: 27-Apr-2017, Time: 06:33:46, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



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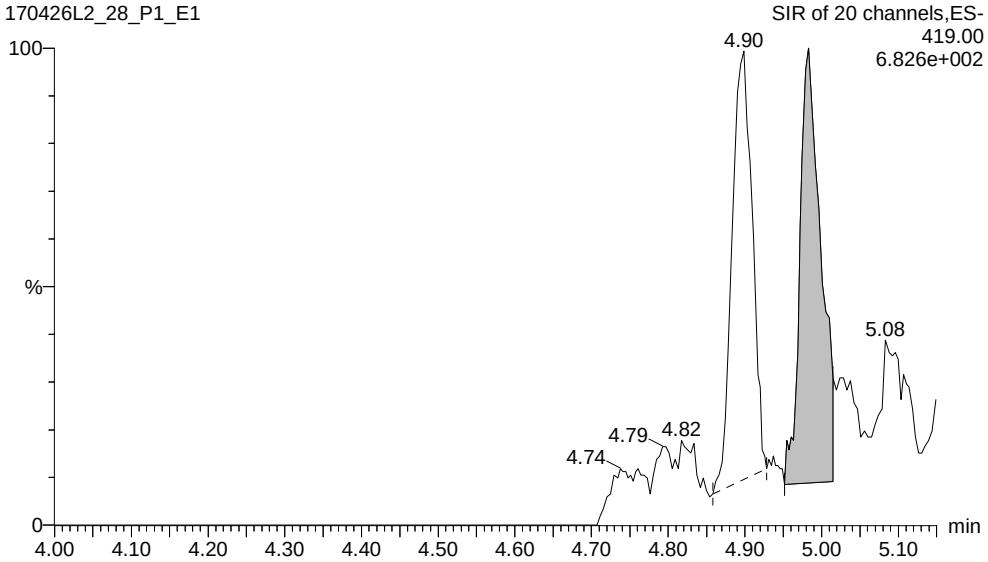
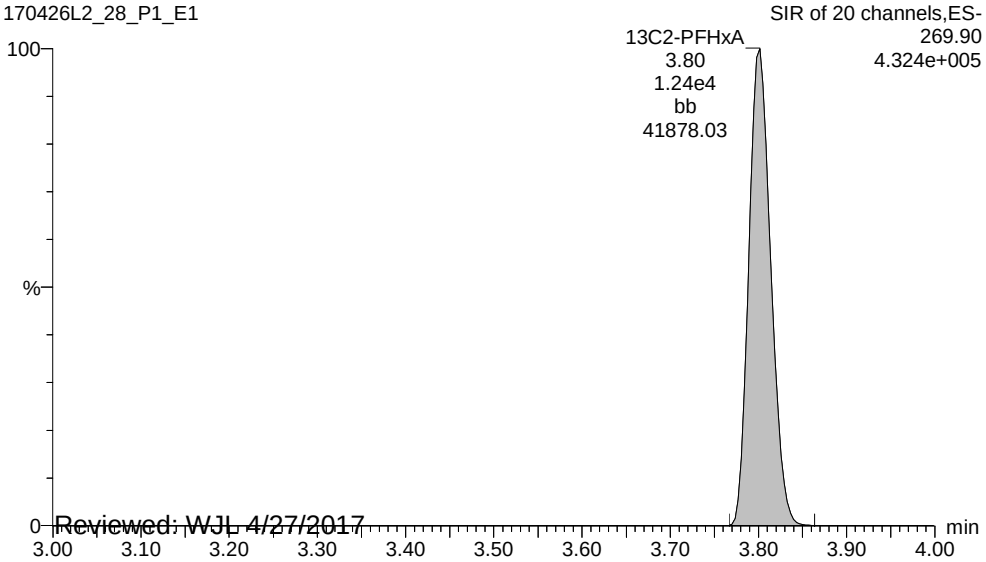
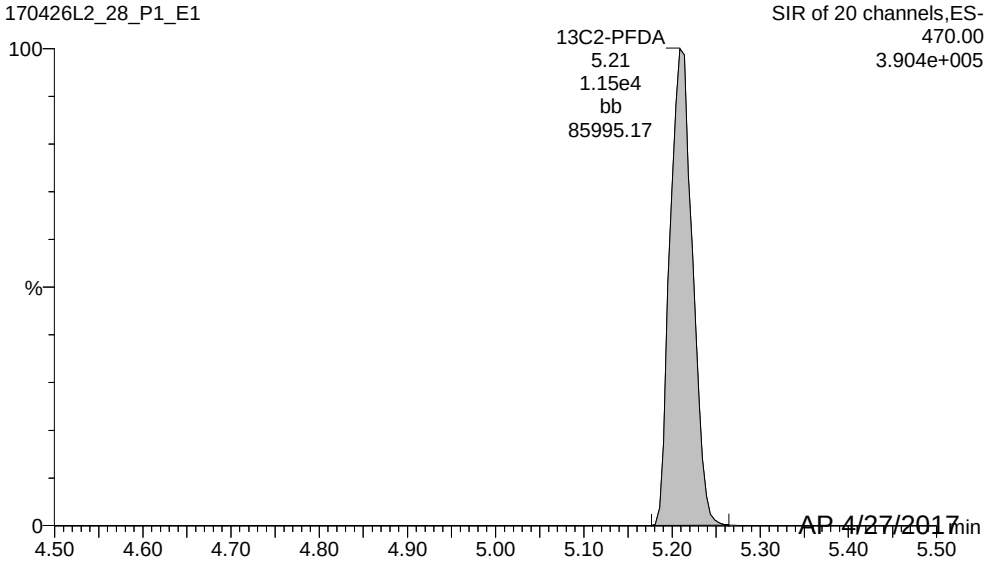


13C2-PFHxA



13C2-PFDA



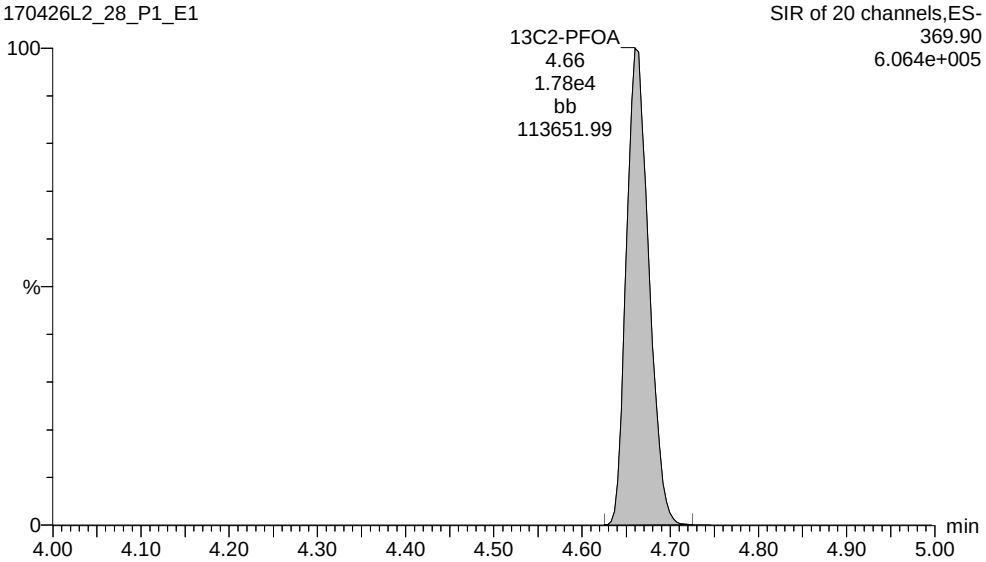
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-28.qld

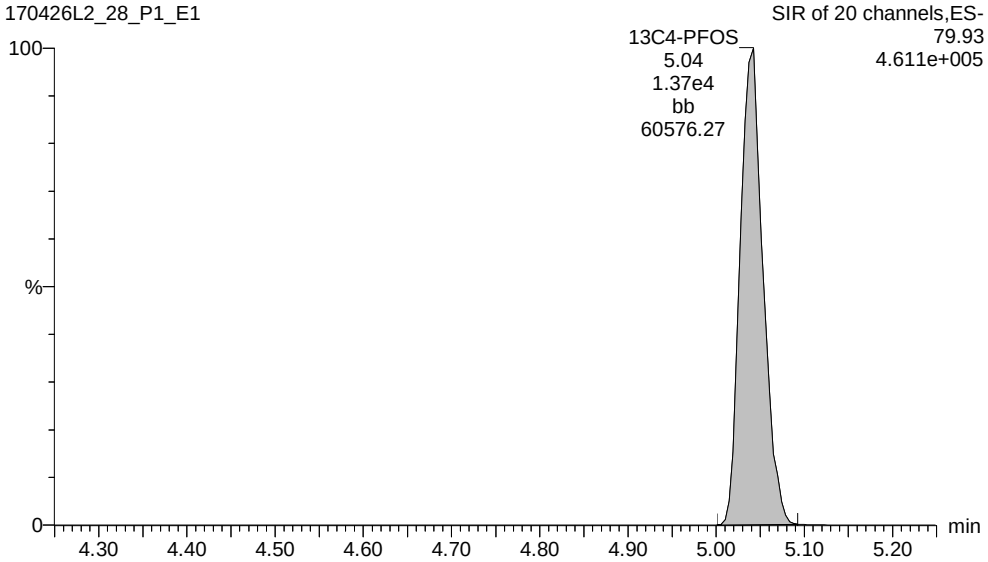
Last Altered: Thursday, April 27, 2017 11:12:44 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:13:16 Pacific Daylight Time

ID: 1700503-09, Description: FRB-23-20170420, Name: 170426L2_28.wiff, Date: 27-Apr-2017, Time: 06:33:46, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-29.qld

Last Altered: Thursday, April 27, 2017 10:55:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:45 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-10, Description: DUP02-20170420, Name: 170426L2_29.wiff, Date: 27-Apr-2017, Time: 06:46:01

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.796e3	1.265e4		0.287	3.41	8.57	
2	3	PFHpA	318.90	1.635e3	1.643e4		0.287	4.28	4.14	
3	4	PFHxS	79.91	4.601e2	1.265e4		0.287	4.39	2.58	
4	5	PFOA	368.90	6.283e3	1.643e4		0.287	4.67	15.3	
5	6	PFNA	419.00	8.488e2	1.643e4		0.287	4.97	1.90	
6	7	PFOS	79.92	1.989e3	1.265e4		0.287	4.92	11.6	
7	15	13C2-PFHxA	269.90	1.169e4	1.643e4	0.560	0.287	3.80	44.2	127
8	16	13C2-PFDA	470.00	1.037e4	1.643e4	0.580	0.287	5.22	37.9	109
9	18	13C2-PFOA	369.90	1.643e4	1.643e4	1.000	0.287	4.67	34.8	100
10	19	13C4-PFOS	79.93	1.265e4	1.265e4	1.000	0.287	5.01	100	100

Reviewed: WJL 4/27/2017 AP 4/27/2017

Vista Analytical Laboratory

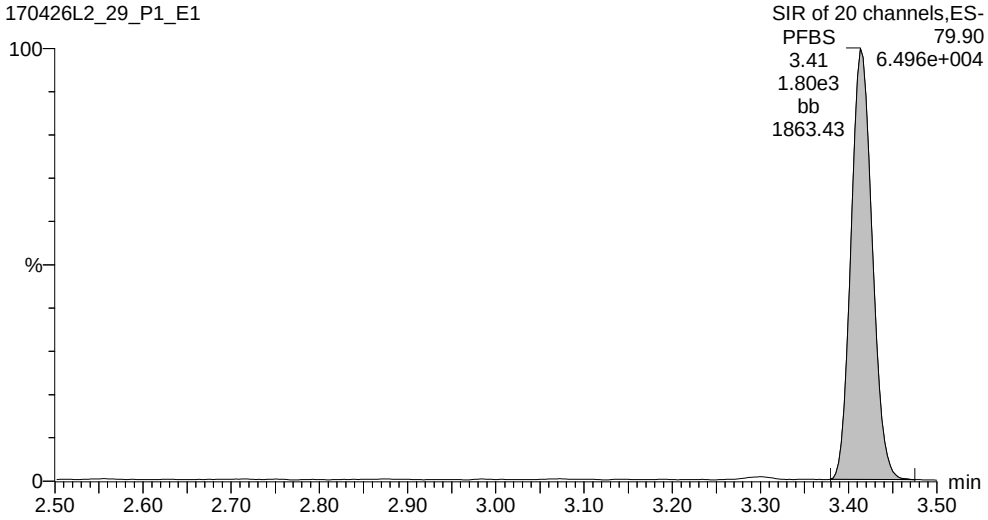
Dataset: U:\Q2.PRO\Results\170426L2\170426L2-29.qld

Last Altered: Thursday, April 27, 2017 10:55:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:45 Pacific Daylight Time

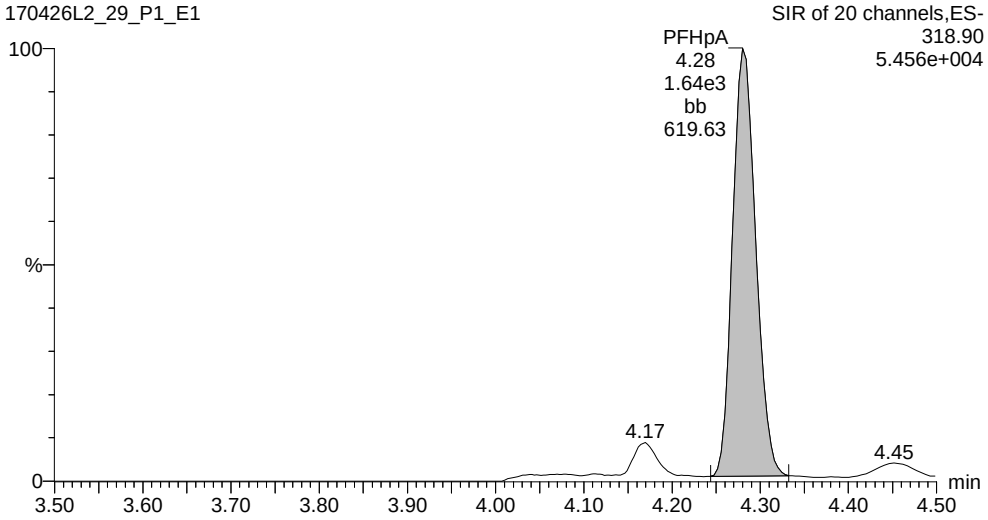
Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-10, Description: DUP02-20170420, Name: 170426L2_29.wiff, Date: 27-Apr-2017, Time: 06:46:01, Instrument: , Lab: ©PE-SCIEX, User: sciex

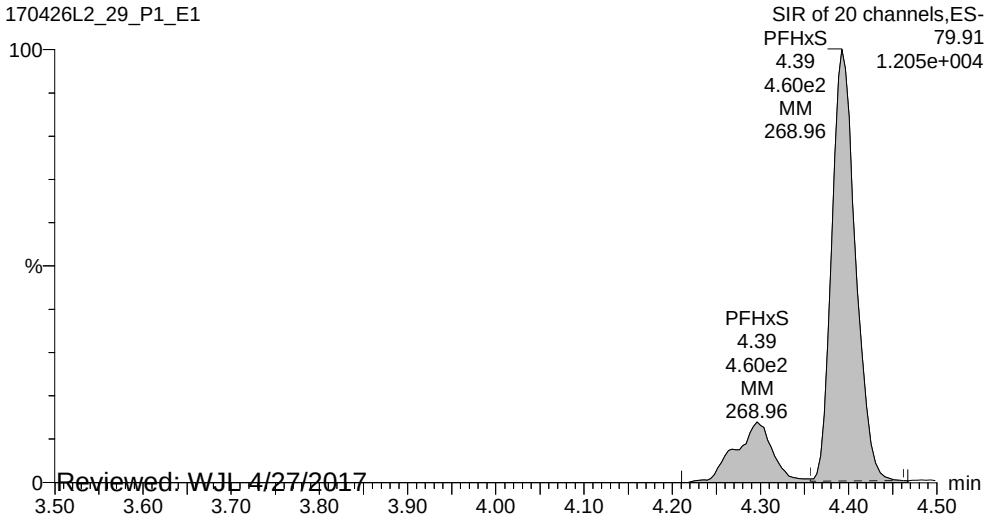
PFBS



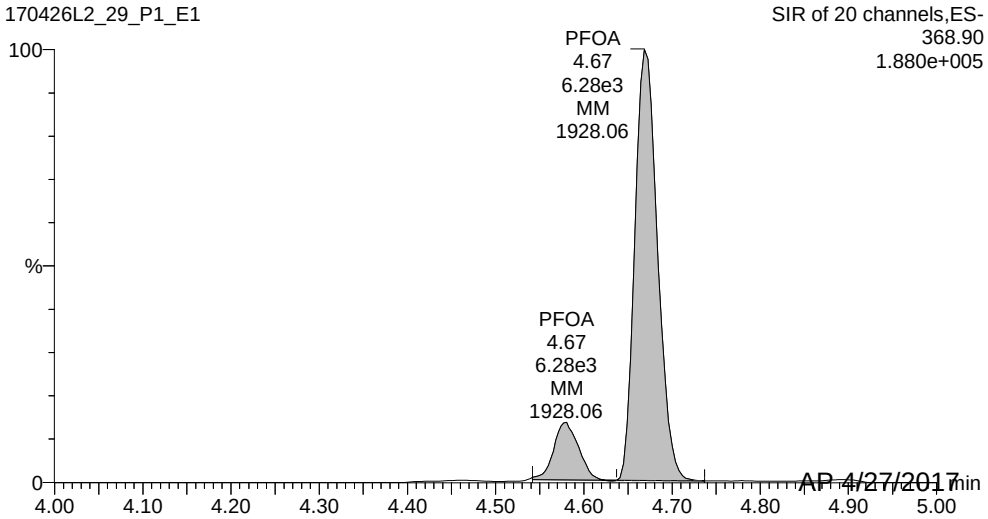
PFHpA



PFHxS



PFOA



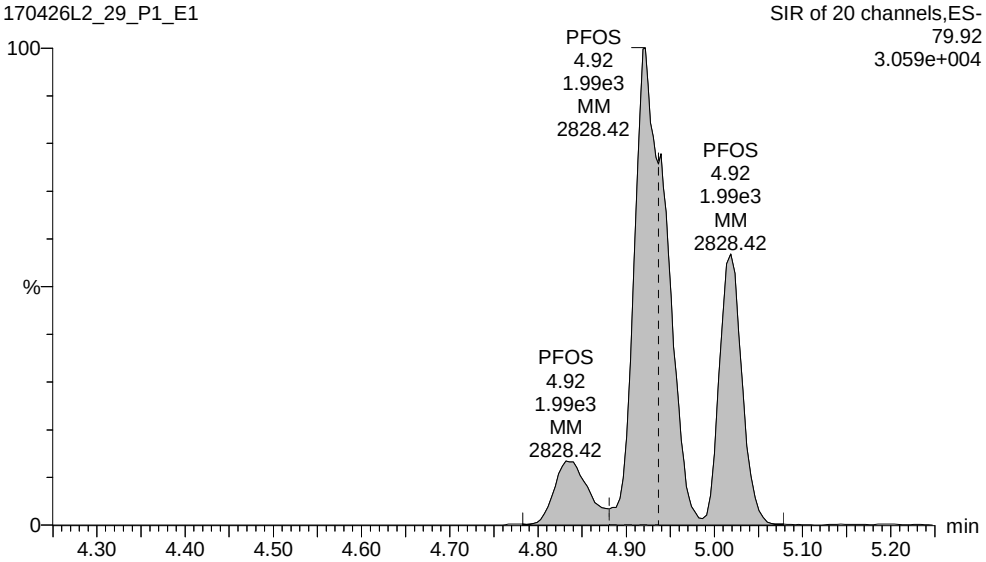
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-29.qld

Last Altered: Thursday, April 27, 2017 10:55:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:45 Pacific Daylight Time

ID: 1700503-10, Description: DUP02-20170420, Name: 170426L2_29.wiff, Date: 27-Apr-2017, Time: 06:46:01, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



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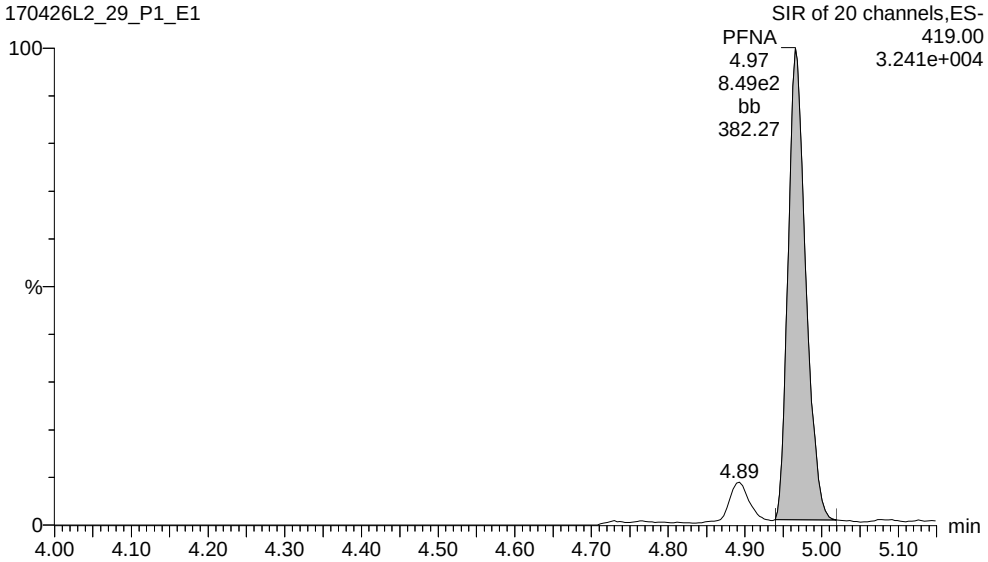

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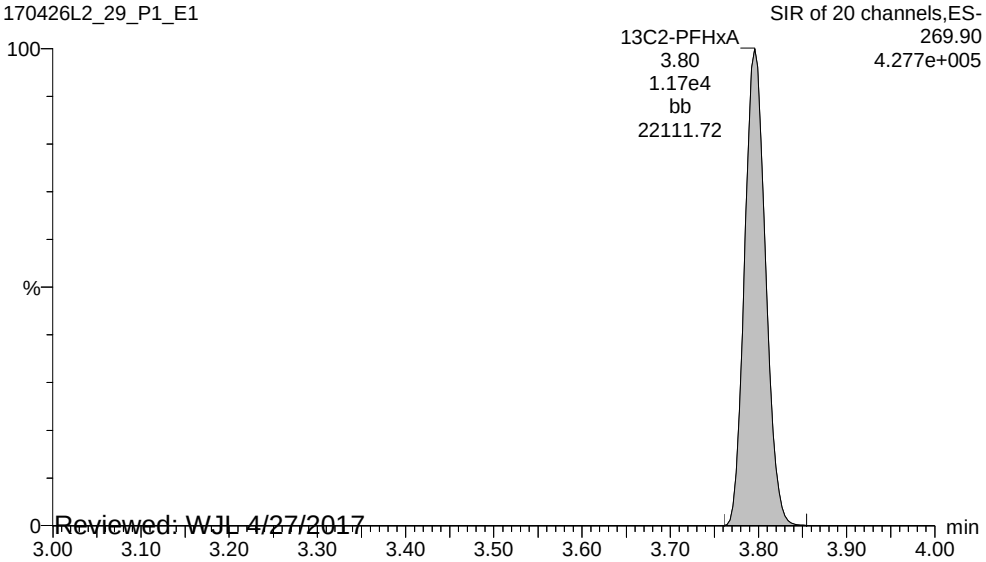
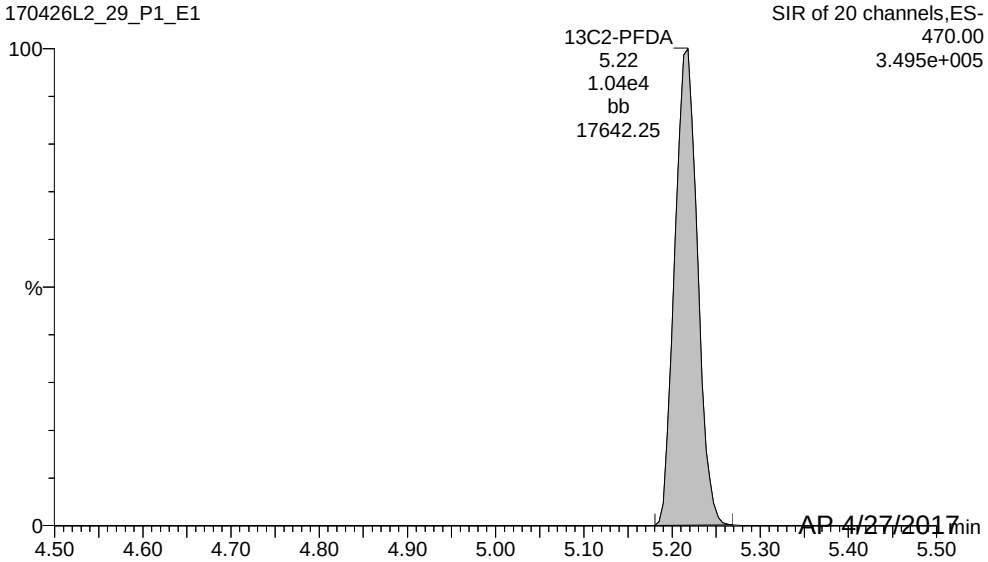


13C2-PFDA



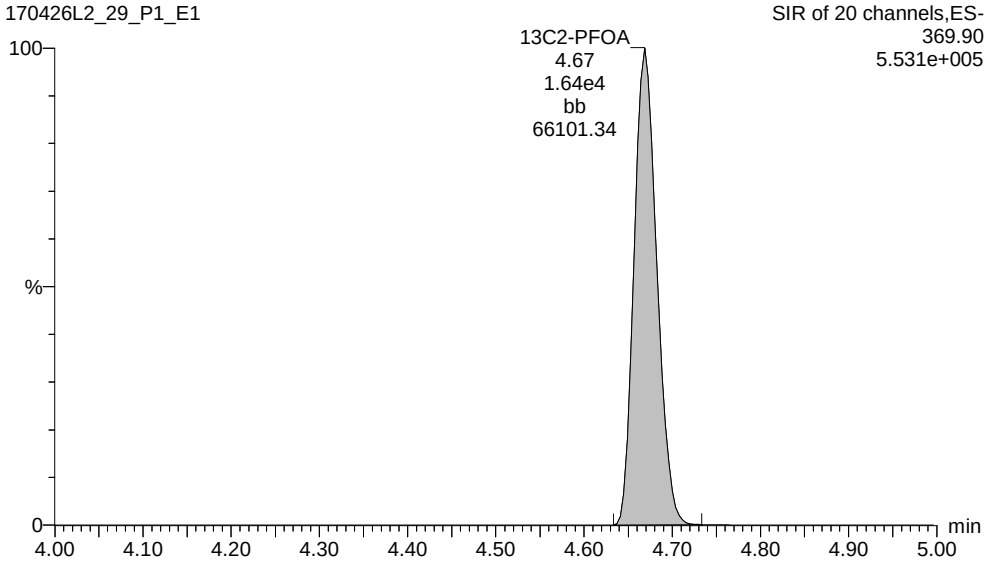
Reviewed: WJL 4/27/2017 AP 4/27/2017

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-29.qld

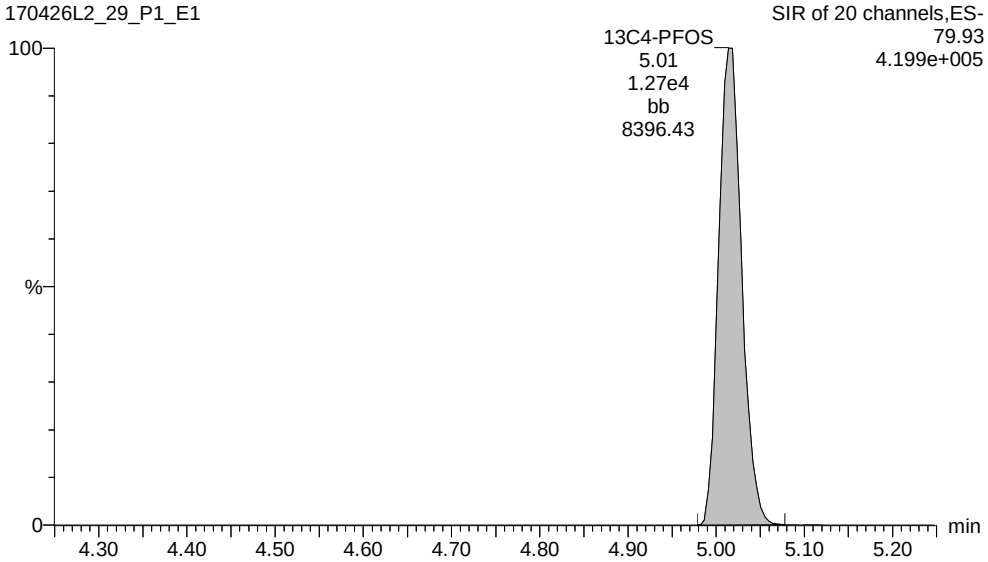
Last Altered: Thursday, April 27, 2017 10:55:12 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:45 Pacific Daylight Time

ID: 1700503-10, Description: DUP02-20170420, Name: 170426L2_29.wiff, Date: 27-Apr-2017, Time: 06:46:01, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFOA



13C4-PFOS



Reviewed: WJL 4/27/2017 AP 4/27/2017

CONTINUING CALIBRATION

Quantify Sample Summary Report **MassLynx 4.1 SCN815**
Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-33.qld

Last Altered: Thursday, April 27, 2017 10:57:46 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:58:54 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Name: 170426L2_33.wiff, Date: 27-Apr-2017, Time: 07:35:00, ID: ST170426L2-10 537 DW CS2 17D2406, Description: 537 DW CS2 17D2406

	#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.36e4	1.93e4		0.250	3.42	51.4	96.9
2	2	PFHxA	268.9	2.71e4	1.93e4		0.250	3.80	62.5	104.1
3	3	PFHpA	318.90	3.06e4	2.65e4		0.250	4.29	58.6	97.7
4	4	PFHxS	79.91	1.25e4	1.93e4		0.250	4.40	55.3	101.0
5	5	PFOA	368.90	3.32e4	2.65e4		0.250	4.70	60.6	101.1
6	6	PFNA	419.00	3.14e4	2.65e4		0.250	5.01	53.9	89.8
7	7	PFOS	79.92	1.26e4	1.93e4		0.250	5.06	57.2	102.9
8	8	PFDA	469.00	2.02e4	2.65e4		0.250	5.25	56.0	93.4
9	9	N-MeFOSAA	419.01	1.31e4	2.86e4		0.250	5.31	61.0	101.7
10	11	PFUnA	519.0	2.35e4	2.65e4		0.250	5.36	58.9	98.2
11	12	PFDoA	569.00	1.14e4	2.65e4		0.250	5.48	21.2	35.3
12	13	PFTrDA	619.00	2.92e4	2.65e4		0.250	5.56	58.8	97.9
13	14	PFTeDA	669.00	2.47e4	2.65e4		0.250	5.66	58.4	97.4
14	15	13C2-PFHxA	269.90	1.49e4	2.65e4	0.560	0.250	3.80	40.3	100.7
15	16	13C2-PFDA	470.00	1.57e4	2.65e4	0.580	0.250	5.24	40.9	102.1
16	17	d5-N-EtFOSAA	419.02	2.07e4	2.86e4	0.688	0.250	5.36	168	105.0
17	18	13C2-PFOA	369.90	2.65e4	2.65e4	1.000	0.250	4.70	40.0	100.0
18	19	13C4-PFOS	79.93	1.93e4	1.93e4	1.000	0.250	5.05	115	100.0
19	20	d3-N-MeFOSAA	418.91	2.86e4	2.86e4	1.000	0.250	5.31	160	100.0

70-130

(A)

70-130

AC 4/27/17

(A) Not used.

✓ ES 4/27/17

AC 4/27/17

LC Calibration Standards Review Checklist ~~Q2~~ Q3

		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	N/A
Calibration ID: ST170426L2-10	L (M) H	☐ N/A	☑	☑	☑	☑	☑	☑
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	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 2/21/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Reviewed By: EJ 4/27/17
Initials/Date

Comments:

Vista Analytical Laboratory Q-1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:59:13 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:00:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170426L2_01_P...	IPA	27-Apr-17	01:03:12
2	170426L2_02_P...	ST170426L2-1 537 DW CS(-3) 17D2401	27-Apr-17	01:15:26
3	170426L2_03_P...	ST170426L2-2 537 DW CS(-2) 17D2402	27-Apr-17	01:27:38
4	170426L2_04_P...	ST170426L2-3 537 DW CS(-1) 17D2403	27-Apr-17	01:39:55
5	170426L2_05_P...	ST170426L2-4 537 DW CS0 17D2516	27-Apr-17	01:52:09
6	170426L2_06_P...	ST170426L2-5 537 DW CS1 17D2604	27-Apr-17	02:04:24
7	170426L2_07_P...	ST170426L2-6 537 DW CS2 17D2605	27-Apr-17	02:16:37
8	170426L2_08_P...	ST170426L2-7 537 DW CS3 17D2606	27-Apr-17	02:28:51
9	170426L2_09_P...	ST170426L2-8 537 DW CS4 17D2607	27-Apr-17	02:41:02
10	170426L2_10_P...	ST170426L2-9 537 DW CS5 17D2608	27-Apr-17	02:53:18
11	170426L2_11_P...	IPA	27-Apr-17	03:05:34
12	170426L2_12_P...	SS170426L2-1 537 DW SSS 17D2609	27-Apr-17	03:17:47
13	170426L2_13_P...	B7D0069-BS1	27-Apr-17	03:30:03
14	170426L2_14_P...	B7D0109-BS1	27-Apr-17	03:42:18
15	170426L2_15_P...	IPA	27-Apr-17	03:54:34
16	170426L2_16_P...	B7D0069-BLK1	27-Apr-17	04:06:49
17	170426L2_17_P...	B7D0109-BLK1	27-Apr-17	04:19:04
18	170426L2_18_P...	1700503-01	27-Apr-17	04:31:22
19	170426L2_19_P...	1700503-02	27-Apr-17	04:43:37
20	170426L2_20_P...	1700503-03	27-Apr-17	04:55:52
21	170426L2_21_P...	1700503-04	27-Apr-17	05:08:06
22	170426L2_22_P...	1700503-05	27-Apr-17	05:20:21
23	170426L2_23_P...	1700503-06	27-Apr-17	05:32:36
24	170426L2_24_P...	B7D0109-MS1	27-Apr-17	05:44:48
25	170426L2_25_P...	B7D0109-MSD1	27-Apr-17	05:57:04
26	170426L2_26_P...	1700503-07	27-Apr-17	06:09:14
27	170426L2_27_P...	1700503-08	27-Apr-17	06:21:31
28	170426L2_28_P...	1700503-09	27-Apr-17	06:33:46
29	170426L2_29_P...	1700503-10	27-Apr-17	06:46:01
30	170426L2_30_P...	1700387-01@20X	27-Apr-17	06:58:16
31	170426L2_31_P...	1700387-01@40X	27-Apr-17	07:10:31

Vista Analytical Laboratory Q-1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:59:13 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:00:05 Pacific Daylight Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	170426L2_32_P...	IPA	27-Apr-17	07:22:47
33	170426L2_33_P...	ST170426L2-10 537 DW CS2 17D2406	27-Apr-17	07:35:00

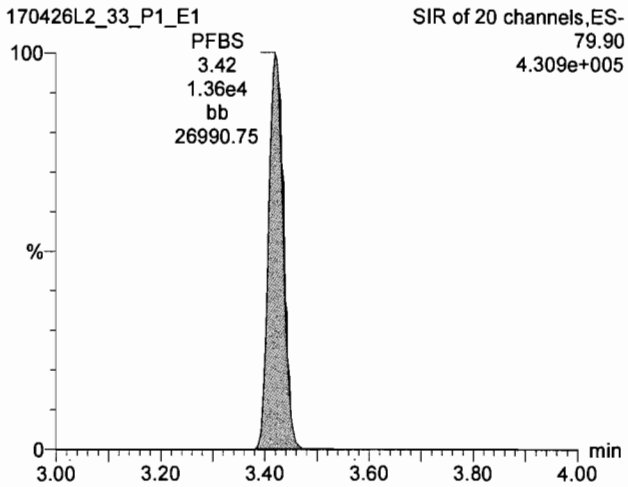
Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:54:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:54:50 Pacific Daylight Time

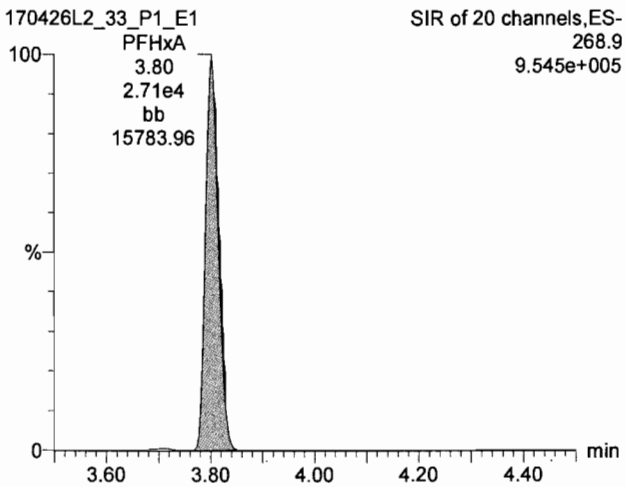
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: ST170426L2-10 537 DW CS2 17D2406, Description: 537 DW CS2 17D2406, Name: 170426L2_33.wiff, Date: 27-Apr-2017, Time: 07:35:00, Instrument: , Lab: ©PE-SCIEX, User: sciex

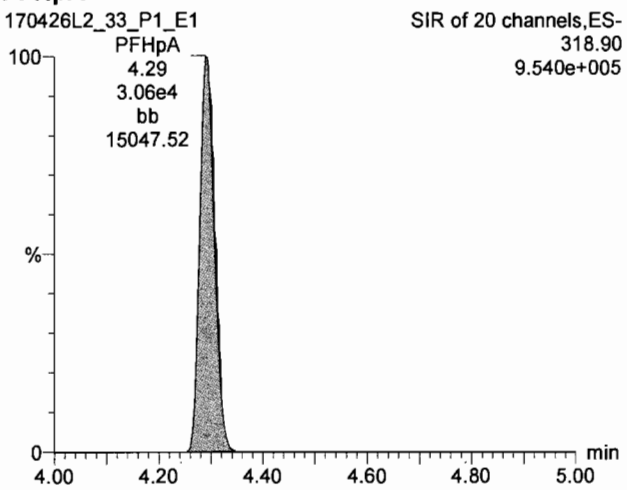
PFBS



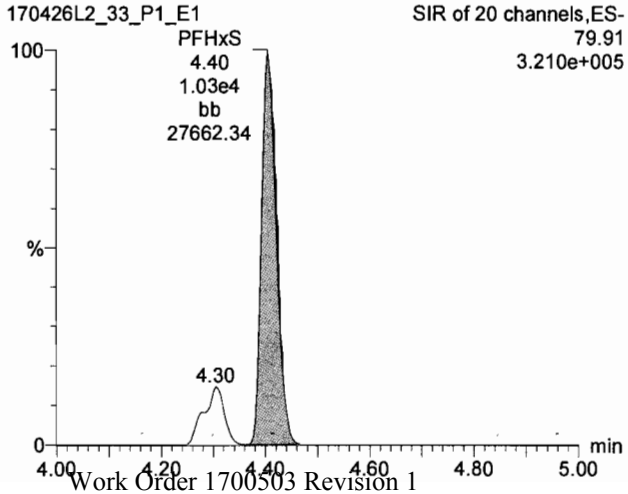
PFHxA



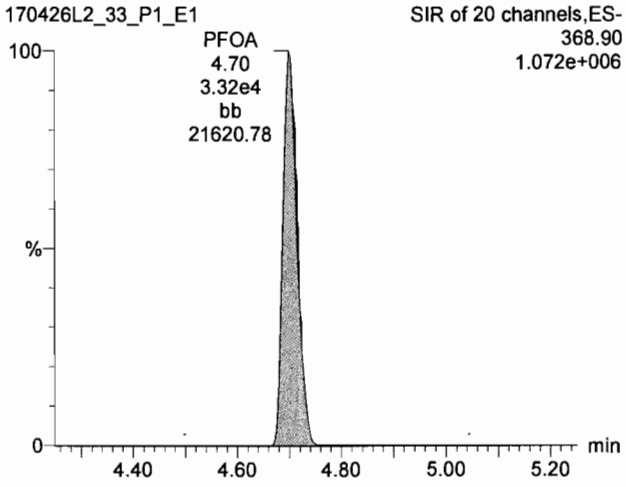
PFHpA



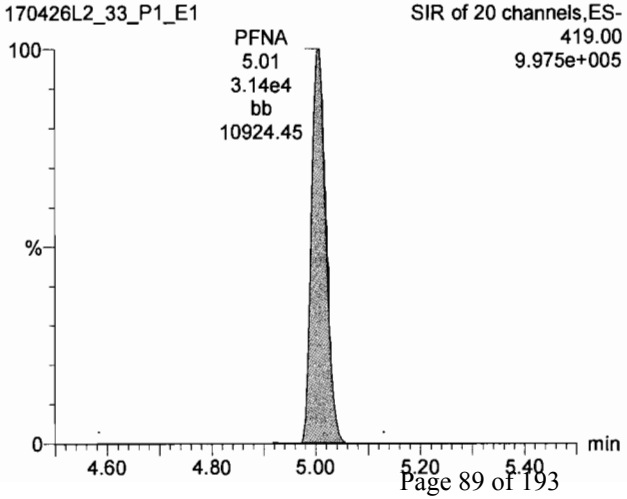
PFHxS

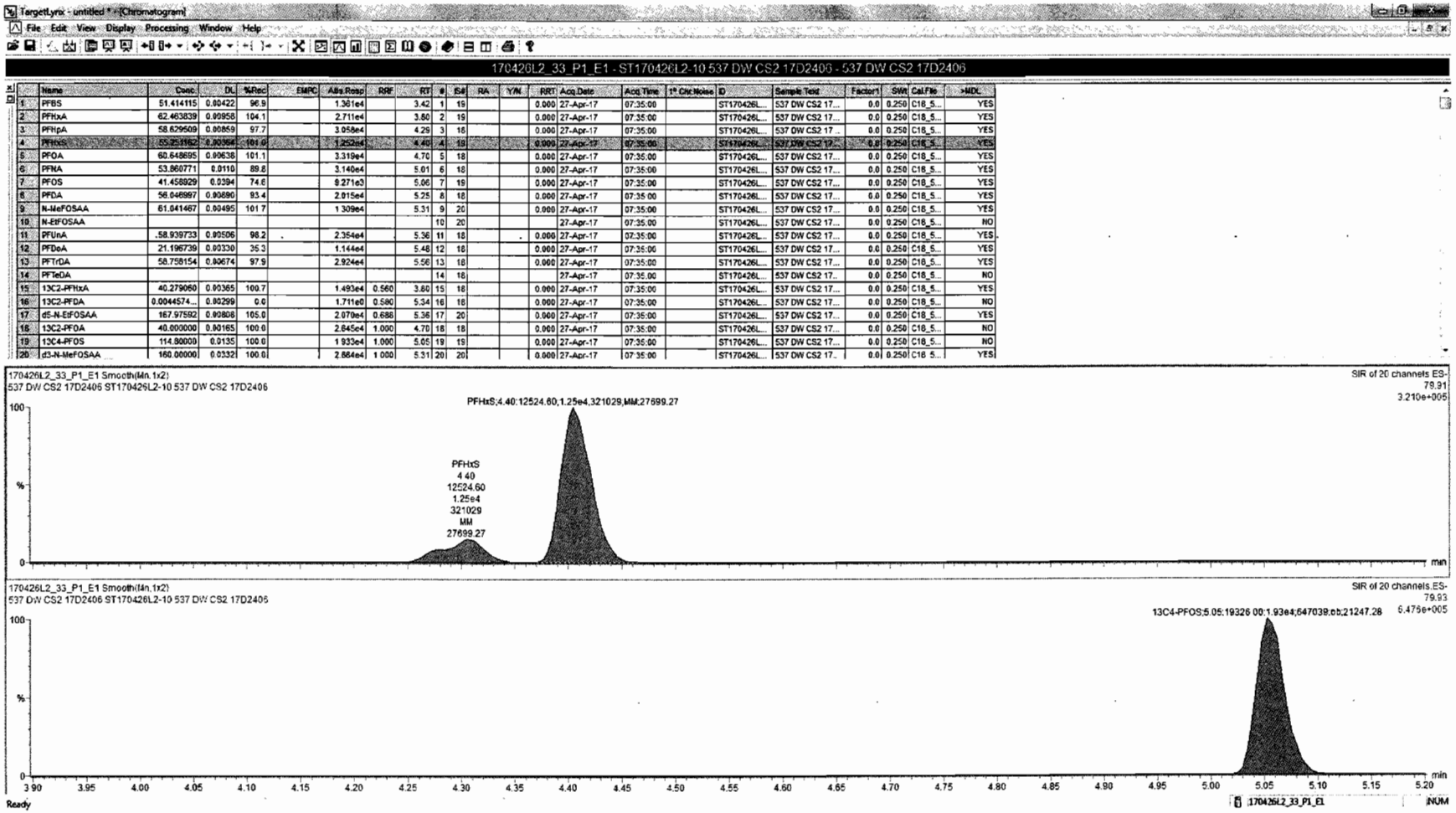


PFOA



PFNA





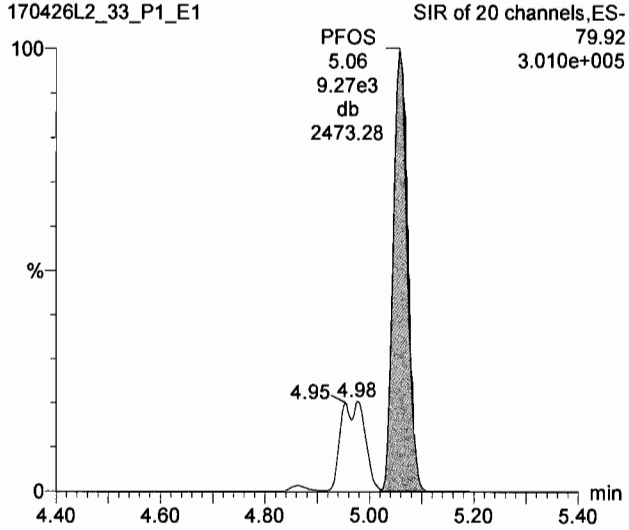
	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chn.Noise	ID	Sample Text	Factor1	SWI	Cal.File	>MDL
1	PFBS	51.414115	0.00422	96.9		1.361e4		3.42	1	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
2	PFHxA	62.463839	0.00958	104.1		2.711e4		3.80	2	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
3	PFHpA	58.629509	0.00859	97.7		3.058e4		4.29	3	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
4	PFHxS	65.251162	0.00956	101.9		1.252e4		4.40	4	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
5	PFOA	60.648695	0.00638	101.1		3.319e4		4.70	5	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
6	PFNA	53.860771	0.0110	89.8		3.140e4		5.01	6	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
7	PFOS	41.458929	0.0394	74.6		9.271e3		5.06	7	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
8	PFDA	56.046997	0.00890	93.4		2.815e4		5.25	8	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
9	N-MeFOSAA	61.641467	0.00495	101.7		1.309e4		5.31	9	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
10	N-EtFOSAA								10	20				27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
11	PFUnA	58.939733	0.00506	98.2		2.354e4		5.36	11	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
12	PFDoA	21.196739	0.00330	35.3		1.144e4		5.48	12	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
13	PFTrDA	58.758154	0.00674	97.9		2.924e4		5.56	13	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
14	PFTeDA								14	18				27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
15	13C2-PFHxA	40.279060	0.00365	100.7		1.493e4	0.560	3.80	15	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
16	13C2-PFDA	0.0044574...	0.00299	0.0		1.711e0	0.580	5.34	16	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
17	d5-N-EtFOSAA	167.97592	0.00808	105.0		2.070e4	0.688	5.36	17	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
18	13C2-PFOA	40.000000	0.00165	100.0		2.845e4	1.000	4.70	18	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
19	13C4-PFOS	114.80000	0.0135	100.0		1.933e4	1.000	5.05	19	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
20	d3-N-MeFOSAA	160.00000	0.0332	100.0		2.864e4	1.000	5.31	20	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:54:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:54:50 Pacific Daylight Time

ID: ST170426L2-10 537 DW CS2 17D2406, Description: 537 DW CS2 17D2406, Name: 170426L2_33.wiff, Date: 27-Apr-2017, Time: 07:35:00, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



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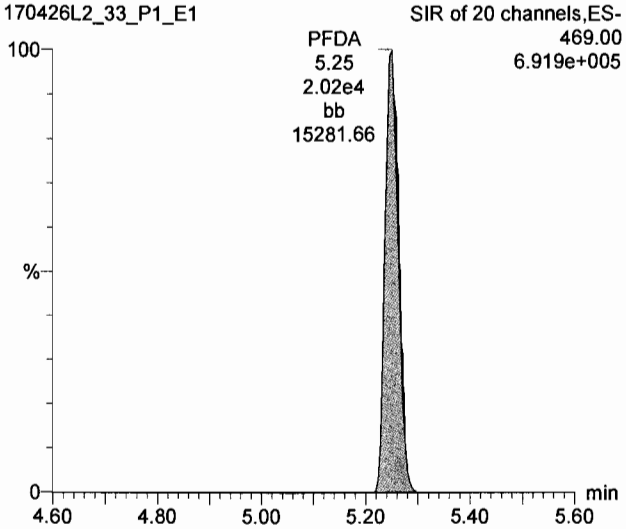
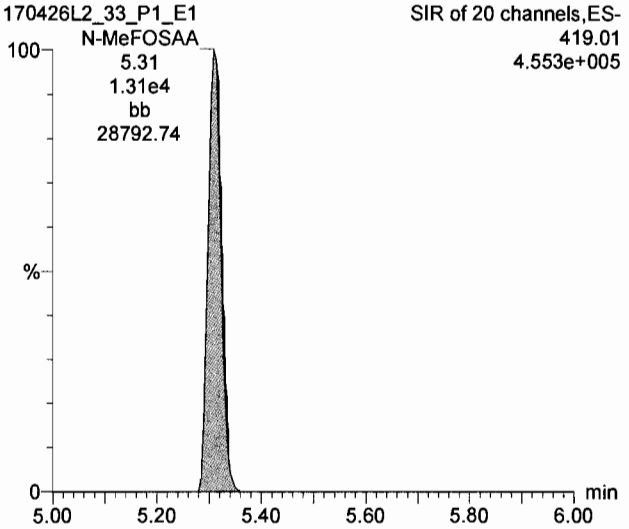
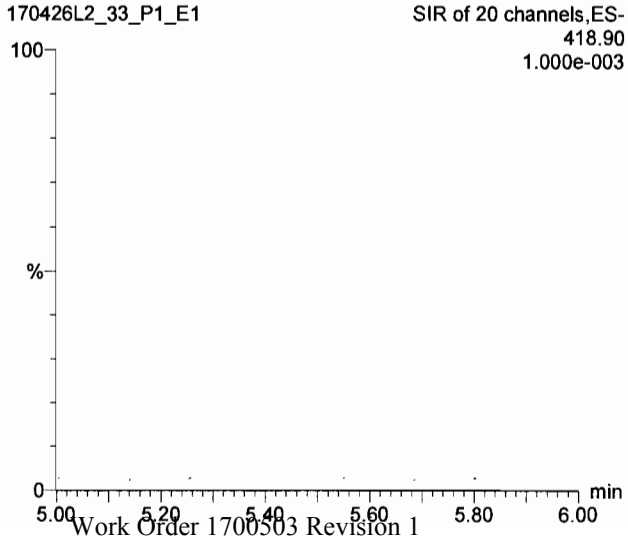


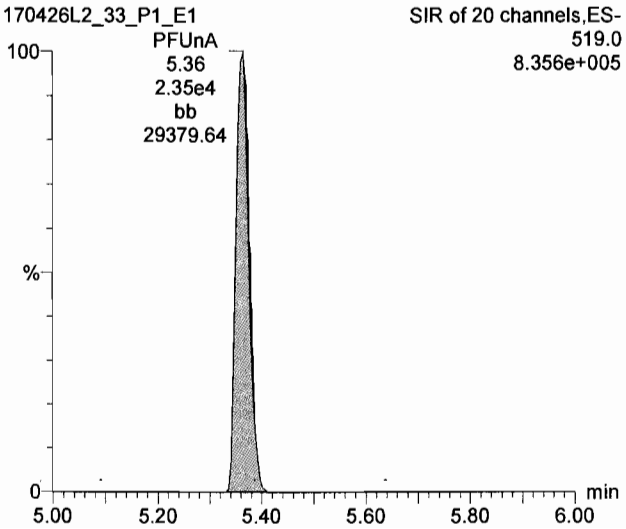
N-MeFOSAA



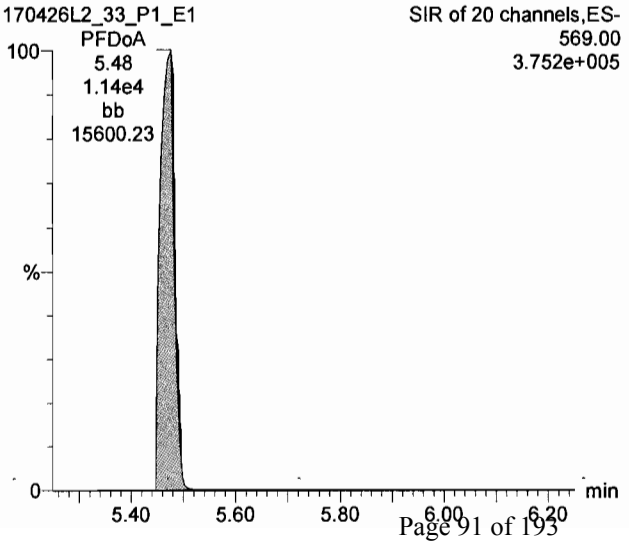
N-EtFOSAA



PFUnA



PFDoA

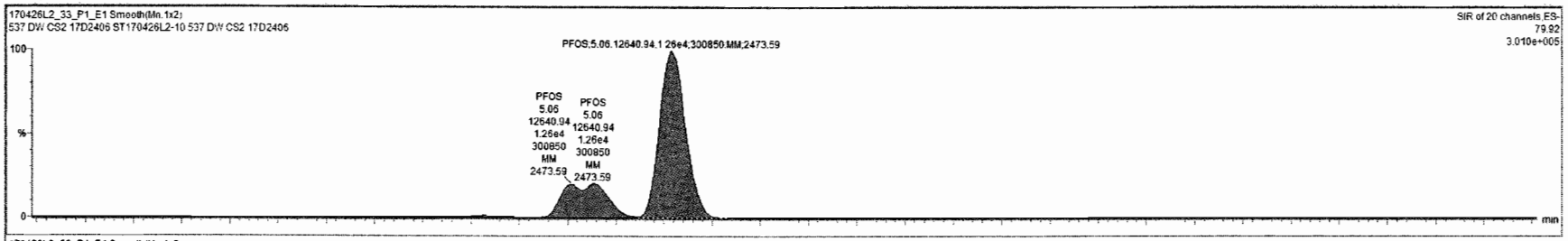


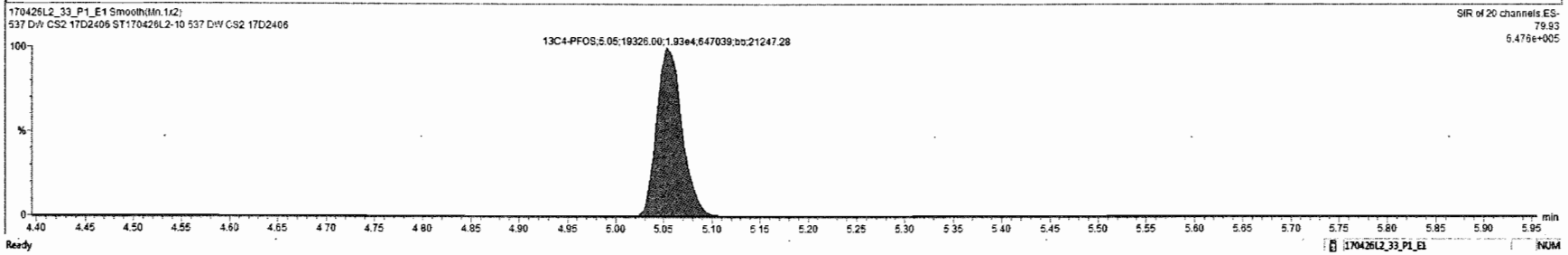
TargetLynx - 170426L2-33.qld - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_33_P1_E1 - ST170426L2-10 537 DW CS2 17D2406 - 537 DW CS2 17D2406

	Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	Std	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor1	SWL	Cal File	>MDL
1	PFBS	51.414115	0.00422	96.9		1.361e4		3.42	1	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
2	PFHxA	62.463839	0.00958	104.1		2.711e4		3.80	2	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
3	PFHpA	58.629509	0.00859	97.7		3.058e4		4.29	3	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5	YES
4	PFHxS	55.251162	0.00364	101.0		1.252e4		4.40	4	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
5	PFOA	60.648695	0.00638	101.1		3.319e4		4.70	5	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
6	PFNA	53.860771	0.0110	89.8		3.140e4		5.01	6	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
7	PFOS	57.186961	0.0394	182.6		1.264e4		5.06	7	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
8	PFDA	58.046997	0.00690	93.4		2.015e4		5.25	8	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
9	N-MeFOSAA	61.041467	0.00495	101.7		1.309e4		5.31	9	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
10	N-EtFOSAA								10	20				27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
11	PFUnA	58.939733	0.00506	98.2		2.354e4		5.36	11	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
12	PFDoA	21.196739	0.00330	35.3		1.144e4		5.48	12	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
13	PFTrDA	58.758154	0.00674	97.9		2.924e4		5.56	13	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
14	PFTeDA								14	18				27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
15	13C2-PFHxA	40.279060	0.00365	100.7		1.493e4	0.560	3.80	15	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
16	13C2-PFDA	0.0044574...	0.00299	0.0		1.711e0	0.580	5.34	16	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
17	d5-N-EtFOSAA	167.97592	0.00808	105.0		2.070e4	0.688	5.36	17	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
18	13C2-PFOA	40.000000	0.00165	100.0		2.645e4	1.000	4.70	18	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
19	13C4-PFOS	114.80000	0.0135	100.0		1.933e4	1.000	5.05	19	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
20	d3-N-MeFOSAA	160.00000	0.0332	100.0		2.864e4	1.000	5.31	20	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES





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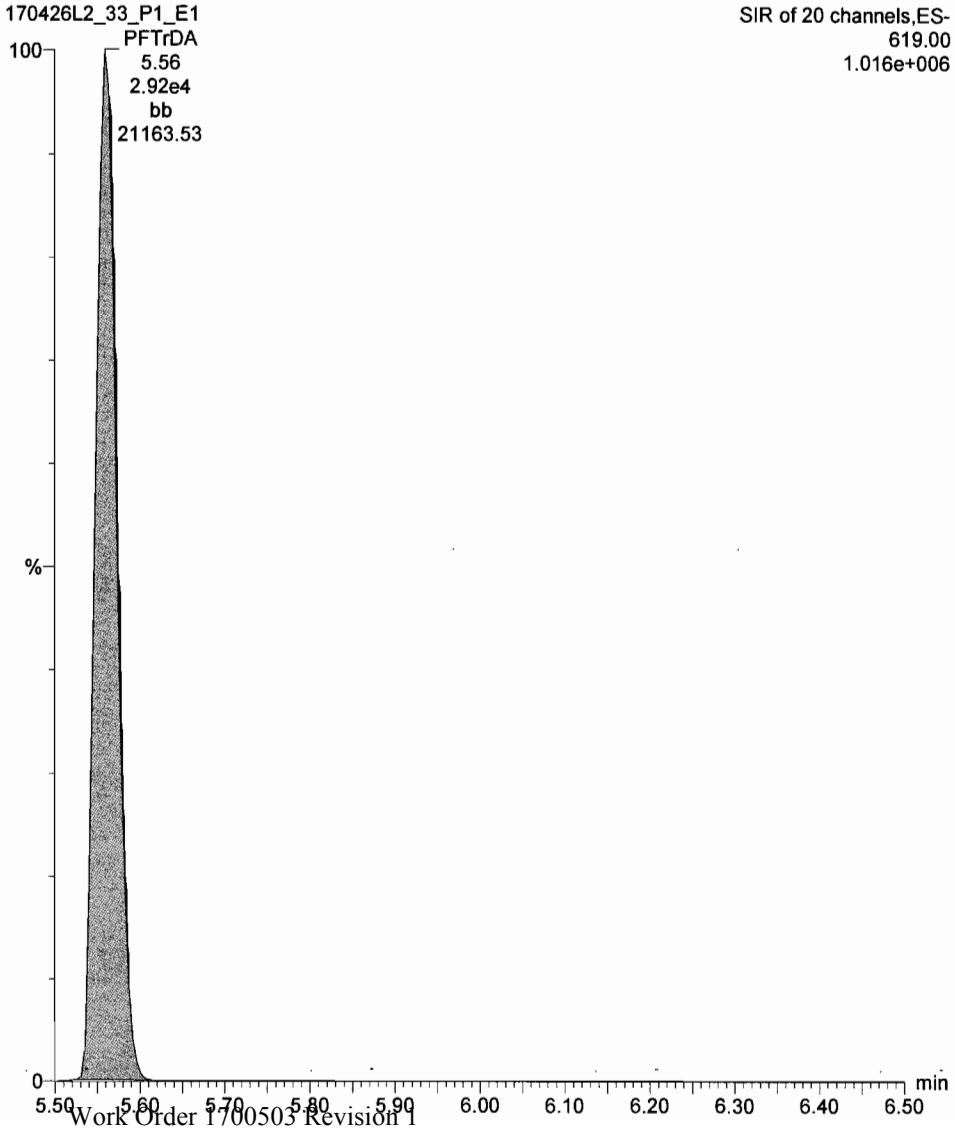
Last Altered: Thursday, April 27, 2017 10:54:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:54:50 Pacific Daylight Time

ID: ST170426L2-10 537 DW CS2 17D2406, Description: 537 DW CS2 17D2406, Name: 170426L2_33.wiff, Date: 27-Apr-2017, Time: 07:35:00, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFTrDA



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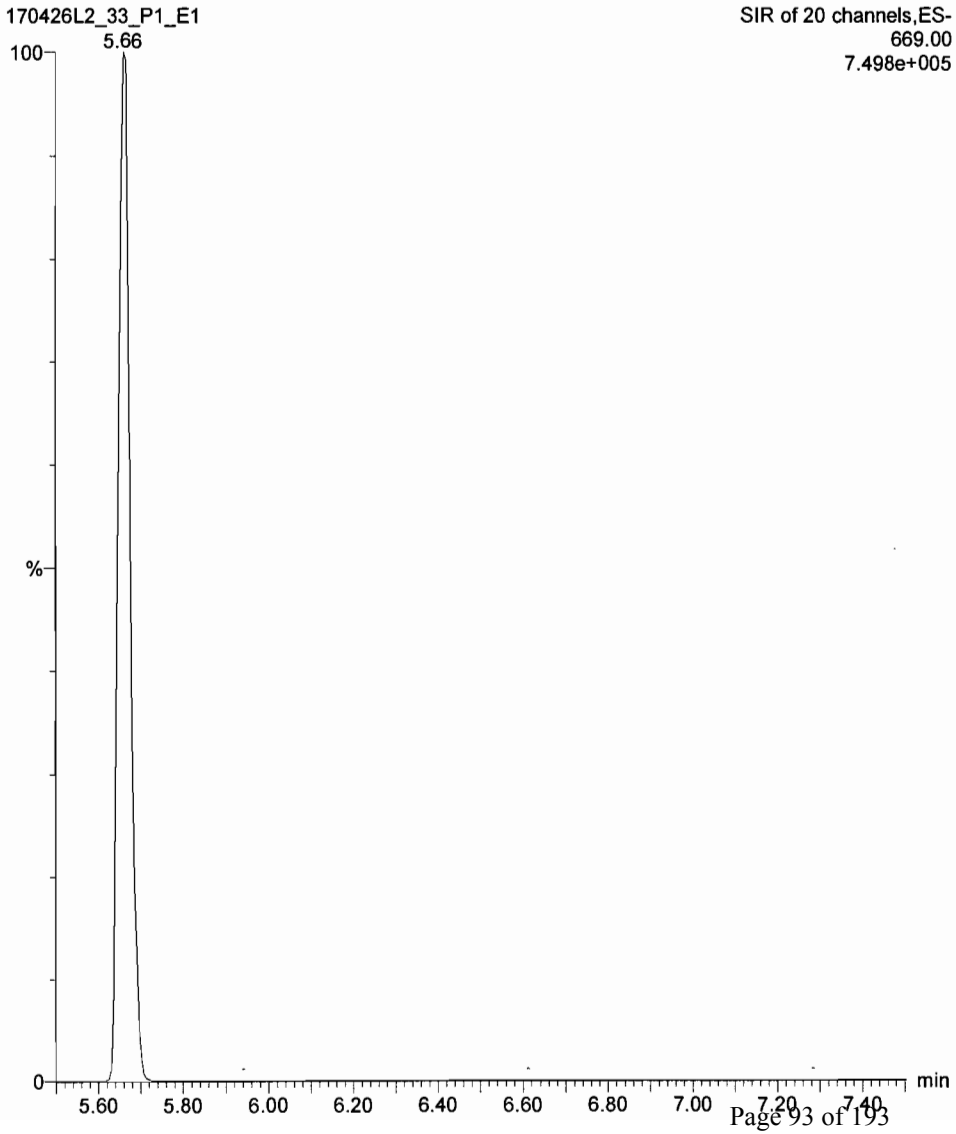
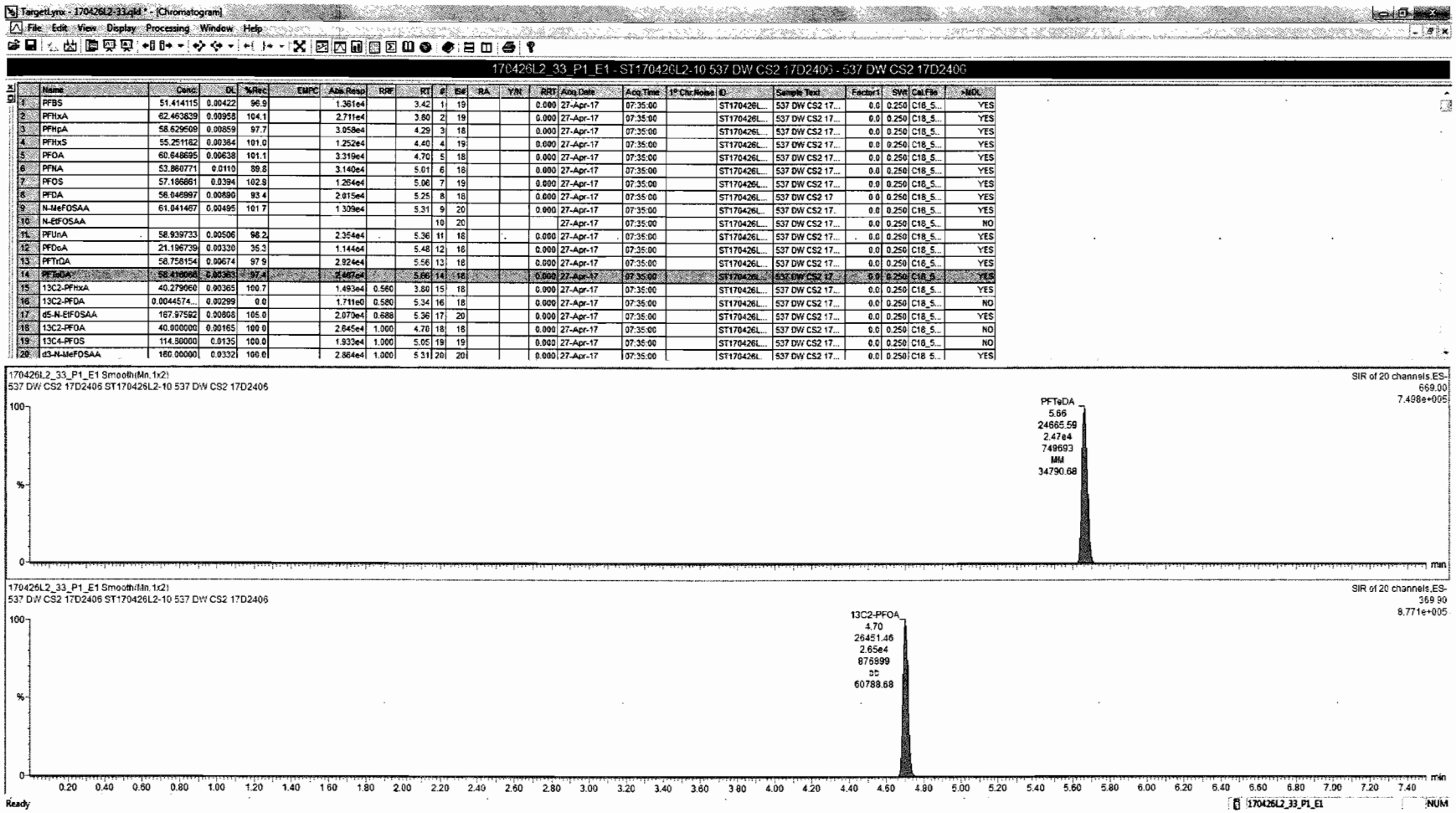




	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	ISt	RA	Y/N	RRT	Acq Date	Acq Time	1st Chn Noise	ID	Sample Text	Factor1	SVd	Cal File	>MDL
1	PFBS	51.414115	0.00422	96.9		1.361e4		3.42	1	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
2	PFHxA	62.463839	0.00958	104.1		2.711e4		3.80	2	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
3	PFHpA	58.629509	0.00859	97.7		3.058e4		4.29	3	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
4	PFHxS	55.251162	0.00364	101.0		1.252e4		4.40	4	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
5	PFOA	60.648695	0.00638	101.1		3.319e4		4.70	5	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
6	PFNA	53.860771	0.0110	89.8		3.140e4		5.01	6	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
7	PFOS	57.186861	0.0394	102.9		1.264e4		5.06	7	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
8	PFDA	58.046997	0.00890	93.4		2.815e4		5.25	8	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17	0.0	0.250	C18_5...	YES
9	N-MeFOSAA	61.041467	0.00495	101.7		1.309e4		5.31	9	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17.	0.0	0.250	C18_5...	YES
10	N-EtFOSAA								10	20				27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
11	PFUnA	58.939733	0.00506	98.2		2.354e4		5.36	11	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
12	PFDoA	21.196739	0.00330	35.3		1.144e4		5.48	12	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
13	PFTrDA	58.758154	0.00674	97.9		2.924e4		5.56	13	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C16_5...	YES
14	PFTeDA	58.418068	0.00353	97.4		2.467e4		5.66	14	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
15	13C2-PFHxA	40.279060	0.00365	100.7		1.493e4	0.560	3.80	15	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
16	13C2-PFDA	0.0044574...	0.00299	0.0		1.711e0	0.580	5.34	16	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
17	d5-N-EtFOSAA	167.97592	0.00805	105.0		2.070e4	0.688	5.36	17	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
18	13C2-PFOA	40.000000	0.00165	100.0		2.645e4	1.000	4.70	18	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
19	13C4-PFOS	114.50000	0.0135	100.0		1.933e4	1.000	5.05	19	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
20	d3-N-MeFOSAA	160.00000	0.0332	100.0		2.864e4	1.000	5.31	20	20			0.000	27-Apr-17	07:35:00		ST170426L	537 DW CS2 17...	0.0	0.250	C18_5...	YES

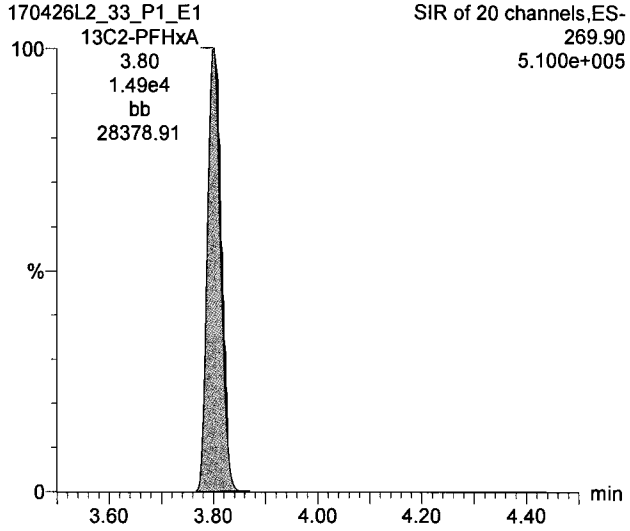
Vista Analytical Laboratory Q1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:54:09 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:54:50 Pacific Daylight Time

ID: ST170426L2-10 537 DW CS2 17D2406, Description: 537 DW CS2 17D2406, Name: 170426L2_33.wiff, Date: 27-Apr-2017, Time: 07:35:00, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFHxA



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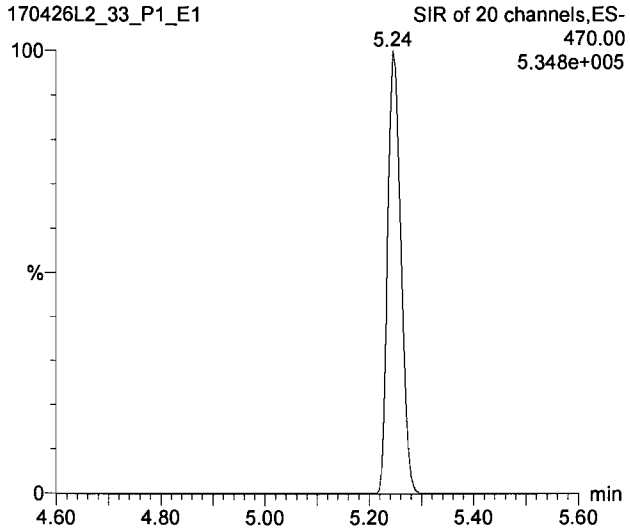

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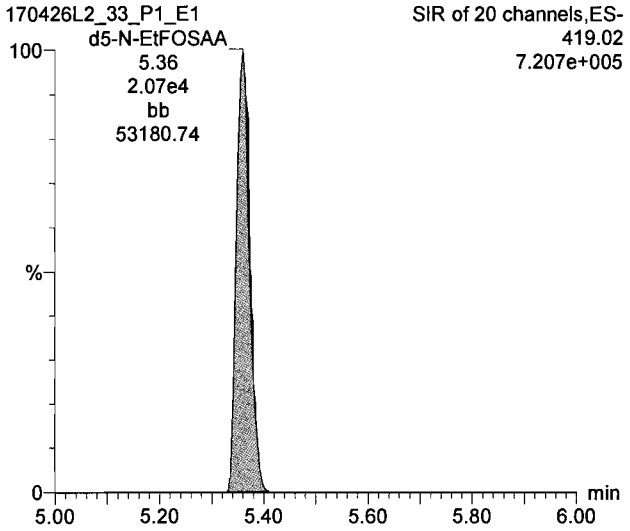

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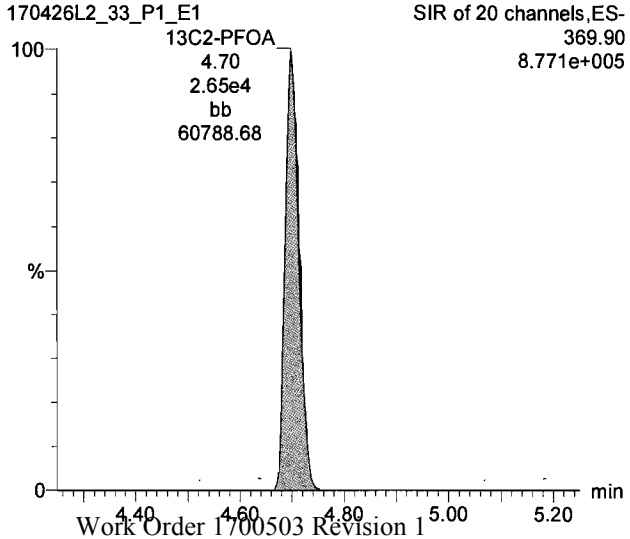

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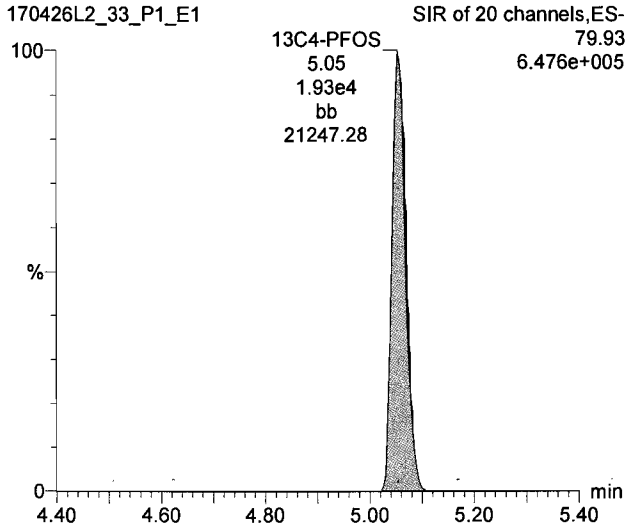

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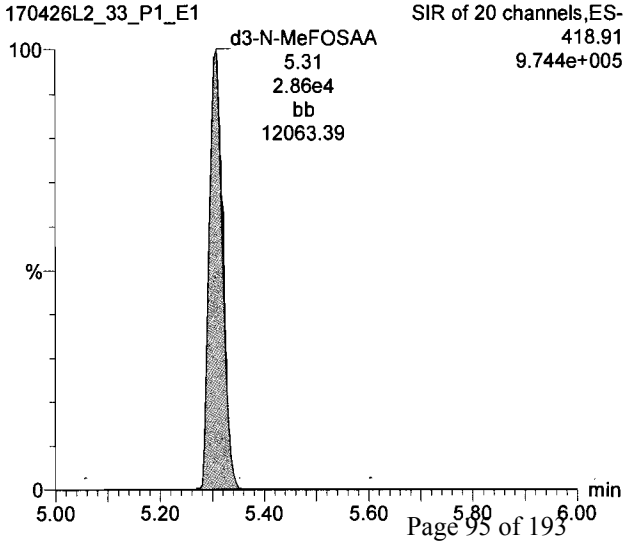

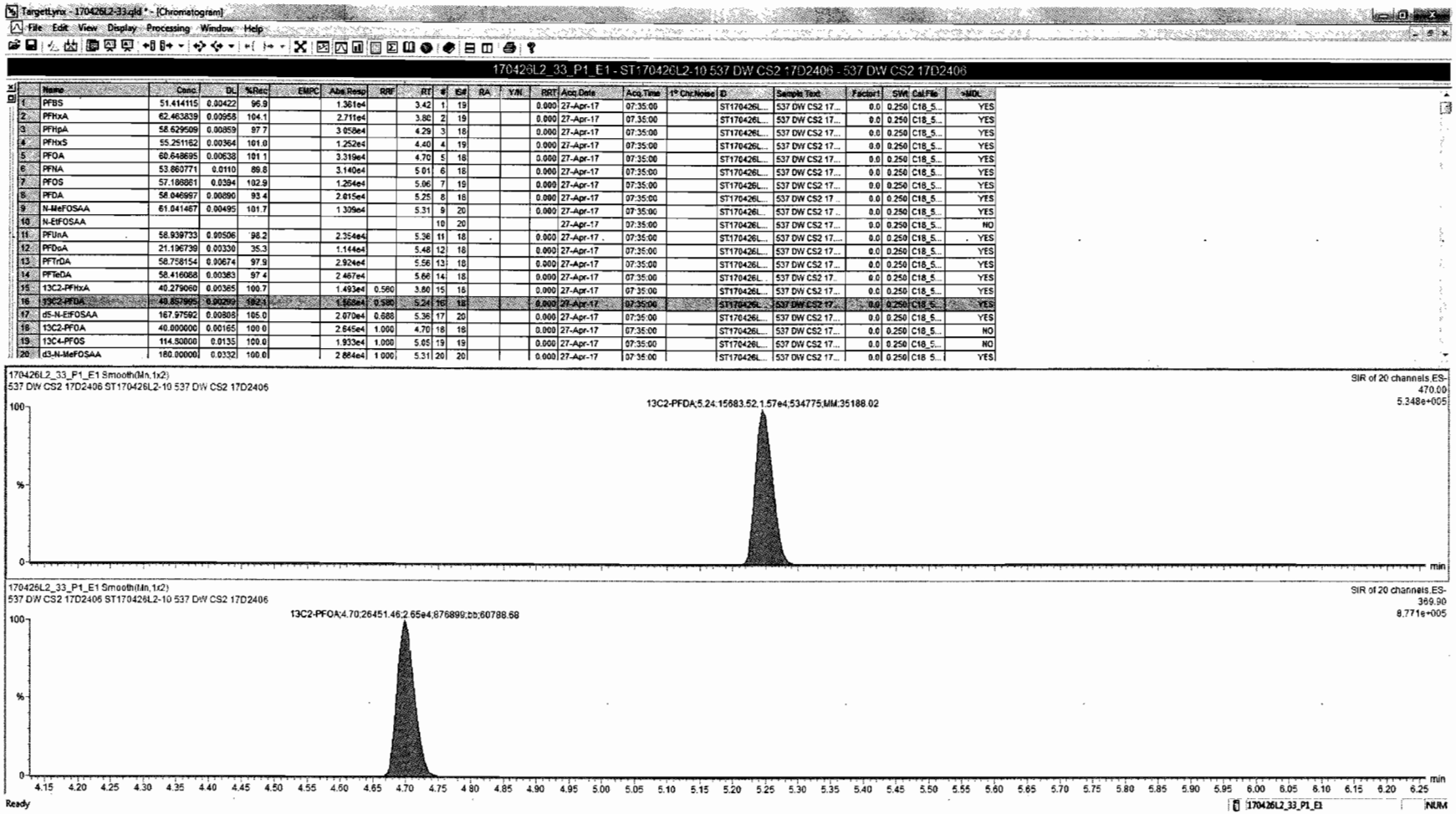

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	ISd	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Noise	ID	Sample Text	Factor1	SWt	Cal.File	>MDL
1	PFBS	51.414115	0.00422	96.9		1.361e4		3.42	1	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
2	PFHxA	62.463839	0.00958	104.1		2.711e4		3.86	2	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
3	PFHpA	58.629509	0.00859	97.7		3.058e4		4.29	3	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
4	PFHxS	55.251162	0.00364	101.0		1.252e4		4.40	4	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
5	PFOA	60.648695	0.00638	101.1		3.319e4		4.70	5	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
6	PFNA	53.860771	0.0110	89.8		3.140e4		5.01	6	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
7	PFOS	57.188861	0.0394	102.9		1.254e4		5.06	7	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
8	PFDA	58.046997	0.00890	93.4		2.815e4		5.25	8	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
9	N-MeFOSAA	61.041467	0.00495	101.7		1.309e4		5.31	9	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
10	N-EtFOSAA								10	20				27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
11	PFUnA	58.939733	0.00506	98.2		2.354e4		5.36	11	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
12	PFDoA	21.196739	0.00330	35.3		1.144e4		5.48	12	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
13	PFTrDA	58.758154	0.00674	97.9		2.924e4		5.56	13	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
14	PFTeDA	58.416088	0.00383	97.4		2.467e4		5.66	14	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
15	13C2-PFHxA	40.279060	0.00365	100.7		1.493e4	0.560	3.80	15	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
16	13C2-PFDA	49.857995	0.00299	102.1		1.568e4	0.580	5.24	16	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
17	d5-N-EtFOSAA	167.97592	0.00808	105.0		2.070e4	0.688	5.36	17	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES
18	13C2-PFOA	40.000000	0.00165	100.0		2.645e4	1.000	4.70	18	18			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
19	13C4-PFOS	114.80000	0.0135	100.0		1.933e4	1.000	5.05	19	19			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	NO
20	d3-N-MeFOSAA	180.00000	0.0332	100.0		2.864e4	1.000	5.31	20	20			0.000	27-Apr-17	07:35:00		ST170426L...	537 DW CS2 17...	0.0	0.250	C18_5...	YES

INITIAL CALIBRATION

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:13:21 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Compound name: PFBS
Coefficient of Determination: R^2 = 0.992491
Calibration curve: -0.008126 * x^2 + 1.67638 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	4.42	3.42	3.87e3	1.54e4	4.41	-0.2	1.64
2	2	170426L2_06_P1_...	8.85	3.41	9.46e3	1.71e4	9.94	12.3	1.79
3	3	170426L2_07_P1_...	13.3	3.41	1.31e4	1.81e4	13.3	0.1	1.57
4	4	170426L2_08_P1_...	17.7	3.42	1.63e4	1.88e4	16.2	-8.7	1.41
5	5	170426L2_09_P1_...	22.1	3.42	1.93e4	1.68e4	22.0	-0.3	1.49
6	6	170426L2_10_P1_...	44.2	3.41	3.58e4	1.75e4	44.8	1.3	1.33

AC 4/27/17
CT 4/27/17

Compound name: PFHxA
Coefficient of Determination: R^2 = 0.992669
Calibration curve: -0.0140311 * x^2 + 2.79726 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

* Not used for N-EtFOSAA.

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	3.80	7.40e3	1.54e4	5.07	1.4	2.76
2	2	170426L2_06_P1_...	10.0	3.79	1.73e4	1.71e4	11.0	9.8	2.90
3	3	170426L2_07_P1_...	15.0	3.79	2.45e4	1.81e4	15.0	0.2	2.59
4	4	170426L2_08_P1_...	20.0	3.80	3.00e4	1.88e4	18.0	-9.8	2.29
5	5	170426L2_09_P1_...	25.0	3.80	3.64e4	1.68e4	25.5	1.9	2.49
6	6	170426L2_10_P1_...	50.0	3.78	6.43e4	1.75e4	50.5	1.1	2.11

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:13:21 Pacific Daylight Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.993260
Calibration curve: -0.00356151 * x^2 + 0.840815 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	4.27	9.06e3	2.01e4	5.48	9.6	0.900
2	2	170426L2_06_P1_...	10.0	4.26	2.10e4	2.45e4	10.7	6.7	0.857
3	3	170426L2_07_P1_...	15.0	4.27	2.92e4	2.45e4	15.2	1.1	0.795
4	4	170426L2_08_P1_...	20.0	4.27	3.54e4	2.34e4	19.6	-1.8	0.757
5	5	170426L2_09_P1_...	25.0	4.28	4.23e4	2.43e4	23.0	-8.2	0.697
6	6	170426L2_10_P1_...	50.0	4.26	7.68e4	2.28e4	51.3	2.6	0.675

Compound name: PFHxS
Coefficient of Determination: R^2 = 0.994944
Calibration curve: -0.00487699 * x^2 + 1.41391 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	4.56	4.38	3.50e3	1.54e4	4.70	3.0	1.43
2	2	170426L2_06_P1_...	9.12	4.37	7.97e3	1.71e4	9.78	7.3	1.47
3	3	170426L2_07_P1_...	13.7	4.38	1.14e4	1.81e4	13.4	-2.1	1.32
4	4	170426L2_08_P1_...	18.2	4.38	1.46e4	1.88e4	16.8	-8.0	1.23
5	5	170426L2_09_P1_...	22.8	4.38	1.80e4	1.68e4	23.6	3.6	1.35
6	6	170426L2_10_P1_...	45.6	4.36	3.32e4	1.75e4	45.8	0.4	1.20

Compound name: PFOA
Coefficient of Determination: R^2 = 0.990932
Calibration curve: -0.0038448 * x^2 + 0.885857 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	4.67	9.85e3	2.01e4	5.66	13.3	0.979
2	2	170426L2_06_P1_..:	10.0	4.65	2.12e4	2.45e4	10.2	2.5	0.867

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFOA

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
3	3	170426L2_07_P1_...	15.0	4.66	3.03e4	2.45e4	14.9	-0.4	0.825
4	4	170426L2_08_P1_...	20.0	4.66	3.88e4	2.34e4	20.6	2.9	0.830
5	5	170426L2_09_P1_...	25.0	4.67	4.37e4	2.43e4	22.5	-10.1	0.719
6	6	170426L2_10_P1_...	50.0	4.65	8.04e4	2.28e4	51.3	2.6	0.706

Compound name: PFNA
Coefficient of Determination: R^2 = 0.990791
Calibration curve: -0.00492928 * x^2 + 0.947915 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.00	9.95e3	2.01e4	5.36	7.2	0.988
2	2	170426L2_06_P1_...	10.0	4.99	2.21e4	2.45e4	10.0	0.5	0.903
3	3	170426L2_07_P1_...	15.0	4.97	3.43e4	2.45e4	16.1	7.6	0.934
4	4	170426L2_08_P1_...	20.0	5.00	3.96e4	2.34e4	20.0	-0.1	0.848
5	5	170426L2_09_P1_...	25.0	5.00	4.55e4	2.43e4	22.4	-10.6	0.749
6	6	170426L2_10_P1_...	50.0	5.01	8.13e4	2.28e4	51.4	2.9	0.714

Compound name: PFOS
Coefficient of Determination: R^2 = 0.995701
Calibration curve: -0.00389592 * x^2 + 1.36875 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	4.62	5.06	3.47e3	1.54e4	4.79	3.8	1.40
2	2	170426L2_06_P1_...	9.24	5.06	7.46e3	1.71e4	9.39	1.7	1.35
3	3	170426L2_07_P1_...	13.9	5.03	1.06e4	1.81e4	12.7	-8.3	1.21
4	4	170426L2_08_P1_...	18.5	5.06	1.55e4	1.88e4	18.3	-1.0	1.28
5	5	170426L2_09_P1_...	23.1	5.05	1.82e4	1.68e4	24.4	5.8	1.35
6	6	170426L2_10_P1_...	46.2	5.06	3.32e4	1.75e4	45.9	-0.7	1.18

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFDA
Coefficient of Determination: R^2 = 0.982861
Calibration curve: -0.002568 * x^2 + 0.579697 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.28	6.47e3	2.01e4	5.69	13.8	0.643
2	2	170426L2_06_P1_...	10.0	5.28	1.51e4	2.45e4	11.2	12.0	0.617
3	3	170426L2_07_P1_...	15.0	5.18	2.05e4	2.45e4	15.5	3.6	0.559
4	4	170426L2_08_P1_...	20.0	5.28	2.29e4	2.34e4	18.4	-8.1	0.490
5	5	170426L2_09_P1_...	25.0	5.28	2.85e4	2.43e4	22.5	-10.0	0.470
6	6	170426L2_10_P1_...	50.0	5.26	5.28e4	2.28e4	52.0	4.0	0.464

Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.973527
Calibration curve: -0.00749663 * x^2 + 1.31273 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.36	3.82e3	2.11e4	5.70	13.9	1.45
2	2	170426L2_06_P1_...	10.0	5.37	8.00e3	2.63e4	9.81	-1.9	1.22
3	3	170426L2_07_P1_...	15.0	5.25	1.28e4	2.47e4	17.6	17.1	1.38
4	4	170426L2_08_P1_...	20.0	5.38	1.39e4	2.64e4	17.8	-11.1	1.05
5	5	170426L2_09_P1_...	25.0	5.37	1.68e4	2.60e4	22.6	-9.5	1.03
6	6	170426L2_10_P1_...	50.0	5.37	3.05e4	2.54e4	52.2	4.4	0.962

Compound name: PFUnA
Coefficient of Determination: R^2 = 0.987718
Calibration curve: -0.00251438 * x^2 + 0.640935 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.44	6.80e3	2.01e4	5.38	7.6	0.675
2	2	170426L2_06_P1_...	10.0	5.44	1.67e4	2.45e4	11.1	11.1	0.681

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFUnA

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
3	3	170426L2_07_P1_...	15.0	5.34	2.11e4	2.45e4	14.2	-5.0	0.575
4	4	170426L2_08_P1_...	20.0	5.48	2.86e4	2.34e4	20.8	4.1	0.613
5	5	170426L2_09_P1_...	25.0	5.44	3.17e4	2.43e4	22.3	-10.7	0.522
6	6	170426L2_10_P1_...	50.0	5.49	5.97e4	2.28e4	51.3	2.6	0.525

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.990731
Calibration curve: -0.00268974 * x^2 + 0.83009 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.55	8.80e3	2.01e4	5.36	7.2	0.874
2	2	170426L2_06_P1_...	10.0	5.54	2.20e4	2.45e4	11.3	12.6	0.900
3	3	170426L2_07_P1_...	15.0	5.53	2.64e4	2.45e4	13.6	-9.1	0.721
4	4	170426L2_08_P1_...	20.0	5.58	3.67e4	2.34e4	20.3	1.4	0.786
5	5	170426L2_09_P1_...	25.0	5.55	4.43e4	2.43e4	23.8	-5.0	0.728
6	6	170426L2_10_P1_...	50.0	5.61	8.01e4	2.28e4	50.8	1.6	0.704

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.993490
Calibration curve: -0.00404685 * x^2 + 0.811962 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.65	7.44e3	2.01e4	4.66	-6.8	0.739
2	2	170426L2_06_P1_...	10.0	5.62	2.03e4	2.45e4	10.8	7.9	0.829
3	3	170426L2_07_P1_...	15.0	5.65	2.93e4	2.45e4	16.1	7.0	0.800
4	4	170426L2_08_P1_...	20.0	5.68	3.31e4	2.34e4	19.3	-3.5	0.708
5	5	170426L2_09_P1_...	25.0	5.64	4.10e4	2.43e4	23.5	-5.9	0.674
6	6	170426L2_10_P1_...	50.0	5.71	7.01e4	2.28e4	50.8	1.6	0.616

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.993849
Calibration curve: -0.00266313 * x^2 + 0.677405 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.74	7.33e3	2.01e4	5.50	9.9	0.728
2	2	170426L2_06_P1_...	10.0	5.73	1.66e4	2.45e4	10.4	4.5	0.679
3	3	170426L2_07_P1_...	15.0	5.75	2.26e4	2.45e4	14.4	-3.7	0.615
4	4	170426L2_08_P1_...	20.0	5.76	3.01e4	2.34e4	20.7	3.5	0.644
5	5	170426L2_09_P1_...	25.0	5.74	3.46e4	2.43e4	23.1	-7.5	0.570
6	6	170426L2_10_P1_...	50.0	5.79	6.28e4	2.28e4	50.9	1.8	0.552

Compound name: 13C2-PFHxA
Response Factor: 0.560398
RRF SD: 0.0292346, Relative SD: 5.21676
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	10.0	3.79	1.24e4	2.01e4	11.0	9.6	0.614
2	2	170426L2_06_P1_...	10.0	3.79	1.32e4	2.45e4	9.62	-3.8	0.539
3	3	170426L2_07_P1_...	10.0	3.79	1.40e4	2.45e4	10.2	2.3	0.573
4	4	170426L2_08_P1_...	10.0	3.80	1.29e4	2.34e4	9.87	-1.3	0.553
5	5	170426L2_09_P1_...	10.0	3.80	1.32e4	2.43e4	9.66	-3.4	0.541
6	6	170426L2_10_P1_...	10.0	3.78	1.23e4	2.28e4	9.66	-3.4	0.542

Compound name: 13C2-PFDA
Response Factor: 0.580466
RRF SD: 0.0439432, Relative SD: 7.57033
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	10.0	5.28	1.34e4	2.01e4	11.5	15.0	0.668
2	2	170426L2_06_P1_...	10.0	5.28	1.40e4	2.45e4	9.86	-1.4	0.573

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
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Compound name: 13C2-PFDA

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
3	3	170426L2_07_P1_...	10.0	5.18	1.41e4	2.45e4	9.95	-0.5	0.578
4	4	170426L2_08_P1_...	10.0	5.28	1.30e4	2.34e4	9.59	-4.1	0.557
5	5	170426L2_09_P1_...	10.0	5.28	1.34e4	2.43e4	9.48	-5.2	0.550
6	6	170426L2_10_P1_...	10.0	5.26	1.27e4	2.28e4	9.61	-3.9	0.558

Compound name: d5-N-EtFOSAA
Response Factor: 0.688374
RRF SD: 0.0829655, Relative SD: 12.0524
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	40.0	5.42	1.78e4	2.11e4	48.9	22.2	0.841
2	2	170426L2_06_P1_...	40.0	5.43	1.83e4	2.63e4	40.3	0.8	0.694
3	3	170426L2_07_P1_...	40.0	5.34	1.59e4	2.47e4	37.5	-6.4	0.645
4	4	170426L2_08_P1_...	40.0	5.47	1.77e4	2.64e4	38.8	-3.0	0.668
5	5	170426L2_09_P1_...	40.0	5.44	1.79e4	2.60e4	40.0	0.0	0.689
6	6	170426L2_10_P1_...	40.0	5.48	1.51e4	2.54e4	34.6	-13.6	0.595

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

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	10.0	4.67	2.01e4	2.01e4	10.0	0.0	1.00
2	2	170426L2_06_P1_...	10.0	4.65	2.45e4	2.45e4	10.0	0.0	1.00
3	3	170426L2_07_P1_...	10.0	4.66	2.45e4	2.45e4	10.0	0.0	1.00
4	4	170426L2_08_P1_...	10.0	4.66	2.34e4	2.34e4	10.0	0.0	1.00
5	5	170426L2_09_P1_...	10.0	4.67	2.43e4	2.43e4	10.0	0.0	1.00
6	6	170426L2_10_P1_...	10.0	4.65	2.28e4	2.28e4	10.0	0.0	1.00

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Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
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Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 1.31363e-016, Relative SD: 1.31363e-014
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	28.7	5.06	1.54e4	1.54e4	28.7	0.0	1.00
2	2	170426L2_06_P1_...	28.7	5.05	1.71e4	1.71e4	28.7	0.0	1.00
3	3	170426L2_07_P1_...	28.7	5.03	1.81e4	1.81e4	28.7	0.0	1.00
4	4	170426L2_08_P1_...	28.7	5.05	1.88e4	1.88e4	28.7	-0.0	1.00
5	5	170426L2_09_P1_...	28.7	5.05	1.68e4	1.68e4	28.7	-0.0	1.00
6	6	170426L2_10_P1_...	28.7	5.06	1.75e4	1.75e4	28.7	-0.0	1.00

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

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	40.0	5.36	2.11e4	2.11e4	40.0	0.0	1.00
2	2	170426L2_06_P1_...	40.0	5.37	2.63e4	2.63e4	40.0	0.0	1.00
3	3	170426L2_07_P1_...	40.0	5.25	2.47e4	2.47e4	40.0	0.0	1.00
4	4	170426L2_08_P1_...	40.0	5.38	2.64e4	2.64e4	40.0	0.0	1.00
5	5	170426L2_09_P1_...	40.0	5.37	2.60e4	2.60e4	40.0	0.0	1.00
6	6	170426L2_10_P1_...	40.0	5.36	2.54e4	2.54e4	40.0	0.0	1.00

Quantify Compound Summary Report

Printed Thu Apr 27 10:35:35 2017

Compound 18: 13C2-PFOA

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Fla	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	170426L2_05_P1_E1	Standard	10	4.67	20132.91	20132.91	10	MM	10	0	26-Apr-17	18:52:09	27-Apr-17	100	1	1	
2	2	170426L2_06_P1_E1	Standard	10	4.65	24458.78	24458.78	10	MM	10	0	26-Apr-17	19:04:24	27-Apr-17	100	1	1	
3	3	170426L2_07_P1_E1	Standard	10	4.66	24452.53	24452.53	10	MM	10	0	26-Apr-17	19:16:37	27-Apr-17	100	1	1	
4	4	170426L2_08_P1_E1	Standard	10	4.66	23362.25	23362.25	10	bb	10	0	26-Apr-17	19:28:51	27-Apr-17	100	1	1	
5	5	170426L2_09_P1_E1	Standard	10	4.67	24309.16	24309.16	10	bb	10	0	26-Apr-17	19:41:02	27-Apr-17	100	1	1	
6	6	170426L2_10_P1_E1	Standard	10	4.65	22754.58	22754.58	10	bb	10	0	26-Apr-17	19:53:18	27-Apr-17	100	1	1	

Compound 18: 13C2-PFOA

RPD

HIGH AREA	24458
LOW AREA	20133
RPD %	19.4

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUMMARY. PASTE IN CELL A1.

Quantify Compound Summary Report

Printed Thu Apr 27 10:36:34 2017

Compound 19: 13C4-PFOS

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Fla	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	170426L2_05_P1_E1	Standard	28.7	5.06	15363.83	15363.83	28.7	MM	28.7	0	26-Apr-17	18:52:09	27-Apr-17	100	1	1	
2	2	170426L2_06_P1_E1	Standard	28.7	5.05	17109.3	17109.3	28.7	bb	28.7	0	26-Apr-17	19:04:24	27-Apr-17	100	1	1	
3	3	170426L2_07_P1_E1	Standard	28.7	5.03	18078.45	18078.45	28.7	bb	28.7	0	26-Apr-17	19:16:37	27-Apr-17	100	1	1	
4	4	170426L2_08_P1_E1	Standard	28.7	5.05	18753.25	18753.25	28.7	MM	28.7	0	26-Apr-17	19:28:51	27-Apr-17	100	1	1	
5	5	170426L2_09_P1_E1	Standard	28.7	5.05	16820.09	16820.09	28.7	bb	28.7	0	26-Apr-17	19:41:02	27-Apr-17	100	1	1	
6	6	170426L2_10_P1_E1	Standard	28.7	5.06	17476.4	17476.4	28.7	bb	28.7	0	26-Apr-17	19:53:18	27-Apr-17	100	1	1	

Compound 19: 13C4-PFOS

RPD

HIGH AREA	18753
LOW AREA	15364
RPD %	19.9

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUMMARY. PASTE IN CELL A1.

Vista Analytical Laboratory Q-1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:34:36 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:34:47 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170426L2_05_P...	ST170426L2-4 537 DW CS0 17D2516	27-Apr-17	01:52:09
2	170426L2_06_P...	ST170426L2-5 537 DW CS1 17D2604	27-Apr-17	02:04:24
3	170426L2_07_P...	ST170426L2-6 537 DW CS2 17D2605	27-Apr-17	02:16:37
4	170426L2_08_P...	ST170426L2-7 537 DW CS3 17D2606	27-Apr-17	02:28:51
5	170426L2_09_P...	ST170426L2-8 537 DW CS4 17D2607	27-Apr-17	02:41:02
6	170426L2_10_P...	ST170426L2-9 537 DW CS5 17D2608	27-Apr-17	02:53:18
7	170426L2_11_P...	IPA	27-Apr-17	03:05:34
8	170426L2_12_P...	SS170426L2-1 537 DW SSS 17D2609	27-Apr-17	03:17:47
9	170426L2_13_P...	B7D0069-BS1	27-Apr-17	03:30:03
10	170426L2_14_P...	B7D0109-BS1	27-Apr-17	03:42:18
11	170426L2_15_P...	IPA	27-Apr-17	03:54:34
12	170426L2_16_P...	B7D0069-BLK1	27-Apr-17	04:06:49
13	170426L2_17_P...	B7D0109-BLK1	27-Apr-17	04:19:04
14	170426L2_18_P...	1700503-01	27-Apr-17	04:31:22
15	170426L2_19_P...	1700503-02	27-Apr-17	04:43:37
16	170426L2_20_P...	1700503-03	27-Apr-17	04:55:52
17	170426L2_21_P...	1700503-04	27-Apr-17	05:08:06
18	170426L2_22_P...	1700503-05	27-Apr-17	05:20:21
19	170426L2_23_P...	1700503-06	27-Apr-17	05:32:36
20	170426L2_24_P...	B7D0109-MS1	27-Apr-17	05:44:48
21	170426L2_25_P...	B7D0109-MSD1	27-Apr-17	05:57:04
22	170426L2_26_P...	1700503-07	27-Apr-17	06:09:14
23	170426L2_27_P...	1700503-08	27-Apr-17	06:21:31
24	170426L2_28_P...	1700503-09	27-Apr-17	06:33:46
25	170426L2_29_P...	1700503-10	27-Apr-17	06:46:01
26	170426L2_30_P...	1700387-01@20X	27-Apr-17	06:58:16
27	170426L2_31_P...	1700387-01@40X	27-Apr-17	07:10:31
28	170426L2_32_P...	IPA	27-Apr-17	07:22:47
29	170426L2_33_P...	ST170426L2-10 537 DW CS2 17D2406	27-Apr-17	07:35:00

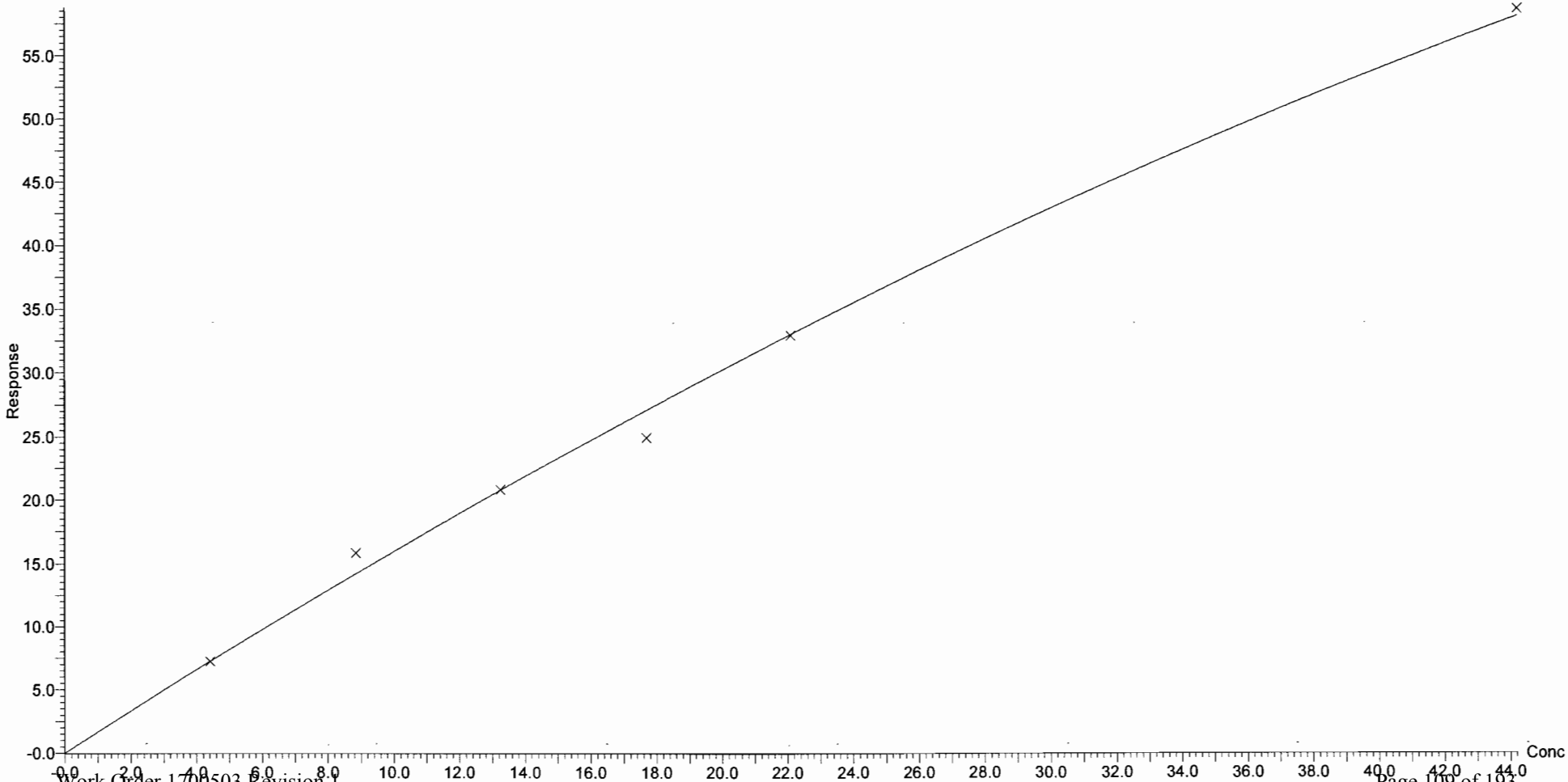
Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

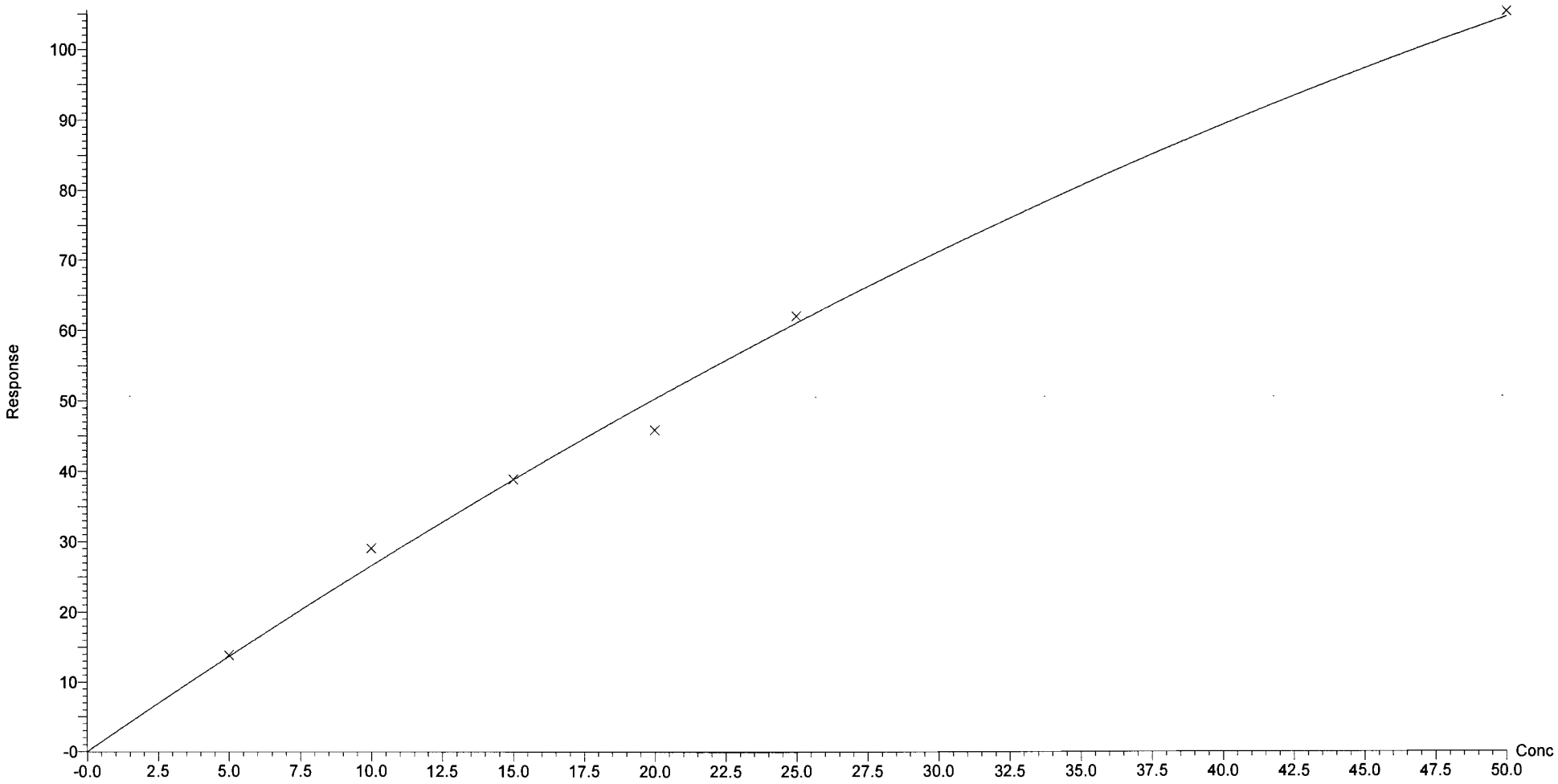
Compound name: PFBS
Coefficient of Determination: R^2 = 0.992491
Calibration curve: -0.008126 * x^2 + 1.67638 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

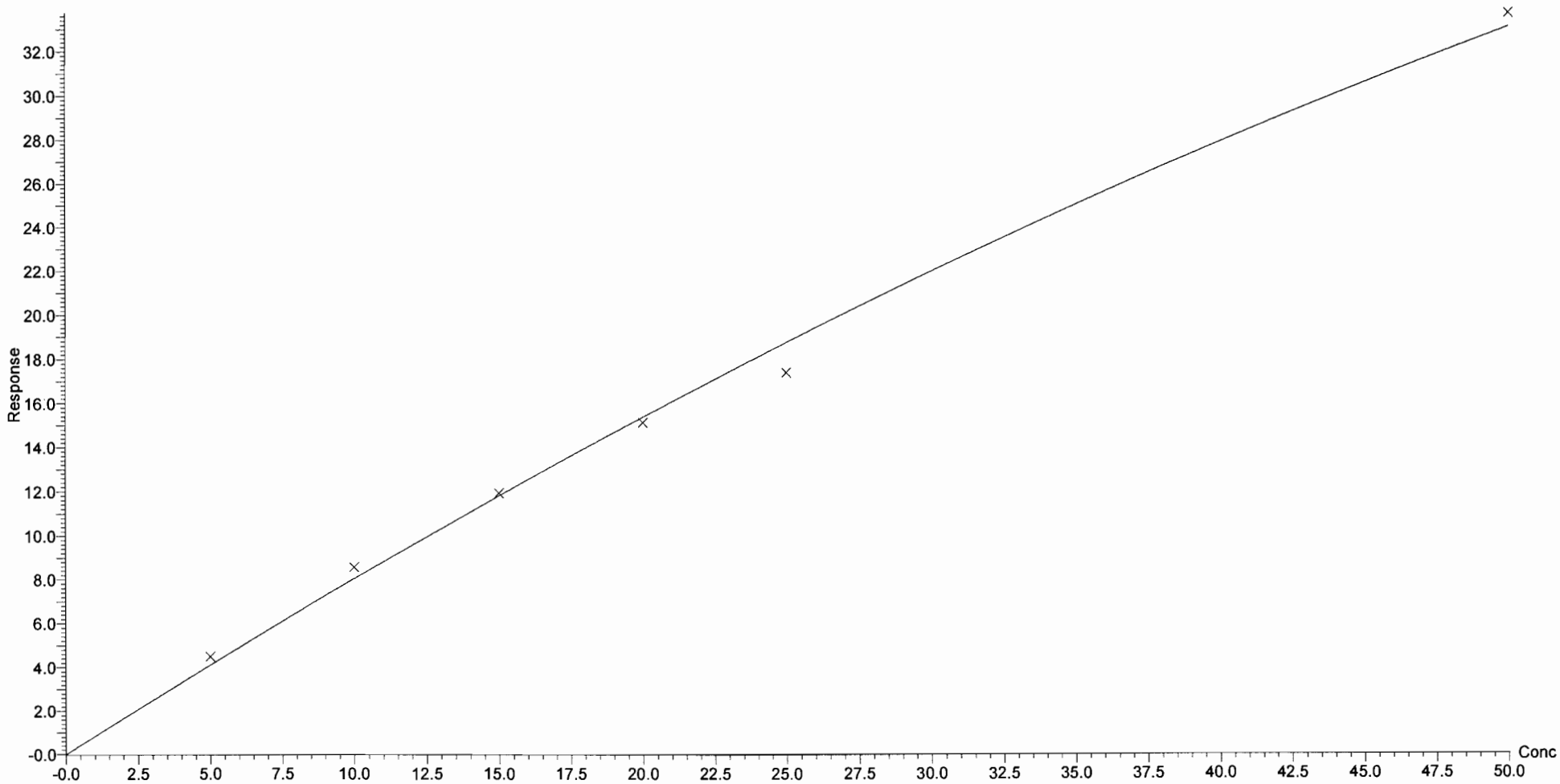
Compound name: PFHxA
Coefficient of Determination: R^2 = 0.992669
Calibration curve: -0.0140311 * x^2 + 2.79726 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

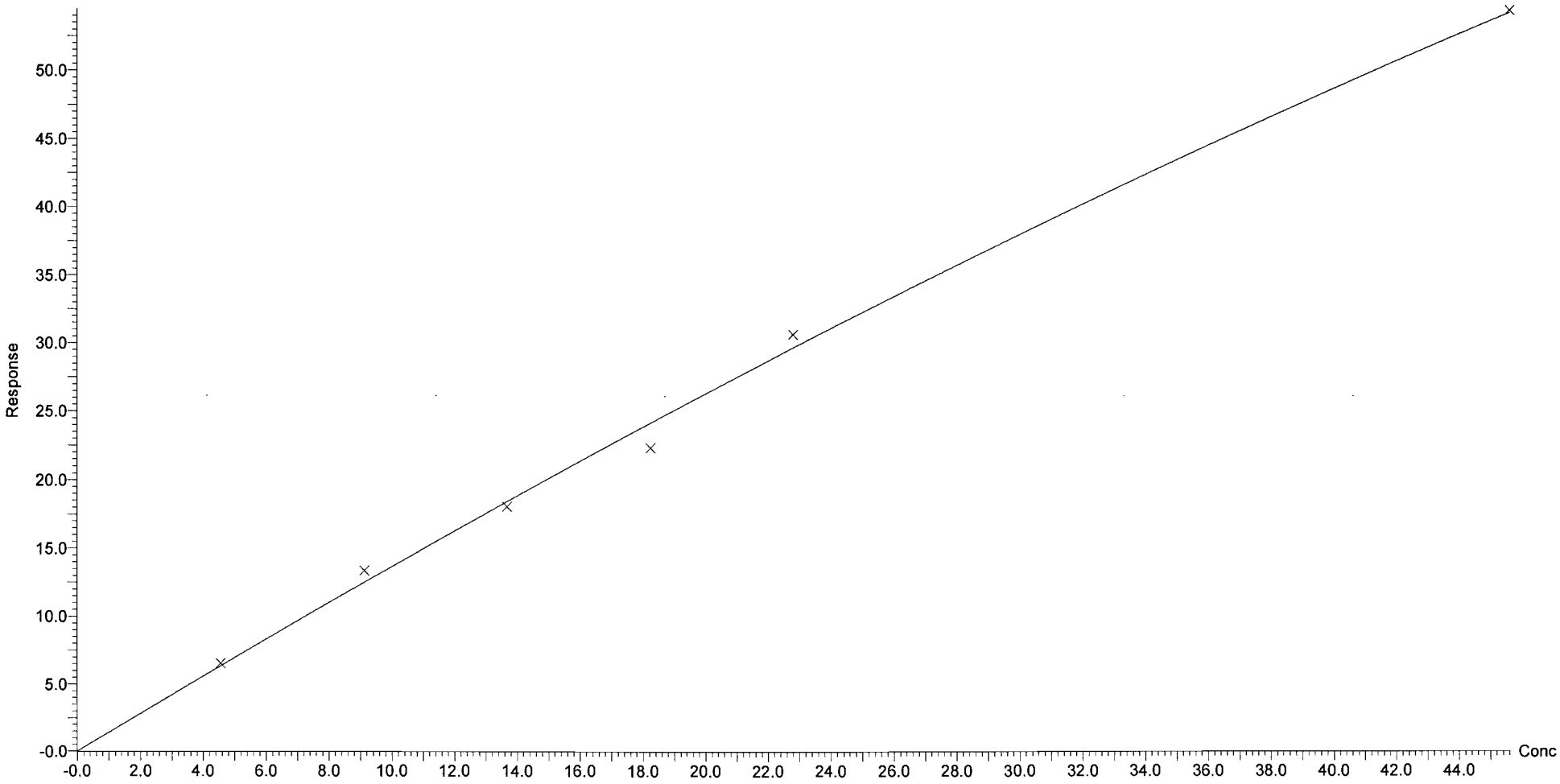
Compound name: PFHpA
Coefficient of Determination: R^2 = 0.993260
Calibration curve: -0.00356151 * x^2 + 0.840815 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

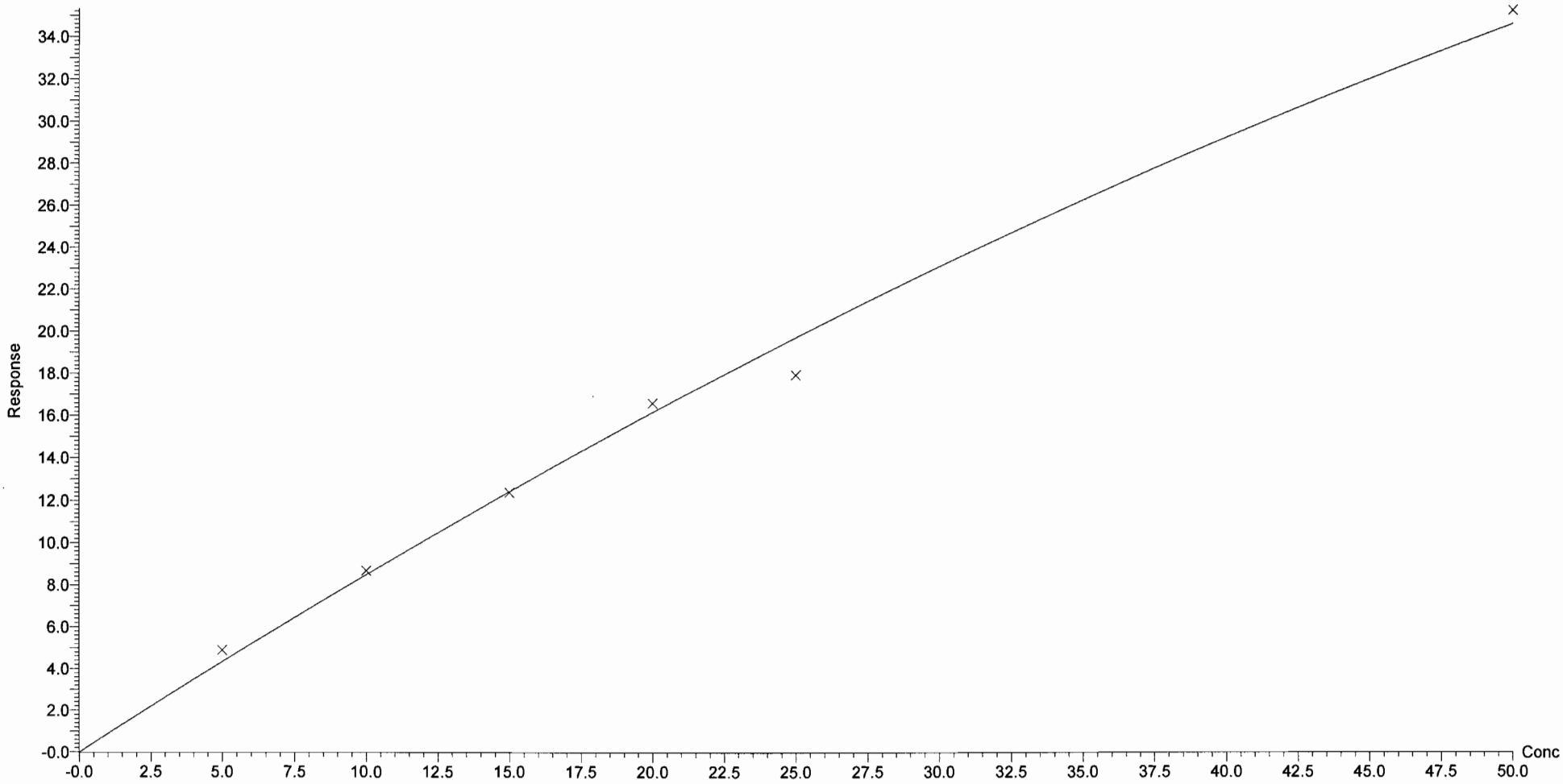
Compound name: PFHxS
Coefficient of Determination: R^2 = 0.994944
Calibration curve: -0.00487699 * x^2 + 1.41391 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

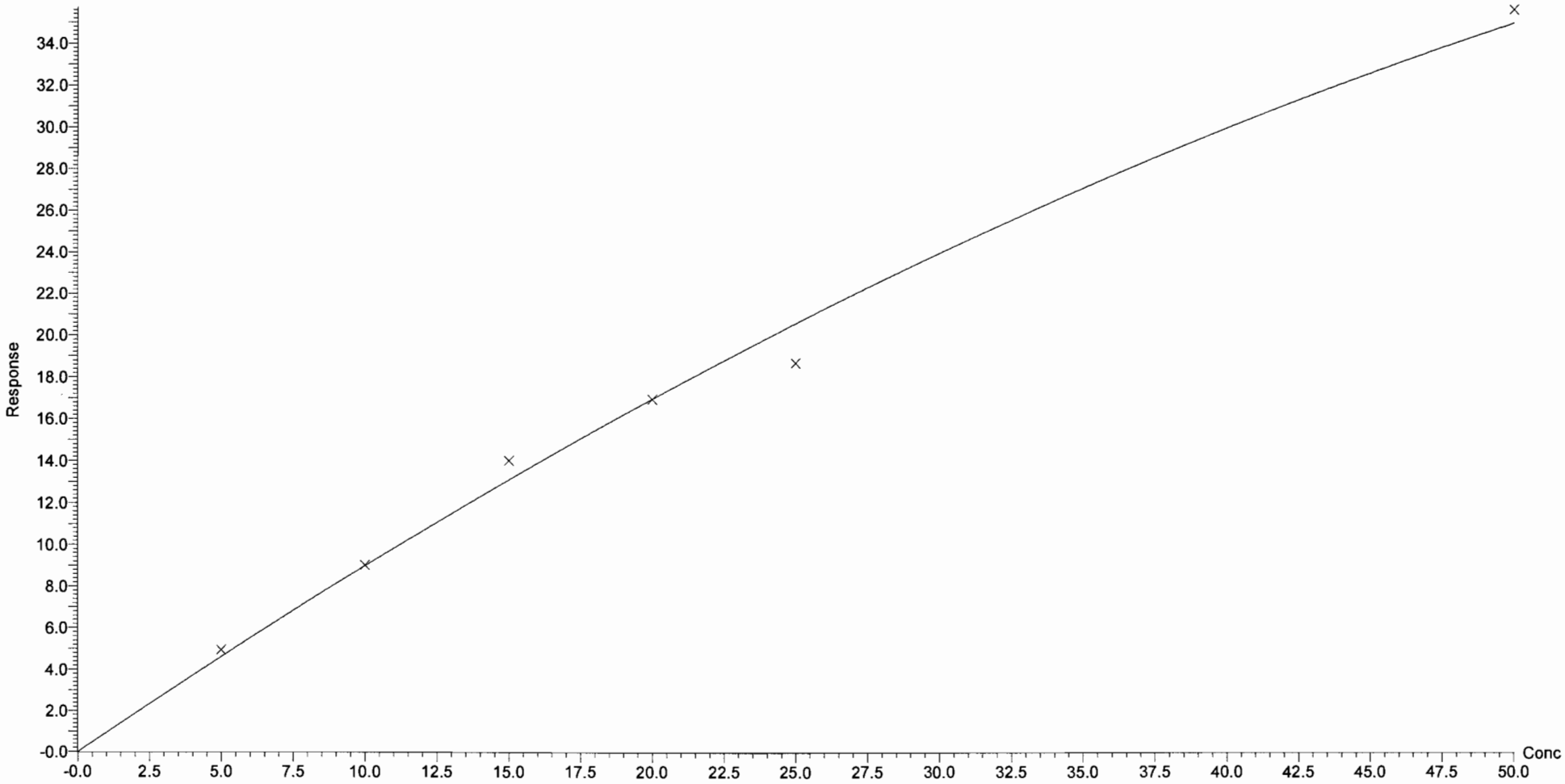
Compound name: PFOA
Coefficient of Determination: R^2 = 0.990932
Calibration curve: -0.0038448 * x^2 + 0.885857 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

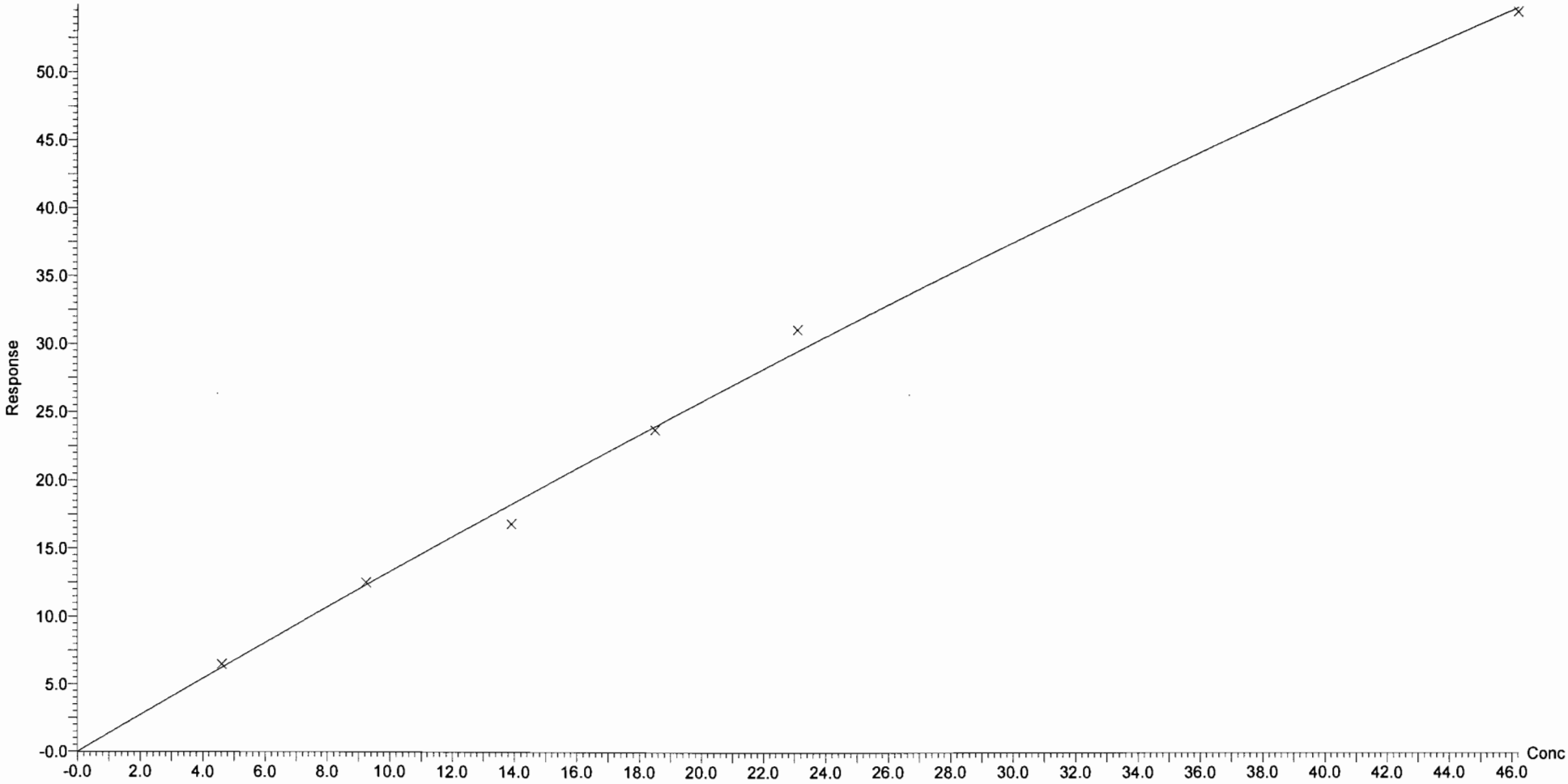
Compound name: PFNA
Coefficient of Determination: R^2 = 0.990791
Calibration curve: -0.00492928 * x^2 + 0.947915 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

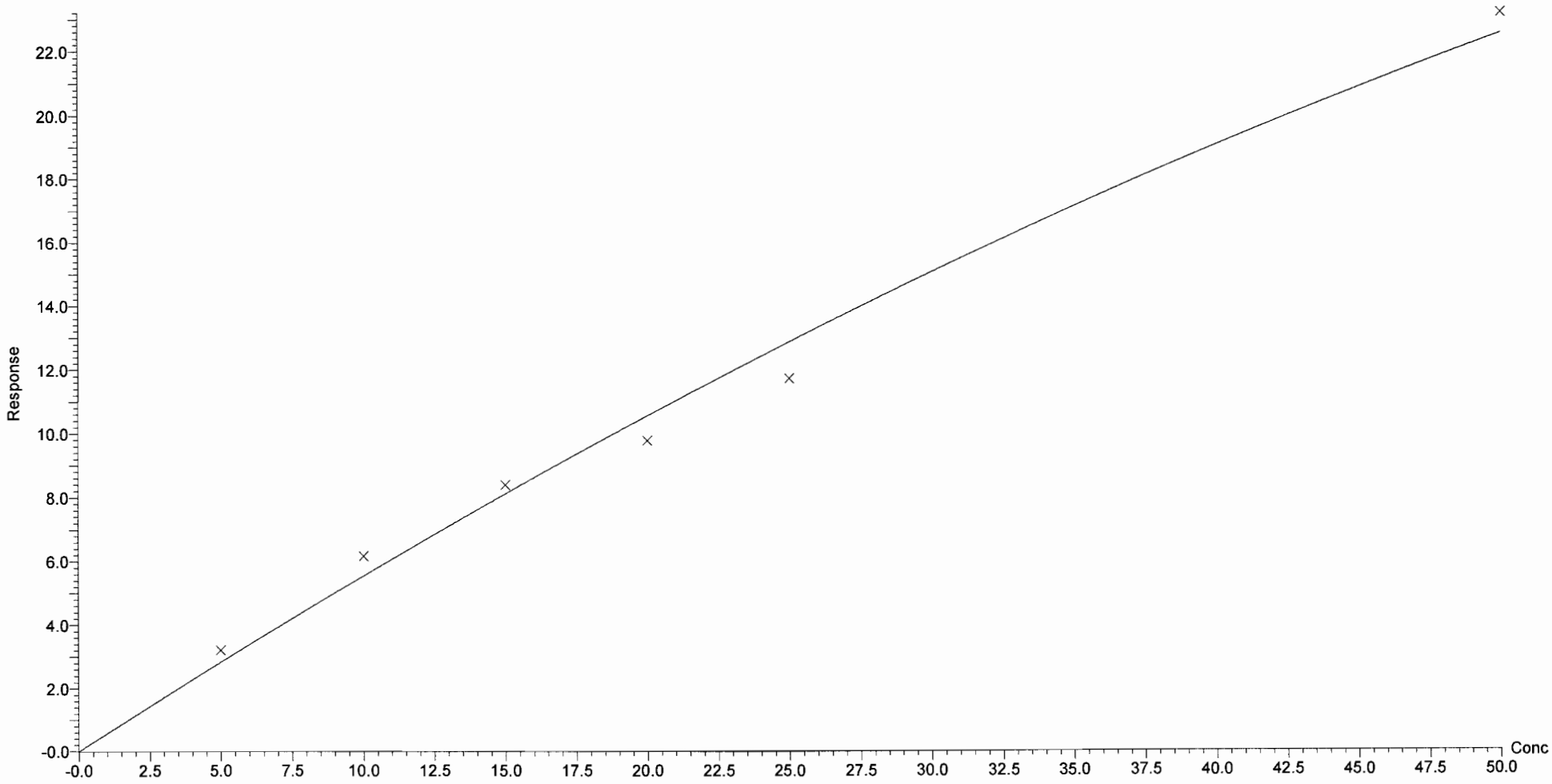
Compound name: PFOS
Coefficient of Determination: R^2 = 0.995701
Calibration curve: -0.00389592 * x^2 + 1.36875 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

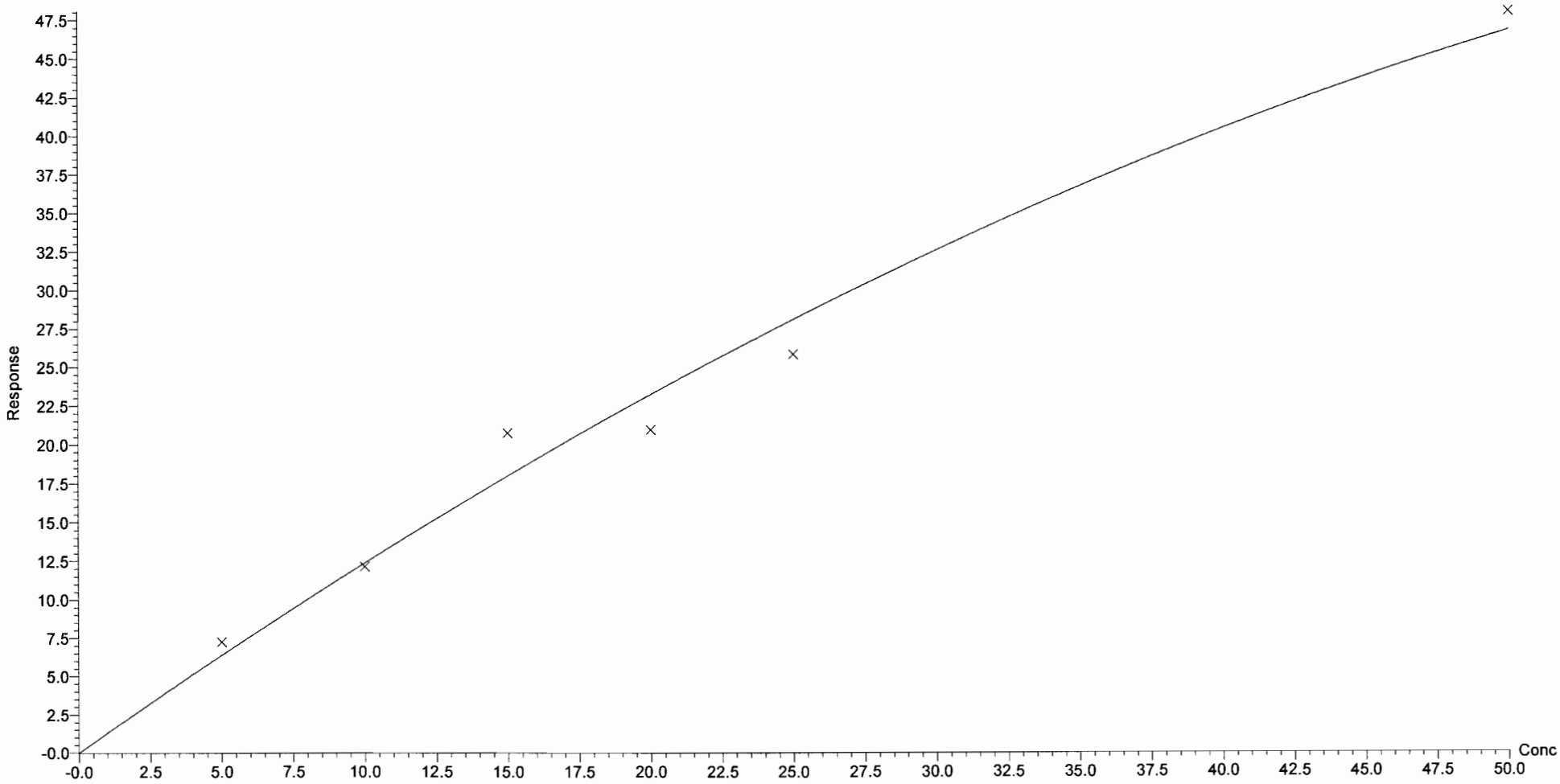
Compound name: PFDA
Coefficient of Determination: R^2 = 0.982861
Calibration curve: -0.002568 * x^2 + 0.579697 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

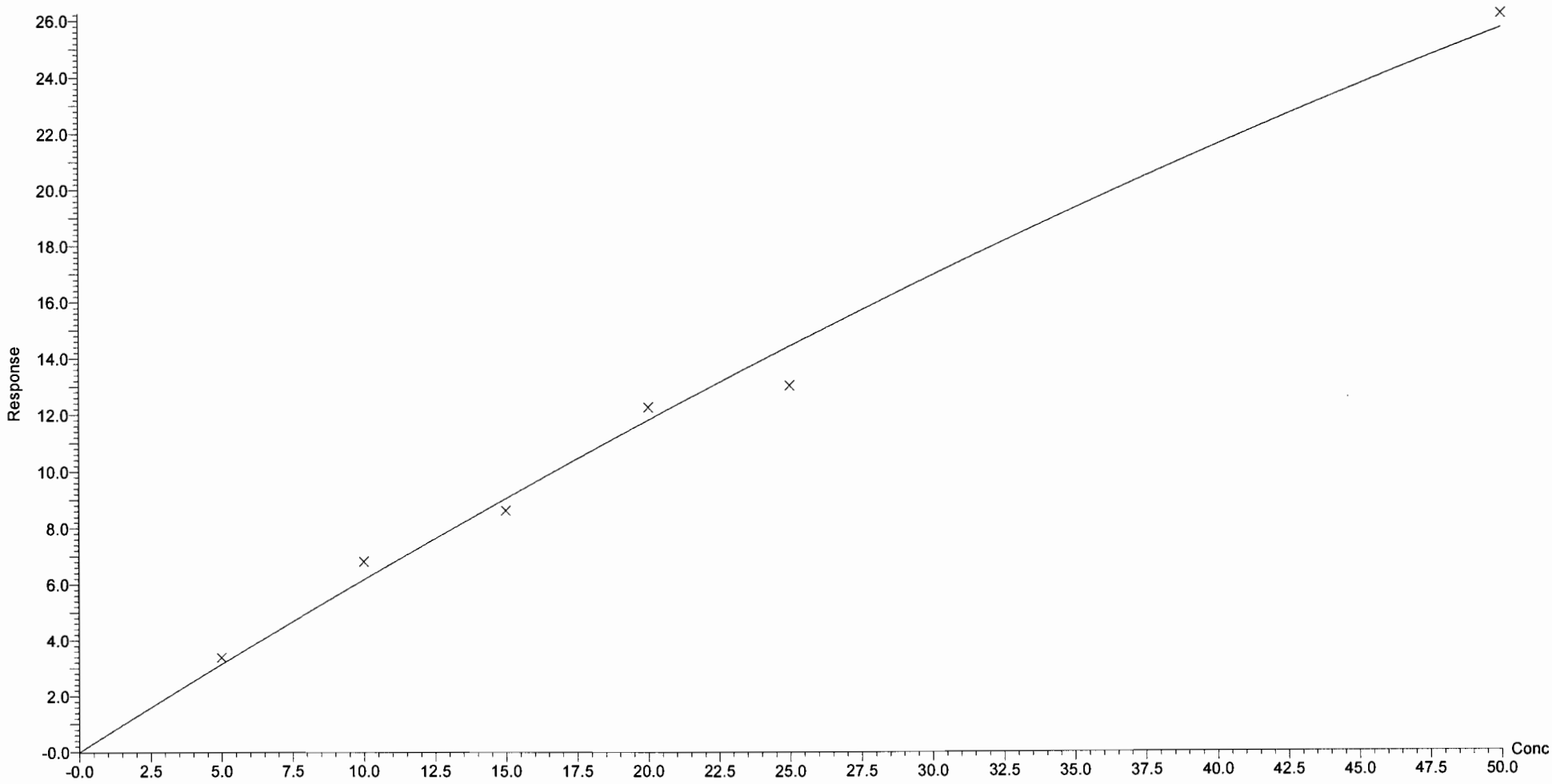
Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.973527
Calibration curve: -0.00749663 * x^2 + 1.31273 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

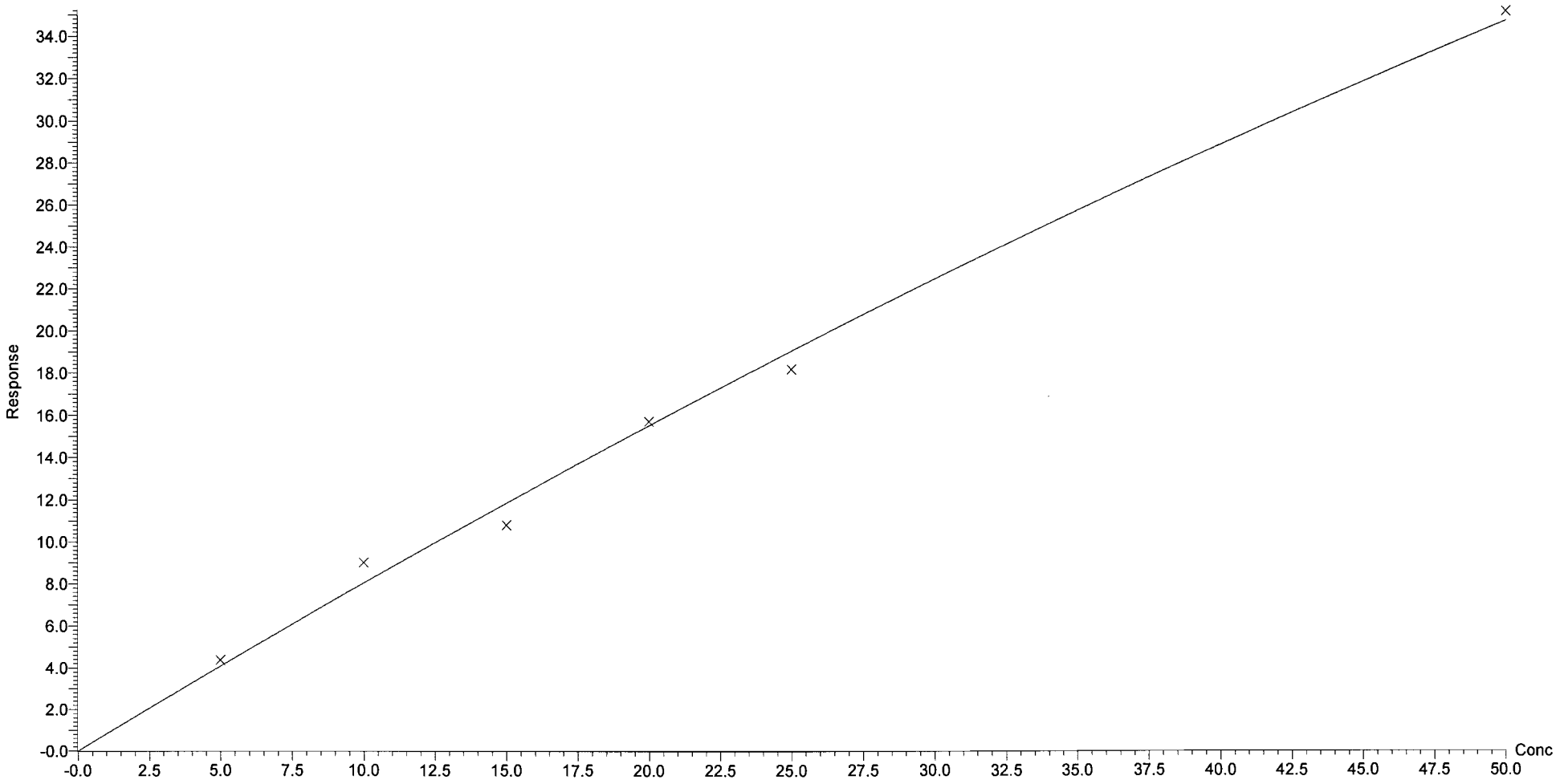
Compound name: PFUnA
Coefficient of Determination: R^2 = 0.987718
Calibration curve: -0.00251438 * x^2 + 0.640935 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

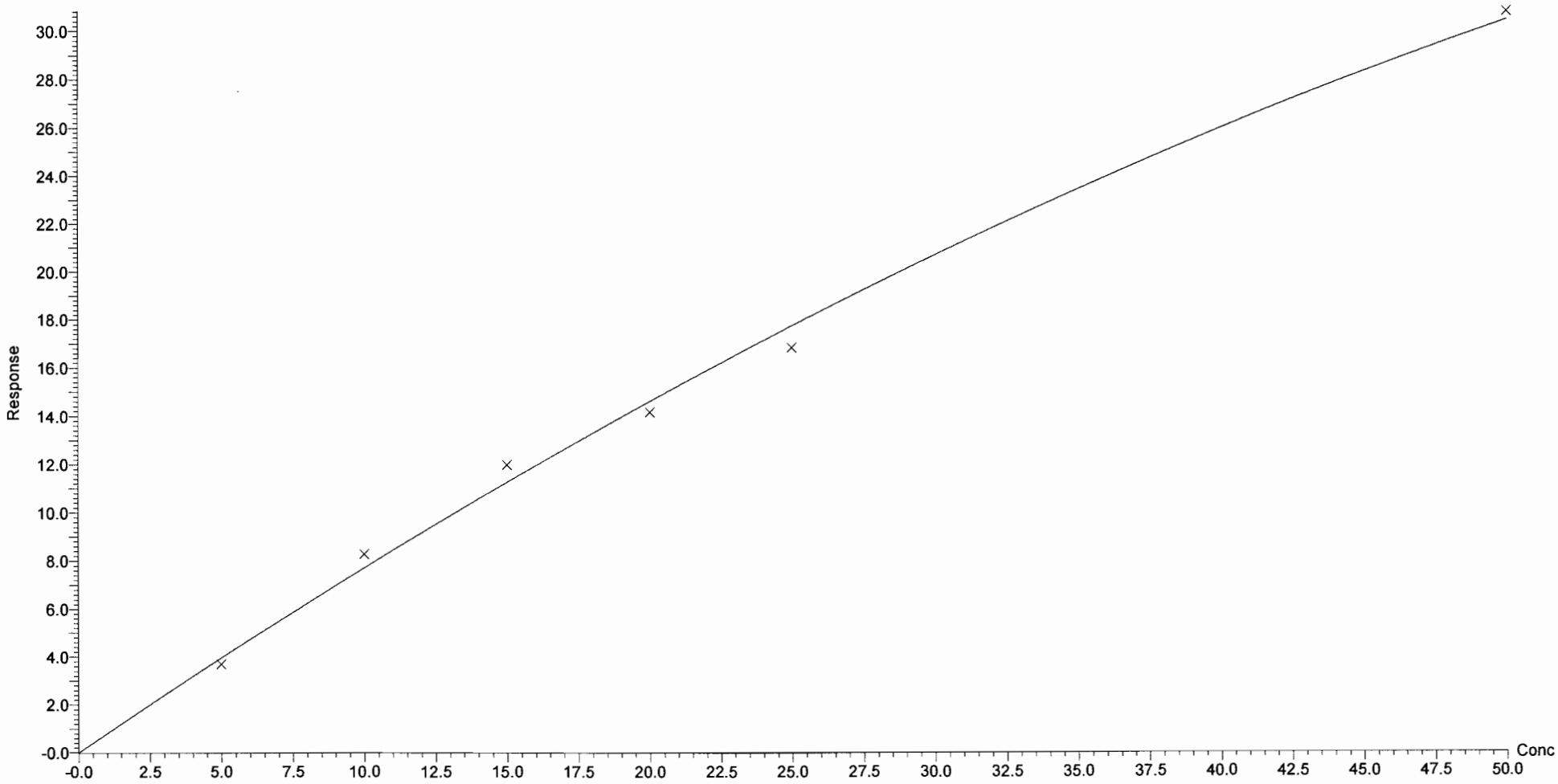
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.990731
Calibration curve: -0.00268974 * x^2 + 0.83009 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

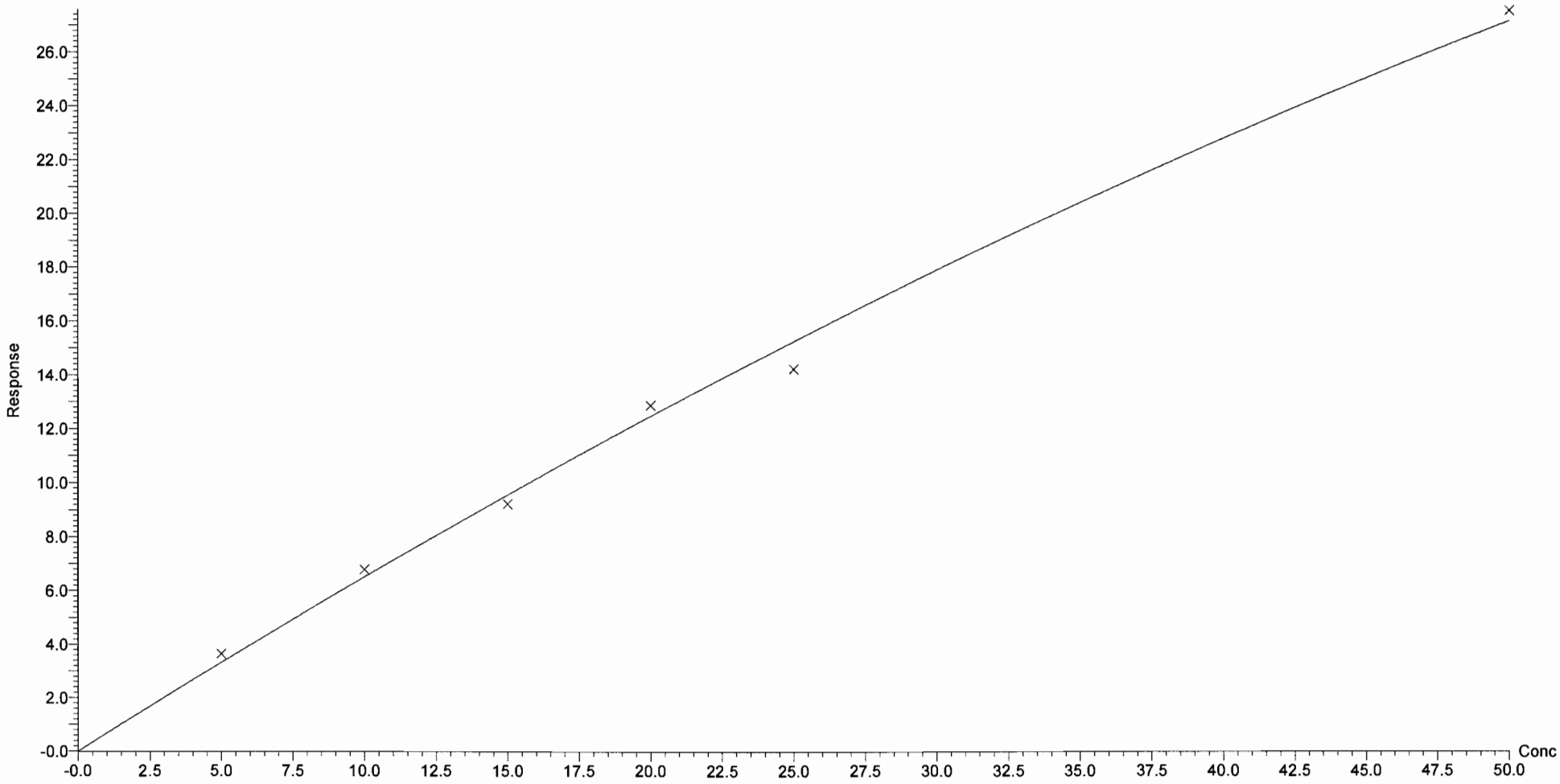
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.993490
Calibration curve: -0.00404685 * x^2 + 0.811962 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.993849
Calibration curve: -0.00266313 * x^2 + 0.677405 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

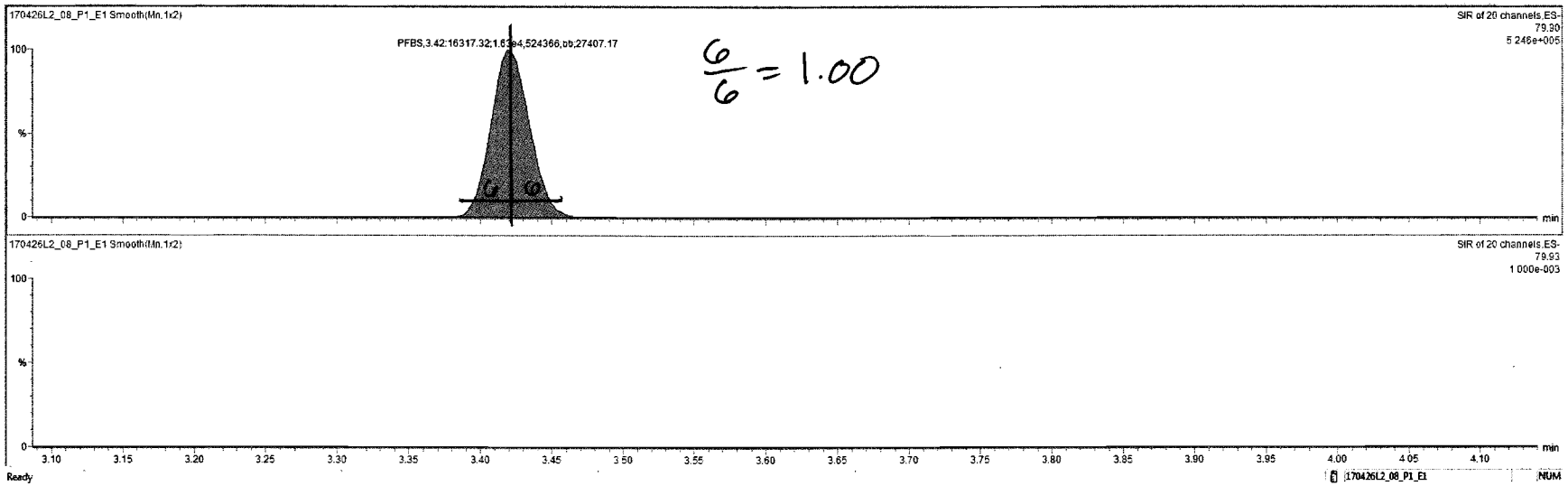


TargetLynx - untitled - [Chromatogram]

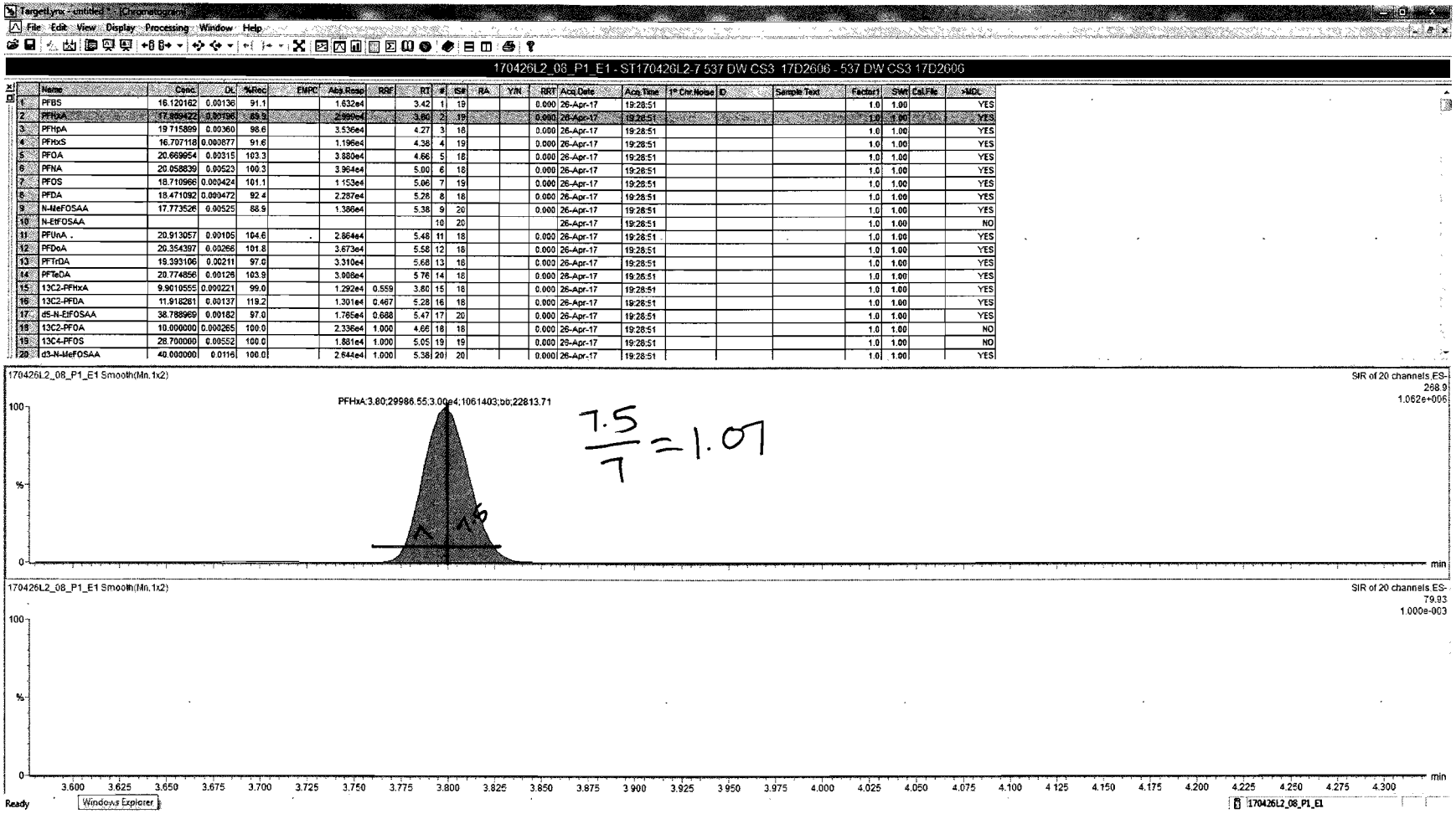
File Edit View Display Processing Window Help

170426L2_08_P1_E1 - ST170426L2-7 537 DW CS3 17D2606 - 537 DW CS3 17D2606

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	ISR	RA	Y/N	RRT	Acq Date	Acq Time	1° Chl Notes	ID	Sample Text	Factor1	SRM	Cal File	>MDL
1	PFBS	16.129162	0.00130	91.1		1.632e4		3.42	1	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
2	PFHxA	17.959422	0.00198	89.9		2.999e4		3.80	2	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
3	PFHpA	19.715899	0.00360	98.6		3.536e4		4.27	3	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
4	PFHxS	16.707118	0.000877	91.6		1.196e4		4.38	4	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
5	PFOA	20.669954	0.00315	103.3		3.880e4		4.66	5	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
6	PFNA	20.058839	0.00523	100.3		3.964e4		5.00	6	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
7	PFOS	18.710968	0.000424	101.1		1.153e4		5.06	7	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
8	PFDA	18.471092	0.000472	92.4		2.287e4		5.26	8	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
9	N-MeFOSAA	17.773526	0.00525	88.9		1.386e4		5.38	9	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:28:51				1.0	1.00		NO
11	PFUnA	20.913057	0.00105	104.6		2.884e4		5.48	11	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
12	PFDoA	20.354397	0.00266	101.8		3.673e4		5.58	12	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
13	PFTrDA	19.393106	0.00211	97.0		3.310e4		5.68	13	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
14	PFTeDA	20.774856	0.00126	103.9		3.008e4		5.76	14	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
15	13C2-PFHxA	9.9010555	0.000221	99.0		1.292e4	0.559	3.80	15	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
16	13C2-PFDA	11.918281	0.00137	119.2		1.301e4	0.467	5.28	16	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
17	d5-N-EtFOSAA	36.788969	0.00182	97.0		1.765e4	0.688	5.47	17	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000265	100.0		2.336e4	1.000	4.66	18	18			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00552	100.0		1.881e4	1.000	5.05	19	19			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0116	100.0		2.644e4	1.000	5.38	20	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES



$\frac{6}{6} = 1.00$



	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1st Chn Noise	ID	Sample Text	Factor1	SW	CalFile	>MDL
1	PFBS	16.120162	0.00136	91.1		1.632e4		3.42	1	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
2	PFHxA	17.809422	0.00196	89.9		2.998e4		3.80	2	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
3	PFHpA	19.715899	0.00360	98.6		3.536e4		4.27	3	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
4	PFHxS	16.707118	0.000877	91.6		1.196e4		4.38	4	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
5	PFOA	20.669954	0.00315	103.3		3.880e4		4.66	5	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
6	PFNA	20.058839	0.00523	100.3		3.964e4		5.00	6	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
7	PFOS	18.710966	0.000424	101.1		1.153e4		5.06	7	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
8	PFDA	18.471092	0.000472	92.4		2.287e4		5.28	8	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
9	N-MeFOSAA	17.773526	0.00525	88.9		1.386e4		5.38	9	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:28:51				1.0	1.00		NO
11	PFUnA .	20.913057	0.00105	104.6	.	2.864e4		5.48	11	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
12	PFDoA	20.354397	0.00266	101.8		3.673e4		5.58	12	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
13	PFTrDA	19.393106	0.00211	97.0		3.310e4		5.68	13	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
14	PFTeDA	20.774856	0.00126	103.9		3.008e4		5.76	14	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
15	13C2-PFHxA	9.9010555	0.000221	99.0		1.292e4	0.559	3.80	15	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
16	13C2-PFDA	11.918281	0.00137	119.2		1.301e4	0.467	5.28	16	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
17	d5-N-EtFOSAA	38.788969	0.00182	97.0		1.765e4	0.688	5.47	17	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000265	100.0		2.336e4	1.000	4.66	18	18			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00552	100.0		1.881e4	1.000	5.05	19	19			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0116	100.0		2.644e4	1.000	5.38	20	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES

Vista Analytical Laboratory Q1

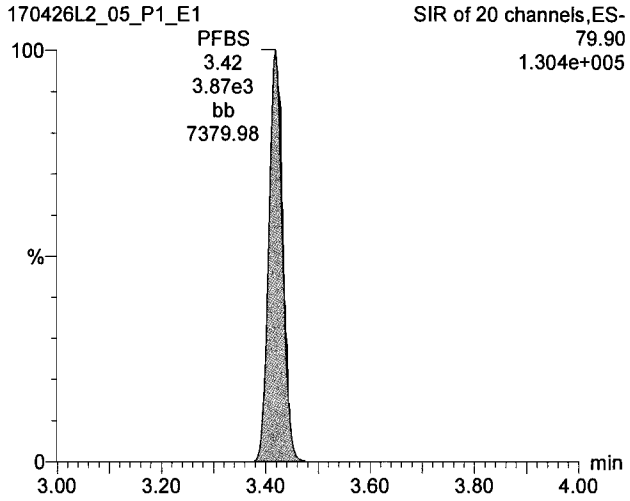
Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

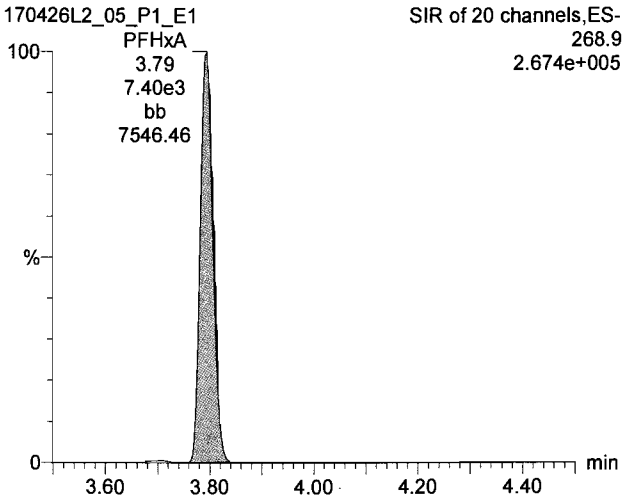
Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: 27 Apr 2017 10:15:04

ID: , Description: , Name: 170426L2_05.wiff, Date: 26-Apr-2017, Time: 18:52:09, Instrument: , Lab: ©PE-SCIEX, User: sciex

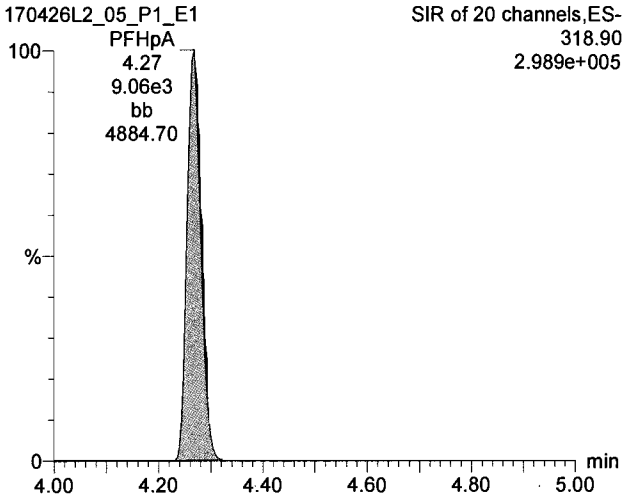
PFBS



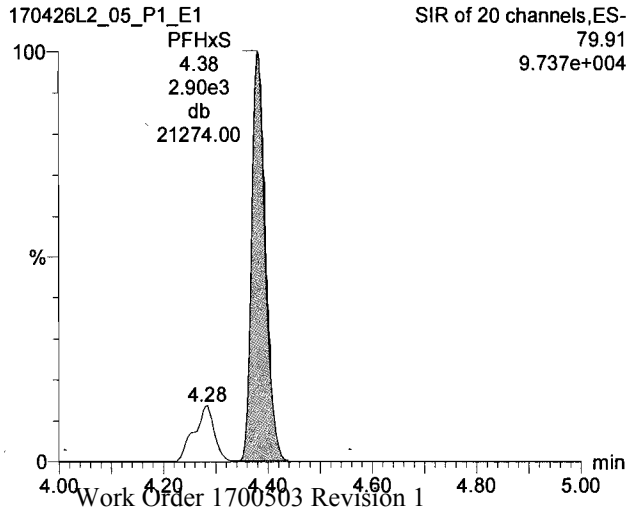
PFHxA



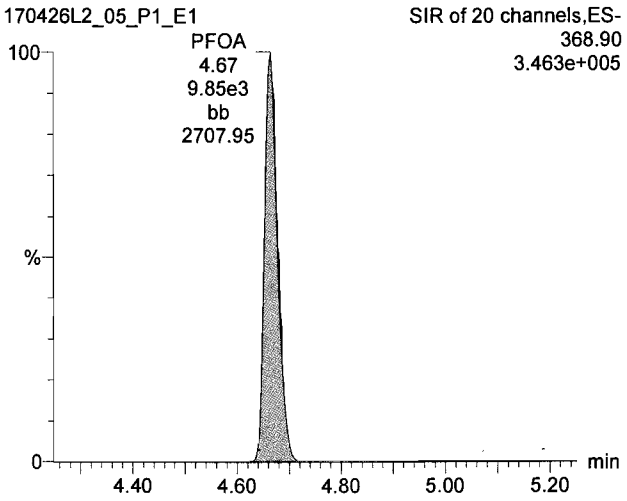
PFHpA



PFHxS



PFOA



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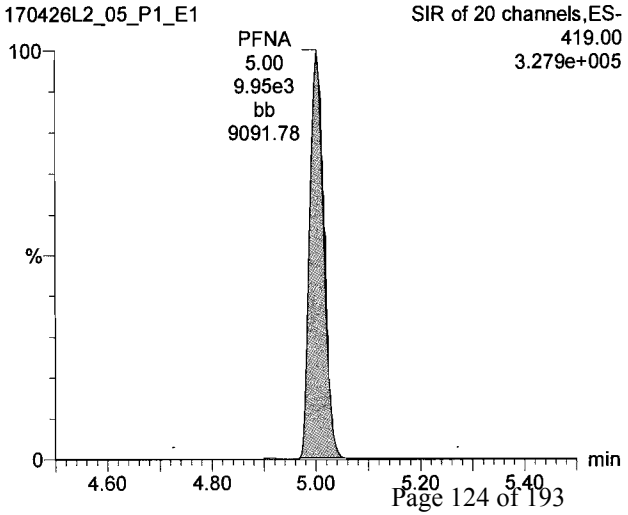
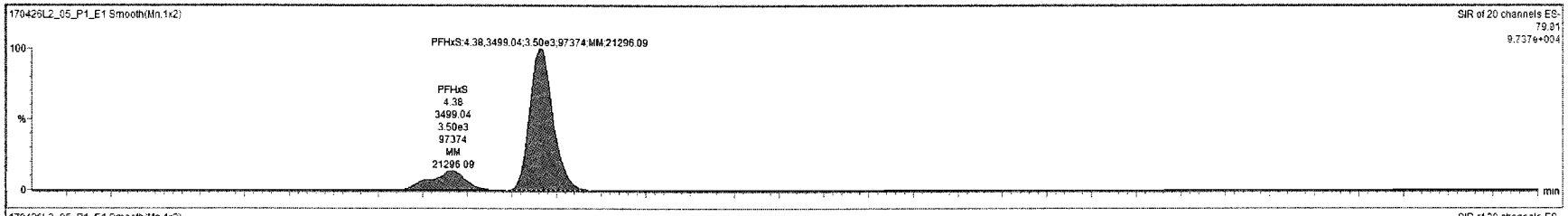


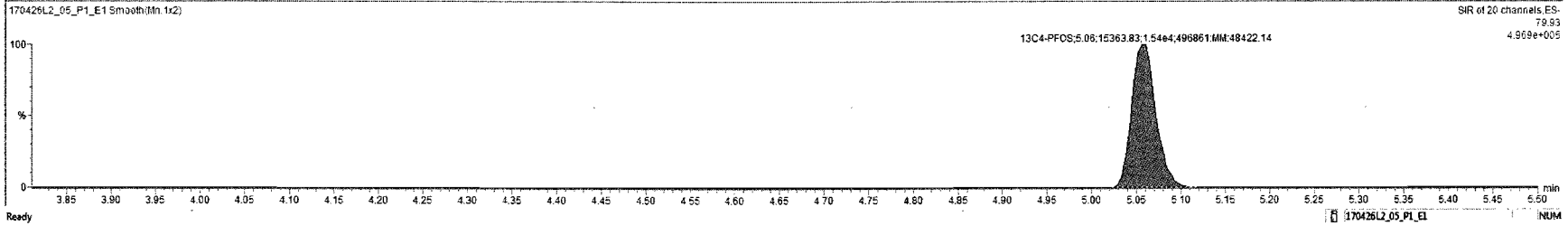
TargetLynx - 170426L2_CW.qld - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_05_P1_E1 - ST170426L2-4 537 DW CS0 17D2516 - 537 DW CS0 17D2516

	Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chn Noise	ID	Sample Text	Factor1	SVd	Cal File	>MDL
1	PFBS	4.4112036	0.00152	99.8		3.874e3		3.42	1	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
2	PFHxA	5.0696737	0.00183	101.4		7.399e3		3.80	2	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
3	PFHpA	5.4784551	0.00265	109.6		9.059e3		4.27	3	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
4	PFHxS	4.6829967	0.000467	103.0		3.499e3		4.38	4	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
5	PFOA	5.6628794	0.00532	113.3		9.851e3		4.67	5	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
6	PFNA	5.3606282	0.00140	107.2		9.945e3		5.00	6	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
7	PFOS	4.7949162	0.000680	103.8		3.465e3		5.06	7	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
8	PFDA	5.6908178	0.00120	113.8		8.474e3		5.28	8	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
9	N-MeFOSAA	5.6973379	0.00257	113.9		3.822e3		5.36	9	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	18:52:09				1.0	1.00		NO
11	PFUnA .	5.3794164	0.000958	107.6		8.795e3		5.44	11	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
12	PFDoA	5.3588922	0.000348	107.2		8.800e3		5.55	12	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
13	PFTrDA	4.6611068	0.00170	93.2		7.443e3		5.65	13	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
14	PFTeDA	5.4956934	0.00138	109.9		7.333e3		5.74	14	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
15	13C2-PFHxA	10.957151	0.000335	109.6		1.236e4	0.580	3.79	15	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
16	13C2-PFDA	11.501662	0.00193	115.0		1.344e4	0.580	5.28	16	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
17	d5-N-EtFOSAA	48.868723	0.00233	122.2		1.777e4	0.688	5.42	17	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.00108	100.0		2.013e4	1.000	4.67	18	18			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00146	100.0		1.536e4	1.000	5.06	19	19			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00497	100.0		2.113e4	1.000	5.36	20	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES





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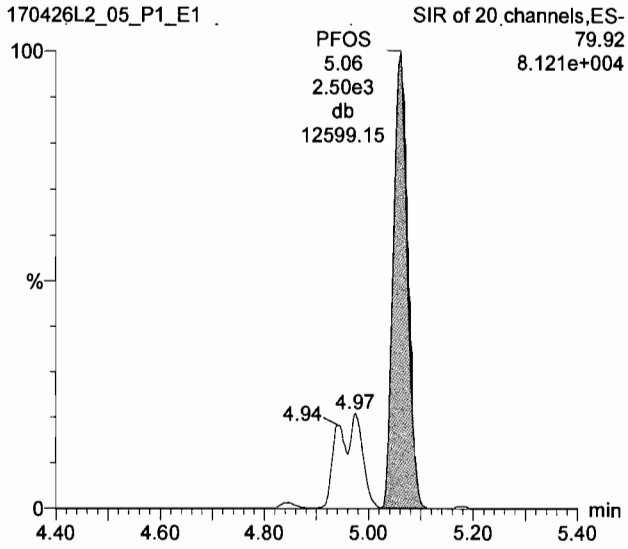
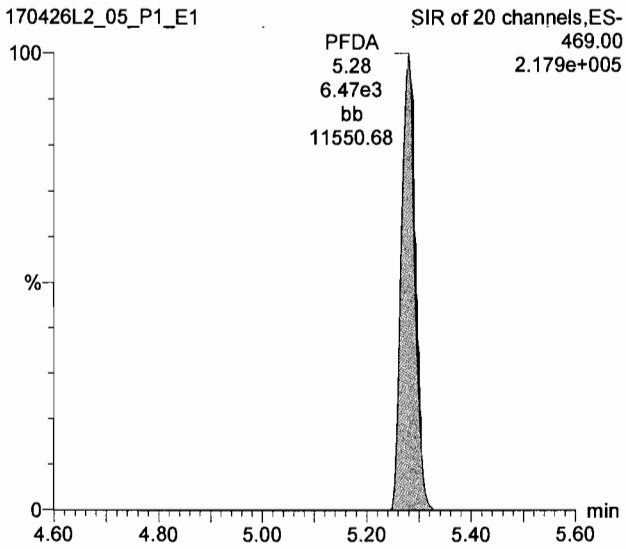
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_05.wiff, Date: 26-Apr-2017, Time: 18:52:09, Instrument: , Lab: ©PE-SCIEX, User: sciex

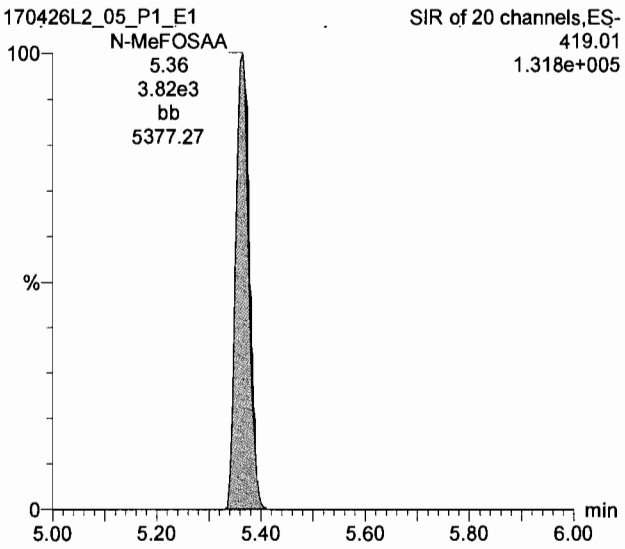
PFOS



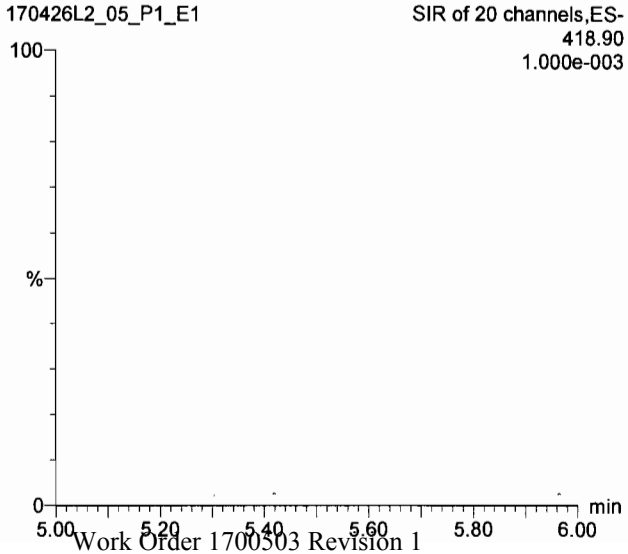
PFDA



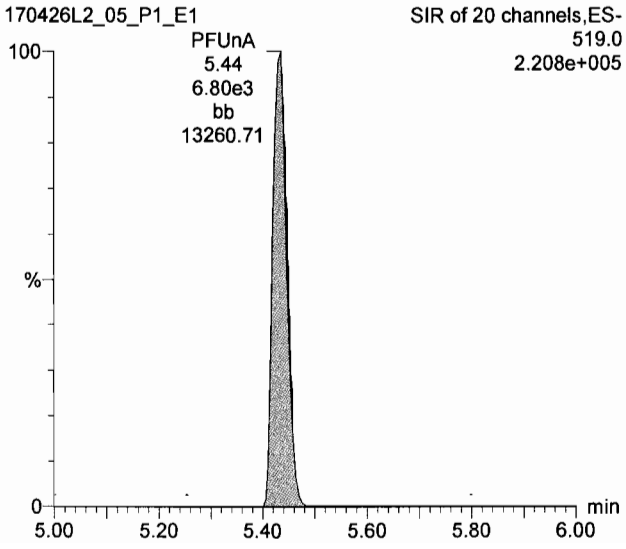
N-MeFOSAA



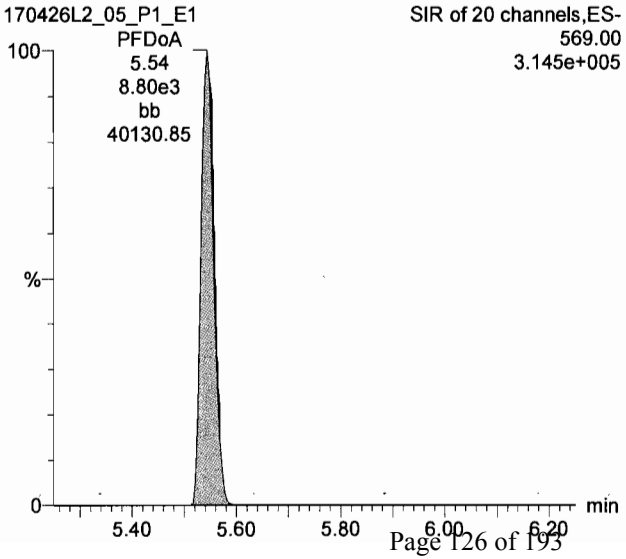
N-EtFOSAA



PFUnA



PFDoA

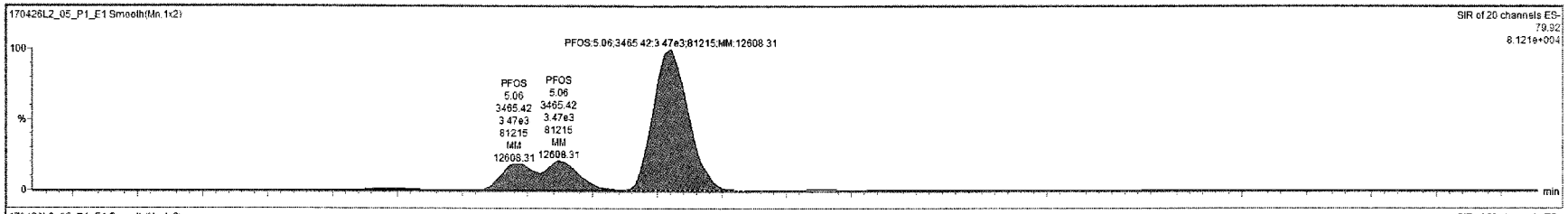


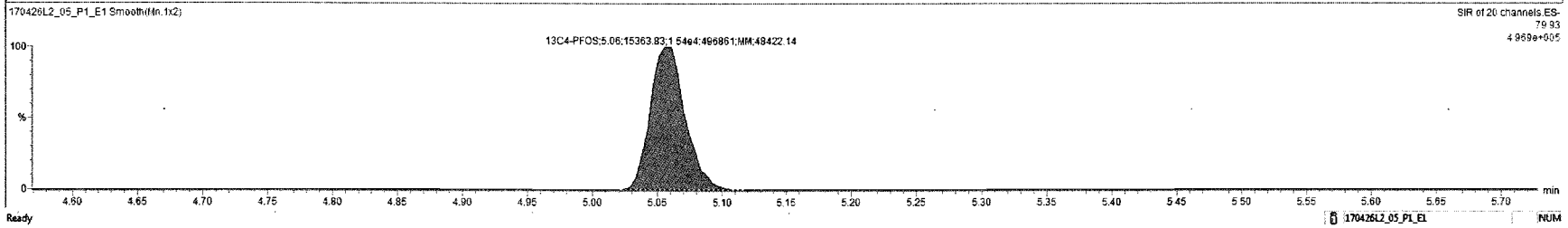
TargetLynx - 170426L2-CRV.wld * - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_05_P1_E1 - ST170426L2-4 537 DW CS0 17D2516 - 537 DW CS0 17D2516

	Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor	Swt	CalFile	>MDL
1	PFBS	4.4112036	0.00152	99.8		3.874e3		3.42	1	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
2	PFHxA	5.0698737	0.00183	101.4		7.399e3		3.80	2	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
3	PFHpA	5.4784551	0.00268	109.6		9.059e3		4.27	3	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
4	PFHxS	4.6989967	0.000467	103.0		3.499e3		4.38	4	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
5	PFOA	5.6628794	0.00532	113.3		9.851e3		4.67	5	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
6	PFNA	5.3606282	0.00140	107.2		9.946e3		5.00	6	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
7	PFOS	4.7949162	0.000680	103.8		3.465e3		5.06	7	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
8	PFDA	5.6908178	0.00120	113.8		8.474e3		5.28	8	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
9	N-MeFOSAA	5.6973379	0.00257	113.9		3.822e3		5.36	9	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	18:52:09				1.0	1.00		NO
11	PFUnA	5.3794184	0.000958	107.6		8.795e3		5.44	11	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
12	PFDoA	5.3588922	0.000348	107.2		8.800e3		5.55	12	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
13	PFTrDA	4.6611068	0.00170	93.2		7.443e3		5.65	13	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
14	PFTeDA	5.4956834	0.00136	109.9		7.333e3		5.74	14	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
15	13C2-PFHxA	10.957151	0.000335	109.6		1.236e4	0.560	3.79	15	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
16	13C2-PFDA	11.501662	0.00193	115.0		1.344e4	0.580	5.28	16	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
17	d5-N-EtFOSAA	46.886723	0.00233	122.2		1.777e4	0.888	5.42	17	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.00108	100.0		2.013e4	1.000	4.67	18	18			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00148	100.0		1.536e4	1.000	5.06	19	19			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00497	100.0		2.113e4	1.000	5.36	20	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES





Ready

170426L2_05_P1_E1

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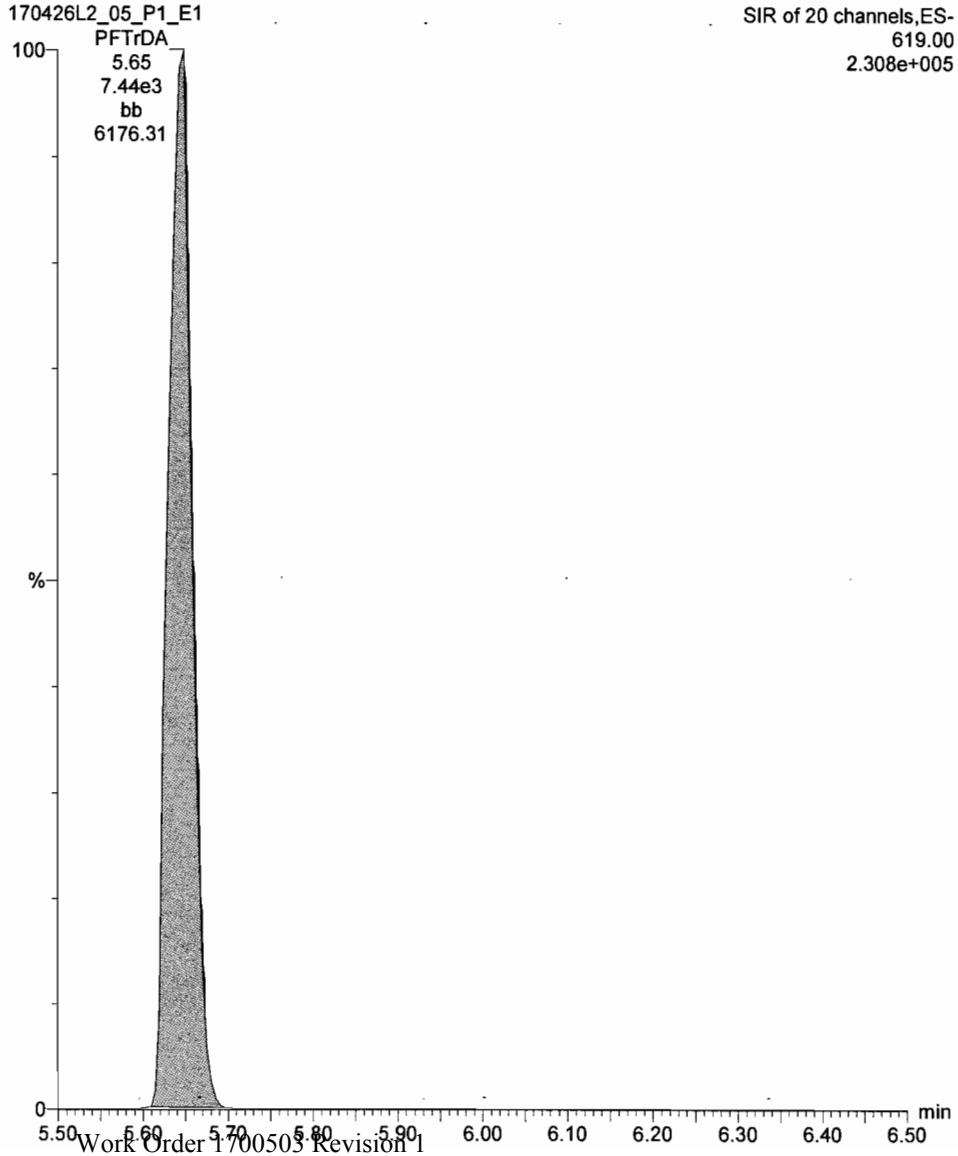
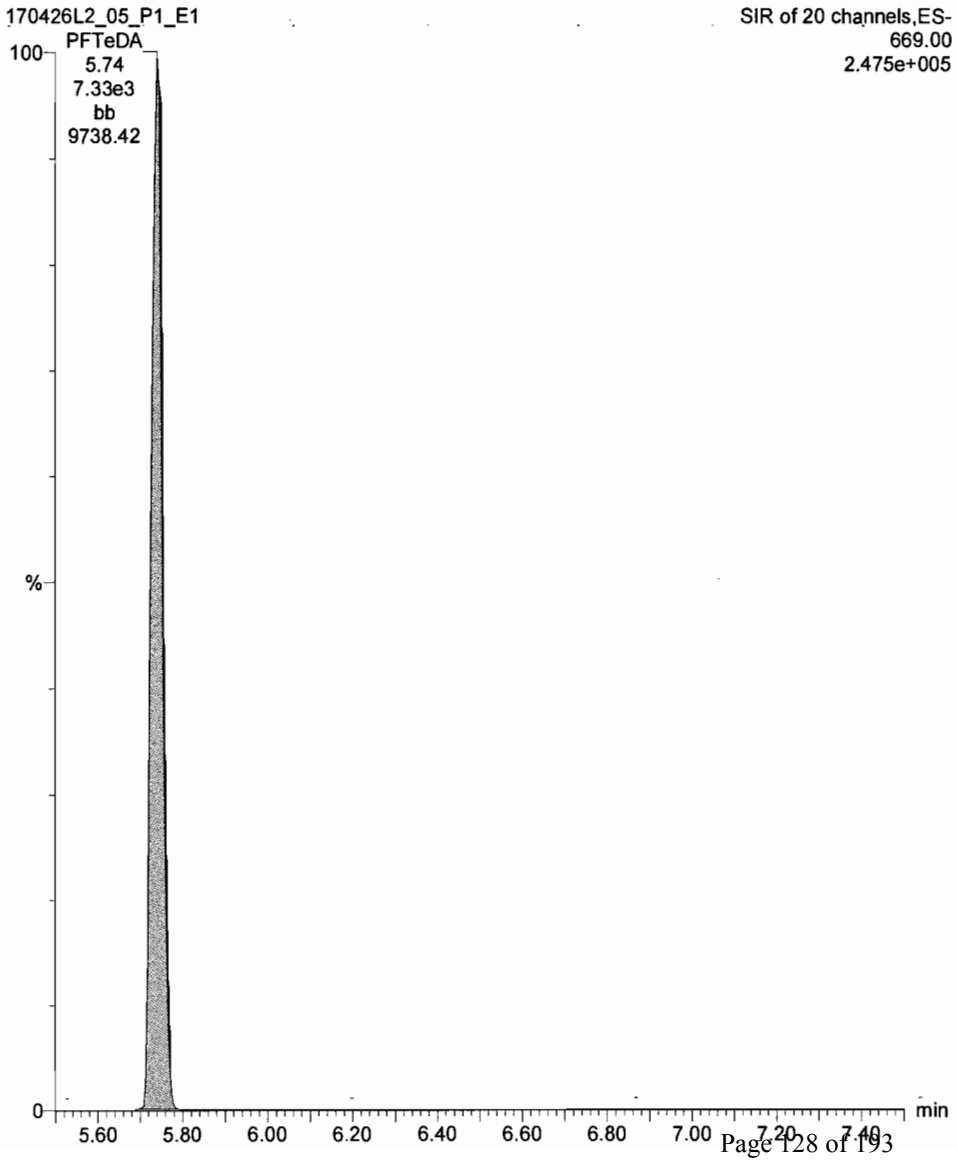
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_05.wiff, Date: 26-Apr-2017, Time: 18:52:09, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFTrDA



PFTeDA



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Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

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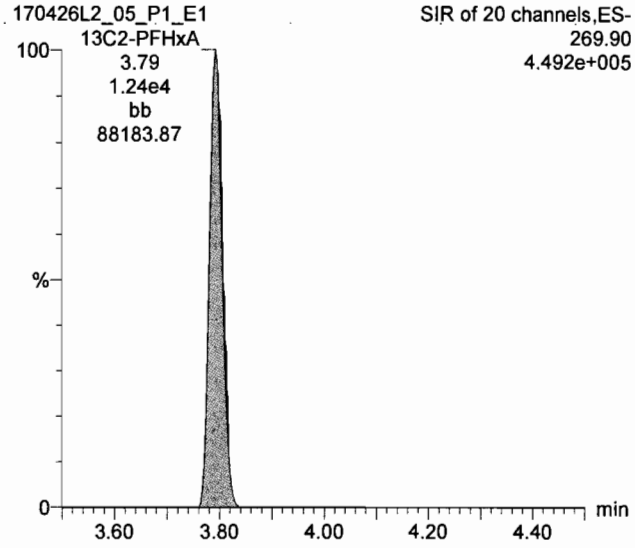
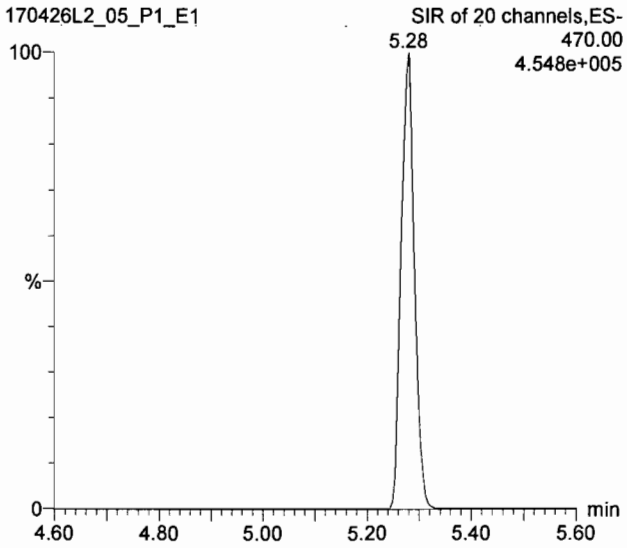
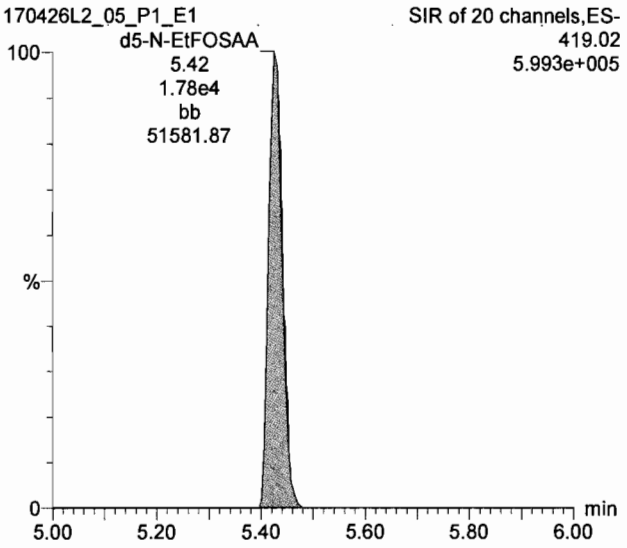
13C2-PFHxA



13C2-PFDA



d5-N-EtFOSAA



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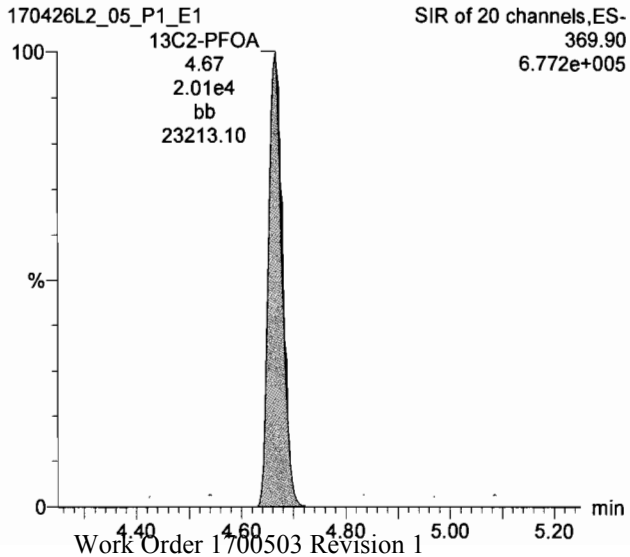
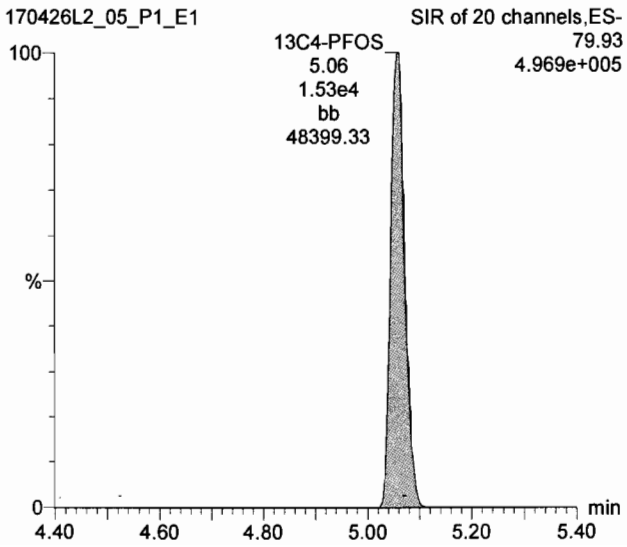
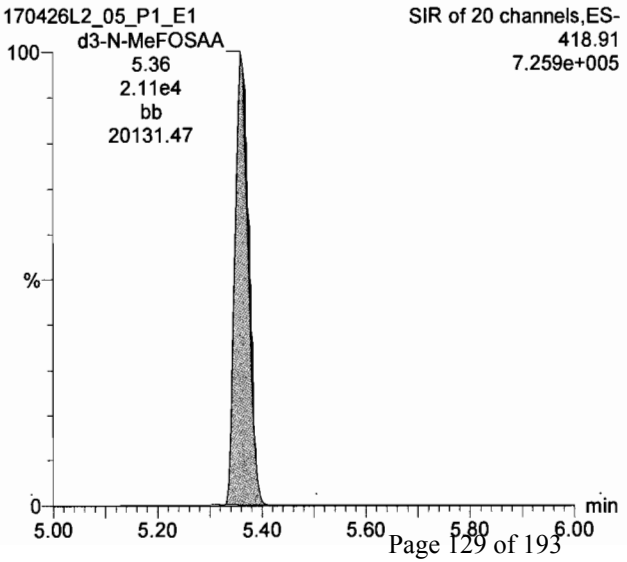


13C4-PFOS



d3-N-MeFOSAA

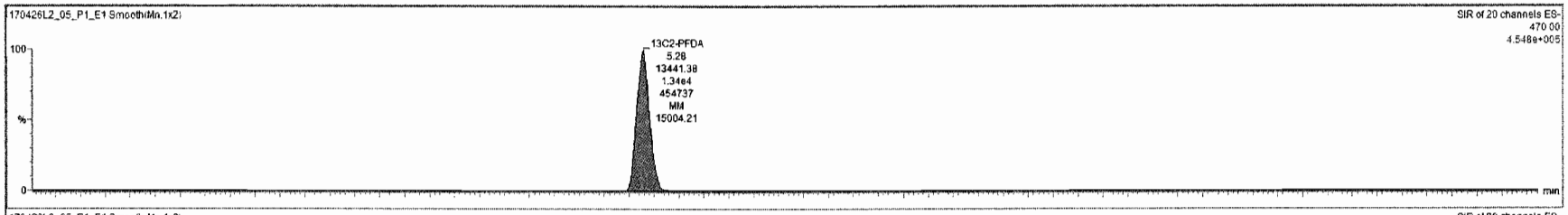


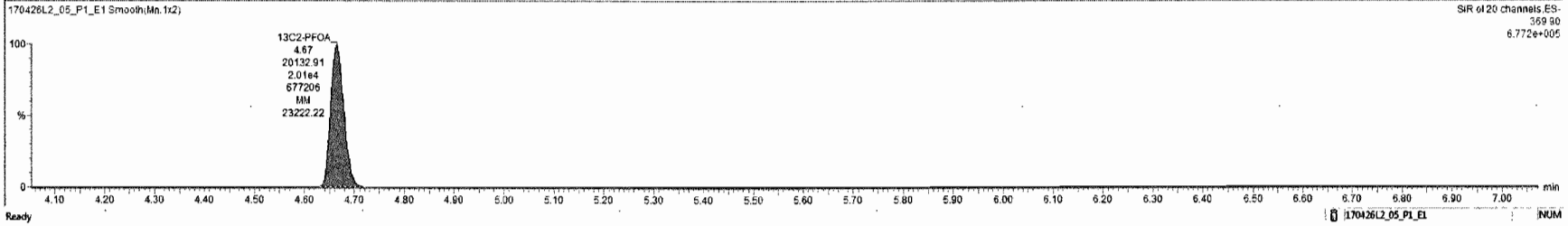
TargetLynx - 170426L2_CRV.qld * [Chromatogram]

File Edit View Display Processing Window Help

170426L2_05_P1_E1 - ST170426L2-4 537 DW CS0 17D2516 - 537 DW CS0 17D2516

	Name	Conc	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	SWI	Cal.File	>MDL
1	PFBS	4.4112036	0.00152	99.8		3.874e3		3.42	1	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
2	PFHxA	5.0698737	0.00183	101.4		7.399e3		3.80	2	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
3	PFHpA	5.4784551	0.00268	109.6		9.059e3		4.27	3	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
4	PFHxS	4.6989987	0.000487	103.0		3.499e3		4.38	4	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
5	PFOA	5.6628794	0.00532	113.3		9.851e3		4.67	5	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
6	PFNA	5.3606282	0.00140	107.2		9.945e3		5.00	6	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
7	PFOS	4.7949162	0.000680	103.8		3.465e3		5.06	7	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
8	PFDA	5.6908178	0.00120	113.8		8.474e3		5.28	8	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
9	N-MeFOSAA	5.6973379	0.00257	113.9		3.822e3		5.36	9	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	18:52:09				1.0	1.00		NO
11	PFUnA	5.3794164	0.000958	107.6		6.795e3		5.44	11	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
12	PFDoA	5.3588922	0.000348	107.2		8.800e3		5.55	12	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
13	PFTrDA	4.6811068	0.00170	93.2		7.443e3		5.65	13	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
14	PFTeDA	5.4956934	0.00138	109.9		7.333e3		5.74	14	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
15	13C2-PFHxA	10.957151	0.000335	109.6		1.236e4	0.560	3.79	15	16			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
16	13C2-PFDA	11.501862	0.00193	115.0		1.344e4	0.580	5.28	16	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
17	d5-N-EtFOSAA	48.868723	0.00233	122.2		1.777e4	0.888	5.42	17	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.00108	100.0		2.013e4	1.000	4.67	18	16			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
19	13C4-PFOS	26.700000	0.00148	100.0		1.536e4	1.000	5.06	19	19			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00497	100.0		2.113e4	1.000	5.36	20	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES



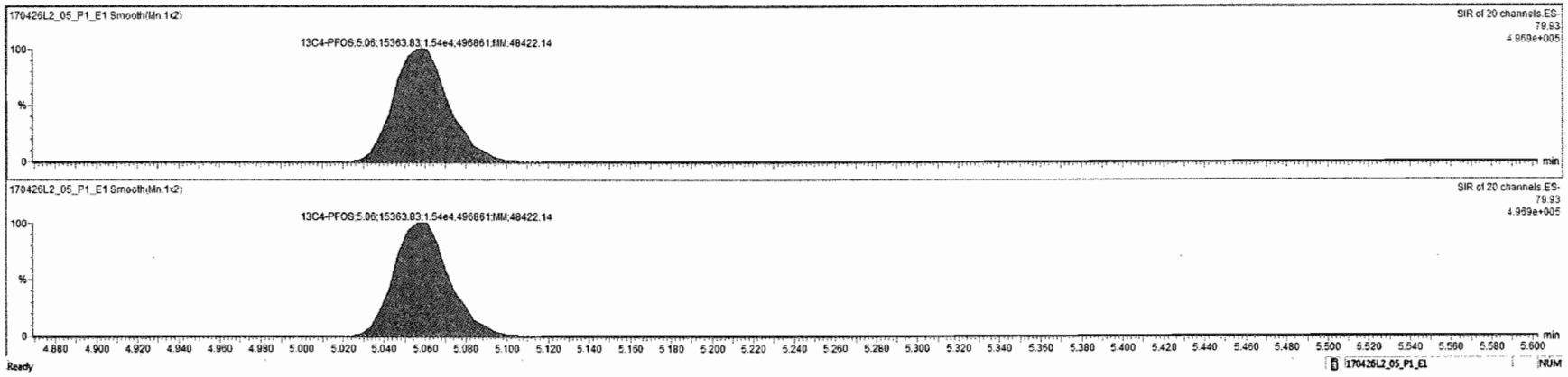


TargetLynx - 170426L2-CSY.qxld - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_05_P1_E1 - ST170426L2-4 537 DW CS0 17D2516 - 537 DW CS0 17D2516

	Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1st Chl Noise	ID	Sample Text	Factor1	SW	Cal File	>MDL
1	PFBS	4.4112036	0.00152	99.6		3.874e3		3.42	1	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
2	PFHxA	5.9698737	0.00183	101.4		7.399e3		3.80	2	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
3	PFHpA	5.4784551	0.00268	109.6		9.059e3		4.27	3	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
4	PFHxS	4.6989967	0.000467	103.0		3.499e3		4.38	4	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
5	PFOA	5.6628794	0.00532	113.3		9.851e3		4.67	5	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
6	PFNA	5.3606282	0.00140	107.2		9.945e3		5.00	6	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
7	PFOS	4.7949182	0.000680	103.8		3.485e3		5.06	7	19			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
8	PFDA	5.6908178	0.00120	113.8		8.474e3		5.28	8	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
9	N-MeFOSAA	5.6973379	0.00257	113.9		3.822e3		5.36	9	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	18:52:09				1.0	1.00		NO
11	PFUnA	5.3794164	0.000958	107.6		6.795e3		5.44	11	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
12	PFDoA	5.3588922	0.000348	107.2		8.800e3		5.56	12	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
13	PFTrDA	4.6611068	0.00170	93.2		7.443e3		5.65	13	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
14	PFTeDA	5.4956634	0.00138	109.9		7.333e3		5.74	14	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
15	13C2-PFHxA	10.957151	0.000335	109.6		1.236e4	0.560	3.79	15	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
16	13C2-PFDA	11.501662	0.00193	115.0		1.344e4	0.580	5.28	16	18			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
17	d5-N-EtFOSAA	48.868723	0.00233	122.2		1.777e4	0.688	5.42	17	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES
18	13C2-PFDA	10.000000	0.00108	100.0		2.613e4	1.000	4.67	18	18			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
19	13C4-PFOS	28.709000	0.00148	100.0		1.536e4	1.000	5.06	19	19			0.000	26-Apr-17	18:52:09				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00497	100.0		2.113e4	1.000	5.36	20	20			0.000	26-Apr-17	18:52:09				1.0	1.00		YES



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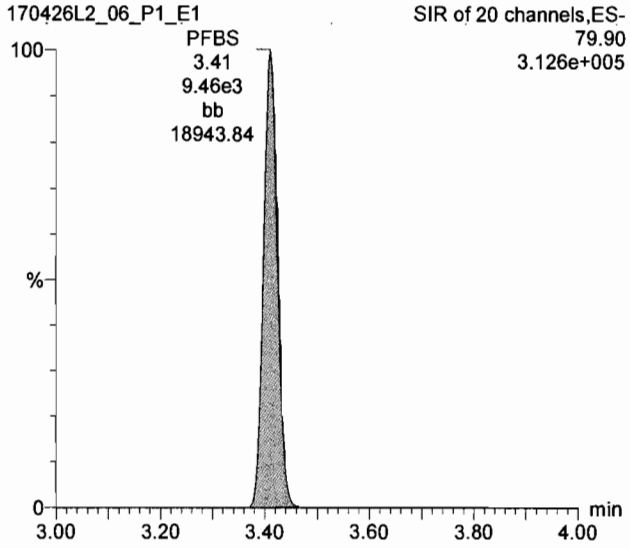
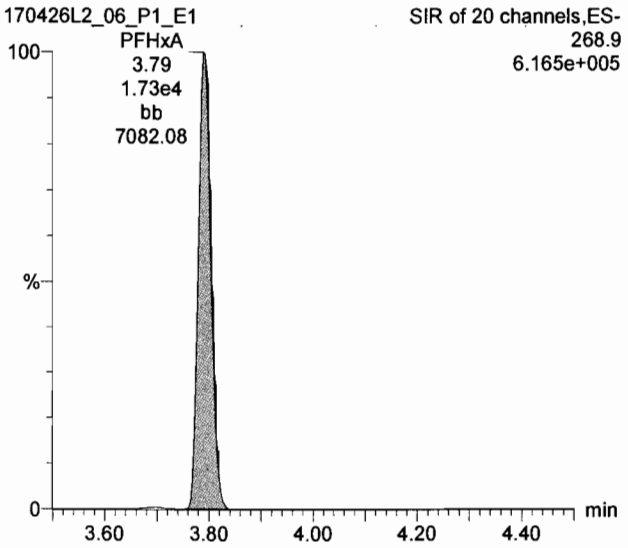
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_06.wiff, Date: 26-Apr-2017, Time: 19:04:24, Instrument: , Lab: ©PE-SCIEX, User: sciex

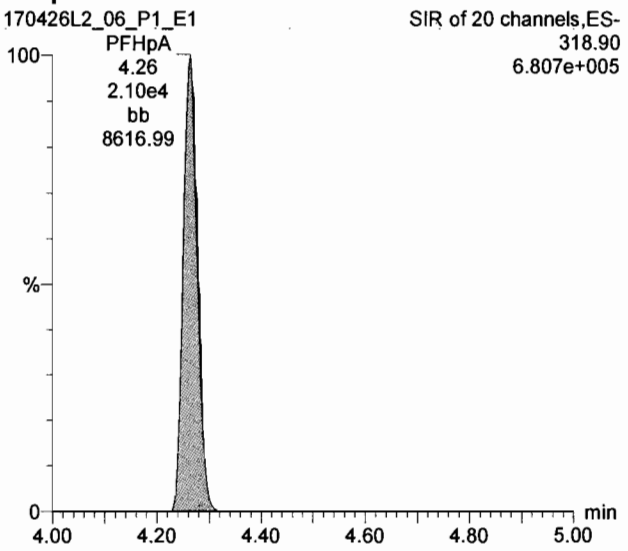
PFBS



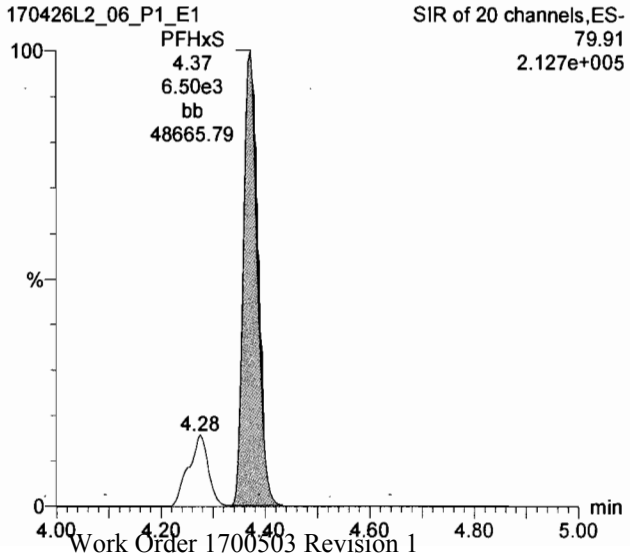
PFHxA



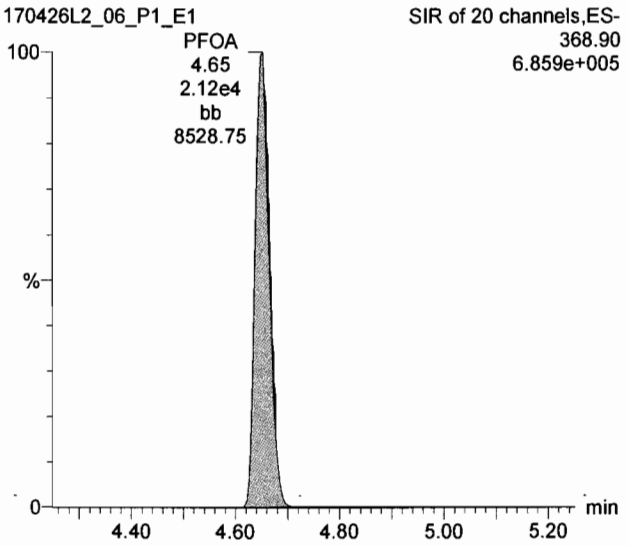
PFHpA



PFHxS



PFOA



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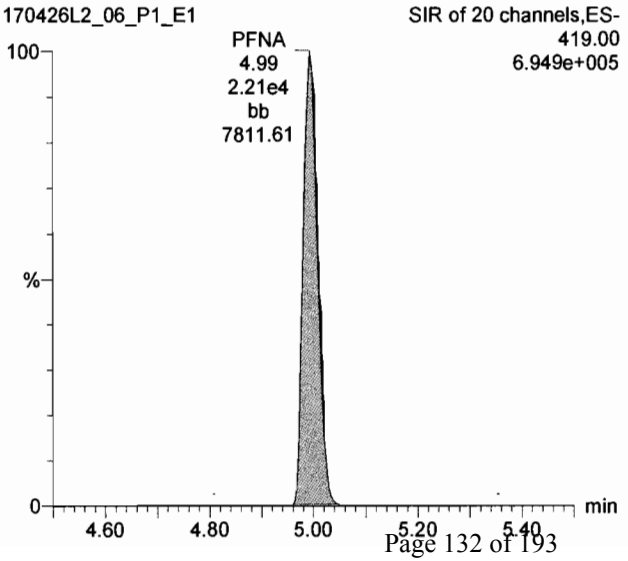
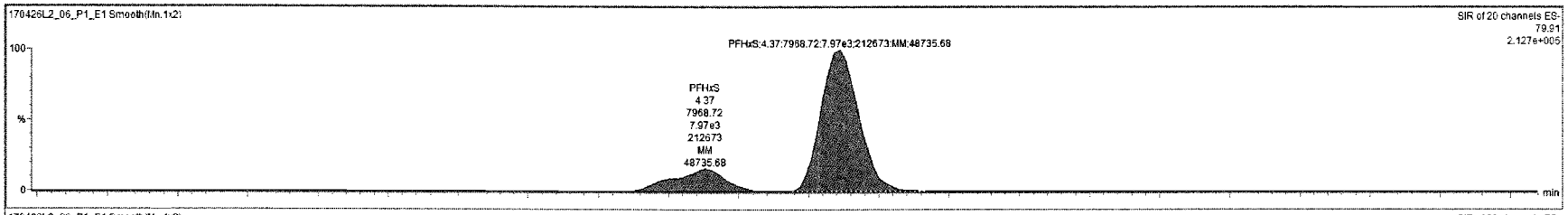


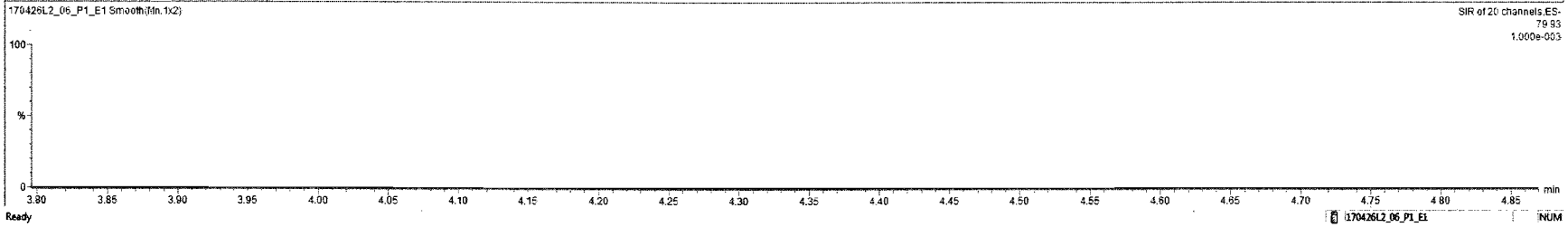
TargetLynx - 170426L2_CEV.qld * [Chromatograms]

File Edit View Display Processing Window Help

170426L2_06_P1_E1 - ST170426L2-5 537 DW CS1 17D2604 - 537 DW CS1 17D2604

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1° Chr.Name	ID	Sample Text	Factor1	SWt	Cal.File	>MDL
1	PFBS	9.9409300	0.00133	112.3		9.455e3		3.41	1	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
2	PFHxA	10.978404	0.00419	109.8		1.730e4		3.79	2	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
3	PFHpA	10.674562	0.00284	106.7		2.096e4		4.26	3	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
4	PFHxS	9.7841936	0.000416	107.3		7.968e3		4.37	4	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
5	PFOA	10.246696	0.00274	102.5		2.121e4		4.65	5	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
6	PFNA	10.049729	0.00283	100.5		2.208e4		4.99	6	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
7	PFOS	9.3945299	0.00186	101.7		7.461e3		5.06	7	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
8	PFDA	11.199100	0.00117	112.0		1.509e4		5.28	8	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
9	N-MeFOSAA	9.8065217	0.00277	98.1		7.997e3		5.37	9	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:04:24				1.0	1.00		NO
11	PFUnA	11.108131	0.000975	111.1		1.865e4		5.44	11	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
12	PFDoA	11.258454	0.000791	112.6		2.202e4		5.54	12	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
13	PFTrDA	10.786715	0.000731	107.9		2.027e4		5.62	13	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
14	PFTeDA	10.446463	0.00153	104.5		1.660e4		5.73	14	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
15	13C2-PFHxA	9.6193287	0.000863	96.2		1.318e4	0.560	3.79	15	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
16	13C2-PFDA	9.8643041	0.000266	98.6		1.400e4	0.580	5.28	16	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
17	d5-N-EtFOSAA	40.304870	0.00228	100.8		1.826e4	0.688	5.43	17	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000332	100.0		2.446e4	1.000	4.65	18	18			0.000	26-Apr-17	19:04:24				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00460	100.0		1.711e4	1.000	5.05	19	19			0.000	26-Apr-17	19:04:24				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00361	100.0		2.632e4	1.000	5.37	20	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES





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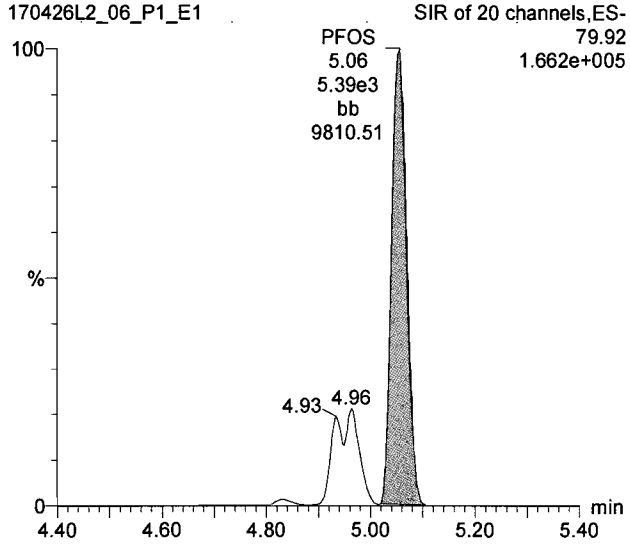
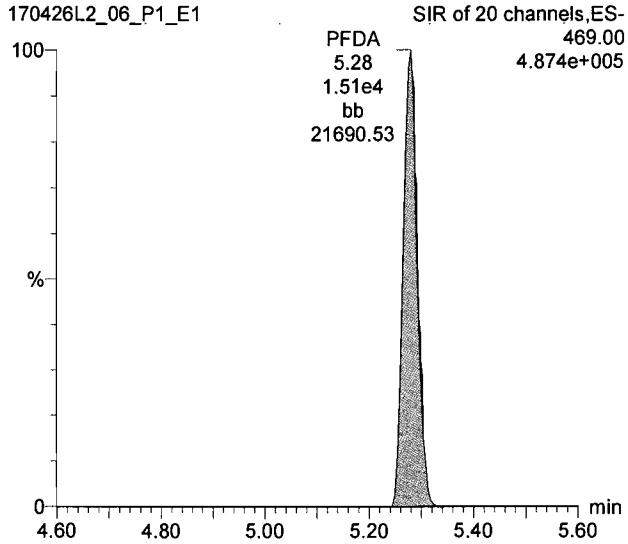
ID: , Description: , Name: 170426L2_06.wiff, Date: 26-Apr-2017, Time: 19:04:24, Instrument: , Lab: ©PE-SCIEX, User: sciex

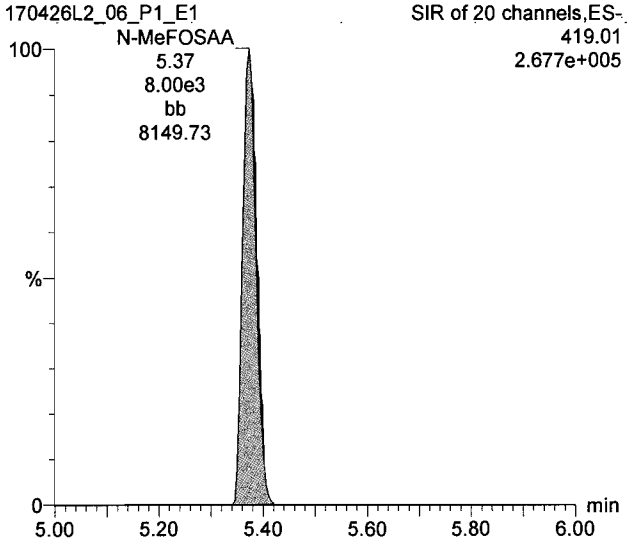
PFOS



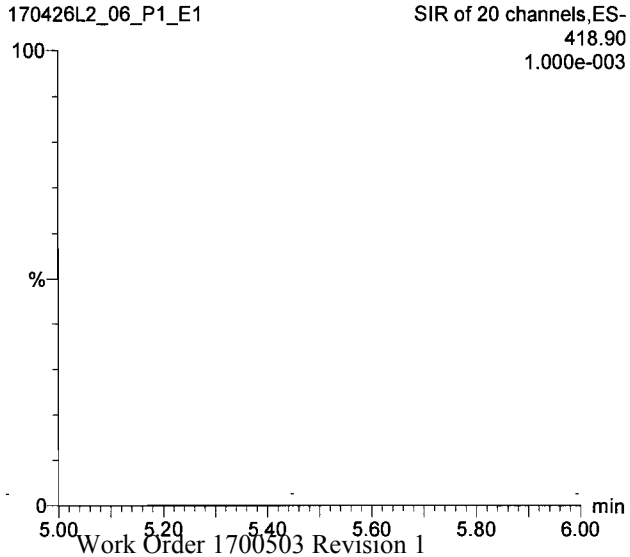
PFDA



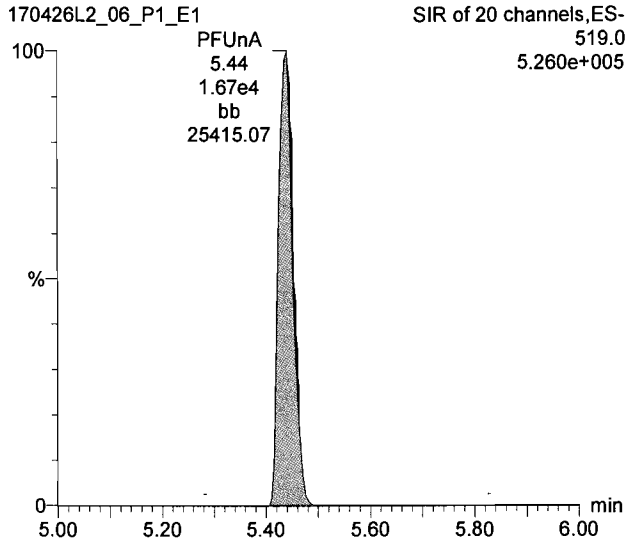
N-MeFOSAA



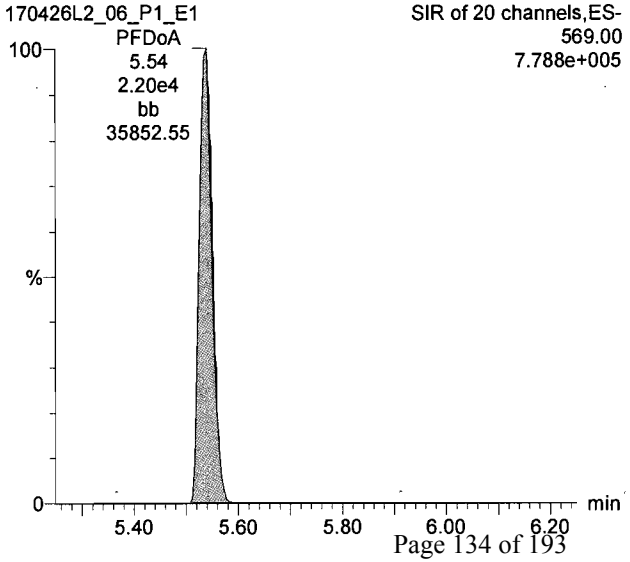
N-EtFOSAA



PFUnA



PFDoA

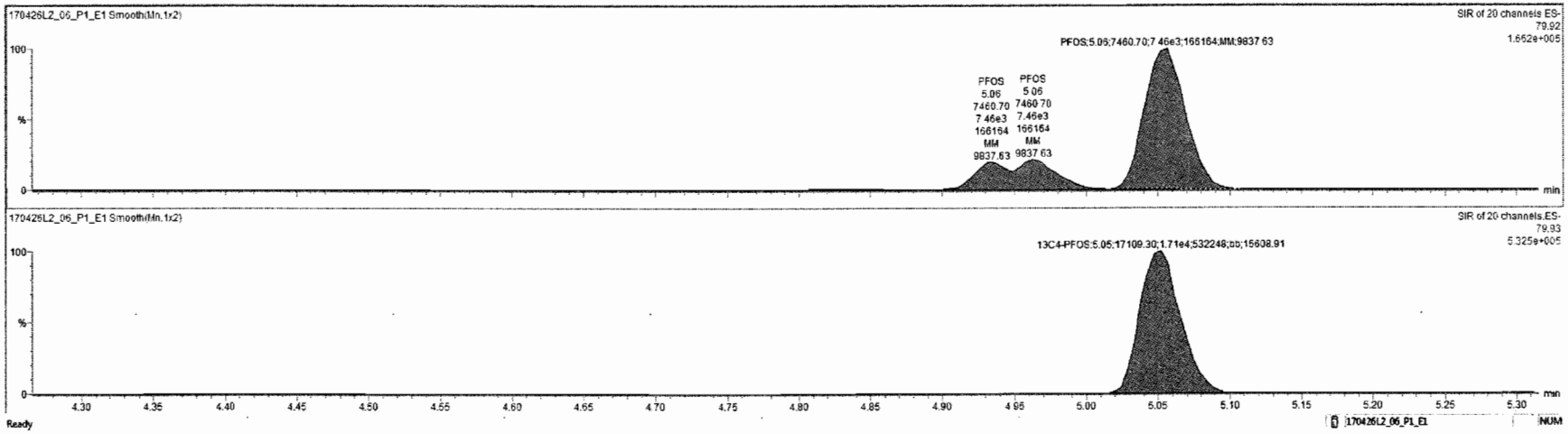


TargetLynx - 170426L2-CRV.qid * [Chromatogram]

File Edit View Display Processing Window Help

170426L2_06_P1_E1 - ST17042GL2-5 537 DW CS1 17D2604 - 537 DW CS1 17D2604

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1° Chl Noise	ID	Sample Text	Factor	SWI	Cal File	>MDL
1	PFBS	9.9409300	0.00133	112.3		9.456e3		3.41	1	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
2	PFHxA	10.978404	0.00419	109.8		1.730e4		3.79	2	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
3	PFHpA	10.674562	0.00284	106.7		2.096e4		4.26	3	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
4	PFHxS	9.7841938	0.000416	107.3		7.969e3		4.37	4	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
5	PFOA	10.246690	0.00274	102.5		2.121e4		4.65	5	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
6	PFNA	10.049729	0.00283	100.5		2.208e4		4.99	6	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
7	PFOS	9.3945289	0.00196	101.7		7.461e3		5.06	7	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
8	PFDA	11.199100	0.00117	112.0		1.509e4		5.26	8	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
9	N-MeFOSAA	9.8665217	0.00277	98.1		7.997e3		5.37	9	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:04:24				1.0	1.00		NO
11	PFUnA	11.108131	0.000975	111.1		1.665e4		5.44	11	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
12	PFDoA	11.258454	0.000791	112.6		2.202e4		5.54	12	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
13	PFTrDA	10.786715	0.000731	107.9		2.027e4		5.62	13	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
14	PFTeDA	10.446463	0.00153	104.5		1.660e4		5.73	14	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
15	13C2-PFHxA	9.6193287	0.000883	96.2		1.318e4	0.560	3.79	15	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
16	13C2-PFDA	9.8643041	0.000266	98.6		1.400e4	0.580	5.28	16	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
17	d5-N-EtFOSAA	40.304870	0.00228	100.8		1.826e4	0.688	5.43	17	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000332	100.0		2.446e4	1.000	4.65	18	18			0.000	26-Apr-17	19:04:24				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00460	100.0		1.711e4	1.000	5.05	19	19			0.000	26-Apr-17	19:04:24				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00361	100.0		2.832e4	1.000	5.37	20	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES



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Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
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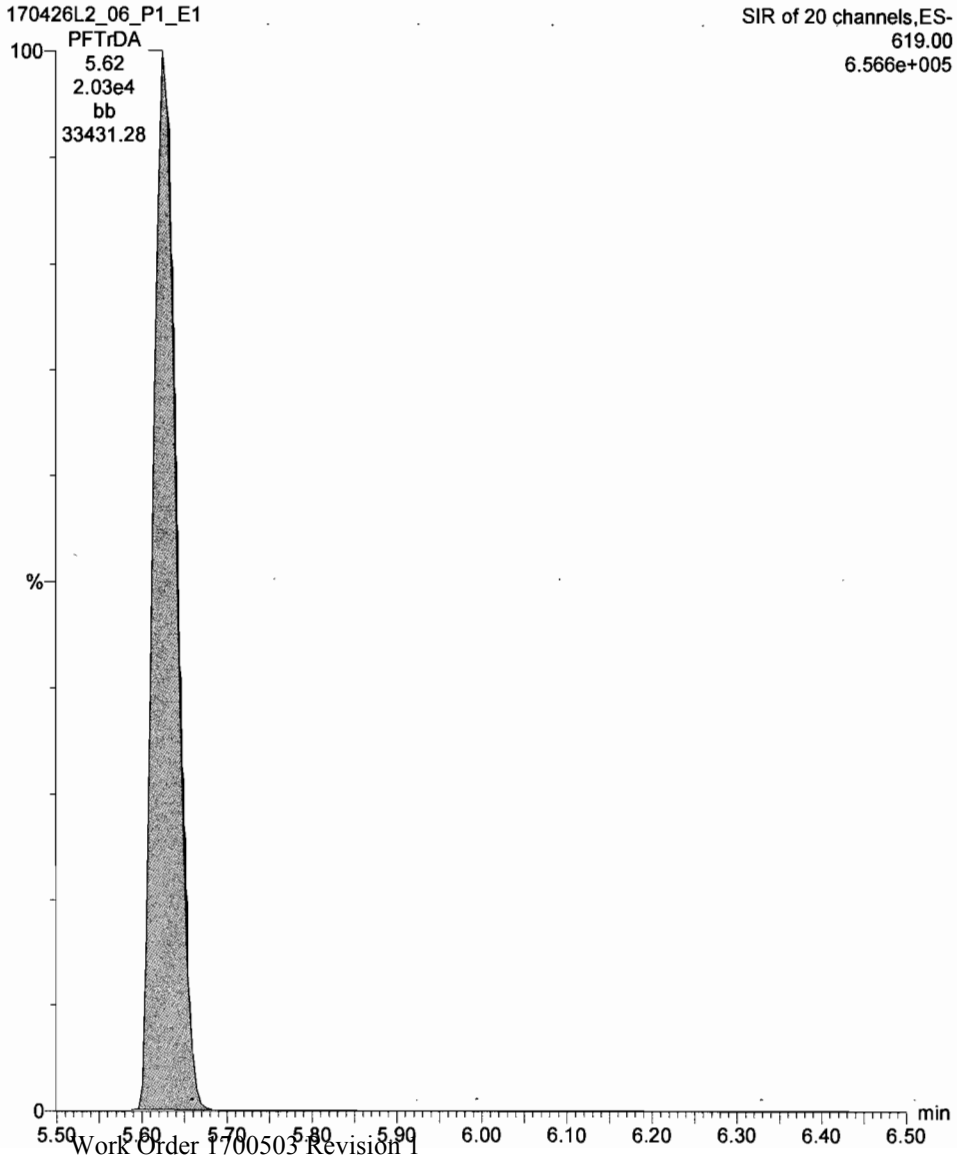
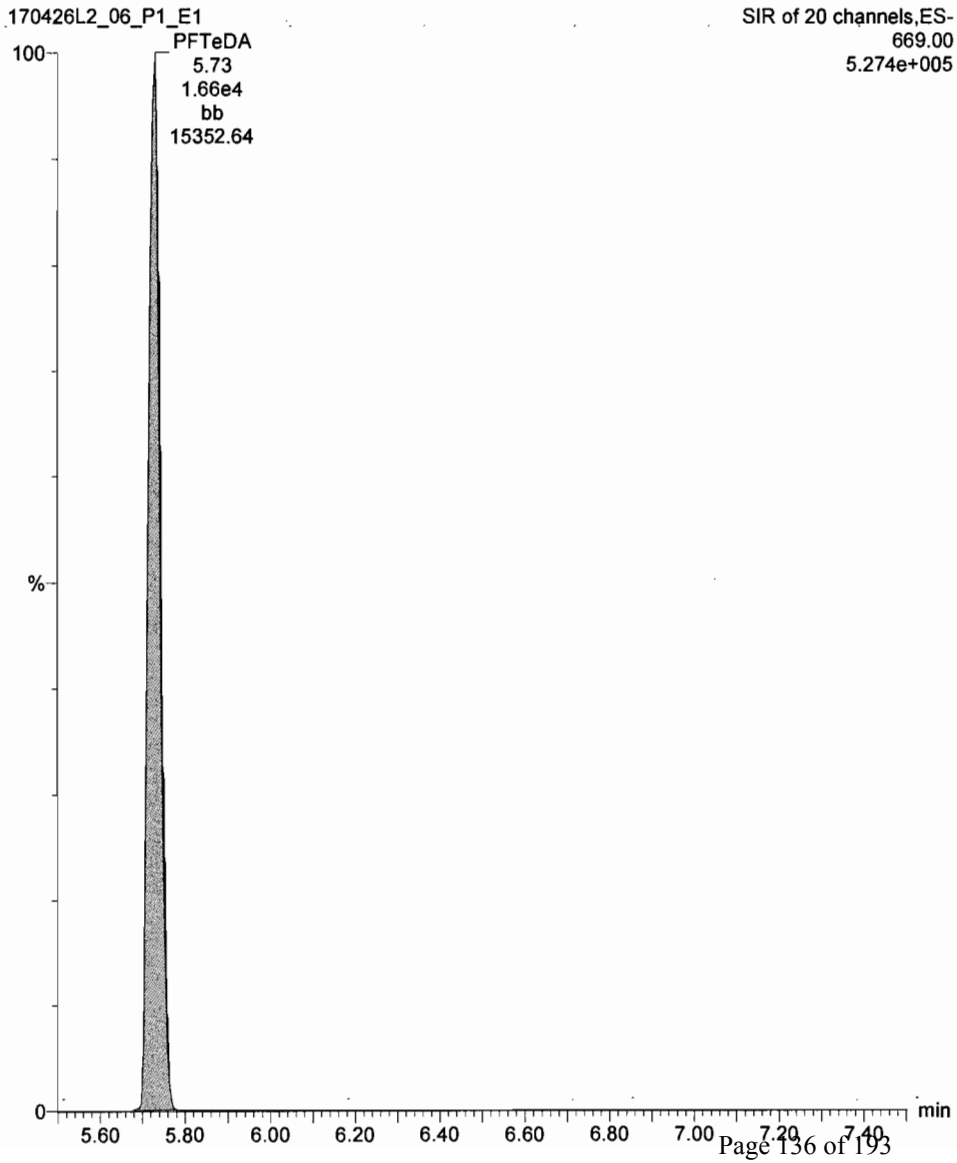
ID: , Description: , Name: 170426L2_06.wiff, Date: 26-Apr-2017, Time: 19:04:24, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFTrDA



PFTeDA



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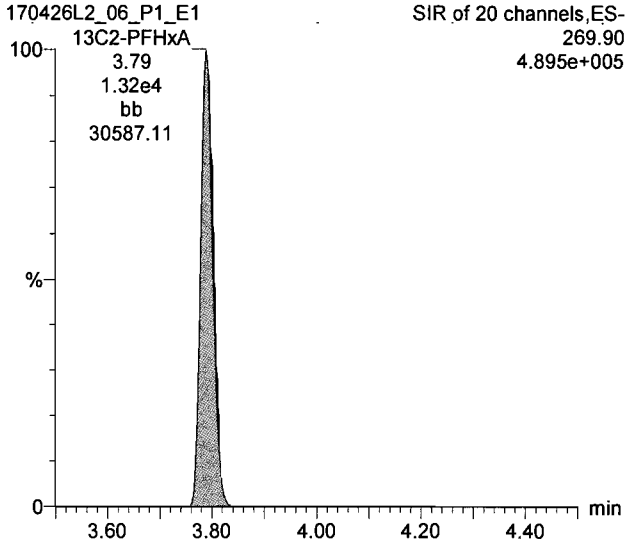
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_06.wiff, Date: 26-Apr-2017, Time: 19:04:24, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFHxA



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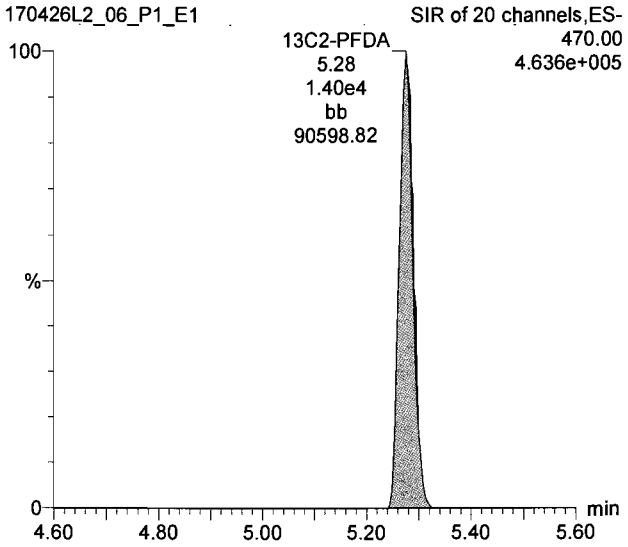
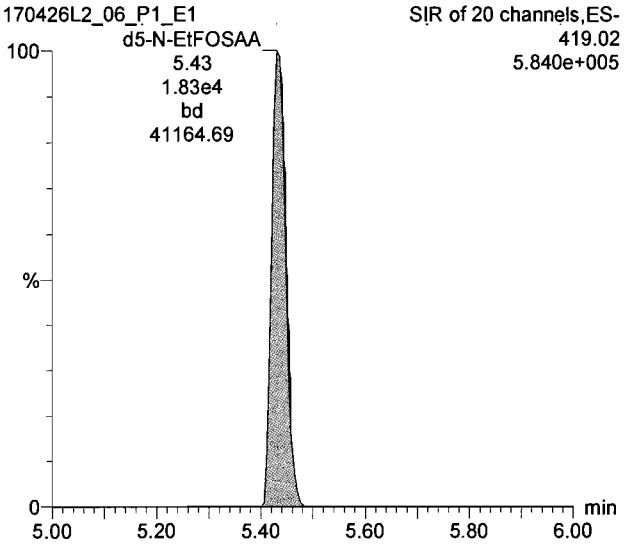
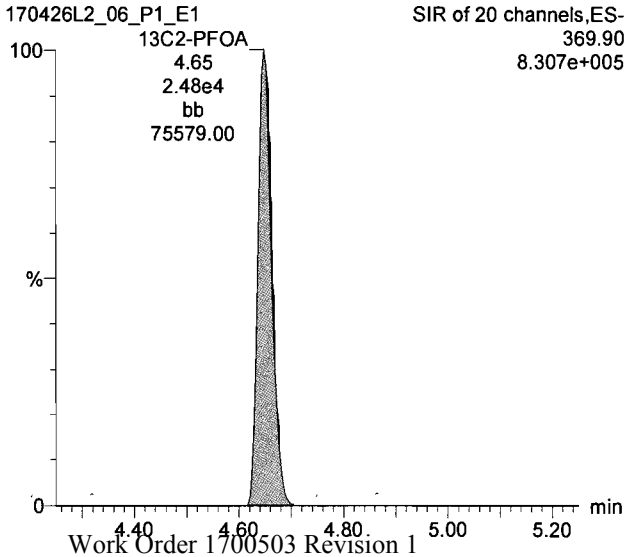


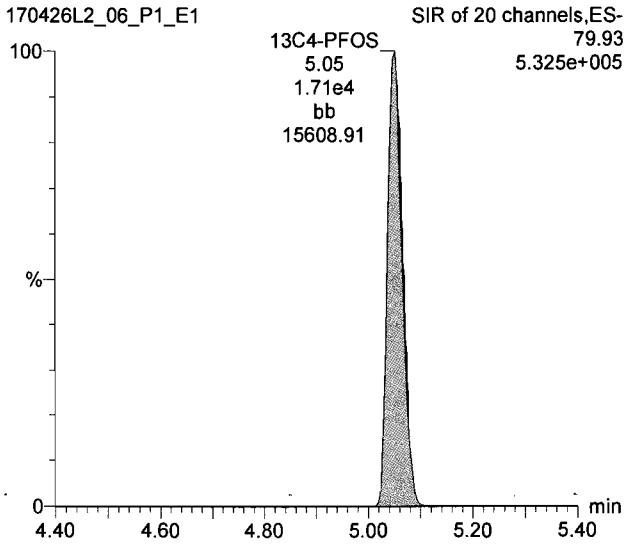
d5-N-EtFOSAA



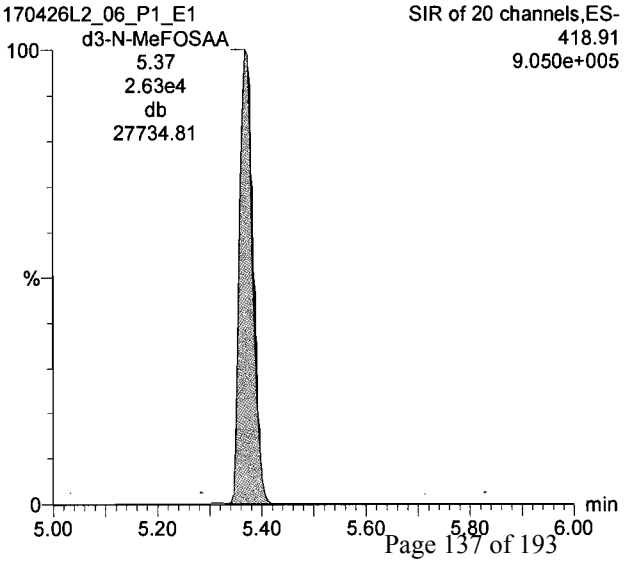
13C2-PFOA



13C4-PFOS



d3-N-MeFOSAA

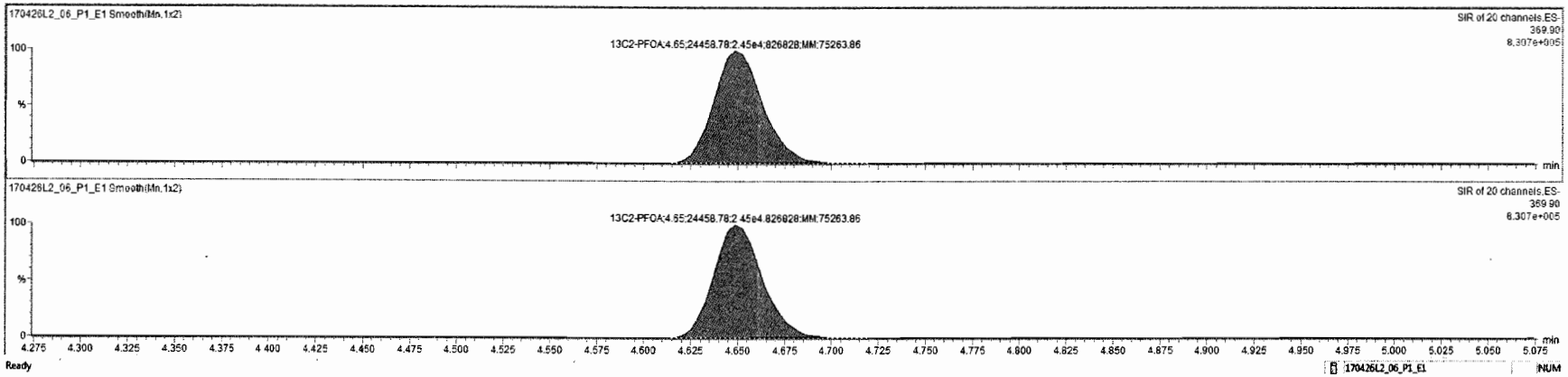


TargetLynx - 170426L2-CSV.qld * [Chromatogram]

File Edit View Display Processing Window Help

170426L2_06_P1_E1 - ST170426L2-5 537 DW CS1 17D2604 - 537 DW CS1 17D2604

	Name	Conc.	OL	%Rec	EMPC	Abs Resp	RRF	RT	#	ISt	RA	Y/N	RRT	Acq Date	Acq Time	1° Chr.Noise	ID	Sample Text	Factor1	SVM	Cal.File	>MDL
1	PFBS	9.9409300	0.00133	112.3		9.458e3		3.41	1	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
2	PFHxA	10.978404	0.00419	109.8		1.730e4		3.79	2	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
3	PFHpA	10.674562	0.00284	106.7		2.096e4		4.26	3	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
4	PFHxS	9.7841936	0.000416	107.3		7.969e3		4.37	4	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
5	PFOA	10.246680	0.00274	102.5		2.121e4		4.65	5	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
6	PFNA	10.049729	0.00283	100.5		2.208e4		4.99	6	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
7	PFOS	9.3945299	0.00186	101.7		7.461e3		5.06	7	19			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
8	PFDA	11.199100	0.00117	112.0		1.509e4		5.26	8	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
9	N-MeFOSAA	9.8065217	0.00277	98.1		7.997e3		5.37	9	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:04:24				1.0	1.00		NO
11	PFUnA	11.108131	0.000975	111.1		1.665e4		5.44	11	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
12	PFDoA	11.258454	0.000791	112.6		2.202e4		5.54	12	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
13	PFTrDA	10.786715	0.000731	107.9		2.027e4		5.62	13	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
14	PFTeDA	10.446463	0.00153	104.5		1.660e4		5.73	14	18			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
15	13C2-PFHxA	9.6193287	0.000863	96.2		1.318e4	0.580	3.79	15	16			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
16	13C2-PFDA	9.8643041	0.000266	98.6		1.400e4	0.580	5.28	16	16			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
17	d5-N-EtFOSAA	40.304870	0.00228	100.8		1.826e4	0.688	5.43	17	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000332	100.0		2.449e4	1.000	4.65	18	16			0.000	26-Apr-17	19:04:24				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00460	100.0		1.711e4	1.000	5.05	19	19			0.000	26-Apr-17	19:04:24				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00361	100.0		2.832e4	1.000	5.37	20	20			0.000	26-Apr-17	19:04:24				1.0	1.00		YES



Ready

170426L2_06_P1_E1 NUM

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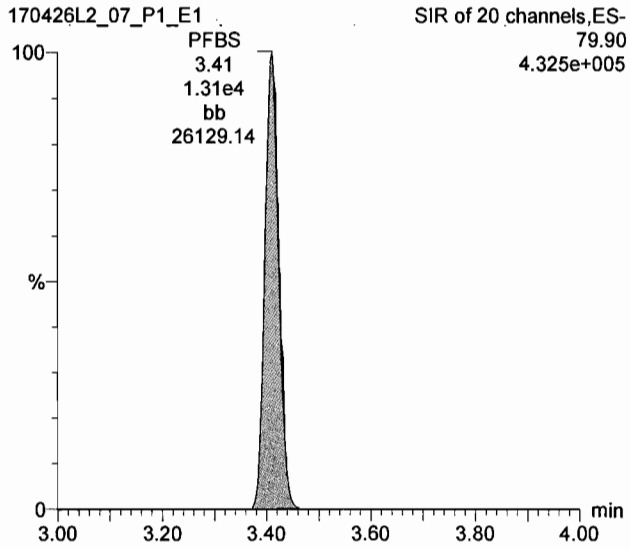
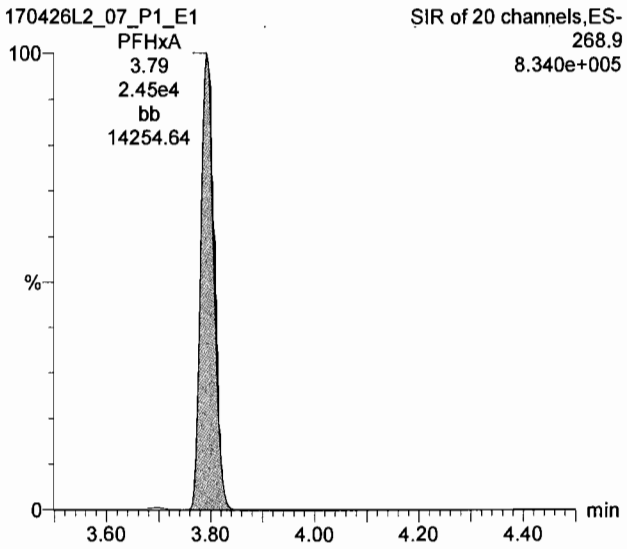
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_07.wiff, Date: 26-Apr-2017, Time: 19:16:37, Instrument: , Lab: ©PE-SCIEX, User: sciex

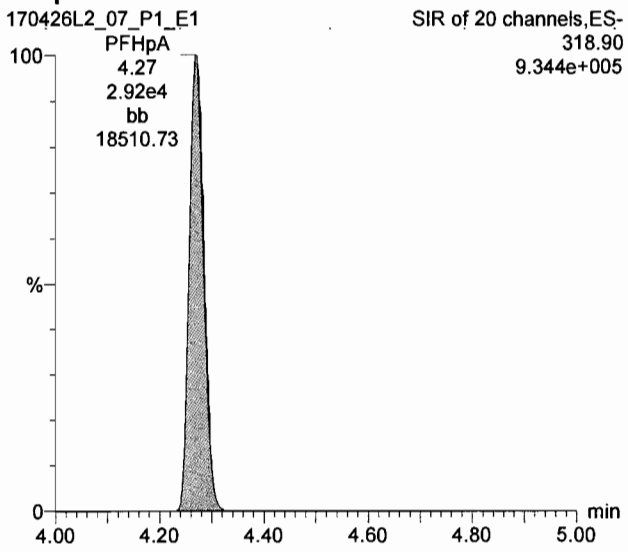
PFBS



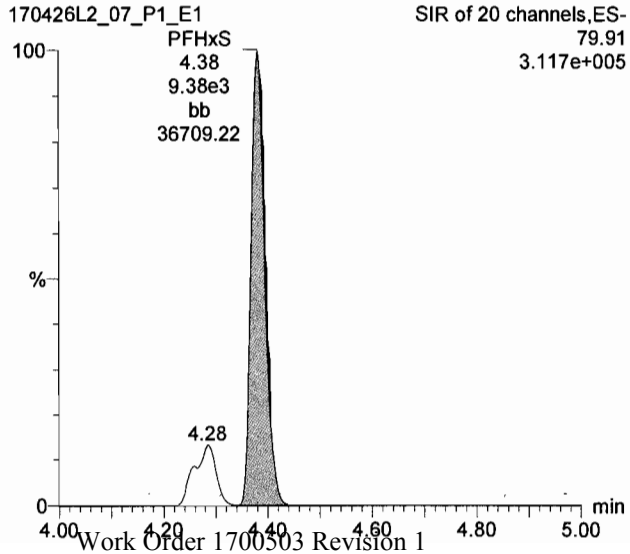
PFHxA



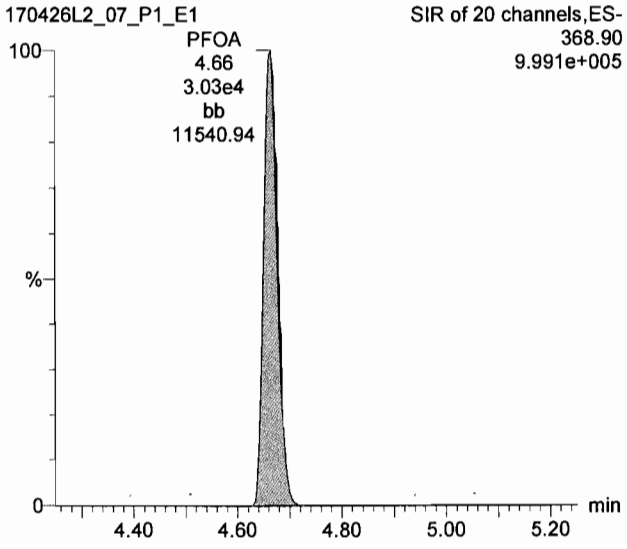
PFHpA



PFHxS



PFOA



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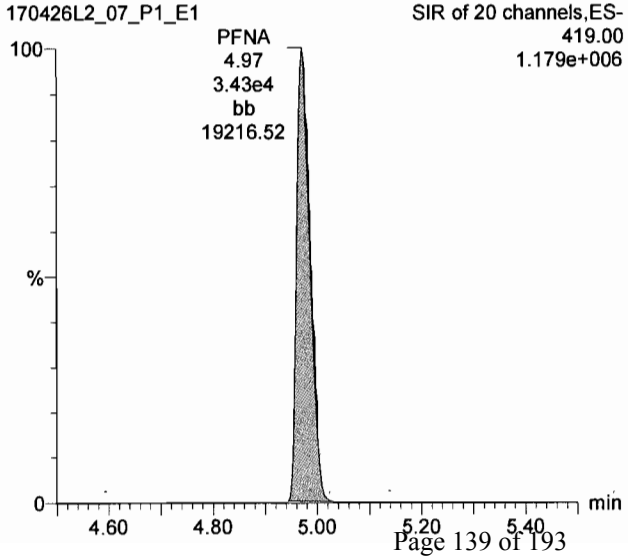
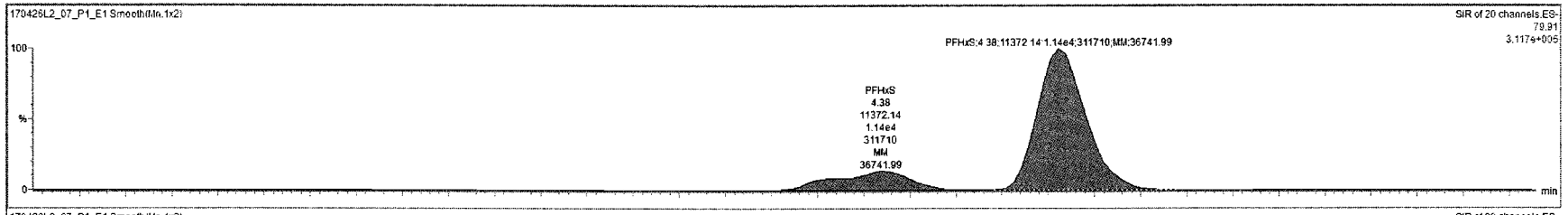


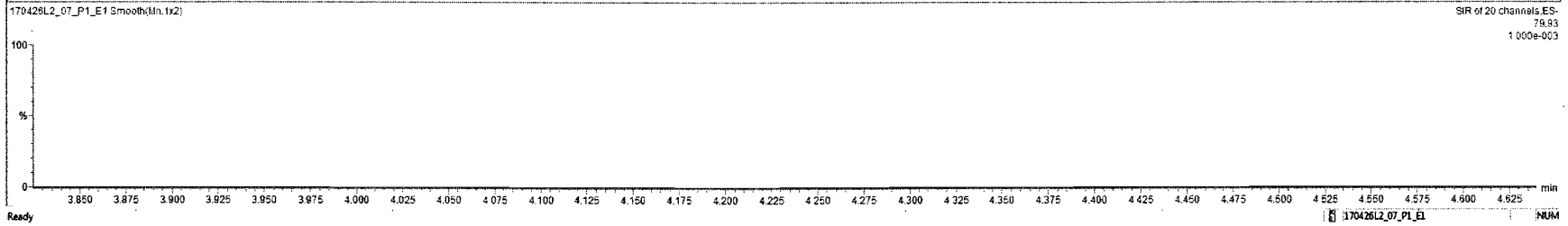
TargetLynx - 170426L2 CRV.qld - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_07_P1_E1 - ST170426L2-6 537 DW CS2 17D2605 - 537 DW CS2 17D2605

	Name	Conc.	OL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	Swt	Cal.File	>MDL
1	PFBS	13.271024	0.00120	106.1		1.311e4		3.41	1	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
2	PFHxA	15.024371	0.00255	100.2		2.448e4		3.79	2	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
3	PFHpA	15.157821	0.00177	101.1		2.916e4		4.27	3	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
4	PFHxS	13.386530	0.000733	97.9		1.137e4		4.38	4	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
5	PFOA	14.943684	0.00289	99.6		3.027e4		4.66	5	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
6	PFNA	16.140573	0.00191	107.6		3.427e4		4.97	6	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
7	PFOS	12.746033	0.0479	91.7		1.059e4		5.03	7	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
8	PFDA	15.542158	0.00203	103.6		2.051e4		5.18	8	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
9	N-MeFOSAA	17.563113	0.00541	117.1		1.281e4		5.25	9	20			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:16:37				1.0	1.00		NO
11	PFUnA	14.249954	0.000455	95.0		2.108e4		5.34	11	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
12	PFDoA	13.630350	0.00323	90.9		2.644e4		5.53	12	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
13	PFTrDA	16.955798	0.00316	107.0		2.933e4		5.65	13	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
14	PFTeDA	14.444158	0.00145	96.3		2.257e4		5.75	14	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
15	13C2-PFHxA	10.231344	0.000857	102.3		1.402e4	0.560	3.79	15	16			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
16	13C2-PFDA	9.9522170	0.000940	99.5		1.413e4	0.580	5.18	16	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
17	d5-N-EtFOSAA	37.453759	0.00236	93.6		1.592e4	0.688	5.34	17	20			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000431	100.0		2.445e4	1.000	4.66	18	18			0.000	26-Apr-17	19:16:37				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00125	100.0		1.608e4	1.000	5.03	19	19			0.000	26-Apr-17	19:16:37				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00158	100.0		2.470e4	1.000	5.25	20	20			0.000	26-Apr-17	19:16:37				1.0	1.00		YES





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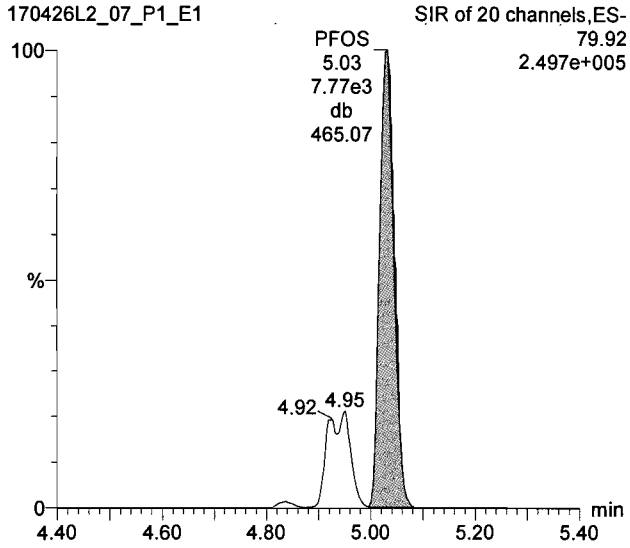
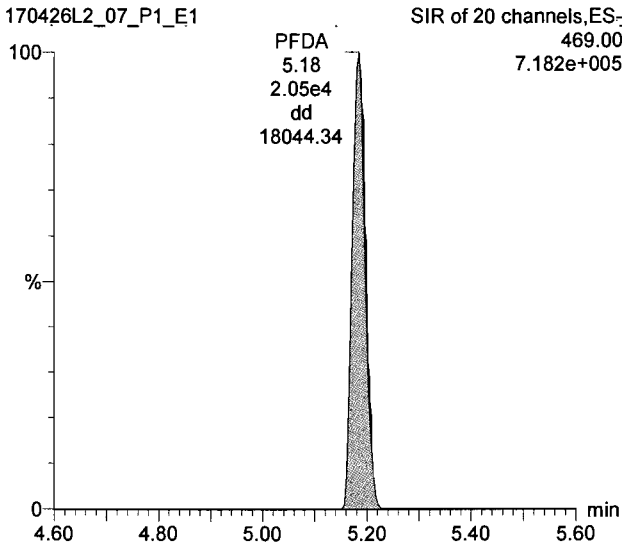
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_07.wiff, Date: 26-Apr-2017, Time: 19:16:37, Instrument: , Lab: ©PE-SCIEX, User: sciex

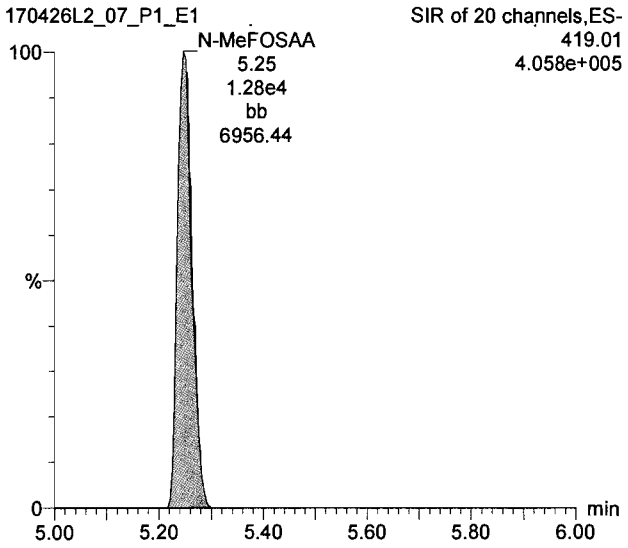
PFOS



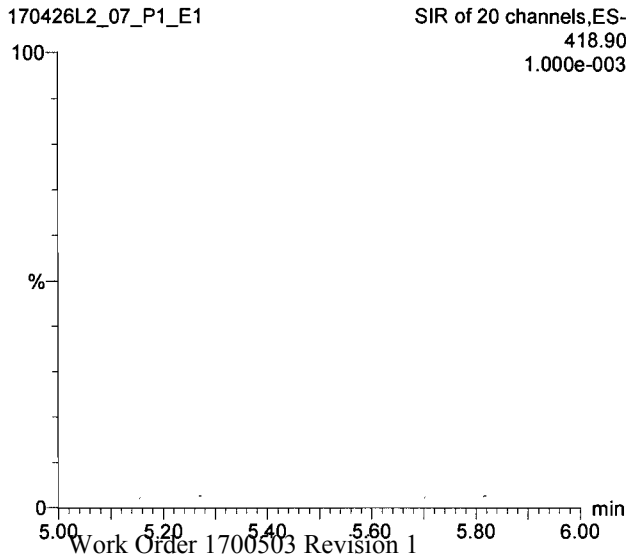
PFDA



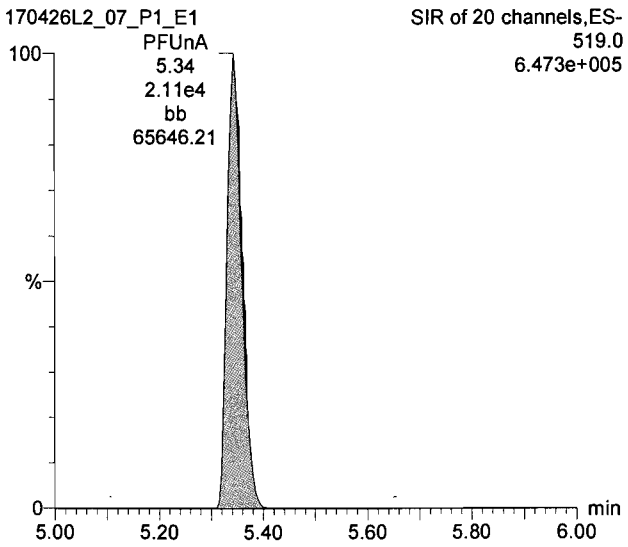
N-MeFOSAA



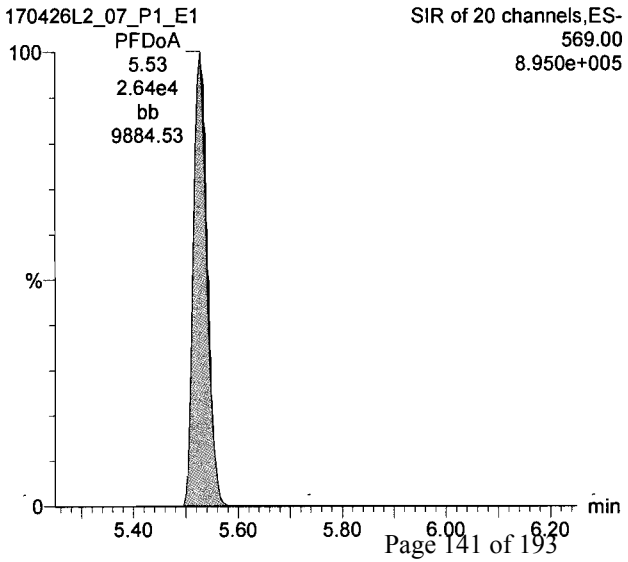
N-EtFOSAA



PFUnA



PFDoA

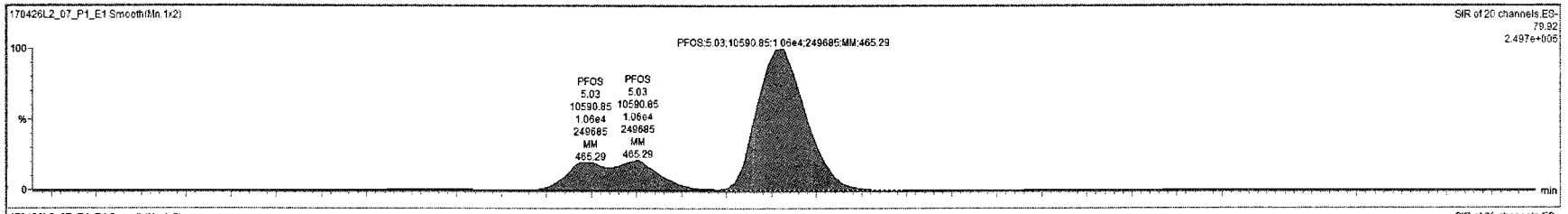


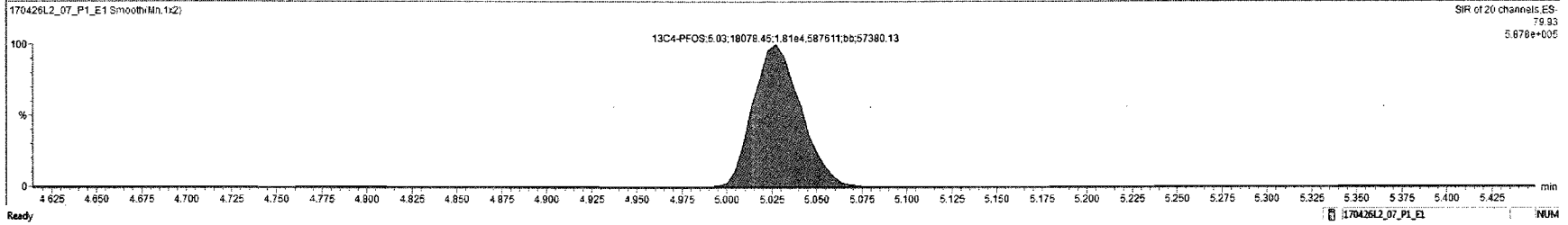
TargetLynx - 170426L2-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_07_P1_E1 - ST170426L2-6 537 DW CS2 17D2605 - 537 DW CS2 17D2605

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor1	SWL	Cal File	>MDL
1	PFBS	13.271024	0.00120	100.1		1.311e4		3.41	1	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
2	PFHxA	15.024371	0.00255	100.2		2.448e4		3.79	2	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
3	PFHpA	15.157821	0.00177	101.1		2.916e4		4.27	3	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
4	PFHxS	13.386620	0.000733	97.9		1.137e4		4.38	4	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
5	PFOA	14.943684	0.00289	99.6		3.027e4		4.66	5	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
6	PFNA	16.140573	0.00191	107.6		3.427e4		4.97	6	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
7	PFOS	12.746033	0.0479	91.7		1.059e4		5.03	7	19			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
8	PFDA	15.542158	0.00203	103.6		2.051e4		5.18	8	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
9	N-MeFOSAA	17.563113	0.00541	117.1		1.281e4		5.25	9	20			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:16:37				1.0	1.00		NO
11	PFUnA	14.249954	0.000455	95.0		2.108e4		5.34	11	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
12	PFDoA	13.630350	0.00323	90.9		2.644e4		5.53	12	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
13	PFTrDA	16.055798	0.00316	107.0		2.933e4		5.65	13	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
14	PFTeDA	14.444158	0.00145	96.3		2.257e4		5.75	14	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
15	13C2-PFHxA	10.231344	0.000857	102.3		1.402e4	0.560	3.79	15	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
16	13C2-PFDA	9.9522170	0.000940	99.5		1.413e4	0.580	5.18	16	18			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
17	d5-N-EtFOSAA	37.453759	0.00236	93.6		1.592e4	0.688	5.34	17	20			0.000	26-Apr-17	19:16:37				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000431	100.0		2.445e4	1.000	4.66	18	18			0.000	26-Apr-17	19:16:37				1.0	1.00		NO
19	13C4-PFOS	26.700000	0.00125	100.0		1.808e4	1.000	5.03	19	19			0.000	26-Apr-17	19:16:37				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00158	100.0		2.470e4	1.000	5.25	20	20			0.000	26-Apr-17	19:16:37				1.0	1.00		YES



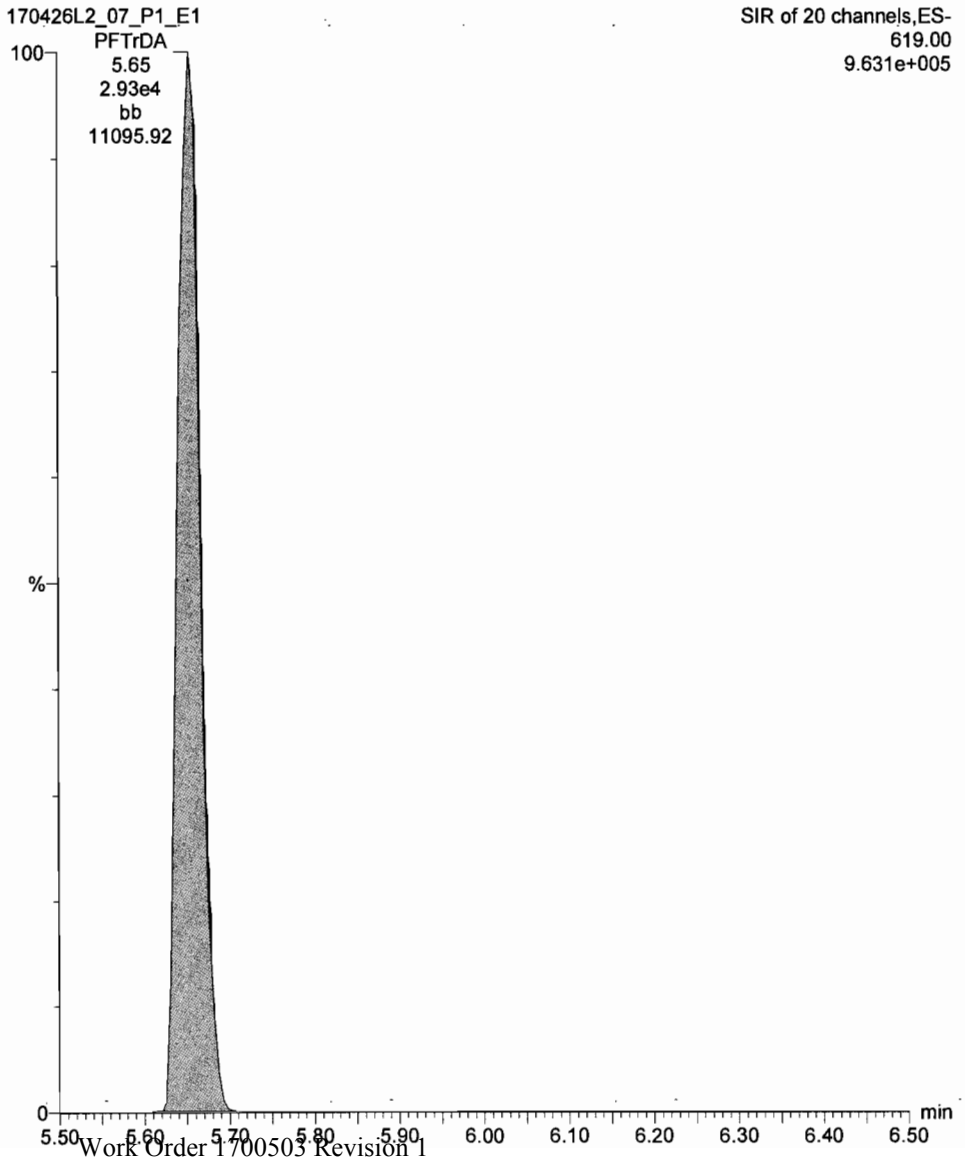


Dataset: Untitled

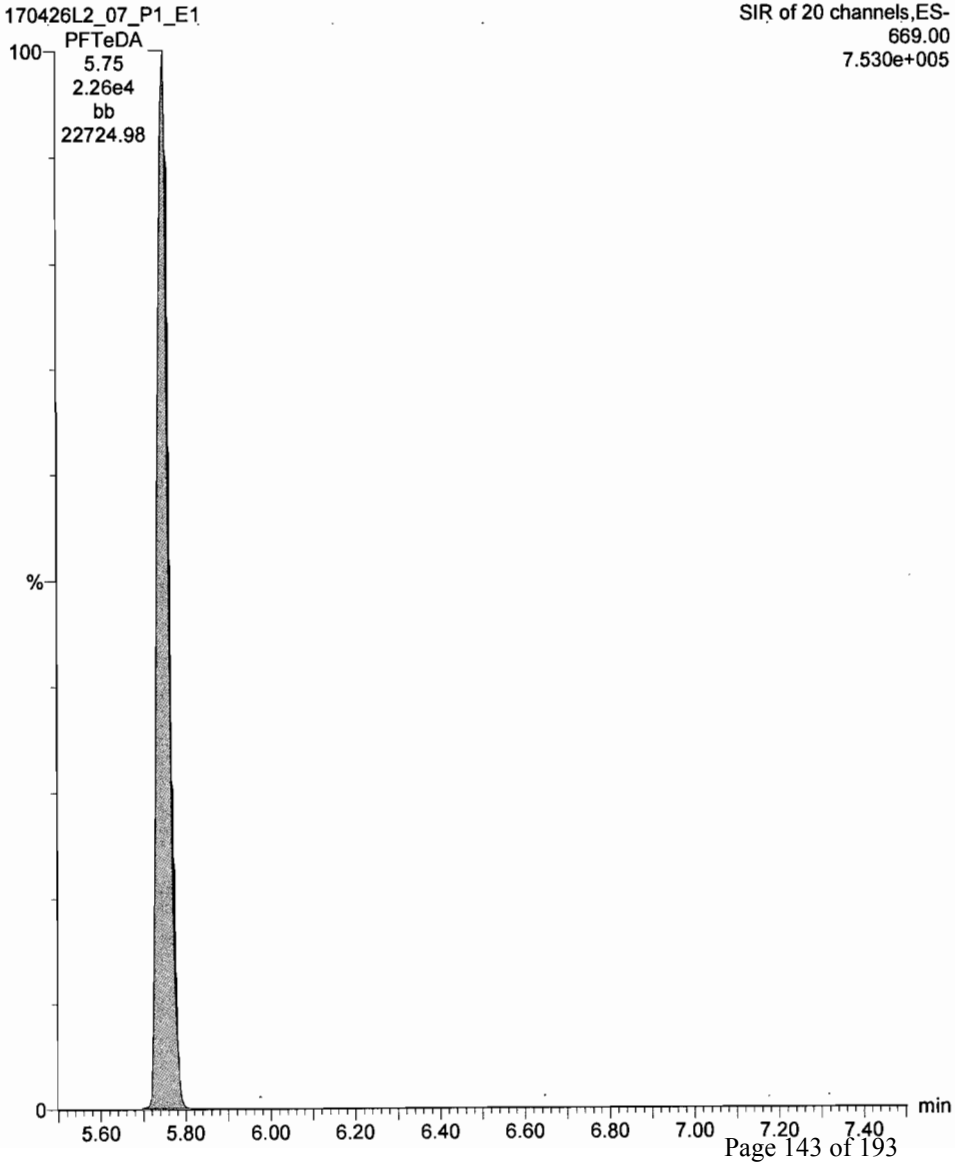
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_07.wiff, Date: 26-Apr-2017, Time: 19:16:37, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFTrDA



PFTeDA

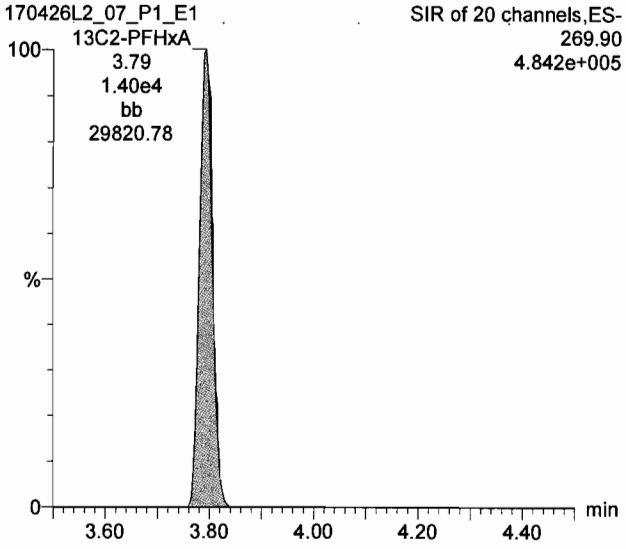


Dataset: Untitled

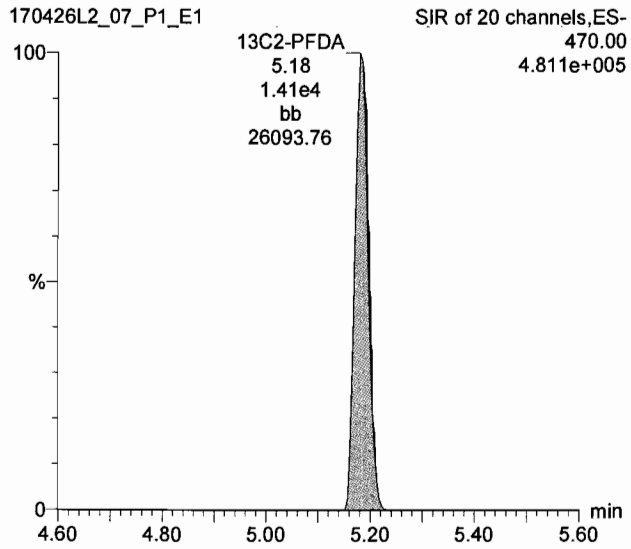
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_07.wiff, Date: 26-Apr-2017, Time: 19:16:37, Instrument: , Lab: ©PE-SCIEX, User: sciex

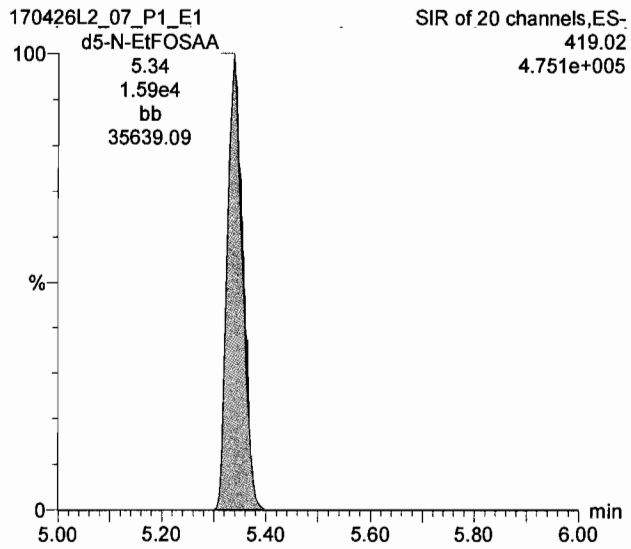
13C2-PFHxA



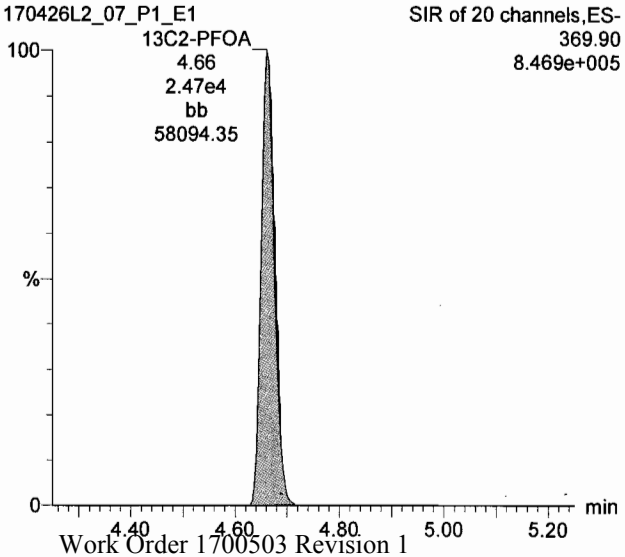
13C2-PFDA



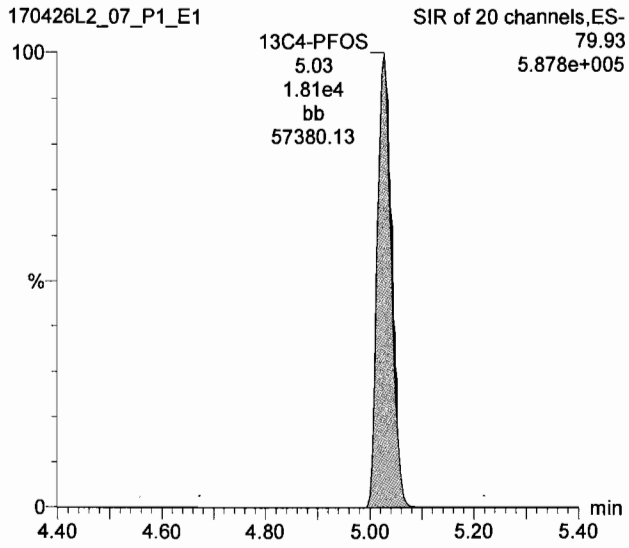
d5-N-EtFOSAA



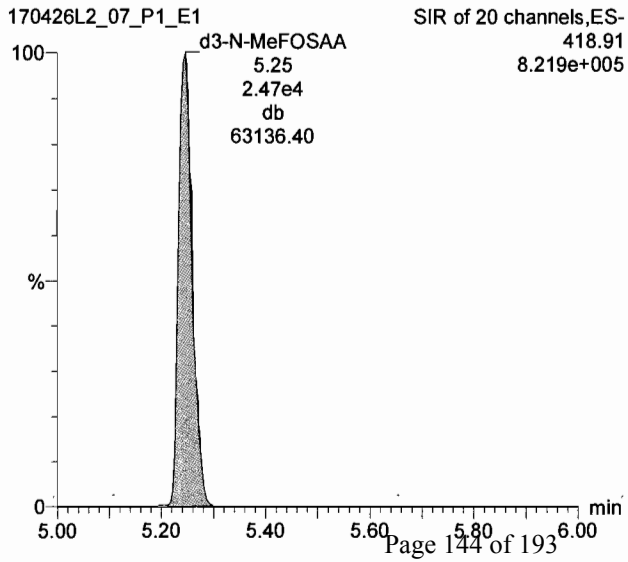
13C2-PFOA



13C4-PFOS



d3-N-MeFOSAA



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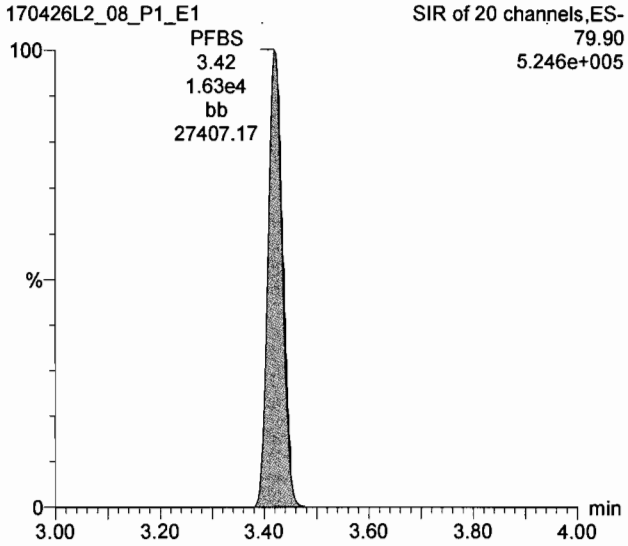
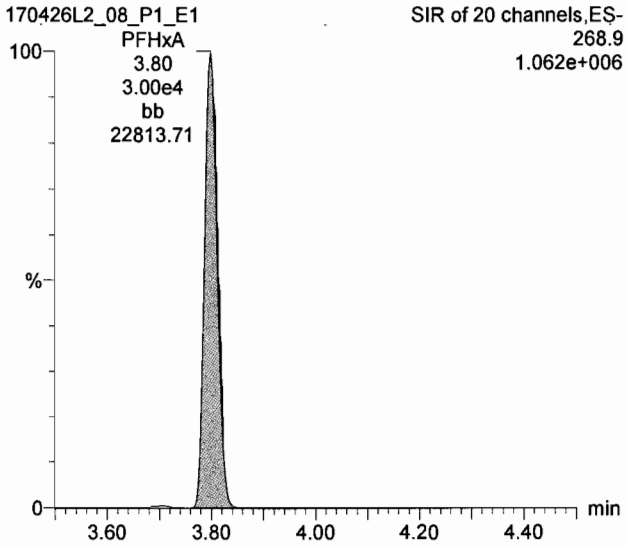
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_08.wiff, Date: 26-Apr-2017, Time: 19:28:51, Instrument: , Lab: ©PE-SCIEX, User: sciex

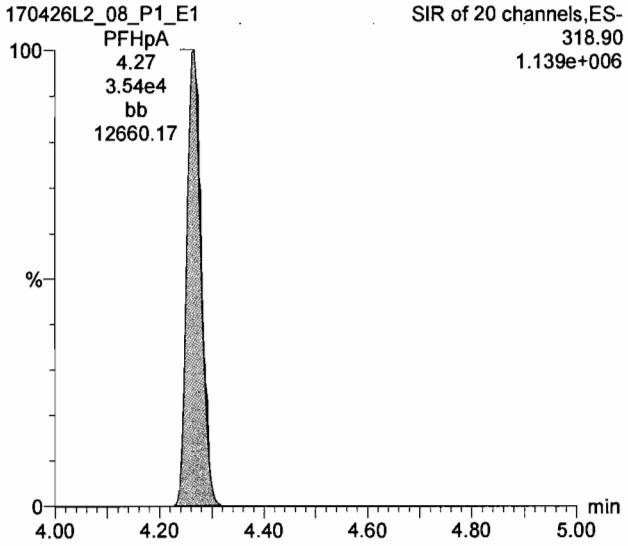
PFBS



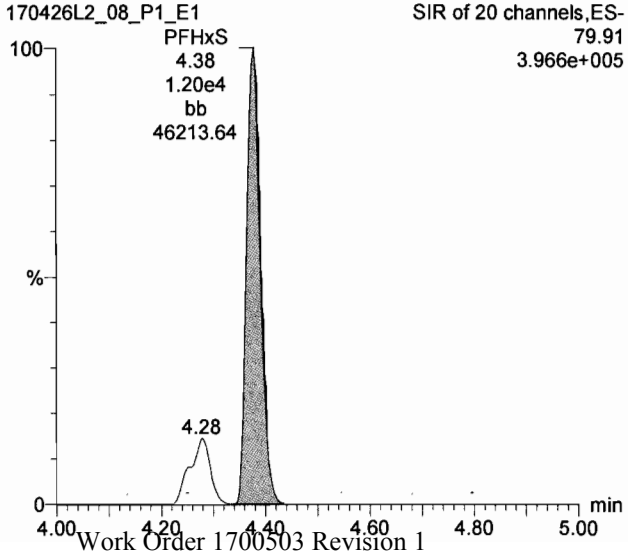
PFHxA



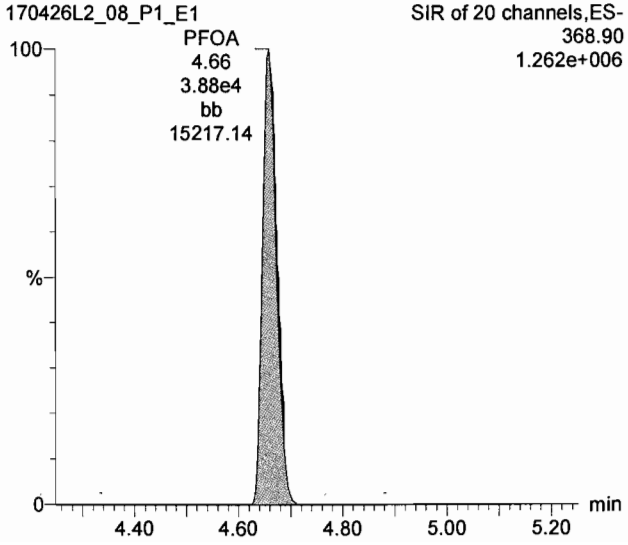
PFHpA



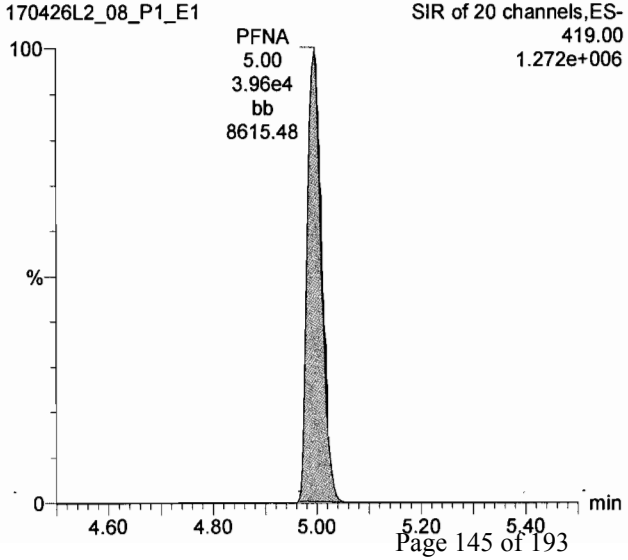
PFHxS



PFOA



PFNA

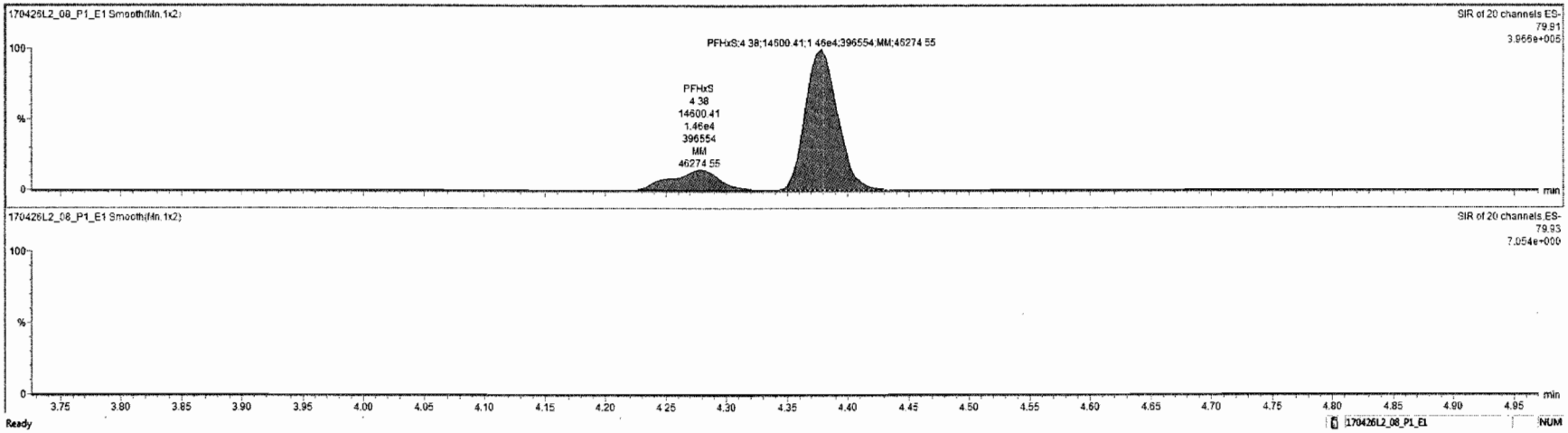


TargetLynx - 170426L2-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_08_P1_E1 - ST170426L2-7 537 DW CS3 17D2606 - 537 DW CS3 17D2606

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	SWL	Cal.File	>MDL
1	PFBS	16.162707	0.00136	91.3		1.632e4		3.42	1	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
2	PFHxA	18.037862	0.00198	90.2		2.999e4		3.80	2	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
3	PFHpA	19.632343	0.00358	98.2		3.536e4		4.27	3	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
4	PFHxS	16.773768	0.009722	92.0		1.460e4		4.38	4	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
5	PFOA	20.587007	0.00313	102.9		3.880e4		4.66	5	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
6	PFNA	19.972034	0.00520	99.9		3.964e4		5.00	6	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
7	PFOS	18.305874	0.000315	99.0		1.552e4		5.06	7	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
8	PFDA	18.388623	0.000489	91.9		2.287e4		5.28	8	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
9	N-MeFOSAA	17.773526	0.00525	88.9		1.386e4		5.38	9	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:28:51				1.0	1.00		NO
11	PFUnA	20.828777	0.00105	104.1		2.864e4		5.48	11	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
12	PFDoA	20.273710	0.00264	101.4		3.673e4		5.58	12	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
13	PFTrDA	19.304814	0.00209	96.5		3.310e4		5.66	13	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
14	PFTeDA	20.693224	0.00125	103.5		3.008e4		5.76	14	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
15	13C2-PFHxA	9.8668727	0.000220	98.7		1.292e4	0.560	3.80	15	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
16	13C2-PFDA	9.5908257	0.00110	95.9		1.301e4	0.580	5.28	16	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
17	d5-N-EtFOSAA	38.788969	0.00182	97.0		1.765e4	0.888	5.47	17	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000265	100.0		2.336e4	1.000	4.66	18	18			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
19	13C4-PFOS	26.700000	0.00553	100.0		1.875e4	1.000	5.05	19	19			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0116	100.0		2.644e4	1.000	5.38	20	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES

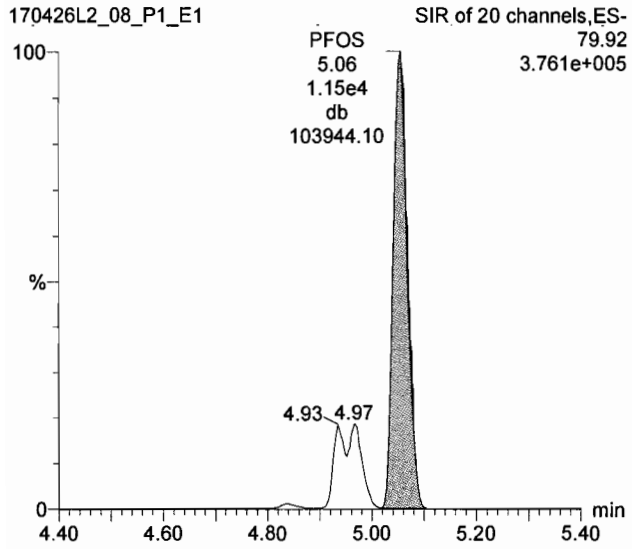


Dataset: Untitled

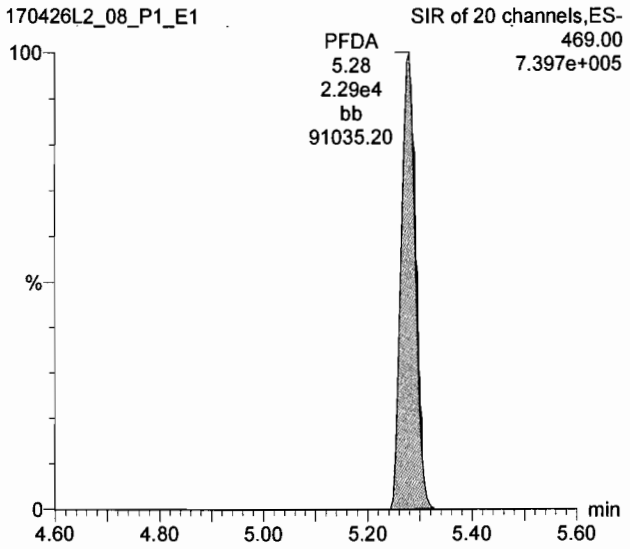
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_08.wiff, Date: 26-Apr-2017, Time: 19:28:51, Instrument: , Lab: ©PE-SCIEX, User: sciex

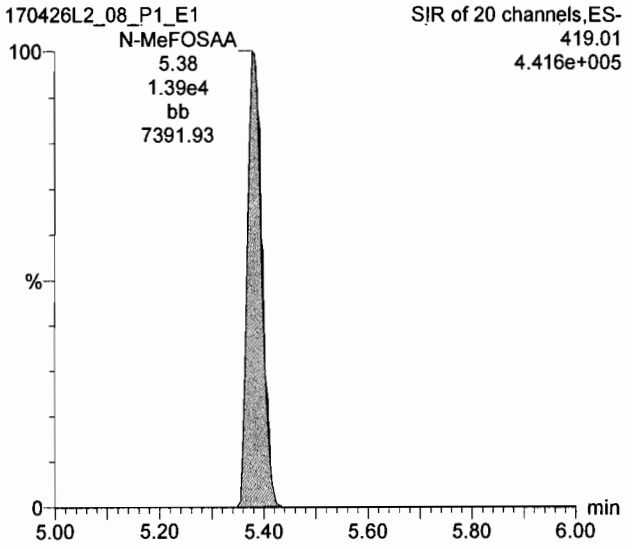
PFOS



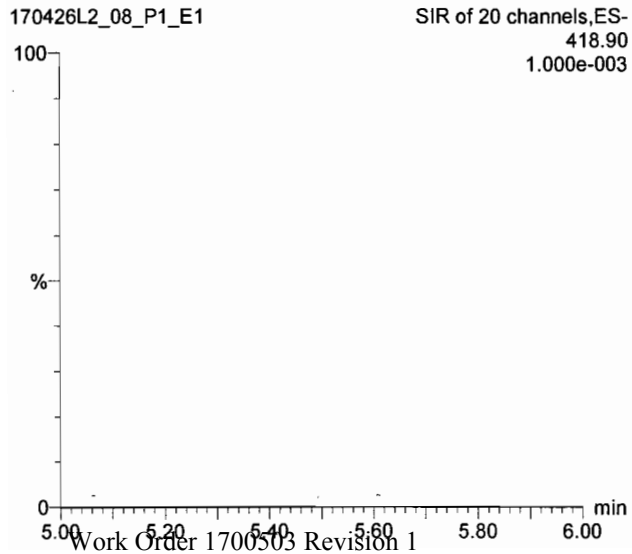
PFDA



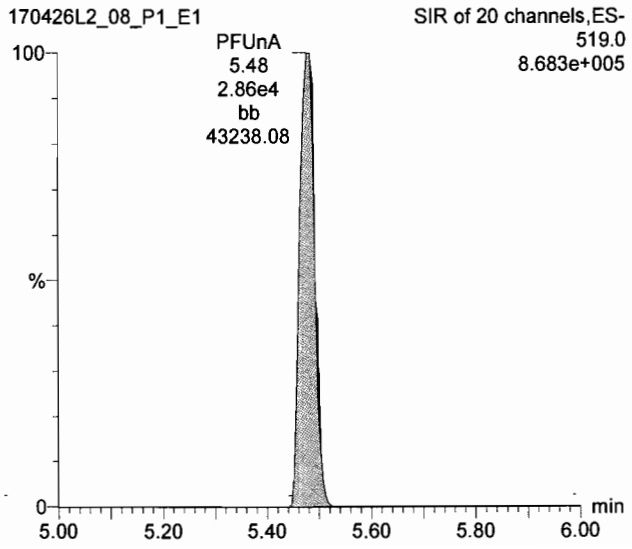
N-MeFOSAA



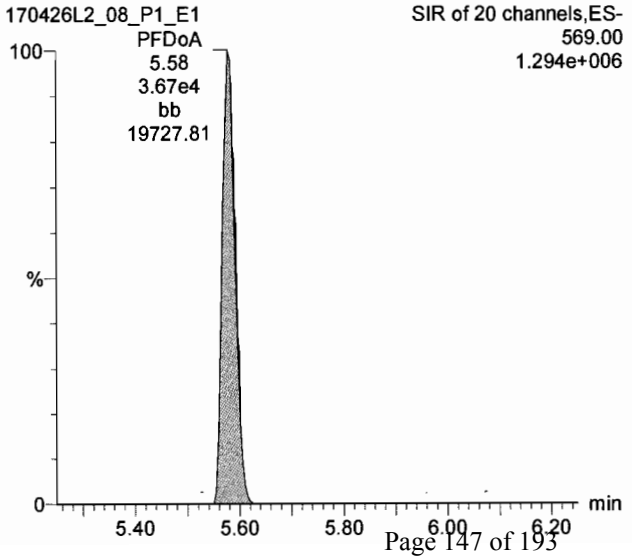
N-EtFOSAA



PFUnA



PFDoA

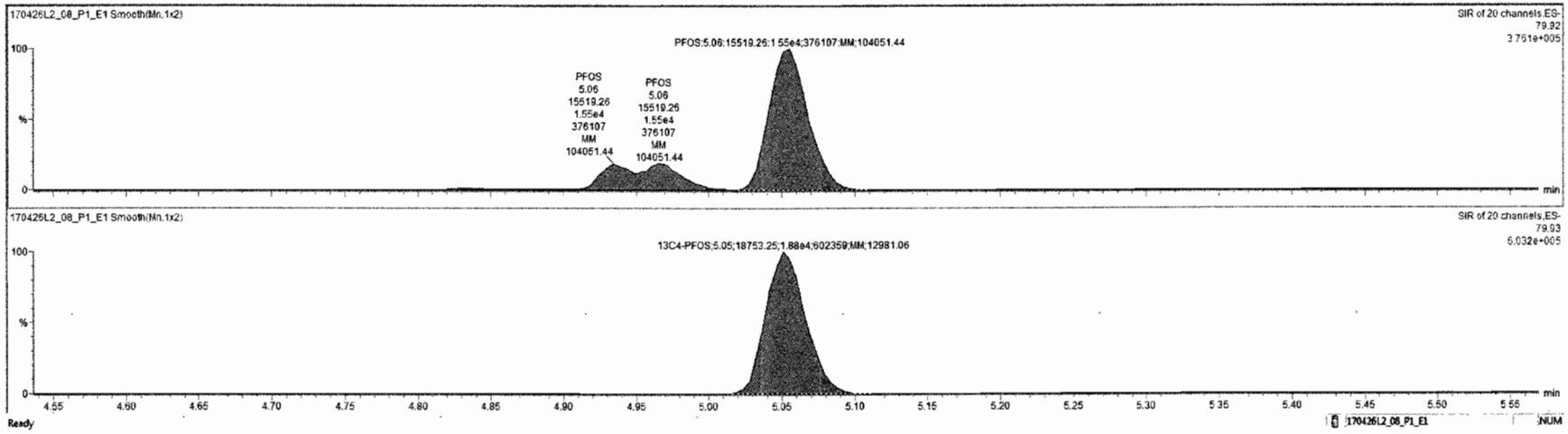


TargetLynx - 170426L2-CitV.qid * - [Chromatograms]

File Edit View Display Processing Window Help

170426L2_08_P1_E1 - ST170426L2-7 537 DW CS3 17D2606 - 537 DW CS3 17D2606

	Name	Conc.	Dt.	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chk Noise	ID	Sample Text	Factor1	SWt	Cal.File	>MDL
1	PFBS	16.162767	0.00136	91.3		1.632e4		3.42	1	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
2	PFHxA	18.037862	0.00196	90.2		2.999e4		3.80	2	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
3	PFHpA	19.632343	0.00358	98.2		3.536e4		4.27	3	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
4	PFHxS	16.773768	0.000722	92.0		1.460e4		4.38	4	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
5	PFOA	20.587007	0.00313	102.9		3.880e4		4.66	5	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
6	PFNA	19.972034	0.00520	99.9		3.964e4		5.00	6	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
7	PFOS	18.965824	0.000315	99.0		1.552e4		5.06	7	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
8	PFDA	18.386623	0.000489	91.9		2.287e4		5.28	8	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
9	N-MeFOSAA	17.773526	0.00525	88.9		1.386e4		5.38	9	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:28:51				1.0	1.00		NO
11	PFUnA	20.828277	0.00105	104.1		2.864e4		5.48	11	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
12	PFDoA	20.273710	0.00284	101.4		3.673e4		5.58	12	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
13	PFTrDA	19.304814	0.00209	96.5		3.310e4		5.68	13	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
14	PFTeDA	20.693224	0.00125	103.5		3.008e4		5.76	14	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
15	13C2-PFHxA	9.8688727	0.000220	98.7		1.292e4	0.560	3.80	15	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
16	13C2-PFDA	9.5908257	0.00110	95.9		1.301e4	0.580	5.28	16	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
17	d5-N-EtFOSAA	38.788969	0.00182	97.0		1.765e4	0.686	5.47	17	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000285	100.0		2.336e4	1.000	4.66	18	18			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00553	100.0		1.875e4	1.000	5.05	19	19			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0116	100.0		2.644e4	1.000	5.38	20	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES

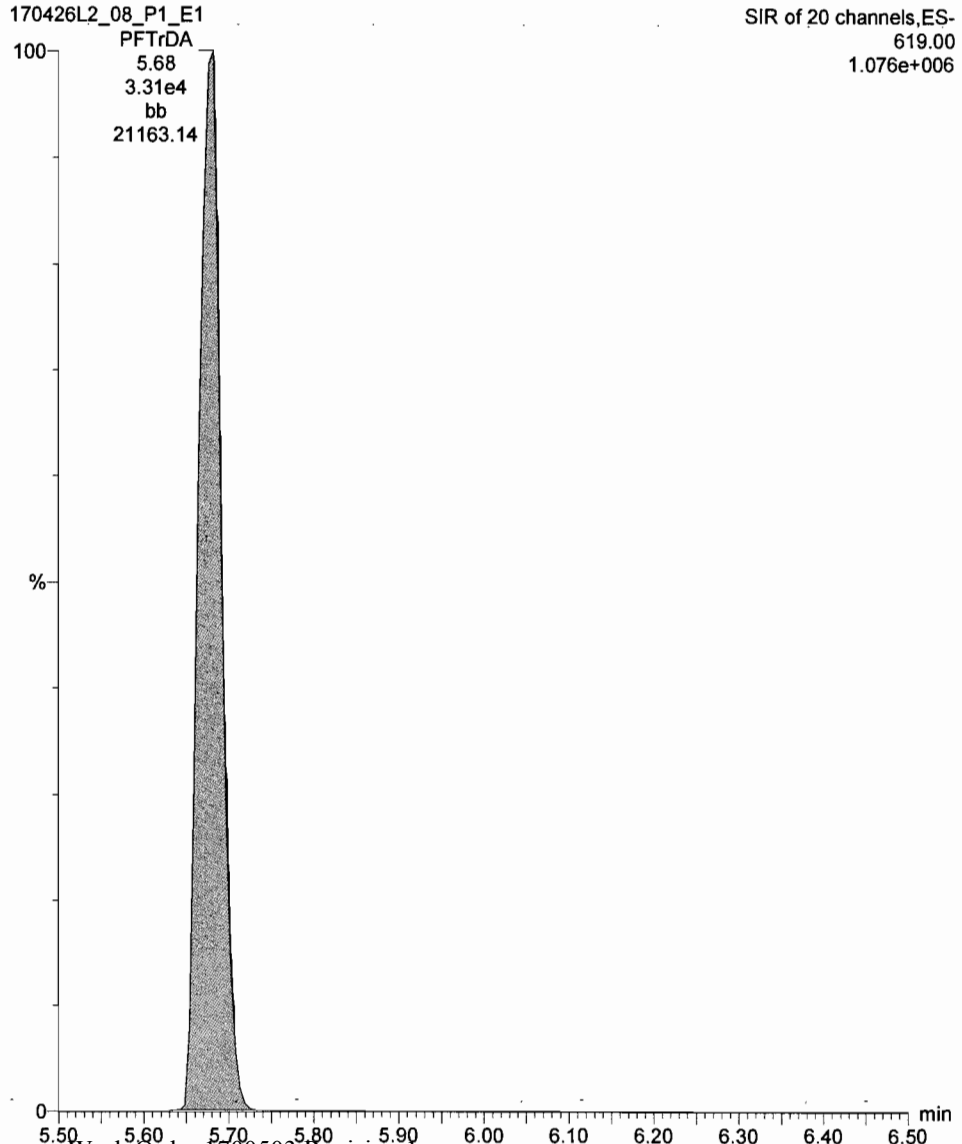


Dataset: Untitled

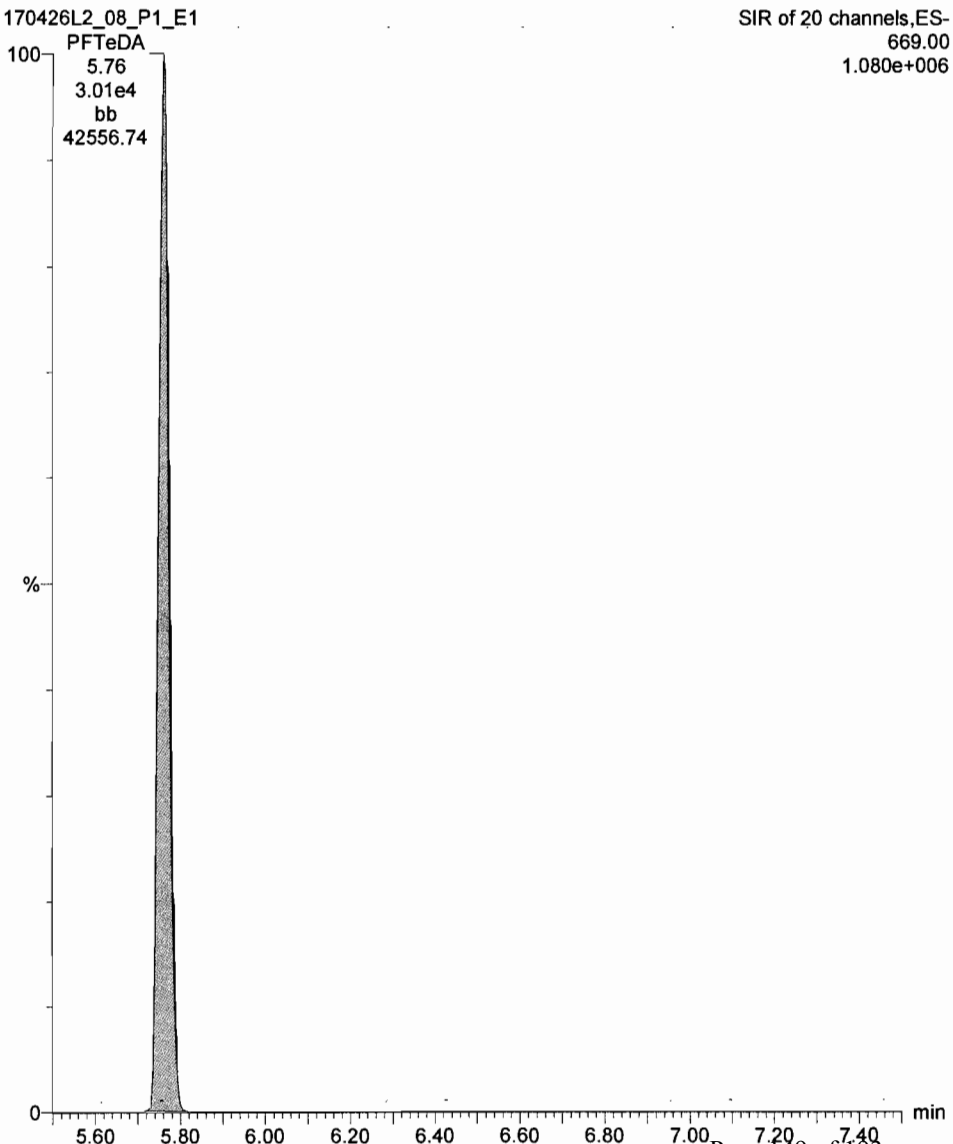
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_08.wiff, Date: 26-Apr-2017, Time: 19:28:51, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFTrDA



PFTeDA

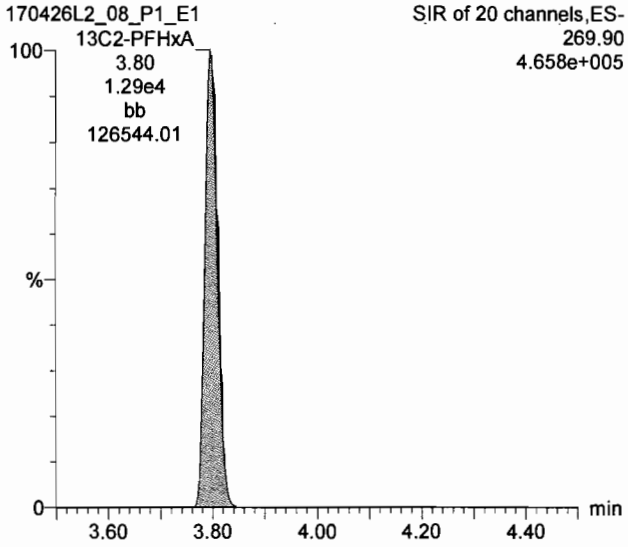


Dataset: Untitled

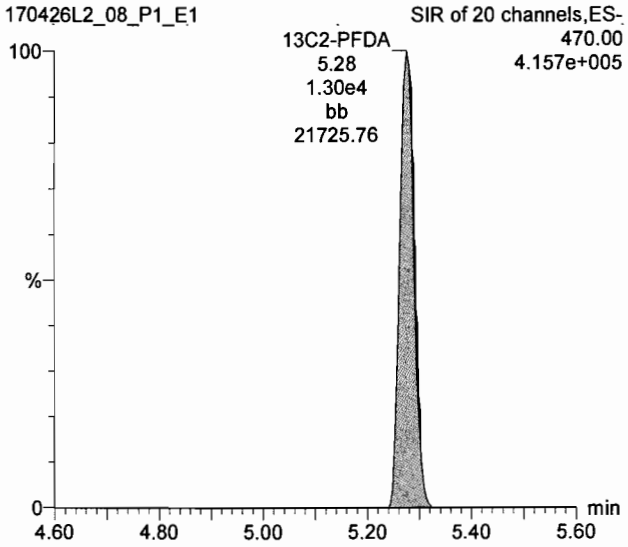
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_08.wiff, Date: 26-Apr-2017, Time: 19:28:51, Instrument: , Lab: ©PE-SCIEX, User: sciex

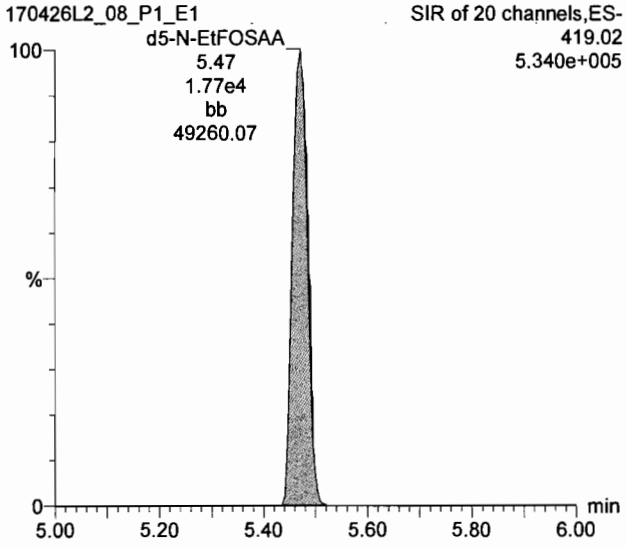
13C2-PFHxA



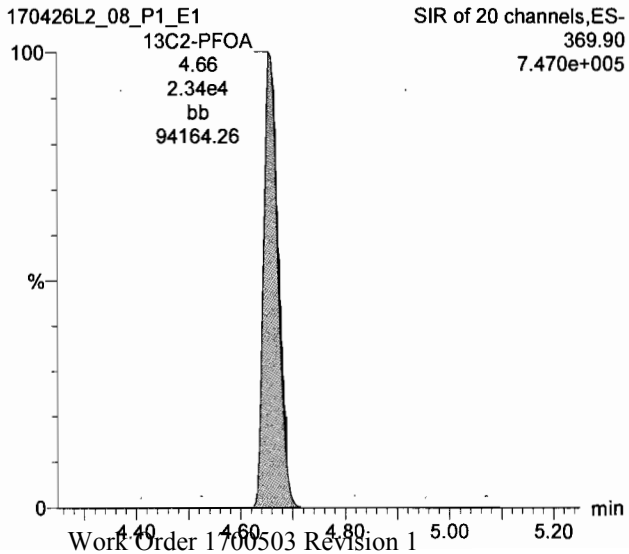
13C2-PFDA



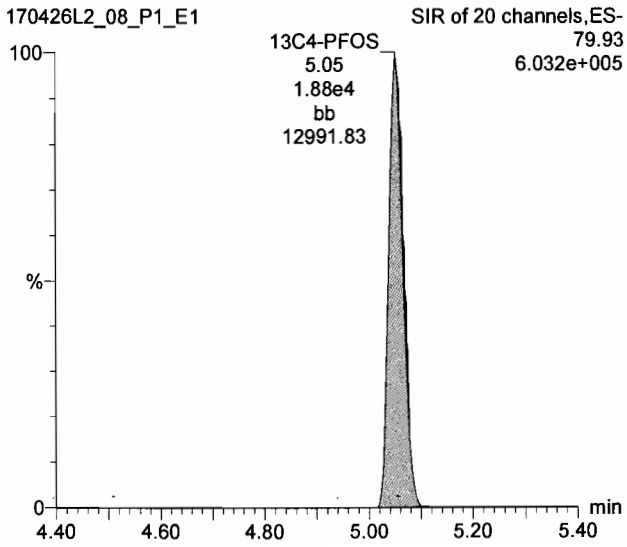
d5-N-EtFOSAA



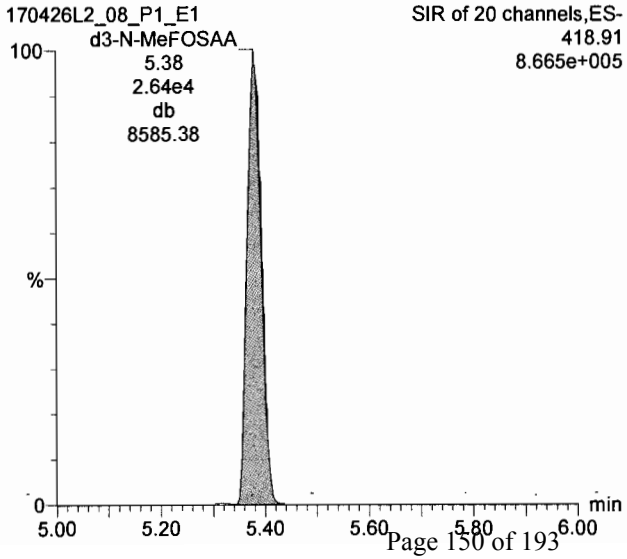
13C2-PFOA



13C4-PFOS



d3-N-MeFOSAA

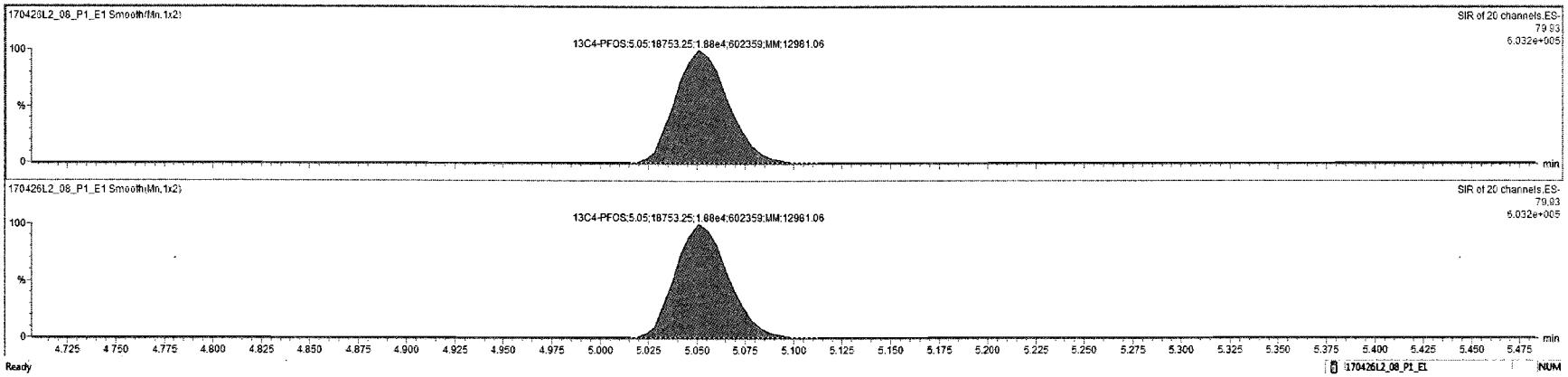


TargetLynx - 170426L2-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_08_P1_E1 - ST170426L2-7 537 DW CS3 17D2606 - 537 DW CS3 17D2606

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	ISW	RA	Y/N	RRT	Acq Date	Acq Time	1st Chk Noise	ID	Sample Text	Factor1	SWI	CalFile	>MDL
1	PFBS	16.162707	0.00136	91.3		1.632e4		3.42	1	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
2	PFHxA	18.037862	0.00198	90.2		2.999e4		3.80	2	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
3	PFHpA	19.632343	0.00358	98.2		3.536e4		4.27	3	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
4	PFHxS	16.773768	0.000722	92.0		1.460e4		4.38	4	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
5	PFOA	20.587007	0.00313	102.9		3.880e4		4.66	5	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
6	PFNA	19.972034	0.00520	99.9		3.964e4		5.00	6	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
7	PFOS	18.305874	0.000315	99.0		1.552e4		5.06	7	19			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
8	PFDA	18.386823	0.00489	91.9		2.287e4		5.28	8	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
9	N-MeFOSAA	17.773526	0.00525	88.9		1.386e4		5.38	9	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:28:51				1.0	1.00		NO
11	PFUnA	20.828777	0.00105	104.1		2.884e4		5.48	11	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
12	PFDoA	20.273710	0.00264	101.4		3.673e4		5.58	12	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
13	PFTrDA	19.304814	0.00209	96.5		3.310e4		5.68	13	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
14	PFTeDA	20.693224	0.00125	103.5		3.008e4		5.76	14	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
15	13C2-PFHxA	9.8688727	0.000220	98.7		1.292e4	0.560	3.80	15	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
16	13C2-PFDA	9.5908257	0.00110	95.9		1.301e4	0.580	5.28	16	18			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
17	d5-N-EtFOSAA	38.788969	0.00182	97.0		1.765e4	0.688	5.47	17	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000265	100.0		2.336e4	1.000	4.66	18	18			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00553	100.0		1.875e4	1.000	5.05	19	19			0.000	26-Apr-17	19:28:51				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.0116	100.0		2.644e4	1.000	5.38	20	20			0.000	26-Apr-17	19:28:51				1.0	1.00		YES



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Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

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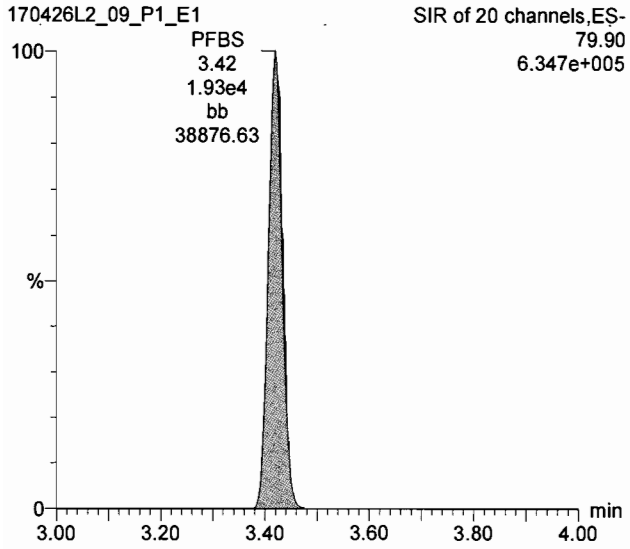
PFBS



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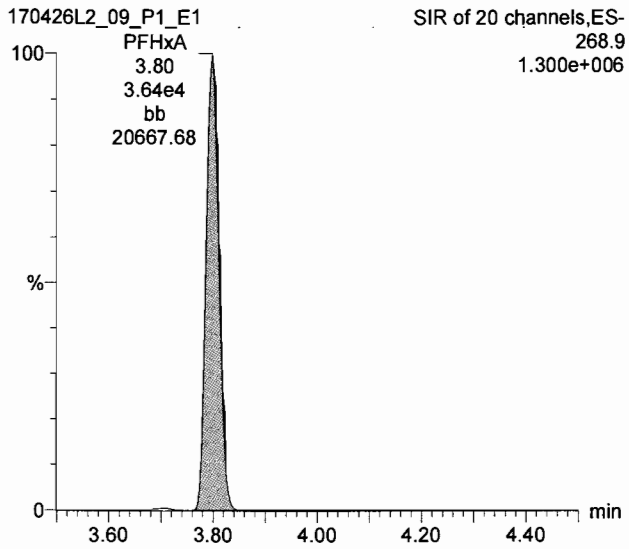

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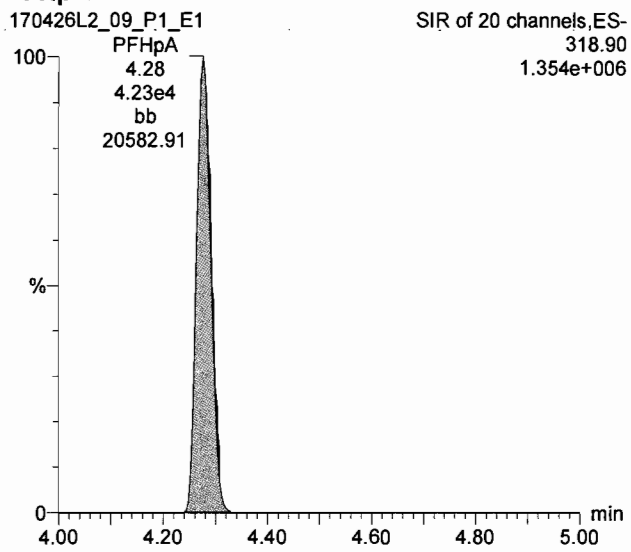

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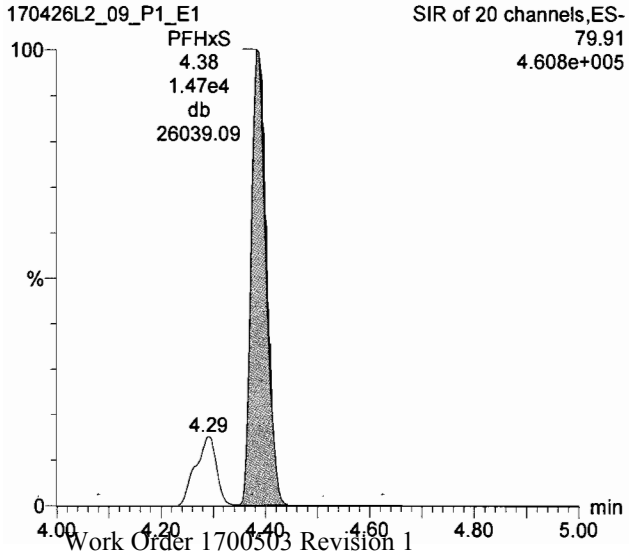

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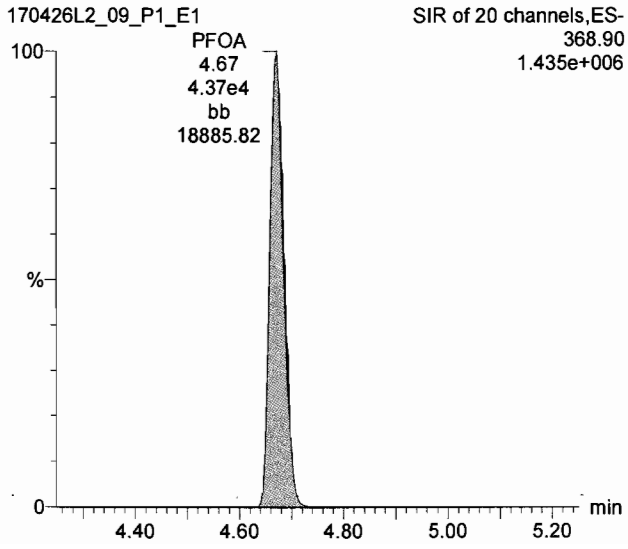

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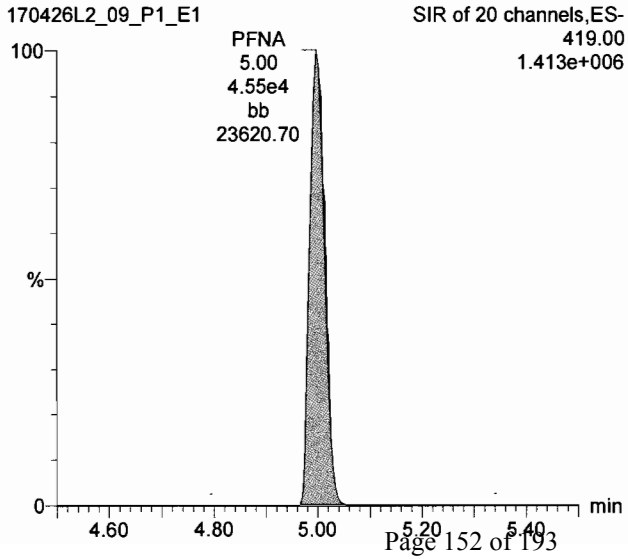

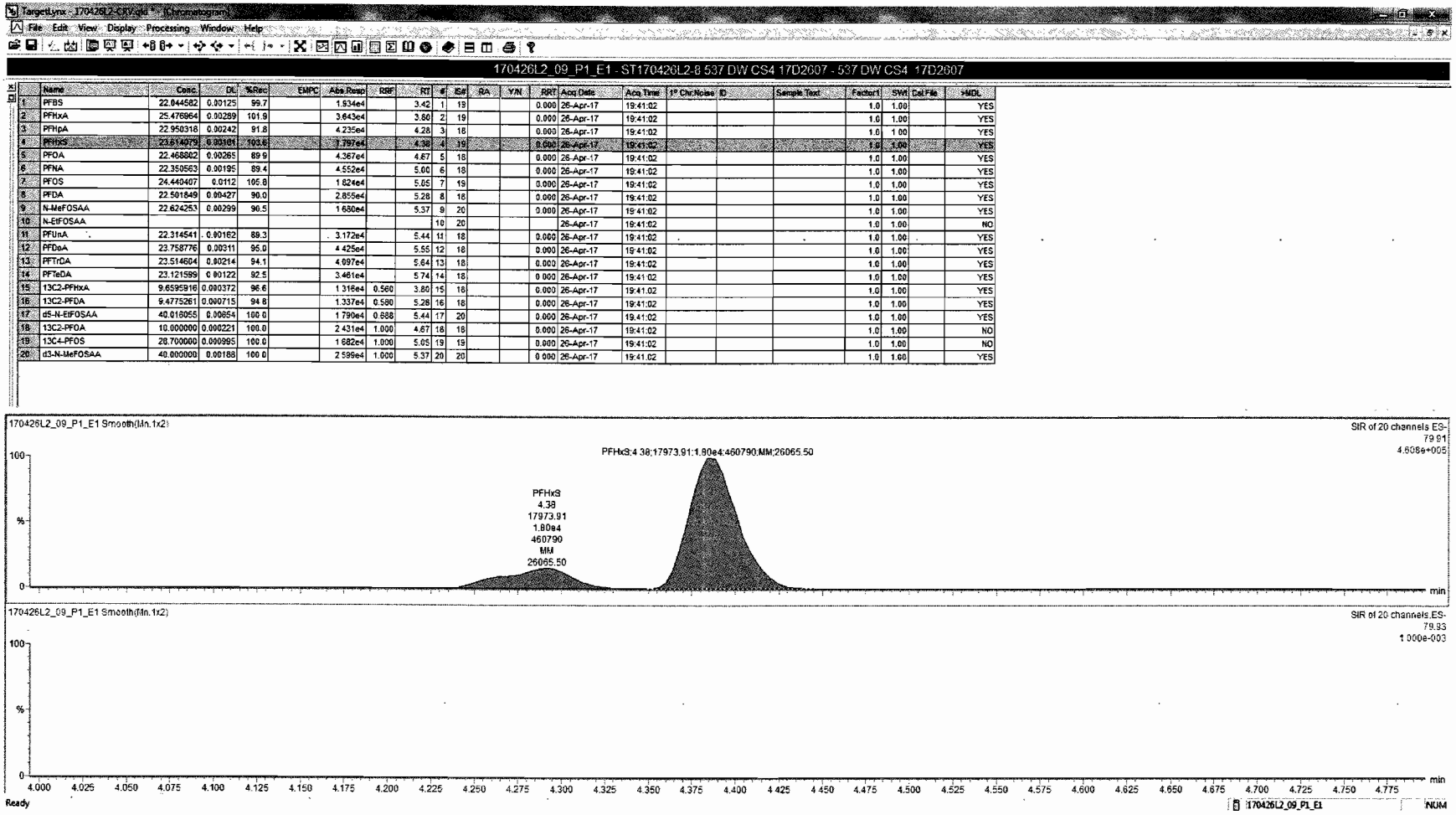

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	ISR	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor1	SWT	Cal File	>MDL
1	PFBS	22.044582	0.00125	99.7		1.934e4		3.42	1	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
2	PFHxA	25.476964	0.00289	101.9		3.643e4		3.80	2	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
3	PFHpA	22.950318	0.00242	91.8		4.235e4		4.28	3	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
4	PFHxS	23.614079	0.00101	103.6		1.797e4		4.38	4	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
5	PFOA	22.468882	0.00265	89.9		4.367e4		4.87	5	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
6	PFNA	22.350563	0.00195	89.4		4.552e4		5.00	6	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
7	PFOS	24.440407	0.0112	195.8		1.824e4		5.05	7	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
8	PFDA	22.501849	0.00427	90.0		2.855e4		5.28	8	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
9	N-MeFOSAA	22.624253	0.00299	90.5		1.686e4		5.37	9	20			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:41:02				1.0	1.00		NO
11	PFUnA	22.314541	0.00162	89.3		3.172e4		5.44	11	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
12	PFDoA	23.758776	0.00311	95.0		4.425e4		5.55	12	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
13	PFTrDA	23.514604	0.00214	94.1		4.097e4		5.64	13	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
14	PFTeDA	23.121599	0.00122	92.5		3.461e4		5.74	14	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
15	13C2-PFHxA	9.6595916	0.000372	96.6		1.316e4	0.560	3.80	15	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
16	13C2-PFDA	9.4775261	0.000715	94.8		1.337e4	0.580	5.28	16	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
17	d5-N-EtFOSAA	40.016055	0.00854	100.0		1.790e4	0.888	5.44	17	20			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000221	100.0		2.431e4	1.000	4.87	18	18			0.000	26-Apr-17	19:41:02				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.000995	100.0		1.682e4	1.000	5.05	19	19			0.000	26-Apr-17	19:41:02				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00188	100.0		2.599e4	1.000	5.37	20	20			0.000	26-Apr-17	19:41:02				1.0	1.00		YES

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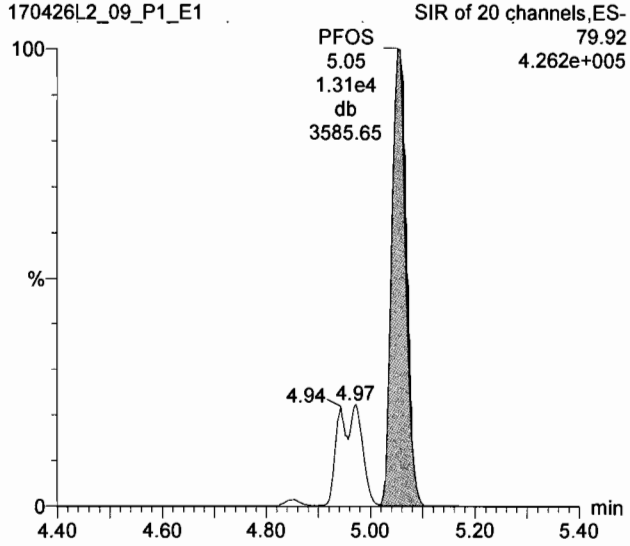
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_09.wiff, Date: 26-Apr-2017, Time: 19:41:02, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



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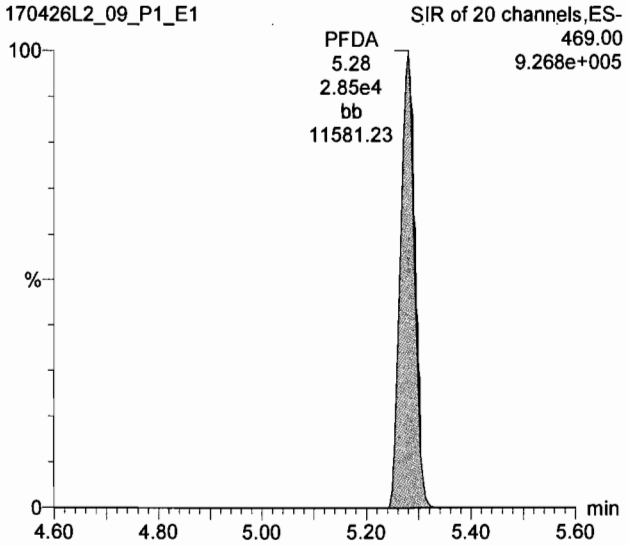

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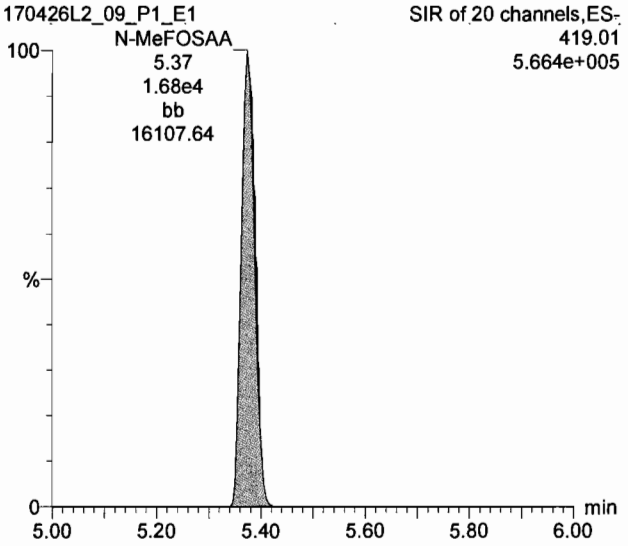

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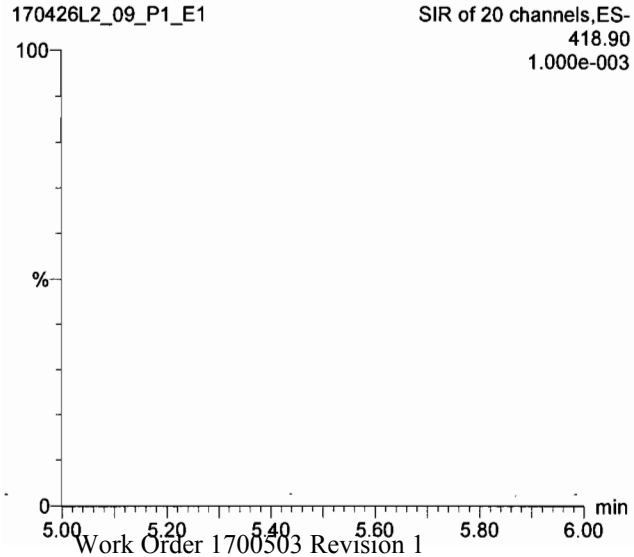

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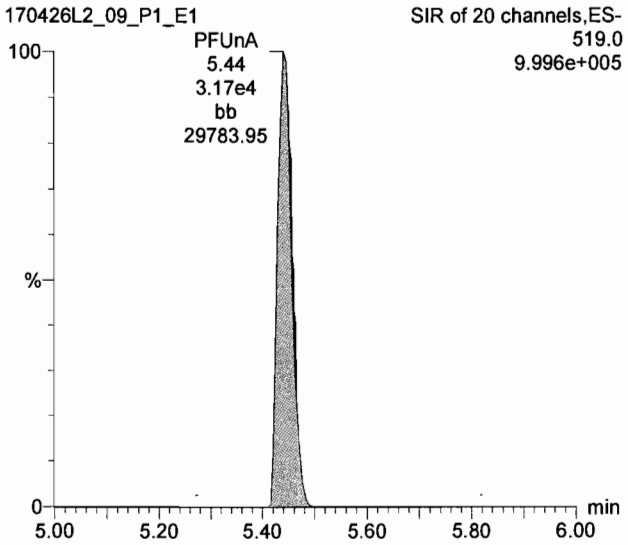

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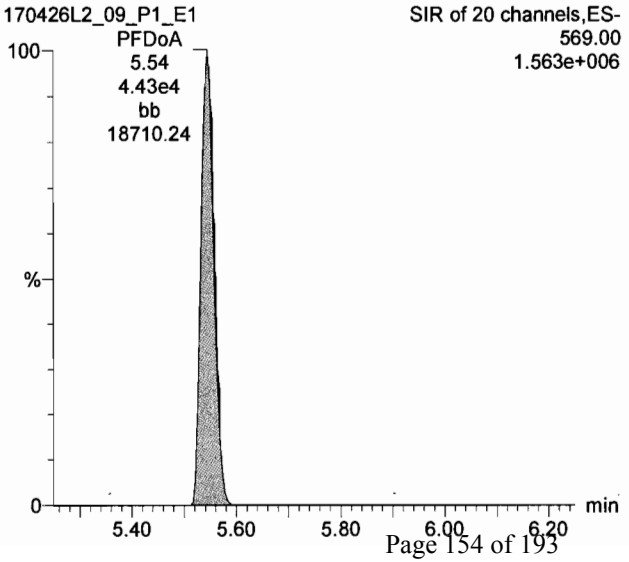
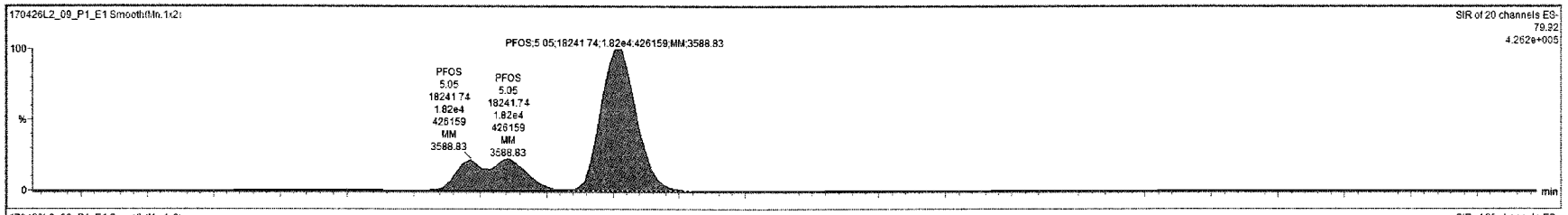


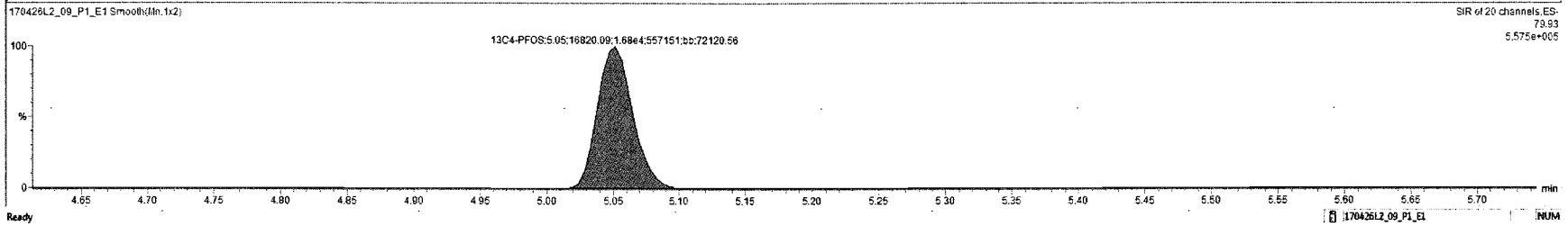
TargetLynx - 170426L2-CRV.qld - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_09_P1_E1 - ST170426L2-8 537 DW CS4 17D2607 - 537 DW CS4 17D2607

	Name	Conc.	DL	%Rec	EMPC	Abs.Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chr.Noise	ID	Sample Text	Factor1	SWT	Cal.File	>MDL
1	PFBS	22.044562	0.00125	99.7		1.934e4		3.42	1	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
2	PFHxA	25.476964	0.00289	101.9		3.643e4		3.80	2	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
3	PFHpA	22.950318	0.00242	91.8		4.235e4		4.28	3	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
4	PFHxS	23.614079	0.00161	103.6		1.797e4		4.36	4	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
5	PFOA	22.468862	0.00265	89.9		4.367e4		4.67	5	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
6	PFNA	22.350563	0.00195	89.4		4.552e4		5.00	6	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
7	PFOS	24.440407	0.0112	195.8		1.824e4		5.05	7	19			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
8	PFDA	22.501649	0.00427	90.0		2.855e4		5.28	8	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
9	N-MeFOSAA	22.624253	0.00299	90.5		1.680e4		5.37	9	20			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:41:02				1.0	1.00		NO
11	PFUnA	22.314541	0.00162	89.3		3.172e4		5.44	11	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
12	PFDoA	23.758776	0.00311	95.0		4.425e4		5.55	12	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
13	PFTrDA	23.514604	0.00214	94.1		4.097e4		5.64	13	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
14	PFTeDA	23.121599	0.00122	92.5		3.461e4		5.74	14	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
15	13C2-PFHxA	9.6595916	0.000372	96.6		1.316e4	0.560	3.80	15	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
16	13C2-PFDA	9.4775261	0.000715	94.8		1.337e4	0.580	5.28	16	18			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
17	d5-N-EtFOSAA	40.016055	0.00654	100.0		1.790e4	0.686	5.44	17	20			0.000	26-Apr-17	19:41:02				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000221	100.0		2.431e4	1.000	4.67	18	18			0.000	26-Apr-17	19:41:02				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.000995	100.0		1.682e4	1.000	5.05	19	19			0.000	26-Apr-17	19:41:02				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00188	100.0		2.599e4	1.000	5.37	20	20			0.000	26-Apr-17	19:41:02				1.0	1.00		YES





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Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

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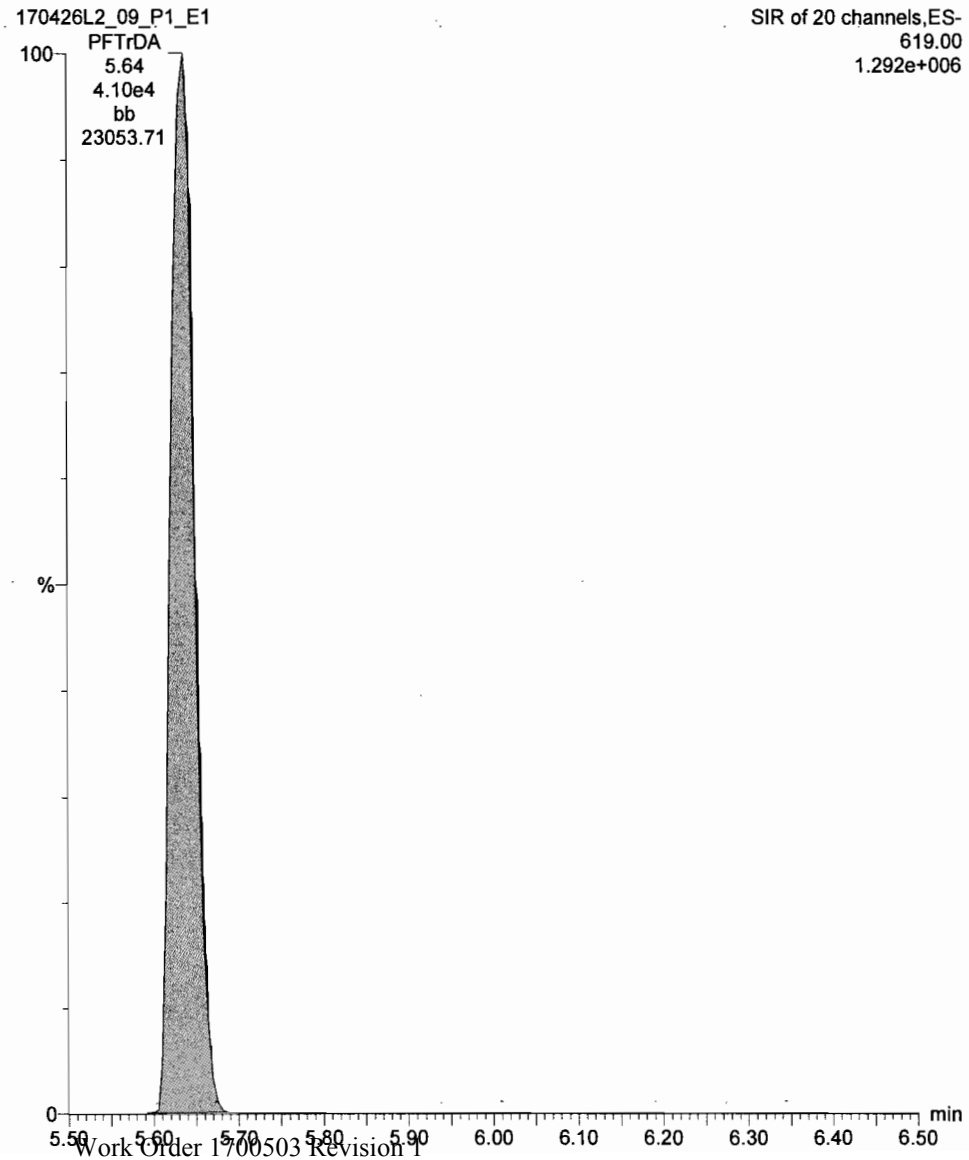
PFTrDA



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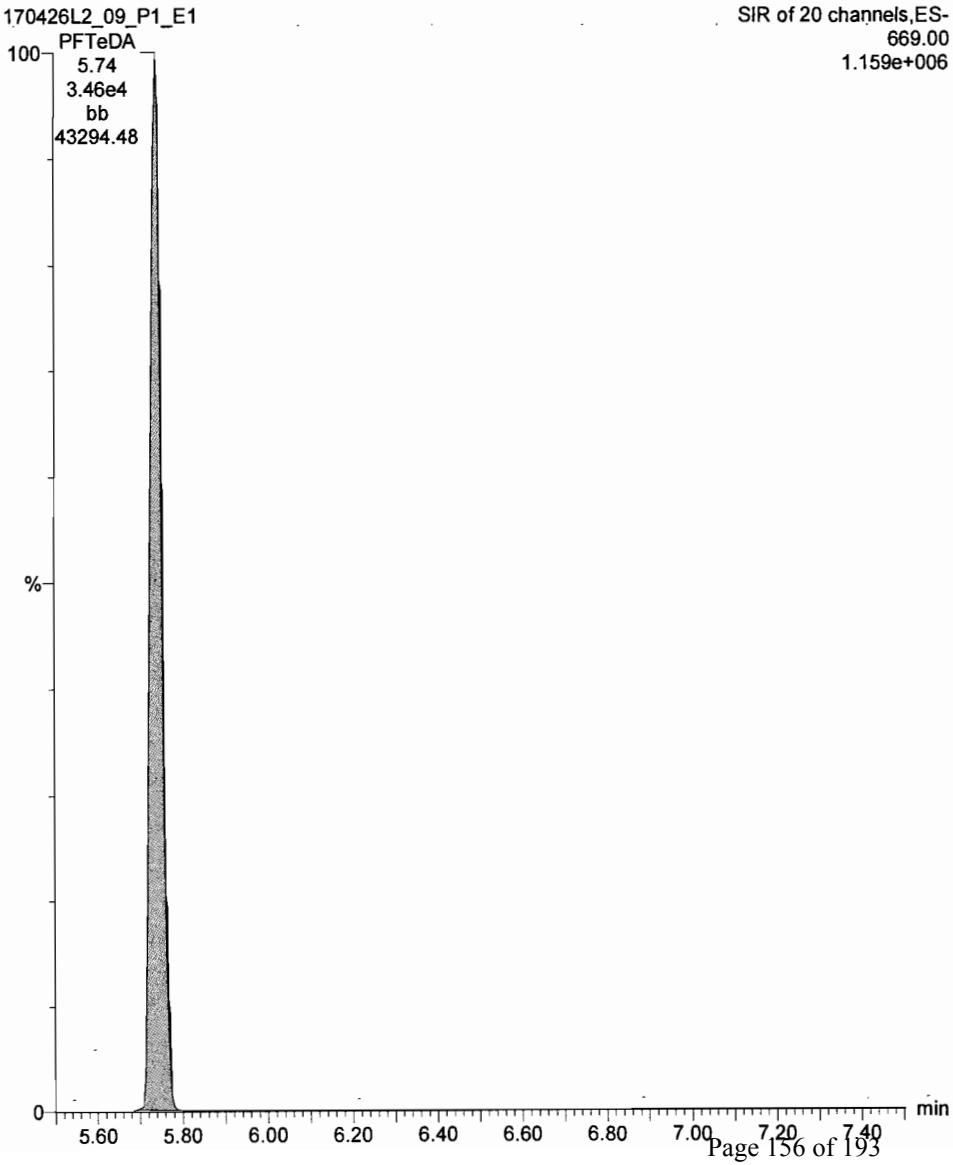

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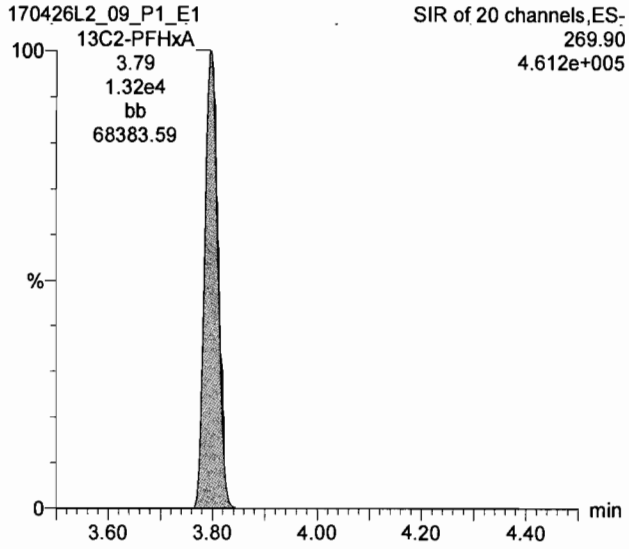
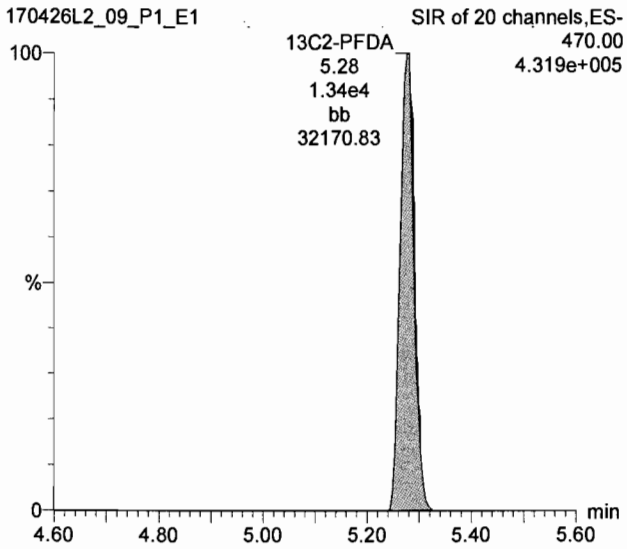
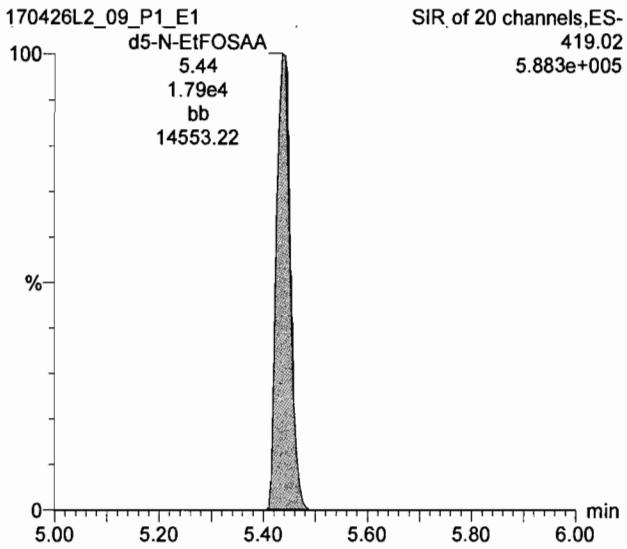
13C2-PFHxA



13C2-PFDA



d5-N-EtFOSAA



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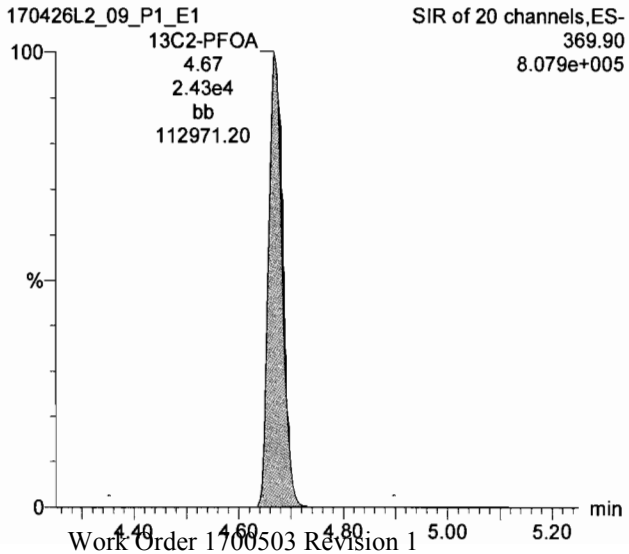

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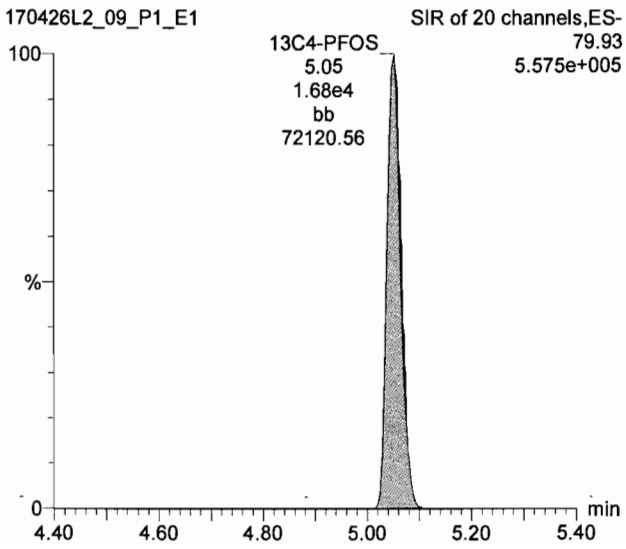

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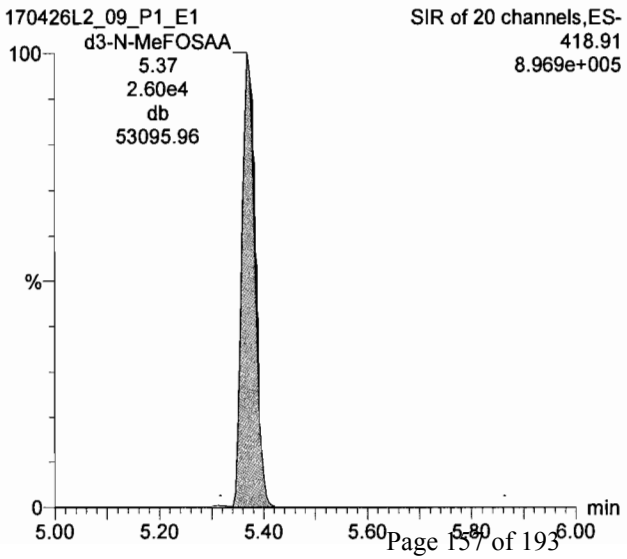

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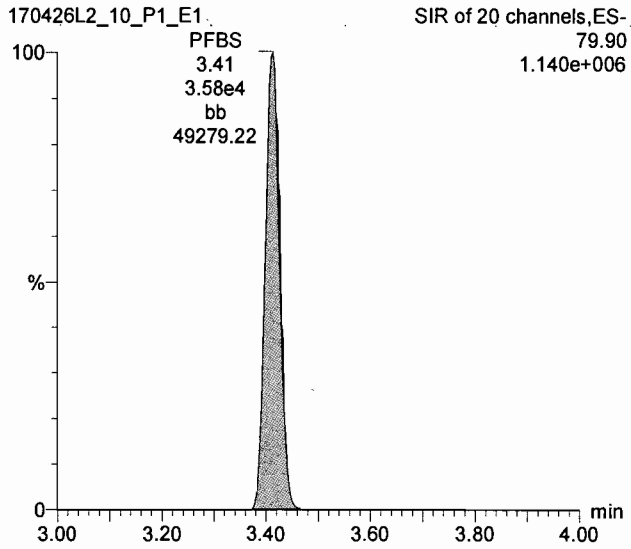
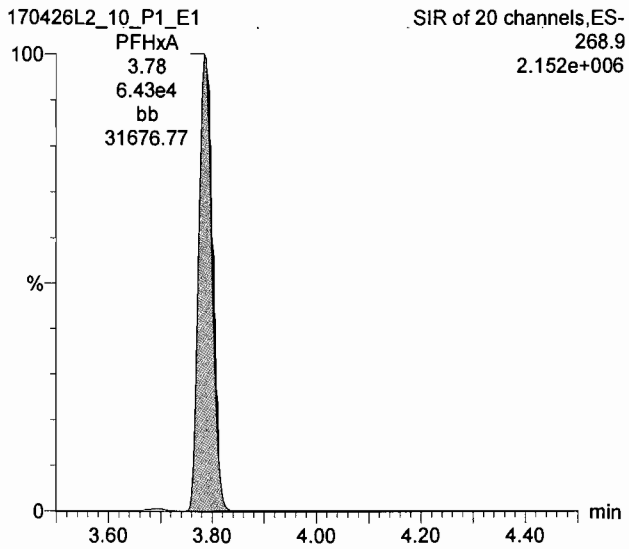
PFBS



PFHxA



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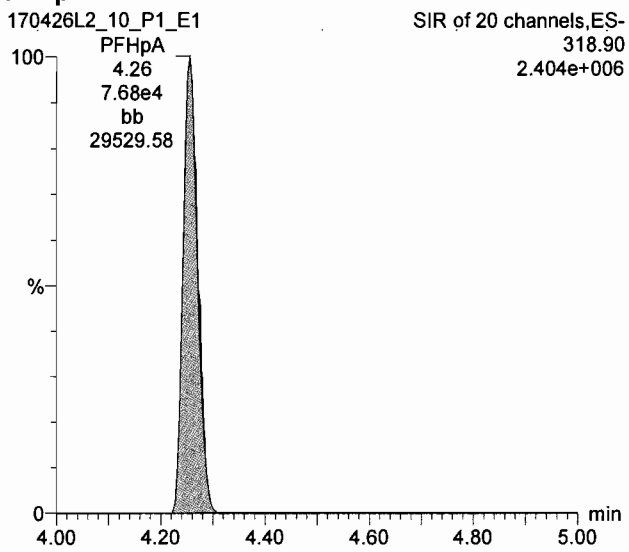
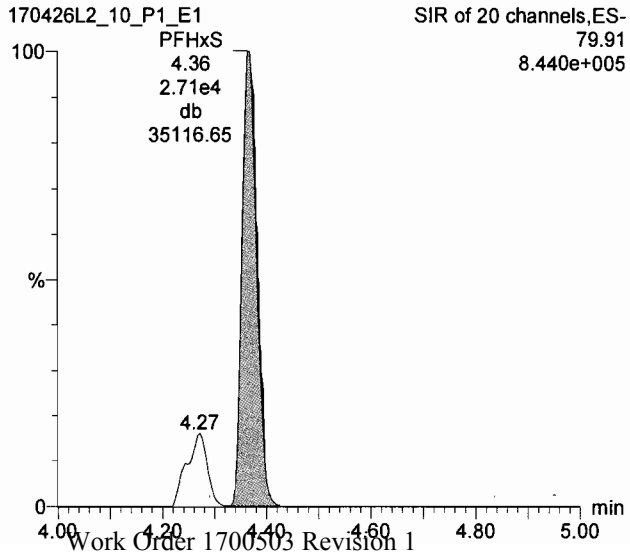
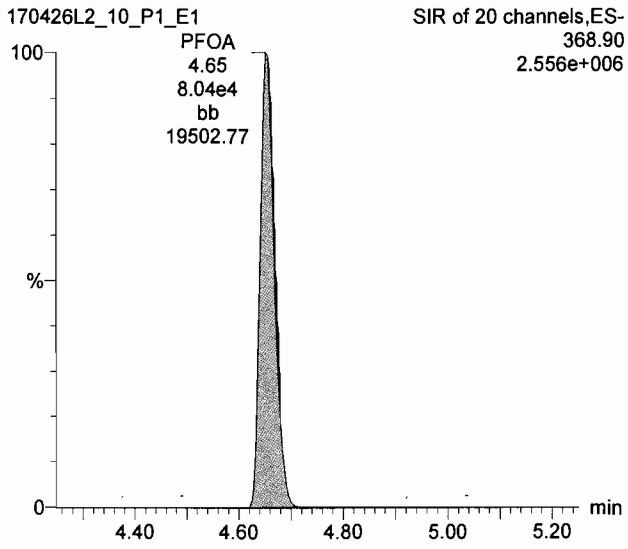


PFHxS



PFOA



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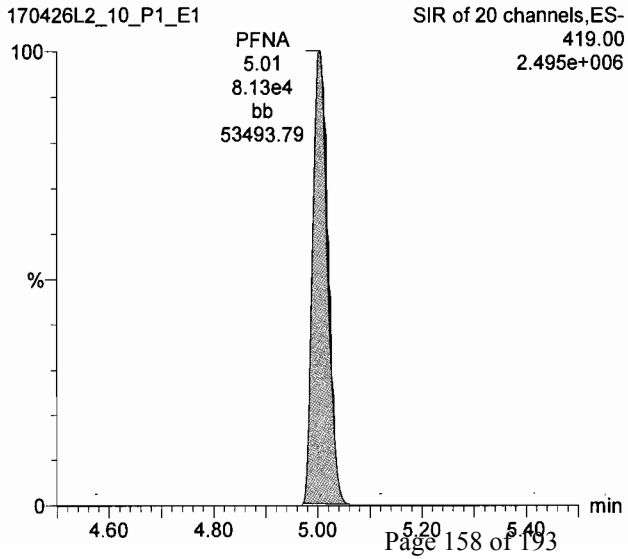
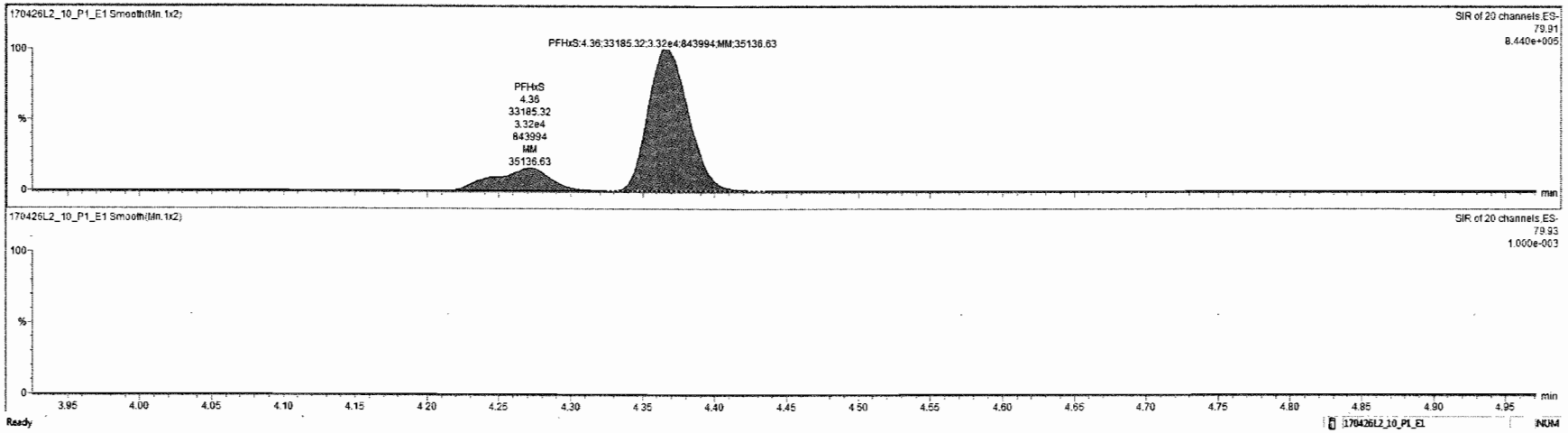


TargetLynx - 170426L2-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_10_P1_E1 - ST170426L2-9 537 DW CS5 17D2608 - 537 DW CS5 17D2408

	Name	Conc	OL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor1	SWI	Cal File	>MDL
1	PFBS	44.790481	0.00178	101.3		3.580e4		3.41	1	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
2	PFHxA	50.542838	0.00313	101.1		6.427e4		3.78	2	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
3	PFHpA	51.276579	0.00321	102.6		7.680e4		4.26	3	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
4	PFHxS	45.769319	0.00219	100.4		3.319e4		4.36	4	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
5	PFOA	51.280987	0.00490	102.6		8.036e4		4.65	5	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
6	PFNA	51.433992	0.00182	102.9		8.127e4		5.01	6	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
7	PFOS	45.881049	0.00529	99.3		3.325e4		5.06	7	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
8	PFDA	52.003329	0.0196	104.0		5.279e4		5.26	8	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
9	N-MeFOSAA	52.175704	0.00458	104.4		3.052e4		5.37	9	20			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:53:18				1.0	1.00		NO
11	PFUnA	51.285322	0.0108	102.6		5.975e4		5.49	11	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
12	PFDoA	50.788669	0.00341	101.6		8.014e4		5.61	12	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
13	PFTrDA	50.824586	0.00321	101.6		7.012e4		5.71	13	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
14	PFTeDA	50.905684	0.00236	101.8		8.276e4		5.79	14	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
15	13C2-PFHxA	9.6637119	0.00280	96.6		1.232e4	0.580	3.78	15	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
16	13C2-PFDA	9.6134651	0.00656	96.1		1.270e4	0.580	5.26	16	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
17	d5-N-EtFOSAA	34.567625	0.00436	86.4		1.510e4	0.668	5.48	17	20			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000372	100.0		2.275e4	1.000	4.65	18	18			0.000	26-Apr-17	19:53:18				1.0	1.00		NO
19	13C4-PFOS	28.700000	0.00185	100.0		1.748e4	1.000	5.06	19	19			0.000	26-Apr-17	19:53:18				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00580	100.0		2.539e4	1.000	5.36	20	20			0.000	26-Apr-17	19:53:18				1.0	1.00		YES



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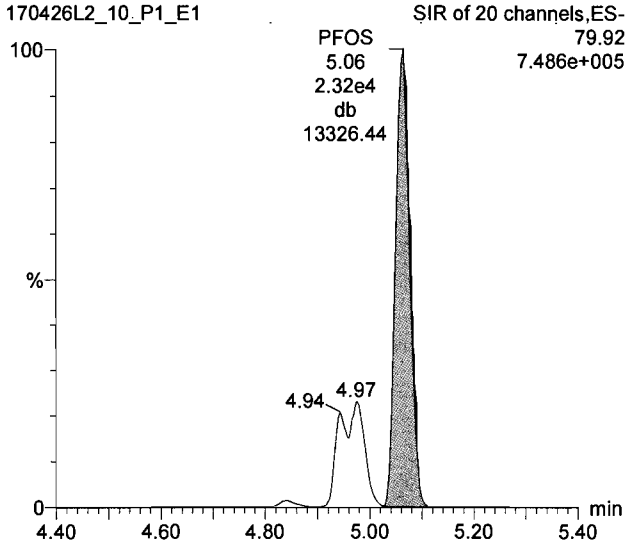
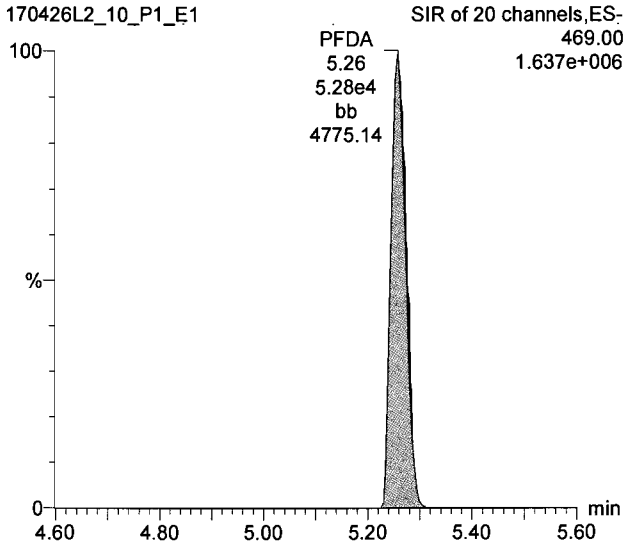
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_10.wiff, Date: 26-Apr-2017, Time: 19:53:18, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFOS



PFDA



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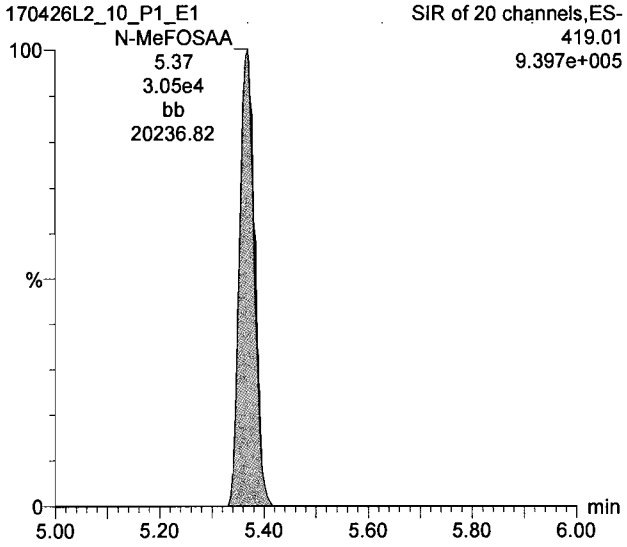

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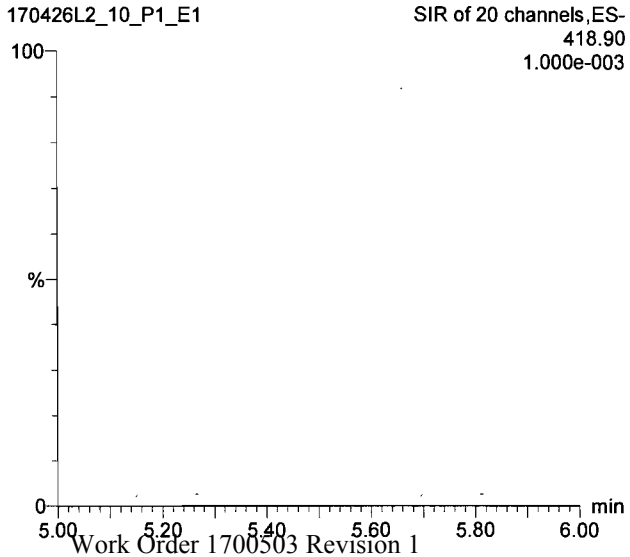
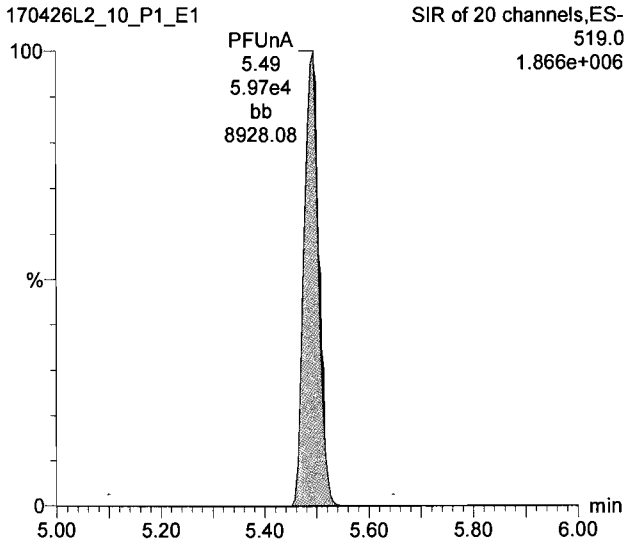
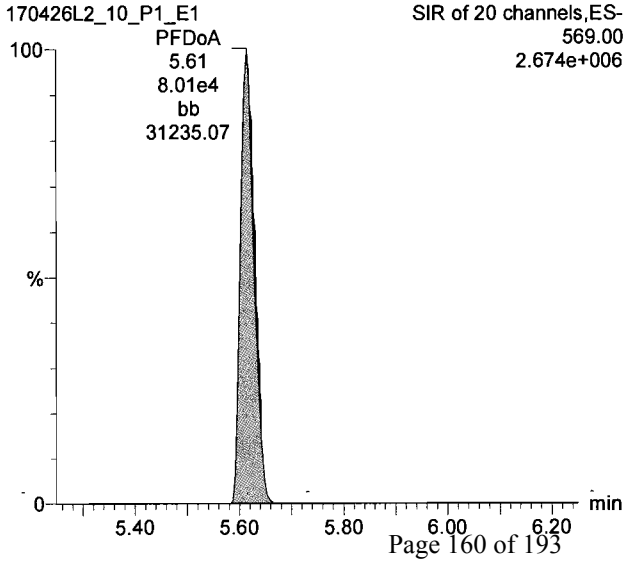


PFUnA



PFDoA

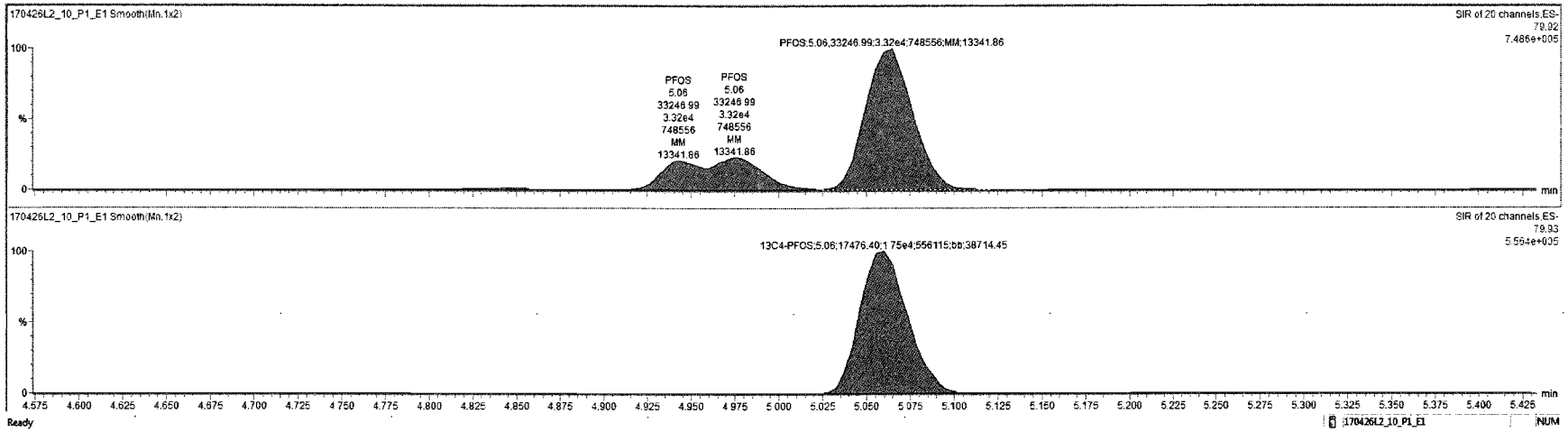


TargetLynx - 170426L2-CRV.qld * - [Chromatogram]

File Edit View Display Processing Window Help

170426L2_10_P1_E1 - ST170426L2-9 537 DW CS5 17D2608 - 537 DW CS5 17D2408

	Name	Conc	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq.Date	Acq.Time	1st Chl.Noise	ID	Sample Text	Factor1	Swt	Cal File	>MDL
1	PFBS	44.790481	0.00178	101.3		3.580e4		3.41	1	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
2	PFHxA	50.542836	0.00313	101.1		6.427e4		3.76	2	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
3	PFHpA	51.276579	0.00321	102.6		7.680e4		4.26	3	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
4	PFHxS	45.769310	0.00219	100.4		3.319e4		4.36	4	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
5	PFOA	51.280987	0.00490	102.6		8.036e4		4.65	5	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
6	PFNA	51.433992	0.00162	102.9		8.127e4		5.01	6	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
7	PFOS	45.881049	0.00529	99.3		3.325e4		5.06	7	19			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
8	PFDA	52.003329	0.0196	104.0		5.279e4		5.26	8	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
9	N-MeFOSAA	52.175704	0.00458	104.4		3.052e4		5.37	9	20			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
10	N-EtFOSAA								10	20				26-Apr-17	19:53:18				1.0	1.00		NO
11	PFUnA	51.285322	0.0108	102.6		5.975e4		5.49	11	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
12	PFDoA	50.788689	0.00341	101.6		8.014e4		5.61	12	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
13	PFTrDA	50.624580	0.00321	101.6		7.012e4		5.71	13	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
14	PFTeDA	50.905684	0.00236	101.8		6.276e4		5.79	14	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
15	13C2-PFHxA	9.6637119	0.00280	96.6		1.232e4	0.560	3.78	15	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
16	13C2-PFDA	9.6134651	0.00656	96.1		1.270e4	0.580	5.26	16	18			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
17	d5-N-EtFOSAA	34.567625	0.00436	86.4		1.510e4	0.688	5.48	17	20			0.000	26-Apr-17	19:53:18				1.0	1.00		YES
18	13C2-PFOA	10.000000	0.000372	100.0		2.275e4	1.000	4.65	18	18			0.000	26-Apr-17	19:53:18				1.0	1.00		NO
19	13C4-PFOS	26.700000	0.00185	100.0		1.749e4	1.000	5.06	19	19			0.000	26-Apr-17	19:53:18				1.0	1.00		NO
20	d3-N-MeFOSAA	40.000000	0.00580	100.0		2.539e4	1.000	5.36	20	20			0.000	26-Apr-17	19:53:18				1.0	1.00		YES



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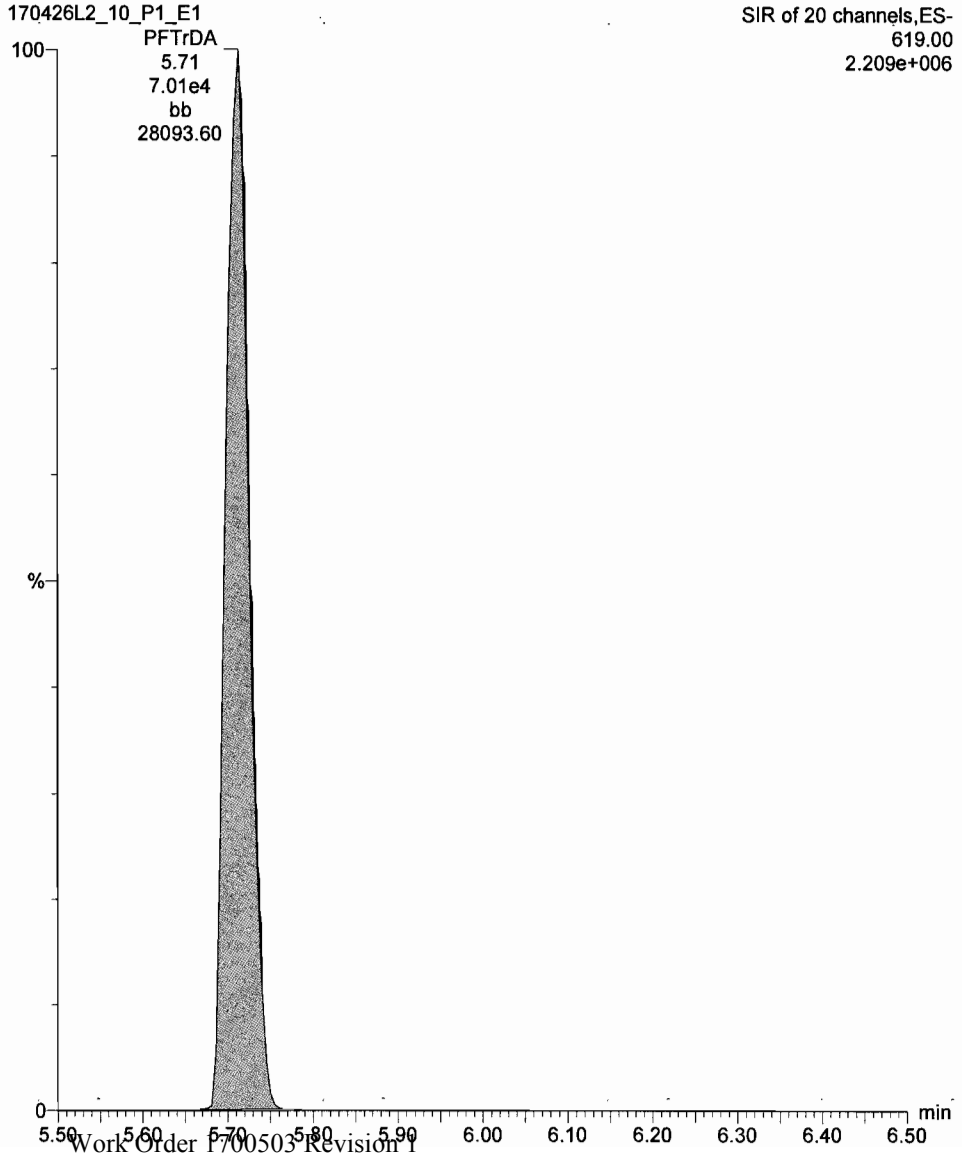
Last Altered: Thursday, April 27, 2017 10:15:05 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

ID: , Description: , Name: 170426L2_10.wiff, Date: 26-Apr-2017, Time: 19:53:18, Instrument: , Lab: ©PE-SCIEX, User: sciex

PFTrDA



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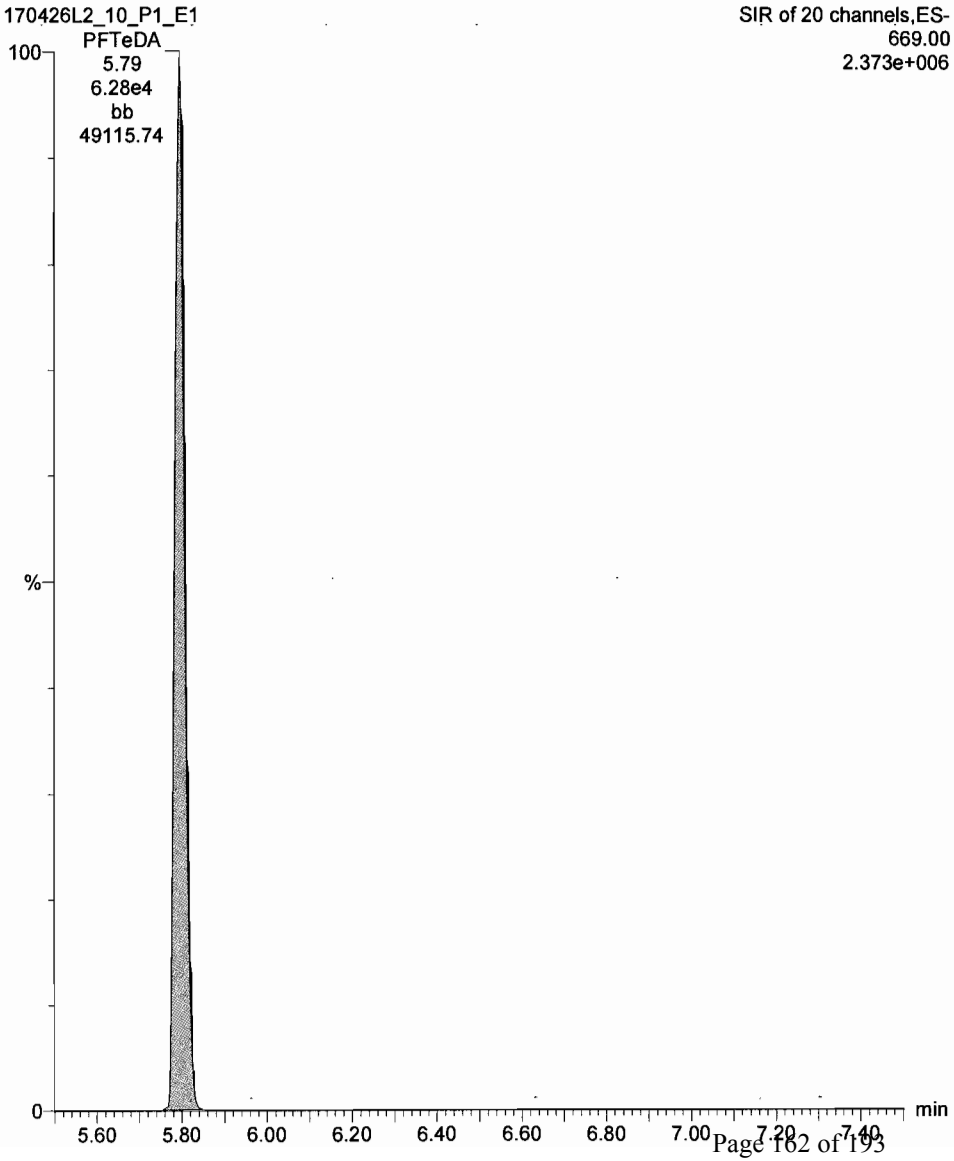

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Printed: Thursday, April 27, 2017 10:15:42 Pacific Daylight Time

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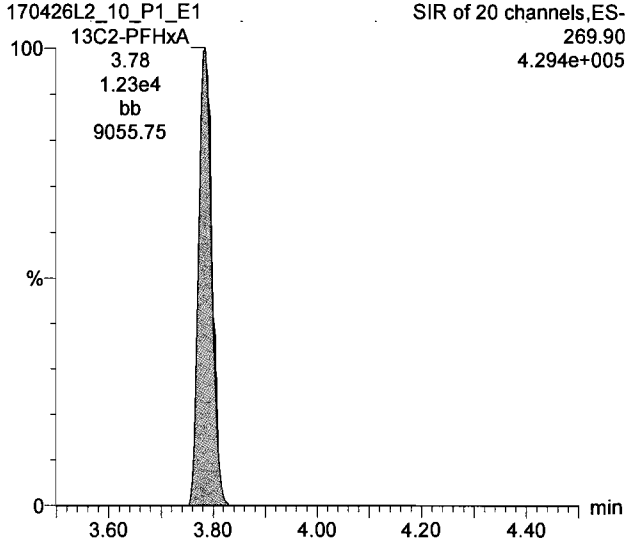
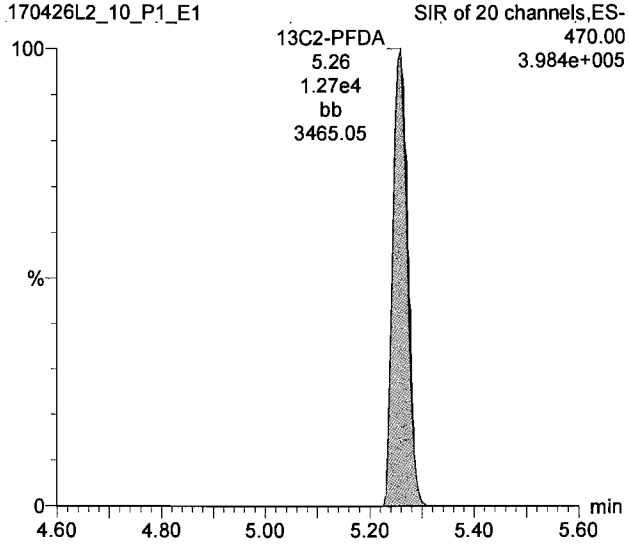
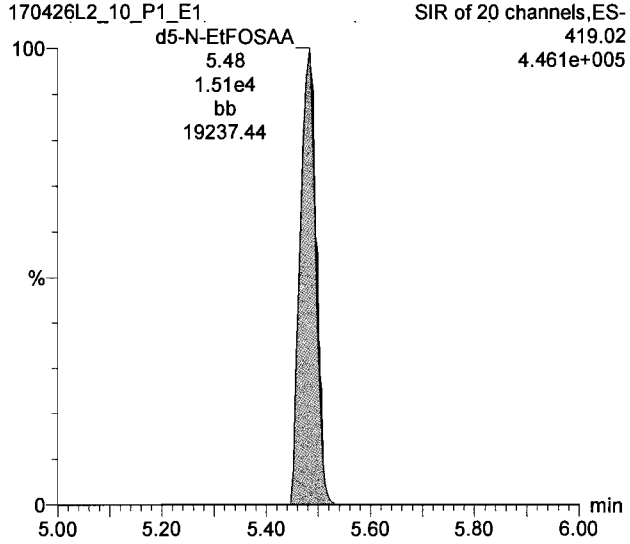
13C2-PFHxA



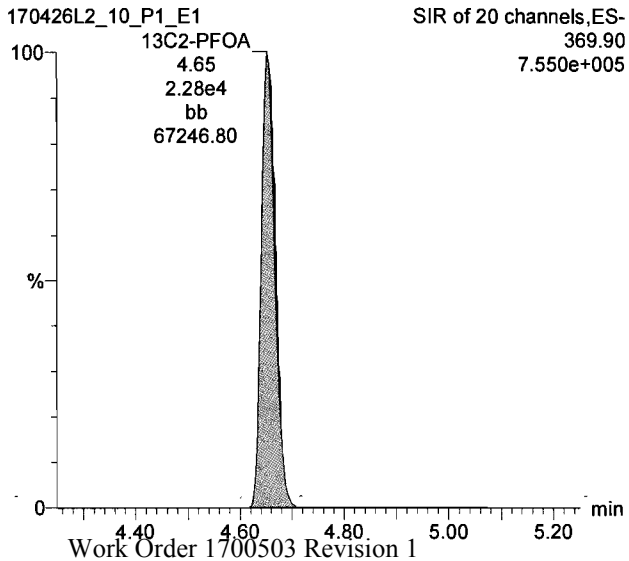
13C2-PFDA



d5-N-EtFOSAA



13C2-PFOA



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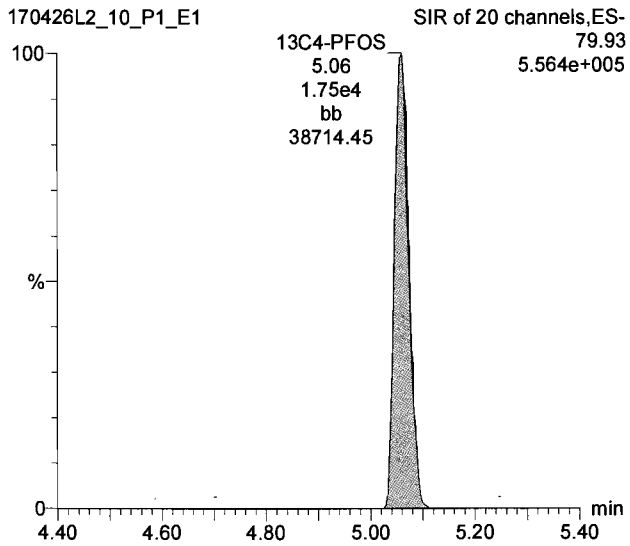
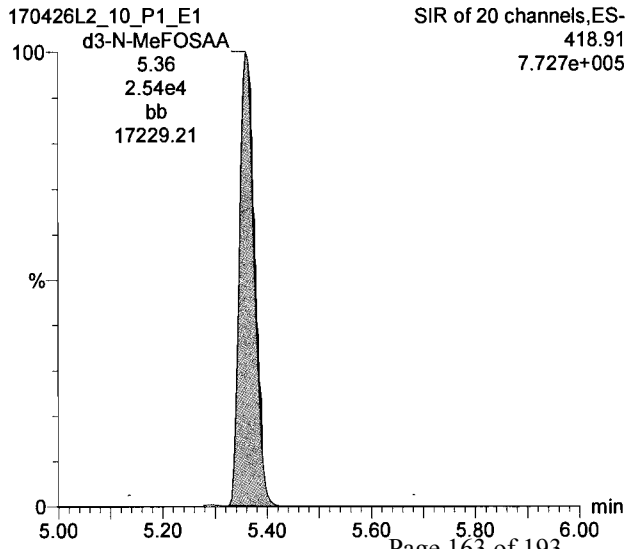


d3-N-MeFOSAA



Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-12.qld

Last Altered: Thursday, April 27, 2017 10:50:18 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:51:03 Pacific Daylight Time

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Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Name: 170426L2_12.wiff, Date: 27-Apr-2017, Time: 03:17:47, ID: SS170426L2-1 537 DW SSS 17D2609, Description: 537 DW SSS 17D2609

	#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1	PFBS	79.90	8.50e3	1.69e4		0.000	3.42	9.03	90.3
2	2	PFHxA	268.9	1.39e4	1.69e4		0.000	3.80	8.88	88.8
3	3	PFHpA	318.90	1.72e4	2.02e4		0.000	4.28	10.6	106.0
4	4	PFHxS	79.91	7.08e3	1.69e4		0.000	4.40	8.79	87.9
5	5	PFOA	368.90	1.72e4	2.02e4		0.000	4.67	10.0	100.4
6	6	PFNA	419.00	1.91e4	2.02e4		0.000	4.97	10.5	105.5
7	7	PFOS	79.92	7.40e3	1.69e4		0.000	5.03	9.46	94.6
8	8	PFDA	469.00	1.11e4	2.02e4		0.000	5.23	9.88	98.8
9	9	N-MeFOSAA	419.01	7.06e3	2.72e4		0.000	5.32	8.31	83.1
10	11	PFUnA	519.0	1.28e4	2.02e4		0.000	5.38	10.3	103.2
11	12	PFDoA	569.00	1.51e4	2.02e4		0.000	5.54	9.27	92.7
12	13	PFTrDA	619.00	1.66e4	2.02e4		0.000	5.70	10.7	106.9
13	14	PFTeDA	669.00	1.38e4	2.02e4		0.000	5.79	10.5	104.6
14	15	13C2-PFHxA	269.90	1.20e4	2.02e4	0.560	0.000	3.80	10.6	105.9
15	16	13C2-PFDA	470.00	1.15e4	2.02e4	0.580	0.000	5.23	9.82	98.2
16	17	d5-N-EtFOSAA	419.02	1.54e4	2.72e4	0.688	0.000	5.38	32.9	82.3
17	18	13C2-PFOA	369.90	2.02e4	2.02e4	1.000	0.000	4.68	10.0	100.0
18	19	13C4-PFOS	79.93	1.69e4	1.69e4	1.000	0.000	5.03	28.7	100.0
19	20	d3-N-MeFOSAA	418.91	2.72e4	2.72e4	1.000	0.000	5.32	40.0	100.0

70-130

AC 4/27/17

CT 4/27/17

Vista Analytical Laboratory Q1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:41:38 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:42:31 Pacific Daylight Time

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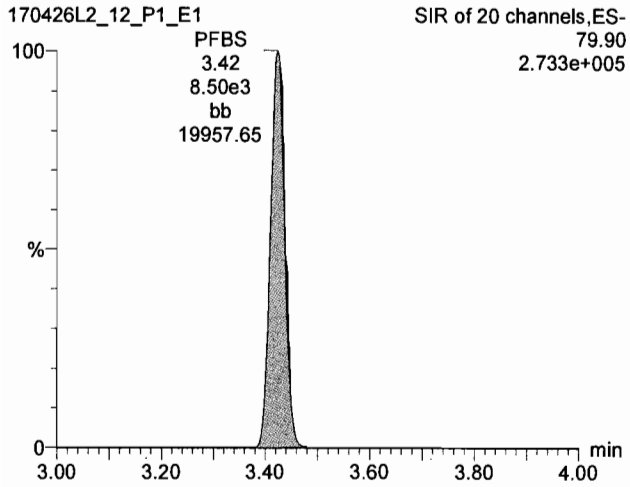
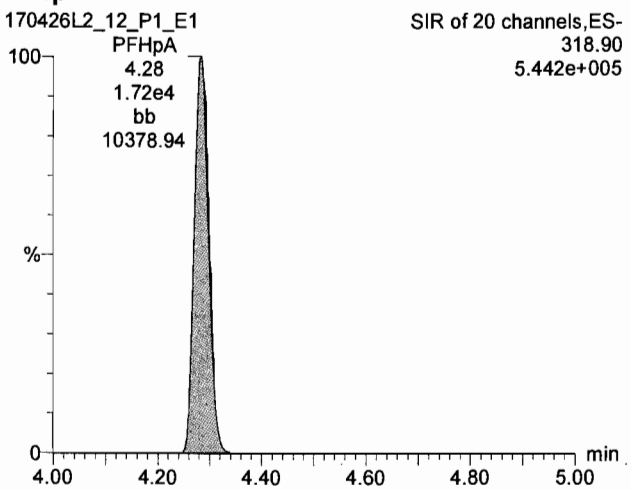
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: SS170426L2-1 537 DW SSS 17D2609, Description: 537 DW SSS 17D2609, Name: 170426L2_12.wiff, Date: 27-Apr-2017, Time: 03:17:47, Instrument: , Lab: ©PE-SCIEX, User: sciex

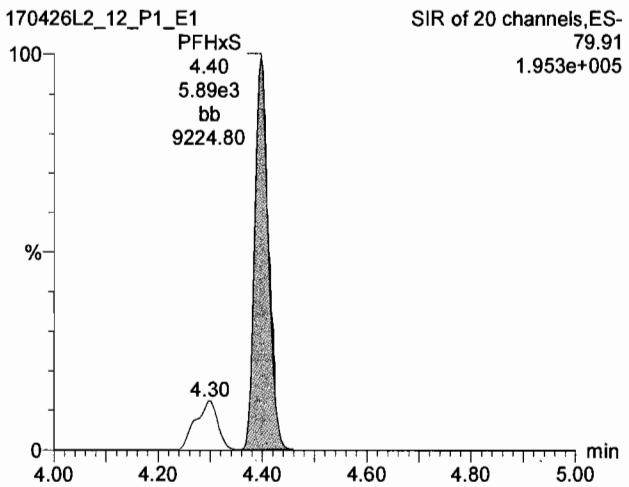
PFBS



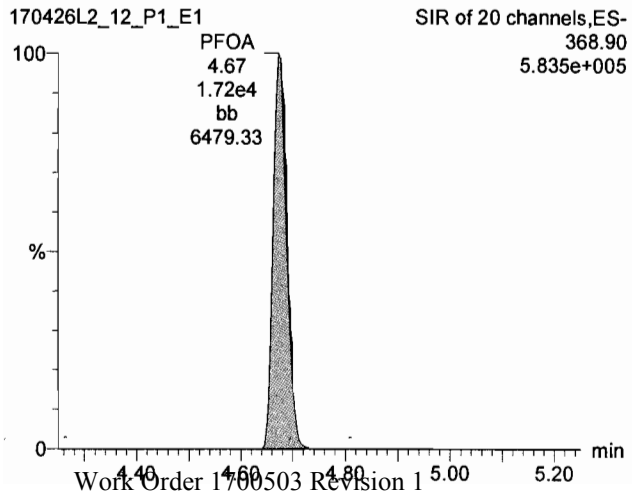
PFHpA



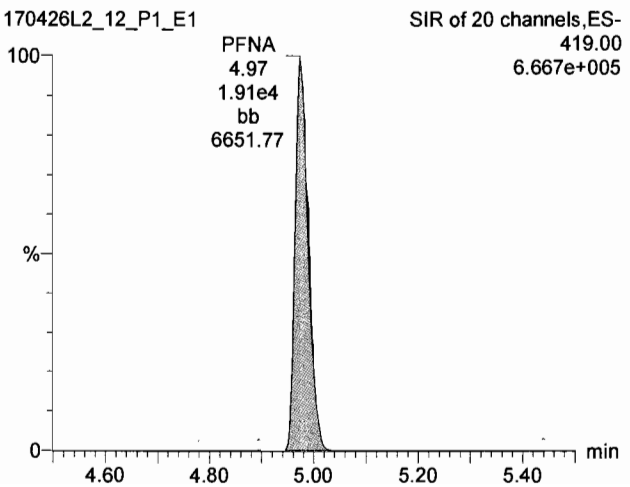
PFHxS



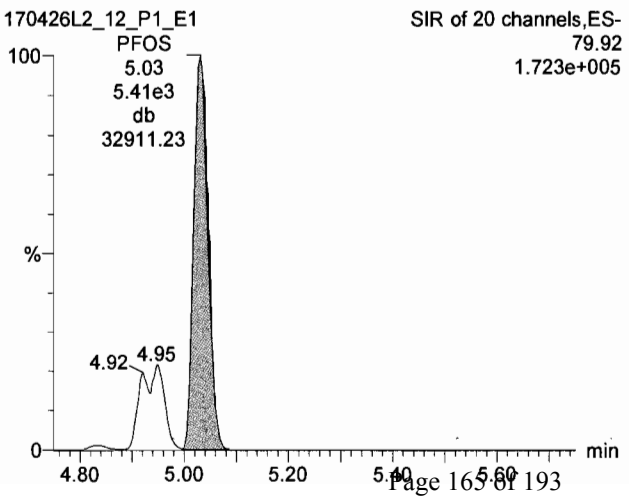
PFOA

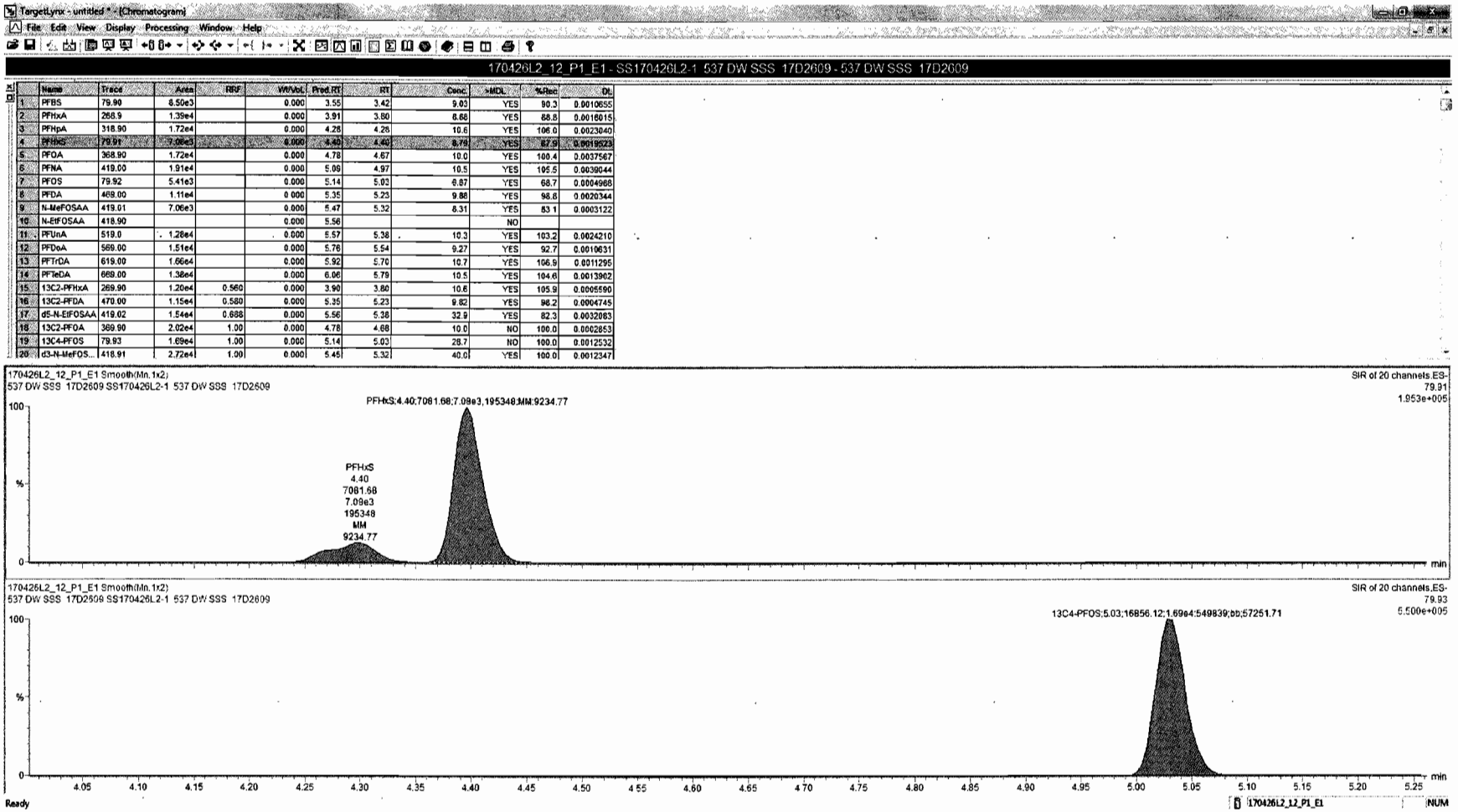


PFNA

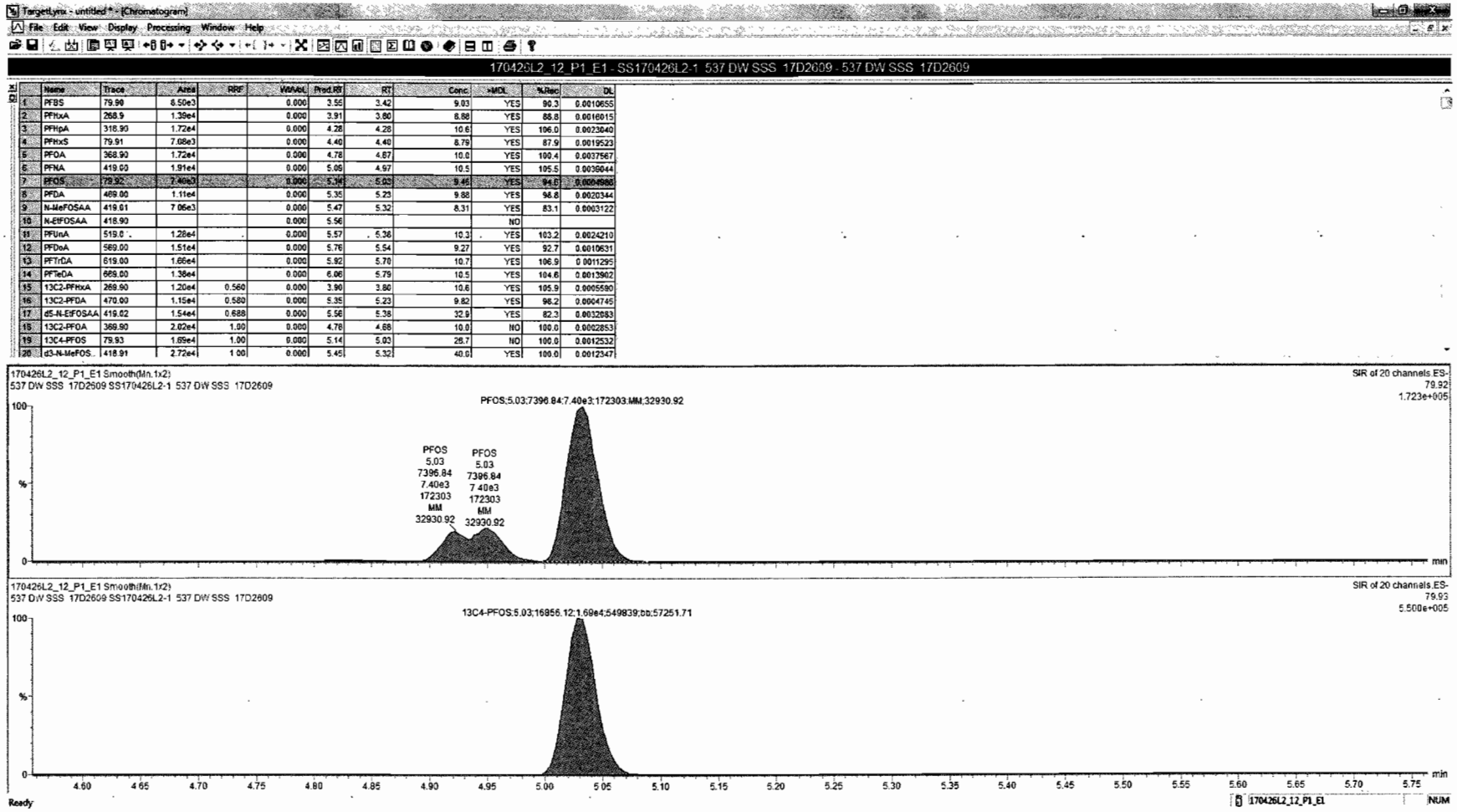


PFOS





	Name	Trace	Area	RRF	Wt/Vol	Prod.RT	RT	Conc.	>MDL	%Rec	DL
1	PFBS	79.90	6.50e3		0.000	3.55	3.42	9.03	YES	90.3	0.0010655
2	PFHxA	268.9	1.39e4		0.000	3.91	3.80	8.68	YES	86.8	0.0016015
3	PFHpA	318.90	1.72e4		0.000	4.28	4.26	10.6	YES	106.0	0.0023040
4	PFHxS	79.91	7.09e3		0.000	4.40	4.40	8.79	YES	87.9	0.0019523
5	PFOA	368.90	1.72e4		0.000	4.78	4.67	10.0	YES	100.4	0.0037567
6	PFNA	419.00	1.91e4		0.000	5.09	4.97	10.5	YES	105.5	0.0039044
7	PFOS	79.92	5.41e3		0.000	5.14	5.03	6.87	YES	68.7	0.0004966
8	PFDA	469.00	1.11e4		0.000	5.35	5.23	9.88	YES	98.8	0.0020344
9	N-MeFOSAA	419.01	7.06e3		0.000	5.47	5.32	8.31	YES	83.1	0.0003122
10	N-EtFOSAA	418.90			0.000	5.56			NO		
11	PFUnA	519.0	1.28e4		0.000	5.57	5.38	10.3	YES	103.2	0.0024210
12	PFDoA	569.00	1.51e4		0.000	5.76	5.54	9.27	YES	92.7	0.0010631
13	PFTrDA	619.00	1.66e4		0.000	5.92	5.70	10.7	YES	106.9	0.0011295
14	PFTeDA	669.00	1.38e4		0.000	6.06	5.79	10.5	YES	104.6	0.0013902
15	13C2-PFHxA	269.90	1.20e4	0.560	0.000	3.90	3.80	10.6	YES	105.9	0.0005590
16	13C2-PFDA	470.00	1.15e4	0.580	0.000	5.35	5.23	9.82	YES	98.2	0.0004745
17	d5-N-EtFOSAA	419.02	1.54e4	0.688	0.000	5.56	5.38	32.9	YES	82.3	0.0032083
18	13C2-PFOA	369.90	2.02e4	1.00	0.000	4.78	4.68	10.0	NO	100.0	0.0002853
19	13C4-PFOS	79.93	1.69e4	1.00	0.000	5.14	5.03	28.7	NO	100.0	0.0012532
20	d3-N-MeFOS...	418.91	2.72e4	1.00	0.000	5.45	5.32	40.0	YES	100.0	0.0012347



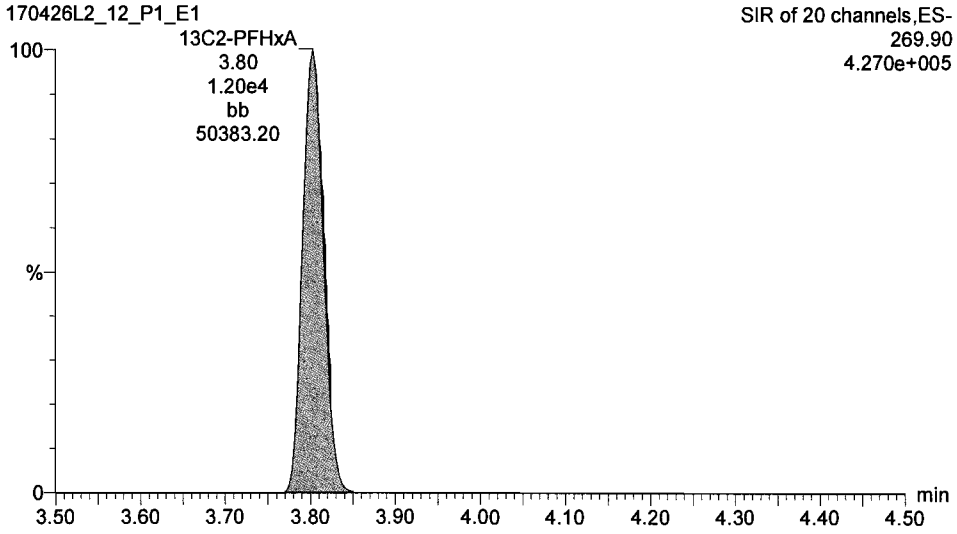
	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	79.90	6.50e3		0.000	3.56	3.42	9.03	YES	90.3	0.0010656
2	PFHxA	268.9	1.39e4		0.000	3.91	3.80	8.88	YES	88.8	0.0016015
3	PFHpA	316.90	1.72e4		0.000	4.28	4.28	10.6	YES	106.0	0.0023040
4	PFHxS	79.91	7.08e3		0.000	4.40	4.40	8.79	YES	87.9	0.0019523
5	PFOA	368.90	1.72e4		0.000	4.78	4.67	10.0	YES	100.4	0.0037567
6	PFNA	419.00	1.91e4		0.000	5.05	4.97	10.5	YES	105.5	0.0036044
7	PFOS	79.92	7.40e3		0.000	5.14	5.03	9.46	YES	94.6	0.0004988
8	PFDA	469.00	1.11e4		0.000	5.35	5.23	9.88	YES	98.8	0.0020344
9	N-MeFOSAA	419.01	7.06e3		0.000	5.47	5.32	8.31	YES	83.1	0.0003122
10	N-EtFOSAA	418.90			0.000	5.56			NO		
11	PFUnA	519.0	1.28e4		0.000	5.57	5.36	10.3	YES	103.2	0.0024210
12	PFDoA	569.00	1.51e4		0.000	5.76	5.54	9.27	YES	92.7	0.0010631
13	PFTrDA	619.00	1.66e4		0.000	5.92	5.70	10.7	YES	106.9	0.0011295
14	PFTeDA	669.00	1.38e4		0.000	6.06	5.79	10.5	YES	104.6	0.0013902
15	13C2-PFHxA	269.90	1.20e4	0.560	0.000	3.90	3.80	10.6	YES	105.9	0.0005590
16	13C2-PFDA	470.00	1.15e4	0.580	0.000	5.35	5.23	9.82	YES	98.2	0.0004745
17	d5-N-EtFOSAA	419.02	1.54e4	0.688	0.000	5.56	5.38	32.9	YES	82.3	0.0032883
18	13C2-PFOA	369.90	2.02e4	1.00	0.000	4.78	4.68	10.0	NO	100.0	0.0002853
19	13C4-PFOS	79.93	1.69e4	1.00	0.000	5.14	5.03	26.7	NO	100.0	0.0012532
20	d3-N-MeFOS	418.91	2.72e4	1.00	0.000	5.45	5.32	40.0	YES	100.0	0.0012347

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:41:38 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:42:31 Pacific Daylight Time

ID: SS170426L2-1 537 DW SSS 17D2609, Description: 537 DW SSS 17D2609, Name: 170426L2_12.wiff, Date: 27-Apr-2017, Time: 03:17:47, Instrument: , Lab: ©PE-SCIEX, User: sciex

13C2-PFHxA



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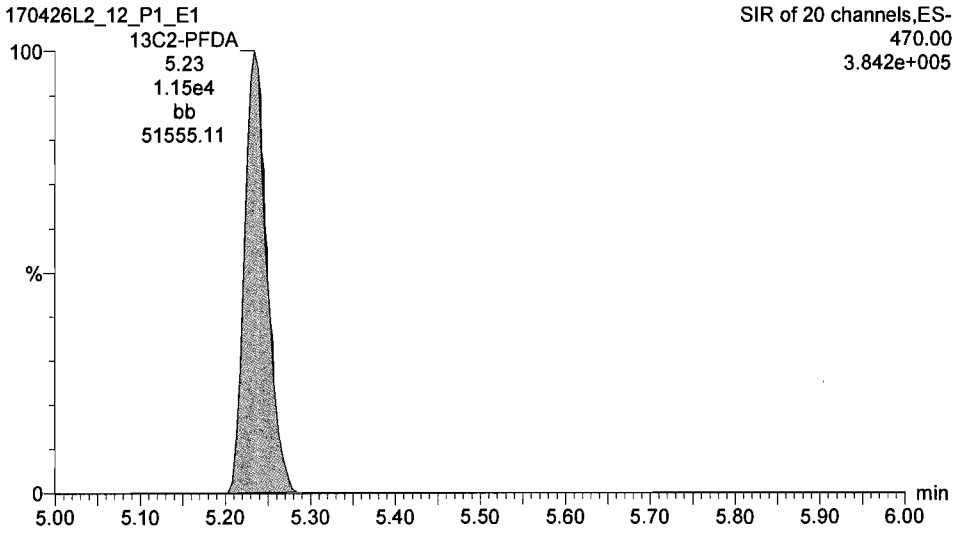

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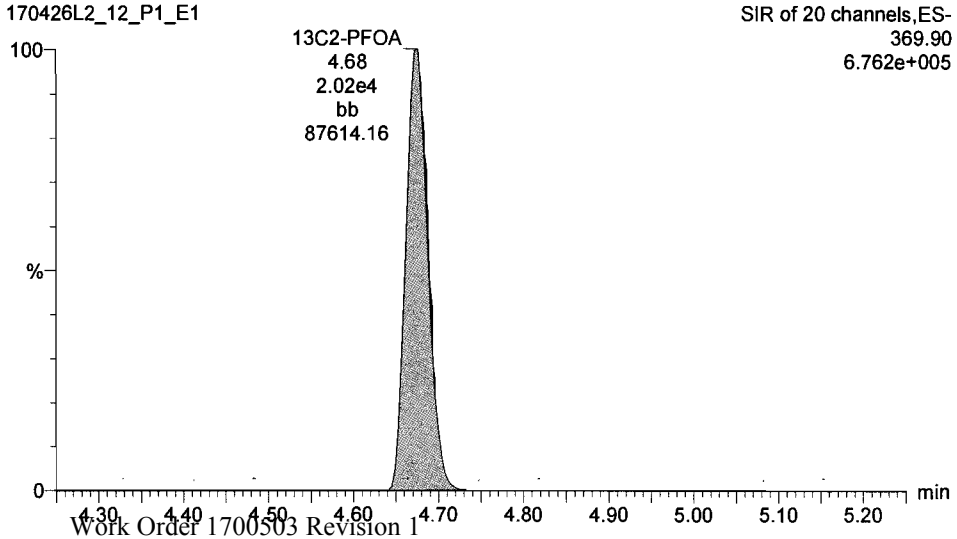

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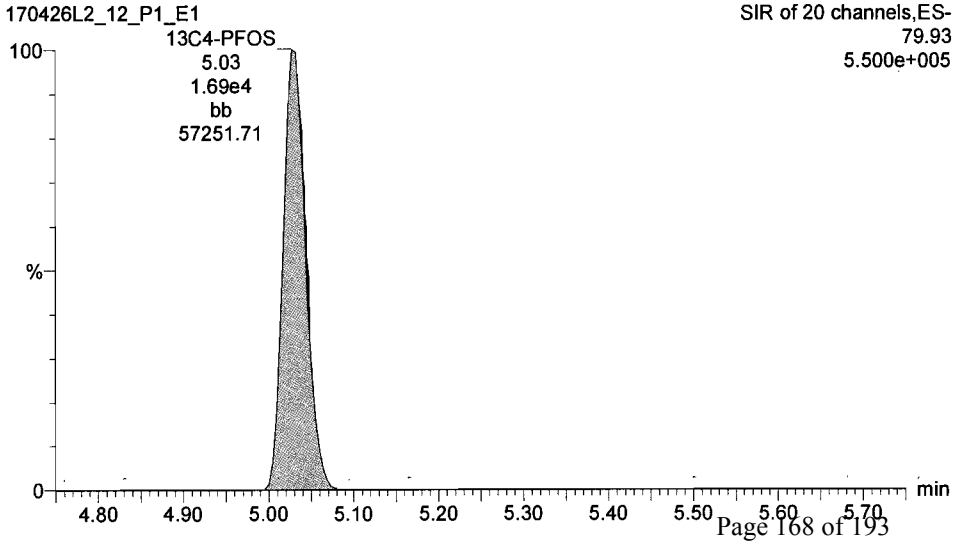

Analytical Standard Record

Vista Analytical Laboratory

17D1704

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
17D1701	EPA-537SS (IS)	17-Apr-17	Jamie C. Stockman	01-Mar-22	17-Apr-17 10:17 by JCS	3

Description:	537 SS (Surrogate)	Expires:	17-Apr-18
Standard Type:	Reagent	Prepared:	19-Apr-17
Solvent:	1%H2)/MeOH	Prepared By:	Jamie C. Stockman
Final Volume (mls):	15	Department:	LCMS
Vials:	1	Last Edit:	27-Apr-17 14:41 by AEW

Analyte	CAS Number	Concentration	Units
d5-EtFOSAA		0.8	ug/mL
13C2-PFHxA		0.2	ug/mL
13C2-PFDA		0.2	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

17D1701

EPA-537SS x3 1

Surrogate Primary Dilution Standard

PRODUCT CODE:	EPA-537SS
LOT NUMBER:	537SS0217
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	02/28/2017
LAST TESTED: (mm/dd/yyyy)	03/01/2017
EXPIRY DATE: (mm/dd/yyyy)	03/01/2022
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

EPA-537SS is a solution/mixture of two mass-labelled (^{13}C) perfluoroalkylcarboxylic acids and a mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acid. The components and their concentrations are given in Table A.

The mass-labelled perfluoroalkylcarboxylic acids both have chemical purities of >98% and isotopic purities of ≥99%. The mass-labelled perfluorooctanesulfonamidoacetic acid has a chemical purity of >98% and an isotopic purity of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (TIC)
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 acids to their respective methyl esters.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED

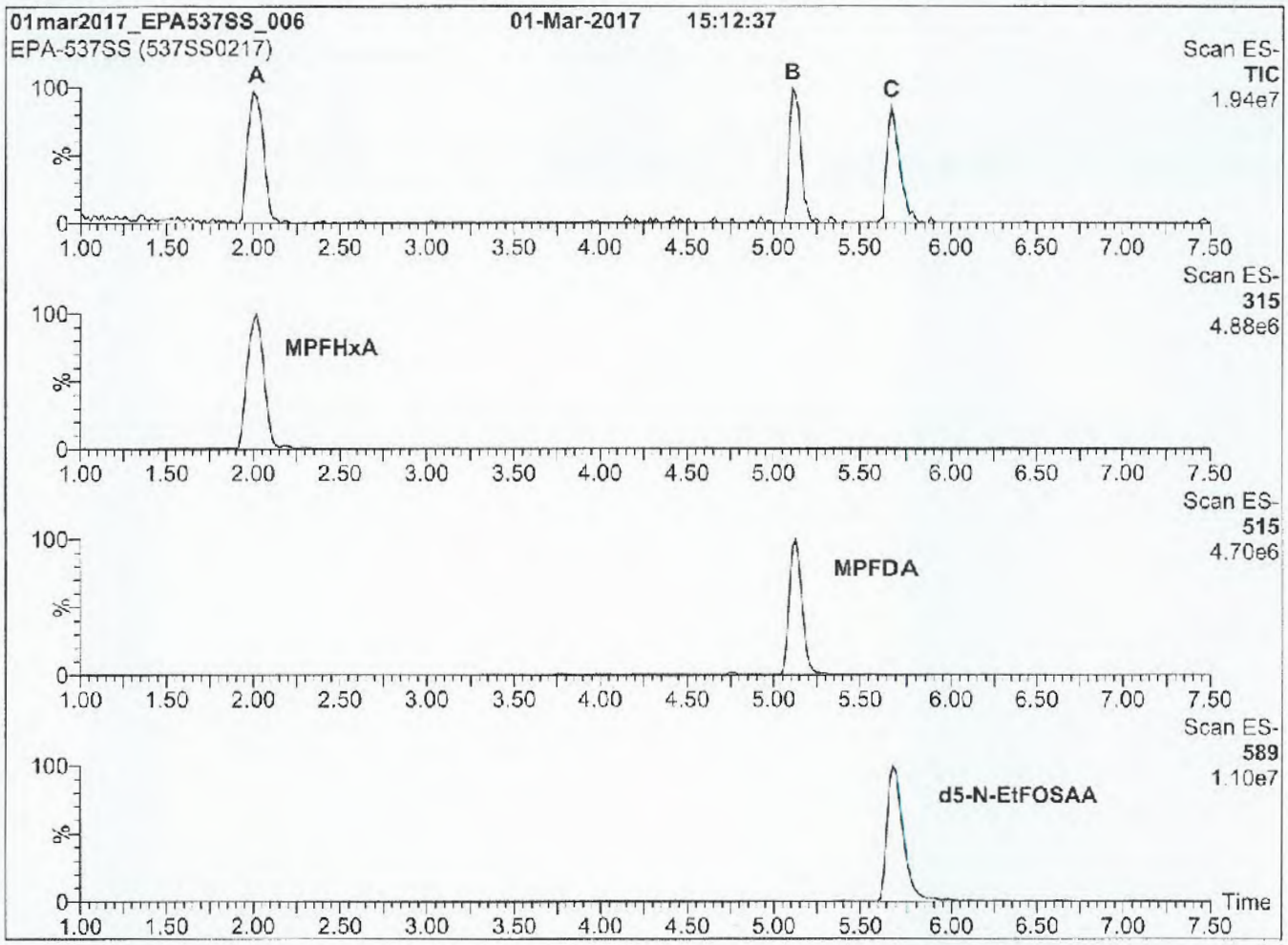
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-537SS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid	MPFHxA	1000	A
Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid	MPFDA	1000	B
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	4000	C

Certified By: _____ **Date:** 03/20/2017
(mm/dd/yyyy)
B.C. Chittim, General Manager

Figure 1: EPA-537SS; LC/MS Data (Total Ion Current Chromatogram)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min
and hold for 1 min before returning
to initial conditions in 0.5 min.
Time: 10 min

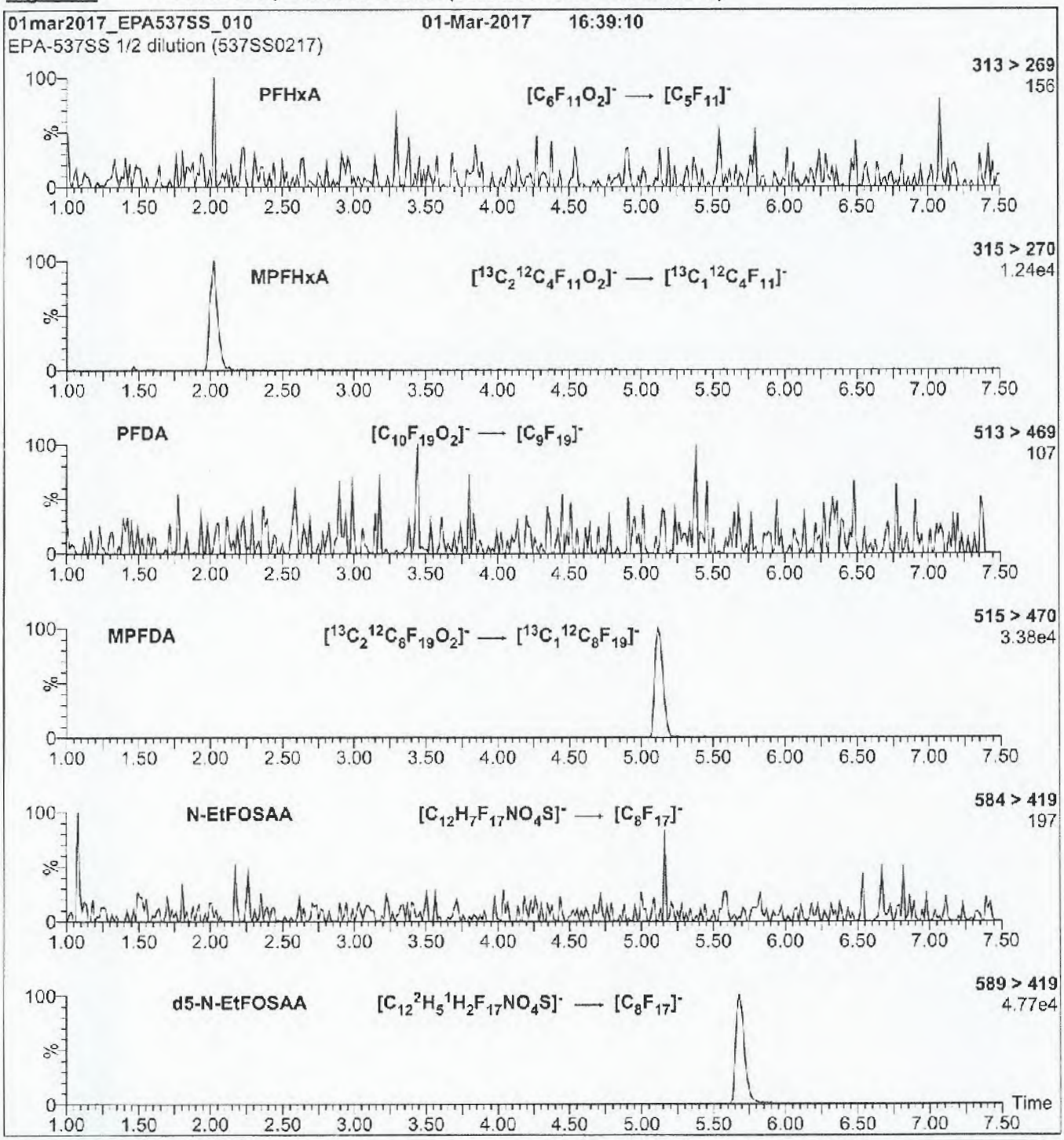
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: EPA-537SS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (EPA-537SS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 9-40 (variable)

Analytical Standard Record

Vista Analytical Laboratory

17D1705

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
17D1702	PFAC-24PAR Natives	17-Apr-17	Jamie C. Stockman	11-Dec-21	17-Apr-17 10:23 by JCS	4

Description:	537 DW NS	Expires:	17-Apr-18
Standard Type:	Analyte Spike	Prepared:	19-Apr-17
Solvent:	1%H2O in MeOH	Prepared By:	Jamie C. Stockman
Final Volume (mls):	8	Department:	LCMS
Vials:	1	Last Edit:	19-Apr-17 09:11 by JCS

Analyte	CAS Number	Concentration	Units
PFHpS	375-92-8	0.95	ug/mL
6:2 FTS	27619-97-2	0.95	ug/mL
8:2 FTS	70887-84-2	0.96	ug/mL
EtFOSAA		1	ug/mL
MeFOSAA		1	ug/mL
PFBA	375-22-4	1	ug/mL
PFBS	375-73-5	0.885	ug/mL
PFDA	335-76-2	1	ug/mL
PFDoA	307-55-1	1	ug/mL
4:2 FTS		0.935	ug/mL
PFHpA	375-85-9	1	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFHxA	307-24-4	1	ug/mL
PFHxS	355-46-4	0.91	ug/mL
PFNA	375-95-1	1	ug/mL
PFOA	335-67-1	1	ug/mL
PFOS	1763-23-1	0.925	ug/mL
PFOSA	754-91-6	1	ug/mL
PFPeA	2706-90-3	1	ug/mL
PFTeDA		1	ug/mL
PFTrDA	72629-94-8	1	ug/mL
PFDS	335-77-3	0.965	ug/mL

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CERTIFICATE OF ANALYSIS DOCUMENTATION

17D1702

PFAC-24PAR x4

Native Per- and Poly-fluoroalkyl Substance Precision and Recovery Standard Solution

PRODUCT CODE:	PFAC-24PAR
LOT NUMBER:	PFAC24PAR1216
SOLVENT(S):	Methanol / Isopropanol (4%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	12/09/2016
LAST TESTED: (mm/dd/yyyy)	12/11/2016
EXPIRY DATE: (mm/dd/yyyy)	12/11/2021
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-24PAR is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), seven native perfluoroalkylsulfonates (C_4, C_5, C_7, C_8, and C_{10} linear; C_8 and C_8 linear and branched), three native telomer sulfonates (4:2, 6:2, and 8:2), two native perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual native perfluoroalkylcarboxylic acids, native perfluoroalkylsulfonates, native telomer sulfonates, native perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of PFHxSK
Table C: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
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 acids to their respective methyl esters.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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INTENDED USE:

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HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **PFAC-24PAR; Components and Concentrations (ng/ml, ± 5% in Methanol / Isopropanol (4%) / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	2000	A
Perfluoro-n-pentanoic acid	PFPeA	2000	B
Perfluoro-n-hexanoic acid	PFHxA	2000	E
Perfluoro-n-heptanoic acid	PFHpA	2000	G
Perfluoro-n-octanoic acid	PFOA	2000	K
Perfluoro-n-nonanoic acid	PFNA	2000	M
Perfluoro-n-decanoic acid	PFDA	2000	Q
Perfluoro-n-undecanoic acid	PFUdA	2000	U
Perfluoro-n-dodecanoic acid	PFDoA	2000	X
Perfluoro-n-tridecanoic acid	PFTrDA	2000	Y
Perfluoro-n-tetradecanoic acid	PFTeDA	2000	Z
Perfluoro-1-octanesulfonamide	FOSA	2000	V
N-methylperfluoro-1-octanesulfonamidoacetic acid	N-MeFOSAA	2000	S
N-ethylperfluoro-1-octanesulfonamidoacetic acid	N-EtFOSAA	2000	T

Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	C
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	2000	1880	F
Potassium perfluorohexanesulfonate*	PFHxSK: linear isomer	1620	1480	I
	PFHxSK: ∑ branched isomers	378	344	H
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	2000	1900	L
Potassium perfluorooctanesulfonate**	PFOSK: linear isomer	1580	1460	O
	PFOSK: ∑ branched isomers	422	391	N
Sodium perfluoro-1-nonanesulfonate	L-PFNS	2000	1920	R
Sodium perfluoro-1-decanesulfonate	L-PFDS	2000	1930	W
Sodium 1H,1H,2H,2H-perfluoro-1-hexanesulfonate	4:2FTS	2000	1870	D
Sodium 1H,1H,2H,2H-perfluoro-1-octanesulfonate	6:2FTS	2000	1900	J
Sodium 1H,1H,2H,2H-perfluoro-1-decanesulfonate	8:2FTS	2000	1920	P

* See Table B for percent composition of linear and branched PFHxSK isomers.
** See Table C for percent composition of linear and branched PFOSK isomers.

Table B: **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	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FSO_3^-K^+$	2.9	18.9
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.

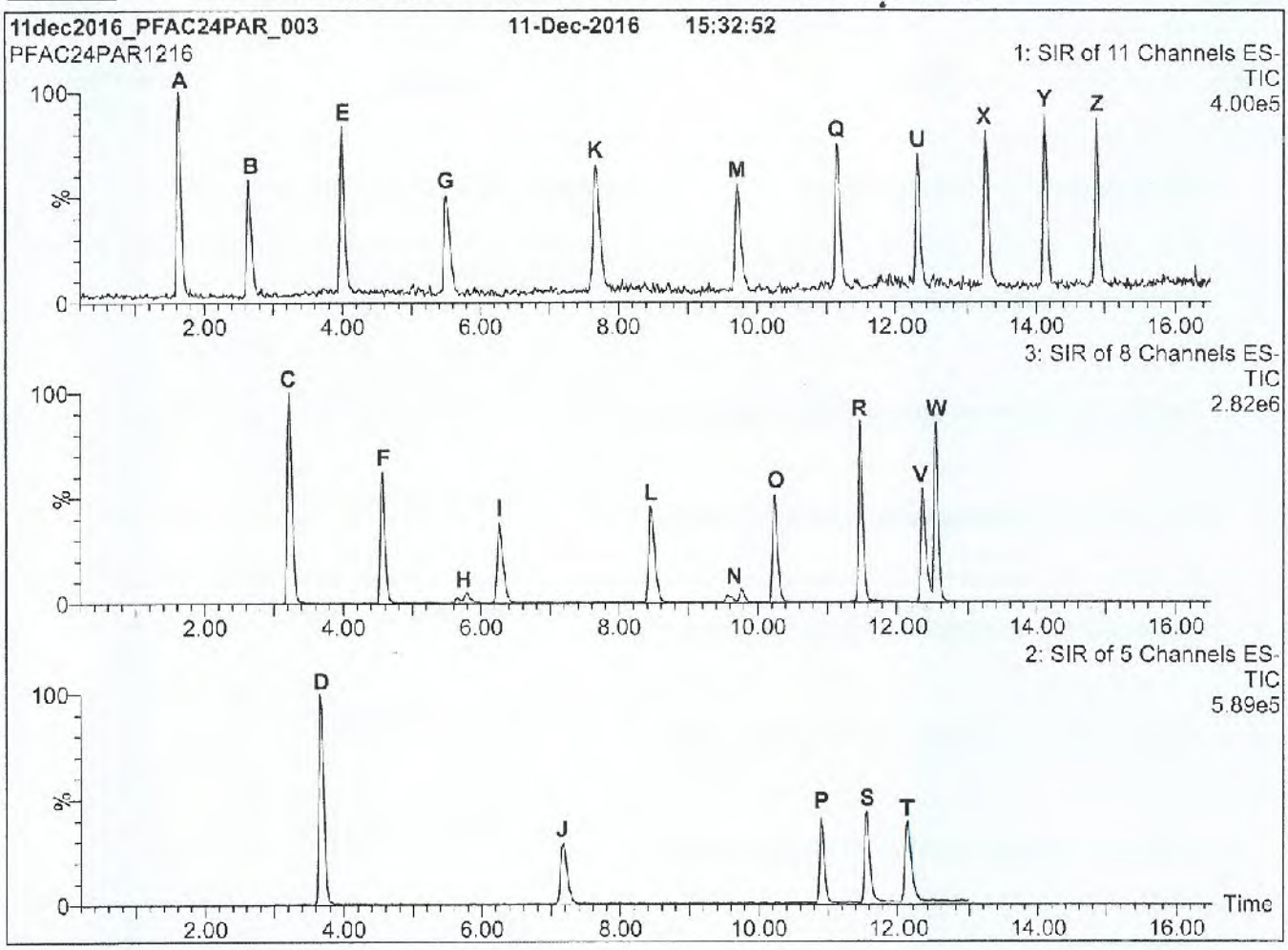
Table C: **PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

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	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: B.G. Chittim **Date:** 12/13/2016 (mm/dd/yyyy)

Figure 1: **PFAC-24PAR; LC/MS Data (Total Ion Current Chromatogram; SIR)**



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 55% organic over 3.5 min.
Ramp to 70% organic over 6.5 min.
Ramp to 85% organic over 5 min and hold for
1 min before returning to initial conditions in 0.5 min.
Time: 17 min

Flow: 300 µl/min

MS Parameters

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = variable (10-70)
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: PFAC-24PAR; LC/MS/MS Data (Selected MRM Transitions)

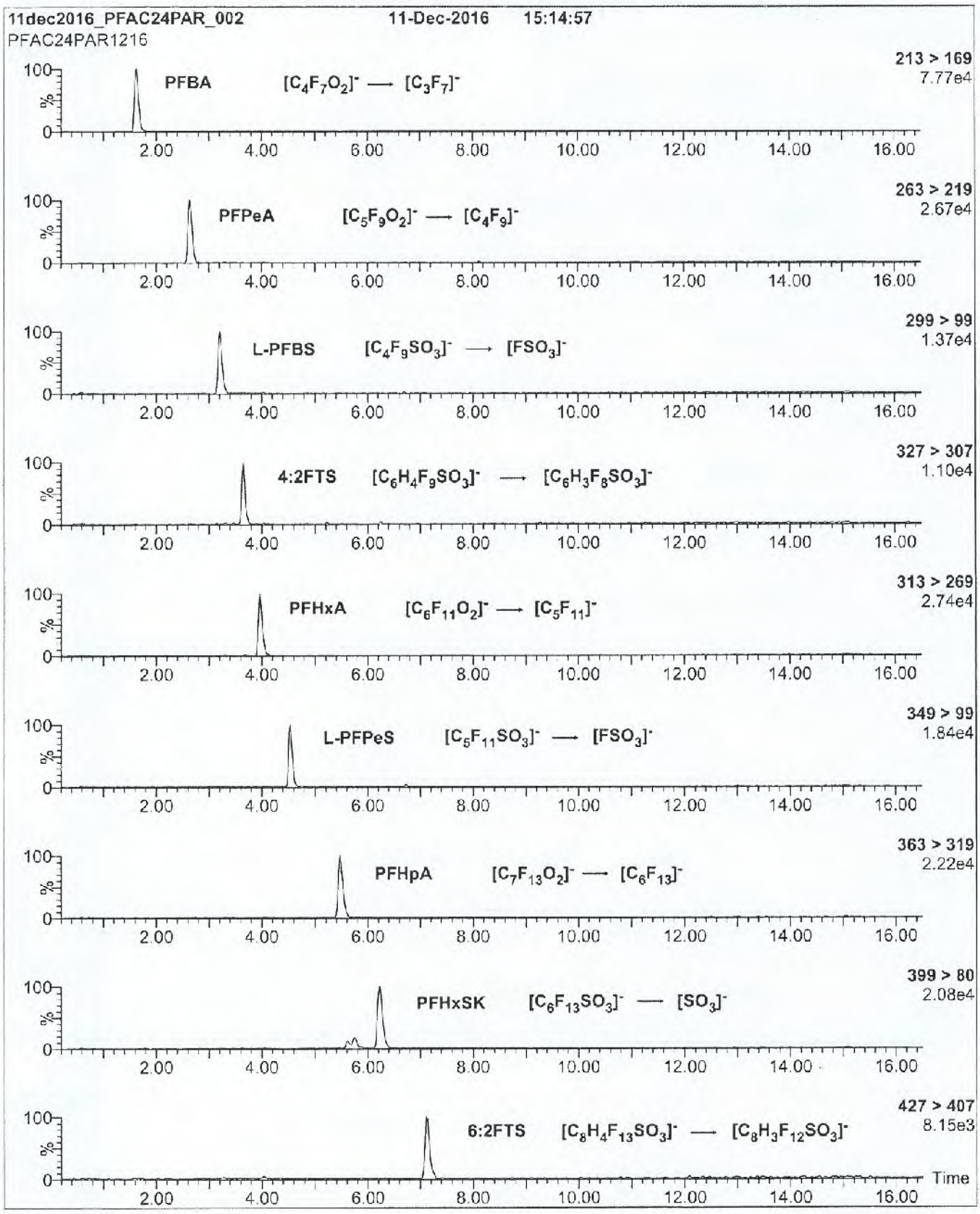


Figure 2: PFAC-24PAR; LC/MS/MS Data (Selected MRM Transitions)

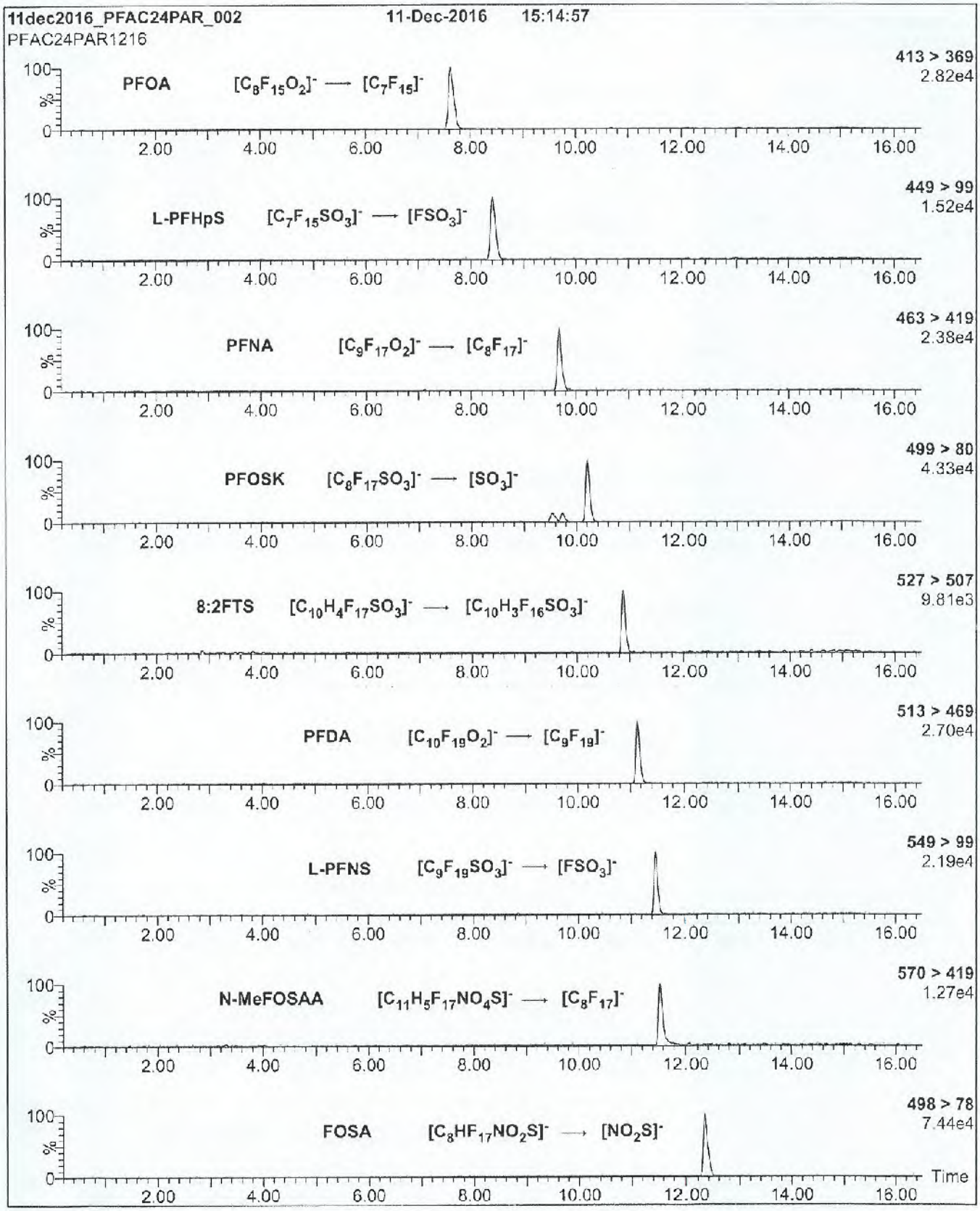
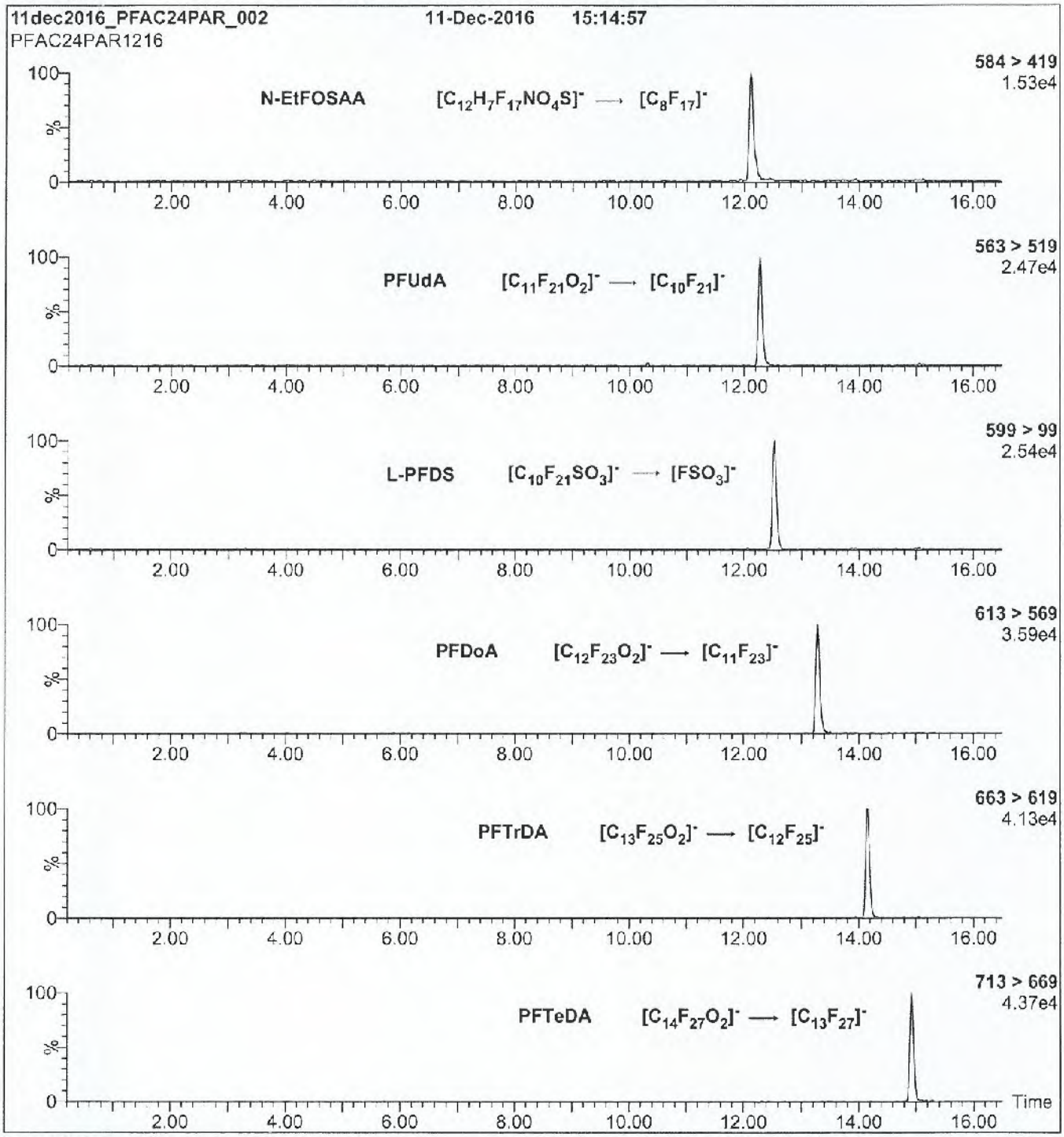


Figure 2: **PFAC-24PAR; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-24PAR)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 8-50 (variable)

Analytical Standard Record

Vista Analytical Laboratory

17D1706

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
17D1703	EPA-537IS (RS)	17-Apr-17	Jamie C. Stockman	29-Oct-21	17-Apr-17 11:07 by JCS	3

Description:	537 IS (RS)	Expires:	17-Apr-18
Standard Type:	Reagent	Prepared:	19-Apr-17
Solvent:	1%H2O/MeOH	Prepared By:	Jamie C. Stockman
Final Volume (mls):	15	Department:	LCMS
Vials:	1	Last Edit:	19-Apr-17 09:11 by JCS

Analyte	CAS Number	Concentration	Units
d3-MeFOSAA		0.8	ug/mL
13C4-PFOS		0.574	ug/mL
13C2-PFOA		0.2	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-537IS x3

Internal Standard
Primary Dilution Standard

1701703

PRODUCT CODE:	EPA-537IS
LOT NUMBER:	537IS1016
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	10/25/2016
LAST TESTED: (mm/dd/yyyy)	10/29/2016
EXPIRY DATE: (mm/dd/yyyy)	10/29/2021
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

EPA-537IS is a solution/mixture of a mass-labelled (^{13}C) perfluoroalkylcarboxylic acid, a mass-labelled (^{13}C) perfluoroalkylsulfonate, and a mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acid. The components and their concentrations are given in Table A.

The mass-labelled perfluoroalkylcarboxylic acid and the mass-labelled perfluoroalkylsulfonate both have chemical purities of >98% and isotopic purities of ≥99%. The mass-labelled perfluorooctanesulfonamidoacetic acid has a chemical purity of >98% and an isotopic purity of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (TIC)
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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

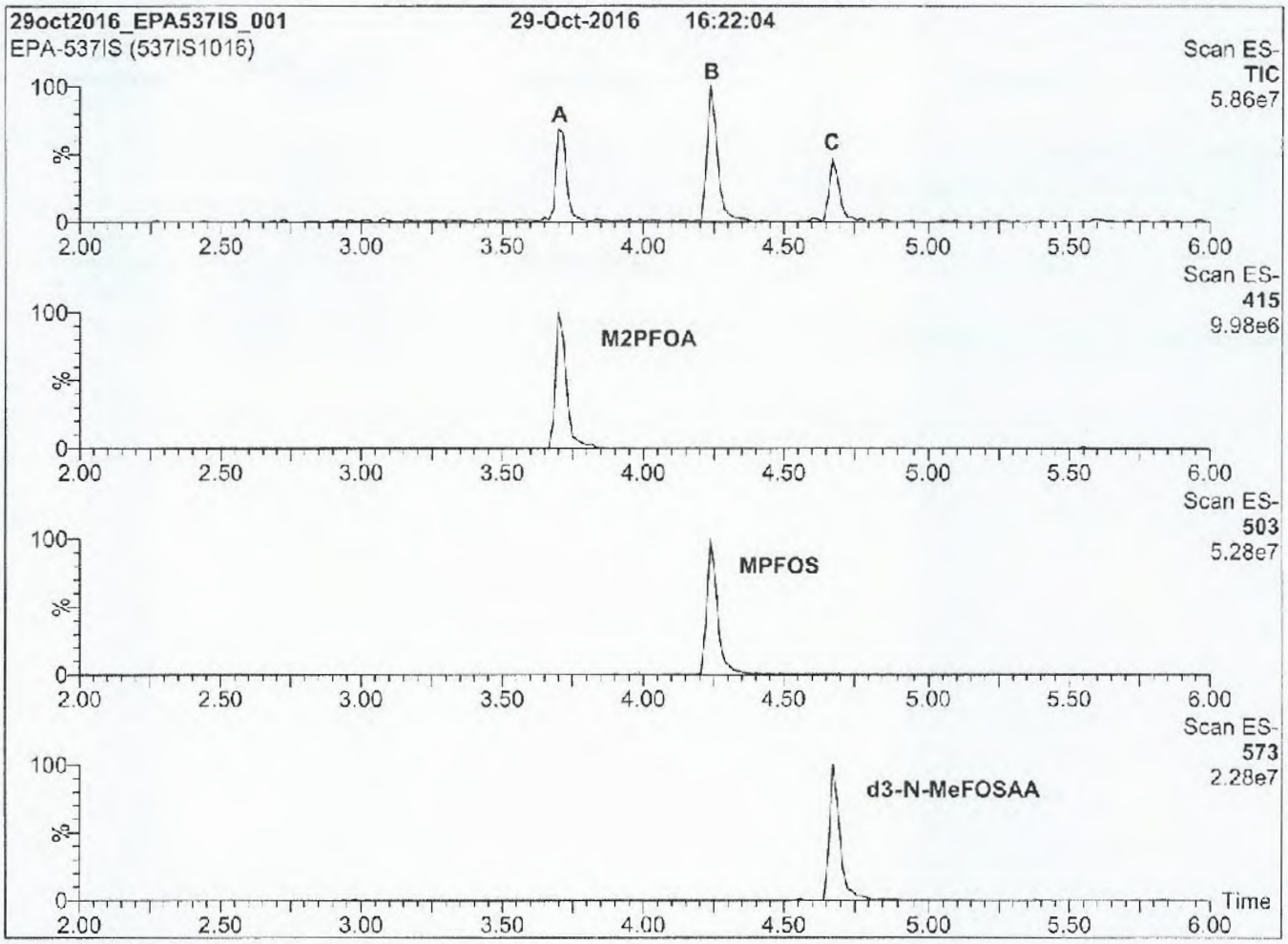
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at Info@well-labs.com

Table A: **EPA-537IS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid	M2PFOA	1000		A
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	4000		C
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate	MPFOS	3000	2870	B

Certified By: B.G. Chittim **Date:** 11/14/2016 (mm/dd/yyyy)

Figure 1: **EPA-537IS; LC/MS Data (Total Ion Current Chromatogram)**



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min
and hold for 2 min before returning
to initial conditions in 0.5 min.
Time: 10 min

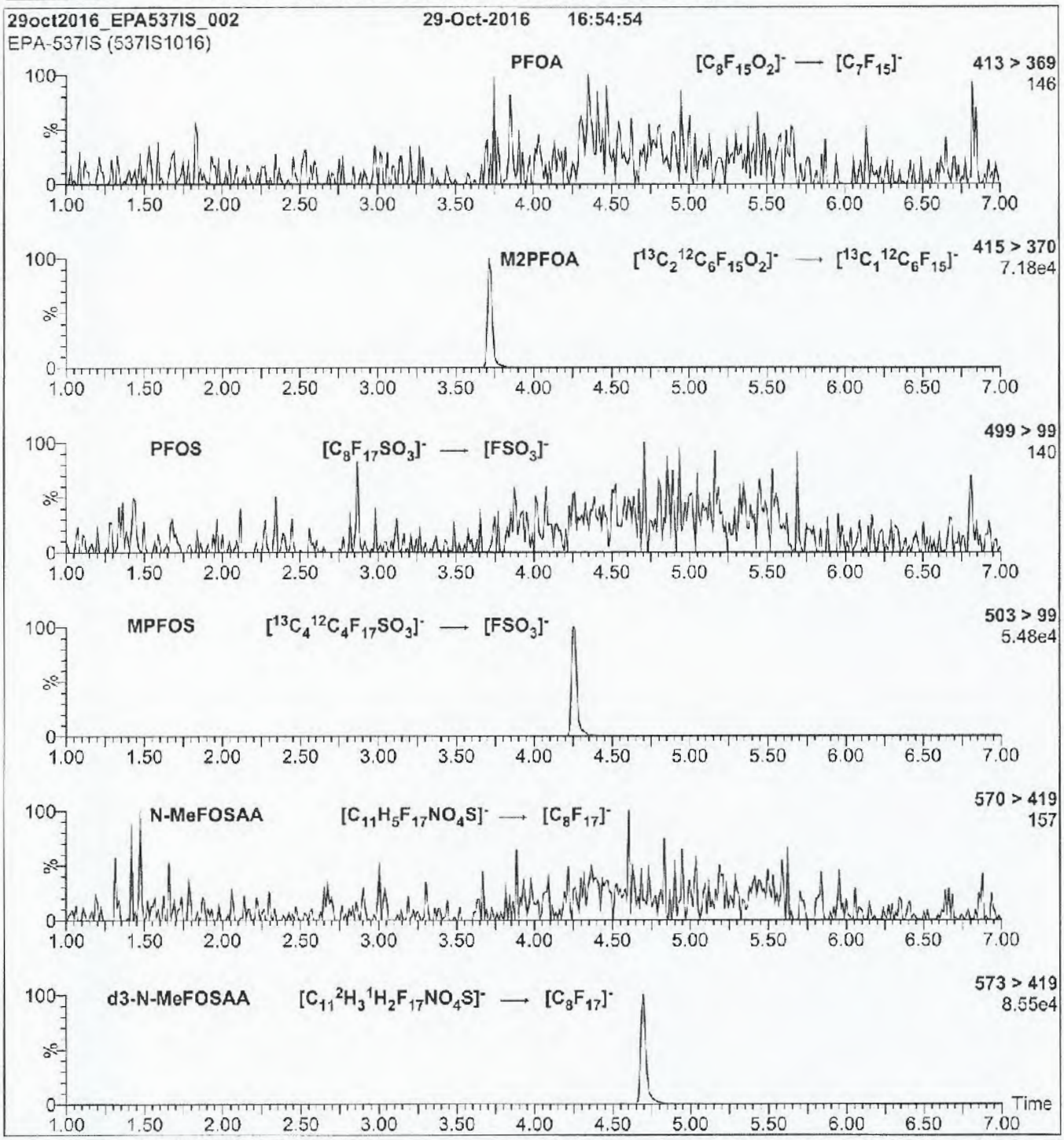
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 25.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: EPA-537IS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (EPA-537IS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 11-40 (variable)

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"DUP01-20170418","EPA Method 537","Initial","1700503-01","Vista","1763-23-1","PFOS","4.14","ng/L","J","1.72","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.285","0.001","8.77",""
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"DUP01-20170418","EPA Method 537","Initial","1700503-01","Vista","13C2-PFDA","13C2-PFDA","98.0","%R","","-99","NA","","SURR","98.0","","-99","NA","YES","100","","0.285","0.001","-99",""
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"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","375-85-9","PFHpA","8.70","ng/L","U","2.78","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.70",""
"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","355-46-

4","PFHxS","2.80","ng/L","J","1.54","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.70",""
"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","335-67-
1","PFOA","9.05","ng/L","J","3.71","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.70",""
"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","375-95-
1","PFNA","8.70","ng/L","U","3.04","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.70",""
"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","1763-23-
1","PFOS","5.01","ng/L","J","1.70","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.70",""
"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","13C2-PFHxA","13C2-
PFHxA","118","%R","","-99","NA","","SURR","118","","-99","NA","YES","100","","0.287","0.001","-99",""
"RW27-20170420","EPA Method 537","Initial","1700503-04","Vista","13C2-PFDA","13C2-
PFDA","106","%R","","-99","NA","","SURR","106","","-99","NA","YES","100","","0.287","0.001","-99",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","375-73-
5","PFBS","8.81","ng/L","U","2.21","LOD","","TRG","","","17.6","LOQ","YES","-99","","0.284","0.001","8.81",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","375-85-
9","PFHpA","8.81","ng/L","U","2.82","LOD","","TRG","","","17.6","LOQ","YES","-99","","0.284","0.001","8.81",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","355-46-
4","PFHxS","8.81","ng/L","U","1.56","LOD","","TRG","","","17.6","LOQ","YES","-99","","0.284","0.001","8.81",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","335-67-
1","PFOA","8.81","ng/L","U","3.76","LOD","","TRG","","","17.6","LOQ","YES","-99","","0.284","0.001","8.81",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","375-95-
1","PFNA","8.81","ng/L","U","3.07","LOD","","TRG","","","17.6","LOQ","YES","-99","","0.284","0.001","8.81",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","1763-23-
1","PFOS","8.81","ng/L","U","1.73","LOD","","TRG","","","17.6","LOQ","YES","-99","","0.284","0.001","8.81",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","13C2-PFHxA","13C2-
PFHxA","127","%R","","-99","NA","","SURR","127","","-99","NA","YES","100","","0.284","0.001","-99",""
"FRB-27-20170420","EPA Method 537","Initial","1700503-05","Vista","13C2-PFDA","13C2-
PFDA","144","%R","H","-99","NA","","SURR","144","","-99","NA","YES","100","","0.284","0.001","-99",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","375-73-
5","PFBS","8.73","ng/L","U","2.19","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.286","0.001","8.73",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","375-85-
9","PFHpA","8.73","ng/L","U","2.79","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.286","0.001","8.73",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","355-46-
4","PFHxS","1.61","ng/L","J","1.54","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.286","0.001","8.73",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","335-67-
1","PFOA","9.17","ng/L","J","3.73","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.286","0.001","8.73",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","375-95-
1","PFNA","8.73","ng/L","U","3.05","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.286","0.001","8.73",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","1763-23-
1","PFOS","4.38","ng/L","J","1.71","LOD","","TRG","","","17.5","LOQ","YES","-99","","0.286","0.001","8.73",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","13C2-PFHxA","13C2-
PFHxA","117","%R","","-99","NA","","SURR","117","","-99","NA","YES","100","","0.286","0.001","-99",""
"RW17-20170420","EPA Method 537","Initial","1700503-06","Vista","13C2-PFDA","13C2-
PFDA","118","%R","","-99","NA","","SURR","118","","-99","NA","YES","100","","0.286","0.001","-99",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","375-73-
5","PFBS","9.00","ng/L","U","2.26","LOD","","TRG","","","18.0","LOQ","YES","-99","","0.278","0.001","9.00",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","375-85-
9","PFHpA","9.00","ng/L","U","2.88","LOD","","TRG","","","18.0","LOQ","YES","-99","","0.278","0.001","9.00",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","355-46-
4","PFHxS","9.00","ng/L","U","1.59","LOD","","TRG","","","18.0","LOQ","YES","-99","","0.278","0.001","9.00",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","335-67-
1","PFOA","9.00","ng/L","U","3.84","LOD","","TRG","","","18.0","LOQ","YES","-99","","0.278","0.001","9.00",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","375-95-
1","PFNA","9.00","ng/L","U","3.14","LOD","","TRG","","","18.0","LOQ","YES","-99","","0.278","0.001","9.00",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","1763-23-

1","PFOS","9.00","ng/L","U","1.76","LOD","","TRG","","","18.0","LOQ","YES","-99","","0.278","0.001","9.00",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","13C2-PFHxA","13C2-
PFHxA","123","%R","","-99","NA","","SURR","123","","-99","NA","YES","100","","0.278","0.001","-99",""
"FRB-17-20170420","EPA Method 537","Initial","1700503-07","Vista","13C2-PFDA","13C2-
PFDA","142","%R","H","-99","NA","","SURR","142","","-99","NA","YES","100","","0.278","0.001","-99",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","375-73-
5","PFBS","9.09","ng/L","J","2.22","LOD","","TRG","","","17.7","LOQ","YES","-99","","0.283","0.001","8.84",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","375-85-
9","PFHpA","4.32","ng/L","J","2.83","LOD","","TRG","","","17.7","LOQ","YES","-99","","0.283","0.001","8.84",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","355-46-
4","PFHxS","2.59","ng/L","J","1.56","LOD","","TRG","","","17.7","LOQ","YES","-99","","0.283","0.001","8.84",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","335-67-
1","PFOA","16.7","ng/L","J","3.77","LOD","","TRG","","","17.7","LOQ","YES","-99","","0.283","0.001","8.84",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","375-95-
1","PFNA","8.84","ng/L","U","3.08","LOD","","TRG","","","17.7","LOQ","YES","-99","","0.283","0.001","8.84",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","1763-23-
1","PFOS","12.5","ng/L","J","1.73","LOD","","TRG","","","17.7","LOQ","YES","-99","","0.283","0.001","8.84",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","13C2-PFHxA","13C2-
PFHxA","121","%R","","-99","NA","","SURR","121","","-99","NA","YES","100","","0.283","0.001","-99",""
"RW23-20170420","EPA Method 537","Initial","1700503-08","Vista","13C2-PFDA","13C2-
PFDA","139","%R","H","-99","NA","","SURR","139","","-99","NA","YES","100","","0.283","0.001","-99",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","375-73-
5","PFBS","8.88","ng/L","U","2.23","LOD","","TRG","","","17.8","LOQ","YES","-99","","0.281","0.001","8.88",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","375-85-
9","PFHpA","8.88","ng/L","U","2.84","LOD","","TRG","","","17.8","LOQ","YES","-99","","0.281","0.001","8.88",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","355-46-
4","PFHxS","8.88","ng/L","U","1.57","LOD","","TRG","","","17.8","LOQ","YES","-99","","0.281","0.001","8.88",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","335-67-
1","PFOA","8.88","ng/L","U","3.79","LOD","","TRG","","","17.8","LOQ","YES","-99","","0.281","0.001","8.88",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","375-95-
1","PFNA","8.88","ng/L","U","3.10","LOD","","TRG","","","17.8","LOQ","YES","-99","","0.281","0.001","8.88",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","1763-23-
1","PFOS","8.88","ng/L","U","1.74","LOD","","TRG","","","17.8","LOQ","YES","-99","","0.281","0.001","8.88",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","13C2-PFHxA","13C2-
PFHxA","124","%R","","-99","NA","","SURR","124","","-99","NA","YES","100","","0.281","0.001","-99",""
"FRB-23-20170420","EPA Method 537","Initial","1700503-09","Vista","13C2-PFDA","13C2-
PFDA","111","%R","","-99","NA","","SURR","111","","-99","NA","YES","100","","0.281","0.001","-99",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","375-73-
5","PFBS","8.57","ng/L","J","2.19","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.71",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","375-85-
9","PFHpA","4.14","ng/L","J","2.79","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.71",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","355-46-
4","PFHxS","2.58","ng/L","J","1.54","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.71",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","335-67-
1","PFOA","15.3","ng/L","J","3.72","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.71",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","375-95-
1","PFNA","8.71","ng/L","U","3.04","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.71",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","1763-23-
1","PFOS","11.6","ng/L","J","1.71","LOD","","TRG","","","17.4","LOQ","YES","-99","","0.287","0.001","8.71",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","13C2-PFHxA","13C2-
PFHxA","127","%R","","-99","NA","","SURR","127","","-99","NA","YES","100","","0.287","0.001","-99",""
"DUP02-20170420","EPA Method 537","Initial","1700503-10","Vista","13C2-PFDA","13C2-
PFDA","109","%R","","-99","NA","","SURR","109","","-99","NA","YES","100","","0.287","0.001","-99",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","375-73-

5","PFBS","10.0","ng/L","U","2.51","LOD","","TRG","","","20.0","LOQ","YES","-99","","0.250","0.001","10.0",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","375-85-
9","PFHpA","10.0","ng/L","U","3.20","LOD","","TRG","","","20.0","LOQ","YES","-99","","0.250","0.001","10.0",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","355-46-
4","PFHxS","10.0","ng/L","U","1.77","LOD","","TRG","","","20.0","LOQ","YES","-99","","0.250","0.001","10.0",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","335-67-
1","PFOA","10.0","ng/L","U","4.27","LOD","","TRG","","","20.0","LOQ","YES","-99","","0.250","0.001","10.0",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","375-95-
1","PFNA","10.0","ng/L","U","3.49","LOD","","TRG","","","20.0","LOQ","YES","-99","","0.250","0.001","10.0",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","1763-23-
1","PFOS","10.0","ng/L","U","1.96","LOD","","TRG","","","20.0","LOQ","YES","-99","","0.250","0.001","10.0",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","13C2-PFHxA","13C2-
PFHxA","118","%R","","-99","NA","","SUR","118","","-99","NA","YES","100","","0.250","0.001","-99",""
"B7D0109-BLK1","EPA Method 537","Initial","B7D0109-BLK1","Vista","13C2-PFDA","13C2-
PFDA","115","%R","","-99","NA","","SUR","115","","-99","NA","YES","100","","0.250","0.001","-99",""
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","375-73-
5","PFBS","77.4","ng/L","","2.51","LOD","","TRG","109","","20.0","LOQ","YES","70.8","","0.250","0.001","10.0",""
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","375-85-
9","PFHpA","84.3","ng/L","","3.20","LOD","","TRG","105","","20.0","LOQ","YES","80.0","","0.250","0.001","10.0",
""
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","355-46-
4","PFHxS","81.6","ng/L","","1.77","LOD","","TRG","112","","20.0","LOQ","YES","72.8","","0.250","0.001","10.0","
"
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","335-67-
1","PFOA","83.5","ng/L","","4.27","LOD","","TRG","104","","20.0","LOQ","YES","80.0","","0.250","0.001","10.0","
"
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","375-95-
1","PFNA","87.2","ng/L","","3.49","LOD","","TRG","109","","20.0","LOQ","YES","80.0","","0.250","0.001","10.0","
"
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","1763-23-
1","PFOS","86.0","ng/L","","1.96","LOD","","TRG","116","","20.0","LOQ","YES","74.0","","0.250","0.001","10.0",""
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","13C2-PFHxA","13C2-
PFHxA","122","%R","","-99","NA","","SUR","122","","-99","NA","YES","100","","0.250","0.001","-99",""
"B7D0109-BS1","EPA Method 537","Initial","B7D0109-BS1","Vista","13C2-PFDA","13C2-
PFDA","129","%R","","-99","NA","","SUR","129","","-99","NA","YES","100","","0.250","0.001","-99",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","375-73-
5","PFBS","63.9","ng/L","","2.24","LOD","","TRG","100.0","","17.8","LOQ","YES","63.1","RW17-
20170420","0.280","0.001","8.92",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","375-85-
9","PFHpA","77.5","ng/L","","2.85","LOD","","TRG","106","","17.8","LOQ","YES","71.3","RW17-
20170420","0.280","0.001","8.92",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","355-46-
4","PFHxS","64.8","ng/L","","1.58","LOD","","TRG","97.4","","17.8","LOQ","YES","64.9","RW17-
20170420","0.280","0.001","8.92",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","335-67-
1","PFOA","89.0","ng/L","","3.81","LOD","","TRG","112","","17.8","LOQ","YES","71.3","RW17-
20170420","0.280","0.001","8.92",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","375-95-
1","PFNA","72.9","ng/L","","3.11","LOD","","TRG","101","","17.8","LOQ","YES","71.3","RW17-
20170420","0.280","0.001","8.92",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","1763-23-
1","PFOS","74.3","ng/L","","1.75","LOD","","TRG","106","","17.8","LOQ","YES","66.0","RW17-
20170420","0.280","0.001","8.92",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","13C2-PFHxA","13C2-

PFHxA","119","%R","","-99","NA","","SUR","119","","-99","NA","YES","100","RW17-20170420","0.280","0.001","-99",""
"B7D0109-MS1","EPA Method 537","Initial","B7D0109-MS1","Vista","13C2-PFDA","13C2-PFDA","114","%R","","-99","NA","","SUR","114","","-99","NA","YES","100","RW17-20170420","0.280","0.001","-99",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","375-73-5","PFBS","68.3","ng/L","","2.25","LOD","","TRG","106","5.83","17.9","LOQ","YES","63.5","RW17-20170420","0.279","0.001","8.97",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","375-85-9","PFHpA","81.0","ng/L","","2.87","LOD","","TRG","110","3.70","17.9","LOQ","YES","71.7","RW17-20170420","0.279","0.001","8.97",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","355-46-4","PFHxS","73.6","ng/L","","1.59","LOD","","TRG","110","12.2","17.9","LOQ","YES","65.3","RW17-20170420","0.279","0.001","8.97",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","335-67-1","PFOA","88.8","ng/L","","3.83","LOD","","TRG","111","0.897","17.9","LOQ","YES","71.7","RW17-20170420","0.279","0.001","8.97",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","375-95-1","PFNA","79.1","ng/L","","3.13","LOD","","TRG","109","7.62","17.9","LOQ","YES","71.7","RW17-20170420","0.279","0.001","8.97",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","1763-23-1","PFOS","77.0","ng/L","","1.76","LOD","","TRG","109","2.79","17.9","LOQ","YES","66.4","RW17-20170420","0.279","0.001","8.97",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","13C2-PFHxA","13C2-PFHxA","122","%R","","-99","NA","","SUR","122","","-99","NA","YES","100","RW17-20170420","0.279","0.001","-99",""
"B7D0109-MSD1","EPA Method 537","Initial","B7D0109-MSD1","Vista","13C2-PFDA","13C2-PFDA","134","%R","H","-99","NA","","SUR","134","","-99","NA","YES","100","RW17-20170420","0.279","0.001","-99",""
"NAWC Trenton, NJ","NAWC Trenton, NJ","DUP01-20170418","04/18/2017 16:00","DW","1700503-01","NM","","3.10","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017 04:31","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
"NAWC Trenton, NJ","NAWC Trenton, NJ","RW15-20170420","04/20/2017 12:20","DW","1700503-02","NM","","3.10","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017 04:43","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
"NAWC Trenton, NJ","NAWC Trenton, NJ","FRB-15-20170420","04/20/2017 12:15","DW","1700503-03","NM","","3.10","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017 04:55","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
"NAWC Trenton, NJ","NAWC Trenton, NJ","RW27-20170420","04/20/2017 12:50","DW","1700503-04","NM","","3.10","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017 05:08","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
"NAWC Trenton, NJ","NAWC Trenton, NJ","FRB-27-20170420","04/20/2017 12:45","DW","1700503-05","NM","","3.10","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017 05:20","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
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00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
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00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","04/21/2017 09:34","01/01/1900 00:00",""
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BLK1","MB","","-99","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017
04:19","Vista","COA","WET","NA","1","NA","NA","01/01/1900
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"NAWC Trenton, NJ","NAWC Trenton, NJ","B7D0109-BS1","01/01/1900 00:00","DW","B7D0109-
BS1","LCS","","-99","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017
03:42","Vista","COA","WET","NA","1","NA","NA","01/01/1900
00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","01/01/1900 00:00","01/01/1900 00:00",""
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MS1","MS","","-99","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017
05:44","Vista","COA","WET","NA","1","NA","NA","01/01/1900
00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","01/01/1900 00:00","01/01/1900 00:00",""
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MSD1","MSD","","-99","EPA Method 537","METHOD","Initial","04/24/2017 08:04","04/27/2017
05:57","Vista","COA","WET","NA","1","NA","NA","01/01/1900
00:00","100","B7D0109","B7D0109","NA","S7D0046","1700503","01/01/1900 00:00","01/01/1900 00:00",""

TETRA TECH

INTERNAL CORRESPONDENCE

TO: **MARY MANG** **DATE:** **MAY 19, 2017**

FROM: **MEGAN RITCHIE** **COPIES:** **DV FILE/**

SUBJECT: **ORGANIC DATA VALIDATION – POLYFLUOROAKLYL SUBSTANCES (PFAS)**
CTO WE08 - FORMER NAWC TRENTON
SDG 1700503

SAMPLES: 10 / Private Well Water / PFAS

RW15-20170420	RW017-20170420	DUP01-20170418
FRB-15-20170420	FRB-17-20170420	DUP02-20170420
RW027-20170420	RW23-20170420	
FRB-27-20170420	FRB-23-20170420	

Overview

The sample set for NAWC Trenton, SDG 1700503 consists of four (4) private well water environmental samples and four (4) field reagent blanks (designated FRB-). One field duplicate pair (RW23-20170420 and DUP02-20170420) is included in this data set. The field duplicate sample DUP01-20170418 is a duplicate of sample RW01-20170418 which is included in SDG 1700466. The results of the field duplicate pair are discussed in this validation report. The samples were analyzed for six polyfluoroalkyl substances (PFAS).

The samples were collected by Tetra Tech on April 18 and 20, 2017 and analyzed by Vista Analytical Laboratory of Sheffield, California. The analysis was conducted in accordance with EPA Method 537 Revision 1.1 analytical and reporting protocols.

The parameters contained in this SDG were validated with regard to the following parameters: data completeness, holding times, initial/continuing calibrations, laboratory method blanks, surrogate spike recoveries, laboratory control sample results, matrix spike/matrix spike duplicate results, field and laboratory duplicate results, internal standard performance, chromatographic resolution, analyte identification, analyte quantitation, and detection limits. Areas of concern are listed below.

Minor

- The surrogate recovery for 13C2-PFDA exceeded the upper QC limit for sample RW23-20170420. The detected results in sample RW23-20170420 were qualified as estimated (J).

- Detected results reported below the LOQ but above the Detection Limit (DL) were qualified as estimated (J).

Notes

The surrogate recoveries for 13C2-PFDA exceeded the upper QC limit for samples FRB-27-20170420 and FRB-17-20170420. No action was taken because there were no detections were reported in these sample.

The parent sample of DUP01-2070418 was included in SDG 1700466 (sample RW01-20170418). It was suspected during review of SDG 1700466 that sample RW01-20170418 was most likely switched with its corresponding field reagent blank FRB-01-20170418. Therefore, the results for DUP01-20170418 from this SDG were compared to the results of sample FRB-01-20170418. Duplicate precision was within the QC criteria.

All analyses were conducted within the hold times specified by the site specific Sampling and Analysis Plan (SAP) and the analytical method.

Non-detected results were reported to the Limit of Detection (LOD).

Executive Summary

Laboratory Performance: Surrogate recoveries exceeded the QC limit for three samples.

Other Factors Affecting Data Quality: Positive results below the LOQ were qualified as estimated.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Superfund Organic Methods Data Review" (January 2017). The text of this report has been formulated to address only those areas affecting data quality.

Megan Ritchie

Tetra Tech, Inc.
Megan Ritchie
Chemist/Data Validator

Joseph A. Samchuck

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted method detection limit for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit).
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
R	The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
UR	The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate
Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

PROJ_NO: 08005-WE08	NSAMPLE	DUP01-20170418			DUP02-20170420			FRB-15-20170420			FRB-17-20170420		
SDG: 1700503	LAB_ID	1700503-01			1700503-10			1700503-03			1700503-07		
FRACTION: OS	SAMP_DATE	4/18/2017			4/20/2017			4/20/2017			4/20/2017		
MEDIA: WATER	QC_TYPE	FD			FD			FB			FB		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	RW01-20170418			RW23-20170420								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		8.31	J	P	15.3	J	P	9.07	U		9	U	
PERFLUOROBUTANE SULFONATE		8.77	U		8.57	J	P	9.07	U		9	U	
PERFLUOROHEPTANOIC ACID		8.77	U		4.14	J	P	9.07	U		9	U	
PERFLUOROHEXANESULFONIC ACID		2.1	J	P	2.58	J	P	9.07	U		9	U	
PERFLUORONONANOIC ACID		8.77	U		8.71	U		9.07	U		9	U	
PERFLUOROOCTANE SULFONIC ACID		4.14	J	P	11.6	J	P	9.07	U		9	U	

PROJ_NO: 08005-WE08	NSAMPLE	FRB-23-20170420			FRB-27-20170420			RW15-20170420			RW17-20170420		
SDG: 1700503	LAB_ID	1700503-09			1700503-05			1700503-02			1700503-06		
FRACTION: OS	SAMP_DATE	4/20/2017			4/20/2017			4/20/2017			4/20/2017		
MEDIA: WATER	QC_TYPE	FB			FB			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		8.88	U		8.81	U		11.2	J	P	9.17	J	P
PERFLUOROBUTANE SULFONATE		8.88	U		8.81	U		9.44	U		8.73	U	
PERFLUOROHEPTANOIC ACID		8.88	U		8.81	U		9.44	U		8.73	U	
PERFLUOROHEXANESULFONIC ACID		8.88	U		8.81	U		3.66	J	P	1.61	J	P
PERFLUORONONANOIC ACID		8.88	U		8.81	U		9.44	U		8.73	U	
PERFLUOROOCTANE SULFONIC ACID		8.88	U		8.81	U		4.87	J	P	4.38	J	P

PROJ_NO: 08005-WE08	NSAMPLE	RW23-20170420			RW27-20170420		
SDG: 1700503	LAB_ID	1700503-08			1700503-04		
FRACTION: OS	SAMP_DATE	4/20/2017			4/20/2017		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		16.7	J	PR	9.05	J	P
PERFLUOROBUTANE SULFONATE		9.09	J	PR	8.7	U	
PERFLUOROHEPTANOIC ACID		4.32	J	PR	8.7	U	
PERFLUOROHEXANESULFONIC ACID		2.59	J	PR	2.8	J	P
PERFLUORONONANOIC ACID		8.84	U		8.7	U	
PERFLUOROOCTANE SULFONIC ACID		12.5	J	PR	5.01	J	P

Appendix B

Results as Reported by the Laboratory

Sample ID: DUP01-20170418

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 18-Apr-2017 16:00
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.285 L

Laboratory Data

Lab Sample: 1700503-01 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 04:31 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.20	8.77	17.5	
PFHpA	ND	2.81	8.77	17.5	
PFHxS	2.10	1.55	8.77	17.5	J
PFOA	8.31	3.75	8.77	17.5	J
PFNA	ND	3.06	8.77	17.5	
PFOS	4.14	1.72	8.77	17.5	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	117	70 - 130	
SUR 13C2-PFDA	98.0	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: RW15-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 12:20
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.265 L

Laboratory Data

Lab Sample: 1700503-02 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 04:43 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.37	9.44	18.9	
PFHpA	ND	3.02	9.44	18.9	
PFHxS	3.66	1.67	9.44	18.9	J
PFOA	11.2	4.03	9.44	18.9	J
PFNA	ND	3.29	9.44	18.9	
PFOS	4.87	1.85	9.44	18.9	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	118	70 - 130	
SUR 13C2-PFDA	129	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: FRB-15-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 12:15
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.276 L

Laboratory Data

Lab Sample:	1700503-03	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 04:55	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.28	9.07	18.1	
PFHpA	ND	2.90	9.07	18.1	
PFHxS	ND	1.60	9.07	18.1	
PFOA	ND	3.87	9.07	18.1	
PFNA	ND	3.16	9.07	18.1	
PFOS	ND	1.78	9.07	18.1	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	112	70 - 130	
SUR 13C2-PFDA	105	70 - 130	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: RW27-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 12:50
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.287 L

Laboratory Data

Lab Sample: 1700503-04 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 05:08 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.18	8.70	17.4	
PFHpA	ND	2.78	8.70	17.4	
PFHxS	2.80	1.54	8.70	17.4	J
PFOA	9.05	3.71	8.70	17.4	J
PFNA	ND	3.04	8.70	17.4	
PFOS	5.01	1.70	8.70	17.4	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	118	70 - 130	
SUR 13C2-PFDA	106	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: FRB-27-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 12:45
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.284 L

Laboratory Data

Lab Sample:	1700503-05	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 05:20	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.21	8.81	17.6	
PFHpA	ND	2.82	8.81	17.6	
PFHxS	ND	1.56	8.81	17.6	
PFOA	ND	3.76	8.81	17.6	
PFNA	ND	3.07	8.81	17.6	
PFOS	ND	1.73	8.81	17.6	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	127	70 - 130	
SUR 13C2-PFDA	144	70 - 130	H

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: RW17-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 14:50
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.286 L

Laboratory Data

Lab Sample: 1700503-06 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 05:32 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.19	8.73	17.5	
PFHpA	ND	2.79	8.73	17.5	
PFHxS	1.61	1.54	8.73	17.5	J
PFOA	9.17	3.73	8.73	17.5	J
PFNA	ND	3.05	8.73	17.5	
PFOS	4.38	1.71	8.73	17.5	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	117	70 - 130	
SUR 13C2-PFDA	118	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: FRB-17-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 14:45
Location:	Pump Room

Sample Data

Matrix:	Blank Water
Sample Size:	0.278 L

Laboratory Data

Lab Sample:	1700503-07	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 06:09	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.26	9.00	18.0	
PFHpA	ND	2.88	9.00	18.0	
PFHxS	ND	1.59	9.00	18.0	
PFOA	ND	3.84	9.00	18.0	
PFNA	ND	3.14	9.00	18.0	
PFOS	ND	1.76	9.00	18.0	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	123	70 - 130	
SUR 13C2-PFDA	142	70 - 130	H

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: RW23-20170420

EPA Method 537

Client Data

Name:	Tetra Tech
Project:	NAWC Trenton, NJ
Date Collected:	20-Apr-2017 17:25
Location:	Pressure Tank

Sample Data

Matrix:	Drinking Water
Sample Size:	0.283 L

Laboratory Data

Lab Sample:	1700503-08	Date Received:	21-Apr-2017 9:34
QC Batch:	B7D0109	Date Extracted:	24-Apr-2017 8:04
Date Analyzed:	27-Apr-17 06:21	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	9.09	2.22	8.84	17.7	J
PFHpA	4.32	2.83	8.84	17.7	J
PFHxS	2.59	1.56	8.84	17.7	J
PFOA	16.7	3.77	8.84	17.7	J
PFNA	ND	3.08	8.84	17.7	
PFOS	12.5	1.73	8.84	17.7	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	121	70 - 130	
SUR 13C2-PFDA	139	70 - 130	H

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

Sample ID: FRB-23-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 17:20
Location: Pump Room

Sample Data

Matrix: Blank Water
Sample Size: 0.281 L

Laboratory Data

Lab Sample: 1700503-09 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 06:33 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.23	8.88	17.8	
PFHpA	ND	2.84	8.88	17.8	
PFHxS	ND	1.57	8.88	17.8	
PFOA	ND	3.79	8.88	17.8	
PFNA	ND	3.10	8.88	17.8	
PFOS	ND	1.74	8.88	17.8	

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	124	70 - 130	
SUR 13C2-PFDA	111	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Sample ID: DUP02-20170420

EPA Method 537

Client Data

Name: Tetra Tech
Project: NAWC Trenton, NJ
Date Collected: 20-Apr-2017 12:00
Location: Pressure Tank

Sample Data

Matrix: Drinking Water
Sample Size: 0.287 L

Laboratory Data

Lab Sample: 1700503-10 Date Received: 21-Apr-2017 9:34
QC Batch: B7D0109 Date Extracted: 24-Apr-2017 8:04
Date Analyzed: 27-Apr-17 06:46 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	8.57	2.19	8.71	17.4	J
PFHpA	4.14	2.79	8.71	17.4	J
PFHxS	2.58	1.54	8.71	17.4	J
PFOA	15.3	3.72	8.71	17.4	J
PFNA	ND	3.04	8.71	17.4	
PFOS	11.6	1.71	8.71	17.4	J

Labeled Standard	%R	LCL-UCL	Qualifiers
SUR 13C2-PFHxA	127	70 - 130	
SUR 13C2-PFDA	109	70 - 130	

DL - Detection limit
RL - Reporting limit

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

Appendix C

Support Documentation

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Laboratory Project ID: 1700503 Temp: 0.3 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: NAWC Trenton P.O.#: 1135710 Sampler: Charles Meyer (name)

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

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Accounts Payable	Tetra Tech Inc	661 Andersen Drive Foster Plaza 7	Pittsburgh	PA	15220	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Charles Meyer	4/18/17	18:00	Bettina Benedict	04/19/17	0907

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

ATTN: Sample Custodian

Method of Shipment: Fed Ex

Tracking No.: 8109 8153 9152

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA 1613 2378-TCDD	EPA 1613 2378 TCDD/TCDF	EPA 1613 PCDD/PCDF	EPA 8290 2378-TCDD	EPA 8290 2378-TCDD/TCDF	EPA 8290 PCDD/PCDF	EPA 8280 2378-TCDD	EPA 8280 2378 TCDD/TCDF	EPA 8280 PCDD/PCDF	EPA 1668 TOTALS	EPA 1668 COPLANAR PCB's	EPA 1668 209 CONGENERS	EPA 1668 PBDE	EPA 1668 PAH	EPA 1614 WHO-29	CARB429 Mod. EPA 537	UCMR3 LIST	Comments
DUP01-20170418	4/18/17	16:00	Pressure Tank	2	DW	DW															✓			

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Mary Mang
Company: Tetra Tech
Address: 234 Mall Boulevard Suite 260
City: King of Prussia State: PA Zip: 19406
Phone: 610 382 1874 Fax: 610 491 9645
Email: mary.mang at tetra tech.com

Container Types: A = 1 Liter Amber, G = Glass Jar, P = HDPE, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma: 2 bottles

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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Laboratory Project ID: 1700503 Temp: 3.1 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: NAWC Trenton P.O.#: 1135710 Sampler: Charles Meyer (name)

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

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Accounts Payable	Tetra Tech Inc	661 Andersen Drive Foster Plaza 7	Pittsburgh	PA	15220	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Charles Meyer	4/20/17	20:00	B. Benedict	04/21/17	0958
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time

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

Method of Shipment: Fed Ex

ATTN: Sample Custodian

Tracking No.: 8109 8153 9027

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA 1613 2378-TCDD	EPA 1613 2378 TCDD/TCDF	EPA 8290 PCDD/PCDF	EPA 8290 2378-TCDD	EPA 8290 2378-TCDD/TCDF	EPA 8280 PCDD/PCDF	EPA 8280 2378-TCDD	EPA 8280 2378 TCDD/TCDF	EPA 8280 PCDD/PCDF	EPA 1668 TOTALS	EPA 1668 COPLANAR PCB's	EPA 1668 209 CONGENERS	EPA 1668 PBDE	EPA 1668 PAH	EPA 1614 WHO-29	CARB429 Mod. EPA 537	UCMR 3 LIST	Comments
RW15-20170420	4/20/17	12:20	Pressoic Tank	2	P	DW																		
FRB-15-20170420	4/20/17	12:15	Pump Room	2	P	BLK																		
RW27-20170420	4/20/17	12:50	Pressure Tank	2	P	DW																		
FRB-27-20170420	4/20/17	12:45	Pump Room	2	P	BLK																		
RW17-20170420	4/20/17	14:50	Pressor Tank	6	P	DW																		DO MS/MSD
FRB-17-20170420	4/20/17	14:45	Pump Room	2	P	BLK																		
RW23-20170420	4/20/17	17:25	Pressure Tank	2	P	DW																		
FRB-23-20170420	4/20/17	17:20	Pump Room	2	P	BLK																		
DUP02-20170420	4/20/17	12:00	Pressure Tank	2	P	DW																		

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Mary Mang
Company: Tetra Tech
Address: 234 Mall Boulevard Suite 260
City: King of Prussia State: PA Zip: 19406
Phone: 610 382 1174 Fax: 610 491 9645
Email: mary.mang at tetratech.com

Container Types: A = 1 Liter Amber, G = Glass Jar, P = HDPE, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma: 22 bottles

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

SDG Number WE08
Vista Work Order No. 1700503
Case Narrative

Sample Condition on Receipt:

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

Analytical Notes:

EPA Method 537

The samples were extracted and analyzed for the UCMR list of six PFAS using EPA Method 537.

Holding Times

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

Quality Control

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

A Laboratory Fortified Blank (LFB) and Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the LRB above 1/2 the LOQ. The LFB recoveries were within the method acceptance criteria

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were prepared and analyzed using sample "RW17-20170420".

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1700503-05	FRB-27-20170420	EPA Method 537	13C2-PFDA	H	144
1700503-07	FRB-17-20170420	EPA Method 537	13C2-PFDA	H	142
1700503-08	RW23-20170420	EPA Method 537	13C2-PFDA	H	139
B7D0109-MSD1	B7D0109-MSD1	EPA Method 537	13C2-PFDA	H	134

H = Recovery was outside laboratory acceptance criteria.

Vista Analytical Laboratory

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-27.qld

Last Altered: Thursday, April 27, 2017 11:01:50 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:14:12 Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.pro\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

ID: 1700503-08, Description: RW23-20170420, Name: 170426L2_27.wiff, Date: 27-Apr-2017, Time: 06:21:31

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.890e3	1.273e4		0.283	3.42	9.09	
2	3	PFHpA	318.90	1.706e3	1.669e4		0.283	4.26	4.32	
3	4	PFHxS	79.91	4.577e2	1.273e4		0.283	4.36	2.59	
4	5	PFOA	368.90	6.827e3	1.669e4		0.283	4.64	16.7	
5	6	PFNA	419.00	8.583e2	1.669e4		0.283	4.97	1.92	
6	7	PFOS	79.92	2.132e3	1.273e4		0.283	4.92	12.5	
7	15	13C2-PFHxA	269.90	1.129e4	1.669e4	0.560	0.283	3.79	42.7	121
8	16	13C2-PFDA	470.00	1.347e4	1.669e4	0.580	0.283	5.26	49.1	139
9	18	13C2-PFOA	369.90	1.669e4	1.669e4	1.000	0.283	4.64	35.4	100
10	19	13C4-PFOS	79.93	1.273e4	1.273e4	1.000	0.283	5.03	101	100

Example Calculation for PFOA for Sample RW23-20170420

(6827 / 16690) * (35.4 / 0.885) = 16.4

Reviewed: WJL 4/27/2017

AP 4/27/2017

Sample ID: LRB

EPA Method 537

Matrix: Drinking Water
Sample Size: 0.250 L

QC Batch: B7D0109
Date Extracted: 24-Apr-2017 8:04

Lab Sample: B7D0109-BLK1
Date Analyzed: 27-Apr-17 04:19 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.51	10.0	20.0	
PFHpA	ND	3.20	10.0	20.0	
PFHxS	ND	1.77	10.0	20.0	
PFOA	ND	4.27	10.0	20.0	
PFNA	ND	3.49	10.0	20.0	
PFOS	ND	1.96	10.0	20.0	

Labeled Standard		%R	LCL-UCL	Qualifiers
SUR	13C2-PFHxA	118	70 - 130	
SUR	13C2-PFDA	115	70 - 130	

DL - Detection limit

RL - Reporting limit

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

Sample ID: LFB

EPA Method 537

Matrix:	Drinking Water	QC Batch:	B7D0109	Lab Sample:	B7D0109-BS1
Sample Size:	0.250 L	Date Extracted:	24-Apr-2017 8:04	Date Analyzed:	27-Apr-17 03:42 Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits
PFBS	77.4	70.8	109	70 - 130
PFHpA	84.3	80.0	105	70 - 130
PFHxS	81.6	72.8	112	70 - 130
PFOA	83.5	80.0	104	70 - 130
PFNA	87.2	80.0	109	70 - 130
PFOS	86.0	74.0	116	70 - 130

	Labeled Standard	%R	LCL-UCL
SUR	13C2-PFHxA	122	70 - 130
SUR	13C2-PFDA	129	70 - 130

LCL-UCL - Lower control limit - upper control limit

LFSM Results

EPA Method 537

Source Client ID: RW17-20170420
Source LabNumber: 1700503-06
Matrix: Drinking Water
Sample Size: 0.280/0.279 L

QC Batch: B7D0109
Date Extracted: 24-Apr-2017 8:04

Lab Sample: B7D0109-MS1/B7D0109-MSD1
Date Analyzed: 27-Apr-17 05:44 Column: BEH C18
27-Apr-17 05:57 Column: BEH C18

Analyte	Spike-MS (ng/L)	MS %R	MS Qual.	Spike-MSD (ng/L)	MSD %R	RPD	MSD Qual.	%R Limit	%RPD Limit
PFBS	63.1	100.0		63.5	106	5.83		70 - 130	30
PFHpA	71.3	106		71.7	110	3.70		70 - 130	30
PFHxS	64.9	97.4		65.3	110	12.2		70 - 130	30
PFOA	71.3	112		71.7	111	0.897		70 - 130	30
PFNA	71.3	101		71.7	109	7.62		70 - 130	30
PFOS	66.0	106		66.4	109	2.79		70 - 130	30

Labeled Standard	MS %R	MS Qualifiers	MSD %R	MS Qual.
SUR 13C2-PFHxA	119		122	
SUR 13C2-PFDA	114		134	H

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

Batch: B7D0109

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1700503-01	0.28503	N/A	N/A	1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-02	0.2649			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-03	0.27574			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-04	0.2874			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-05	0.28379			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-06	0.28643			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-07	0.27787			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-08	0.28288			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-09	0.28138			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
1700503-10	0.28699			1000	24-Apr-17 08:04	BAP			Drinking Water	537 PFAS DW DoD Unmod
B7D0109-BLK1	0.25			1000	24-Apr-17 08:04	BAP				QC
B7D0109-BS1	0.25			1000	24-Apr-17 08:04	BAP	17D1705	20		QC
B7D0109-MS1	0.28034			1000	24-Apr-17 08:04	BAP	17D1705	20		QC
B7D0109-MSD1	0.27877			1000	24-Apr-17 08:04	BAP	17D1705	20		QC

4/25/17

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodifie

PREPARATION BENCH SHEET

B7D0109

Chemist: BP

Prep Date/Time: 24-Apr-17 08:04

Prepared using: LCMS - SPE Extraction-LCMS

C	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	~~IS~~/NS CHEM/WIT DATE (SS)	SPE (C7D0115)	RS CHEM/WIT DATE
☐	B7D0109-BLK1 (A)	N/A	N/A	0.250	BP HC 4.24.17	BP HC 4.24.17	BP HC 4/24/17
☐	B7D0109-BS1 (A)	N/A	↓	↓	↓	↓	↓
☐	B7D0109-MS1 1700503-06	308.08	27.74	0.28034			
☐	B7D0109-MSD1 1700503-06	306.40	27.63	0.27877			
☐	1700503-01	311.66	26.63	0.28503			
☐	1700503-02	292.03	27.13	0.2649			
☐	1700503-03	301.95	26.21	0.27574			
☐	1700503-04	314.82	27.42	0.28740			
☐	1700503-05	310.80	27.01	0.28379			
☐	1700503-06	313.52	27.09	0.28643			
☐	1700503-07	305.77	27.90	0.27787			
☐	1700503-08	309.43	26.55	0.28288			
☐	1700503-09	308.45	27.07	0.28138			
☐	1700503-10	313.70	26.71	0.28699			

(A) 0.625g Trizma added HC 4/24/17

SS

~~IS~~ Name	NS Name	RS Name		
17D1704, 50L (V4)	17D1705, 20uL (V3)	17D1706, 50uL (V4)	SPE Chem: Strata-X 33um 500mg/6mL Ele SOLV: MeOH Final Volume(s) 1mL	Check Out: Chemist/Date: HC 4/24/17 Check In: Chemist/Date: N/A Balance ID: HRMS-8

Comments: Assume 1 g = 1 mL

Vista Analytical Laboratory

BALANCE CALIBRATION CHECK

Weights # 22370 and 7718

Date	☑ for Weight # verification	Weight 1 1 g (0.9900 – 1.0100)	Weight 2 100 g (99.00 – 101.00)	Weight 3 2000 g (1980 – 2020)	Initials	Acceptable? (Y/N)
4/5/17	✓	1.00	100.00	2000.00	ZHC	Y
4/6/17	✓	1.00	99.99	2000.02	TVD	Y
4/6/17	✓	Balance calibrated for 500mg → reads 0.50g IVD				Y
4/7/17	✓	1.00	100.01	2000.03	TVD	Y
4/10/17	✓	1.00	99.99	2000.01	ZHC	Y
4/11/17	✓	1.01	99.99	2000.03	ZHC	Y
4/12/17	✓	1.00	99.99	2000.00	OBF	Y
4.14.17	✓	1.00	99.99	2000.03	BP	Y
4.17.17	✓	1.01	100.01	2000.02	BP	Y
4/18/17	✓	1.01	100.01	2000.03	TVD	Y
4.19.17	✓	1.00	100.00	2000.04	BP	Y
4.20.17	✓	1.01	100.02	2000.02	ZHC	Y
4.21.17	✓	1.00	100.01	2000.01	BP	Y
4.24.17	✓	1.00	99.99	2000.03	ZHC	Y
4.25.17	✓	1.01	100.00	2000.00	ZHC	Y
4/26/17	✓	1.00	100.00	2000.01	OBF	Y
4/27/17	✓	1.00	99.98	2000.01	ZHC	Y

Comments:

Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:13:21 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Compound name: PFBS
Coefficient of Determination: R^2 = 0.992491
Calibration curve: -0.008126 * x^2 + 1.67638 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	4.42	3.42	3.87e3	1.54e4	4.41	-0.2	1.64
2	2	170426L2_06_P1_...	8.85	3.41	9.46e3	1.71e4	9.94	12.3	1.79
3	3	170426L2_07_P1_...	13.3	3.41	1.31e4	1.81e4	13.3	0.1	1.57
4	4	170426L2_08_P1_...	17.7	3.42	1.63e4	1.88e4	16.2	-8.7	1.41
5	5	170426L2_09_P1_...	22.1	3.42	1.93e4	1.68e4	22.0	-0.3	1.49
6	6	170426L2_10_P1_...	44.2	3.41	3.58e4	1.75e4	44.8	1.3	1.33

AC 4/27/17
CT 4/27/17

Compound name: PFHxA
Coefficient of Determination: R^2 = 0.992669
Calibration curve: -0.0140311 * x^2 + 2.79726 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

* Not used for N-EtFOSAA.

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	3.80	7.40e3	1.54e4	5.07	1.4	2.76
2	2	170426L2_06_P1_...	10.0	3.79	1.73e4	1.71e4	11.0	9.8	2.90
3	3	170426L2_07_P1_...	15.0	3.79	2.45e4	1.81e4	15.0	0.2	2.59
4	4	170426L2_08_P1_...	20.0	3.80	3.00e4	1.88e4	18.0	-9.8	2.29
5	5	170426L2_09_P1_...	25.0	3.80	3.64e4	1.68e4	25.5	1.9	2.49
6	6	170426L2_10_P1_...	50.0	3.78	6.43e4	1.75e4	50.5	1.1	2.11

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:13:21 Pacific Daylight Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.993260
Calibration curve: -0.00356151 * x^2 + 0.840815 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	4.27	9.06e3	2.01e4	5.48	9.6	0.900
2	2	170426L2_06_P1_...	10.0	4.26	2.10e4	2.45e4	10.7	6.7	0.857
3	3	170426L2_07_P1_...	15.0	4.27	2.92e4	2.45e4	15.2	1.1	0.795
4	4	170426L2_08_P1_...	20.0	4.27	3.54e4	2.34e4	19.6	-1.8	0.757
5	5	170426L2_09_P1_...	25.0	4.28	4.23e4	2.43e4	23.0	-8.2	0.697
6	6	170426L2_10_P1_...	50.0	4.26	7.68e4	2.28e4	51.3	2.6	0.675

Compound name: PFHxS
Coefficient of Determination: R^2 = 0.994944
Calibration curve: -0.00487699 * x^2 + 1.41391 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	4.56	4.38	3.50e3	1.54e4	4.70	3.0	1.43
2	2	170426L2_06_P1_...	9.12	4.37	7.97e3	1.71e4	9.78	7.3	1.47
3	3	170426L2_07_P1_...	13.7	4.38	1.14e4	1.81e4	13.4	-2.1	1.32
4	4	170426L2_08_P1_...	18.2	4.38	1.46e4	1.88e4	16.8	-8.0	1.23
5	5	170426L2_09_P1_...	22.8	4.38	1.80e4	1.68e4	23.6	3.6	1.35
6	6	170426L2_10_P1_...	45.6	4.36	3.32e4	1.75e4	45.8	0.4	1.20

Compound name: PFOA
Coefficient of Determination: R^2 = 0.990932
Calibration curve: -0.0038448 * x^2 + 0.885857 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	4.67	9.85e3	2.01e4	5.66	13.3	0.979
2	2	170426L2_06_P1_..:	10.0	4.65	2.12e4	2.45e4	10.2	2.5	0.867

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFOA

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
3	3	170426L2_07_P1_...	15.0	4.66	3.03e4	2.45e4	14.9	-0.4	0.825
4	4	170426L2_08_P1_...	20.0	4.66	3.88e4	2.34e4	20.6	2.9	0.830
5	5	170426L2_09_P1_...	25.0	4.67	4.37e4	2.43e4	22.5	-10.1	0.719
6	6	170426L2_10_P1_...	50.0	4.65	8.04e4	2.28e4	51.3	2.6	0.706

Compound name: PFNA
Coefficient of Determination: R^2 = 0.990791
Calibration curve: -0.00492928 * x^2 + 0.947915 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.00	9.95e3	2.01e4	5.36	7.2	0.988
2	2	170426L2_06_P1_...	10.0	4.99	2.21e4	2.45e4	10.0	0.5	0.903
3	3	170426L2_07_P1_...	15.0	4.97	3.43e4	2.45e4	16.1	7.6	0.934
4	4	170426L2_08_P1_...	20.0	5.00	3.96e4	2.34e4	20.0	-0.1	0.848
5	5	170426L2_09_P1_...	25.0	5.00	4.55e4	2.43e4	22.4	-10.6	0.749
6	6	170426L2_10_P1_...	50.0	5.01	8.13e4	2.28e4	51.4	2.9	0.714

Compound name: PFOS
Coefficient of Determination: R^2 = 0.995701
Calibration curve: -0.00389592 * x^2 + 1.36875 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	4.62	5.06	3.47e3	1.54e4	4.79	3.8	1.40
2	2	170426L2_06_P1_...	9.24	5.06	7.46e3	1.71e4	9.39	1.7	1.35
3	3	170426L2_07_P1_...	13.9	5.03	1.06e4	1.81e4	12.7	-8.3	1.21
4	4	170426L2_08_P1_...	18.5	5.06	1.55e4	1.88e4	18.3	-1.0	1.28
5	5	170426L2_09_P1_...	23.1	5.05	1.82e4	1.68e4	24.4	5.8	1.35
6	6	170426L2_10_P1_...	46.2	5.06	3.32e4	1.75e4	45.9	-0.7	1.18

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFDA
Coefficient of Determination: R^2 = 0.982861
Calibration curve: -0.002568 * x^2 + 0.579697 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.28	6.47e3	2.01e4	5.69	13.8	0.643
2	2	170426L2_06_P1_...	10.0	5.28	1.51e4	2.45e4	11.2	12.0	0.617
3	3	170426L2_07_P1_...	15.0	5.18	2.05e4	2.45e4	15.5	3.6	0.559
4	4	170426L2_08_P1_...	20.0	5.28	2.29e4	2.34e4	18.4	-8.1	0.490
5	5	170426L2_09_P1_...	25.0	5.28	2.85e4	2.43e4	22.5	-10.0	0.470
6	6	170426L2_10_P1_...	50.0	5.26	5.28e4	2.28e4	52.0	4.0	0.464

Compound name: N-MeFOSAA
Coefficient of Determination: R^2 = 0.973527
Calibration curve: -0.00749663 * x^2 + 1.31273 * x
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.36	3.82e3	2.11e4	5.70	13.9	1.45
2	2	170426L2_06_P1_...	10.0	5.37	8.00e3	2.63e4	9.81	-1.9	1.22
3	3	170426L2_07_P1_...	15.0	5.25	1.28e4	2.47e4	17.6	17.1	1.38
4	4	170426L2_08_P1_...	20.0	5.38	1.39e4	2.64e4	17.8	-11.1	1.05
5	5	170426L2_09_P1_...	25.0	5.37	1.68e4	2.60e4	22.6	-9.5	1.03
6	6	170426L2_10_P1_...	50.0	5.37	3.05e4	2.54e4	52.2	4.4	0.962

Compound name: PFUnA
Coefficient of Determination: R^2 = 0.987718
Calibration curve: -0.00251438 * x^2 + 0.640935 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.44	6.80e3	2.01e4	5.38	7.6	0.675
2	2	170426L2_06_P1_...	10.0	5.44	1.67e4	2.45e4	11.1	11.1	0.681

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFUnA

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
3	3 170426L2_07_P1_...	15.0	5.34	2.11e4	2.45e4	14.2	-5.0	0.575
4	4 170426L2_08_P1_...	20.0	5.48	2.86e4	2.34e4	20.8	4.1	0.613
5	5 170426L2_09_P1_...	25.0	5.44	3.17e4	2.43e4	22.3	-10.7	0.522
6	6 170426L2_10_P1_...	50.0	5.49	5.97e4	2.28e4	51.3	2.6	0.525

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.990731
Calibration curve: -0.00268974 * x^2 + 0.83009 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170426L2_05_P1_...	5.00	5.55	8.80e3	2.01e4	5.36	7.2	0.874
2	2 170426L2_06_P1_...	10.0	5.54	2.20e4	2.45e4	11.3	12.6	0.900
3	3 170426L2_07_P1_...	15.0	5.53	2.64e4	2.45e4	13.6	-9.1	0.721
4	4 170426L2_08_P1_...	20.0	5.58	3.67e4	2.34e4	20.3	1.4	0.786
5	5 170426L2_09_P1_...	25.0	5.55	4.43e4	2.43e4	23.8	-5.0	0.728
6	6 170426L2_10_P1_...	50.0	5.61	8.01e4	2.28e4	50.8	1.6	0.704

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.993490
Calibration curve: -0.00404685 * x^2 + 0.811962 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170426L2_05_P1_...	5.00	5.65	7.44e3	2.01e4	4.66	-6.8	0.739
2	2 170426L2_06_P1_...	10.0	5.62	2.03e4	2.45e4	10.8	7.9	0.829
3	3 170426L2_07_P1_...	15.0	5.65	2.93e4	2.45e4	16.1	7.0	0.800
4	4 170426L2_08_P1_...	20.0	5.68	3.31e4	2.34e4	19.3	-3.5	0.708
5	5 170426L2_09_P1_...	25.0	5.64	4.10e4	2.43e4	23.5	-5.9	0.674
6	6 170426L2_10_P1_...	50.0	5.71	7.01e4	2.28e4	50.8	1.6	0.616

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: PFTeDA
Coefficient of Determination: R^2 = 0.993849
Calibration curve: -0.00266313 * x^2 + 0.677405 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	5.00	5.74	7.33e3	2.01e4	5.50	9.9	0.728
2	2	170426L2_06_P1_...	10.0	5.73	1.66e4	2.45e4	10.4	4.5	0.679
3	3	170426L2_07_P1_...	15.0	5.75	2.26e4	2.45e4	14.4	-3.7	0.615
4	4	170426L2_08_P1_...	20.0	5.76	3.01e4	2.34e4	20.7	3.5	0.644
5	5	170426L2_09_P1_...	25.0	5.74	3.46e4	2.43e4	23.1	-7.5	0.570
6	6	170426L2_10_P1_...	50.0	5.79	6.28e4	2.28e4	50.9	1.8	0.552

Compound name: 13C2-PFHxA
Response Factor: 0.560398
RRF SD: 0.0292346, Relative SD: 5.21676
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	10.0	3.79	1.24e4	2.01e4	11.0	9.6	0.614
2	2	170426L2_06_P1_...	10.0	3.79	1.32e4	2.45e4	9.62	-3.8	0.539
3	3	170426L2_07_P1_...	10.0	3.79	1.40e4	2.45e4	10.2	2.3	0.573
4	4	170426L2_08_P1_...	10.0	3.80	1.29e4	2.34e4	9.87	-1.3	0.553
5	5	170426L2_09_P1_...	10.0	3.80	1.32e4	2.43e4	9.66	-3.4	0.541
6	6	170426L2_10_P1_...	10.0	3.78	1.23e4	2.28e4	9.66	-3.4	0.542

Compound name: 13C2-PFDA
Response Factor: 0.580466
RRF SD: 0.0439432, Relative SD: 7.57033
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	10.0	5.28	1.34e4	2.01e4	11.5	15.0	0.668
2	2	170426L2_06_P1_...	10.0	5.28	1.40e4	2.45e4	9.86	-1.4	0.573

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: 13C2-PFDA

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
3	3	170426L2_07_P1_...	10.0	5.18	1.41e4	2.45e4	9.95	-0.5	0.578
4	4	170426L2_08_P1_...	10.0	5.28	1.30e4	2.34e4	9.59	-4.1	0.557
5	5	170426L2_09_P1_...	10.0	5.28	1.34e4	2.43e4	9.48	-5.2	0.550
6	6	170426L2_10_P1_...	10.0	5.26	1.27e4	2.28e4	9.61	-3.9	0.558

Compound name: d5-N-EtFOSAA
Response Factor: 0.688374
RRF SD: 0.0829655, Relative SD: 12.0524
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	40.0	5.42	1.78e4	2.11e4	48.9	22.2	0.841
2	2	170426L2_06_P1_...	40.0	5.43	1.83e4	2.63e4	40.3	0.8	0.694
3	3	170426L2_07_P1_...	40.0	5.34	1.59e4	2.47e4	37.5	-6.4	0.645
4	4	170426L2_08_P1_...	40.0	5.47	1.77e4	2.64e4	38.8	-3.0	0.668
5	5	170426L2_09_P1_...	40.0	5.44	1.79e4	2.60e4	40.0	0.0	0.689
6	6	170426L2_10_P1_...	40.0	5.48	1.51e4	2.54e4	34.6	-13.6	0.595

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

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	10.0	4.67	2.01e4	2.01e4	10.0	0.0	1.00
2	2	170426L2_06_P1_...	10.0	4.65	2.45e4	2.45e4	10.0	0.0	1.00
3	3	170426L2_07_P1_...	10.0	4.66	2.45e4	2.45e4	10.0	0.0	1.00
4	4	170426L2_08_P1_...	10.0	4.66	2.34e4	2.34e4	10.0	0.0	1.00
5	5	170426L2_09_P1_...	10.0	4.67	2.43e4	2.43e4	10.0	0.0	1.00
6	6	170426L2_10_P1_...	10.0	4.65	2.28e4	2.28e4	10.0	0.0	1.00

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Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

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Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 1.31363e-016, Relative SD: 1.31363e-014
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	28.7	5.06	1.54e4	1.54e4	28.7	0.0	1.00
2	2	170426L2_06_P1_...	28.7	5.05	1.71e4	1.71e4	28.7	0.0	1.00
3	3	170426L2_07_P1_...	28.7	5.03	1.81e4	1.81e4	28.7	0.0	1.00
4	4	170426L2_08_P1_...	28.7	5.05	1.88e4	1.88e4	28.7	-0.0	1.00
5	5	170426L2_09_P1_...	28.7	5.05	1.68e4	1.68e4	28.7	-0.0	1.00
6	6	170426L2_10_P1_...	28.7	5.06	1.75e4	1.75e4	28.7	-0.0	1.00

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

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170426L2_05_P1_...	40.0	5.36	2.11e4	2.11e4	40.0	0.0	1.00
2	2	170426L2_06_P1_...	40.0	5.37	2.63e4	2.63e4	40.0	0.0	1.00
3	3	170426L2_07_P1_...	40.0	5.25	2.47e4	2.47e4	40.0	0.0	1.00
4	4	170426L2_08_P1_...	40.0	5.38	2.64e4	2.64e4	40.0	0.0	1.00
5	5	170426L2_09_P1_...	40.0	5.37	2.60e4	2.60e4	40.0	0.0	1.00
6	6	170426L2_10_P1_...	40.0	5.36	2.54e4	2.54e4	40.0	0.0	1.00

Quantify Compound Summary Report

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Compound 18: 13C2-PFOA

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Fla	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	170426L2_05_P1_E1	Standard	10	4.67	20132.91	20132.91	10	MM	10	0	26-Apr-17	18:52:09	27-Apr-17	100	1	1	
2	2	170426L2_06_P1_E1	Standard	10	4.65	24458.78	24458.78	10	MM	10	0	26-Apr-17	19:04:24	27-Apr-17	100	1	1	
3	3	170426L2_07_P1_E1	Standard	10	4.66	24452.53	24452.53	10	MM	10	0	26-Apr-17	19:16:37	27-Apr-17	100	1	1	
4	4	170426L2_08_P1_E1	Standard	10	4.66	23362.25	23362.25	10	bb	10	0	26-Apr-17	19:28:51	27-Apr-17	100	1	1	
5	5	170426L2_09_P1_E1	Standard	10	4.67	24309.16	24309.16	10	bb	10	0	26-Apr-17	19:41:02	27-Apr-17	100	1	1	
6	6	170426L2_10_P1_E1	Standard	10	4.65	22754.58	22754.58	10	bb	10	0	26-Apr-17	19:53:18	27-Apr-17	100	1	1	

Compound 18: 13C2-PFOA

RPD

HIGH AREA	24458
LOW AREA	20133
RPD %	19.4

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUMMARY. PASTE IN CELL A1.

Quantify Compound Summary Report

Printed Thu Apr 27 10:36:34 2017

Compound 19: 13C4-PFOS

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Fla	Conc.	%Dev	Acq.Date	Acq.Time	Cal.Date	%Rec	RRF	Divisor1	
1	1	170426L2_05_P1_E1	Standard	28.7	5.06	15363.83	15363.83	28.7	MM	28.7	0	26-Apr-17	18:52:09	27-Apr-17	100	1	1	
2	2	170426L2_06_P1_E1	Standard	28.7	5.05	17109.3	17109.3	28.7	bb	28.7	0	26-Apr-17	19:04:24	27-Apr-17	100	1	1	
3	3	170426L2_07_P1_E1	Standard	28.7	5.03	18078.45	18078.45	28.7	bb	28.7	0	26-Apr-17	19:16:37	27-Apr-17	100	1	1	
4	4	170426L2_08_P1_E1	Standard	28.7	5.05	18753.25	18753.25	28.7	MM	28.7	0	26-Apr-17	19:28:51	27-Apr-17	100	1	1	
5	5	170426L2_09_P1_E1	Standard	28.7	5.05	16820.09	16820.09	28.7	bb	28.7	0	26-Apr-17	19:41:02	27-Apr-17	100	1	1	
6	6	170426L2_10_P1_E1	Standard	28.7	5.06	17476.4	17476.4	28.7	bb	28.7	0	26-Apr-17	19:53:18	27-Apr-17	100	1	1	

Compound 19: 13C4-PFOS

RPD

HIGH AREA	18753
LOW AREA	15364
RPD %	19.9

INSTRUCTIONS: IN TARGETLYNX, VERIFY YOU ARE USING THE LIST14 DW LAYOUT. RIGHT CLICK ON THE SUMMARY BOX AND SELECT "LIST BY COMPOUND". SELECT 13C2-PFOA, 13C4-PFOS OR D3-NMEFOSAA. CLICK ON EDIT. SELECT COPY CURRENT SUMMARY. PASTE IN CELL A1.

Vista Analytical Laboratory Q-1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:34:36 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:34:47 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170426L2_05_P...	ST170426L2-4 537 DW CS0 17D2516	27-Apr-17	01:52:09
2	170426L2_06_P...	ST170426L2-5 537 DW CS1 17D2604	27-Apr-17	02:04:24
3	170426L2_07_P...	ST170426L2-6 537 DW CS2 17D2605	27-Apr-17	02:16:37
4	170426L2_08_P...	ST170426L2-7 537 DW CS3 17D2606	27-Apr-17	02:28:51
5	170426L2_09_P...	ST170426L2-8 537 DW CS4 17D2607	27-Apr-17	02:41:02
6	170426L2_10_P...	ST170426L2-9 537 DW CS5 17D2608	27-Apr-17	02:53:18
7	170426L2_11_P...	IPA	27-Apr-17	03:05:34
8	170426L2_12_P...	SS170426L2-1 537 DW SSS 17D2609	27-Apr-17	03:17:47
9	170426L2_13_P...	B7D0069-BS1	27-Apr-17	03:30:03
10	170426L2_14_P...	B7D0109-BS1	27-Apr-17	03:42:18
11	170426L2_15_P...	IPA	27-Apr-17	03:54:34
12	170426L2_16_P...	B7D0069-BLK1	27-Apr-17	04:06:49
13	170426L2_17_P...	B7D0109-BLK1	27-Apr-17	04:19:04
14	170426L2_18_P...	1700503-01	27-Apr-17	04:31:22
15	170426L2_19_P...	1700503-02	27-Apr-17	04:43:37
16	170426L2_20_P...	1700503-03	27-Apr-17	04:55:52
17	170426L2_21_P...	1700503-04	27-Apr-17	05:08:06
18	170426L2_22_P...	1700503-05	27-Apr-17	05:20:21
19	170426L2_23_P...	1700503-06	27-Apr-17	05:32:36
20	170426L2_24_P...	B7D0109-MS1	27-Apr-17	05:44:48
21	170426L2_25_P...	B7D0109-MSD1	27-Apr-17	05:57:04
22	170426L2_26_P...	1700503-07	27-Apr-17	06:09:14
23	170426L2_27_P...	1700503-08	27-Apr-17	06:21:31
24	170426L2_28_P...	1700503-09	27-Apr-17	06:33:46
25	170426L2_29_P...	1700503-10	27-Apr-17	06:46:01
26	170426L2_30_P...	1700387-01@20X	27-Apr-17	06:58:16
27	170426L2_31_P...	1700387-01@40X	27-Apr-17	07:10:31
28	170426L2_32_P...	IPA	27-Apr-17	07:22:47
29	170426L2_33_P...	ST170426L2-10 537 DW CS2 17D2406	27-Apr-17	07:35:00

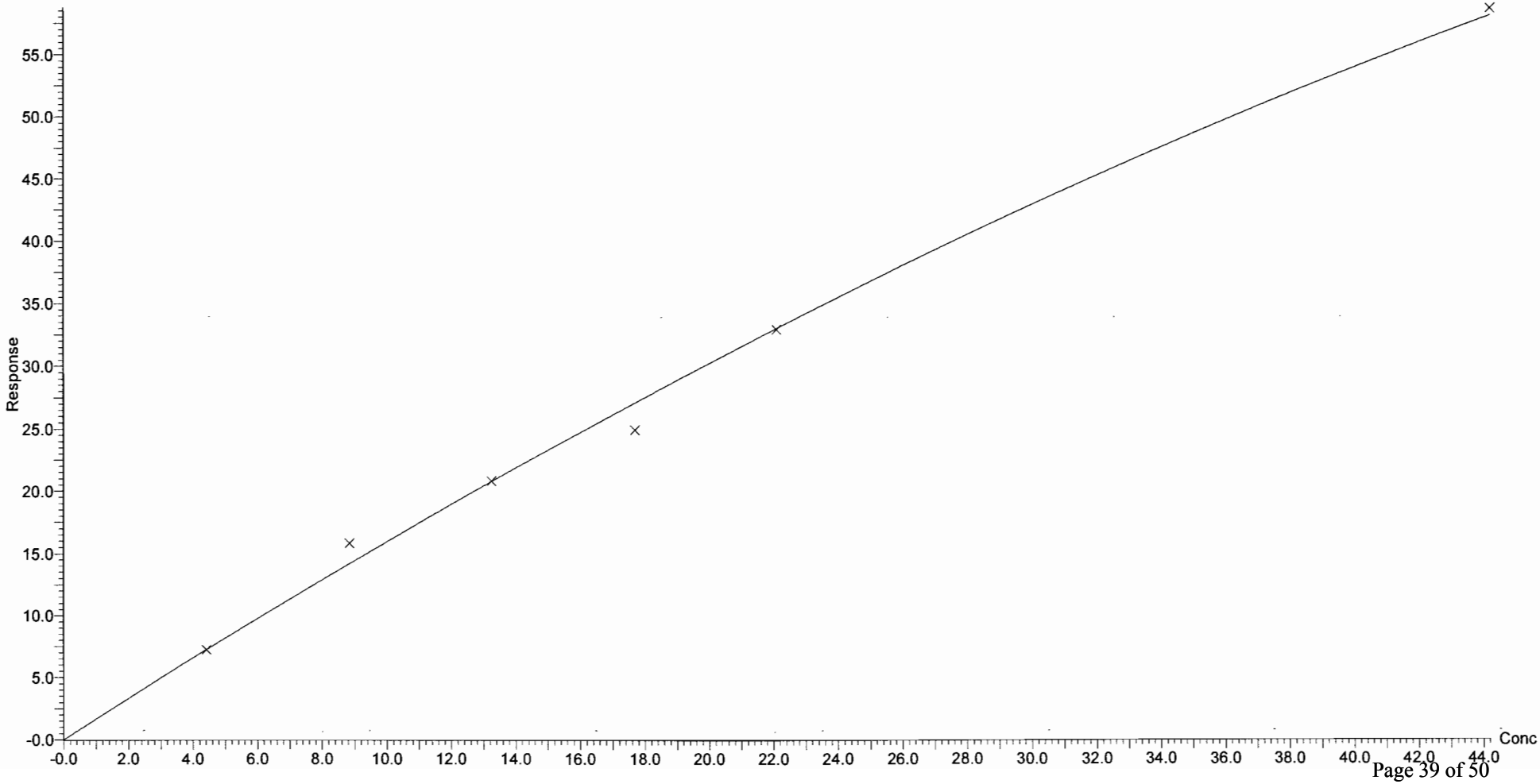
Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

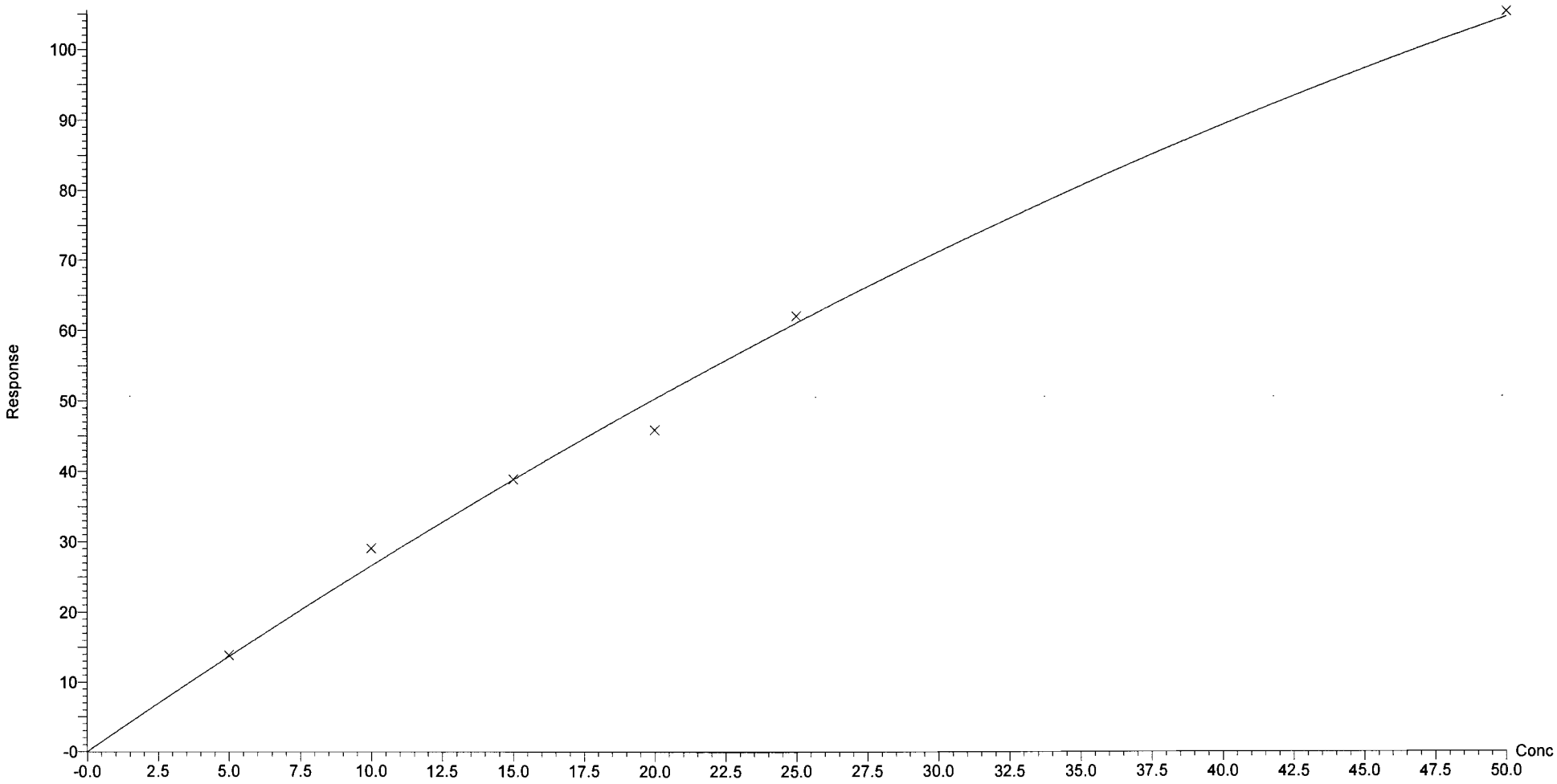
Compound name: PFBS
Coefficient of Determination: R^2 = 0.992491
Calibration curve: -0.008126 * x^2 + 1.67638 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

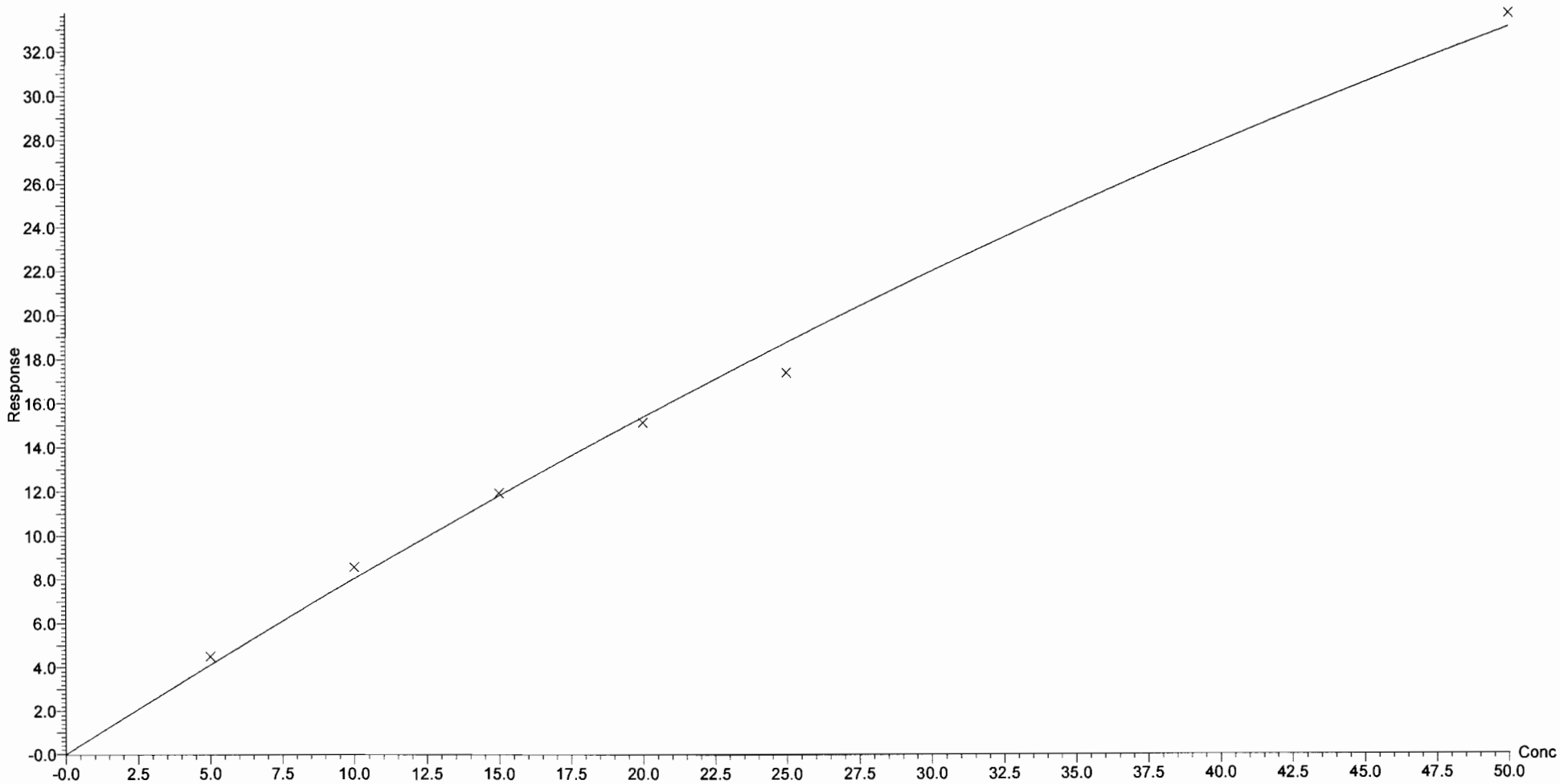
Compound name: PFHxA
Coefficient of Determination: R^2 = 0.992669
Calibration curve: -0.0140311 * x^2 + 2.79726 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.993260
Calibration curve: -0.00356151 * x^2 + 0.840815 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

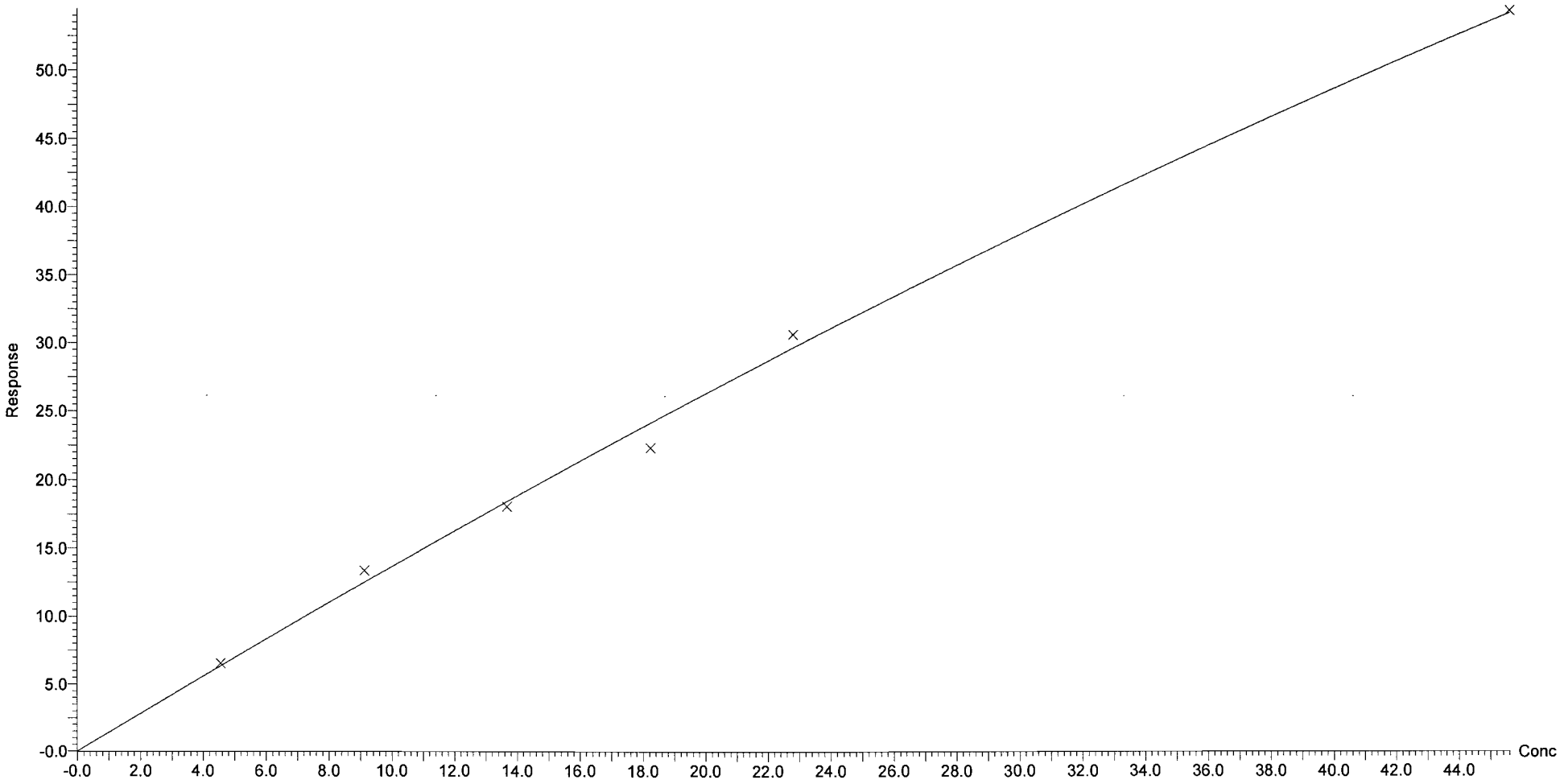


Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

Compound name: PFHxS
Coefficient of Determination: R^2 = 0.994944
Calibration curve: -0.00487699 * x^2 + 1.41391 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

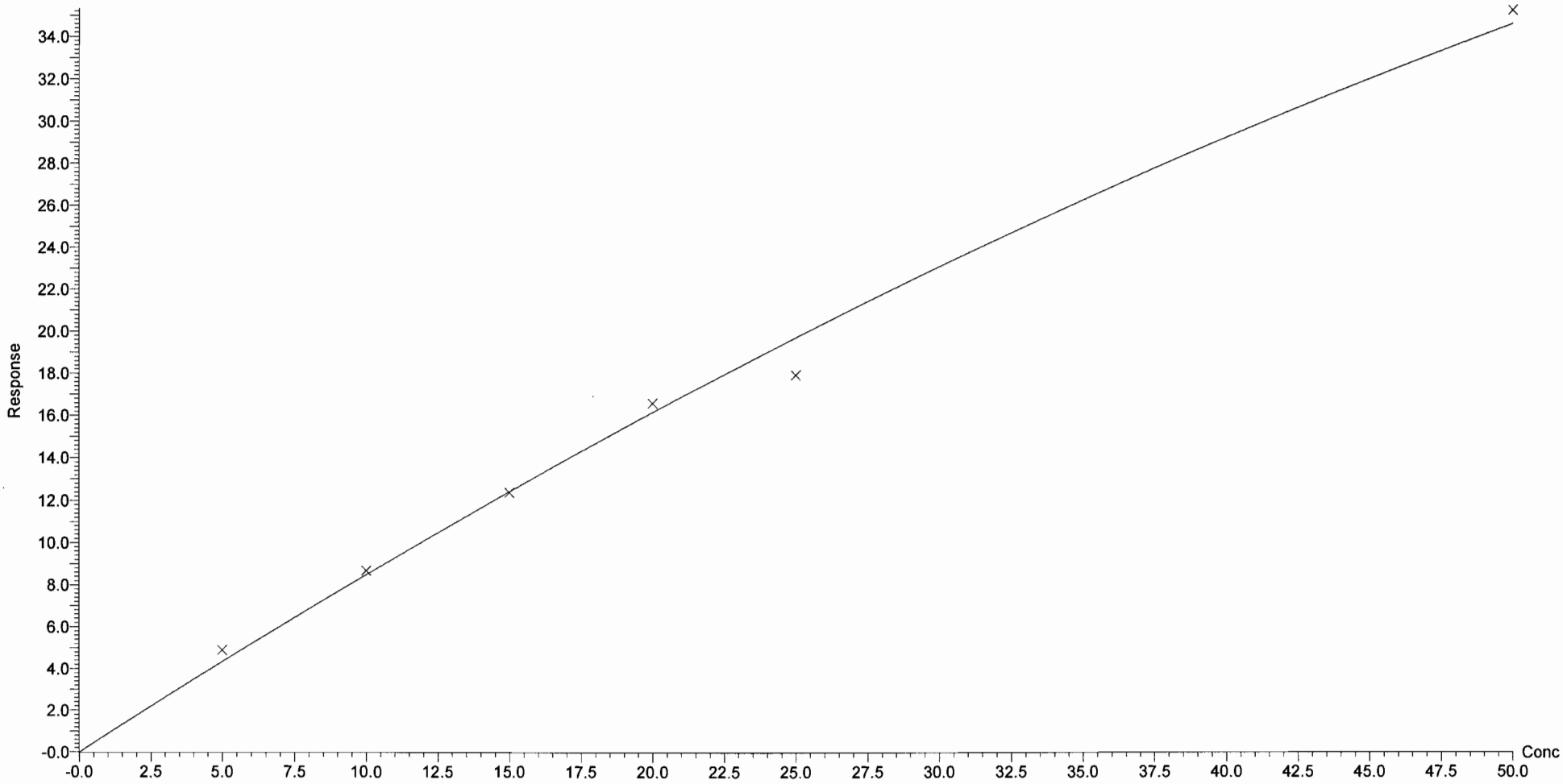


Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

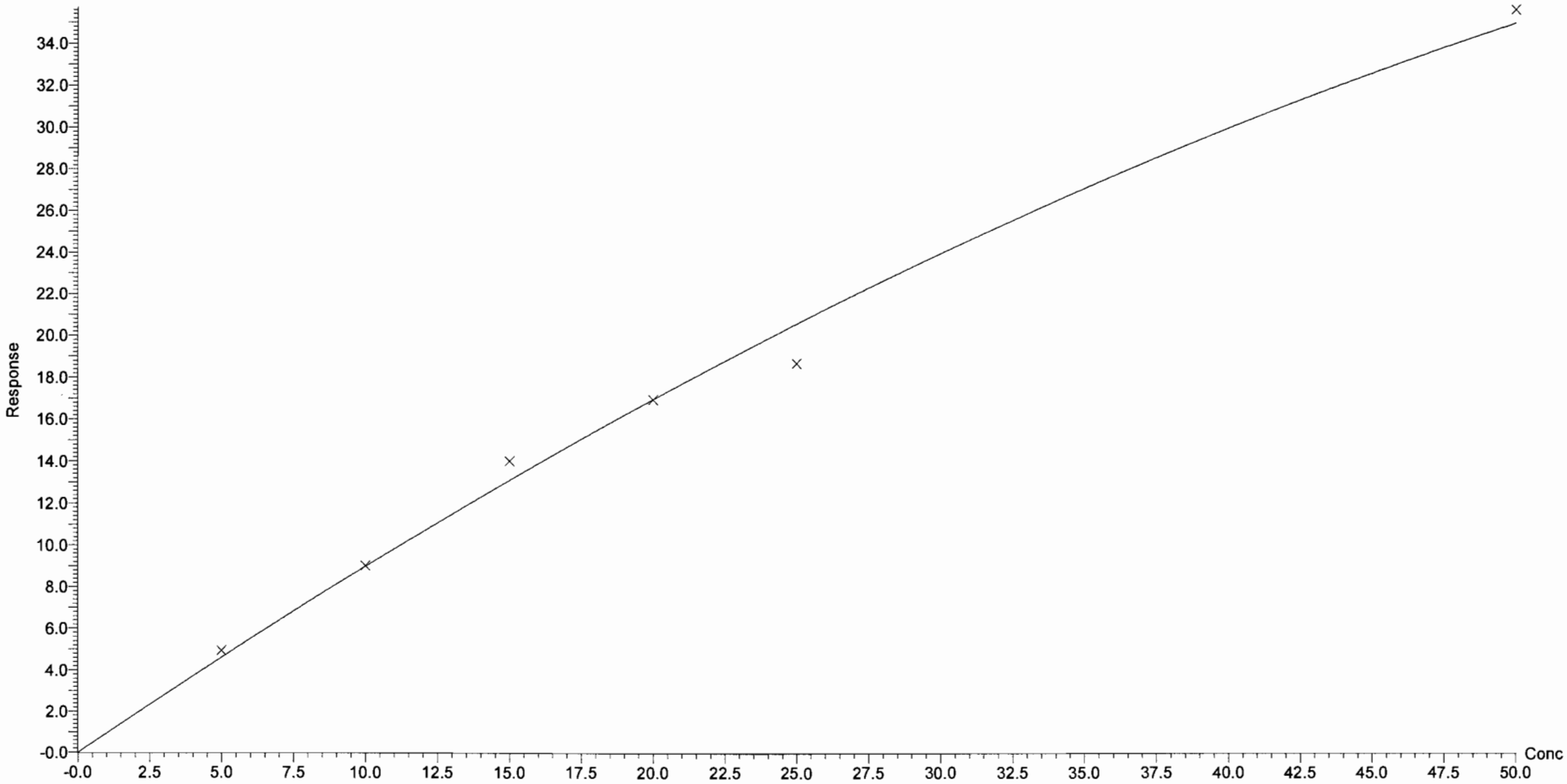
Compound name: PFOA
Coefficient of Determination: R^2 = 0.990932
Calibration curve: -0.0038448 * x^2 + 0.885857 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

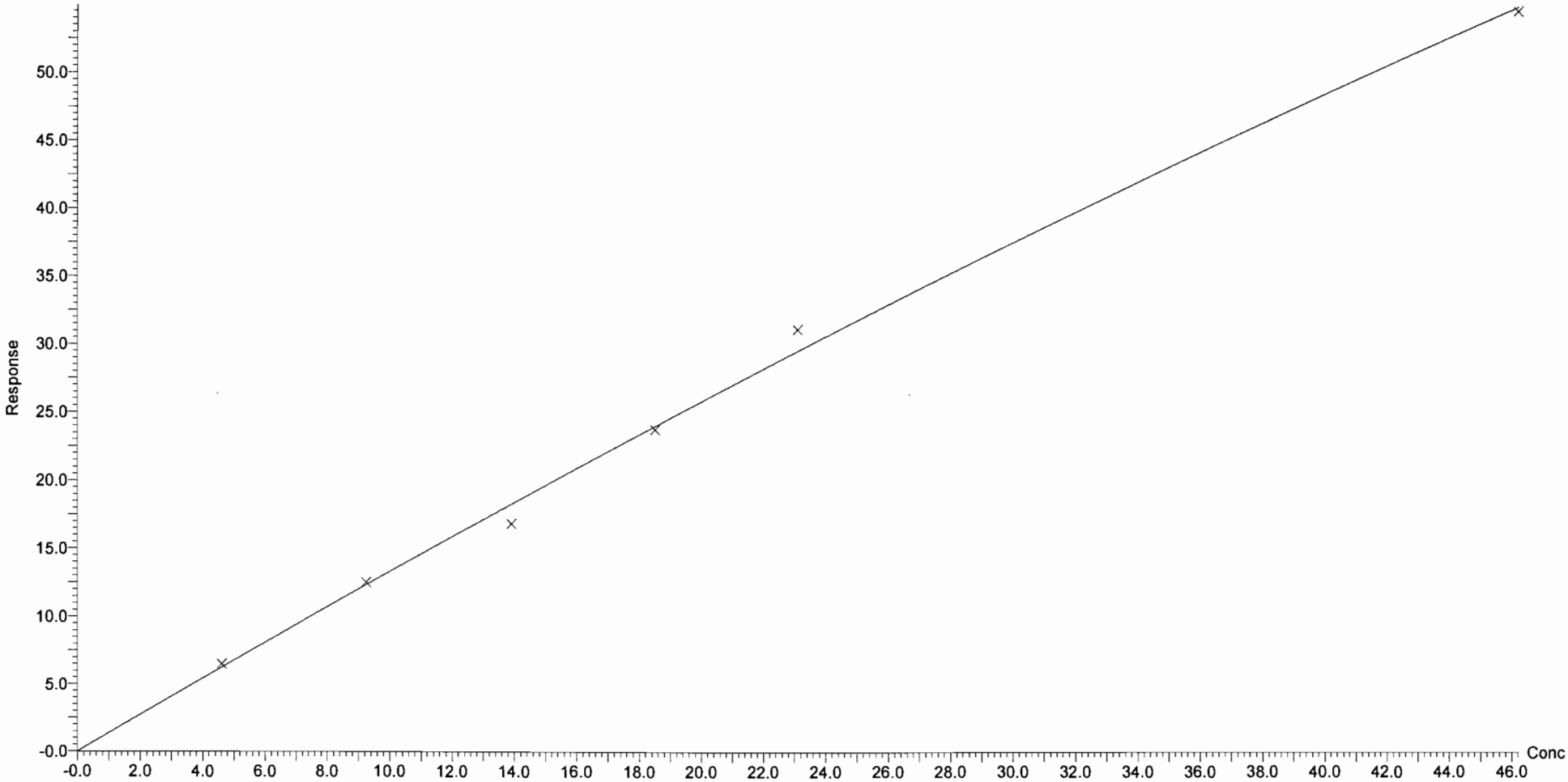
Compound name: PFNA
Coefficient of Determination: R^2 = 0.990791
Calibration curve: -0.00492928 * x^2 + 0.947915 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

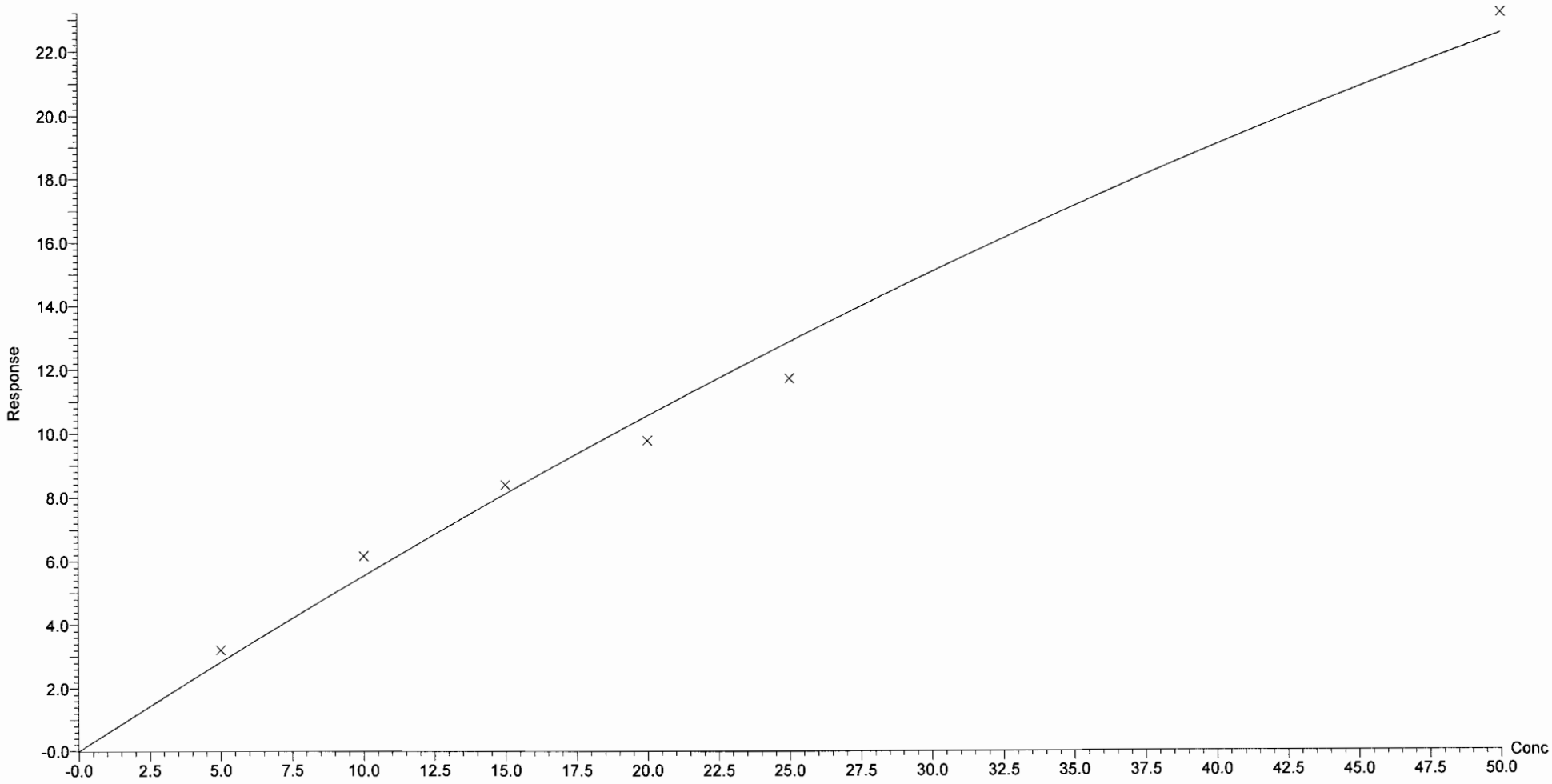
Compound name: PFOS
Coefficient of Determination: R^2 = 0.995701
Calibration curve: -0.00389592 * x^2 + 1.36875 * x
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\Q2.PRO\Results\170426L2\170426L2-CRV.qld

Last Altered: Thursday, April 27, 2017 10:05:41 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:12:36 Pacific Daylight Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.982861
Calibration curve: -0.002568 * x^2 + 0.579697 * x
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Quantify Sample Summary Report **MassLynx 4.1 SCN815**
Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\170426L2\170426L2-33.qld

Last Altered: Thursday, April 27, 2017 10:57:46 Pacific Daylight Time
Printed: Thursday, April 27, 2017 10:58:54 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Name: 170426L2_33.wiff, Date: 27-Apr-2017, Time: 07:35:00, ID: ST170426L2-10 537 DW CS2 17D2406, Description: 537 DW CS2 17D2406

	#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1	PFBS	79.90	1.36e4	1.93e4		0.250	3.42	51.4	96.9
2	2	PFHxA	268.9	2.71e4	1.93e4		0.250	3.80	62.5	104.1
3	3	PFHpA	318.90	3.06e4	2.65e4		0.250	4.29	58.6	97.7
4	4	PFHxS	79.91	1.25e4	1.93e4		0.250	4.40	55.3	101.0
5	5	PFOA	368.90	3.32e4	2.65e4		0.250	4.70	60.6	101.1
6	6	PFNA	419.00	3.14e4	2.65e4		0.250	5.01	53.9	89.8
7	7	PFOS	79.92	1.26e4	1.93e4		0.250	5.06	57.2	102.9
8	8	PFDA	469.00	2.02e4	2.65e4		0.250	5.25	56.0	93.4
9	9	N-MeFOSAA	419.01	1.31e4	2.86e4		0.250	5.31	61.0	101.7
10	11	PFUnA	519.0	2.35e4	2.65e4		0.250	5.36	58.9	98.2
11	12	PFDoA	569.00	1.14e4	2.65e4		0.250	5.48	21.2	35.3
12	13	PFTrDA	619.00	2.92e4	2.65e4		0.250	5.56	58.8	97.9
13	14	PFTeDA	669.00	2.47e4	2.65e4		0.250	5.66	58.4	97.4
14	15	13C2-PFHxA	269.90	1.49e4	2.65e4	0.560	0.250	3.80	40.3	100.7
15	16	13C2-PFDA	470.00	1.57e4	2.65e4	0.580	0.250	5.24	40.9	102.1
16	17	d5-N-EtFOSAA	419.02	2.07e4	2.86e4	0.688	0.250	5.36	168	105.0
17	18	13C2-PFOA	369.90	2.65e4	2.65e4	1.000	0.250	4.70	40.0	100.0
18	19	13C4-PFOS	79.93	1.93e4	1.93e4	1.000	0.250	5.05	115	100.0
19	20	d3-N-MeFOSAA	418.91	2.86e4	2.86e4	1.000	0.250	5.31	160	100.0

70-130

(A)

70-130

AC 4/27/17

(A) Not used.

✓ ES 4/27/17

AC 4/27/17

LC Calibration Standards Review Checklist ~~Q2~~ Q3

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	N/A
Calibration ID:	STT0426L2-10	L (M) H	N/A ☐	☑	☑	☑	☑	☑	☑
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	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 2/21/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Reviewed By: [initials] 4/27/17
Initials/Date

Comments:

Vista Analytical Laboratory Q-1

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:59:13 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:00:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 14_537_DW.mdb 25 Apr 2017 15:23:54
Calibration: U:\Q2.PRO\CurveDB\C18_537_Q3_04-26-17_L14.cdb 27 Apr 2017 10:05:41

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170426L2_01_P...	IPA	27-Apr-17	01:03:12
2	170426L2_02_P...	ST170426L2-1 537 DW CS(-3) 17D2401	27-Apr-17	01:15:26
3	170426L2_03_P...	ST170426L2-2 537 DW CS(-2) 17D2402	27-Apr-17	01:27:38
4	170426L2_04_P...	ST170426L2-3 537 DW CS(-1) 17D2403	27-Apr-17	01:39:55
5	170426L2_05_P...	ST170426L2-4 537 DW CS0 17D2516	27-Apr-17	01:52:09
6	170426L2_06_P...	ST170426L2-5 537 DW CS1 17D2604	27-Apr-17	02:04:24
7	170426L2_07_P...	ST170426L2-6 537 DW CS2 17D2605	27-Apr-17	02:16:37
8	170426L2_08_P...	ST170426L2-7 537 DW CS3 17D2606	27-Apr-17	02:28:51
9	170426L2_09_P...	ST170426L2-8 537 DW CS4 17D2607	27-Apr-17	02:41:02
10	170426L2_10_P...	ST170426L2-9 537 DW CS5 17D2608	27-Apr-17	02:53:18
11	170426L2_11_P...	IPA	27-Apr-17	03:05:34
12	170426L2_12_P...	SS170426L2-1 537 DW SSS 17D2609	27-Apr-17	03:17:47
13	170426L2_13_P...	B7D0069-BS1	27-Apr-17	03:30:03
14	170426L2_14_P...	B7D0109-BS1	27-Apr-17	03:42:18
15	170426L2_15_P...	IPA	27-Apr-17	03:54:34
16	170426L2_16_P...	B7D0069-BLK1	27-Apr-17	04:06:49
17	170426L2_17_P...	B7D0109-BLK1	27-Apr-17	04:19:04
18	170426L2_18_P...	1700503-01	27-Apr-17	04:31:22
19	170426L2_19_P...	1700503-02	27-Apr-17	04:43:37
20	170426L2_20_P...	1700503-03	27-Apr-17	04:55:52
21	170426L2_21_P...	1700503-04	27-Apr-17	05:08:06
22	170426L2_22_P...	1700503-05	27-Apr-17	05:20:21
23	170426L2_23_P...	1700503-06	27-Apr-17	05:32:36
24	170426L2_24_P...	B7D0109-MS1	27-Apr-17	05:44:48
25	170426L2_25_P...	B7D0109-MSD1	27-Apr-17	05:57:04
26	170426L2_26_P...	1700503-07	27-Apr-17	06:09:14
27	170426L2_27_P...	1700503-08	27-Apr-17	06:21:31
28	170426L2_28_P...	1700503-09	27-Apr-17	06:33:46
29	170426L2_29_P...	1700503-10	27-Apr-17	06:46:01
30	170426L2_30_P...	1700387-01@20X	27-Apr-17	06:58:16
31	170426L2_31_P...	1700387-01@40X	27-Apr-17	07:10:31

Dataset: Untitled

Last Altered: Thursday, April 27, 2017 10:59:13 Pacific Daylight Time
Printed: Thursday, April 27, 2017 11:00:05 Pacific Daylight Time

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
32	170426L2_32_P...	IPA	27-Apr-17	07:22:47
33	170426L2_33_P...	ST170426L2-10 537 DW CS2 17D2406	27-Apr-17	07:35:00

C:\ALL_PROJECTS\112G08005\WE08\FIGURE 10-2 CSM AND FLOW.MXD MKB 12/22/2016

INSET
SCALE 1" = 600'

NAWC
TRENTON

MW-48BR

1

2

3

Altura

634

N

611

Scotch Rd

Merrill Lynch Dr

Diverty R

Sheffield Ln

Reed Rd

Ewing Creek Tributary

Capital Way

Capital Health Medical Center

Reading

95

Ewing Creek

Charles Ewing Blvd

Timberlake Dr

200 ft

Mountain View Golf Course

228 ft

Mansfield Rd

Star Dr

Bedford Dr

Westwood Dr

579

Bear Tavern Rd

237 ft

Sam Weinroth Rd

S Olessna Ave

197 ft

Trenton Mercer Airport

601

Terminal Circle Dr

Willis Dr

Scenic Dr

Schwarzkopf Dr

Sunset Ave

Howell Ave

Decou Ave

Parkway Ave

Graphics Dr

Municipal Dr

Upper Ferry Rd

636

Rambling Creek Park

Kyle Way

Ewing

Carlton Ave

Main Blvd

Shelton Ave

Albans Ave

Acton Ave

Chelmsford Dr

Dixmont Ave

Conway Ave

Dixfield Ave

Brandon Ave

Lanning

Fireside Stratford Ave

Rutledge Ave

Dunmore Ave

Walton Ave

Farrell Ave

Glen Manor Dr

Fernwood

Parkw

Villa

Lower Ferry Rd

Phillips Blvd

Van Saun Dr

Currier Way

Bywood Ln

Rockleigh Dr

Corey Dr

Hickory Hill Dr

Bayberry Rd

Van Duyn Dr

West Branch Shabakunk Creek Tributary

Scudders Falls

W Upper Ferry Rd

Diane Dr

175

Wilburtha

Wilburtha Rd

Blackwood Dr

Riverview Dr

Country Ln

Delaware River Tributary

River Rd

Jacob Ct

Brown St

State Police Dr

E State Police Dr

Lafayette Ave

Summit Ave

Washington Ave

Trenton Ave

New Ave

Railroad Ave

Grand Ave

Walker Ave

Gold Run Tributary

Yorkshire Cir

Silvia St

Wynnewood Rd

Franklyn Rd

Gilmore Rd

Downing Rd

Clarke Rd

Ferry Road Manor

643

Esther Ave

Palmer Ln

133 ft

Lincoln Dr

Drake Cir

E Drake Dr

Sullivan Way

Gold Run

Trenton Country Club

McGray Dr

Paton Ln

Abernethy Dr

Morningside Dr

Santhican Dr

Delaware River

NAWC
TRENTON

SEE INSET

PRIVATE WELL LOCATIONS

PRIVATE WELL LOCATIONS

0 750 1,500 3,000
Feet

LEGEND
- (2) IR SITE LOCATION
- GROUNDWATER TREATMENT PLANT
- SHALLOW GROUNDWATER FLOW DIRECTION
- DEEP GROUNDWATER FLOW DIRECTION
- ONE MILE RADIUS

TETRA TECH

CONCEPTUAL SITE MODEL AND GROUNDWATER FLOW DIRECTIONS FORMER NAVAL AIR WARFARE CENTER TRENTON, NEW JERSEY

FILE	SCALE
FIGURE 10-2 CSM AND FLOW	PER SCALE BAR
FIGURE NUMBER **FIGURE 10-2**	REV 0 / DATE 12/22/16