



**Groundwater Sample Results,
Level 2 Laboratory Report, Level 4 Laboratory Report,
Electronic Data Deliverable, Data Validation Report,
and the Sample Location Report, SDG 1600820**

*Naval Air Station Oceana
Virginia Beach, Virginia*

July 2019

July 07, 2016

Vista Work Order No. 1600820

Ms. Tiffany Hill
CH2M Hill
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 23, 2016. This sample set was analyzed on a rush turn-around time, under your Project Name 'Fentress Phase II PFC Investigation'.

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

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

Sincerely,

Martha Maier
Laboratory Director



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

Vista Work Order No. 1600820

Case Narrative

Sample Condition on Receipt:

Six aqueous 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:

Modified EPA Method 537

The samples were extracted and analyzed for a selected list of six PFAS using Modified EPA Method 537. The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Results for PFHpA and PFNA results include the linear isomer only.

Holding Times

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

Quality Control

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

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

The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

As requested, an MS/MSD was performed on sample "OF-MW10D-0616". The recoveries and RPDs were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1600820-01	OF-MW10-0616		22-Jun-16 08:40	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1600820-02	OF-MW08-0616		22-Jun-16 08:50	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1600820-03	OF-MW08P-0616		22-Jun-16 08:55	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1600820-04	OF-MW10D-0616	MS/MSD	22-Jun-16 13:30	23-Jun-16 09:34	HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
1600820-05	OF-MW09-0616		22-Jun-16 14:55	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1600820-06	OF-MW09D-0616		22-Jun-16 13:50	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank						Modified EPA Method 537			
Matrix: Aqueous		QC Batch: B6F0157		Lab Sample: B6F0157-BLK1		Date Analyzed: 28-Jun-16 19:36 Column: BEH C18 Analyst: PBW			
Sample Size: 0.125 L		Date Extracted: 28-Jun-2016 8:05							
Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	107	60 - 150	
PFHpA	ND	0.591	4.00	8.00		IS 13C4-PFHpA	101	25 - 175	
PFHxS	ND	0.947	4.00	8.00		IS 18O2-PFHxS	97.9	60 - 150	
PFOA	ND	0.651	4.00	8.00		IS 13C2-PFOA	97.9	60 - 150	
PFOS	ND	0.807	4.00	8.00		IS 13C8-PFOS	103	60 - 150	
PFNA	ND	0.810	4.00	8.00		IS 13C5-PFNA	97.6	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OPR

Modified EPA Method 537

Matrix: Aqueous Sample Size: 0.125 L	QC Batch: B6F0157 Date Extracted: 28-Jun-2016 8:05	Lab Sample: B6F0157-BS1 Date Analyzed: 28-Jun-16 18:59 Column: BEH C18 Analyst: PBW					
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
PFBS	93.8	80.0	117	60 - 130	IS 13C3-PFBS	101	60 - 150
PFHpA	92.0	80.0	115	70 - 130	IS 13C4-PFHpA	103	25 - 175
PFHxS	98.2	80.0	123	70 - 130	IS 18O2-PFHxS	106	60 - 150
PFOA	80.4	80.0	101	70 - 130	IS 13C2-PFOA	102	60 - 150
PFOS	87.9	80.0	110	70 - 130	IS 13C8-PFOS	98.1	60 - 150
PFNA	96.3	80.0	120	50 - 130	IS 13C5-PFNA	92.9	50 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: OF-MW10-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-01	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.129 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 8:40			Date Analyzed:	28-Jun-16 23:40	Column:	BEH C18 Analyst: BSR
Location:							

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	81.9	1.73	3.88	7.74		IS 13C3-PFBS	102	60 - 150	
PFHpA	139	0.572	3.88	7.74		IS 13C4-PFHpA	95.3	25 - 175	
PFHxS	667	0.916	3.88	7.74		IS 18O2-PFHxS	99.4	60 - 150	
PFOA	151	0.630	3.88	7.74		IS 13C2-PFOA	93.0	60 - 150	
PFOS	283	0.781	3.88	7.74		IS 13C8-PFOS	87.8	60 - 150	
PFNA	12.3	0.783	3.88	7.74		IS 13C5-PFNA	84.7	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW08-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-02	Date Received:	23-Jun-2016	9:34	
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.122 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016	8:05	
Date Collected:	22-Jun-2016 8:50			Date Analyzed:	28-Jun-16 23:53	Column:	BEH C18	Analyst:	BSR
Location:					29-Jun-16 16:55	Column:	BEH C18	Analyst:	PBW
Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.83	4.10	8.18		IS 13C3-PFBS	95.0	60 - 150	
PFHpA	ND	0.604	4.10	8.18		IS 13C4-PFHpA	99.2	25 - 175	
PFHxS	8360	9.68	41.0	81.8	D	IS 18O2-PFHxS	98.2	60 - 150	D
PFOA	ND	0.665	4.10	8.18		IS 13C2-PFOA	101	60 - 150	
PFOS	10400	8.25	41.0	81.8	D	IS 13C8-PFOS	90.7	60 - 150	D
PFNA	ND	0.828	4.10	8.18		IS 13C5-PFNA	92.2	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW08P-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-03	Date Received:	23-Jun-2016 9:34		
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.128 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05		
Date Collected:	22-Jun-2016 8:55			Date Analyzed:	29-Jun-16 00:05	Column:	BEH C18	Analyst:	BSR
Location:					29-Jun-16 17:07	Column:	BEH C18	Analyst:	PBW
Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	1580	17.4	39.1	78.0	D	IS 13C3-PFBS	103	60 - 150	D
PFHpA	ND	0.576	3.91	7.80		IS 13C4-PFHpA	98.0	25 - 175	
PFHxS	8120	9.23	39.1	78.0	D	IS 18O2-PFHxS	97.9	60 - 150	D
PFOA	ND	0.635	3.91	7.80		IS 13C2-PFOA	92.8	60 - 150	
PFOS	11900	7.87	39.1	78.0	D	IS 13C8-PFOS	90.0	60 - 150	D
PFNA	ND	0.790	3.91	7.80		IS 13C5-PFNA	81.0	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW10D-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-04	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.125 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 13:30			Date Analyzed:	29-Jun-16 00:17	Column:	BEH C18
Location:						Analyst:	BSR

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	97.1	60 - 150	
PFHpA	ND	0.591	4.00	8.00		IS 13C4-PFHpA	92.3	25 - 175	
PFHxS	3.48	0.947	4.00	8.00	J	IS 18O2-PFHxS	92.9	60 - 150	
PFOA	ND	0.651	4.00	8.00		IS 13C2-PFOA	99.6	60 - 150	
PFOS	4.73	0.807	4.00	8.00	J	IS 13C8-PFOS	87.3	60 - 150	
PFNA	ND	0.810	4.00	8.00		IS 13C5-PFNA	98.6	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Matrix Spike Results

Modified EPA Method 537

Source Client ID: OF-MW10D-0616	QC Batch: B6F0157	Lab Sample: B6F0157-MS1/B6F0157-MSD1
Source LabNumber: 1600820-04	Date Extracted: 28-Jun-2016 8:05	Date Analyzed: 29-Jun-16 01:54 Column: BEH C18 Analyst: BSR
Matrix: Aqueous		29-Jun-16 02:07 Column: BEH C18 Analyst: BSR
Sample Size: 0.128/0.129 L		

Analyte	Spike-MS (ng/L)	MS %R	MS Qualifiers	Spike-MSD (ng/L)	MSD %R	RPD	MS Qualifiers	Labeled Standard	MS %R	MS Qualifiers	MSD %R	MS Qualifiers
PFBS	77.8	117		77.5	117	0		IS 13C3-PFBS	103		101	
PFHpA	77.8	119		77.5	112	6.06		IS 13C4-PFHpA	96.9		97.2	
PFHxS	77.8	109		77.5	107	1.85		IS 18O2-PFHxS	104		104	
PFOA	77.8	102		77.5	109	6.64		IS 13C2-PFOA	95.0		92.0	
PFOS	77.8	109		77.5	113	3.60		IS 13C8-PFOS	96.0		83.7	
PFNA	77.8	113		77.5	115	1.75		IS 13C5-PFNA	84.1		98.9	

Sample ID: OF-MW09-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-05	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.128 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 14:55			Date Analyzed:	29-Jun-16 01:06	Column:	BEH C18 Analyst: BSR
Location:							

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.75	3.91	7.81		IS 13C3-PFBS	107	60 - 150	
PFHpA	ND	0.577	3.91	7.81		IS 13C4-PFHpA	100	25 - 175	
PFHxS	9.07	0.925	3.91	7.81		IS 18O2-PFHxS	104	60 - 150	
PFOA	1.09	0.636	3.91	7.81	J	IS 13C2-PFOA	110	60 - 150	
PFOS	7.84	0.788	3.91	7.81		IS 13C8-PFOS	96.9	60 - 150	
PFNA	ND	0.791	3.91	7.81		IS 13C5-PFNA	93.4	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW09D-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-06	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.129 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 13:50			Date Analyzed:	29-Jun-16 01:18	Column:	BEH C18 Analyst: BSR
Location:							

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.74	3.88	7.76		IS 13C3-PFBS	86.9	60 - 150	
PFHpA	ND	0.573	3.88	7.76		IS 13C4-PFHpA	84.4	25 - 175	
PFHxS	ND	0.918	3.88	7.76		IS 18O2-PFHxS	86.8	60 - 150	
PFOA	ND	0.631	3.88	7.76		IS 13C2-PFOA	84.4	60 - 150	
PFOS	5.49	0.783	3.88	7.76	J	IS 13C8-PFOS	85.3	60 - 150	
PFNA	ND	0.785	3.88	7.76		IS 13C5-PFNA	82.3	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

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 Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
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
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
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

SAMPLE LOG-IN CHECKLIST



Vista Project #: 1600820 TAT 14

Samples Arrival:	Date/Time 6/23/16 0934	Initials: gp	Location: WR-2
			Shelf/Rack: N/A
Logged In:	Date/Time 6/23/16 1103	Initials: SR gp	Location: WR2
			Shelf/Rack: E6
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C: 0.3 (uncorrected)	Time: 0942	Thermometer ID: IR-2	
Temp °C: -1.0 (corrected)			

		YES	NO	NA
Adequate Sample Volume Received?		✓		
Holding Time Acceptable?		✓		
Shipping Container(s) Intact?		✓		
Shipping Custody Seals Intact?		✓		
Shipping Documentation Present?		✓		
Airbill	Trk # 7834 2220 2157	✓		
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?				✓
Na ₂ S ₂ O ₃ Preservation Documented?	COC	Sample Container	<input checked="" type="radio"/> None	
Shipping Container	Vista	<input checked="" type="radio"/> Client	Retain	Return
				Dispose

Comments: Note: IDs do not match. gp 6/23/16

<u>Client Sample ID</u>	<u>Vista Label ID</u>
OF-M10D-0616-MS	OF-MW10D-0616
OF-M10D-0616-SD	OF-MW10D-0616

September 08, 2016

Vista Work Order No. 1600820

Ms. Tiffany Hill
CH2M Hill
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on June 23, 2016. This sample set was analyzed on a rush turn-around time, under your Project Name 'Fentress Phase II PFC Investigation'.

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

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

Sincerely,

Martha Maier
Laboratory Director



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

Vista Work Order No. 1600820

Case Narrative

Sample Condition on Receipt:

Six aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. This report was amended; data from the undiluted extracts was omitted from the datasheets for samples "OF-MW08-0616" and "OF-MW08P-0616".

Analytical Notes:

Modified EPA Method 537

The samples were extracted and analyzed for a selected list of six PFAS using Modified EPA Method 537. The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Results for PFHpA and PFNA results include the linear isomer only.

Holding Times

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

Quality Control

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

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The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

As requested, an MS/MSD was performed on sample "OF-MW10D-0616". The recoveries and RPDs were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
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1600820-02	OF-MW08-0616		22-Jun-16 08:50	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
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		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
		MS/MSD			HDPE Bottle, 125 mL
1600820-05	OF-MW09-0616		22-Jun-16 14:55	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL
1600820-06	OF-MW09D-0616		22-Jun-16 13:50	23-Jun-16 09:34	HDPE Bottle, 125 mL HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank						Modified EPA Method 537			
Matrix: Aqueous		QC Batch: B6F0157		Lab Sample: B6F0157-BLK1		Date Analyzed: 28-Jun-16 19:36 Column: BEH C18 Analyst: PBW			
Sample Size: 0.125 L		Date Extracted: 28-Jun-2016 8:05							
Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	107	60 - 150	
PFHpA	ND	0.591	4.00	8.00		IS 13C4-PFHpA	101	25 - 175	
PFHxS	ND	0.947	4.00	8.00		IS 18O2-PFHxS	97.9	60 - 150	
PFOA	ND	0.651	4.00	8.00		IS 13C2-PFOA	97.9	60 - 150	
PFOS	ND	0.807	4.00	8.00		IS 13C8-PFOS	103	60 - 150	
PFNA	ND	0.810	4.00	8.00		IS 13C5-PFNA	97.6	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OPR

Modified EPA Method 537

Matrix: Aqueous Sample Size: 0.125 L	QC Batch: B6F0157 Date Extracted: 28-Jun-2016 8:05	Lab Sample: B6F0157-BS1 Date Analyzed: 28-Jun-16 18:59 Column: BEH C18 Analyst: PBW					
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
PFBS	93.8	80.0	117	60 - 130	IS 13C3-PFBS	101	60 - 150
PFHpA	92.0	80.0	115	70 - 130	IS 13C4-PFHpA	103	25 - 175
PFHxS	98.2	80.0	123	70 - 130	IS 18O2-PFHxS	106	60 - 150
PFOA	80.4	80.0	101	70 - 130	IS 13C2-PFOA	102	60 - 150
PFOS	87.9	80.0	110	70 - 130	IS 13C8-PFOS	98.1	60 - 150
PFNA	96.3	80.0	120	50 - 130	IS 13C5-PFNA	92.9	50 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: OF-MW10-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-01	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.129 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 8:40			Date Analyzed:	28-Jun-16 23:40	Column:	BEH C18 Analyst: BSR
Location:							

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	81.9	1.73	3.88	7.74		IS 13C3-PFBS	102	60 - 150	
PFHpA	139	0.572	3.88	7.74		IS 13C4-PFHpA	95.3	25 - 175	
PFHxS	667	0.916	3.88	7.74		IS 18O2-PFHxS	99.4	60 - 150	
PFOA	151	0.630	3.88	7.74		IS 13C2-PFOA	93.0	60 - 150	
PFOS	283	0.781	3.88	7.74		IS 13C8-PFOS	87.8	60 - 150	
PFNA	12.3	0.783	3.88	7.74		IS 13C5-PFNA	84.7	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW08-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-02	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.122 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 8:50			Date Analyzed:	28-Jun-16 23:53	Column:	BEH C18 Analyst: BSR
Location:					29-Jun-16 16:55	Column:	BEH C18 Analyst: PW

Analyte	Conc. (ng/L)	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	1610	4.10	8.18		IS 13C3-PFBS	95.0	60 - 150	
PFHpA	539	4.10	8.18		IS 13C4-PFHpA	99.2	25 - 175	
PFHxS	8360	41.0	81.8	D	IS 18O2-PFHxS	98.2	60 - 150	D
PFOA	465	4.10	8.18		IS 13C2-PFOA	101	60 - 150	
PFOS	10400	41.0	81.8	D	IS 13C8-PFOS	90.7	60 - 150	D
PFNA	12.0	4.10	8.18		IS 13C5-PFNA	92.2	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

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: OF-MW08P-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-03	Date Received:	23-Jun-2016	9:34	
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.128 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016	8:05	
Date Collected:	22-Jun-2016 8:55			Date Analyzed:	29-Jun-16 00:05	Column:	BEH C18	Analyst:	BSR
Location:					29-Jun-16 17:07	Column:	BEH C18	Analyst:	PBW
Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	1580	17.4	39.1	78.0	D	IS 13C3-PFBS	103	60 - 150	D
PFHpA	562	0.576	3.91	7.80		IS 13C4-PFHpA	98.0	25 - 175	
PFHxS	8120	9.23	39.1	78.0	D	IS 18O2-PFHxS	97.9	60 - 150	D
PFOA	514	0.635	3.91	7.80		IS 13C2-PFOA	92.8	60 - 150	
PFOS	11900	7.87	39.1	78.0	D	IS 13C8-PFOS	90.0	60 - 150	D
PFNA	12.2	0.790	3.91	7.80		IS 13C5-PFNA	81.0	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

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: OF-MW10D-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-04	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.125 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 13:30			Date Analyzed:	29-Jun-16 00:17	Column:	BEH C18
Location:						Analyst:	BSR

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.79	4.00	8.00		IS 13C3-PFBS	97.1	60 - 150	
PFHpA	ND	0.591	4.00	8.00		IS 13C4-PFHpA	92.3	25 - 175	
PFHxS	3.48	0.947	4.00	8.00	J	IS 18O2-PFHxS	92.9	60 - 150	
PFOA	ND	0.651	4.00	8.00		IS 13C2-PFOA	99.6	60 - 150	
PFOS	4.73	0.807	4.00	8.00	J	IS 13C8-PFOS	87.3	60 - 150	
PFNA	ND	0.810	4.00	8.00		IS 13C5-PFNA	98.6	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Matrix Spike Results

Modified EPA Method 537

Source Client ID: OF-MW10D-0616
 Source LabNumber: 1600820-04
 Matrix: Aqueous
 Sample Size: 0.128/0.129 L

QC Batch: B6F0157
 Date Extracted: 28-Jun-2016 8:05

Lab Sample: B6F0157-MS1/B6F0157-MSD1
 Date Analyzed: 29-Jun-16 01:54 Column: BEH C18 Analyst: BSR
 29-Jun-16 02:07 Column: BEH C18 Analyst: BSR

Analyte	Spike-MS (ng/L)	MS %R	MS Qualifiers	Spike-MSD (ng/L)	MSD %R	RPD	MS Qualifiers	Labeled Standard	MS %R	MS Qualifiers	MSD %R	MS Qualifiers
PFBS	77.8	117		77.5	117	0		IS 13C3-PFBS	103		101	
PFHpA	77.8	119		77.5	112	6.06		IS 13C4-PFHpA	96.9		97.2	
PFHxS	77.8	109		77.5	107	1.85		IS 18O2-PFHxS	104		104	
PFOA	77.8	102		77.5	109	6.64		IS 13C2-PFOA	95.0		92.0	
PFOS	77.8	109		77.5	113	3.60		IS 13C8-PFOS	96.0		83.7	
PFNA	77.8	113		77.5	115	1.75		IS 13C5-PFNA	84.1		98.9	

Sample ID: OF-MW09-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-05	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.128 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 14:55			Date Analyzed:	29-Jun-16 01:06	Column:	BEH C18 Analyst: BSR
Location:							

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.75	3.91	7.81		IS 13C3-PFBS	107	60 - 150	
PFHpA	ND	0.577	3.91	7.81		IS 13C4-PFHpA	100	25 - 175	
PFHxS	9.07	0.925	3.91	7.81		IS 18O2-PFHxS	104	60 - 150	
PFOA	1.09	0.636	3.91	7.81	J	IS 13C2-PFOA	110	60 - 150	
PFOS	7.84	0.788	3.91	7.81		IS 13C8-PFOS	96.9	60 - 150	
PFNA	ND	0.791	3.91	7.81		IS 13C5-PFNA	93.4	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW09D-0616**Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1600820-06	Date Received:	23-Jun-2016 9:34
Project:	Fentress Phase II PFC Investigation	Sample Size:	0.129 L	QC Batch:	B6F0157	Date Extracted:	28-Jun-2016 8:05
Date Collected:	22-Jun-2016 13:50			Date Analyzed:	29-Jun-16 01:18	Column:	BEH C18 Analyst: BSR
Location:							

Analyte	Conc. (ng/L)	MDL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	1.74	3.88	7.76		IS 13C3-PFBS	86.9	60 - 150	
PFHpA	ND	0.573	3.88	7.76		IS 13C4-PFHpA	84.4	25 - 175	
PFHxS	ND	0.918	3.88	7.76		IS 18O2-PFHxS	86.8	60 - 150	
PFOA	ND	0.631	3.88	7.76		IS 13C2-PFOA	84.4	60 - 150	
PFOS	5.49	0.783	3.88	7.76	J	IS 13C8-PFOS	85.3	60 - 150	
PFNA	ND	0.785	3.88	7.76		IS 13C5-PFNA	82.3	50 - 150	

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

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.
*	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
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
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

SAMPLE LOG-IN CHECKLIST



Vista Project #: 1600820 TAT 14

Samples Arrival:	Date/Time 6/23/16 0934	Initials: gp	Location: WR-2
			Shelf/Rack: N/A
Logged In:	Date/Time 6/23/16 1103	Initials: SR gp	Location: WR2
			Shelf/Rack: E6
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C: 0.3 (uncorrected)	Time: 0942	Thermometer ID: IR-2	
Temp °C: -1.0 (corrected)			

		YES	NO	NA
Adequate Sample Volume Received?		✓		
Holding Time Acceptable?		✓		
Shipping Container(s) Intact?		✓		
Shipping Custody Seals Intact?		✓		
Shipping Documentation Present?		✓		
Airbill	Trk # 7834 2220 2157	✓		
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?				✓
Na ₂ S ₂ O ₃ Preservation Documented?	COC	Sample Container	<input checked="" type="radio"/> None	
Shipping Container	Vista	<input checked="" type="radio"/> Client	Retain	Return
			Dispose	

Comments: Note: IDs do not match. gp 6/23/16

<u>Client Sample ID</u>	<u>Vista Label ID</u>
OF-M10D-0616-MS	OF-MW10D-0616
OF-M10D-0616-SD	OF-MW10D-0616

EXTRACTION INFORMATION

Process Sheet
Workorder: 1600820

Prep Expiration: 07/06/2016
Client: CH2M Hill

Workorder Due: 07-Jul-16 00:00

TAT: 14

Method: 537 PFAS 6 DOD (LOQ as mRL)
Matrix: Aqueous
Client Matrix: Aqueous

Prep Batch: 36F0157

Prep Data Entered: 6/29/16 NK
Date and Initials

Initial Sequence: _____

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1600820-01 (A)	<input checked="" type="checkbox"/>	OF-MW10-0616	23-Jun-16 09:34	WR-2 E-6	
1600820-02	<input checked="" type="checkbox"/>	OF-MW08-0616	23-Jun-16 09:34	WR-2 E-6	
1600820-03	<input checked="" type="checkbox"/>	OF-MW08P-0616	23-Jun-16 09:34	WR-2 E-6	
1600820-04 (A-C)	<input checked="" type="checkbox"/>	OF-MW10D-0616	23-Jun-16 09:34	WR-2 E-6	MS/MSD
1600820-05 (A)	<input checked="" type="checkbox"/>	OF-MW09-0616	23-Jun-16 09:34	WR-2 E-6	
1600820-06	<input checked="" type="checkbox"/>	OF-MW09D-0616	23-Jun-16 09:34	WR-2 E-6	

Report total PFOA

Vista PM: Martha Maier

Vial Box ID: Kitty

Sample Reconciled By: N. King 6/28/16

Percent Solids



Project: 1600820

Balance ID: NA

Sample ID	Chemist: <u>NA</u> Date: <u>↓</u> Time: <u>↓</u>		Chemist: <u>NA</u> Date: <u>↓</u> Time: <u>↓</u>		Chemist/Date <u>dm 4/20/16</u>	
	Boat Wt.	Sample + Boat Wt.	Residue + Boat Wt.	pH before	pH after	CF
160820-01 A <i>dm 4/20/16</i>			(A)	7	2	0
160820-02 BA <i>dm 4/20/16</i>			(B)	6	2	0
-03 A			↓	6	2	0
-04 A			↓	6	2	0
-04 B			(A)	7	2	0
-04 C			↓	7	2	0
-05 A			(B)	6	2	0
-06 A			(A)	7	2	0

- Procedure:**
- Tare the balance.
 - Record Boat Weight.
 - Add 2 - 10 g of sample.
 - Record Wet Wt. + Boat Wt.
 - Dry in oven overnight at 107°C.
 - Tare the balance.
 - Record Residue + Boat Wt.

- Notes:**
- Ⓐ Sample adjusted to pH 2 with 3 drops HCl.
 - Ⓑ Sample adjusted to pH 2 with 2 drops HCl *nk 6/28/16*
- Methods 8280, 613, 1613, 8290, 1614 - pH < 9
 • Methods 1668/PCN - pH 2-3
 • NCASI 551 - pH 1

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS 6 DOD (LOO as mR

B6F0157

Chemist: N.King

Prep Date/Time: 28-Jun-16 08:05

Prepared using: LCMS - SPE Extraction-LCMS

						CGF0129		
C	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE	RS CHEM/WIT DATE	
<input type="checkbox"/>	B6F0157-BLK1	N/A	N/A	(0.125)	NK DM 6/28/16	NK 6/28/16	NK DM 6/28/16	
<input type="checkbox"/>	B6F0157-BS1	↓	↓	(0.125)	↓	↓	↓	
<input type="checkbox"/>	B6F0157-MS1 1600820-04 (A)	155.66	27.18	0.12848	↓	↓	↓	
<input type="checkbox"/>	B6F0157-MSD1 1600820-04 (A)	156.22	27.18	0.12904	↓	↓	↓	
<input type="checkbox"/>	1600820-01 (A)	156.45	27.22	0.12923	↓	↓	↓	
<input type="checkbox"/>	1600820-02	149.36	27.08	0.12228	↓	↓	↓	
<input type="checkbox"/>	1600820-03	155.47	27.24	0.12823	↓	↓	↓	
<input type="checkbox"/>	1600820-04 (A)	152.5	27.11	0.12504	↓	↓	↓	
<input type="checkbox"/>	1600820-05	155.13	27.17	0.12796	↓	↓	↓	
<input type="checkbox"/>	1600820-06 (A)	156.05	27.4	0.12891	↓	↓	↓	

(A) Samples contained particulate. Samples were centrifuged. NK 6/28/16

IS Name (V3) 16E0520, 10 _μ l	NS Name (V4) 16E0701, 10 _μ l	RS Name (V3) 16F0203, 10 _μ l	SPE Chem: Strata XAW 33 _μ m 200mg/6ml Ele SOLV: MeOH + 0.5% NH ₄ OH in MeOH Final Volume(s): 1 ml	Check Out: NK 6/28/16 Chemist/Date: Check In: ↓ Empty Chemist/Date: Balance ID: HRMS-9
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Comments: Assume 1 g = 1 mL

SAMPLE DATA – MODIFIED EPA METHOD 537

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_19.qld

Last Altered: Thursday, June 30, 2016 16:03:44 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:04:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_19.wiff, Date: 28-Jun-2016, Time: 19:36:32, ID: B6F0157-BLK1, Description: Method Blank

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	79.9		7.12e3		0.125			
2	2 PFHpA	318.9	2.17e0	1.33e4		0.125	4.03	0.0873	
3	3 PFHxS	79.91	4.87e0	1.72e3		0.125	4.47	0.441	
4	4 PFOA	368.9	1.38e1	1.04e4		0.125	4.74	0.314	
5	5 PFOS	79.92		5.36e3		0.125			
6	6 PFNA	419.0		9.75e3		0.125			
7	7 13C3-PFBS	79.95	7.12e3	1.22e4	0.546	0.125	3.46	107	107.0
8	8 13C4-PFHpA	321.9	1.33e4	1.22e4	1.075	0.125	4.35	101	101.2
9	9 18O2-PFHxS	102.9	1.72e3	5.71e3	0.307	0.125	4.47	97.9	97.9
10	10 13C2-PFOA	369.9	1.04e4	1.02e4	1.042	0.125	4.74	97.9	97.9
11	11 13C8-PFOS	79.93	5.36e3	5.09e3	1.026	0.125	5.12	103	102.6
12	12 13C5-PFNA	422.9	9.75e3	4.72e2	21.158	0.125	5.06	97.6	97.6
13	13 13C5-PFHxA	273.0	1.22e4	1.22e4	1.000	0.125	3.87	100	100.0
14	14 13C3-PFHxS	80.0	5.71e3	5.71e3	1.000	0.125	4.47	100	100.0
15	15 13C8-PFOA	375.9	1.02e4	1.02e4	1.000	0.125	4.74	100	100.0
16	16 13C4-PFOS	79.94	5.09e3	5.09e3	1.000	0.125	5.12	100	100.0
17	17 13C9-PFNA	427.0	4.72e2	4.72e2	1.000	0.125	5.06	100	100.0
18	18 Total PFBS	79.9		7.12e3		0.125			
19	19 Total PFHxS	79.91		1.72e3		0.125		0.441	
20	20 Total PFOA	368.9		1.04e4		0.125		0.314	
21	21 Total PFOS	79.92		5.36e3		0.125		0.200	

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_19.qld

Last Altered: Thursday, June 30, 2016 16:03:44 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:04:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_19.wiff, Date: 28-Jun-2016, Time: 19:36:32, ID: B6F0157-BLK1, Description: Method Blank

Total PFBS

#	Name	Trace	RT	Area	IS Area	Conc.
1						

Total PFHxS

#	Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	4.87e0	1.72e3	0.441

Total PFOA

#	Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.74	1.38e1	1.04e4	0.314

Total PFOS

#	Name	Trace	RT	Area	IS Area	Conc.
1	21 Total PFOS	79.92	5.05	7.34e0	5.36e3	0.200

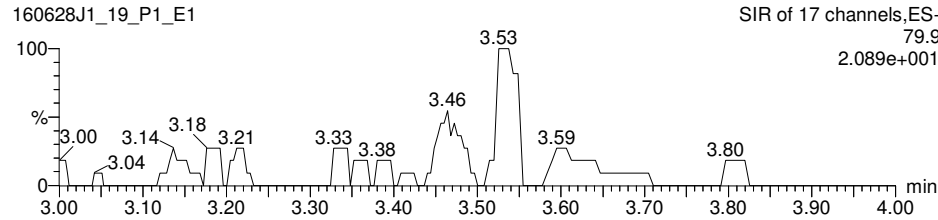
Dataset: U:\Q2.PRO\Results\160628J1\160628J1_19.qld

Last Altered: Thursday, June 30, 2016 16:03:44 Pacific Daylight Time
Printed: Thursday, June 30, 2016 16:04:17 Pacific Daylight Time

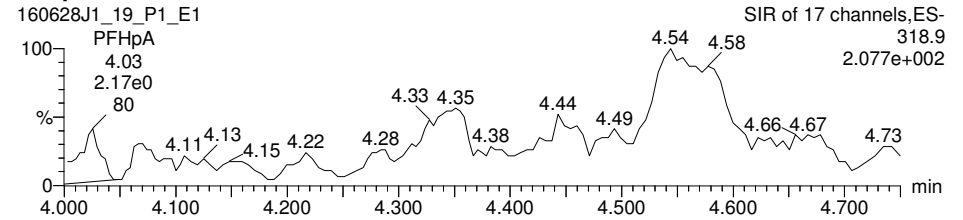
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50
Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_19.wiff, Date: 28-Jun-2016, Time: 19:36:32, ID: B6F0157-BLK1, Description: Method Blank

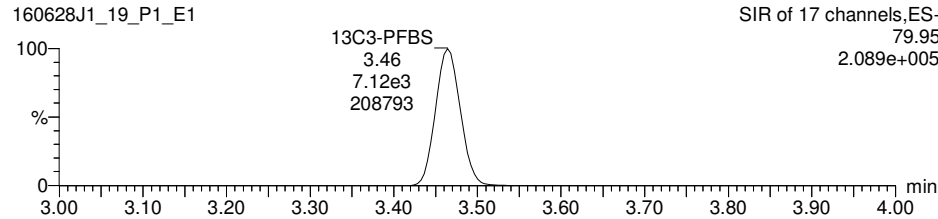
PFBS



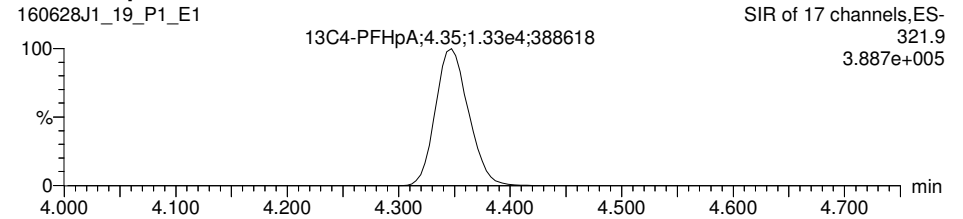
PFHpA



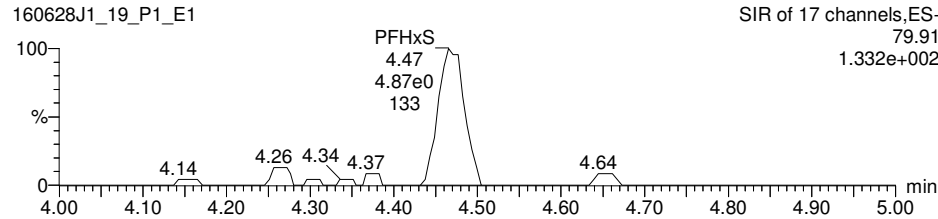
13C3-PFBS



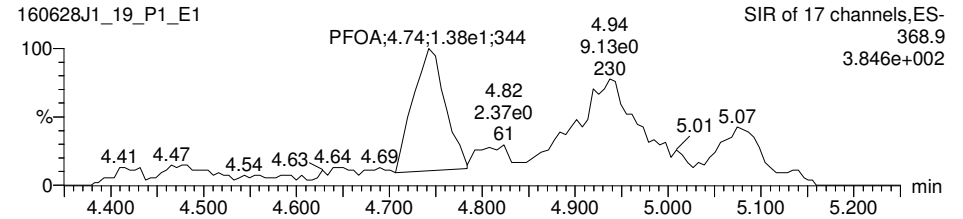
13C4-PFHpA



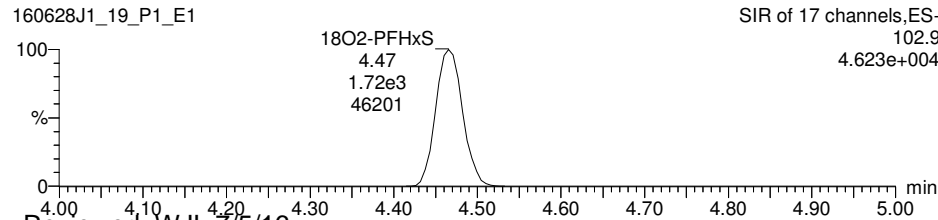
PFHxS



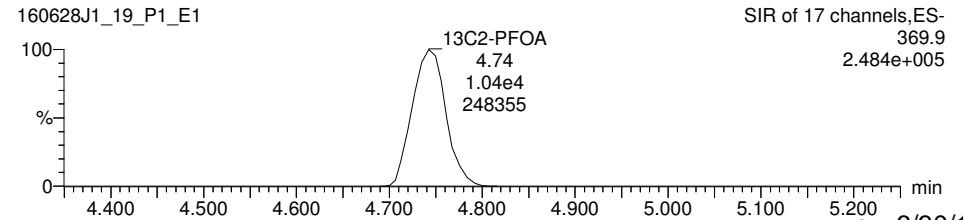
PFOA



18O2-PFHxS

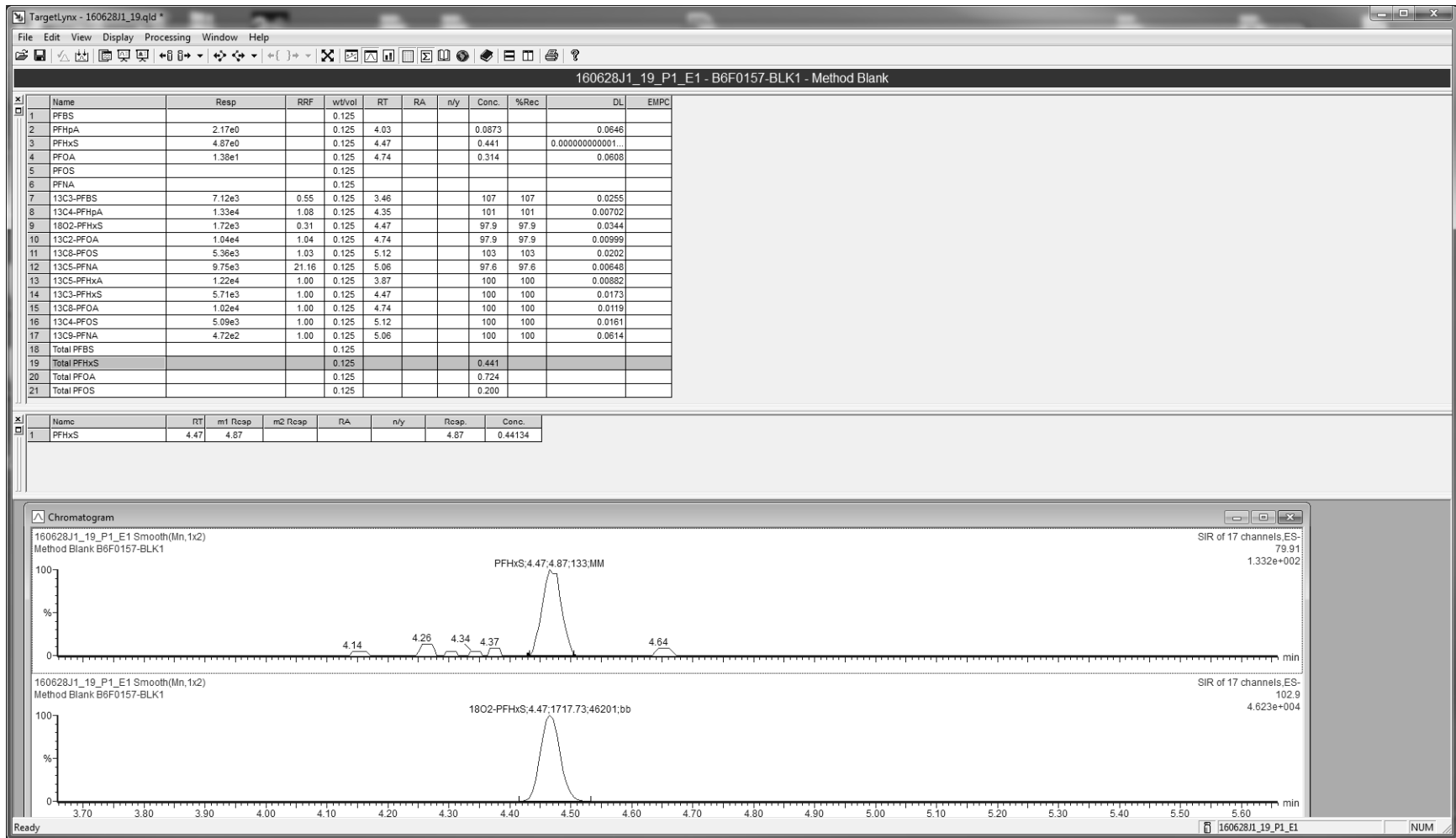


13C2-PFOA



Reviewed: WJL 7/5/16

pw 6/30/16



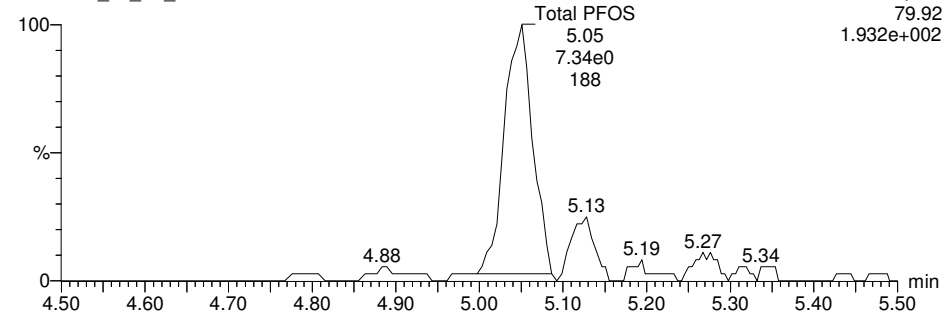
Dataset: U:\Q2.PRO\Results\160628J1\160628J1_19.qld

Last Altered: Thursday, June 30, 2016 16:03:44 Pacific Daylight Time
Printed: Thursday, June 30, 2016 16:04:17 Pacific Daylight Time

Name: 160628J1_19.wiff, Date: 28-Jun-2016, Time: 19:36:32, ID: B6F0157-BLK1, Description: Method Blank

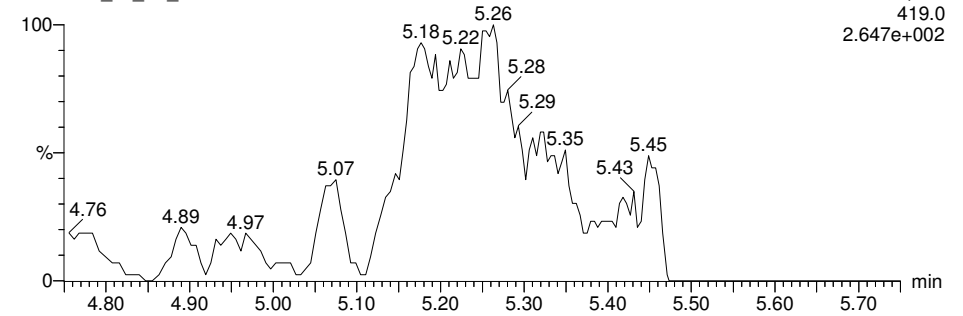
PFOS

160628J1_19_P1_E1



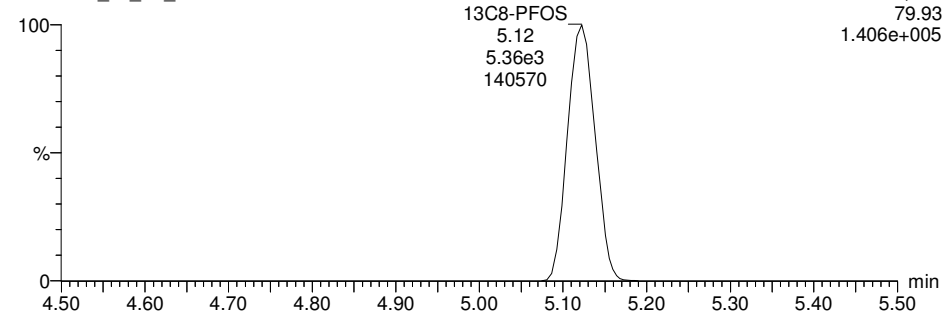
PFNA

160628J1_19_P1_E1



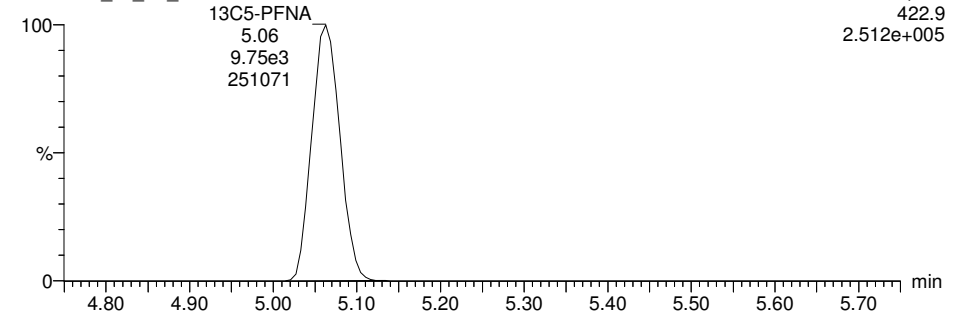
13C8-PFOS

160628J1_19_P1_E1



13C5-PFNA

160628J1_19_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1_19.qld

Last Altered: Thursday, June 30, 2016 16:03:44 Pacific Daylight Time

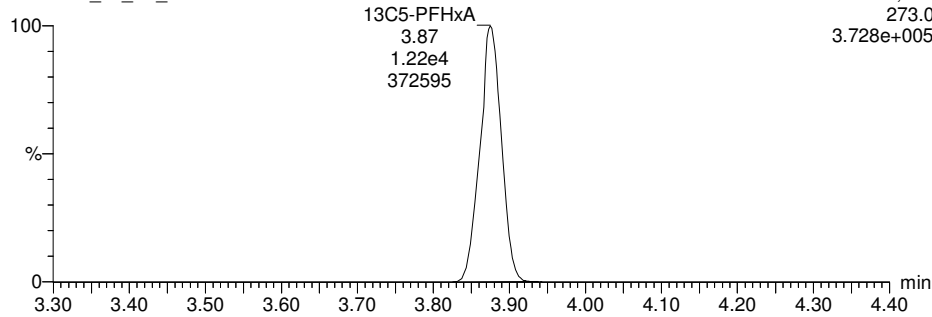
Printed: Thursday, June 30, 2016 16:04:17 Pacific Daylight Time

Name: 160628J1_19.wiff, Date: 28-Jun-2016, Time: 19:36:32, ID: B6F0157-BLK1, Description: Method Blank

13C5-PFHxA

160628J1_19_P1_E1

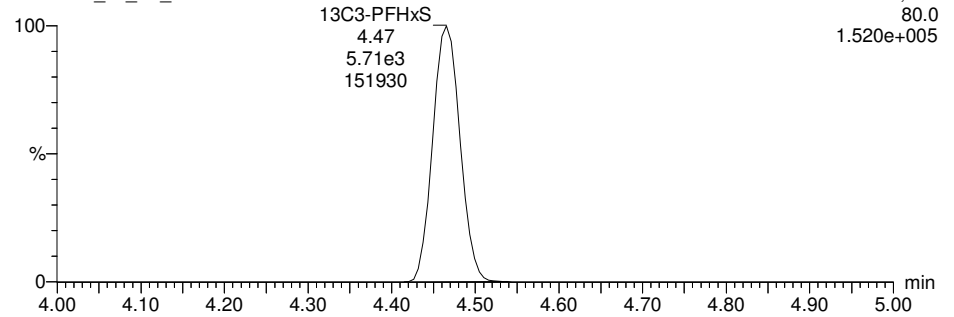
SIR of 17 channels,ES-
273.0
3.728e+005



13C3-PFHxS

160628J1_19_P1_E1

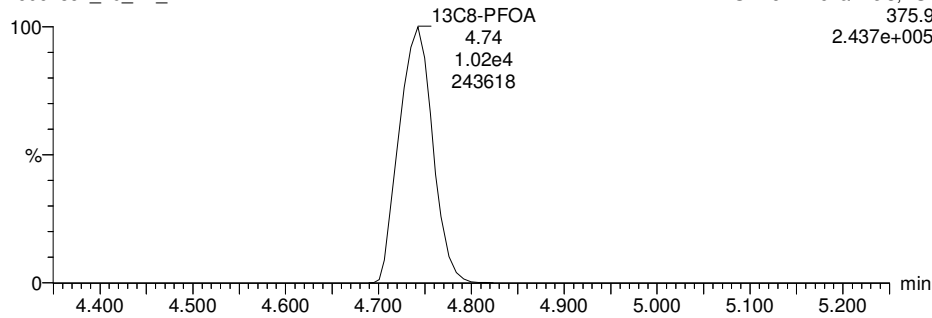
SIR of 17 channels,ES-
80.0
1.520e+005



13C8-PFOA

160628J1_19_P1_E1

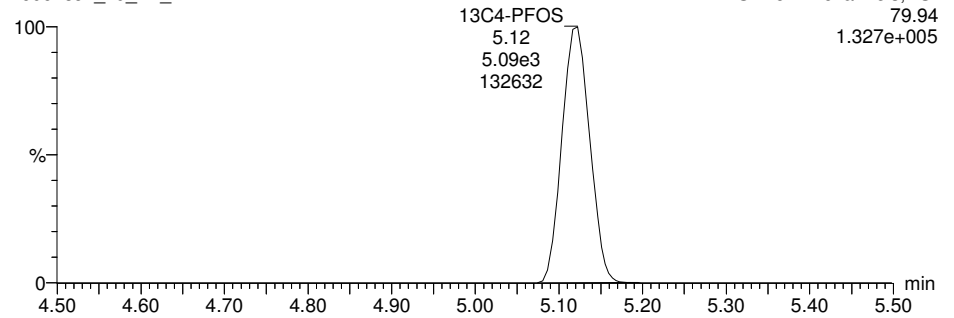
SIR of 17 channels,ES-
375.9
2.437e+005



13C4-PFOS

160628J1_19_P1_E1

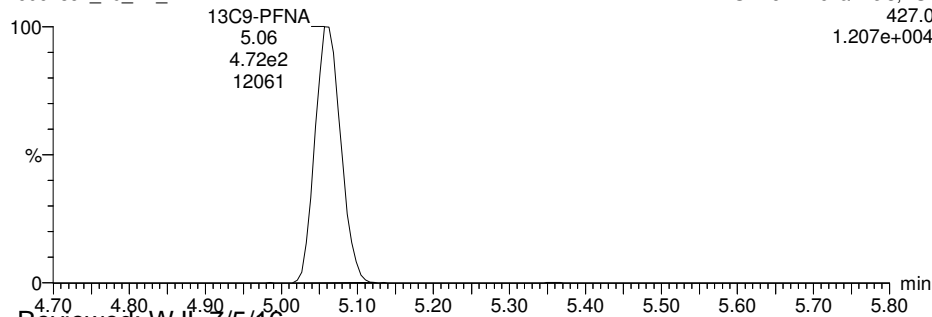
SIR of 17 channels,ES-
79.94
1.327e+005



13C9-PFNA

160628J1_19_P1_E1

SIR of 17 channels,ES-
427.0
1.207e+004



Reviewed: WJL 7/5/16

pw 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_16.qld

Last Altered: Thursday, June 30, 2016 15:59:57 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:00:18 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_16.wiff, Date: 28-Jun-2016, Time: 18:59:54, ID: B6F0157-BS1, Description: OPR

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	79.9	1.20e3	6.33e3		0.125	3.47	93.8	117.3
2	2 PFHpA	318.9	2.19e3	1.28e4		0.125	4.35	92.0	114.9
3	3 PFHxS	79.91	1.04e3	1.65e3		0.125	4.47	98.2	122.7
4	4 PFOA	368.9	3.40e3	1.01e4		0.125	4.75	80.4	100.5
5	5 PFOS	79.92	3.11e3	5.21e3		0.125	5.13	87.9	109.8
6	6 PFNA	419.0	5.06e3	9.32e3		0.125	5.06	96.3	120.3
7	7 13C3-PFBS	79.95	6.33e3	1.15e4	0.546	0.125	3.47	101	100.7
8	8 13C4-PFHpA	321.9	1.28e4	1.15e4	1.075	0.125	4.35	103	103.2
9	9 18O2-PFHxS	102.9	1.65e3	5.08e3	0.307	0.125	4.46	106	105.7
10	10 13C2-PFOA	369.9	1.01e4	9.53e3	1.042	0.125	4.75	102	101.7
11	11 13C8-PFOS	79.93	5.21e3	5.18e3	1.026	0.125	5.12	98.1	98.1
12	12 13C5-PFNA	422.9	9.32e3	4.74e2	21.158	0.125	5.06	92.9	92.9
13	13 13C5-PFHxA	273.0	1.15e4	1.15e4	1.000	0.125	3.88	100	100.0
14	14 13C3-PFHxS	80.0	5.08e3	5.08e3	1.000	0.125	4.46	100	100.0
15	15 13C8-PFOA	375.9	9.53e3	9.53e3	1.000	0.125	4.74	100	100.0
16	16 13C4-PFOS	79.94	5.18e3	5.18e3	1.000	0.125	5.12	100	100.0
17	17 13C9-PFNA	427.0	4.74e2	4.74e2	1.000	0.125	5.06	100	100.0
18	18 Total PFBS	79.9		6.33e3		0.125		93.8	
19	19 Total PFHxS	79.91		1.65e3		0.125		98.2	
20	20 Total PFOA	368.9		1.01e4		0.125		80.4	
21	21 Total PFOS	79.92		5.21e3		0.125		87.9	

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_16.qld

Last Altered: Thursday, June 30, 2016 15:59:57 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:00:18 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_16.wiff, Date: 28-Jun-2016, Time: 18:59:54, ID: B6F0157-BS1, Description: OPR

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.47	1.20e3	6.33e3	93.8

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	1.04e3	1.65e3	98.2

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.75	3.40e3	1.01e4	80.4

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	3.11e3	5.21e3	87.9

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_16.qld

Last Altered: Thursday, June 30, 2016 15:59:57 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:00:29 Pacific Daylight Time

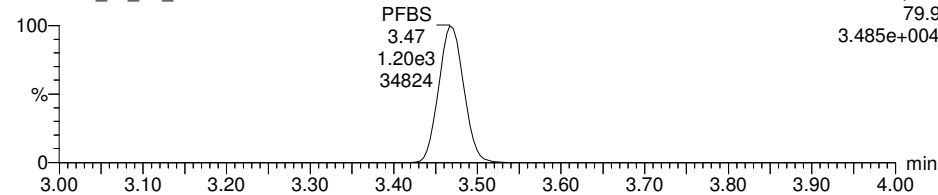
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_16.wiff, Date: 28-Jun-2016, Time: 18:59:54, ID: B6F0157-BS1, Description: OPR

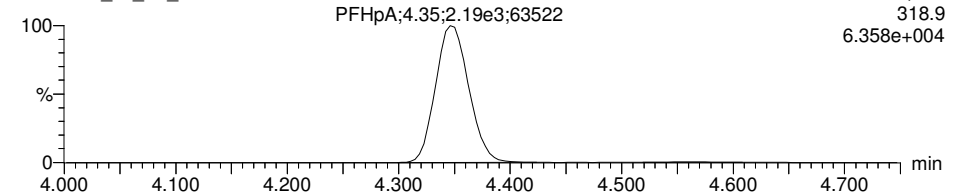
PFBS

160628J1_16_P1_E1



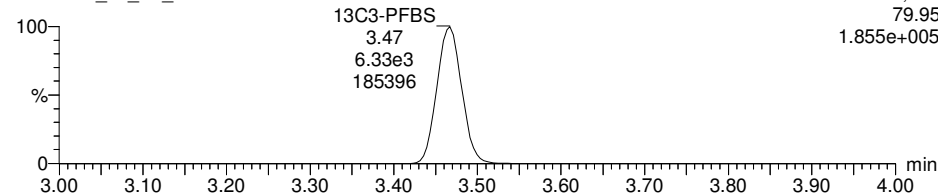
PFHpA

160628J1_16_P1_E1



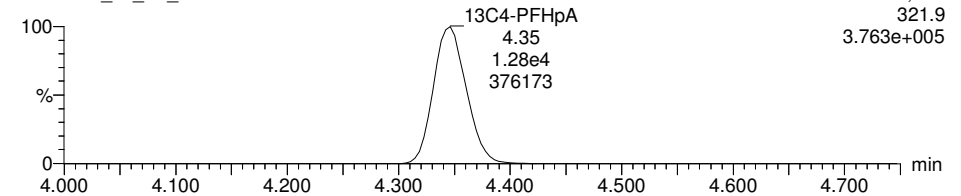
13C3-PFBS

160628J1_16_P1_E1



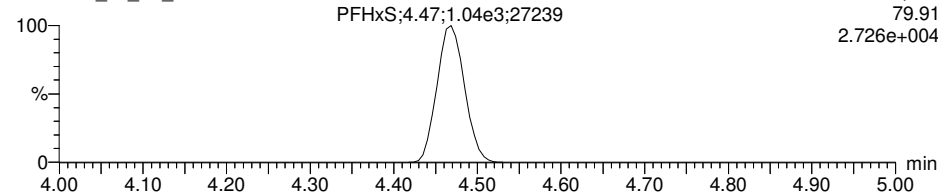
13C4-PFHpA

160628J1_16_P1_E1



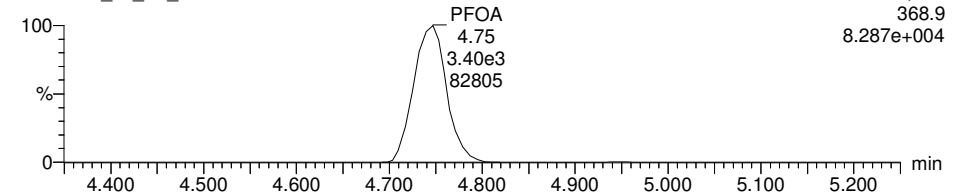
PFHxS

160628J1_16_P1_E1



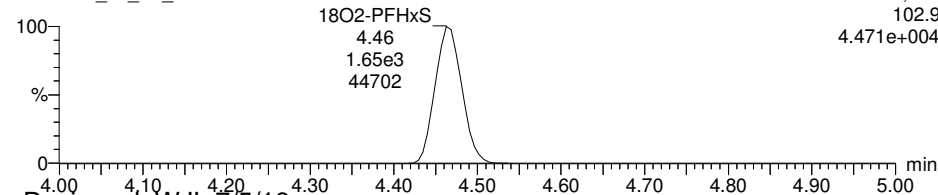
PFOA

160628J1_16_P1_E1



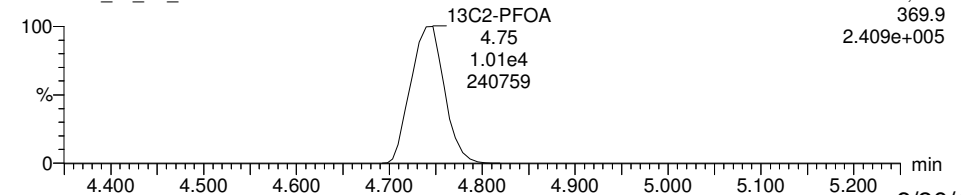
18O2-PFHxS

160628J1_16_P1_E1



13C2-PFOA

160628J1_16_P1_E1



Reviewed: WJL 7/5/16

pw 6/30/16

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_16.qld

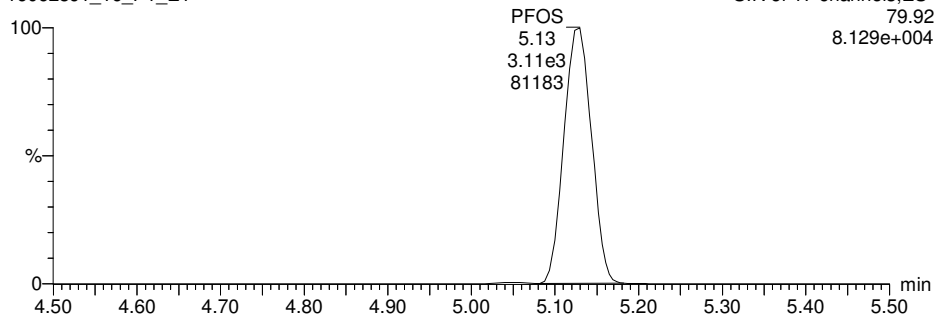
Last Altered: Thursday, June 30, 2016 15:59:57 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:00:29 Pacific Daylight Time

Name: 160628J1_16.wiff, Date: 28-Jun-2016, Time: 18:59:54, ID: B6F0157-BS1, Description: OPR

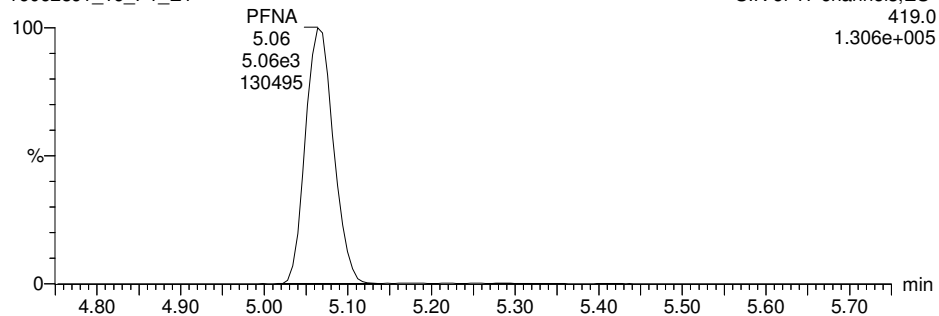
PFOS

160628J1_16_P1_E1



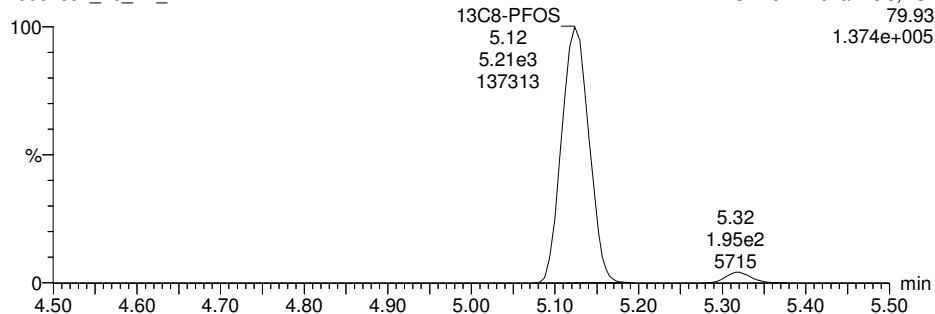
PFNA

160628J1_16_P1_E1



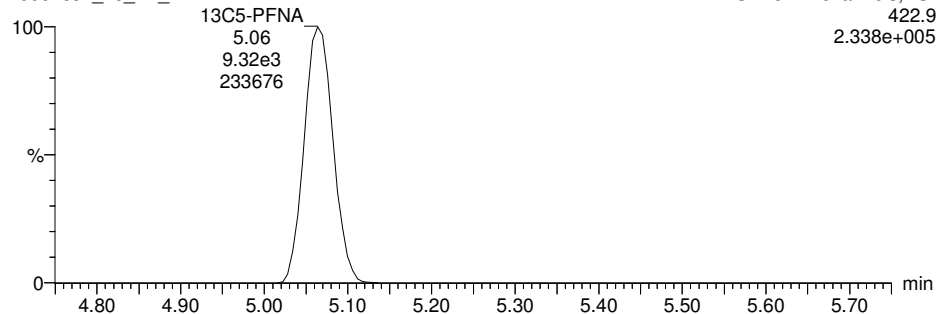
13C8-PFOS

160628J1_16_P1_E1



13C5-PFNA

160628J1_16_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1_16.qld

Last Altered: Thursday, June 30, 2016 15:59:57 Pacific Daylight Time

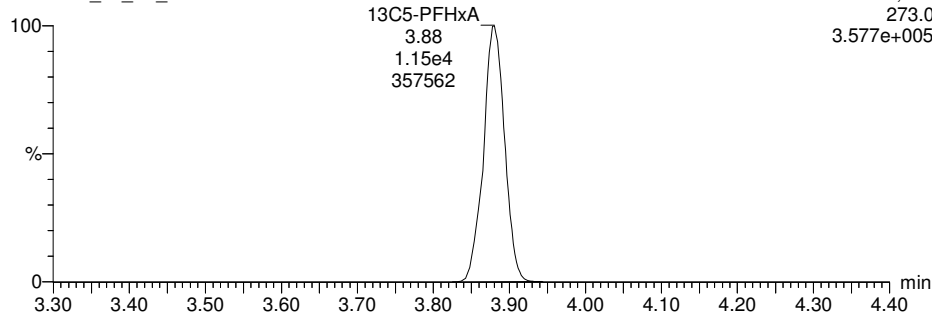
Printed: Thursday, June 30, 2016 16:00:29 Pacific Daylight Time

Name: 160628J1_16.wiff, Date: 28-Jun-2016, Time: 18:59:54, ID: B6F0157-BS1, Description: OPR

13C5-PFHxA

160628J1_16_P1_E1

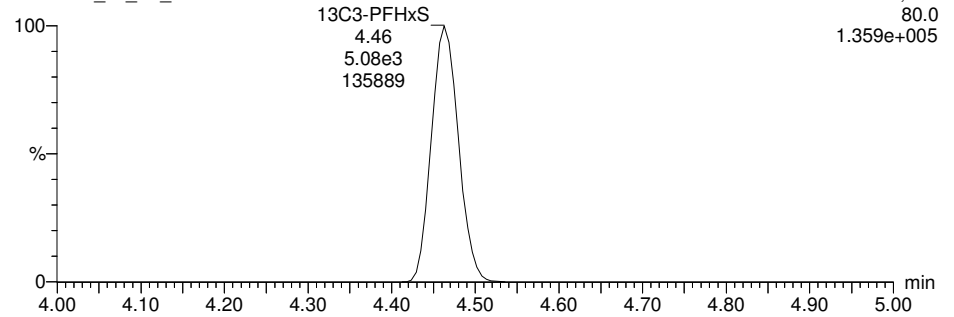
SIR of 17 channels,ES-
273.0
3.577e+005



13C3-PFHxS

160628J1_16_P1_E1

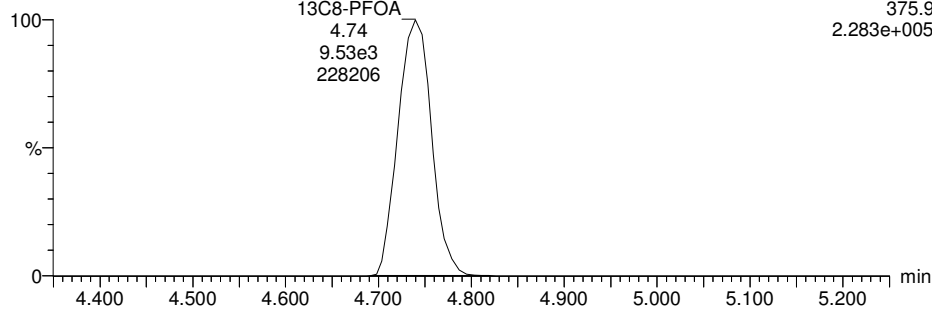
SIR of 17 channels,ES-
80.0
1.359e+005



13C8-PFOA

160628J1_16_P1_E1

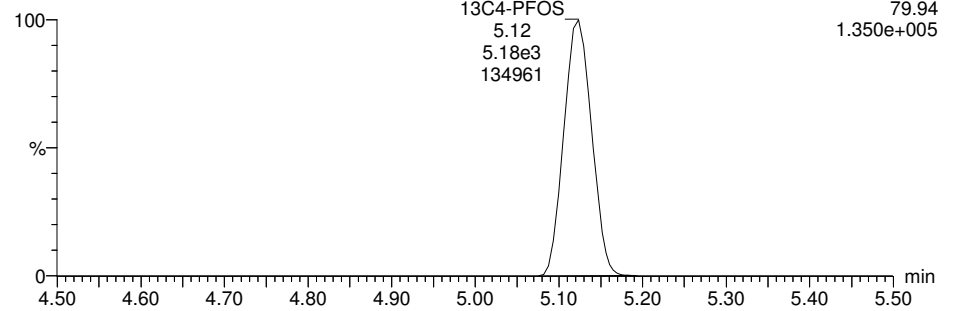
SIR of 17 channels,ES-
375.9
2.283e+005



13C4-PFOS

160628J1_16_P1_E1

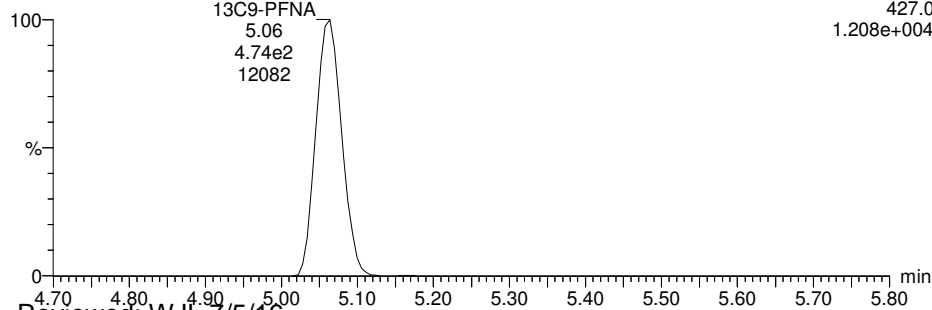
SIR of 17 channels,ES-
79.94
1.350e+005



13C9-PFNA

160628J1_16_P1_E1

SIR of 17 channels,ES-
427.0
1.208e+004



Reviewed: WJL 7/5/16

pw 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_39.qld

Last Altered: Thursday, June 30, 2016 12:06:52 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:07:38 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-01, Description: OF-MW10-0616, Name: 160628J1_39.wiff, Date: 28-Jun-2016, Time: 23:40:48

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	79.9	1.092e3	6.525e3		0.129	3.47	80.1	
2	2 PFHpA	318.9	3.213e3	1.205e4		0.129	4.36	139	
3	3 PFHxS	79.91	5.748e3	1.575e3		0.129	4.47	560	
4	4 PFOA	368.9	5.563e3	9.649e3		0.129	4.75	134	
5	5 PFOS	79.92	2.124e3	4.493e3		0.129	5.13	67.2	
6	6 PFNA	419.0	6.577e2	9.094e3		0.129	5.07	12.3	
7	7 13C3-PFBS	79.95	6.525e3	1.176e4	0.546	0.129	3.47	98.3	102
8	8 13C4-PFHpA	321.9	1.205e4	1.176e4	1.075	0.129	4.35	92.2	95.3
9	9 18O2-PFHxS	102.9	1.575e3	5.156e3	0.307	0.129	4.47	96.2	99.4
10	10 13C2-PFOA	369.9	9.649e3	9.964e3	1.042	0.129	4.75	89.9	93.0
11	11 13C8-PFOS	79.93	4.493e3	4.987e3	1.026	0.129	5.13	85.0	87.8
12	12 13C5-PFNA	422.9	9.094e3	5.074e2	21.158	0.129	5.07	81.9	84.7
13	13 13C5-PFHxA	273.0	1.176e4	1.176e4	1.000	0.129	3.88	96.7	100
14	14 13C3-PFHxS	80.0	5.156e3	5.156e3	1.000	0.129	4.47	96.7	100
15	15 13C8-PFOA	375.9	9.964e3	9.964e3	1.000	0.129	4.74	96.7	100
16	16 13C4-PFOS	79.94	4.987e3	4.987e3	1.000	0.129	5.13	96.7	100
17	17 13C9-PFNA	427.0	5.074e2	5.074e2	1.000	0.129	5.07	96.7	100
18	18 Total PFBS	79.9		6.525e3		0.129		81.9	
19	19 Total PFHxS	79.91		1.575e3		0.129		667	
20	20 Total PFOA	368.9		9.649e3		0.129		151	
21	21 Total PFOS	79.92		4.493e3		0.129		283	

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_39.qld

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Printed: Thursday, June 30, 2016 12:07:38 PM Pacific Daylight Time

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	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.47	1091.968	6525.209	80.1
2	18 Total PFBS	79.9	3.34	24.263	6525.209	1.8

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	19 Total PFHxS	79.91	4.27	23.013	1575.178	2.2
2	3 PFHxS	79.91	4.47	5748.437	1575.178	559.9
3	19 Total PFHxS	79.91	4.38	1097.724	1575.178	105.3

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.75	5563.349	9649.383	134.4
2	20 Total PFOA	368.9	4.66	683.345	9649.383	16.2

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	2123.830	4493.093	67.2
2	21 Total PFOS	79.92	5.02	5918.757	4493.093	189.3
3	21 Total PFOS	79.92	4.93	851.118	4493.093	26.8

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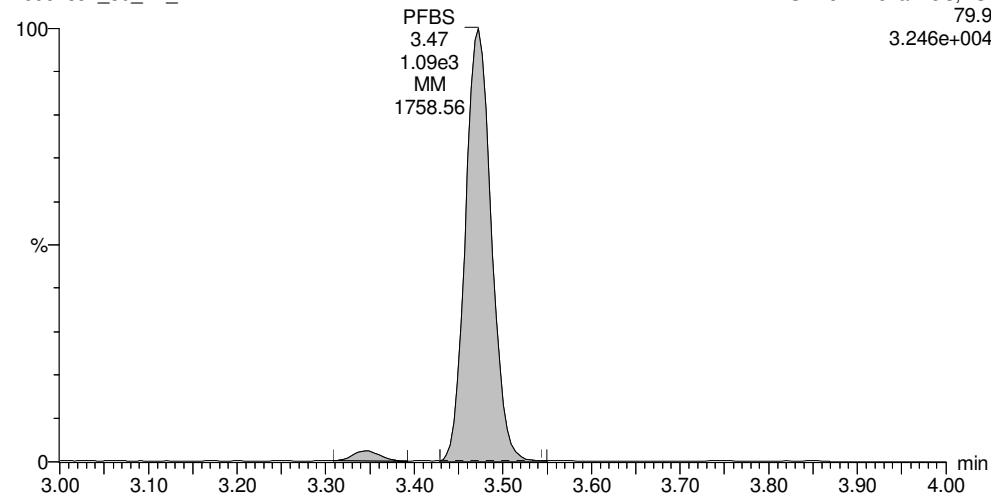
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ID: 1600820-01, Description: OF-MW10-0616, Name: 160628J1_39.wiff, Date: 28-Jun-2016, Time: 23:40:48, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

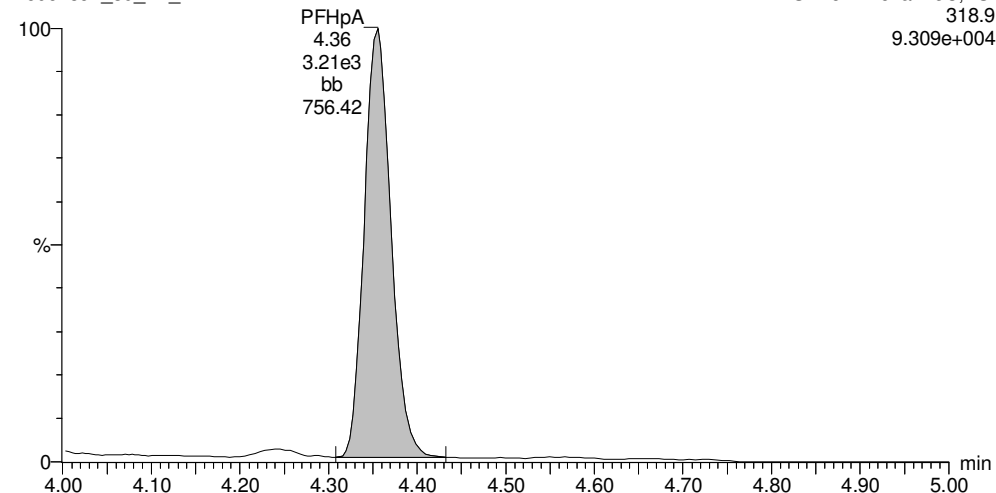
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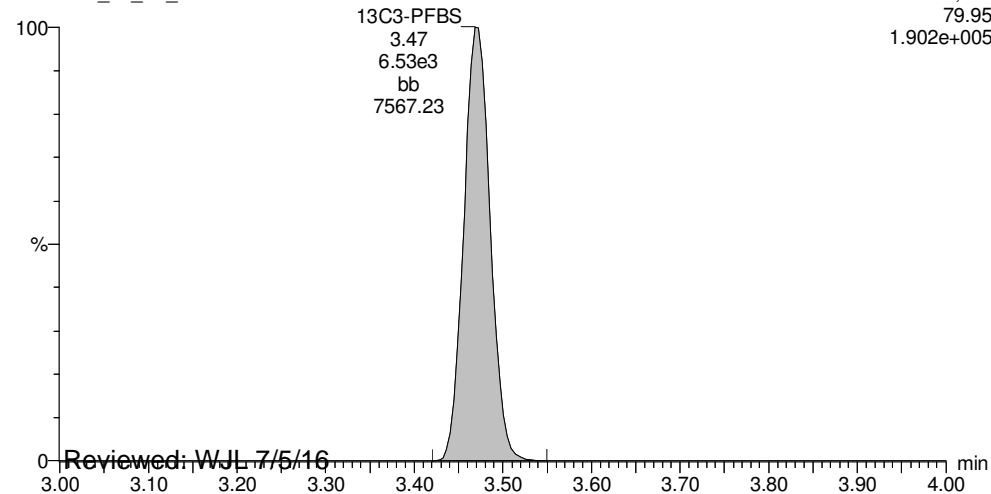
PFHpA

160628J1_39_P1_E1



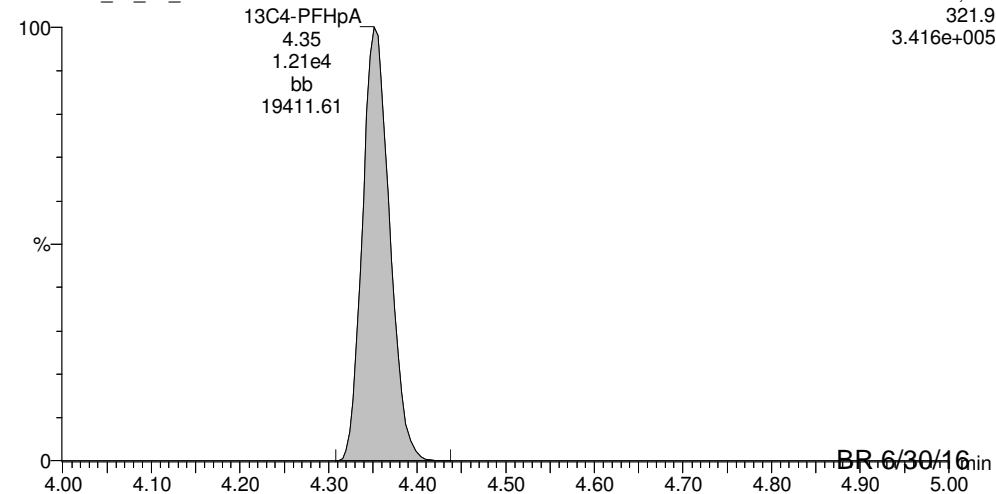
13C3-PFBS

160628J1_39_P1_E1



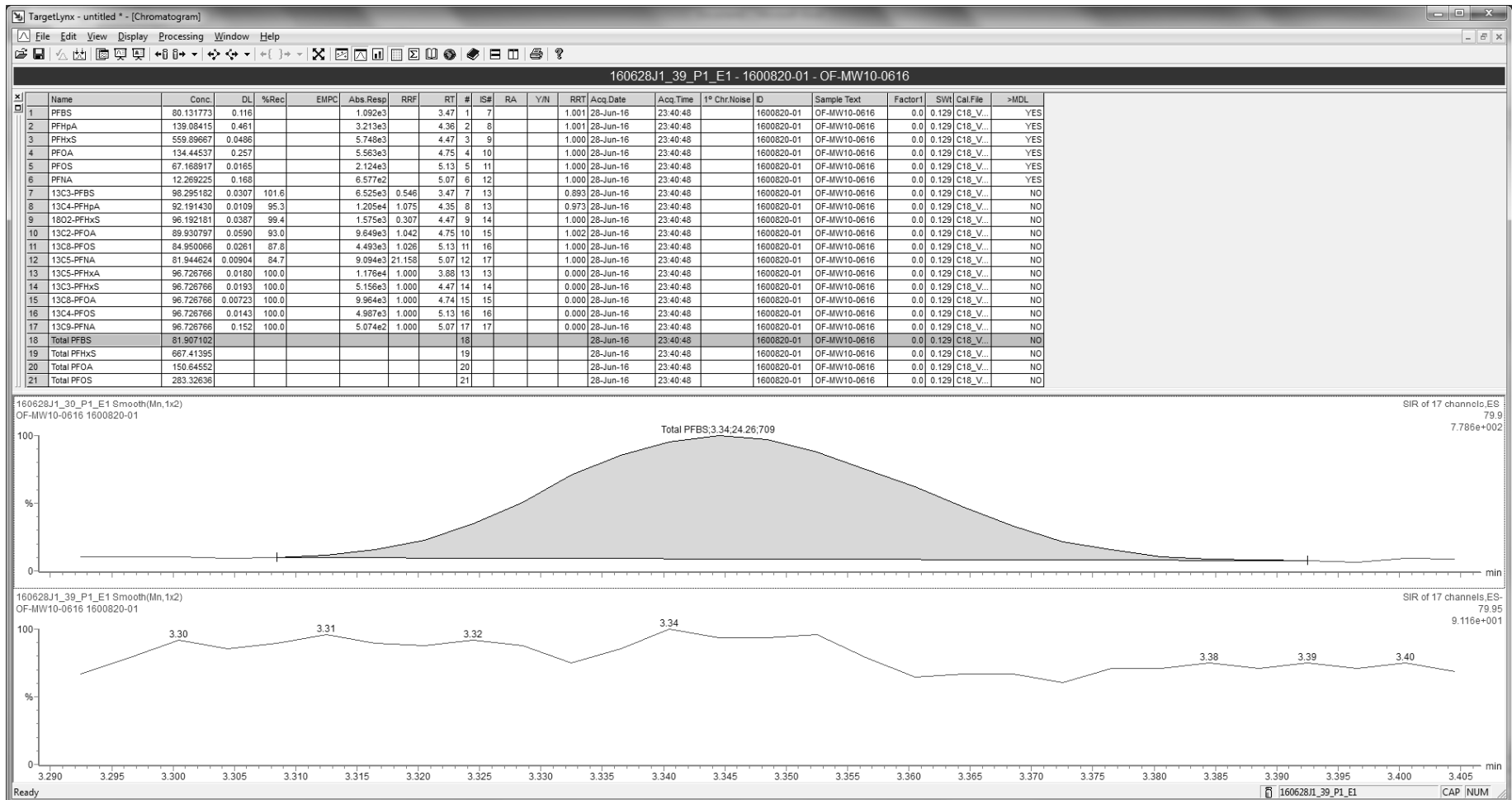
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Reviewed: WJL 7/5/16

BR 6/30/16



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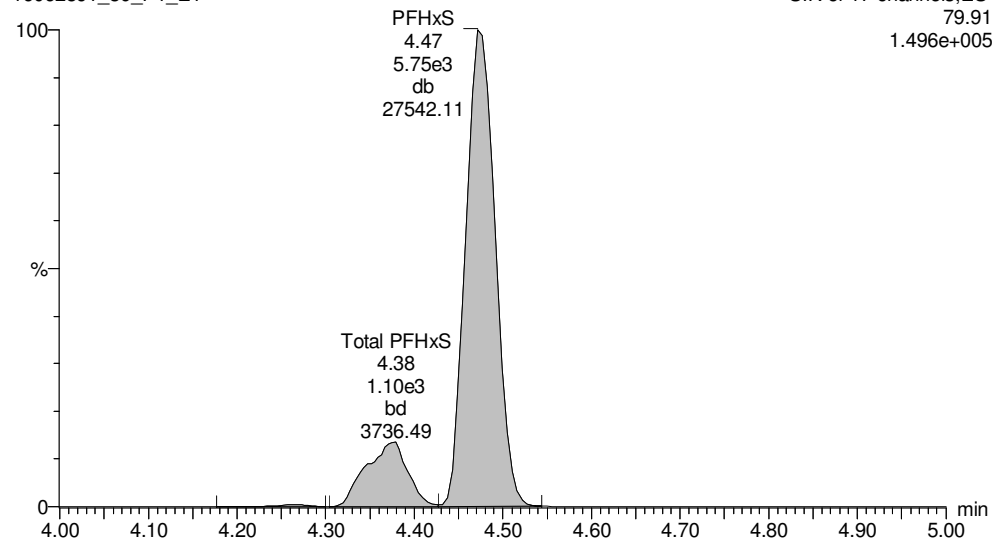
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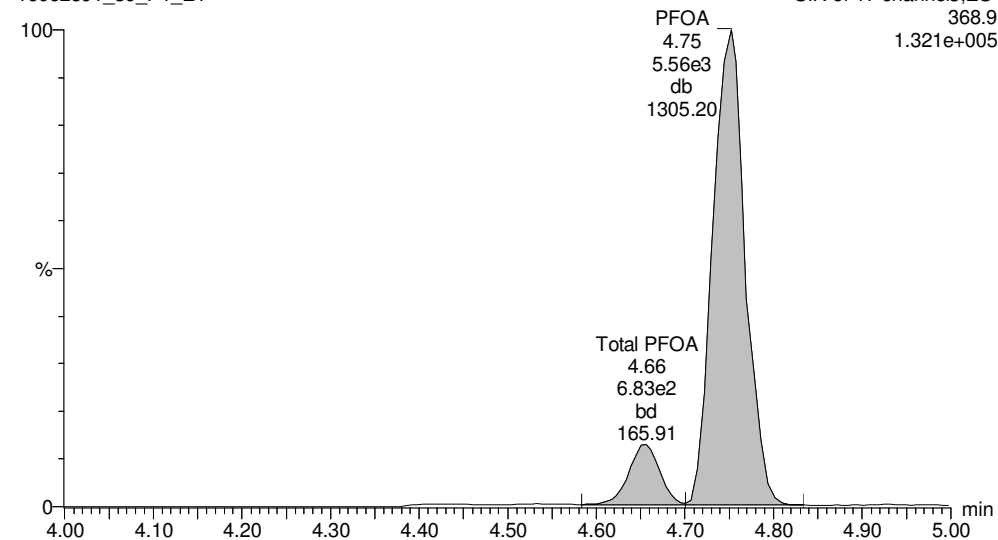
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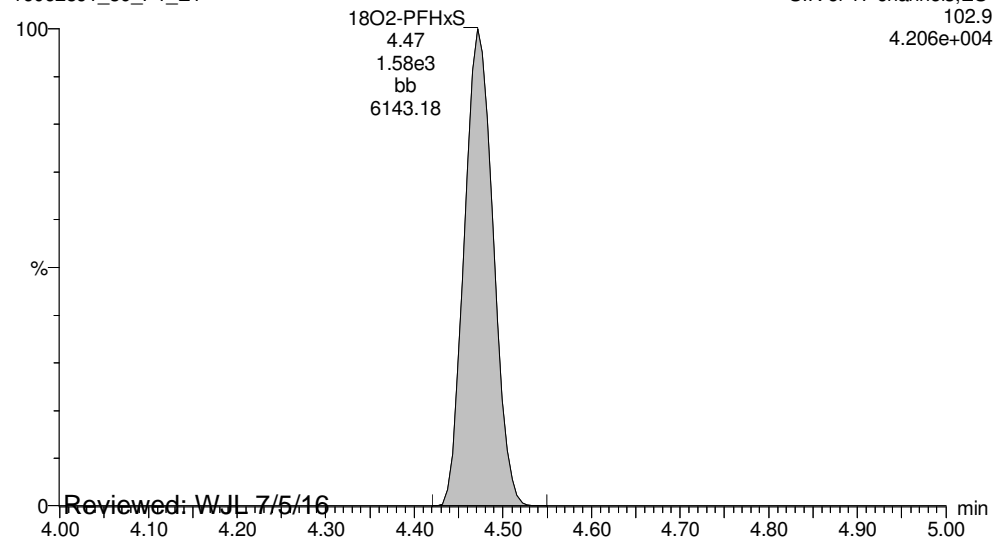
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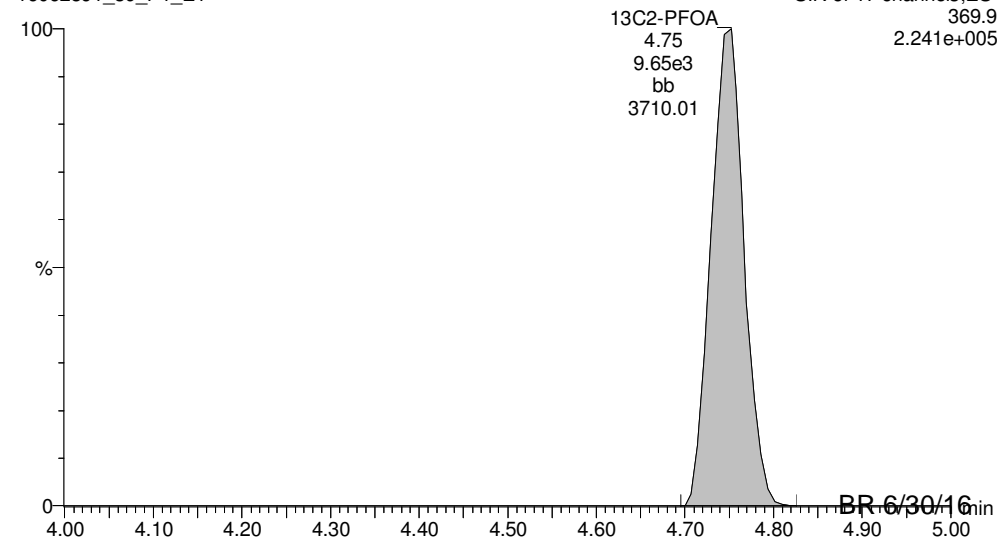
18O2-PFHxS

160628J1_39_P1_E1



13C2-PFOA

160628J1_39_P1_E1



Reviewed: WJL 7/5/16

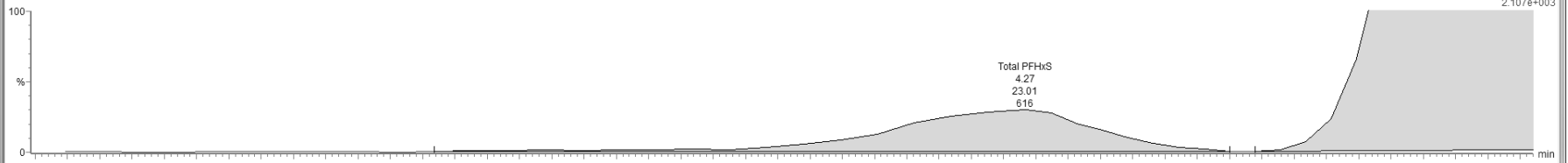
BR 6/30/16

160628J1_39_P1_E1 - 1600820-01 - OF-MW10-0616

Name	Conc.	DL	%Rec	EMPC	Abs Resp	RRF	RT	#	IS#	RA	Y/N	RRT	Acq Date	Acq Time	I* Chr.Noise	D	Sample Text	Factor1	SWI	Cal File	>MDL
1 PFBS	80.131773	0.116			1.092e3	3.47	1	7				1.001	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	YES
2 PFHpA	139.08415	0.461			3.213e3	4.36	2	8				1.001	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	YES
3 PFHxS	559.89687	0.0486			5.748e3	4.47	3	9				1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	YES
4 PFOA	134.44537	0.257			5.563e3	4.75	4	10				1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	YES
5 PFOS	67.168917	0.0165			2.124e3	5.13	5	11				1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	YES
6 PFNA	12.269225	0.168			6.577e2	5.07	6	12				1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	YES
7 13C3-PFBS	98.295182	0.0307	101.6		6.525e3	0.546	3.47	7	13			0.893	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
8 13C4-PFHpA	92.191430	0.0109	95.3		1.295e4	1.075	4.35	8	13			0.973	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
9 18O2-PFHxS	96.192181	0.0387	99.4		1.575e3	0.307	4.47	9	14			1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
10 13C2-PFOA	89.930797	0.0590	93.0		9.649e3	1.042	4.75	10	15			1.002	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
11 13C8-PFOS	84.950966	0.0261	87.8		4.493e3	1.026	5.13	11	16			1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
12 13C5-PFNA	81.944624	0.00904	84.7		9.094e3	21.158	5.07	12	17			1.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
13 13C5-PFHxA	96.726766	0.0180	100.0		1.176e4	1.000	3.88	13	13			0.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
14 13C3-PFHxS	96.726766	0.0193	100.0		5.156e3	1.000	4.47	14	14			0.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
15 13C8-PFOA	96.726766	0.00723	100.0		9.964e3	1.000	4.74	15	15			0.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
16 13C4-PFOS	96.726766	0.0143	100.0		4.987e3	1.000	5.13	16	16			0.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
17 13C9-PFNA	96.726766	0.152	100.0		5.074e2	1.000	5.07	17	17			0.000	28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
18 Total PFBS	81.907102						18						28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
19 Total PFHxS	667.41395						19						28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
20 Total PFOA	150.64552						20						28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO
21 Total PFOS	283.32636						21						28-Jun-16	23:40:48		1600820-01	OF-MW10-0616	0.0	0.129	C18_V	NO

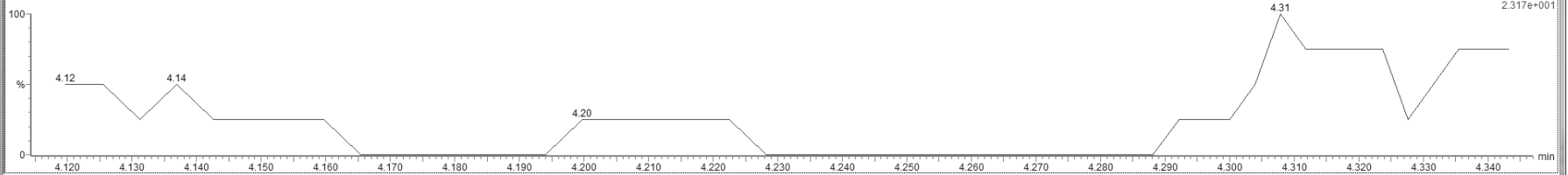
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OF-MW10-0616 1600820-01

SIR of 17 channels, ES-
79.91
2.107e+003



160628J1_39_P1_E1 Smooth(Mn,1x2)
OF-MW10-0616 1600820-01

SIR of 17 channels, ES-
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2.317e+001



Ready

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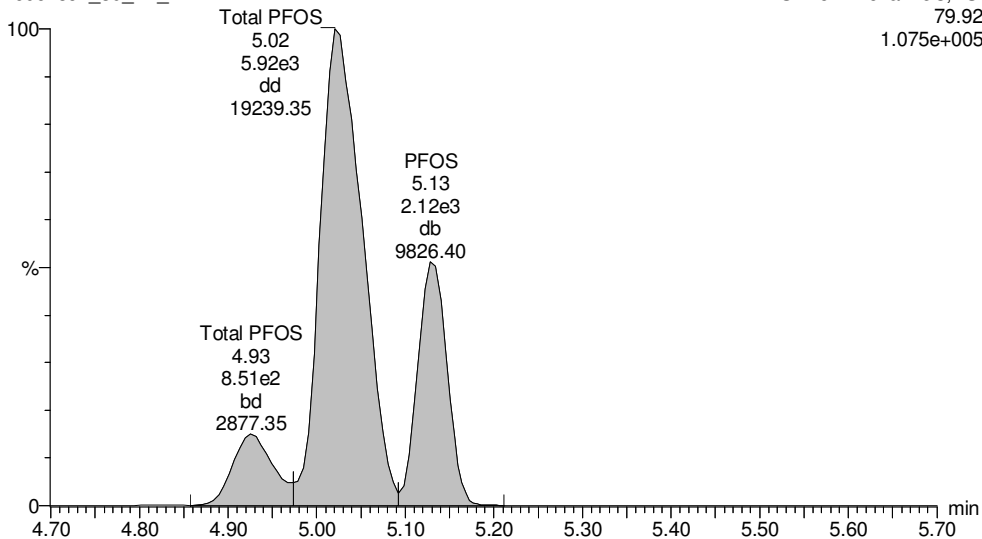
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Printed: Thursday, June 30, 2016 12:07:38 PM Pacific Daylight Time

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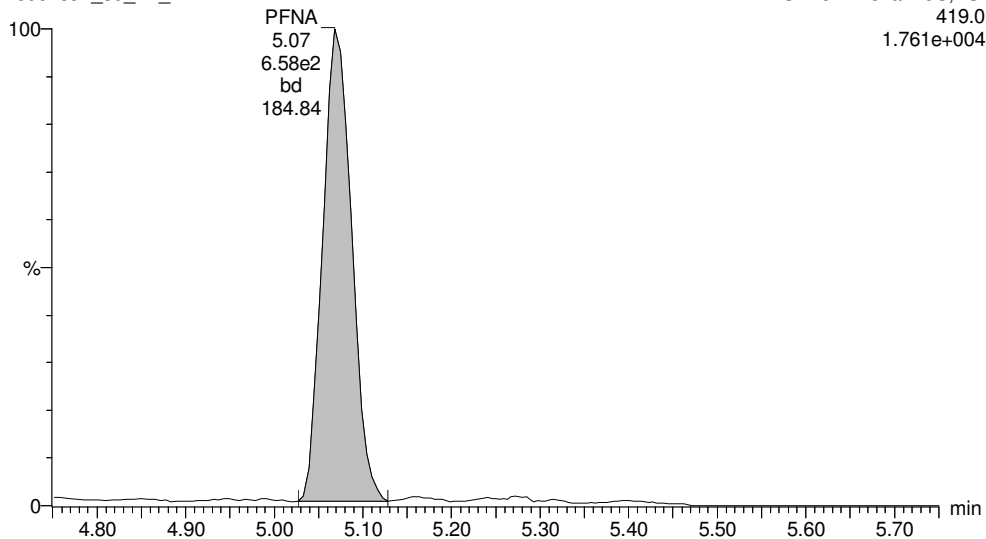
Total PFOS

160628J1_39_P1_E1



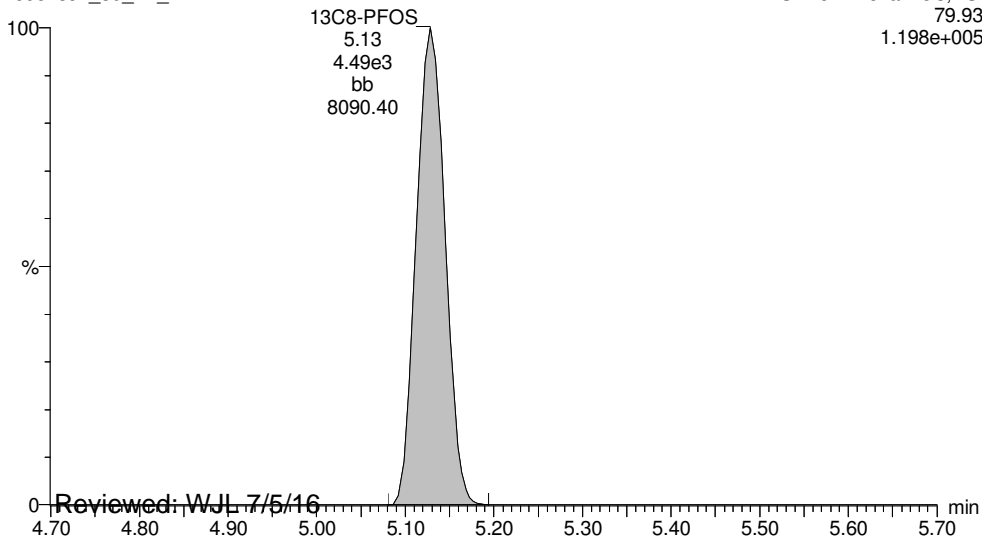
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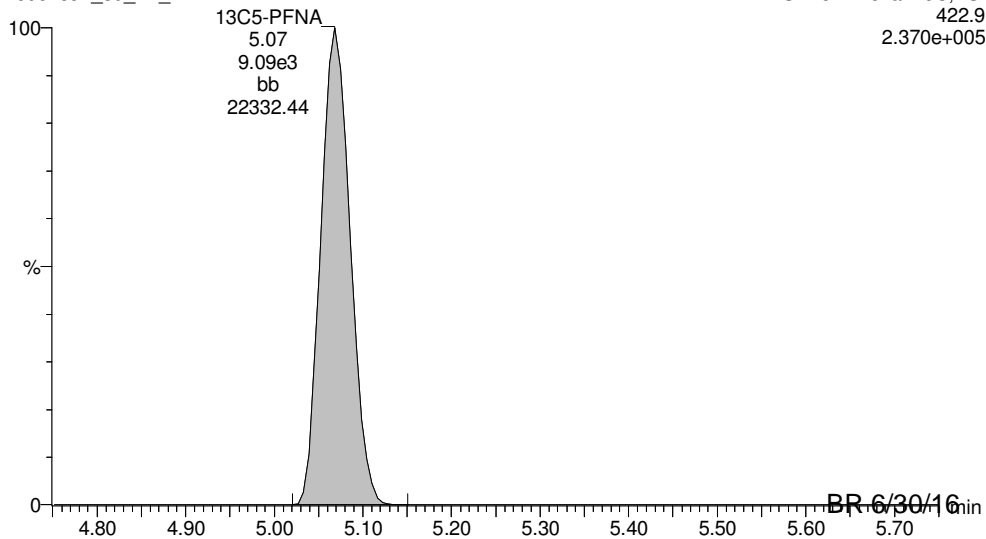
13C8-PFOS

160628J1_39_P1_E1



13C5-PFNA

160628J1_39_P1_E1



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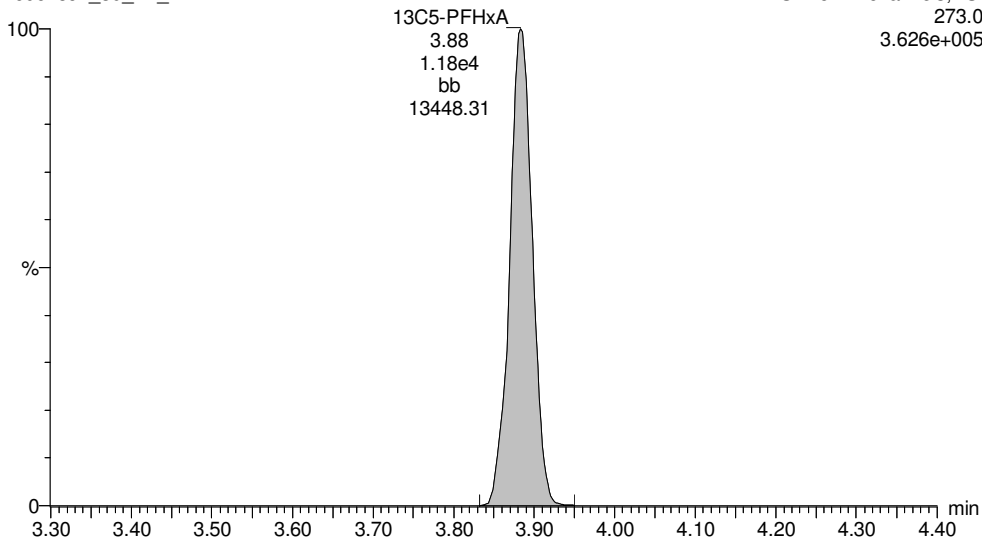
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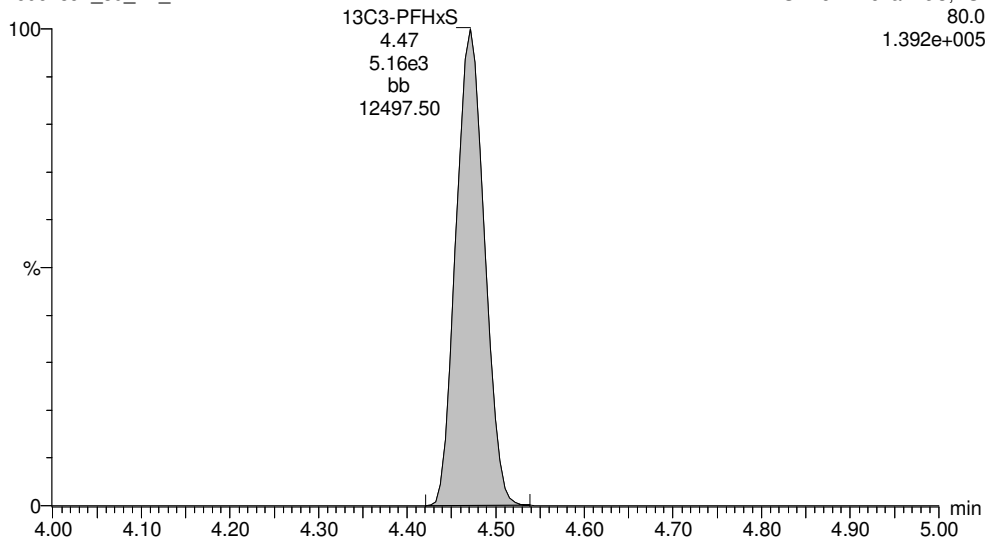
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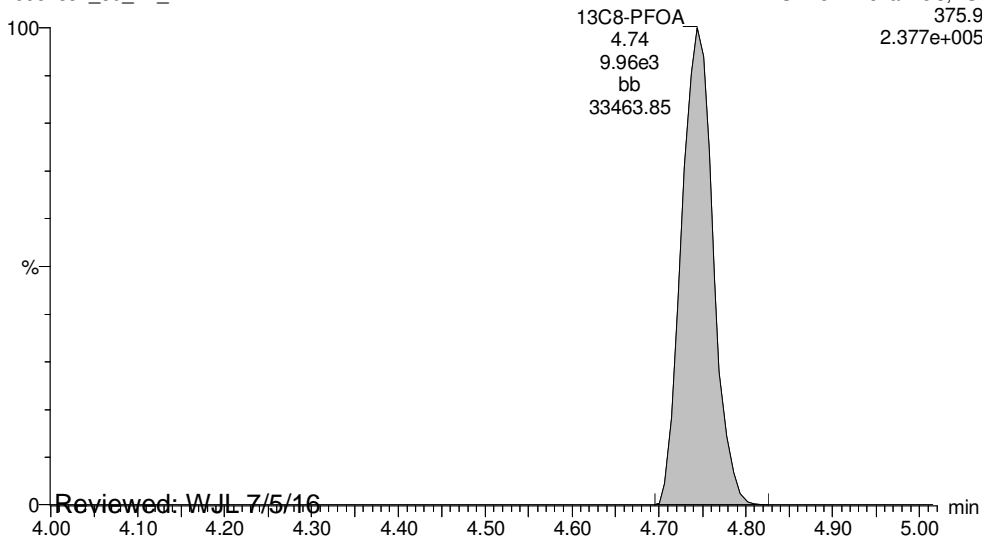
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160628J1_39_P1_E1



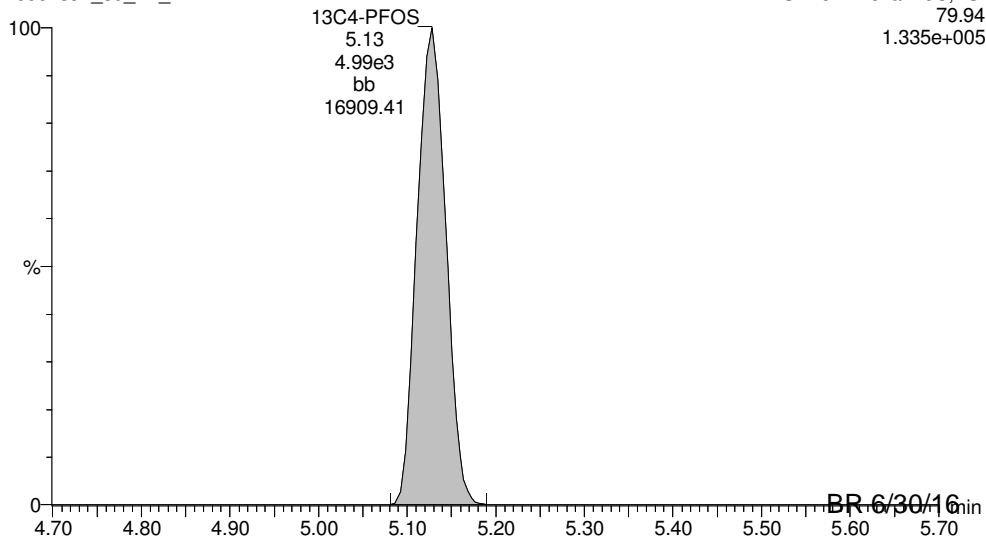
13C8-PFOA

160628J1_39_P1_E1



13C4-PFOS

160628J1_39_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_39.qld

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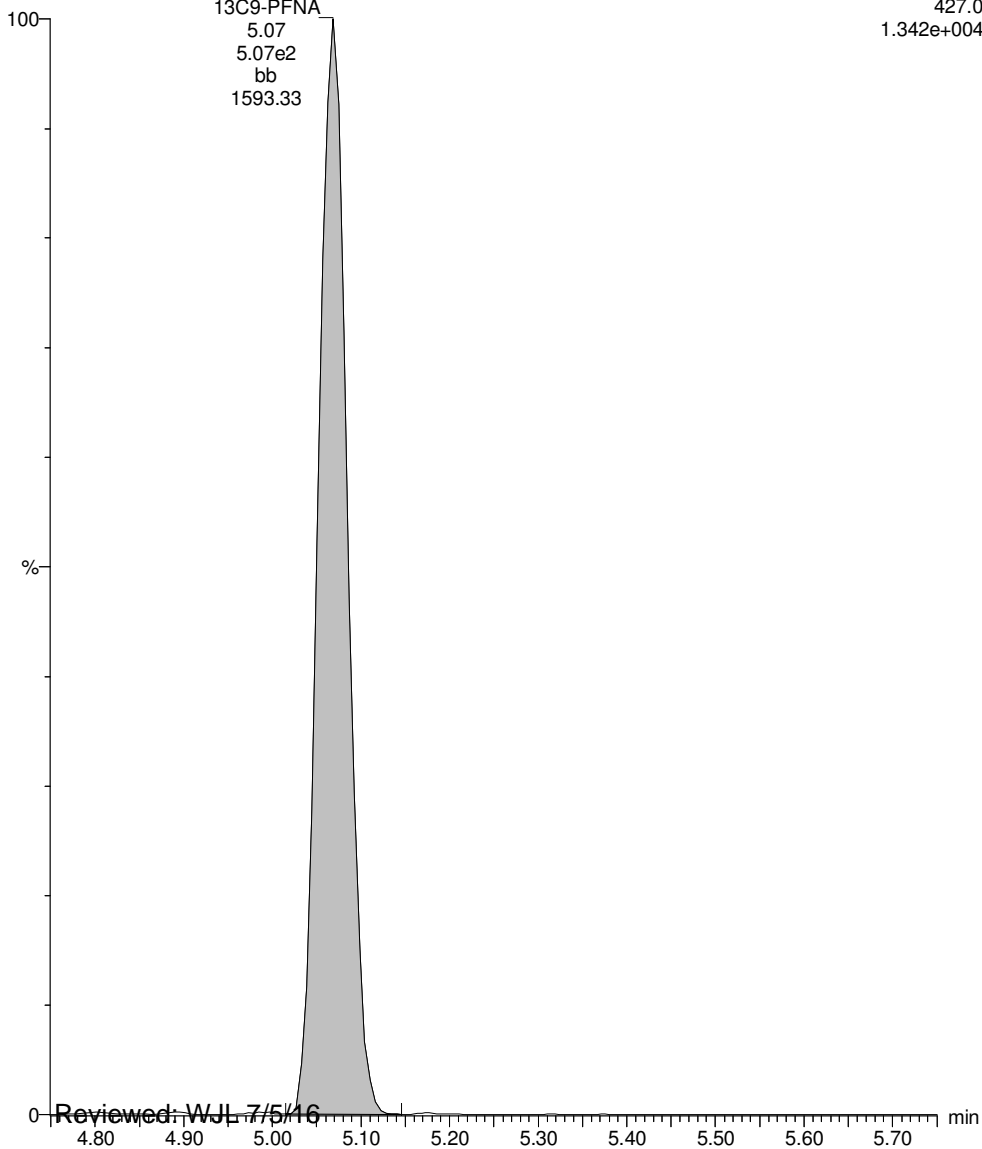
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13C9-PFNA

160628J1_39_P1_E1

SIR of 17 channels, ES-
427.0
1.342e+004

13C9-PFNA
5.07
5.07e2
bb
1593.33



Reviewed: WJL 7/5/16

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BR 6/30/16

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Dataset: U:\Q2.PRO\Results\160628J1\160628J1_40.qld

Last Altered: Thursday, June 30, 2016 12:11:44 PM Pacific Daylight Time

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Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-02, Description: OF-MW08-0616, Name: 160628J1_40.wiff, Date: 28-Jun-2016, Time: 23:53:02

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec	TARGETED IN UG/L
1	1 PFBS	79.9	1.812e4	5.813e3		0.122	3.47	1.57		
2	2 PFHpA	318.9	1.180e4	1.196e4		0.122	4.35	0.539		
3	3 PFHxS	79.91	4.287e4	1.088e3		0.122	4.47	6.27 E*		
4	4 PFOA	368.9	1.773e4	1.133e4		0.122	4.74	0.377		
5	5 PFOS	79.92	1.187e5	3.940e3		0.122	5.12	4.50 E*		
6	6 PFNA	419.0	6.596e2	9.878e3		0.122	5.06	0.0120		
7	7 13C3-PFBS	79.95	5.813e3	1.121e4	0.546	0.122	3.47	0.0971	95.0	
8	8 13C4-PFHpA	321.9	1.196e4	1.121e4	1.075	0.122	4.35	0.101	99.2	
9	9 18O2-PFHxS	102.9	1.088e3	3.647e3	0.307	0.122	4.47	0.0993	97.1	*
10	10 13C2-PFOA	369.9	1.133e4	1.074e4	1.042	0.122	4.74	0.104	101	
11	11 13C8-PFOS	79.93	3.940e3	4.157e3	1.026	0.122	5.12	0.0944	92.4	*
12	12 13C5-PFNA	422.9	9.878e3	5.065e2	21.158	0.122	5.06	0.0942	92.2	
13	13 13C5-PFHxA	273.0	1.121e4	1.121e4	1.000	0.122	3.88	0.102	100	
14	14 13C3-PFHxS	80.0	3.647e3	3.647e3	1.000	0.122	4.47	0.102	100	
15	15 13C8-PFOA	375.9	1.074e4	1.074e4	1.000	0.122	4.74	0.102	100	
16	16 13C4-PFOS	79.94	4.157e3	4.157e3	1.000	0.122	5.12	0.102	100	
17	17 13C9-PFNA	427.0	5.065e2	5.065e2	1.000	0.122	5.06	0.102	100	
18	18 Total PFBS	79.9		5.813e3		0.122		1.61		
19	19 Total PFHxS	79.91		1.088e3		0.122		8.43		
20	20 Total PFOA	368.9		1.133e4		0.122		0.465		
21	21 Total PFOS	79.92		3.940e3		0.122		10.6		

*see dil

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_40.qld

Last Altered: Thursday, June 30, 2016 12:11:44 PM Pacific Daylight Time

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	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.47	18118.510	5812.860	1.6
2	18 Total PFBS	79.9	3.34	476.467	5812.860	0.0

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	42869.148	1088.088	6.3
2	19 Total PFHxS	79.91	4.37	14276.782	1088.088	2.1
3	19 Total PFHxS	79.91	4.26	477.691	1088.088	0.1

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	20 Total PFOA	368.9	4.65	4111.063	11334.049	0.1
2	4 PFOA	368.9	4.74	17725.471	11334.049	0.4

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.12	118675.367	3939.623	4.5
2	21 Total PFOS	79.92	5.02	140876.359	3939.623	5.3
3	21 Total PFOS	79.92	4.92	20425.465	3939.623	0.8
4	21 Total PFOS	79.92	4.81	85.006	3939.623	0.0

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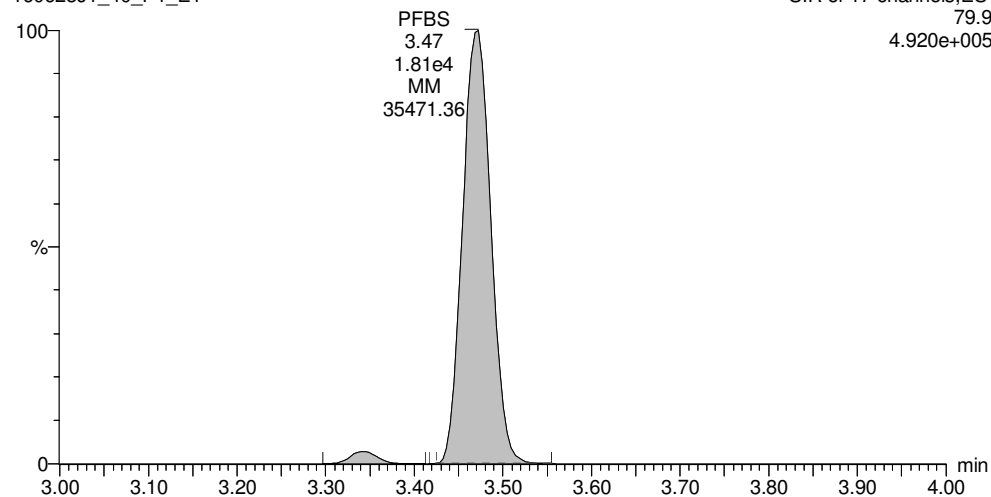
Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-02, Description: OF-MW08-0616, Name: 160628J1_40.wiff, Date: 28-Jun-2016, Time: 23:53:02, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

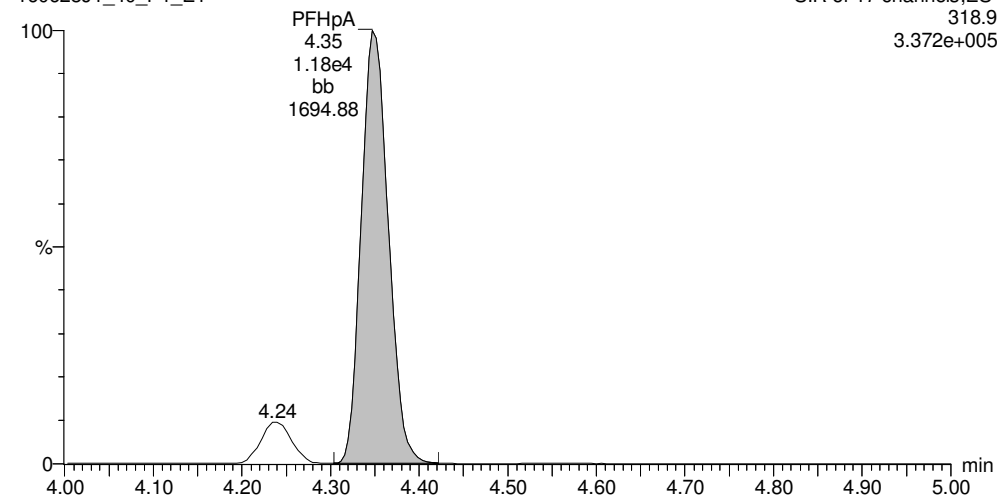
Total PFBS

160628J1_40_P1_E1



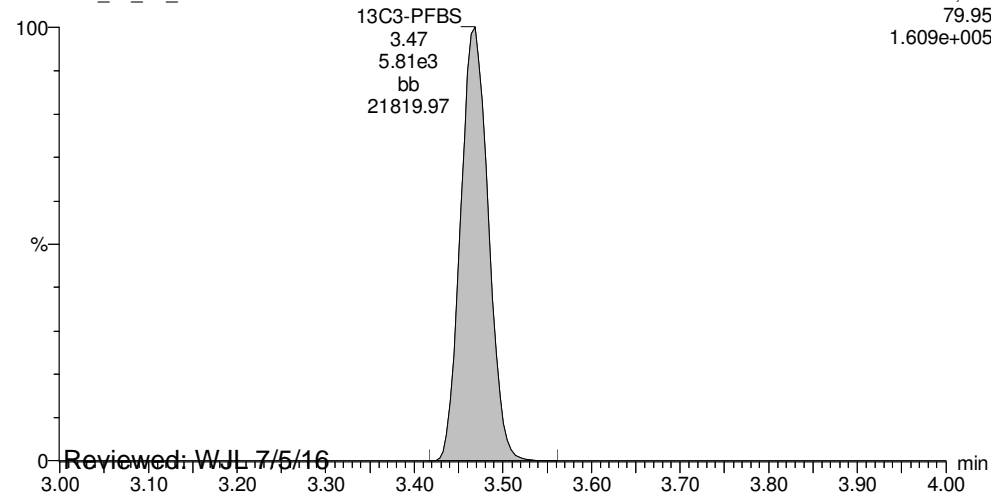
PFHpA

160628J1_40_P1_E1



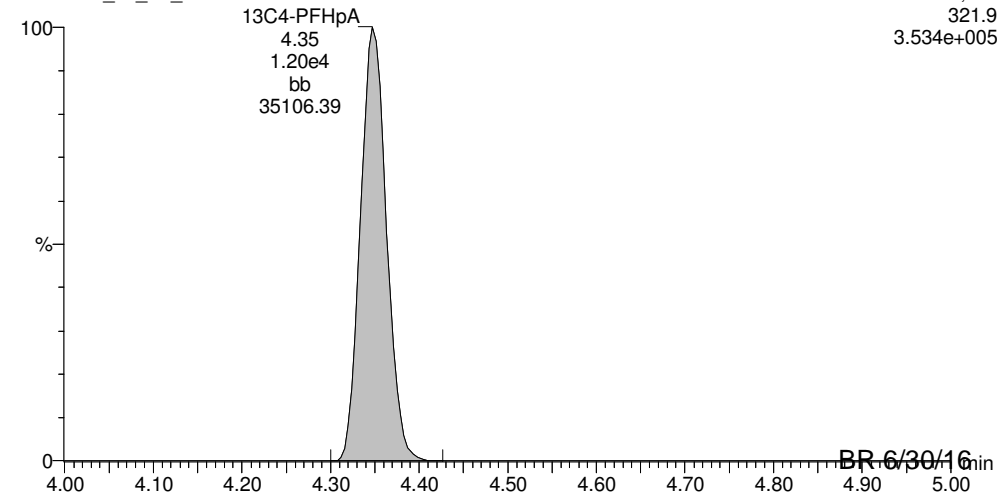
13C3-PFBS

160628J1_40_P1_E1



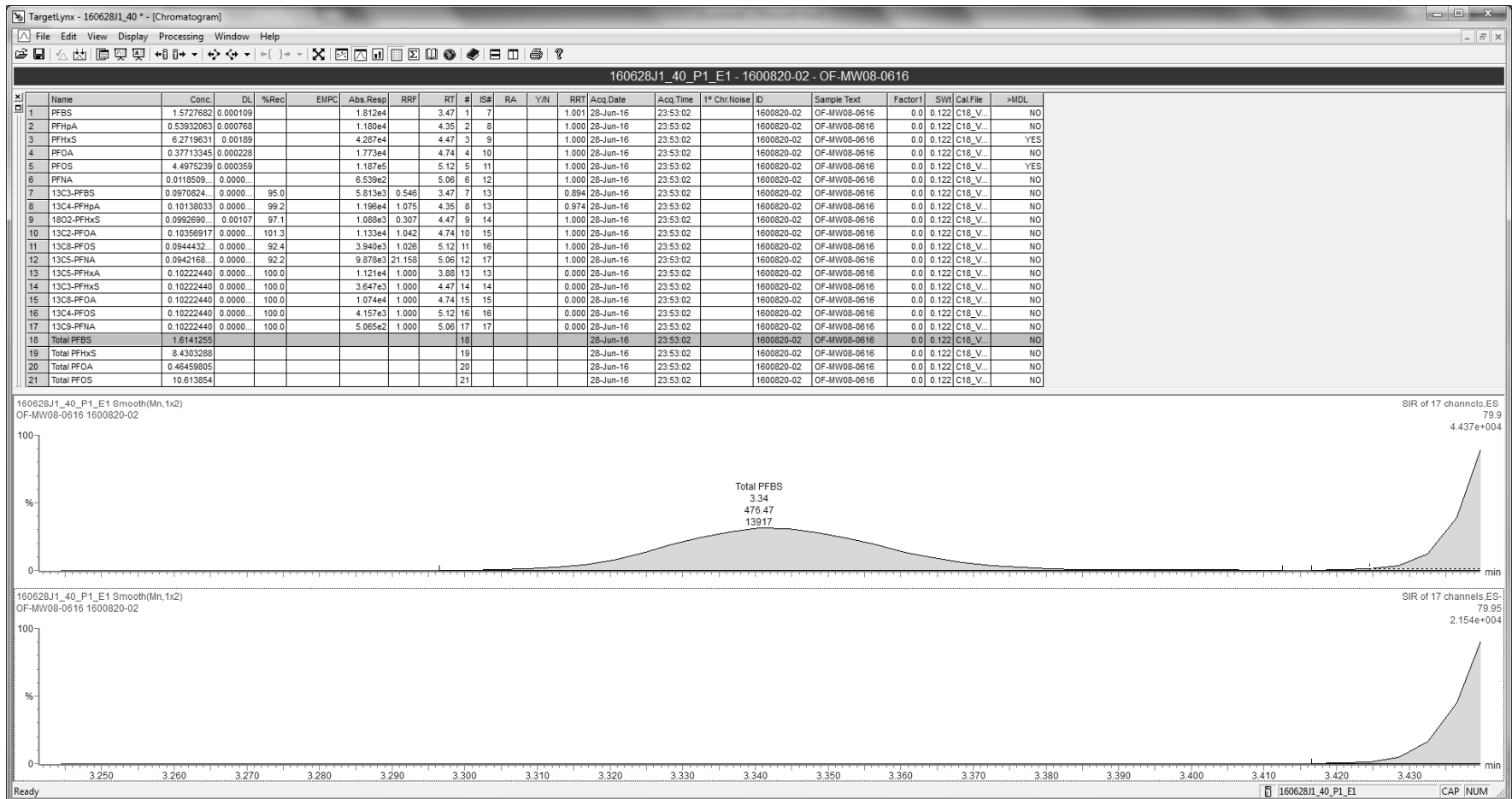
13C4-PFHpA

160628J1_40_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16



Dataset: U:\Q2.PRO\Results\160628J1\160628J1_40.qld

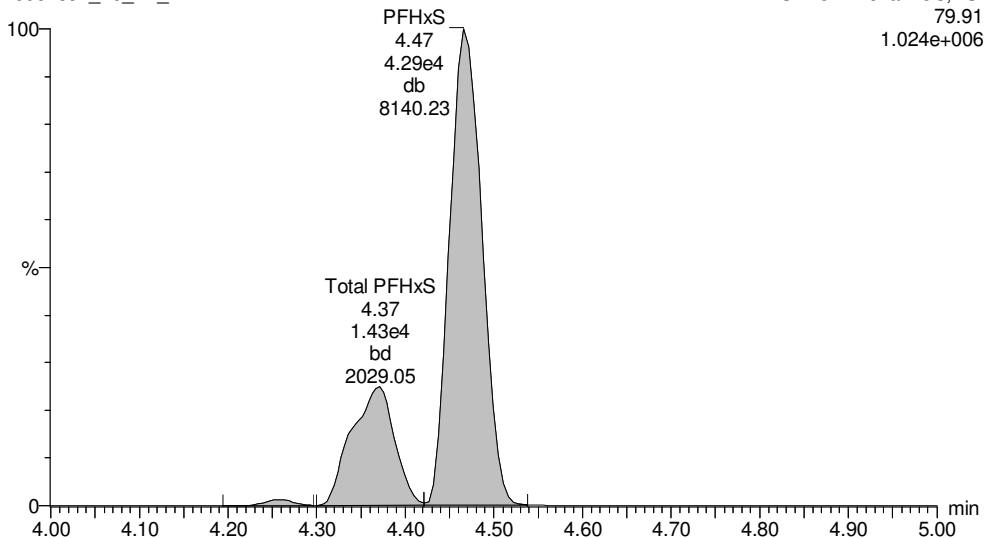
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Printed: Thursday, June 30, 2016 12:11:56 PM Pacific Daylight Time

ID: 1600820-02, Description: OF-MW08-0616, Name: 160628J1_40.wiff, Date: 28-Jun-2016, Time: 23:53:02, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

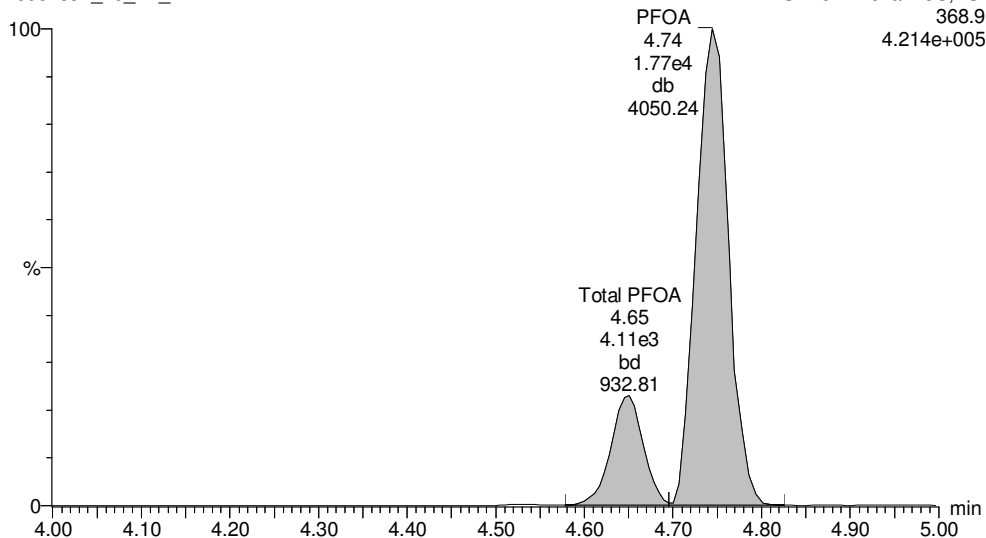
Total PFHxS

160628J1_40_P1_E1



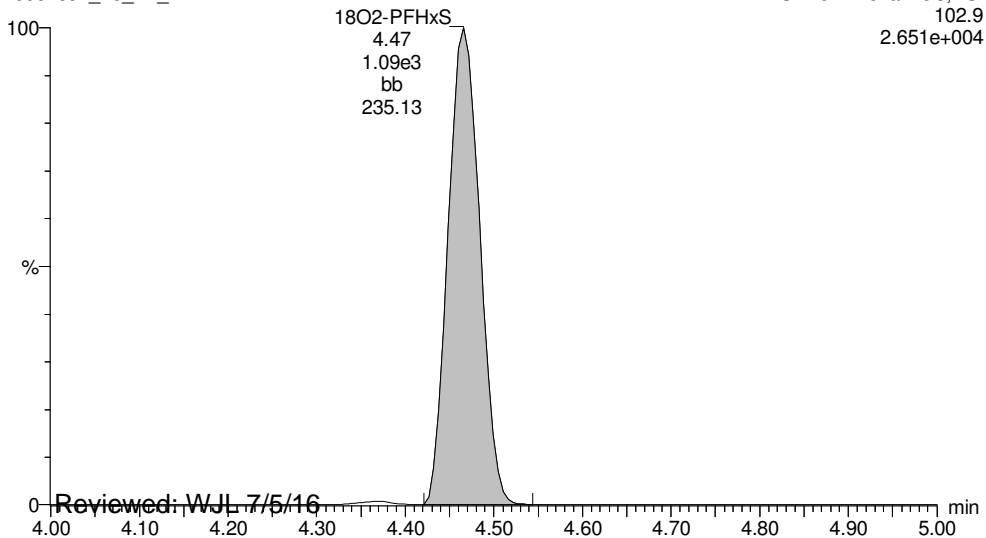
Total PFOA

160628J1_40_P1_E1



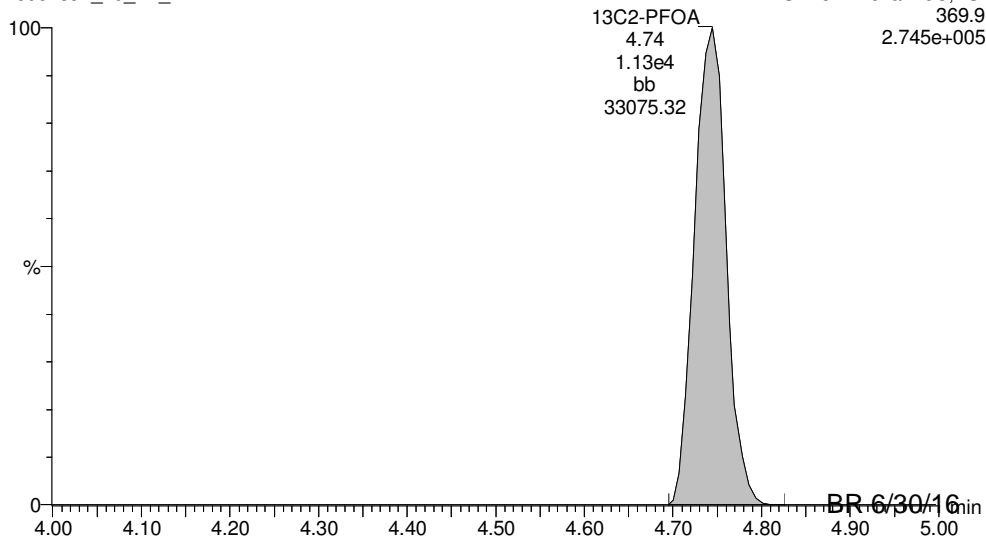
18O2-PFHxS

160628J1_40_P1_E1



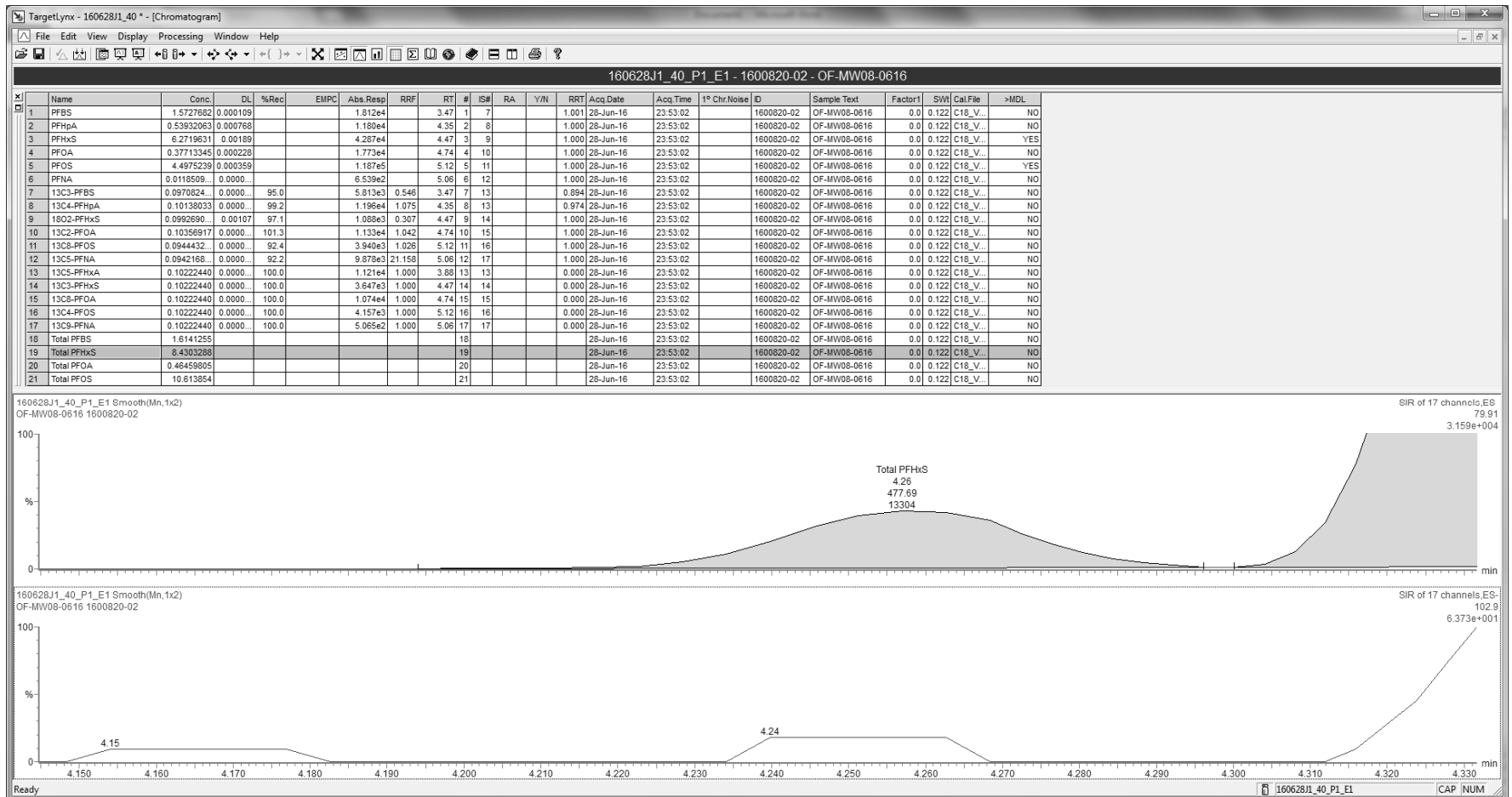
13C2-PFOA

160628J1_40_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16



Dataset: U:\Q2.PRO\Results\160628J1\160628J1_40.qld

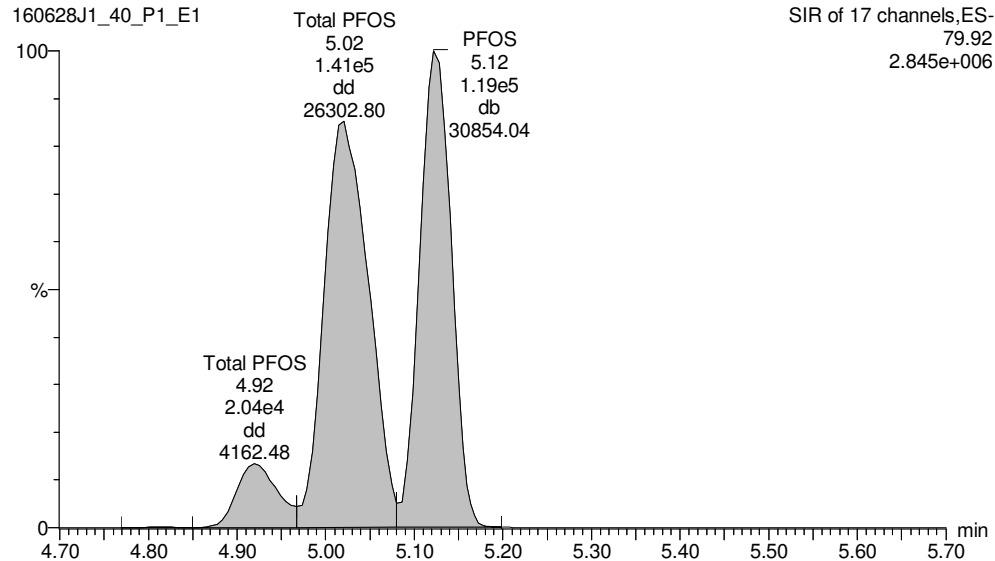
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ID: 1600820-02, Description: OF-MW08-0616, Name: 160628J1_40.wiff, Date: 28-Jun-2016, Time: 23:53:02, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

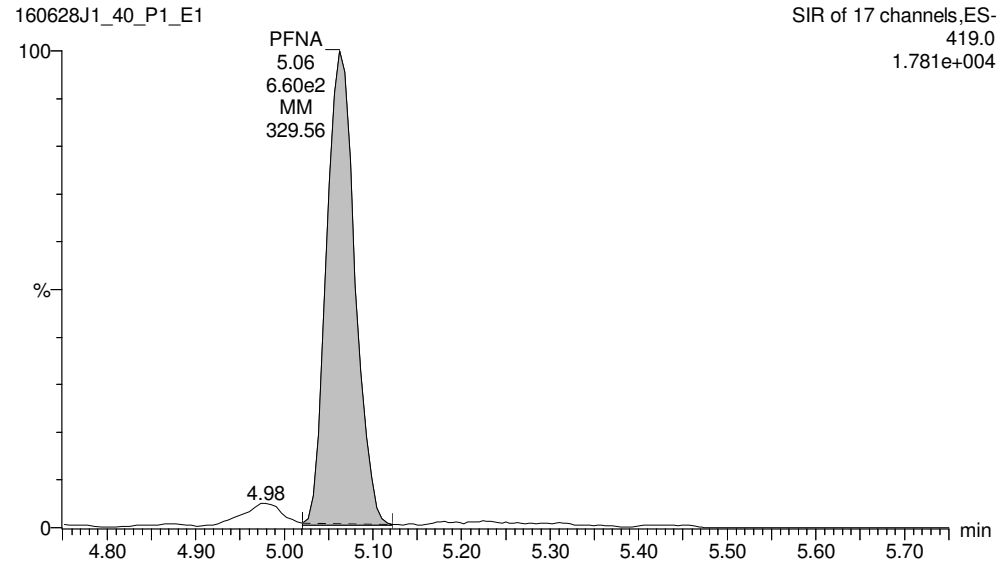
Total PFOS

160628J1_40_P1_E1



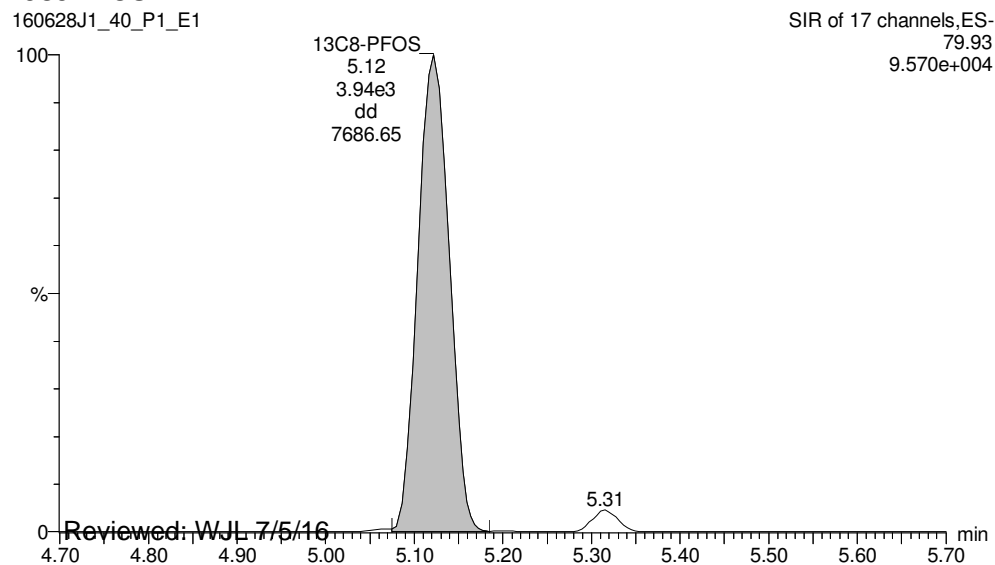
PFNA

160628J1_40_P1_E1



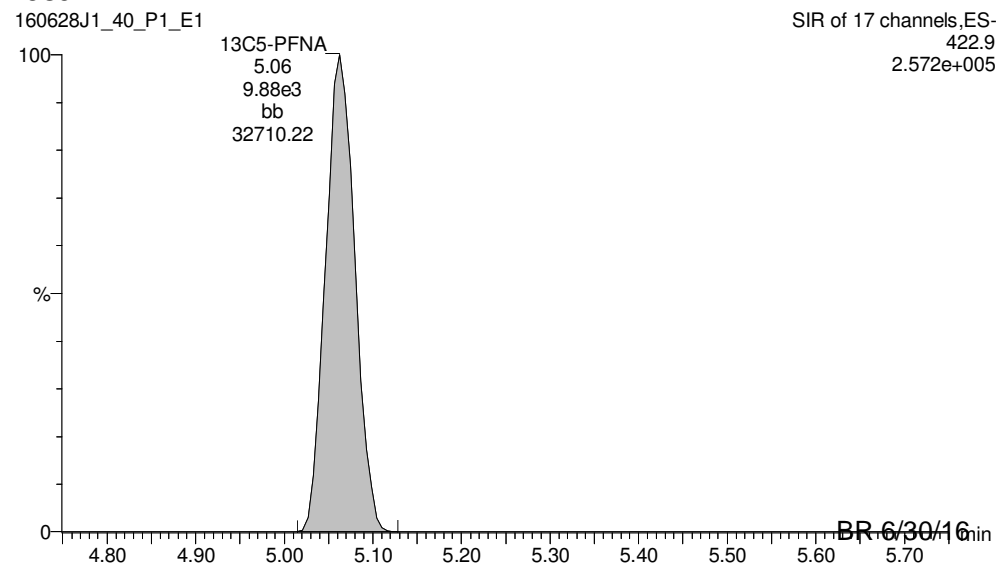
13C8-PFOS

160628J1_40_P1_E1



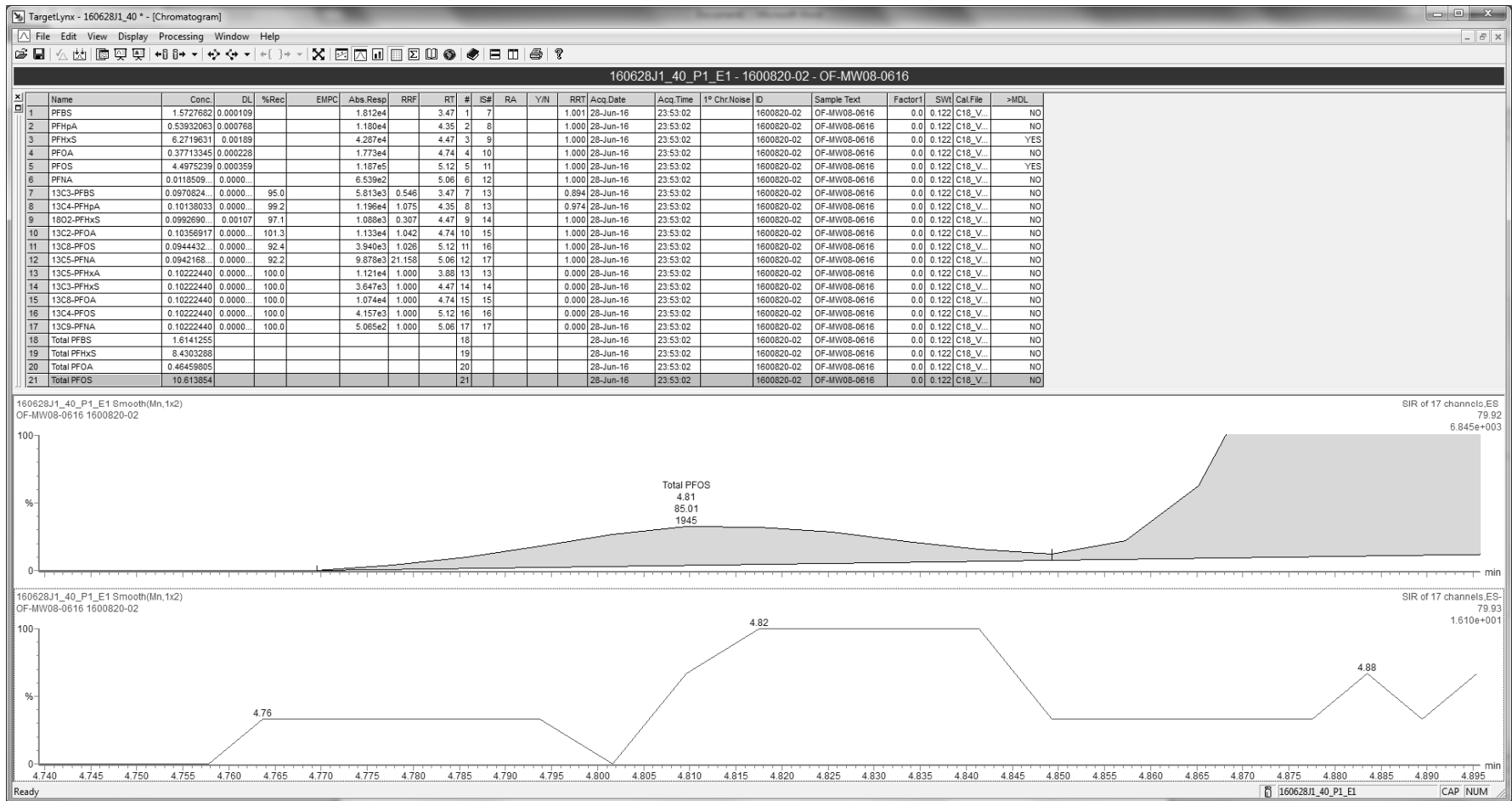
13C5-PFNA

160628J1_40_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16



Dataset: U:\Q2.PRO\Results\160628J1\160628J1_40.qld

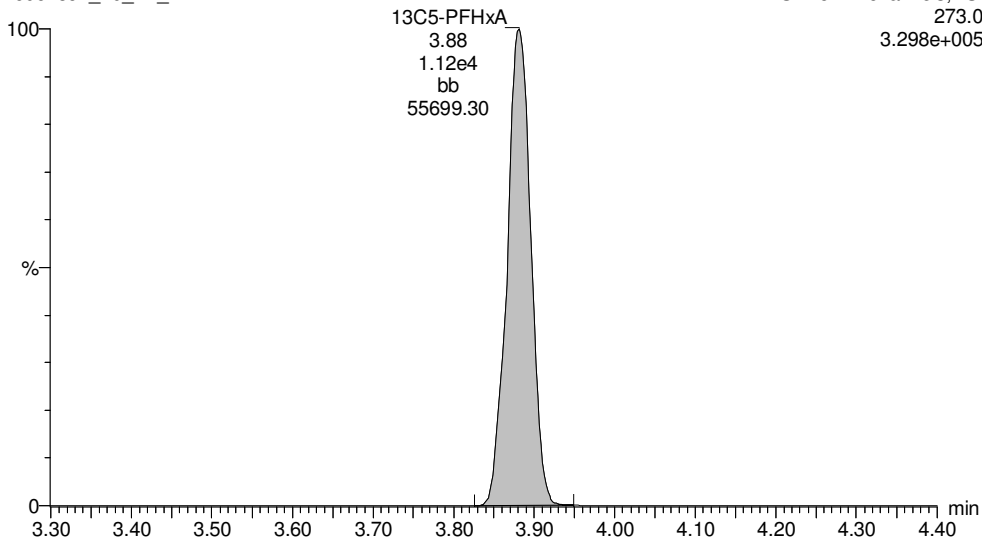
Last Altered: Thursday, June 30, 2016 12:11:44 PM Pacific Daylight Time

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ID: 1600820-02, Description: OF-MW08-0616, Name: 160628J1_40.wiff, Date: 28-Jun-2016, Time: 23:53:02, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

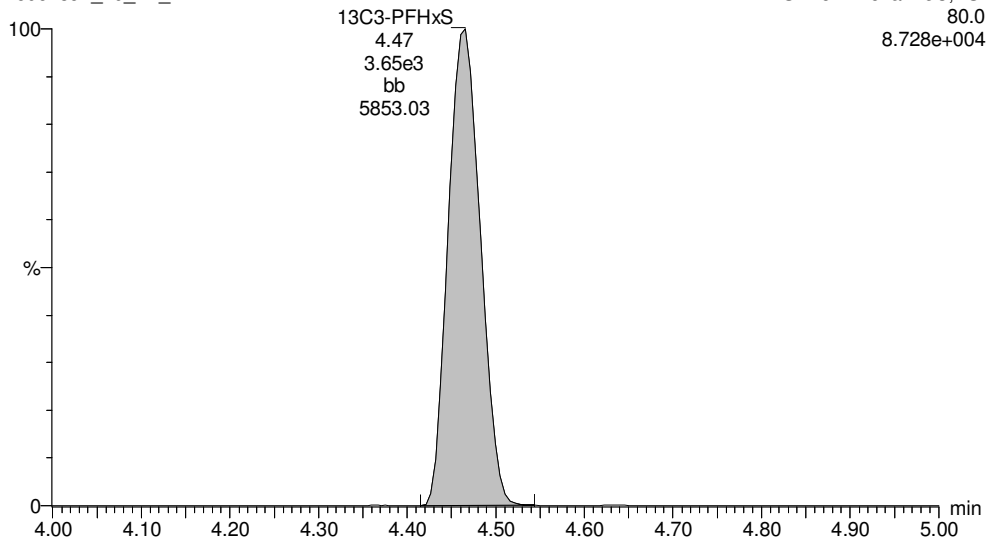
13C5-PFHxA

160628J1_40_P1_E1



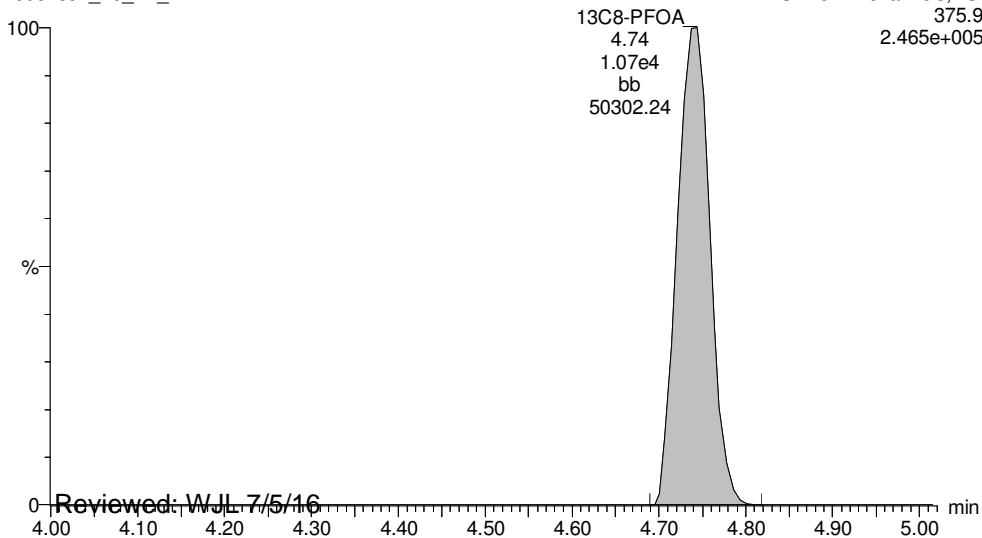
13C3-PFHxS

160628J1_40_P1_E1



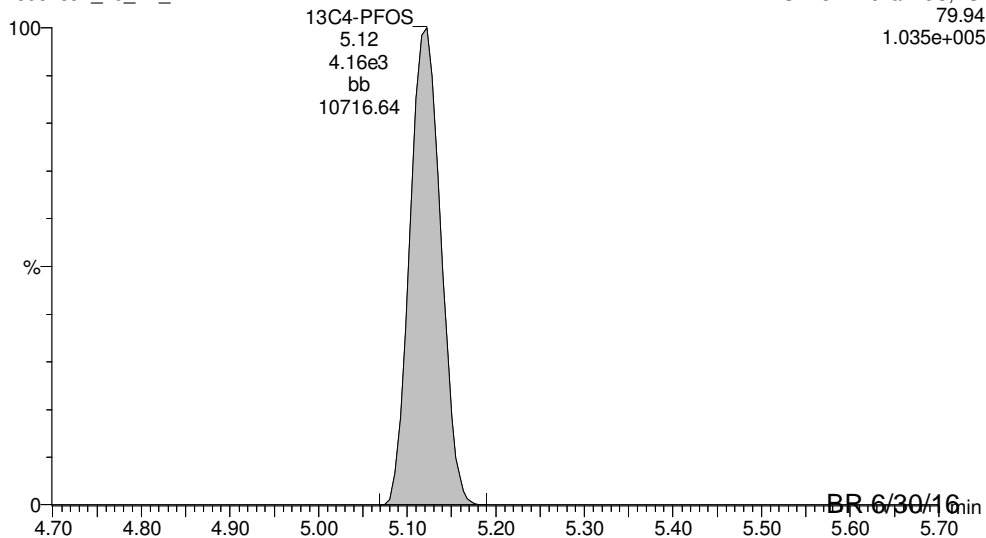
13C8-PFOA

160628J1_40_P1_E1



13C4-PFOS

160628J1_40_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_40.qld

Last Altered: Thursday, June 30, 2016 12:11:44 PM Pacific Daylight Time

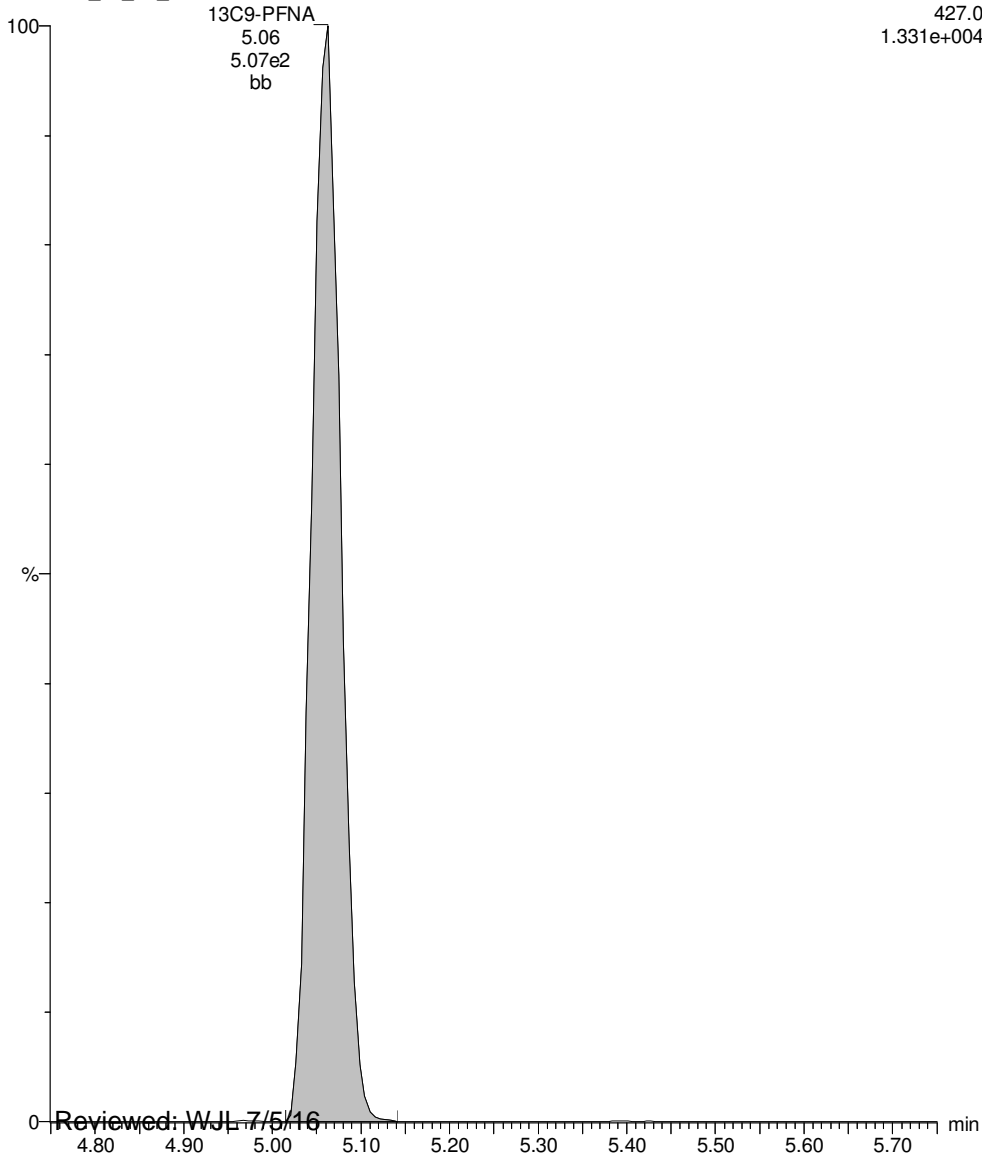
Printed: Thursday, June 30, 2016 12:11:56 PM Pacific Daylight Time

ID: 1600820-02, Description: OF-MW08-0616, Name: 160628J1_40.wiff, Date: 28-Jun-2016, Time: 23:53:02, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

13C9-PFNA

160628J1_40_P1_E1

SIR of 17 channels, ES-
427.0
1.331e+004



Dataset: U:\Q2.PRO\Results\160629J1\160629J1_05.qld

Last Altered: Thursday, June 30, 2016 15:11:35 Pacific Daylight Time

Printed: Thursday, June 30, 2016 15:18:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_05.wiff, Date: 29-Jun-2016, Time: 16:55:13, ID: 1600820-02@10x, Description: OF-MW08-0616

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	3 PFHxS	79.91	1.37e4	3.30e2		0.122	4.50	6.62	
2	5 PFOS	79.92	2.94e4	8.96e2		0.122	5.15	4.92	
3	9 18O2-PFHxS	102.9	3.30e2	1.09e3	0.307	0.122	4.50	0.101	98.2
4	11 13C8-PFOS	79.93	8.96e2	9.62e2	1.026	0.122	5.14	0.0930	90.7
5	14 13C3-PFHxS	80.0	1.09e3	1.09e3	1.000	0.122	4.49	0.102	100.0
6	16 13C4-PFOS	79.94	9.62e2	9.62e2	1.000	0.122	5.14	0.102	100.0
7	19 Total PFHxS	79.91		3.30e2		0.122		8.36	
8	21 Total PFOS	79.92		8.96e2		0.122		10.4	

Target = ug/L

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160629J1\160629J1_05.qld

Last Altered: Thursday, June 30, 2016 15:11:35 Pacific Daylight Time

Printed: Thursday, June 30, 2016 15:18:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_05.wiff, Date: 29-Jun-2016, Time: 16:55:13, ID: 1600820-02@10x, Description: OF-MW08-0616

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.50	5.51e3	1.78e3	1.56
2	18 Total PFBS	79.9	3.37	1.27e2	1.78e3	0.0360

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.50	1.37e4	3.30e2	6.62
2	19 Total PFHxS	79.91	4.40	3.48e3	3.30e2	1.68
3	19 Total PFHxS	79.91	4.29	1.16e2	3.30e2	0.0560

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.77	3.62e3	2.14e3	0.408
2	20 Total PFOA	368.9	4.68	9.12e2	2.14e3	0.103

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.15	2.94e4	8.96e2	4.92
2	21 Total PFOS	79.92	5.04	2.93e4	8.96e2	4.90
3	21 Total PFOS	79.92	4.95	3.61e3	8.96e2	0.603
4	21 Total PFOS	79.92	4.84	1.66e1	8.96e2	0.00277

Dataset: U:\Q2.PRO\Results\160629J1\160629J1_05.qld

Last Altered: Thursday, June 30, 2016 15:11:35 Pacific Daylight Time

Printed: Thursday, June 30, 2016 15:17:16 Pacific Daylight Time

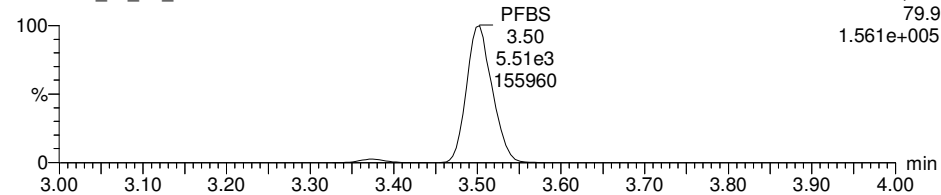
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_05.wiff, Date: 29-Jun-2016, Time: 16:55:13, ID: 1600820-02@10x, Description: OF-MW08-0616

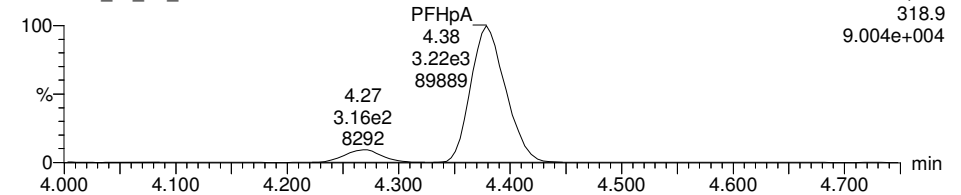
PFBS

160629J1_05_P1_E1



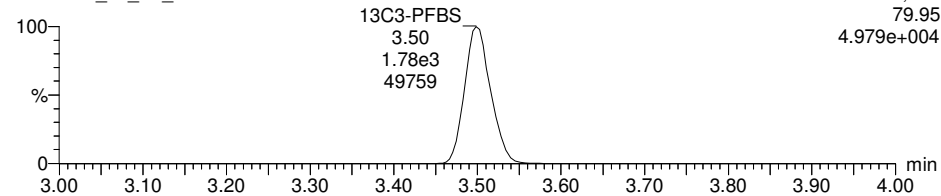
PFHpA

160629J1_05_P1_E1



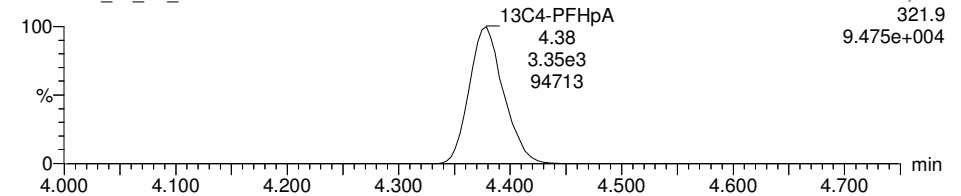
13C3-PFBS

160629J1_05_P1_E1



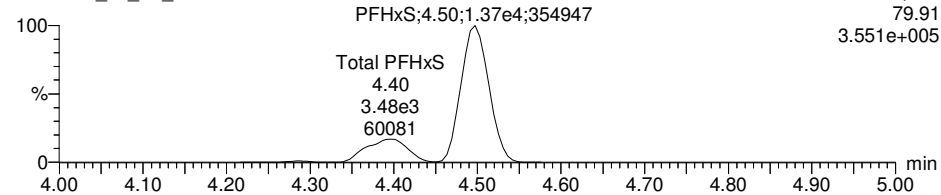
13C4-PFHpA

160629J1_05_P1_E1



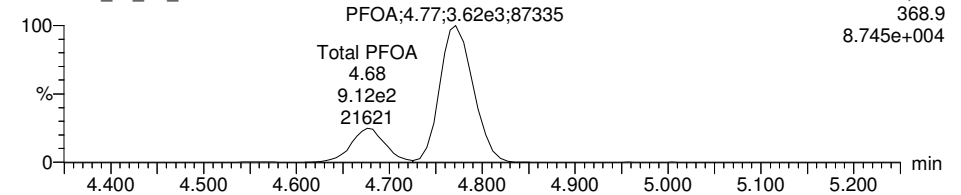
PFHxS

160629J1_05_P1_E1



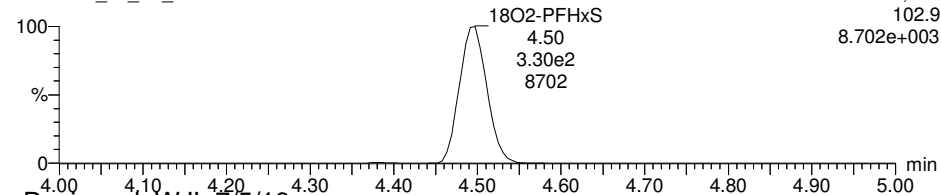
PFOA

160629J1_05_P1_E1



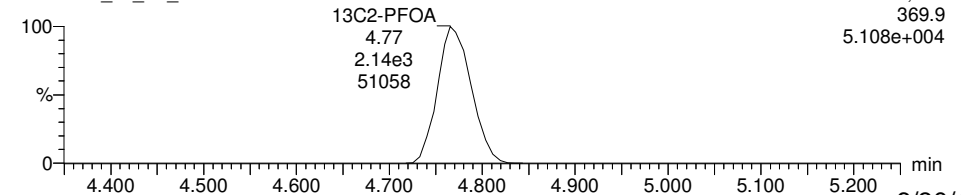
18O2-PFHxS

160629J1_05_P1_E1



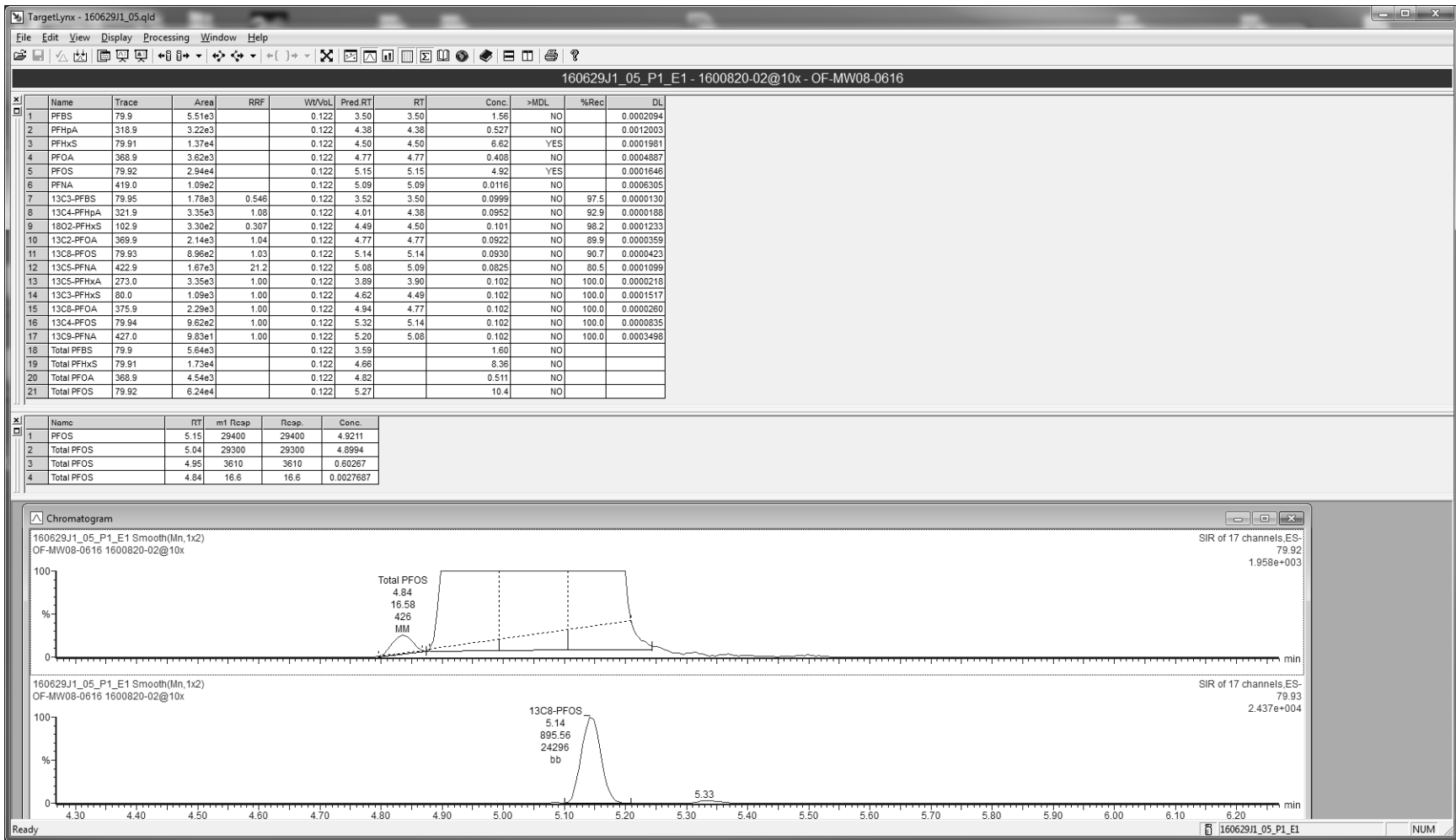
13C2-PFOA

160629J1_05_P1_E1



Reviewed: WJL 7/5/16

pw 6/30/16



Dataset: U:\Q2.PRO\Results\160629J1\160629J1_05.qld

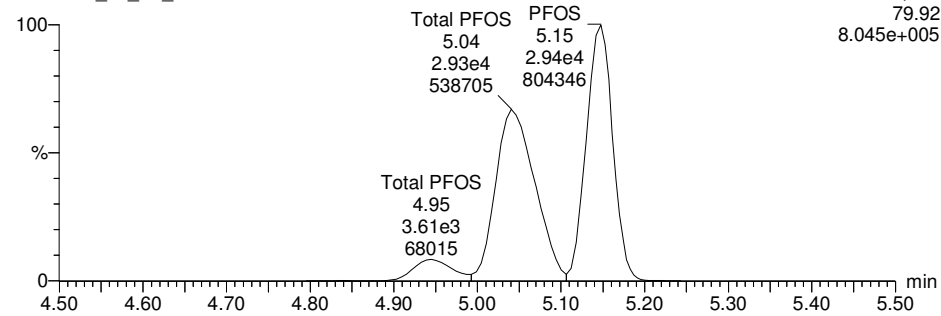
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Printed: Thursday, June 30, 2016 15:17:16 Pacific Daylight Time

Name: 160629J1_05.wiff, Date: 29-Jun-2016, Time: 16:55:13, ID: 1600820-02@10x, Description: OF-MW08-0616

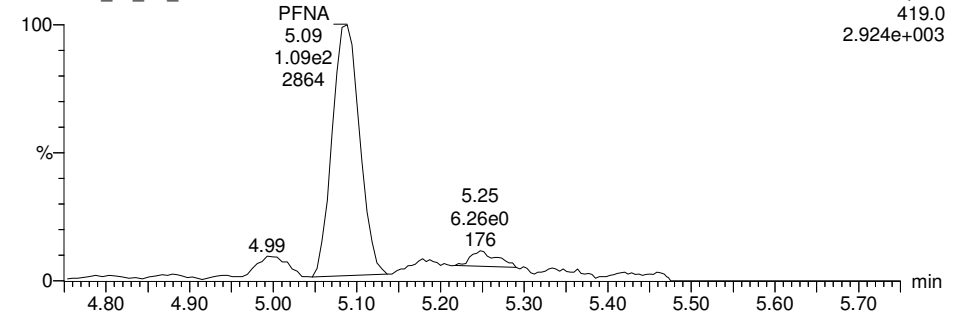
PFOS

160629J1_05_P1_E1



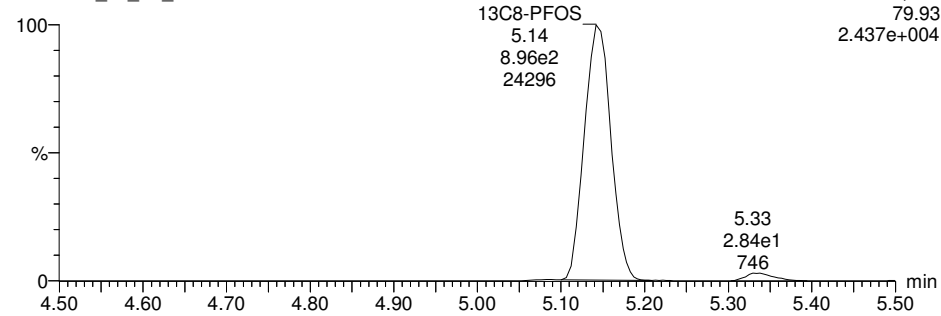
PFNA

160629J1_05_P1_E1



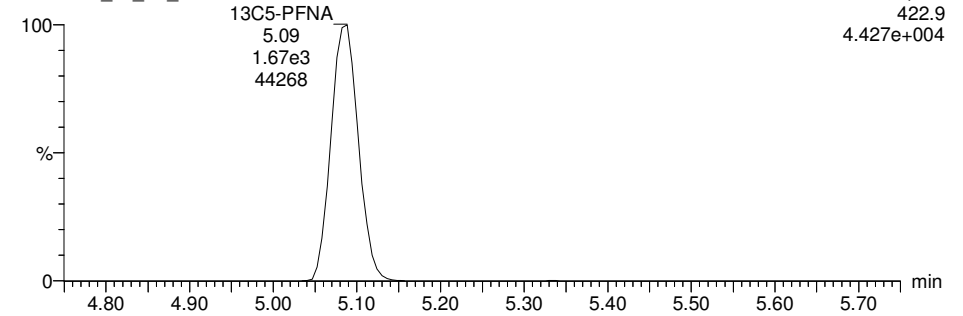
13C8-PFOS

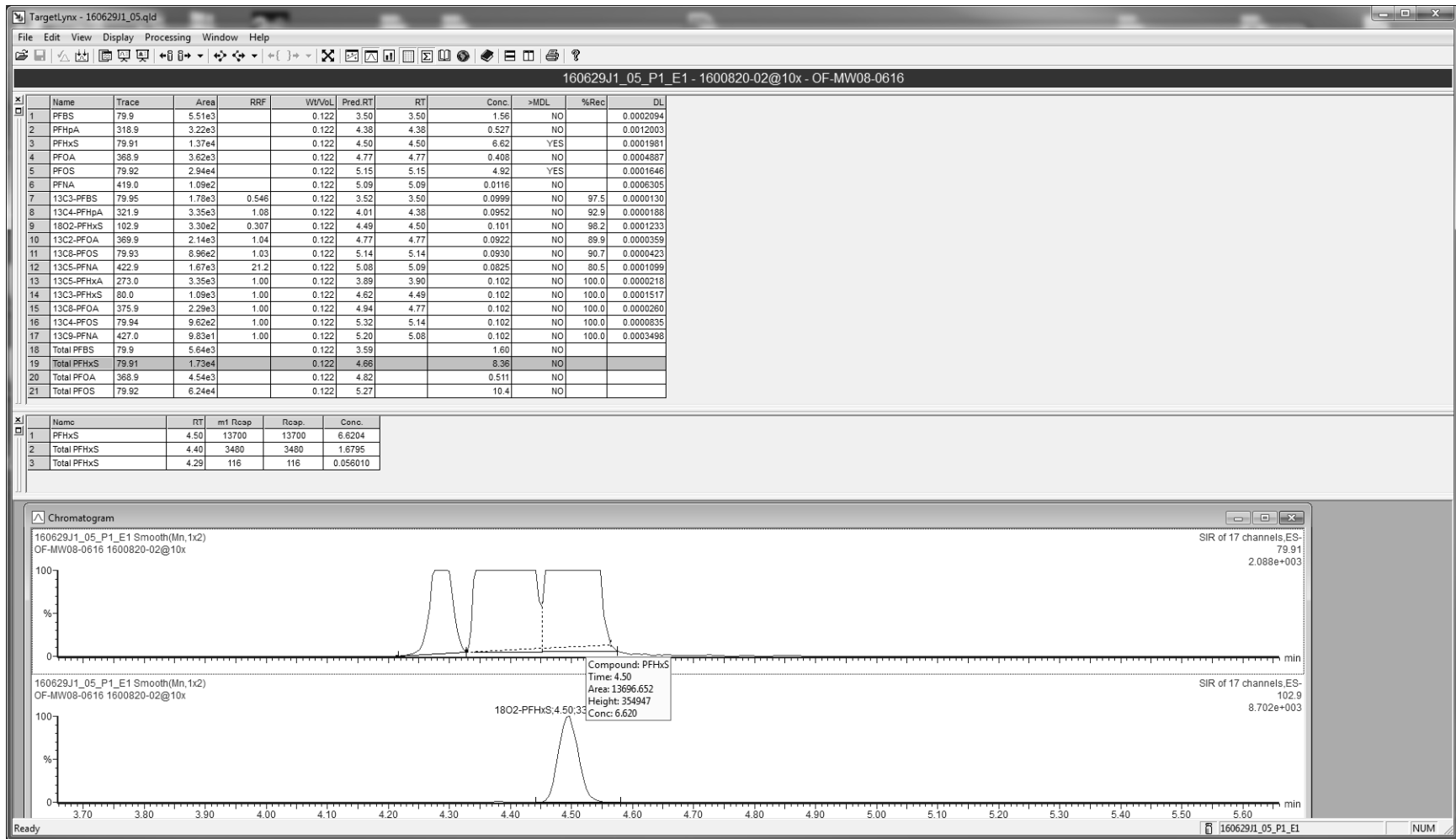
160629J1_05_P1_E1



13C5-PFNA

160629J1_05_P1_E1





Dataset: U:\Q2.PRO\Results\160629J1\160629J1_05.qld

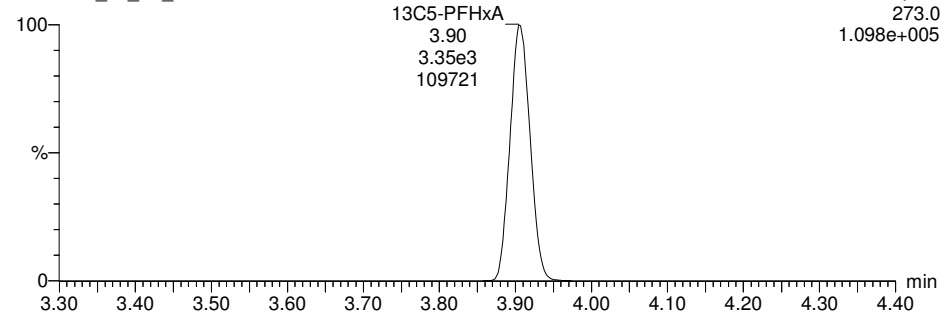
Last Altered: Thursday, June 30, 2016 15:11:35 Pacific Daylight Time

Printed: Thursday, June 30, 2016 15:17:16 Pacific Daylight Time

Name: 160629J1_05.wiff, Date: 29-Jun-2016, Time: 16:55:13, ID: 1600820-02@10x, Description: OF-MW08-0616

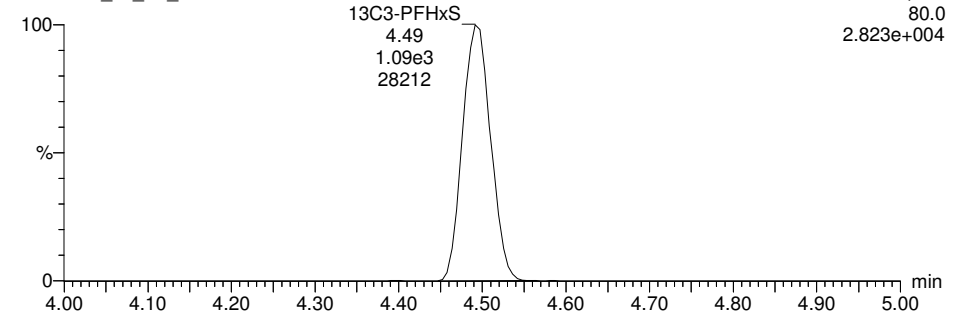
13C5-PFHxA

160629J1_05_P1_E1



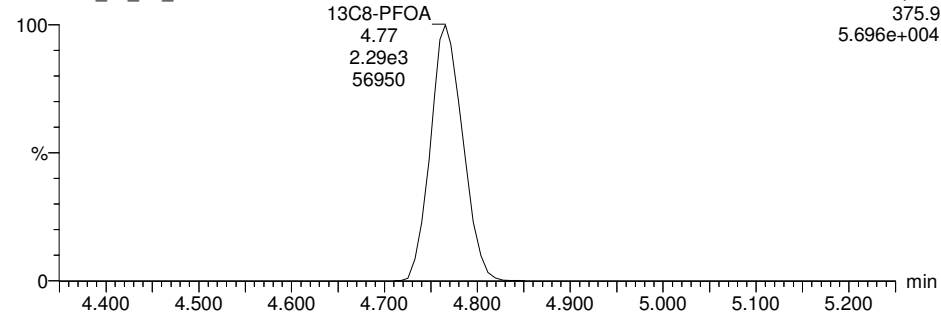
13C3-PFHxS

160629J1_05_P1_E1



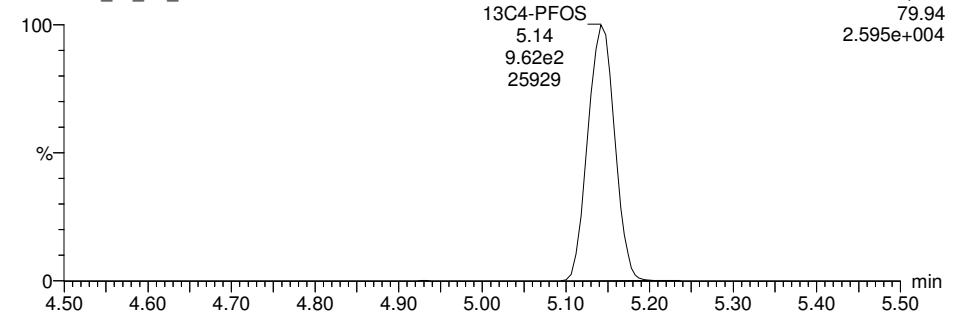
13C8-PFOA

160629J1_05_P1_E1



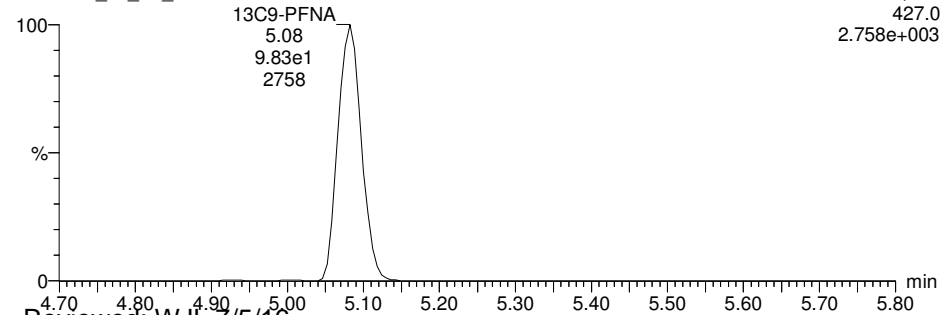
13C4-PFOS

160629J1_05_P1_E1



13C9-PFNA

160629J1_05_P1_E1



Reviewed: WJL 7/5/16

pw 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

Last Altered: Thursday, June 30, 2016 12:14:21 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:15:02 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec	TARGETED IN UG/L
1	1 PFBS	79.9	1.913e4	5.799e3		0.128	3.47	1.59 E*		
2	2 PFHpA	318.9	1.280e4	1.186e4		0.128	4.35	0.562		
3	3 PFHxS	79.91	4.555e4	1.086e3		0.128	4.47	6.37 E*		
4	4 PFOA	368.9	1.943e4	1.077e4		0.128	4.74	0.415		
5	5 PFOS	79.92	1.228e5	3.915e3		0.128	5.13	4.46 E*		
6	6 PFNA	419.0	6.935e2	9.723e3		0.128	5.07	0.0122		
7	7 13C3-PFBS	79.95	5.799e3	1.126e4	0.546	0.128	3.47	0.0919	94.3	*
8	8 13C4-PFHpA	321.9	1.186e4	1.126e4	1.075	0.128	4.35	0.0955	98.0	*
9	9 18O2-PFHxS	102.9	1.086e3	3.551e3	0.307	0.128	4.47	0.0970	99.5	*
10	10 13C2-PFOA	369.9	1.077e4	1.115e4	1.042	0.128	4.74	0.0905	92.8	
11	11 13C8-PFOS	79.93	3.915e3	4.192e3	1.026	0.128	5.12	0.0888	91.1	*
12	12 13C5-PFNA	422.9	9.723e3	5.675e2	21.158	0.128	5.06	0.0789	81.0	
13	13 13C5-PFHxA	273.0	1.126e4	1.126e4	1.000	0.128	3.88	0.0975	100	
14	14 13C3-PFHxS	80.0	3.551e3	3.551e3	1.000	0.128	4.47	0.0975	100	
15	15 13C8-PFOA	375.9	1.115e4	1.115e4	1.000	0.128	4.74	0.0975	100	
16	16 13C4-PFOS	79.94	4.192e3	4.192e3	1.000	0.128	5.12	0.0975	100	
17	17 13C9-PFNA	427.0	5.675e2	5.675e2	1.000	0.128	5.06	0.0975	100	
18	18 Total PFBS	79.9		5.799e3		0.128		1.63		
19	19 Total PFHxS	79.91		1.086e3		0.128		8.62		
20	20 Total PFOA	368.9		1.077e4		0.128		0.514		
21	21 Total PFOS	79.92		3.915e3		0.128		10.8		

*see dil

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

Last Altered: Thursday, June 30, 2016 12:14:21 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:15:02 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50**Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23****ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15****Total PFBS**

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.47	19134.049	5799.274	1.6
2	18 Total PFBS	79.9	3.34	519.890	5799.274	0.0

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	45553.855	1085.699	6.4
2	19 Total PFHxS	79.91	4.38	15526.256	1085.699	2.2
3	19 Total PFHxS	79.91	4.26	537.849	1085.699	0.1

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.74	19434.898	10773.712	0.4
2	20 Total PFOA	368.9	4.65	4598.902	10773.712	0.1
3	20 Total PFOA	368.9	4.53	64.633	10773.712	0.0

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	122768.953	3915.486	4.5
2	21 Total PFOS	79.92	5.02	153681.344	3915.486	5.6
3	21 Total PFOS	79.92	4.92	21613.205	3915.486	0.8

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

Last Altered: Thursday, June 30, 2016 12:14:21 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:15:02 PM Pacific Daylight Time

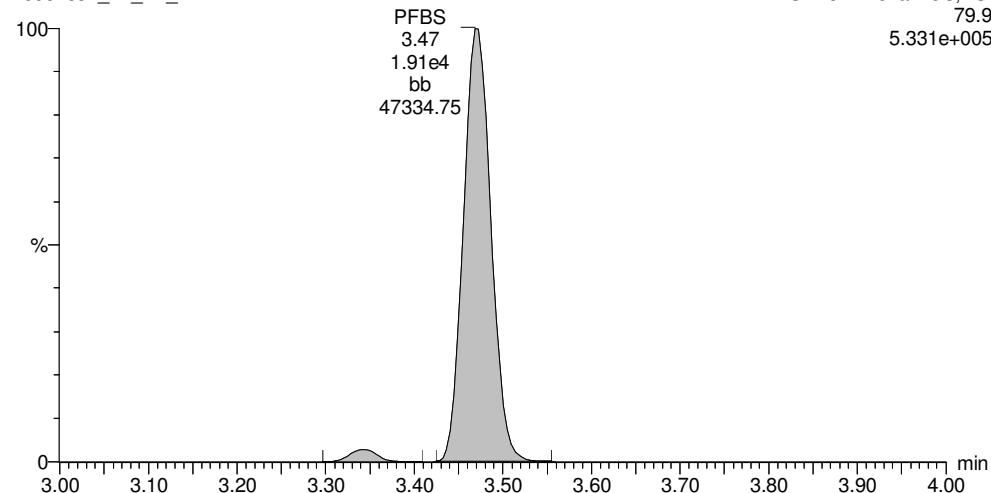
Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

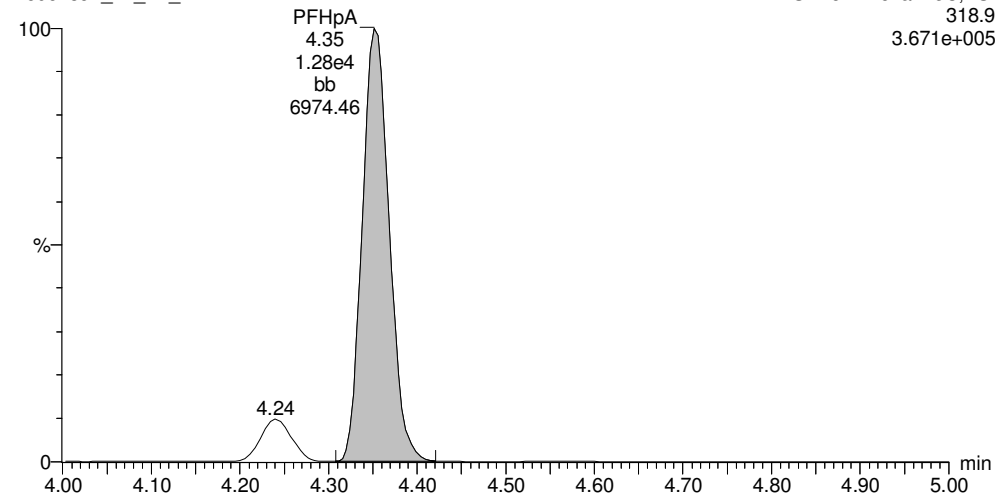
Total PFBS

160628J1_41_P1_E1



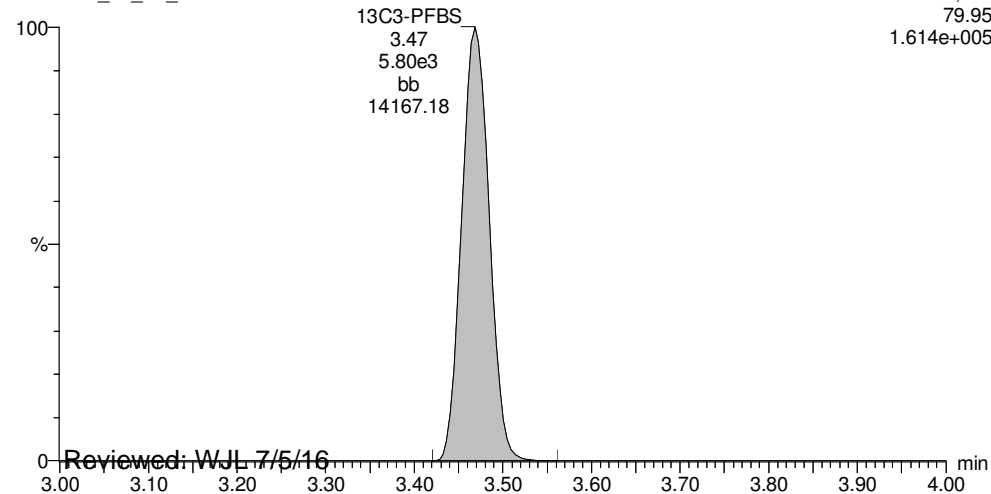
PFHpA

160628J1_41_P1_E1



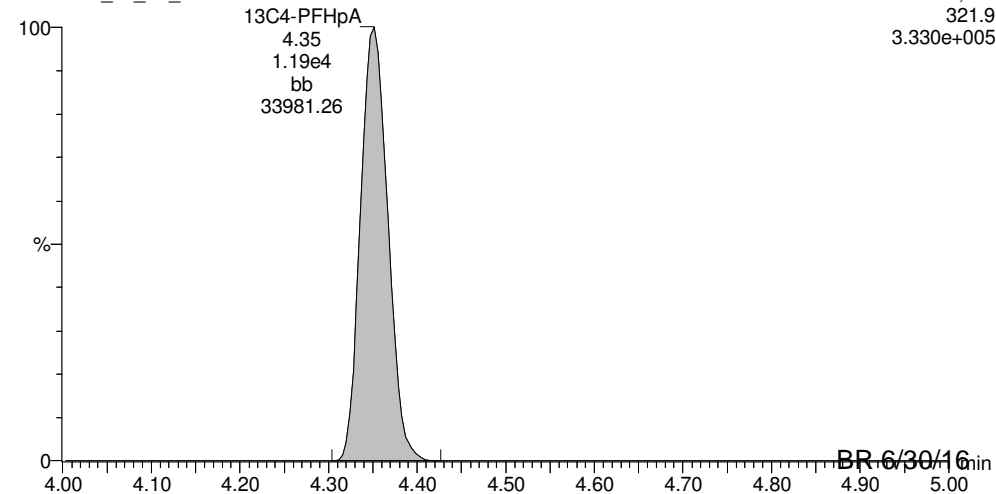
13C3-PFBS

160628J1_41_P1_E1



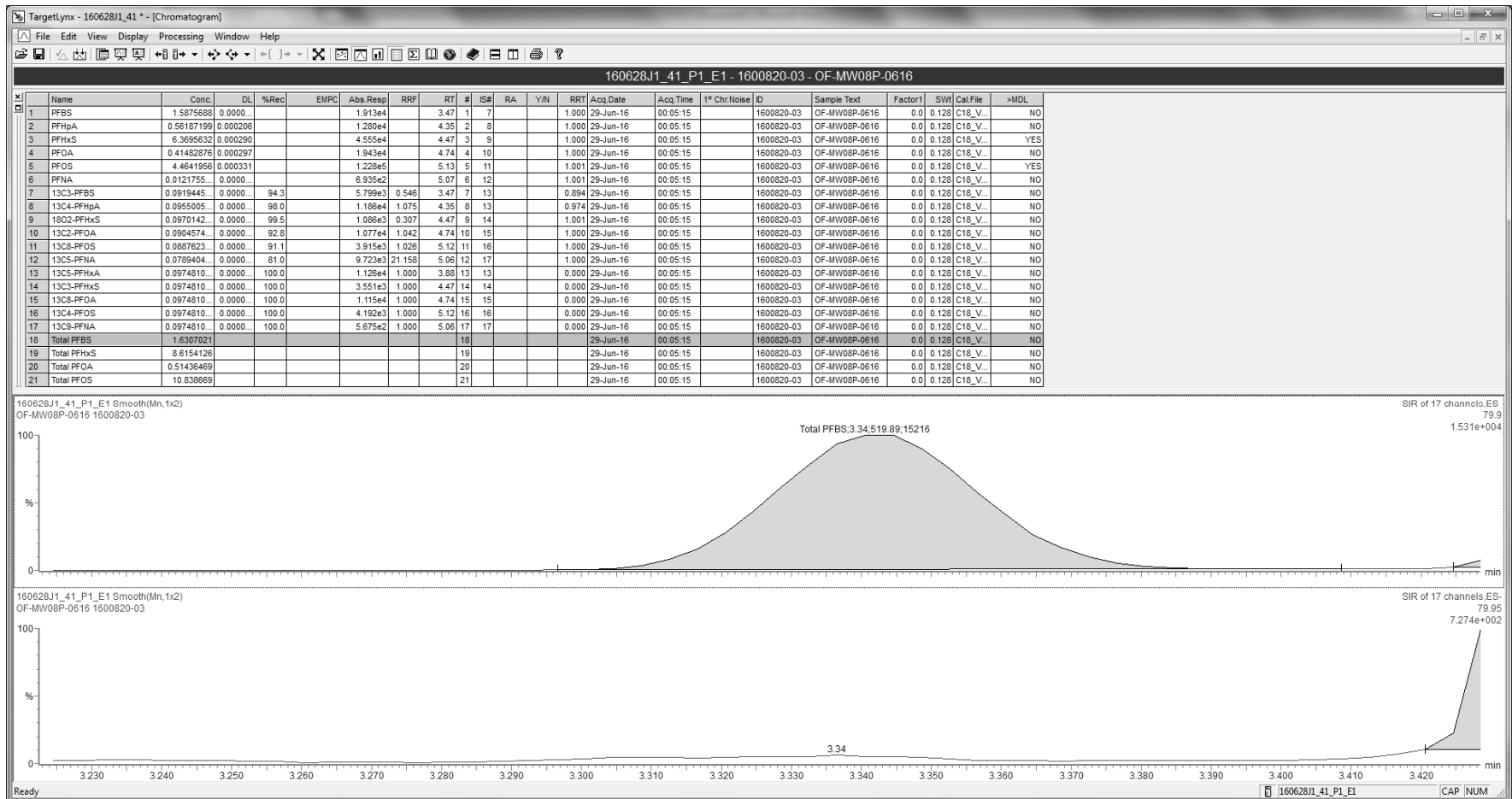
13C4-PFHpA

160628J1_41_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16



Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

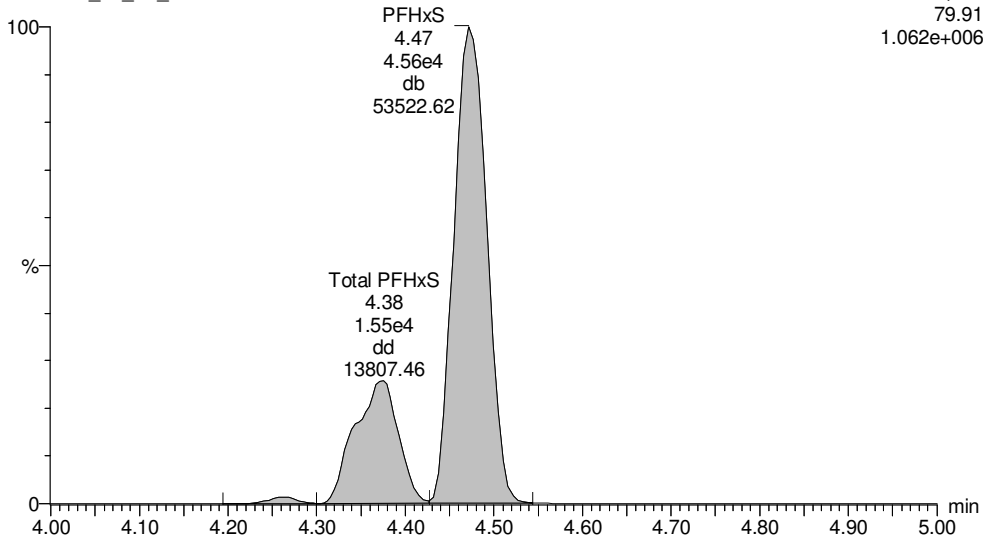
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Printed: Thursday, June 30, 2016 12:15:02 PM Pacific Daylight Time

ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

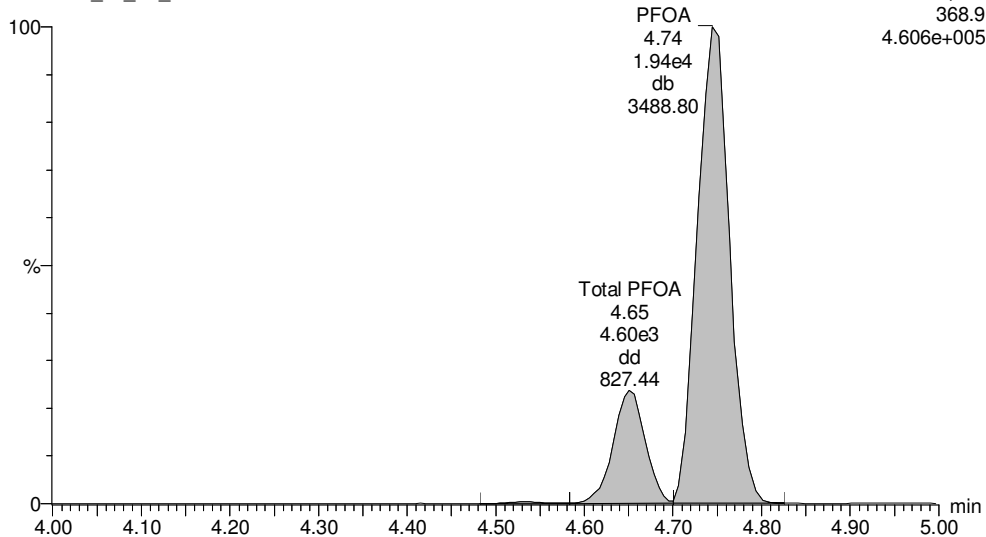
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160628J1_41_P1_E1



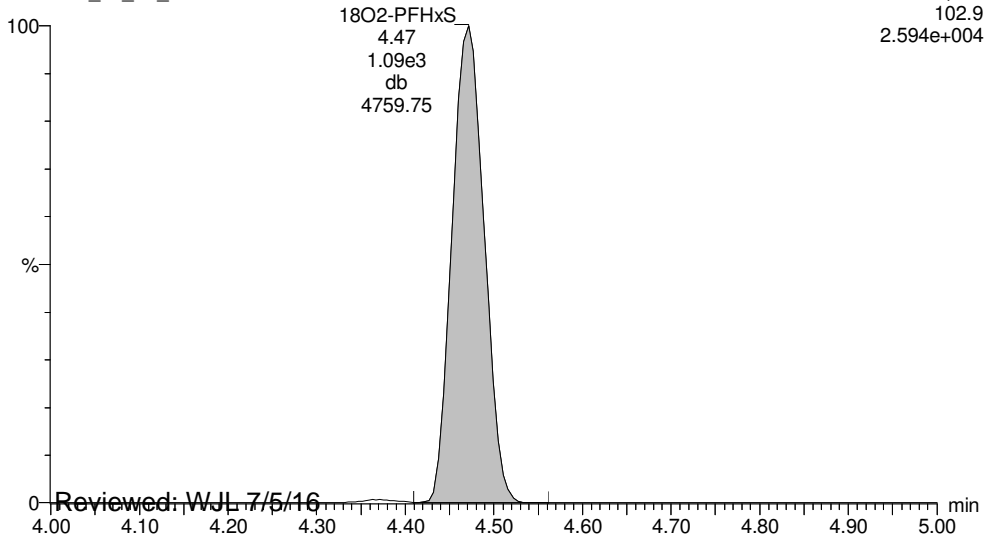
Total PFOA

160628J1_41_P1_E1



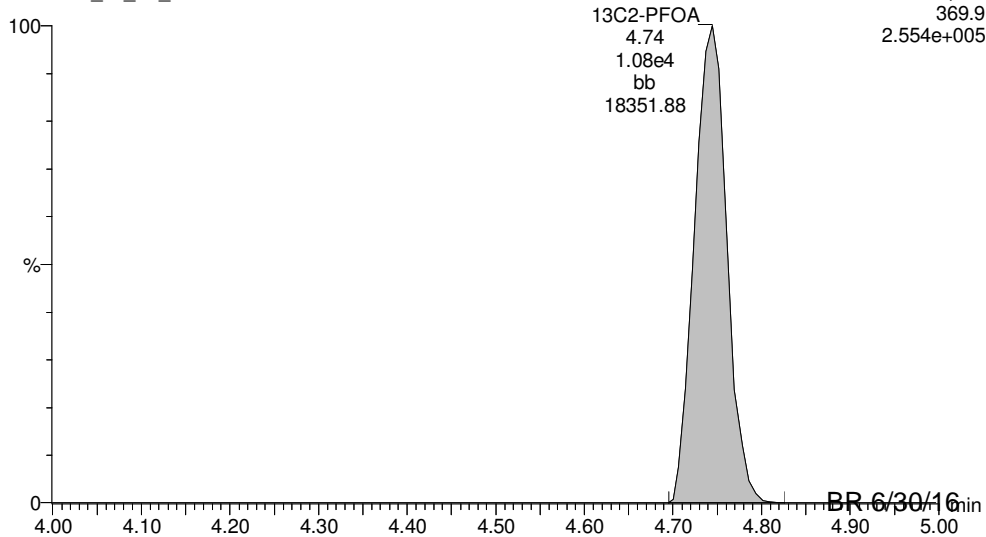
18O2-PFHxS

160628J1_41_P1_E1



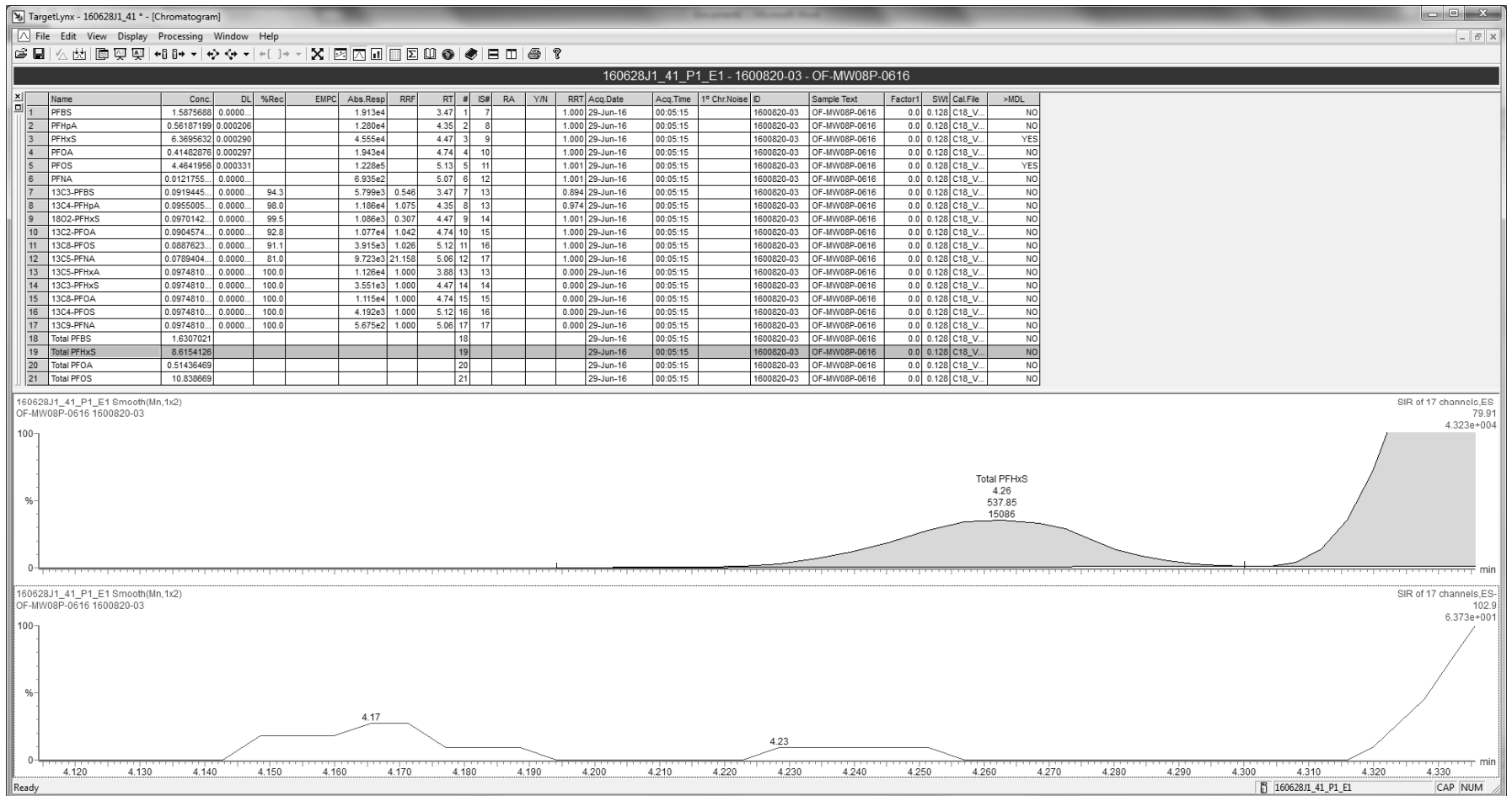
13C2-PFOA

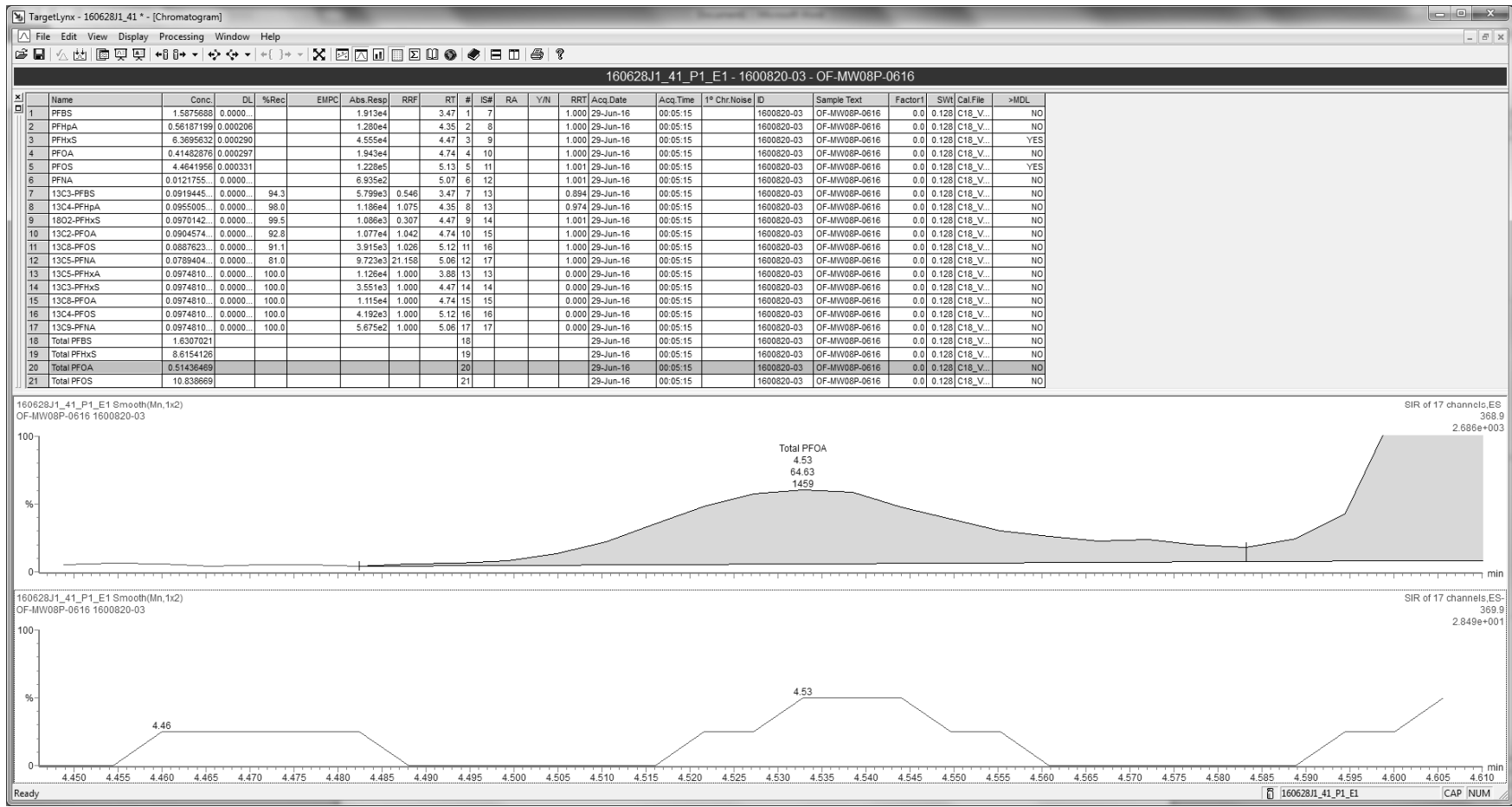
160628J1_41_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16





Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

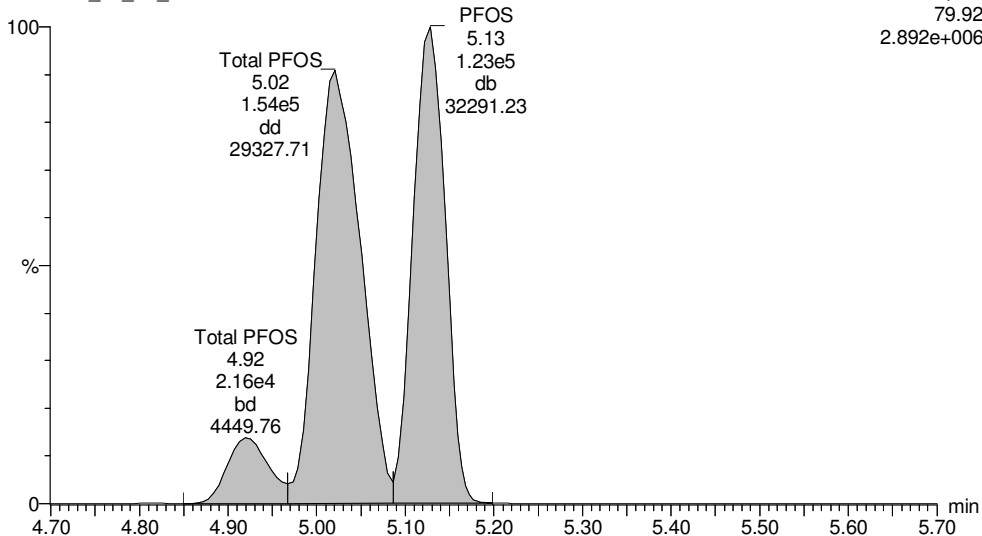
Last Altered: Thursday, June 30, 2016 12:14:21 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:15:02 PM Pacific Daylight Time

ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

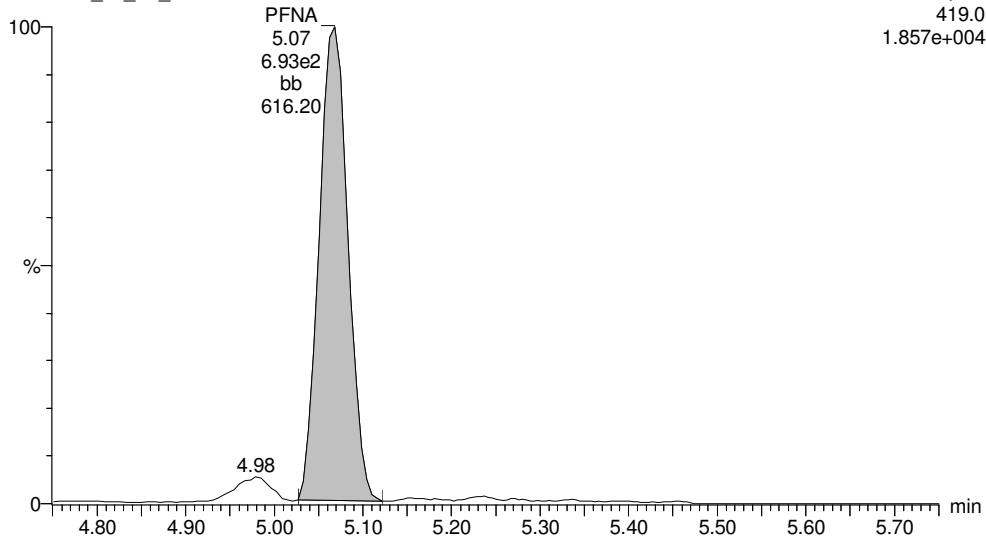
Total PFOS

160628J1_41_P1_E1



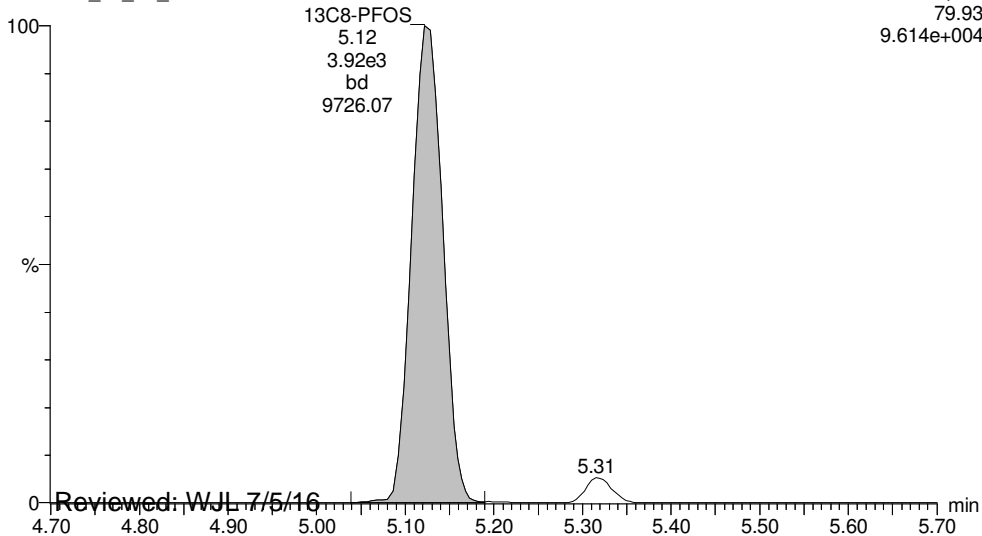
PFNA

160628J1_41_P1_E1



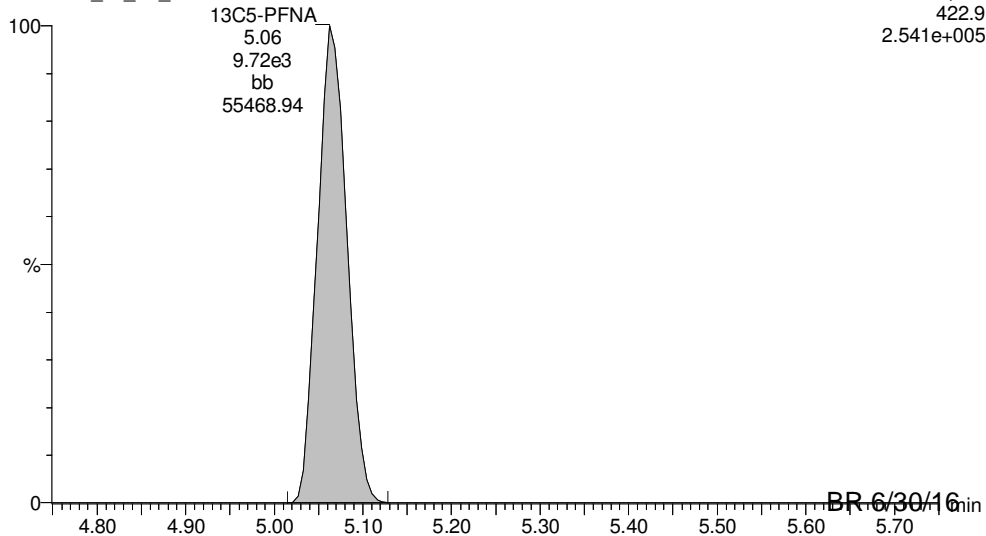
13C8-PFOS

160628J1_41_P1_E1



13C5-PFNA

160628J1_41_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

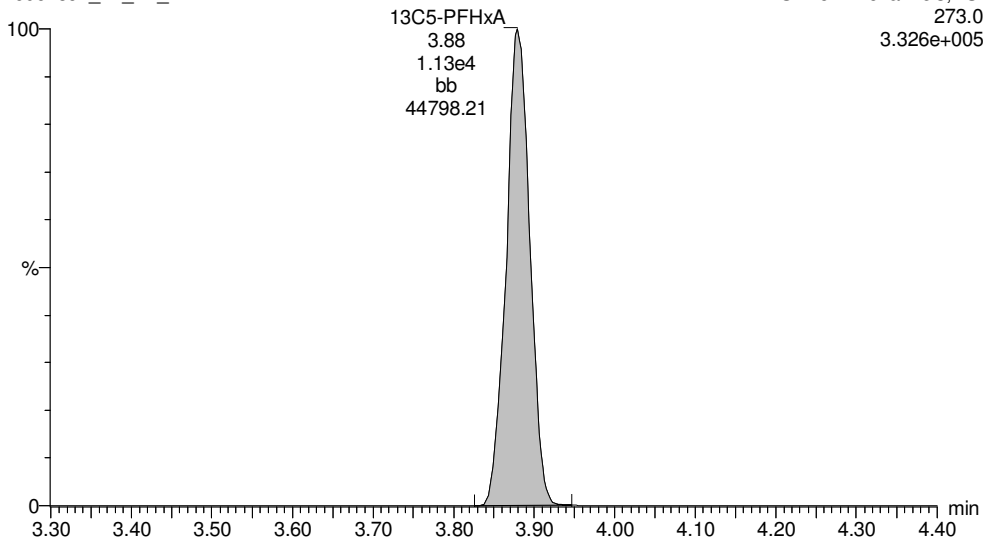
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Printed: Thursday, June 30, 2016 12:15:02 PM Pacific Daylight Time

ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

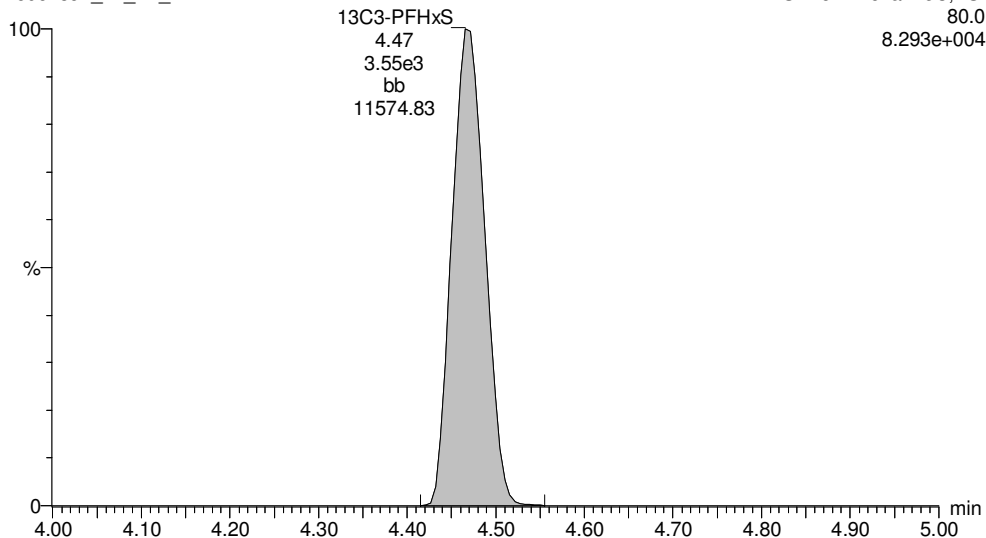
13C5-PFHxA

160628J1_41_P1_E1



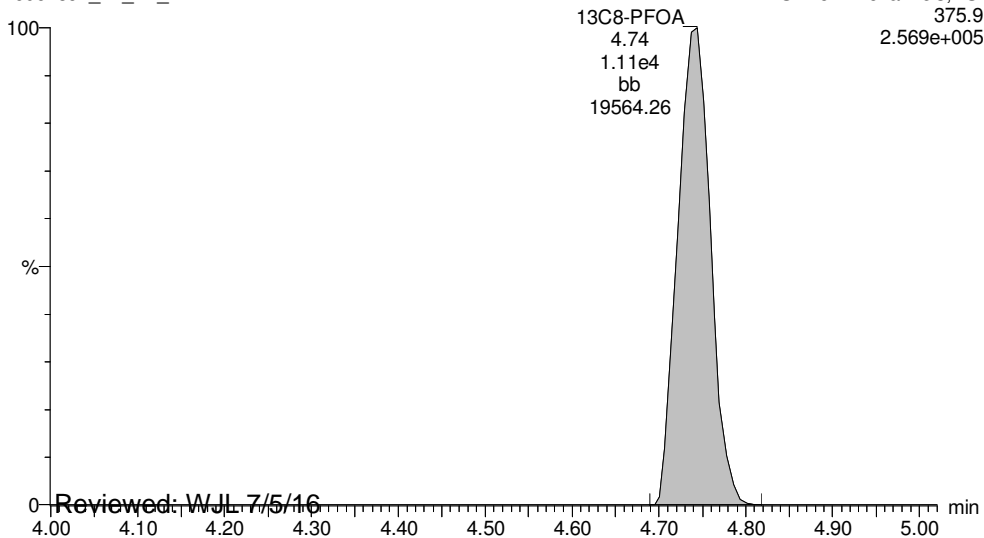
13C3-PFHxS

160628J1_41_P1_E1



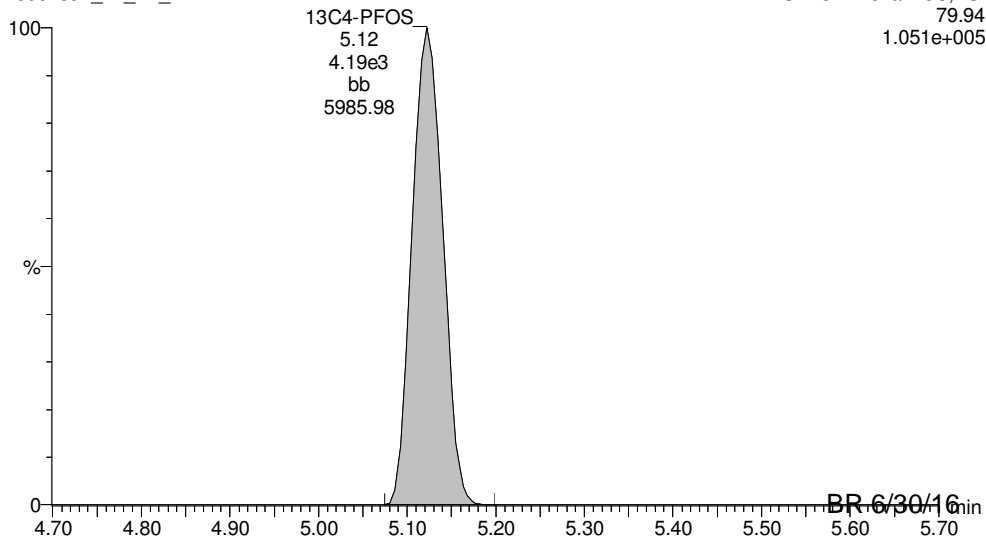
13C8-PFOA

160628J1_41_P1_E1



13C4-PFOS

160628J1_41_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_41.qld

Last Altered: Thursday, June 30, 2016 12:14:21 PM Pacific Daylight Time

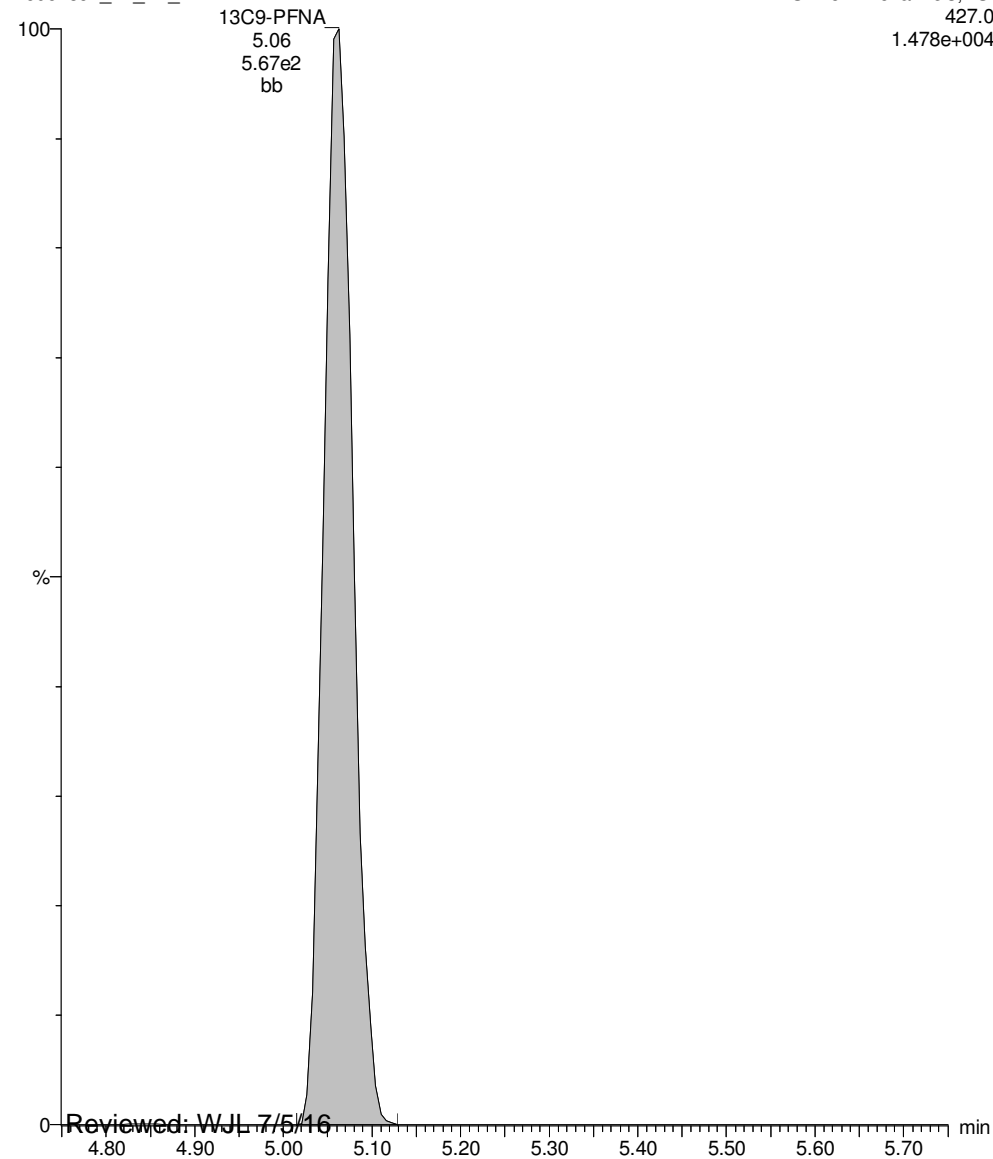
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ID: 1600820-03, Description: OF-MW08P-0616, Name: 160628J1_41.wiff, Date: 29-Jun-2016, Time: 00:05:15, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

13C9-PFNA

160628J1_41_P1_E1

SIR of 17 channels, ES-
427.0
1.478e+004



Reviewed: WJL 7/5/16

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BR 6/30/16

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Dataset: U:\Q2.PRO\Results\160629J1\160629J1_06.qld

Last Altered: Thursday, June 30, 2016 16:37:10 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:41:41 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_06.wiff, Date: 29-Jun-2016, Time: 17:07:26, ID: 1600820-03@10x, Description: OF-MW08P-0616

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	79.9	2.45e3	7.66e2		0.128	3.49	1.55	
2	3 PFHxS	79.91	6.31e3	1.48e2		0.128	4.49	6.48	
3	5 PFOS	79.92	1.02e4	2.71e2		0.128	5.14	5.37	
4	7 13C3-PFBS	79.95	7.66e2	1.36e3	0.546	0.128	3.49	0.101	103.2
5	9 18O2-PFHxS	102.9	1.48e2	4.92e2	0.307	0.128	4.49	0.0956	97.9
6	11 13C8-PFOS	79.93	2.71e2	2.94e2	1.026	0.128	5.14	0.0879	90.0
7	13 13C5-PFHxA	273.0	1.36e3	1.36e3	1.000	0.128	3.90	0.0977	100.0
8	14 13C3-PFHxS	80.0	4.92e2	4.92e2	1.000	0.128	4.49	0.0977	100.0
9	16 13C4-PFOS	79.94	2.94e2	2.94e2	1.000	0.128	5.13	0.0977	100.0

Target = ug/L

Dataset: U:\Q2.PRO\Results\160629J1\160629J1_06.qld

Last Altered: Thursday, June 30, 2016 16:37:10 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:41:57 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_06.wiff, Date: 29-Jun-2016, Time: 17:07:26, ID: 1600820-03@10x, Description: OF-MW08P-0616

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	18 Total PFBS	79.9		7.66e2		0.128		1.58	
2	19 Total PFHxS	79.91		1.48e2		0.128		8.12	
3	21 Total PFOS	79.92		2.71e2		0.128		11.9	

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160629J1\160629J1_06.qld

Last Altered: Thursday, June 30, 2016 16:37:10 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:41:57 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_06.wiff, Date: 29-Jun-2016, Time: 17:07:26, ID: 1600820-03@10x, Description: OF-MW08P-0616

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.49	2.45e3	7.66e2	1.55
2	18 Total PFBS	79.9	3.37	5.38e1	7.66e2	0.0339

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.49	6.31e3	1.48e2	6.48
2	19 Total PFHxS	79.91	4.39	1.54e3	1.48e2	1.58
3	19 Total PFHxS	79.91	4.28	5.40e1	1.48e2	0.0555

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	20 Total PFOA	368.9	4.67	3.72e2	8.84e2	0.0970
2	4 PFOA	368.9	4.76	1.57e3	8.84e2	0.410

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.14	1.02e4	2.71e2	5.37
2	21 Total PFOS	79.92	5.03	1.09e4	2.71e2	5.72
3	21 Total PFOS	79.92	4.93	1.45e3	2.71e2	0.763

Dataset: U:\Q2.PRO\Results\160629J1\160629J1_06.qld

Last Altered: Thursday, June 30, 2016 16:37:10 Pacific Daylight Time

Printed: Thursday, June 30, 2016 16:37:54 Pacific Daylight Time

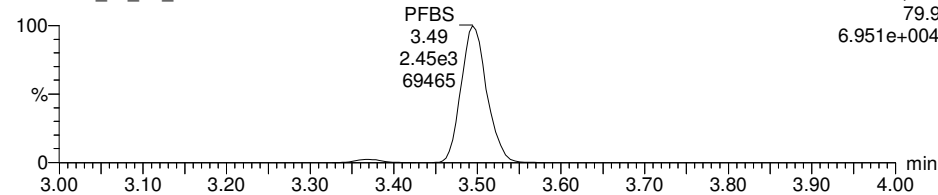
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160629J1_06.wiff, Date: 29-Jun-2016, Time: 17:07:26, ID: 1600820-03@10x, Description: OF-MW08P-0616

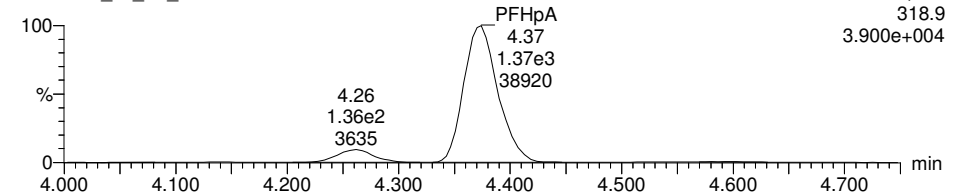
PFBS

160629J1_06_P1_E1



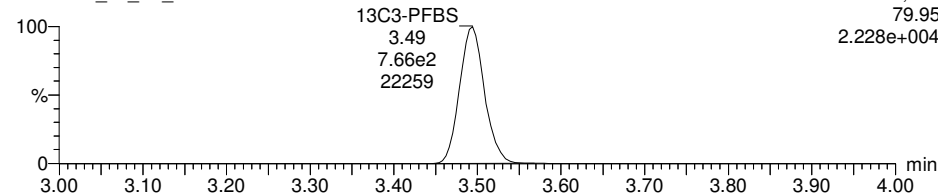
PFHpA

160629J1_06_P1_E1



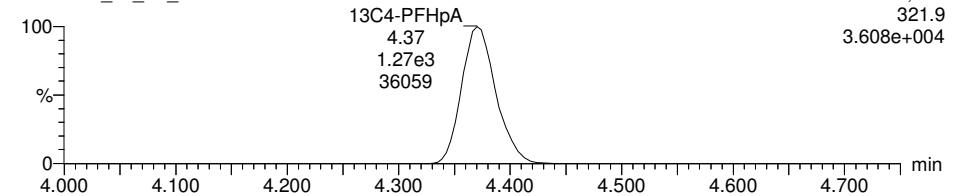
13C3-PFBS

160629J1_06_P1_E1



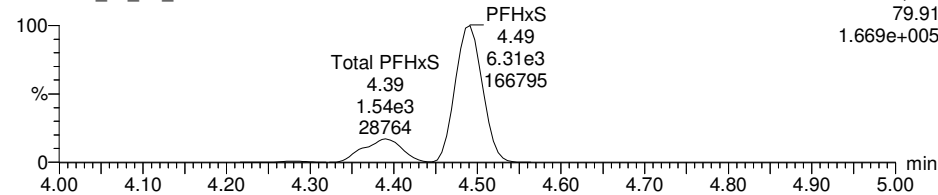
13C4-PFHpA

160629J1_06_P1_E1



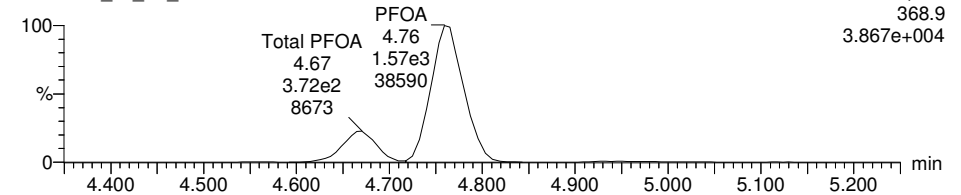
PFHxS

160629J1_06_P1_E1



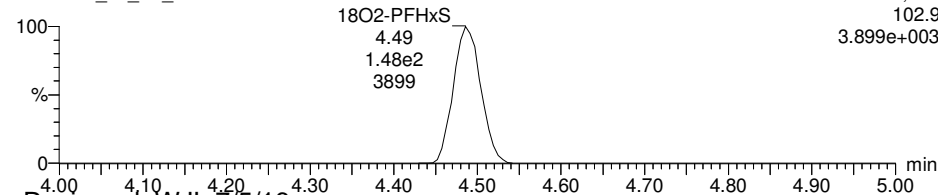
PFOA

160629J1_06_P1_E1



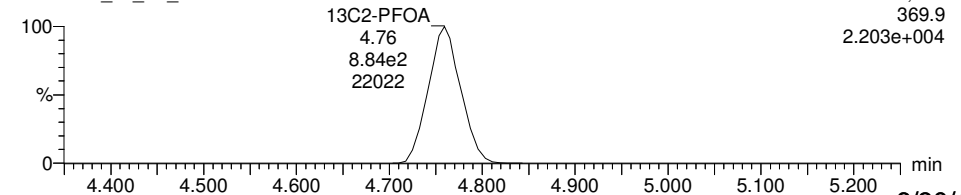
18O2-PFHxS

160629J1_06_P1_E1



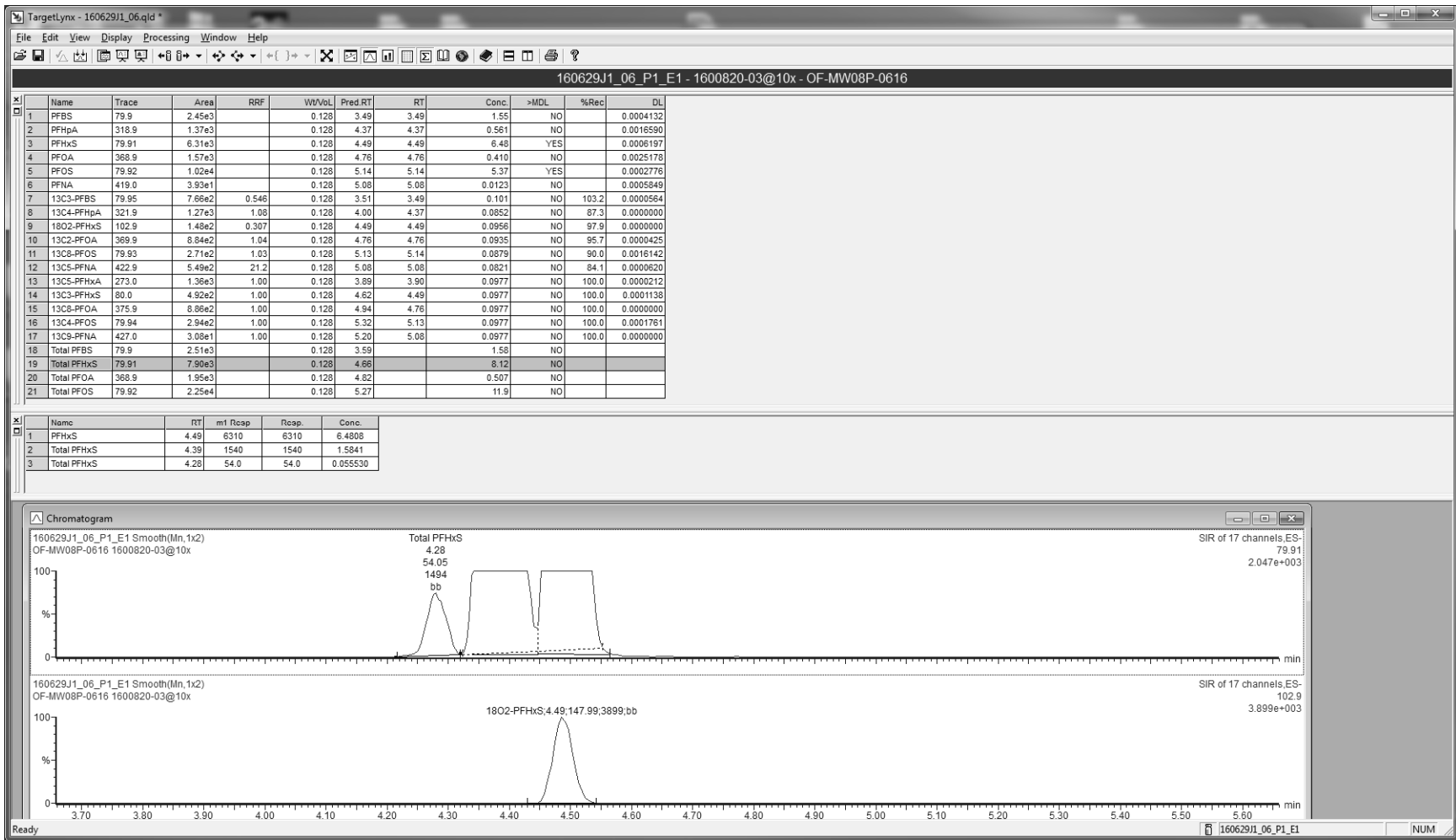
13C2-PFOA

160629J1_06_P1_E1



Reviewed: WJL 7/5/16

pw 6/30/16

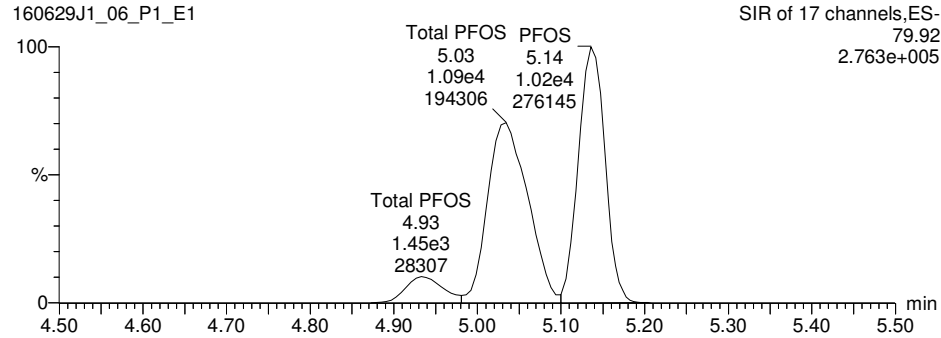


Dataset: U:\Q2.PRO\Results\160629J1\160629J1_06.qld

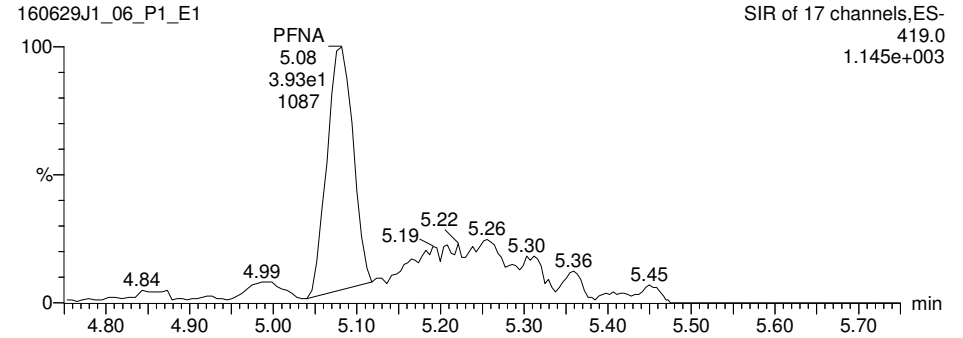
Last Altered: Thursday, June 30, 2016 16:37:10 Pacific Daylight Time
Printed: Thursday, June 30, 2016 16:37:54 Pacific Daylight Time

Name: 160629J1_06.wiff, Date: 29-Jun-2016, Time: 17:07:26, ID: 1600820-03@10x, Description: OF-MW08P-0616

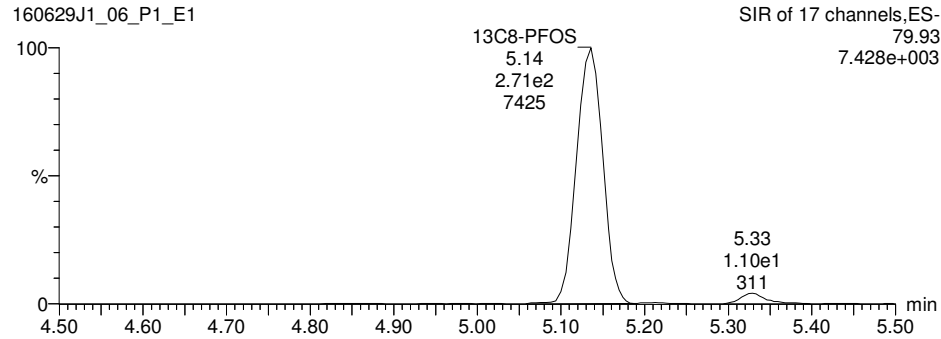
PFOS



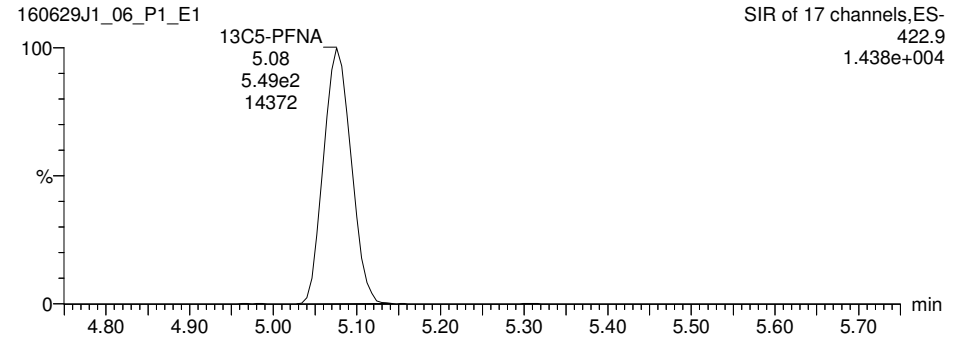
PFNA



13C8-PFOS



13C5-PFNA



Dataset: U:\Q2.PRO\Results\160629J1\160629J1_06.qld

Last Altered: Thursday, June 30, 2016 16:37:10 Pacific Daylight Time

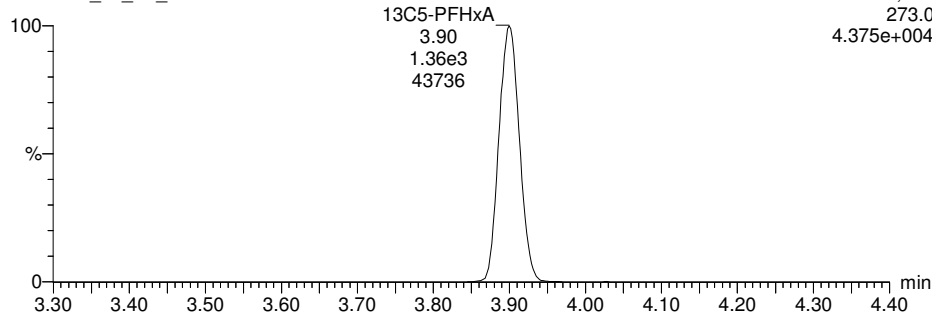
Printed: Thursday, June 30, 2016 16:37:54 Pacific Daylight Time

Name: 160629J1_06.wiff, Date: 29-Jun-2016, Time: 17:07:26, ID: 1600820-03@10x, Description: OF-MW08P-0616

13C5-PFHxA

160629J1_06_P1_E1

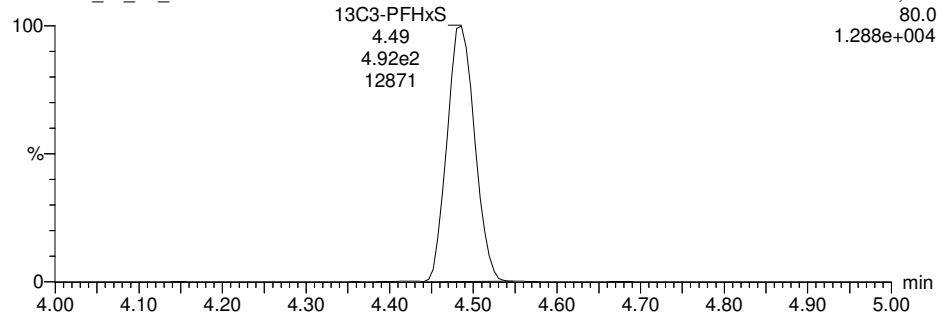
SIR of 17 channels,ES-
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4.375e+004



13C3-PFHxS

160629J1_06_P1_E1

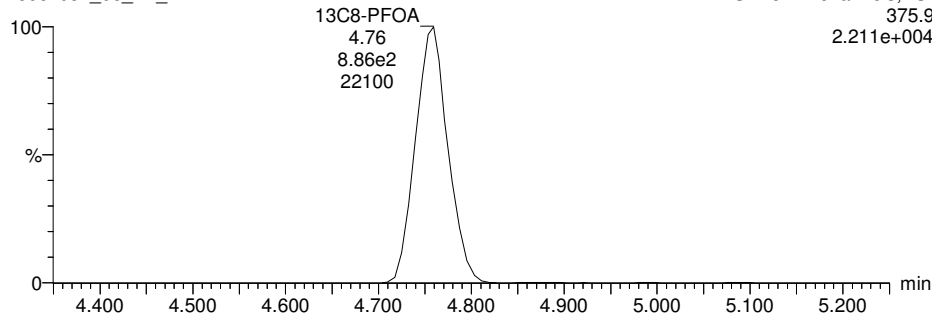
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13C8-PFOA

160629J1_06_P1_E1

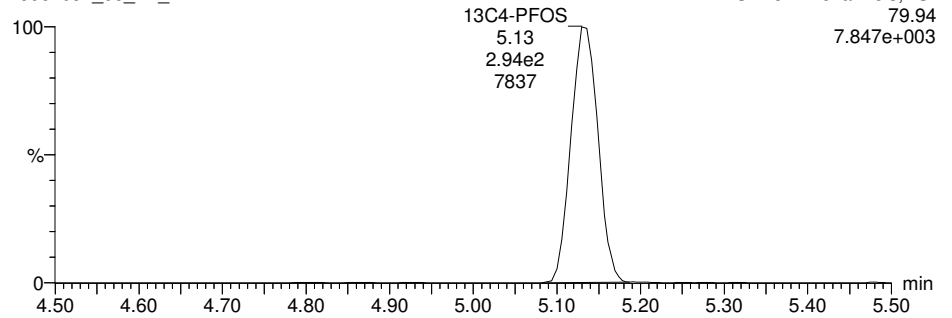
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2.211e+004



13C4-PFOS

160629J1_06_P1_E1

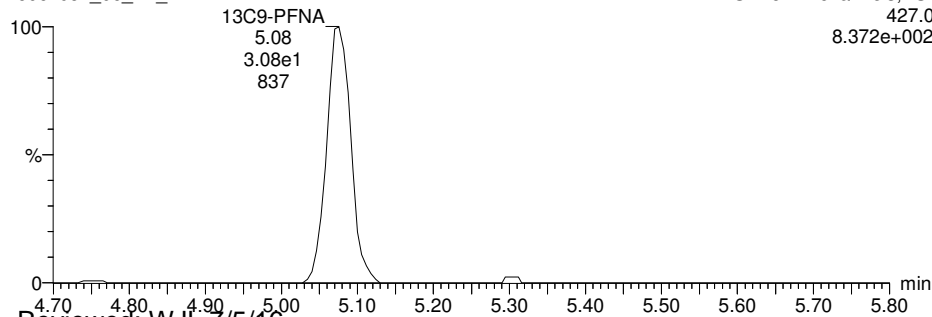
SIR of 17 channels,ES-
79.94
7.847e+003



13C9-PFNA

160629J1_06_P1_E1

SIR of 17 channels,ES-
427.0
8.372e+002



Reviewed: WJL 7/5/16

pw 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

Last Altered: Thursday, June 30, 2016 12:18:15 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:18:22 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-04, Description: OF-MW10D-0616, Name: 160628J1_42.wiff, Date: 29-Jun-2016, Time: 00:17:24

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	79.9		6.326e3		0.125			
2	2 PFHpA	318.9		1.185e4		0.125			
3	3 PFHxS	79.91	2.784e1	1.554e3		0.125	4.49	2.79	
4	4 PFOA	368.9	2.829e1	1.037e4		0.125	4.76	0.643	
5	5 PFOS	79.92	7.846e1	5.048e3		0.125	5.14	2.27	
6	6 PFNA	419.0		9.467e3		0.125			
7	7 13C3-PFBS	79.95	6.326e3	1.194e4	0.546	0.125	3.47	97.0	97.1
8	8 13C4-PFHpA	321.9	1.185e4	1.194e4	1.075	0.125	4.35	92.3	92.3
9	9 18O2-PFHxS	102.9	1.554e3	5.445e3	0.307	0.125	4.47	92.9	92.9
10	10 13C2-PFOA	369.9	1.037e4	9.998e3	1.042	0.125	4.75	99.6	99.6
11	11 13C8-PFOS	79.93	5.048e3	5.638e3	1.026	0.125	5.13	87.2	87.3
12	12 13C5-PFNA	422.9	9.467e3	4.537e2	21.158	0.125	5.07	98.6	98.6
13	13 13C5-PFHxA	273.0	1.194e4	1.194e4	1.000	0.125	3.89	100	100
14	14 13C3-PFHxS	80.0	5.445e3	5.445e3	1.000	0.125	4.47	100	100
15	15 13C8-PFOA	375.9	9.998e3	9.998e3	1.000	0.125	4.75	100	100
16	16 13C4-PFOS	79.94	5.638e3	5.638e3	1.000	0.125	5.13	100	100
17	17 13C9-PFNA	427.0	4.537e2	4.537e2	1.000	0.125	5.07	100	100
18	18 Total PFBS	79.9		6.326e3		0.125			
19	19 Total PFHxS	79.91		1.554e3		0.125		3.48	
20	20 Total PFOA	368.9		1.037e4		0.125		0.643	
21	21 Total PFOS	79.92		5.048e3		0.125		4.73	

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

Last Altered: Thursday, June 30, 2016 12:18:15 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:18:22 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-04, Description: OF-MW10D-0616, Name: 160628J1_42.wiff, Date: 29-Jun-2016, Time: 00:17:24

Total PFBS

#	Name	Trace	RT	Area	IS Area	Conc.
1						

Total PFHxS

#	Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.49	27.836	1554.223	2.8
2	19 Total PFHxS	79.91	4.39	6.942	1554.223	0.7

Total PFOA

#	Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.76	28.288	10371.847	0.6

Total PFOS

#	Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.14	78.458	5047.679	2.3
2	21 Total PFOS	79.92	5.03	75.123	5047.679	2.2
3	21 Total PFOS	79.92	4.94	9.805	5047.679	0.3

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

Last Altered: Thursday, June 30, 2016 12:18:15 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:18:22 PM Pacific Daylight Time

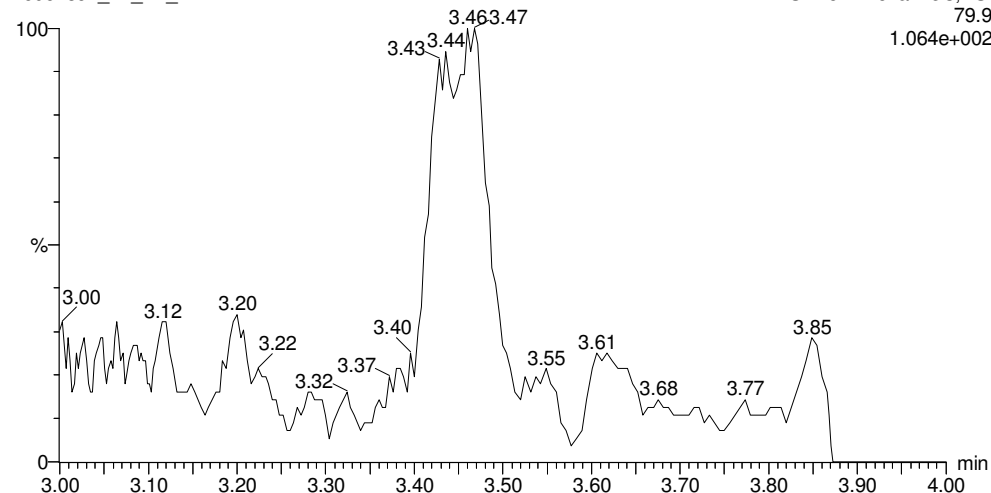
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Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-04, Description: OF-MW10D-0616, Name: 160628J1_42.wiff, Date: 29-Jun-2016, Time: 00:17:24, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

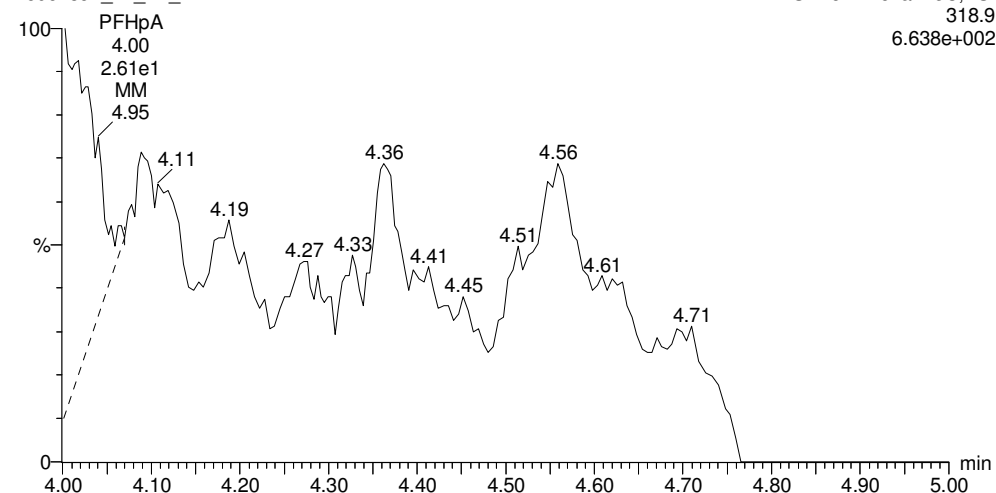
Total PFBS

160628J1_42_P1_E1



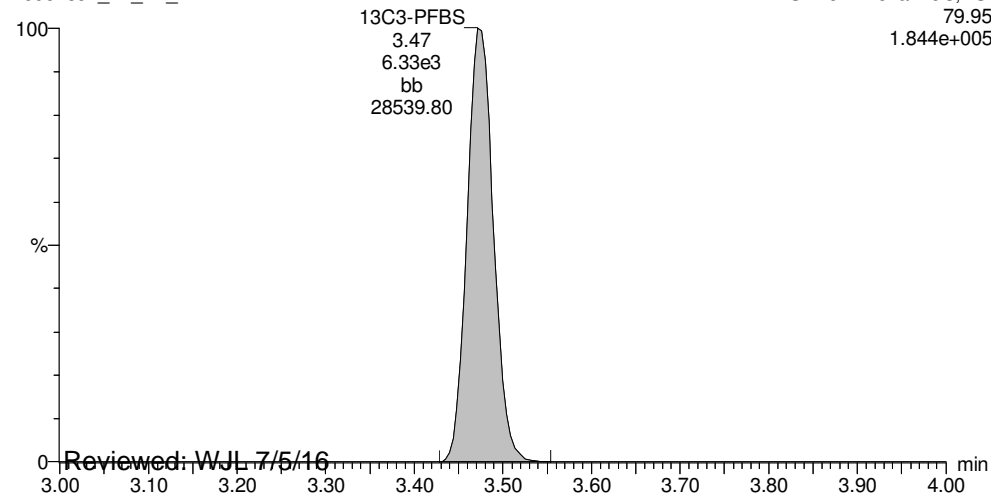
PFHpA

160628J1_42_P1_E1



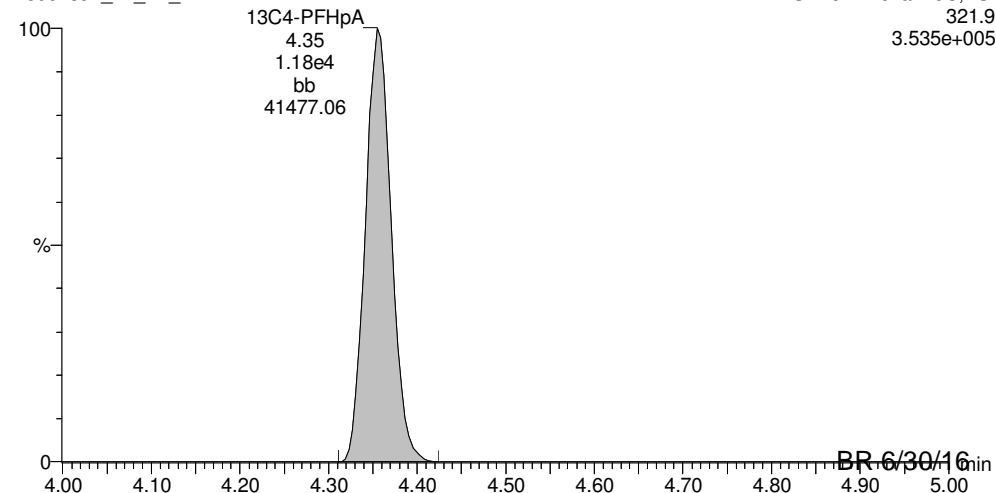
13C3-PFBS

160628J1_42_P1_E1



13C4-PFHpA

160628J1_42_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

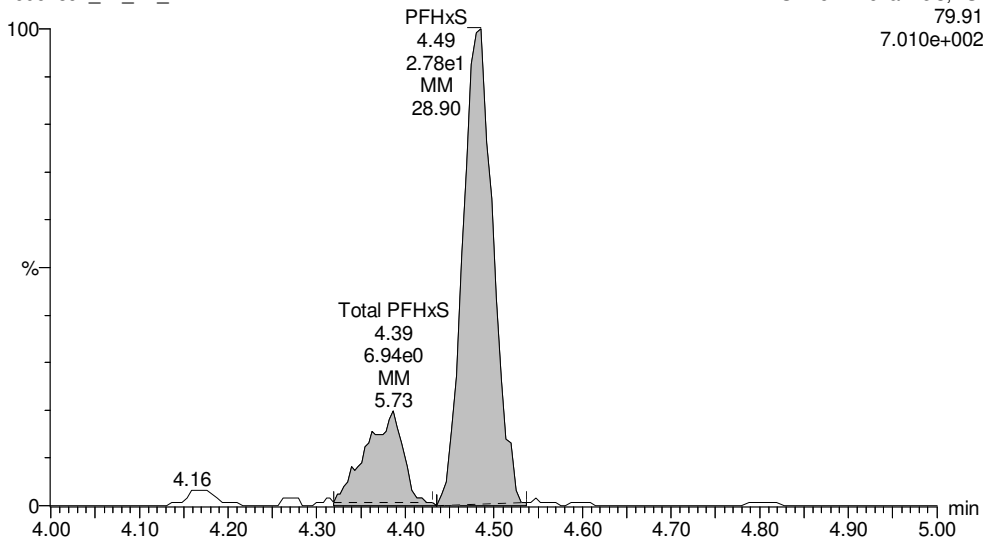
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Printed: Thursday, June 30, 2016 12:18:22 PM Pacific Daylight Time

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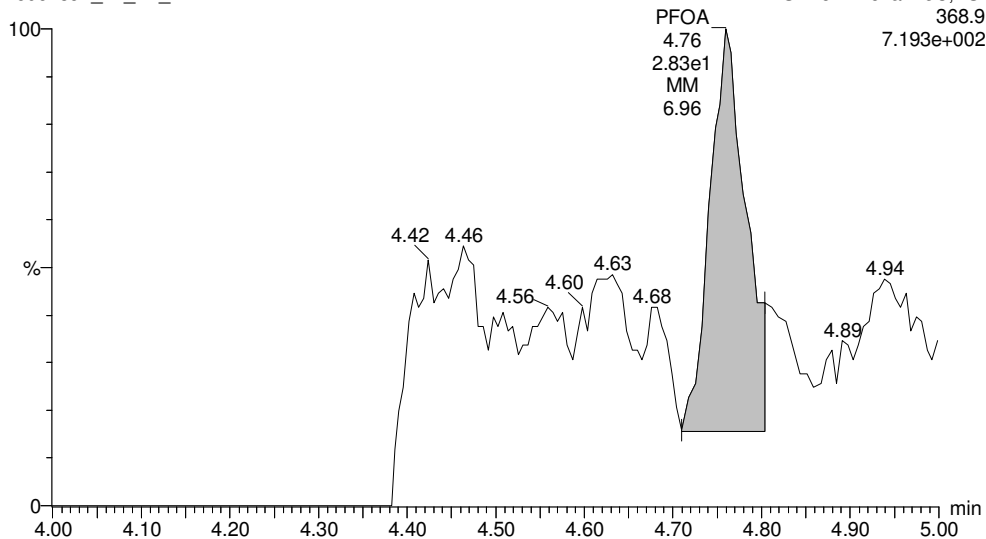
Total PFHxS

160628J1_42_P1_E1



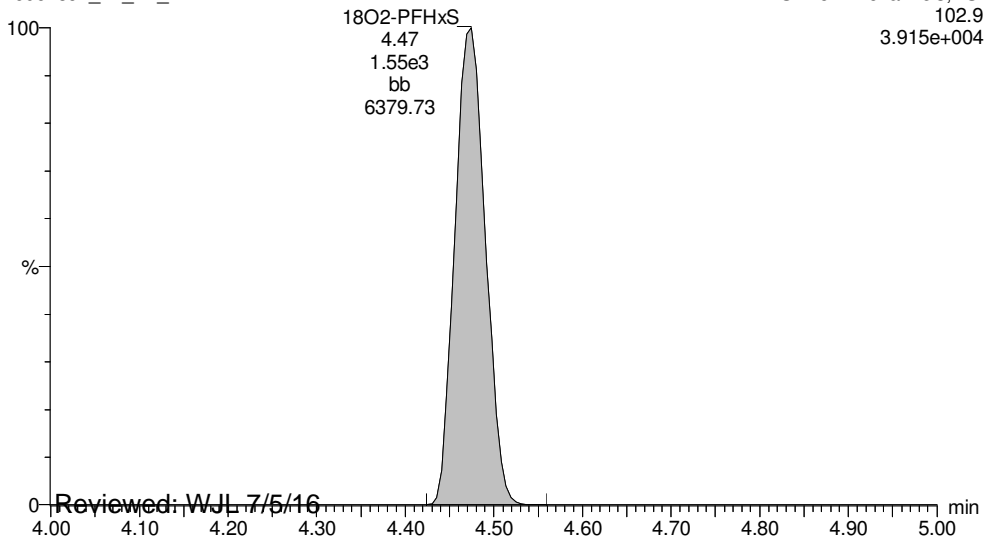
Total PFOA

160628J1_42_P1_E1



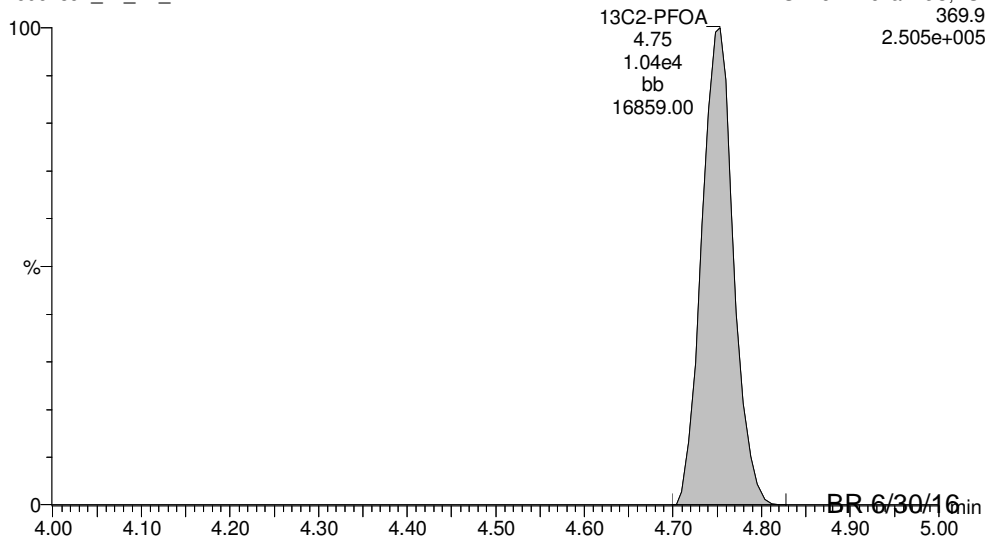
18O2-PFHxS

160628J1_42_P1_E1



13C2-PFOA

160628J1_42_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

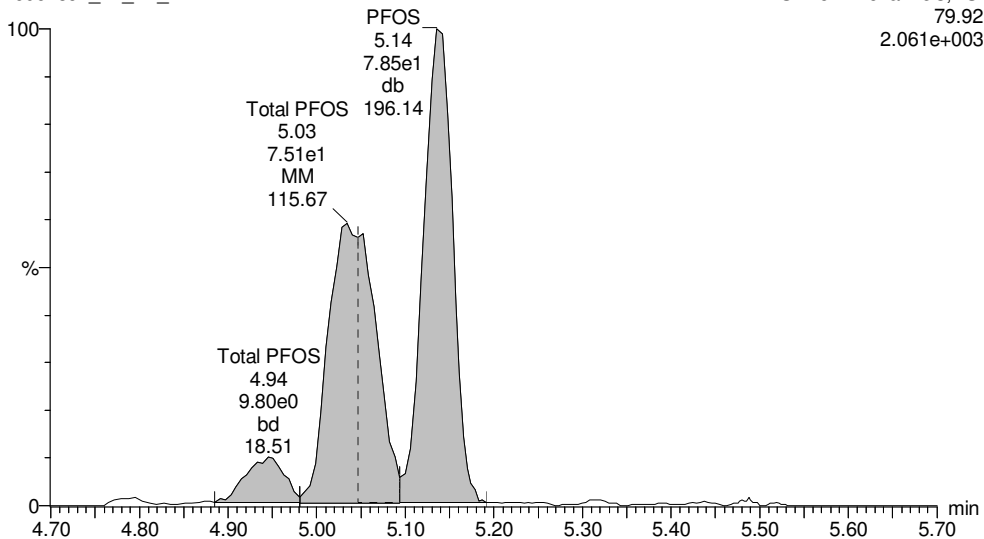
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Printed: Thursday, June 30, 2016 12:18:22 PM Pacific Daylight Time

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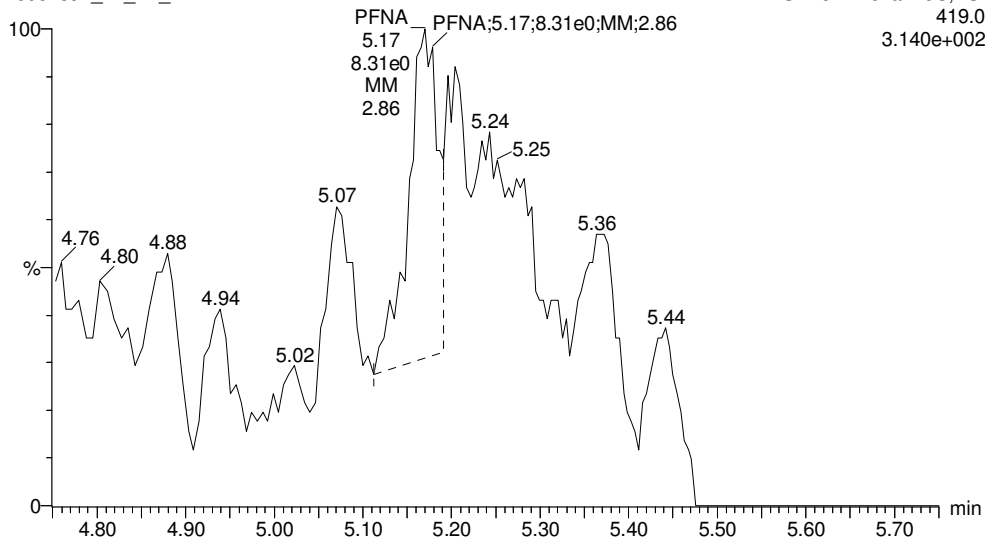
Total PFOS

160628J1_42_P1_E1



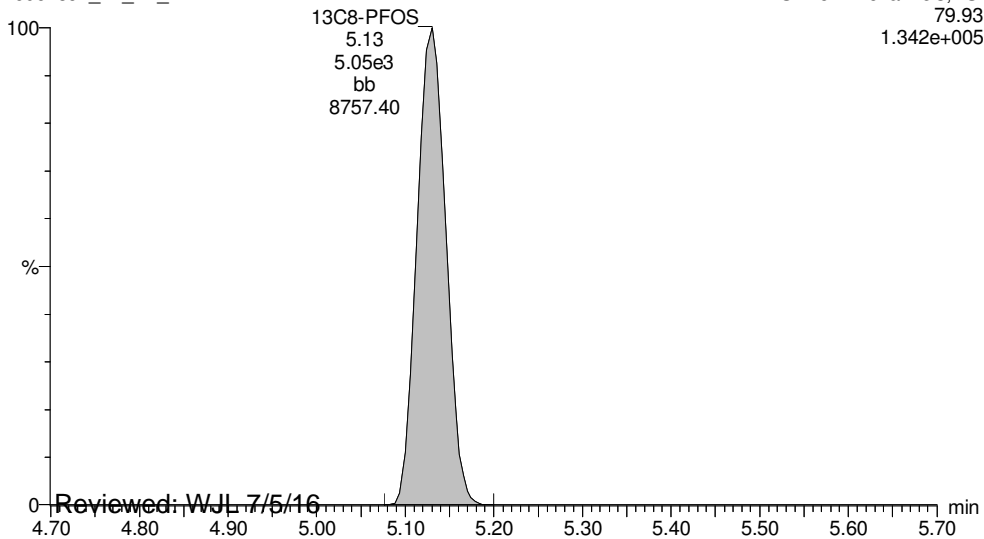
PFNA

160628J1_42_P1_E1



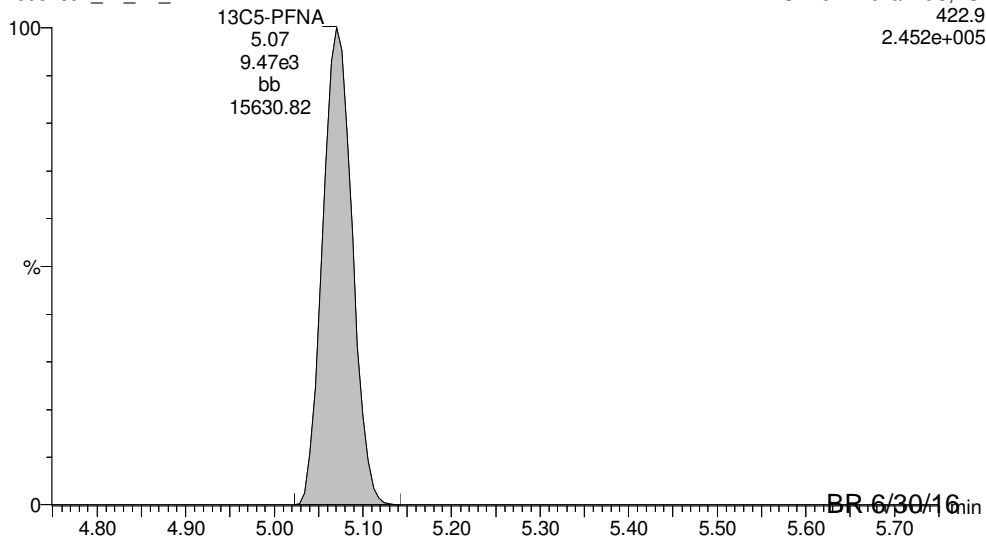
13C8-PFOS

160628J1_42_P1_E1



13C5-PFNA

160628J1_42_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

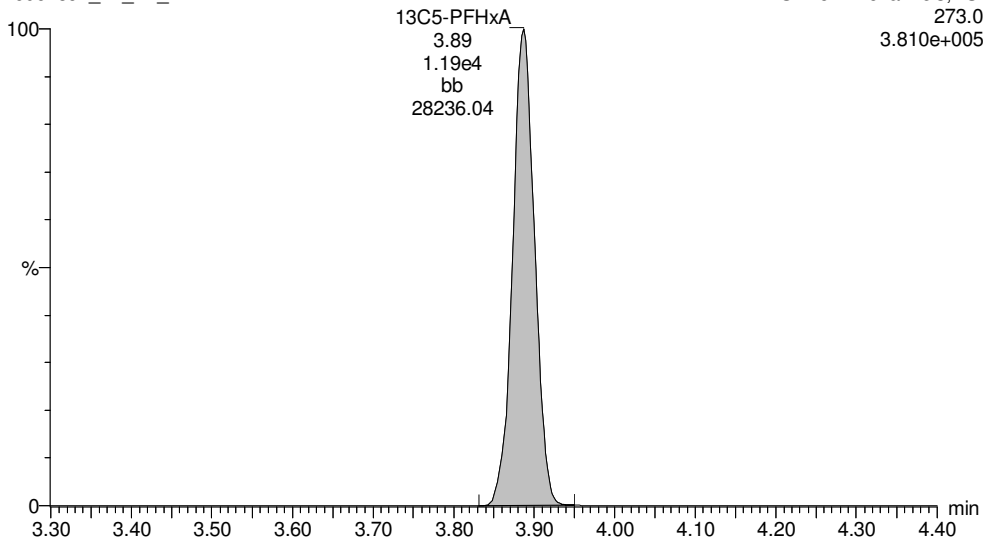
Last Altered: Thursday, June 30, 2016 12:18:15 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:18:22 PM Pacific Daylight Time

ID: 1600820-04, Description: OF-MW10D-0616, Name: 160628J1_42.wiff, Date: 29-Jun-2016, Time: 00:17:24, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

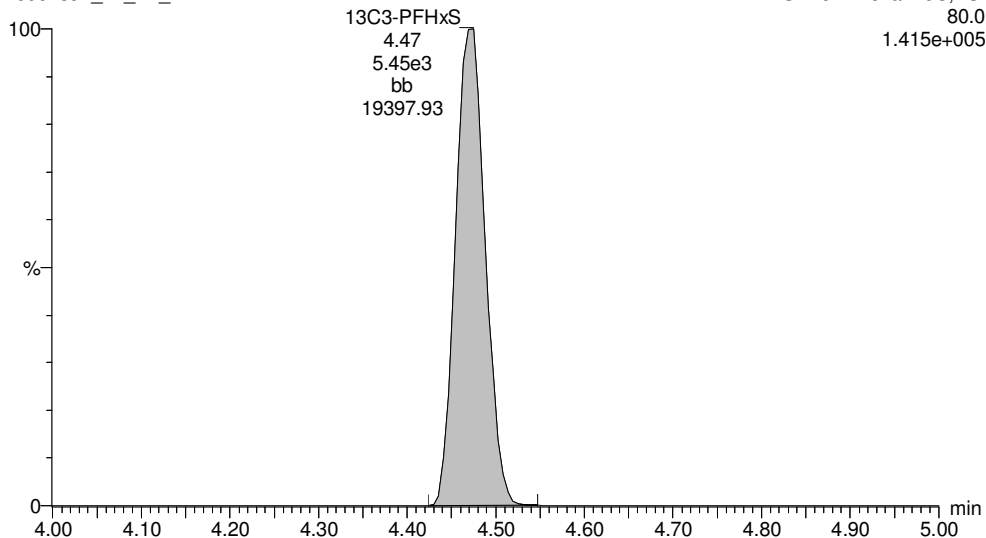
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160628J1_42_P1_E1



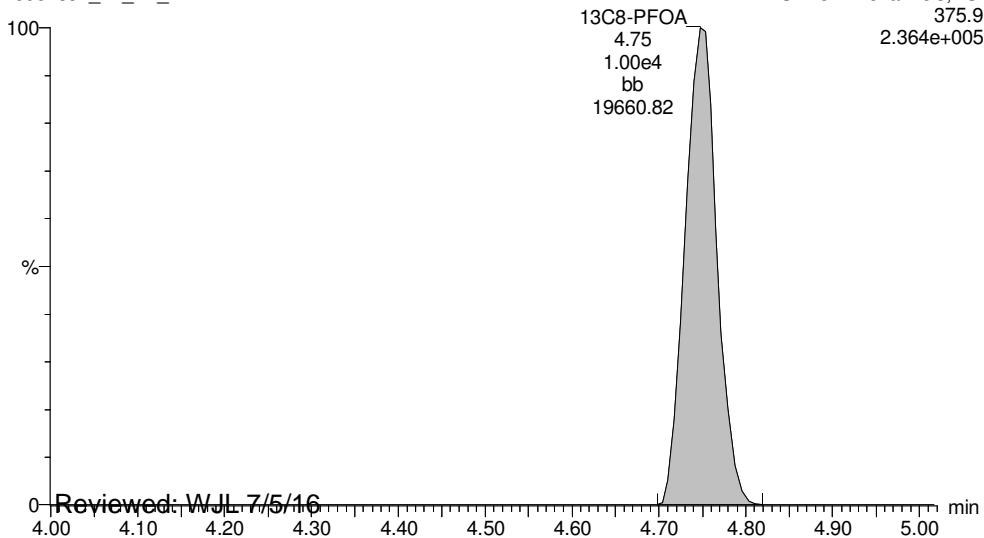
13C3-PFHxS

160628J1_42_P1_E1



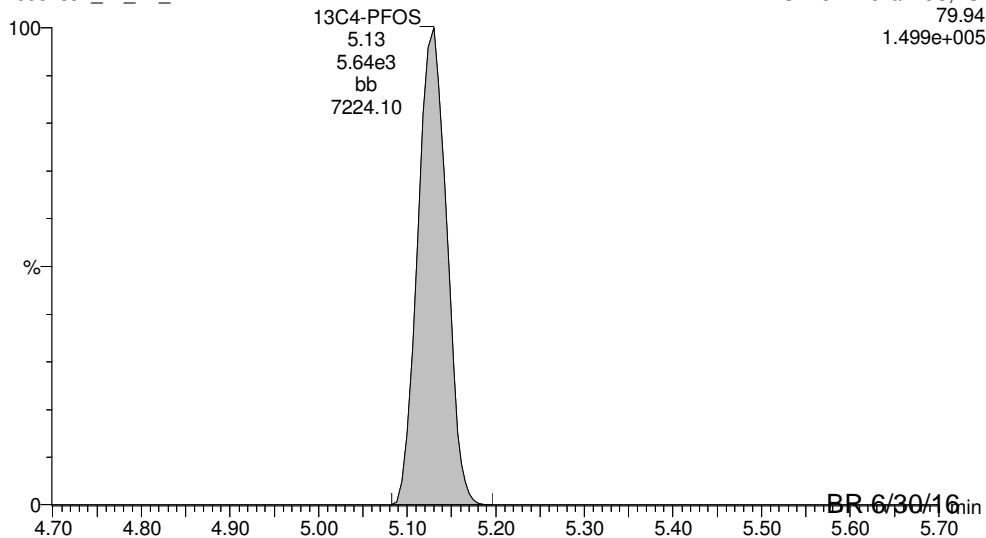
13C8-PFOA

160628J1_42_P1_E1



13C4-PFOS

160628J1_42_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_42.qld

Last Altered: Thursday, June 30, 2016 12:18:15 PM Pacific Daylight Time

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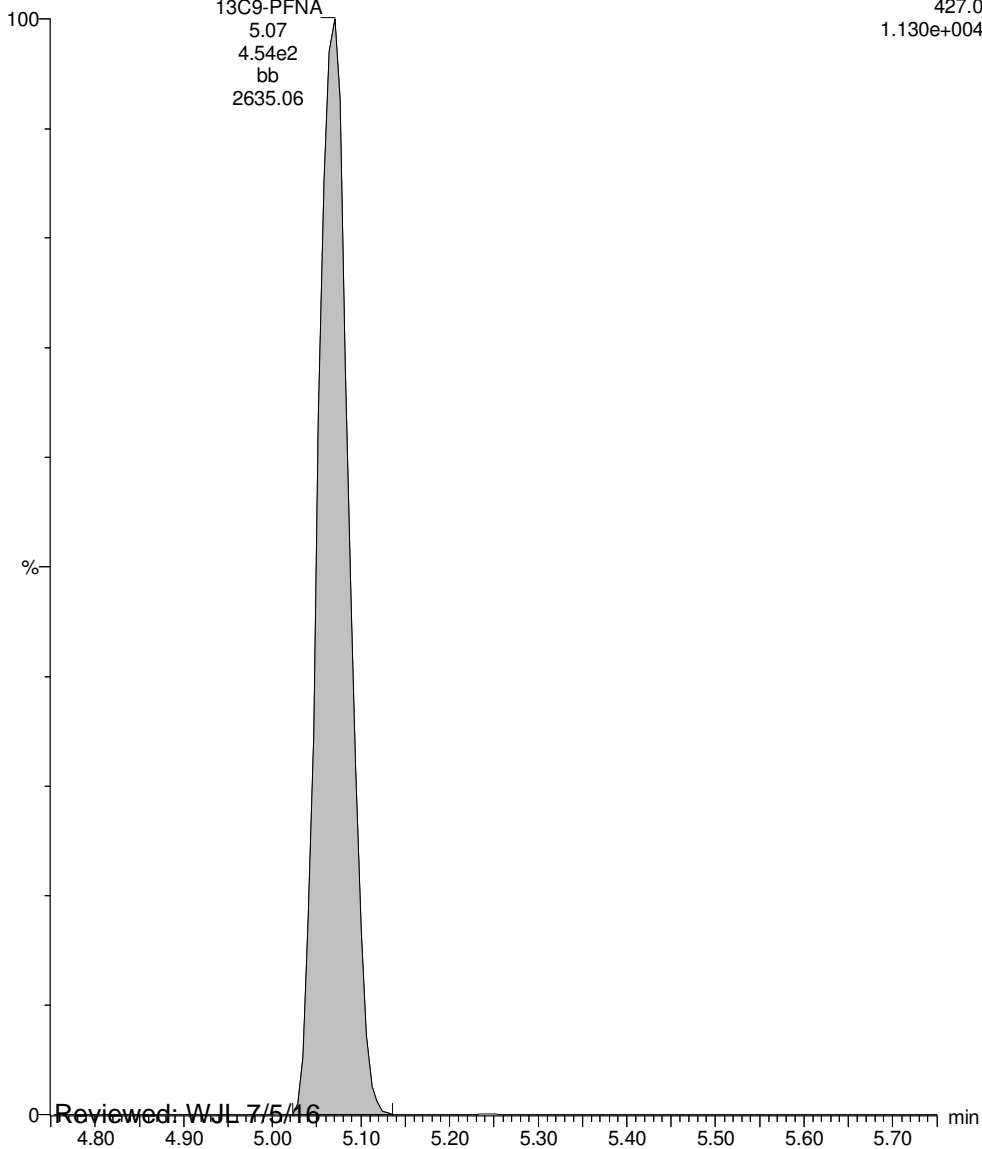
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13C9-PFNA

160628J1_42_P1_E1

SIR of 17 channels, ES-
427.0
1.130e+004

13C9-PFNA
5.07
4.54e2
bb
2635.06



Reviewed: WJL 7/5/16

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Dataset: U:\Q2.PRO\Results\160628J1\160628J1_50.qld

Last Altered: Thursday, June 30, 2016 12:35:02 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: B6F0157-MS1, Description: Matrix Spike, Name: 160628J1_50.wiff, Date: 29-Jun-2016, Time: 01:54:57

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	79.9	1.316e3	6.987e3		0.128	3.48	90.8	
2	2 PFHpA	318.9	2.294e3	1.301e4		0.128	4.35	92.2	
3	3 PFHxS	79.91	1.019e3	1.760e3		0.128	4.48	88.0	
4	4 PFOA	368.9	3.745e3	1.087e4		0.128	4.76	80.1	
5	5 PFOS	79.92	3.329e3	5.331e3		0.128	5.13	89.4	
6	6 PFNA	419.0	4.955e3	9.743e3		0.128	5.07	87.6	
7	7 13C3-PFBS	79.95	6.987e3	1.249e4	0.546	0.128	3.47	99.7	102
8	8 13C4-PFHpA	321.9	1.301e4	1.249e4	1.075	0.128	4.35	94.3	96.9
9	9 18O2-PFHxS	102.9	1.760e3	5.496e3	0.307	0.128	4.47	101	104
10	10 13C2-PFOA	369.9	1.087e4	1.099e4	1.042	0.128	4.75	92.4	95.0
11	11 13C8-PFOS	79.93	5.331e3	5.411e3	1.026	0.128	5.13	93.4	96.0
12	12 13C5-PFNA	422.9	9.743e3	5.475e2	21.158	0.128	5.07	81.8	84.1
13	13 13C5-PFHxA	273.0	1.249e4	1.249e4	1.000	0.128	3.89	97.3	100
14	14 13C3-PFHxS	80.0	5.496e3	5.496e3	1.000	0.128	4.47	97.3	100
15	15 13C8-PFOA	375.9	1.099e4	1.099e4	1.000	0.128	4.75	97.3	100
16	16 13C4-PFOS	79.94	5.411e3	5.411e3	1.000	0.128	5.13	97.3	100
17	17 13C9-PFNA	427.0	5.475e2	5.475e2	1.000	0.128	5.06	97.3	100
18	18 Total PFBS	79.9		6.987e3		0.128		90.8	
19	19 Total PFHxS	79.91		1.760e3		0.128		88.0	
20	20 Total PFOA	368.9		1.087e4		0.128		80.1	
21	21 Total PFOS	79.92		5.331e3		0.128		89.8	

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_50.qld

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Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: B6F0157-MS1, Description: Matrix Spike, Name: 160628J1_50.wiff, Date: 29-Jun-2016, Time: 01:54:57

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.48	1316.229	6987.223	90.8

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.48	1019.401	1759.618	88.0

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.76	3744.613	10873.492	80.1

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	3328.759	5331.367	89.4
2	21 Total PFOS	79.92	5.05	15.799	5331.367	0.4

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_50.qld

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Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

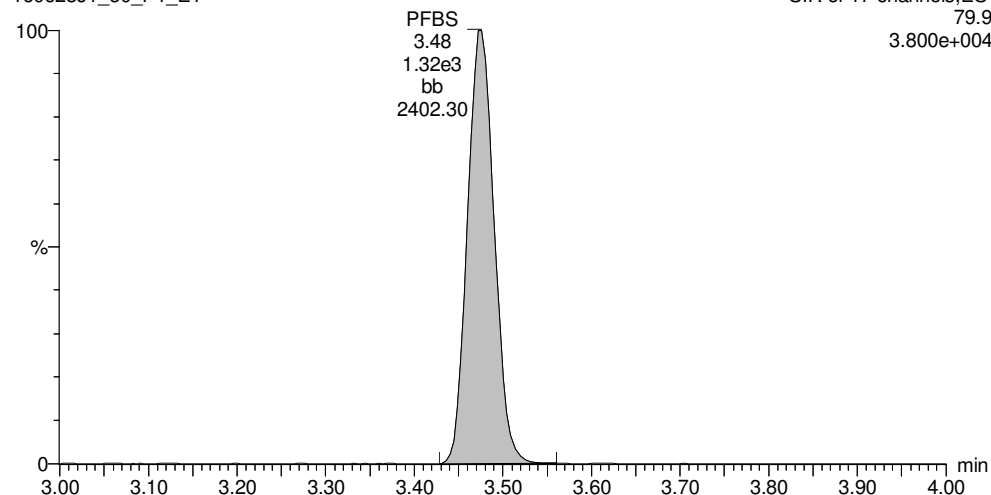
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Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: B6F0157-MS1, Description: Matrix Spike, Name: 160628J1_50.wiff, Date: 29-Jun-2016, Time: 01:54:57, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

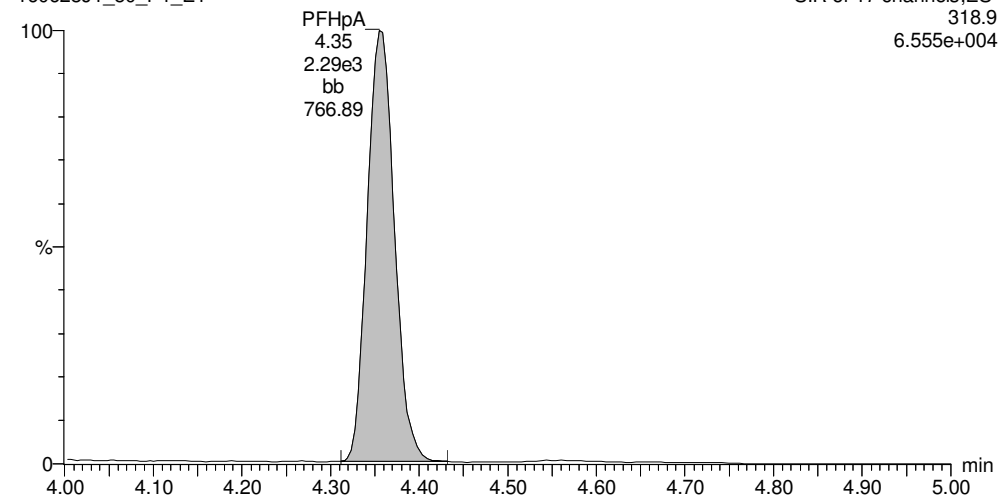
Total PFBS

160628J1_50_P1_E1



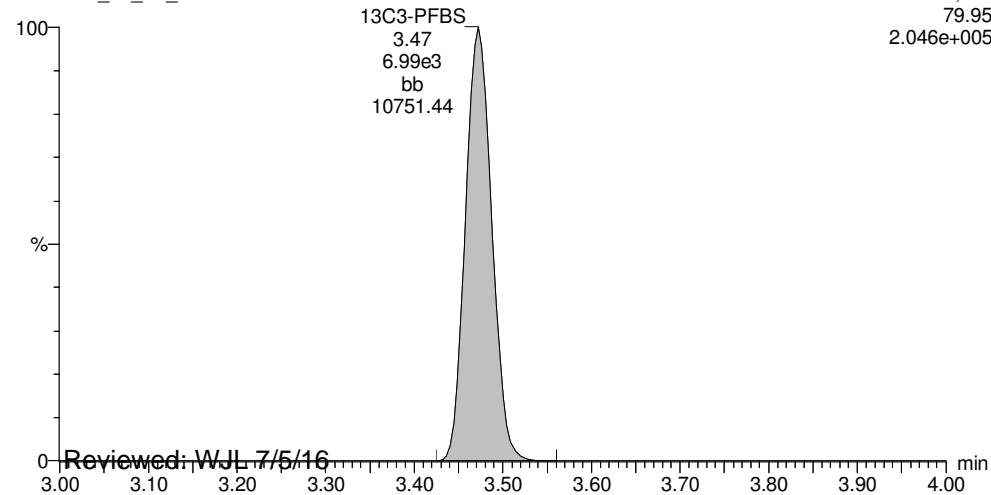
PFHpA

160628J1_50_P1_E1



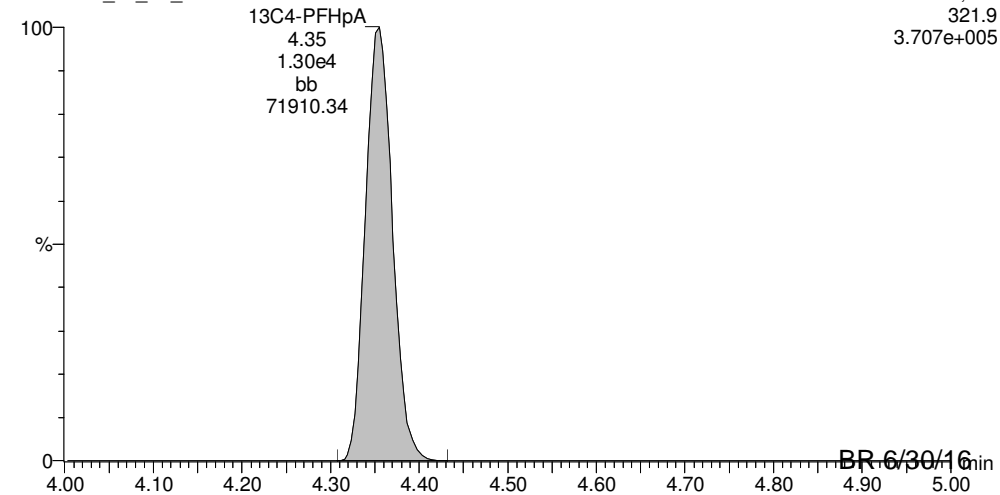
13C3-PFBS

160628J1_50_P1_E1



13C4-PFHpA

160628J1_50_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_50.qld

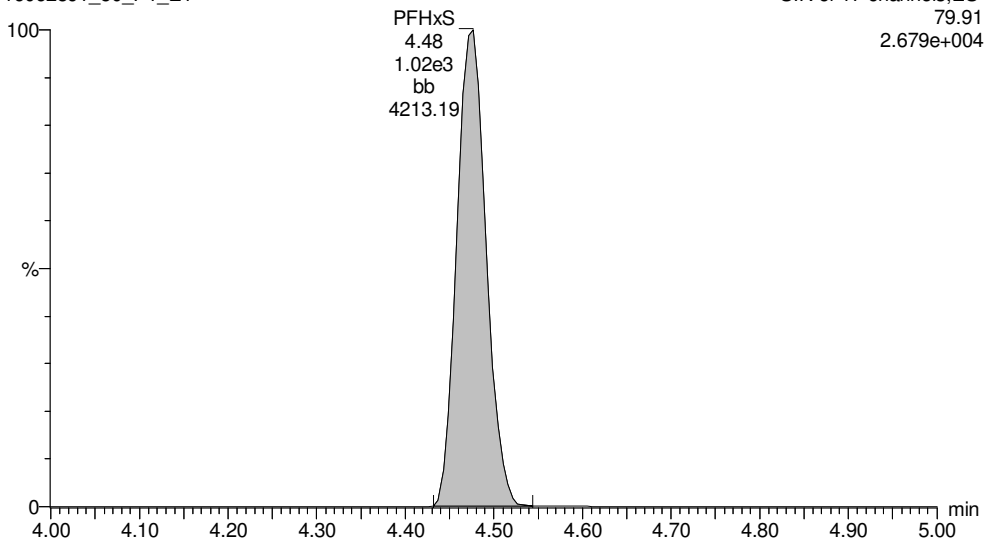
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Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

ID: B6F0157-MS1, Description: Matrix Spike, Name: 160628J1_50.wiff, Date: 29-Jun-2016, Time: 01:54:57, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

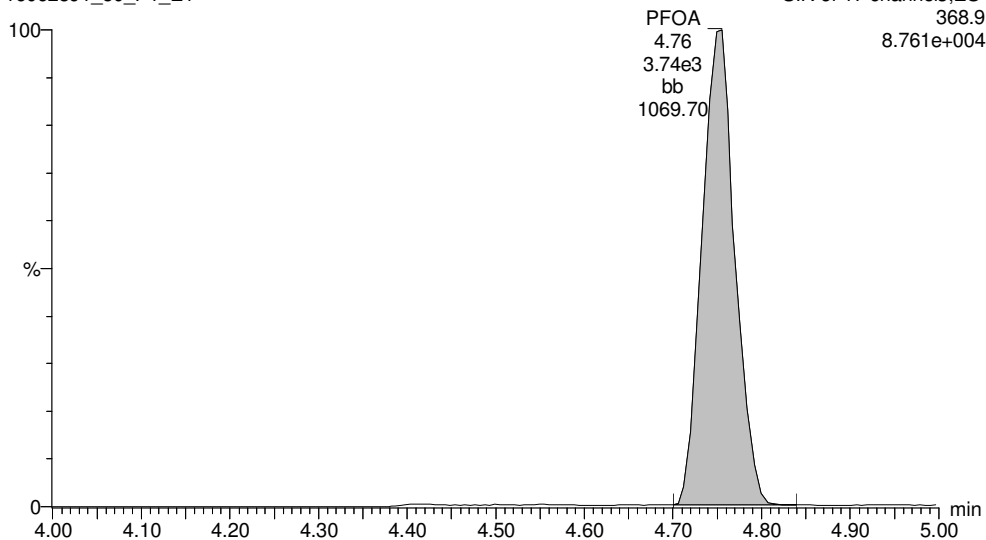
Total PFHxS

160628J1_50_P1_E1



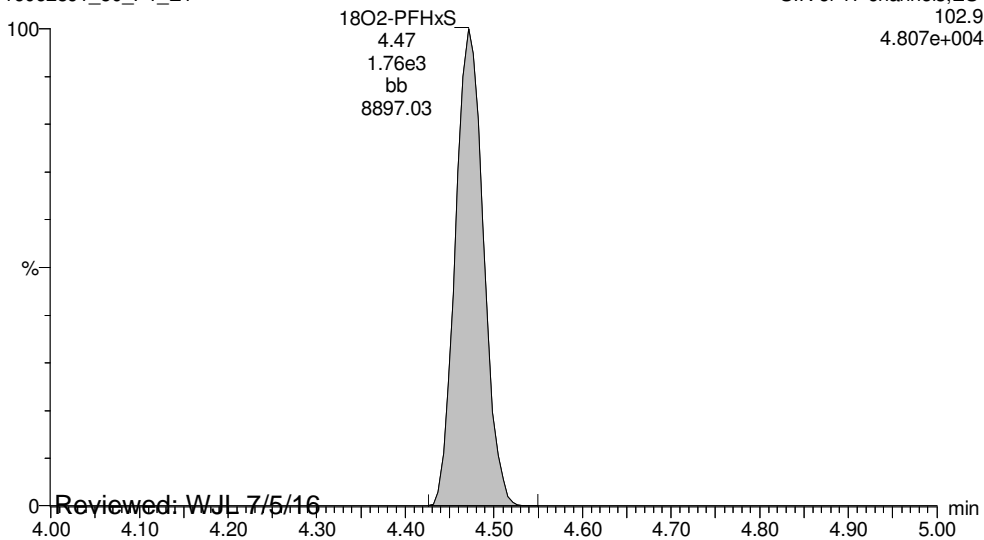
Total PFOA

160628J1_50_P1_E1



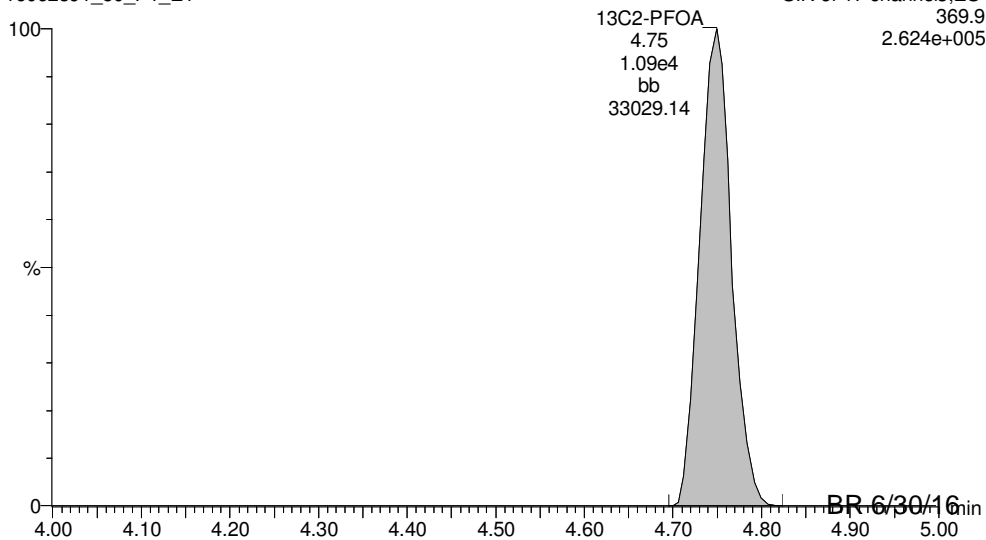
18O2-PFHxS

160628J1_50_P1_E1



13C2-PFOA

160628J1_50_P1_E1



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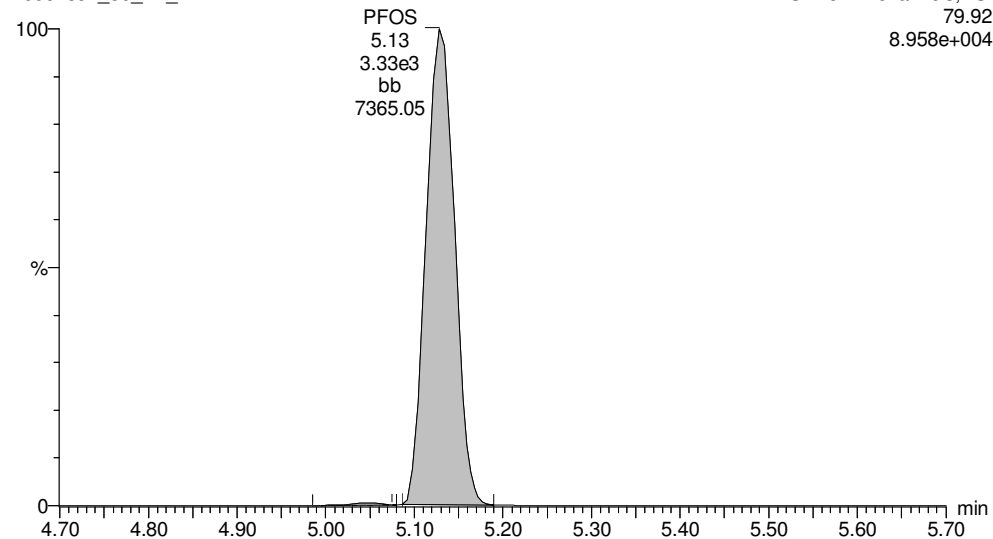
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Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

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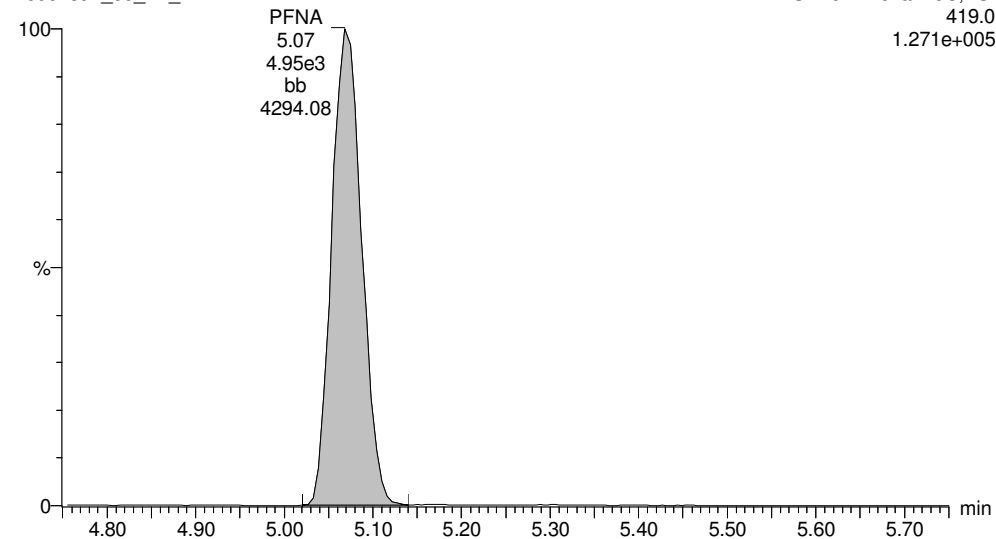
Total PFOS

160628J1_50_P1_E1



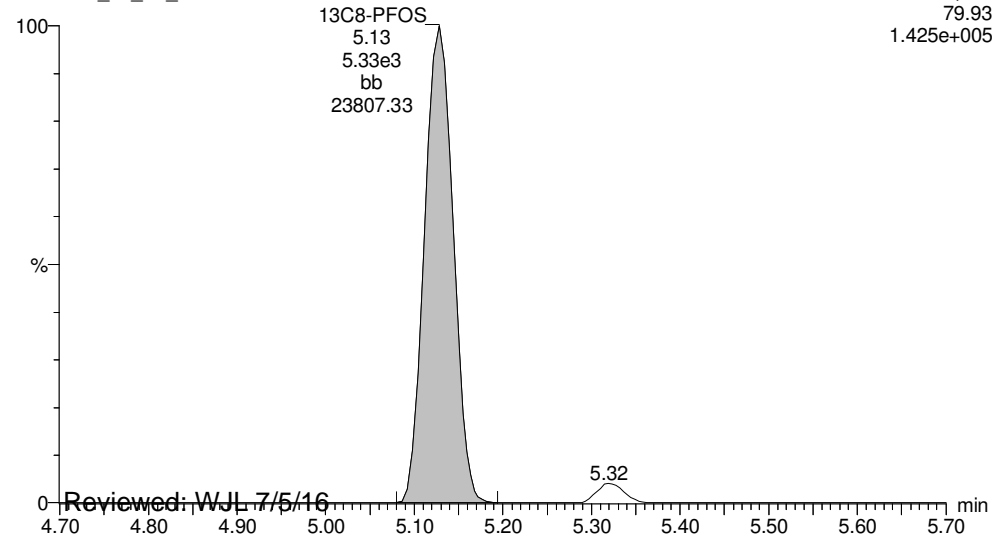
PFNA

160628J1_50_P1_E1



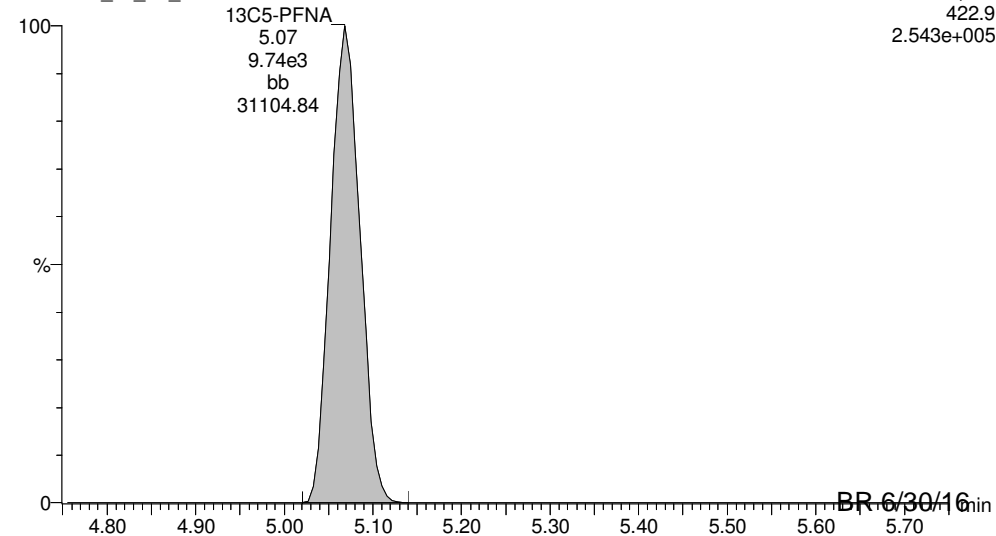
13C8-PFOS

160628J1_50_P1_E1



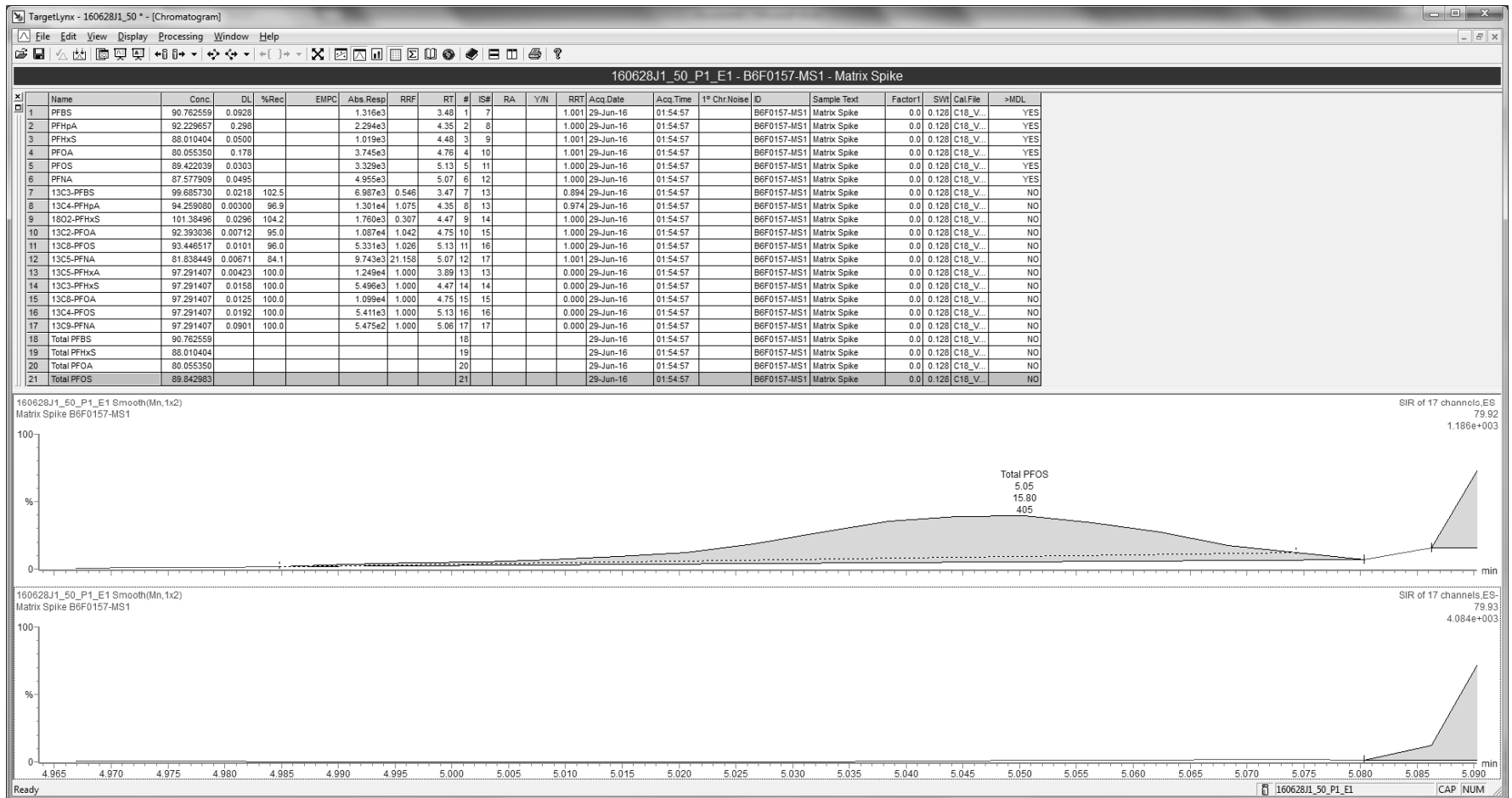
13C5-PFNA

160628J1_50_P1_E1



Reviewed: WJL 7/5/16

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Dataset: U:\Q2.PRO\Results\160628J1\160628J1_50.qld

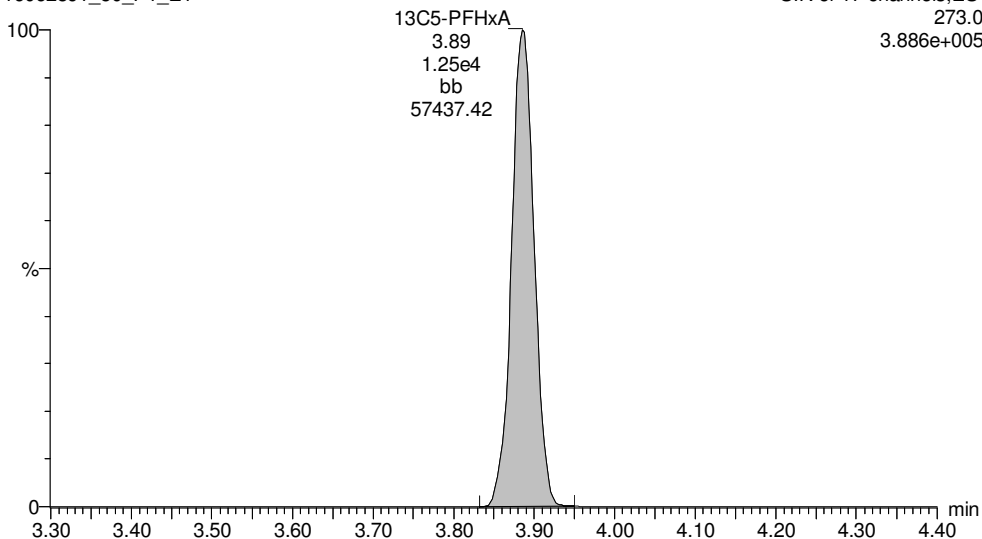
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Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

ID: B6F0157-MS1, Description: Matrix Spike, Name: 160628J1_50.wiff, Date: 29-Jun-2016, Time: 01:54:57, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

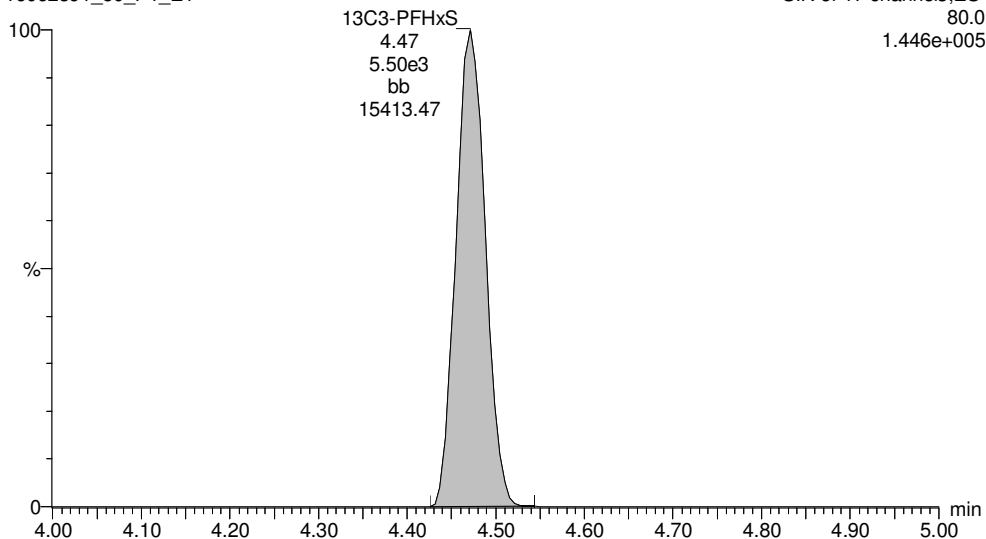
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160628J1_50_P1_E1



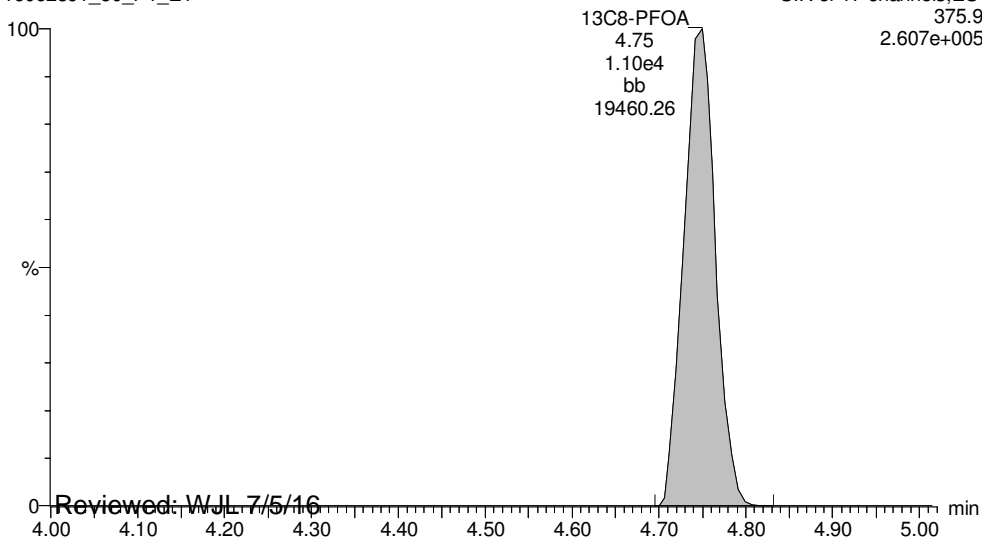
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160628J1_50_P1_E1



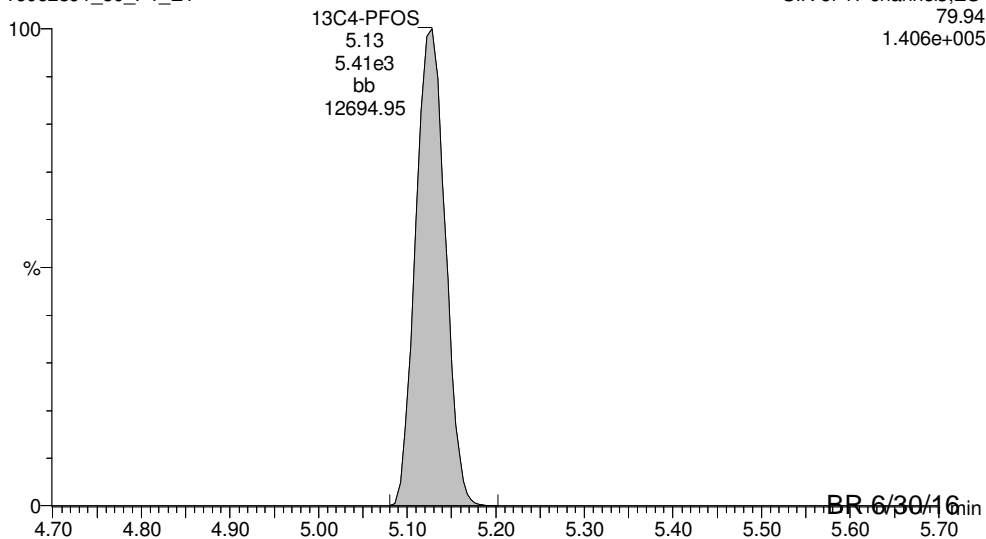
13C8-PFOA

160628J1_50_P1_E1



13C4-PFOS

160628J1_50_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_50.qld

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Printed: Thursday, June 30, 2016 12:35:24 PM Pacific Daylight Time

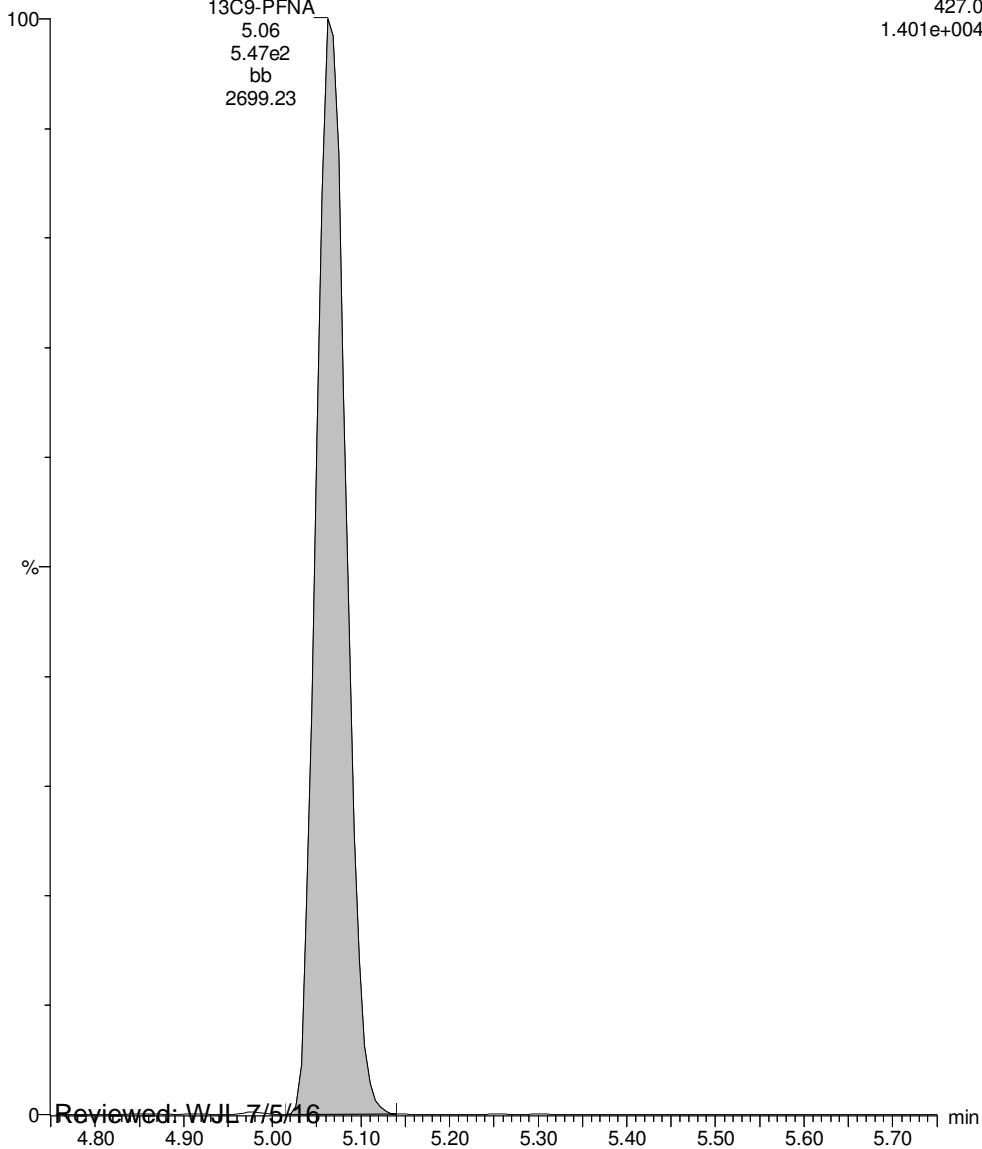
ID: B6F0157-MS1, Description: Matrix Spike, Name: 160628J1_50.wiff, Date: 29-Jun-2016, Time: 01:54:57, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

13C9-PFNA

160628J1_50_P1_E1

SIR of 17 channels, ES-
427.0
1.401e+004

13C9-PFNA
5.06
5.47e2
bb
2699.23



Reviewed: WJL 7/5/16

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Dataset: U:\Q2.PRO\Results\160628J1\160628J1_51.qld

Last Altered: Thursday, June 30, 2016 12:36:46 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:37:21 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: B6F0157-MSD1, Description: Matrix Spike Dup, Name: 160628J1_51.wiff, Date: 29-Jun-2016, Time: 02:07:16

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	79.9	1.319e3	6.947e3		0.129	3.47	91.1	
2	2 PFHpA	318.9	2.184e3	1.312e4		0.129	4.35	86.7	
3	3 PFHxS	79.91	9.899e2	1.740e3		0.129	4.47	86.0	
4	4 PFOA	368.9	3.745e3	1.020e4		0.129	4.75	85.0	
5	5 PFOS	79.92	3.235e3	5.020e3		0.129	5.13	91.9	
6	6 PFNA	419.0	5.427e3	1.042e4		0.129	5.07	89.4	
7	7 13C3-PFBS	79.95	6.947e3	1.256e4	0.546	0.129	3.47	98.2	101
8	8 13C4-PFHpA	321.9	1.312e4	1.256e4	1.075	0.129	4.35	94.1	97.2
9	9 18O2-PFHxS	102.9	1.740e3	5.442e3	0.307	0.129	4.47	101	104
10	10 13C2-PFOA	369.9	1.020e4	1.065e4	1.042	0.129	4.75	89.1	92.0
11	11 13C8-PFOS	79.93	5.020e3	5.850e3	1.026	0.129	5.13	81.0	83.7
12	12 13C5-PFNA	422.9	1.042e4	4.977e2	21.158	0.129	5.06	95.8	98.9
13	13 13C5-PFHxA	273.0	1.256e4	1.256e4	1.000	0.129	3.88	96.9	100
14	14 13C3-PFHxS	80.0	5.442e3	5.442e3	1.000	0.129	4.47	96.9	100
15	15 13C8-PFOA	375.9	1.065e4	1.065e4	1.000	0.129	4.74	96.9	100
16	16 13C4-PFOS	79.94	5.850e3	5.850e3	1.000	0.129	5.12	96.9	100
17	17 13C9-PFNA	427.0	4.977e2	4.977e2	1.000	0.129	5.06	96.9	100
18	18 Total PFBS	79.9		6.947e3		0.129		91.1	
19	19 Total PFHxS	79.91		1.740e3		0.129		86.0	
20	20 Total PFOA	368.9		1.020e4		0.129		85.0	
21	21 Total PFOS	79.92		5.020e3		0.129		92.5	

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_51.qld

Last Altered: Thursday, June 30, 2016 12:36:46 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:37:21 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: B6F0157-MSD1, Description: Matrix Spike Dup, Name: 160628J1_51.wiff, Date: 29-Jun-2016, Time: 02:07:16

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.47	1318.526	6947.141	91.1

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	989.882	1740.086	86.0

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.75	3744.777	10200.506	85.0

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	3234.644	5020.483	91.9
2	21 Total PFOS	79.92	5.05	23.095	5020.483	0.7

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_51.qld

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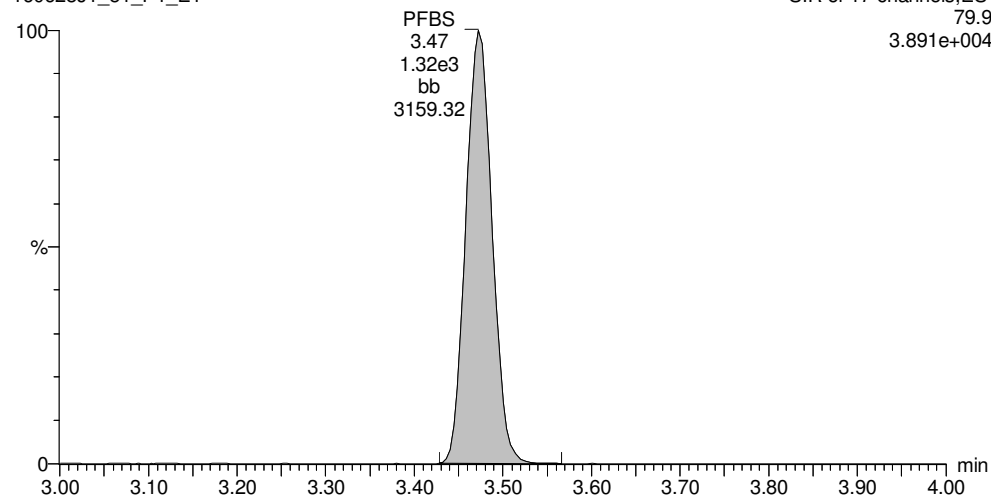
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ID: B6F0157-MSD1, Description: Matrix Spike Dup, Name: 160628J1_51.wiff, Date: 29-Jun-2016, Time: 02:07:16, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

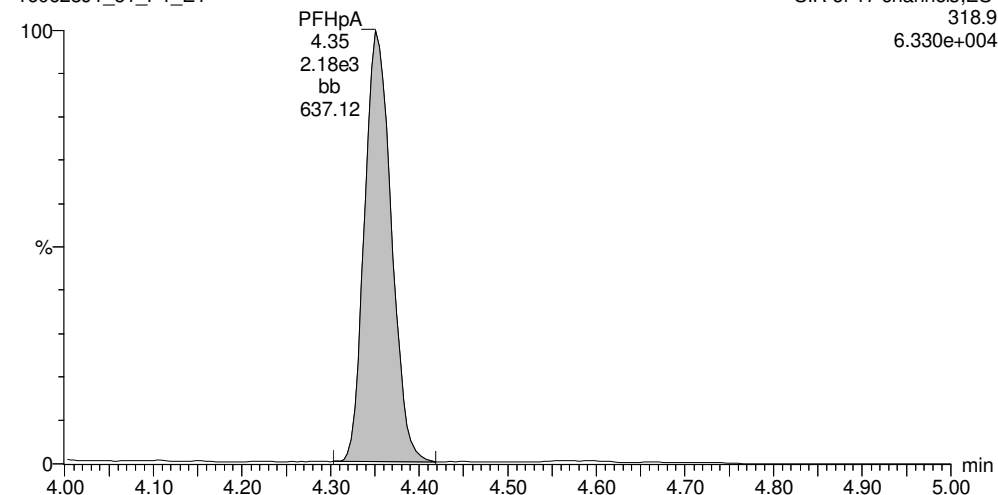
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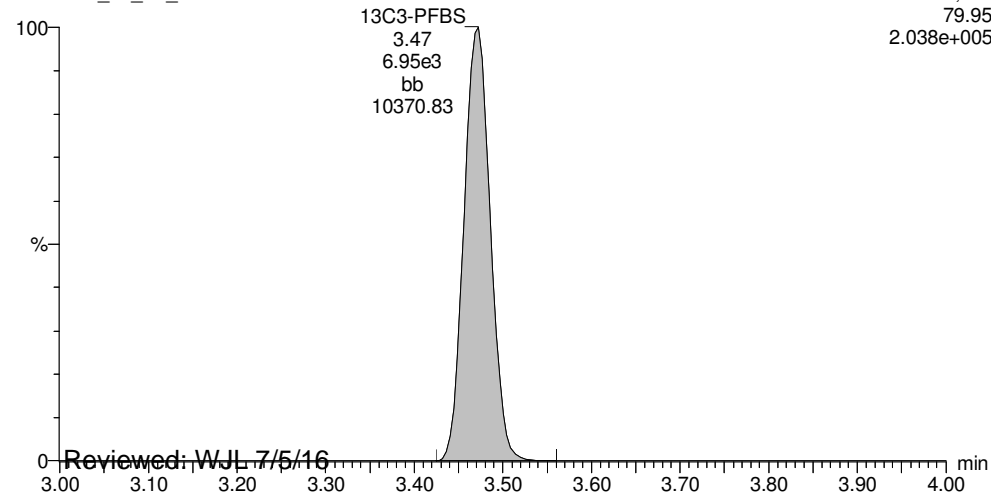
PFHpA

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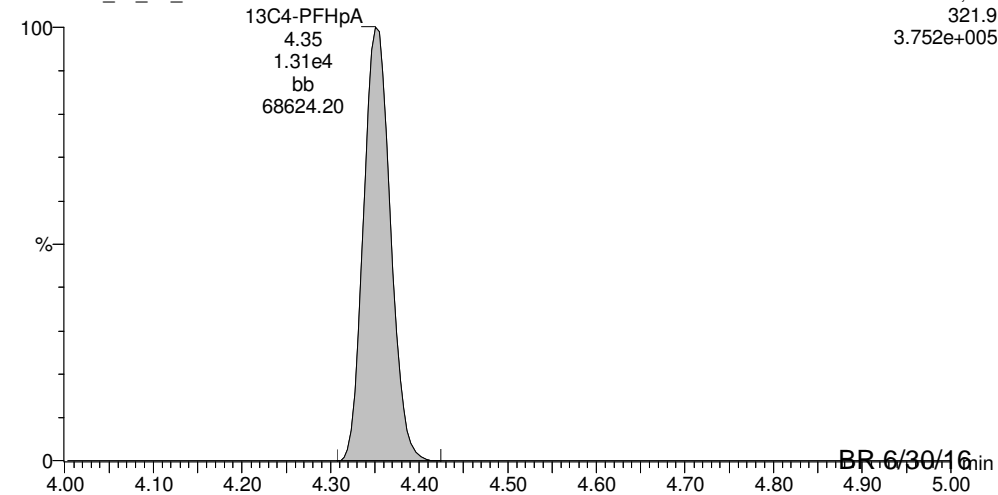
13C3-PFBS

160628J1_51_P1_E1



13C4-PFHpA

160628J1_51_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

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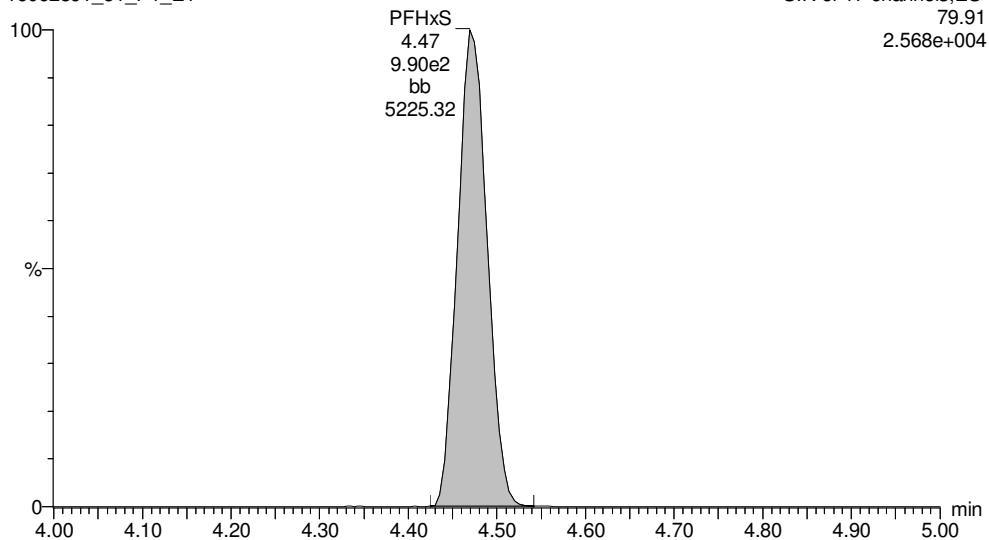
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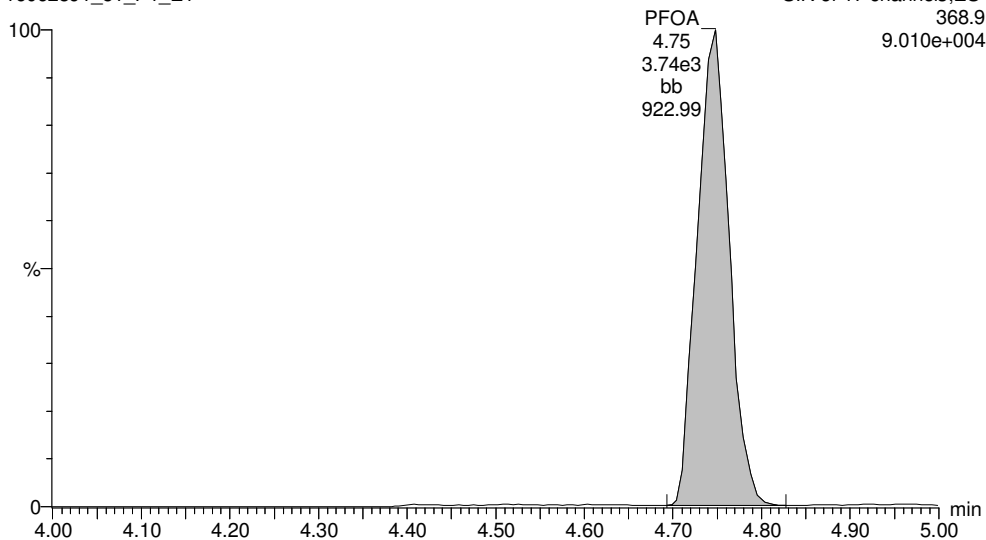
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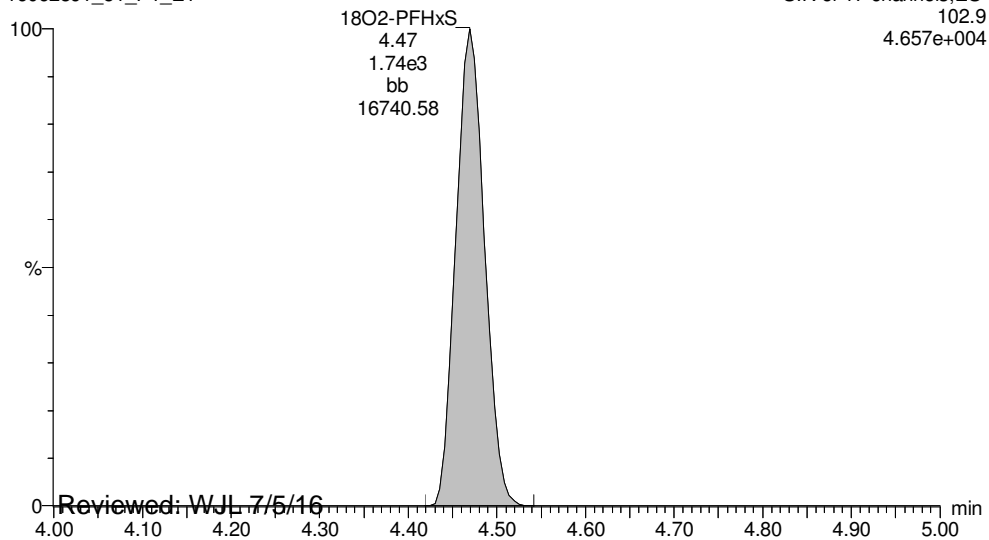
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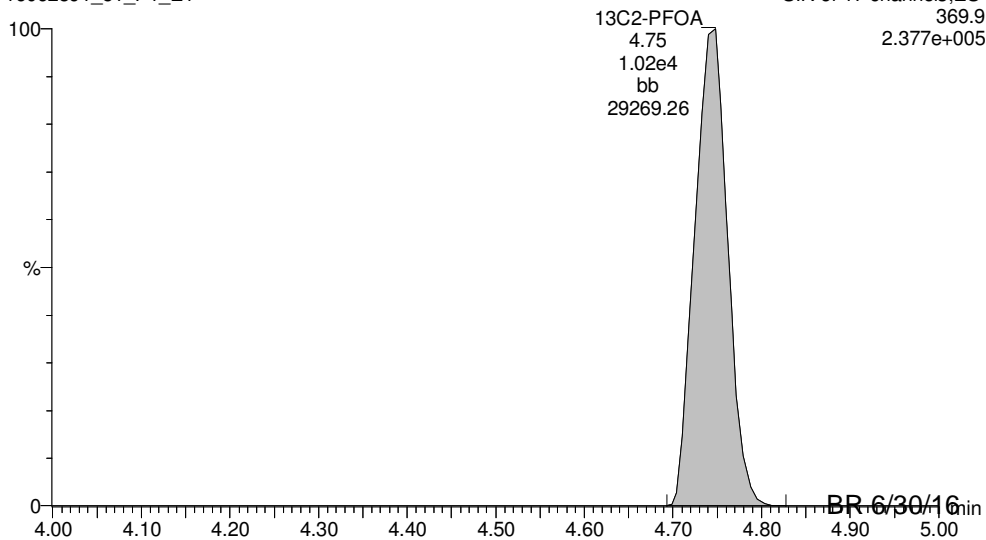
18O2-PFHxS

160628J1_51_P1_E1



13C2-PFOA

160628J1_51_P1_E1



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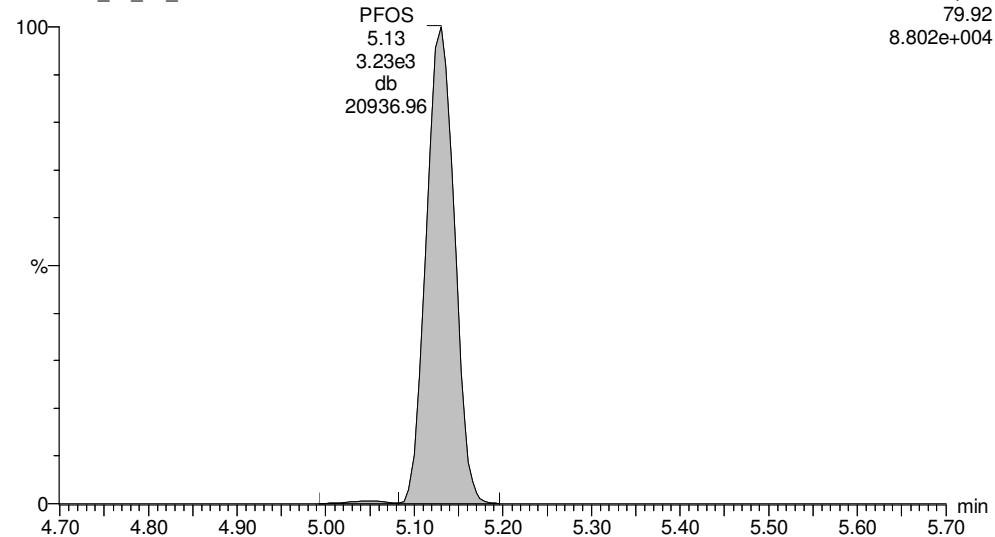
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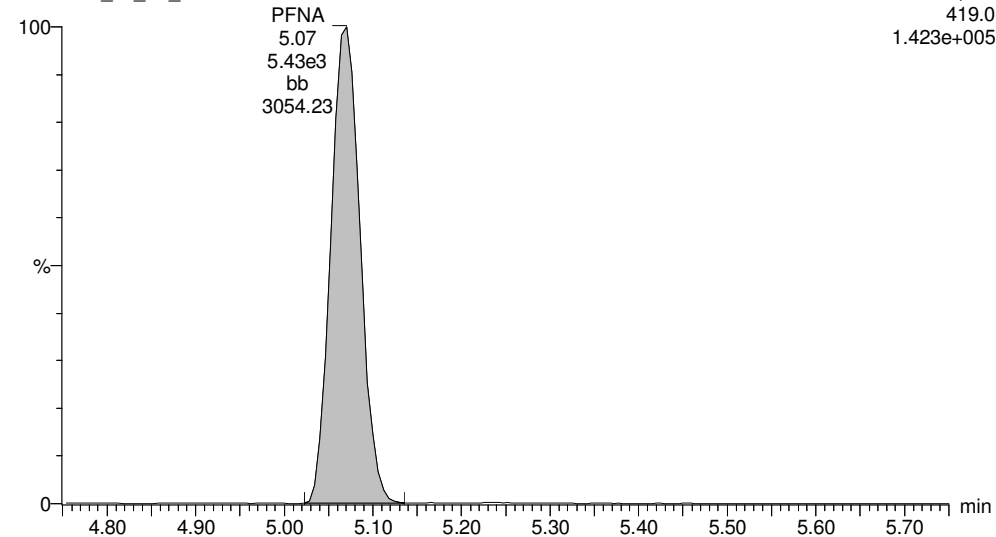
Total PFOS

160628J1_51_P1_E1



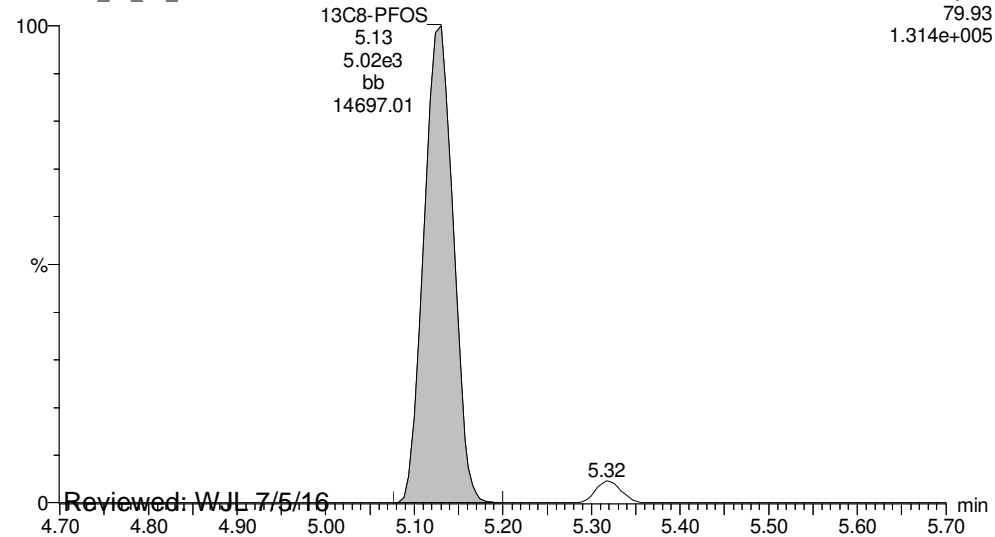
PFNA

160628J1_51_P1_E1



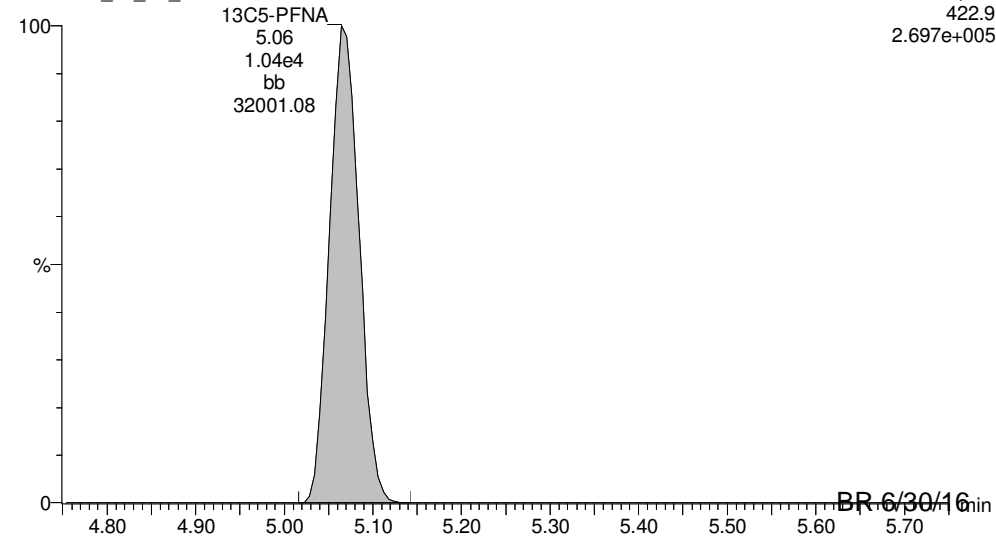
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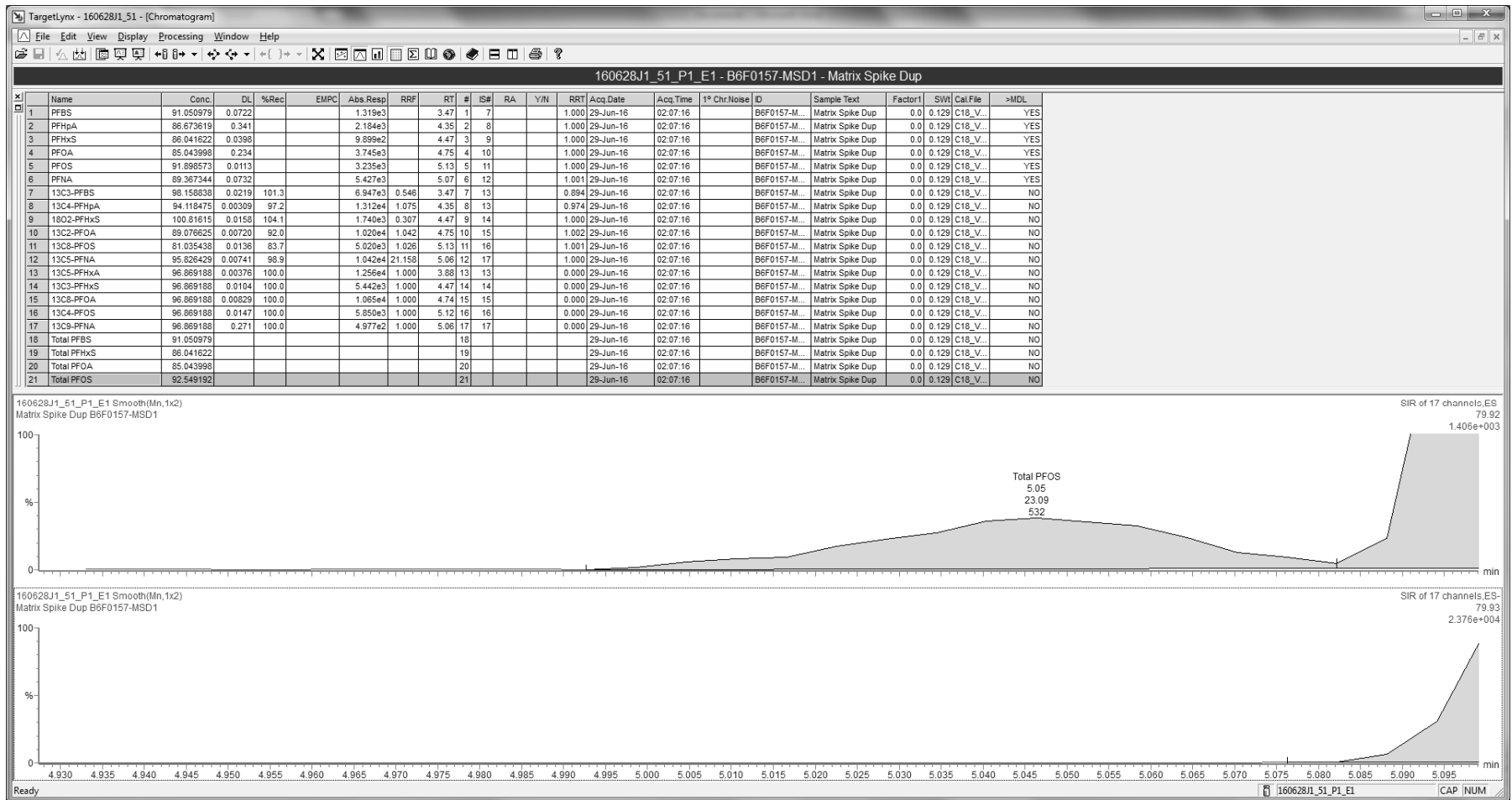
13C5-PFNA

160628J1_51_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16



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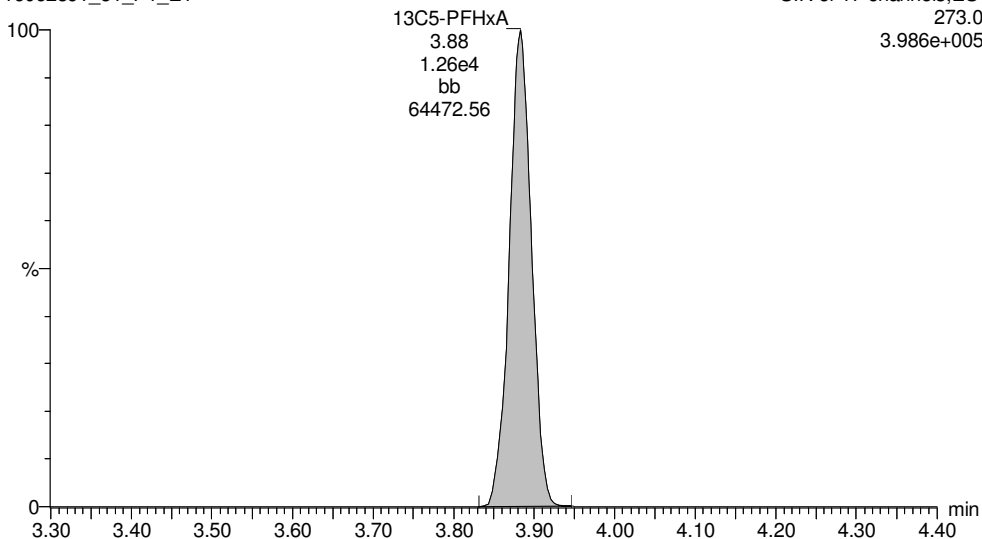
Last Altered: Thursday, June 30, 2016 12:36:46 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:37:21 PM Pacific Daylight Time

ID: B6F0157-MSD1, Description: Matrix Spike Dup, Name: 160628J1_51.wiff, Date: 29-Jun-2016, Time: 02:07:16, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

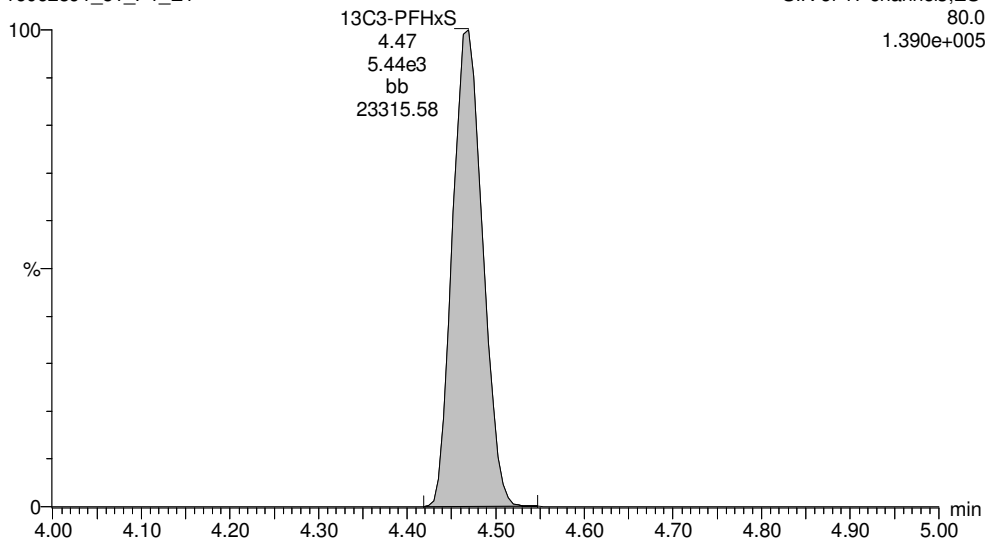
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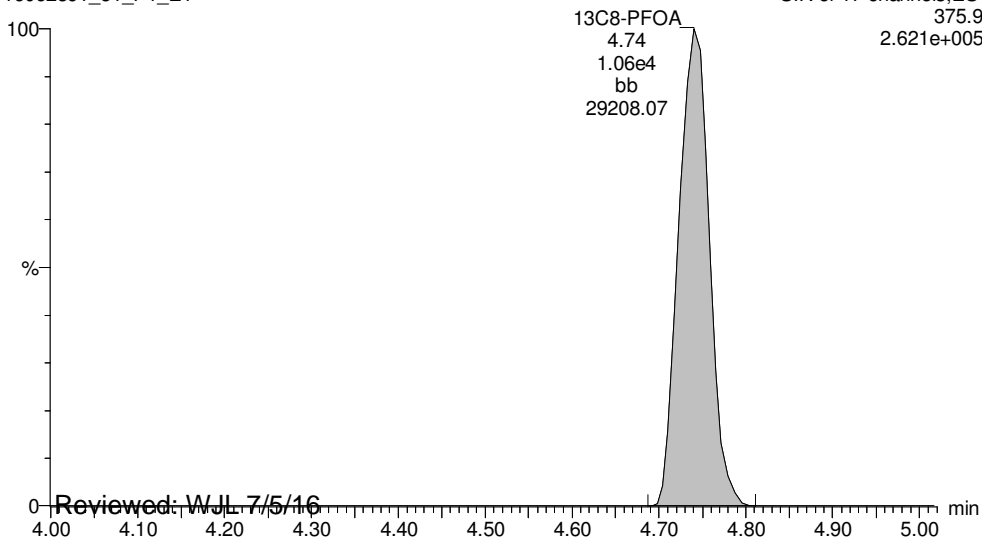
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160628J1_51_P1_E1



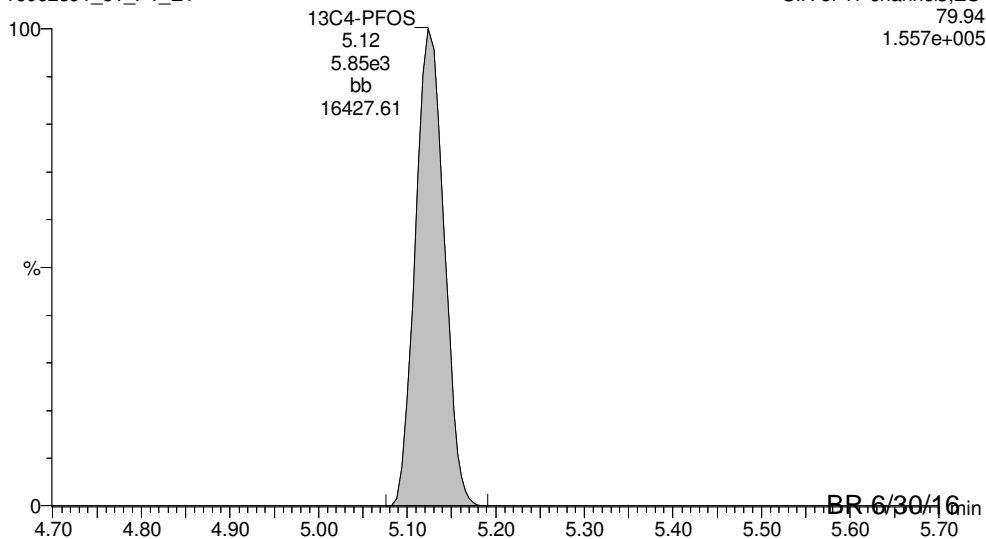
13C8-PFOA

160628J1_51_P1_E1



13C4-PFOS

160628J1_51_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

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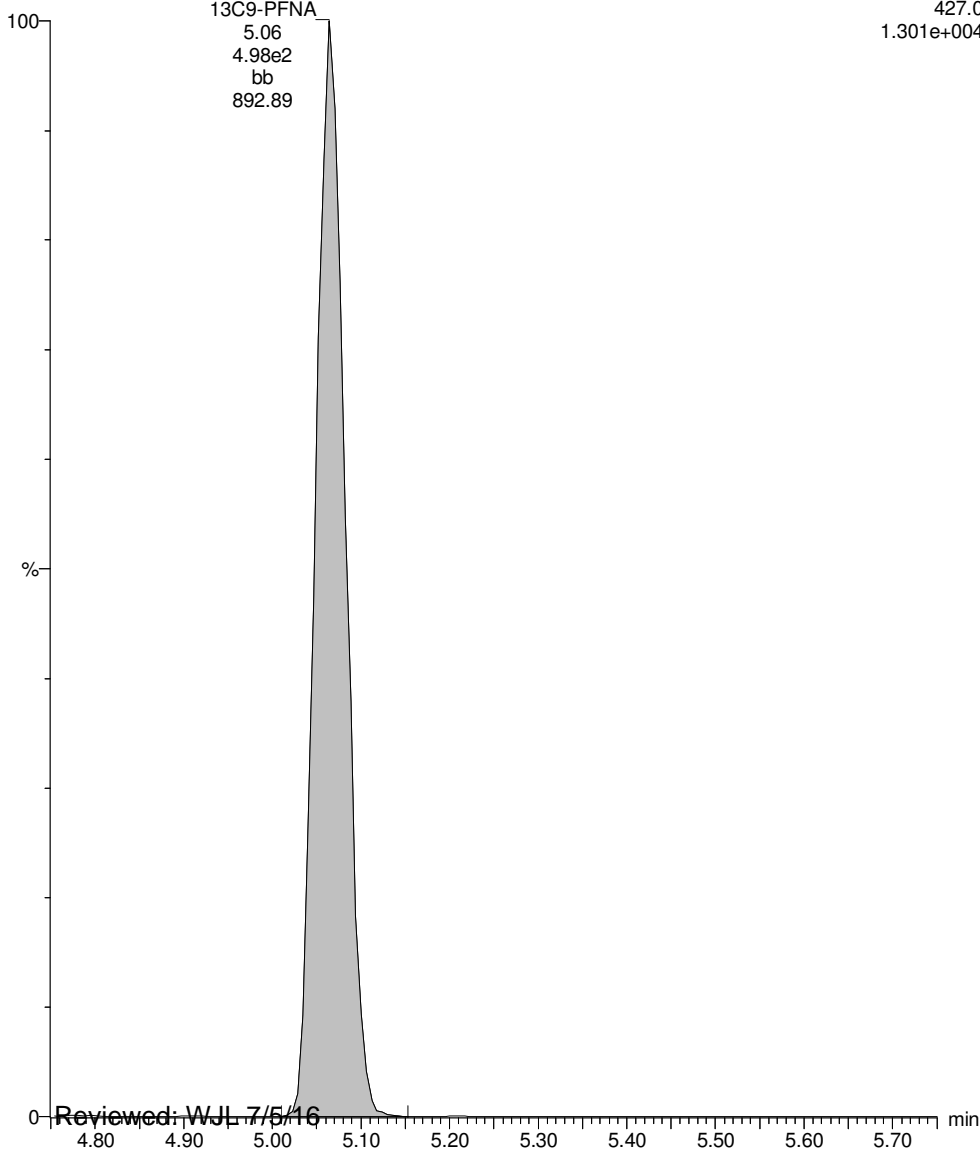
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13C9-PFNA

160628J1_51_P1_E1

SIR of 17 channels, ES-
427.0
1.301e+004



Reviewed: WJL 7/5/16

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BR 6/30/16

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Dataset: U:\Q2.PRO\Results\160628J1\160628J1_46.qld

Last Altered: Thursday, June 30, 2016 12:29:32 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:29:44 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-05, Description: OF-MW09-0616, Name: 160628J1_46.wiff, Date: 29-Jun-2016, Time: 01:06:12

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	79.9	1.994e1	6.920e3		0.128	3.46	1.39	
2	2 PFHpA	318.9		1.280e4		0.128			
3	3 PFHxS	79.91	9.264e1	1.713e3		0.128	4.47	8.23	
4	4 PFOA	368.9	4.903e1	1.034e4		0.128	4.74	1.09	
5	5 PFOS	79.92	1.075e2	5.260e3		0.128	5.12	2.92	
6	6 PFNA	419.0		9.624e3		0.128			
7	7 13C3-PFBS	79.95	6.920e3	1.190e4	0.546	0.128	3.46	104	107
8	8 13C4-PFHpA	321.9	1.280e4	1.190e4	1.075	0.128	4.35	97.8	100
9	9 18O2-PFHxS	102.9	1.713e3	5.372e3	0.307	0.128	4.47	101	104
10	10 13C2-PFOA	369.9	1.034e4	9.050e3	1.042	0.128	4.74	107	110
11	11 13C8-PFOS	79.93	5.260e3	5.292e3	1.026	0.128	5.12	94.6	96.9
12	12 13C5-PFNA	422.9	9.624e3	4.871e2	21.158	0.128	5.06	91.2	93.4
13	13 13C5-PFHxA	273.0	1.190e4	1.190e4	1.000	0.128	3.87	97.7	100
14	14 13C3-PFHxS	80.0	5.372e3	5.372e3	1.000	0.128	4.46	97.7	100
15	15 13C8-PFOA	375.9	9.050e3	9.050e3	1.000	0.128	4.73	97.7	100
16	16 13C4-PFOS	79.94	5.292e3	5.292e3	1.000	0.128	5.12	97.7	100
17	17 13C9-PFNA	427.0	4.871e2	4.871e2	1.000	0.128	5.06	97.7	100
18	18 Total PFBS	79.9		6.920e3		0.128		1.39	
19	19 Total PFHxS	79.91		1.713e3		0.128		9.07	
20	20 Total PFOA	368.9		1.034e4		0.128		1.09	
21	21 Total PFOS	79.92		5.260e3		0.128		7.84	

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_46.qld

Last Altered: Thursday, June 30, 2016 12:29:32 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:29:44 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-05, Description: OF-MW09-0616, Name: 160628J1_46.wiff, Date: 29-Jun-2016, Time: 01:06:12

Total PFBS

	# Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.46	19.941	6920.019	1.4

Total PFHxS

	# Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	92.645	1712.823	8.2
2	19 Total PFHxS	79.91	4.37	7.210	1712.823	0.6
3	19 Total PFHxS	79.91	4.34	2.215	1712.823	0.2

Total PFOA

	# Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.74	49.026	10338.487	1.1

Total PFOS

	# Name	Trace	RT	Area	IS Area	Conc.
1	21 Total PFOS	79.92	4.91	15.526	5259.835	0.4
2	5 PFOS	79.92	5.12	107.499	5259.835	2.9
3	21 Total PFOS	79.92	5.02	166.097	5259.835	4.5

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_46.qld

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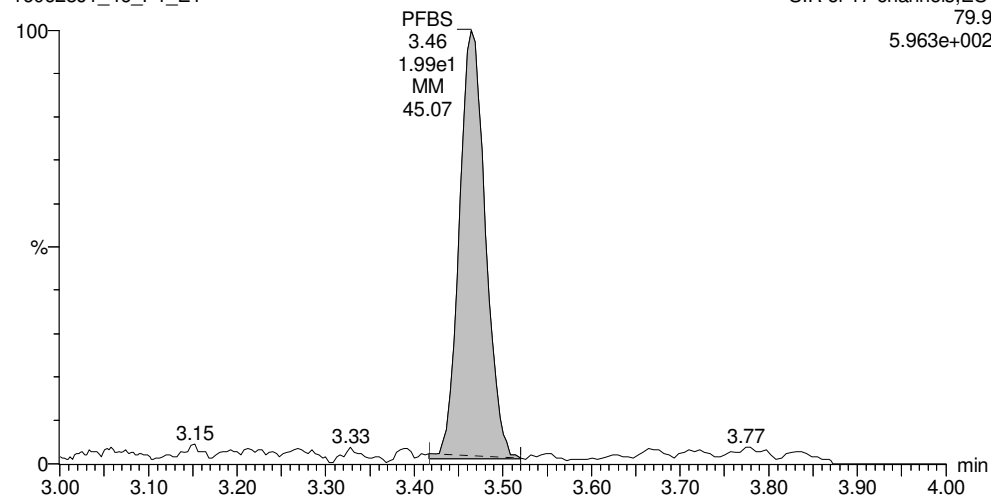
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ID: 1600820-05, Description: OF-MW09-0616, Name: 160628J1_46.wiff, Date: 29-Jun-2016, Time: 01:06:12, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

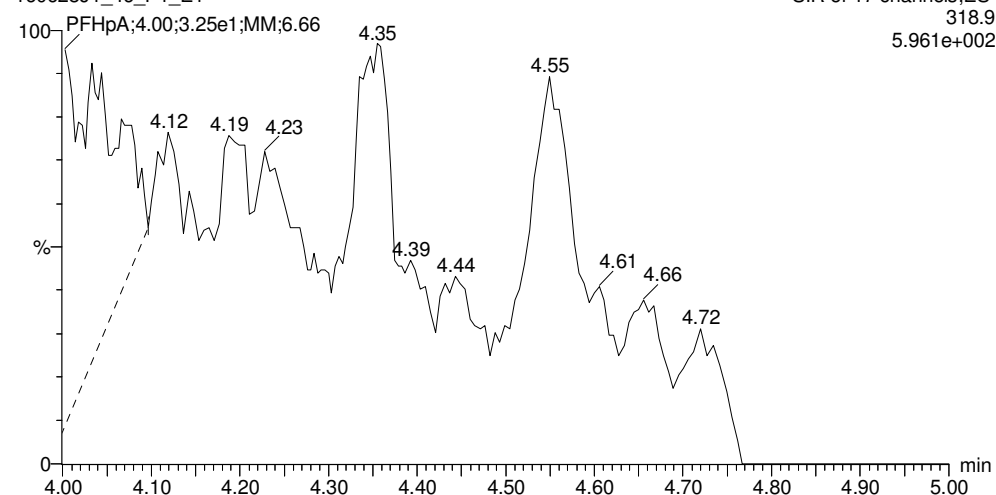
Total PFBS

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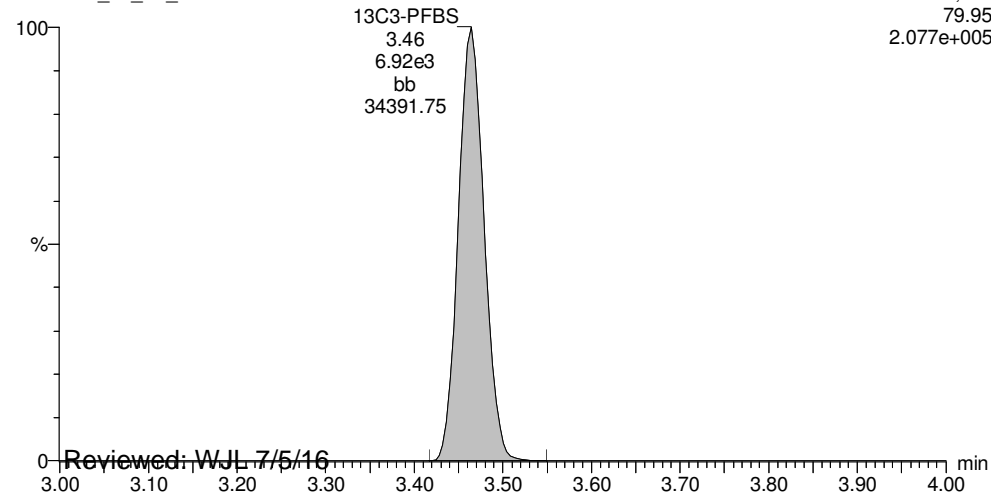
PFHpA

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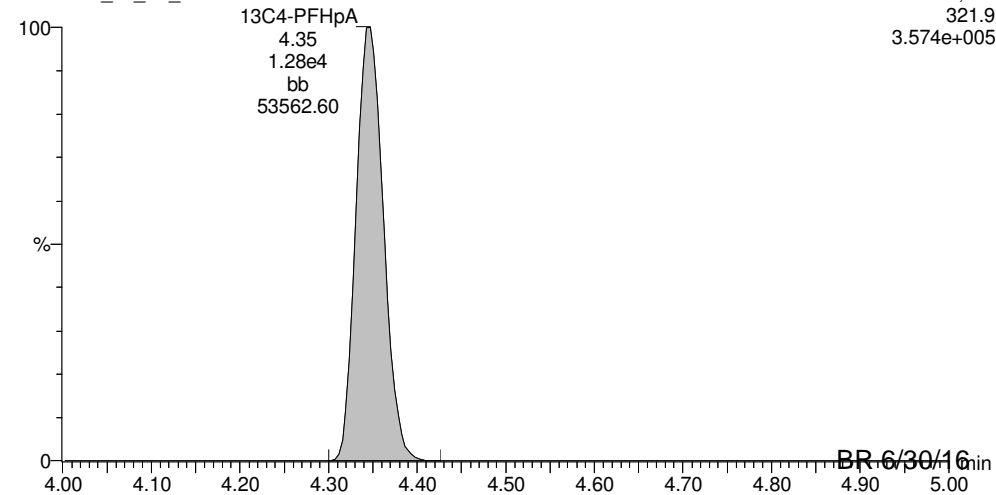
13C3-PFBS

160628J1_46_P1_E1



13C4-PFHpA

160628J1_46_P1_E1



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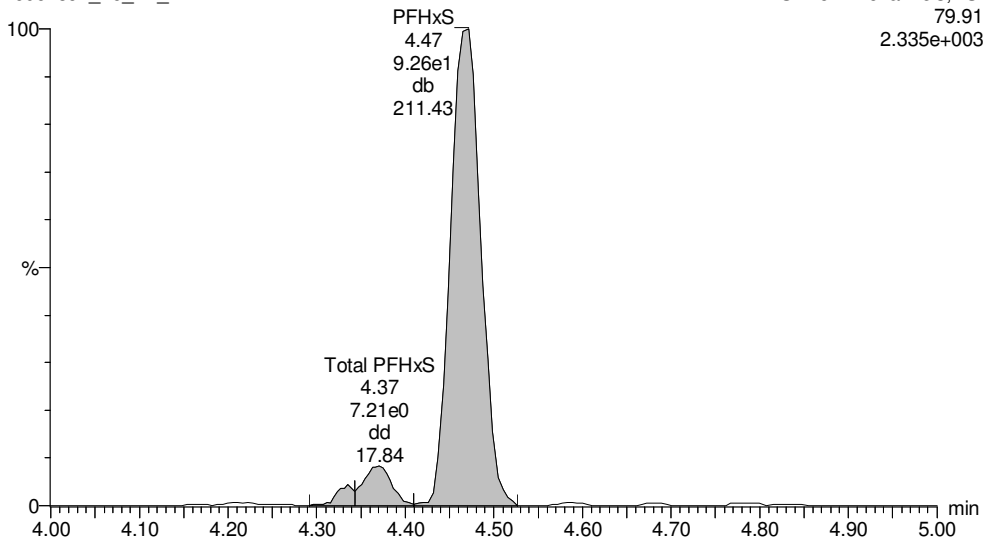
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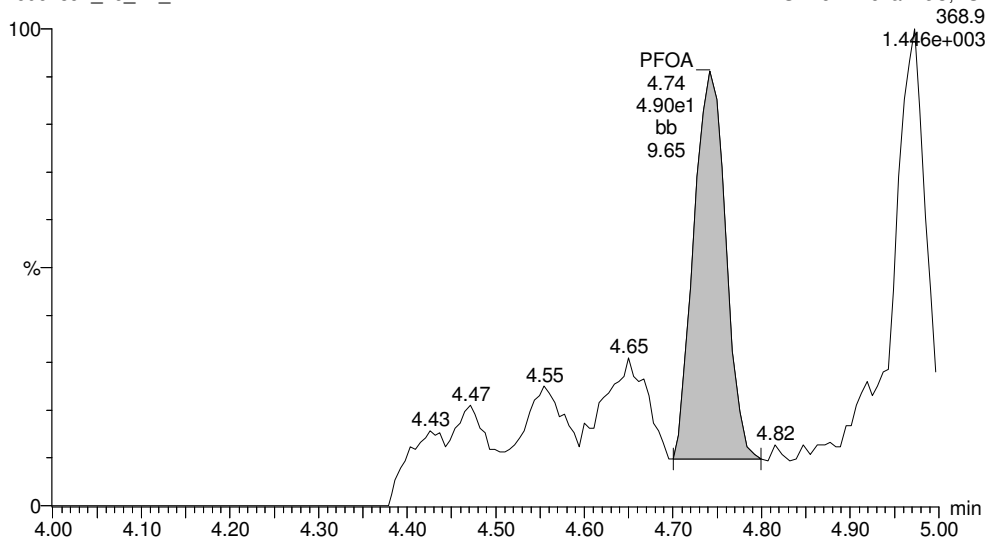
Total PFHxS

160628J1_46_P1_E1



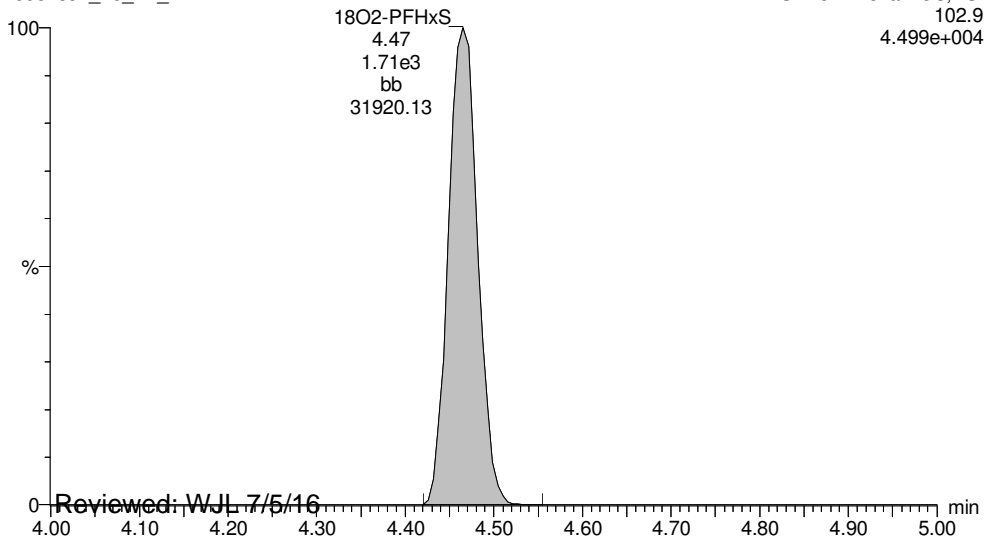
Total PFOA

160628J1_46_P1_E1



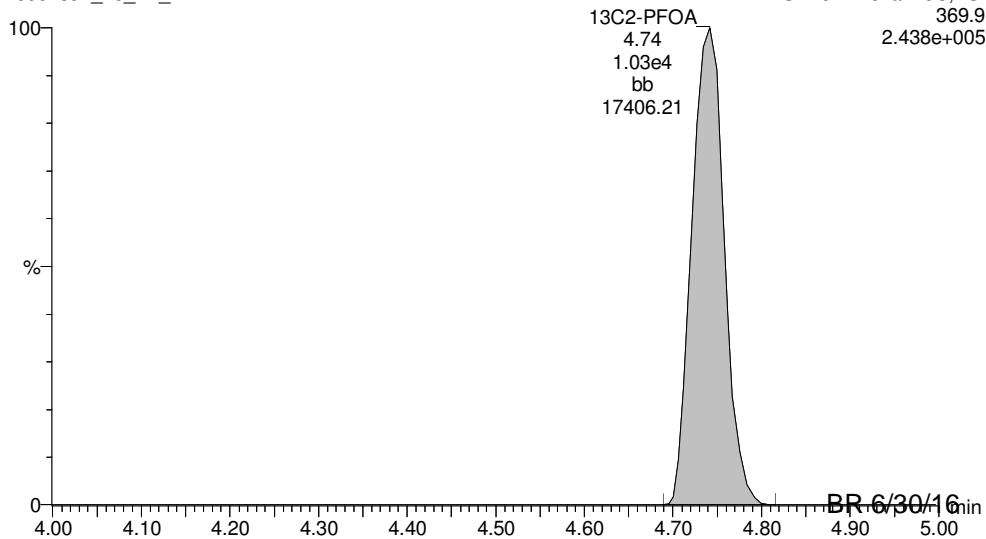
18O2-PFHxS

160628J1_46_P1_E1



13C2-PFOA

160628J1_46_P1_E1



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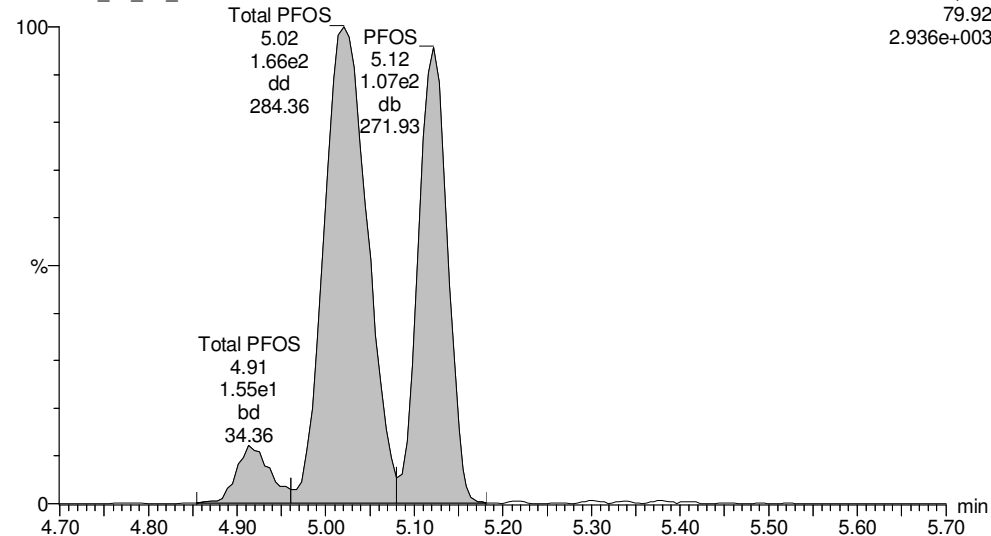
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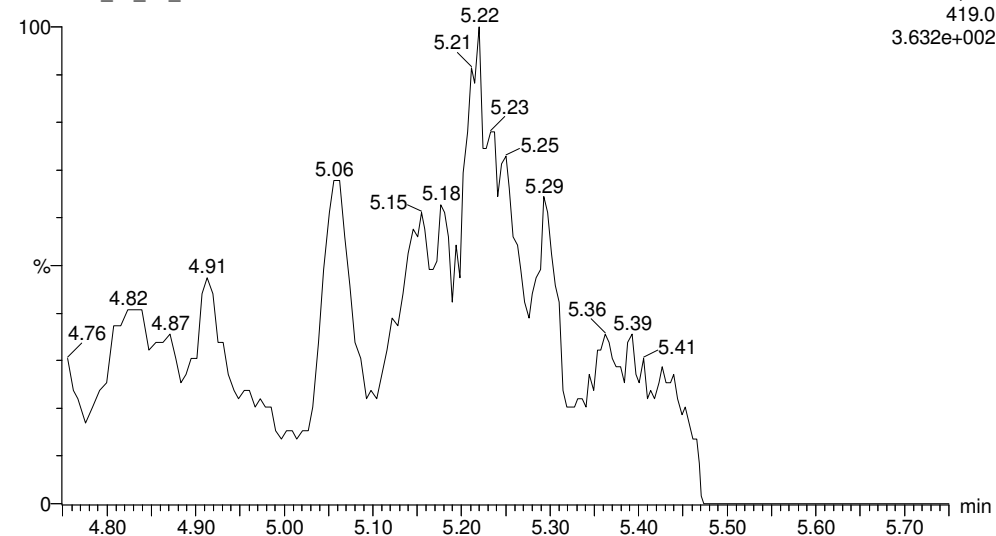
Total PFOS

160628J1_46_P1_E1



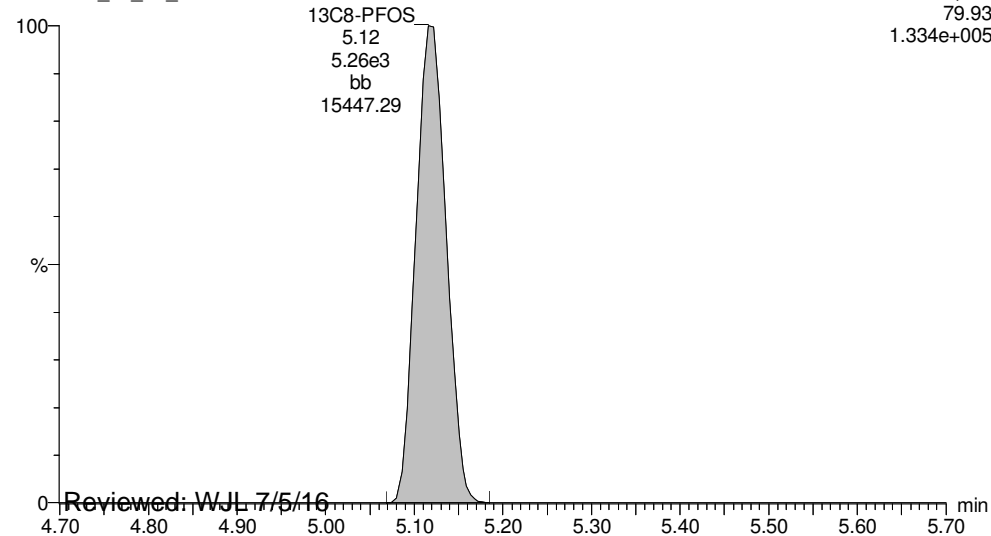
PFNA

160628J1_46_P1_E1



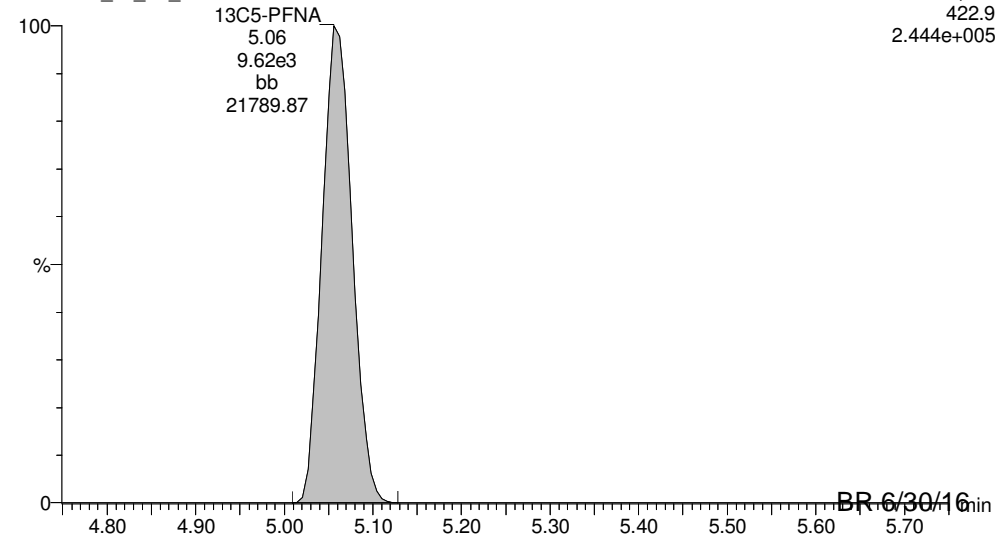
13C8-PFOS

160628J1_46_P1_E1



13C5-PFNA

160628J1_46_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_46.qld

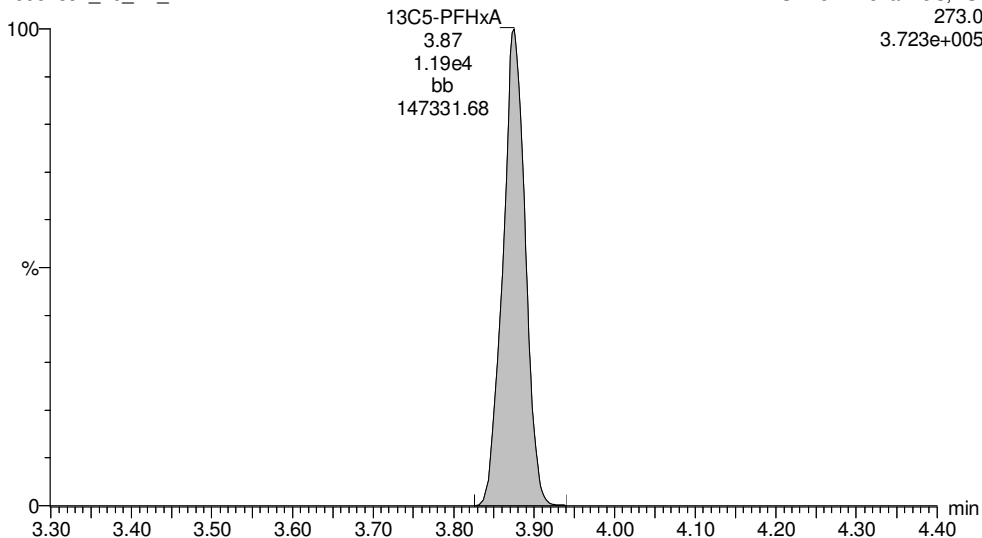
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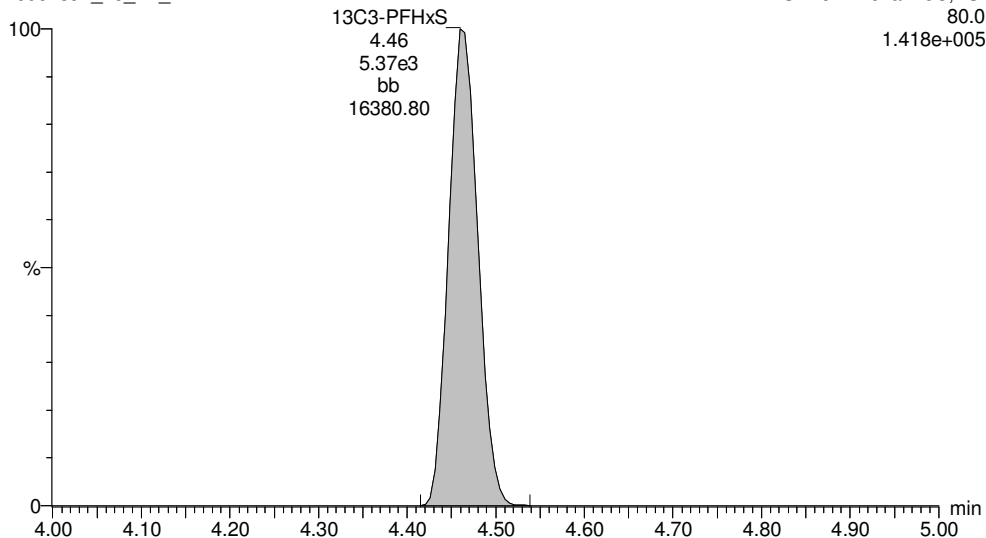
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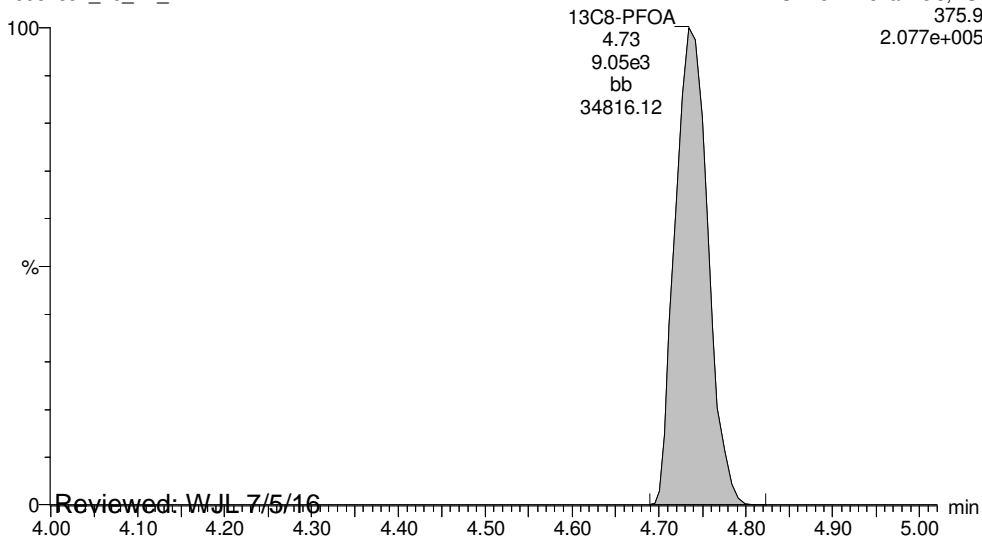
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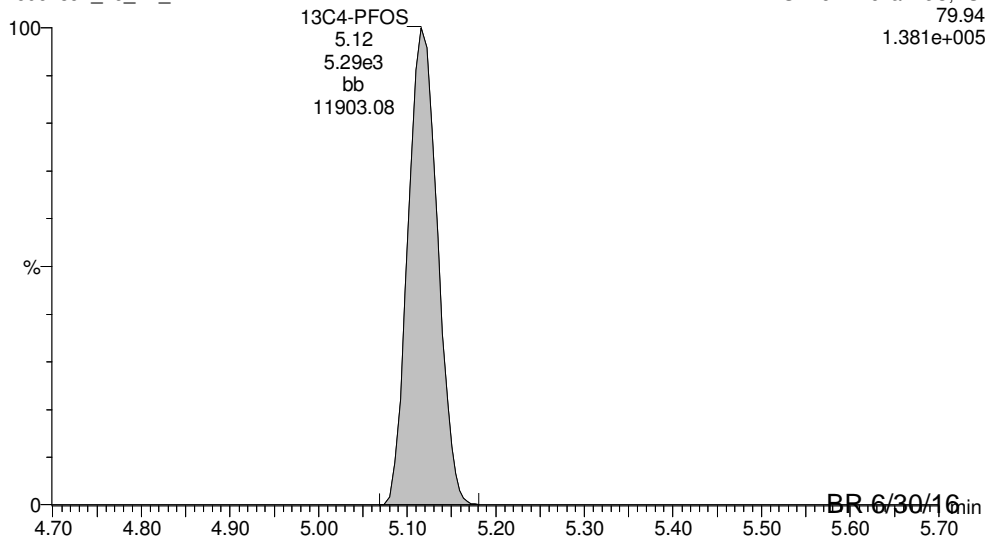
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13C4-PFOS

160628J1_46_P1_E1



Reviewed: WJL 7/5/16

BR-6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_46.qld

Last Altered: Thursday, June 30, 2016 12:29:32 PM Pacific Daylight Time

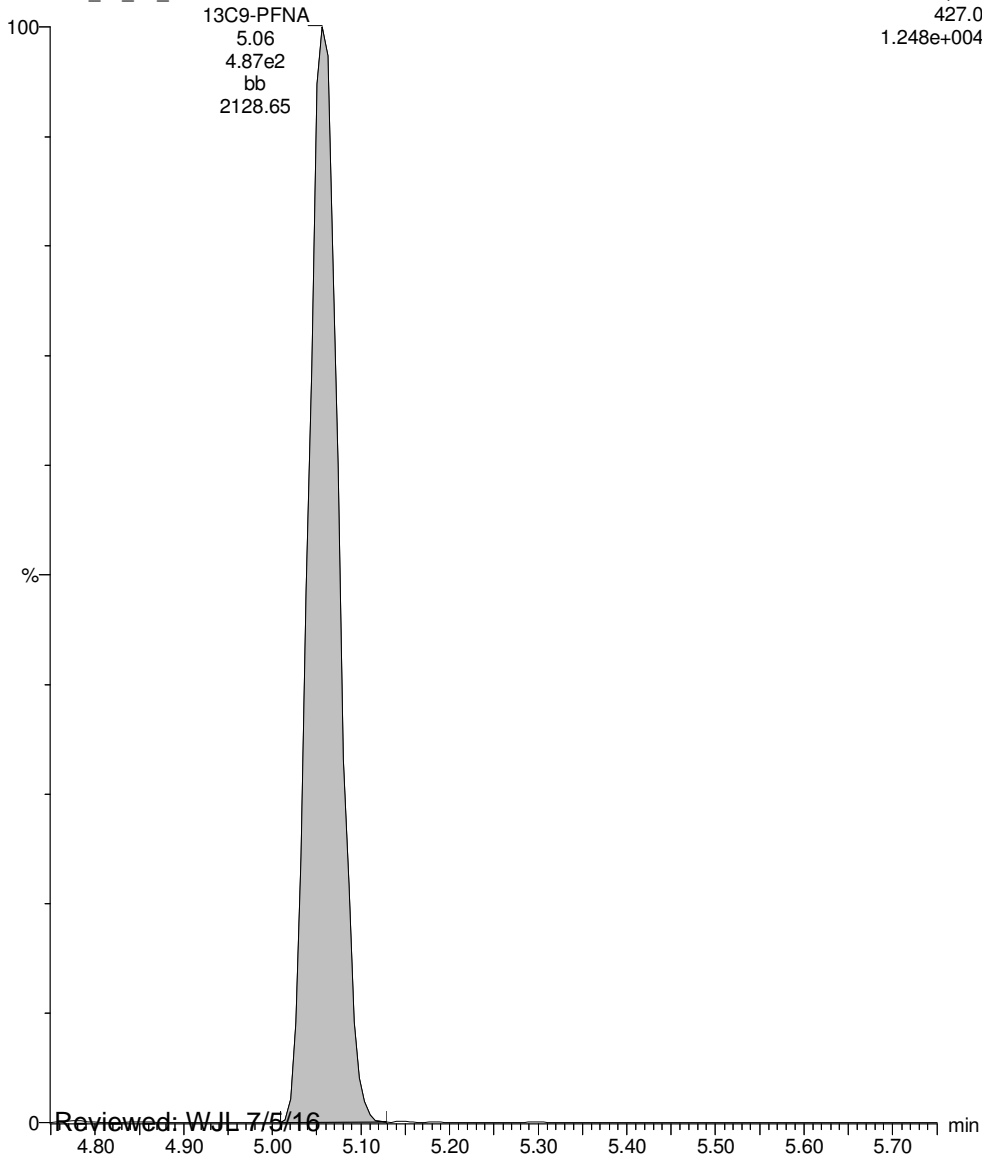
Printed: Thursday, June 30, 2016 12:29:44 PM Pacific Daylight Time

ID: 1600820-05, Description: OF-MW09-0616, Name: 160628J1_46.wiff, Date: 29-Jun-2016, Time: 01:06:12, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

13C9-PFNA

160628J1_46_P1_E1

SIR of 17 channels, ES-
427.0
1.248e+004



Reviewed: WJL 7/5/16

Work Order 1600820 Revision 1

BR 6/30/16

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Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25

#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	79.9		6.101e3		0.129			
2	2 PFHpA	318.9		1.167e4		0.129			
3	3 PFHxS	79.91	8.624e0	1.476e3		0.129	4.47	0.882	
4	4 PFOA	368.9	2.274e1	9.266e3		0.129	4.75	0.561	
5	5 PFOS	79.92	1.470e2	5.113e3		0.129	5.13	4.07	
6	6 PFNA	419.0		9.164e3		0.129			
7	7 13C3-PFBS	79.95	6.101e3	1.286e4	0.546	0.129	3.47	84.3	86.9
8	8 13C4-PFHpA	321.9	1.167e4	1.286e4	1.075	0.129	4.35	81.8	84.4
9	9 18O2-PFHxS	102.9	1.476e3	5.535e3	0.307	0.129	4.46	84.2	86.8
10	10 13C2-PFOA	369.9	9.266e3	1.054e4	1.042	0.129	4.75	81.9	84.4
11	11 13C8-PFOS	79.93	5.113e3	5.840e3	1.026	0.129	5.13	82.8	85.3
12	12 13C5-PFNA	422.9	9.164e3	5.261e2	21.158	0.129	5.07	79.8	82.3
13	13 13C5-PFHxA	273.0	1.286e4	1.286e4	1.000	0.129	3.88	97.0	100
14	14 13C3-PFHxS	80.0	5.535e3	5.535e3	1.000	0.129	4.46	97.0	100
15	15 13C8-PFOA	375.9	1.054e4	1.054e4	1.000	0.129	4.75	97.0	100
16	16 13C4-PFOS	79.94	5.840e3	5.840e3	1.000	0.129	5.12	97.0	100
17	17 13C9-PFNA	427.0	5.261e2	5.261e2	1.000	0.129	5.07	97.0	100
18	18 Total PFBS	79.9		6.101e3		0.129			
19	19 Total PFHxS	79.91		1.476e3		0.129		0.882	
20	20 Total PFOA	368.9		9.266e3		0.129		0.561	
21	21 Total PFOS	79.92		5.113e3		0.129		5.49	

Quantify Totals Report MassLynx 4.1 SCN815

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.pro\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25

Total PFBS

#	Name	Trace	RT	Area	IS Area	Conc.
1						

Total PFHxS

#	Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	8.624	1476.299	0.9

Total PFOA

#	Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.75	22.738	9265.621	0.6

Total PFOS

#	Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	147.045	5112.810	4.1
2	21 Total PFOS	79.92	5.03	51.143	5112.810	1.4

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

Method: U:\Q2.pro\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

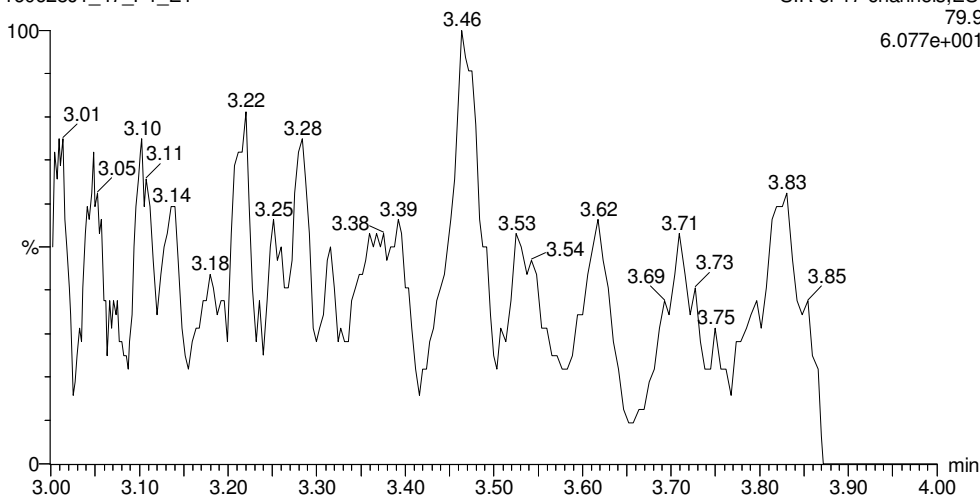
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ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

Total PFBS

160628J1_47_P1_E1

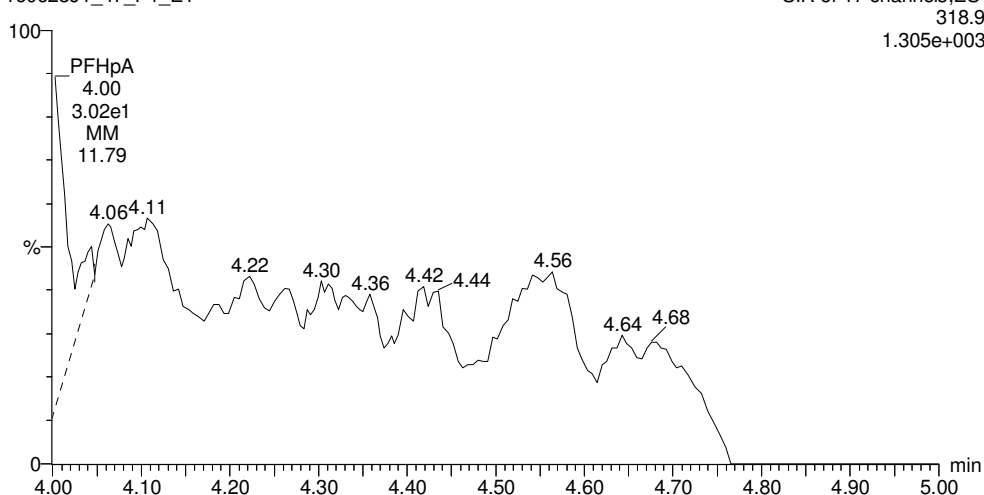
SIR of 17 channels,ES-
79.9
6.077e+001



PFHpA

160628J1_47_P1_E1

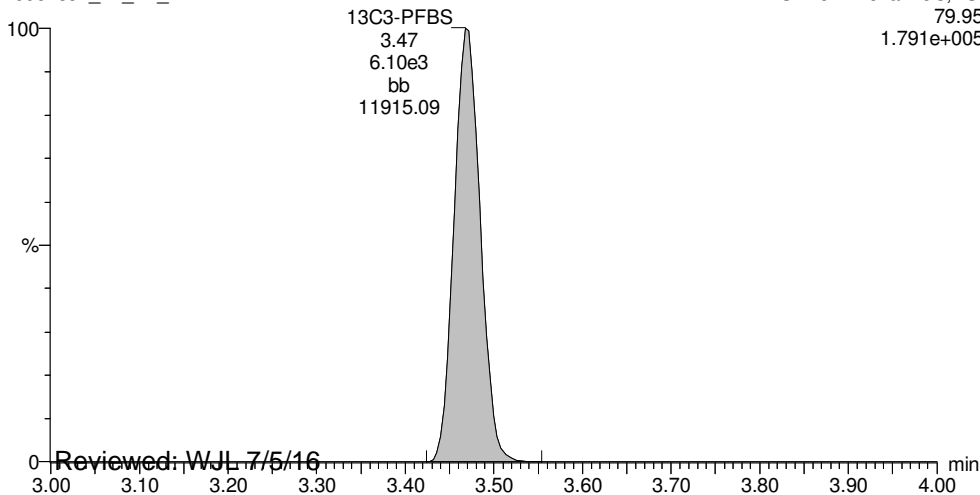
SIR of 17 channels,ES-
318.9
1.305e+003



13C3-PFBS

160628J1_47_P1_E1

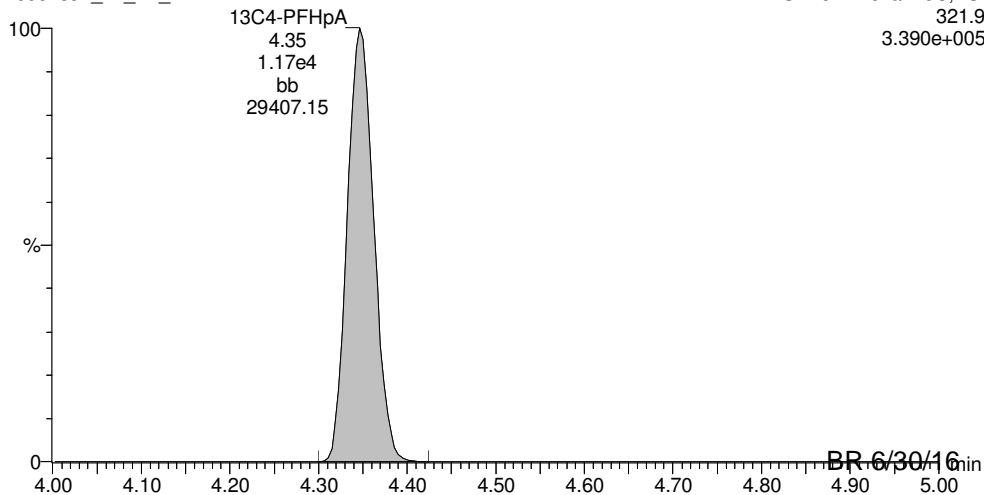
SIR of 17 channels,ES-
79.95
1.791e+005



13C4-PFHpA

160628J1_47_P1_E1

SIR of 17 channels,ES-
321.9
3.390e+005



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

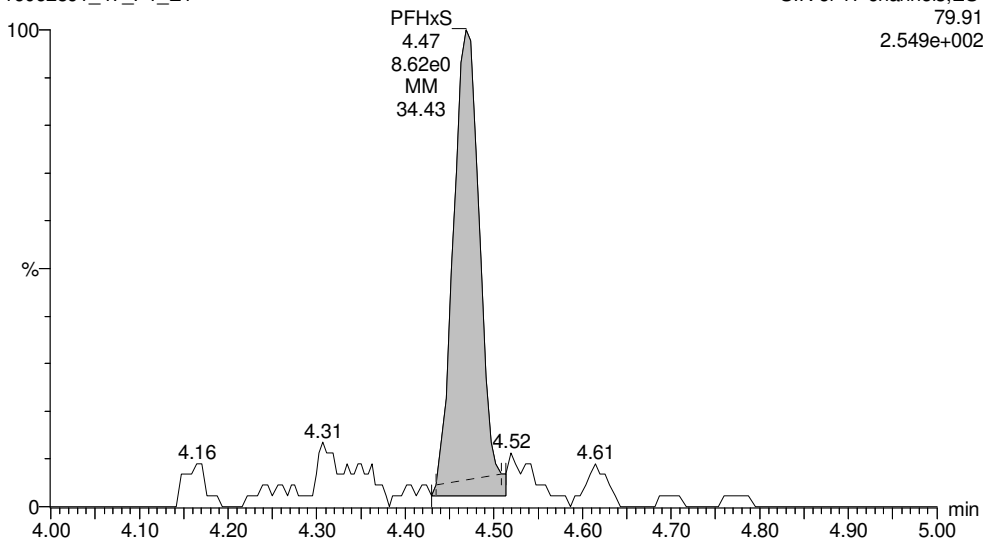
Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

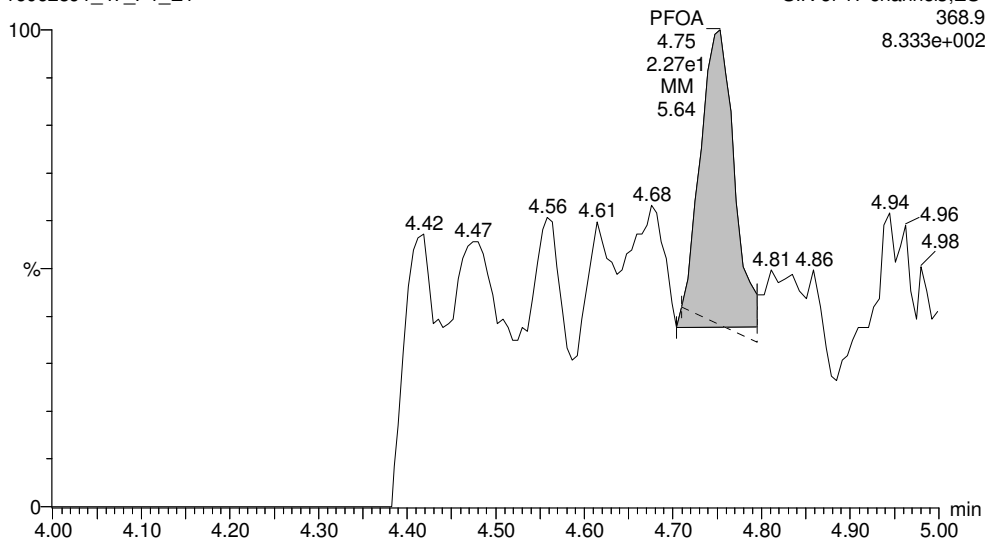
Total PFHxS

160628J1_47_P1_E1



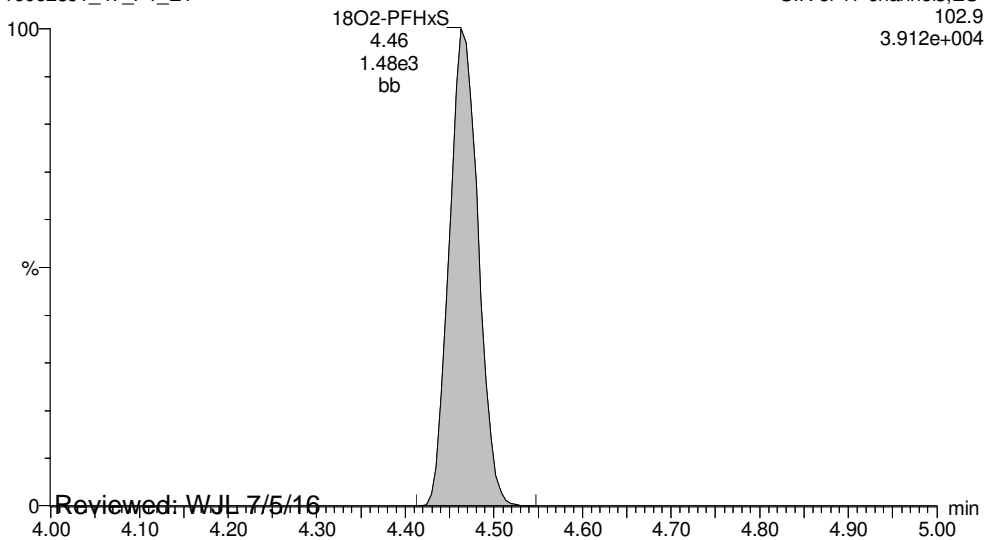
Total PFOA

160628J1_47_P1_E1



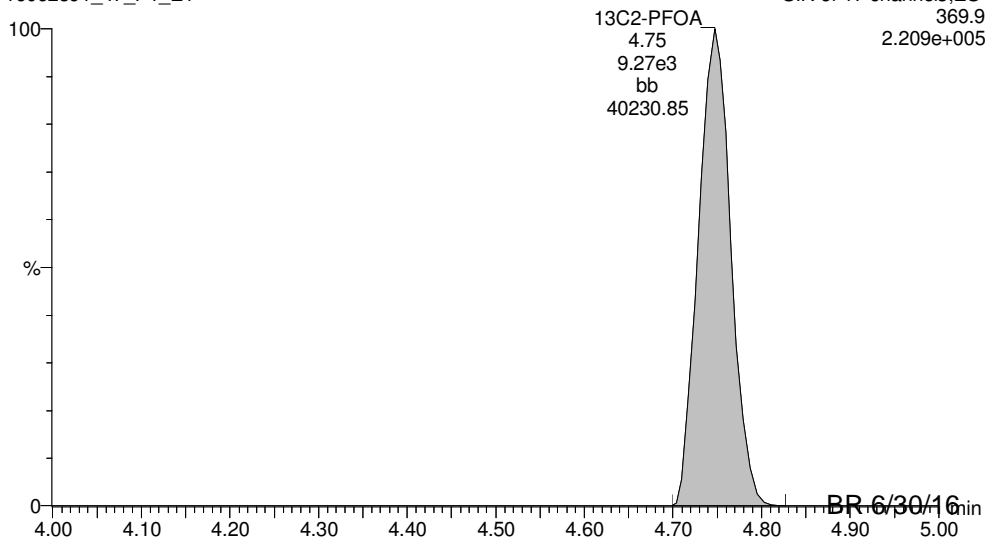
18O2-PFHxS

160628J1_47_P1_E1



13C2-PFOA

160628J1_47_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

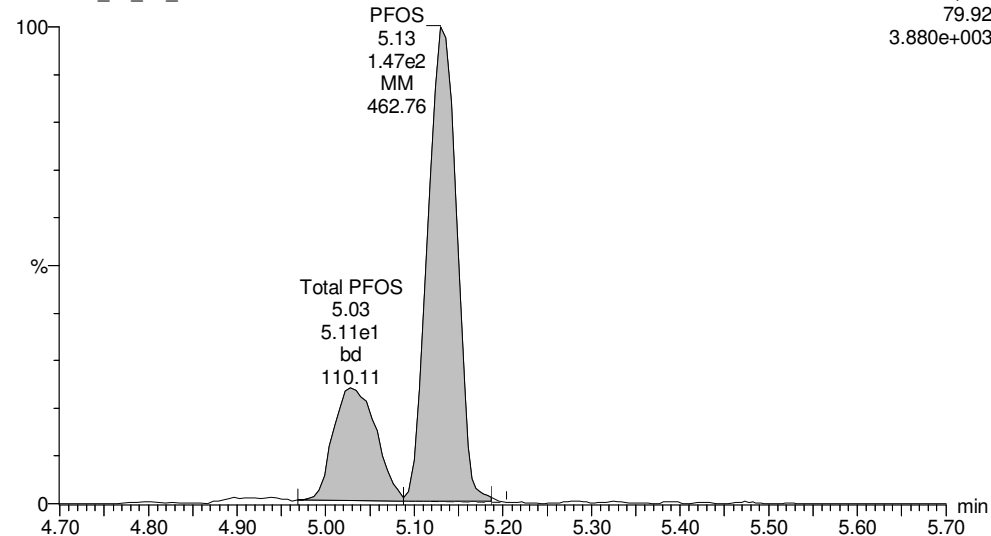
Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

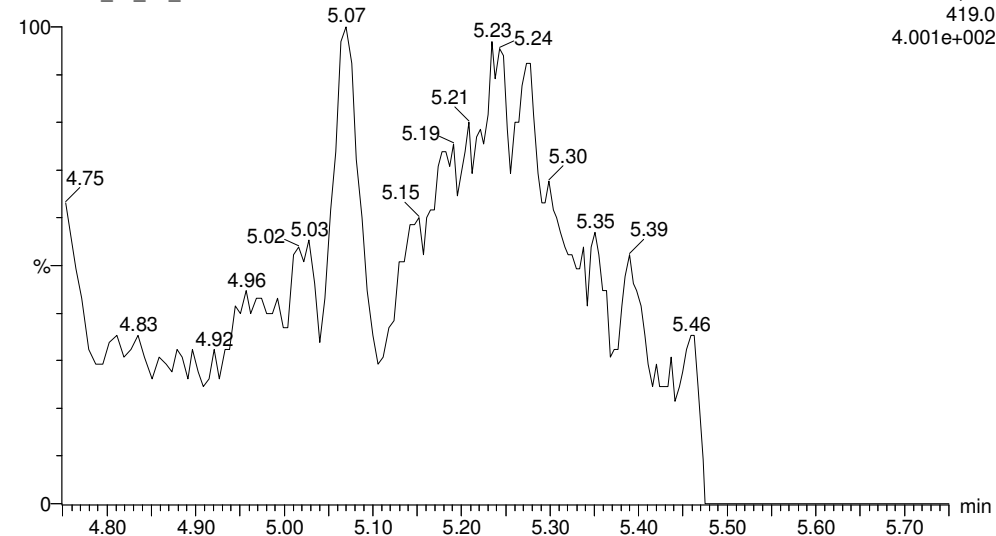
Total PFOS

160628J1_47_P1_E1



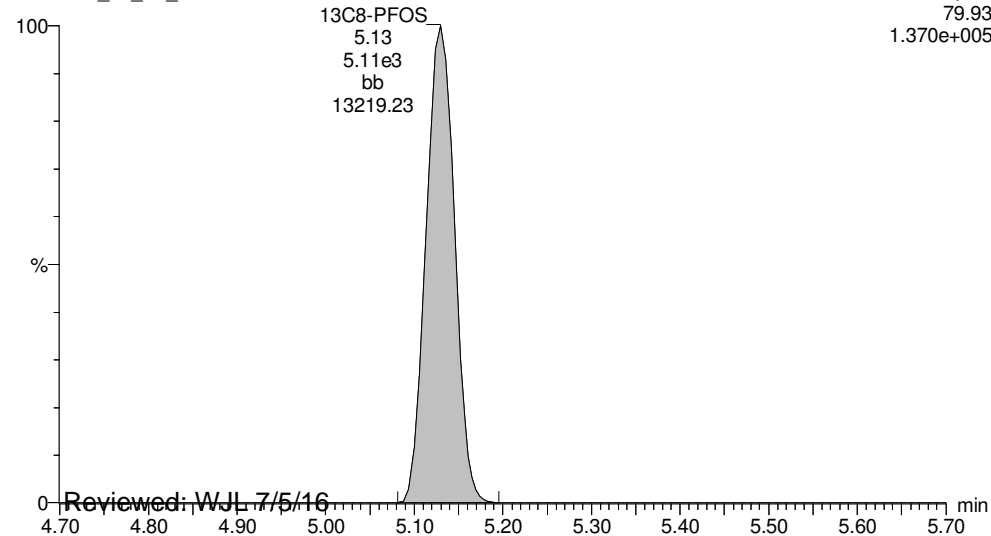
PFNA

160628J1_47_P1_E1



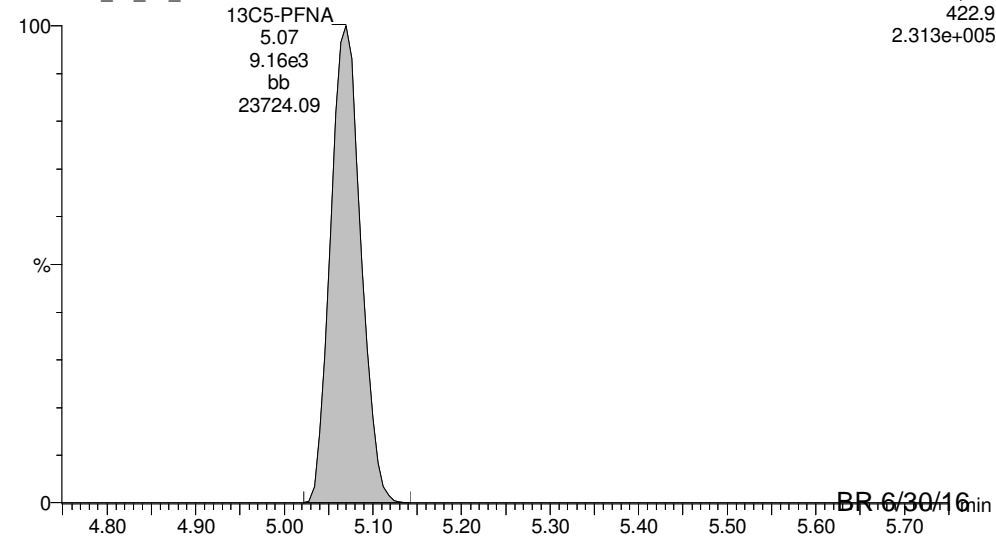
13C8-PFOS

160628J1_47_P1_E1



13C5-PFNA

160628J1_47_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

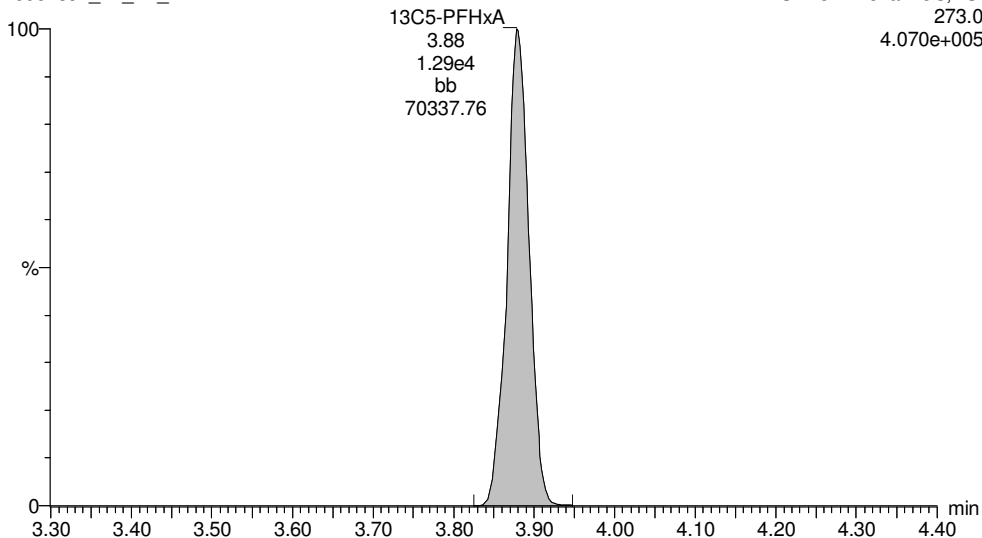
Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

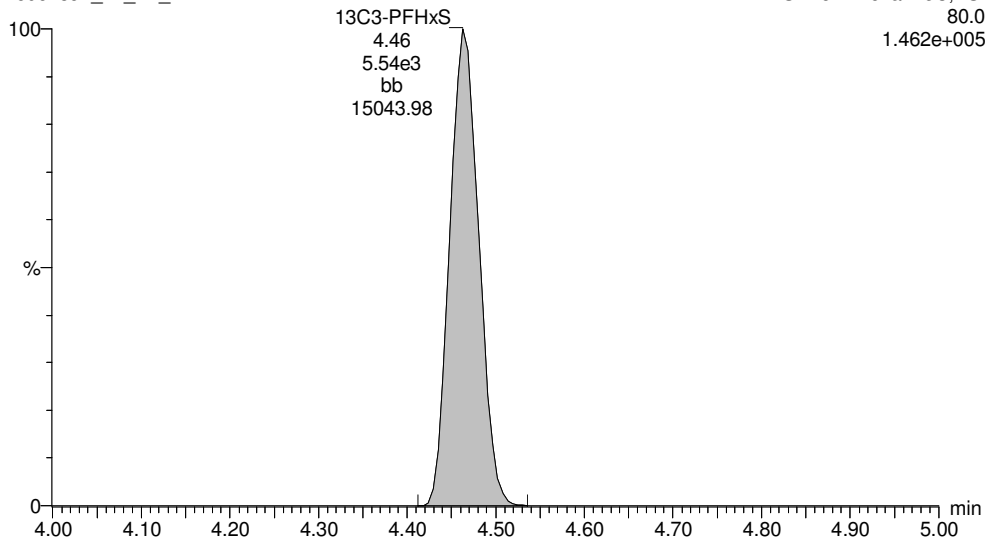
13C5-PFHxA

160628J1_47_P1_E1



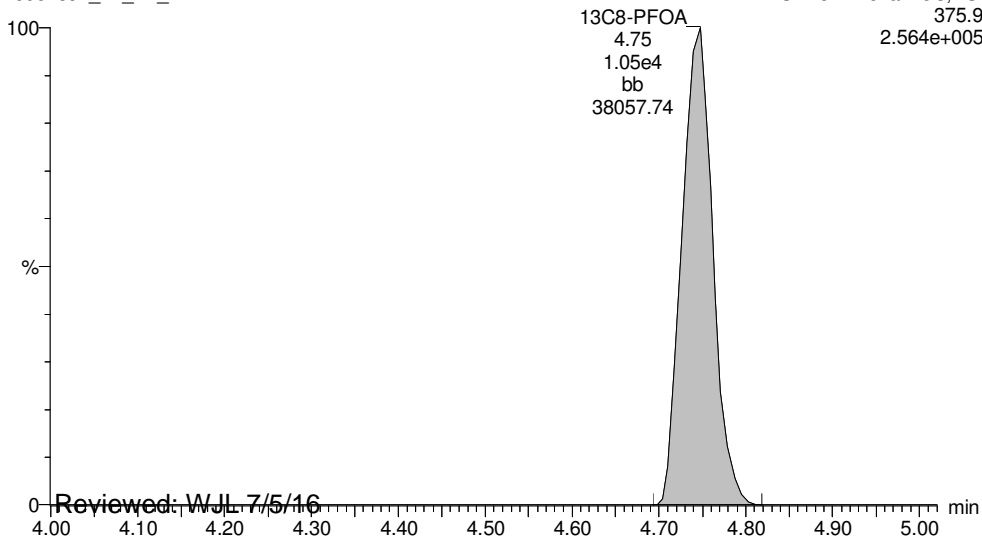
13C3-PFHxS

160628J1_47_P1_E1



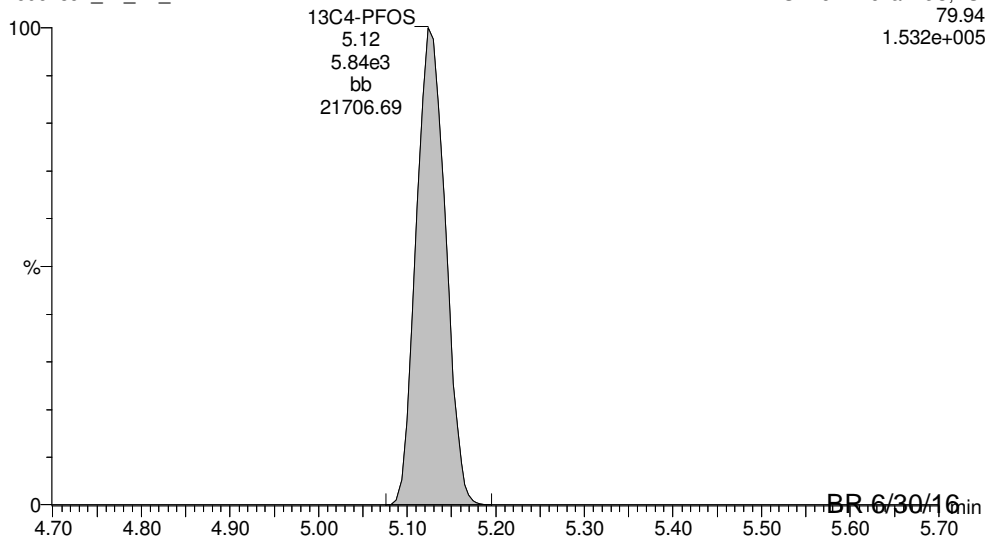
13C8-PFOA

160628J1_47_P1_E1



13C4-PFOS

160628J1_47_P1_E1



Reviewed: WJL 7/5/16

BR 6/30/16

Dataset: U:\Q2.PRO\Results\160628J1\160628J1_47.qld

Last Altered: Thursday, June 30, 2016 12:32:11 PM Pacific Daylight Time

Printed: Thursday, June 30, 2016 12:32:23 PM Pacific Daylight Time

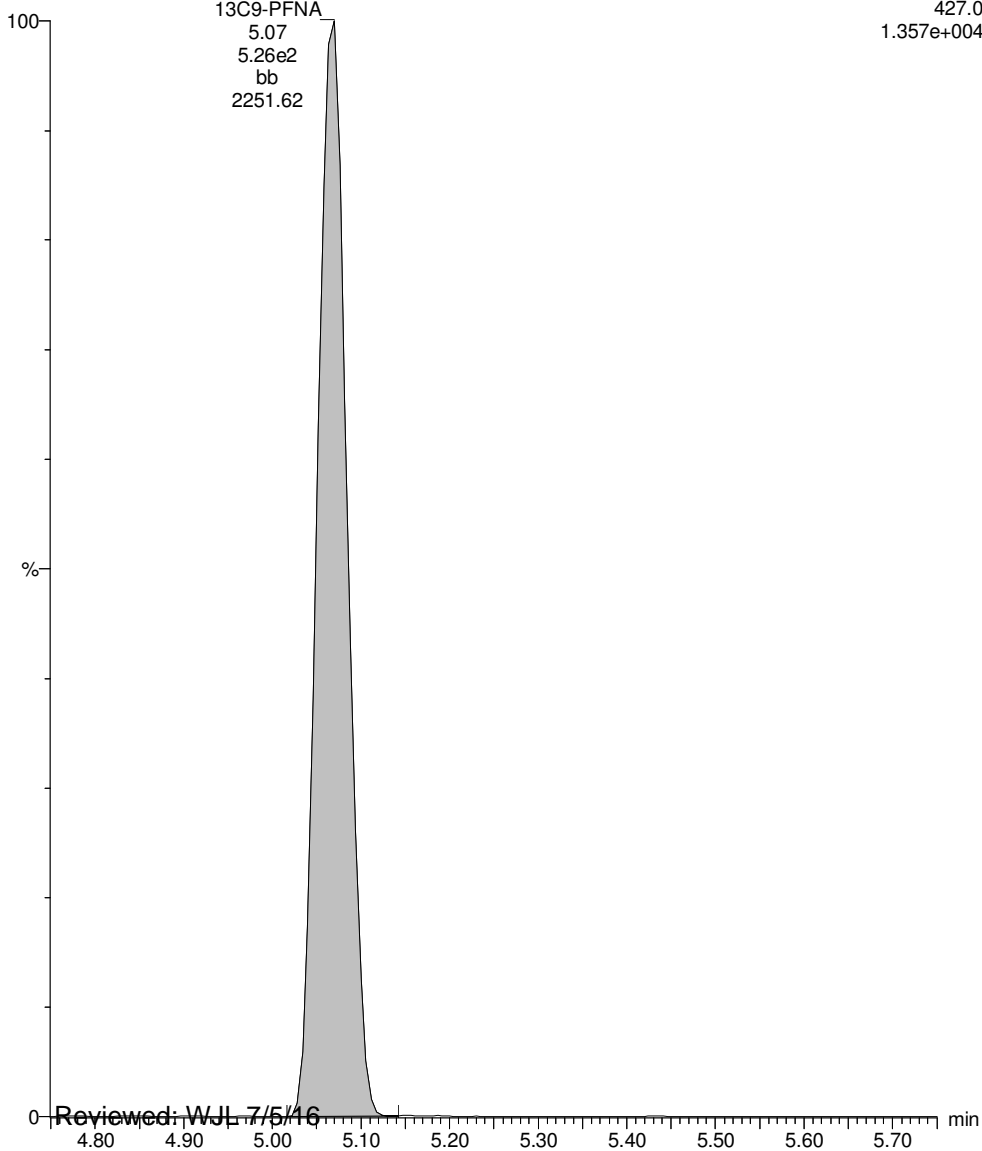
ID: 1600820-06, Description: OF-MW09D-0616, Name: 160628J1_47.wiff, Date: 29-Jun-2016, Time: 01:18:25, Instrument: , Lab: ©PE-SCIEX, User: pwoolley

13C9-PFNA

160628J1_47_P1_E1

SIR of 17 channels, ES-
427.0
1.357e+004

13C9-PFNA
5.07
5.26e2
bb
2251.62



CONTINUING CALIBRATION

Dataset: U:\Q2.PRO\Results\160628J1\160628J_31.qld

Last Altered: Wednesday, June 29, 2016 12:47:51 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 12:48:25 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_31.wiff, Date: 28-Jun-2016, Time: 22:03:07, ID: ST160628J1-10 PFC CS3.5 16F0705, Description: PFC CS3.5 16F0705

#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	79.9	3.21e3	8.06e3		1.000	3.46	24.8	99.1
2	2 PFHpA	318.9	5.82e3	1.55e4		1.000	4.35	25.4	101.6
3	3 PFHxS	79.91	2.56e3	2.05e3		1.000	4.47	24.5	98.0
4	4 PFOA	368.9	9.70e3	1.35e4		1.000	4.74	21.7	86.9
5	5 PFOS	79.92	7.50e3	5.56e3		1.000	5.12	25.0	100.2
6	6 PFNA	419.0	1.31e4	1.13e4		1.000	5.06	26.1	104.4
7	7 13C3-PFBS	79.95	8.06e3	1.44e4	0.546	1.000	3.46	12.8	102.2
8	8 13C4-PFHpA	321.9	1.55e4	1.44e4	1.075	1.000	4.35	12.5	99.9
9	9 18O2-PFHxS	102.9	2.05e3	6.39e3	0.307	1.000	4.46	13.0	104.4
10	10 13C2-PFOA	369.9	1.35e4	1.21e4	1.042	1.000	4.74	13.4	107.0
11	11 13C8-PFOS	79.93	5.56e3	5.83e3	1.026	1.000	5.12	11.6	93.0
12	12 13C5-PFNA	422.9	1.13e4	5.90e2	21.158	1.000	5.06	11.3	90.3
13	13 13C5-PFHxA	273.0	1.44e4	1.44e4	1.000	1.000	3.87	12.5	100.0
14	14 13C3-PFHxS	80.0	6.39e3	6.39e3	1.000	1.000	4.46	12.5	100.0
15	15 13C8-PFOA	375.9	1.21e4	1.21e4	1.000	1.000	4.74	12.5	100.0
16	16 13C4-PFOS	79.94	5.83e3	5.83e3	1.000	1.000	5.12	12.5	100.0
17	17 13C9-PFNA	427.0	5.90e2	5.90e2	1.000	1.000	5.06	12.5	100.0
18	18 Total PFBS	79.9		8.06e3		1.000		24.8	
19	19 Total PFHxS	79.91		2.05e3		1.000		24.6	
20	20 Total PFOA	368.9		1.35e4		1.000		21.7	
21	21 Total PFOS	79.92		5.56e3		1.000		25.1	

75-125
 ↓
 6/29/16
 PW
 NA 60-150
 NA
 60-150
 ↓
 50-150

PW
 6/29/16
 JP 6/29/16 ✓

	Sample Name	Acquisition Date	Sample ID	Sample Comment
1	160628J1_01	6/28/2016 15:56:50	IPA	IPA
2	160628J1_02	6/28/2016 16:09:02	ST160628J1-1 PFC CS0 16F0701	PFC CS0 16F0701
3	160628J1_03	6/28/2016 16:21:13	ST160628J1-2 PFC CS1 16F0702	PFC CS1 16F0702
4	160628J1_04	6/28/2016 16:33:26	ST160628J1-3 PFC CS2 16F0703	PFC CS2 16F0703
5	160628J1_05	6/28/2016 16:45:38	ST160628J1-4 PFC CS3 16F0704	PFC CS3 16F0704
6	160628J1_06	6/28/2016 16:57:51	ST160628J1-5 PFC CS3.5 16F0705	PFC CS3.5 16F0705
7	160628J1_07	6/28/2016 17:10:01	ST160628J1-6 PFC CS4 16F0706	PFC CS4 16F0706
8	160628J1_08	6/28/2016 17:22:14	ST160628J1-7 PFC CS4.5 16F0707	PFC CS4.5 16F0707
9	160628J1_09	6/28/2016 17:34:27	ST160628J1-8 PFC CS5 16F0708	PFC CS5 16F0708
10	160628J1_10	6/28/2016 17:46:39	ST160628J1-9 PFC CS6 16F0709	PFC CS6 16F0709
11	160628J1_11	6/28/2016 17:58:52	IPA	IPA
12	160628J1_12	6/28/2016 18:11:06	IPA	IPA
13	160628J1_13	6/28/2016 18:23:17	SS160628J1-1 PFC SSS 16F0907	PFC SSS 16F0907
14	160628J1_14	6/28/2016 18:35:29	IPA	IPA
15	160628J1_15	6/28/2016 18:47:40	B6F0156-BS1	OPR
16	160628J1_16	6/28/2016 18:59:54	B6F0157-BS1	OPR
17	160628J1_17	6/28/2016 19:12:07	IPA	IPA
18	160628J1_18	6/28/2016 19:24:20	B6F0156-BLK1	Method Blank
19	160628J1_19	6/28/2016 19:36:32	B6F0157-BLK1	Method Blank
20	160628J1_20	6/28/2016 19:48:47	1600818-01	OF14-MW07S-0616
21	160628J1_21	6/28/2016 20:01:01	1600818-02	OF14-MW07D-0616
22	160628J1_22	6/28/2016 20:13:11	1600818-03	OF-MW14-0616
23	160628J1_23	6/28/2016 20:25:26	1600818-04	OF-MW16-0616
24	160628J1_24	6/28/2016 20:37:39	1600818-05	OF-FB062016
25	160628J1_25	6/28/2016 20:49:51	1600818-06	OF-EB062016
26	160628J1_26	6/28/2016 21:02:04	1600818-07	OF-MW15-0616
27	160628J1_27	6/28/2016 21:14:15	1600818-08	OF-MW15D-0616
28	160628J1_28	6/28/2016 21:26:29	1600818-09	OF14-MW06-0616
29	160628J1_29	6/28/2016 21:38:43	1600818-10	OF14-MW06D-0616
30	160628J1_30	6/28/2016 21:50:55	IPA	IPA
31	160628J1_31	6/28/2016 22:03:07	ST160628J1-10 PFC CS3.5 16F0705	PFC CS3.5 16F0705
32	160628J1_32	6/28/2016 22:15:20	IPA	IPA
33	160628J1_33	6/28/2016 22:27:29	1600818-11	OF-MW17-0616
34	160628J1_34	6/28/2016 22:39:43	1600818-12	OF-MW12D-0616
35	160628J1_35	6/28/2016 22:51:56	1600818-13	OF-MW12-0616
36	160628J1_36	6/28/2016 23:04:09	1600818-14	OF-MW13D-0616
37	160628J1_37	6/28/2016 23:16:23	1600818-15	OF-MW13DP-0616
38	160628J1_38	6/28/2016 23:28:36	1600818-16	OF-MW11D-0616
39	160628J1_39	6/28/2016 23:40:48	1600820-01	OF-MW10-0616
40	160628J1_40	6/28/2016 23:53:02	1600820-02	OF-MW08-0616
41	160628J1_41	6/29/2016 00:05:15	1600820-03	OF-MW08P-0616
42	160628J1_42	6/29/2016 00:17:24	1600820-04	OF-MW10D-0616
43	160628J1_43	6/29/2016 00:29:38	IPA	IPA
44	160628J1_44	6/29/2016 00:41:49	ST160628J1-11 PFC CS3.5 16F0705	PFC CS3.5 16E0705
45	160628J1_45	6/29/2016 00:54:00	IPA	IPA
46	160628J1_46	6/29/2016 01:06:12	1600820-05	OF-MW09-0616
47	160628J1_47	6/29/2016 01:18:25	1600820-06	OF-MW09D-0616
48	160628J1_48	6/29/2016 01:30:33	B6F0156-MS1	Matrix Spike
49	160628J1_49	6/29/2016 01:42:48	B6F0156-MSD1	Matrix Spike Dup
50	160628J1_50	6/29/2016 01:54:57	B6F0157-MS1	Matrix Spike
51	160628J1_51	6/29/2016 02:07:16	B6F0157-MSD1	Matrix Spike Dup
52	160628J1_52	6/29/2016 02:19:30	1600783-01@1:5	OFFPOL-MW-7-0616
53	160628J1_53	6/29/2016 02:31:44	1600783-01@1:20	OFFPOL-MW-7-0616
54	160628J1_54	6/29/2016 02:43:54	1600783-02@1:5	OFFPOL-MW-4-0616

	Sample Name	Acquisition Date	Sample ID	Sample Comment
55	160628J1_55	6/29/2016 02:56:06	1600783-02@1:20	OFPOL-MW-4-0616
56	160628J1_56	6/29/2016 03:08:22	IPA	IPA
57	160628J1_57	6/29/2016 03:20:34	ST160628J1-12 PFC CS3.5 16F0705	PFC CS3.5 16F0705
58	160628J1_58	6/29/2016 03:32:48	IPA	IPA
59	160628J1_59	6/29/2016 03:44:58	1600783-03@1:10	OFPOL-MW-8-0616
60	160628J1_60	6/29/2016 03:57:12	1600783-04@1:10	OFPOL-MW-6-0616
61	160628J1_61	6/29/2016 04:09:21	1600783-05@1:10	OFPOL-MW-3-0616
62	160628J1_62	6/29/2016 04:21:35	1600783-06@1:10	OFPOL-MW-3P-0616
63	160628J1_63	6/29/2016 04:33:48	1600783-07@1:10	OFPOL-MW-2-0616
64	160628J1_64	6/29/2016 04:45:59	1600783-08@1:5	OF-MW13-0616
65	160628J1_65	6/29/2016 04:58:10	1600783-09@1:5	OF-MW11-0616
66	160628J1_66	6/29/2016 05:10:22	IPA	IPA
67	160628J1_67	6/29/2016 05:22:31	ST160628J1-13 PFC CS3.5 16F0705	PFC CS3.5 16F0705
68	160628J1_68	6/29/2016 05:34:44	IPA	IPA

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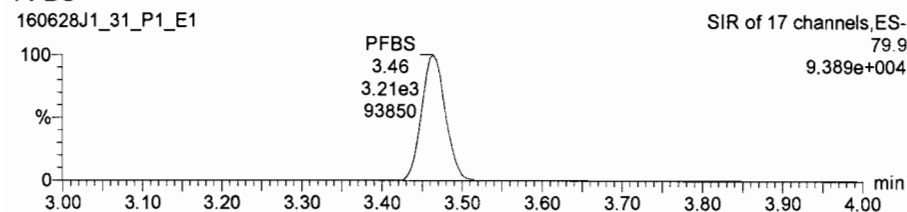
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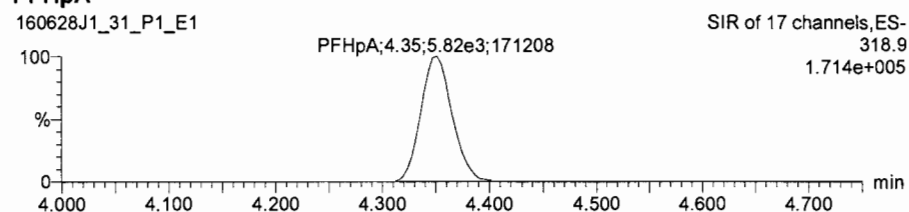
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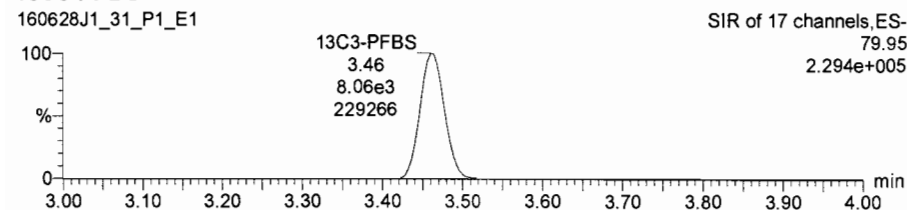
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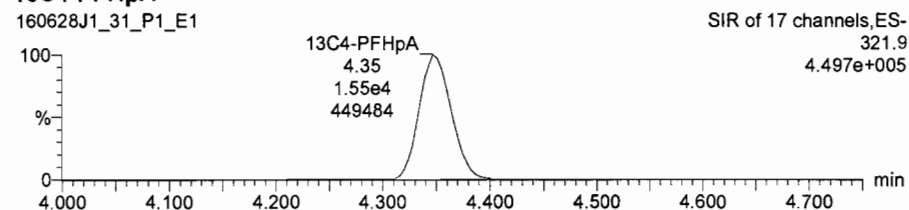
PFHpA



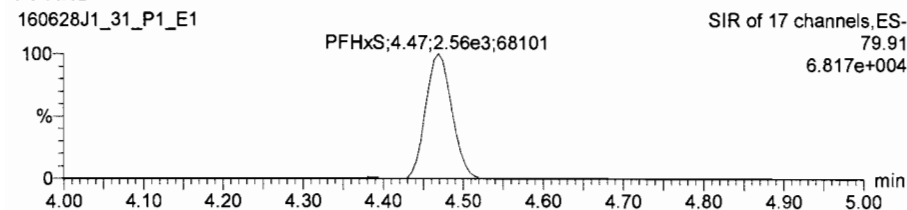
13C3-PFBS



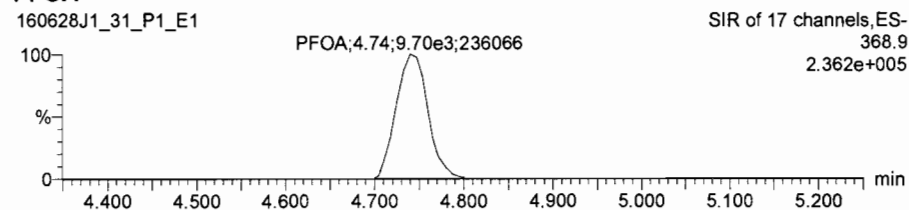
13C4-PFHpA



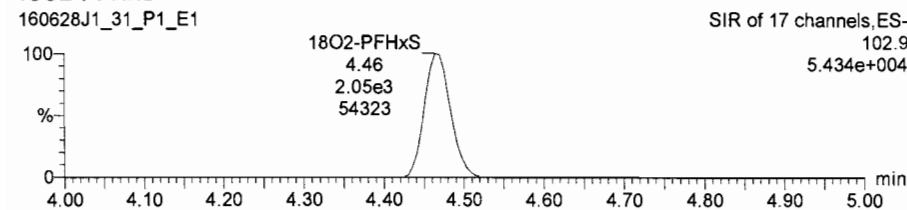
PFHxS



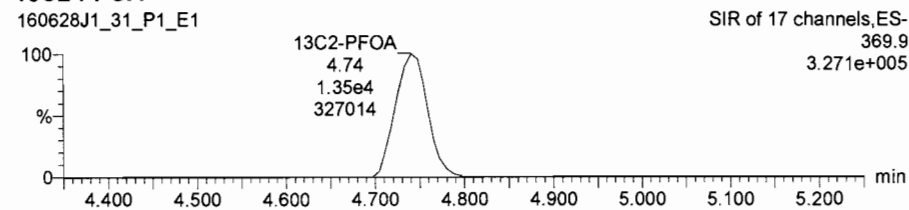
PFOA



18O2-PFHxS



13C2-PFOA



Dataset: U:\Q2.PRO\Results\160628J1\160628J_31.qld

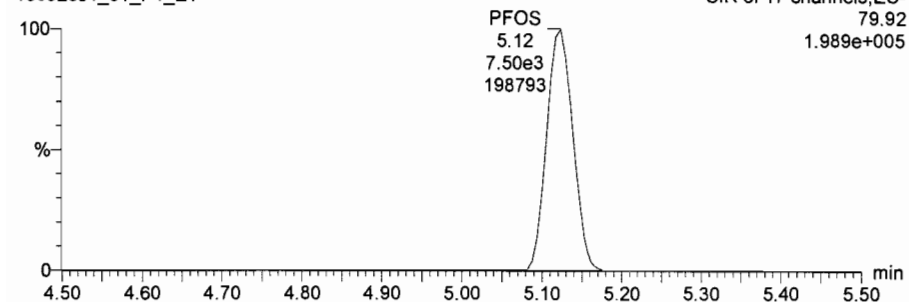
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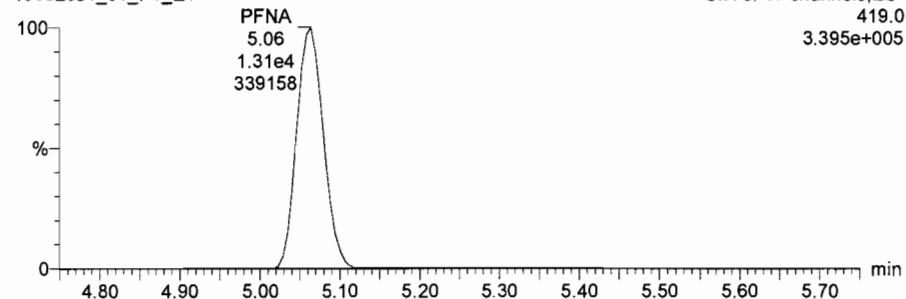
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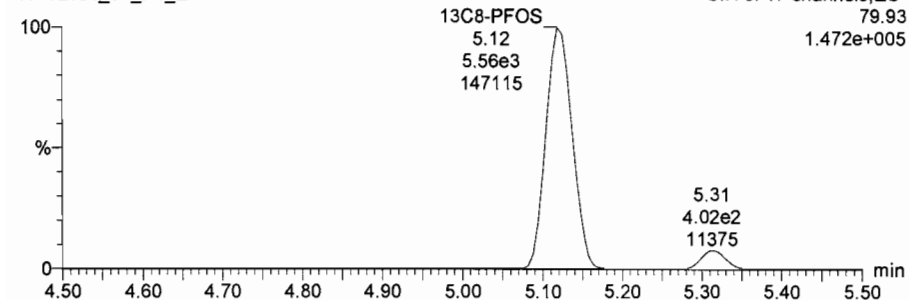
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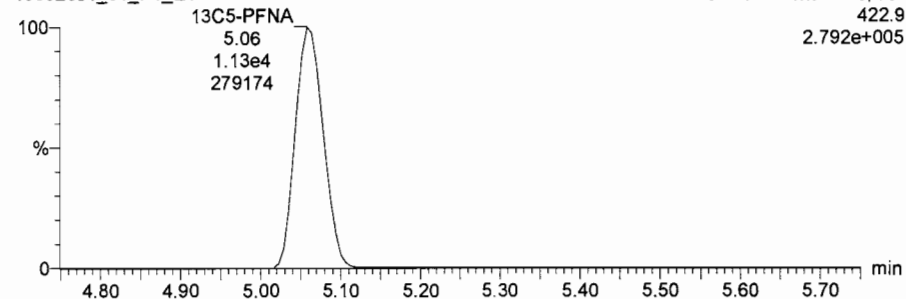
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13C5-PFNA

160628J1_31_P1_E1



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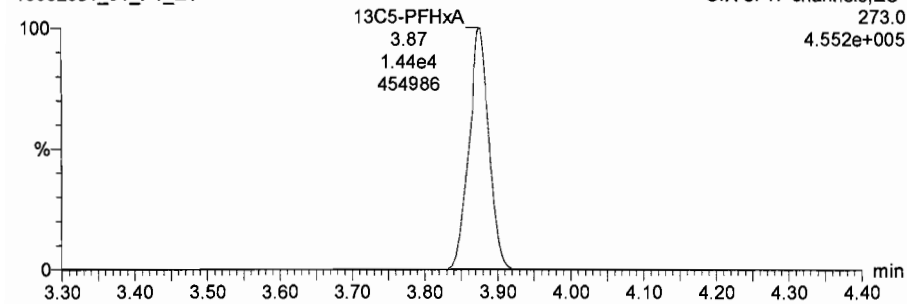
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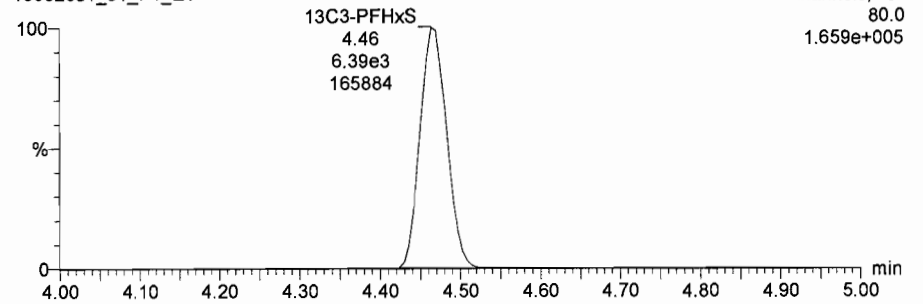
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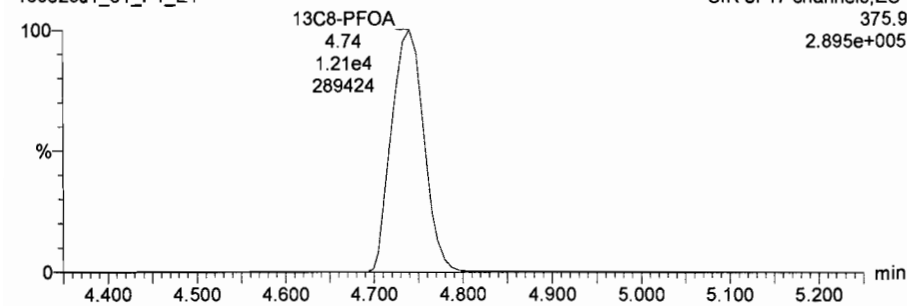
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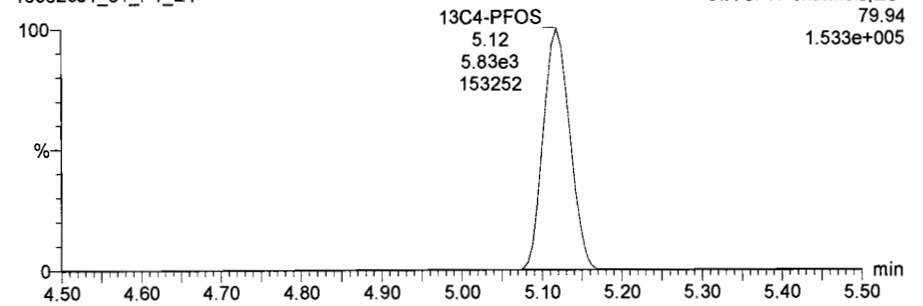
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160628J1_31_P1_E1



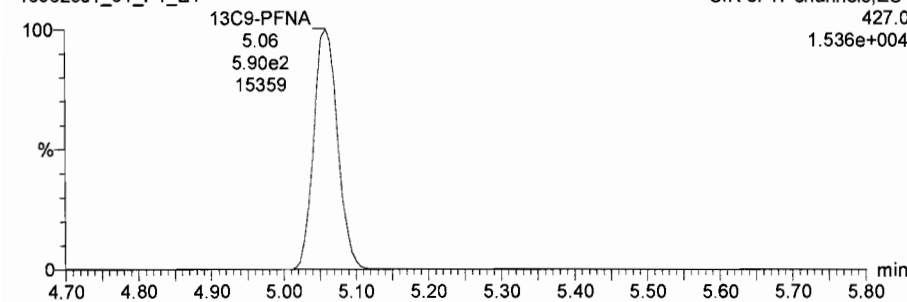
13C4-PFOS

160628J1_31_P1_E1



13C9-PFNA

160628J1_31_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J_44.qld

Last Altered: Wednesday, June 29, 2016 12:50:48 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 12:51:54 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_44.wiff, Date: 29-Jun-2016, Time: 00:41:49, ID: ST160628J1-11 PFC CS3.5 16F0705, Description: PFC CS3.5 16E0705

#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc	%Rec
1	1 PFBS	79.9	3.18e3	7.90e3		1.000	3.47	25.0	100.0
2	2 PFHpA	318.9	5.66e3	1.52e4		1.000	4.36	25.2	100.8
3	3 PFHxS	79.91	2.54e3	2.03e3		1.000	4.48	24.6	98.2
4	4 PFOA	368.9	9.62e3	1.21e4		1.000	4.75	24.2	96.8
5	5 PFOS	79.92	7.36e3	5.79e3		1.000	5.13	23.6	94.3
6	6 PFNA	419.0	1.29e4	1.19e4		1.000	5.07	24.4	97.4
7	7 13C3-PFBS	79.95	7.90e3	1.43e4	0.546	1.000	3.47	12.7	101.5
8	8 13C4-PFHpA	321.9	1.52e4	1.43e4	1.075	1.000	4.36	12.4	99.2
9	9 18O2-PFHxS	102.9	2.03e3	6.29e3	0.307	1.000	4.47	13.1	104.9
10	10 13C2-PFOA	369.9	1.21e4	1.22e4	1.042	1.000	4.75	11.9	95.2
11	11 13C8-PFOS	79.93	5.79e3	5.66e3	1.026	1.000	5.13	12.5	99.7
12	12 13C5-PFNA	422.9	1.19e4	5.72e2	21.158	1.000	5.07	12.3	98.3
13	13 13C5-PFHxA	273.0	1.43e4	1.43e4	1.000	1.000	3.89	12.5	100.0
14	14 13C3-PFHxS	80.0	6.29e3	6.29e3	1.000	1.000	4.47	12.5	100.0
15	15 13C8-PFOA	375.9	1.22e4	1.22e4	1.000	1.000	4.75	12.5	100.0
16	16 13C4-PFOS	79.94	5.66e3	5.66e3	1.000	1.000	5.13	12.5	100.0
17	17 13C9-PFNA	427.0	5.72e2	5.72e2	1.000	1.000	5.07	12.5	100.0
18	18 Total PFBS	79.9		7.90e3		1.000		25.0	
19	19 Total PFHxS	79.91		2.03e3		1.000		24.6	
20	20 Total PFOA	368.9		1.21e4		1.000		24.2	
21	21 Total PFOS	79.92		5.79e3		1.000		23.7	

75-125

↓
NA 60-150

NA

60-150

↓
50-150

PW
6/29/16

BR 6/29/16 ✓

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2	160628J1_02	6/28/2016 16:09:02	ST160628J1-1 PFC CS0 16F0701	PFC CS0 16F0701
3	160628J1_03	6/28/2016 16:21:13	ST160628J1-2 PFC CS1 16F0702	PFC CS1 16F0702
4	160628J1_04	6/28/2016 16:33:26	ST160628J1-3 PFC CS2 16F0703	PFC CS2 16F0703
5	160628J1_05	6/28/2016 16:45:38	ST160628J1-4 PFC CS3 16F0704	PFC CS3 16F0704
6	160628J1_06	6/28/2016 16:57:51	ST160628J1-5 PFC CS3.5 16F0705	PFC CS3.5 16F0705
7	160628J1_07	6/28/2016 17:10:01	ST160628J1-6 PFC CS4 16F0706	PFC CS4 16F0706
8	160628J1_08	6/28/2016 17:22:14	ST160628J1-7 PFC CS4.5 16F0707	PFC CS4.5 16F0707
9	160628J1_09	6/28/2016 17:34:27	ST160628J1-8 PFC CS5 16F0708	PFC CS5 16F0708
10	160628J1_10	6/28/2016 17:46:39	ST160628J1-9 PFC CS6 16F0709	PFC CS6 16F0709
11	160628J1_11	6/28/2016 17:58:52	IPA	IPA
12	160628J1_12	6/28/2016 18:11:06	IPA	IPA
13	160628J1_13	6/28/2016 18:23:17	SS160628J1-1 PFC SSS 16F0907	PFC SSS 16F0907
14	160628J1_14	6/28/2016 18:35:29	IPA	IPA
15	160628J1_15	6/28/2016 18:47:40	B6F0156-BS1	OPR
16	160628J1_16	6/28/2016 18:59:54	B6F0157-BS1	OPR
17	160628J1_17	6/28/2016 19:12:07	IPA	IPA
18	160628J1_18	6/28/2016 19:24:20	B6F0156-BLK1	Method Blank
19	160628J1_19	6/28/2016 19:36:32	B6F0157-BLK1	Method Blank
20	160628J1_20	6/28/2016 19:48:47	1600818-01	OF14-MW07S-0616
21	160628J1_21	6/28/2016 20:01:01	1600818-02	OF14-MW07D-0616
22	160628J1_22	6/28/2016 20:13:11	1600818-03	OF-MW14-0616
23	160628J1_23	6/28/2016 20:25:26	1600818-04	OF-MW16-0616
24	160628J1_24	6/28/2016 20:37:39	1600818-05	OF-FB062016
25	160628J1_25	6/28/2016 20:49:51	1600818-06	OF-EB062016
26	160628J1_26	6/28/2016 21:02:04	1600818-07	OF-MW15-0616
27	160628J1_27	6/28/2016 21:14:15	1600818-08	OF-MW15D-0616
28	160628J1_28	6/28/2016 21:26:29	1600818-09	OF14-MW06-0616
29	160628J1_29	6/28/2016 21:38:43	1600818-10	OF14-MW06D-0616
30	160628J1_30	6/28/2016 21:50:55	IPA	IPA
31	160628J1_31	6/28/2016 22:03:07	ST160628J1-10 PFC CS3.5 16F0705	PFC CS3.5 16F0705
32	160628J1_32	6/28/2016 22:15:20	IPA	IPA
33	160628J1_33	6/28/2016 22:27:29	1600818-11	OF-MW17-0616
34	160628J1_34	6/28/2016 22:39:43	1600818-12	OF-MW12D-0616
35	160628J1_35	6/28/2016 22:51:56	1600818-13	OF-MW12-0616
36	160628J1_36	6/28/2016 23:04:09	1600818-14	OF-MW13D-0616
37	160628J1_37	6/28/2016 23:16:23	1600818-15	OF-MW13DP-0616
38	160628J1_38	6/28/2016 23:28:36	1600818-16	OF-MW11D-0616
39	160628J1_39	6/28/2016 23:40:48	1600820-01	OF-MW10-0616
40	160628J1_40	6/28/2016 23:53:02	1600820-02	OF-MW08-0616
41	160628J1_41	6/29/2016 00:05:15	1600820-03	OF-MW08P-0616
42	160628J1_42	6/29/2016 00:17:24	1600820-04	OF-MW10D-0616
43	160628J1_43	6/29/2016 00:29:38	IPA	IPA
44	160628J1_44	6/29/2016 00:41:49	ST160628J1-11 PFC CS3.5 16F0705	PFC CS3.5 16E0705
45	160628J1_45	6/29/2016 00:54:00	IPA	IPA
46	160628J1_46	6/29/2016 01:06:12	1600820-05	OF-MW09-0616
47	160628J1_47	6/29/2016 01:18:25	1600820-06	OF-MW09D-0616
48	160628J1_48	6/29/2016 01:30:33	B6F0156-MS1	Matrix Spike
49	160628J1_49	6/29/2016 01:42:48	B6F0156-MSD1	Matrix Spike Dup
50	160628J1_50	6/29/2016 01:54:57	B6F0157-MS1	Matrix Spike
51	160628J1_51	6/29/2016 02:07:16	B6F0157-MSD1	Matrix Spike Dup
52	160628J1_52	6/29/2016 02:19:30	1600783-01@1:5	OFFPOL-MW-7-0616
53	160628J1_53	6/29/2016 02:31:44	1600783-01@1:20	OFFPOL-MW-7-0616
54	160628J1_54	6/29/2016 02:43:54	1600783-02@1:5	OFFPOL-MW-4-0616

	Sample Name	Acquisition Date	Sample ID	Sample Comment
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56	160628J1_56	6/29/2016 03:08:22	IPA	IPA
57	160628J1_57	6/29/2016 03:20:34	ST160628J1-12 PFC CS3.5 16F0705	PFC CS3.5 16F0705
58	160628J1_58	6/29/2016 03:32:48	IPA	IPA
59	160628J1_59	6/29/2016 03:44:58	1600783-03@1:10	OFFPOL-MW-8-0616
60	160628J1_60	6/29/2016 03:57:12	1600783-04@1:10	OFFPOL-MW-6-0616
61	160628J1_61	6/29/2016 04:09:21	1600783-05@1:10	OFFPOL-MW-3-0616
62	160628J1_62	6/29/2016 04:21:35	1600783-06@1:10	OFFPOL-MW-3P-0616
63	160628J1_63	6/29/2016 04:33:48	1600783-07@1:10	OFFPOL-MW-2-0616
64	160628J1_64	6/29/2016 04:45:59	1600783-08@1:5	OF-MW13-0616
65	160628J1_65	6/29/2016 04:58:10	1600783-09@1:5	OF-MW11-0616
66	160628J1_66	6/29/2016 05:10:22	IPA	IPA
67	160628J1_67	6/29/2016 05:22:31	ST160628J1-13 PFC CS3.5 16F0705	PFC CS3.5 16F0705
68	160628J1_68	6/29/2016 05:34:44	IPA	IPA

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Printed: Wednesday, June 29, 2016 12:52:07 Pacific Daylight Time

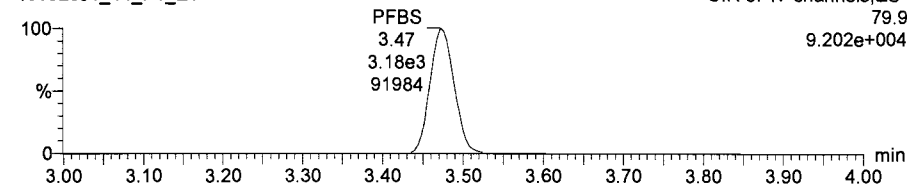
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Calibration: U:\Q2.PRO\CurveDB\IC18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

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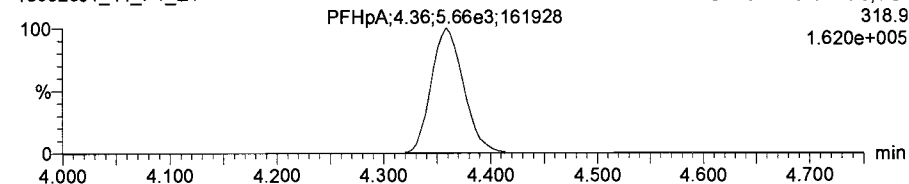
PFBS

160628J1_44_P1_E1



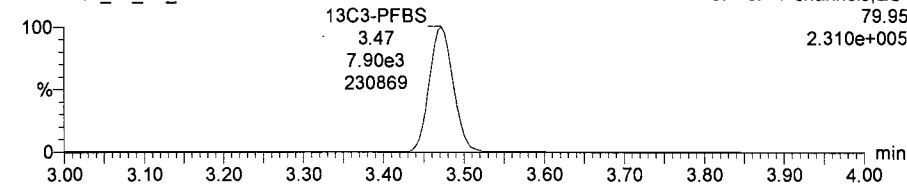
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160628J1_44_P1_E1



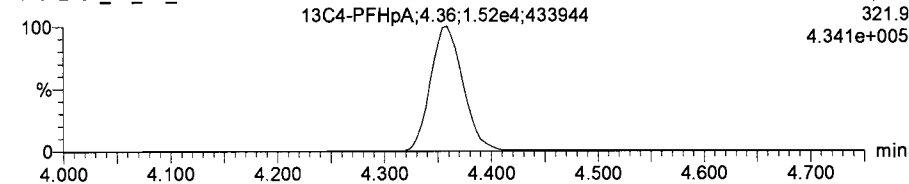
13C3-PFBS

160628J1_44_P1_E1



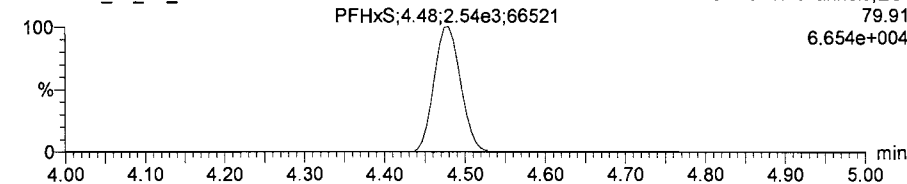
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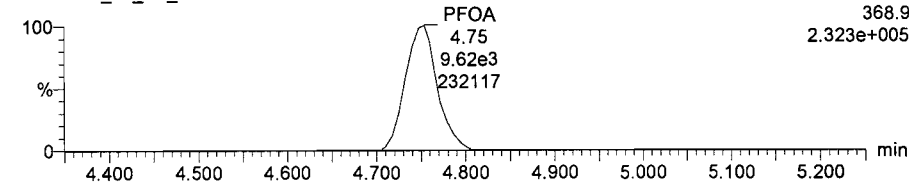
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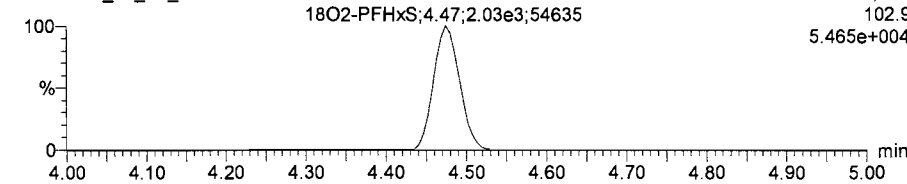
PFOA

160628J1_44_P1_E1



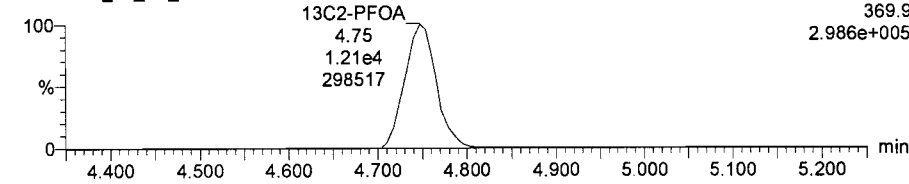
18O2-PFHxS

160628J1_44_P1_E1



13C2-PFOA

160628J1_44_P1_E1



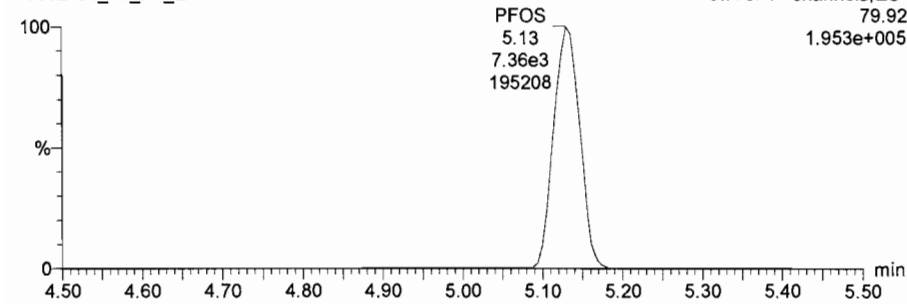
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Printed: Wednesday, June 29, 2016 12:52:07 Pacific Daylight Time

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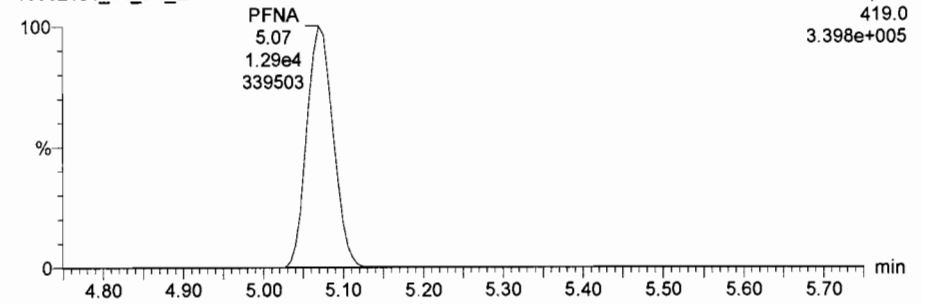
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160628J1_44_P1_E1



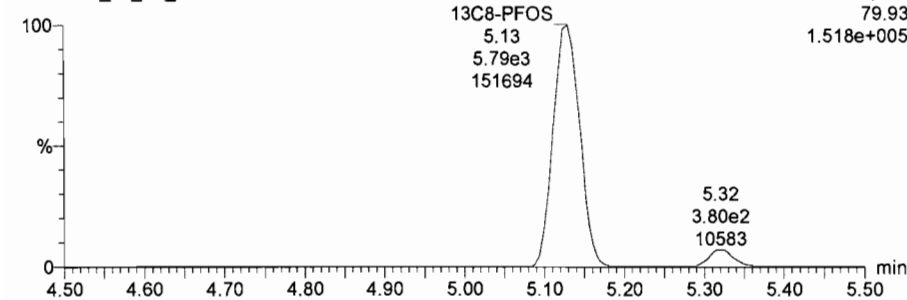
PFNA

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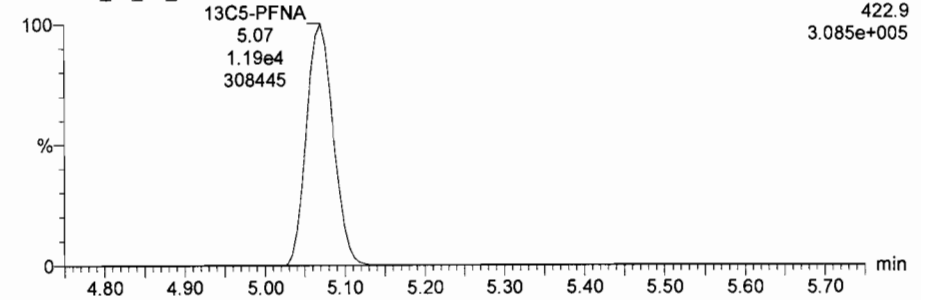
13C8-PFOS

160628J1_44_P1_E1



13C5-PFNA

160628J1_44_P1_E1



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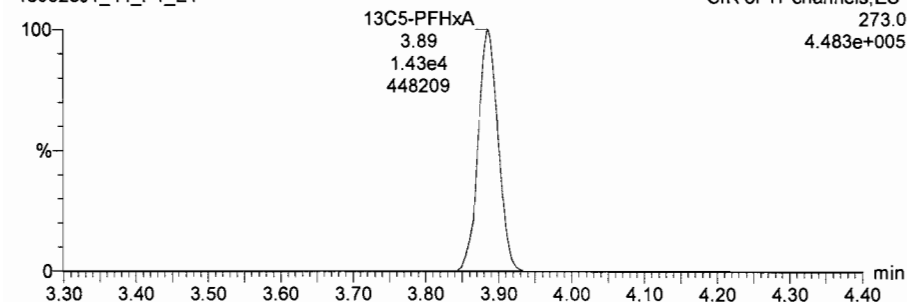
Last Altered: Wednesday, June 29, 2016 12:50:48 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 12:52:07 Pacific Daylight Time

Name: 160628J1_44.wiff, Date: 29-Jun-2016, Time: 00:41:49, ID: ST160628J1-11 PFC CS3.5 16F0705, Description: PFC CS3.5 16E0705

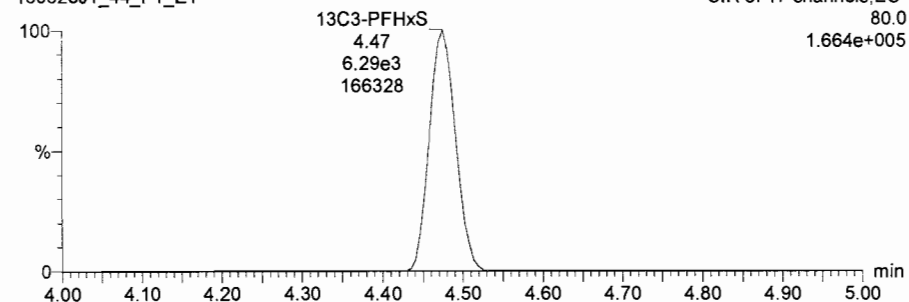
13C5-PFHxA

160628J1_44_P1_E1



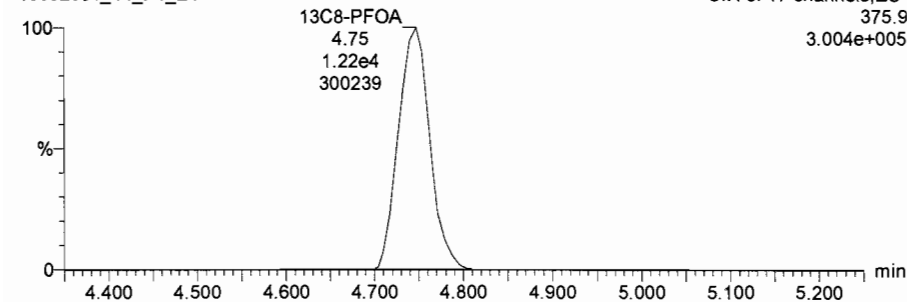
13C3-PFHxS

160628J1_44_P1_E1



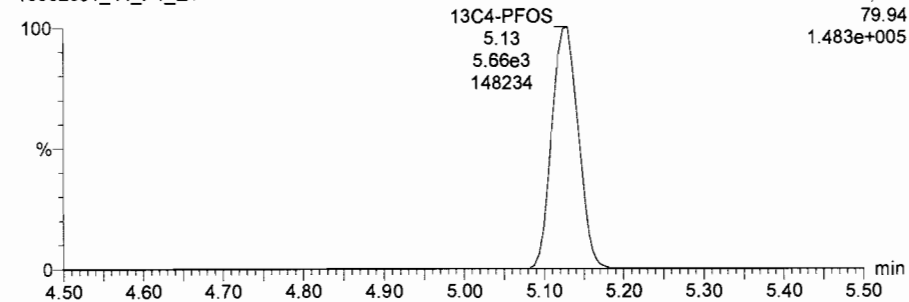
13C8-PFOA

160628J1_44_P1_E1



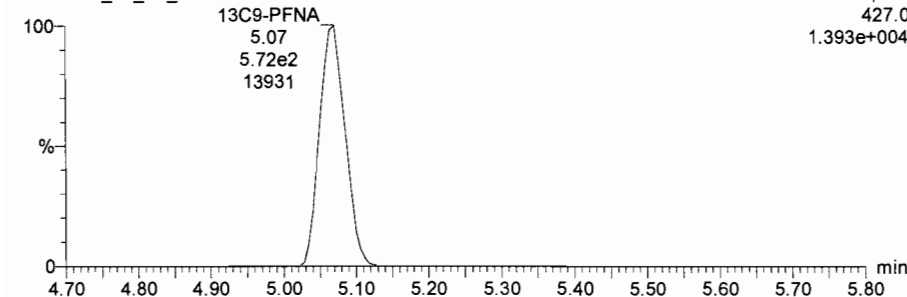
13C4-PFOS

160628J1_44_P1_E1



13C9-PFNA

160628J1_44_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J_57.qld

Last Altered: Wednesday, June 29, 2016 12:53:56 Pacific Daylight Time
 Printed: Wednesday, June 29, 2016 12:54:24 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50
 Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_57.wiff, Date: 29-Jun-2016, Time: 03:20:34, ID: ST160628J1-12 PFC CS3.5 16F0705, Description: PFC CS3.5 16F0705

#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	79.9	3.18e3	7.93e3		1.000	3.47	24.9	99.8
2	2 PFHpA	318.9	5.76e3	1.56e4		1.000	4.35	25.0	99.8
3	3 PFHxS	79.91	2.50e3	2.03e3		1.000	4.47	24.1	96.5
4	4 PFOA	368.9	9.52e3	1.24e4		1.000	4.74	23.4	93.6
5	5 PFOS	79.92	7.27e3	5.68e3		1.000	5.13	23.8	95.0
6	6 PFNA	419.0	1.29e4	1.22e4		1.000	5.07	23.7	94.8
7	7 13C3-PFBS	79.95	7.93e3	1.42e4	0.546	1.000	3.47	12.8	102.3
8	8 13C4-PFHpA	321.9	1.56e4	1.42e4	1.075	1.000	4.35	12.8	102.3
9	9 18O2-PFHxS	102.9	2.03e3	6.48e3	0.307	1.000	4.47	12.7	101.9
10	10 13C2-PFOA	369.9	1.24e4	1.22e4	1.042	1.000	4.74	12.2	97.4
11	11 13C8-PFOS	79.93	5.68e3	5.39e3	1.026	1.000	5.12	12.8	102.8
12	12 13C5-PFNA	422.9	1.22e4	5.64e2	21.158	1.000	5.06	12.8	102.3
13	13 13C5-PFHxA	273.0	1.42e4	1.42e4	1.000	1.000	3.88	12.5	100.0
14	14 13C3-PFHxS	80.0	6.48e3	6.48e3	1.000	1.000	4.47	12.5	100.0
15	15 13C8-PFOA	375.9	1.22e4	1.22e4	1.000	1.000	4.74	12.5	100.0
16	16 13C4-PFOS	79.94	5.39e3	5.39e3	1.000	1.000	5.12	12.5	100.0
17	17 13C9-PFNA	427.0	5.64e2	5.64e2	1.000	1.000	5.06	12.5	100.0
18	18 Total PFBS	79.9		7.93e3		1.000		24.9	
19	19 Total PFHxS	79.91		2.03e3		1.000		24.1	
20	20 Total PFOA	368.9		1.24e4		1.000		23.4	
21	21 Total PFOS	79.92		5.68e3		1.000		23.8	

75-125
 ↓
 NA 60-150
 NA
 60-150
 ↓
 50-150

PW
 2/29/16
 BR 6/29/16 ✓

	Sample Name	Acquisition Date	Sample ID	Sample Comment
1	160628J1_01	6/28/2016 15:56:50	IPA	IPA
2	160628J1_02	6/28/2016 16:09:02	ST160628J1-1 PFC CS0 16F0701	PFC CS0 16F0701
3	160628J1_03	6/28/2016 16:21:13	ST160628J1-2 PFC CS1 16F0702	PFC CS1 16F0702
4	160628J1_04	6/28/2016 16:33:26	ST160628J1-3 PFC CS2 16F0703	PFC CS2 16F0703
5	160628J1_05	6/28/2016 16:45:38	ST160628J1-4 PFC CS3 16F0704	PFC CS3 16F0704
6	160628J1_06	6/28/2016 16:57:51	ST160628J1-5 PFC CS3.5 16F0705	PFC CS3.5 16F0705
7	160628J1_07	6/28/2016 17:10:01	ST160628J1-6 PFC CS4 16F0706	PFC CS4 16F0706
8	160628J1_08	6/28/2016 17:22:14	ST160628J1-7 PFC CS4.5 16F0707	PFC CS4.5 16F0707
9	160628J1_09	6/28/2016 17:34:27	ST160628J1-8 PFC CS5 16F0708	PFC CS5 16F0708
10	160628J1_10	6/28/2016 17:46:39	ST160628J1-9 PFC CS6 16F0709	PFC CS6 16F0709
11	160628J1_11	6/28/2016 17:58:52	IPA	IPA
12	160628J1_12	6/28/2016 18:11:06	IPA	IPA
13	160628J1_13	6/28/2016 18:23:17	SS160628J1-1 PFC SSS 16F0907	PFC SSS 16F0907
14	160628J1_14	6/28/2016 18:35:29	IPA	IPA
15	160628J1_15	6/28/2016 18:47:40	B6F0156-BS1	OPR
16	160628J1_16	6/28/2016 18:59:54	B6F0157-BS1	OPR
17	160628J1_17	6/28/2016 19:12:07	IPA	IPA
18	160628J1_18	6/28/2016 19:24:20	B6F0156-BLK1	Method Blank
19	160628J1_19	6/28/2016 19:36:32	B6F0157-BLK1	Method Blank
20	160628J1_20	6/28/2016 19:48:47	1600818-01	OF14-MW07S-0616
21	160628J1_21	6/28/2016 20:01:01	1600818-02	OF14-MW07D-0616
22	160628J1_22	6/28/2016 20:13:11	1600818-03	OF-MW14-0616
23	160628J1_23	6/28/2016 20:25:26	1600818-04	OF-MW16-0616
24	160628J1_24	6/28/2016 20:37:39	1600818-05	OF-FB062016
25	160628J1_25	6/28/2016 20:49:51	1600818-06	OF-EB062016
26	160628J1_26	6/28/2016 21:02:04	1600818-07	OF-MW15-0616
27	160628J1_27	6/28/2016 21:14:15	1600818-08	OF-MW15D-0616
28	160628J1_28	6/28/2016 21:26:29	1600818-09	OF14-MW06-0616
29	160628J1_29	6/28/2016 21:38:43	1600818-10	OF14-MW06D-0616
30	160628J1_30	6/28/2016 21:50:55	IPA	IPA
31	160628J1_31	6/28/2016 22:03:07	ST160628J1-10 PFC CS3.5 16F0705	PFC CS3.5 16F0705
32	160628J1_32	6/28/2016 22:15:20	IPA	IPA
33	160628J1_33	6/28/2016 22:27:29	1600818-11	OF-MW17-0616
34	160628J1_34	6/28/2016 22:39:43	1600818-12	OF-MW12D-0616
35	160628J1_35	6/28/2016 22:51:56	1600818-13	OF-MW12-0616
36	160628J1_36	6/28/2016 23:04:09	1600818-14	OF-MW13D-0616
37	160628J1_37	6/28/2016 23:16:23	1600818-15	OF-MW13DP-0616
38	160628J1_38	6/28/2016 23:28:36	1600818-16	OF-MW11D-0616
39	160628J1_39	6/28/2016 23:40:48	1600820-01	OF-MW10-0616
40	160628J1_40	6/28/2016 23:53:02	1600820-02	OF-MW08-0616
41	160628J1_41	6/29/2016 00:05:15	1600820-03	OF-MW08P-0616
42	160628J1_42	6/29/2016 00:17:24	1600820-04	OF-MW10D-0616
43	160628J1_43	6/29/2016 00:29:38	IPA	IPA
44	160628J1_44	6/29/2016 00:41:49	ST160628J1-11 PFC CS3.5 16F0705	PFC CS3.5 16E0705
45	160628J1_45	6/29/2016 00:54:00	IPA	IPA
46	160628J1_46	6/29/2016 01:06:12	1600820-05	OF-MW09-0616
47	160628J1_47	6/29/2016 01:18:25	1600820-06	OF-MW09D-0616
48	160628J1_48	6/29/2016 01:30:33	B6F0156-MS1	Matrix Spike
49	160628J1_49	6/29/2016 01:42:48	B6F0156-MSD1	Matrix Spike Dup
50	160628J1_50	6/29/2016 01:54:57	B6F0157-MS1	Matrix Spike
51	160628J1_51	6/29/2016 02:07:16	B6F0157-MSD1	Matrix Spike Dup
52	160628J1_52	6/29/2016 02:19:30	1600783-01@1:5	OFFPOL-MW-7-0616
53	160628J1_53	6/29/2016 02:31:44	1600783-01@1:20	OFFPOL-MW-7-0616
54	160628J1_54	6/29/2016 02:43:54	1600783-02@1:5	OFFPOL-MW-4-0616

	Sample Name	Acquisition Date	Sample ID	Sample Comment
55	160628J1_55	6/29/2016 02:56:06	1600783-02@1:20	OFFPOL-MW-4-0616
56	160628J1_56	6/29/2016 03:08:22	IPA	IPA
57	160628J1_57	6/29/2016 03:20:34	ST160628J1-12 PFC CS3.5 16F0705	PFC CS3.5 16F0705
58	160628J1_58	6/29/2016 03:32:48	IPA	IPA
59	160628J1_59	6/29/2016 03:44:58	1600783-03@1:10	OFFPOL-MW-8-0616
60	160628J1_60	6/29/2016 03:57:12	1600783-04@1:10	OFFPOL-MW-6-0616
61	160628J1_61	6/29/2016 04:09:21	1600783-05@1:10	OFFPOL-MW-3-0616
62	160628J1_62	6/29/2016 04:21:35	1600783-06@1:10	OFFPOL-MW-3P-0616
63	160628J1_63	6/29/2016 04:33:48	1600783-07@1:10	OFFPOL-MW-2-0616
64	160628J1_64	6/29/2016 04:45:59	1600783-08@1:5	OF-MW13-0616
65	160628J1_65	6/29/2016 04:58:10	1600783-09@1:5	OF-MW11-0616
66	160628J1_66	6/29/2016 05:10:22	IPA	IPA
67	160628J1_67	6/29/2016 05:22:31	ST160628J1-13 PFC CS3.5 16F0705	PFC CS3.5 16F0705
68	160628J1_68	6/29/2016 05:34:44	IPA	IPA

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Last Altered: Wednesday, June 29, 2016 12:53:56 Pacific Daylight Time

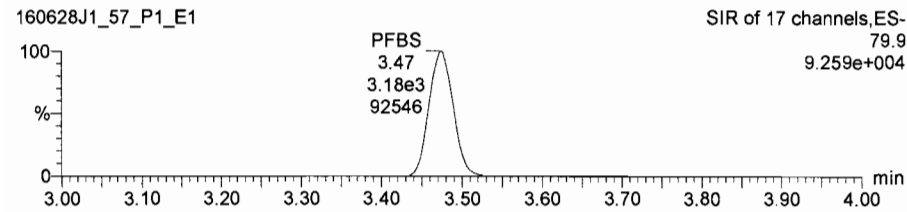
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Method: U:\Q2.PRO\MethDB\PFIC List 6.mdb 13 Jun 2016 10:04:50

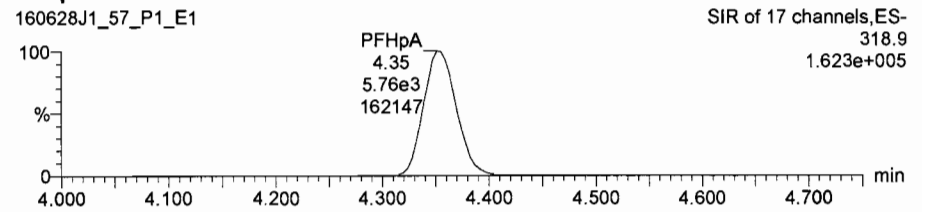
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Name: 160628J1_57.wiff, Date: 29-Jun-2016, Time: 03:20:34, ID: ST160628J1-12 PFC CS3.5 16F0705, Description: PFC CS3.5 16F0705

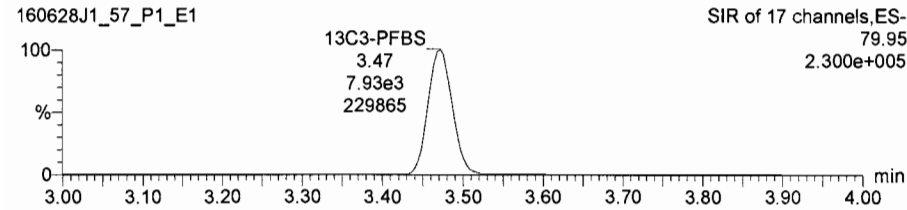
PFBS



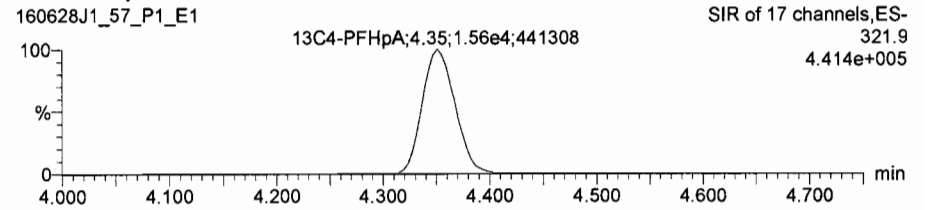
PFHpA



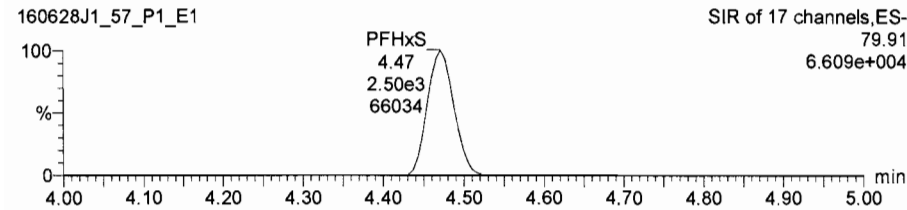
13C3-PFBS



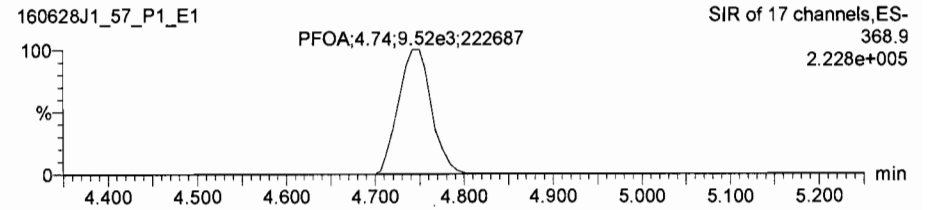
13C4-PFHpA



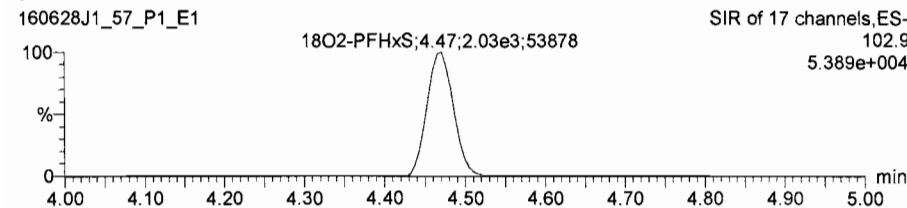
PFHxS



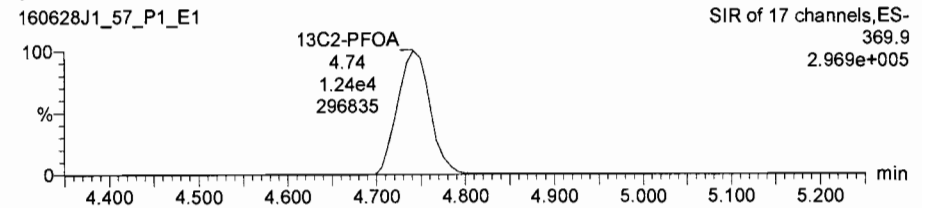
PFOA



18O2-PFHxS



13C2-PFOA



Dataset: U:\Q2.PRO\Results\160628J1\160628J_57.qld

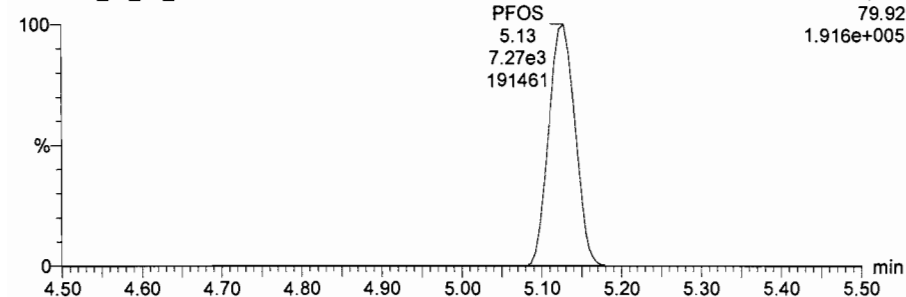
Last Altered: Wednesday, June 29, 2016 12:53:56 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 12:54:14 Pacific Daylight Time

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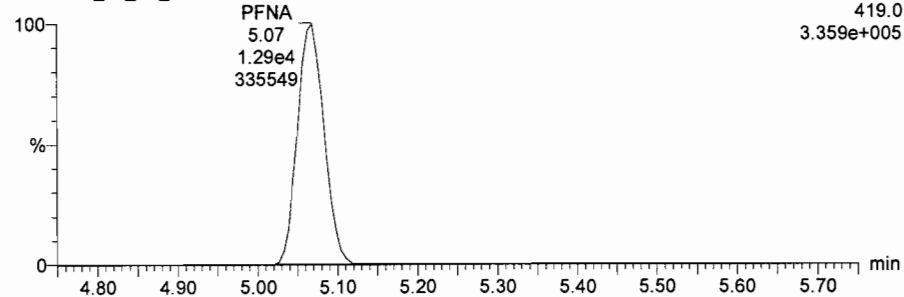
PFOS

160628J1_57_P1_E1



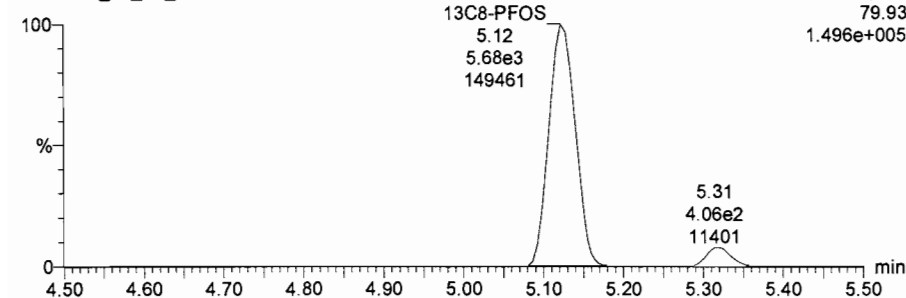
PFNA

160628J1_57_P1_E1



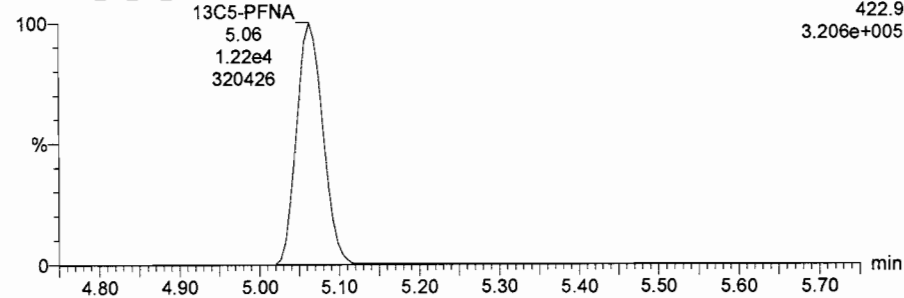
13C8-PFOS

160628J1_57_P1_E1



13C5-PFNA

160628J1_57_P1_E1



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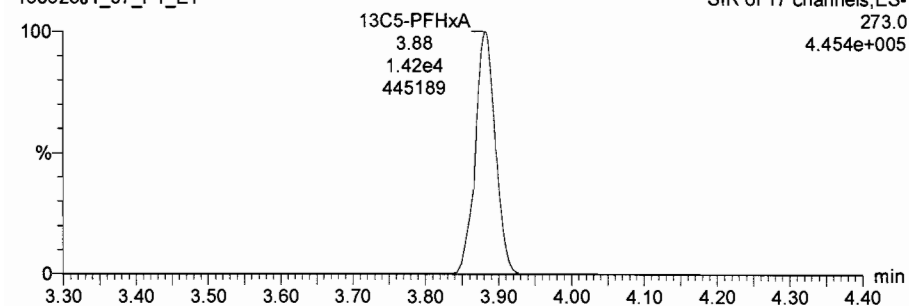
Last Altered: Wednesday, June 29, 2016 12:53:56 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 12:54:14 Pacific Daylight Time

Name: 160628J1_57.wiff, Date: 29-Jun-2016, Time: 03:20:34, ID: ST160628J1-12 PFC CS3.5 16F0705, Description: PFC CS3.5 16F0705

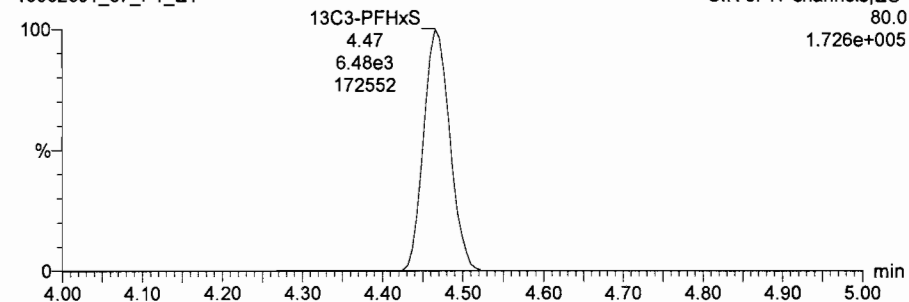
13C5-PFHxA

160628J1_57_P1_E1



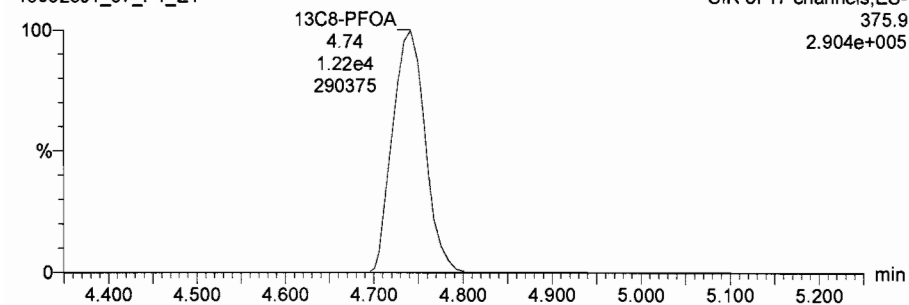
13C3-PFHxS

160628J1_57_P1_E1



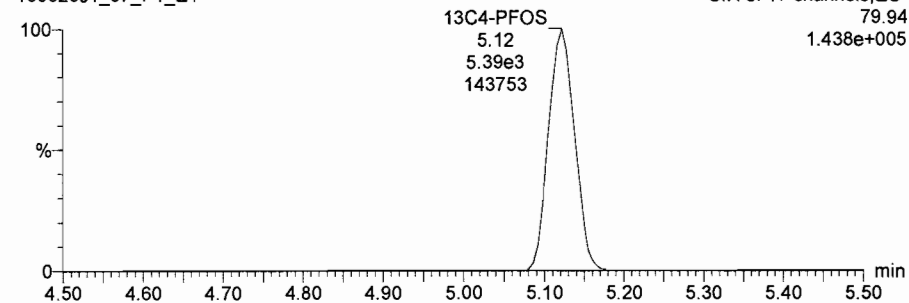
13C8-PFOA

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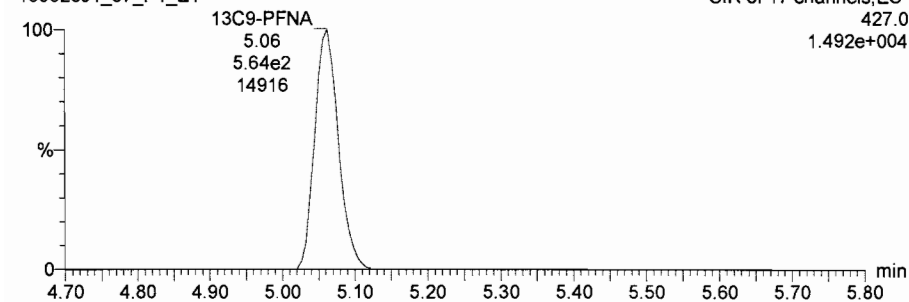
13C4-PFOS

160628J1_57_P1_E1



13C9-PFNA

160628J1_57_P1_E1



INITIAL CALIBRATION

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160628J1\160628J1.crv.qld

Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:55:49 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Compound name: PFBS

Coefficient of Determination: $R^2 = 0.999029$

Calibration curve: $-5.7982e-005 * x^2 + 0.202603 * x$

Response type: Internal Std (Ref 7), 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 160628J1_02_P1_...	1.00	3.48	1.69e2	9.01e3	1.16	15.7	0.234
2	2 160628J1_03_P1_...	2.00	3.47	3.62e2	9.75e3	2.29	14.5	0.232
3	3 160628J1_04_P1_...	5.00	3.47	8.11e2	8.66e3	5.79	15.8	0.234
4	4 160628J1_05_P1_...	10.0	3.48	1.39e3	8.29e3	10.3	3.5	0.209
5	5 160628J1_06_P1_...	25.0	3.47	3.37e3	8.26e3	25.4	1.4	0.204
6	6 160628J1_07_P1_...	50.0	3.47	7.26e3	9.27e3	49.0	-2.0	0.196
7	7 160628J1_08_P1_...	75.0	3.46	9.43e3	7.81e3	76.1	1.5	0.201
8	8 160628J1_09_P1_...	100	3.47	1.23e4	8.08e3	96.3	-3.7	0.190
9	9 160628J1_10_P1_...	200	3.47	2.41e4	7.81e3	202	0.9	0.193

PW
 3/ 6/29/16
 PW
 6/29/16
 BR 6/29/16 ✓

Compound name: PFHpA

Coefficient of Determination: $R^2 = 0.999129$

Calibration curve: $-9.64025e-005 * x^2 + 0.187132 * x$

Response type: Internal Std (Ref 8), 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 160628J1_02_P1_...	1.00	4.37	2.97e2	1.66e4	1.20	19.8	0.224
2	2 160628J1_03_P1_...	2.00	4.35	6.36e2	1.88e4	2.27	13.3	0.212
3	3 160628J1_04_P1_...	5.00	4.35	1.46e3	1.70e4	5.74	14.8	0.214
4	4 160628J1_05_P1_...	10.0	4.36	2.38e3	1.56e4	10.2	2.4	0.191
5	5 160628J1_06_P1_...	25.0	4.35	5.83e3	1.54e4	25.6	2.6	0.189
6	6 160628J1_07_P1_...	50.0	4.35	1.26e4	1.82e4	47.5	-5.0	0.173
7	7 160628J1_08_P1_...	75.0	4.35	1.77e4	1.65e4	74.9	-0.1	0.180
8	8 160628J1_09_P1_...	100	4.35	2.36e4	1.67e4	99.7	-0.3	0.177
9	9 160628J1_10_P1_...	200	4.35	4.51e4	1.67e4	201	0.4	0.168

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:55:49 Pacific Daylight Time

Compound name: PFHxS

Coefficient of Determination: $R^2 = 0.998712$

Calibration curve: $-0.000163172 * x^2 + 0.642268 * x$

Response type: Internal Std (Ref 9), 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 160628J1_02_P1_...	1.00	4.48	1.33e2	2.17e3	1.20	19.8	0.769
2	2 160628J1_03_P1_...	2.00	4.47	2.90e2	2.39e3	2.36	17.8	0.756
3	3 160628J1_04_P1_...	5.00	4.47	6.29e2	2.12e3	5.77	15.5	0.741
4	4 160628J1_05_P1_...	10.0	4.48	1.19e3	2.07e3	11.3	12.7	0.722
5	5 160628J1_06_P1_...	25.0	4.47	2.63e3	2.06e3	25.0	0.1	0.639
6	6 160628J1_07_P1_...	50.0	4.47	5.96e3	2.44e3	48.1	-3.9	0.610
7	7 160628J1_08_P1_...	75.0	4.46	8.10e3	2.15e3	74.8	-0.2	0.629
8	8 160628J1_09_P1_...	100	4.47	1.05e4	2.15e3	97.9	-2.1	0.613
9	9 160628J1_10_P1_...	200	4.47	2.06e4	2.09e3	202	0.8	0.614

Compound name: PFOA

Coefficient of Determination: $R^2 = 0.998790$

Calibration curve: $-0.000525715 * x^2 + 0.423933 * x$

Response type: Internal Std (Ref 10), 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 160628J1_02_P1_...	1.00	4.76	5.61e2	1.48e4	1.12	11.9	0.474
2	2 160628J1_03_P1_...	2.00	4.75	1.06e3	1.36e4	2.31	15.6	0.489
3	3 160628J1_04_P1_...	5.00	4.75	2.71e3	1.44e4	5.57	11.4	0.469
4	4 160628J1_05_P1_...	10.0	4.75	4.19e3	1.24e4	10.1	0.7	0.422
5	5 160628J1_06_P1_...	25.0	4.75	1.03e4	1.35e4	23.2	-7.3	0.382
6	6 160628J1_07_P1_...	50.0	4.75	2.27e4	1.40e4	51.1	2.3	0.406
7	7 160628J1_08_P1_...	75.0	4.75	3.02e4	1.28e4	76.9	2.5	0.393
8	8 160628J1_09_P1_...	100	4.74	3.87e4	1.34e4	96.7	-3.3	0.361
9	9 160628J1_10_P1_...	200	4.75	7.27e4	1.42e4	201	0.6	0.320

Dataset: U:\Q2.PRO\Results\160628J1\160628J1 crv.qld

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Compound name: PFOS

Coefficient of Determination: R² = 0.998757

Calibration curve: -0.000490003 * x² + 0.684949 * x

Response type: Internal Std (Ref 11), 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 160628J1_02_P1_...	1.00	5.13	3.82e2	6.03e3	1.16	15.8	0.792
2	2 160628J1_03_P1_...	2.00	5.12	7.96e2	6.36e3	2.29	14.4	0.783
3	3 160628J1_04_P1_...	5.00	5.12	2.13e3	6.90e3	5.66	13.3	0.773
4	4 160628J1_05_P1_...	10.0	5.13	3.58e3	6.13e3	10.8	7.5	0.731
5	5 160628J1_06_P1_...	25.0	5.13	7.87e3	6.00e3	24.3	-2.6	0.655
6	6 160628J1_07_P1_...	50.0	5.13	1.85e4	7.14e3	49.0	-2.0	0.648
7	7 160628J1_08_P1_...	75.0	5.12	2.55e4	6.84e3	71.7	-4.5	0.621
8	8 160628J1_09_P1_...	100	5.12	3.18e4	6.08e3	103	3.1	0.654
9	9 160628J1_10_P1_...	200	5.13	6.29e4	6.70e3	200	0.0	0.587

Compound name: PFNA

Coefficient of Determination: R² = 0.998256

Calibration curve: -0.000543361 * x² + 0.571042 * x

Response type: Internal Std (Ref 12), 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 160628J1_02_P1_...	1.00	5.07	6.82e2	1.24e4	1.20	20.2	0.686
2	2 160628J1_03_P1_...	2.00	5.06	1.53e3	1.34e4	2.50	25.1	0.713
3	3 160628J1_04_P1_...	5.00	5.06	3.78e3	1.43e4	5.81	16.2	0.660
4	4 160628J1_05_P1_...	10.0	5.07	6.38e3	1.26e4	11.2	11.7	0.631
5	5 160628J1_06_P1_...	25.0	5.07	1.37e4	1.29e4	23.7	-5.2	0.529
6	6 160628J1_07_P1_...	50.0	5.06	3.20e4	1.47e4	49.8	-0.4	0.542
7	7 160628J1_08_P1_...	75.0	5.06	4.25e4	1.34e4	74.7	-0.4	0.529
8	8 160628J1_09_P1_...	100	5.06	5.40e4	1.34e4	97.0	-3.0	0.503
9	9 160628J1_10_P1_...	200	5.07	1.01e5	1.35e4	202	1.1	0.466

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Compound name: 13C3-PFBS

Response Factor: 0.545966

RRF SD: 0.0193303, Relative SD: 3.54057

Response type: Internal Std (Ref 13), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	3.48	9.01e3	1.56e4	13.2	5.4	0.576
2	2 160628J1_03_P1_...	12.5	3.47	9.75e3	1.74e4	12.9	2.8	0.561
3	3 160628J1_04_P1_...	12.5	3.47	8.66e3	1.61e4	12.3	-1.8	0.536
4	4 160628J1_05_P1_...	12.5	3.48	8.29e3	1.51e4	12.5	0.3	0.548
5	5 160628J1_06_P1_...	12.5	3.46	8.26e3	1.48e4	12.8	2.5	0.560
6	6 160628J1_07_P1_...	12.5	3.46	9.27e3	1.67e4	12.7	1.8	0.556
7	7 160628J1_08_P1_...	12.5	3.46	7.81e3	1.46e4	12.3	-1.7	0.537
8	8 160628J1_09_P1_...	12.5	3.47	8.08e3	1.54e4	12.0	-3.7	0.526
9	9 160628J1_10_P1_...	12.5	3.47	7.81e3	1.52e4	11.8	-5.7	0.515

Compound name: 13C4-PFHpA

Response Factor: 1.07533

RRF SD: 0.0319761, Relative SD: 2.97361

Response type: Internal Std (Ref 13), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	4.36	1.66e4	1.56e4	12.3	-1.5	1.06
2	2 160628J1_03_P1_...	12.5	4.35	1.88e4	1.74e4	12.6	0.5	1.08
3	3 160628J1_04_P1_...	12.5	4.35	1.70e4	1.61e4	12.2	-2.0	1.05
4	4 160628J1_05_P1_...	12.5	4.36	1.56e4	1.51e4	12.0	-4.2	1.03
5	5 160628J1_06_P1_...	12.5	4.35	1.54e4	1.48e4	12.1	-3.1	1.04
6	6 160628J1_07_P1_...	12.5	4.35	1.82e4	1.67e4	12.7	1.5	1.09
7	7 160628J1_08_P1_...	12.5	4.34	1.65e4	1.46e4	13.1	5.1	1.13
8	8 160628J1_09_P1_...	12.5	4.35	1.67e4	1.54e4	12.6	1.0	1.09
9	9 160628J1_10_P1_...	12.5	4.35	1.67e4	1.52e4	12.8	2.6	1.10

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Compound name: 18O2-PFHxS

Response Factor: 0.307222

RRF SD: 0.0081325, Relative SD: 2.64711

Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	4.48	2.17e3	6.89e3	12.8	2.4	0.315
2	2 160628J1_03_P1_...	12.5	4.47	2.39e3	7.96e3	12.2	-2.2	0.300
3	3 160628J1_04_P1_...	12.5	4.46	2.12e3	7.23e3	11.9	-4.4	0.294
4	4 160628J1_05_P1_...	12.5	4.47	2.07e3	6.79e3	12.4	-0.9	0.304
5	5 160628J1_06_P1_...	12.5	4.47	2.06e3	6.69e3	12.5	0.0	0.307
6	6 160628J1_07_P1_...	12.5	4.47	2.44e3	7.73e3	12.9	2.9	0.316
7	7 160628J1_08_P1_...	12.5	4.46	2.15e3	6.77e3	12.9	3.2	0.317
8	8 160628J1_09_P1_...	12.5	4.47	2.15e3	7.15e3	12.2	-2.2	0.301
9	9 160628J1_10_P1_...	12.5	4.47	2.09e3	6.73e3	12.7	1.2	0.311

Compound name: 13C2-PFOA

Response Factor: 1.0416

RRF SD: 0.0655859, Relative SD: 6.29663

Response type: Internal Std (Ref 15), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	4.76	1.48e4	1.28e4	13.9	11.0	1.16
2	2 160628J1_03_P1_...	12.5	4.75	1.36e4	1.43e4	11.4	-8.7	0.951
3	3 160628J1_04_P1_...	12.5	4.75	1.44e4	1.33e4	13.0	4.4	1.09
4	4 160628J1_05_P1_...	12.5	4.75	1.24e4	1.25e4	12.0	-4.4	0.996
5	5 160628J1_06_P1_...	12.5	4.74	1.35e4	1.26e4	12.8	2.5	1.07
6	6 160628J1_07_P1_...	12.5	4.74	1.40e4	1.42e4	11.8	-5.3	0.986
7	7 160628J1_08_P1_...	12.5	4.74	1.28e4	1.27e4	12.1	-3.2	1.01
8	8 160628J1_09_P1_...	12.5	4.74	1.34e4	1.31e4	12.2	-2.0	1.02
9	9 160628J1_10_P1_...	12.5	4.75	1.42e4	1.29e4	13.2	5.8	1.10

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Compound name: 13C8-PFOS

Response Factor: 1.02589

RRF SD: 0.0401258, Relative SD: 3.91129

Response type: Internal Std (Ref 16), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	5.13	6.03e3	5.62e3	13.1	4.6	1.07
2	2 160628J1_03_P1_...	12.5	5.12	6.36e3	6.54e3	11.8	-5.3	0.971
3	3 160628J1_04_P1_...	12.5	5.12	6.90e3	6.42e3	13.1	4.7	1.07
4	4 160628J1_05_P1_...	12.5	5.13	6.13e3	6.05e3	12.3	-1.2	1.01
5	5 160628J1_06_P1_...	12.5	5.12	6.00e3	5.70e3	12.8	2.6	1.05
6	6 160628J1_07_P1_...	12.5	5.12	7.14e3	7.09e3	12.3	-1.9	1.01
7	7 160628J1_08_P1_...	12.5	5.12	6.84e3	6.84e3	12.2	-2.5	1.00
8	8 160628J1_09_P1_...	12.5	5.12	6.08e3	6.21e3	11.9	-4.5	0.980
9	9 160628J1_10_P1_...	12.5	5.13	6.70e3	6.30e3	12.9	3.6	1.06

Compound name: 13C5-PFNA

Response Factor: 21.1576

RRF SD: 1.3736, Relative SD: 6.49222

Response type: Internal Std (Ref 17), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	5.07	1.24e4	6.78e2	10.8	-13.4	18.3
2	2 160628J1_03_P1_...	12.5	5.06	1.34e4	6.73e2	11.8	-5.7	20.0
3	3 160628J1_04_P1_...	12.5	5.06	1.43e4	6.50e2	13.0	4.1	22.0
4	4 160628J1_05_P1_...	12.5	5.07	1.26e4	5.75e2	13.0	3.9	22.0
5	5 160628J1_06_P1_...	12.5	5.07	1.29e4	6.27e2	12.1	-2.8	20.6
6	6 160628J1_07_P1_...	12.5	5.06	1.47e4	6.72e2	13.0	3.8	22.0
7	7 160628J1_08_P1_...	12.5	5.06	1.34e4	6.44e2	12.3	-1.7	20.8
8	8 160628J1_09_P1_...	12.5	5.06	1.34e4	6.04e2	13.1	5.2	22.3
9	9 160628J1_10_P1_...	12.5	5.06	1.35e4	5.99e2	13.3	6.5	22.5

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Compound name: 13C5-PFHxA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 13), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	3.89	1.56e4	1.56e4	12.5	0.0	1.00
2	2 160628J1_03_P1_...	12.5	3.88	1.74e4	1.74e4	12.5	0.0	1.00
3	3 160628J1_04_P1_...	12.5	3.88	1.61e4	1.61e4	12.5	0.0	1.00
4	4 160628J1_05_P1_...	12.5	3.89	1.51e4	1.51e4	12.5	0.0	1.00
5	5 160628J1_06_P1_...	12.5	3.88	1.48e4	1.48e4	12.5	0.0	1.00
6	6 160628J1_07_P1_...	12.5	3.88	1.67e4	1.67e4	12.5	0.0	1.00
7	7 160628J1_08_P1_...	12.5	3.88	1.46e4	1.46e4	12.5	0.0	1.00
8	8 160628J1_09_P1_...	12.5	3.88	1.54e4	1.54e4	12.5	0.0	1.00
9	9 160628J1_10_P1_...	12.5	3.88	1.52e4	1.52e4	12.5	0.0	1.00

Compound name: 13C3-PFHxS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	4.48	6.89e3	6.89e3	12.5	0.0	1.00
2	2 160628J1_03_P1_...	12.5	4.47	7.96e3	7.96e3	12.5	0.0	1.00
3	3 160628J1_04_P1_...	12.5	4.46	7.23e3	7.23e3	12.5	0.0	1.00
4	4 160628J1_05_P1_...	12.5	4.47	6.79e3	6.79e3	12.5	0.0	1.00
5	5 160628J1_06_P1_...	12.5	4.47	6.69e3	6.69e3	12.5	0.0	1.00
6	6 160628J1_07_P1_...	12.5	4.46	7.73e3	7.73e3	12.5	0.0	1.00
7	7 160628J1_08_P1_...	12.5	4.46	6.77e3	6.77e3	12.5	0.0	1.00
8	8 160628J1_09_P1_...	12.5	4.47	7.15e3	7.15e3	12.5	0.0	1.00
9	9 160628J1_10_P1_...	12.5	4.47	6.73e3	6.73e3	12.5	0.0	1.00

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Compound name: 13C8-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 15), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	4.76	1.28e4	1.28e4	12.5	0.0	1.00
2	2 160628J1_03_P1_...	12.5	4.75	1.43e4	1.43e4	12.5	0.0	1.00
3	3 160628J1_04_P1_...	12.5	4.74	1.33e4	1.33e4	12.5	0.0	1.00
4	4 160628J1_05_P1_...	12.5	4.75	1.25e4	1.25e4	12.5	0.0	1.00
5	5 160628J1_06_P1_...	12.5	4.74	1.26e4	1.26e4	12.5	0.0	1.00
6	6 160628J1_07_P1_...	12.5	4.74	1.42e4	1.42e4	12.5	0.0	1.00
7	7 160628J1_08_P1_...	12.5	4.74	1.27e4	1.27e4	12.5	0.0	1.00
8	8 160628J1_09_P1_...	12.5	4.74	1.31e4	1.31e4	12.5	0.0	1.00
9	9 160628J1_10_P1_...	12.5	4.74	1.29e4	1.29e4	12.5	0.0	1.00

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 16), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	5.13	5.62e3	5.62e3	12.5	0.0	1.00
2	2 160628J1_03_P1_...	12.5	5.12	6.54e3	6.54e3	12.5	0.0	1.00
3	3 160628J1_04_P1_...	12.5	5.12	6.42e3	6.42e3	12.5	0.0	1.00
4	4 160628J1_05_P1_...	12.5	5.12	6.05e3	6.05e3	12.5	0.0	1.00
5	5 160628J1_06_P1_...	12.5	5.12	5.70e3	5.70e3	12.5	0.0	1.00
6	6 160628J1_07_P1_...	12.5	5.12	7.09e3	7.09e3	12.5	0.0	1.00
7	7 160628J1_08_P1_...	12.5	5.12	6.84e3	6.84e3	12.5	0.0	1.00
8	8 160628J1_09_P1_...	12.5	5.12	6.21e3	6.21e3	12.5	0.0	1.00
9	9 160628J1_10_P1_...	12.5	5.12	6.30e3	6.30e3	12.5	0.0	1.00

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Compound name: 13C9-PFNA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 17), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 160628J1_02_P1_...	12.5	5.07	6.78e2	6.78e2	12.5	0.0	1.00
2	2 160628J1_03_P1_...	12.5	5.06	6.73e2	6.73e2	12.5	0.0	1.00
3	3 160628J1_04_P1_...	12.5	5.06	6.50e2	6.50e2	12.5	0.0	1.00
4	4 160628J1_05_P1_...	12.5	5.07	5.75e2	5.75e2	12.5	0.0	1.00
5	5 160628J1_06_P1_...	12.5	5.06	6.27e2	6.27e2	12.5	0.0	1.00
6	6 160628J1_07_P1_...	12.5	5.06	6.72e2	6.72e2	12.5	0.0	1.00
7	7 160628J1_08_P1_...	12.5	5.06	6.44e2	6.44e2	12.5	0.0	1.00
8	8 160628J1_09_P1_...	12.5	5.06	6.04e2	6.04e2	12.5	0.0	1.00
9	9 160628J1_10_P1_...	12.5	5.06	5.99e2	5.99e2	12.5	0.0	1.00

Compound name: Total PFBS

Coefficient of Determination: R^2 = 0.999029

Calibration curve: $-5.7982e-005 * x^2 + 0.202603 * x$

Response type: Internal Std (Ref 7), 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 160628J1_02_P1_...	1.00			9.01e3	1.16		
2	2 160628J1_03_P1_...	2.00			9.75e3	2.29		
3	3 160628J1_04_P1_...	5.00			8.66e3	5.80		
4	4 160628J1_05_P1_...	10.0			8.29e3	10.3		
5	5 160628J1_06_P1_...	25.0			8.26e3	25.4		
6	6 160628J1_07_P1_...	50.0			9.27e3	49.0		
7	7 160628J1_08_P1_...	75.0			7.81e3	76.1		
8	8 160628J1_09_P1_...	100			8.08e3	96.3		
9	9 160628J1_10_P1_...	200			7.81e3	202		

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

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Compound name: Total PFHxS

Coefficient of Determination: R² = 0.998712

Calibration curve: $-0.000163172 * x^2 + 0.642268 * x$

Response type: Internal Std (Ref 9), 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 160628J1_02_P1_...	1.00			2.17e3	1.20		
2	2 160628J1_03_P1_...	2.00			2.39e3	2.36		
3	3 160628J1_04_P1_...	5.00			2.12e3	5.77		
4	4 160628J1_05_P1_...	10.0			2.07e3	11.3		
5	5 160628J1_06_P1_...	25.0			2.06e3	25.0		
6	6 160628J1_07_P1_...	50.0			2.44e3	48.1		
7	7 160628J1_08_P1_...	75.0			2.15e3	74.8		
8	8 160628J1_09_P1_...	100			2.15e3	97.9		
9	9 160628J1_10_P1_...	200			2.09e3	202		

Compound name: Total PFOA

Coefficient of Determination: R² = 0.998790

Calibration curve: $-0.000525715 * x^2 + 0.423933 * x$

Response type: Internal Std (Ref 10), 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 160628J1_02_P1_...	12.5			1.48e4	1.12		
2	2 160628J1_03_P1_...	12.5			1.36e4	2.34		
3	3 160628J1_04_P1_...	12.5			1.44e4	5.61		
4	4 160628J1_05_P1_...	12.5			1.24e4	10.1		
5	5 160628J1_06_P1_...	12.5			1.35e4	23.2		
6	6 160628J1_07_P1_...	12.5			1.40e4	51.1		
7	7 160628J1_08_P1_...	12.5			1.28e4	77.0		
8	8 160628J1_09_P1_...	12.5			1.34e4	96.8		
9	9 160628J1_10_P1_...	12.5			1.42e4	201		

Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:55:49 Pacific Daylight Time

Compound name: Total PFOS

Coefficient of Determination: $R^2 = 0.998757$

Calibration curve: $-0.000490003 * x^2 + 0.684949 * x$

Response type: Internal Std (Ref 11), 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 160628J1_02_P1_...	1.00			6.03e3	1.19		
2	2 160628J1_03_P1_...	2.00			6.36e3	2.31		
3	3 160628J1_04_P1_...	5.00			6.90e3	5.69		
4	4 160628J1_05_P1_...	10.0			6.13e3	10.8		
5	5 160628J1_06_P1_...	25.0			6.00e3	24.4		
6	6 160628J1_07_P1_...	50.0			7.14e3	49.2		
7	7 160628J1_08_P1_...	75.0			6.84e3	71.8		
8	8 160628J1_09_P1_...	100			6.08e3	103		
9	9 160628J1_10_P1_...	200			6.70e3	201		

Sample Name	Acquisition Date	Sample ID	Sample Comment
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160628J1_03	6/28/2016 16:21:13	ST160628J1-2 PFC CS1 16F0702	PFC CS1 16F0702
160628J1_04	6/28/2016 16:33:26	ST160628J1-3 PFC CS2 16F0703	PFC CS2 16F0703
160628J1_05	6/28/2016 16:45:38	ST160628J1-4 PFC CS3 16F0704	PFC CS3 16F0704
160628J1_06	6/28/2016 16:57:51	ST160628J1-5 PFC CS3.5 16F0705	PFC CS3.5 16F0705
160628J1_07	6/28/2016 17:10:01	ST160628J1-6 PFC CS4 16F0706	PFC CS4 16F0706
160628J1_08	6/28/2016 17:22:14	ST160628J1-7 PFC CS4.5 16F0707	PFC CS4.5 16F0707
160628J1_09	6/28/2016 17:34:27	ST160628J1-8 PFC CS5 16F0708	PFC CS5 16F0708
160628J1_10	6/28/2016 17:46:39	ST160628J1-9 PFC CS6 16F0709	PFC CS6 16F0709
160628J1_11	6/28/2016 17:58:52	IPA	IPA
160628J1_12	6/28/2016 18:11:06	IPA	IPA
160628J1_13	6/28/2016 18:23:17	SS160628J1-1 PFC SSS 16F0907	PFC SSS 16F0907
160628J1_14	6/28/2016 18:35:29	IPA	IPA
160628J1_15	6/28/2016 18:47:40	B6F0156-BS1	OPR
160628J1_16	6/28/2016 18:59:54	B6F0157-BS1	OPR
160628J1_17	6/28/2016 19:12:07	IPA	IPA
160628J1_18	6/28/2016 19:24:20	B6F0156-BLK1	Method Blank
160628J1_19	6/28/2016 19:36:32	B6F0157-BLK1	Method Blank
160628J1_20	6/28/2016 19:48:47	1600818-01	OF14-MW07S-0616
160628J1_21	6/28/2016 20:01:01	1600818-02	OF14-MW07D-0616
160628J1_22	6/28/2016 20:13:11	1600818-03	OF-MW14-0616
160628J1_23	6/28/2016 20:25:26	1600818-04	OF-MW16-0616
160628J1_24	6/28/2016 20:37:39	1600818-05	OF-FB062016
160628J1_25	6/28/2016 20:49:51	1600818-06	OF-EB062016
160628J1_26	6/28/2016 21:02:04	1600818-07	OF-MW15-0616
160628J1_27	6/28/2016 21:14:15	1600818-08	OF-MW15D-0616
160628J1_28	6/28/2016 21:26:29	1600818-09	OF14-MW06-0616
160628J1_29	6/28/2016 21:38:43	1600818-10	OF14-MW06D-0616
160628J1_30	6/28/2016 21:50:55	IPA	IPA
160628J1_31	6/28/2016 22:03:07	ST160628J1-10 PFC CS3.5 16F0705	PFC CS3.5 16F0705
160628J1_32	6/28/2016 22:15:20	IPA	IPA
160628J1_33	6/28/2016 22:27:29	1600818-11	OF-MW17-0616
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160628J1_35	6/28/2016 22:51:56	1600818-13	OF-MW12-0616
160628J1_36	6/28/2016 23:04:09	1600818-14	OF-MW13D-0616
160628J1_37	6/28/2016 23:16:23	1600818-15	OF-MW13DP-0616
160628J1_38	6/28/2016 23:28:36	1600818-16	OF-MW11D-0616
160628J1_39	6/28/2016 23:40:48	1600820-01	OF-MW10-0616
160628J1_40	6/28/2016 23:53:02	1600820-02	OF-MW08-0616
160628J1_41	6/29/2016 00:05:15	1600820-03	OF-MW08P-0616
160628J1_42	6/29/2016 00:17:24	1600820-04	OF-MW10D-0616
160628J1_43	6/29/2016 00:29:38	IPA	IPA
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160628J1_45	6/29/2016 00:54:00	IPA	IPA
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160628J1_47	6/29/2016 01:18:25	1600820-06	OF-MW09D-0616
160628J1_48	6/29/2016 01:30:33	B6F0156-MS1	Matrix Spike
160628J1_49	6/29/2016 01:42:48	B6F0156-MSD1	Matrix Spike Dup
160628J1_50	6/29/2016 01:54:57	B6F0157-MS1	Matrix Spike
160628J1_51	6/29/2016 02:07:16	B6F0157-MSD1	Matrix Spike Dup
160628J1_52	6/29/2016 02:19:30	1600783-01@1:5	OPOL-MW-7-0616
160628J1_53	6/29/2016 02:31:44	1600783-01@1:20	OPOL-MW-7-0616
160628J1_54	6/29/2016 02:43:54	1600783-02@1:5	OPOL-MW-4-0616

Sample Name	Acquisition Date	Sample ID	Sample Comment
160628J1_55	6/29/2016 02:56:06	1600783-02@1:20	OPOL-MW-4-0616
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160628J1_57	6/29/2016 03:20:34	ST160628J1-12 PFC CS3.5 16F0705	PFC CS3.5 16F0705
160628J1_58	6/29/2016 03:32:48	IPA	IPA
160628J1_59	6/29/2016 03:44:58	1600783-03@1:10	OPOL-MW-8-0616
160628J1_60	6/29/2016 03:57:12	1600783-04@1:10	OPOL-MW-6-0616
160628J1_61	6/29/2016 04:09:21	1600783-05@1:10	OPOL-MW-3-0616
160628J1_62	6/29/2016 04:21:35	1600783-06@1:10	OPOL-MW-3P-0616
160628J1_63	6/29/2016 04:33:48	1600783-07@1:10	OPOL-MW-2-0616
160628J1_64	6/29/2016 04:45:59	1600783-08@1:5	OF-MW13-0616
160628J1_65	6/29/2016 04:58:10	1600783-09@1:5	OF-MW11-0616
160628J1_66	6/29/2016 05:10:22	IPA	IPA
160628J1_67	6/29/2016 05:22:31	ST160628J1-13 PFC CS3.5 16F0705	PFC CS3.5 16F0705
160628J1_68	6/29/2016 05:34:44	IPA	IPA

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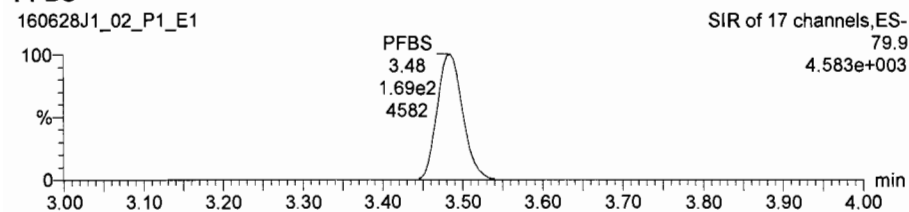
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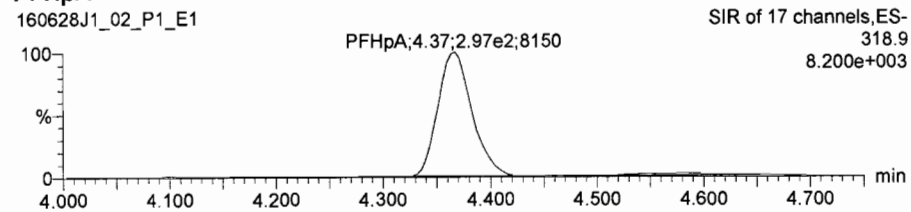
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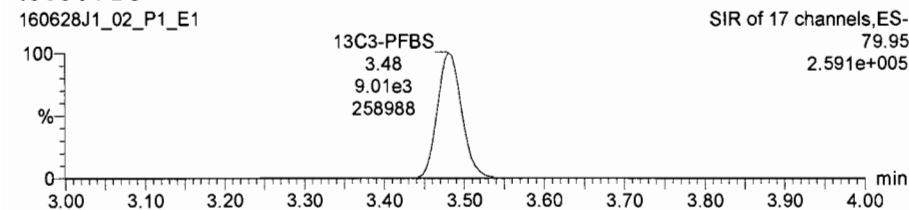
PFBS



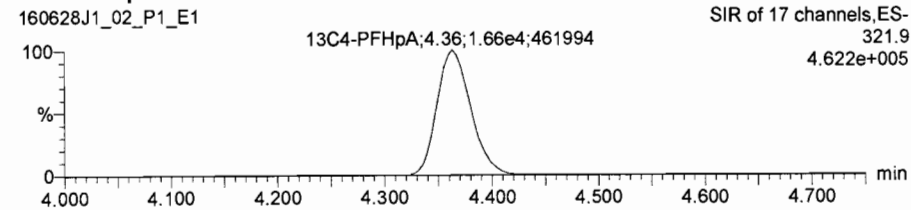
PFHpA



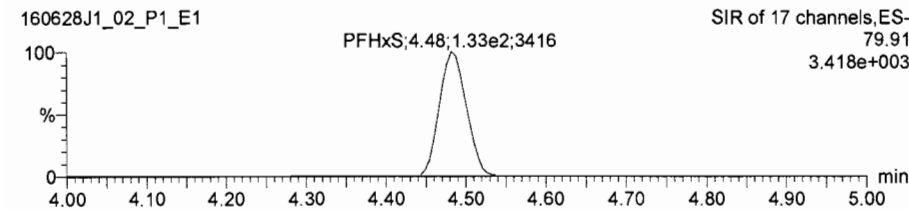
13C3-PFBS



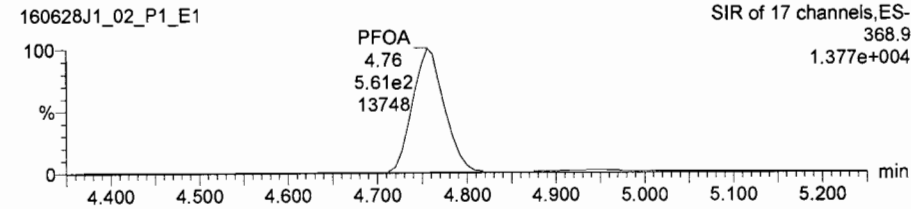
13C4-PFHpA



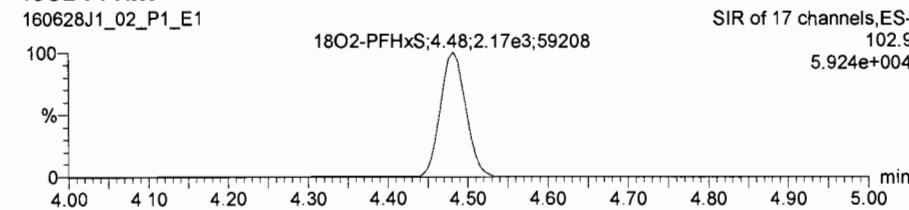
PFHxS



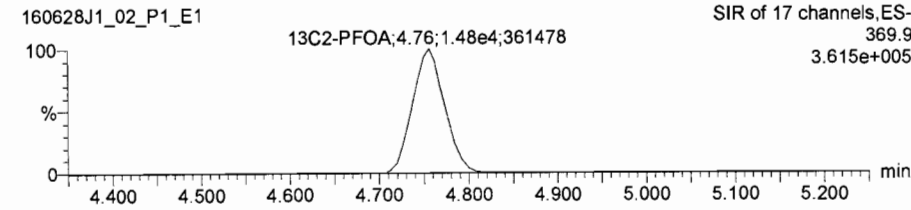
PFOA



18O2-PFHxS



13C2-PFOA



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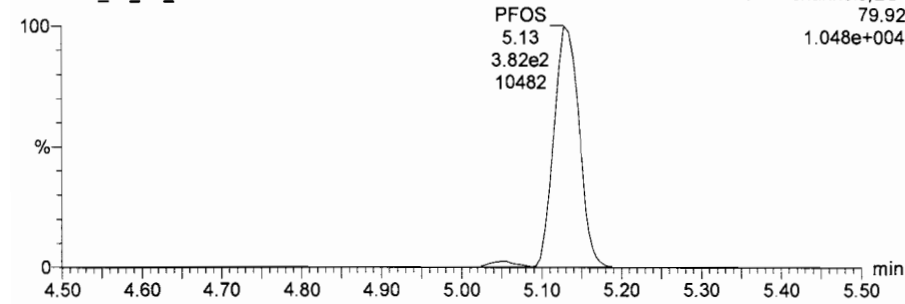
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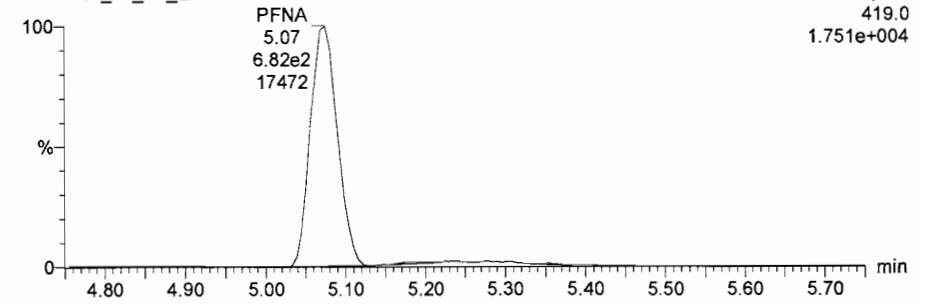
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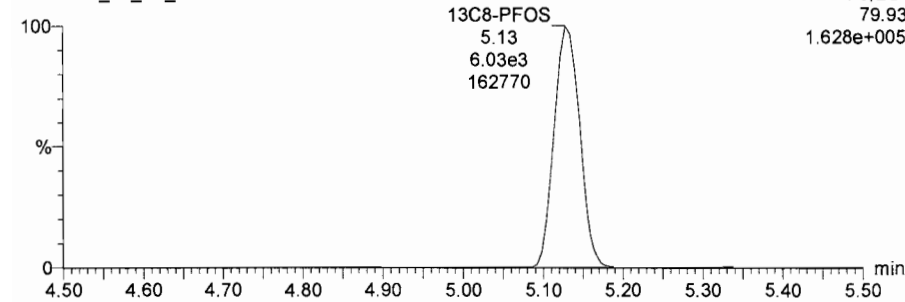
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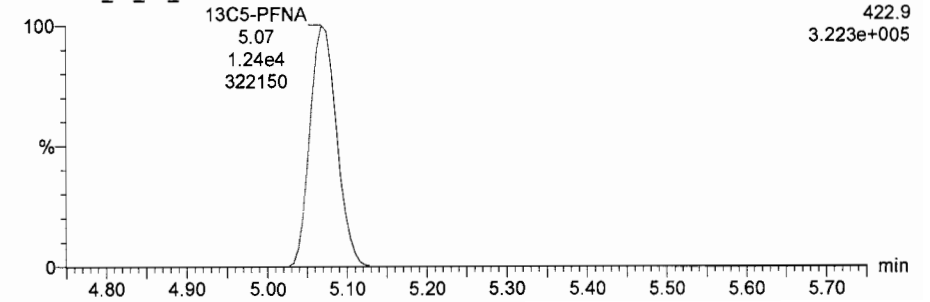
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13C5-PFNA

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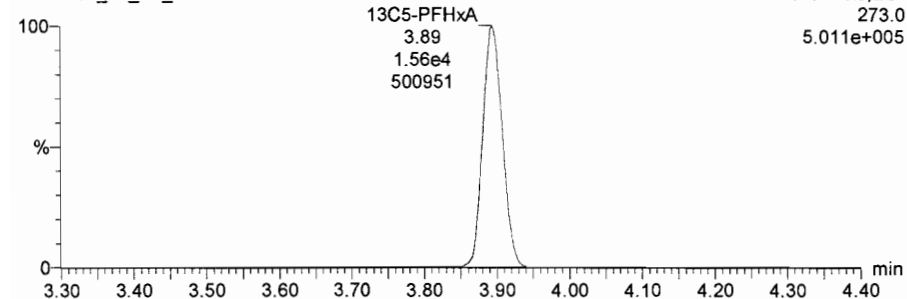
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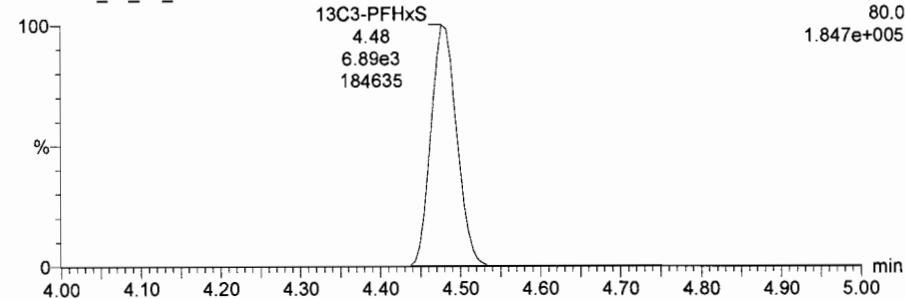
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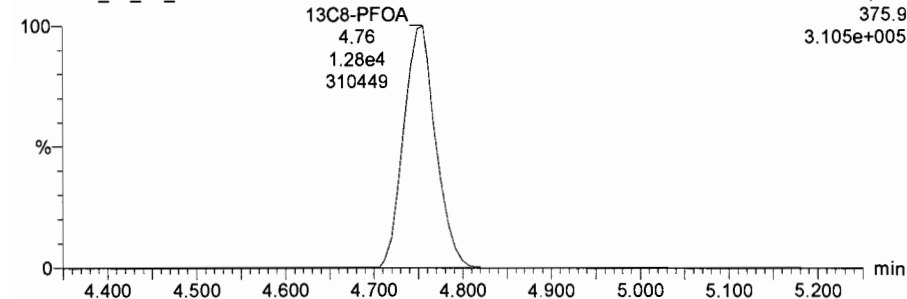
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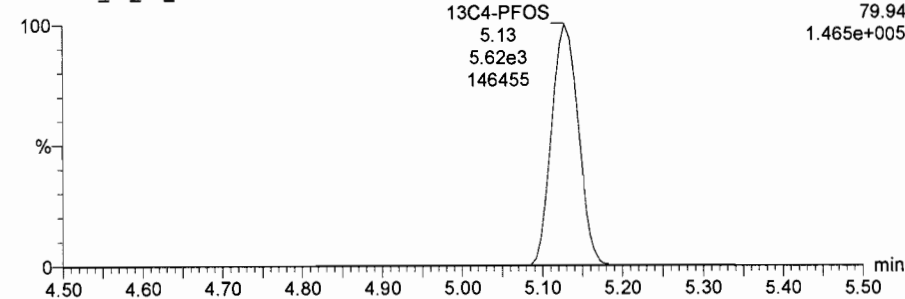
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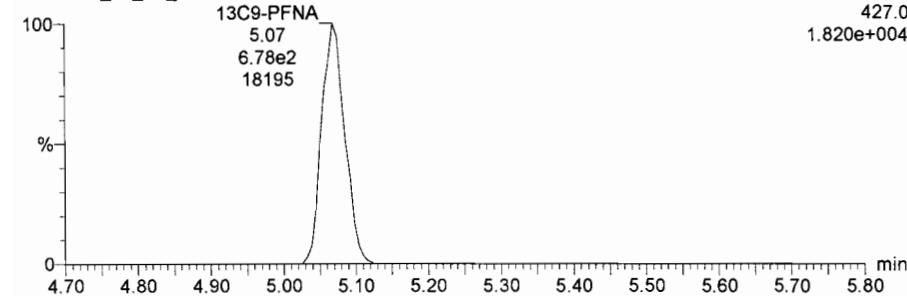
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13C9-PFNA

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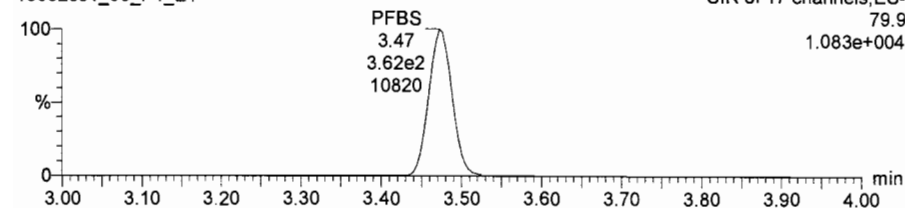
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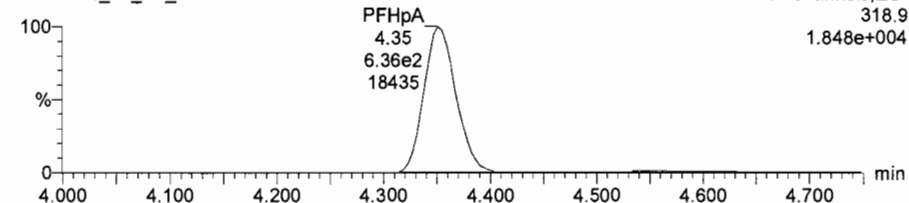
PFBS

160628J1_03_P1_E1



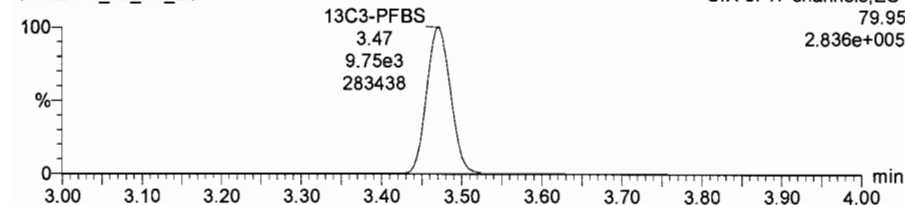
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160628J1_03_P1_E1



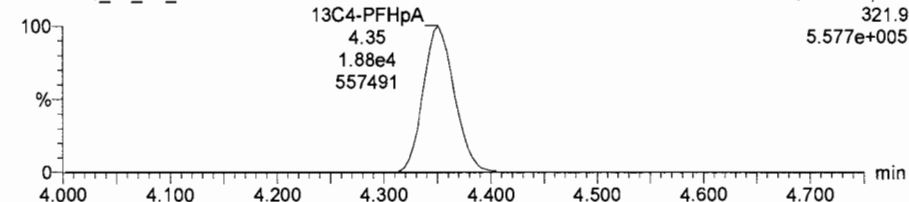
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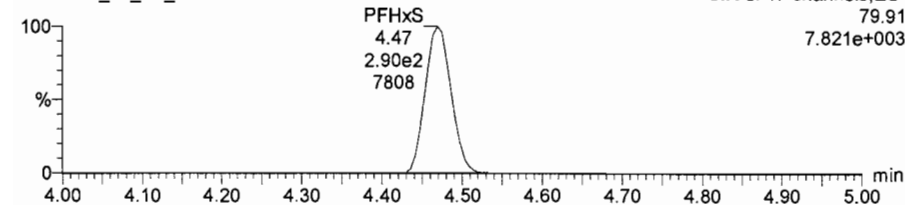
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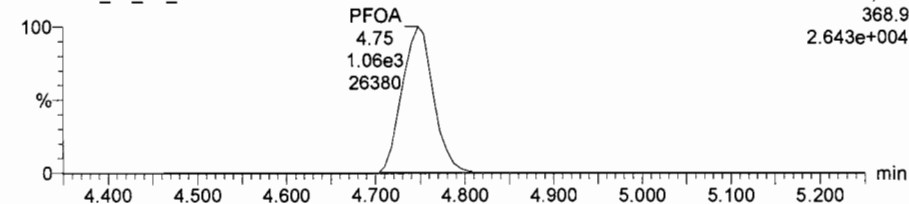
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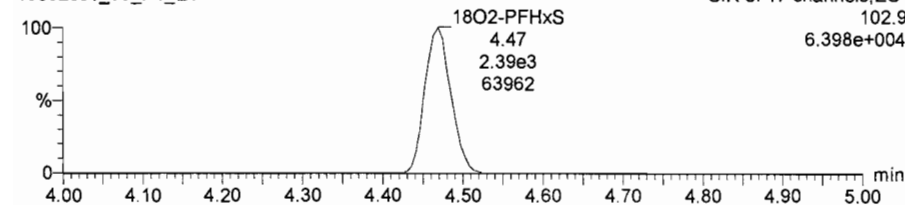
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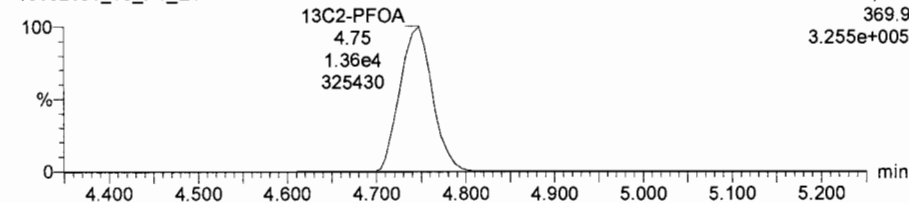
18O2-PFHxS

160628J1_03_P1_E1



13C2-PFOA

160628J1_03_P1_E1



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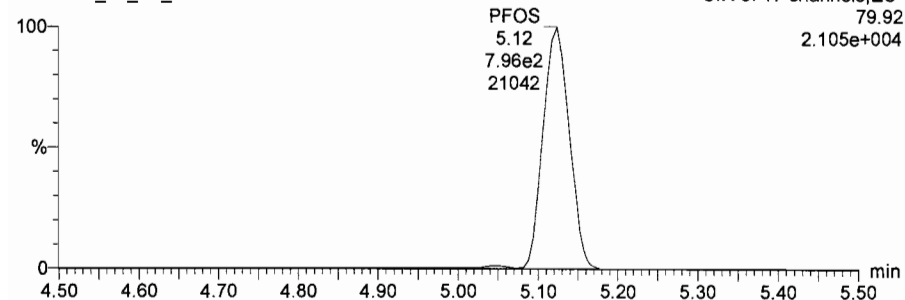
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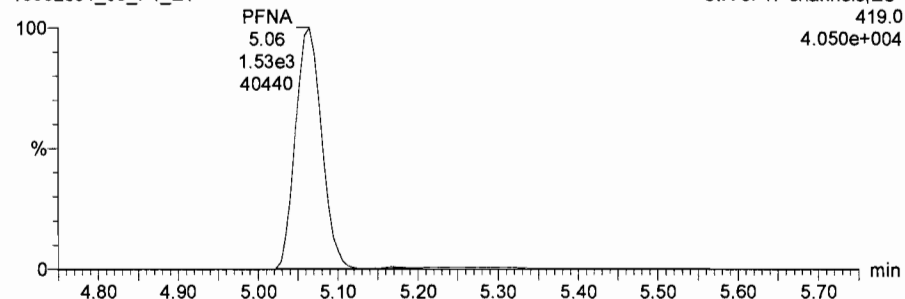
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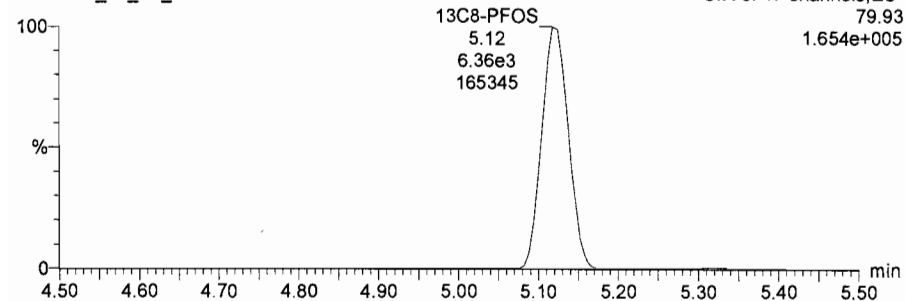
PFNA

160628J1_03_P1_E1



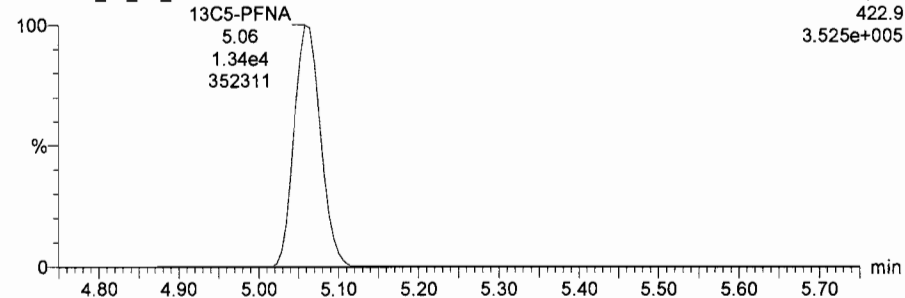
13C8-PFOS

160628J1_03_P1_E1



13C5-PFNA

160628J1_03_P1_E1



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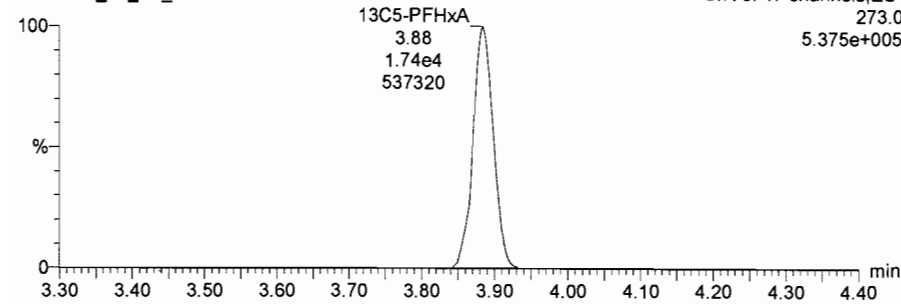
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Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

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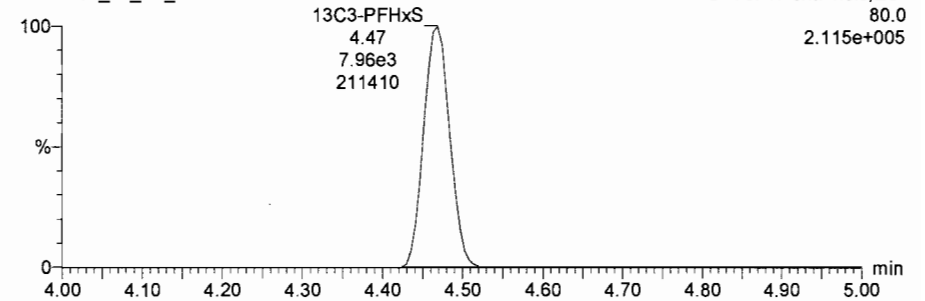
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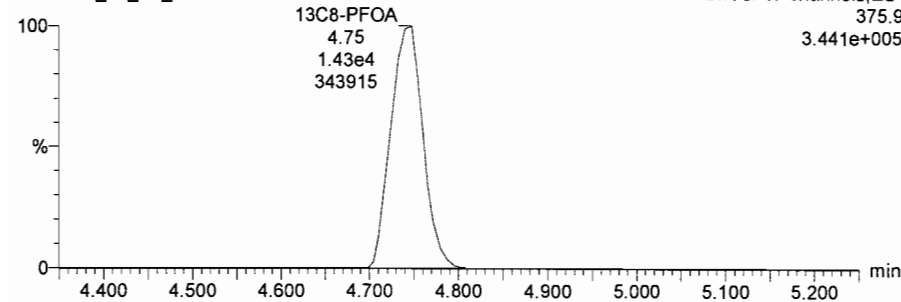
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160628J1_03_P1_E1



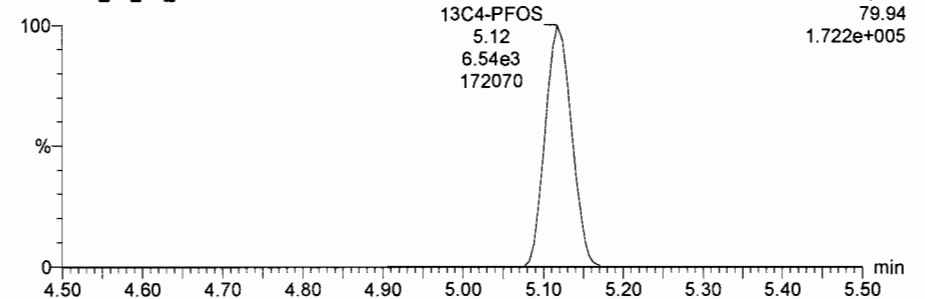
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160628J1_03_P1_E1



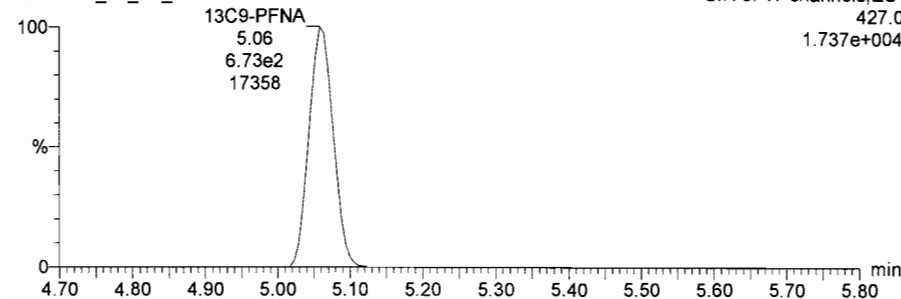
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13C9-PFNA

160628J1_03_P1_E1

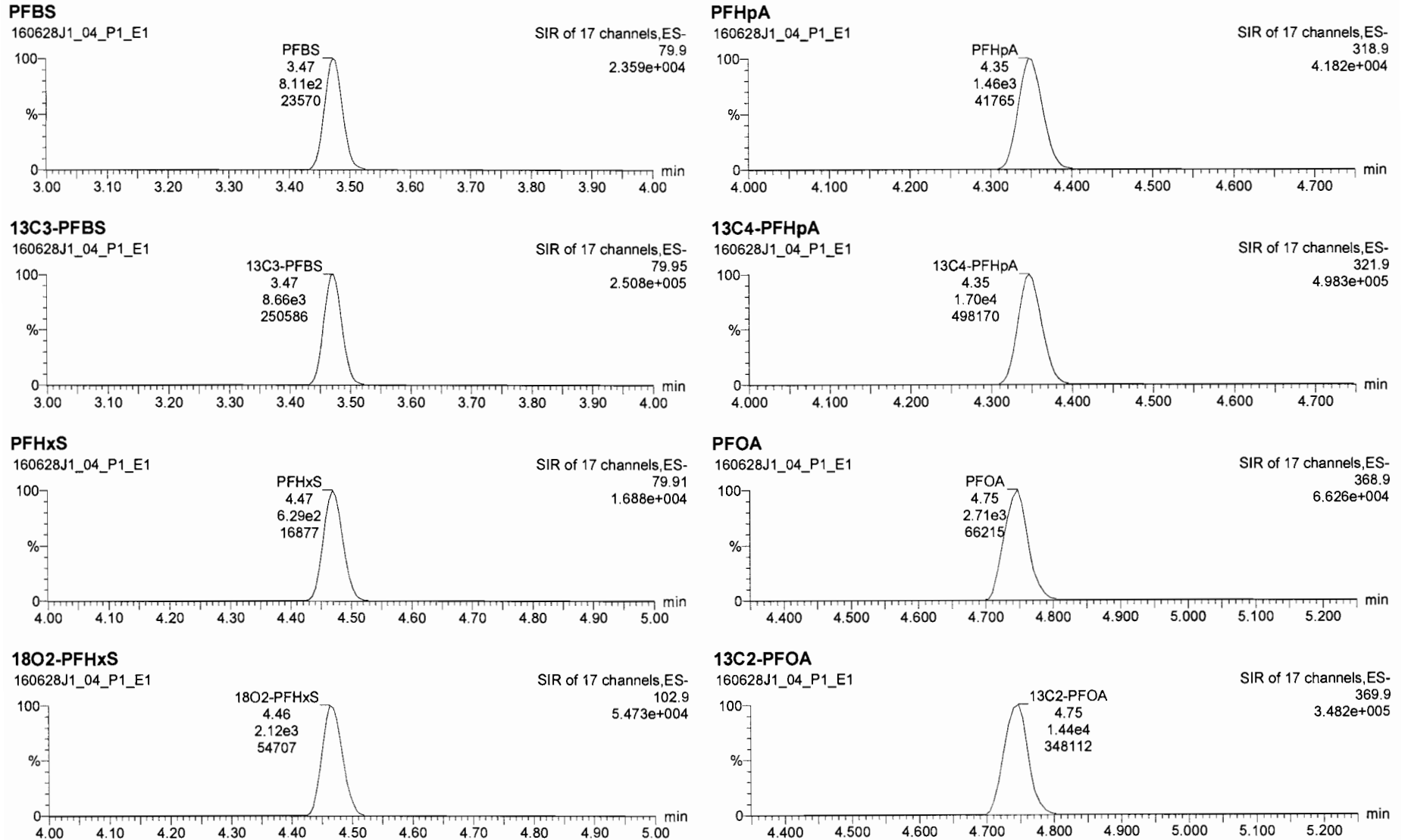


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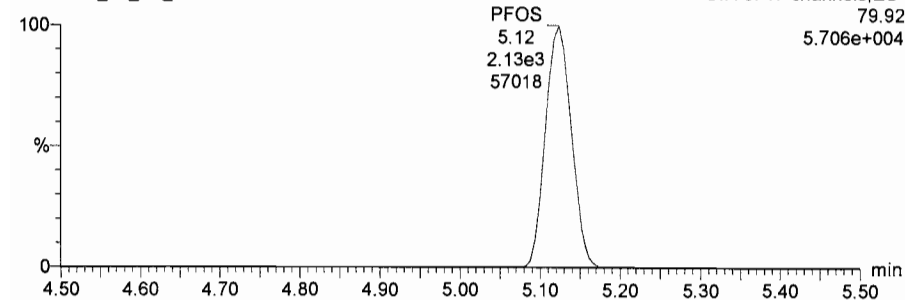
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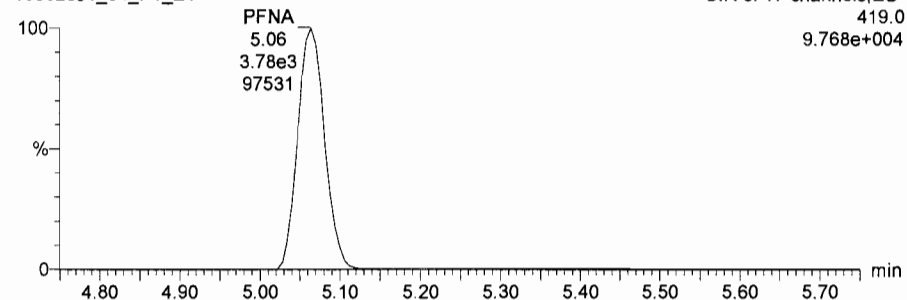
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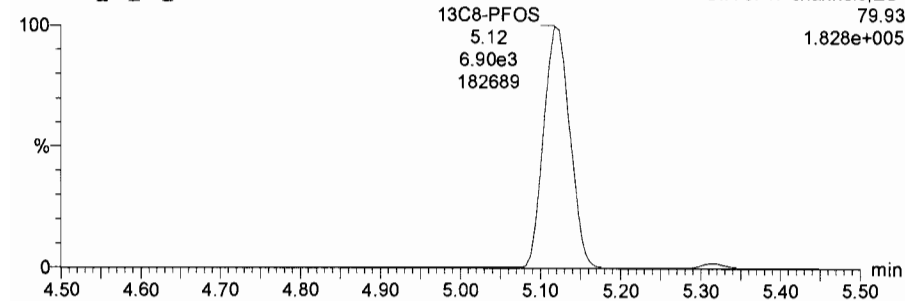
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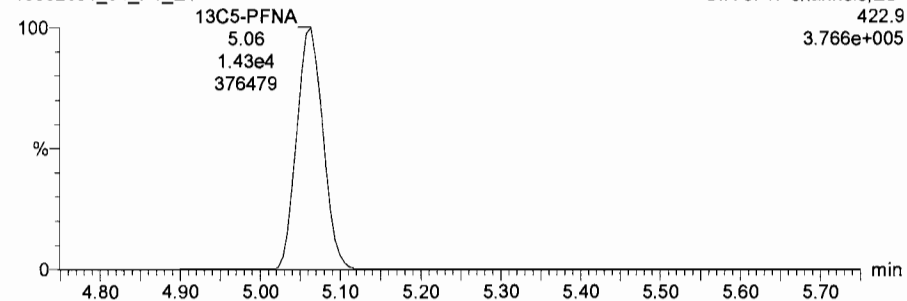
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160628J1_04_P1_E1



13C5-PFNA

160628J1_04_P1_E1



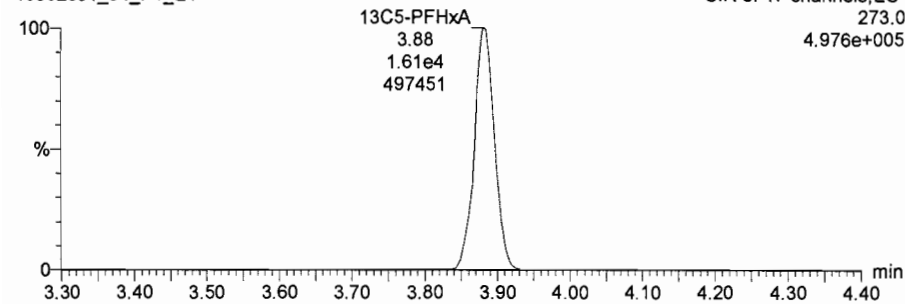
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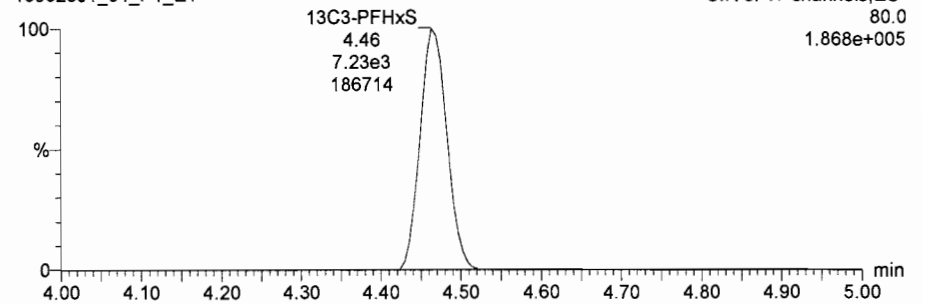
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160628J1_04_P1_E1



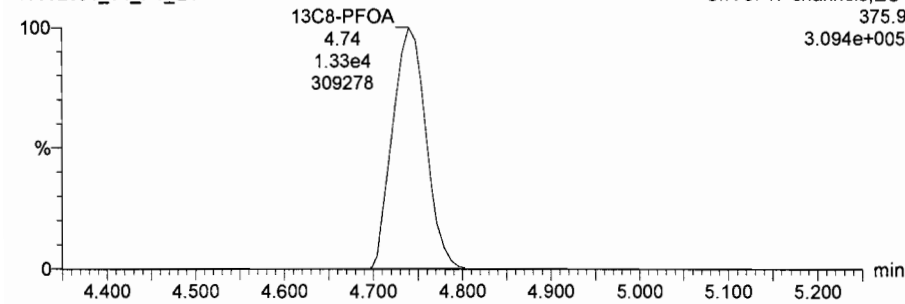
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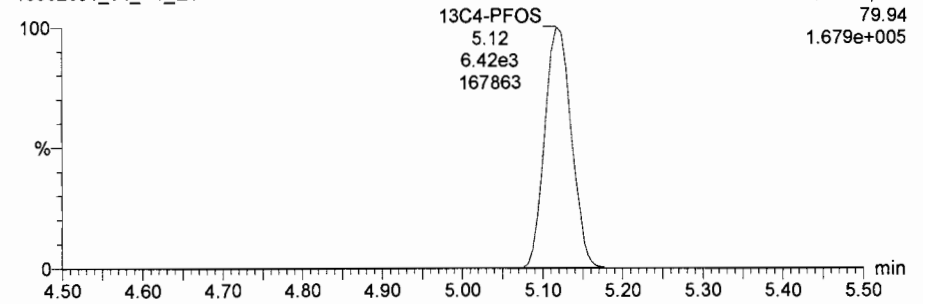
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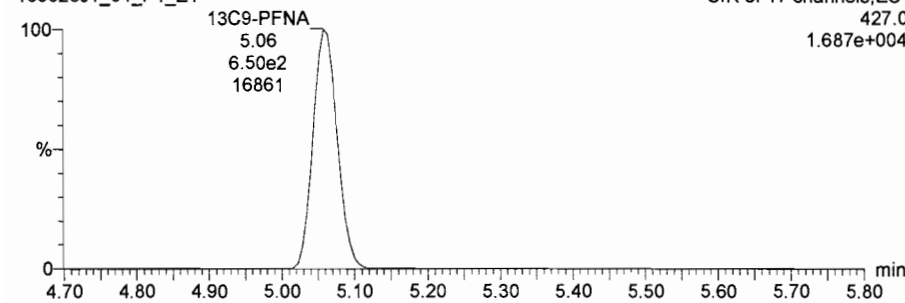
13C4-PFOS

160628J1_04_P1_E1



13C9-PFNA

160628J1_04_P1_E1



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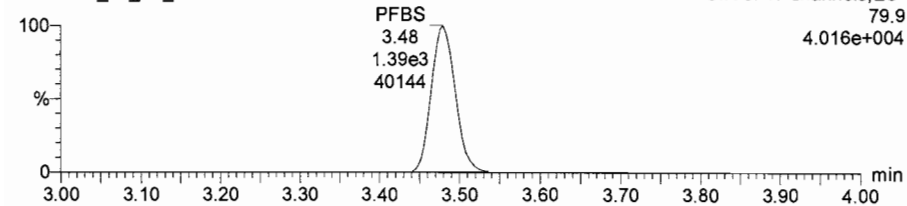
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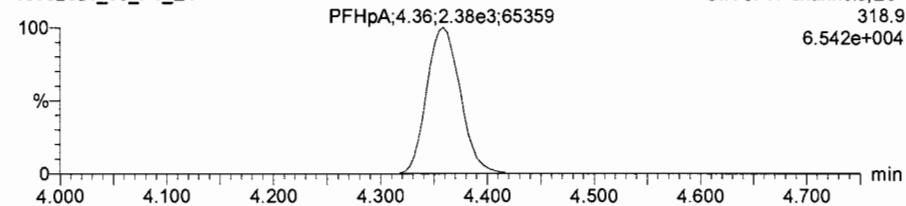
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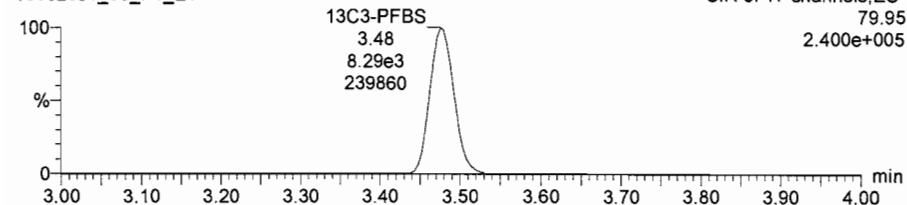
PFHpA

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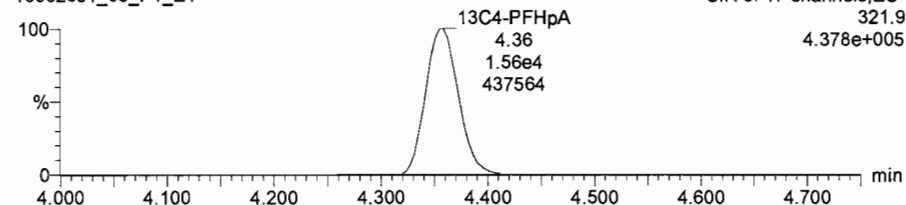
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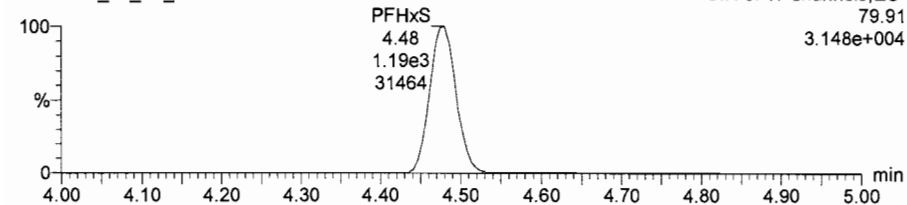
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160628J1_05_P1_E1



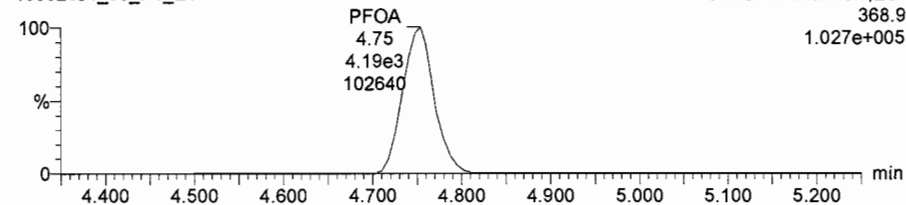
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160628J1_05_P1_E1



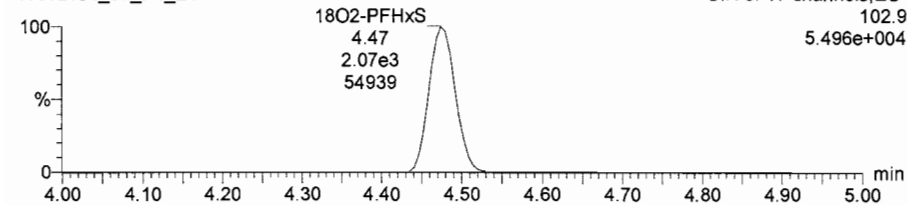
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160628J1_05_P1_E1



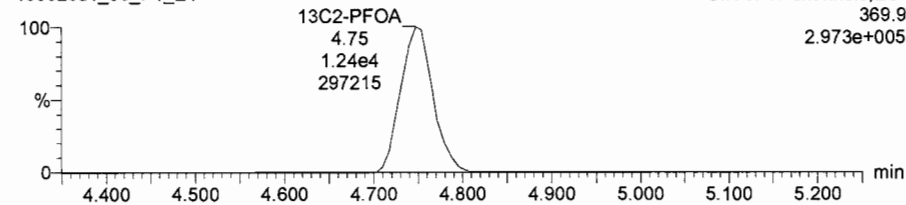
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160628J1_05_P1_E1



13C2-PFOA

160628J1_05_P1_E1



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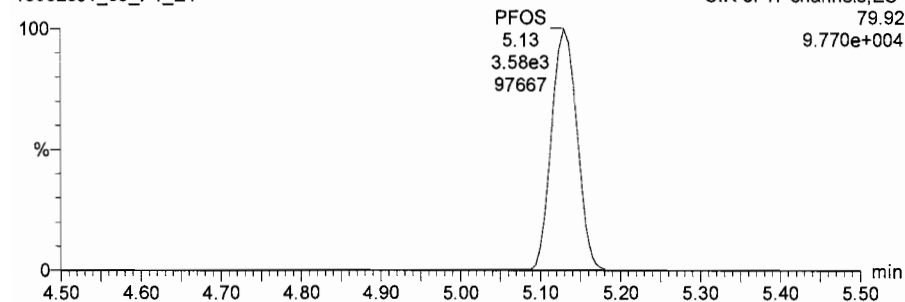
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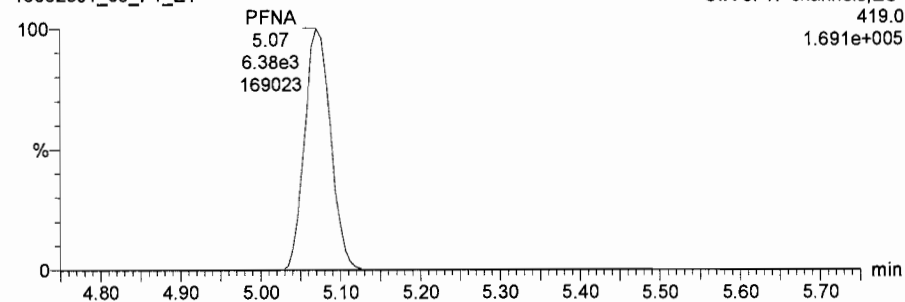
PFOS

160628J1_05_P1_E1



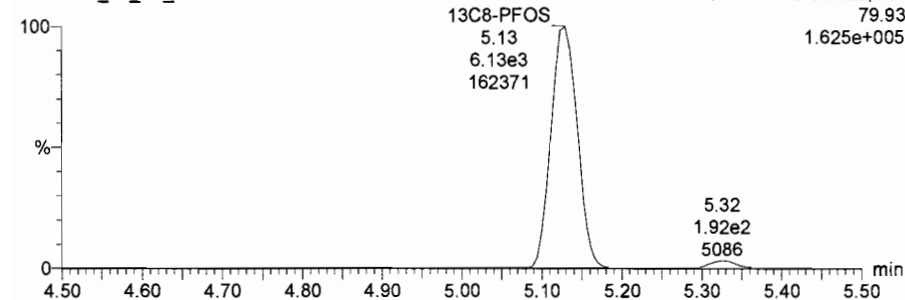
PFNA

160628J1_05_P1_E1



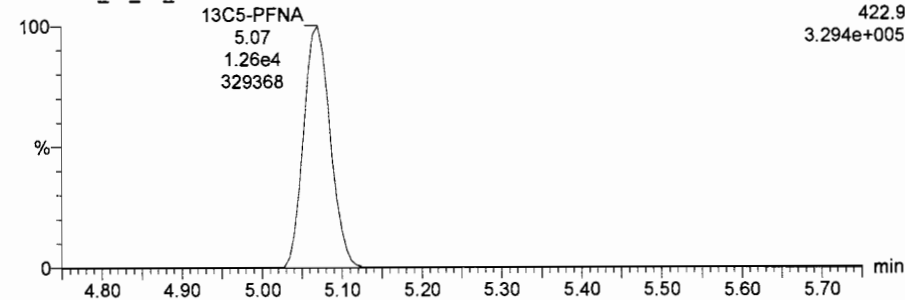
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160628J1_05_P1_E1



13C5-PFNA

160628J1_05_P1_E1



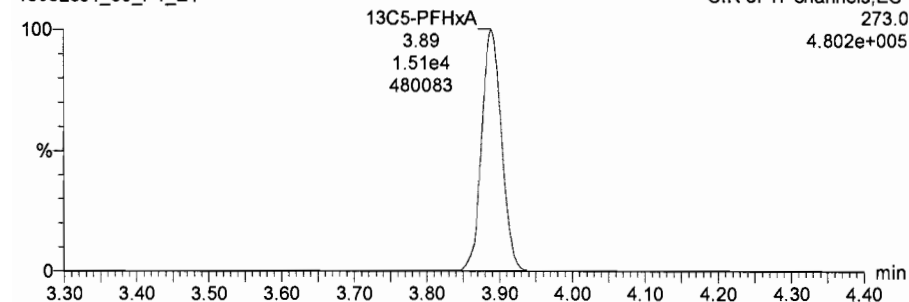
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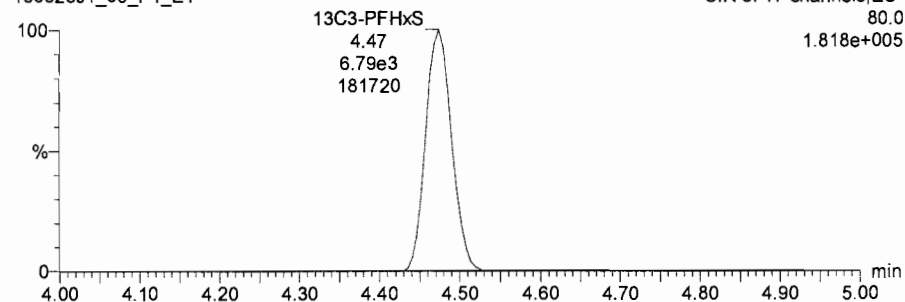
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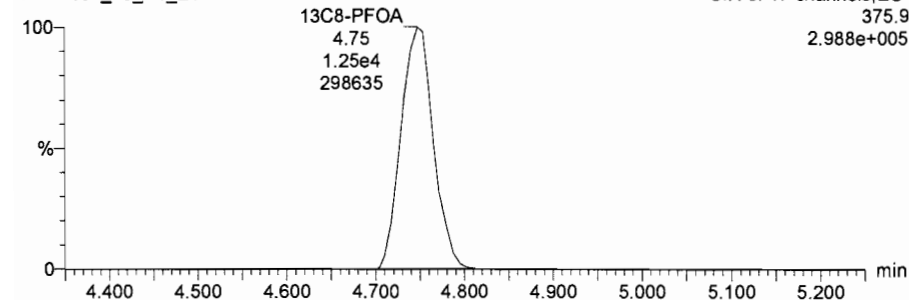
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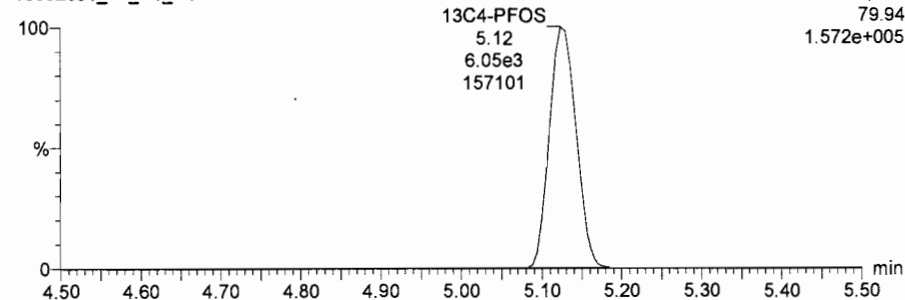
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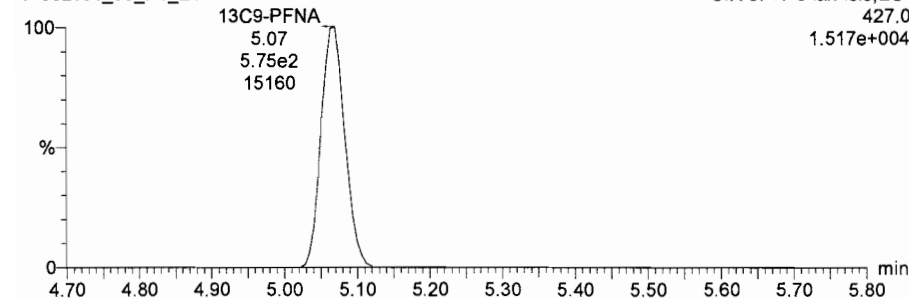
13C4-PFOS

160628J1_05_P1_E1



13C9-PFNA

160628J1_05_P1_E1



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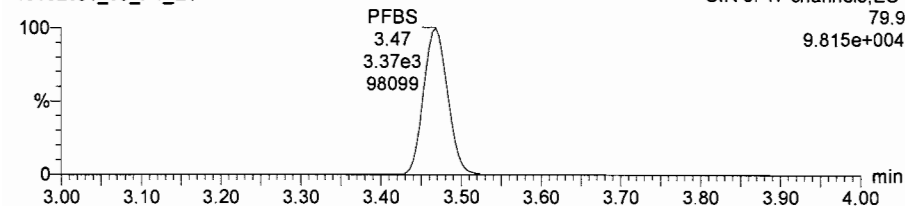
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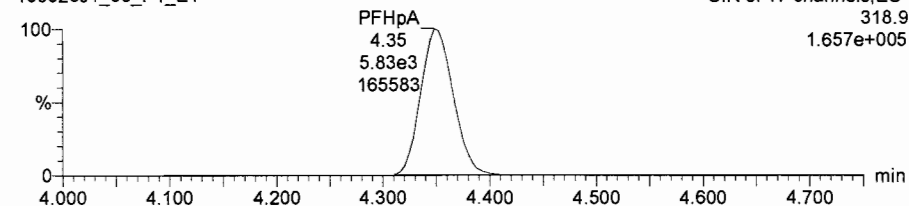
PFBS

160628J1_06_P1_E1



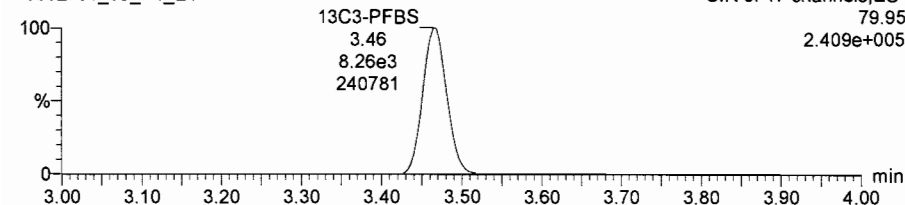
PFHpA

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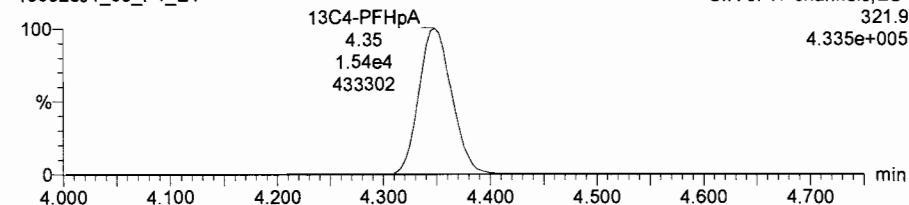
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160628J1_06_P1_E1



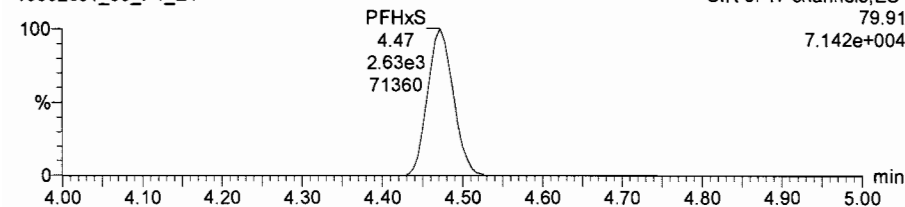
13C4-PFHpA

160628J1_06_P1_E1



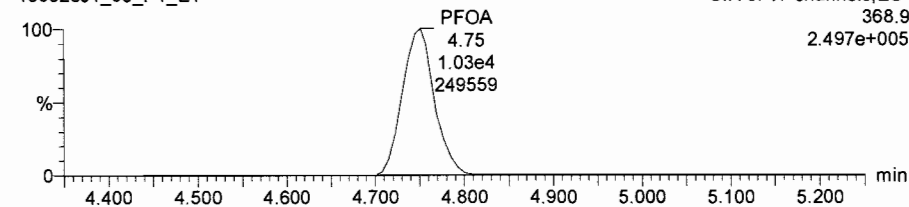
PFHxS

160628J1_06_P1_E1



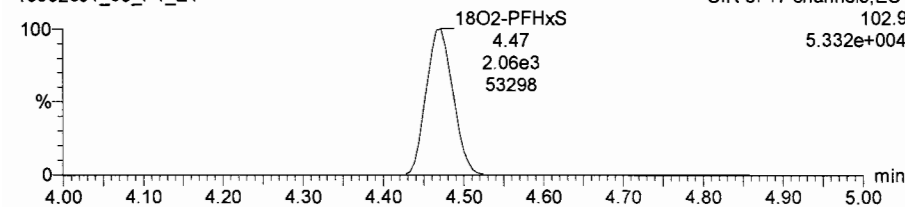
PFOA

160628J1_06_P1_E1



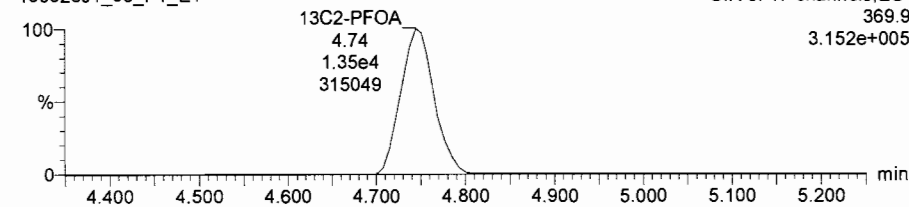
18O2-PFHxS

160628J1_06_P1_E1



13C2-PFOA

160628J1_06_P1_E1



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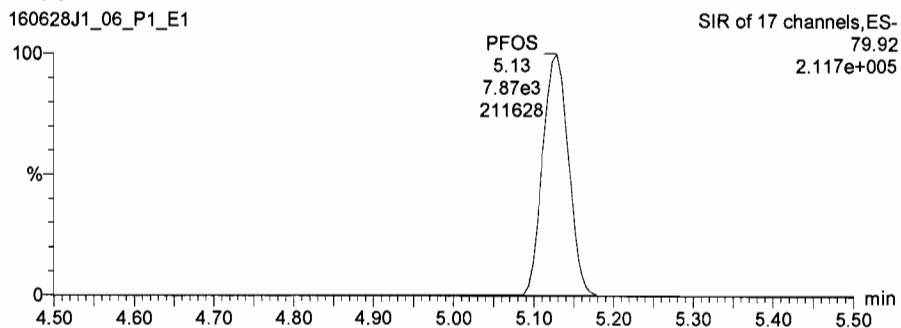
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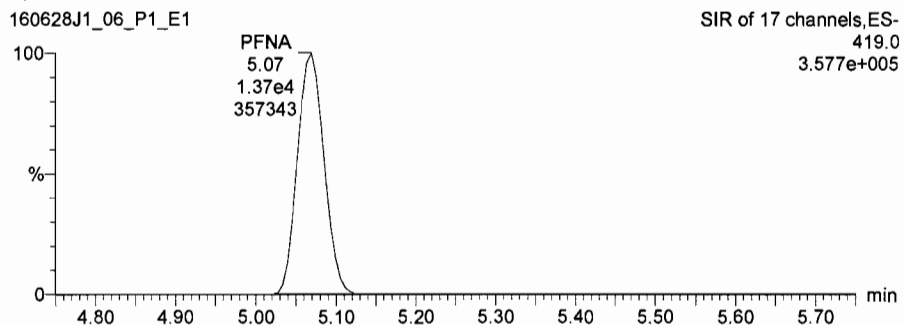
PFOS

160628J1_06_P1_E1



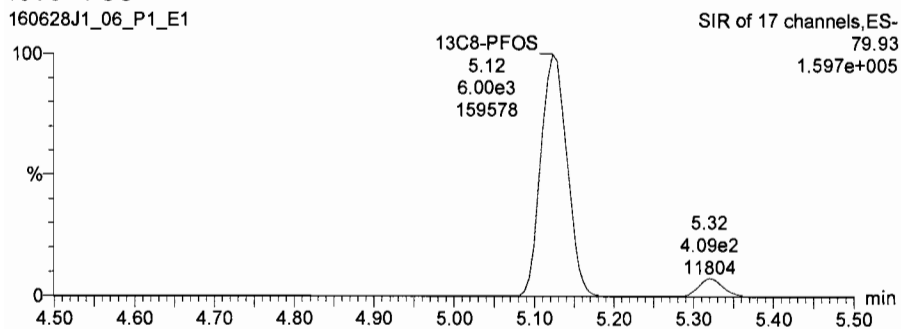
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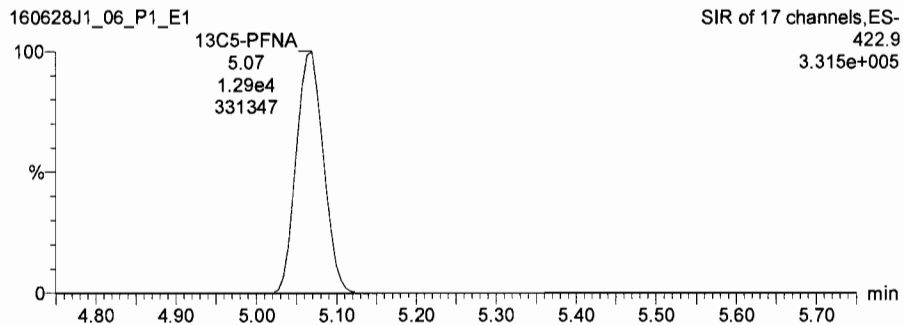
13C8-PFOS

160628J1_06_P1_E1



13C5-PFNA

160628J1_06_P1_E1



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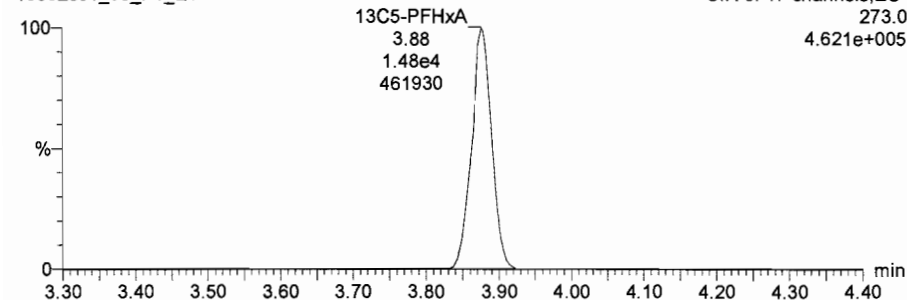
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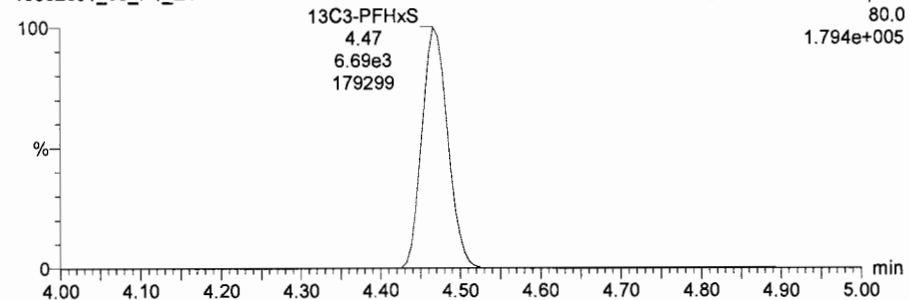
13C5-PFHxA

160628J1_06_P1_E1



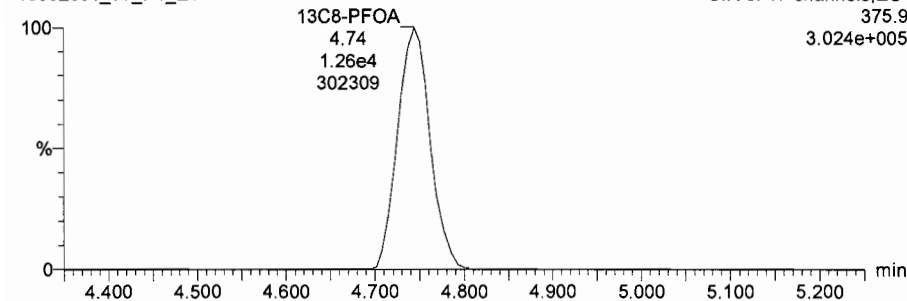
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160628J1_06_P1_E1



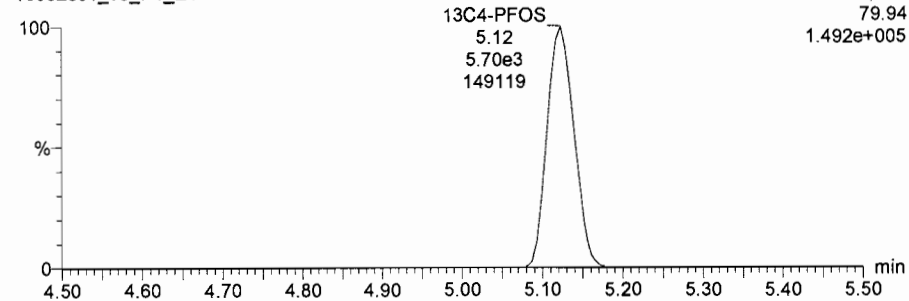
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160628J1_06_P1_E1



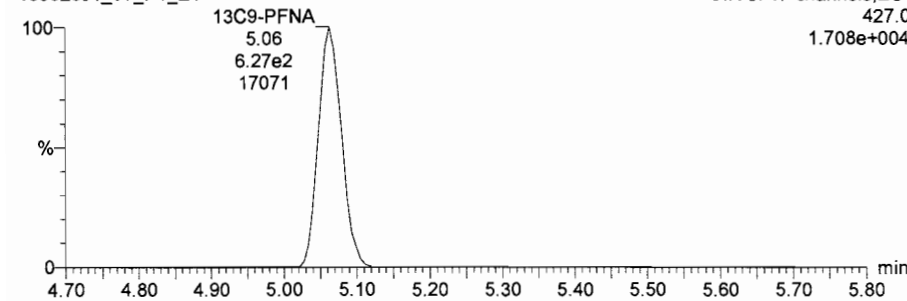
13C4-PFOS

160628J1_06_P1_E1



13C9-PFNA

160628J1_06_P1_E1



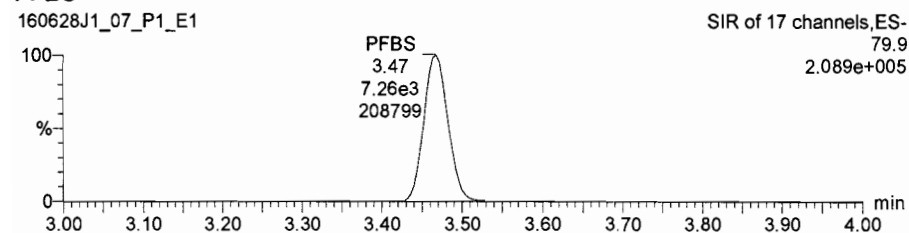
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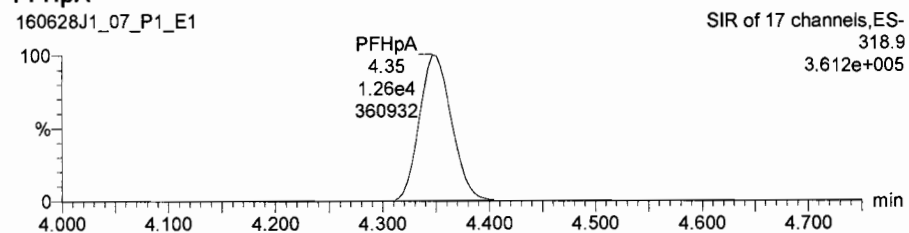
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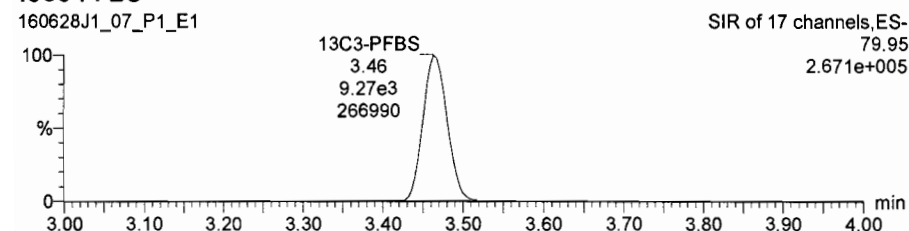
PFBS



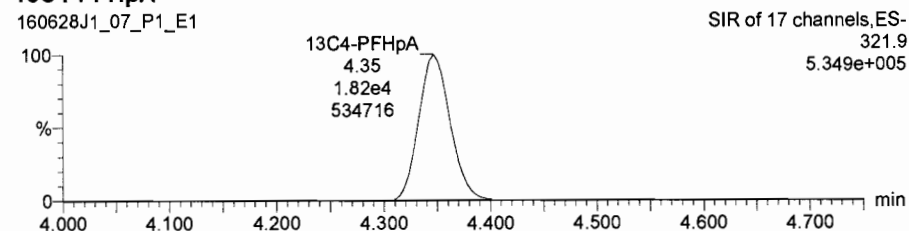
PFHpA



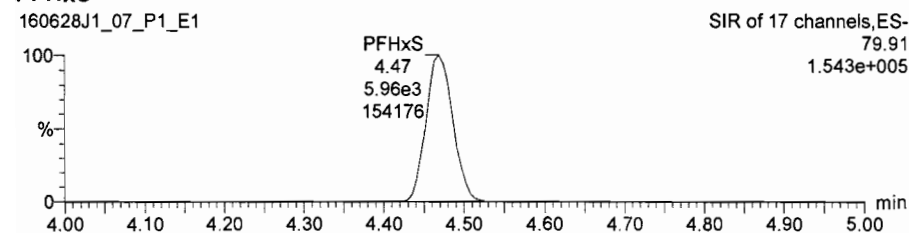
13C3-PFBS



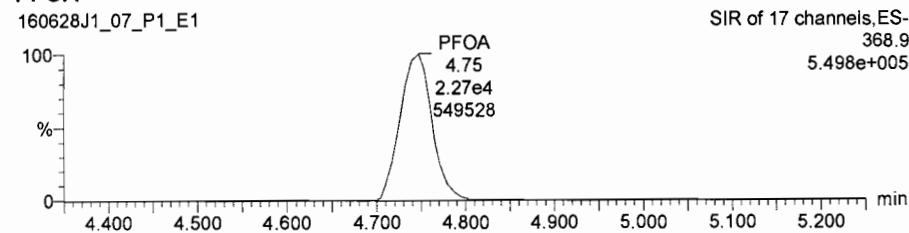
13C4-PFHpA



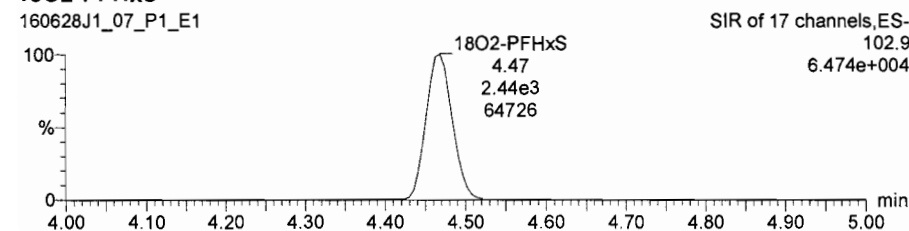
PFHxS



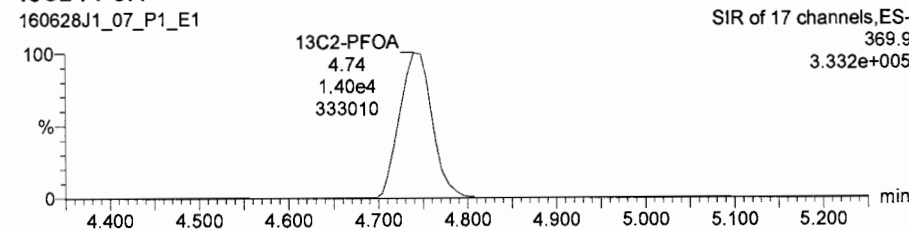
PFOA



18O2-PFHxS



13C2-PFOA



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

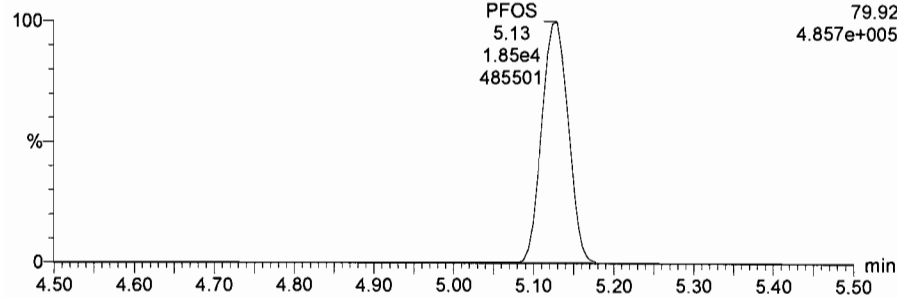
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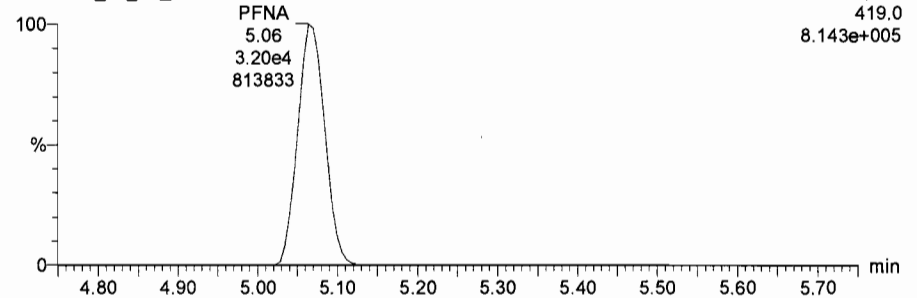
PFOS

160628J1_07_P1_E1



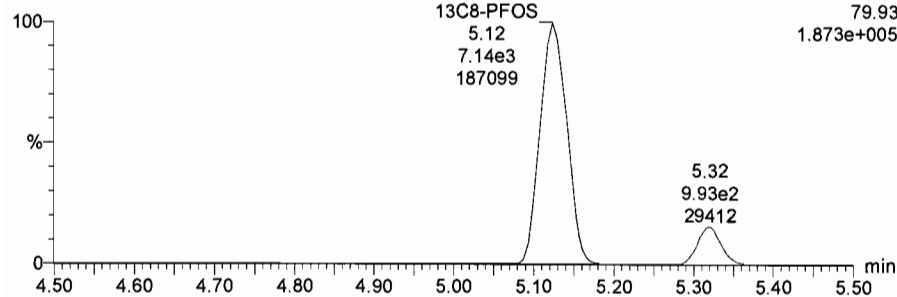
PFNA

160628J1_07_P1_E1



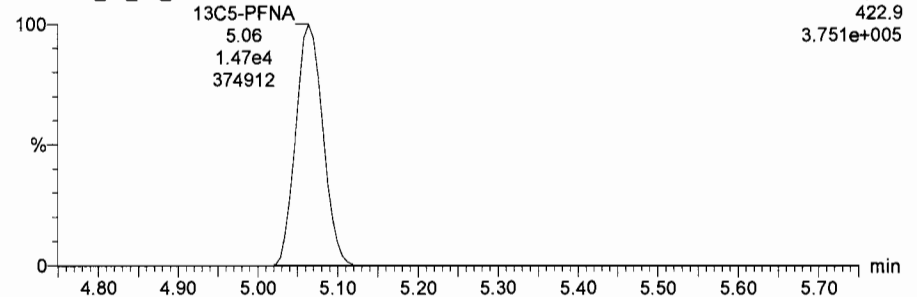
13C8-PFOS

160628J1_07_P1_E1



13C5-PFNA

160628J1_07_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

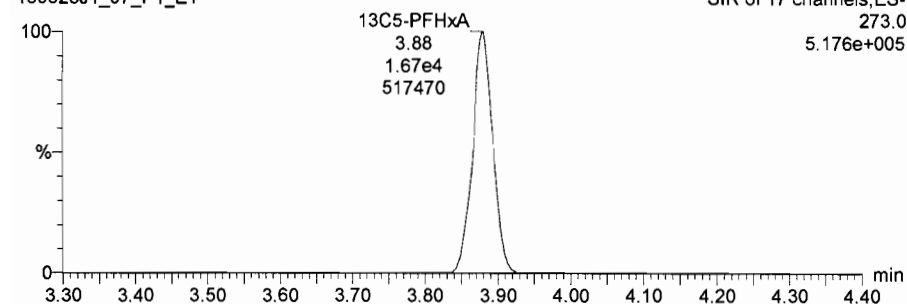
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_07.wiff, Date: 28-Jun-2016, Time: 17:10:01, ID: ST160628J1-6 PFC CS4 16F0706, Description: PFC CS4 16F0706

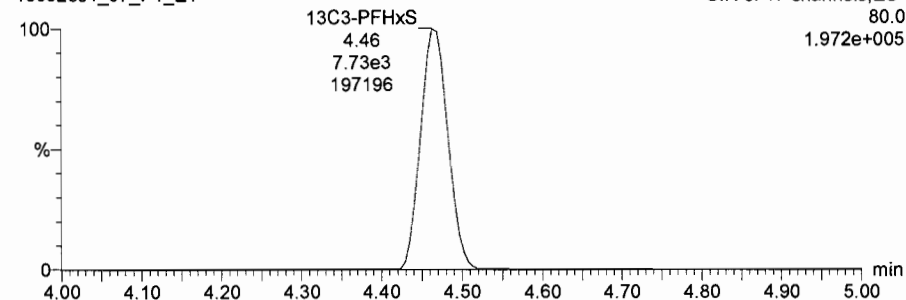
13C5-PFHxA

160628J1_07_P1_E1



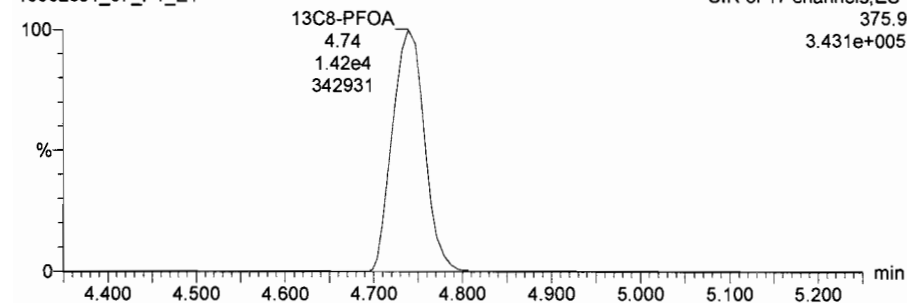
13C3-PFHxS

160628J1_07_P1_E1



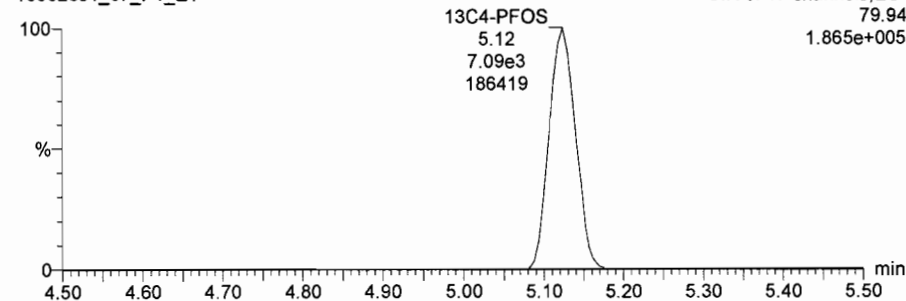
13C8-PFOA

160628J1_07_P1_E1



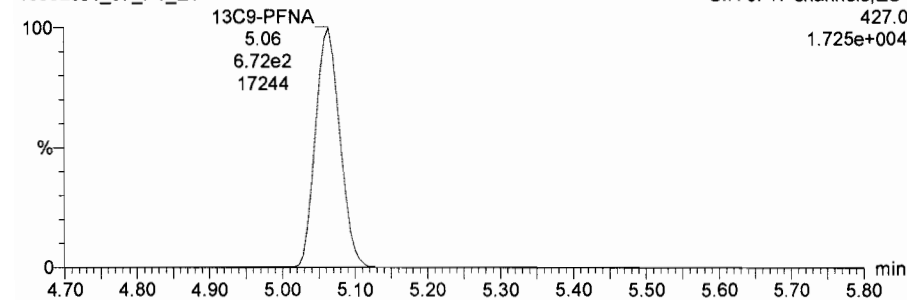
13C4-PFOS

160628J1_07_P1_E1



13C9-PFNA

160628J1_07_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

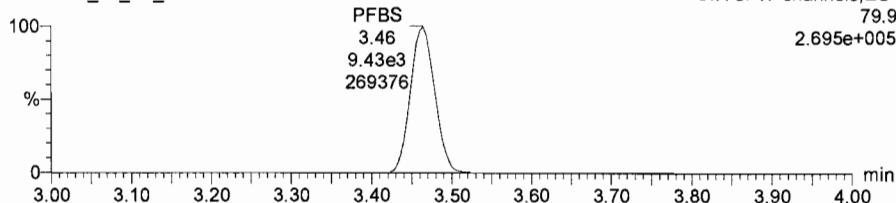
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_08.wiff, Date: 28-Jun-2016, Time: 17:22:14, ID: ST160628J1-7 PFC CS4.5 16F0707, Description: PFC CS4.5 16F0707

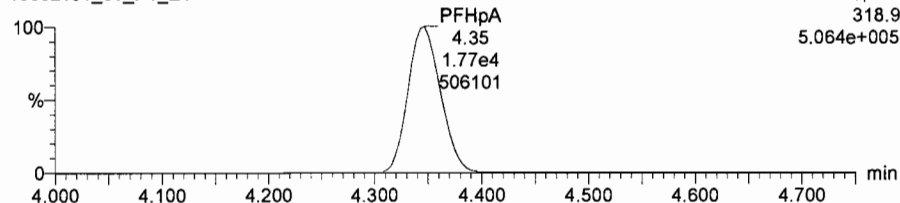
PFBS

160628J1_08_P1_E1



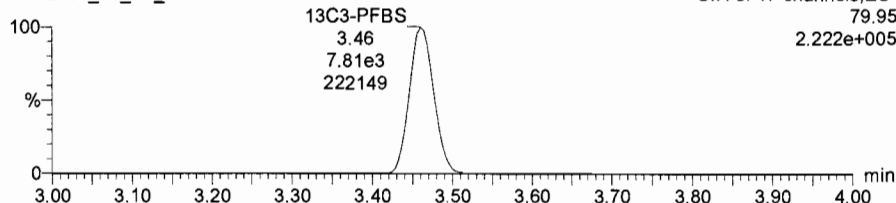
PFHpA

160628J1_08_P1_E1



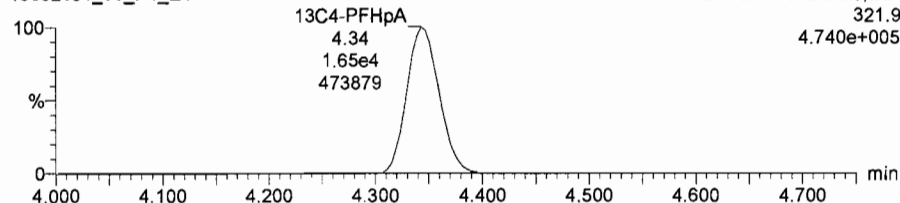
13C3-PFBS

160628J1_08_P1_E1



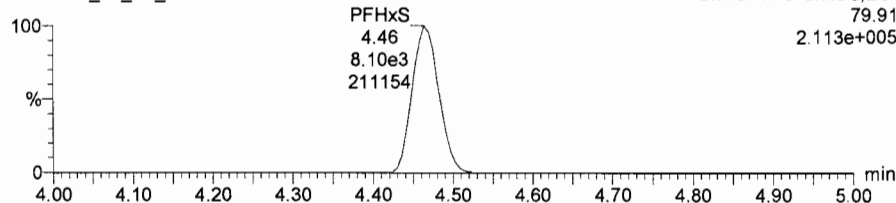
13C4-PFHpA

160628J1_08_P1_E1



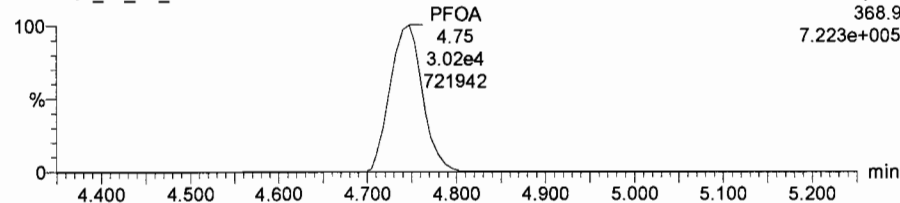
PFHxS

160628J1_08_P1_E1



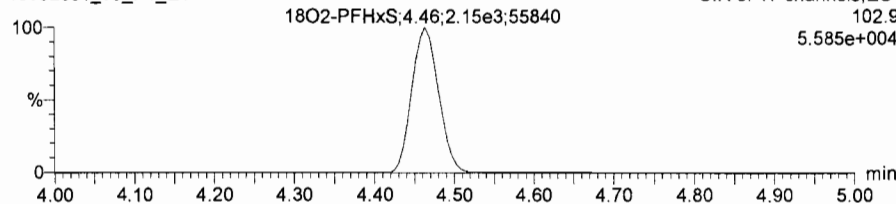
PFOA

160628J1_08_P1_E1



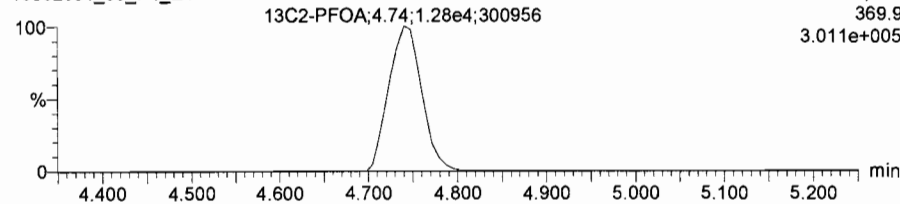
18O2-PFHxS

160628J1_08_P1_E1



13C2-PFOA

160628J1_08_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

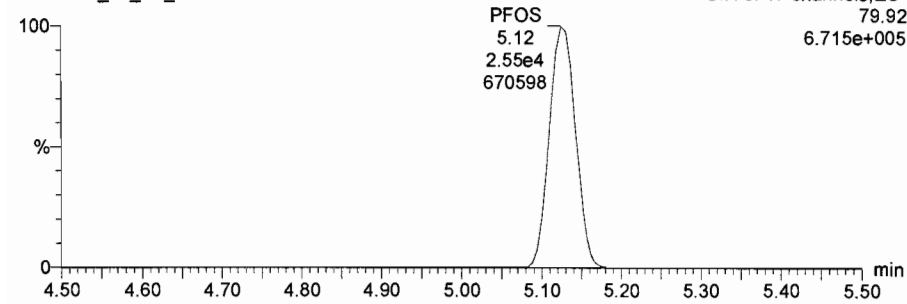
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_08.wiff, Date: 28-Jun-2016, Time: 17:22:14, ID: ST160628J1-7 PFC CS4.5 16F0707, Description: PFC CS4.5 16F0707

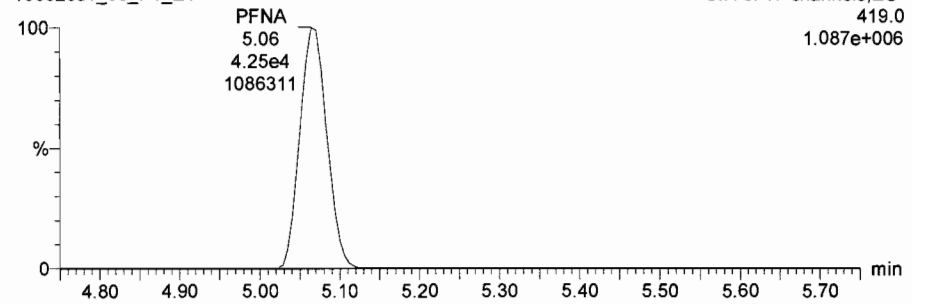
PFOS

160628J1_08_P1_E1



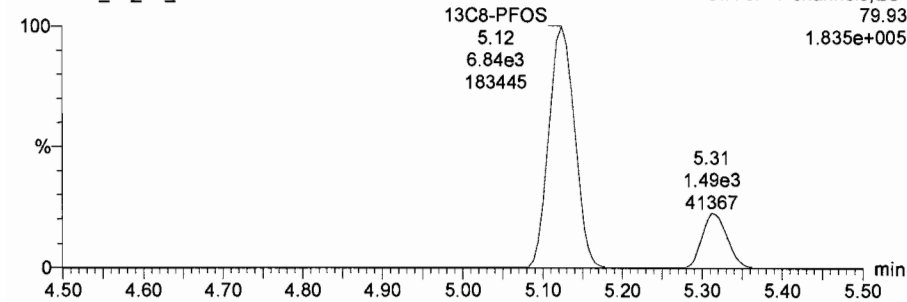
PFNA

160628J1_08_P1_E1



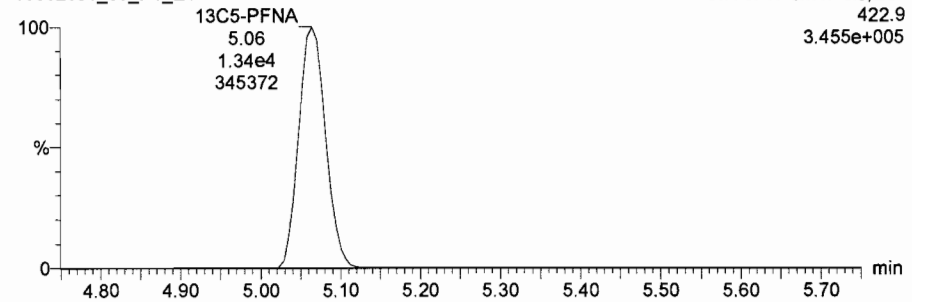
13C8-PFOS

160628J1_08_P1_E1



13C5-PFNA

160628J1_08_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1.crv.qld

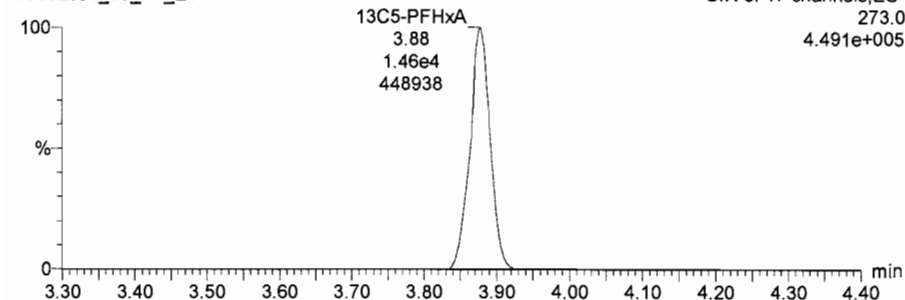
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_08.wiff, Date: 28-Jun-2016, Time: 17:22:14, ID: ST160628J1-7 PFC CS4.5 16F0707, Description: PFC CS4.5 16F0707

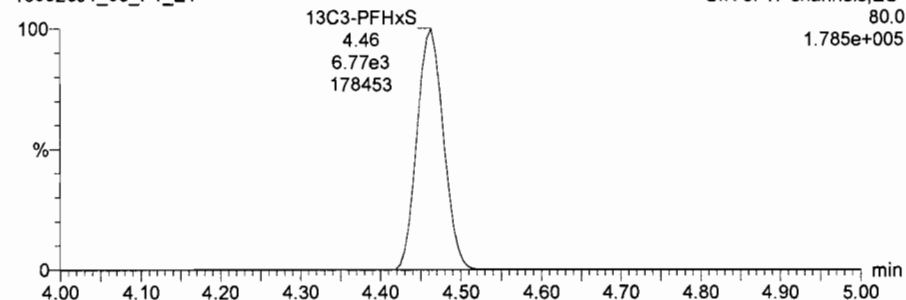
13C5-PFHxA

160628J1_08_P1_E1



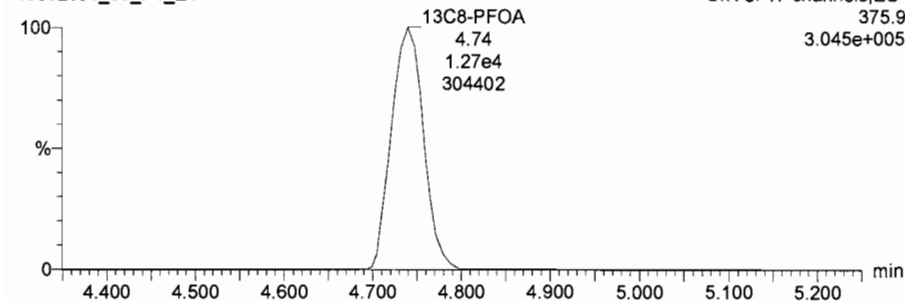
13C3-PFHxS

160628J1_08_P1_E1



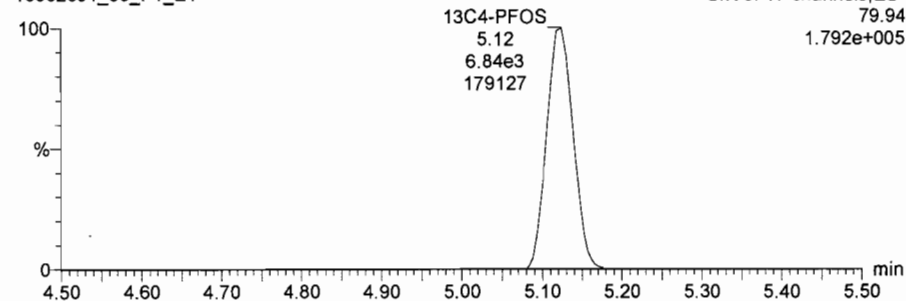
13C8-PFOA

160628J1_08_P1_E1



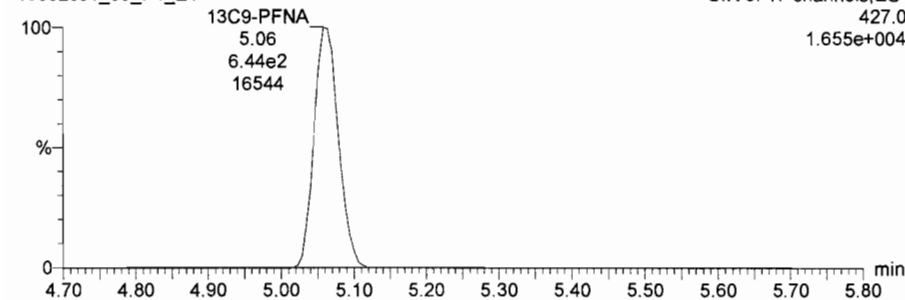
13C4-PFOS

160628J1_08_P1_E1



13C9-PFNA

160628J1_08_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

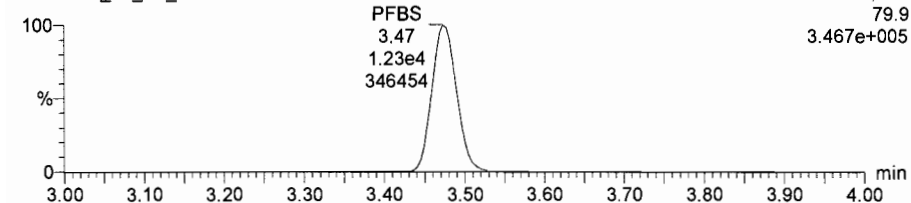
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_09.wiff, Date: 28-Jun-2016, Time: 17:34:27, ID: ST160628J1-8 PFC CS5 16F0708, Description: PFC CS5 16F0708

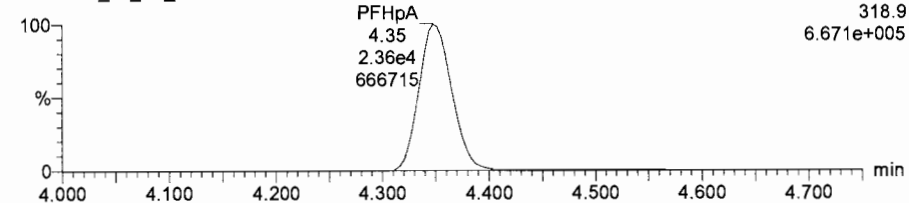
PFBS

160628J1_09_P1_E1



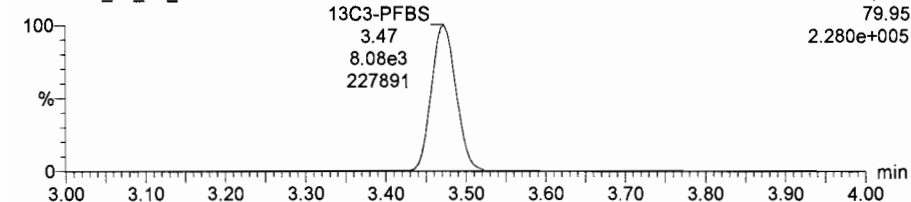
PFHpA

160628J1_09_P1_E1



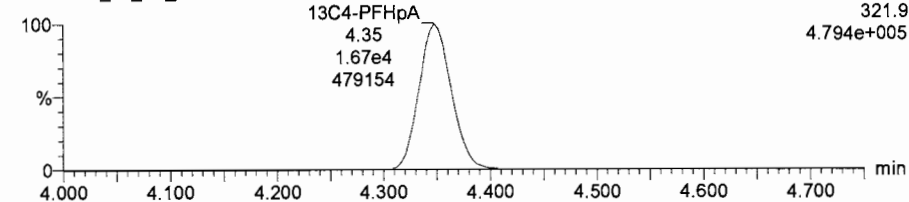
13C3-PFBS

160628J1_09_P1_E1



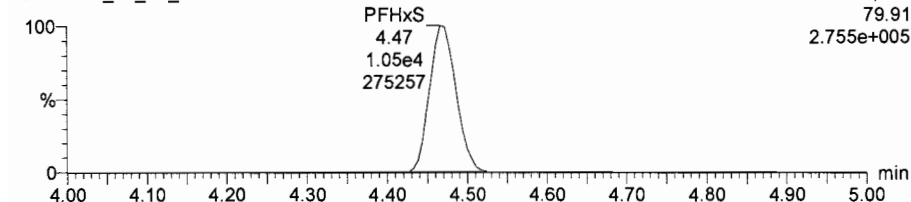
13C4-PFHpA

160628J1_09_P1_E1



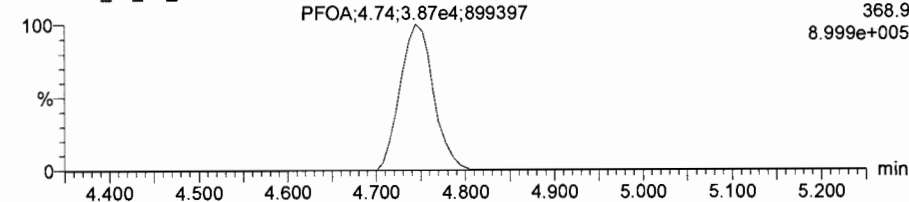
PFHxS

160628J1_09_P1_E1



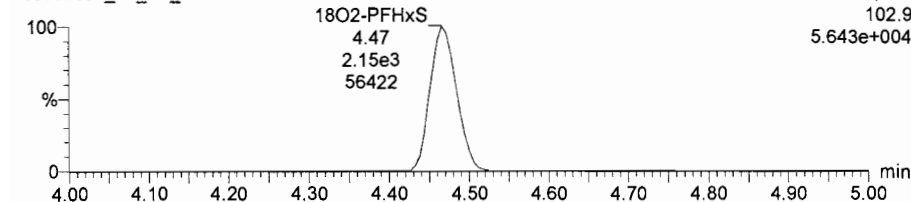
PFOA

160628J1_09_P1_E1



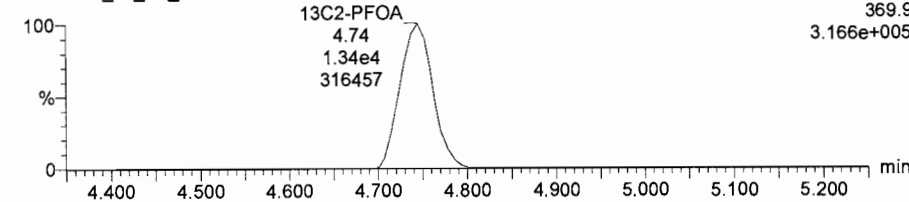
18O2-PFHxS

160628J1_09_P1_E1



13C2-PFOA

160628J1_09_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

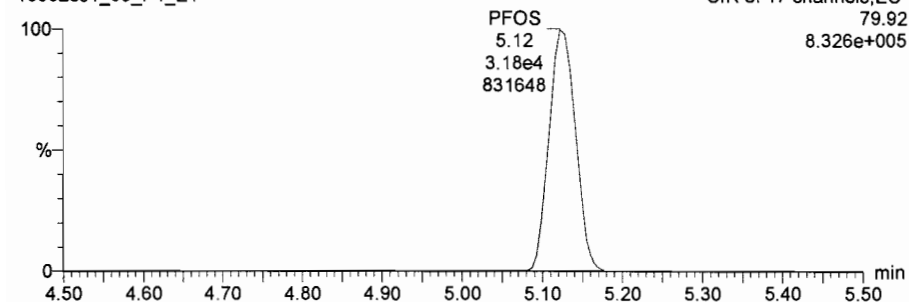
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Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_09.wiff, Date: 28-Jun-2016, Time: 17:34:27, ID: ST160628J1-8 PFC CS5 16F0708, Description: PFC CS5 16F0708

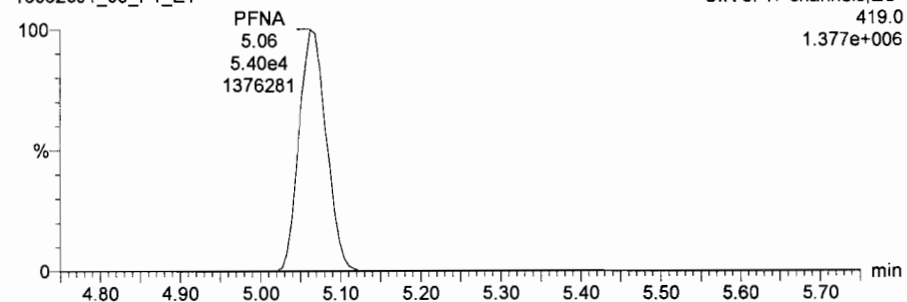
PFOS

160628J1_09_P1_E1



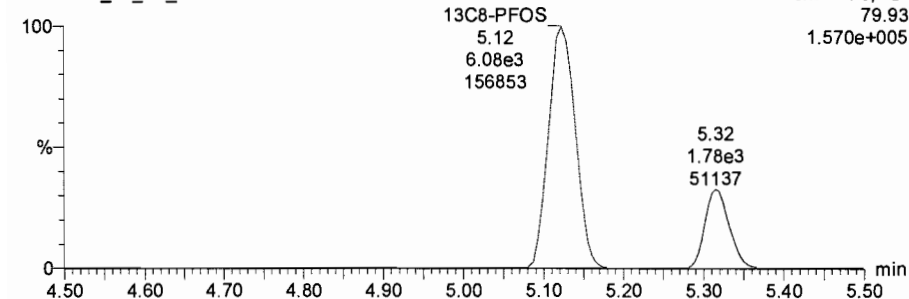
PFNA

160628J1_09_P1_E1



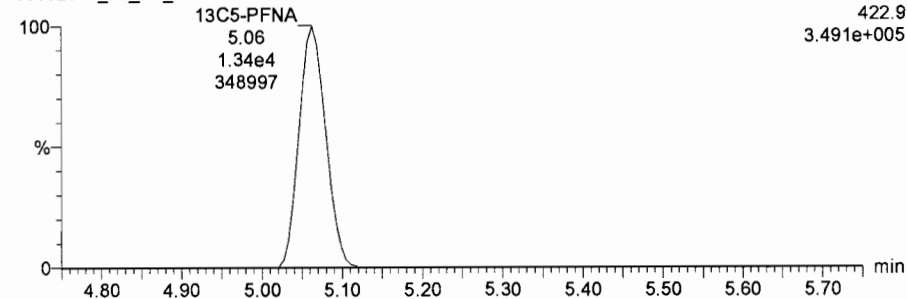
13C8-PFOS

160628J1_09_P1_E1



13C5-PFNA

160628J1_09_P1_E1



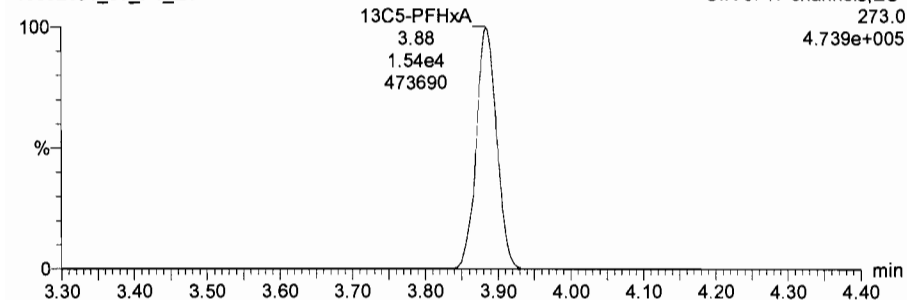
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Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time
Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_09.wiff, Date: 28-Jun-2016, Time: 17:34:27, ID: ST160628J1-8 PFC CS5 16F0708, Description: PFC CS5 16F0708

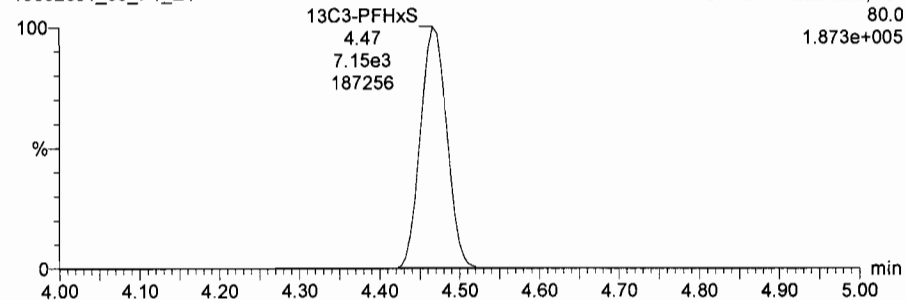
13C5-PFHxA

160628J1_09_P1_E1



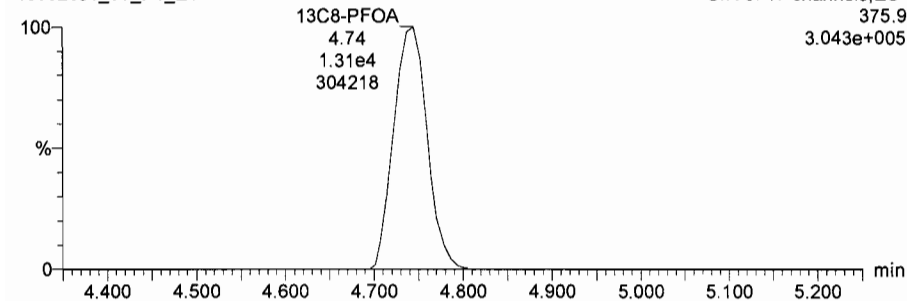
13C3-PFHxS

160628J1_09_P1_E1



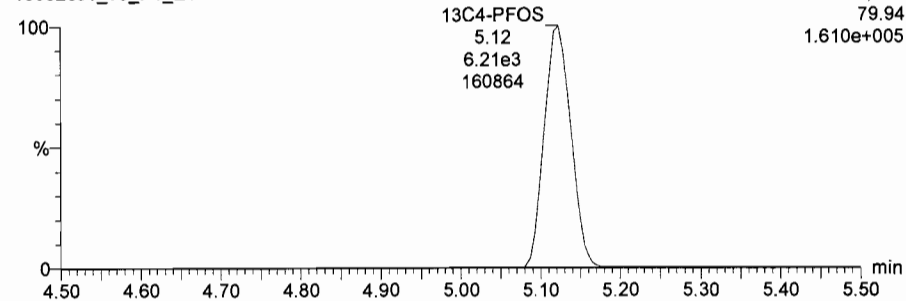
13C8-PFOA

160628J1_09_P1_E1



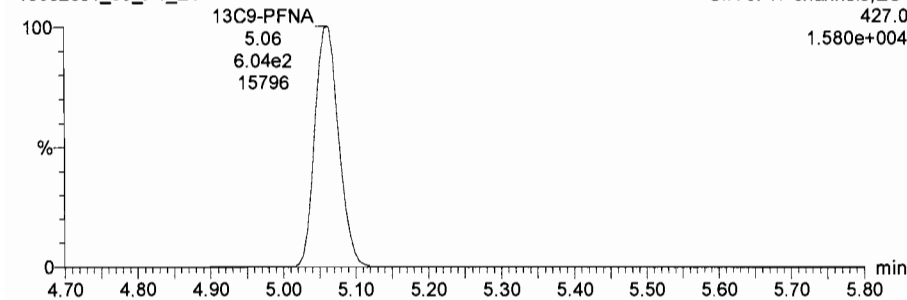
13C4-PFOS

160628J1_09_P1_E1



13C9-PFNA

160628J1_09_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1crv.qld

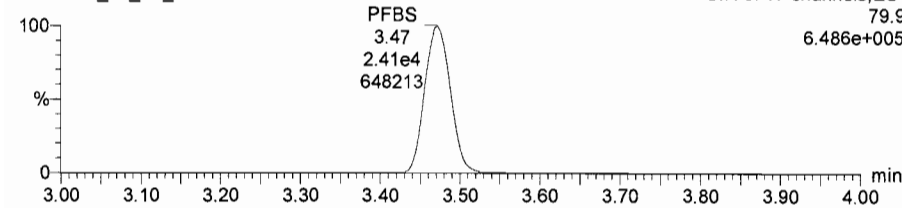
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Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

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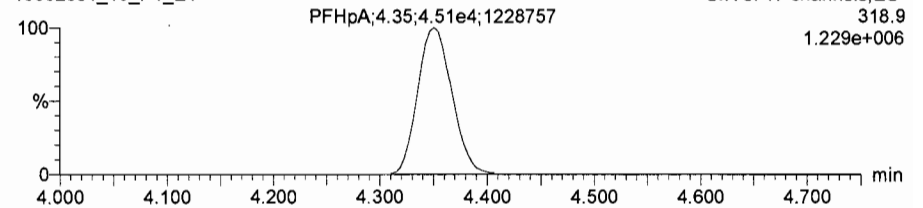
PFBS

160628J1_10_P1_E1



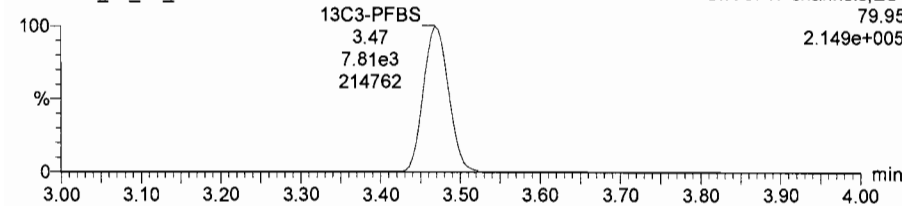
PFHpA

160628J1_10_P1_E1



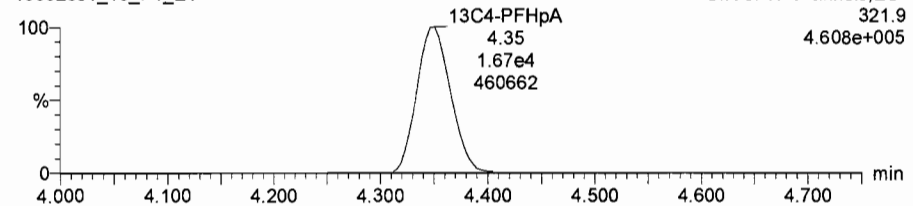
13C3-PFBS

160628J1_10_P1_E1



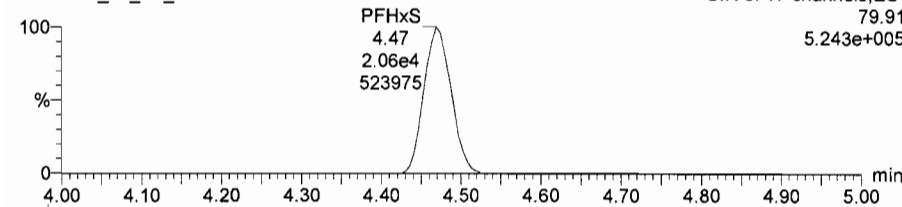
13C4-PFHpA

160628J1_10_P1_E1



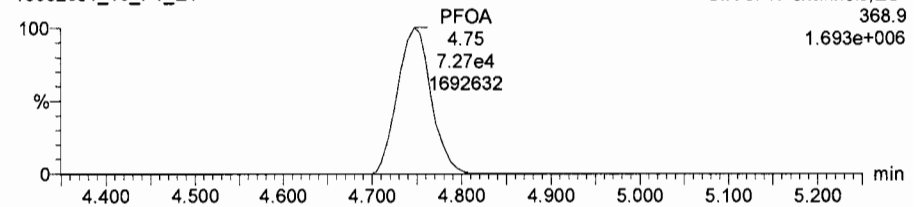
PFHxS

160628J1_10_P1_E1



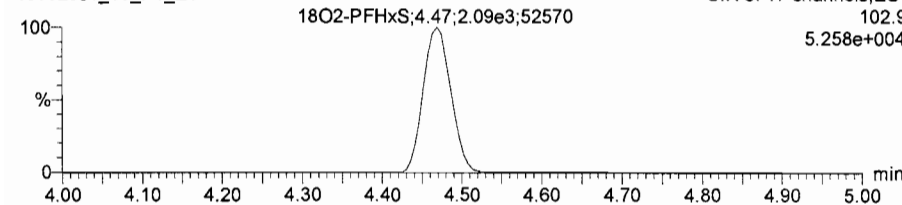
PFOA

160628J1_10_P1_E1



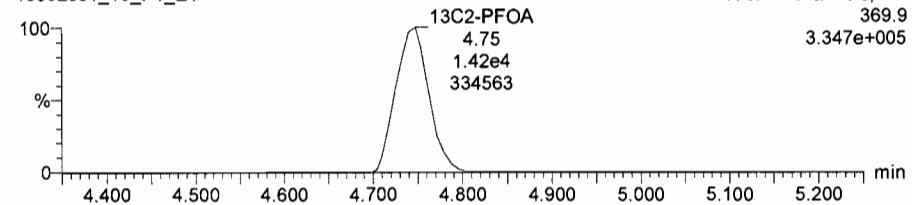
18O2-PFHxS

160628J1_10_P1_E1



13C2-PFOA

160628J1_10_P1_E1



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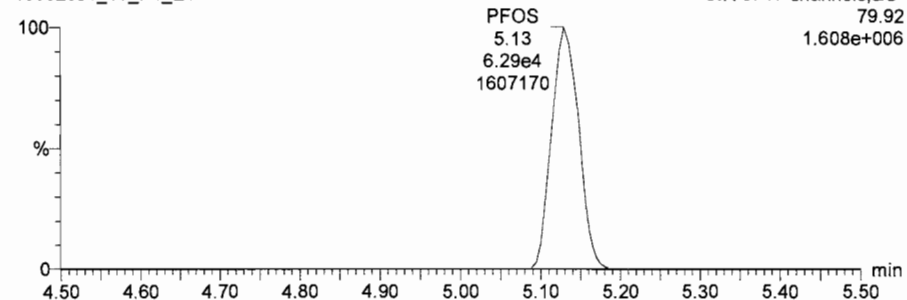
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_10.wiff, Date: 28-Jun-2016, Time: 17:46:39, ID: ST160628J1-9 PFC CS6 16F0709, Description: PFC CS6 16F0709

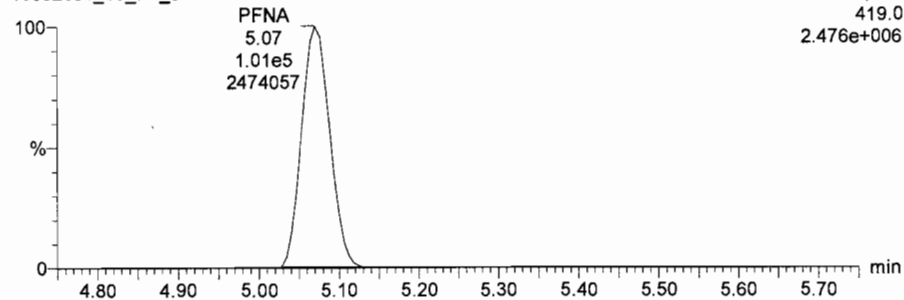
PFOS

160628J1_10_P1_E1



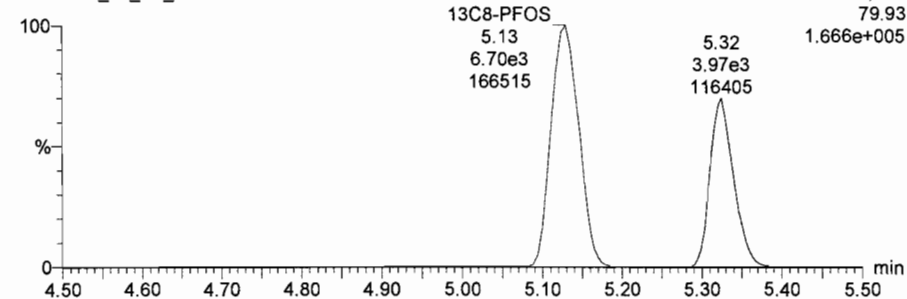
PFNA

160628J1_10_P1_E1



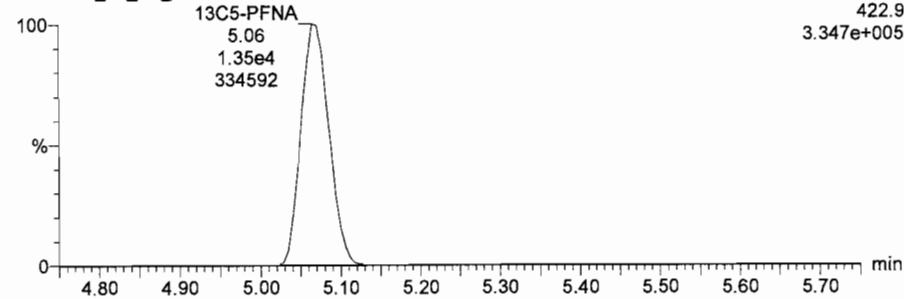
13C8-PFOS

160628J1_10_P1_E1



13C5-PFNA

160628J1_10_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J1.crv.qld

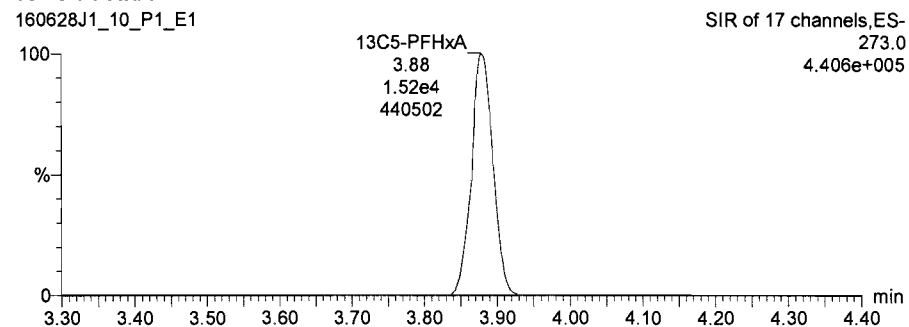
Last Altered: Wednesday, June 29, 2016 11:45:23 Pacific Daylight Time

Printed: Wednesday, June 29, 2016 11:56:13 Pacific Daylight Time

Name: 160628J1_10.wiff, Date: 28-Jun-2016, Time: 17:46:39, ID: ST160628J1-9 PFC CS6 16F0709, Description: PFC CS6 16F0709

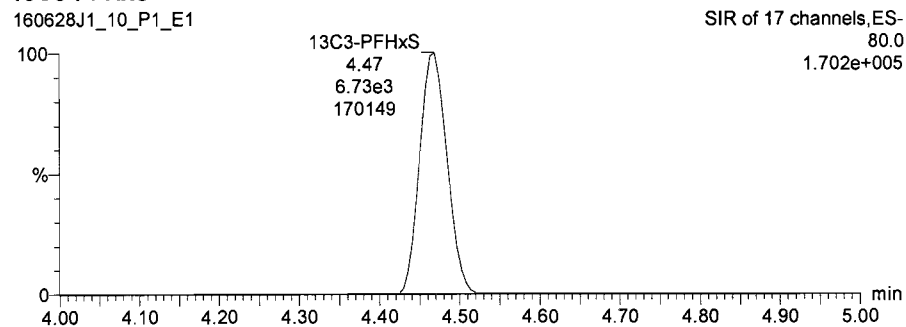
13C5-PFHxA

160628J1_10_P1_E1



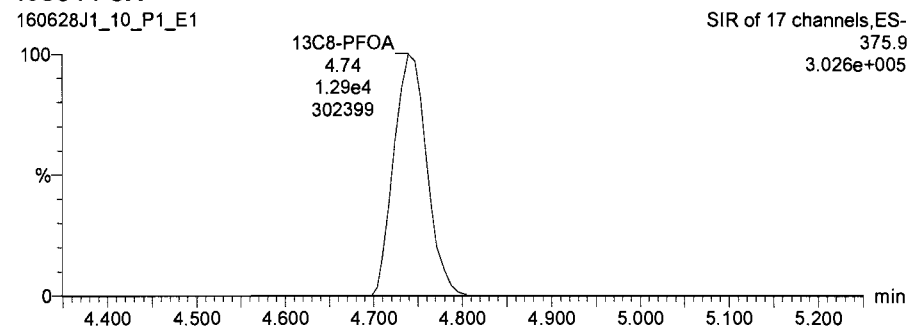
13C3-PFHxS

160628J1_10_P1_E1



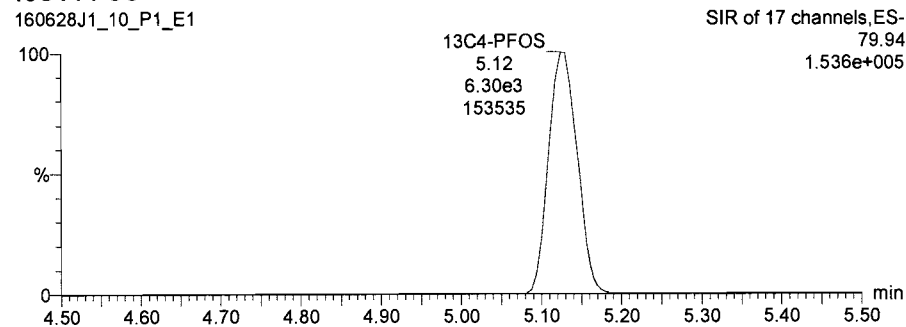
13C8-PFOA

160628J1_10_P1_E1



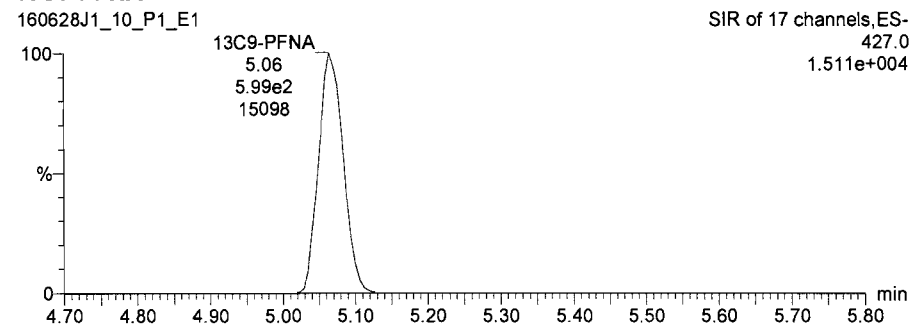
13C4-PFOS

160628J1_10_P1_E1



13C9-PFNA

160628J1_10_P1_E1



Dataset: U:\Q2.PRO\Results\160628J1\160628J_13.qld

Last Altered: Wednesday, June 29, 2016 12:35:29 Pacific Daylight Time
Printed: Wednesday, June 29, 2016 12:36:25 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50
Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_13.wiff, Date: 28-Jun-2016, Time: 18:23:17, ID: SS160628J1-1 PFC SSS 16F0907, Description: PFC SSS 16F0907

#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1 PFBS	79.9	3.62e3	8.73e3		1.000	3.46	25.8	103.0
2	2 PFHpA	318.9	7.70e3	1.75e4		1.000	4.35	29.8	119.4
3	3 PFHxS	79.91	2.58e3	2.29e3		1.000	4.47	22.1	88.2
4	4 PFOA	368.9	8.83e3	1.48e4		1.000	4.74	18.0	72.0
5	5 PFOS	79.92	6.16e3	7.43e3		1.000	5.13	15.3	61.2
6	6 PFNA	419.0	1.63e4	1.50e4		1.000	5.07	24.4	97.5
7	7 13C3-PFBS	79.95	8.73e3	1.45e4	0.546	1.000	3.46	13.8	110.0
8	8 13C4-PFHpA	321.9	1.75e4	1.45e4	1.075	1.000	4.34	14.0	112.1
9	9 18O2-PFHxS	102.9	2.29e3	6.83e3	0.307	1.000	4.47	13.6	108.9
10	10 13C2-PFOA	369.9	1.48e4	1.27e4	1.042	1.000	4.74	13.9	111.5
11	11 13C8-PFOS	79.93	7.43e3	6.74e3	1.026	1.000	5.13	13.4	107.5
12	12 13C5-PFNA	422.9	1.50e4	6.02e2	21.158	1.000	5.07	14.7	118.0
13	13 13C5-PFHxA	273.0	1.45e4	1.45e4	1.000	1.000	3.88	12.5	100.0
14	14 13C3-PFHxS	80.0	6.83e3	6.83e3	1.000	1.000	4.47	12.5	100.0
15	15 13C8-PFOA	375.9	1.27e4	1.27e4	1.000	1.000	4.74	12.5	100.0
16	16 13C4-PFOS	79.94	6.74e3	6.74e3	1.000	1.000	5.13	12.5	100.0
17	17 13C9-PFNA	427.0	6.02e2	6.02e2	1.000	1.000	5.06	12.5	100.0
18	18 Total PFBS	79.9		8.73e3		1.000		25.8	
19	19 Total PFHxS	79.91		2.29e3		1.000		26.3	
20	20 Total PFOA	368.9		1.48e4		1.000		21.2	
21	21 Total PFOS	79.92		7.43e3		1.000		25.7	

Limits
75-125

108.8 ⓐ
91.1 ⓐ
89.6 ⓐ

PW
6/29/16
BR 6/29/16 ✓

ⓐ % Rec Calc. as % of linear isomers in Branched/Technical mix.
PW 6/29/16

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160628J1\160628J_13.qld

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Printed: Wednesday, June 29, 2016 12:36:25 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 13 Jun 2016 10:04:50

Calibration: U:\Q2.PRO\CurveDB\C18_VAL-PFC_Q2_06-28-16_L6_A.cdb 29 Jun 2016 11:45:23

Name: 160628J1_13.wiff, Date: 28-Jun-2016, Time: 18:23:17, ID: SS160628J1-1 PFC SSS 16F0907, Description: PFC SSS 16F0907

Total PFBS

#	Name	Trace	RT	Area	IS Area	Conc.
1	1 PFBS	79.9	3.46	3.62e3	8.73e3	25.8

Total PFHxS

#	Name	Trace	RT	Area	IS Area	Conc.
1	3 PFHxS	79.91	4.47	2.58e3	2.29e3	22.1
2	19 Total PFHxS	79.91	4.37	4.85e2	2.29e3	4.13
3	19 Total PFHxS	79.91	4.26	9.77e0	2.29e3	0.0832

Total PFOA

#	Name	Trace	RT	Area	IS Area	Conc.
1	4 PFOA	368.9	4.74	8.83e3	1.48e4	18.0
2	20 Total PFOA	368.9	4.65	1.62e3	1.48e4	3.24

Total PFOS

#	Name	Trace	RT	Area	IS Area	Conc.
1	5 PFOS	79.92	5.13	6.16e3	7.43e3	15.3
2	21 Total PFOS	79.92	5.02	3.90e3	7.43e3	9.64
3	21 Total PFOS	79.92	4.93	2.93e2	7.43e3	0.720

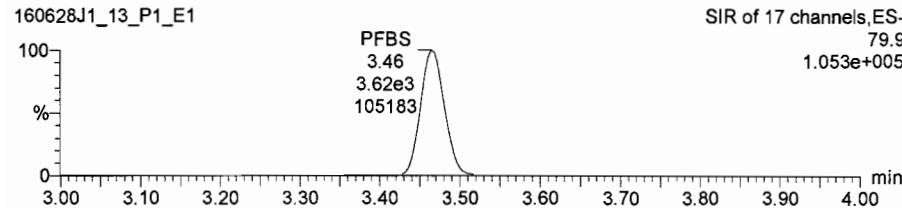
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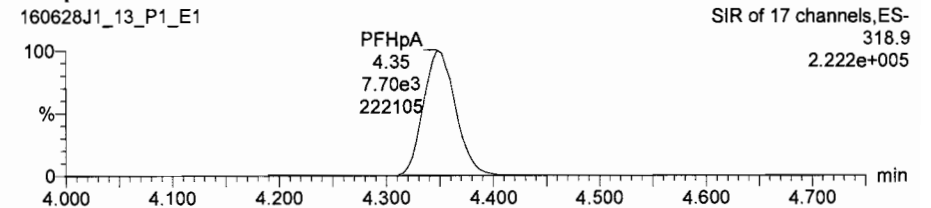
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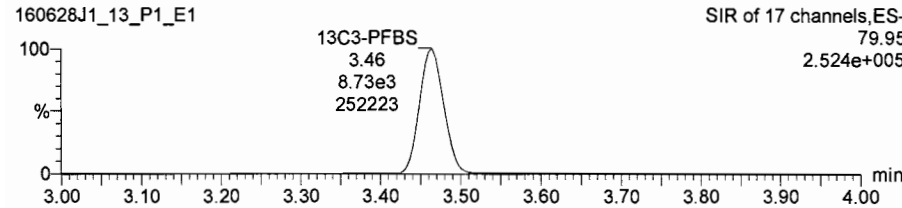
PFBS



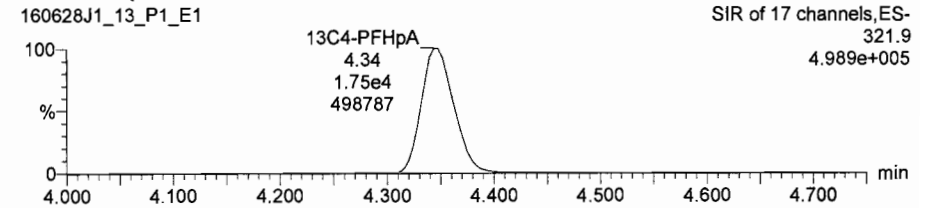
PFHpA



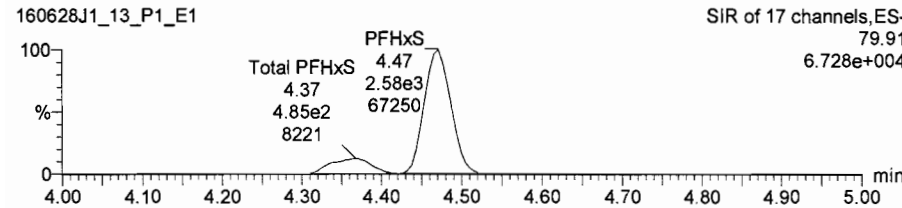
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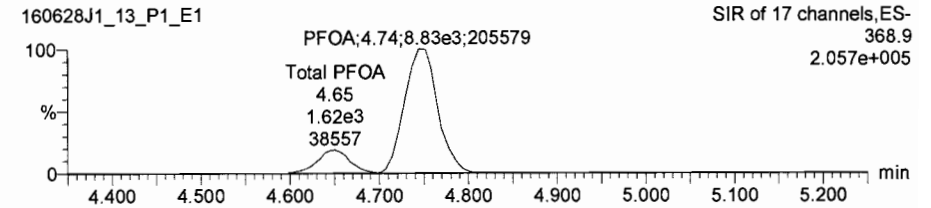
13C4-PFHpA



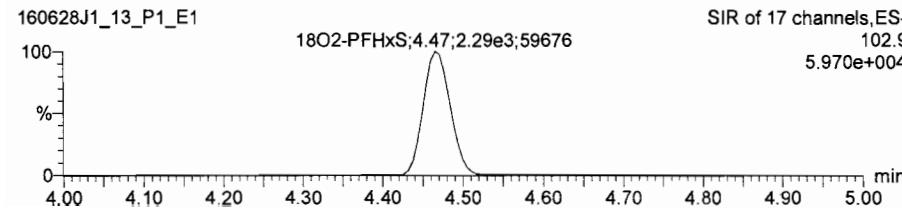
PFHxS



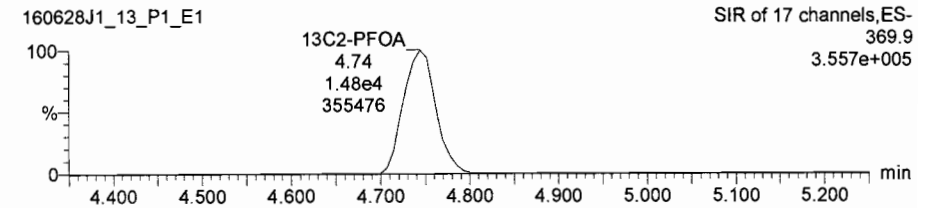
PFOA

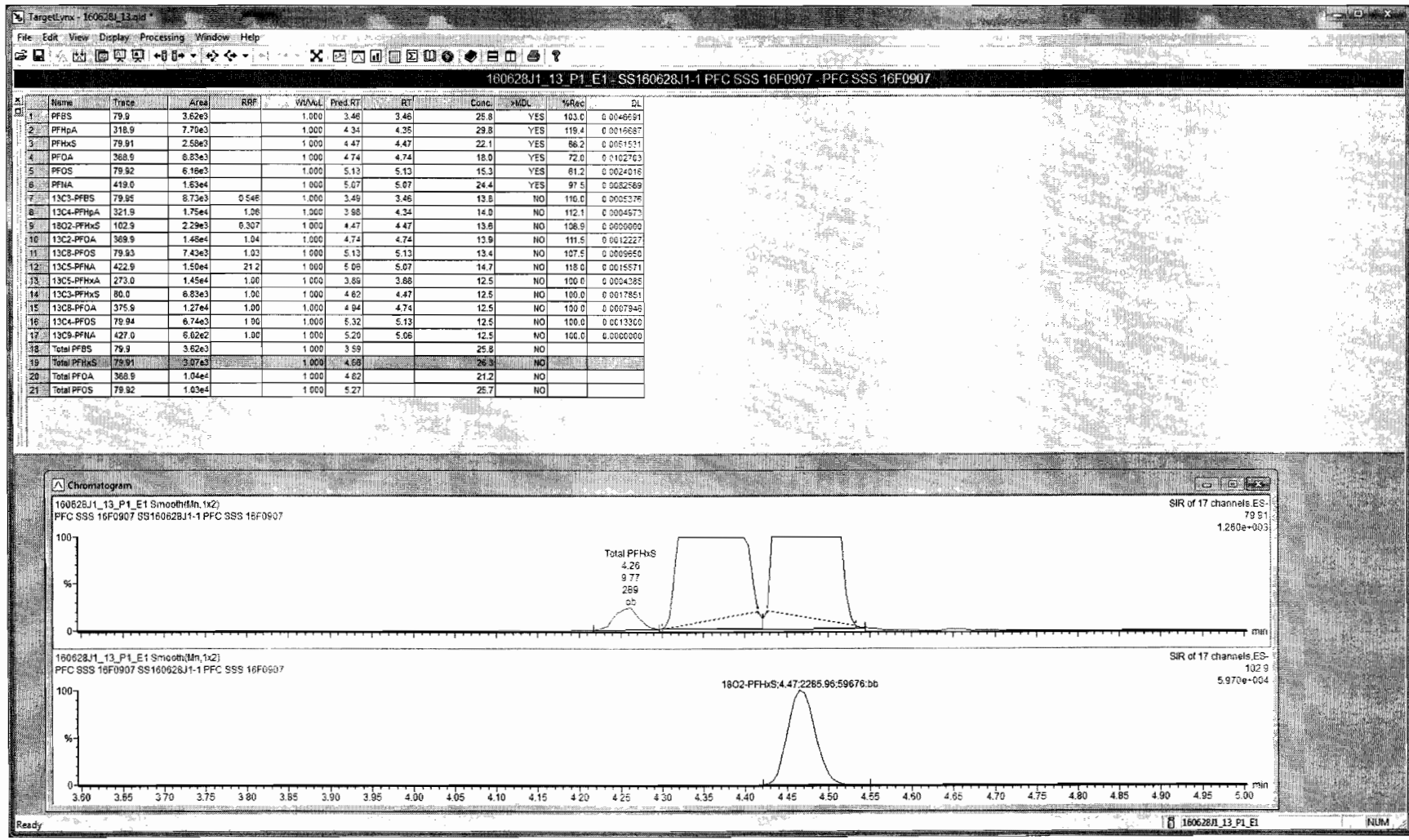


18O2-PFHxS



13C2-PFOA





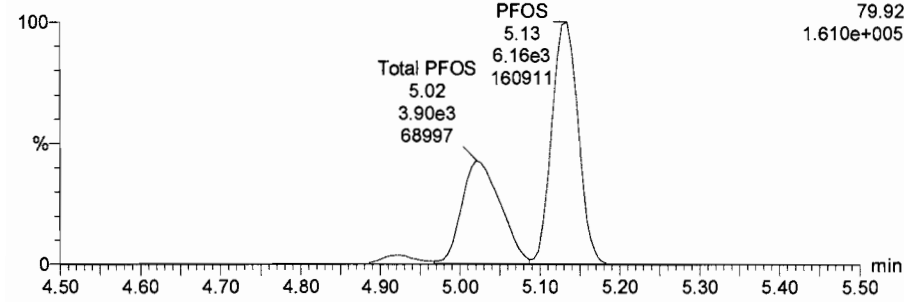
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Printed: Wednesday, June 29, 2016 12:36:44 Pacific Daylight Time

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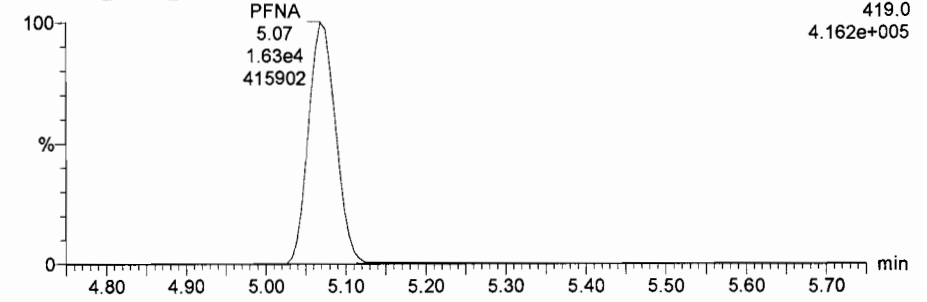
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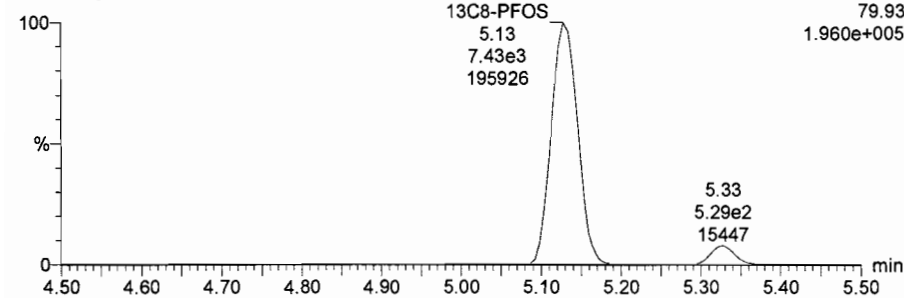
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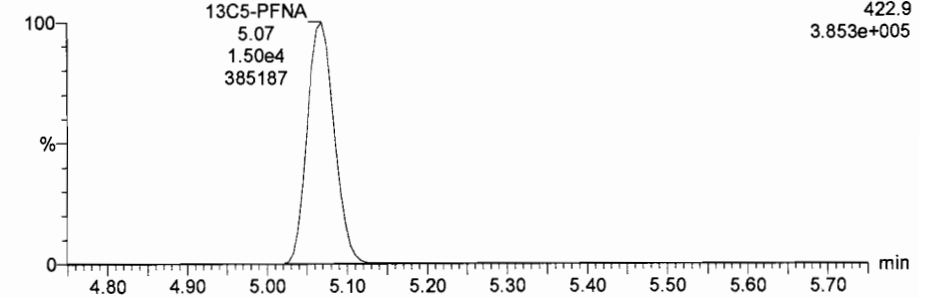
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160628J1_13_P1_E1



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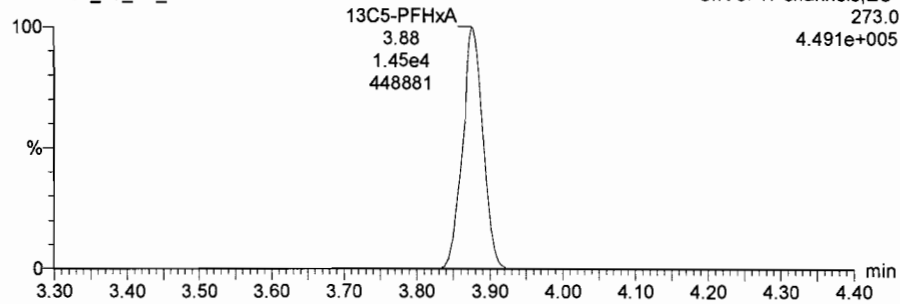
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13C5-PFHxA

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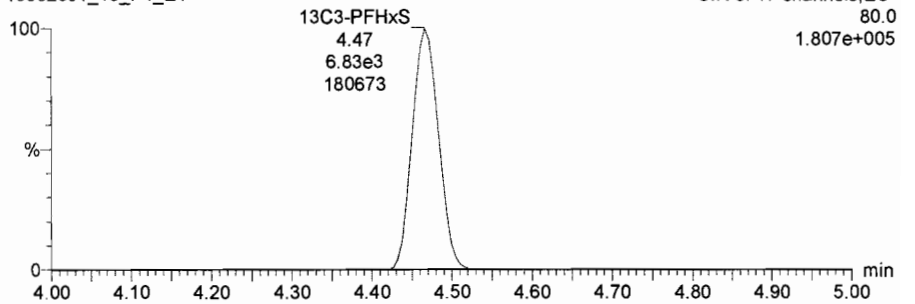
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4.491e+005



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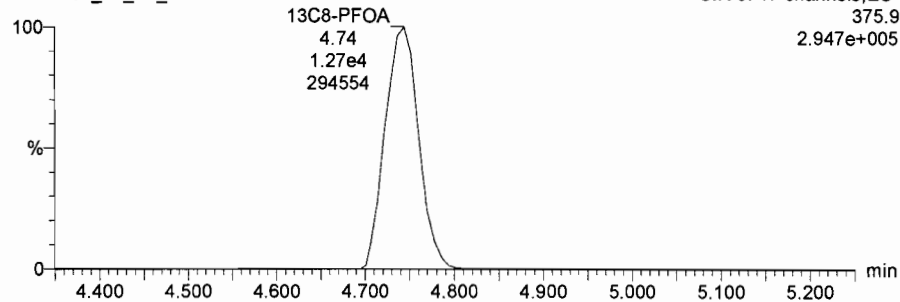
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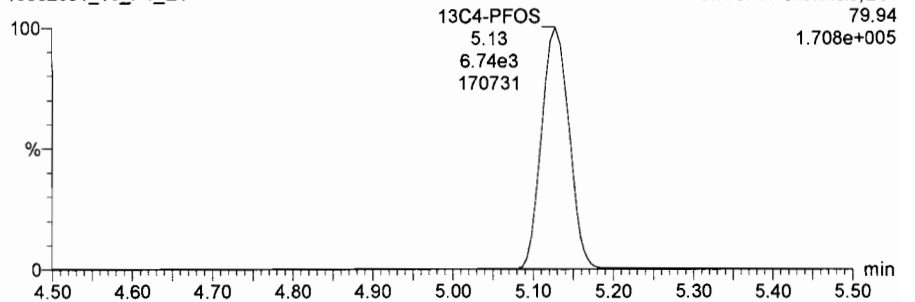
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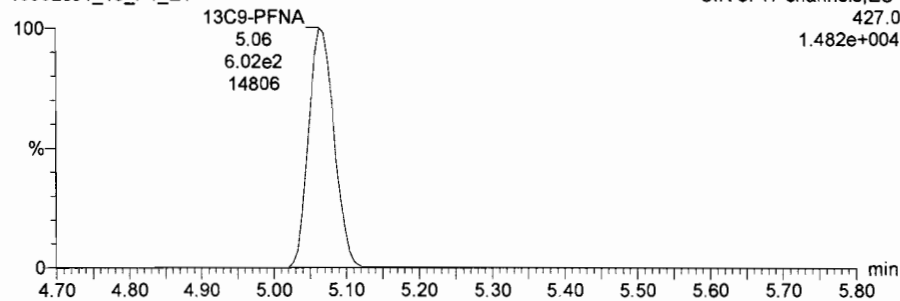
SIR of 17 channels, ES-
79.94
1.708e+005



13C9-PFNA

160628J1_13_P1_E1

SIR of 17 channels, ES-
427.0
1.482e+004



Index	Company	Product	Category	Material	Quantity	Unit Price	Total Price	Order Date	Delivery Date	Status	Warehouse	Location	Notes	Supplier	Contact	Phone	Email	Website	Address	City	State	Zip	Country
1	ABC Corp	Product A	Electronics	Material X	100	10.00	1000.00	2023-01-01	2023-01-15	Completed	WH1	LA	Standard	Supplier A	John D.	555-123-4567	john.d@abc.com	www.abc.com	123 Main St	Los Angeles	CA	90001	USA
2	DEF Inc	Product B	Mechanical	Material Y	200	5.00	1000.00	2023-01-02	2023-01-16	Completed	WH2	NY	Standard	Supplier B	Jane E.	555-234-5678	jane.e@def.com	www.def.com	456 Park Ave	New York	NY	10001	USA
3	GHI Ltd	Product C	Chemicals	Material Z	50	20.00	1000.00	2023-01-03	2023-01-17	Completed	WH3	TX	Standard	Supplier C	Mike F.	555-345-6789	mike.f@ghi.com	www.ghi.com	789 Highway	Dallas	TX	75001	USA
4	JKL Co	Product D	Plastics	Material A	300	3.33	1000.00	2023-01-04	2023-01-18	Completed	WH4	FL	Standard	Supplier D	Sarah G.	555-456-7890	sarah.g@jkl.com	www.jkl.com	012 Ocean Dr	Miami	FL	33101	USA
5	MNO Corp	Product E	Metals	Material B	150	6.67	1000.00	2023-01-05	2023-01-19	Completed	WH5	WA	Standard	Supplier E	David H.	555-567-8901	david.h@mno.com	www.mno.com	345 Mountain Rd	Seattle	WA	98101	USA
6	PQR Inc	Product F	Textiles	Material C	400	2.50	1000.00	2023-01-06	2023-01-20	Completed	WH6	IL	Standard	Supplier F	Emily I.	555-678-9012	emily.i@pqr.com	www.pqr.com	678 Valley St	Chicago	IL	60601	USA
7	STU Ltd	Product G	Automotive	Material D	250	4.00	1000.00	2023-01-07	2023-01-21	Completed	WH7	OH	Standard	Supplier G	Chris J.	555-789-0123	chris.j@stu.com	www.stu.com	901 Industrial Blvd	Columbus	OH	43201	USA
8	VWX Co	Product H	Food & Beverage	Material E	180	5.56	1000.00	2023-01-08	2023-01-22	Completed	WH8	CA	Standard	Supplier H	Alex K.	555-890-1234	alex.k@vwx.com	www.vwx.com	234 Market St	San Francisco	CA	94101	USA
9	YZA Inc	Product I	Pharmaceuticals	Material F	120	8.33	1000.00	2023-01-09	2023-01-23	Completed	WH9	VA	Standard	Supplier I	Nancy L.	555-901-2345	nancy.l@yza.com	www.yza.com	567 Capitol Hill	Alexandria	VA	22301	USA
10	BCD Corp	Product J	Construction	Material G	350	2.86	1000.00	2023-01-10	2023-01-24	Completed	WH10	AZ	Standard	Supplier J	Robert M.	555-012-3456	robert.m@bcd.com	www.bcd.com	890 Desert Ave	Phoenix	AZ	85001	USA

Case No.	Case Name	Case Type	Case Status	Case Date	Case Location	Case Description	Case Details	Case Outcome	Case Notes
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1000000003	Case 3	Case Type 3	Case Status 3	Case Date 3	Case Location 3	Case Description 3	Case Details 3	Case Outcome 3	Case Notes 3
1000000004	Case 4	Case Type 4	Case Status 4	Case Date 4	Case Location 4	Case Description 4	Case Details 4	Case Outcome 4	Case Notes 4
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1000000007	Case 7	Case Type 7	Case Status 7	Case Date 7	Case Location 7	Case Description 7	Case Details 7	Case Outcome 7	Case Notes 7
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Data Validation Summary

Oceana CTO-WE44, NALF Fentress

TO: Tiffany Hill/CVO
Anita Dodson/VBO

FROM: Tiffany McGlynn/GNV

CC: Herb Kelly/GNV

DATE: September 9, 2016

Introduction

The following data validation report discusses the data validation process and findings for Vista Analytical in the Sample Delivery Groups (SDGs) listed in the table below.

Samples were analyzed using the following analytical methods:

- 537 MOD Perfluorinated Hydrocarbons

The samples included in these SDGs are listed in the table below.

SDG	Sample_Name	Matrix
1600783	OFPOL-MW-7-0616	Water
1600783	OFPOL-MW-4-0616	Water
1600783	OFPOL-MW-8-0616	Water
1600783	OFPOL-MW-6-0616	Water
1600783	OFPOL-MW-3-0616	Water
1600783	OFPOL-MW-3P-0616	Water
1600783	OFPOL-MW-2-0616	Water
1600783	OF-MW13-0616	Water
1600783	OF-MW11-0616	Water
1600818	OF14-MW07S-0616	Water
1600818	OF14-MW07D-0616	Water
1600818	OF-MW14-0616	Water

SDG	Sample_Name	Matrix
1600818	OF-MW16-0616	Water
1600818	OF-FB062016	Water
1600818	OF-EB062016	Water
1600818	OF-MW15-0616	Water
1600818	OF-MW15D-0616	Water
1600818	OF14-MW06-0616	Water
1600818	OF14-MW06D-0616	Water
1600818	OF-MW17-0616	Water
1600818	OF-MW12D-0616	Water
1600818	OF-MW12-0616	Water
1600818	OF-MW13D-0616	Water
1600818	OF-MW13DP-0616	Water
1600818	OF-MW11D-0616	Water
1600820	OF-MW10-0616	Water
1600820	OF-MW08-0616	Water
1600820	OF-MW08P-0616	Water
1600820	OF-MW10D-0616	Water
1600820	OF-MW09-0616	Water
1600820	OF-MW09D-0616	Water
1600872	OF-MW28-0716	Water
1600872	OF-MW25-0716	Water
1600872	OF-MW31-0716	Water
1600872	OF-FB070616	Water
1600896	OF-MW24-0716	Water
1600896	OF-FB071116	Water
1600896	OF-MW27-0716	Water
1600903	OF-MW30-0716	Water
1600903	OF-MW30P-0716	Water
1600903	OF-MW30D-0716	Water
1600903	OF-MW28D-0716	Water
1600903	OF-MW32-0716	Water
1600903	OF-MW29-0716	Water
1600903	OF-MW08D-0716	Water
1600903	OF-MW34-0716	Water
1600903	OF-MW31D-0716	Water

Data Evaluation

Data was evaluated in accordance with the analytical methods and with the criteria found in the following guidance documents: Sampling and Analysis Plan Basewide Perfluorinated Compound Site Investigation, Naval Auxiliary Landing Field Fentress, Chesapeake, Virginia

Contract Task Order WE44 (August 2016) and National Functional Guidelines for Organic Data Review (August 2014) with Region 3 Modification (Use of 'B' qualifier) as applicable. The samples were evaluated based on the following criteria:

- Data Completeness
- Technical Holding Times
- Tuning Instrument
- Initial/Continuing Calibrations
- Blanks
- Internal Standards
- Laboratory Control Samples
- Isotope Dilution Analyte
- Field Duplicates
- Identification/Quantitation
- Reporting Limits

Overall Evaluation of Data/Potential Usability Issues

Specific details regarding qualification of the data are addressed in the sections below. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte, the validator has chosen the qualifier that best indicates possible bias in the results and qualified these data accordingly.

Data Completeness

The SDG was received complete and intact.

Technical Holding Times

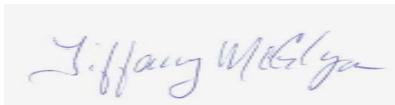
According to the chain of custody records, sampling was performed on 6/17/16 through 7/14/16. Samples were received at the laboratory 6/18/16 through 7/15/16. All sample preparation and analyses were performed within holding time requirements.

Conclusion

These data can be used in the project decision-making process as qualified by the data quality evaluation process.

Please do not hesitate to contact us about this validation report.

Sincerely,

A handwritten signature in blue ink that reads "Tiffany McGlynn". The signature is written in a cursive style and is contained within a light gray rectangular box.

Tiffany McGlynn

Qualification Flags

Exclude	More appropriate data exist for this analyte.
R	Data were rejected for use.
UL	Analyte not detected, quantitation limit is potentially biased low.
UJ	Analyte not detected, estimated quantitation limit.
U	Analyte not detected.
B	Not detected substantially above the level reported in laboratory or field blanks.
L	Analyte present, estimated value potentially biased low.
K	Analyte present, estimated value potentially biased high.
N	Analyte identification presumptive; no second column analysis performed or GC/MS tentative identification.
J	Analyte present, estimated value.
NJ	Analysis indicates the presence of an analyte that was "tentatively identified" and the associated value represents its approximate concentration.
None	Placeholder for calculating quality control issues that do not require flagging.
=	Analyte was detected at a concentration greater than the quantitation limit.

Qualifier Code Reference

Value	Description
%SOL	High Moisture content
2C	Second Column – Poor Dual Column Reproducibility
2S	Second Source – Bad reproducibility between tandem detectors
BD	Blank Spike/Blank Spike Duplicate(LCS/LCSD) Precision
BRL	Below Reporting Limit
BSH	Blank Spike/LCS – High Recovery
BSL	Blank Spike/LCS – Low Recovery
CC	Continuing Calibration
CCBL	Continuing Calibration Blank Contamination
CCH	Continuing Calibration Verification – High Recovery
CCL	Continuing Calibration Verification – Low Recovery
DL	Redundant Result – due to Dilution
EBL	Equipment Blank Contamination
EMPC	Estimated Possible Maximum Concentration
ESH	Extraction Standard - High Recovery
ESL	Extraction Standard - Low Recovery
FBL	Field Blank Contamination
FD	Field Duplicate
HT	Holding Time
ICB	Initial Calibration – Bad Linearity or Curve Function
ICH	Initial Calibration – High Relative Response Factors
ICL	Initial Calibration – Low Relative Response Factors
IR15	Ion ratio exceeds +/- 15% difference
ISH	Internal Standard – High Recovery
ISL	Internal Standard – Low Recovery
LD	Lab Duplicate Reproducibility
LR	Concentration Exceeds Linear Range
MBL	Method Blank Contamination
MDP	Matrix Spike/Matrix Spike Duplicate Precision
MI	Matrix interference obscuring the raw data

Value	Description
MSH	Matrix Spike and/or Matrix Spike Duplicate – High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate – Low Recovery
OT	Other
PD	Pesticide Degradation
RE	Redundant Result - due to Reanalysis or Re-extraction
SD	Serial Dilution Reproducibility
SSH	Spiked Surrogate – High Recovery
SSL	Spiked Surrogate – Low Recovery
TBL	Trip Blank Contamination
TN	Tune

