



**Groundwater Sample Results,
Level 2 Laboratory Report, Level 4 Laboratory Report,
Electronic Data Deliverable, and Data Validation Report,
SDG 1701286**

*Naval Air Station Meridian
Meridian, Mississippi*

July 2019



September 28, 2017

Vista Work Order No. 1701286

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 September 21, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name '676034'.

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,

A handwritten signature in black ink that reads "Martha Maier". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

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. 1701286**Case Narrative****Sample Condition on Receipt:**

Four drinking water samples and four 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:**EPA Method 537**

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

Holding Times

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

Quality Control

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

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

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "ME-JW-RW02-0917".

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701286-01	ME-JW-RW01-0917		20-Sep-17 09:37	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-02	ME-JW-FB01-0917		20-Sep-17 09:38	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-03	ME-JW-RW02-0917	MS/MSD	20-Sep-17 10:23	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-04	ME-JW-FB02-0917		20-Sep-17 10:24	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-05	ME-JW-RW03-0917		20-Sep-17 11:02	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-06	ME-JW-FB03-0917		20-Sep-17 11:03	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-07	ME-JW-RW04-0917		20-Sep-17 11:38	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-08	ME-JW-FB04-0917		20-Sep-17 11:39	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB					EPA Method 537					
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water					Laboratory Data Lab Sample: B7I0113-BLK1 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1
PFOA	ND	1.08	5.00	10.0		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1
PFOS	ND	1.04	5.00	10.0		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	98.9	70 - 130			B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1

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

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

Sample ID: LFB					EPA Method 537					
Client Data Name: CH2M Hill Project: 676034					Laboratory Data Lab Sample: B7I0113-BS1 Column: BEH C18					
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	15.8	17.7	89.4	70-130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1
PFOA	22.6	20.0	113	70-130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1
PFOS	18.9	18.5	102	70-130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR		94.5	70- 130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1

Sample ID: ME-JW-RW01-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water Date Collected: 20-Sep-17 09:37					Laboratory Data Lab Sample: 1701286-01 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	2.54	0.453	5.11	10.2	J	B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1
PFOA	5.30	1.10	5.11	10.2	J	B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1
PFOS	13.4	1.06	5.11	10.2		B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.8	70 - 130			B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1

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

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

Sample ID: ME-JW-FB01-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 09:38					Laboratory Data Lab Sample: 1701286-02 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.482	5.44	10.9		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
PFOA	ND	1.17	5.44	10.9		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
PFOS	ND	1.13	5.44	10.9		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130			B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1

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

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

Sample ID: ME-JW-RW02-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water Date Collected: 20-Sep-17 10:23					Laboratory Data Lab Sample: 1701286-03 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.21	10.4		B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1
PFOA	ND	1.13	5.21	10.4		B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1
PFOS	ND	1.08	5.21	10.4		B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1

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

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

Sample ID: ME-JW-RW02-0917														EPA Method 537		
Name: CH2M Hill Project: 676034 Matrix: Drinking Water					Lab Sample: B7I0113-MS1/B7I0113-MSD1 QC Batch: B7I0113 Samp Size: 0.237/0.250 L					Source Lab Sample: 1701286-03 Date Extracted: 22-Sep-17 Column: BEH C18						
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	15.9	18.7	85.3		15.5	17.7	87.5	2.55		70-130	30	23-Sep-17 01:22	1	23-Sep-17 01:34	1
PFOA	ND	23.5	21.1	110		21.7	20.0	107	2.76		70-130	30	23-Sep-17 01:22	1	23-Sep-17 01:34	1
PFOS	ND	18.1	19.5	92.4		18.8	18.5	101	8.89		70-130	30	23-Sep-17 01:22	1	23-Sep-17 01:34	1
Labeled Standards		Type		MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA		SURR		103				95.8			70-130		23-Sep-17 01:22	1	23-Sep-17 01:34	1

Sample ID: ME-JW-FB02-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 10:24					Laboratory Data Lab Sample: 1701286-04 Date Received: 21-Sep-17 0v:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.44v	5.07	10.1		B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
PFOA	ND	1.0v	5.07	10.1		B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
PFOS	ND	1.05	5.07	10.1		B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU99	110	70 - 130			B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1

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

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

Sample ID: ME-JW-RW01-097L					EAH Metdr5 31L				
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Client Data				baoryatryP Data			
Name:	Cu 2M u ill	Matrix:	DriBgiBWR ater	Lab Sample:	1701286-0H	ColnmB:	Ek u C18
Project:	676034	Date Collected:	20-Sep-17 11:02	Date v ecei9ed:	21-Sep-17 0F:10		

h nalPte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Bated	Extyacte5	Samp Size	h nalPze5	Dilutirn
P. ES	ND	05437	4F3	F36		E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1
P. OA	ND	1506	4F3	F36		E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1
P. OS	ND	1503	4F3	F36		E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1
baoele5 Stan5ay5s	TPpe	% RecrveyP	bimits		Qualifieys	Bated	Extyacte5	Samp Size	h nalPze5	Dilutirn
13C2-P. u xA	SUv v	F35H	70 - 130			E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1

DL - DetectioBLimit
 LOD - Limit of DetectioB
 LOQ - Limit of qnaBitatioB

LCL-UCL- Lower coBrol limit - npper coBrol limit
 v esnlts reported to the DL5
 R heBreported, P. u xS, P. OA aBd P. OS iBclnde both liBcar aBd braBched isomers5
 OBly the liBcar isomer is reported for all other aBalytes5

Sample ID: ME-JW-FB01-097L										EAh Metdr5 31L	
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 11:03					baoryatryP Data Lab Sample: 1701286-06 Date 9 eceiRed: 21-Sep-17 0v:10 Column: BEH C18						
h nalPte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Extyacte5	Samp Size	h nalPze5	Dilutirn	
PFBS	ND	0.455	5.13	10.3		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1	
PFOA	ND	1.11	5.13	10.3		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1	
PFOS	ND	1.07	5.13	10.3		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1	
b aoele5 Stan5ay5s	TPpe	% RecrveyP	bimits	Qualifieys	Batcd	Extyacte5	Samp Size	h nalPze5	Dilutirn		
13C2-PFHxA	SU9 9	v6.5	70 - 130		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1		

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

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

Sample ID: ME-JW-RW04-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water Date Collected: 20-Sep-17 11:38					Laboratory Data Lab Sample: 1701286-07 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.77		B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1
PFOA	ND	1.06	4.89	9.77		B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1
PFOS	ND	1.02	4.89	9.77		B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1

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

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

Sample ID: ME-JW-FB04-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 11:39					Laboratory Data Lab Sample: 1701286-08 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1
PFOA	ND	1.07	4.97	9.94		B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1
PFOS	ND	1.03	4.97	9.94		B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.9	70 - 130			B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1

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

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

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

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

NELAP Accredited Test Methods

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

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

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

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

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

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



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701286 Temp: 0.5 °C
Storage ID: WP-2 Storage Secured: Yes ☒ No ☐

Project ID: 676034 PO#: 1006-7-106051 Sampler: John Towns
(name)

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

Invoice to: Name Company Address City State Ph# Fax#

Katie Tippin CH2M 757-671-6258

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

John Towns 9/20/17 1500 Marissa Sparks 9/21/17 0925

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 (916) 673-1520 * Fax (916) 673-0106				Method of Shipment: <u>Fed Ex</u>		Tracking No.: <u>7877 8008 3232</u>		Add Analysis(es) Requested										Comments	
Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 18	537 List: 14	Full List of 26	Other: Please List Below	PFOA/PFOS	UCMR3 PFAS List 18	PFAS List: 14	EPA Method 537 (DW only) SOP 64				
ME-JW-RW01-0917	9/20/17	0937		2	P	DW						X							
ME-JW-FB01-0917	9/20/17	0938		2	P	AQ						X							
ME-JW-RW02-0917	9/20/17	1023		2	P	DW						X							
ME-JW-RW02-0917-MS	9/20/17	1023		2	P	DW						X							
ME-JW-RW02-0917-SD	9/20/17	1023		2	P	DW						X							
ME-JW-FB02-0917	9/20/17	1024		2	P	AQ						X							
ME-JW-RW03-0917	9/20/17	1102		2	P	DW						X							
ME-JW-FB03-0917	9/20/17	1103		2	P	AQ						X							
ME-JW-RW04-0917	9/20/17	1138		2	P	DW						X							
ME-JW-FB04-0917	9/20/17	1139		2	P	AQ						X							

Special Instructions/Comments: Method 537, SOP 64

SEND
DOCUMENTATION
AND RESULTS TO:

Name: Katie Tippin
Company: CH2M
Address: _____
City: _____ State: _____ Zip: _____
Phone: 757-671-6258 Fax: _____
Email: Katie.Tippin@Ch2m.com

Container Types: ☒ P = HDPE, ☐ PJ = HDPE Jar
O = Other: _____

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

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

Sample Log-in Checklist

 Vista Work Order #: 1701286 TAT 7

Samples Arrival:	Date/Time 9/21/17 0910	Initials: WWS	Location: WR-2 Shelf/Rack: N/A
Logged In:	Date/Time 09/21/17 1213	Initials: WWS	Location: WR-2 Shelf/Rack: F7
Delivered By:	☒ FedEx ☐ UPS ☐ On Trac ☐ GSO ☐ DHL ☐ Hand Delivered ☐ Other		
Preservation:	☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None		
Temp °C: 0.4 (uncorrected)	Time: 0924	Thermometer ID: IR-1	
Temp °C: 0.5 (corrected)	Probe used: Yes ☐ No ☒		

		YES	NO	NA
Adequate Sample Volume Received?		✓		
Holding Time Acceptable?		✓		
Shipping Container(s) Intact?		✓		
Shipping Custody Seals Intact?		✓		
Shipping Documentation Present?		✓		
Airbill	Trk # 7877 8008 3232	✓		
Sample Container Intact?		✓		
Sample Custody Seals Intact?				✓
Chain of Custody / Sample Documentation Present?		✓		
COC Anomaly/Sample Acceptance Form completed?			✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?		✓		
Preservation Documented:	Na ₂ S ₂ O ₃ ☒ Trizma ☐ None ☒ Yes ☐ No ☐ NA			
Shipping Container	☒ Vista ☐ Client ☒ Retain ☐ Return ☐ Dispose			

Comments:

September 28, 2017

Vista Work Order No. 1701286

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 September 21, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name '676034'.

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. 1701286

Case Narrative

Sample Condition on Receipt:

Four drinking water samples and four 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:

EPA Method 537

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

Holding Times

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

Quality Control

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

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

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

A Laboratory Fortified Sample Matrix (LFSM) and Laboratory Fortified Sample Matrix Duplicate (LFSMD) were performed on sample "ME-JW-RW02-0917".

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701286-01	ME-JW-RW01-0917		20-Sep-17 09:37	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-02	ME-JW-FB01-0917		20-Sep-17 09:38	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-03	ME-JW-RW02-0917	MS/MSD	20-Sep-17 10:23	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-04	ME-JW-FB02-0917		20-Sep-17 10:24	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-05	ME-JW-RW03-0917		20-Sep-17 11:02	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-06	ME-JW-FB03-0917		20-Sep-17 11:03	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-07	ME-JW-RW04-0917		20-Sep-17 11:38	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1701286-08	ME-JW-FB04-0917		20-Sep-17 11:39	21-Sep-17 09:10	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: LRB					EPA Method 537					
Client Data Name: CH2M Hill Project: 676034					Laboratory Data Lab Sample: B7I0113-BLK1 Column: BEH C18					
Matrix: Drinking Water										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.443	5.00	10.0		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1
PFOA	ND	1.08	5.00	10.0		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1
PFOS	ND	1.04	5.00	10.0		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	98.9	70 - 130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 01:09	1	

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

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

Sample ID: LFB					EPA Method 537					
Client Data Name: CH2M Hill Project: 676034					Laboratory Data Lab Sample: B7I0113-BS1 Column: BEH C18					
Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	15.8	17.7	89.4	70-130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1
PFOA	22.6	20.0	113	70-130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1
PFOS	18.9	18.5	102	70-130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1
Labeled Standards	Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR		94.5	70- 130		B7I0113	22-Sep-17	0.250 L	23-Sep-17 00:45	1

Sample ID: ME-JW-RW01-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water Date Collected: 20-Sep-17 09:37					Laboratory Data Lab Sample: 1701286-01 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	2.54	0.453	5.11	10.2	J	B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1
PFOA	5.30	1.10	5.11	10.2	J	B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1
PFOS	13.4	1.06	5.11	10.2		B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.8	70 - 130			B7I0113	22-Sep-17	0.244 L	23-Sep-17 01:47	1

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

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

Sample ID: ME-JW-FB01-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 09:38					Laboratory Data Lab Sample: 1701286-02 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.482	5.44	10.9		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
PFOA	ND	1.17	5.44	10.9		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
PFOS	ND	1.13	5.44	10.9		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	105	70 - 130			B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1

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

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

Sample ID: ME-JW-RW02-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water Date Collected: 20-Sep-17 10:23					Laboratory Data Lab Sample: 1701286-03 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.462	5.21	10.4		B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1
PFOA	ND	1.13	5.21	10.4		B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1
PFOS	ND	1.08	5.21	10.4		B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B7I0113	22-Sep-17	0.240 L	23-Sep-17 02:11	1

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

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

Sample ID: ME-JW-RW02-0917														EPA Method 537		
Name: CH2M Hill Project: 676034 Matrix: Drinking Water					Lab Sample: B7I0113-MS1/B7I0113-MSD1 QC Batch: B7I0113 Samp Size: 0.237/0.250 L					Source Lab Sample: 1701286-03 Date Extracted: 22-Sep-17 Column: BEH C18						
Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	ND	15.9	18.7	85.3		15.5	17.7	87.5	2.55		70-130	30	23-Sep-17 01:22	1	23-Sep-17 01:34	1
PFOA	ND	23.5	21.1	110		21.7	20.0	107	2.76		70-130	30	23-Sep-17 01:22	1	23-Sep-17 01:34	1
PFOS	ND	18.1	19.5	92.4		18.8	18.5	101	8.89		70-130	30	23-Sep-17 01:22	1	23-Sep-17 01:34	1
Labeled Standards		Type		MS % Rec	MS Quals			MSD % Rec		MSD Quals	Limits		MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C2-PFHxA		SURR		103				95.8			70-130		23-Sep-17 01:22	1	23-Sep-17 01:34	1

Sample ID: ME-JW-FB02-0917					EPA Method 537					
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 10:24					Laboratory Data Lab Sample: 1701286-04 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.44v	5.07	10.1		B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
PFOA	ND	1.0v	5.07	10.1		B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
PFOS	ND	1.05	5.07	10.1		B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SU99	110	70 - 130			B7I0113	22-Sep-17	0.247 L	23-Sep-17 02:24	1

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

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

Sample ID: ME-JW-RW01-097L					EAH Metdr5 31L				
----------------------------	--	--	--	--	----------------	--	--	--	--

Client Data				Laboratory Data			
Name:	Cu 2M u ill	Matrix:	DriBgiBWR ater	Lab Sample:	1701286-0H	ColnmB:	Ek u C18
Project:	676034	Date Collected:	20-Sep-17 11:02	Date v ecei9ed:	21-Sep-17 0F:10		

h nalPte	Crnc. (ng/b)	Db	b OD	b OQ	Qualifieys	Batcd	Extyacte5	Samp Size	h nalPze5	Dilutirn
P. ES	ND	05437	4F3	F36		E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1
P. OA	ND	1506	4F3	F36		E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1
P. OS	ND	1503	4F3	F36		E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1
b aoele5 Stan5ay5s	TPpe	% RecrveyP	b imits		Qualifieys	Batcd	Extyacte5	Samp Size	h nalPze5	Dilutirn
13C2-P. u xA	SUv v	F35H	70 - 130			E7I0113	22-Sep-17	02H4 L	26-Sep-17 14:38	1

DL - DetectioBLimit
 LOD - Limit of DetectioB
 LOQ - Limit of qnaBitatioB

LCL-UCL- Lower coBrol limit - npper coBrol limit
 v esnlts reported to the DL5
 R heBreported, P. u xS, P. OA aBd P. OS iBclnde both liBcar aBd braBched isomers5
 OBly the liBcar isomer is reported for all other aBalytes5

Sample ID: ME-JW-FB01-097L										EAh Metdr5 31L	
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 11:03					baoryatryP Data Lab Sample: 1701286-06 Date 9 eceiRed: 21-Sep-17 0v:10 Column: BEH C18						
h nalPte	Crnc. (ng/b)	Db	bOD	bOQ	Qualifieys	Batcd	Extyacte5	Samp Size	h nalPze5	Dilutirn	
PFBS	ND	0.455	5.13	10.3		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1	
PFOA	ND	1.11	5.13	10.3		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1	
PFOS	ND	1.07	5.13	10.3		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1	
b aoele5 Stan5ay5s	TPpe	% RecrveyP	bimits	Qualifieys	Batcd	Extyacte5	Samp Size	h nalPze5	Dilutirn		
13C2-PFHxA	SU9 9	v6.5	70 - 130		B7I0113	22-Sep-17	0.244 L	23-Sep-17 02:4v	1		

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

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

Sample ID: ME-JW-RW04-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Drinking Water Date Collected: 20-Sep-17 11:38					Laboratory Data Lab Sample: 1701286-07 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.433	4.89	9.77		B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1
PFOA	ND	1.06	4.89	9.77		B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1
PFOS	ND	1.02	4.89	9.77		B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	104	70 - 130			B750113	22-Sep-17	0.216 L	23-Sep-17 03:01	1

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

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

Sample ID: ME-JW-FB04-0917										EPA Method 537
Client Data Name: CH2M Hill Project: 676034 Matrix: Aqueous Date Collected: 20-Sep-17 11:39					Laboratory Data Lab Sample: 1701286-08 Date Received: 21-Sep-17 09:10 Column: BEH C18					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.440	4.97	9.94		B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1
PFOA	ND	1.07	4.97	9.94		B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1
PFOS	ND	1.03	4.97	9.94		B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	96.9	70 - 130			B750113	22-Sep-17	0.212 L	23-Sep-17 03:13	1

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

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

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

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

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

NELAP Accredited Test Methods

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

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

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

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

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

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



CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1701286 Temp: 0.5 °C
Storage ID: WP-2 Storage Secured: Yes ☒ No ☐

Project ID: 676034 PO#: 10006-7-106051 Sampler: John Towns
(name)

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

Invoice to: Name Company Address City State Ph# Fax#

Katie Tippin CH2M
Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

John Towns 9/20/17 1500 Marissa Sparks 9/21/17 0925
Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 (916) 673-1520 * Fax (916) 673-0106				Method of Shipment: <u>Fed Ex</u>		Tracking No.: <u>7877 8008 3232</u>		Add Analysis(es) Requested										Comments	
Sample ID				Date		Time		Location/Sample Description		Container(s)		Mod. EPA Method 537						EPA Method 537 (DW only)	
										Quantity	Type	Matrix	PFOA/PFOS	UCMR3 PFAS List 14	537 List: 14	Full List of 26	Other: Please List Below	PFOA/PFOS	UCMR3 PFAS List 14
ME-JW-RW01-0917	9/20/17	0937		2	P	DW											X		
ME-JW-FB01-0917	9/20/17	0938		2	P	AQ											X		
ME-JW-RW02-0917	9/20/17	1023		2	P	DW											X		
ME-JW-RW02-0917-MS	9/20/17	1023		2	P	DW											X		
ME-JW-RW02-0917-SD	9/20/17	1023		2	P	DW											X		
ME-JW-FB02-0917	9/20/17	1024		2	P	AQ											X		
ME-JW-RW03-0917	9/20/17	1102		2	P	DW											X		
ME-JW-FB03-0917	9/20/17	1103		2	P	AQ											X		
ME-JW-RW04-0917	9/20/17	1138		2	P	DW											X		
ME-JW-FB04-0917	9/20/17	1139		2	P	AQ											X		

Special Instructions/Comments: Method 537, SOP 64

SEND
DOCUMENTATION
AND RESULTS TO:

Name: Katie Tippin
Company: CH2M
Address: _____
City: _____ State: _____ Zip: _____
Phone: 757-671-6258 Fax: _____
Email: Katie.Tippin@CH2M.com

Container Types: ☒ P = HDPE, ☐ PJ = HDPE Jar
O = Other: _____

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

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

Sample Log-in Checklist

Vista Work Order #: 1701286 TAT 7

Samples Arrival:	Date/Time 9/21/17 0910	Initials: WWS	Location: WR-2 Shelf/Rack: N/A
Logged In:	Date/Time 09/21/17 1213	Initials: WWS	Location: WR-2 Shelf/Rack: F 7
Delivered By:	☒ FedEx ☐ UPS ☐ On Trac ☐ GSO ☐ DHL ☐ Hand Delivered ☐ Other		
Preservation:	☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None		
Temp °C: 0.4 (uncorrected)	Time: 0924	Thermometer ID: IR-1	
Temp °C: 0.5 (corrected)	Probe used: Yes ☐ No ☒		

		YES	NO	NA
Adequate Sample Volume Received?		✓		
Holding Time Acceptable?		✓		
Shipping Container(s) Intact?		✓		
Shipping Custody Seals Intact?		✓		
Shipping Documentation Present?		✓		
Airbill	Trk # 7877 8008 3232	✓		
Sample Container Intact?		✓		
Sample Custody Seals Intact?				✓
Chain of Custody / Sample Documentation Present?		✓		
COC Anomaly/Sample Acceptance Form completed?			✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?		✓		
Preservation Documented:	Na ₂ S ₂ O ₃ ☒ Trizma ☐ None ☒ Yes ☐ No ☐ NA			
Shipping Container	☒ Vista ☐ Client ☒ Retain ☐ Return ☐ Dispose			

Comments:

EXTRACTION INFORMATION

Process Sheet
Workorder: **1701286**



Prep Expiration: 2017-Oct-04
Client: CH2M Hill

Workorder Due: 28-Sep-17 00:00

TAT: 7

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

Prep Batch: B7I0113

Version: PFOA, PFOS, & PFBS
DoD: DoD QSM 5.1

Prep Data Entered: KC 9.25.17
Date and Initials

Initial Sequence: _____

LabSampleID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
1701286-01	'A'	☒	☒	ME-JW-RW01-0917		WR-2 F-7	HDPE Bottle, 250 mL
1701286-02		☒	☒	ME-JW-FB01-0917		WR-2 F-7	HDPE Bottle, 250 mL
1701286-03	'B'	☒	☒	ME-JW-RW02-0917	MS/MSD	WR-2 F-7	HDPE Bottle, 250 mL
1701286-04		☒	☒	ME-JW-FB02-0917		WR-2 F-7	HDPE Bottle, 250 mL
1701286-05		☒	☒	ME-JW-RW03-0917		WR-2 F-7	HDPE Bottle, 250 mL
1701286-06		☒	☒	ME-JW-FB03-0917		WR-2 F-7	HDPE Bottle, 250 mL
1701286-07		☒	☒	ME-JW-RW04-0917		WR-2 F-7	HDPE Bottle, 250 mL
1701286-08		☒	☒	ME-JW-FB04-0917		WR-2 F-7	HDPE Bottle, 250 mL

Pre-Prep Check Out: HB 9/21/17 Prep Check Out: HC 9.22.17
Pre-Prep Check In: NA Prep Check In: NA

Prep Reconciled Initials/Date: HB 9/21/17
Spike Reconciled Initials/Date: HC 9.22.17
VialBoxID: Harry Potter

PREPARATION BENCH SHEET

Matrix: Drinking Water

Method: 537 PFAS DW DoD Unmodified

B7I0113

Chemist: *HC*

Prep Date/Time: 21-Sep-17 14:03

22 0900

Prepared using: LCMS - SPE Extraction-LCMS

Balance ID: <i>HMS-8</i>							
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
☐	B7I0113-BLK1 (A)	NA	NA	(0.250) ✓	<i>HC</i> <i>HC</i> 9.22.17	<i>HC</i> 9.22.17	<i>HC</i> <i>DM</i> 9.22.17
☐	B7I0113-BS1 (A)	↓	↓	↓			
☐	B7I0113-MS1 1701286-03	264.38	27.49	0.2389 ✓			
☐	B7I0113-MSD1 1701286-03	277.03	26.93	0.25010 ✓			
☐	1701286-01	271.85	27.47	0.24438 ✓			
☐	1701286-02	256.46	26.61	0.22985 ✓			
☐	1701286-03	267.18	27.28	0.23990 ✓			
☐	1701286-04	273.63	26.87	0.24676 ✓			
☒	1701286-05	280.77	27.15	0.25362 ✓			
☐	1701286-06	270.03	26.45	0.24358 ✓			
☒	1701286-07	282.59	26.81	0.25578 ✓			
☐	1701286-08	278.04	26.43	0.25101 ✓			

SS/IS: <i>17F1415, 50µL (13)</i> NS: <i>17H2812, 20µL (13)</i> IS/RS: <i>17F1416, 50µL (13)</i> <i>HC 9.22.17</i>	SPE Chem: <i>Strata X 33µm 500mg 6m</i> Lot#: <i>517-001874</i> Ele SOLV: <i>MeOH</i> Lot#: <i>DS323</i> Final Volume(s) <i>1mL</i>	Notes: <i>0.625g TriZma preservative added to QCs. 18 9/21/17</i> <i>1.25g TriZma</i> <i>18 9/21/17</i>
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Comments: Assume 1 g = 1 mL

Cen = Centrifuged

Work Order 1701286

Batch: B7I0113

Matrix: Drinking Water

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1701286-01	0.24438 ✓	NA	NA	1000	22-Sep-17 09:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701286-02	0.22985 ✓	T	T	1000	22-Sep-17 09:00	HAC			Aqueous	537 PFAS DW DoD Unmod
1701286-03	0.2399 ✓	T	T	1000	22-Sep-17 09:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701286-04	0.24676 ✓	T	T	1000	22-Sep-17 09:00	HAC			Aqueous	537 PFAS DW DoD Unmod
1701286-05	0.25362 ✓	T	T	1000	22-Sep-17 09:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701286-06	0.24358 ✓	T	T	1000	22-Sep-17 09:00	HAC			Aqueous	537 PFAS DW DoD Unmod
1701286-07	0.25578 ✓	T	T	1000	22-Sep-17 09:00	HAC			Drinking Water	537 PFAS DW DoD Unmod
1701286-08	0.25161 ✓	T	T	1000	22-Sep-17 09:00	HAC			Aqueous	537 PFAS DW DoD Unmod
B7I0113-BLK1	0.25 ✓	T	T	1000	22-Sep-17 09:00	HAC				QC
B7I0113-BS1	0.25 ✓	T	T	1000	22-Sep-17 09:00	HAC	17H2812 ✓	20 ✓		QC
B7I0113-MS1	0.23689 ✓	T	T	1000	22-Sep-17 09:00	HAC	17H2812 ✓	20 ✓		QC
B7I0113-MSD1	0.2501 ✓	T	T	1000	22-Sep-17 09:00	HAC	17H2812 ✓	20 ✓		QC

KC 9.25.17

SAMPLE DATA –EPA METHOD 537

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-16.qld

Last Altered: Tuesday, September 26, 2017 12:48:05 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:49:12 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-BLK1 LRB 0.25, Description: LRB, Name: 170922G3_16, Date: 23-Sep-2017, Time: 01:09:57

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		7.712e3		0.250			
2	4 PFOA	413 > 368.70		4.996e3		0.250			
3	6 PFOS	499.00 > 79.90		7.712e3		0.250			
4	7 13C2-PFHxA	315.0 > 269.80	2.690e3	4.996e3	0.544	0.250	3.31	39.6	98.9
5	8 13C2-PFDA	515.10 > 469.90	3.377e3	4.996e3	0.667	0.250	4.88	40.6	101
6	9 13C2-PFOA	414.90 > 369.70	4.996e3	4.996e3	1.000	0.250	4.23	40.0	100
7	10 13C4-PFOS	503.0 > 79.90	7.712e3	7.712e3	1.000	0.250	4.65	115	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-16.qld

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Printed: Tuesday, September 26, 2017 12:49:12 Pacific Daylight Time

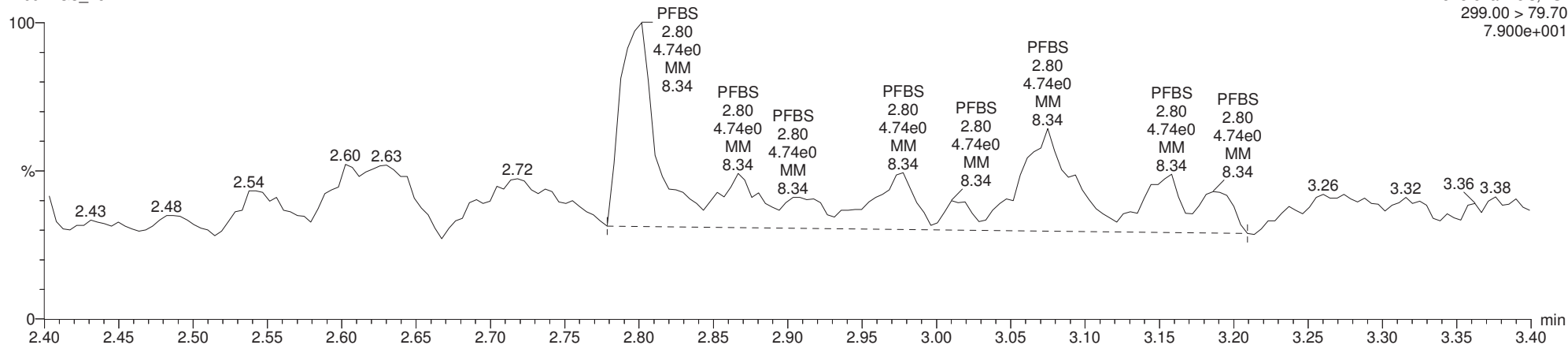
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-BLK1 LRB 0.25, Description: LRB, Name: 170922G3_16, Date: 23-Sep-2017, Time: 01:09:57, Instrument: , Lab: , User:

PFBS

170922G3_16

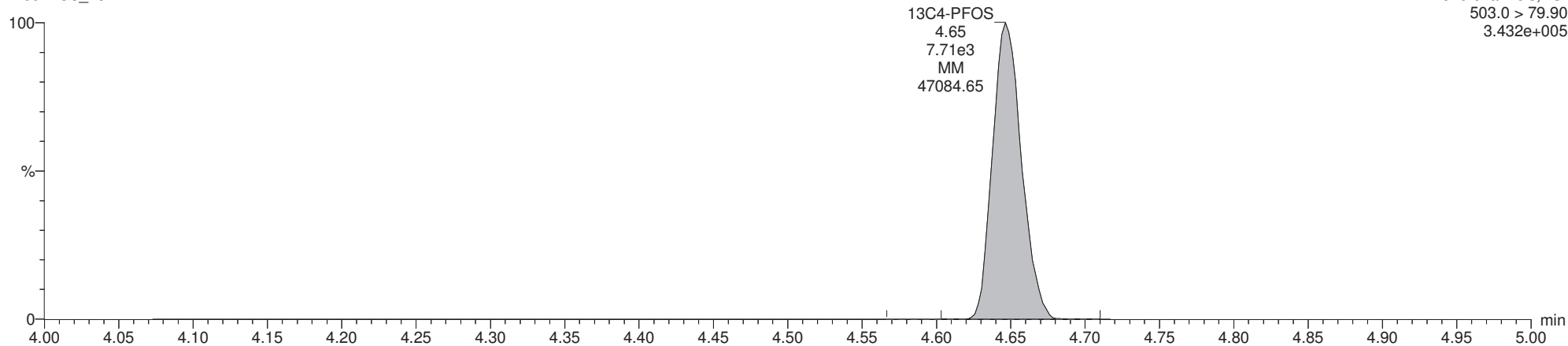
F2:MRM of 5 channels, ES-
299.00 > 79.70
7.900e+001



13C4-PFOS

170922G3_16

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.432e+005



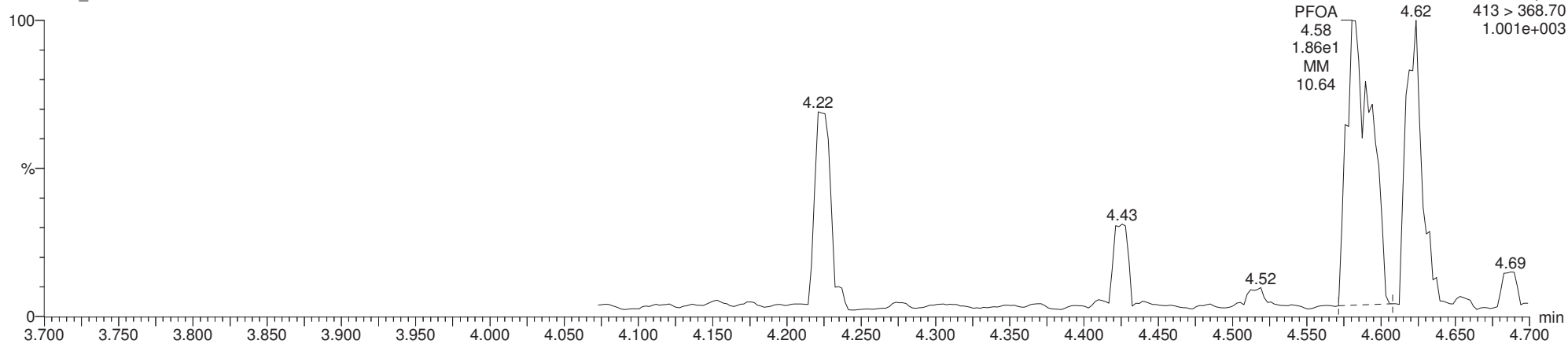
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Printed: Tuesday, September 26, 2017 12:49:12 Pacific Daylight Time

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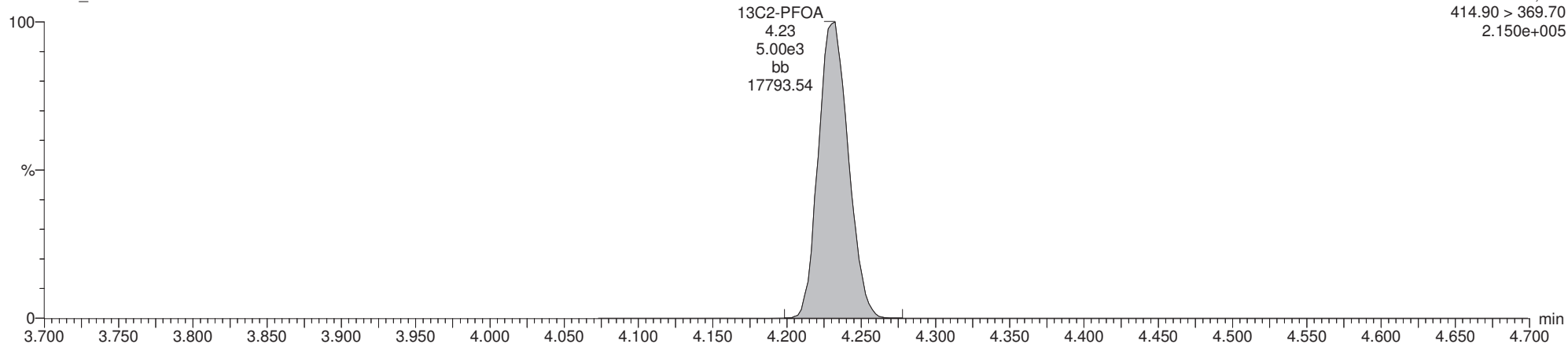
PFOA

170922G3_16



13C2-PFOA

170922G3_16

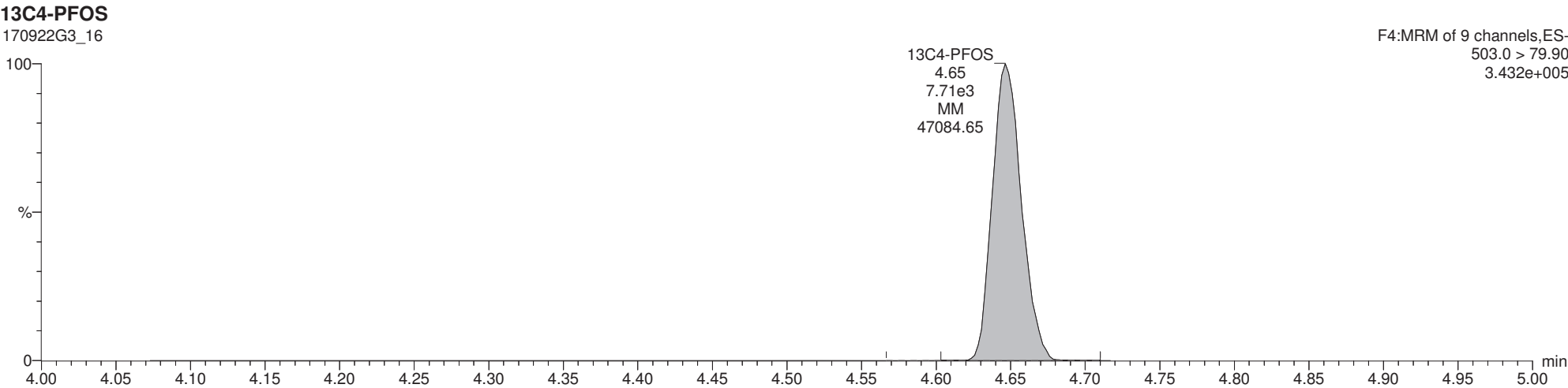
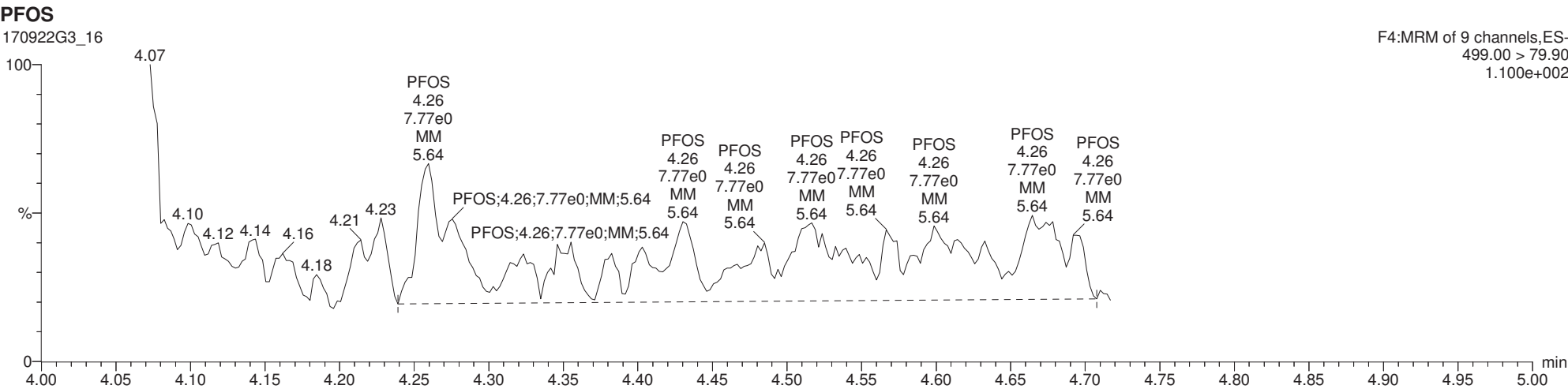


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Printed: Tuesday, September 26, 2017 12:49:12 Pacific Daylight Time

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Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-16.qld

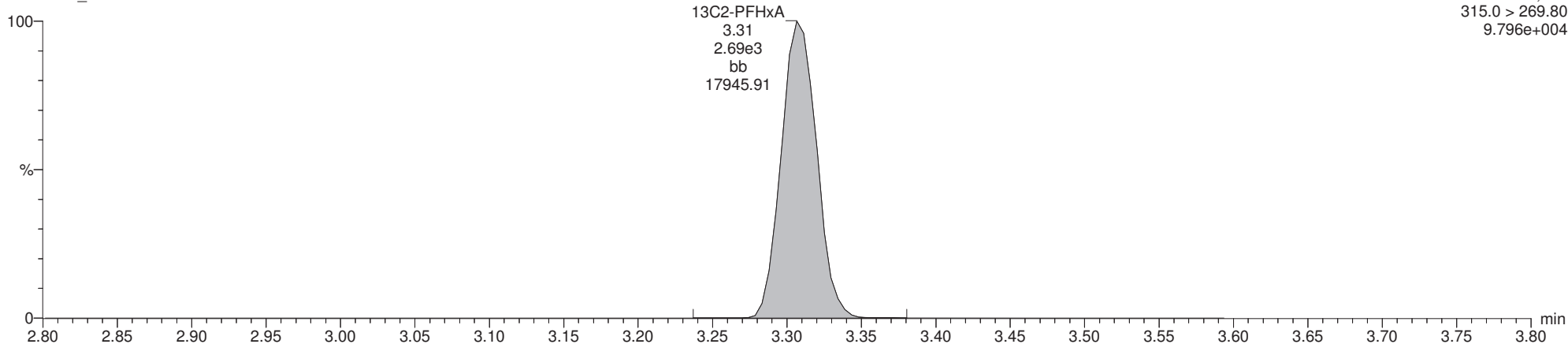
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Printed: Tuesday, September 26, 2017 12:49:12 Pacific Daylight Time

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13C2-PFHxA

170922G3_16

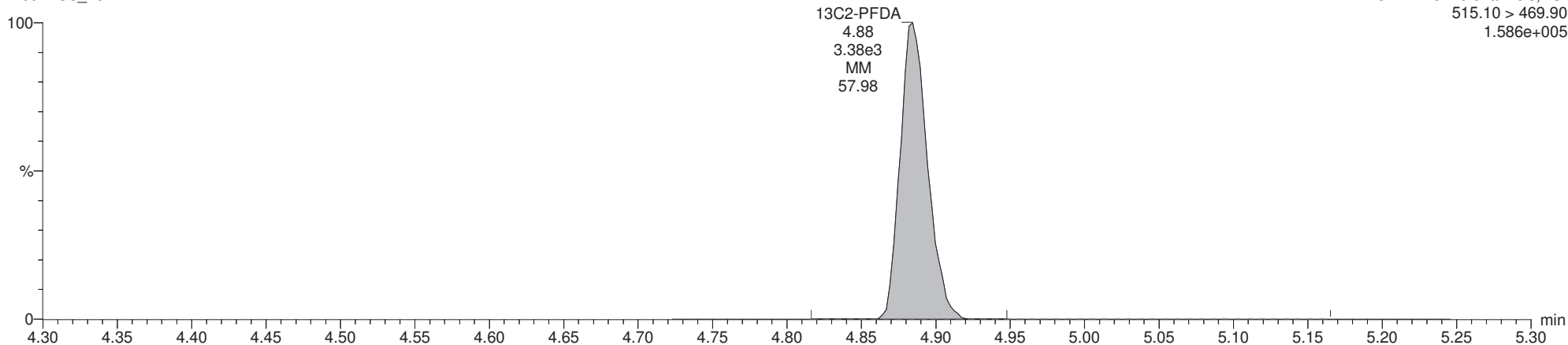
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.796e+004



13C2-PFDA

170922G3_16

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.586e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-14.qld

Last Altered: Tuesday, September 26, 2017 11:52:12 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:38:57 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-BS1 LFB 0.25, Description: LFB, Name: 170922G3_14, Date: 23-Sep-2017, Time: 00:45:10

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	9.038e2	7.917e3		0.250	2.92	15.8	89.4
2	4 PFOA	413 > 368.70	2.203e3	5.200e3		0.250	4.23	22.6	113
3	6 PFOS	499.00 > 79.90	1.381e3	7.917e3		0.250	4.65	18.9	102
4	7 13C2-PFHxA	315.0 > 269.80	2.675e3	5.200e3	0.544	0.250	3.31	37.8	94.5
5	8 13C2-PFDA	515.10 > 469.90	3.162e3	5.200e3	0.667	0.250	4.89	36.5	91.2
6	9 13C2-PFOA	414.90 > 369.70	5.200e3	5.200e3	1.000	0.250	4.23	40.0	100
7	10 13C4-PFOS	503.0 > 79.90	7.917e3	7.917e3	1.000	0.250	4.64	115	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-14.qld

Last Altered: Tuesday, September 26, 2017 11:52:12 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:38:57 Pacific Daylight Time

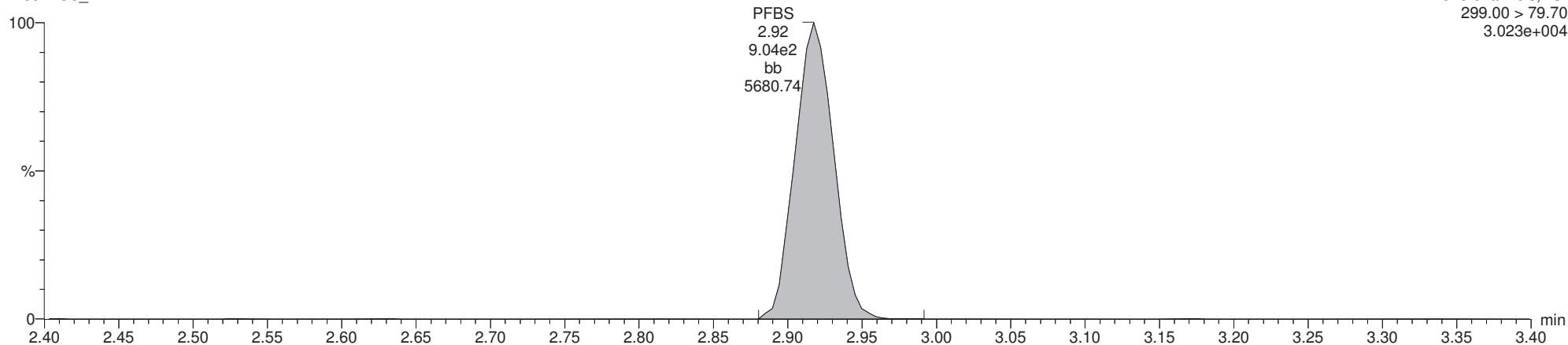
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-BS1 LFB 0.25, Description: LFB, Name: 170922G3_14, Date: 23-Sep-2017, Time: 00:45:10, Instrument: , Lab: , User:

PFBS

170922G3_14

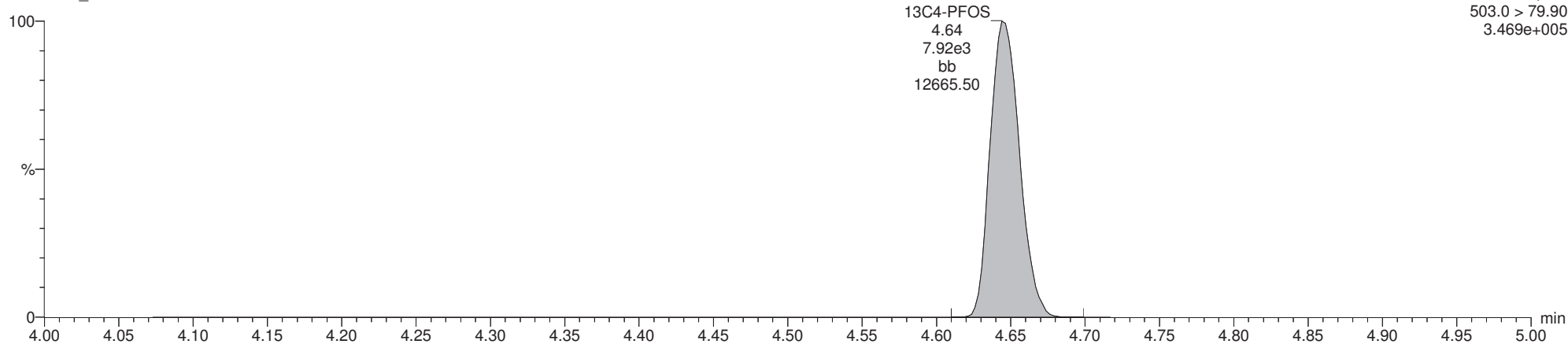
F2:MRM of 5 channels, ES-
299.00 > 79.70
3.023e+004



13C4-PFOS

170922G3_14

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.469e+005



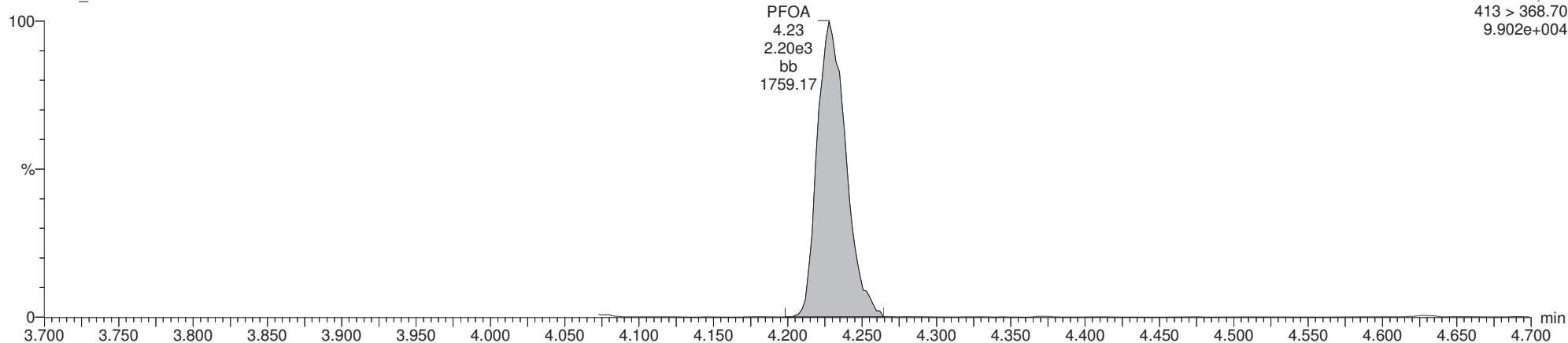
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Last Altered: Tuesday, September 26, 2017 11:52:12 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:38:57 Pacific Daylight Time

ID: B7I0113-BS1 LFB 0.25, Description: LFB, Name: 170922G3_14, Date: 23-Sep-2017, Time: 00:45:10, Instrument: , Lab: , User:

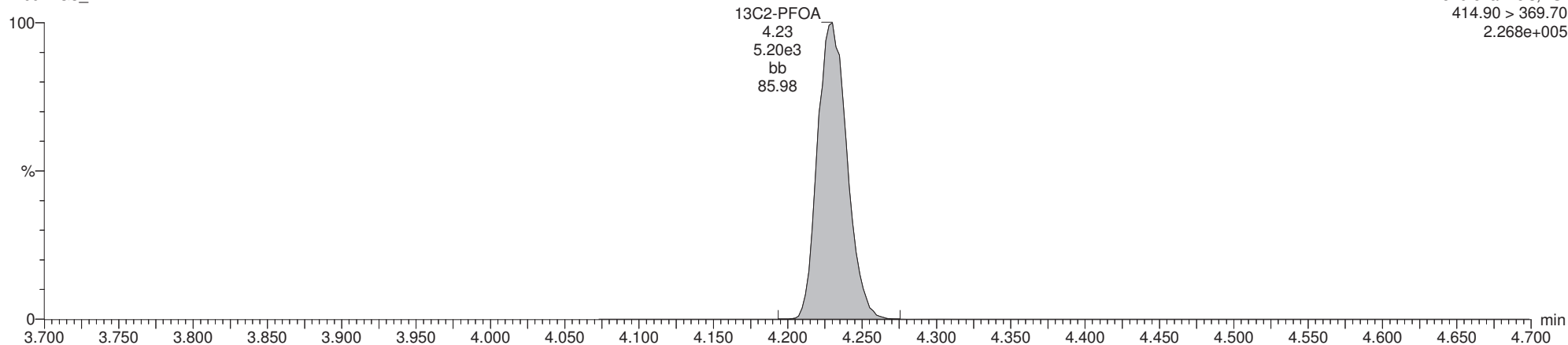
PFOA

170922G3_14



¹³C2-PFOA

170922G3_14



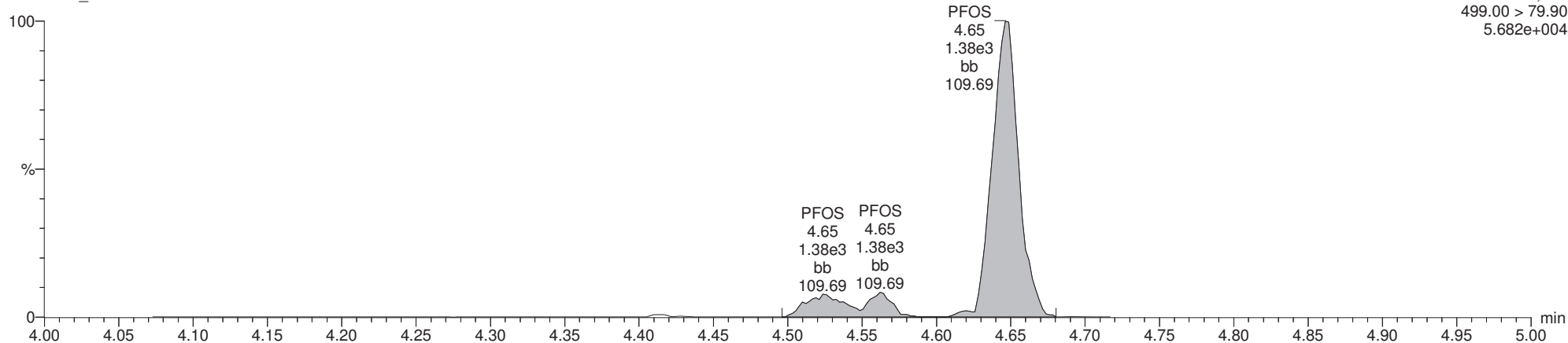
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Printed: Tuesday, September 26, 2017 12:38:57 Pacific Daylight Time

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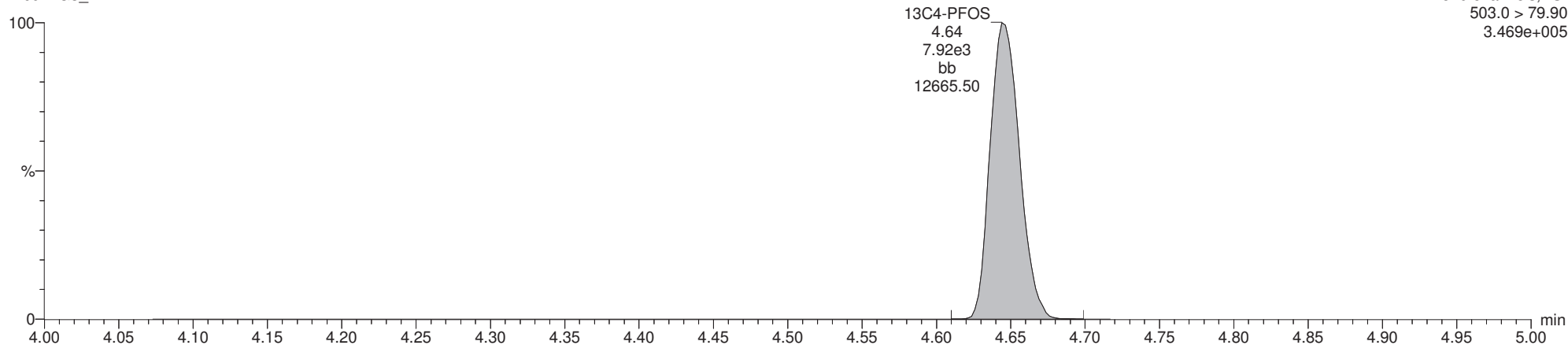
PFOS

170922G3_14



13C4-PFOS

170922G3_14



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-14.qld

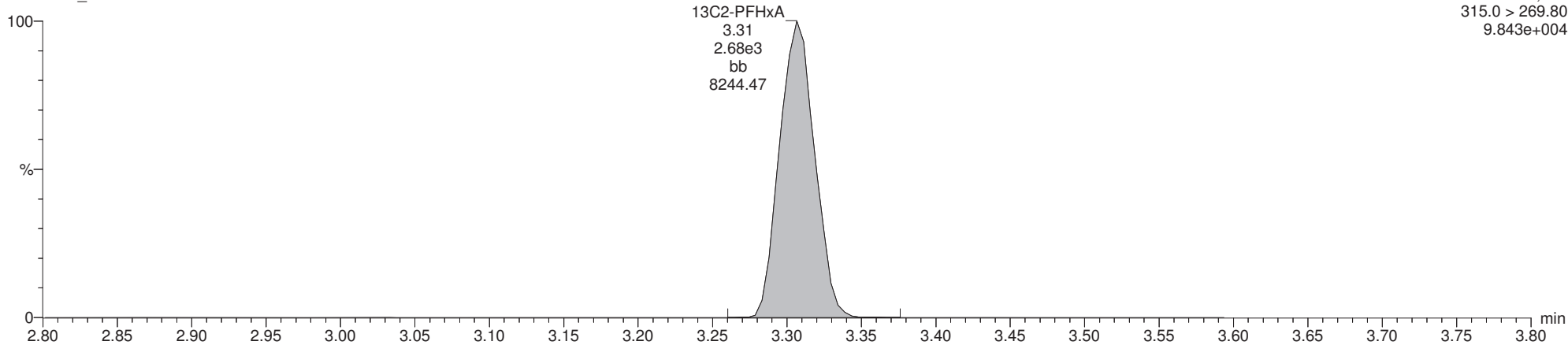
Last Altered: Tuesday, September 26, 2017 11:52:12 Pacific Daylight Time
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ID: B7I0113-BS1 LFB 0.25, Description: LFB, Name: 170922G3_14, Date: 23-Sep-2017, Time: 00:45:10, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_14

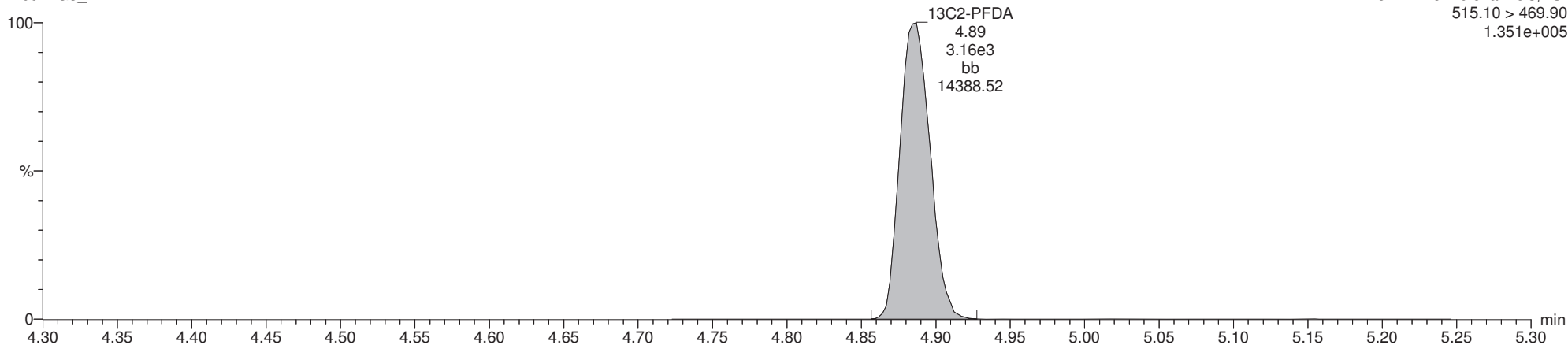
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.843e+004



13C2-PFDA

170922G3_14

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.351e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-19.qld

Last Altered: Tuesday, September 26, 2017 17:55:00 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:55:39 Pacific Daylight Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-01 ME-JW-RW01-0917 0.25, Description: ME-JW-RW01-0917, Name: 170922G3_19, Date: 23-Sep-2017, Time: 01:47:08

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	1.380e2	7.689e3		0.244	2.91	2.54	
2	4 PFOA	413 > 368.70	5.125e2	5.317e3		0.244	4.22	5.30	
3	6 PFOS	499.00 > 79.90	9.300e2	7.689e3		0.244	4.64	13.4	
4	7 13C2-PFHxA	315.0 > 269.80	2.570e3	5.317e3	0.544	0.244	3.30	36.3	88.8
5	8 13C2-PFDA	515.10 > 469.90	3.397e3	5.317e3	0.667	0.244	4.88	39.2	95.8
6	9 13C2-PFOA	414.90 > 369.70	5.317e3	5.317e3	1.000	0.244	4.22	40.9	100
7	10 13C4-PFOS	503.0 > 79.90	7.689e3	7.689e3	1.000	0.244	4.64	117	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-19.qld

Last Altered: Tuesday, September 26, 2017 17:55:00 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:55:39 Pacific Daylight Time

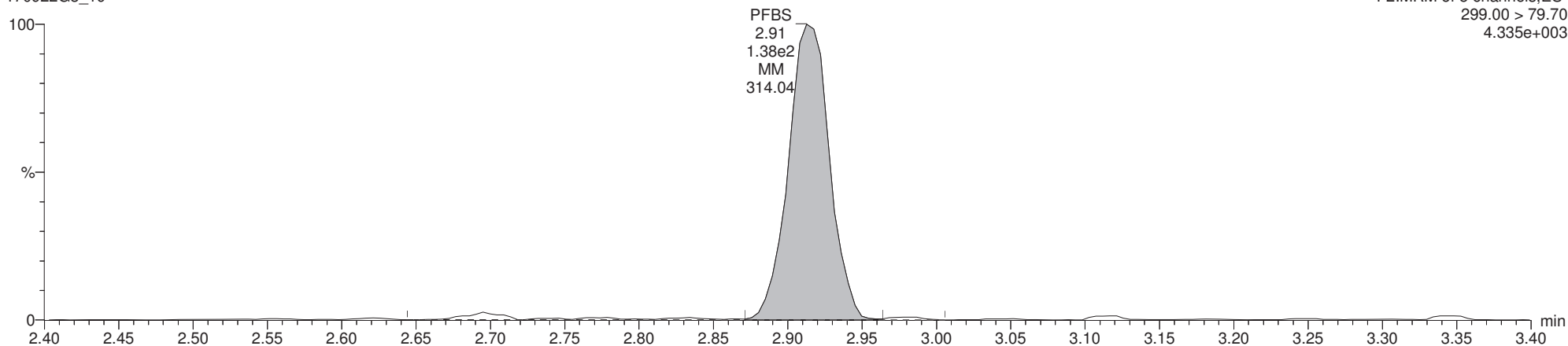
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-01 ME-JW-RW01-0917 0.25, Description: ME-JW-RW01-0917, Name: 170922G3_19, Date: 23-Sep-2017, Time: 01:47:08, Instrument: , Lab: , User:

PFBS

170922G3_19

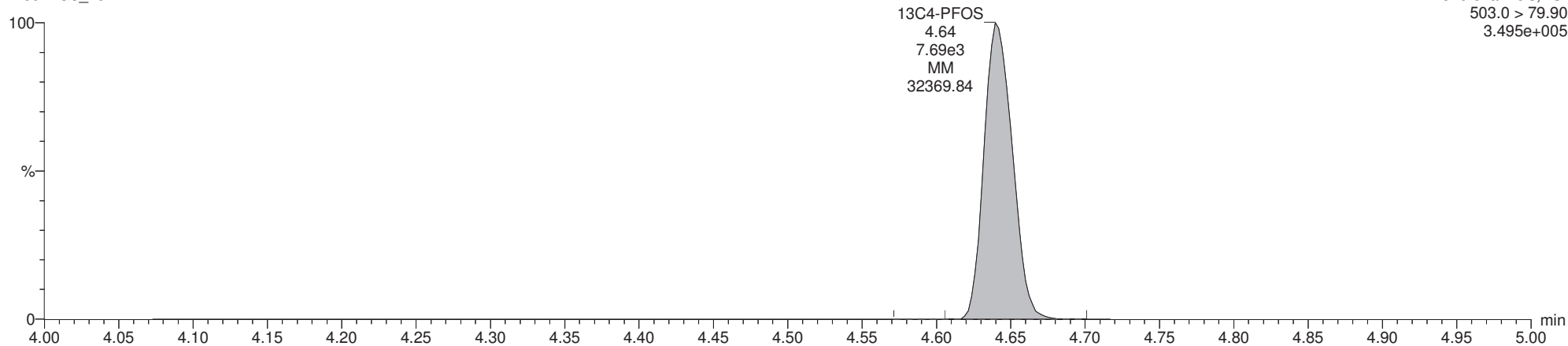
F2:MRM of 5 channels, ES-
299.00 > 79.70
4.335e+003



13C4-PFOS

170922G3_19

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.495e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-19.qld

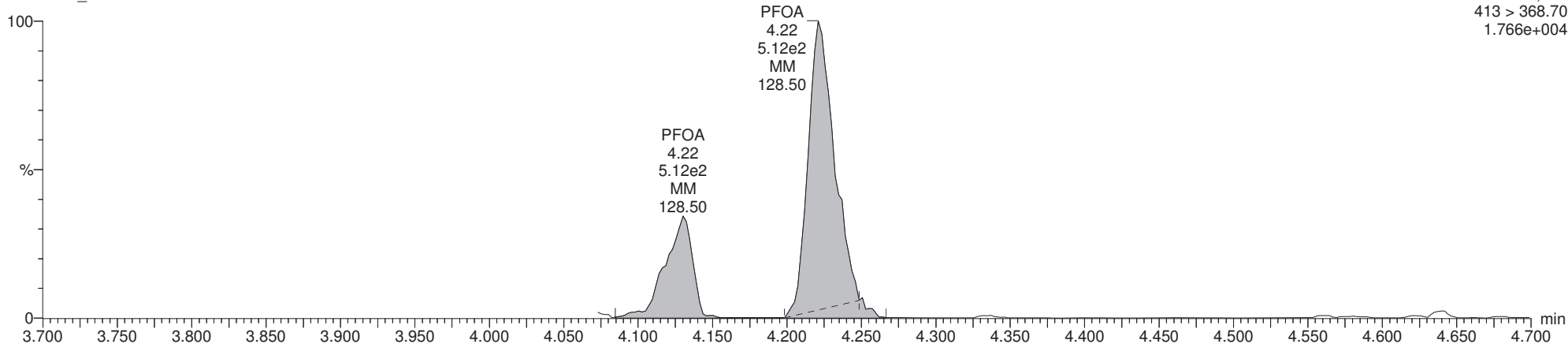
Last Altered: Tuesday, September 26, 2017 17:55:00 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:55:39 Pacific Daylight Time

ID: 1701286-01 ME-JW-RW01-0917 0.25, Description: ME-JW-RW01-0917, Name: 170922G3_19, Date: 23-Sep-2017, Time: 01:47:08, Instrument: , Lab: , User:

PFOA

170922G3_19

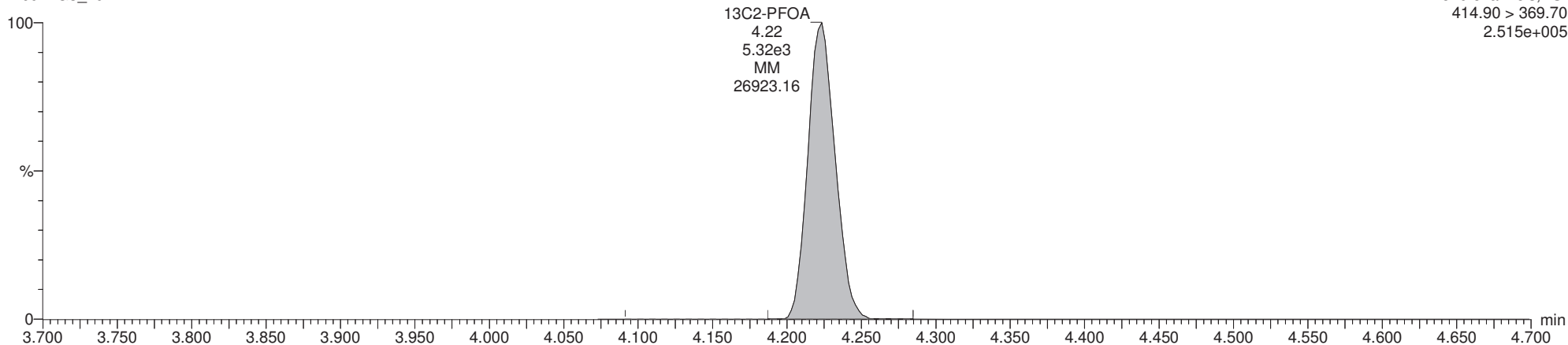
F4:MRM of 9 channels,ES-
413 > 368.70
1.766e+004



¹³C2-PFOA

170922G3_19

F4:MRM of 9 channels,ES-
414.90 > 369.70
2.515e+005



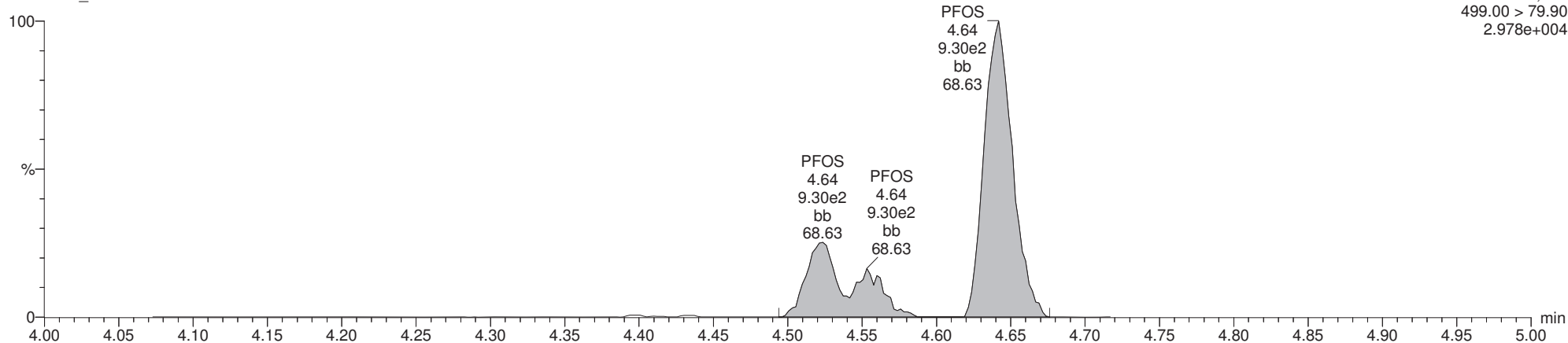
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-19.qld

Last Altered: Tuesday, September 26, 2017 17:55:00 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:55:39 Pacific Daylight Time

ID: 1701286-01 ME-JW-RW01-0917 0.25, Description: ME-JW-RW01-0917, Name: 170922G3_19, Date: 23-Sep-2017, Time: 01:47:08, Instrument: , Lab: , User:

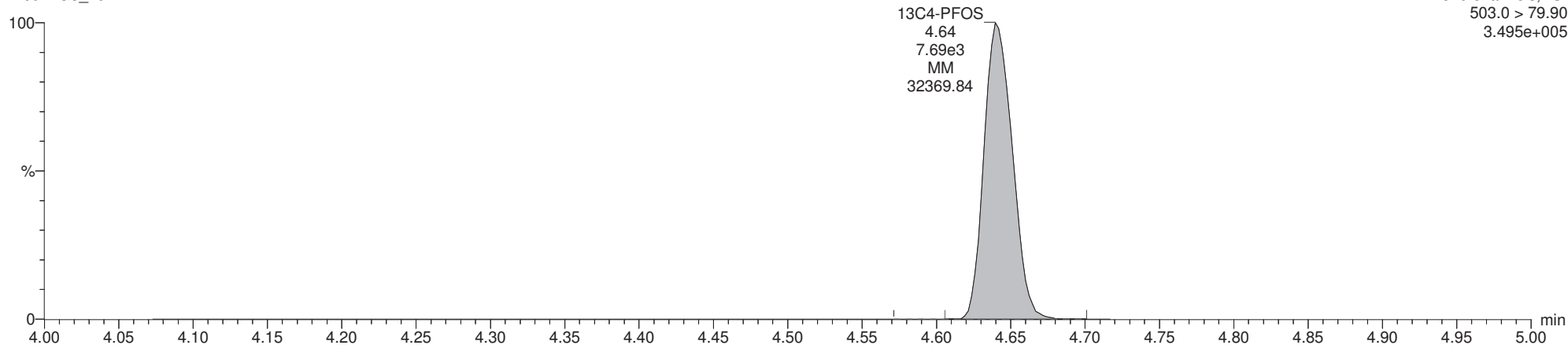
PFOS

170922G3_19



13C4-PFOS

170922G3_19



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-19.qld

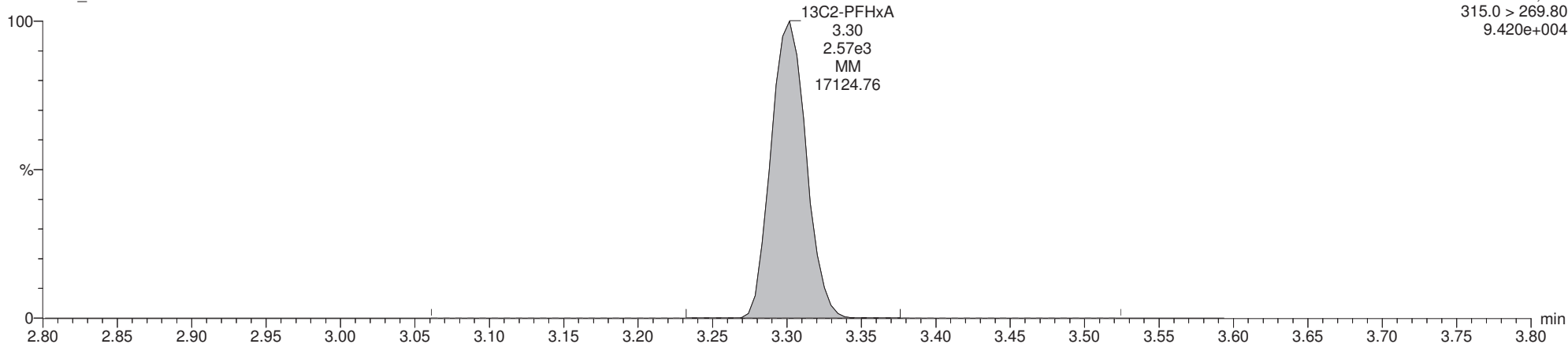
Last Altered: Tuesday, September 26, 2017 17:55:00 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:55:39 Pacific Daylight Time

ID: 1701286-01 ME-JW-RW01-0917 0.25, Description: ME-JW-RW01-0917, Name: 170922G3_19, Date: 23-Sep-2017, Time: 01:47:08, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_19

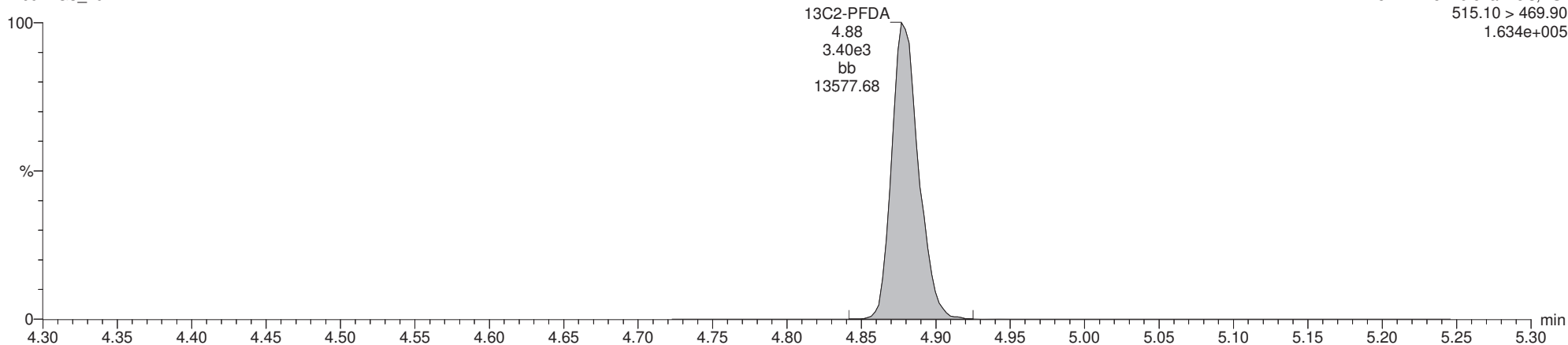
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.420e+004



13C2-PFDA

170922G3_19

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.634e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-20.qld

Last Altered: Tuesday, September 26, 2017 13:05:16 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:06:00 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-02 ME-JW-FB01-0917 0.25, Description: ME-JW-FB01-0917, Name: 170922G3_20, Date: 23-Sep-2017, Time: 01:59:31

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		7.356e3		0.230			
2	4 PFOA	413 > 368.70	1.740e1	4.731e3		0.230	4.22	0.216	
3	6 PFOS	499.00 > 79.90		7.356e3		0.230			
4	7 13C2-PFHxA	315.0 > 269.80	2.710e3	4.731e3	0.544	0.230	3.30	45.8	105
5	8 13C2-PFDA	515.10 > 469.90	2.972e3	4.731e3	0.667	0.230	4.88	41.0	94.2
6	9 13C2-PFOA	414.90 > 369.70	4.731e3	4.731e3	1.000	0.230	4.22	43.5	100
7	10 13C4-PFOS	503.0 > 79.90	7.356e3	7.356e3	1.000	0.230	4.64	125	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-20.qld

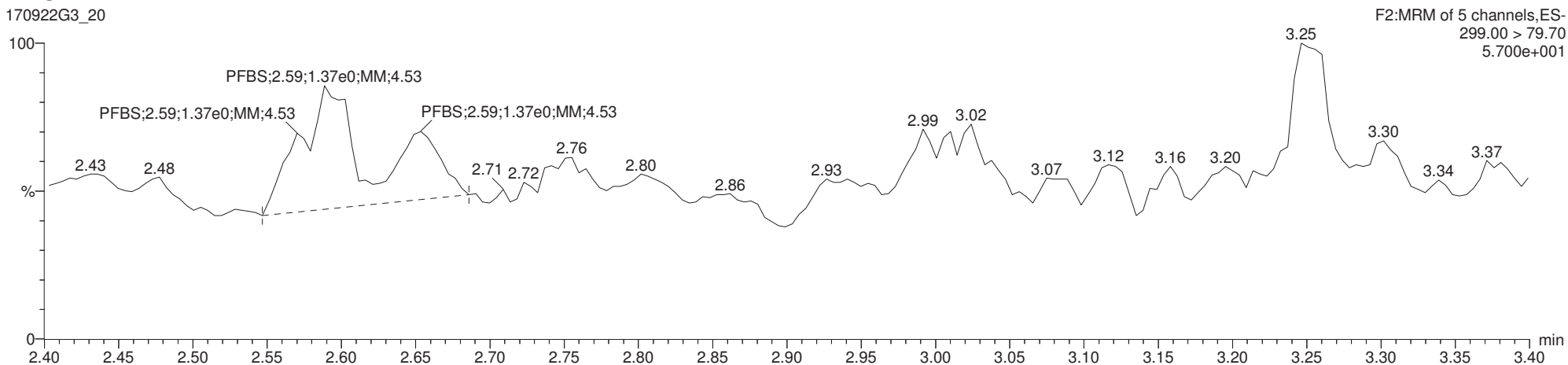
Last Altered: Tuesday, September 26, 2017 13:05:16 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:06:00 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-02 ME-JW-FB01-0917 0.25, Description: ME-JW-FB01-0917, Name: 170922G3_20, Date: 23-Sep-2017, Time: 01:59:31, Instrument: , Lab: , User:

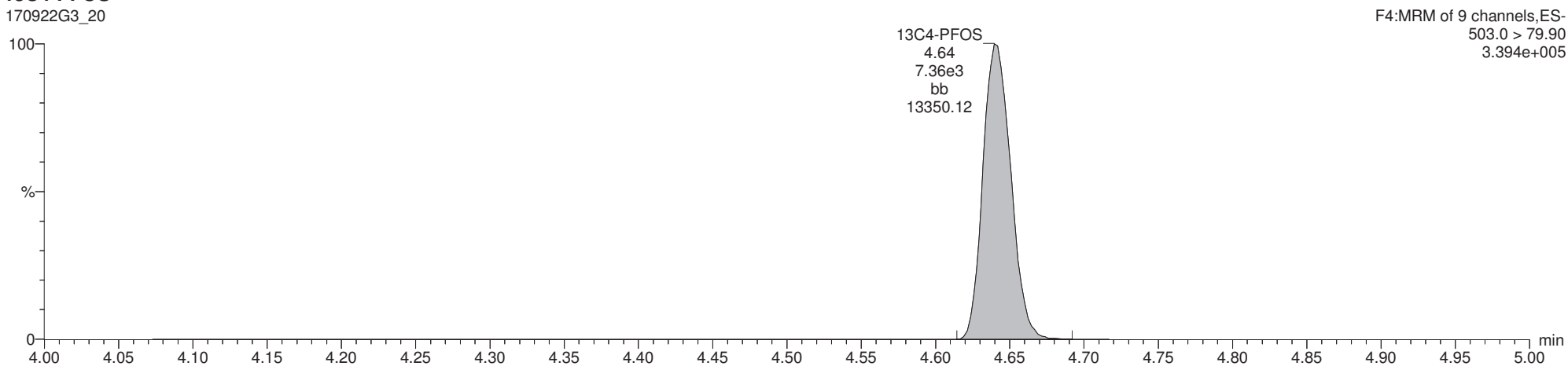
PFBS

170922G3_20



13C4-PFOS

170922G3_20



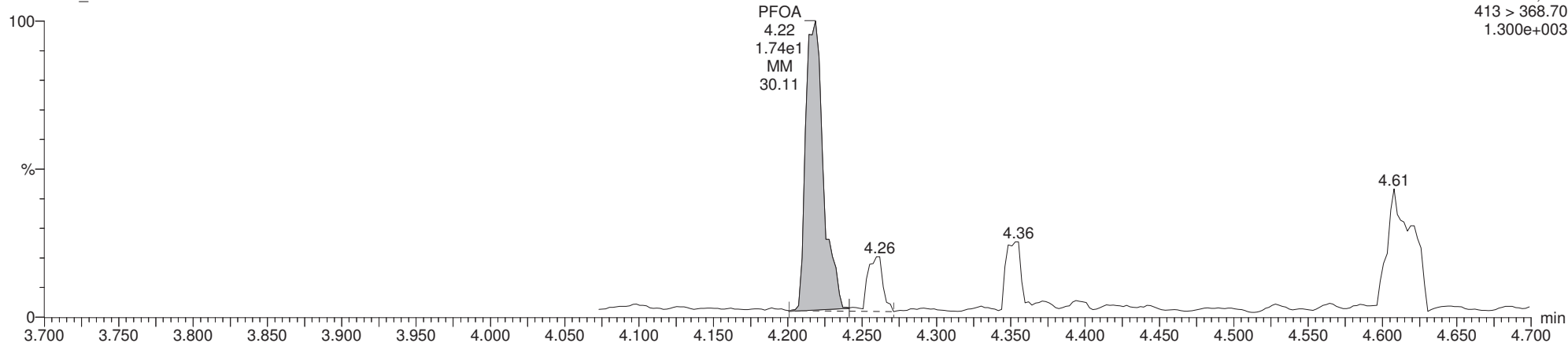
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-20.qld

Last Altered: Tuesday, September 26, 2017 13:05:16 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:06:00 Pacific Daylight Time

ID: 1701286-02 ME-JW-FB01-0917 0.25, Description: ME-JW-FB01-0917, Name: 170922G3_20, Date: 23-Sep-2017, Time: 01:59:31, Instrument: , Lab: , User:

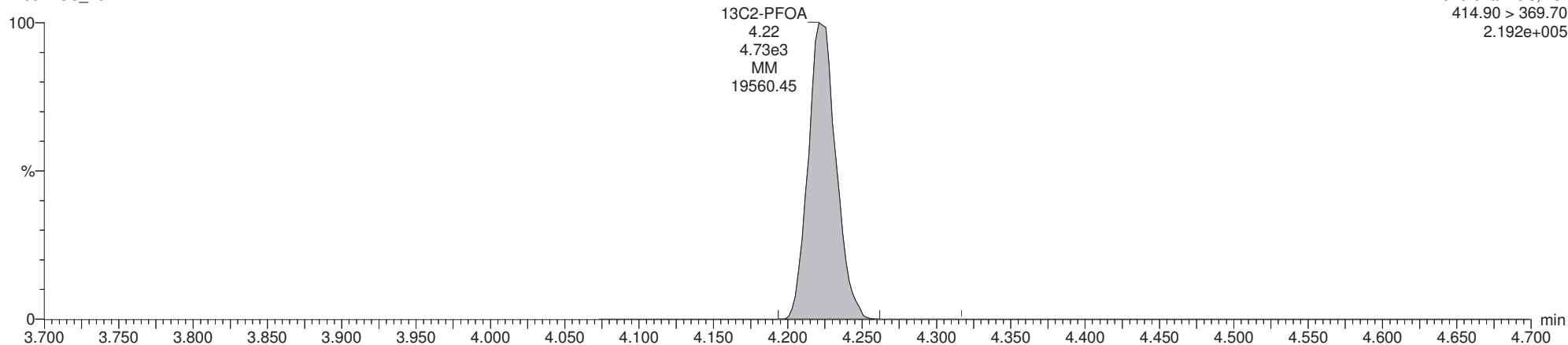
PFOA

170922G3_20



13C2-PFOA

170922G3_20



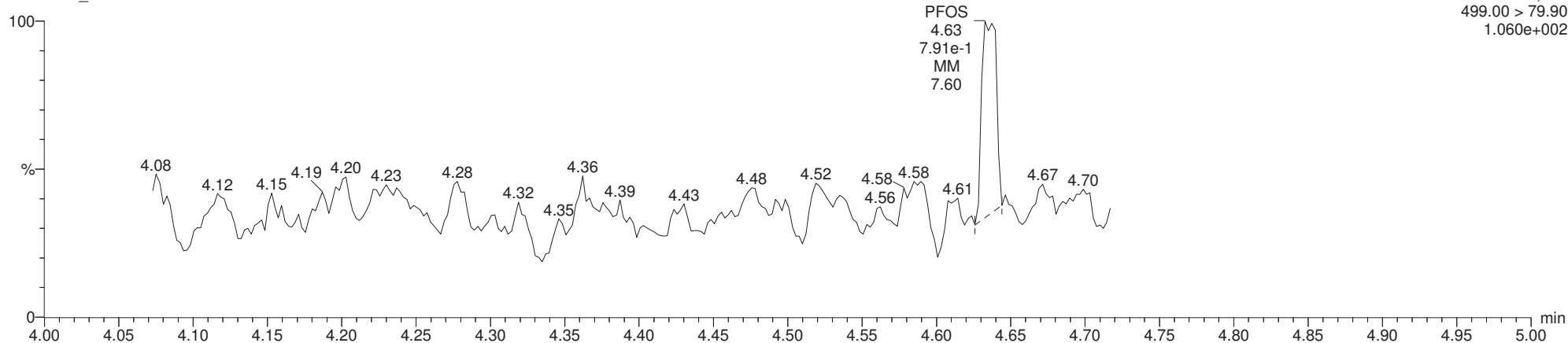
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-20.qld

Last Altered: Tuesday, September 26, 2017 13:05:16 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:06:00 Pacific Daylight Time

ID: 1701286-02 ME-JW-FB01-0917 0.25, Description: ME-JW-FB01-0917, Name: 170922G3_20, Date: 23-Sep-2017, Time: 01:59:31, Instrument: , Lab: , User:

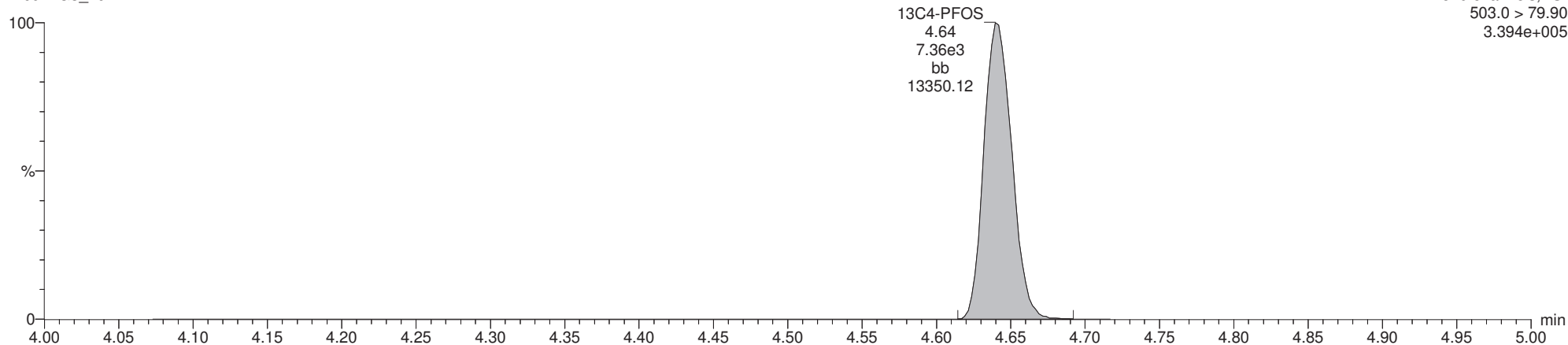
PFOS

170922G3_20



13C4-PFOS

170922G3_20



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-20.qld

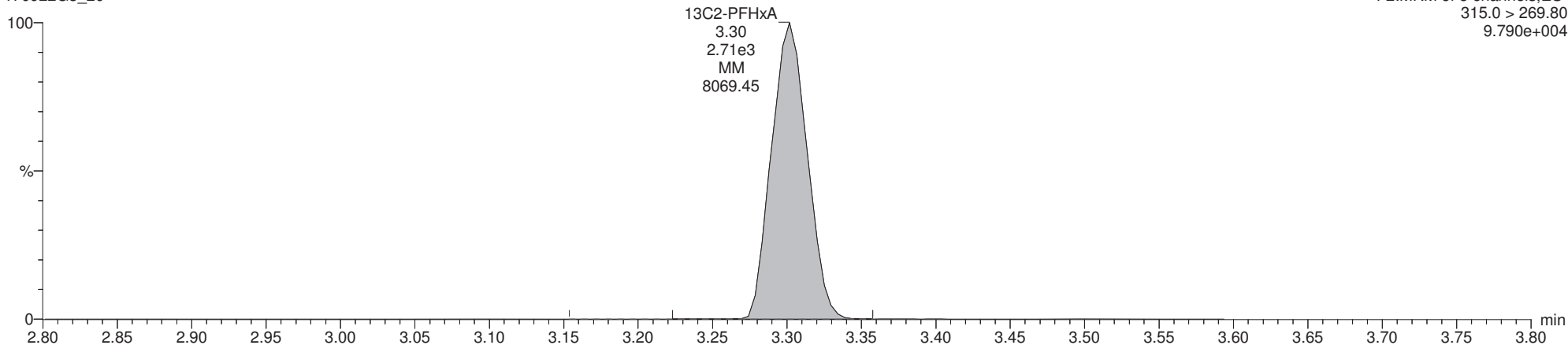
Last Altered: Tuesday, September 26, 2017 13:05:16 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:06:00 Pacific Daylight Time

ID: 1701286-02 ME-JW-FB01-0917 0.25, Description: ME-JW-FB01-0917, Name: 170922G3_20, Date: 23-Sep-2017, Time: 01:59:31, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_20

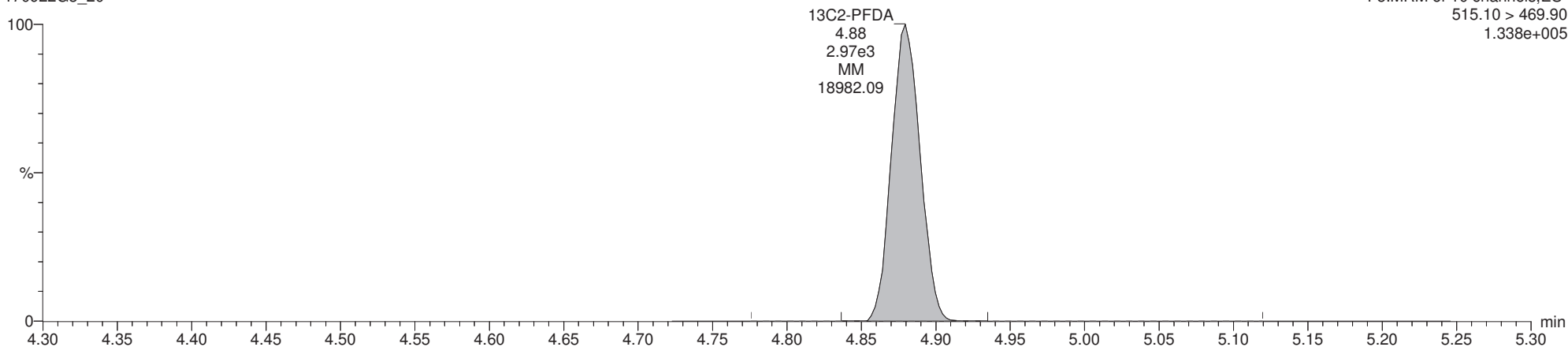
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.790e+004



13C2-PFDA

170922G3_20

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.338e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-21.qld

Last Altered: Tuesday, September 26, 2017 17:56:44 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:57:04 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-03 ME-JW-RW02-0917 0.25, Description: ME-JW-RW02-0917, Name: 170922G3_21, Date: 23-Sep-2017, Time: 02:11:57

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.000e3		0.240			
2	4 PFOA	413 > 368.70	1.965e1	4.676e3		0.240	4.22	0.236	
3	6 PFOS	499.00 > 79.90	4.068e0	8.000e3		0.240	4.65	0.0578	
4	7 13C2-PFHxA	315.0 > 269.80	2.637e3	4.676e3	0.544	0.240	3.30	43.2	104
5	8 13C2-PFDA	515.10 > 469.90	3.072e3	4.676e3	0.667	0.240	4.88	41.1	98.5
6	9 13C2-PFOA	414.90 > 369.70	4.676e3	4.676e3	1.000	0.240	4.22	41.7	100
7	10 13C4-PFOS	503.0 > 79.90	8.000e3	8.000e3	1.000	0.240	4.64	120	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-21.qld

Last Altered: Tuesday, September 26, 2017 17:56:44 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:57:04 Pacific Daylight Time

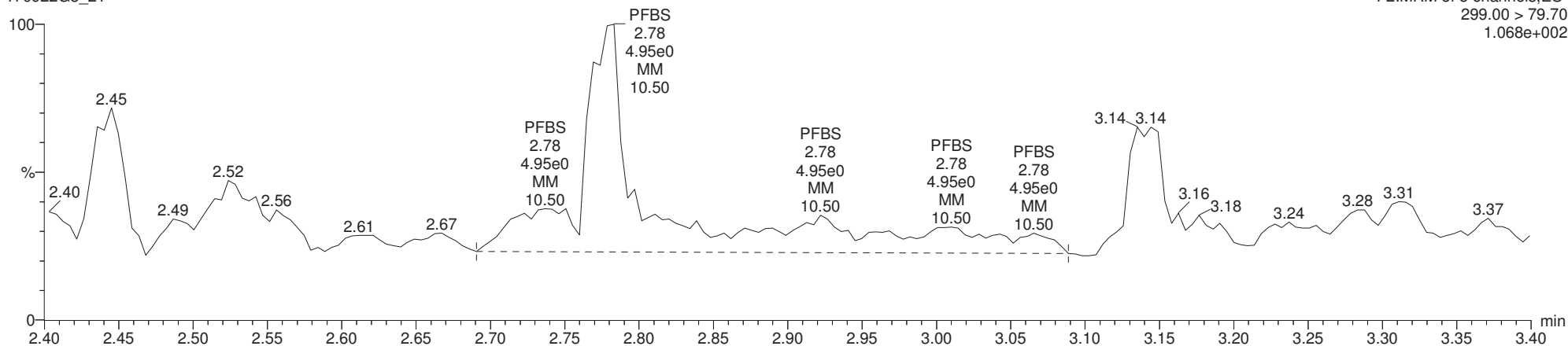
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-03 ME-JW-RW02-0917 0.25, Description: ME-JW-RW02-0917, Name: 170922G3_21, Date: 23-Sep-2017, Time: 02:11:57, Instrument: , Lab: , User:

PFBS

170922G3_21

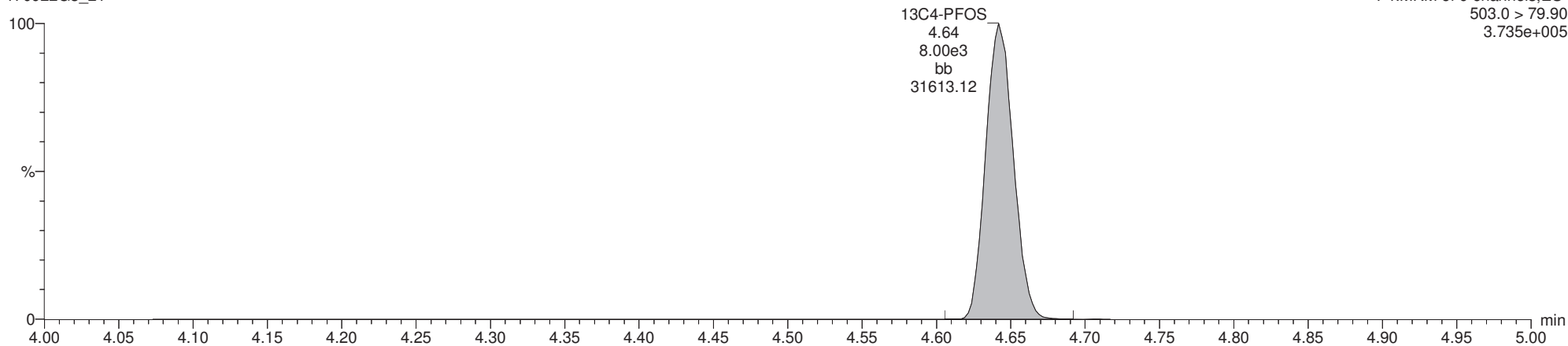
F2:MRM of 5 channels, ES-
299.00 > 79.70
1.068e+002



13C4-PFOS

170922G3_21

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.735e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-21.qld

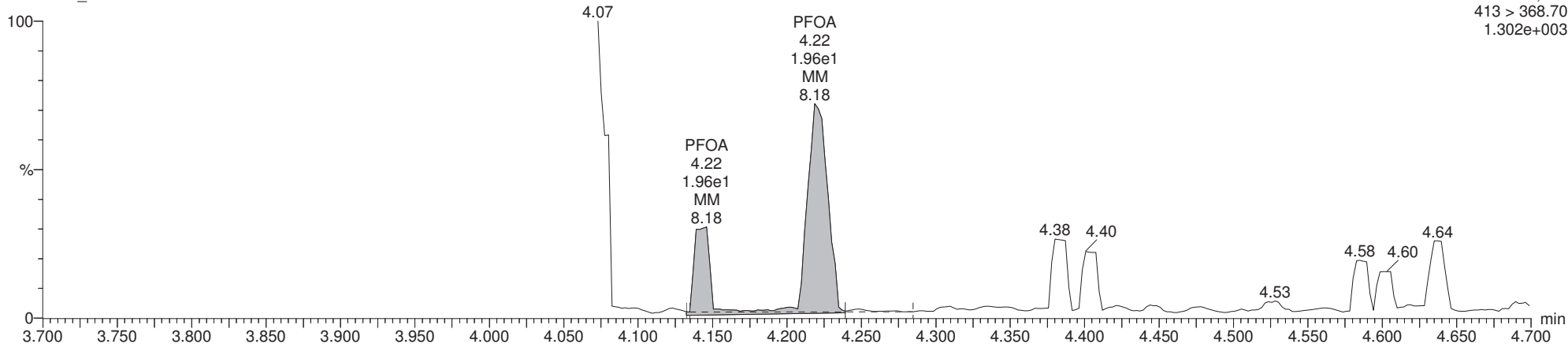
Last Altered: Tuesday, September 26, 2017 17:56:44 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:57:04 Pacific Daylight Time

ID: 1701286-03 ME-JW-RW02-0917 0.25, Description: ME-JW-RW02-0917, Name: 170922G3_21, Date: 23-Sep-2017, Time: 02:11:57, Instrument: , Lab: , User:

PFOA

170922G3_21

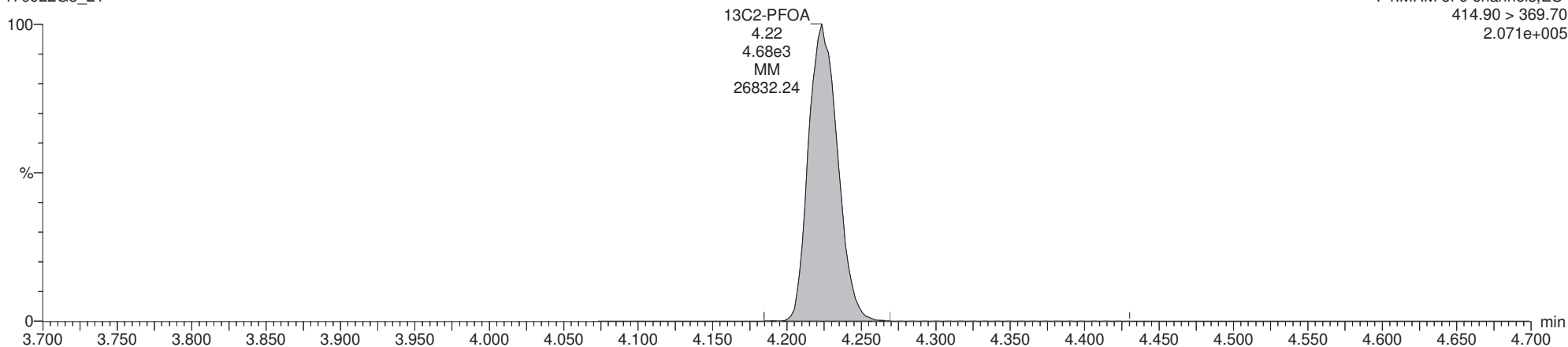
F4:MRM of 9 channels,ES-
413 > 368.70
1.302e+003



13C2-PFOA

170922G3_21

F4:MRM of 9 channels,ES-
414.90 > 369.70
2.071e+005



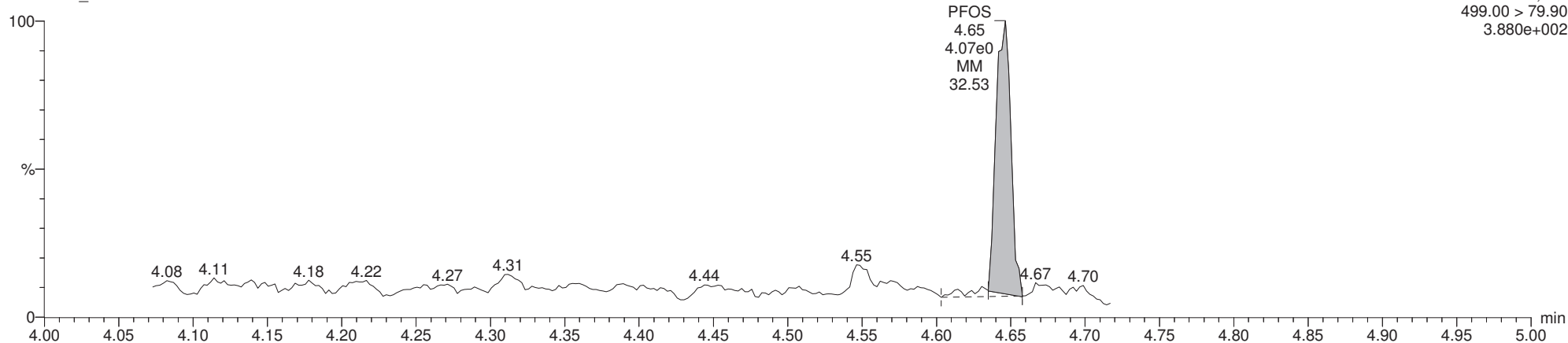
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-21.qld

Last Altered: Tuesday, September 26, 2017 17:56:44 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:57:04 Pacific Daylight Time

ID: 1701286-03 ME-JW-RW02-0917 0.25, Description: ME-JW-RW02-0917, Name: 170922G3_21, Date: 23-Sep-2017, Time: 02:11:57, Instrument: , Lab: , User:

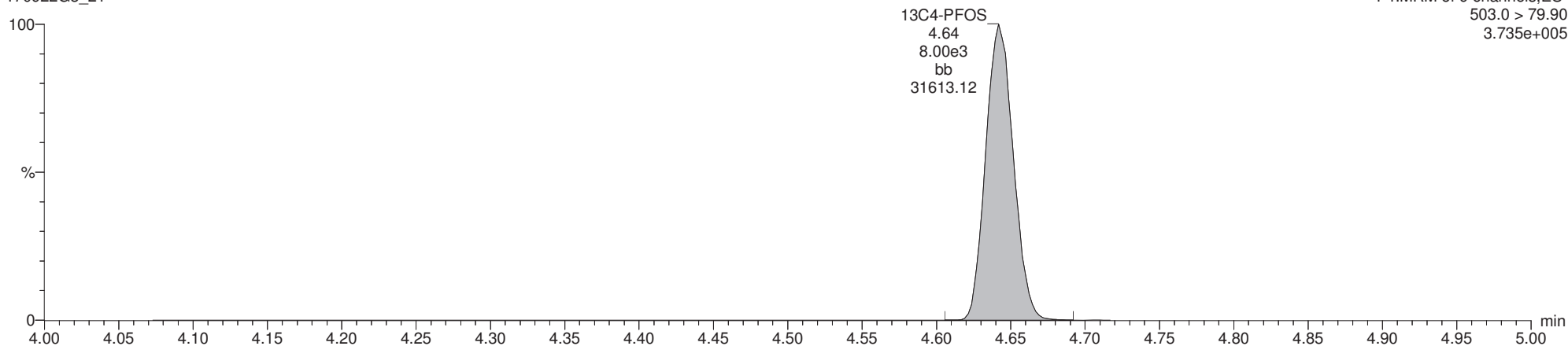
PFOS

170922G3_21



13C4-PFOS

170922G3_21



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-21.qld

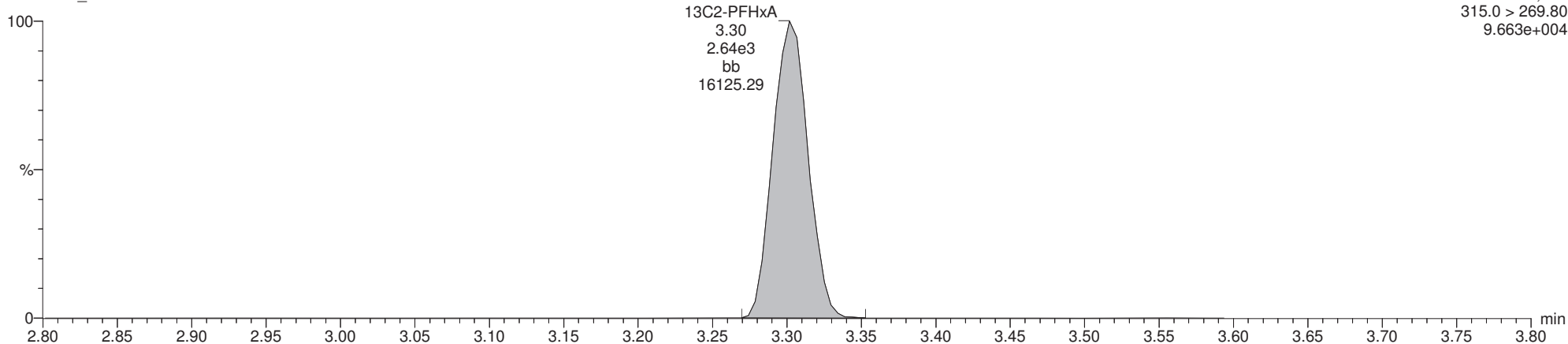
Last Altered: Tuesday, September 26, 2017 17:56:44 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:57:04 Pacific Daylight Time

ID: 1701286-03 ME-JW-RW02-0917 0.25, Description: ME-JW-RW02-0917, Name: 170922G3_21, Date: 23-Sep-2017, Time: 02:11:57, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_21

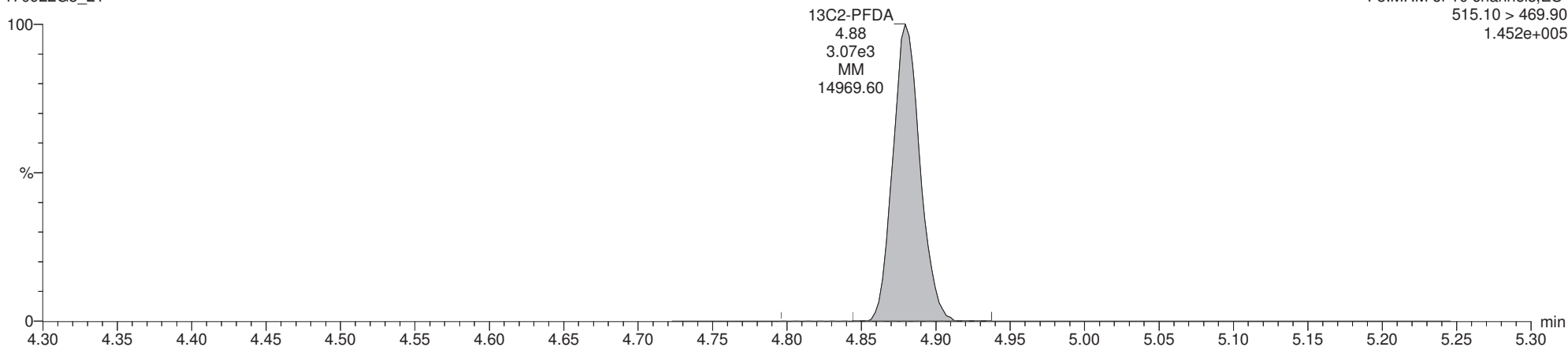
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.663e+004



13C2-PFDA

170922G3_21

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.452e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-17.qld

Last Altered: Tuesday, September 26, 2017 12:51:02 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:51:37 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-MS1 LFSM 0.25, Description: LFSM, Name: 170922G3_17, Date: 23-Sep-2017, Time: 01:22:21

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	9.170e2	8.403e3		0.237	2.92	15.9	
2	4 PFOA	413 > 368.70	2.172e3	5.201e3		0.237	4.23	23.5	
3	6 PFOS	499.00 > 79.90	1.330e3	8.403e3		0.237	4.65	18.1	
4	7 13C2-PFHxA	315.0 > 269.80	2.906e3	5.201e3	0.544	0.237	3.31	43.3	103
5	8 13C2-PFDA	515.10 > 469.90	3.006e3	5.201e3	0.667	0.237	4.89	36.6	86.7
6	9 13C2-PFOA	414.90 > 369.70	5.201e3	5.201e3	1.000	0.237	4.23	42.2	100
7	10 13C4-PFOS	503.0 > 79.90	8.403e3	8.403e3	1.000	0.237	4.65	121	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-17.qld

Last Altered: Tuesday, September 26, 2017 12:51:02 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:51:37 Pacific Daylight Time

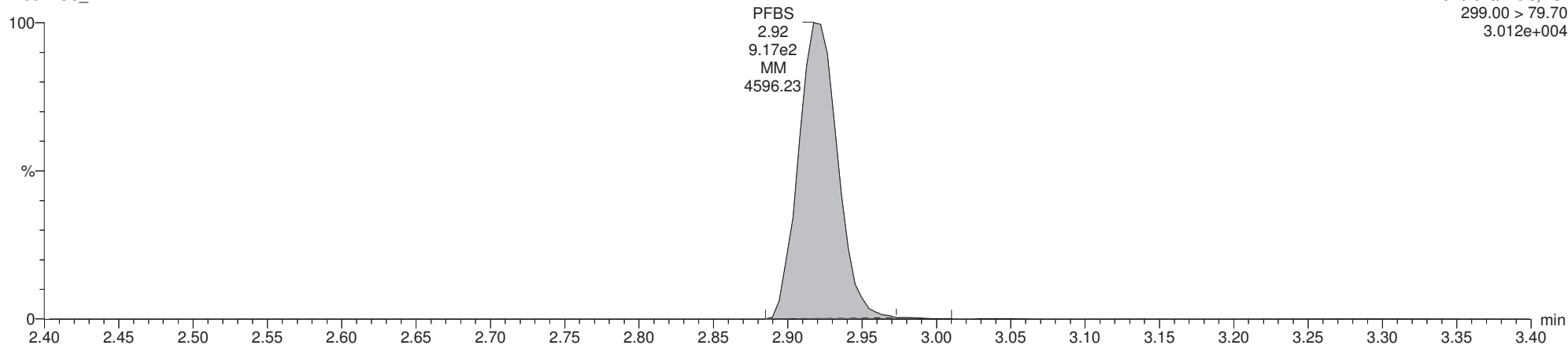
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-MS1 LFSM 0.25, Description: LFSM, Name: 170922G3_17, Date: 23-Sep-2017, Time: 01:22:21, Instrument: , Lab: , User:

PFBS

170922G3_17

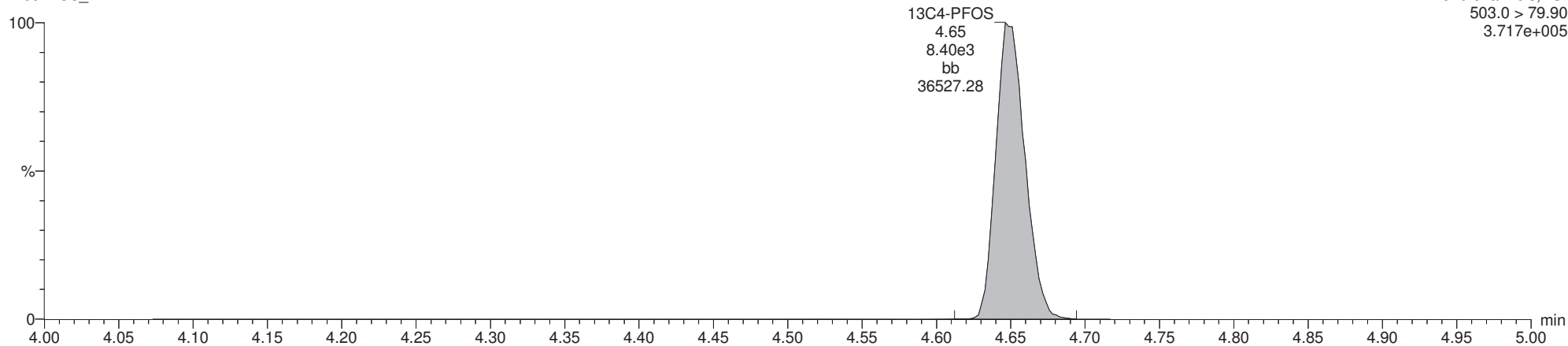
F2:MRM of 5 channels, ES-
299.00 > 79.70
3.012e+004



13C4-PFOS

170922G3_17

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.717e+005



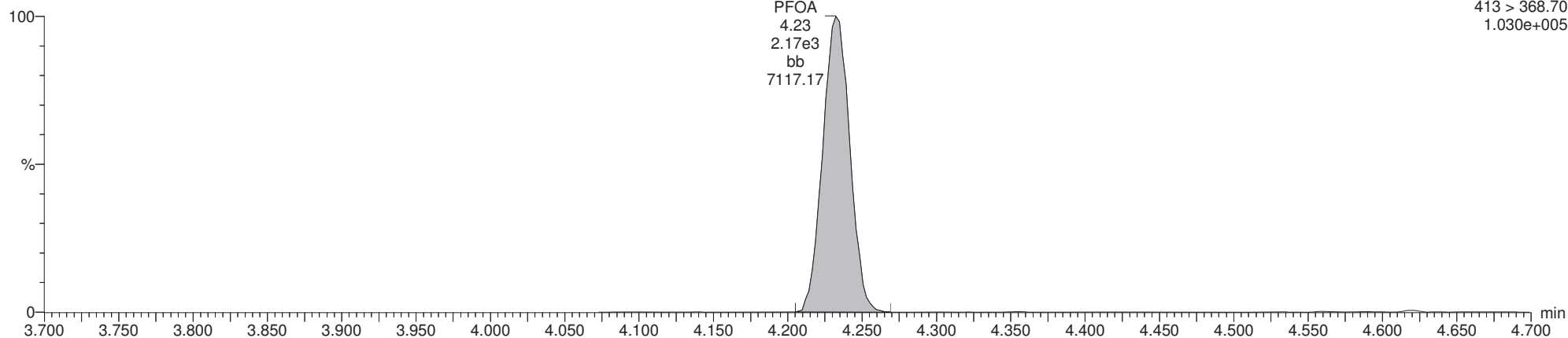
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-17.qld

Last Altered: Tuesday, September 26, 2017 12:51:02 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:51:37 Pacific Daylight Time

ID: B7I0113-MS1 LFSM 0.25, Description: LFSM, Name: 170922G3_17, Date: 23-Sep-2017, Time: 01:22:21, Instrument: , Lab: , User:

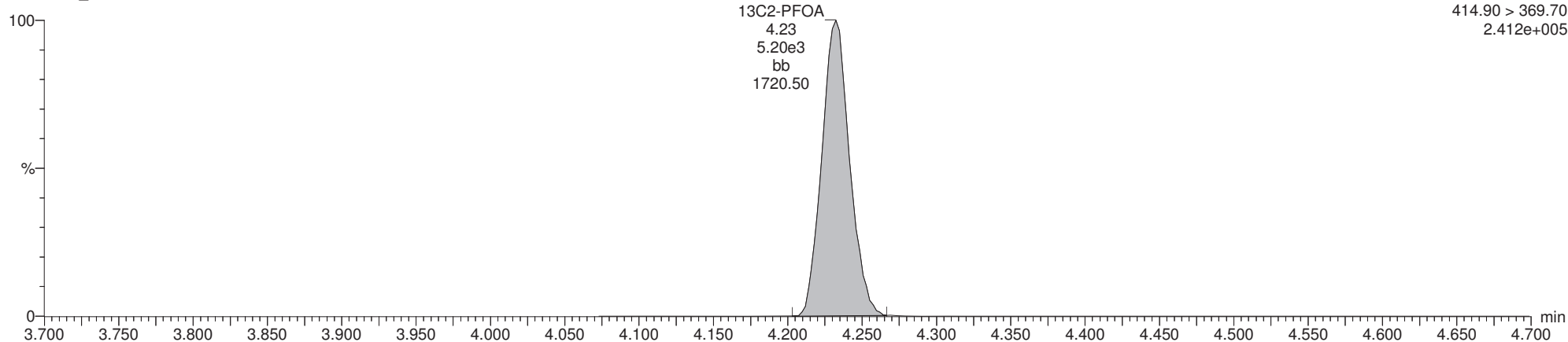
PFOA

170922G3_17



¹³C2-PFOA

170922G3_17



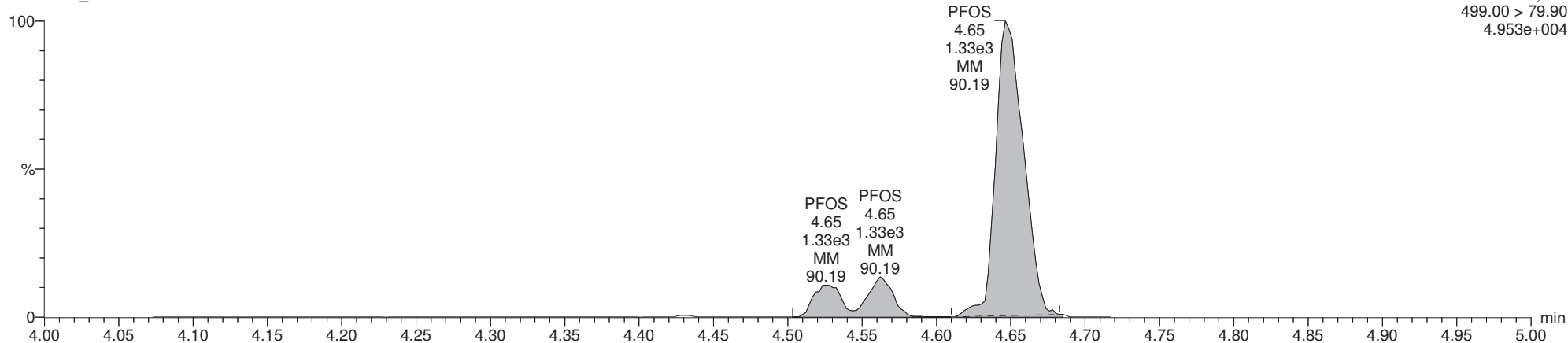
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-17.qld

Last Altered: Tuesday, September 26, 2017 12:51:02 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:51:37 Pacific Daylight Time

ID: B7I0113-MS1 LFSM 0.25, Description: LFSM, Name: 170922G3_17, Date: 23-Sep-2017, Time: 01:22:21, Instrument: , Lab: , User:

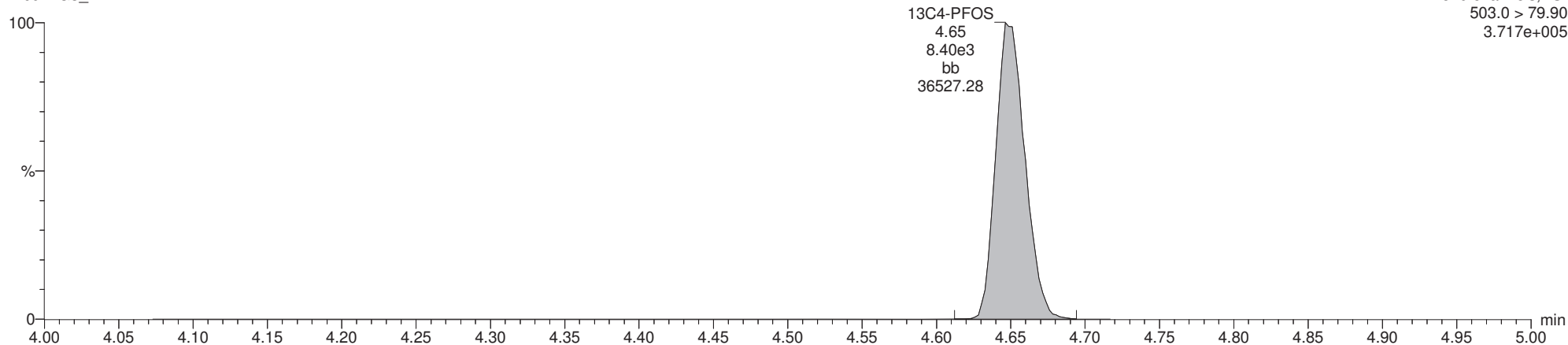
PFOS

170922G3_17



13C4-PFOS

170922G3_17



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-17.qld

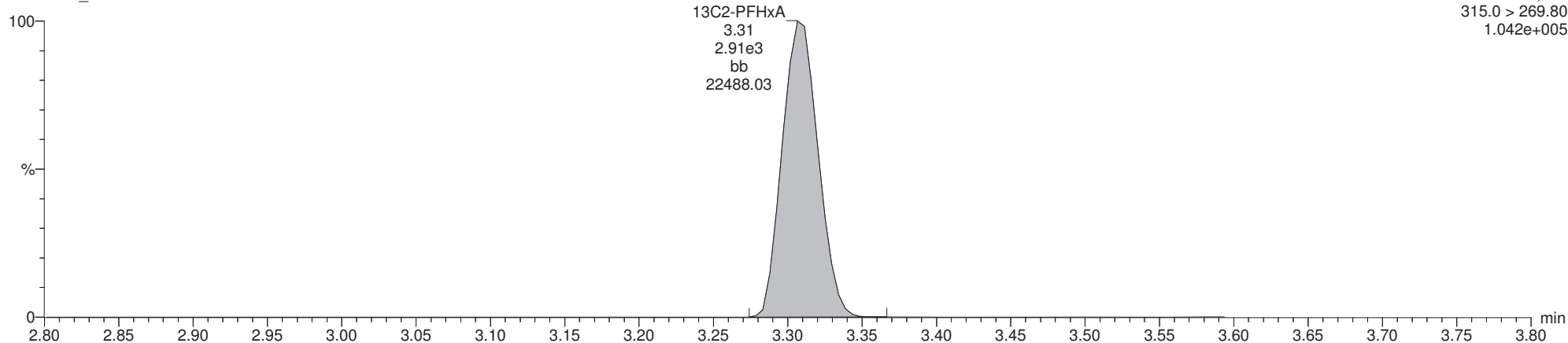
Last Altered: Tuesday, September 26, 2017 12:51:02 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:51:37 Pacific Daylight Time

ID: B7I0113-MS1 LFSM 0.25, Description: LFSM, Name: 170922G3_17, Date: 23-Sep-2017, Time: 01:22:21, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_17

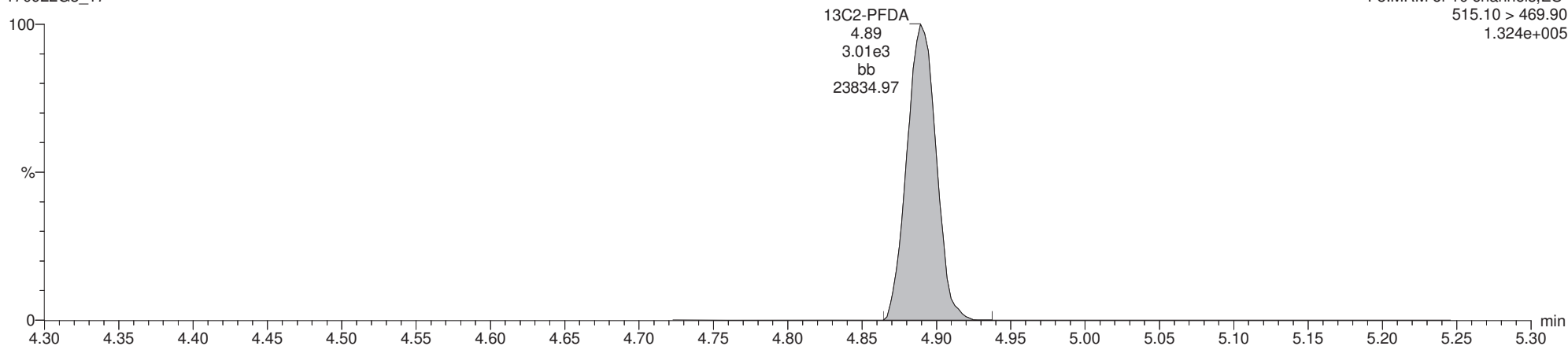
F2:MRM of 5 channels,ES-
315.0 > 269.80
1.042e+005



13C2-PFDA

170922G3_17

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.324e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-18.qld

Last Altered: Tuesday, September 26, 2017 12:54:22 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:55:38 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-MSD1 LFSMD 0.25, Description: LFSMD, Name: 170922G3_18, Date: 23-Sep-2017, Time: 01:34:44

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	9.002e2	8.049e3		0.250	2.92	15.5	
2	4 PFOA	413 > 368.70	2.030e3	5.002e3		0.250	4.23	21.7	
3	6 PFOS	499.00 > 79.90	1.400e3	8.049e3		0.250	4.64	18.8	
4	7 13C2-PFHxA	315.0 > 269.80	2.609e3	5.002e3	0.544	0.250	3.30	38.3	95.8
5	8 13C2-PFDA	515.10 > 469.90	3.028e3	5.002e3	0.667	0.250	4.89	36.3	90.8
6	9 13C2-PFOA	414.90 > 369.70	5.002e3	5.002e3	1.000	0.250	4.23	40.0	100
7	10 13C4-PFOS	503.0 > 79.90	8.049e3	8.049e3	1.000	0.250	4.64	115	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-18.qld

Last Altered: Tuesday, September 26, 2017 12:54:22 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:55:38 Pacific Daylight Time

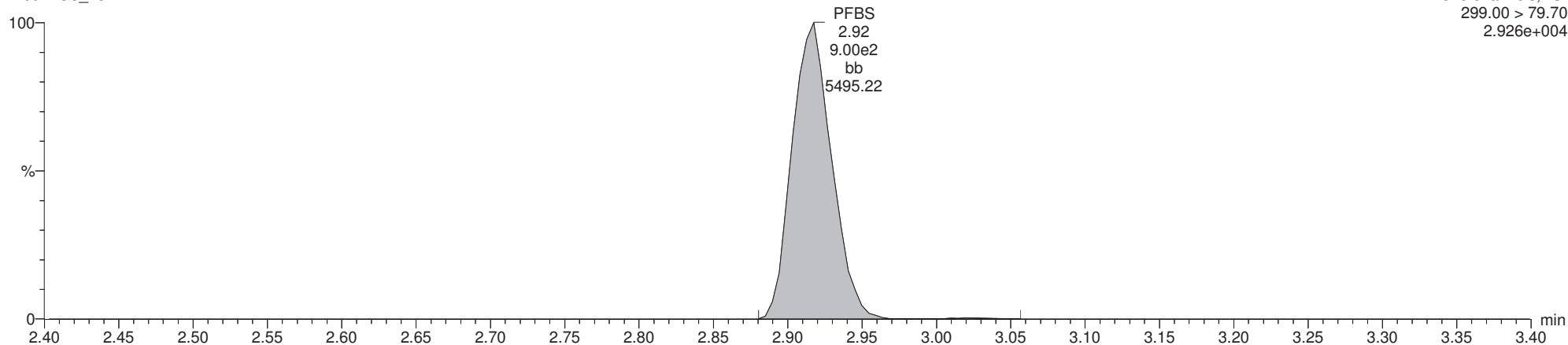
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: B7I0113-MSD1 LFSMD 0.25, Description: LFSMD, Name: 170922G3_18, Date: 23-Sep-2017, Time: 01:34:44, Instrument: , Lab: , User:

PFBS

170922G3_18

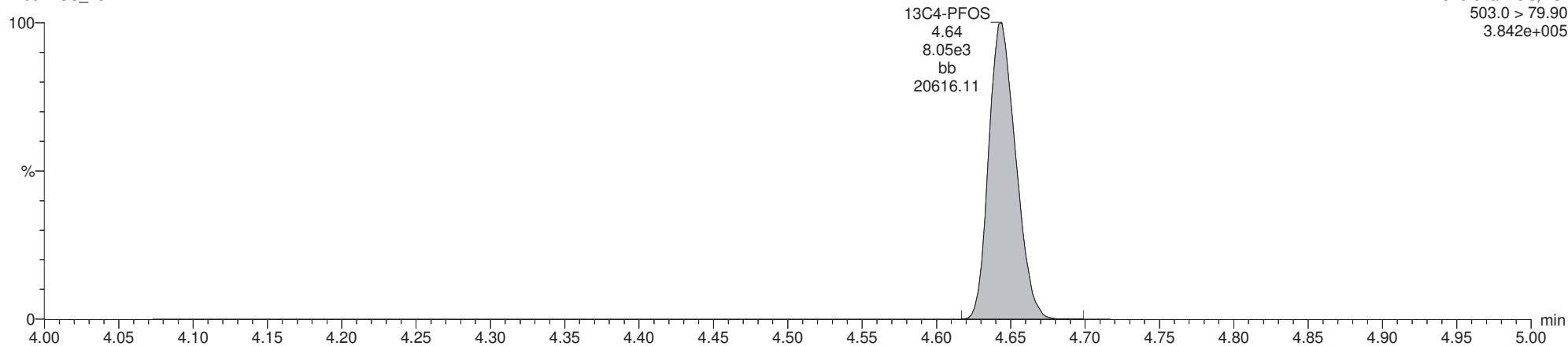
F2:MRM of 5 channels, ES-
299.00 > 79.70
2.926e+004



13C4-PFOS

170922G3_18

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.842e+005



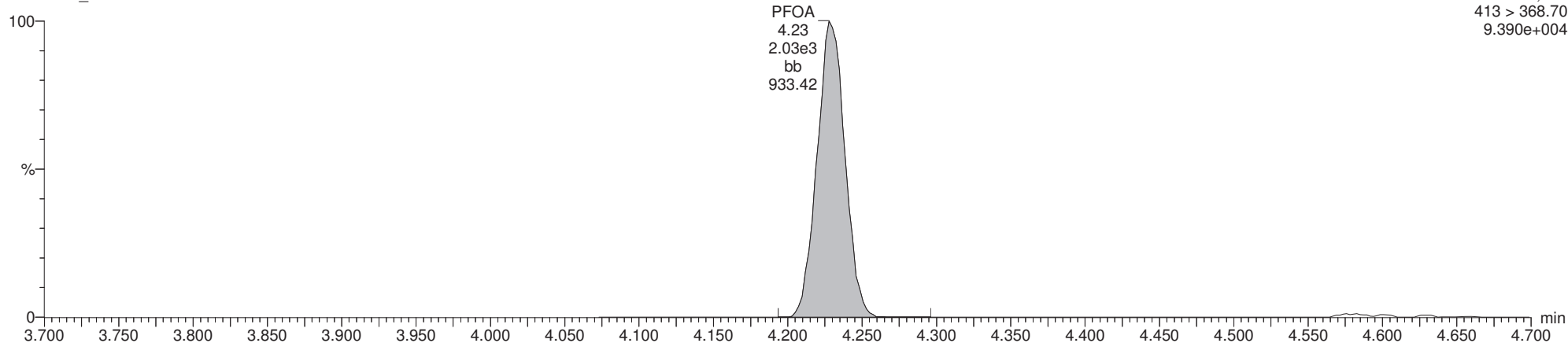
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-18.qld

Last Altered: Tuesday, September 26, 2017 12:54:22 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:55:38 Pacific Daylight Time

ID: B7I0113-MSD1 LFSMD 0.25, Description: LFSMD, Name: 170922G3_18, Date: 23-Sep-2017, Time: 01:34:44, Instrument: , Lab: , User:

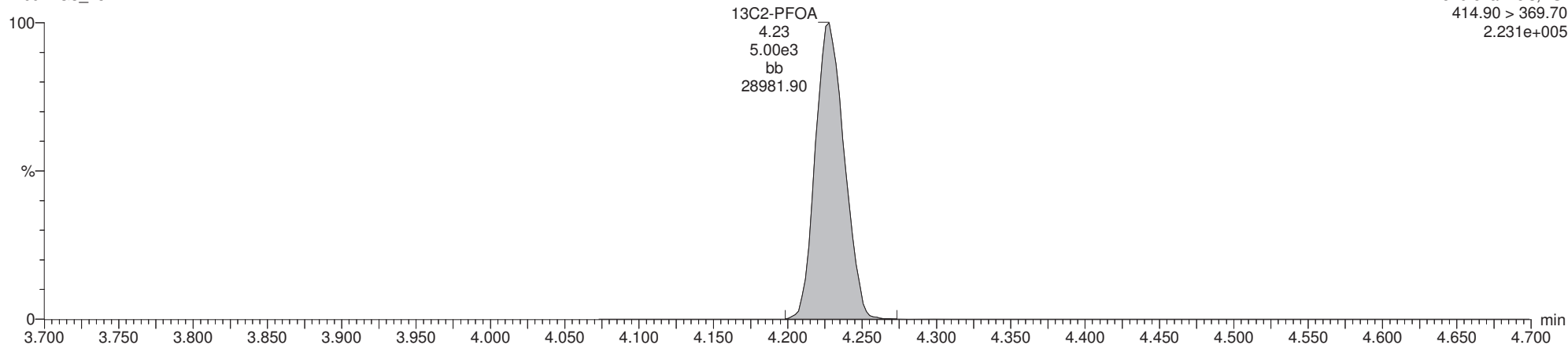
PFOA

170922G3_18



¹³C2-PFOA

170922G3_18



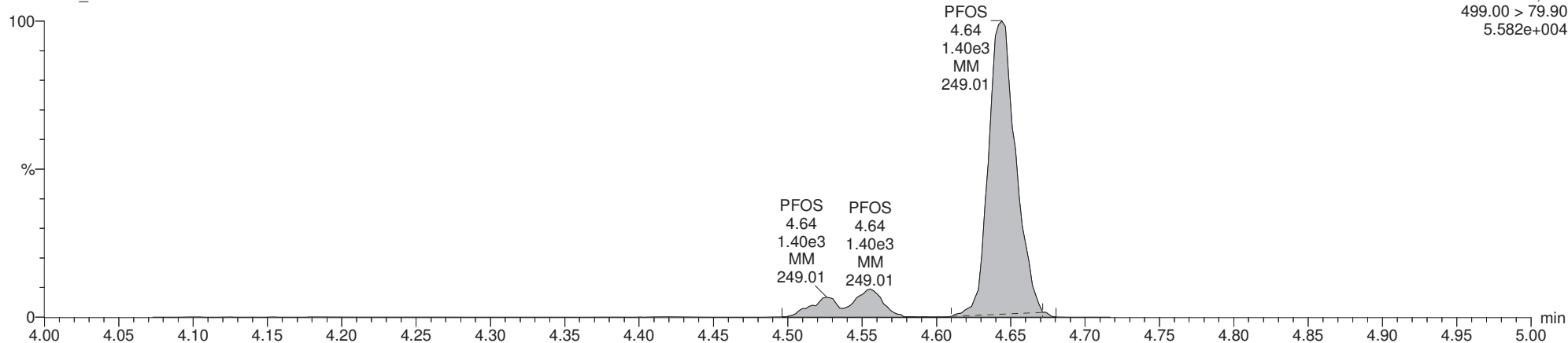
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-18.qld

Last Altered: Tuesday, September 26, 2017 12:54:22 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:55:38 Pacific Daylight Time

ID: B7I0113-MSD1 LFSMD 0.25, Description: LFSMD, Name: 170922G3_18, Date: 23-Sep-2017, Time: 01:34:44, Instrument: , Lab: , User:

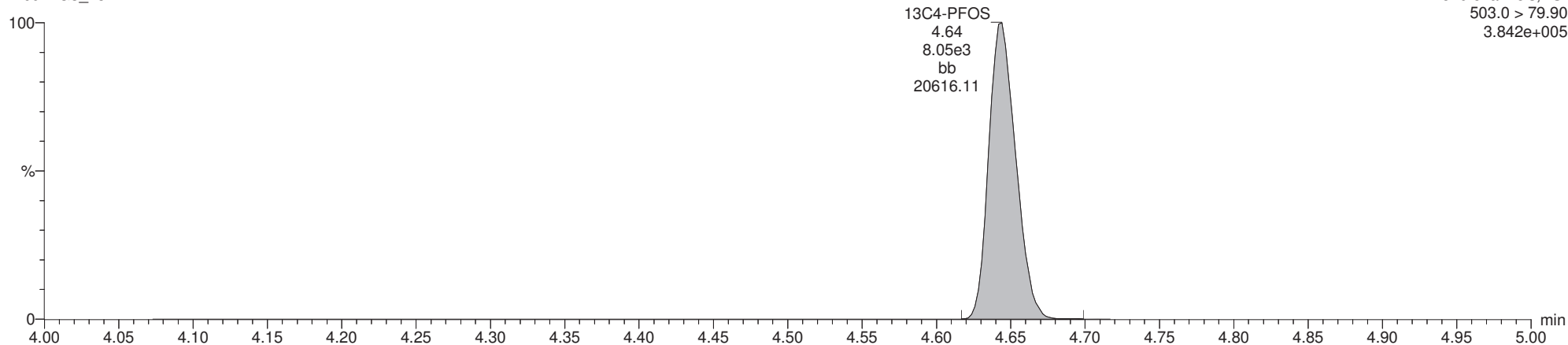
PFOS

170922G3_18



13C4-PFOS

170922G3_18



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-18.qld

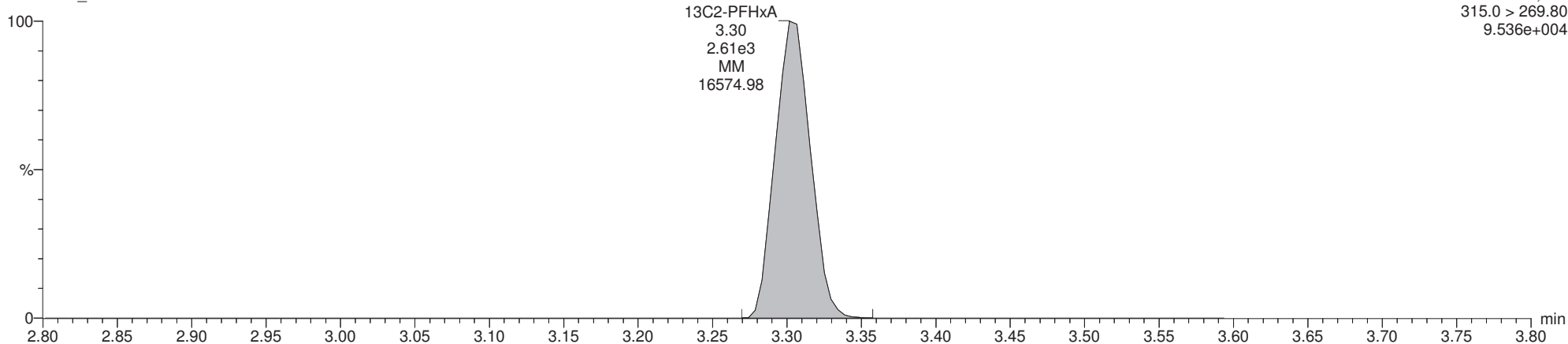
Last Altered: Tuesday, September 26, 2017 12:54:22 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:55:38 Pacific Daylight Time

ID: B7I0113-MSD1 LFSMD 0.25, Description: LFSMD, Name: 170922G3_18, Date: 23-Sep-2017, Time: 01:34:44, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_18

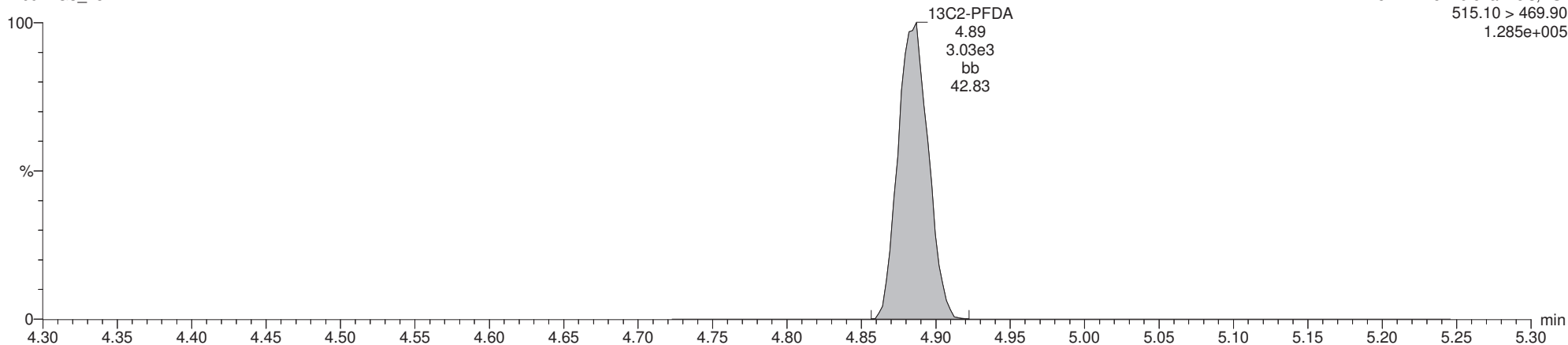
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.536e+004



13C2-PFDA

170922G3_18

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.285e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-22.qld

Last Altered: Tuesday, September 26, 2017 13:10:35 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:11:43 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-04 ME-JW-FB02-0917 0.25, Description: ME-JW-FB02-0917, Name: 170922G3_22, Date: 23-Sep-2017, Time: 02:24:21

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.037e3		0.247			
2	4 PFOA	413 > 368.70	1.411e1	4.795e3		0.247	4.23	0.161	
3	6 PFOS	499.00 > 79.90	4.135e0	8.037e3		0.247	4.65	0.0569	
4	7 13C2-PFHxA	315.0 > 269.80	2.881e3	4.795e3	0.544	0.247	3.30	44.7	110
5	8 13C2-PFDA	515.10 > 469.90	3.202e3	4.795e3	0.667	0.247	4.88	40.6	100
6	9 13C2-PFOA	414.90 > 369.70	4.795e3	4.795e3	1.000	0.247	4.22	40.5	100
7	10 13C4-PFOS	503.0 > 79.90	8.037e3	8.037e3	1.000	0.247	4.64	116	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-22.qld

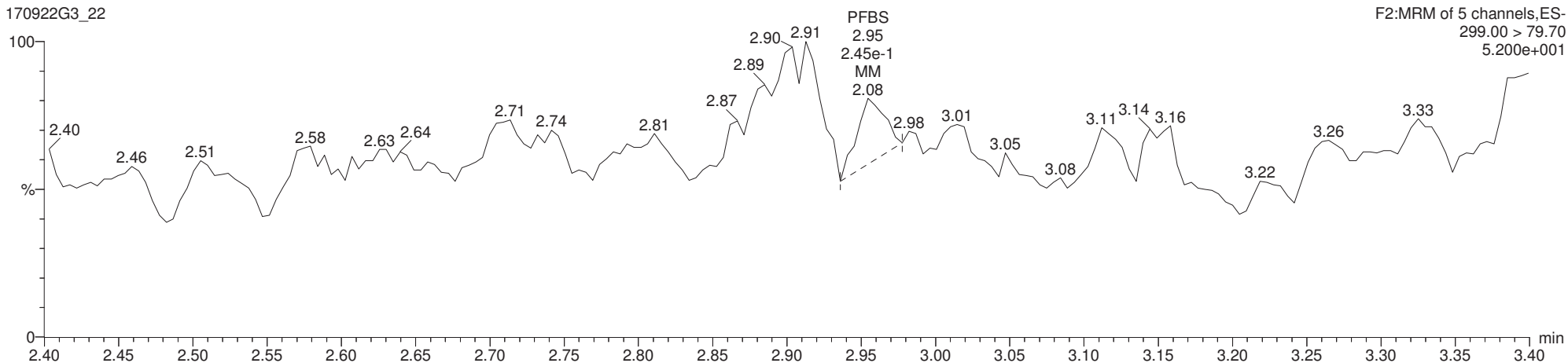
Last Altered: Tuesday, September 26, 2017 13:10:35 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:11:43 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-04 ME-JW-FB02-0917 0.25, Description: ME-JW-FB02-0917, Name: 170922G3_22, Date: 23-Sep-2017, Time: 02:24:21, Instrument: , Lab: , User:

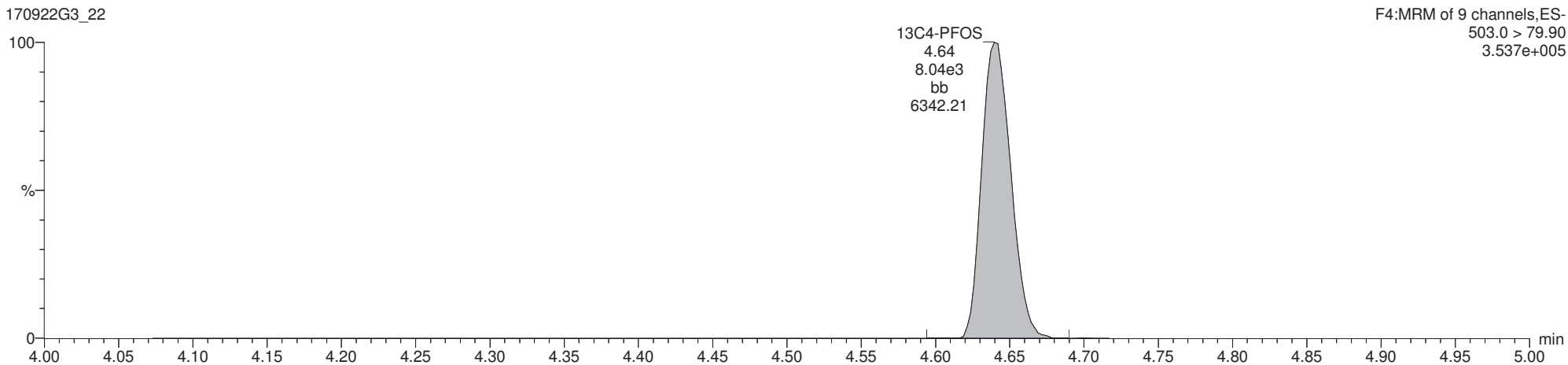
PFBS

170922G3_22



13C4-PFOS

170922G3_22



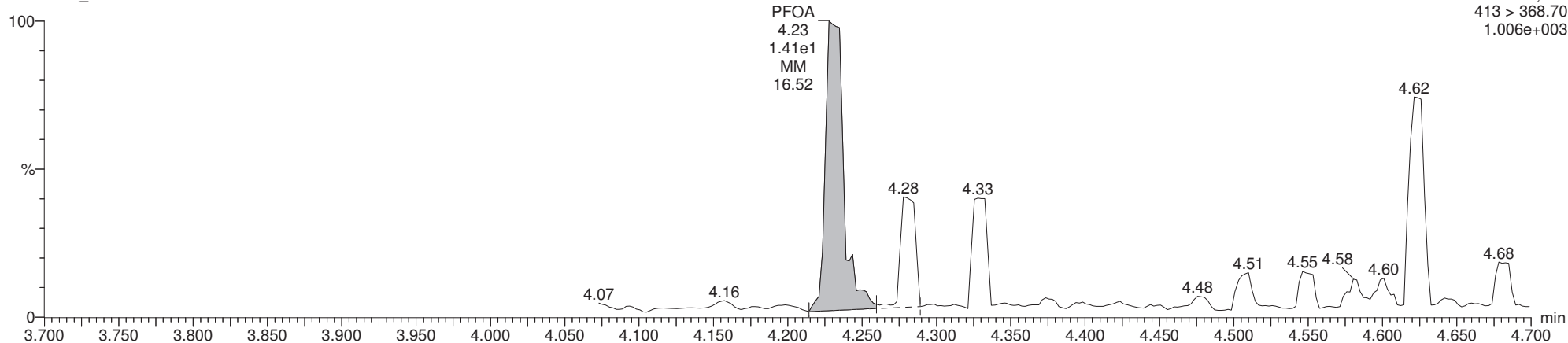
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-22.qld

Last Altered: Tuesday, September 26, 2017 13:10:35 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:11:43 Pacific Daylight Time

ID: 1701286-04 ME-JW-FB02-0917 0.25, Description: ME-JW-FB02-0917, Name: 170922G3_22, Date: 23-Sep-2017, Time: 02:24:21, Instrument: , Lab: , User:

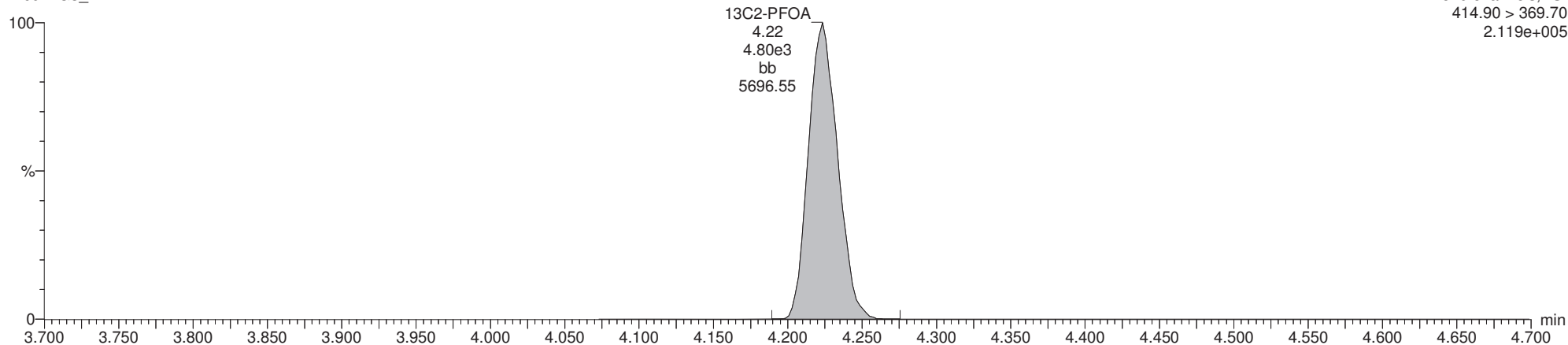
PFOA

170922G3_22



13C2-PFOA

170922G3_22



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-22.qld

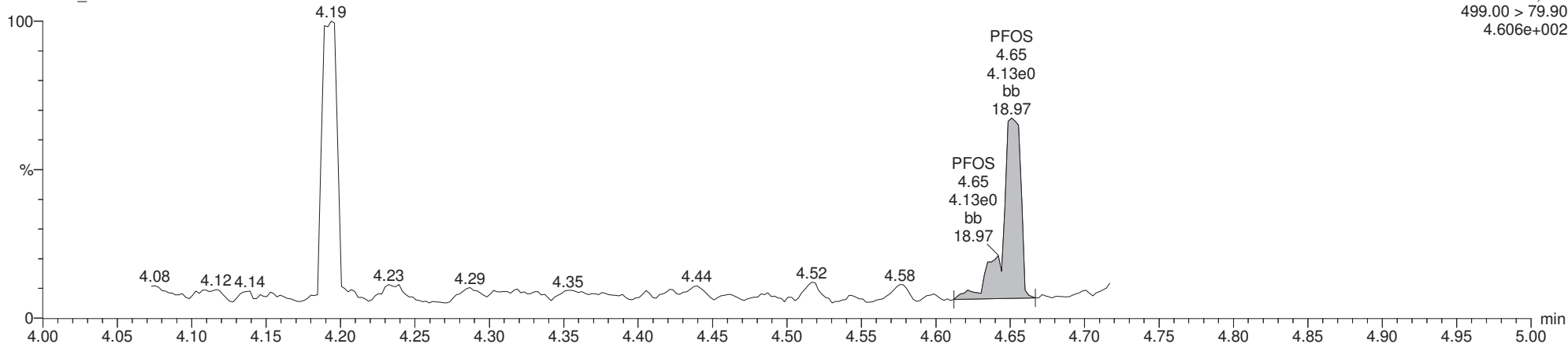
Last Altered: Tuesday, September 26, 2017 13:10:35 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:11:43 Pacific Daylight Time

ID: 1701286-04 ME-JW-FB02-0917 0.25, Description: ME-JW-FB02-0917, Name: 170922G3_22, Date: 23-Sep-2017, Time: 02:24:21, Instrument: , Lab: , User:

PFOS

170922G3_22

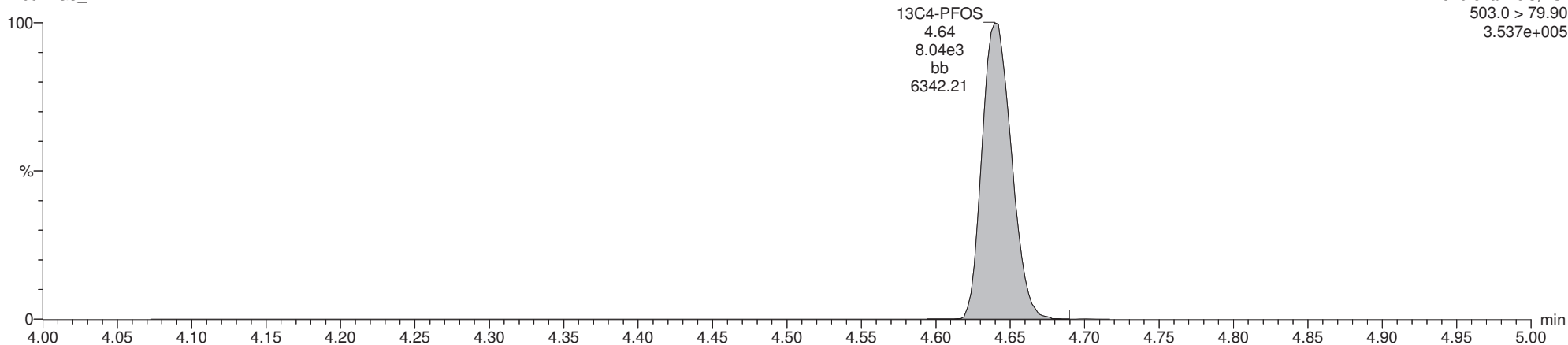
F4:MRM of 9 channels,ES-
499.00 > 79.90
4.606e+002



13C4-PFOS

170922G3_22

F4:MRM of 9 channels,ES-
503.0 > 79.90
3.537e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-22.qld

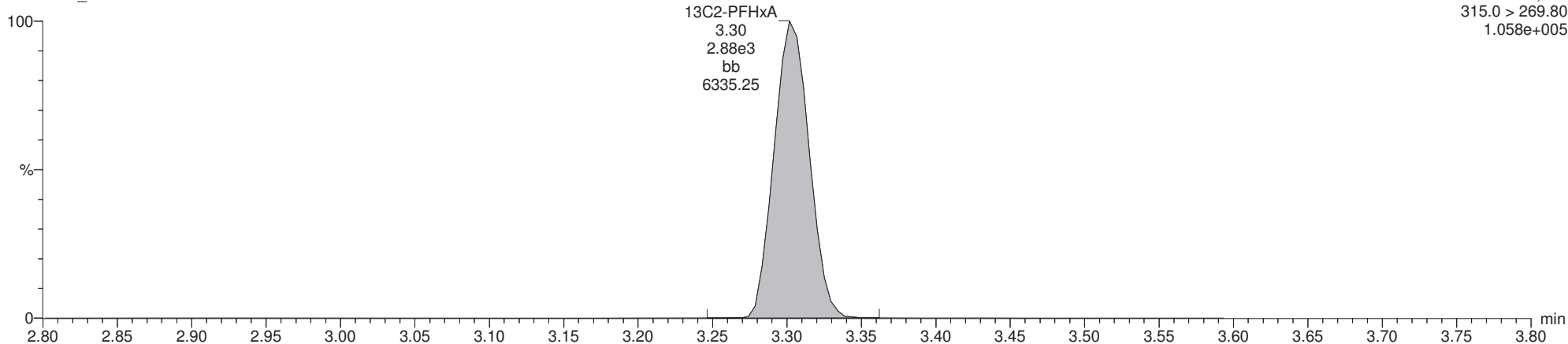
Last Altered: Tuesday, September 26, 2017 13:10:35 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:11:43 Pacific Daylight Time

ID: 1701286-04 ME-JW-FB02-0917 0.25, Description: ME-JW-FB02-0917, Name: 170922G3_22, Date: 23-Sep-2017, Time: 02:24:21, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_22

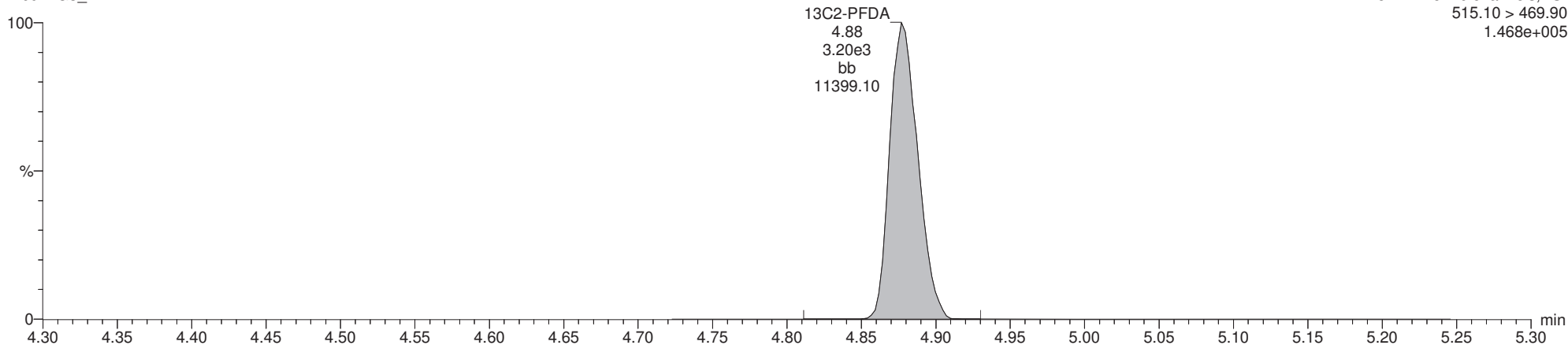
F2:MRM of 5 channels,ES-
315.0 > 269.80
1.058e+005



13C2-PFDA

170922G3_22

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.468e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-4.qld

Last Altered: Tuesday, September 26, 2017 17:52:47 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:53:03 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-05 ME-JW-RW03-0917 0.25, Description: ME-JW-RW03-0917, Name: 170926G1_4, Date: 26-Sep-2017, Time: 14:38:31

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		1.079e4		0.254			
2	4 PFOA	413 > 368.70	6.657e1	7.218e3		0.254	4.25	0.490	
3	6 PFOS	499.00 > 79.90	6.229e0	1.079e4		0.254	4.65	0.0621	
4	7 13C2-PFHxA	315.0 > 269.80	3.674e3	7.218e3	0.544	0.254	3.33	36.9	93.5
5	8 13C2-PFDA	515.10 > 469.90	3.676e3	7.218e3	0.667	0.254	4.88	30.1	76.4
6	9 13C2-PFOA	414.90 > 369.70	7.218e3	7.218e3	1.000	0.254	4.23	39.4	100
7	10 13C4-PFOS	503.0 > 79.90	1.079e4	1.079e4	1.000	0.254	4.65	113	100

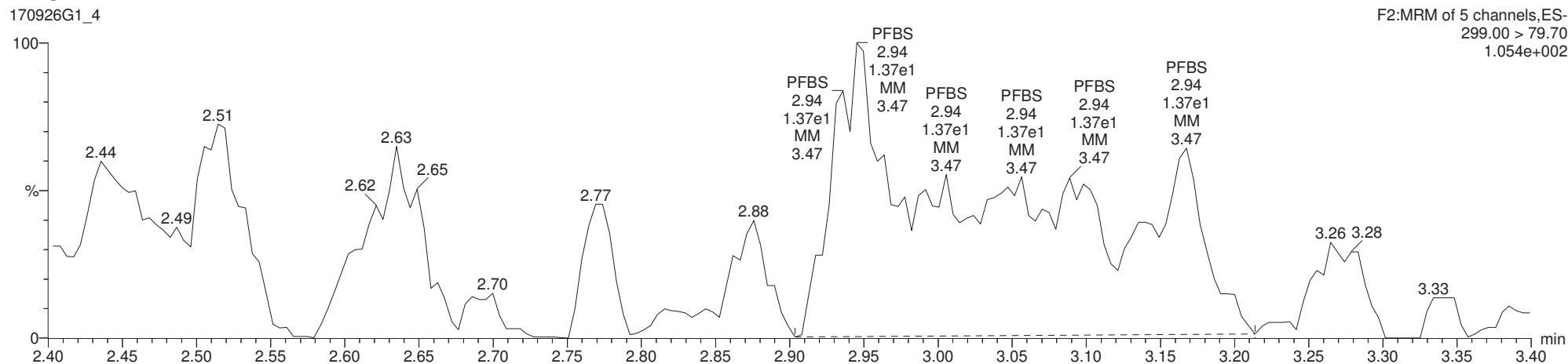
Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-4.qld

Last Altered: Tuesday, September 26, 2017 17:52:47 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:53:03 Pacific Daylight Time

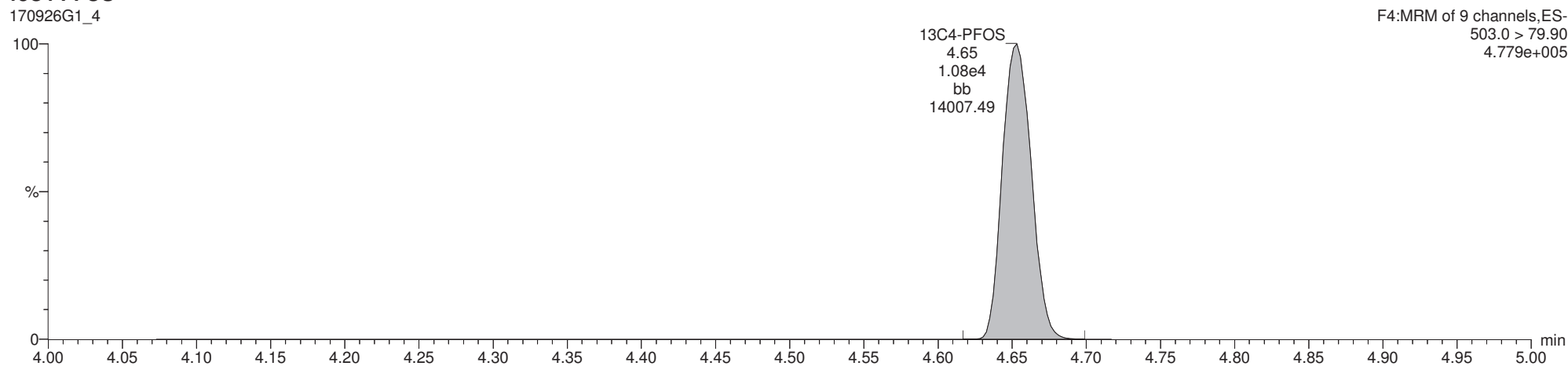
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-05 ME-JW-RW03-0917 0.25, Description: ME-JW-RW03-0917, Name: 170926G1_4, Date: 26-Sep-2017, Time: 14:38:31, Instrument: , Lab: , User:

PFBS



13C4-PFOS



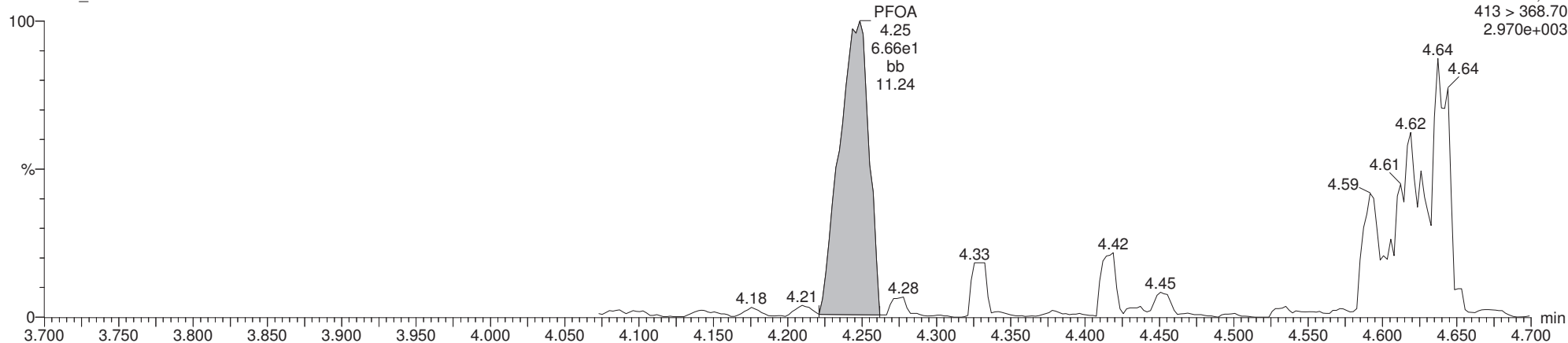
Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-4.qld

Last Altered: Tuesday, September 26, 2017 17:52:47 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:53:03 Pacific Daylight Time

ID: 1701286-05 ME-JW-RW03-0917 0.25, Description: ME-JW-RW03-0917, Name: 170926G1_4, Date: 26-Sep-2017, Time: 14:38:31, Instrument: , Lab: , User:

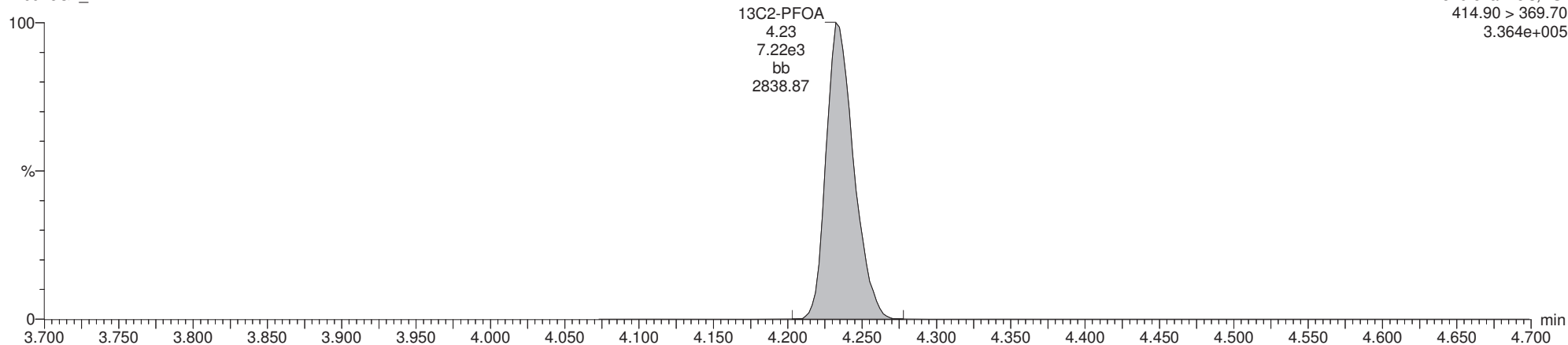
PFOA

170926G1_4



13C2-PFOA

170926G1_4



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-4.qld

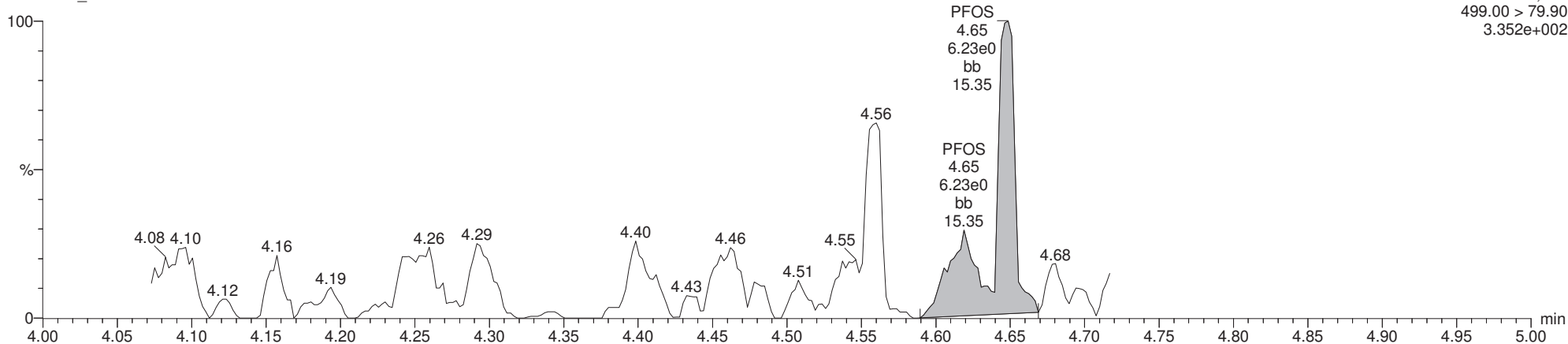
Last Altered: Tuesday, September 26, 2017 17:52:47 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:53:03 Pacific Daylight Time

ID: 1701286-05 ME-JW-RW03-0917 0.25, Description: ME-JW-RW03-0917, Name: 170926G1_4, Date: 26-Sep-2017, Time: 14:38:31, Instrument: , Lab: , User:

PFOS

170926G1_4

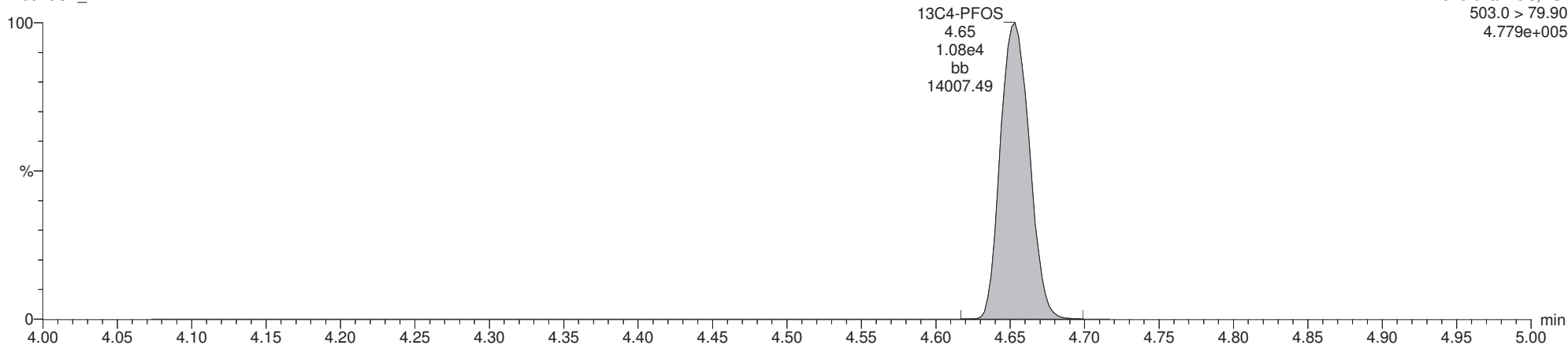
F4:MRM of 9 channels,ES-
499.00 > 79.90
3.352e+002



13C4-PFOS

170926G1_4

F4:MRM of 9 channels,ES-
503.0 > 79.90
4.779e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-4.qld

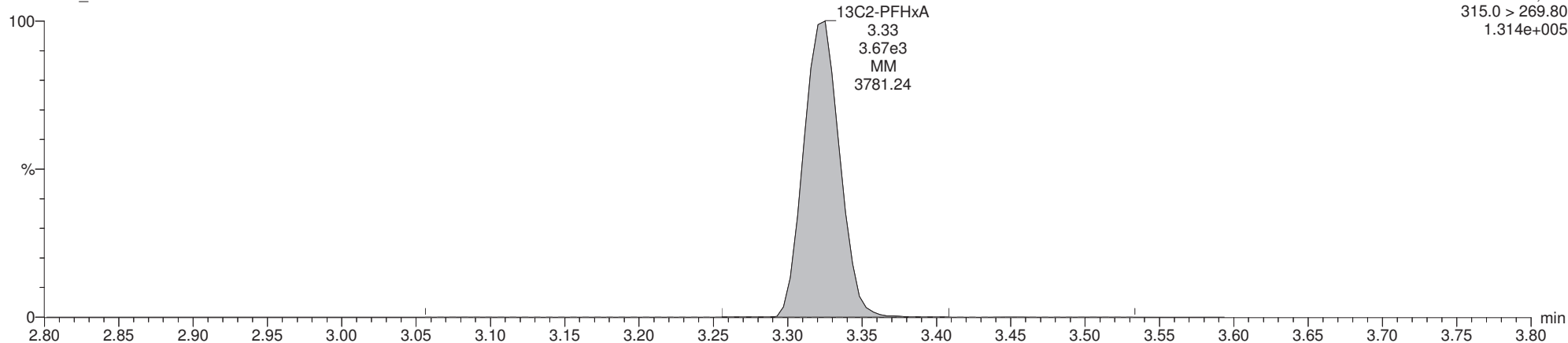
Last Altered: Tuesday, September 26, 2017 17:52:47 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 17:53:03 Pacific Daylight Time

ID: 1701286-05 ME-JW-RW03-0917 0.25, Description: ME-JW-RW03-0917, Name: 170926G1_4, Date: 26-Sep-2017, Time: 14:38:31, Instrument: , Lab: , User:

13C2-PFHxA

170926G1_4

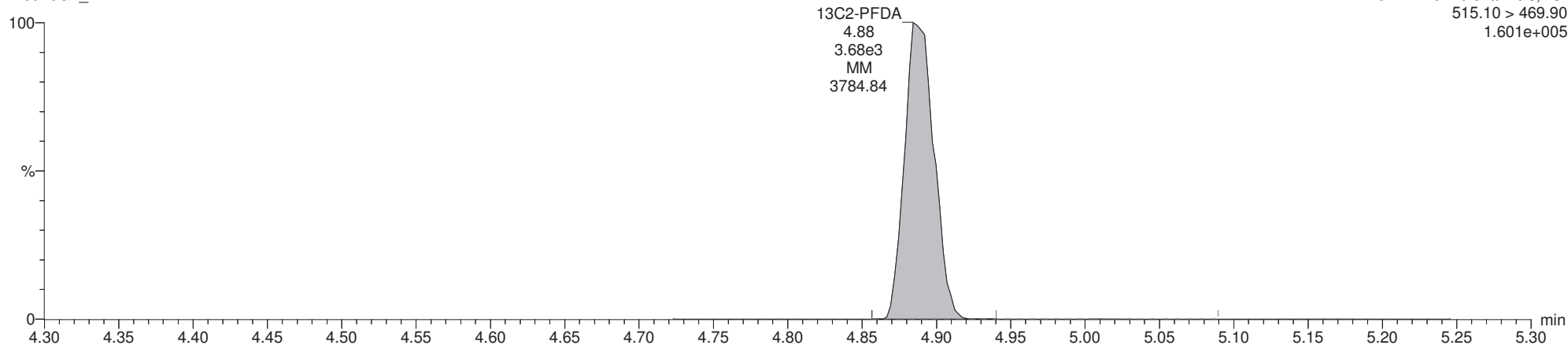
F2:MRM of 5 channels,ES-
315.0 > 269.80
1.314e+005



13C2-PFDA

170926G1_4

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.601e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-24.qld

Last Altered: Tuesday, September 26, 2017 13:19:33 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:20:11 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-06 ME-JW-FB03-0917 0.25, Description: ME-JW-FB03-0917, Name: 170922G3_24, Date: 23-Sep-2017, Time: 02:49:04

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		7.677e3		0.244			
2	4 PFOA	413 > 368.70	2.299e1	5.656e3		0.244	4.22	0.225	
3	6 PFOS	499.00 > 79.90	6.193e0	7.677e3		0.244	4.64	0.0903	
4	7 13C2-PFHxA	315.0 > 269.80	2.971e3	5.656e3	0.544	0.244	3.30	39.6	96.5
5	8 13C2-PFDA	515.10 > 469.90	3.546e3	5.656e3	0.667	0.244	4.88	38.6	94.0
6	9 13C2-PFOA	414.90 > 369.70	5.656e3	5.656e3	1.000	0.244	4.22	41.1	100
7	10 13C4-PFOS	503.0 > 79.90	7.677e3	7.677e3	1.000	0.244	4.64	118	100

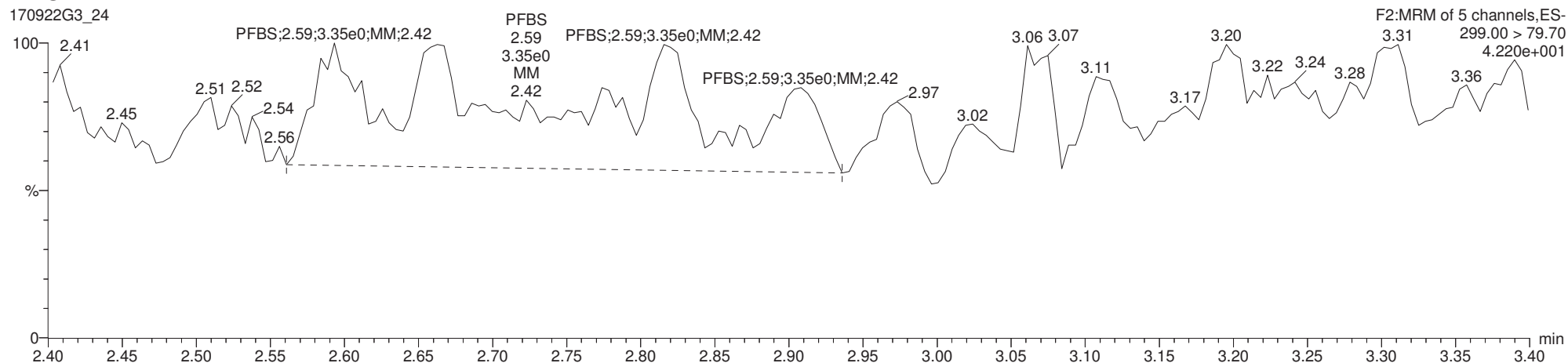
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-24.qld

Last Altered: Tuesday, September 26, 2017 13:19:33 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:20:11 Pacific Daylight Time

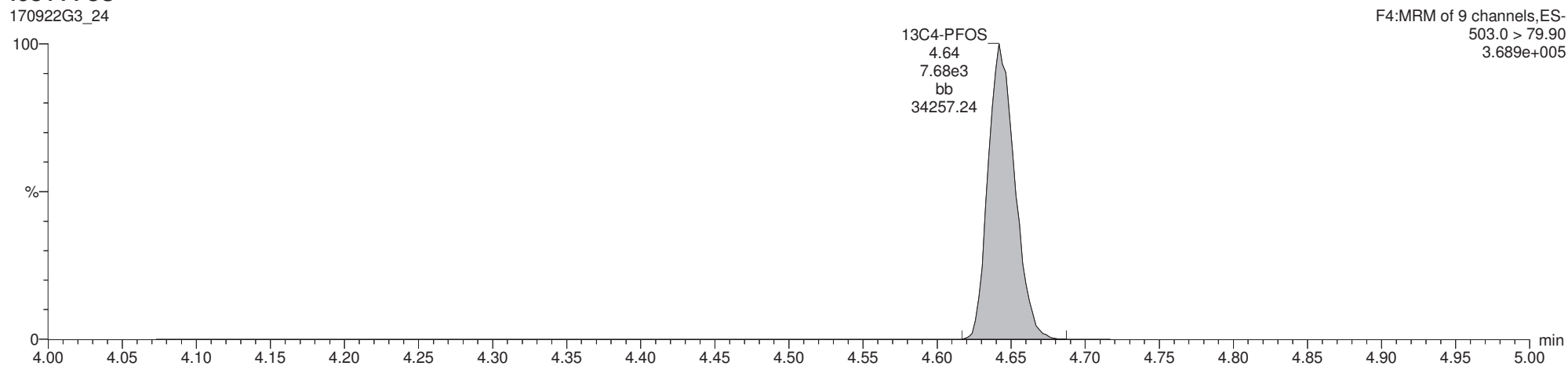
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-06 ME-JW-FB03-0917 0.25, Description: ME-JW-FB03-0917, Name: 170922G3_24, Date: 23-Sep-2017, Time: 02:49:04, Instrument: , Lab: , User:

PFBS



13C4-PFOS



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-24.qld

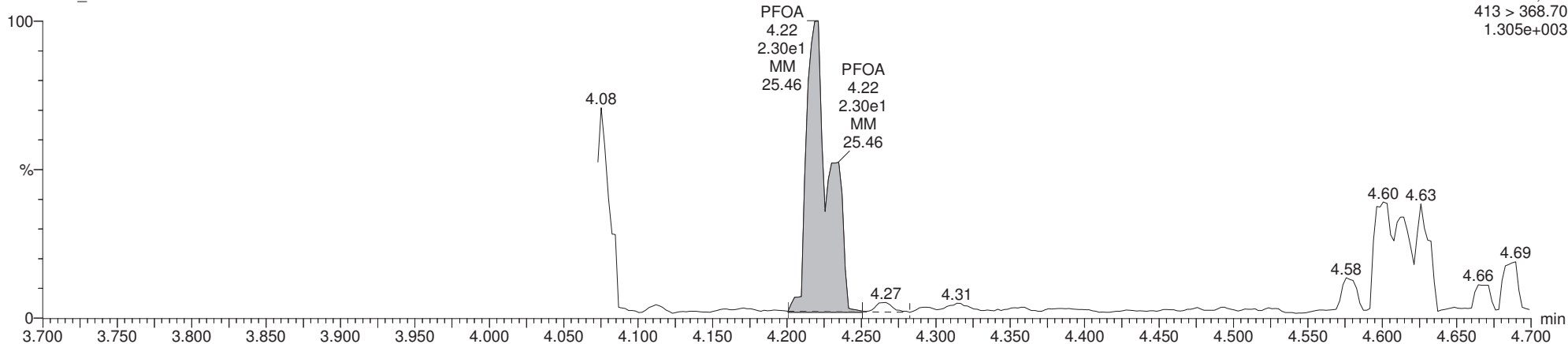
Last Altered: Tuesday, September 26, 2017 13:19:33 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:20:11 Pacific Daylight Time

ID: 1701286-06 ME-JW-FB03-0917 0.25, Description: ME-JW-FB03-0917, Name: 170922G3_24, Date: 23-Sep-2017, Time: 02:49:04, Instrument: , Lab: , User:

PFOA

170922G3_24

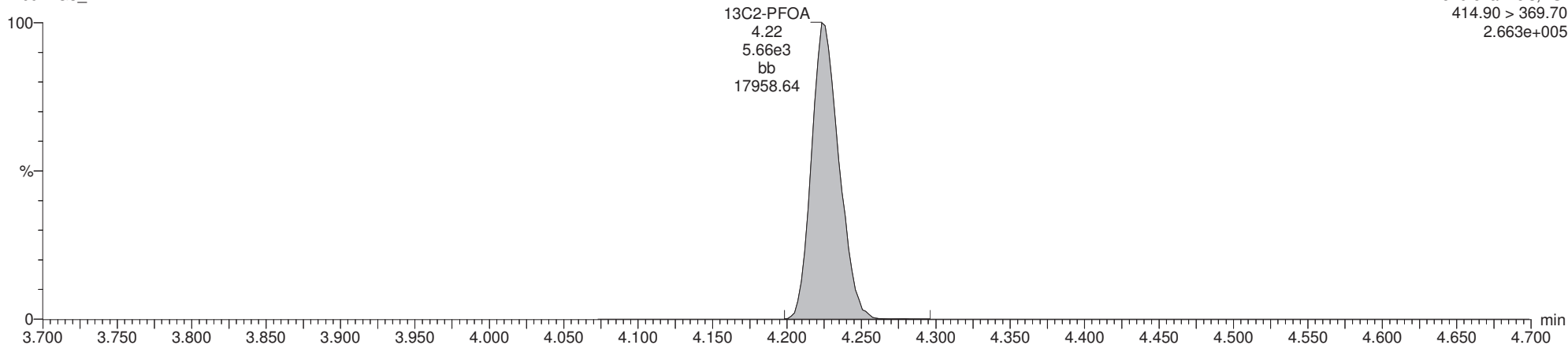
F4:MRM of 9 channels,ES-
413 > 368.70
1.305e+003



13C2-PFOA

170922G3_24

F4:MRM of 9 channels,ES-
414.90 > 369.70
2.663e+005



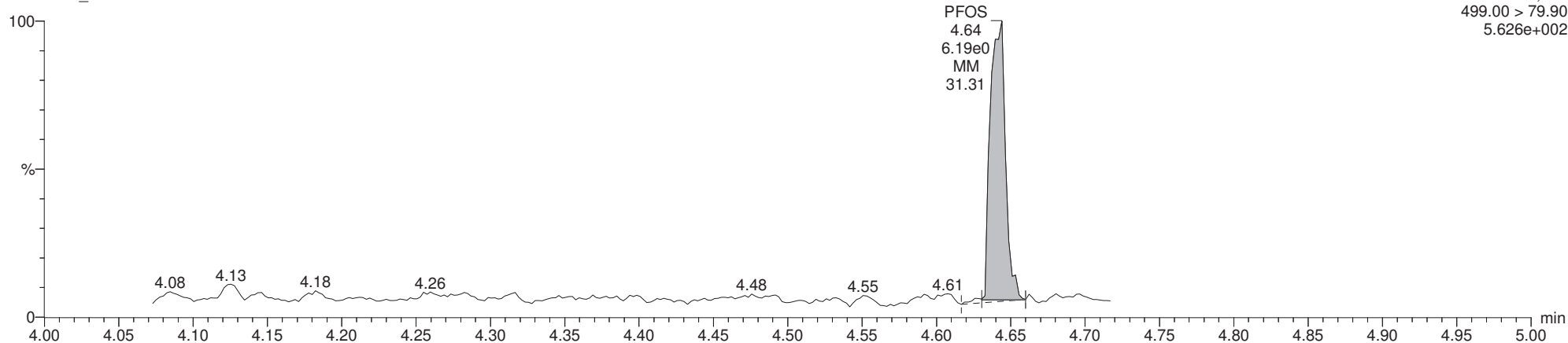
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-24.qld

Last Altered: Tuesday, September 26, 2017 13:19:33 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:20:11 Pacific Daylight Time

ID: 1701286-06 ME-JW-FB03-0917 0.25, Description: ME-JW-FB03-0917, Name: 170922G3_24, Date: 23-Sep-2017, Time: 02:49:04, Instrument: , Lab: , User:

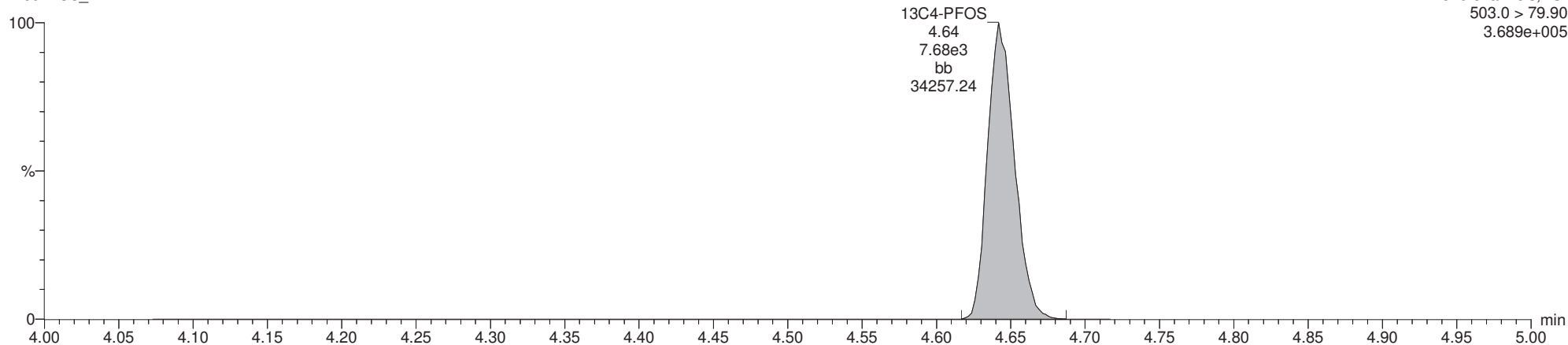
PFOS

170922G3_24



¹³C4-PFOS

170922G3_24



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-24.qld

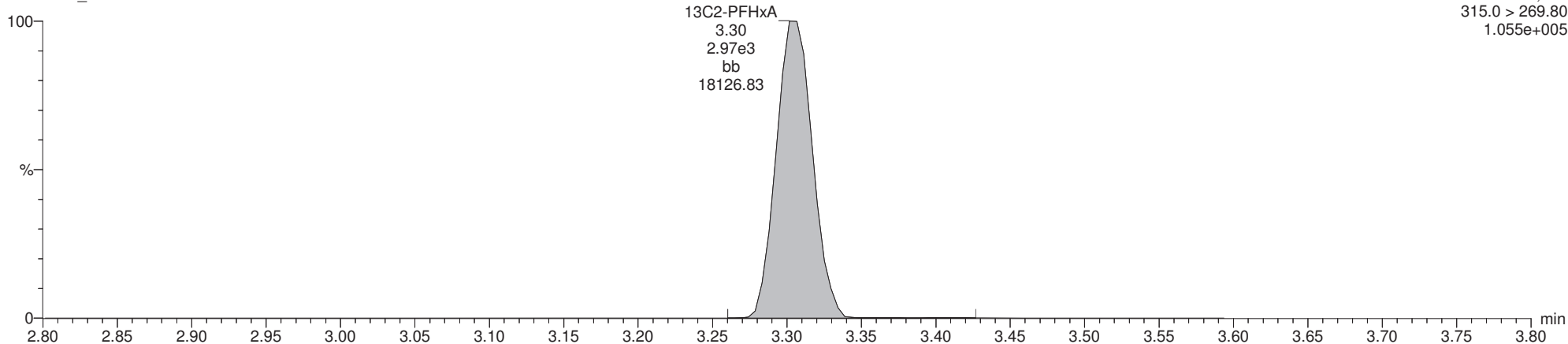
Last Altered: Tuesday, September 26, 2017 13:19:33 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:20:11 Pacific Daylight Time

ID: 1701286-06 ME-JW-FB03-0917 0.25, Description: ME-JW-FB03-0917, Name: 170922G3_24, Date: 23-Sep-2017, Time: 02:49:04, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_24

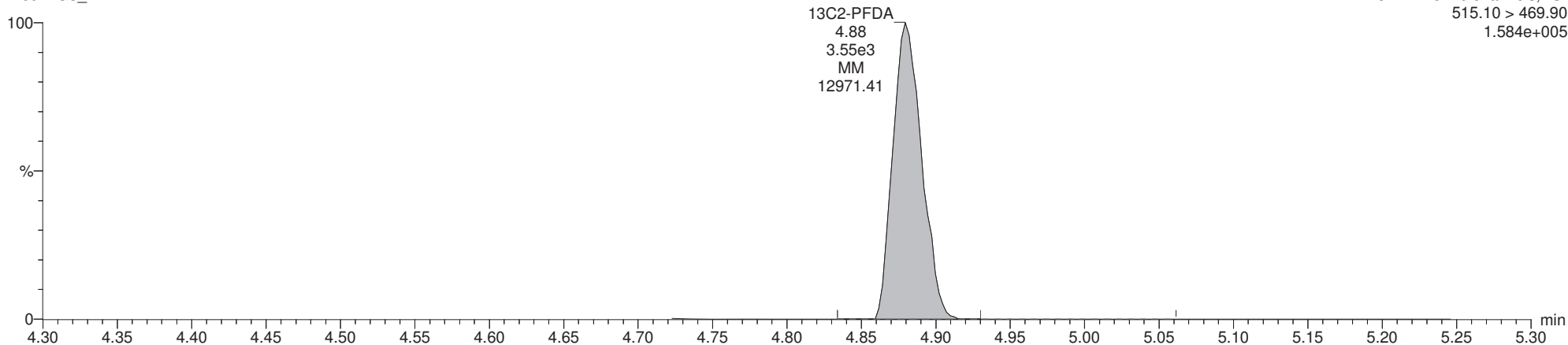
F2:MRM of 5 channels,ES-
315.0 > 269.80
1.055e+005



13C2-PFDA

170922G3_24

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.584e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-25.qld

Last Altered: Tuesday, September 26, 2017 13:22:38 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:22:43 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-07 ME-JW-RW04-0917 0.25, Description: ME-JW-RW04-0917, Name: 170922G3_25, Date: 23-Sep-2017, Time: 03:01:27

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		7.495e3		0.256			
2	4 PFOA	413 > 368.70	5.985e1	4.565e3		0.256	4.23	0.691	
3	6 PFOS	499.00 > 79.90	1.249e1	7.495e3		0.256	4.64	0.178	
4	7 13C2-PFHxA	315.0 > 269.80	2.585e3	4.565e3	0.544	0.256	3.30	40.7	104
5	8 13C2-PFDA	515.10 > 469.90	3.035e3	4.565e3	0.667	0.256	4.88	39.0	99.7
6	9 13C2-PFOA	414.90 > 369.70	4.565e3	4.565e3	1.000	0.256	4.23	39.1	100
7	10 13C4-PFOS	503.0 > 79.90	7.495e3	7.495e3	1.000	0.256	4.64	112	100

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-25.qld

Last Altered: Tuesday, September 26, 2017 13:22:38 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:22:43 Pacific Daylight Time

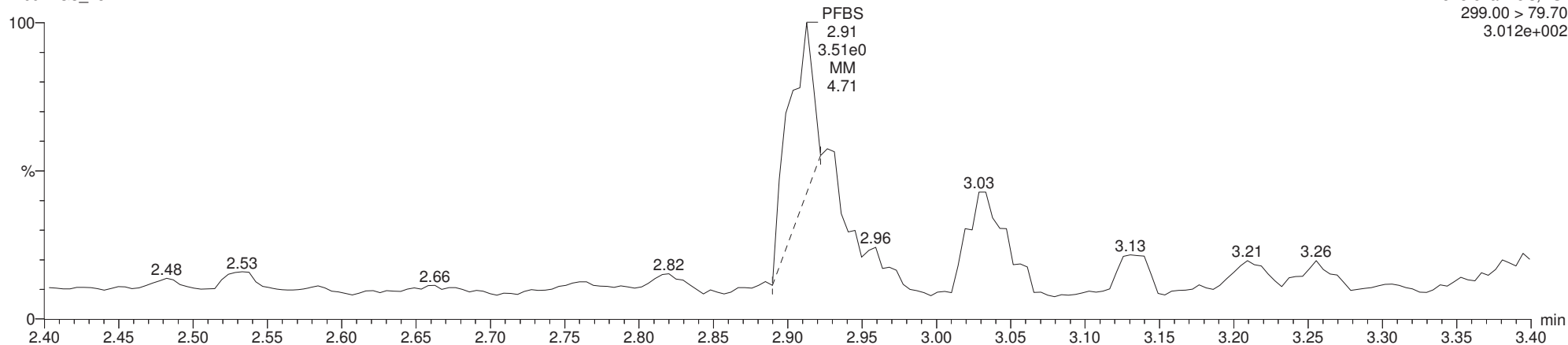
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-07 ME-JW-RW04-0917 0.25, Description: ME-JW-RW04-0917, Name: 170922G3_25, Date: 23-Sep-2017, Time: 03:01:27, Instrument: , Lab: , User:

PFBS

170922G3_25

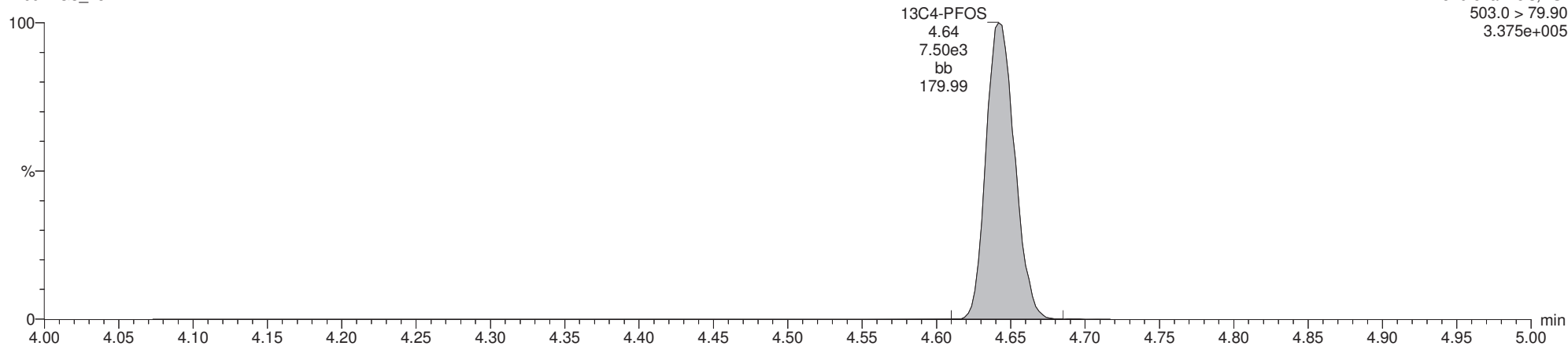
F2:MRM of 5 channels, ES-
299.00 > 79.70
3.012e+002



13C4-PFOS

170922G3_25

F4:MRM of 9 channels, ES-
503.0 > 79.90
3.375e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-25.qld

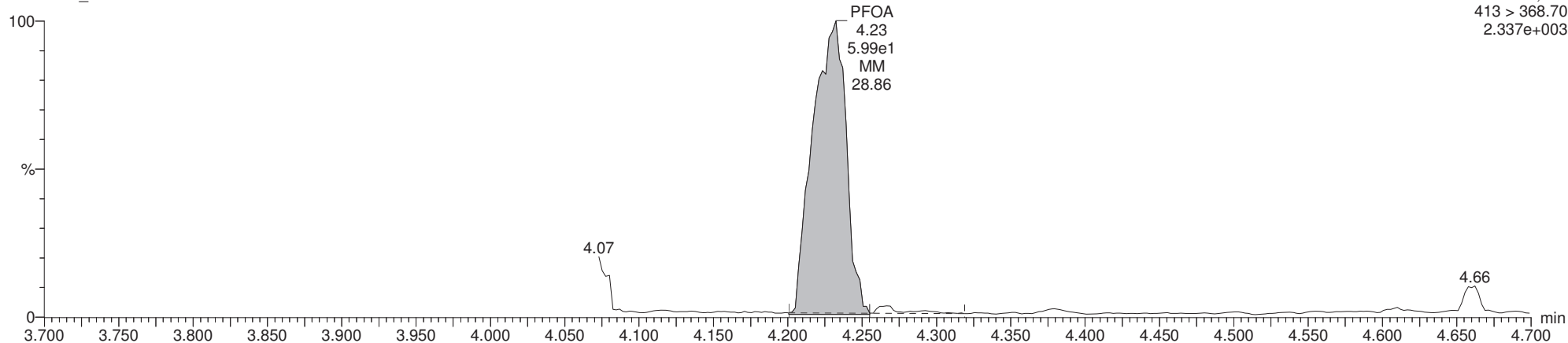
Last Altered: Tuesday, September 26, 2017 13:22:38 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:22:43 Pacific Daylight Time

ID: 1701286-07 ME-JW-RW04-0917 0.25, Description: ME-JW-RW04-0917, Name: 170922G3_25, Date: 23-Sep-2017, Time: 03:01:27, Instrument: , Lab: , User:

PFOA

170922G3_25

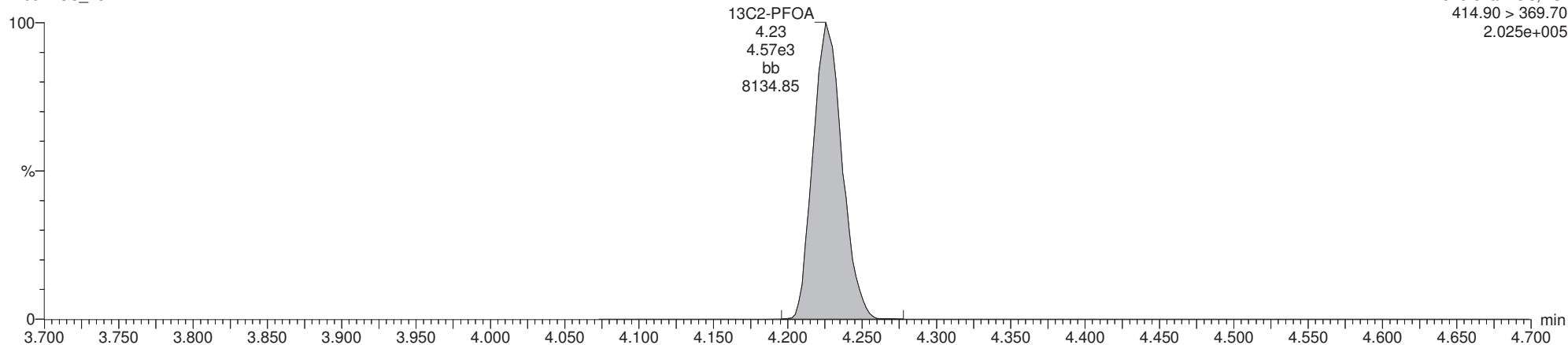
F4:MRM of 9 channels,ES-
413 > 368.70
2.337e+003



¹³C2-PFOA

170922G3_25

F4:MRM of 9 channels,ES-
414.90 > 369.70
2.025e+005



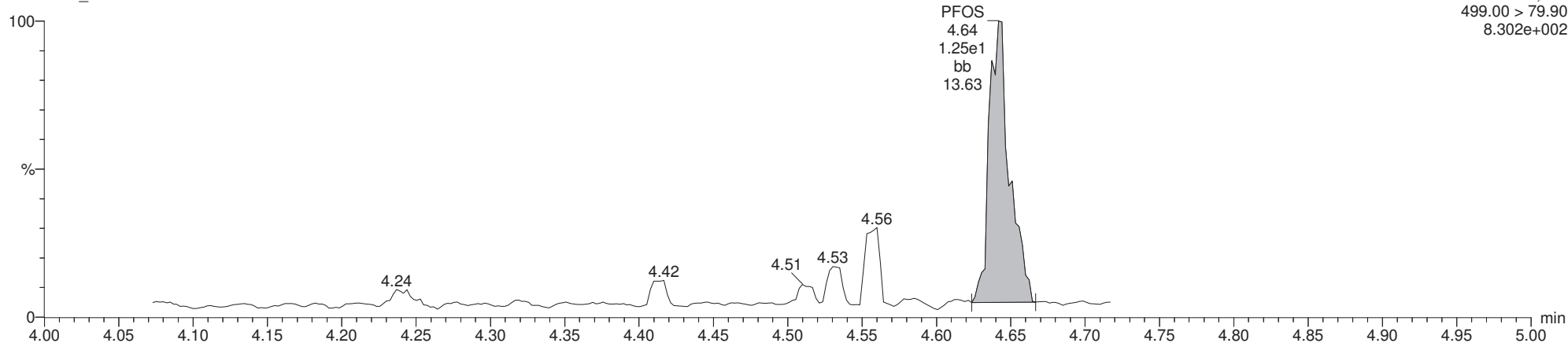
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Last Altered: Tuesday, September 26, 2017 13:22:38 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:22:43 Pacific Daylight Time

ID: 1701286-07 ME-JW-RW04-0917 0.25, Description: ME-JW-RW04-0917, Name: 170922G3_25, Date: 23-Sep-2017, Time: 03:01:27, Instrument: , Lab: , User:

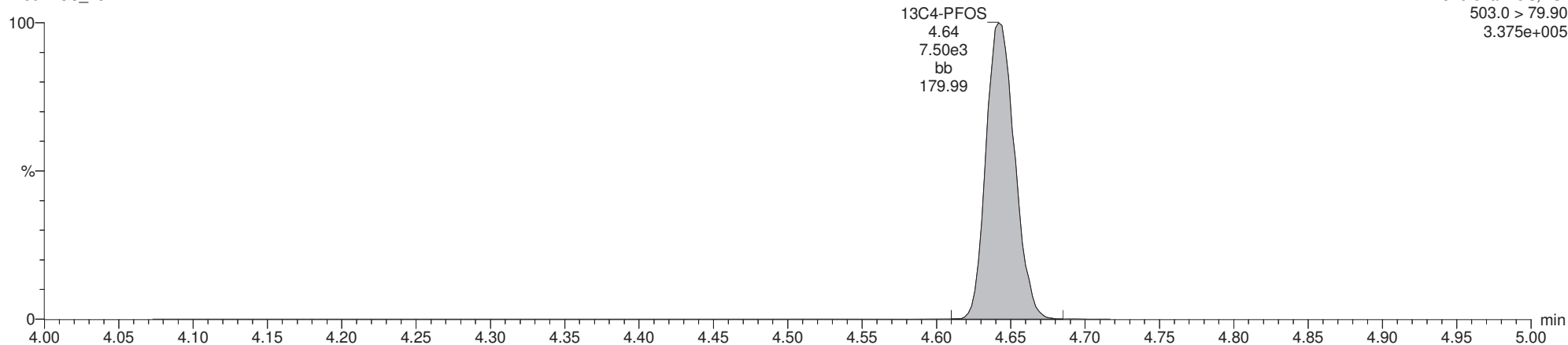
PFOS

170922G3_25



13C4-PFOS

170922G3_25



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-25.qld

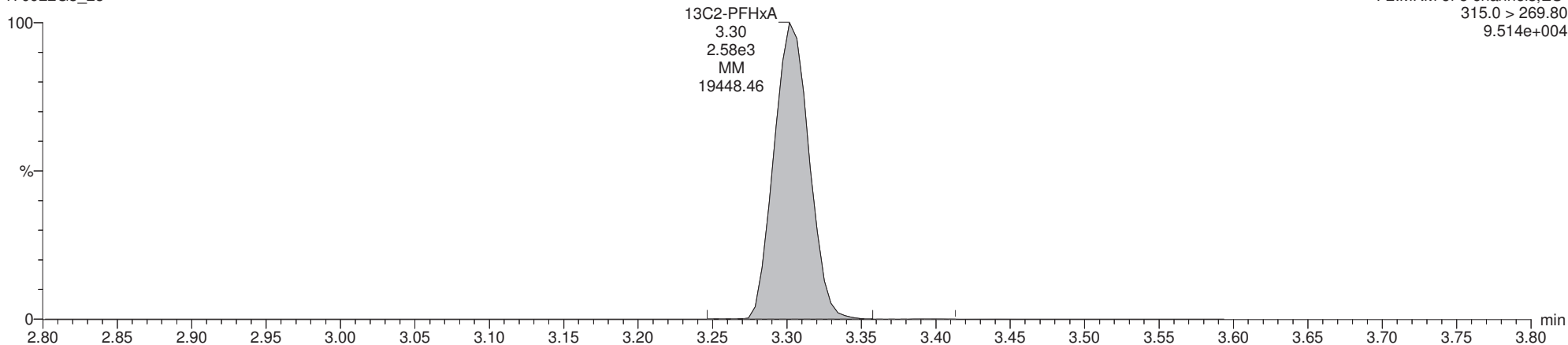
Last Altered: Tuesday, September 26, 2017 13:22:38 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:22:43 Pacific Daylight Time

ID: 1701286-07 ME-JW-RW04-0917 0.25, Description: ME-JW-RW04-0917, Name: 170922G3_25, Date: 23-Sep-2017, Time: 03:01:27, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_25

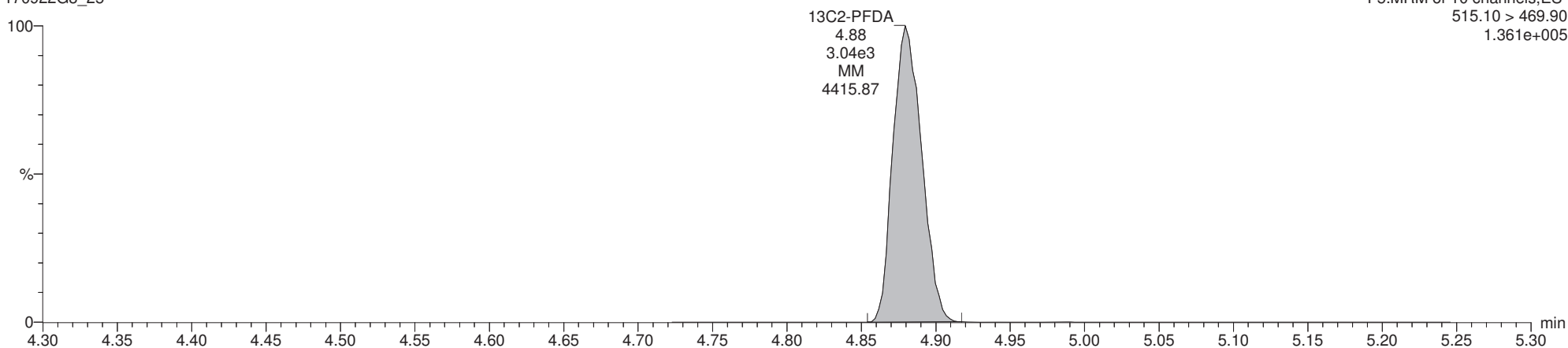
F2:MRM of 5 channels,ES-
315.0 > 269.80
9.514e+004



13C2-PFDA

170922G3_25

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.361e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-26.qld

Last Altered: Tuesday, September 26, 2017 13:23:56 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:24:33 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

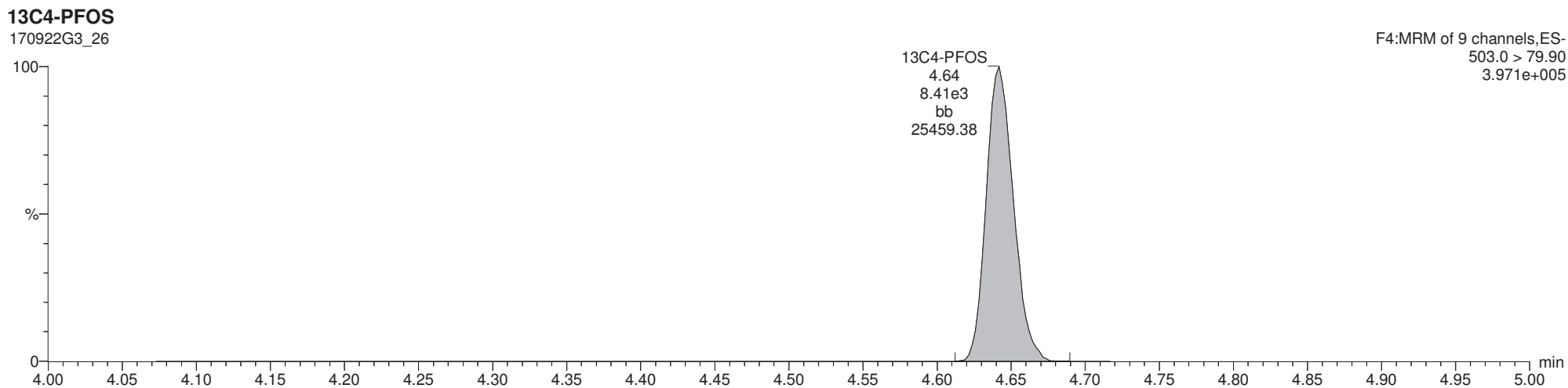
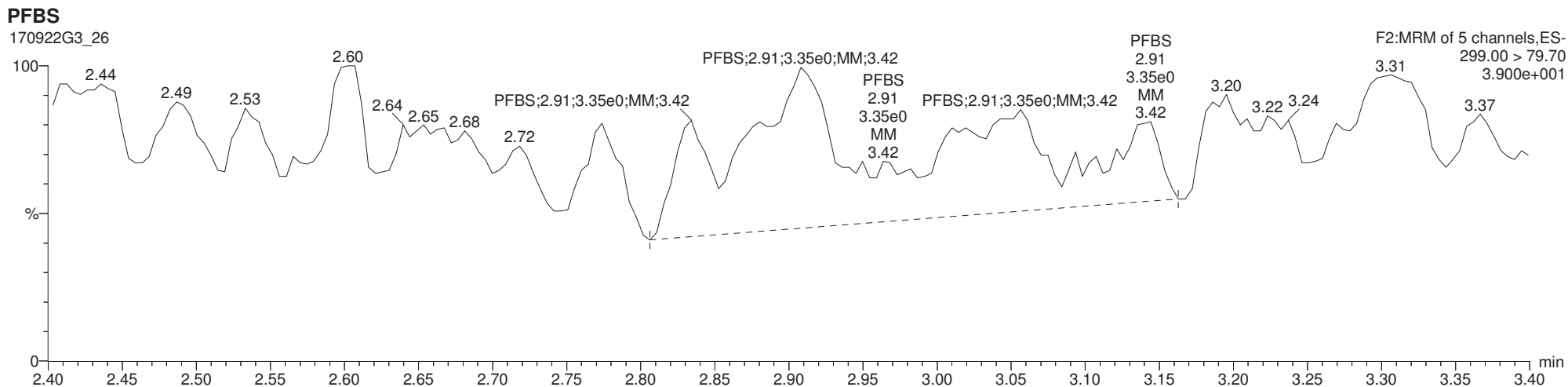
ID: 1701286-08 ME-JW-FB04-0917 0.25, Description: ME-JW-FB04-0917, Name: 170922G3_26, Date: 23-Sep-2017, Time: 03:13:49

	# Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1 PFBS	299.00 > 79.70		8.413e3		0.252			
2	4 PFOA	413 > 368.70		5.227e3		0.252			
3	6 PFOS	499.00 > 79.90		8.413e3		0.252			
4	7 13C2-PFHxA	315.0 > 269.80	2.757e3	5.227e3	0.544	0.252	3.30	38.5	96.9
5	8 13C2-PFDA	515.10 > 469.90	3.184e3	5.227e3	0.667	0.252	4.88	36.3	91.4
6	9 13C2-PFOA	414.90 > 369.70	5.227e3	5.227e3	1.000	0.252	4.22	39.7	100
7	10 13C4-PFOS	503.0 > 79.90	8.413e3	8.413e3	1.000	0.252	4.64	114	100

Last Altered: Tuesday, September 26, 2017 13:23:56 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:24:33 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

ID: 1701286-08 ME-JW-FB04-0917 0.25, Description: ME-JW-FB04-0917, Name: 170922G3 26, Date: 23-Sep-2017, Time: 03:13:49, Instrument: , Lab: , User:



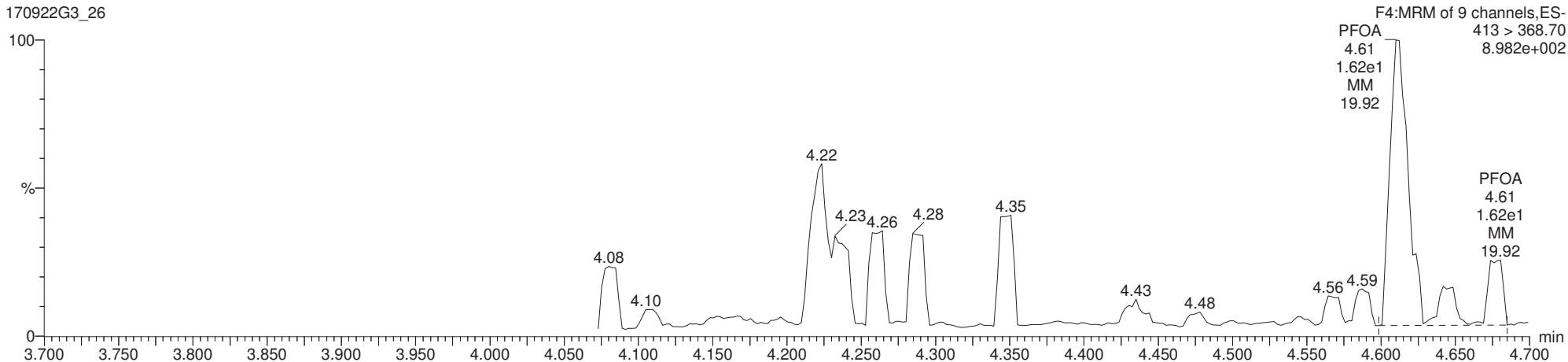
Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-26.qld

Last Altered: Tuesday, September 26, 2017 13:23:56 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:24:33 Pacific Daylight Time

ID: 1701286-08 ME-JW-FB04-0917 0.25, Description: ME-JW-FB04-0917, Name: 170922G3_26, Date: 23-Sep-2017, Time: 03:13:49, Instrument: , Lab: , User:

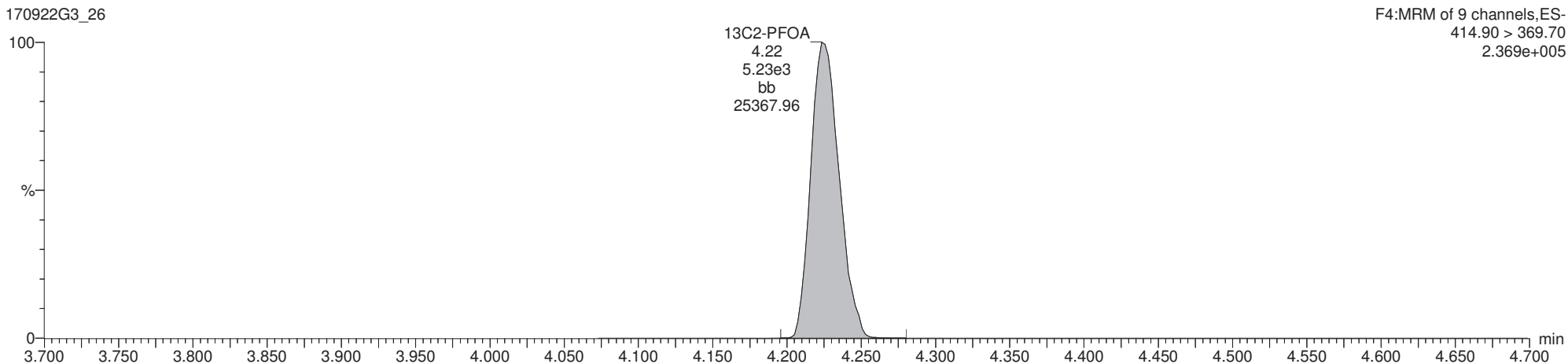
PFOA

170922G3_26



13C2-PFOA

170922G3_26



Last Altered: Tuesday, September 26, 2017 13:23:56 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:24:33 Pacific Daylight Time

ID: 1701286-08 ME-JW-FB04-0917 0.25, Description: ME-JW-FB04-0917, Name: 170922G3 26, Date: 23-Sep-2017, Time: 03:13:49, Instrument: , Lab: , User:

170922G3 26

Chromatogram showing detector response (%) versus time (min). The x-axis ranges from 4.00 to 5.00 minutes. The y-axis ranges from 0 to 100%. The chromatogram displays several peaks, with the most prominent ones labeled with retention times and peak names. The peaks are labeled as follows: 4.08, 4.10, 4.13, 4.16, 4.18, 4.20, 4.24, 4.28, 4.29, 4.31, 4.32, 4.36 (PFOS), 4.36 (PFOS), 4.36 (PFOS), 4.36 (PFOS), 4.36 (PFOS), 4.36 (PFOS), 4.58, 4.59, 4.61, 4.65, 4.68. The peak at 4.36 is labeled with 'PFOS' and '2.06e0 MM'.

170922G3 26

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-26.qld

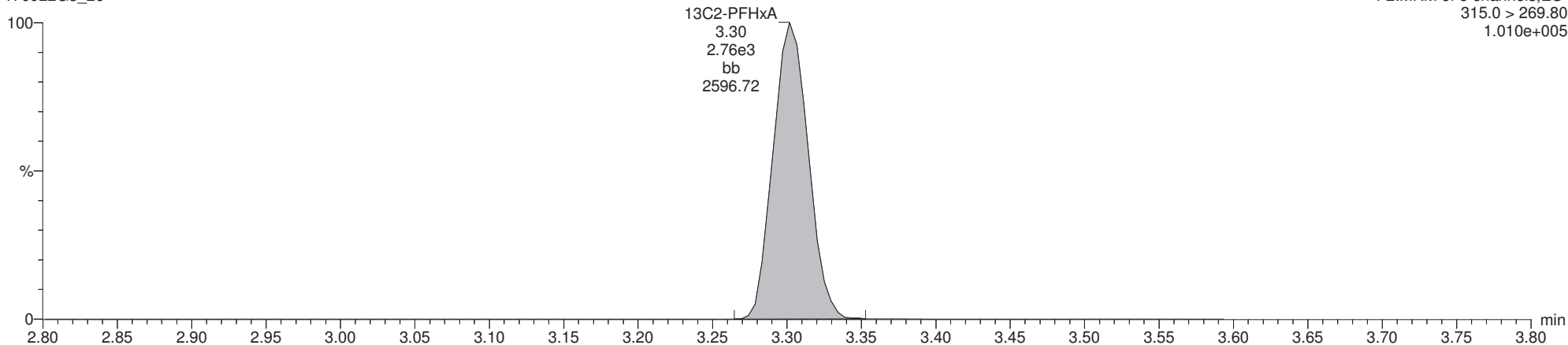
Last Altered: Tuesday, September 26, 2017 13:23:56 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 13:24:33 Pacific Daylight Time

ID: 1701286-08 ME-JW-FB04-0917 0.25, Description: ME-JW-FB04-0917, Name: 170922G3_26, Date: 23-Sep-2017, Time: 03:13:49, Instrument: , Lab: , User:

13C2-PFHxA

170922G3_26

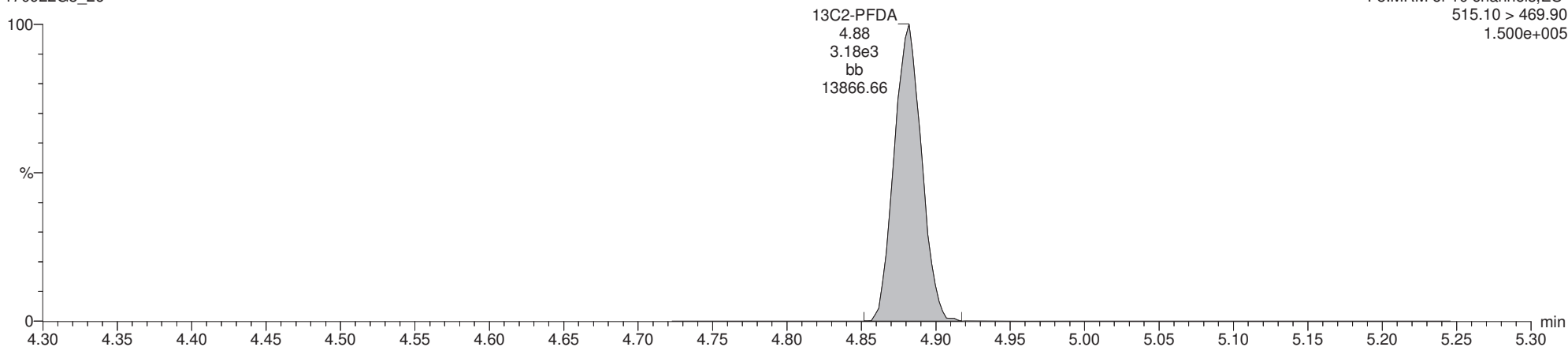
F2:MRM of 5 channels,ES-
315.0 > 269.80
1.010e+005



13C2-PFDA

170922G3_26

F5:MRM of 10 channels,ES-
515.10 > 469.90
1.500e+005



**INJECTION INTERNAL STANDARD (IIS) AREAS,
INSTRUMENT BLANKS (IB)
AND
CONTINUING CALIBRATION VERIFICATIONS CCV)**

Quantify Compound Summary Report

Printed Tue Sep 26 11:30:09 2017

Compound 9: 13C2-PFOA

#	Name	Type	Std. Conc	RT	Area	IS Area	iCAL RS AREAS	PEAK AREA %
1	1 170922G3_14	Analyte	10	4.23	5199.937	5199.937	5751.982333	90.40252036
2	2 170922G3_15	Analyte	10				5751.982333	0
3	3 170922G3_16	Analyte	10	4.23	4987.297	4987.297	5751.982333	86.70570789
4	4 170922G3_17	Analyte	10	4.23	5198.522	5198.522	5751.982333	90.37792015
5	5 170922G3_18	Analyte	10	4.23	4997.176	4997.176	5751.982333	86.87745738
6	6 170922G3_19	Analyte	10	4.22	5301.544	5301.544	5751.982333	92.16898962
7	7 170922G3_20	Analyte	10	4.22	4725.599	4725.599	5751.982333	82.15600685
8	8 170922G3_21	Analyte	10	4.22	4669.972	4669.972	5751.982333	81.18891418
9	9 170922G3_22	Analyte	10	4.22	4789.723	4789.723	5751.982333	83.27082252
10	10 170922G3_23	Analyte	10	4.22	5244.303	5244.303	5751.982333	91.17383705
11	11 170922G3_24	Analyte	10	4.22	5654.474	5654.474	5751.982333	98.30478733
12	12 170922G3_25	Analyte	10	4.23	4560.875	4560.875	5751.982333	79.29222893
13	13 170922G3_26	Analyte	10	4.22	5217.121	5217.121	5751.982333	90.70126954
14	14 170922G3_27	Analyte	10				5751.982333	0
15	15 170922G3_28	Analyte	10	4.23	7283.8	7283.8	5751.982333	126.6311261

Quantify Compound Summary Report

Printed Tue Sep 26 16:18:43 2017

Compound 10: 13C4-PFOS

#	Name	Type	Std. Conc	RT	Area	IS Area	iCAL RS AREAS	PEAK AREA %
1	1 170922G3_1	Analyte	28.7				9122.88	

2	2	170922G3_2	Standard	28.7	4.64	9413.468	9413.468	9122.88	103.1852661
3	3	170922G3_3	Standard	28.7	4.65	9092.311	9092.311	9122.88	99.66491941
4	4	170922G3_4	Standard	28.7	4.65	8942.392	8942.392	9122.88	98.02158967
5	5	170922G3_5	Standard	28.7	4.65	9241.128	9241.128	9122.88	101.2961696
6	6	170922G3_6	Standard	28.7	4.65	9428.505	9428.505	9122.88	103.3500934
7	7	170922G3_7	Standard	28.7	4.65	8592.578	8592.578	9122.88	94.18712073
8	8	170922G3_8	Standard	28.7	4.64	9198.438	9198.438	9122.88	100.8282253
9	9	170922G3_9	Standard	28.7	4.65	9313.921	9313.921	9122.88	102.0940865
10	10	170922G3_10	Standard	28.7	4.65	8731.764	8731.764	9122.88	95.71280122
11	11	170922G3_11	Analyte	28.7				9122.88	0
12	12	170922G3_12	Analyte	28.7	4.65	9199.07	9199.07	9122.88	100.8351529
13	13	170922G3_13	Analyte	28.7				9122.88	0
14	14	170922G3_14	Analyte	28.7	4.64	7893.41	7893.41	9122.88	86.52322512
15	15	170922G3_15	Analyte	28.7				9122.88	0
16	16	170922G3_16	Analyte	28.7	4.65	7688.146	7688.146	9122.88	84.27323389
17	17	170922G3_17	Analyte	28.7	4.65	8402.319	8402.319	9122.88	92.10160607
18	18	170922G3_18	Analyte	28.7	4.64	8021.605	8021.605	9122.88	87.9284283
19	19	170922G3_19	Analyte	28.7	4.64	7672.365	7672.365	9122.88	84.10025124
20	20	170922G3_20	Analyte	28.7	4.64	7308.098	7308.098	9122.88	80.10735645
21	21	170922G3_21	Analyte	28.7	4.64	7975.121	7975.121	9122.88	87.41889623
22	22	170922G3_22	Analyte	28.7	4.64	8019.987	8019.987	9122.88	87.91069268
23	23	170922G3_23	Analyte	28.7	4.64	8486.765	8486.765	9122.88	93.02725674
24	24	170922G3_24	Analyte	28.7	4.64	7676.577	7676.577	9122.88	84.14642087
25	25	170922G3_25	Analyte	28.7	4.64	7481.594	7481.594	9122.88	82.00912431
26	26	170922G3_26	Analyte	28.7	4.64	8398.455	8398.455	9122.88	92.05925103
27	27	170922G3_27	Analyte	28.7				9122.88	0
28	28	170922G3_28	Analyte	28.7	4.64	10254.74	10254.742	9122.88	112.4068496
29	29	170922G3_29	Analyte	28.7				9122.88	0

Dataset: Untitled

Last Altered: Wednesday, September 27, 2017 16:35:56 Pacific Daylight Time

Printed: Wednesday, September 27, 2017 16:36:20 Pacific Daylight Time

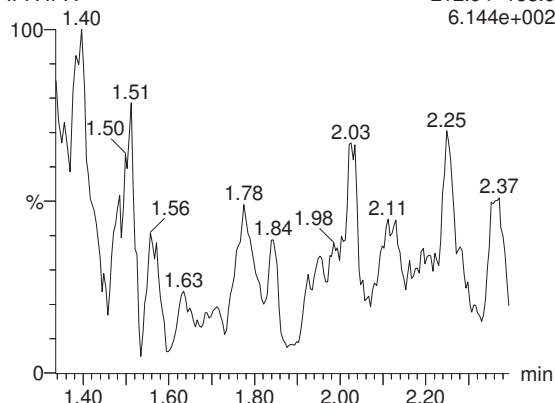
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Calibration: U:\G1.PRO\CurveDB\C18_VAL-PFC_Q1_9-15-17_A_2Trans.cdb 17 Sep 2017 20:04:51

Name: 170922G1_3, Date: 22-Sep-2017, Time: 09:01:35, ID: IPA, Description: IPA

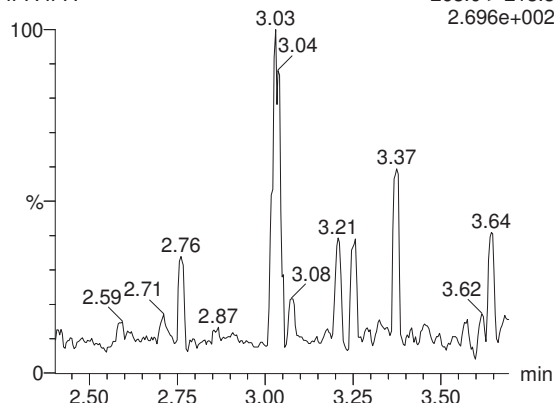
PFBA

170922G1_3 Smooth(Mn,1x2) F2:MRM of 3 channels,ES-IPA IPA
212.9 > 168.9
6.144e+002



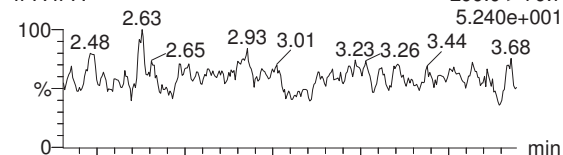
PFPeA

170922G1_3 Smooth(Mn,1x2) F3:MRM of 9 channels,ES-IPA IPA
263.0 > 218.8
2.696e+002



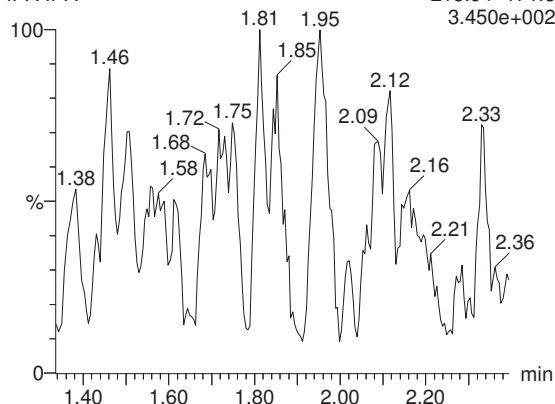
PFBS

170922G1_3 Smooth(Mn,1x2) F3:MRM of 9 channels,ES-IPA IPA
299.0 > 79.7
5.240e+001



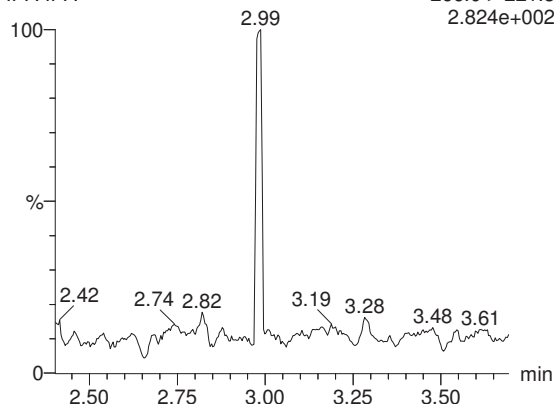
13C3-PFBA

170922G1_3 Smooth(Mn,1x2) F2:MRM of 3 channels,ES-IPA IPA
215.9 > 171.8
3.450e+002



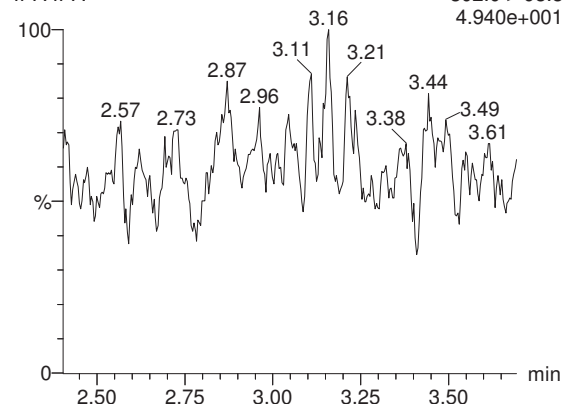
13C3-PFPeA

170922G1_3 Smooth(Mn,1x2) F3:MRM of 9 channels,ES-IPA IPA
266.0 > 221.8
2.824e+002



13C3-PFBS

170922G1_3 Smooth(Mn,1x2) F3:MRM of 9 channels,ES-IPA IPA
302.0 > 98.8
4.940e+001



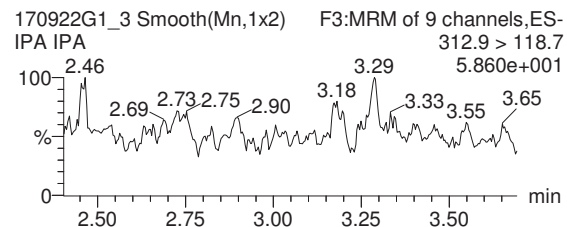
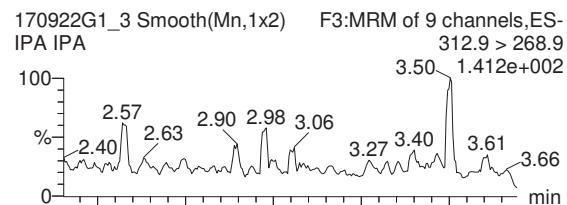
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Last Altered: Wednesday, September 27, 2017 16:35:56 Pacific Daylight Time

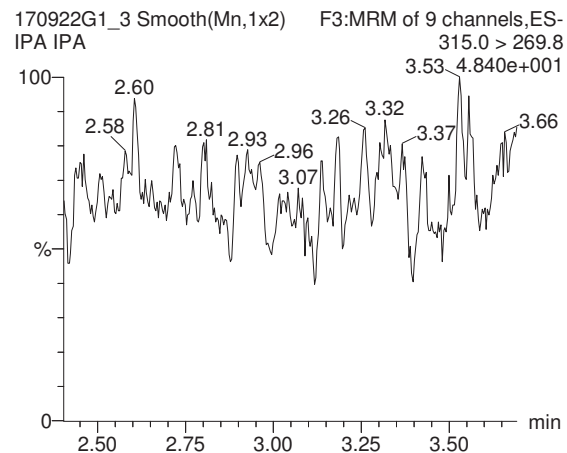
Printed: Wednesday, September 27, 2017 16:36:20 Pacific Daylight Time

Name: 170922G1_3, Date: 22-Sep-2017, Time: 09:01:35, ID: IPA, Description: IPA

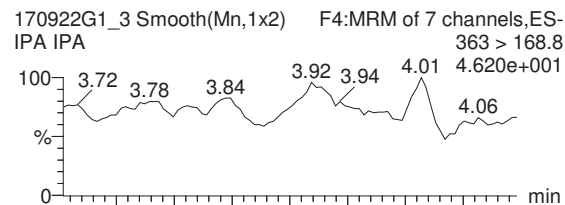
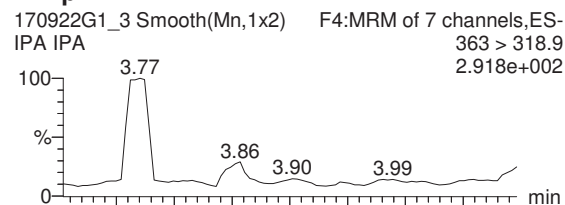
PFHxA



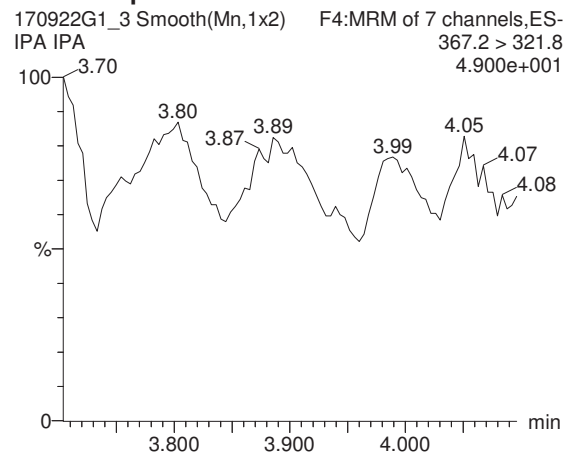
13C2-PFHxA



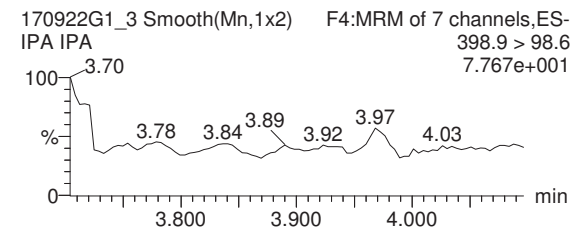
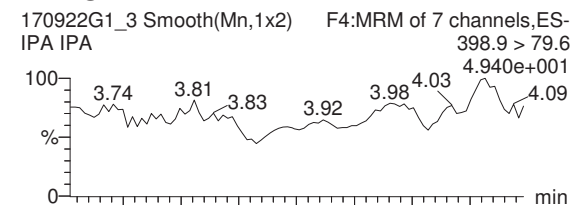
PFHpA



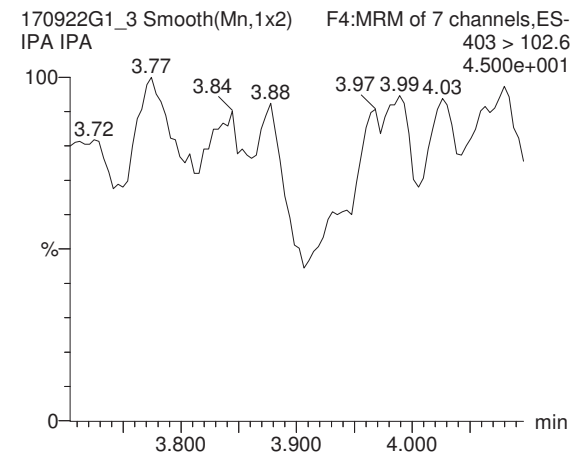
13C4-PFHpA



PFHxS



18O2-PFHxS



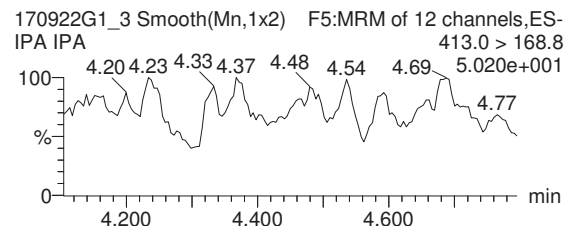
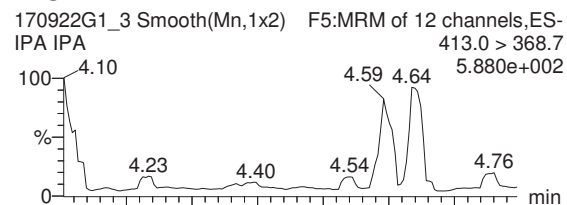
Dataset: Untitled

Last Altered: Wednesday, September 27, 2017 16:35:56 Pacific Daylight Time

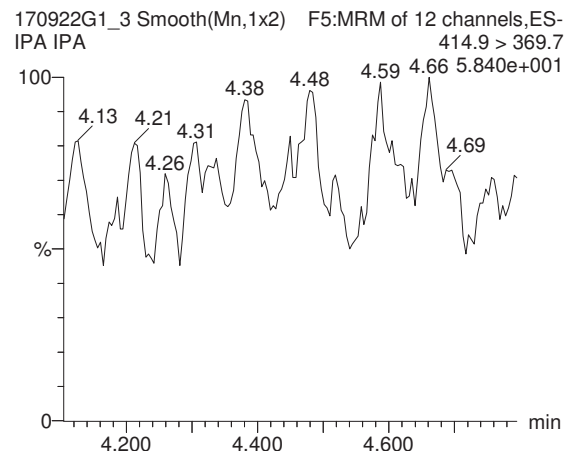
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Name: 170922G1_3, Date: 22-Sep-2017, Time: 09:01:35, ID: IPA, Description: IPA

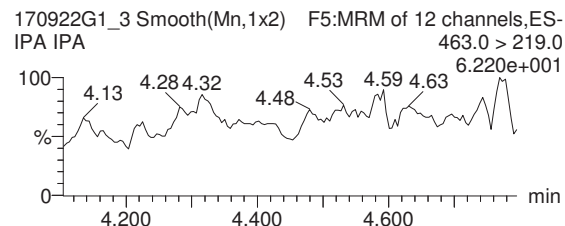
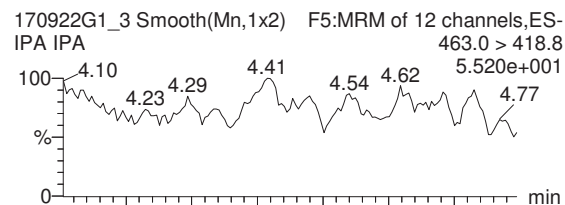
PFOA



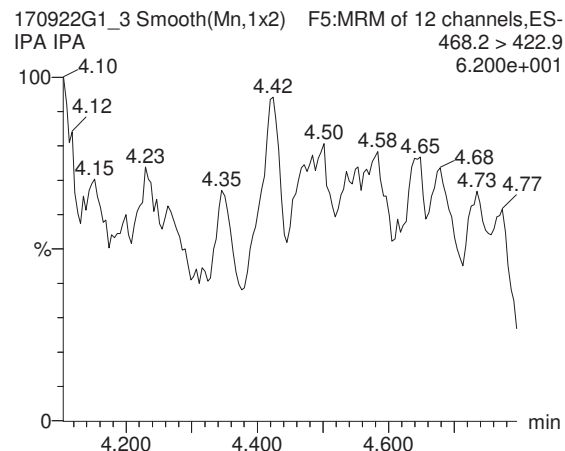
13C2-PFOA



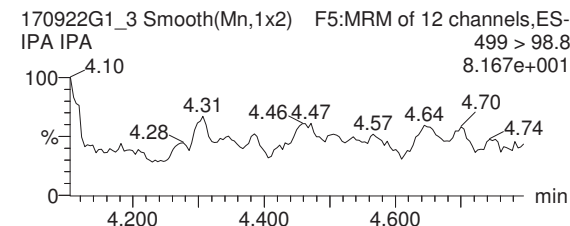
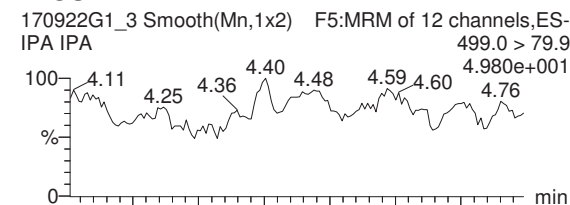
PFNA



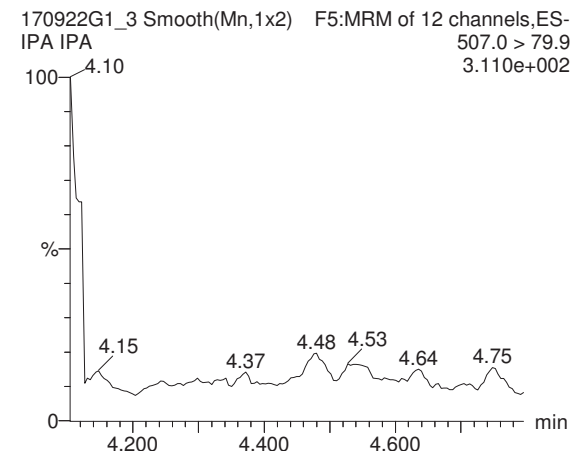
13C5-PFNA



PFOS



13C8-PFOS



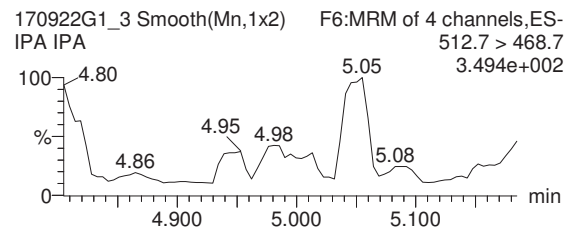
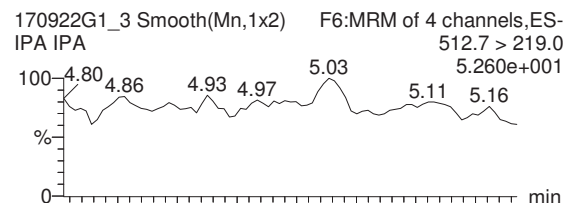
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Last Altered: Wednesday, September 27, 2017 16:35:56 Pacific Daylight Time

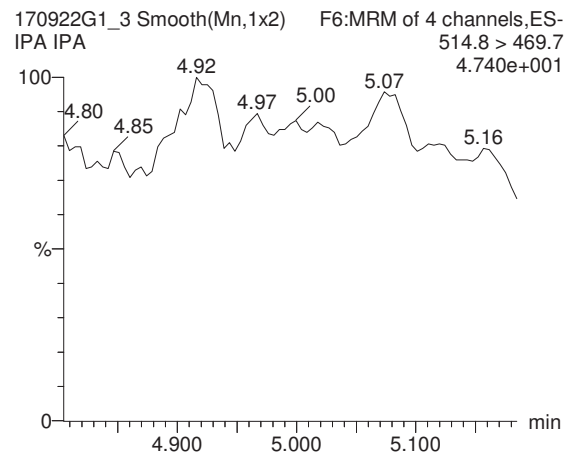
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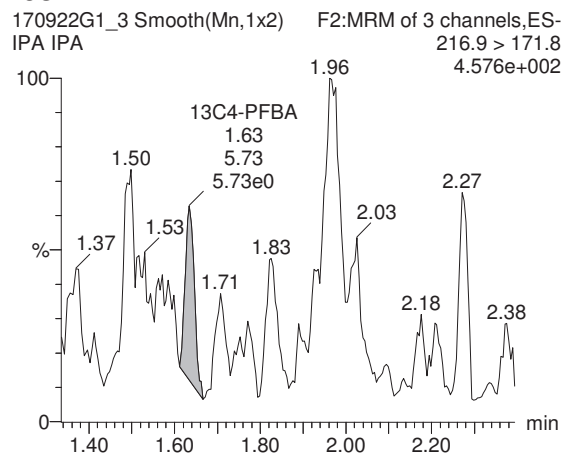
PFDA



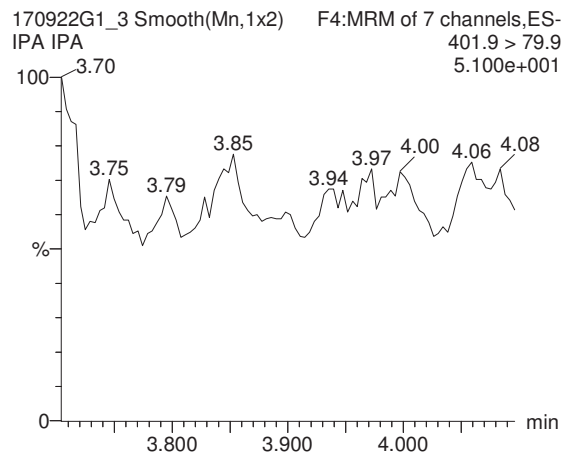
13C2-PFDA



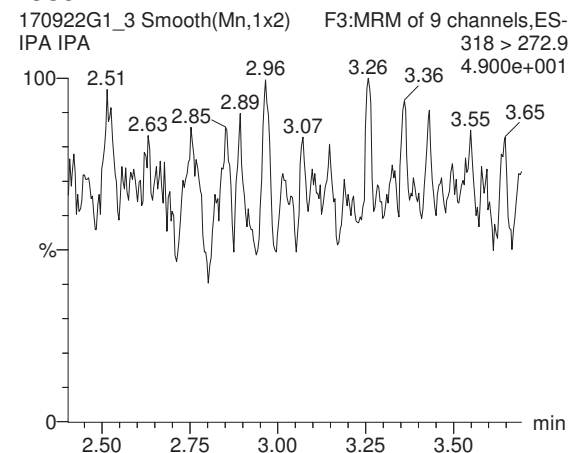
13C4-PFBA



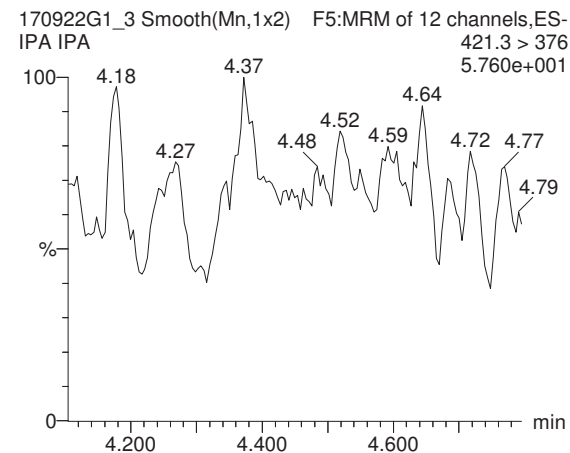
13C3-PFHxS



13C5-PFHxA



13C8-PFOA



Dataset: Untitled

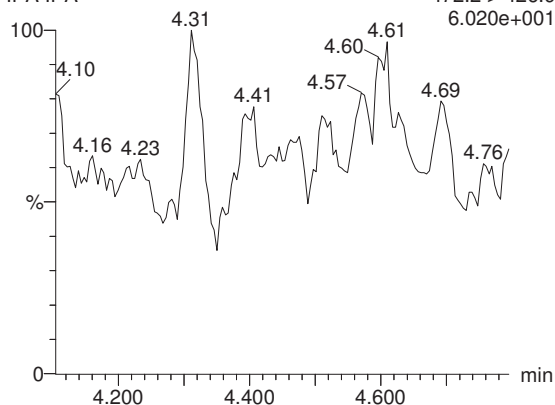
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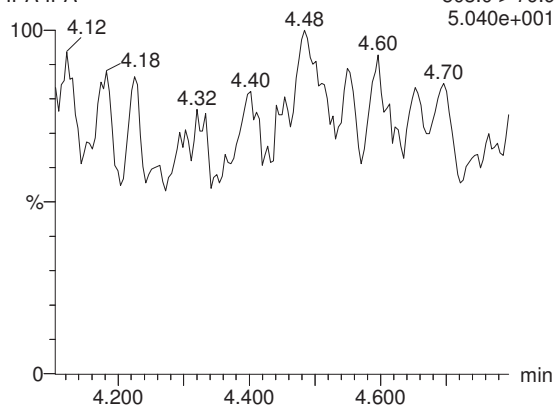
13C9-PFNA

170922G1_3 Smooth(Mn,1x2) F5:MRM of 12 channels,ES-IPA IPA
472.2 > 426.9
6.020e+001



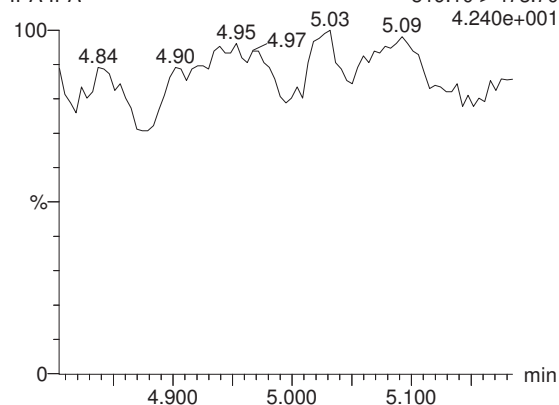
13C4-PFOS

170922G1_3 Smooth(Mn,1x2) F5:MRM of 12 channels,ES-IPA IPA
503.0 > 79.9
5.040e+001



13C6-PFDA

170922G1_3 Smooth(Mn,1x2) F6:MRM of 4 channels,ES-IPA IPA
519.10 > 473.70
4.240e+001



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-28.qld

Last Altered: Tuesday, September 26, 2017 11:37:23 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 11:39:33 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170922G3_28, Date: 23-Sep-2017, Time: 03:38:38, ID: ST170922G3-10 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

	# Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec	Recovery ...	Mod.C...
1	1 PFBS	299.00 > 79...	5.31e3	1.03e4		1.000	2.91	17.9	101.0	NO	
2	2 PFHpA	363.00 > 31...	1.13e4	7.29e3		1.000	3.82	18.5	92.6	NO	
3	3 PFHxS	398.90 > 79...	5.73e3	1.03e4		1.000	3.94	18.9	103.5	NO	
4	4 PFOA	413 > 368.70	1.05e4	7.29e3		1.000	4.23	18.8	93.9	NO	
5	5 PFNA	463.00 > 41...	1.23e4	7.29e3		1.000	4.57	18.1	90.3	NO	
6	6 PFOS	499.00 > 79...	7.59e3	1.03e4		1.000	4.64	19.4	104.7	NO	
7	7 13C2-PFHxA	315.0 > 269...	3.38e3	7.29e3	0.544	1.000	3.30	8.52	85.2	NO	
8	8 13C2-PFDA	515.10 > 46...	4.01e3	7.29e3	0.667	1.000	4.88	8.24	82.4	NO	
9	9 13C2-PFOA	414.90 > 36...	7.29e3	7.29e3	1.000	1.000	4.23	10.0	100.0	NO	
10	10 13C4-PFOS	503.0 > 79.90	1.03e4	1.03e4	1.000	1.000	4.64	28.7	100.0	NO	

you 9/26/17

✓ J.A.
9/26/2017

Sample List Report

MassLynx MassLynx V4.1 SCN 945

Sample List: U:\G1.PRO\SampleDB\170922G3.SPL
Last Modified: Monday, September 25, 2017 09:04:49 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 12:08:05 Pacific Daylight Time

Page 1 of 2

Page Position (1, 1)

	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Inject Volume
1	170922G3_1	IPA	IPA	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:48	5.000
2	170922G3_2	ST170922G3-1 PFC CS-3 537 17H2814	PFC CS-3 537 17H2814	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:3	5.000
3	170922G3_3	ST170922G3-2 PFC CS-2 537 17H2815	PFC CS-2 537 17H2815	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:4	5.000
4	170922G3_4	ST170922G3-3 PFC CS-1 537 17H2816	PFC CS-1 537 17H2816	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:5	5.000
5	170922G3_5	ST170922G3-4 PFC CS0 537 17I2204	PFC CS0 537 17I2204	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:6	5.000
6	170922G3_6	ST170922G3-5 PFC CS1 537 17H2818	PFC CS1 537 17H2818	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:7	5.000
7	170922G3_7	ST170922G3-6 PFC CS2 537 17H2819	PFC CS2 537 17H2819	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:8	5.000
8	170922G3_8	ST170922G3-7 PFC CS3 537 17H2820	PFC CS3 537 17H2820	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:9	5.000
9	170922G3_9	ST170922G3-8 PFC CS4 537 17H2821	PFC CS4 537 17H2821	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:10	5.000
10	170922G3_10	ST170922G3-9 PFC CS5 537 17H2822	PFC CS5 537 17H2822	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:11	5.000
11	170922G3_11	IPA	IPA	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:48	5.000
12	170922G3_12	ICV170922G3-1 PFC ICV 537 17H2823	PFC ICV 537 17H2823	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:12	5.000
13	170922G3_13	IPA	IPA	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:48	5.000
14	170922G3_14	B7I0113-BS1 LFB 0.25	LFB	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:34	5.000
15	170922G3_15	IPA	IPA	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:48	5.000
16	170922G3_16	B7I0113-BLK1 LRB 0.25	LRB	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:35	5.000
17	170922G3_17	B7I0113-MS1 LFSM 0.25	LFSM	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:36	5.000
18	170922G3_18	B7I0113-MSD1 LFSMD 0.25	LFSMD	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:37	5.000
19	170922G3_19	1701286-01 ME-JW-RW01-0917 0.25	ME-JW-RW01-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:38	5.000
20	170922G3_20	1701286-02 ME-JW-FB01-0917 0.25	ME-JW-FB01-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:39	5.000
21	170922G3_21	1701286-03 ME-JW-RW02-0917 0.25	ME-JW-RW02-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:40	5.000
22	170922G3_22	1701286-04 ME-JW-FB02-0917 0.25	ME-JW-FB02-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:41	5.000
23	170922G3_23	1701286-05 ME-JW-RW03-0917 0.25	ME-JW-RW03-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:42	5.000
24	170922G3_24	1701286-06 ME-JW-FB03-0917 0.25	ME-JW-FB03-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:43	5.000
25	170922G3_25	1701286-07 ME-JW-RW04-0917 0.25	ME-JW-RW04-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:44	5.000
26	170922G3_26	1701286-08 ME-JW-FB04-0917 0.25	ME-JW-FB04-0917	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:45	5.000
27	170922G3_27	IPA	IPA	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:48	5.000
28	170922G3_28	ST170922G3-10 PFC CS3 537 17H2820	PFC CS3 537 17H2820	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:9	5.000
29	170922G3_29	IPA	IPA	PFAS_DW_L14_2Trans	PFC_2010enviro_6	2:48	5.000

LC Calibration Standards Review Checklist Q1

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
<u>ST170922G3-10</u>	<u>L M H</u>	<u>NA</u> ☒	☒	☒	☒	☒	☒	<u>NA</u> ☒
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
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Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/6/17

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Reviewed By: JA 9/26/2017
Initials/Date

Comments:

DW - LG

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-28.qld

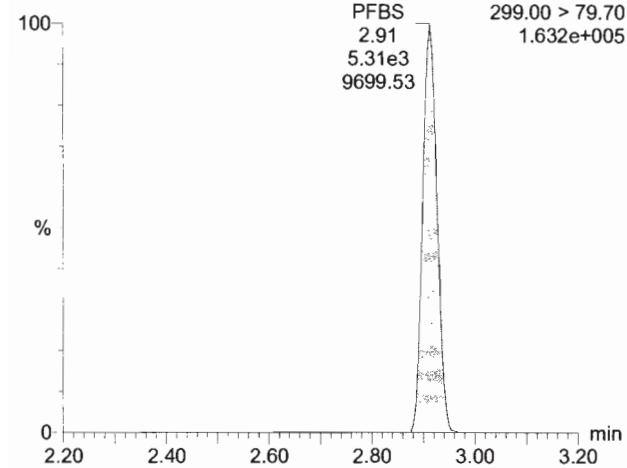
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Printed: Tuesday, September 26, 2017 11:38:48 Pacific Daylight Time

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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170922G3_28, Date: 23-Sep-2017, Time: 03:38:38, ID: ST170922G3-10 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

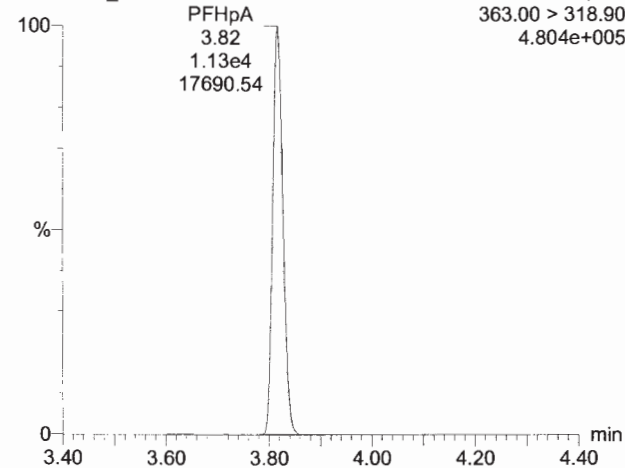
PFBS

170922G3_28



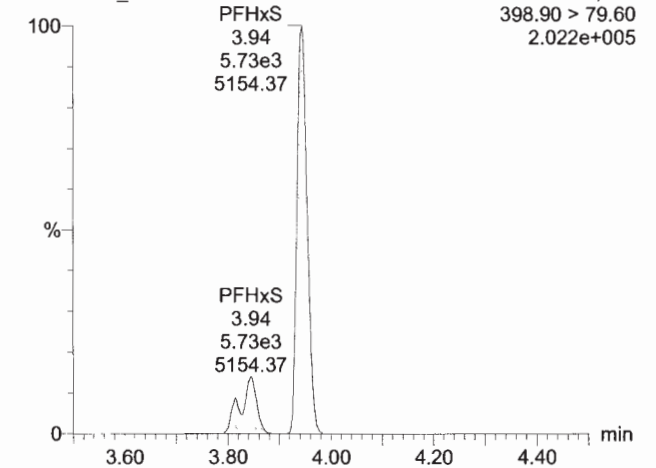
PFHpA

170922G3_28



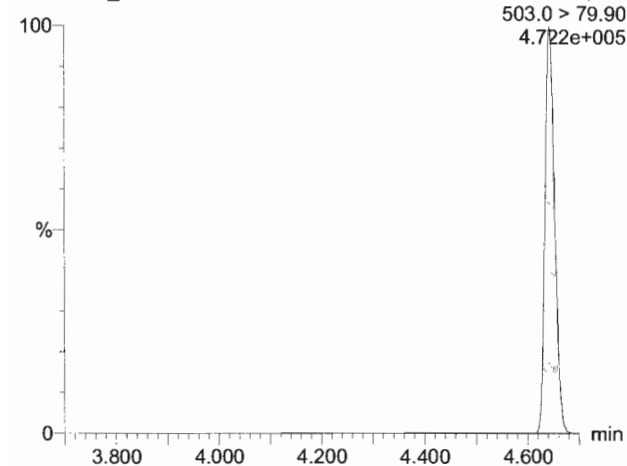
PFHxS

170922G3_28



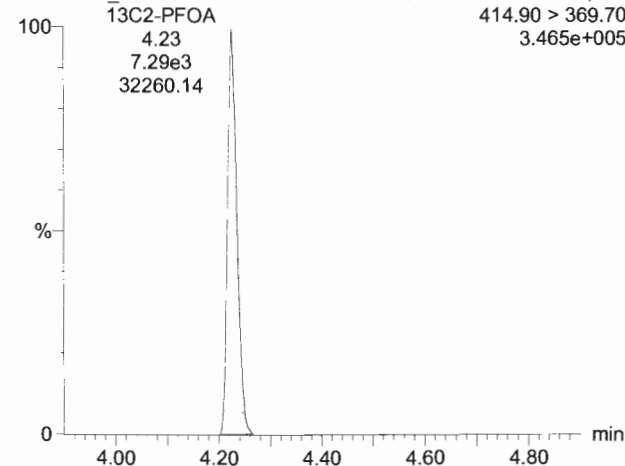
13C4-PFOS

170922G3_28



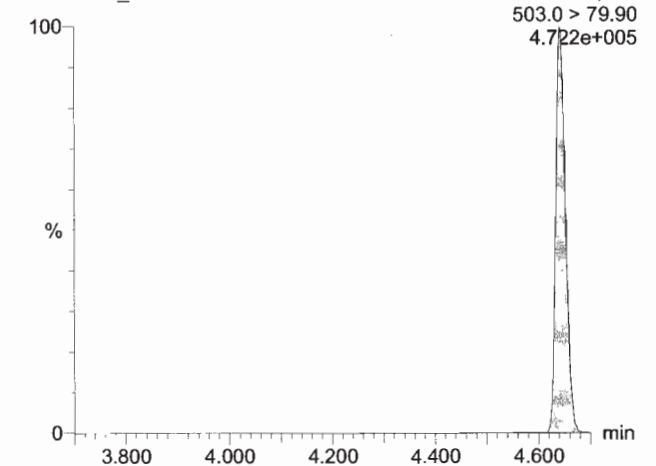
13C2-PFOA

170922G3_28



13C4-PFOS

170922G3_28



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-28.qld

Last Altered: Tuesday, September 26, 2017 11:37:23 Pacific Daylight Time

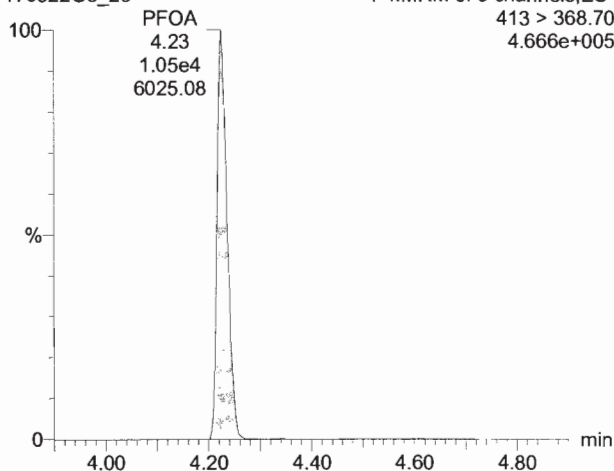
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PFOA

170922G3_28

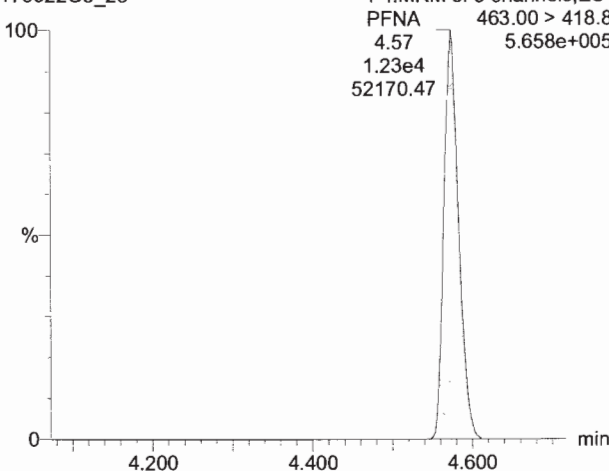
F4:MRM of 9 channels,ES-
413 > 368.70
4.666e+005



PFNA

170922G3_28

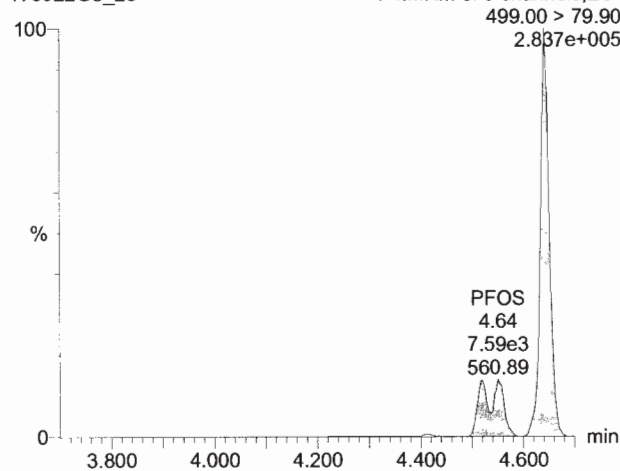
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PFNA 463.00 > 418.8
4.57 5.658e+005
1.23e4 52170.47



PFOS

170922G3_28

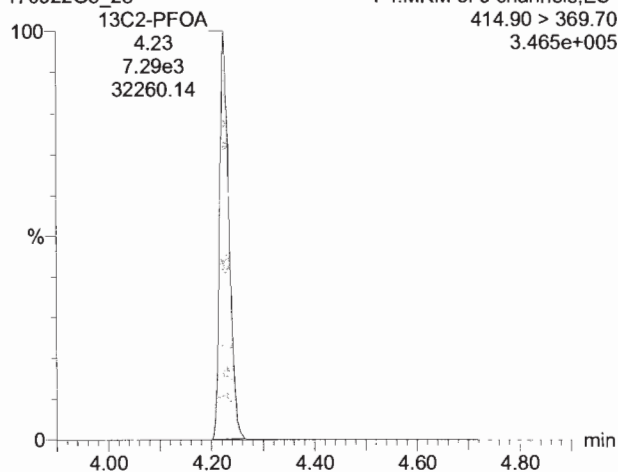
F4:MRM of 9 channels,ES-
499.00 > 79.90
2.837e+005



13C2-PFOA

170922G3_28

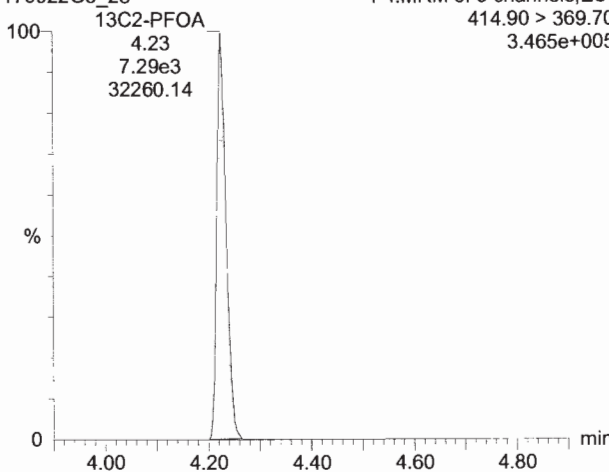
F4:MRM of 9 channels,ES-
414.90 > 369.70
3.465e+005



13C2-PFOA

170922G3_28

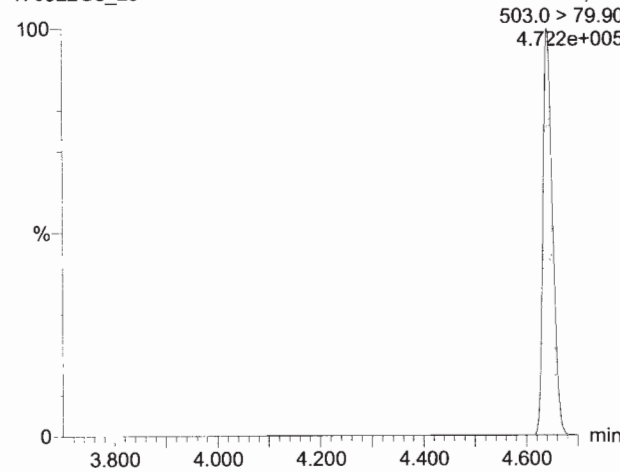
F4:MRM of 9 channels,ES-
414.90 > 369.70
3.465e+005



13C4-PFOS

170922G3_28

F4:MRM of 9 channels,ES-
503.0 > 79.90
4.722e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-28.qld

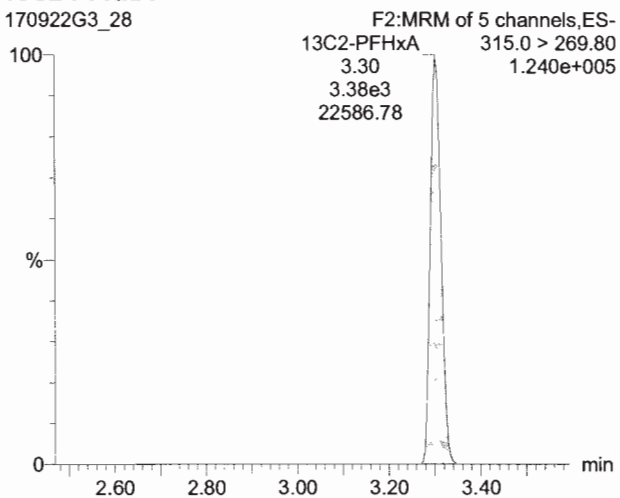
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Printed: Tuesday, September 26, 2017 11:38:48 Pacific Daylight Time

Name: 170922G3_28, Date: 23-Sep-2017, Time: 03:38:38, ID: ST170922G3-10 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

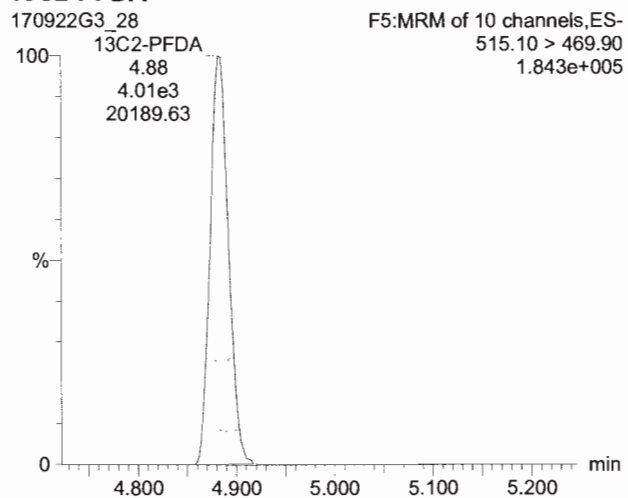
13C2-PFHxA

170922G3_28



13C2-PFDA

170922G3_28



Quantify Compound Summary Report

Printed Tue Sep 26 15:47:53 2017

Compound 9: 13C2-PFOA

#	Name	Type	Std. Conc	RT	Area	IS Area	ICAL PEAK AREA	PEAK AREA %
1	1 170926G1_1	Analyte	10					
2	2 170926G1_2	Analyte	10	4.23	6972.058	6972.058	5751.982	121.2114016
3	3 170926G1_3	Analyte	10					
4	4 170926G1_4	Analyte	10	4.23	7198.044	7198.044	5751.982	125.1402386
5	5 170926G1_5	Analyte	10					
6	6 170926G1_6	Analyte	10	4.24	6018.606	6018.606	5751.982	104.6353413
7	7 170926G1_7	Analyte	10					

CCALS

#	Name	Type	Std. Conc	RT	Area	IS Area	CCAL PEAK AREA	PEAK AREA %
3	3 170926G1_3	Analyte	10					
4	4 170926G1_4	Analyte	10	4.23	7198.044	7198.044	6972.058	103.2413098
5	5 170926G1_5	Analyte	10					
6	6 170926G1_6	Analyte	10	4.24	6018.606	6018.606	6972.058	86.32466913
7	7 170926G1_7	Analyte	10					

Printed Tue Sep 26 15:48:42 2017

Compound 10: 13C4-PFOS

#	Name	Type	Std. Conc	RT	Area	IS Area	ICAL PEAK AREA	PEAK AREA %
1	1 170926G1_1	Analyte	28.7					
2	2 170926G1_2	Analyte	28.7	4.65	9617.39	9617.39	9122.88	105.420547
3	3 170926G1_3	Analyte	28.7					
4	4 170926G1_4	Analyte	28.7	4.65	10785.41	10785.412	9122.88	118.2237627
5	5 170926G1_5	Analyte	28.7					
6	6 170926G1_6	Analyte	28.7	4.65	9791.193	9791.193	9122.88	107.32568

7	7	170926G1_7	Analyte	28.7
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CCALS

#	Name	Type	Std. Conc	RT	Area	IS Area	CCAL PEAK AREA	PEAK AREA %
3	3 170926G1_3	Analyte	28.7					
4	4 170926G1_4	Analyte	28.7	4.65	10785.41	10785.412	9617.39	112.1448959
5	5 170926G1_5	Analyte	28.7					
6	6 170926G1_6	Analyte	28.7	4.65	9791.193	9791.193	9617.39	101.8071743
7	7 170926G1_7	Analyte	28.7					

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, September 27, 2017 09:31:16 Pacific Daylight Time

Printed: Wednesday, September 27, 2017 09:31:31 Pacific Daylight Time

Method: U:\G1.PRO\MethDB\PFAS_14or16_2trans_0915.mdb 15 Sep 2017 16:05:04
Calibration: U:\G1.PRO\CurveDB\C18_VAL-PFC_Q1_9-27-17_A_2Trans.cdb 27 Sep 2017 09:01:10
26 LA 9/27/17

Name: 170926G3_11, Date: 26-Sep-2017, Time: 19:28:12, ID: IPA, Description: IPA

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBA	212.9 > 168.9		6.80e0	1.0000		1.60				
2	2 PFPeA	263.0 > 218.8			1.0000		0.00				
3	3 PFBS	299.0 > 79.7			1.0000		0.00				
4	4 PFHxA	312.9 > 268.9			1.0000		0.00				
5	5 PFHpA	363 > 318.9			1.0000		0.00				
6	6 PFHxS	398.9 > 79.6			1.0000		0.00				
7	7 PFOA	413.0 > 368.7			1.0000		0.00				
8	8 PFNA	463.0 > 418.8			1.0000		0.00				
9	9 PFOS	499.0 >79.9			1.0000		0.00				
10	10 PFDA	512.7 > 219.0			1.0000		0.00				
11	11 13C3-PFBA	215.9 > 171.8	6.80e0	8.05e0	1.0000	1.433	1.60	1.60	10.6	7.3721	59.0
12	12 13C3-PFBS	302.0 > 98.8			1.0000		0.00				
13	13 13C3-PFPeA	266.0 > 221.8			1.0000		0.00				
14	14 13C2-PFHxA	315.0 > 269.8			1.0000		0.00				
15	15 13C4-PFHpA	367.2 > 321.8			1.0000		0.00				
16	16 18O2-PFHxS	403 > 102.6			1.0000		0.00				
17	17 13C2-PFOA	414.9 > 369.7			1.0000		0.00				
18	18 13C5-PFNA	468.2 > 422.9			1.0000		0.00				
19	19 13C2-PFDA	514.8 > 469.7			1.0000		0.00				
20	20 13C8-PFOS	507.0 > 79.9			1.0000		0.00				
21	21 13C4-PFBA	216.9 > 171.8	8.05e0	8.05e0	1.0000	1.000	1.82	1.60	12.5	12.5000	100.0
22	22 13C5-PFHxA	318>272.9			1.0000		3.37				
23	23 13C3-PFHxS	401.9 > 79.9			1.0000		4.03				
24	24 13C8-PFOA	421.3 > 376			1.0000		4.31				
25	25 13C9-PFNA	472.2 > 426.9			1.0000		4.64				
26	26 13C4-PFOS	503.0 > 79.9			1.0000		4.71				
27	27 13C6-PFDA	519.10 > 473....			1.0000		4.86				
28	28 Total PFHxS	398.9 > 79.6	0.00e0		1.0000		4.09		0.000		
29	29 Total PFOA	413.0 > 368.7	1.51e1		1.0000		4.22		0.000		
30	30 Total PFOS	499.0 >79.9	0.00e0		1.0000		4.61		0.000		

Vista Analytical Laboratory

Dataset: Untitled

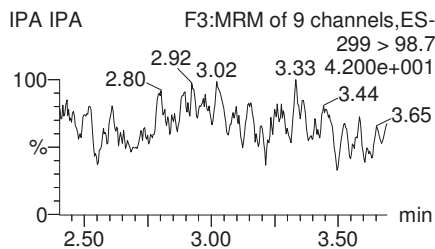
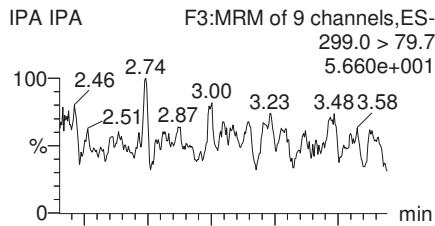
Last Altered: Wednesday, September 27, 2017 09:31:16 Pacific Daylight Time

Printed: Wednesday, September 27, 2017 09:31:31 Pacific Daylight Time

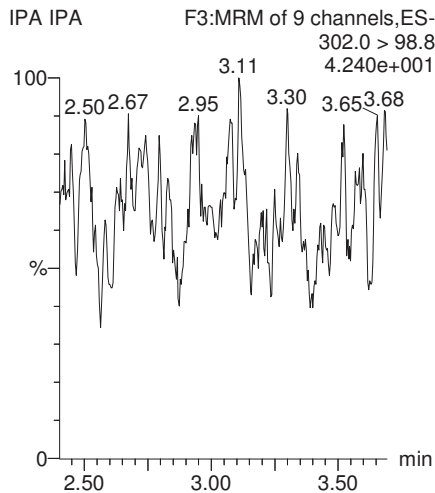
Method: U:\G1.PRO\MethDB\PFAS_14or16_2trans_0915.mdb 15 Sep 2017 16:05:04
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Name: 170926G3_11, Date: 26-Sep-2017, Time: 19:28:12, ID: IPA, Description: IPA

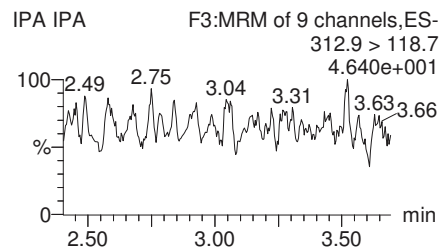
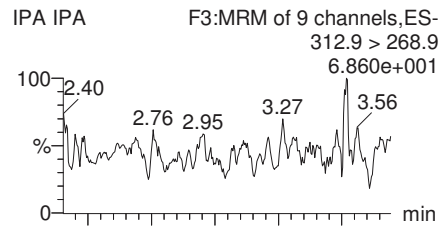
PFBS



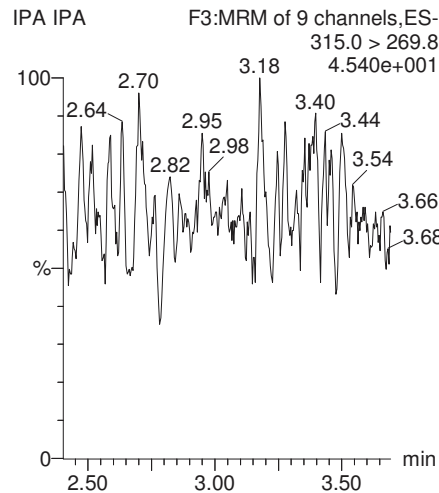
13C3-PFBS



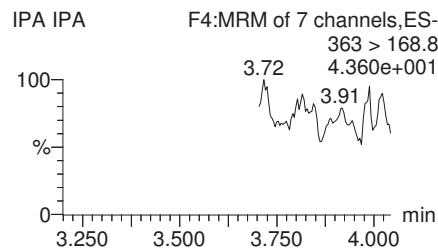
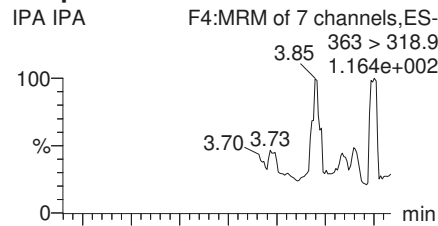
PFHxA



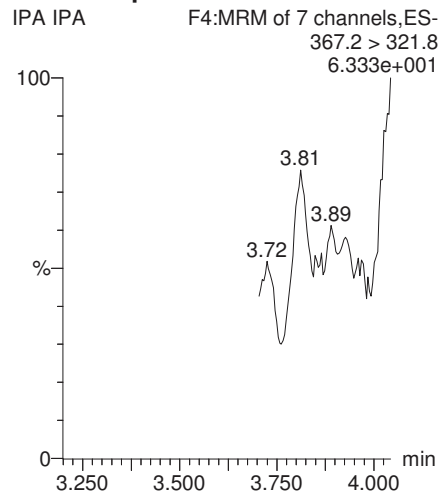
13C2-PFHxA



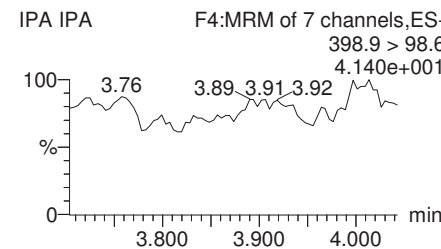
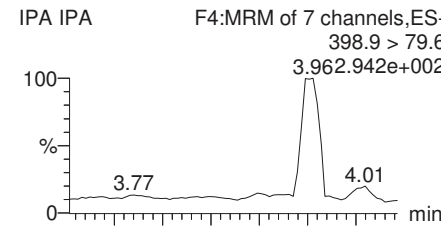
PFHpA



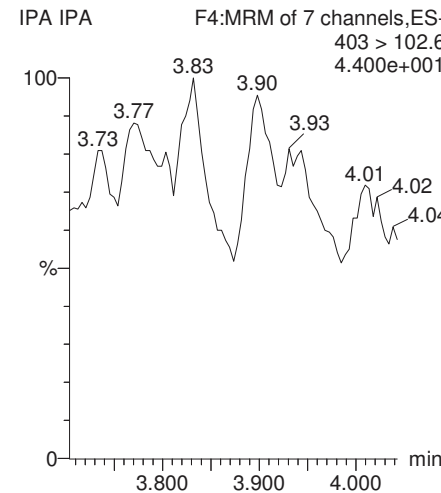
13C4-PFHpA



Total PFHxS



18O2-PFHxS



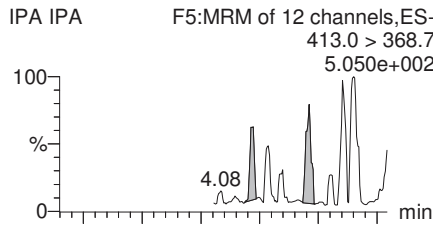
Vista Analytical Laboratory

Dataset: Untitled

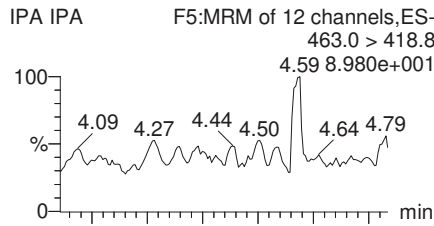
Last Altered: Wednesday, September 27, 2017 09:31:16 Pacific Daylight Time
Printed: Wednesday, September 27, 2017 09:31:31 Pacific Daylight Time

Name: 170926G3_11, Date: 26-Sep-2017, Time: 19:28:12, ID: IPA, Description: IPA

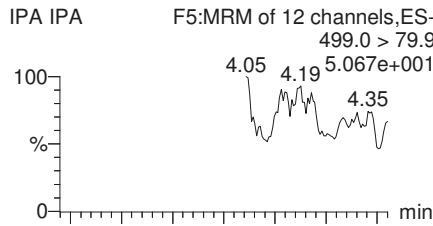
Total PFOA



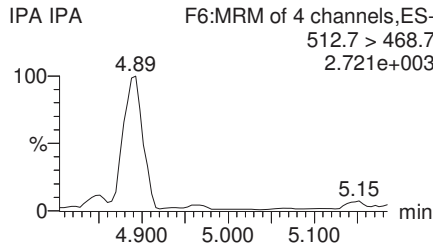
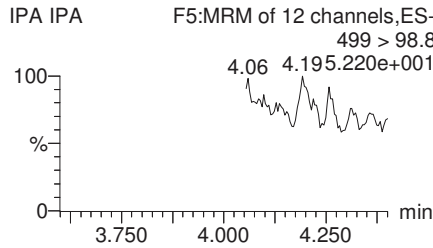
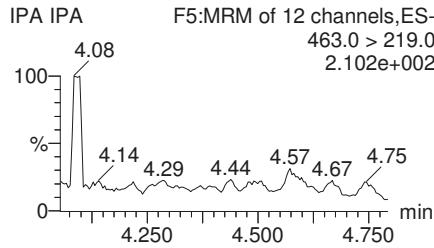
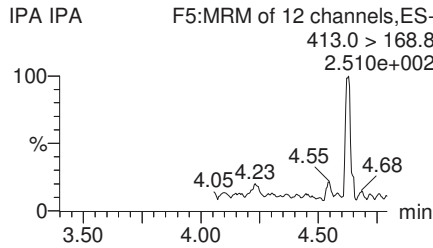
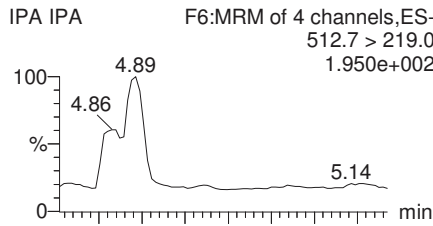
PFNA



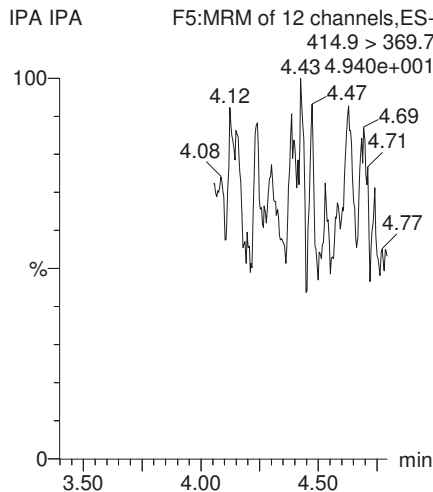
Total PFOS



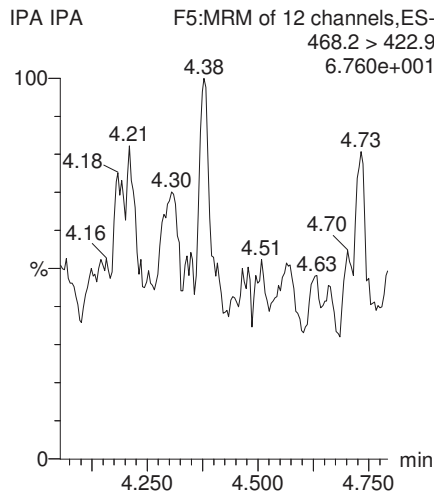
PFDA



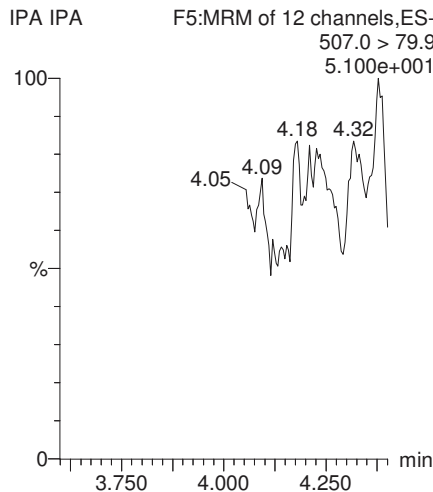
13C2-PFOA



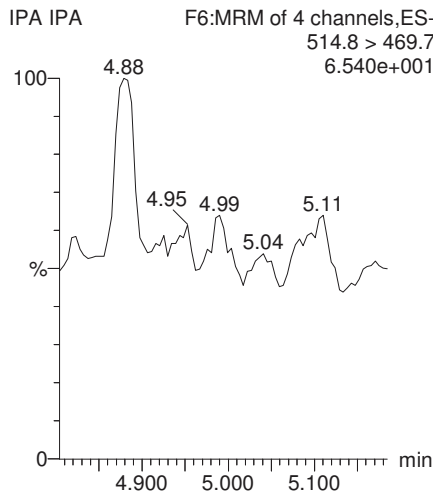
13C5-PFNA



13C8-PFOS



13C2-PFDA

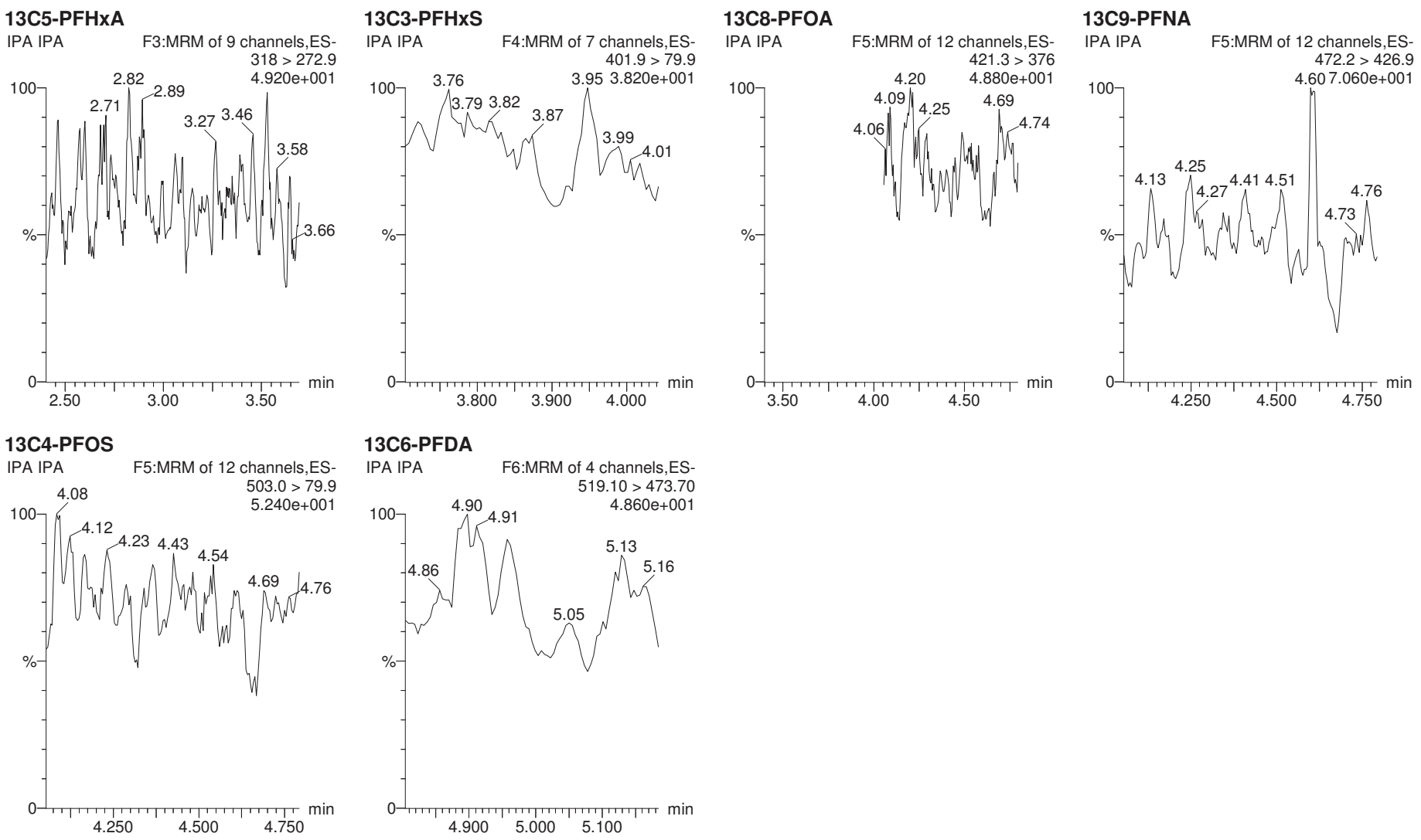


Dataset: Untitled

Last Altered: Wednesday, September 27, 2017 09:31:16 Pacific Daylight Time

Printed: Wednesday, September 27, 2017 09:31:31 Pacific Daylight Time

Name: 170926G3_11, Date: 26-Sep-2017, Time: 19:28:12, ID: IPA, Description: IPA



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-2.qld

Last Altered: Tuesday, September 26, 2017 15:29:39 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:39:58 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170926G1_2, Date: 26-Sep-2017, Time: 14:13:42, ID: ST170926G1-1 PFC CS0 537 17I2204, Description: PFC CS0 537 17I2204

	# Name	Trace	wt/vol	RT	Area	IS Area	Response	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	1.000	2.93	1176.7	9619.6	3.511	4.2351	95.8
2	4 PFOA	413 > 368.70	1.000	4.24	2793.7	6990.1	3.997	5.3334	106.7
3	6 PFOS	499.00 > 79.90	1.000	4.65	1650.8	9619.6	4.925	4.6384	100.4
4	7 13C2-PFHxA	315.0 > 269.80	1.000	3.32	3695.1	6990.1	5.286	9.7101	97.1
5	8 13C2-PFDA	515.10 > 469.90	1.000	4.89	4694.3	6990.1	6.716	10.0734	100.7
6	9 13C2-PFOA	414.90 > 369.70	1.000	4.24	6990.1	6990.1	10.000	10.0000	100.0
7	10 13C4-PFOS	503.0 > 79.90	1.000	4.65	9619.6	9619.6	28.700	28.7000	100.0

9/26/17
VJA 9/26/2017

Dataset: Untitled

Last Altered: Tuesday, September 26, 2017 15:47:15 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:50:25 Pacific Daylight Time

Method: U:\G1.PRO\MethDB\PFAS_DW_L6_0907.mdb 07 Sep 2017 08:44:23

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170926G1_1	IPA	26-Sep-17	14:01:17
2	170926G1_2	ST170926G1-1 PFC CS0 537 17I2204	26-Sep-17	14:13:42
3	170926G1_3	IPA	26-Sep-17	14:26:05
4	170926G1_4	1701286-05 ME-JW-RW03-0917 0.25	26-Sep-17	14:38:31
5	170926G1_5	IPA	26-Sep-17	14:50:53
6	170926G1_6	ST170926G1-2 PFC CS3 537 17H2820	26-Sep-17	15:03:18
7	170926G1_7	IPA	26-Sep-17	15:15:46

LC Calibration Standards Review Checklist Q1

Calibration ID:		ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	
81170926G1-1	LMH	<u>24</u>	☒	☒	☐	☒	☒	<u>NA</u>
<u>↓</u> -2	LMH	☒	☒	☒	☐	☒	☒	☒
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	LMH	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 4/5/17

Run Log Present: ☒

of Samples per Sequence Checked: ☒

Reviewed By: JA 9/26/2017
Initials/Date

Comments:

DW
PFBS, PFOA, PFOS ONLY

Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-2.qld

Last Altered: Tuesday, September 26, 2017 15:29:39 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:39:58 Pacific Daylight Time

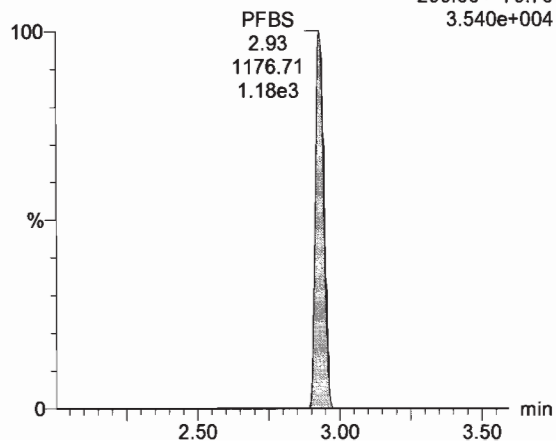
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170926G1_2, Date: 26-Sep-2017, Time: 14:13:42, ID: ST170926G1-1 PFC CS0 537 17I2204, Description: PFC CS0 537 17I2204

PFBS

170926G1_2 Smooth(Mn,1x2) F2:MRM of 5 channels,ES-
299.00 > 79.70
3.540e+004



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-2.qld

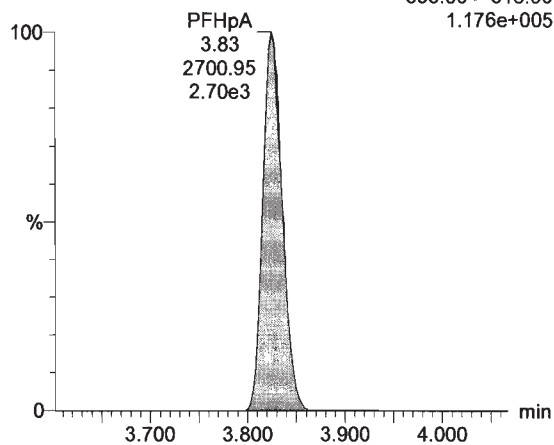
Last Altered: Tuesday, September 26, 2017 15:29:39 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:39:58 Pacific Daylight Time

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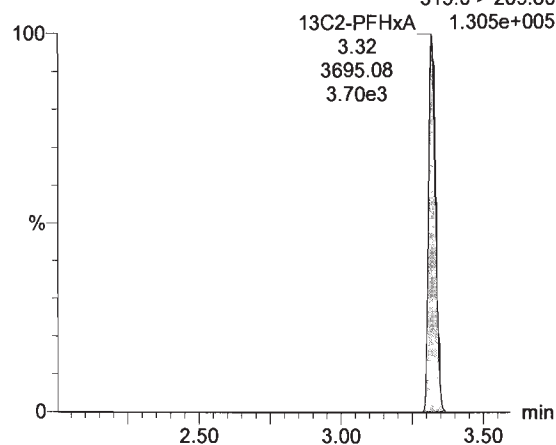
PFHpA

170926G1_2 Smooth(Mn,1x2) F3:MRM of 3 channels,ES-
363.00 > 318.90
1.176e+005



13C2-PFHxA

170926G1_2 Smooth(Mn,1x2) F2:MRM of 5 channels,ES-
315.0 > 269.80
1.305e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-2.qld

Last Altered: Tuesday, September 26, 2017 15:29:39 Pacific Daylight Time

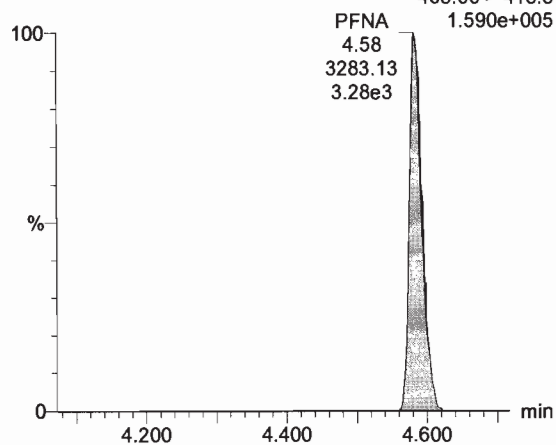
Printed: Tuesday, September 26, 2017 15:39:58 Pacific Daylight Time

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PFNA

170926G1_2 Smooth(Mn,1x2)

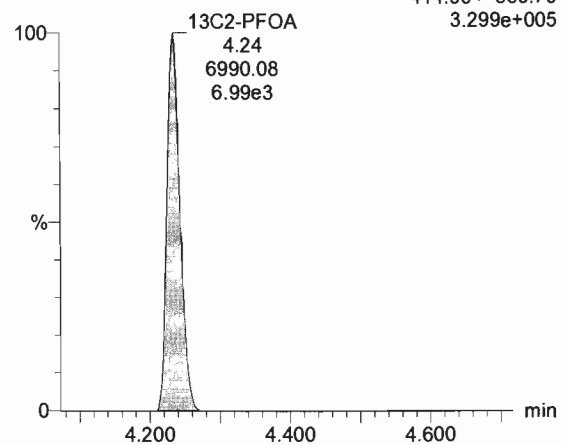
F4:MRM of 9 channels,ES-
463.00 > 418.8
1.590e+005



13C2-PFOA

170926G1_2 Smooth(Mn,1x2)

F4:MRM of 9 channels,ES-
414.90 > 369.70
3.299e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-2.qld

Last Altered: Tuesday, September 26, 2017 15:29:39 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:39:58 Pacific Daylight Time

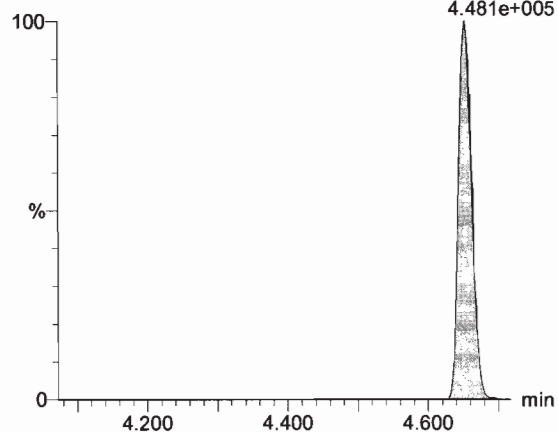
Name: 170926G1_2, Date: 26-Sep-2017, Time: 14:13:42, ID: ST170926G1-1 PFC CS0 537 17I2204, Description: PFC CS0 537 17I2204

13C4-PFOS

170926G1_2 Smooth(Mn,1x2) F4:MRM of 9 channels,ES-

503.0 > 79.90

4.481e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-6.qld

Last Altered: Tuesday, September 26, 2017 15:33:41 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:40:11 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170926G1_6, Date: 26-Sep-2017, Time: 15:03:18, ID: ST170926G1-2 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

	# Name	Trace	wt/vol	RT	Area	IS Area	Response	Conc.	%Rec
1	1 PFBS	299.00 > 79.70	1.000	2.93	4503.9	9810.5	13.176	15.8943	89.8
2	4 PFOA	413 > 368.70	1.000	4.24	10179.9	6036.0	16.865	21.8220	109.1
3	6 PFOS	499.00 > 79.90	1.000	4.65	6569.1	9810.5	19.217	17.6517	95.4
4	7 13C2-PFHxA	315.0 > 269.80	1.000	3.32	3364.0	6036.0	5.573	10.2373	102.4
5	8 13C2-PFDA	515.10 > 469.90	1.000	4.89	4361.2	6036.0	7.225	10.8378	108.4
6	9 13C2-PFOA	414.90 > 369.70	1.000	4.24	6036.0	6036.0	10.000	10.0000	100.0
7	10 13C4-PFOS	503.0 > 79.90	1.000	4.65	9810.5	9810.5	28.700	28.7000	100.0

YJA 9/26/17

YJA. 9/26/2017

Dataset: Untitled

Last Altered: Tuesday, September 26, 2017 15:47:15 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:50:25 Pacific Daylight Time

Compound name: PFHpA

	Name	ID	Acq.Date	Acq.Time
1	170926G1_1	IPA	26-Sep-17	14:01:17
2	170926G1_2	ST170926G1-1 PFC CS0 537 17I2204	26-Sep-17	14:13:42
3	170926G1_3	IPA	26-Sep-17	14:26:05
4	170926G1_4	1701286-05 ME-JW-RW03-0917 0.25	26-Sep-17	14:38:31
5	170926G1_5	IPA	26-Sep-17	14:50:53
6	170926G1_6	ST170926G1-2 PFC CS3 537 17H2820	26-Sep-17	15:03:18
7	170926G1_7	IPA	26-Sep-17	15:15:46

Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-6.qld

Last Altered: Tuesday, September 26, 2017 15:33:41 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:40:11 Pacific Daylight Time

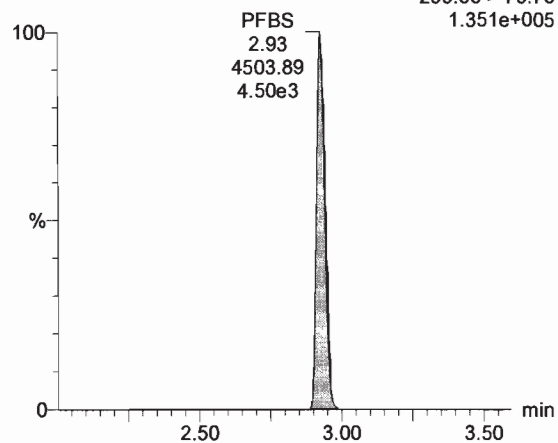
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Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170926G1_6, Date: 26-Sep-2017, Time: 15:03:18, ID: ST170926G1-2 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

PFBS

170926G1_6 Smooth(Mn,1x2) F2:MRM of 5 channels,ES-
299.00 > 79.70
1.351e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-6.qld

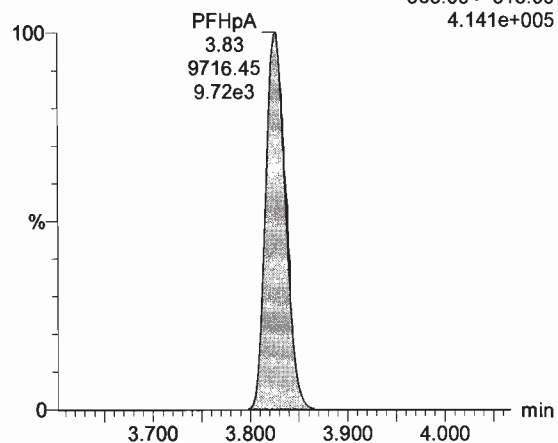
Last Altered: Tuesday, September 26, 2017 15:33:41 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:40:11 Pacific Daylight Time

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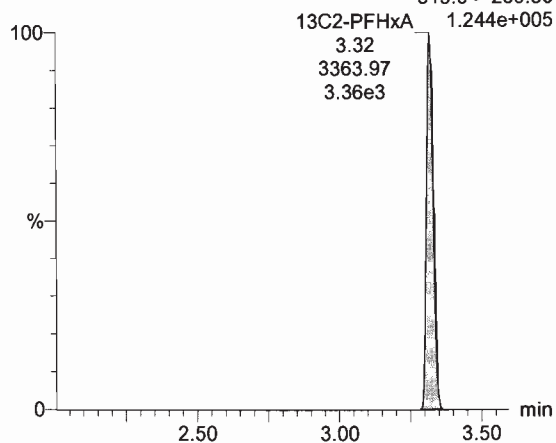
PFHpA

170926G1_6 Smooth(Mn,1x2) F3:MRM of 3 channels,ES-
363.00 > 318.90
4.141e+005



13C2-PFHxA

170926G1_6 Smooth(Mn,1x2) F2:MRM of 5 channels,ES-
315.0 > 269.80
1.244e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-6.qld

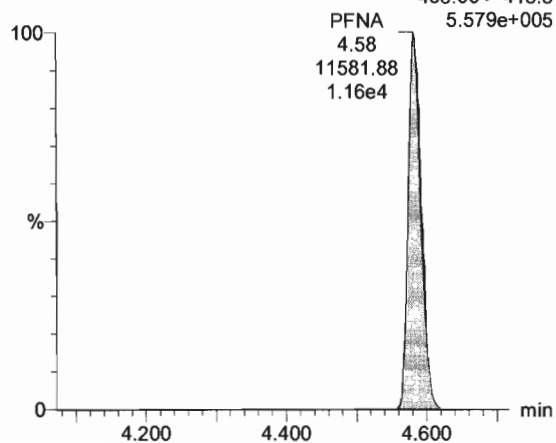
Last Altered: Tuesday, September 26, 2017 15:33:41 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:40:11 Pacific Daylight Time

Name: 170926G1_6, Date: 26-Sep-2017, Time: 15:03:18, ID: ST170926G1-2 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

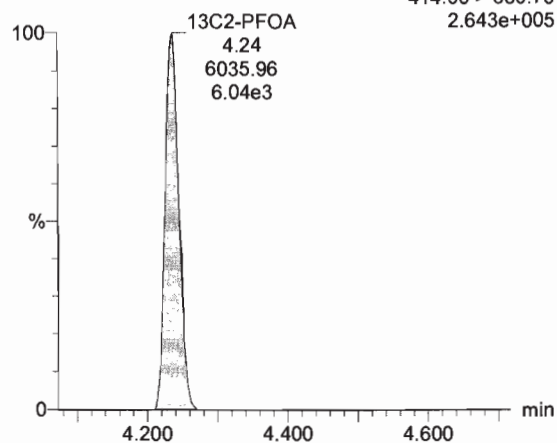
PFNA

170926G1_6 Smooth(Mn,1x2) F4:MRM of 9 channels,ES-
463.00 > 418.8
5.579e+005



13C2-PFOA

170926G1_6 Smooth(Mn,1x2) F4:MRM of 9 channels,ES-
414.90 > 369.70
2.643e+005



Dataset: U:\G1.PRO\Results\2017\170926G1\170926G1-6.qld

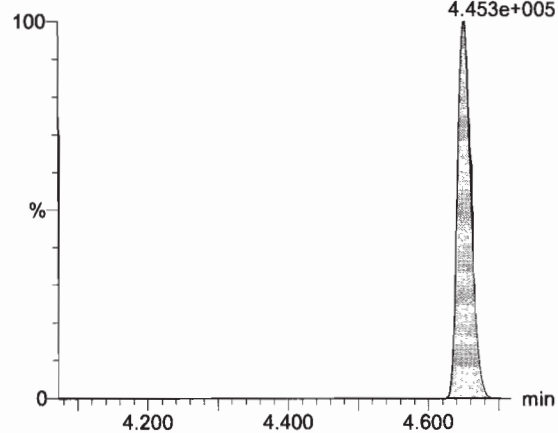
Last Altered: Tuesday, September 26, 2017 15:33:41 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 15:40:11 Pacific Daylight Time

Name: 170926G1_6, Date: 26-Sep-2017, Time: 15:03:18, ID: ST170926G1-2 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820

13C4-PFOS

170926G1_6 Smooth(Mn,1x2) F4:MRM of 9 channels,ES-
503.0 > 79.90
4.453e+005



INITIAL CALIBRATION (ICAL)
INCLUDING ASSOCIATED
INITIAL CALIBRATION VERIFICATION (ICV) AND INSTRUMENT BLANK (IB)

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:55:12 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Compound name: PFBSCoefficient of Determination: $R^2 = 0.994976$ Calibration curve: $0.828966 * x$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

Yea 9/26/17

JA 9/26/2017

	#.Name	Std. Conc	RT.	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	0.443	2.91	0.389	-12.0	0.729	1.06e2
2	2 170922G3_3	0.885	2.91	0.855	-3.4	0.801	2.25e2
3	3 170922G3_4	1.77	2.92	1.91	8.0	0.895	4.94e2
4	4 170922G3_5	4.42	2.91	4.60	4.2	0.864	1.23e3
5	5 170922G3_6	8.85	2.92	8.14	-8.0	0.763	2.22e3
6	6 170922G3_7	13.3	2.91	14.1	6.4	0.882	3.51e3
7	7 170922G3_8	17.7	2.92	16.6	-6.2	0.778	4.42e3
8	8 170922G3_9	22.1	2.91	20.3	-8.0	0.763	5.49e3
9	9 170922G3_10	44.2	2.91	46.7	5.6	0.875	1.18e4

Compound name: PFHpACoefficient of Determination: $R^2 = 0.996532$ Calibration curve: $0.833483 * x$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#.Name	Std. Conc	RT.	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	0.500	3.82	0.622	24.4	1.04	2.90e2
2	2 170922G3_3	1.00	3.82	1.00	-0.0	0.833	5.34e2
3	3 170922G3_4	2.00	3.82	1.95	-2.5	0.812	9.16e2
4	4 170922G3_5	5.00	3.82	5.14	2.8	0.857	2.40e3
5	5 170922G3_6	10.0	3.82	9.77	-2.3	0.814	4.78e3
6	6 170922G3_7	15.0	3.82	15.3	2.0	0.850	7.08e3
7	7 170922G3_8	20.0	3.82	20.1	0.3	0.836	9.44e3
8	8 170922G3_9	25.0	3.82	22.6	-9.8	0.752	1.12e4
9	9 170922G3_10	50.0	3.82	52.1	4.2	0.869	2.39e4

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:55:12 Pacific Daylight Time

Compound name: PFHxSCoefficient of Determination: $R^2 = 0.995474$ Calibration curve: $0.846557 * x$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#-Name	Std. Conc	RT	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	0.455	3.95	0.440	-3.2	0.819	1.23e2
2	2 170922G3_3	0.910	3.94	1.01	10.8	0.938	2.72e2
3	3 170922G3_4	1.82	3.95	1.85	1.7	0.861	4.89e2
4	4 170922G3_5	4.56	3.94	4.65	2.0	0.863	1.27e3
5	5 170922G3_6	9.12	3.95	8.73	-4.3	0.810	2.43e3
6	6 170922G3_7	13.7	3.95	15.0	9.3	0.926	3.80e3
7	7 170922G3_8	18.2	3.95	16.7	-8.2	0.777	4.55e3
8	8 170922G3_9	22.8	3.95	21.3	-6.5	0.791	5.87e3
9	9 170922G3_10	45.6	3.95	47.5	4.1	0.882	1.22e4

Compound name: PFOACoefficient of Determination: $R^2 = 0.996149$ Calibration curve: $0.00142544 * x^2 + 0.741759 * x$

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	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	0.500	4.23	0.566	13.1	0.840	2.35e2
2	2 170922G3_3	1.00	4.23	1.01	1.2	0.752	4.82e2
3	3 170922G3_4	2.00	4.23	2.59	29.4	0.964	1.09e3
4	4 170922G3_5	5.00	4.23	5.11	2.2	0.765	2.14e3
5	5 170922G3_6	10.0	4.23	10.8	7.9	0.817	4.80e3
6	6 170922G3_7	15.0	4.23	15.1	0.8	0.769	6.41e3
7	7 170922G3_8	20.0	4.23	19.2	-4.1	0.737	8.33e3
8	8 170922G3_9	25.0	4.23	23.2	-7.0	0.721	1.07e4
9	9 170922G3_10	50.0	4.23	50.9	1.8	0.829	2.29e4

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:55:12 Pacific Daylight Time

Compound name: PFNACoefficient of Determination: $R^2 = 0.996928$ Calibration curve: $0.930609 * x$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	#.Name	Std. Conc	RT	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	0.500	4.58	0.509	1.8	0.948	2.65e2
2	2 170922G3_3	1.00	4.58	1.11	10.6	1.03	6.60e2
3	3 170922G3_4	2.00	4.58	2.03	1.5	0.945	1.07e3
4	4 170922G3_5	5.00	4.58	4.71	-5.9	0.876	2.45e3
5	5 170922G3_6	10.0	4.58	9.55	-4.5	0.889	5.22e3
6	6 170922G3_7	15.0	4.58	16.3	8.6	1.01	8.42e3
7	7 170922G3_8	20.0	4.57	20.2	0.8	0.938	1.06e4
8	8 170922G3_9	25.0	4.58	23.1	-7.7	0.859	1.27e4
9	9 170922G3_10	50.0	4.58	51.1	2.1	0.951	2.62e4

Compound name: PFOSCoefficient of Determination: $R^2 = 0.995375$ Calibration curve: $0.00206621 * x^2 + 1.05223 * x$

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	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	0.464	4.65	0.491	5.9	1.11	1.70e2
2	2 170922G3_3	0.924	4.64	0.929	0.5	1.06	3.12e2
3	3 170922G3_4	1.85	4.65	1.68	-9.5	0.956	5.52e2
4	4 170922G3_5	4.62	4.65	4.59	-0.7	1.05	1.57e3
5	5 170922G3_6	9.24	4.65	9.03	-2.3	1.05	3.18e3
6	6 170922G3_7	13.9	4.65	15.9	14.3	1.24	5.17e3
7	7 170922G3_8	18.5	4.64	18.3	-1.2	1.08	6.40e3
8	8 170922G3_9	23.1	4.64	21.3	-7.9	1.01	7.59e3
9	9 170922G3_10	46.2	4.65	46.6	0.9	1.16	1.63e4

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:55:12 Pacific Daylight Time

Compound name: 13C2-PFHxA

Response Factor: 0.544402

RRF SD: 0.0386294, Relative SD: 7.09574

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: RF

	#.Name	Std. Conc	RT	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	10.0	3.30	9.91	-0.9	0.539	3.02e3
2	2 170922G3_3	10.0	3.31	9.24	-7.6	0.503	3.23e3
3	3 170922G3_4	10.0	3.31	10.8	7.6	0.586	3.30e3
4	4 170922G3_5	10.0	3.31	10.8	8.4	0.590	3.30e3
5	5 170922G3_6	10.0	3.30	9.20	-8.0	0.501	2.94e3
6	6 170922G3_7	10.0	3.31	10.4	3.9	0.566	3.14e3
7	7 170922G3_8	10.0	3.31	9.73	-2.7	0.530	2.99e3
8	8 170922G3_9	10.0	3.31	9.17	-8.3	0.499	2.96e3
9	9 170922G3_10	10.0	3.31	10.8	7.8	0.587	3.23e3

Compound name: 13C2-PFDA

Response Factor: 0.666672

RRF SD: 0.0485444, Relative SD: 7.28159

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: RF

	#.Name	Std. Conc	RT	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	10.0	4.88	11.0	9.8	0.732	4.10e3
2	2 170922G3_3	10.0	4.89	9.57	-4.3	0.638	4.09e3
3	3 170922G3_4	10.0	4.88	10.2	1.9	0.679	3.83e3
4	4 170922G3_5	10.0	4.89	10.4	3.6	0.691	3.86e3
5	5 170922G3_6	10.0	4.88	9.44	-5.6	0.629	3.70e3
6	6 170922G3_7	10.0	4.89	11.2	11.8	0.745	4.14e3
7	7 170922G3_8	10.0	4.88	9.79	-2.1	0.653	3.69e3
8	8 170922G3_9	10.0	4.88	9.08	-9.2	0.605	3.59e3
9	9 170922G3_10	10.0	4.88	9.42	-5.8	0.628	3.46e3

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:55:12 Pacific Daylight Time

Compound name: 13C2-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: RF

	#.Name	Std. Conc	RT.	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	10.0	4.23	10.0	0.0	1.00	5.60e3
2	2 170922G3_3	10.0	4.23	10.0	0.0	1.00	6.41e3
3	3 170922G3_4	10.0	4.23	10.0	0.0	1.00	5.64e3
4	4 170922G3_5	10.0	4.23	10.0	0.0	1.00	5.59e3
5	5 170922G3_6	10.0	4.23	10.0	0.0	1.00	5.87e3
6	6 170922G3_7	10.0	4.23	10.0	0.0	1.00	5.55e3
7	7 170922G3_8	10.0	4.23	10.0	0.0	1.00	5.65e3
8	8 170922G3_9	10.0	4.23	10.0	0.0	1.00	5.93e3
9	9 170922G3_10	10.0	4.23	10.0	0.0	1.00	5.51e3

Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 9.61481e-017, Relative SD: 9.61481e-015

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: RF

	#.Name	Std. Conc	RT.	Conc.	%Dev.	RRF	Resp
1	1 170922G3_2	28.7	4.64	28.7	0.0	1.00	9.43e3
2	2 170922G3_3	28.7	4.65	28.7	0.0	1.00	9.13e3
3	3 170922G3_4	28.7	4.65	28.7	0.0	1.00	8.95e3
4	4 170922G3_5	28.7	4.65	28.7	0.0	1.00	9.25e3
5	5 170922G3_6	28.7	4.65	28.7	0.0	1.00	9.43e3
6	6 170922G3_7	28.7	4.65	28.7	-0.0	1.00	8.60e3
7	7 170922G3_8	28.7	4.64	28.7	0.0	1.00	9.22e3
8	8 170922G3_9	28.7	4.65	28.7	0.0	1.00	9.34e3
9	9 170922G3_10	28.7	4.65	28.7	-0.0	1.00	8.74e3

Sample List Report

MassLynx 4.1

Sample List: U:\G1.PRO\SampleDB\170922G3.SPL
 Last Modified: Monday, September 25, 2017 09:04:49 Pacific Daylight Time
 Printed: Tuesday, September 26, 2017 12:03:02 Pacific Daylight Time

Page 1 of 2

Page Position (1, 1)

	File Name	Sample ID	wt/vol	Sample Type	Conc A	Conc B	Conc C	Conc D	Conc E	Conc F	Conc G	Conc H
1	170922G3_1	IPA	1.000000	Analyte	---	---	---	---	10	40	28.7	---
2	170922G3_2	ST170922G3-1 PFC CS-3 537 17H2814	1.000000	Standard	0.5	0.4425	0.455	0.464	10	40	28.7	---
3	170922G3_3	ST170922G3-2 PFC CS-2 537 17H2815	1.000000	Standard	1	0.8850	0.91	0.924	10	40	28.7	---
4	170922G3_4	ST170922G3-3 PFC CS-1 537 17H2816	1.000000	Standard	2	1.77	1.82	1.85	10	40	28.7	---
5	170922G3_5	ST170922G3-4 PFC CS0 537 17I2204	1.000000	Standard	5	4.42	4.56	4.62	10	40	28.7	---
6	170922G3_6	ST170922G3-5 PFC CS1 537 17H2818	1.000000	Standard	10	8.85	9.12	9.24	10	40	28.7	---
7	170922G3_7	ST170922G3-6 PFC CS2 537 17H2819	1.000000	Standard	15	13.26	13.68	13.9	10	40	28.7	---
8	170922G3_8	ST170922G3-7 PFC CS3 537 17H2820	1.000000	Standard	20	17.7	18.24	18.5	10	40	28.7	---
9	170922G3_9	ST170922G3-8 PFC CS4 537 17H2821	1.000000	Standard	25	22.1	22.8	23.1	10	40	28.7	---
10	170922G3_10	ST170922G3-9 PFC CS5 537 17H2822	1.000000	Standard	50	44.2	45.6	46.2	10	40	28.7	---
11	170922G3_11	IPA	1.000000	Analyte	---	---	---	---	10	40	28.7	---
12	170922G3_12	ICV170922G3-1 PFC ICV 537 17H2823	1.000000	Analyte	10	10	10	10	10	40	28.7	---
13	170922G3_13	IPA	1.000000	Analyte	---	---	---	---	10	40	28.7	---
14	170922G3_14	B7I0113-BS1 LFB 0.25	0.250000	Analyte	5	4.42	4.56	4.62	10	40	28.7	---
15	170922G3_15	IPA	1.000000	Analyte	---	---	---	---	10	40	28.7	---
16	170922G3_16	B7I0113-BLK1 LRB 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
17	170922G3_17	B7I0113-MS1 LFSM 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
18	170922G3_18	B7I0113-MSD1 LFSMD 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
19	170922G3_19	1701286-01 ME-JW-RW01-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
20	170922G3_20	1701286-02 ME-JW-FB01-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
21	170922G3_21	1701286-03 ME-JW-RW02-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
22	170922G3_22	1701286-04 ME-JW-FB02-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
23	170922G3_23	1701286-05 ME-JW-RW03-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
24	170922G3_24	1701286-06 ME-JW-FB03-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
25	170922G3_25	1701286-07 ME-JW-RW04-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
26	170922G3_26	1701286-08 ME-JW-FB04-0917 0.25	0.250000	Analyte	---	---	---	---	10	40	28.7	---
27	170922G3_27	IPA	1.000000	Analyte	---	---	---	---	10	40	28.7	---
28	170922G3_28	ST170922G3-10 PFC CS3 537 17H2820	1.000000	Analyte	20	17.7	18.24	18.5	10	40	28.7	---
29	170922G3_29	IPA	1.000000	Analyte	---	---	---	---	10	40	28.7	---

Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

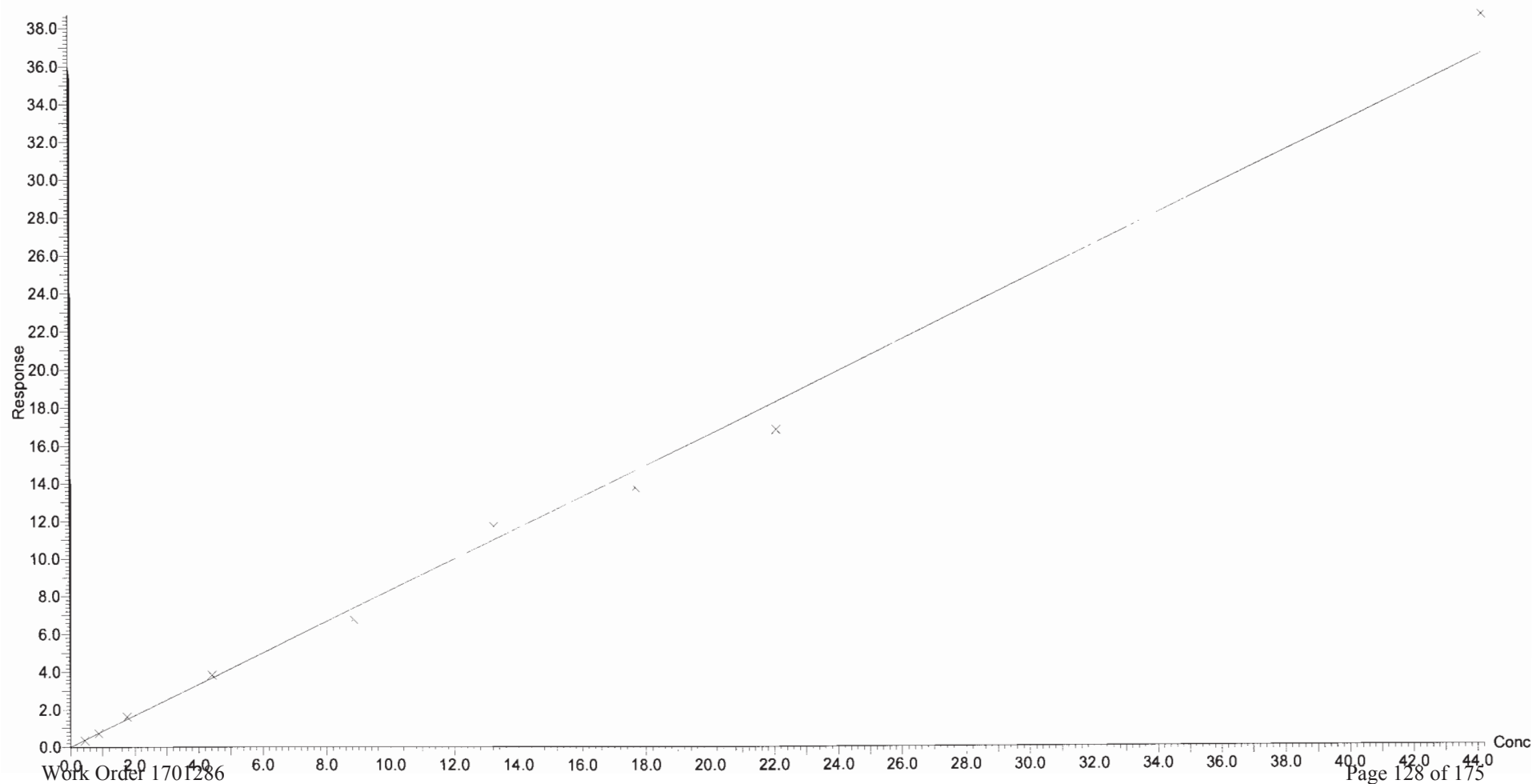
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Compound name: PFBS

Coefficient of Determination: $R^2 = 0.994976$ Calibration curve: $0.828966 * x$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

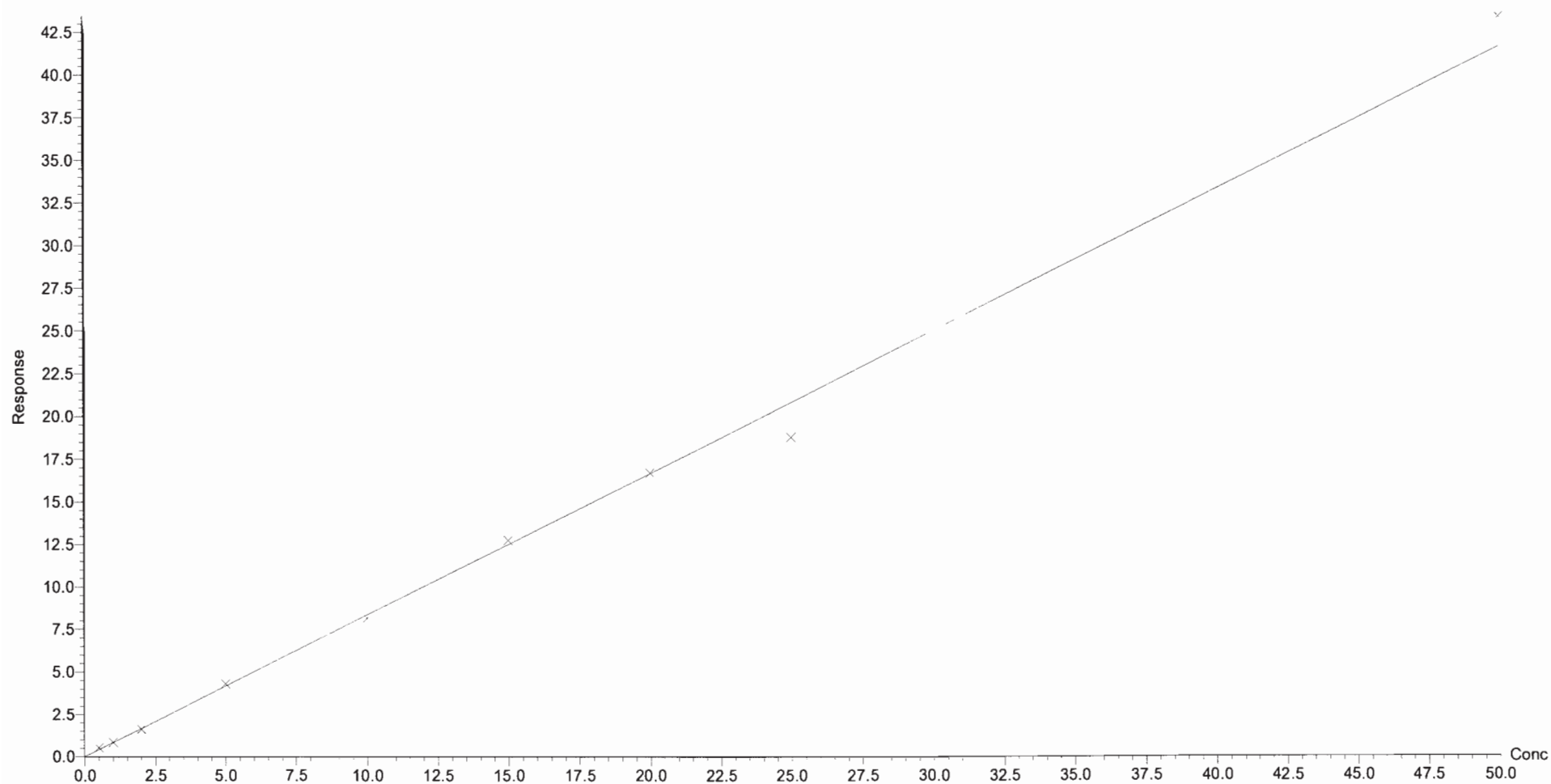
Compound name: PFHpA

Coefficient of Determination: $R^2 = 0.996532$

Calibration curve: $0.833483 * x$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

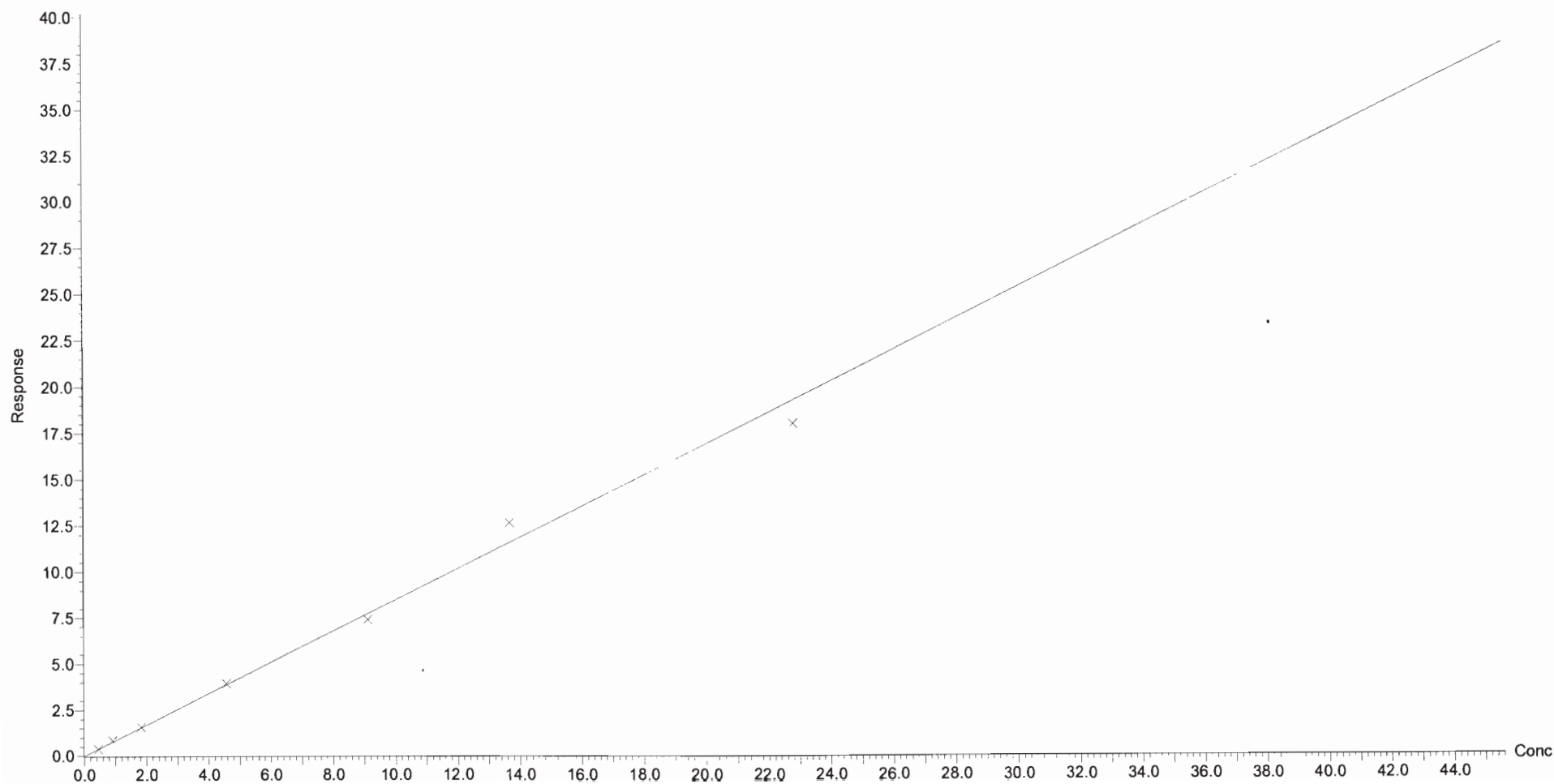
Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

Compound name: PFHxS

Coefficient of Determination: $R^2 = 0.995474$ Calibration curve: $0.846557 * x$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

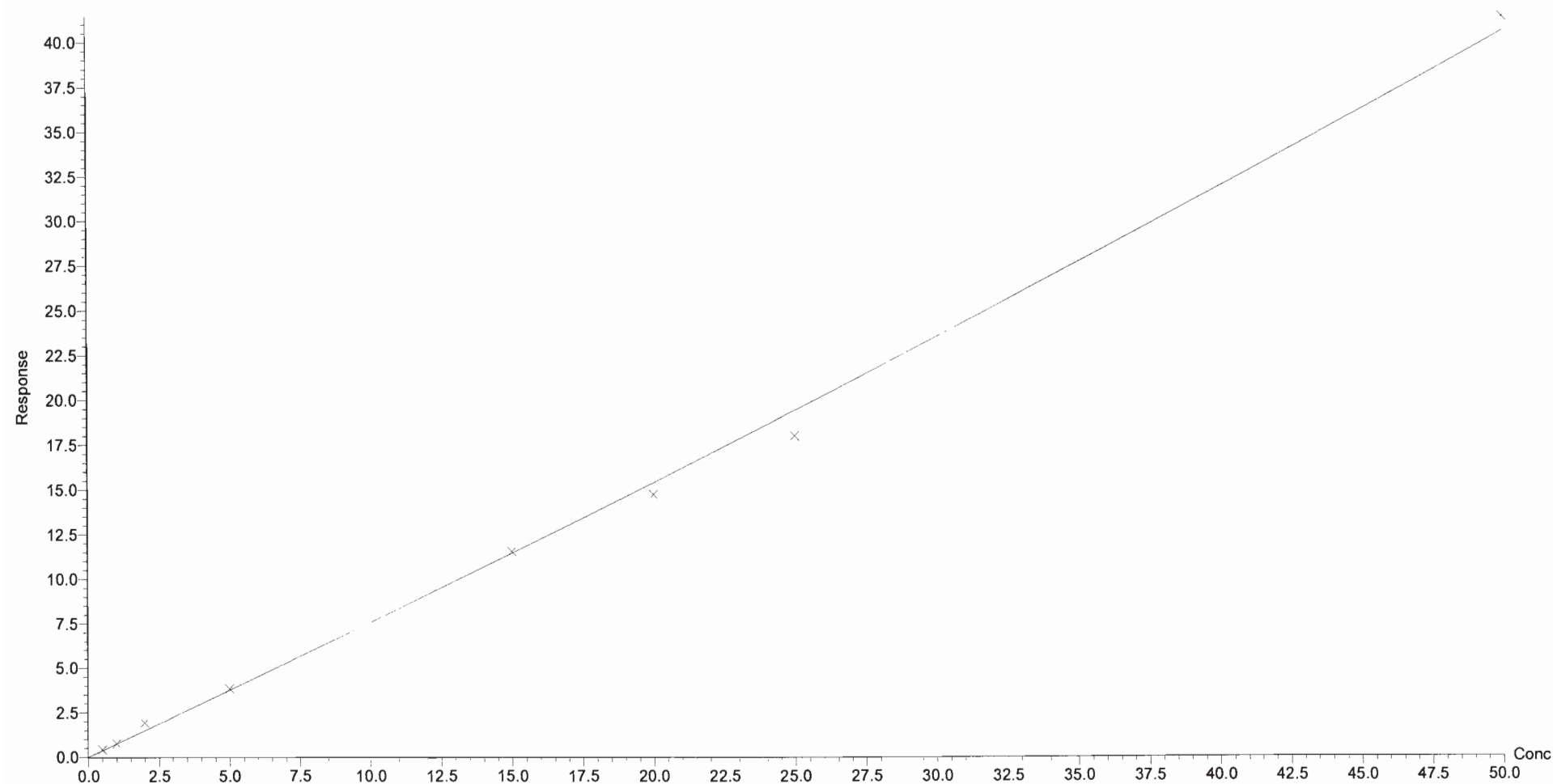
Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

Compound name: PFOA

Coefficient of Determination: $R^2 = 0.996149$ Calibration curve: $0.00142544 * x^2 + 0.741759 * x$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

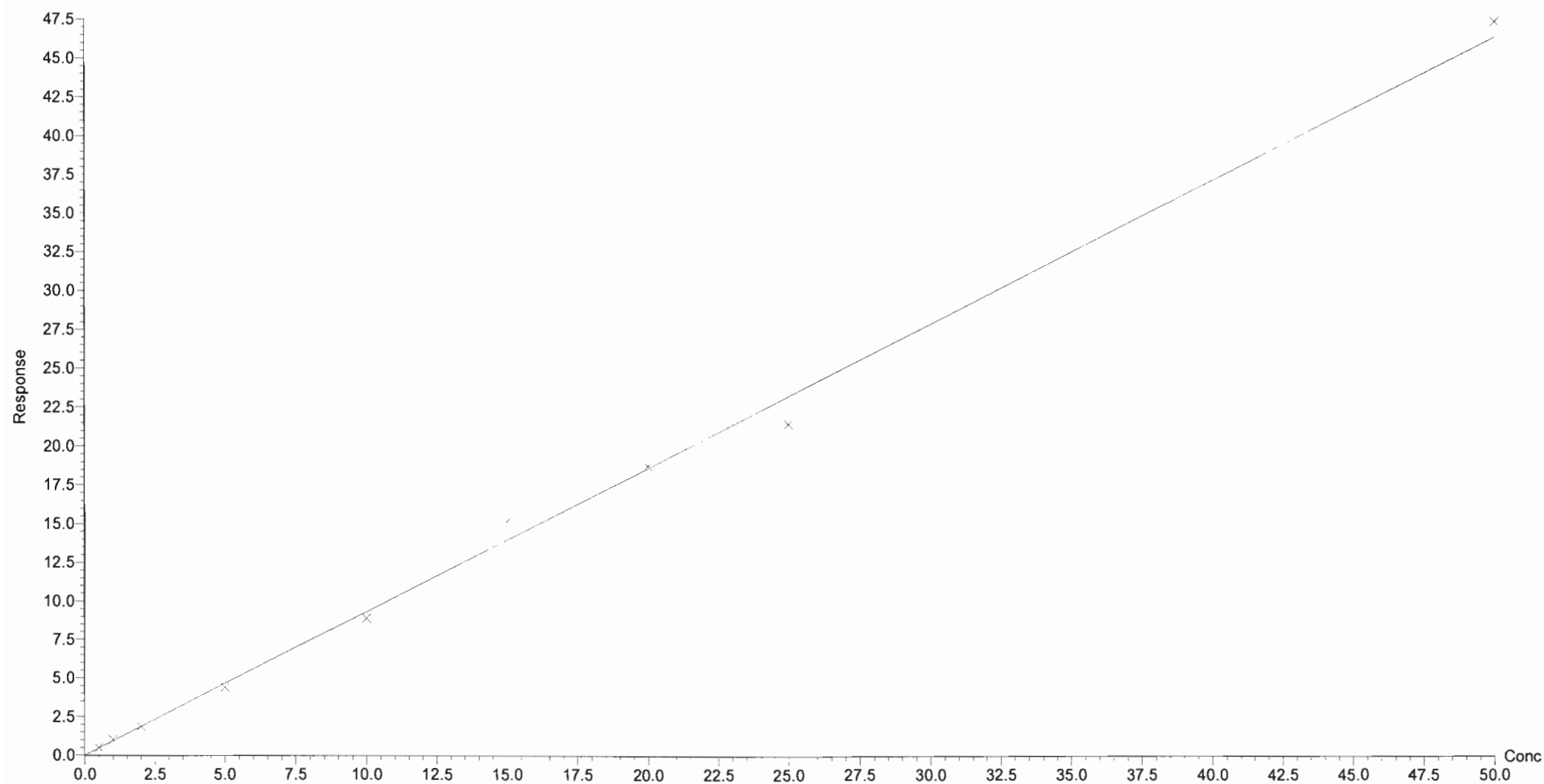
Compound name: PFNA

Coefficient of Determination: $R^2 = 0.996928$

Calibration curve: $0.930609 * x$

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

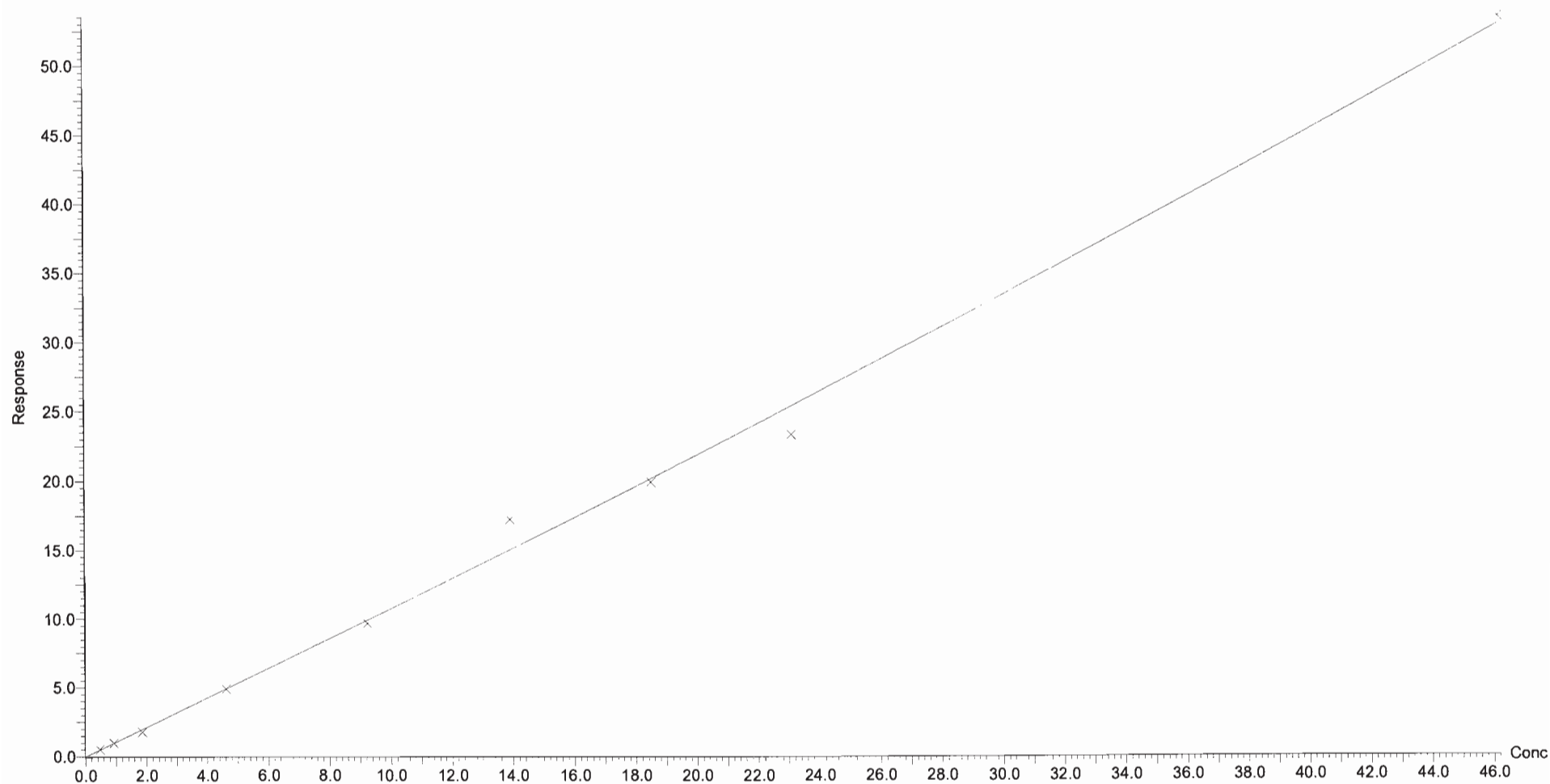
Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

Compound name: PFOS

Coefficient of Determination: $R^2 = 0.995375$ Calibration curve: $0.00206621 * x^2 + 1.05223 * x$

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

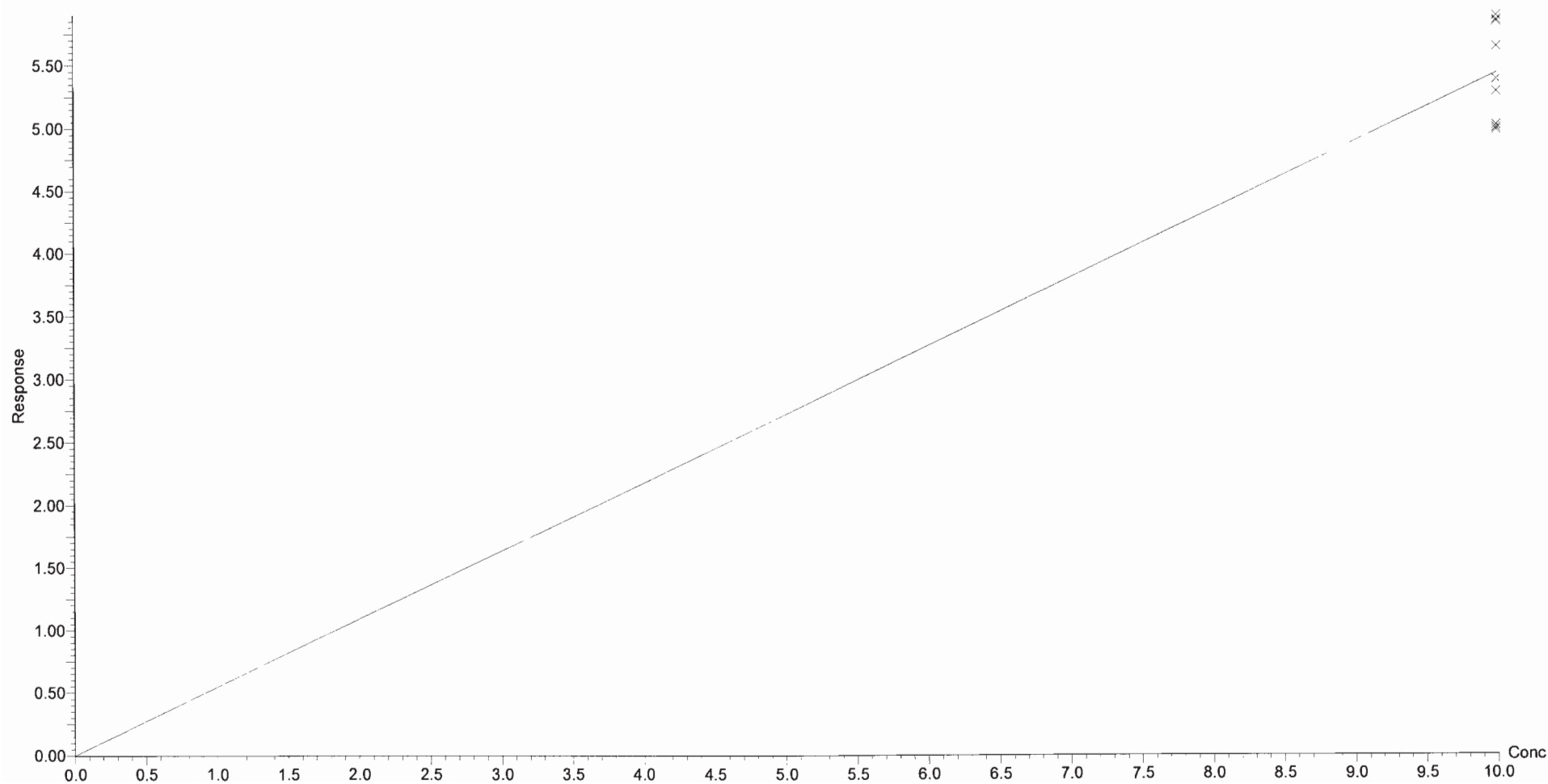
Compound name: 13C2-PFHxA

Response Factor: 0.544402

RRF SD: 0.0386294, % Relative SD: 7.09574

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: RF



Vista Analytical Laboratory

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

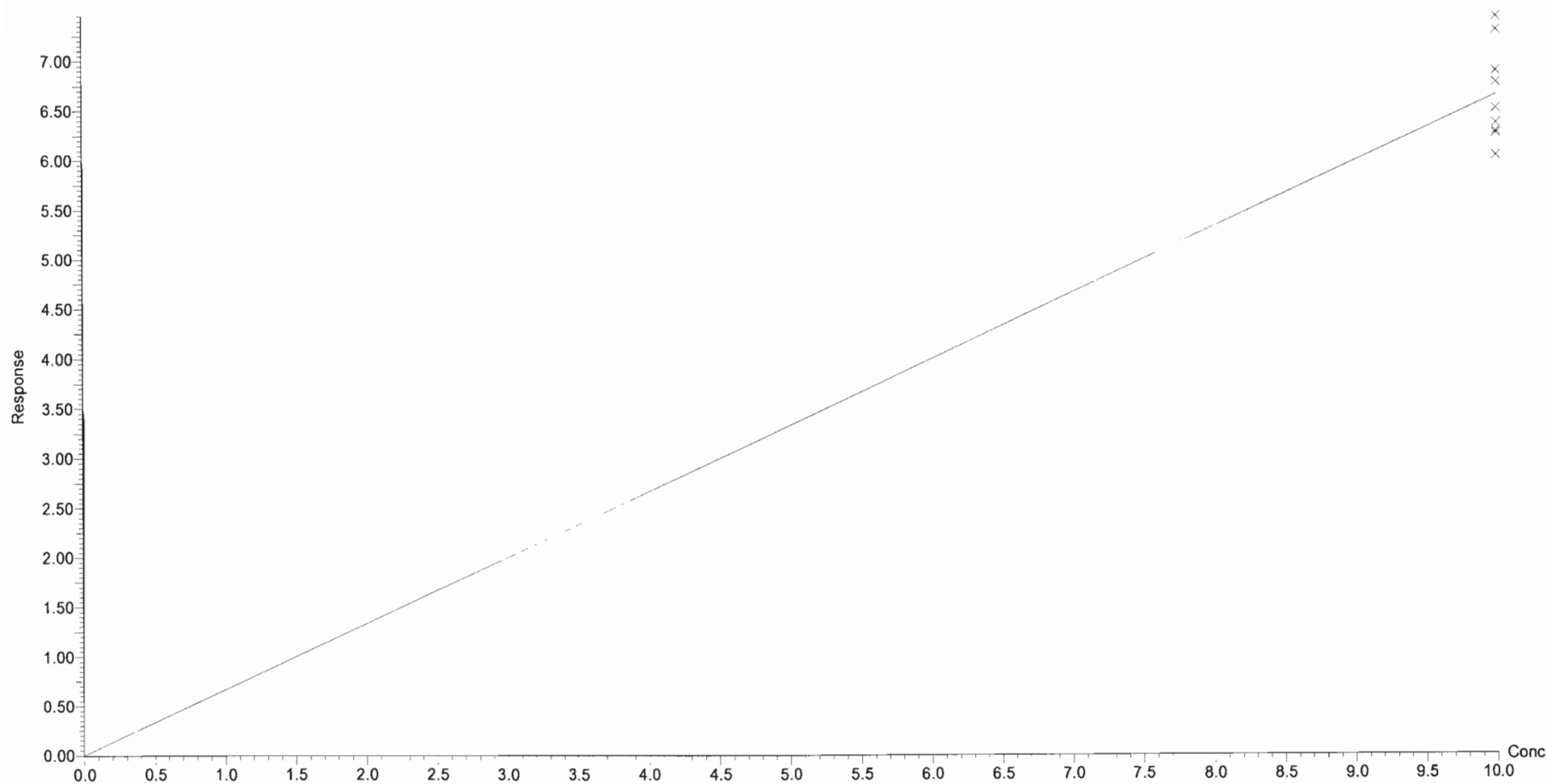
Compound name: 13C2-PFDA

Response Factor: 0.666672

RRF SD: 0.0485444, % Relative SD: 7.28159

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: RF



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

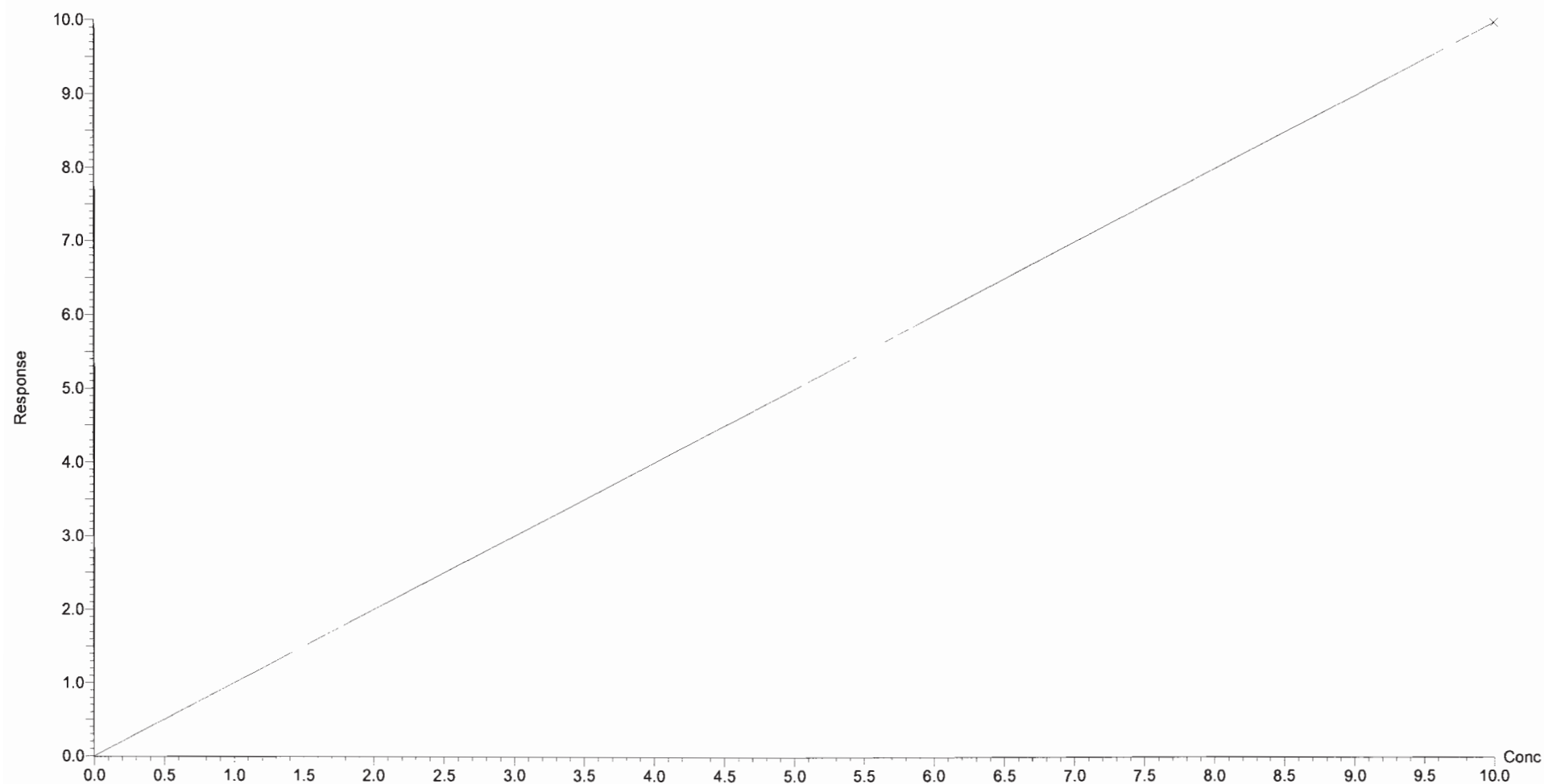
Compound name: 13C2-PFOA

Response Factor: 1

RRF SD: 0, % Relative SD: 0

Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)

Curve type: RF



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:56 Pacific Daylight Time

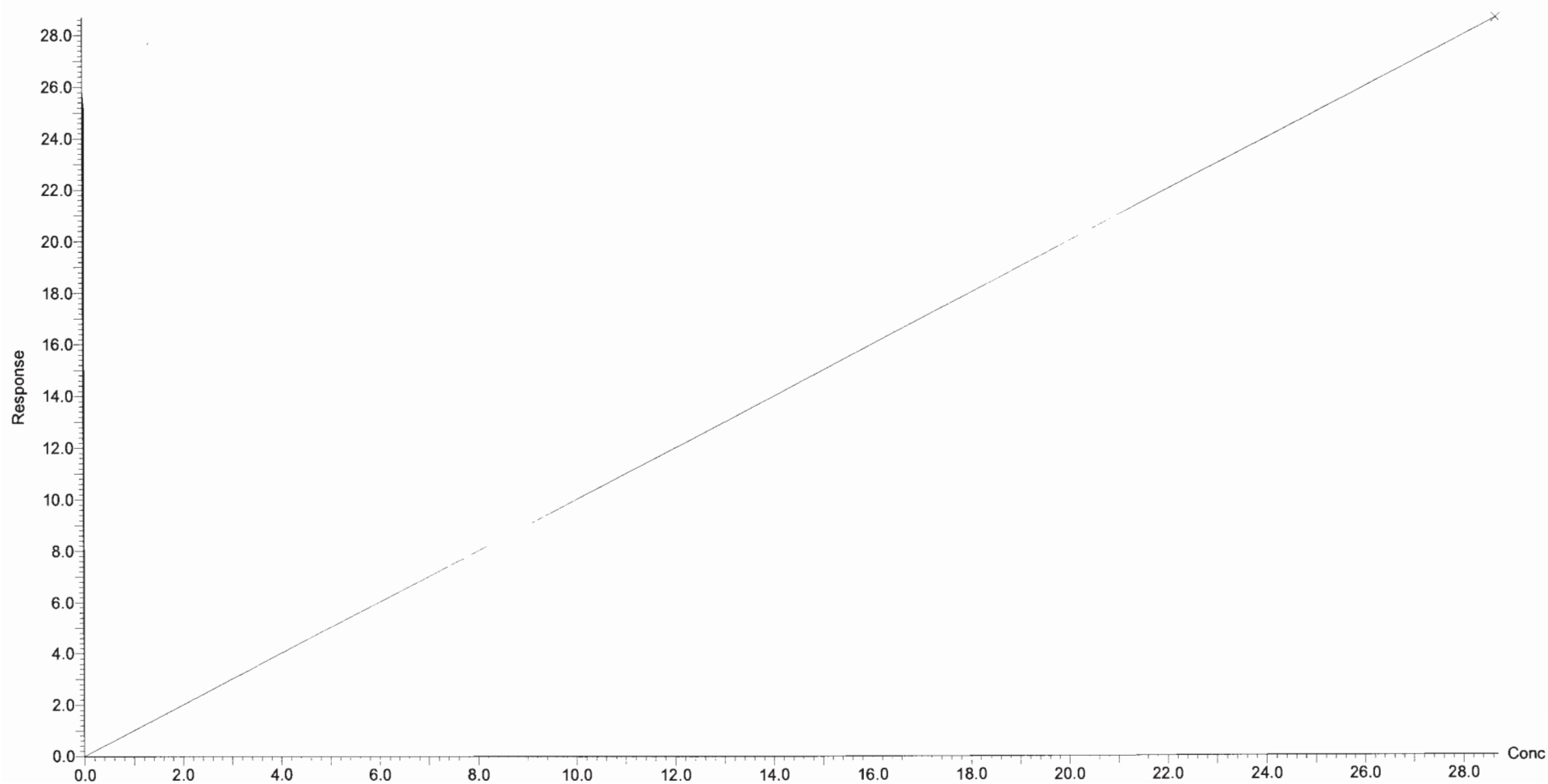
Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 9.61481e-017, % Relative SD: 9.61481e-015

Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)

Curve type: RF



Quantify Compound Summary Report

Printed Tue Sep 26 11:16:32 2017

Compound 9: 13C2-PFOA

	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flag	Conc.	%Dev
1	170922G3_2	Standard	10	4.23	5600.4	5600.426	1.00E+01	MM	10	0.00E+00
2	170922G3_3	Standard	10	4.23	6413.8	6413.778	1.00E+01	bb	10	0.00E+00
3	170922G3_4	Standard	10	4.23	5638.6	5638.605	1.00E+01	bb	10	0.00E+00
4	170922G3_5	Standard	10	4.23	5594.3	5594.296	1.00E+01	bb	10	0.00E+00
5	170922G3_6	Standard	10	4.23	5874.6	5874.579	1.00E+01	bb	10	0.00E+00
6	170922G3_7	Standard	10	4.23	5553.5	5553.502	1.00E+01	bb	10	0.00E+00
7	170922G3_8	Standard	10	4.23	5647.4	5647.442	1.00E+01	bb	10	0.00E+00
8	170922G3_9	Standard	10	4.23	5931.7	5931.73	1.00E+01	bb	10	0.00E+00
9	170922G3_10	Standard	10	4.23	5513.5	5513.483	1.00E+01	bb	10	0.00E+00

Compound 9: 13C2-PFOA

HIGH AREA	6413.778
LOW AREA	5513.483
RPD %	15.1

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

Quantify Compound Summary Report

Printed Tue Sep 26 11:18:47 2017

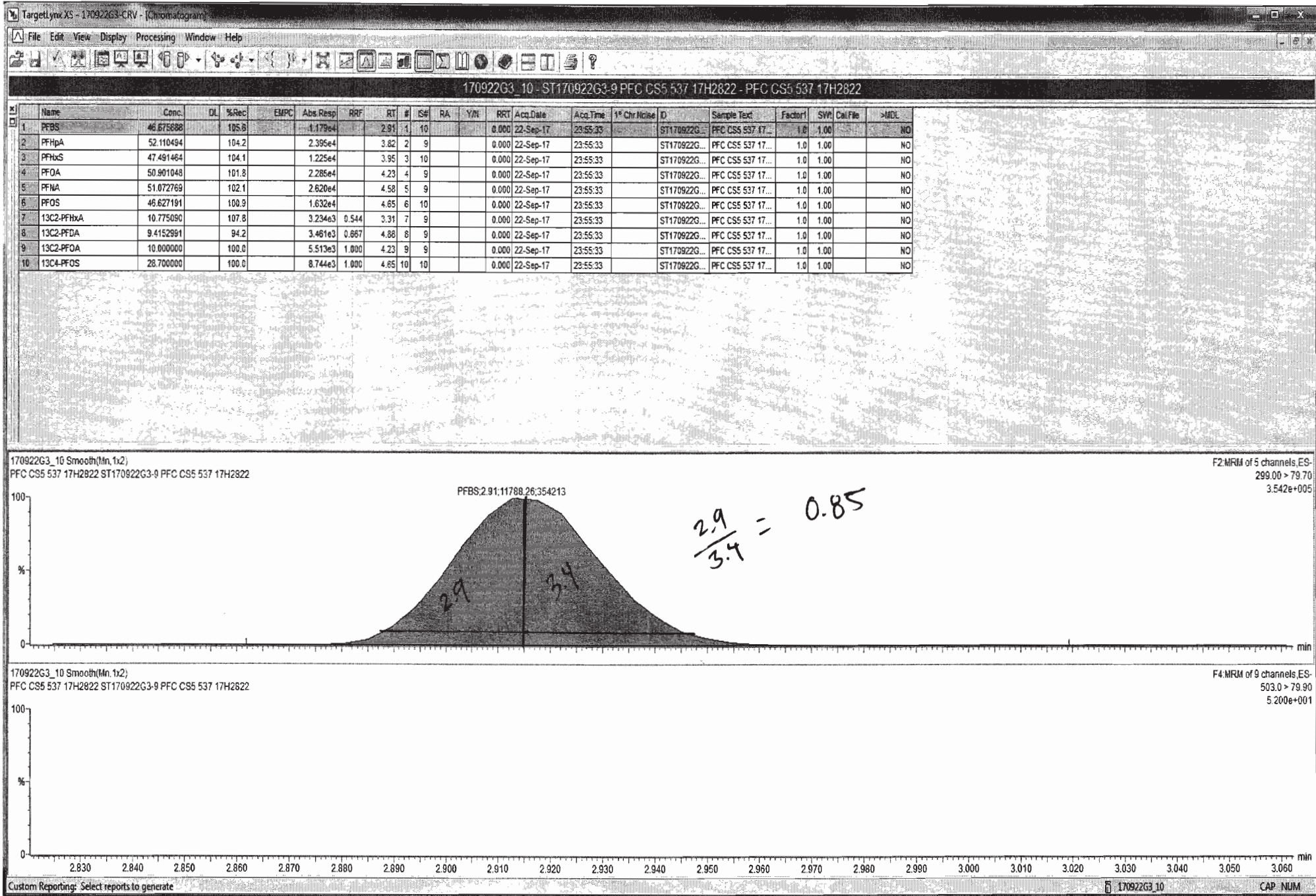
Compound 10: 13C4-PFOS

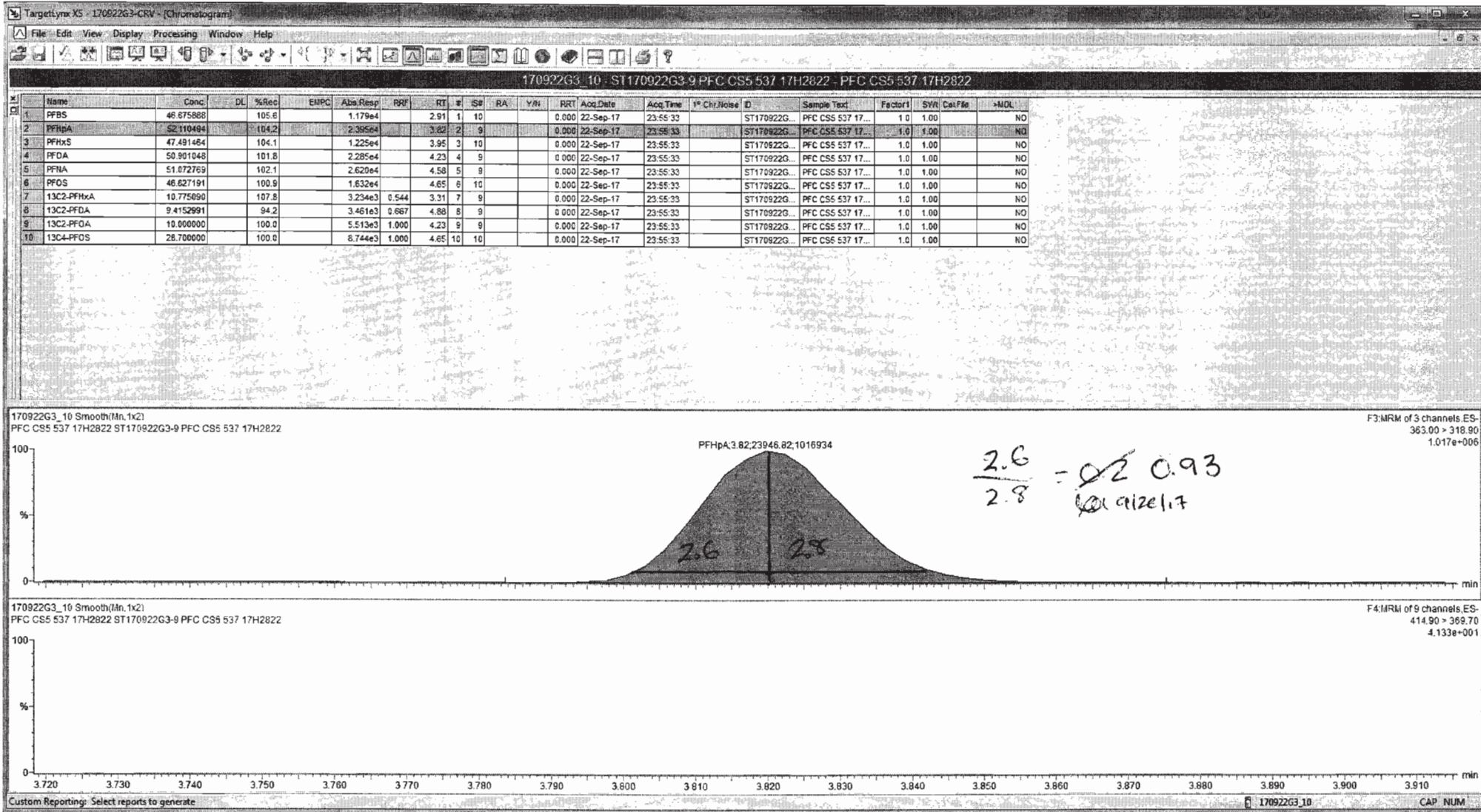
	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primary Flag	Conc.
1	170922G3_2	Standard	28.7	4.64	9433.2	9433.22	28.7	bb	2.87E+01
2	170922G3_3	Standard	28.7	4.65	9132.9	9132.85	28.7	bb	2.87E+01
3	170922G3_4	Standard	28.7	4.65	8953.7	8953.74	28.7	bb	2.87E+01
4	170922G3_5	Standard	28.7	4.65	9252.3	9252.25	28.7	bb	2.87E+01
5	170922G3_6	Standard	28.7	4.65	9428.5	9428.51	28.7	bb	2.87E+01
6	170922G3_7	Standard	28.7	4.65	8603.5	8603.48	28.7	bb	2.87E+01
7	170922G3_8	Standard	28.7	4.64	9217.4	9217.40	28.7	bb	2.87E+01
8	170922G3_9	Standard	28.7	4.65	9340.6	9340.62	28.7	bb	2.87E+01
9	170922G3_10	Standard	28.7	4.65	8743.8	8743.85	28.7	bb	2.87E+01

Compound 10: 13C4-PFOS

HIGH AREA	9433.222
LOW AREA	8603.481
RPD %	9.2

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





Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

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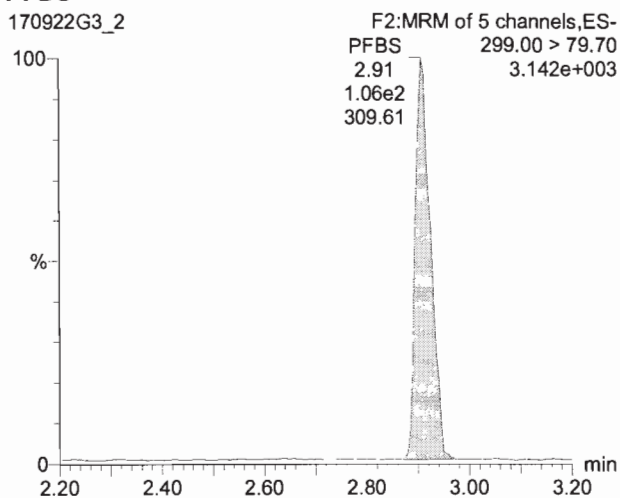
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

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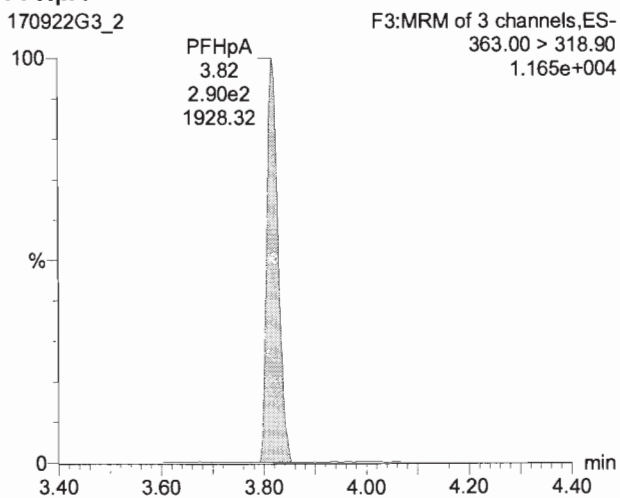
PFBS

170922G3_2



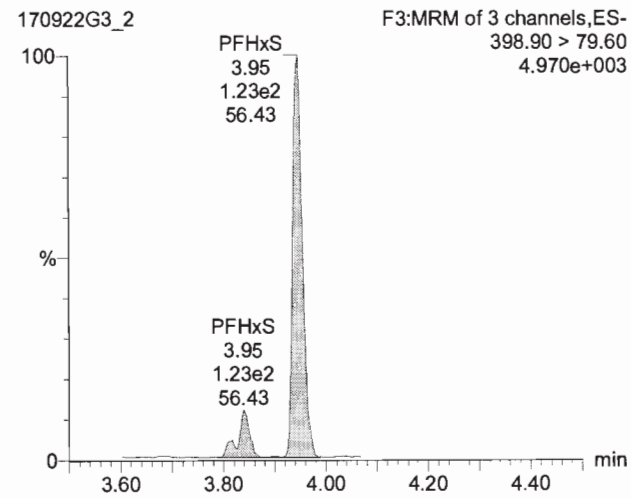
PFHpA

170922G3_2



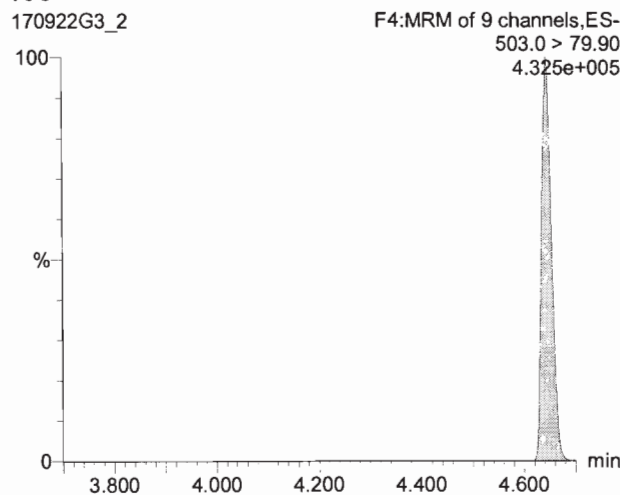
PFHxS

170922G3_2



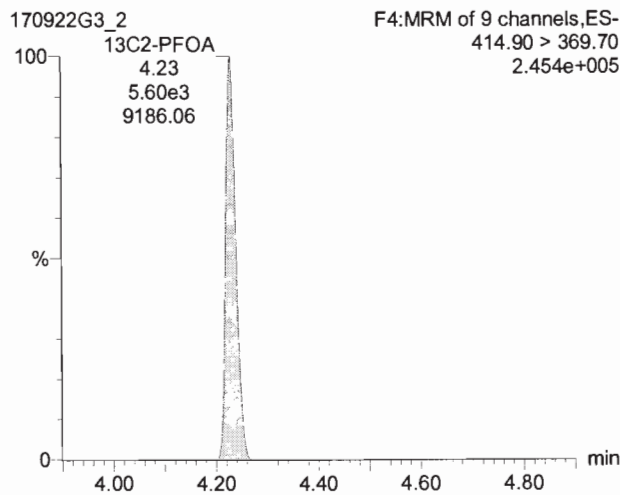
13C4-PFOS

170922G3_2



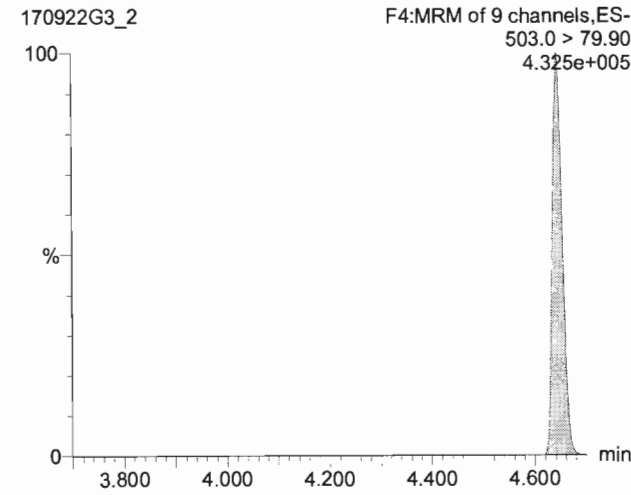
13C2-PFOA

170922G3_2



13C4-PFOS

170922G3_2



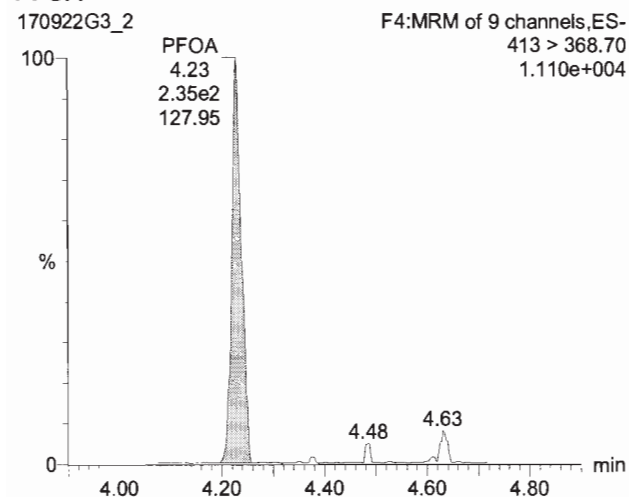
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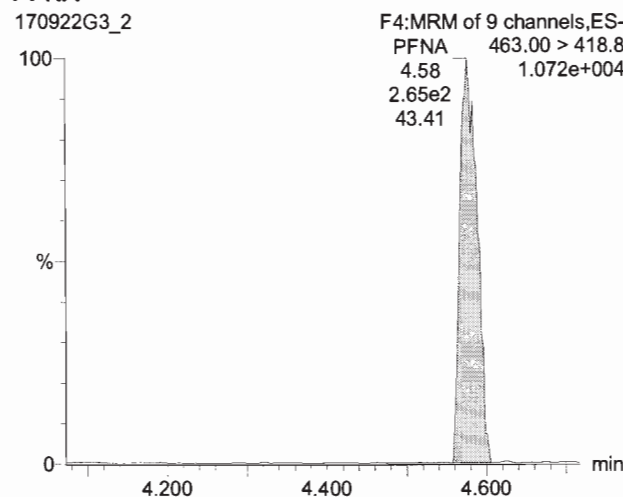
Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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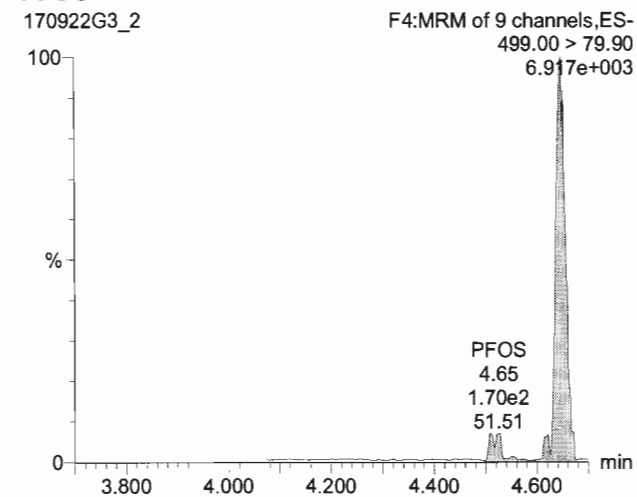
PFOA



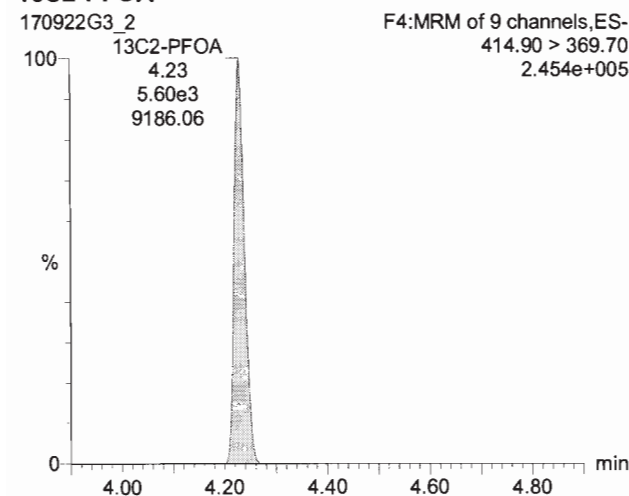
PFNA



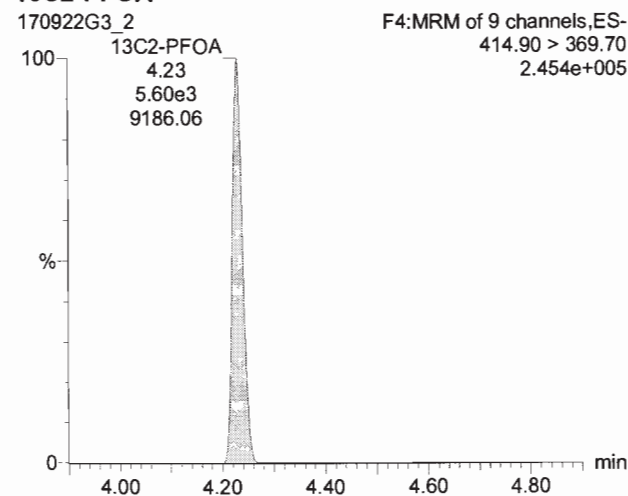
PFOS



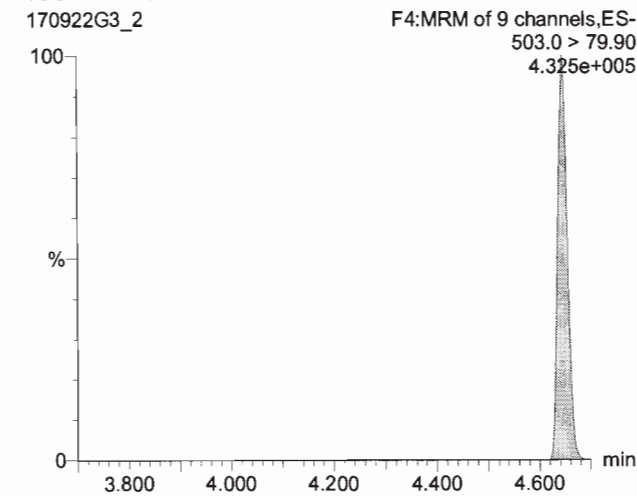
13C2-PFOA



13C2-PFOA



13C4-PFOS



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

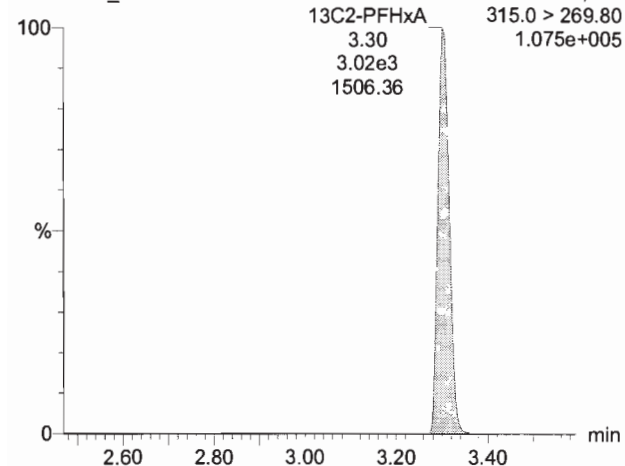
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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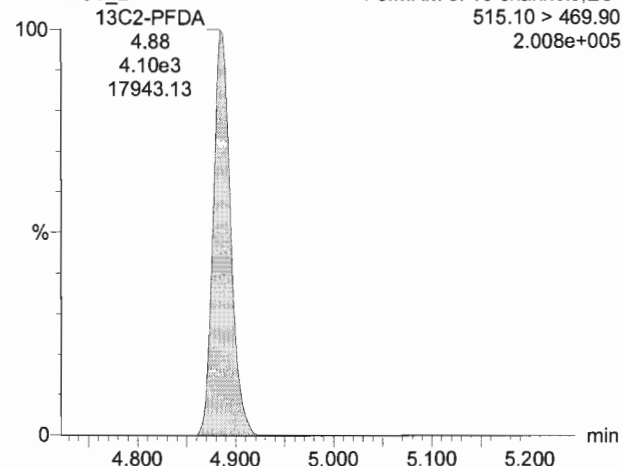
13C2-PFHxA

170922G3_2



13C2-PFDA

170922G3_2



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

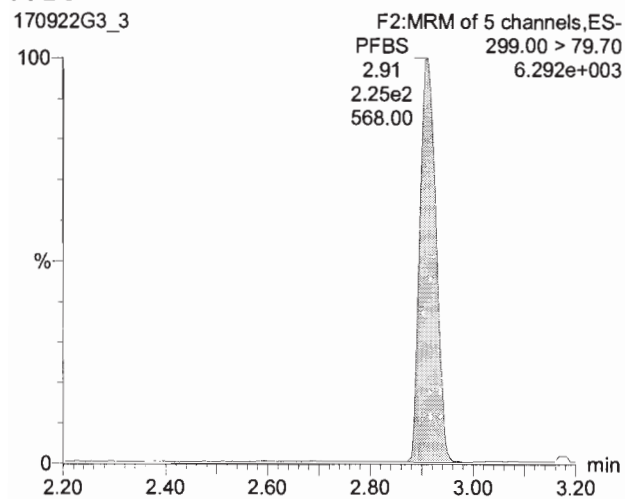
Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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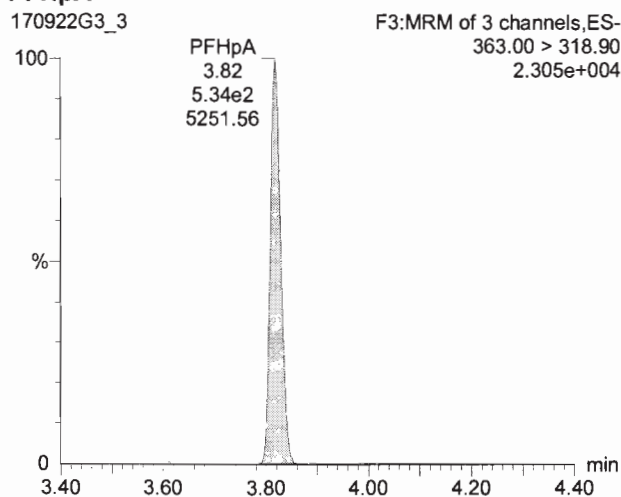
PFBS

170922G3_3



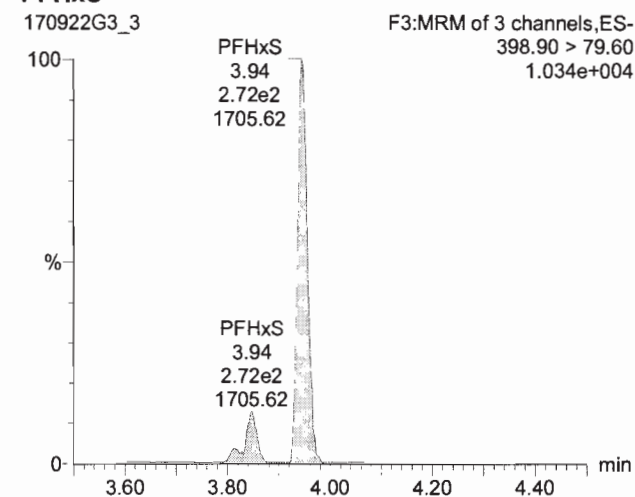
PFHpA

170922G3_3



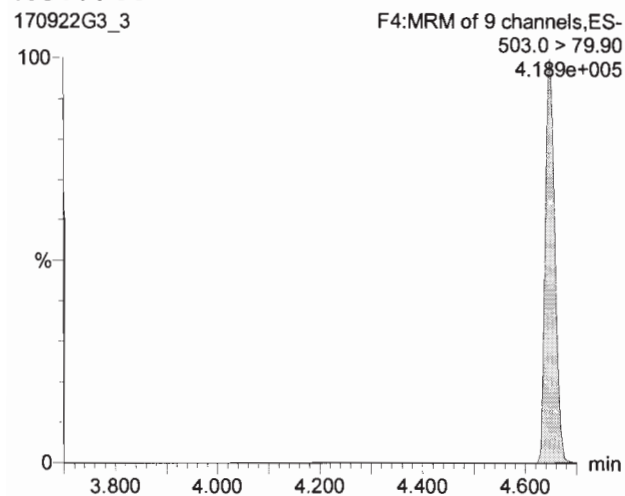
PFHxS

170922G3_3



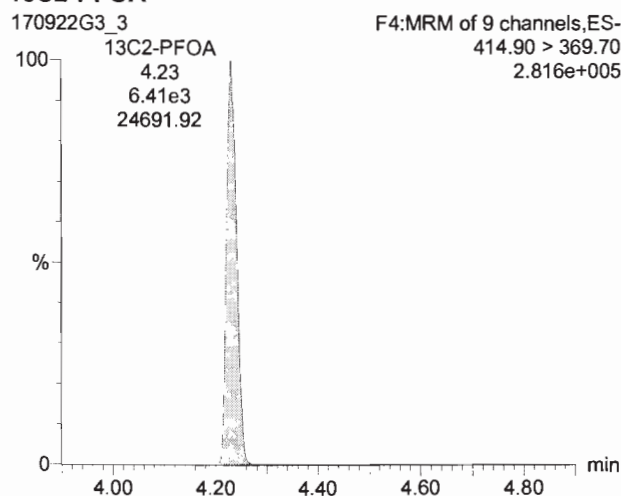
13C4-PFOS

170922G3_3



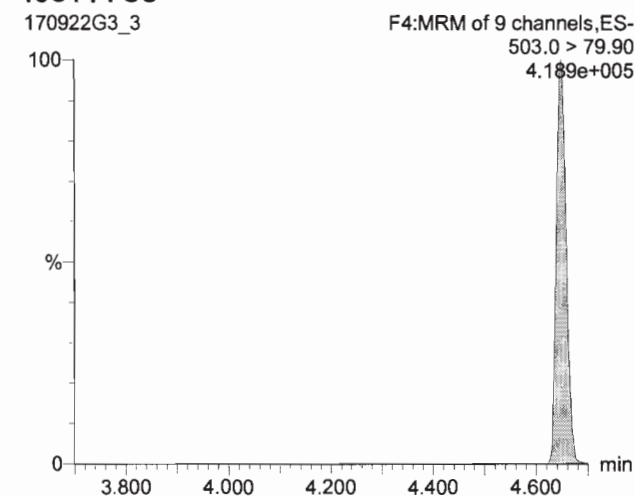
13C2-PFOA

170922G3_3



13C4-PFOS

170922G3_3



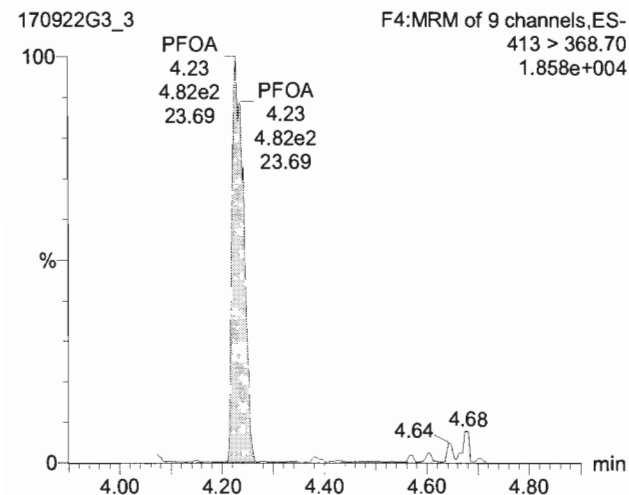
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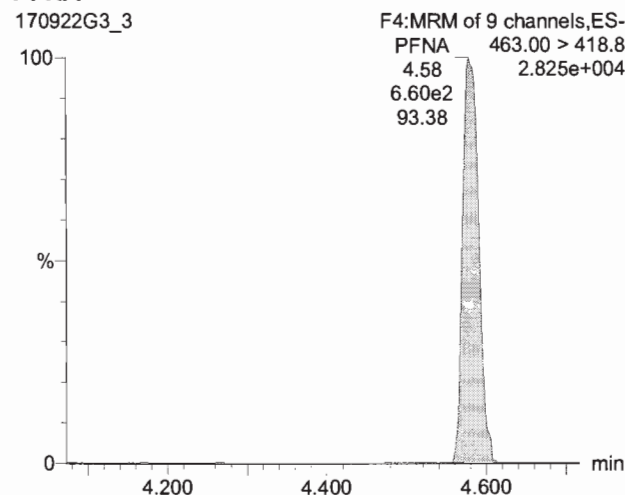
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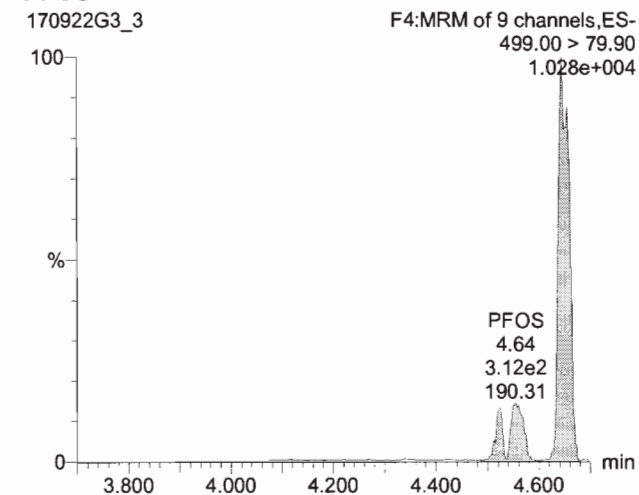
PFOA



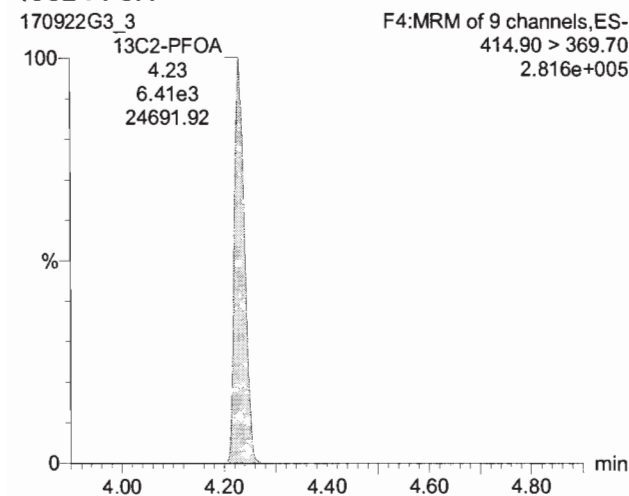
PFNA



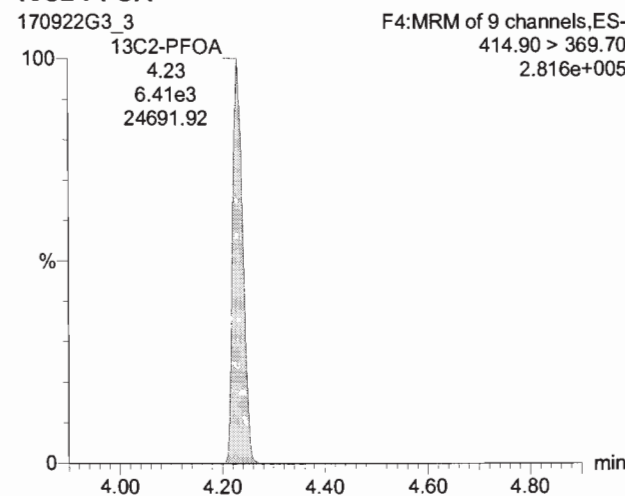
PFOS



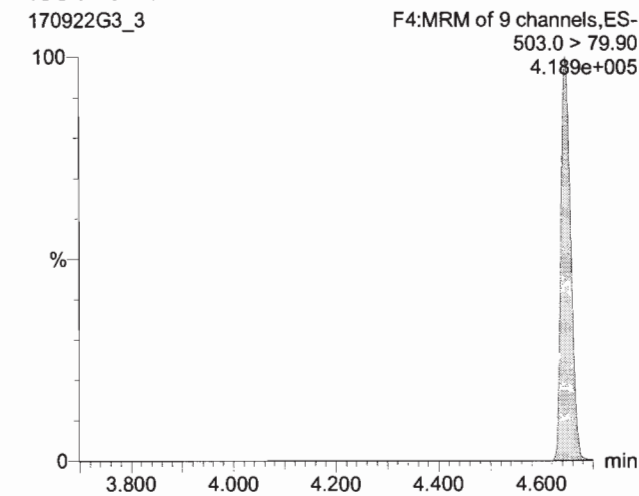
13C2-PFOA



13C2-PFOA



13C4-PFOS



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

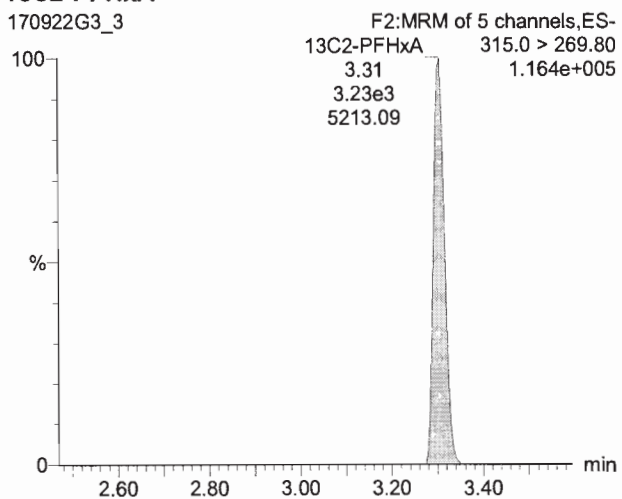
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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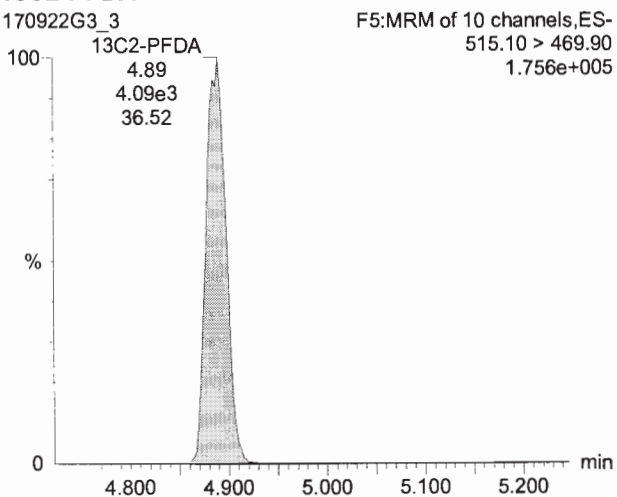
13C2-PFHxA

170922G3_3



13C2-PFDA

170922G3_3



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

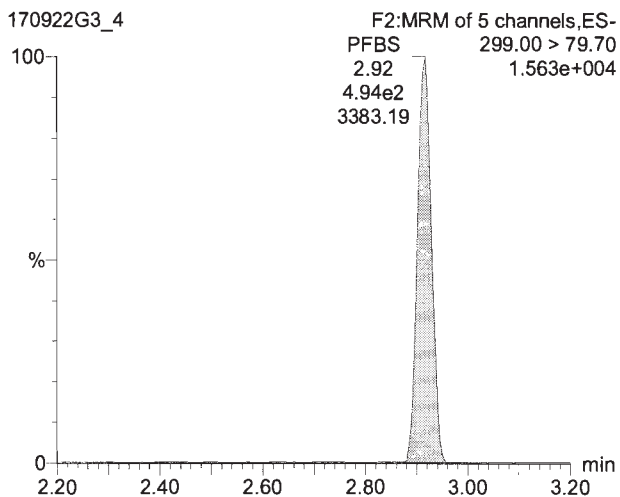
Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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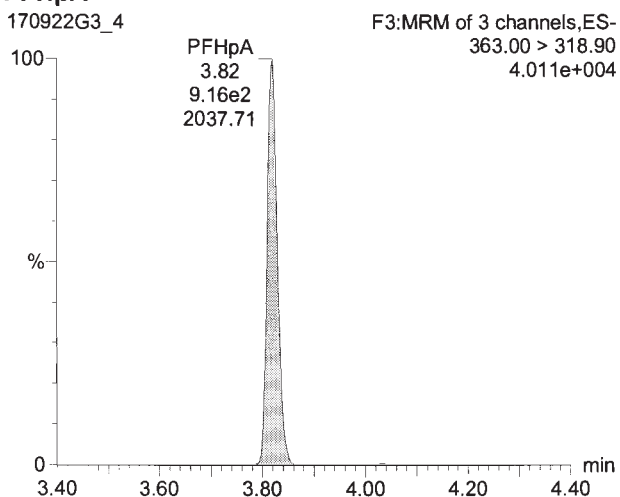
PFBS

170922G3_4



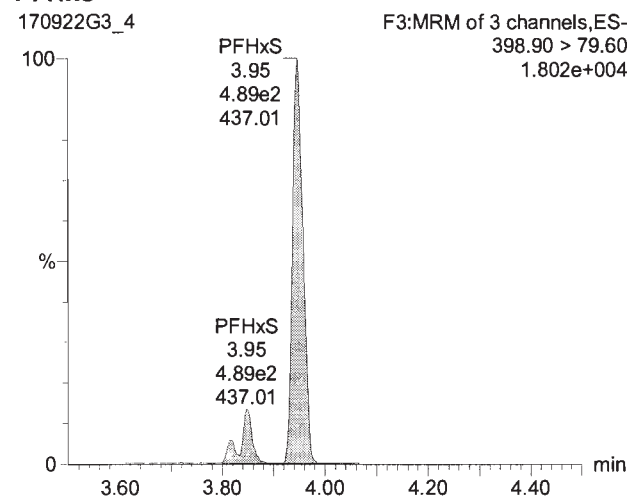
PFHpA

170922G3_4



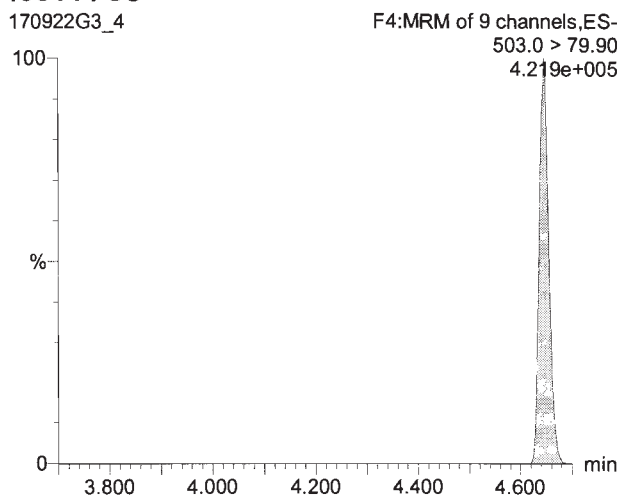
PFHxS

170922G3_4



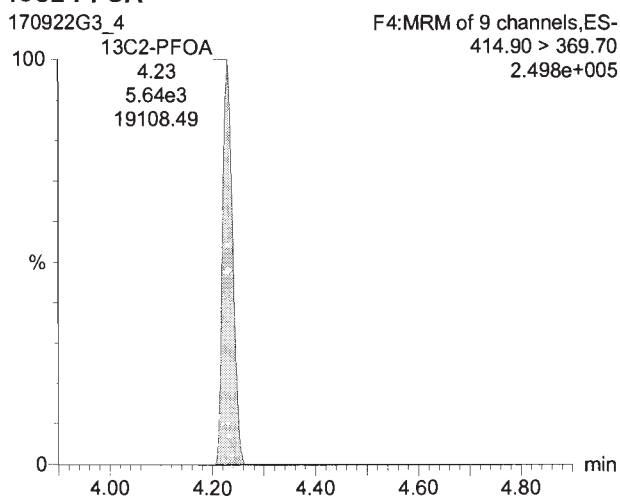
13C4-PFOS

170922G3_4



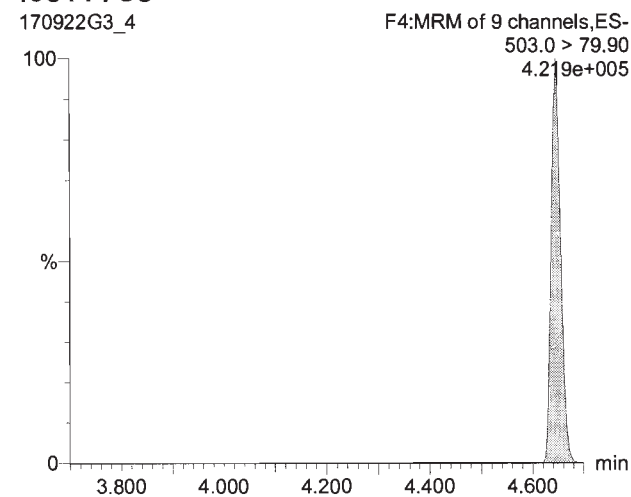
13C2-PFOA

170922G3_4



13C4-PFOS

170922G3_4



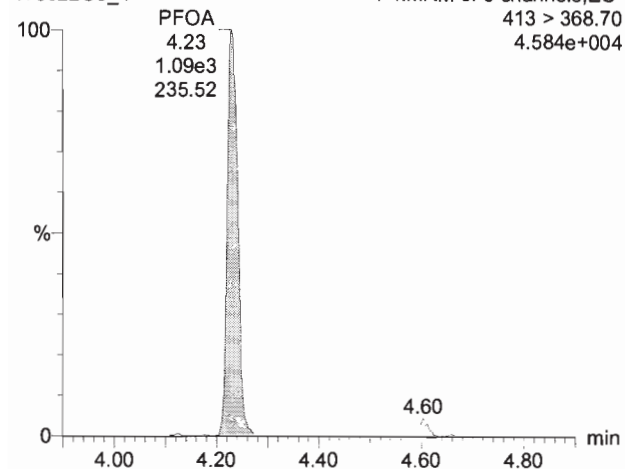
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Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_4, Date: 22-Sep-2017, Time: 22:40:54, ID: ST170922G3-3 PFC CS-1 537 17H2816, Description: PFC CS-1 537 17H2816

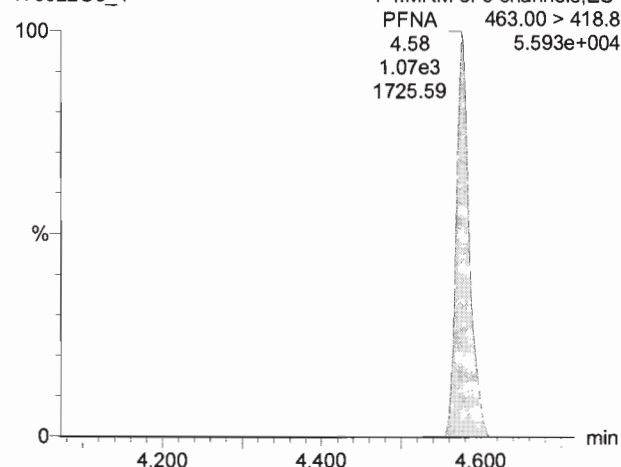
PFOA

170922G3_4



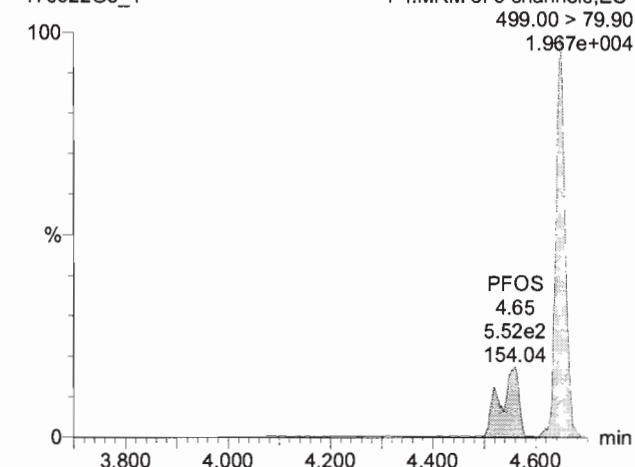
PFNA

170922G3_4



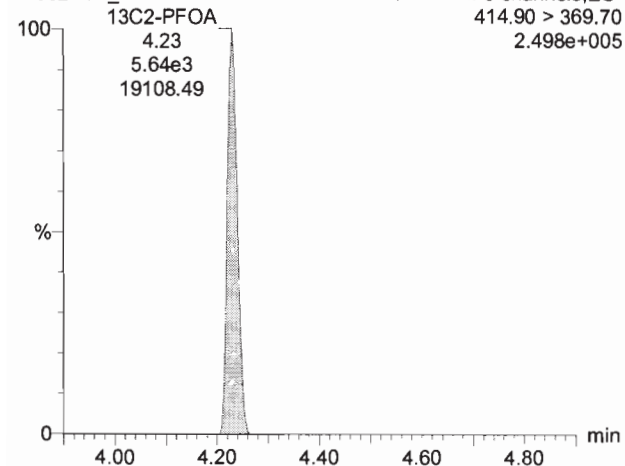
PFOS

170922G3_4



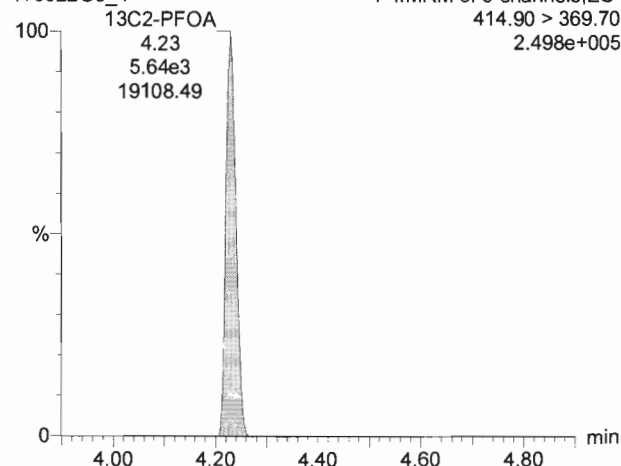
13C2-PFOA

170922G3_4



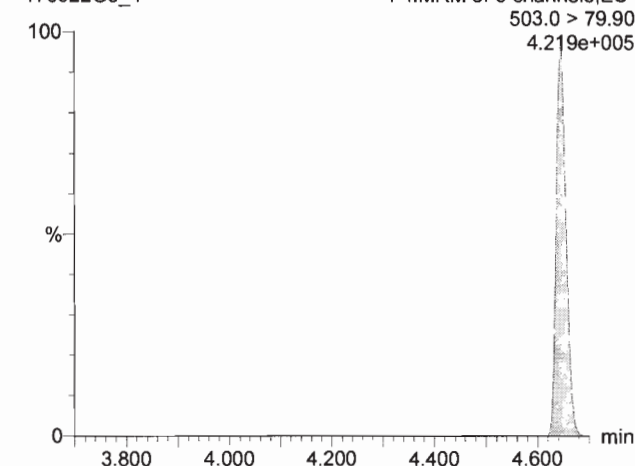
13C2-PFOA

170922G3_4



13C4-PFOS

170922G3_4



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

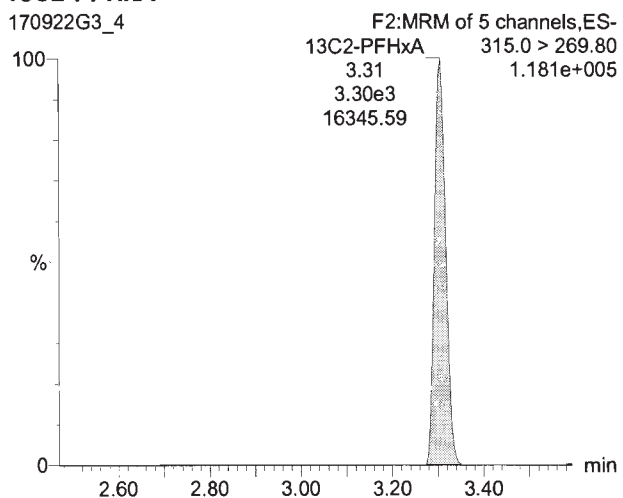
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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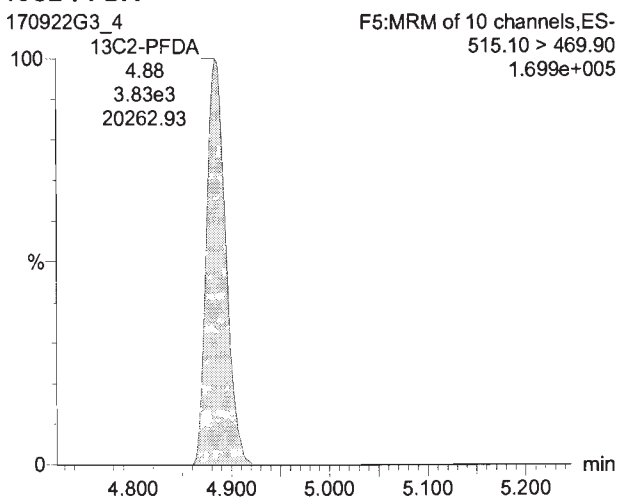
13C2-PFHxA

170922G3_4



13C2-PFDA

170922G3_4



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

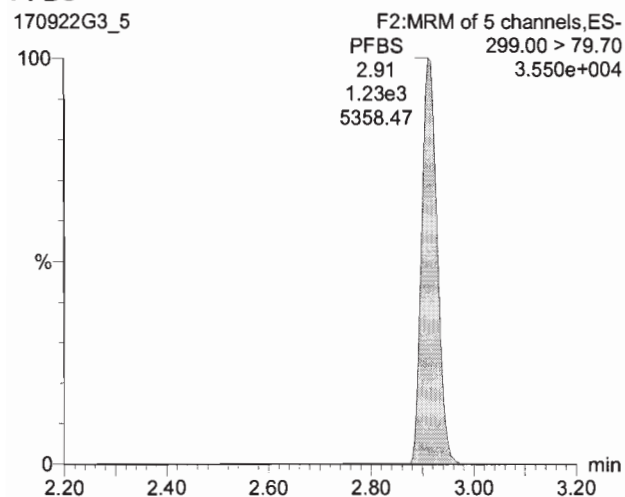
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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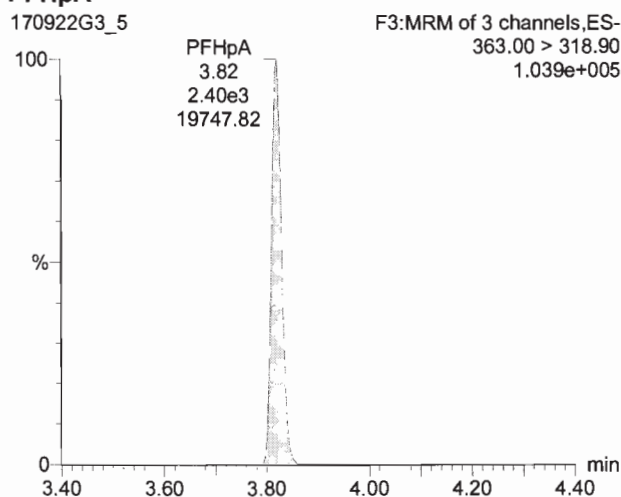
PFBS

170922G3_5



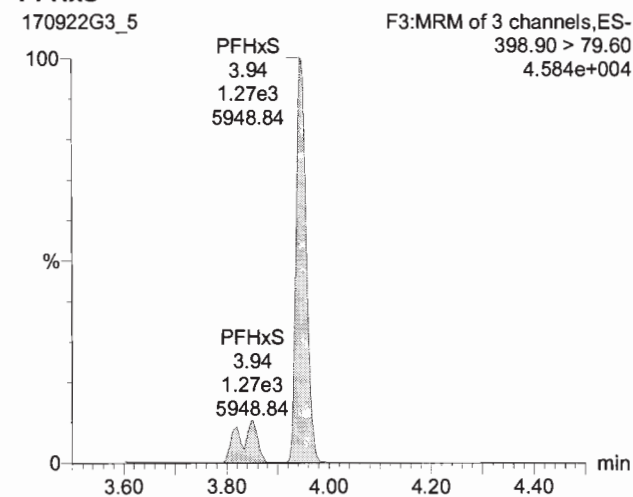
PFHpA

170922G3_5



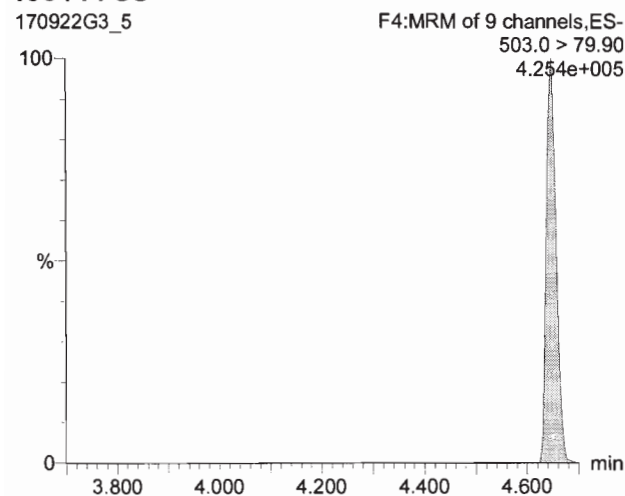
PFHxS

170922G3_5



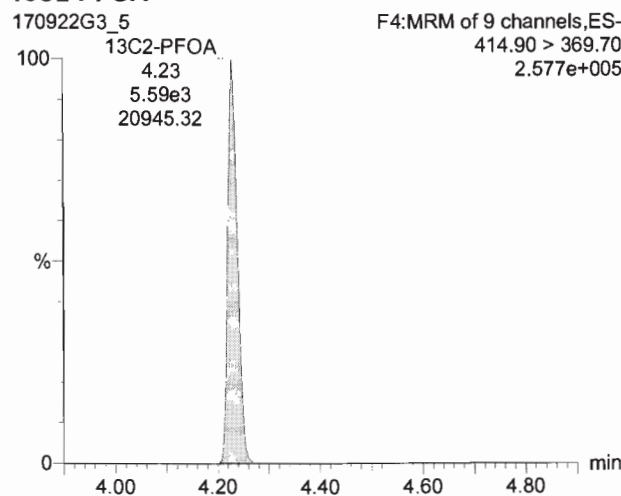
13C4-PFOS

170922G3_5



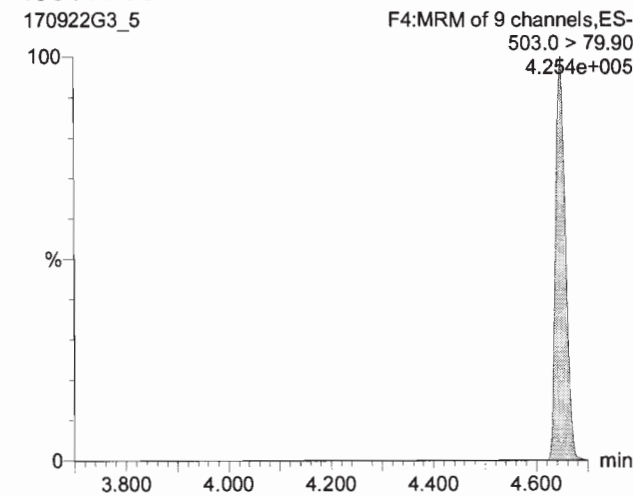
13C2-PFOA

170922G3_5



13C4-PFOS

170922G3_5



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

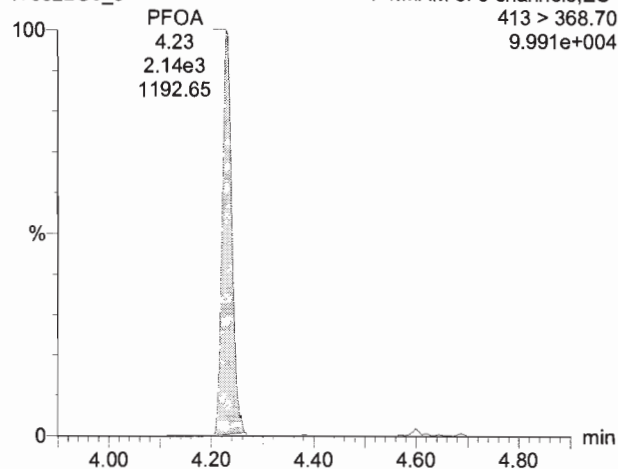
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PFOA

170922G3_5

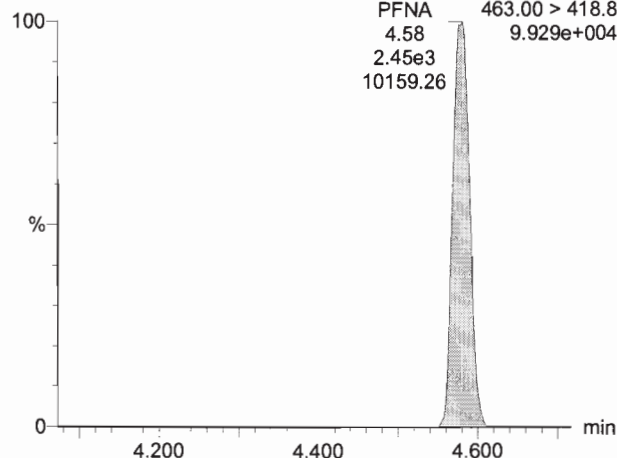
F4:MRM of 9 channels,ES-
413 > 368.70
9.991e+004



PFNA

170922G3_5

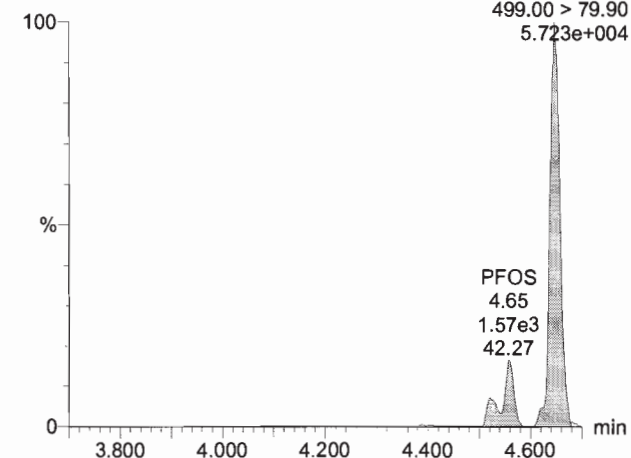
F4:MRM of 9 channels,ES-
PFNA 463.00 > 418.8
4.58 9.929e+004
2.45e3
10159.26



PFOS

170922G3_5

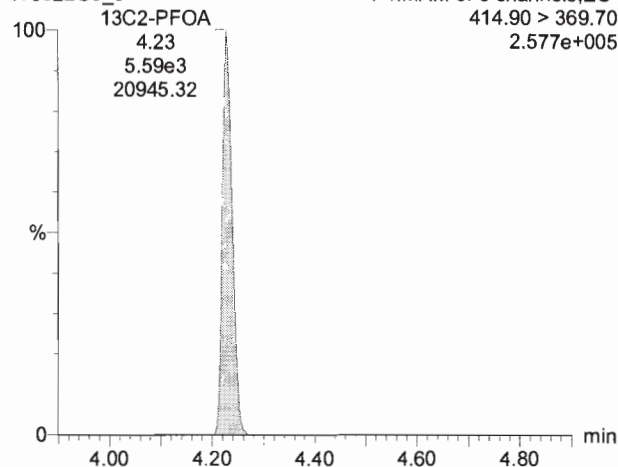
F4:MRM of 9 channels,ES-
499.00 > 79.90
5.723e+004



13C2-PFOA

170922G3_5

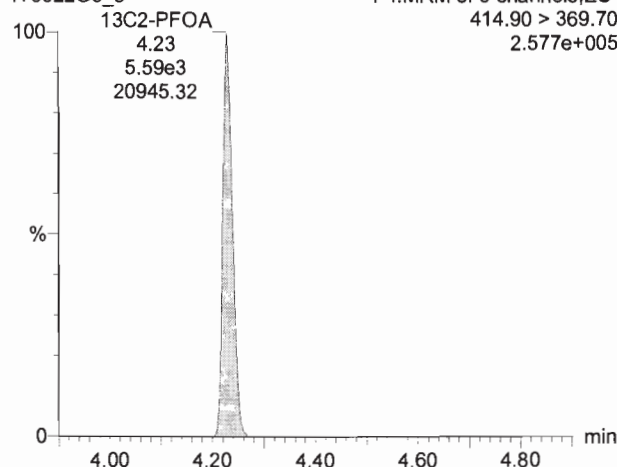
F4:MRM of 9 channels,ES-
414.90 > 369.70
2.577e+005



13C2-PFOA

170922G3_5

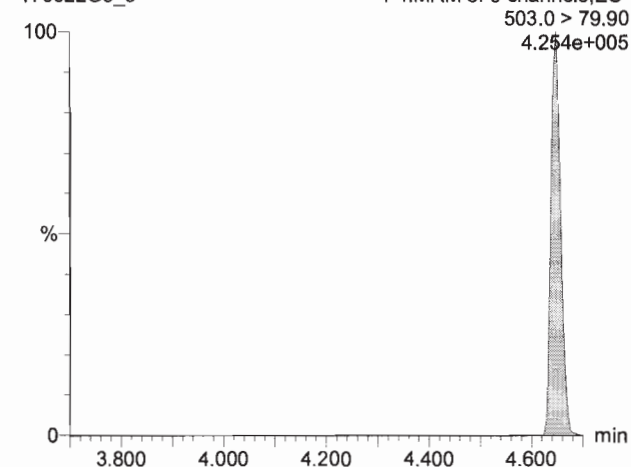
F4:MRM of 9 channels,ES-
414.90 > 369.70
2.577e+005



13C4-PFOS

170922G3_5

F4:MRM of 9 channels,ES-
503.0 > 79.90
4.254e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

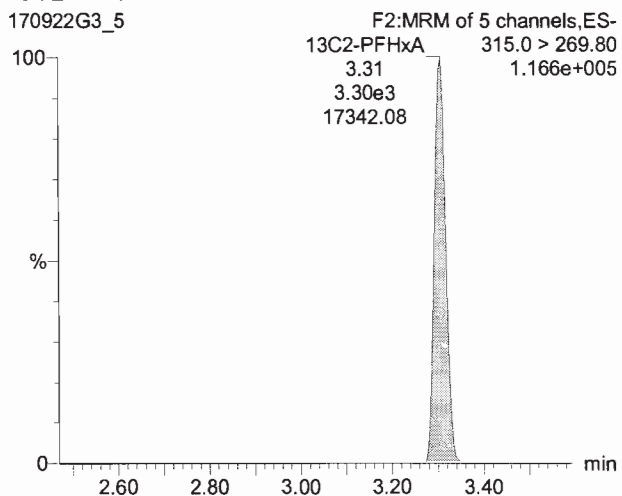
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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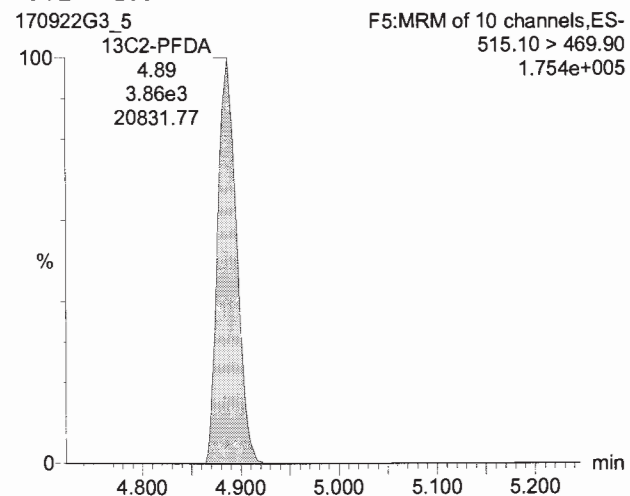
13C2-PFHxA

170922G3_5



13C2-PFDA

170922G3_5



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

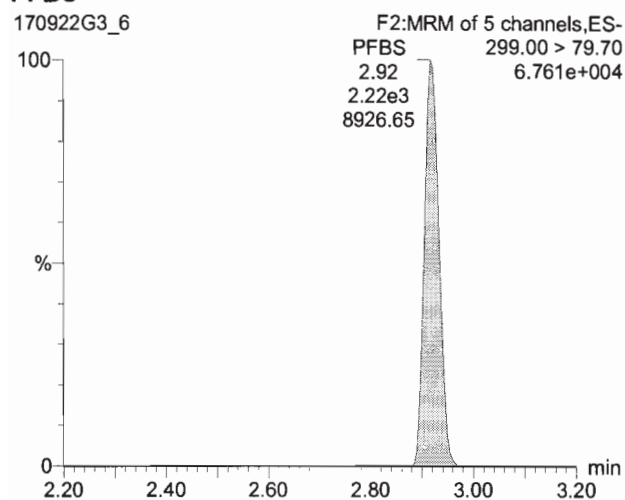
Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_6, Date: 22-Sep-2017, Time: 23:05:52, ID: ST170922G3-5 PFC CS1 537 17H2818, Description: PFC CS1 537 17H2818

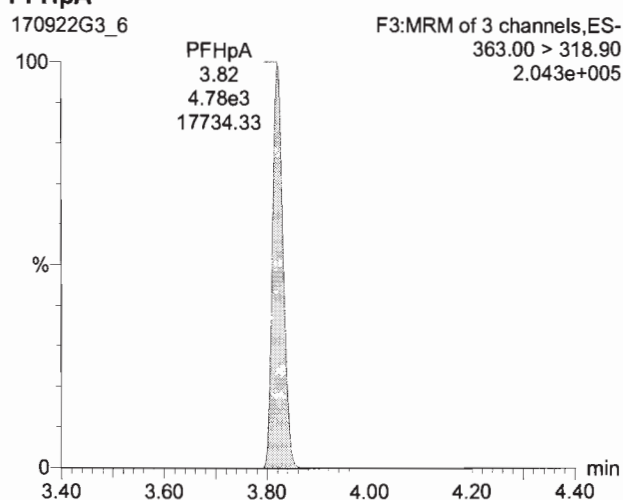
PFBS

170922G3_6



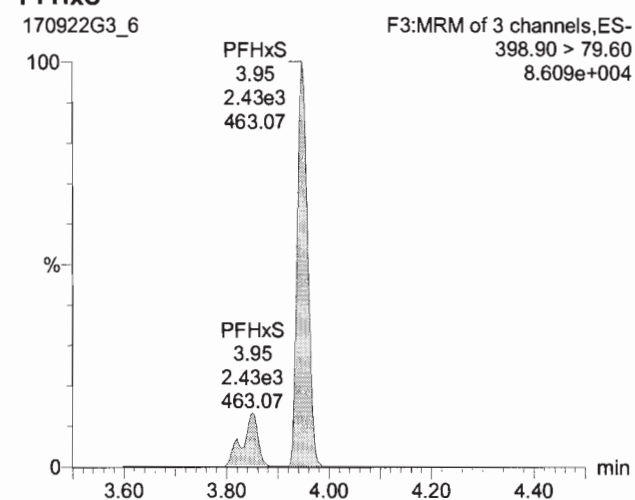
PFHpA

170922G3_6



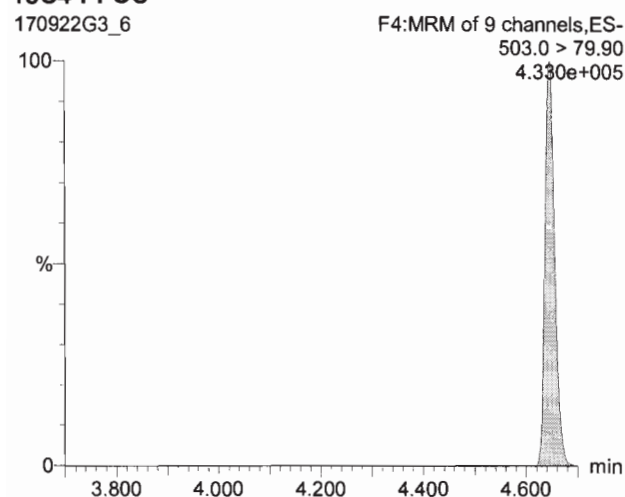
PFHxS

170922G3_6



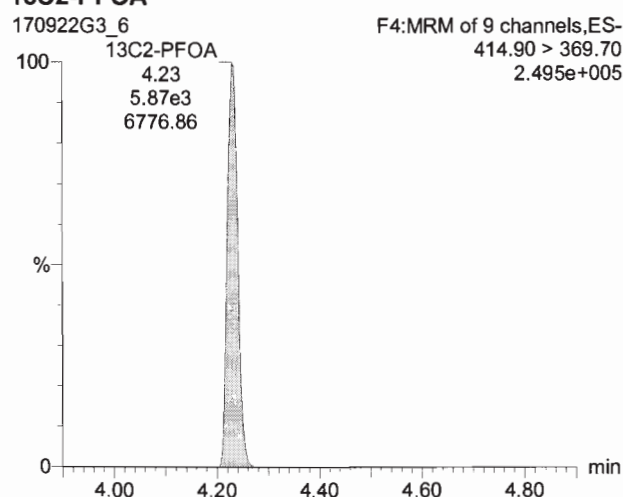
13C4-PFOS

170922G3_6



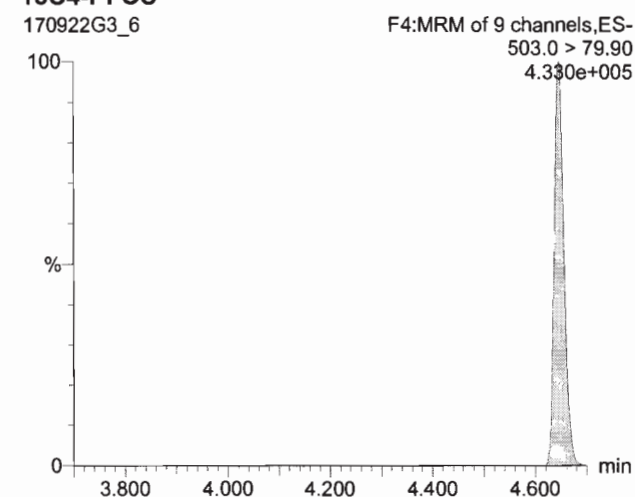
13C2-PFOA

170922G3_6



13C4-PFOS

170922G3_6

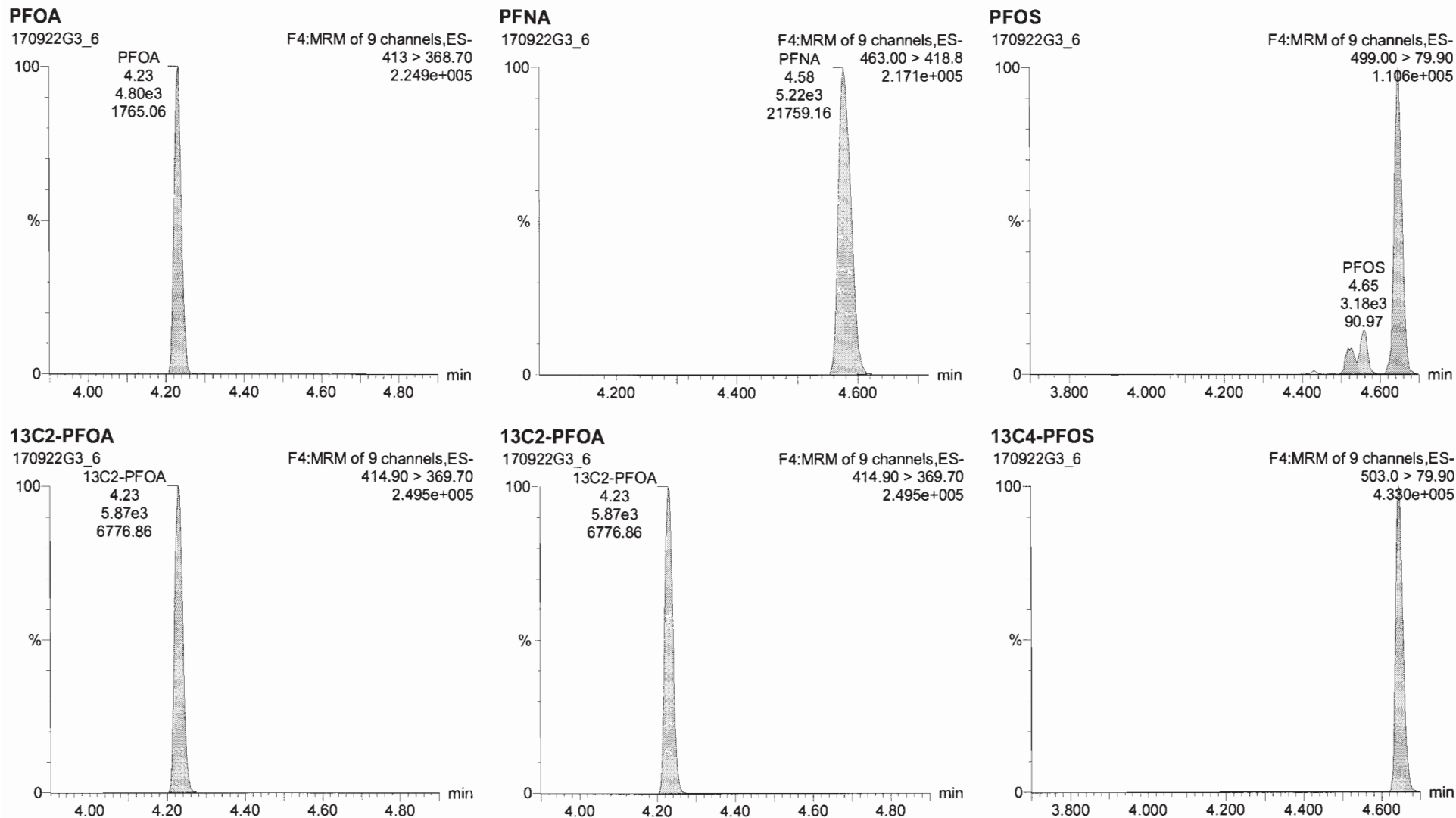


Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_6, Date: 22-Sep-2017, Time: 23:05:52, ID: ST170922G3-5 PFC CS1 537 17H2818, Description: PFC CS1 537 17H2818



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

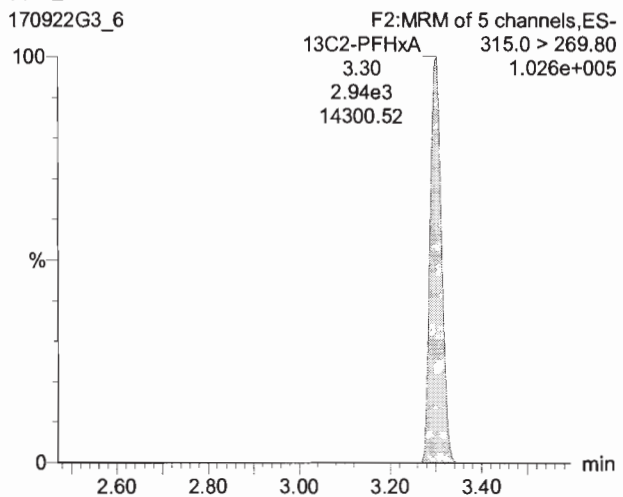
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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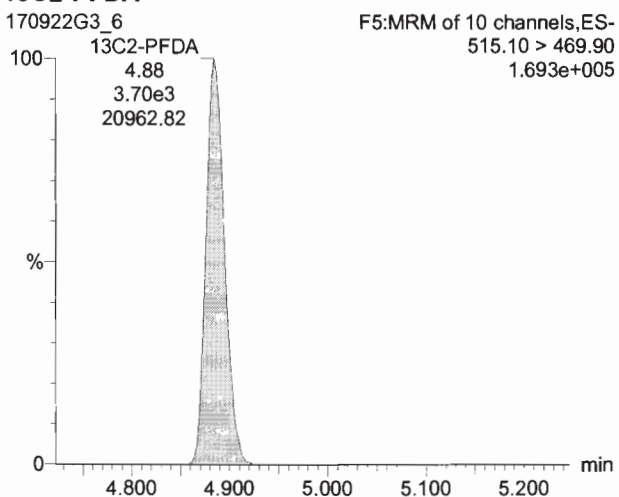
13C2-PFHxA

170922G3_6



13C2-PFDA

170922G3_6



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

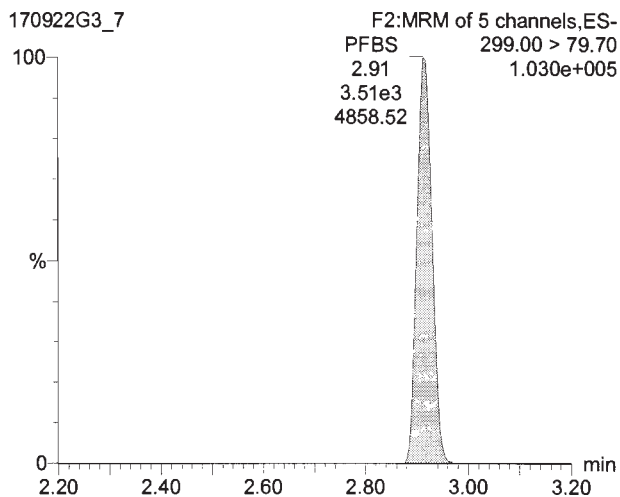
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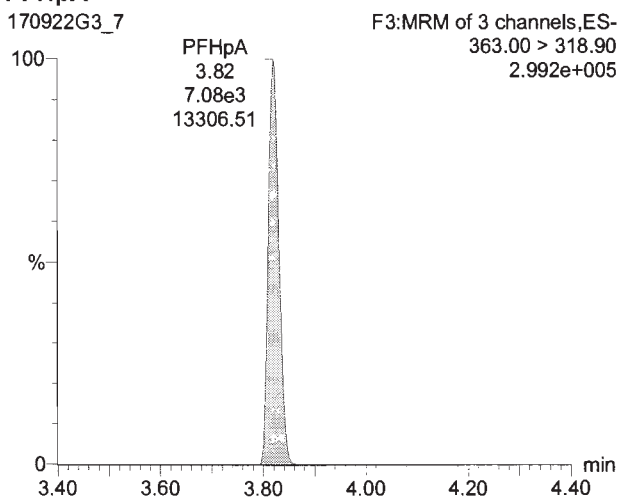
PFBS

170922G3_7



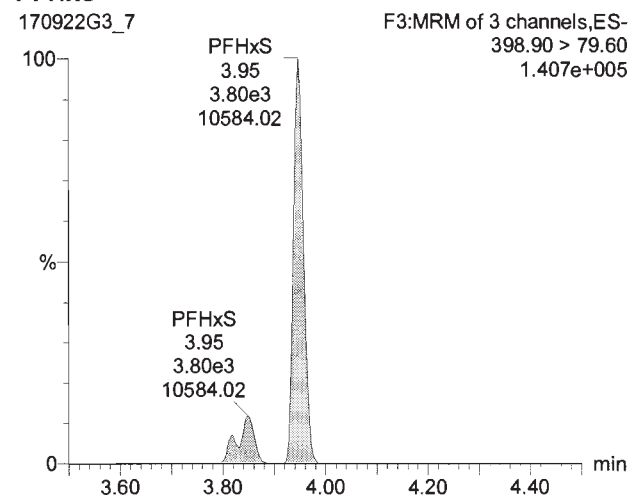
PFHpA

170922G3_7



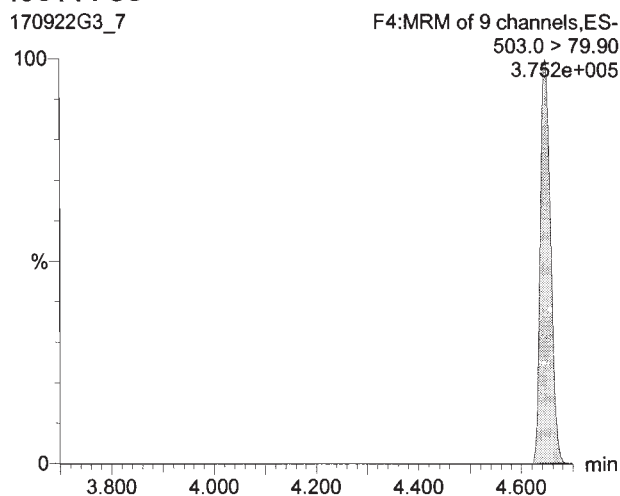
PFHxS

170922G3_7



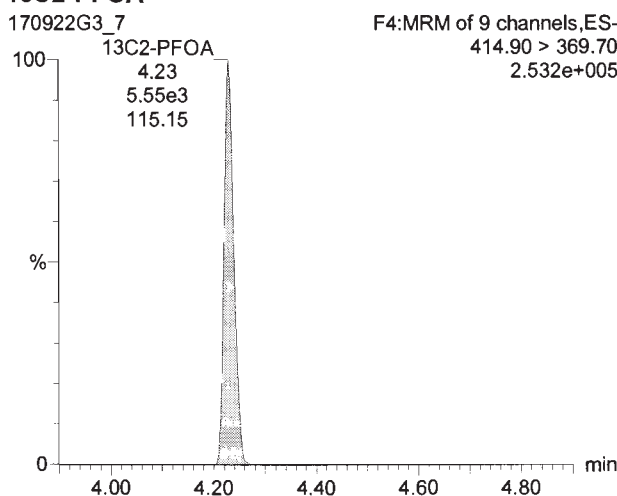
13C4-PFOS

170922G3_7



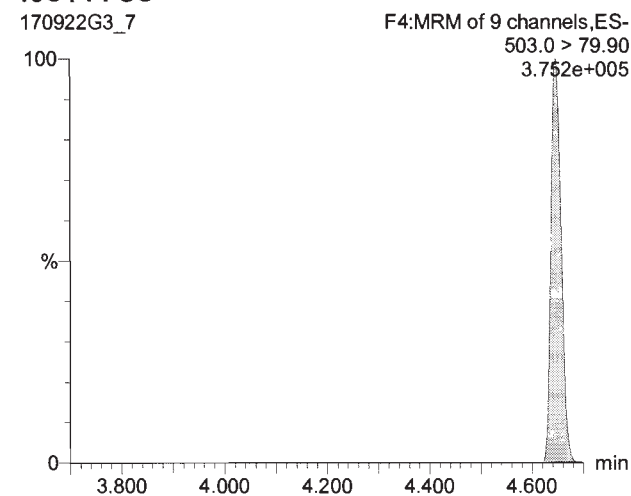
13C2-PFOA

170922G3_7



13C4-PFOS

170922G3_7



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

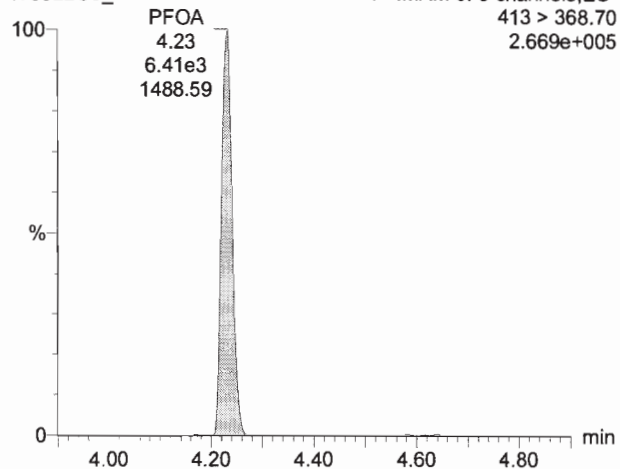
Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_7, Date: 22-Sep-2017, Time: 23:18:23, ID: ST170922G3-6 PFC CS2 537 17H2819, Description: PFC CS2 537 17H2819

PFOA

170922G3_7

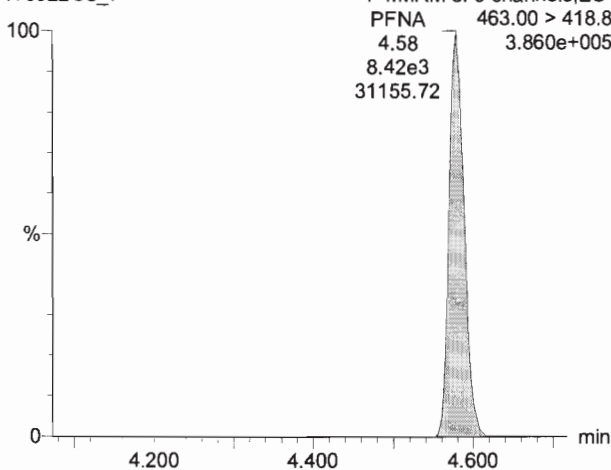
F4:MRM of 9 channels,ES-
413 > 368.70
2.669e+005



PFNA

170922G3_7

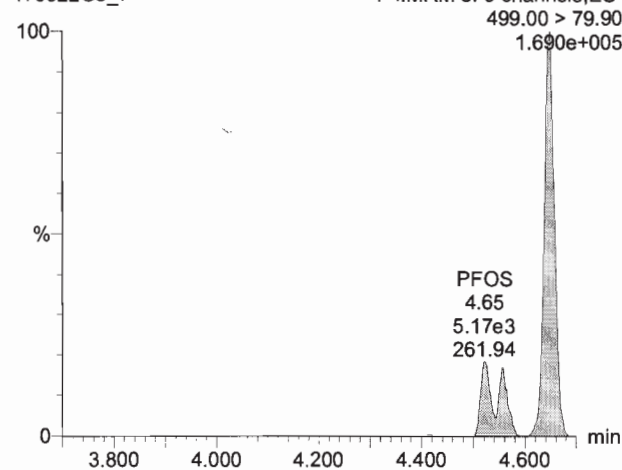
F4:MRM of 9 channels,ES-
PFNA 463.00 > 418.8
4.58 3.860e+005
8.42e3
31155.72



PFOS

170922G3_7

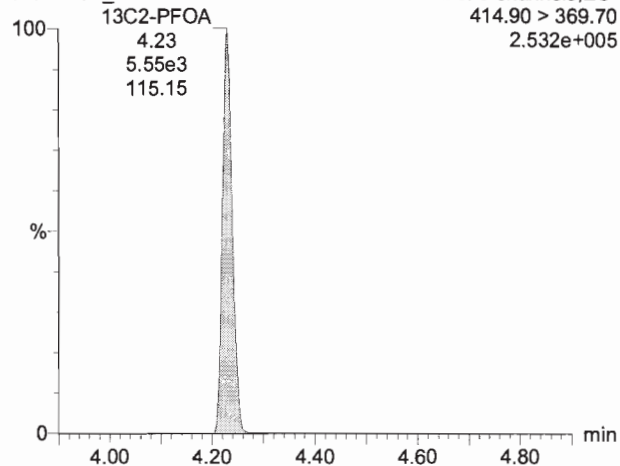
F4:MRM of 9 channels,ES-
499.00 > 79.90
1.690e+005



13C2-PFOA

170922G3_7

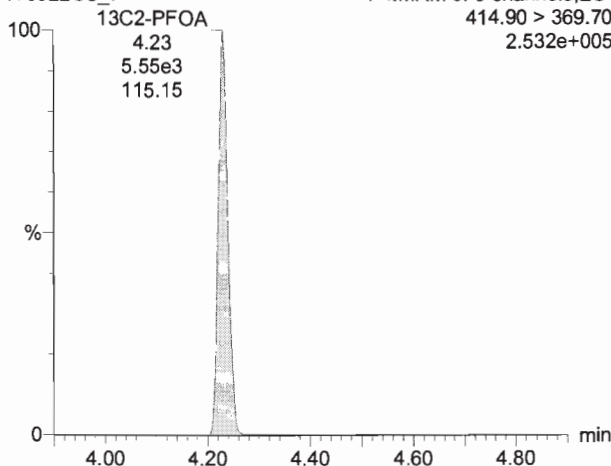
F4:MRM of 9 channels,ES-
414.90 > 369.70
2.532e+005



13C2-PFOA

170922G3_7

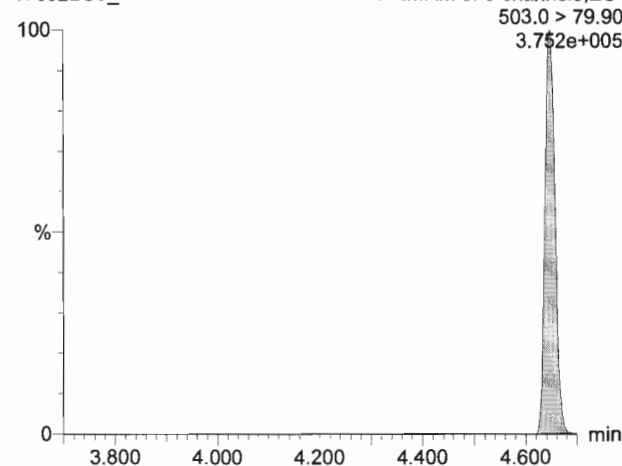
F4:MRM of 9 channels,ES-
414.90 > 369.70
2.532e+005



13C4-PFOS

170922G3_7

F4:MRM of 9 channels,ES-
503.0 > 79.90
3.752e+005



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

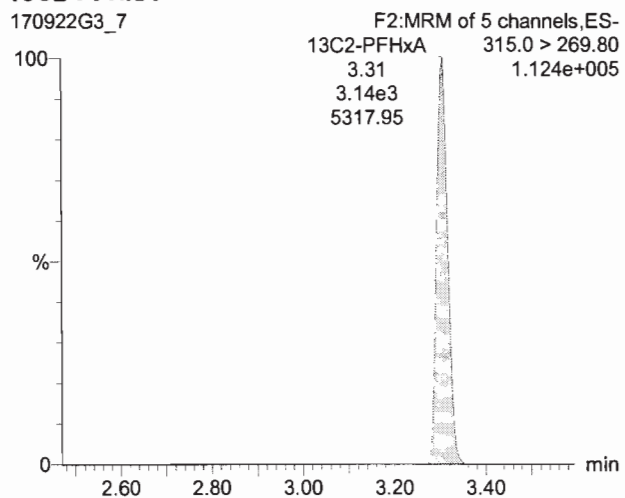
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_7, Date: 22-Sep-2017, Time: 23:18:23, ID: ST170922G3-6 PFC CS2 537 17H2819, Description: PFC CS2 537 17H2819

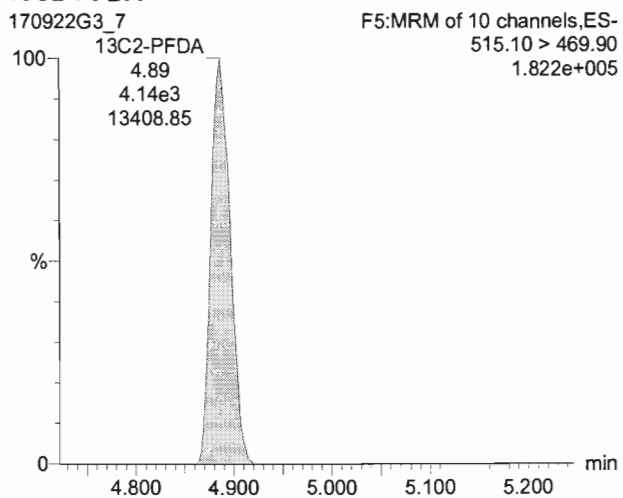
13C2-PFHxA

170922G3_7



13C2-PFDA

170922G3_7



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

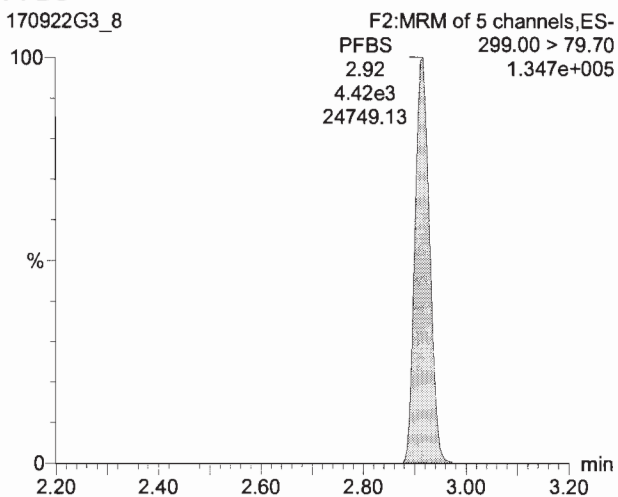
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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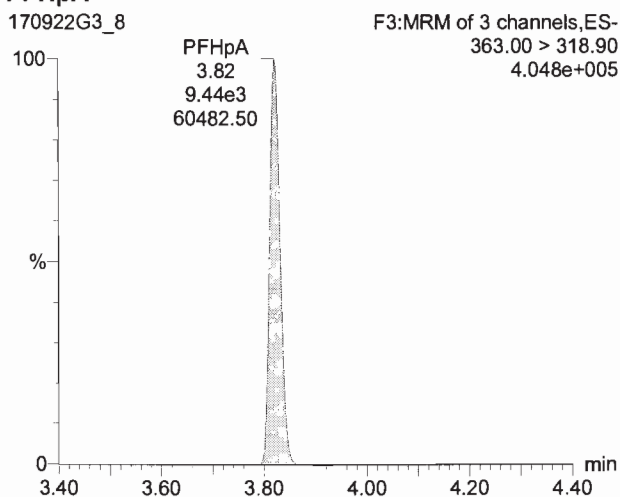
PFBS

170922G3_8



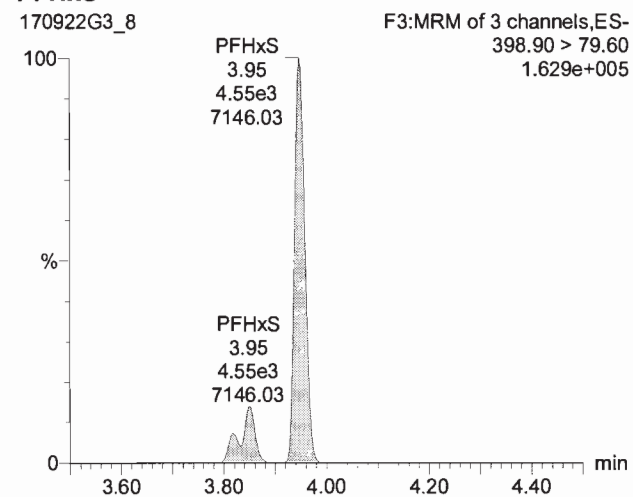
PFHpA

170922G3_8



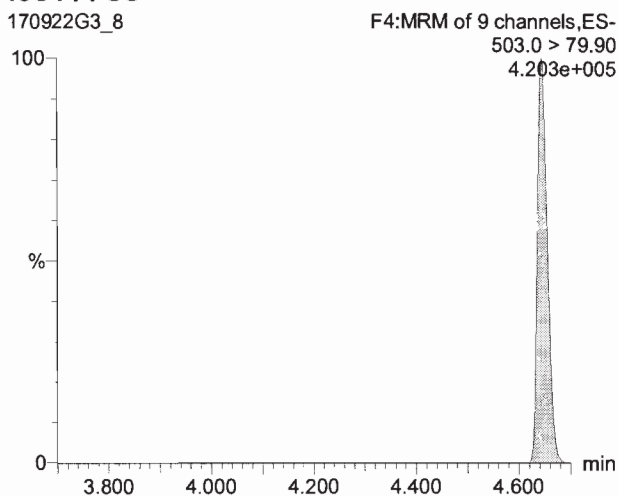
PFHxS

170922G3_8



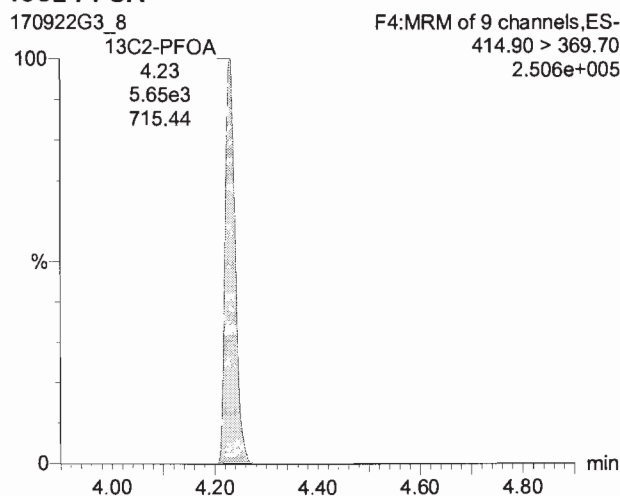
13C4-PFOS

170922G3_8



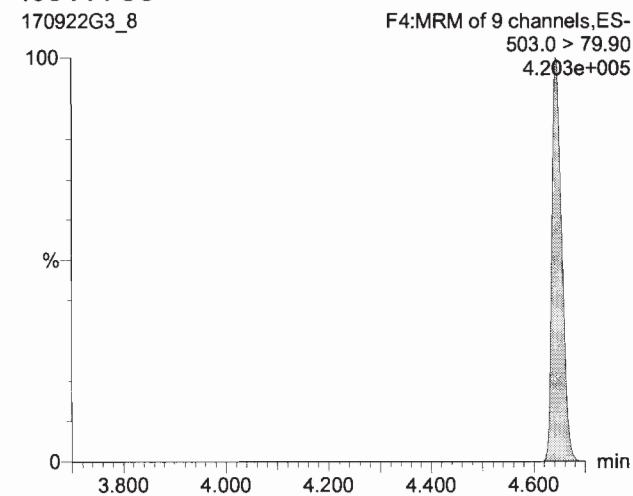
13C2-PFOA

170922G3_8



13C4-PFOS

170922G3_8

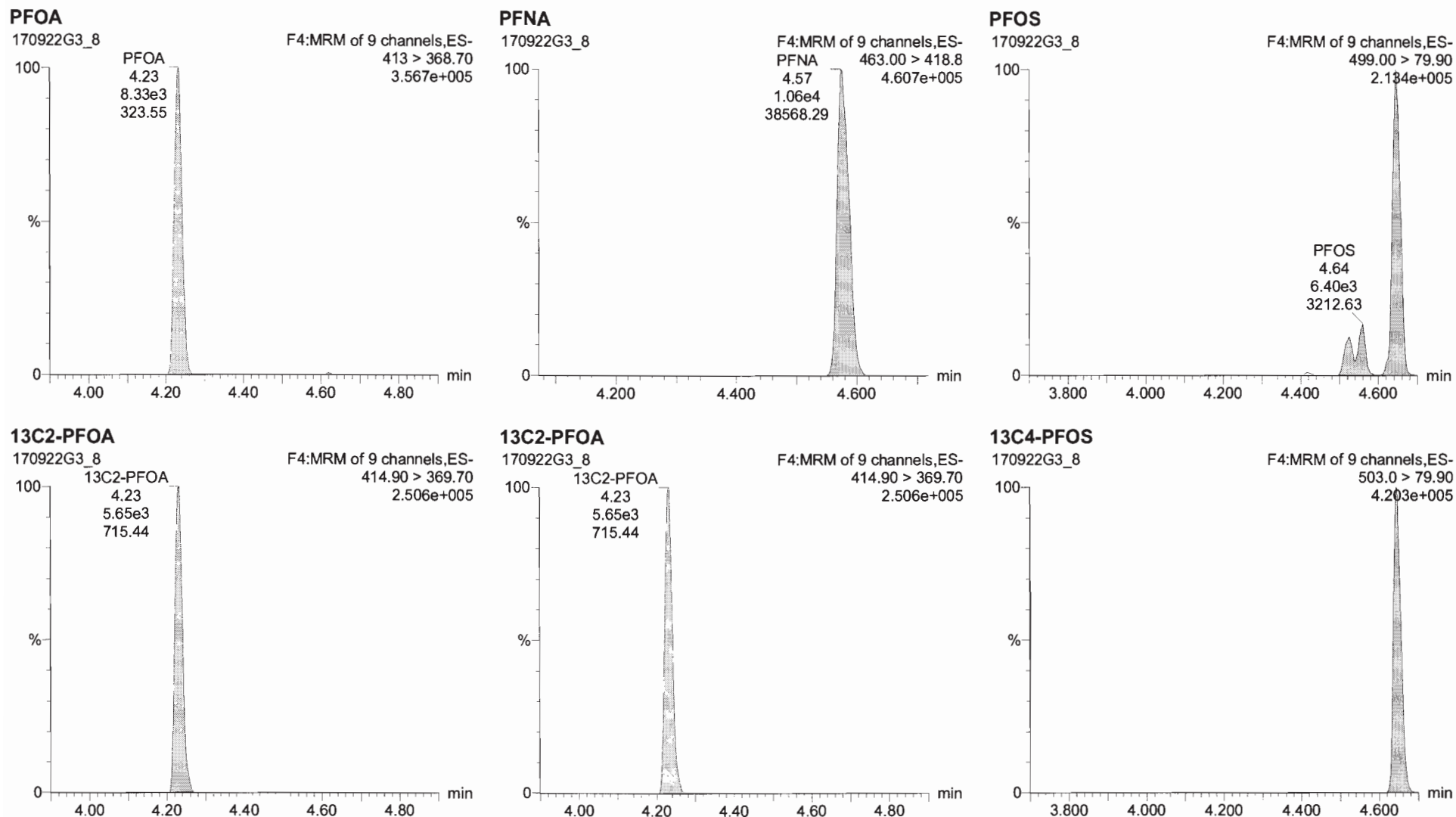


Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_8, Date: 22-Sep-2017, Time: 23:30:49, ID: ST170922G3-7 PFC CS3 537 17H2820, Description: PFC CS3 537 17H2820



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

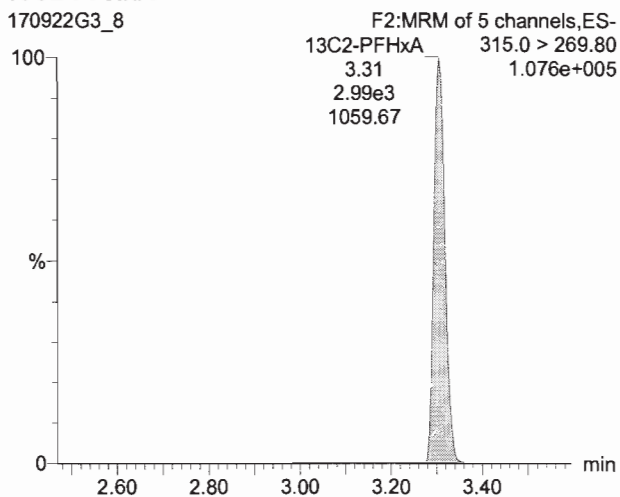
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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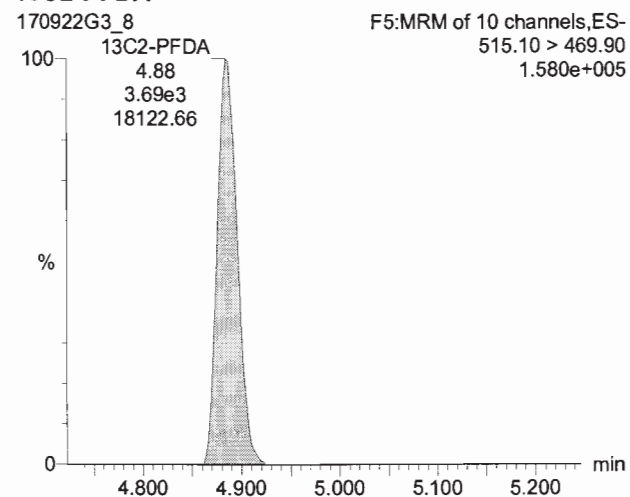
13C2-PFHxA

170922G3_8



13C2-PFDA

170922G3_8



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

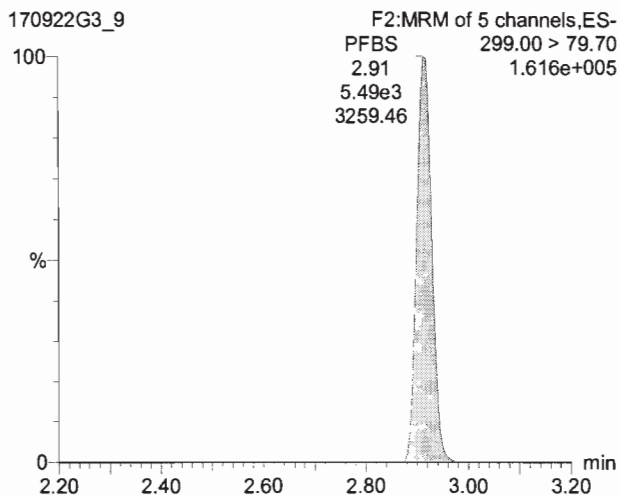
Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

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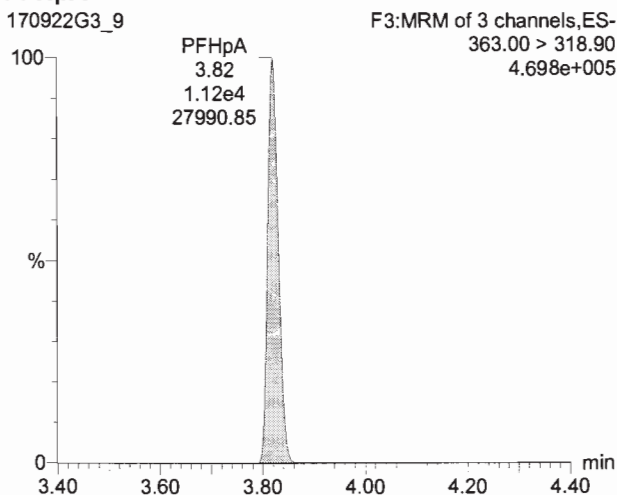
PFBS

170922G3_9



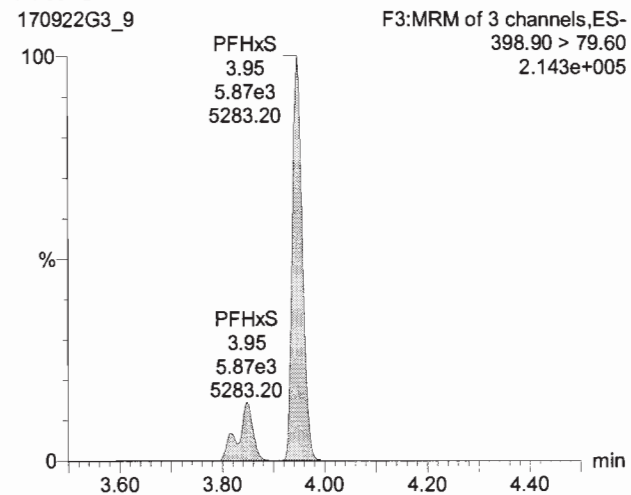
PFHpA

170922G3_9



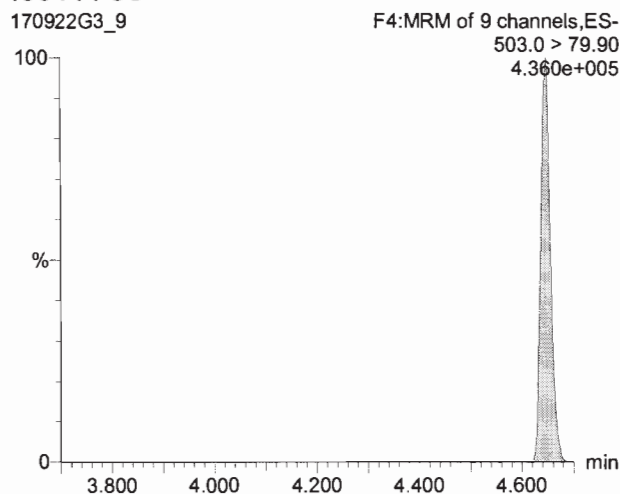
PFHxS

170922G3_9



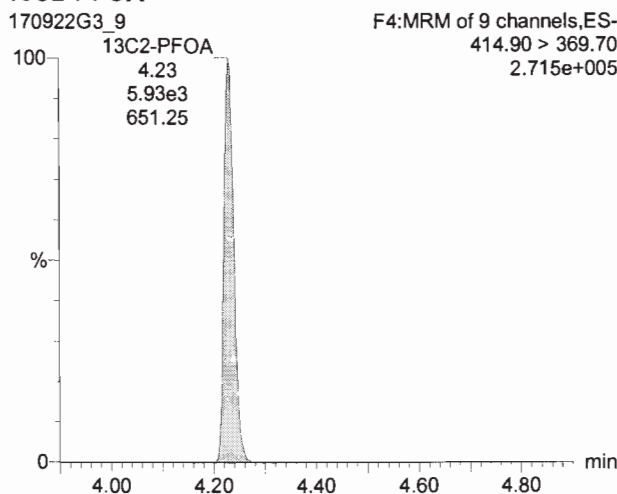
13C4-PFOS

170922G3_9



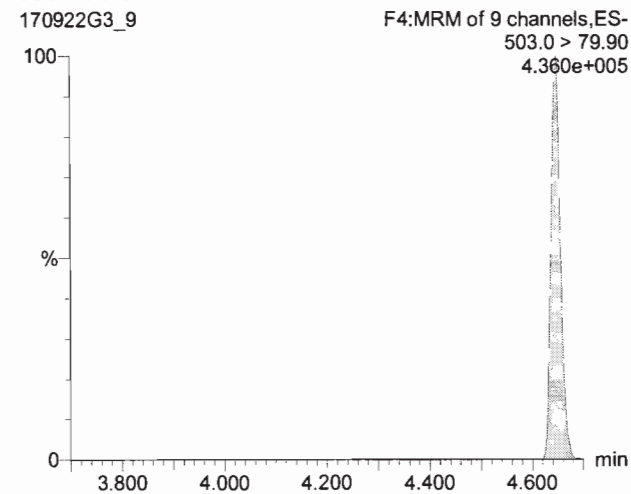
13C2-PFOA

170922G3_9



13C4-PFOS

170922G3_9

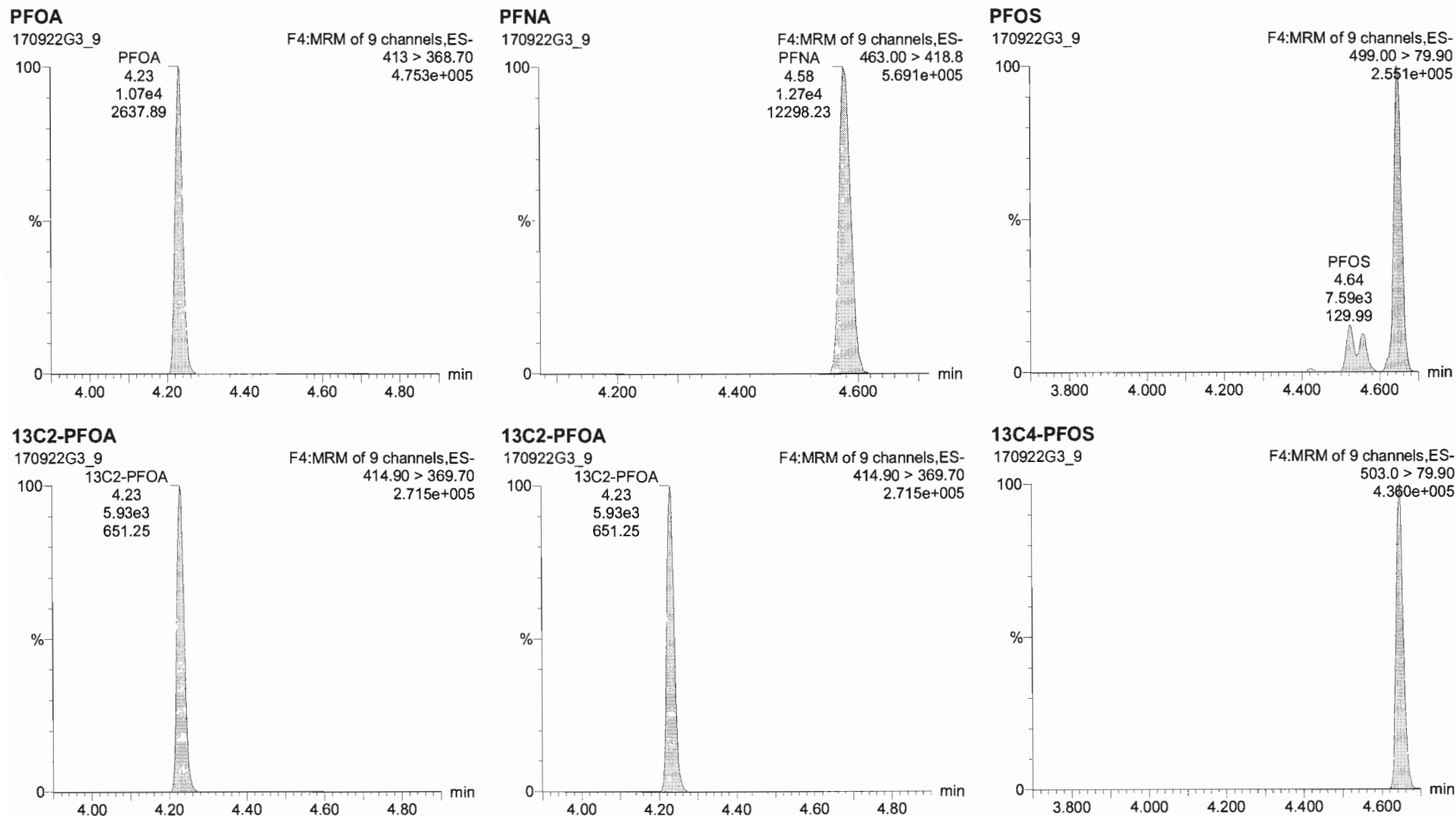


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Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_9, Date: 22-Sep-2017, Time: 23:43:12, ID: ST170922G3-8 PFC CS4 537 17H2821, Description: PFC CS4 537 17H2821



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

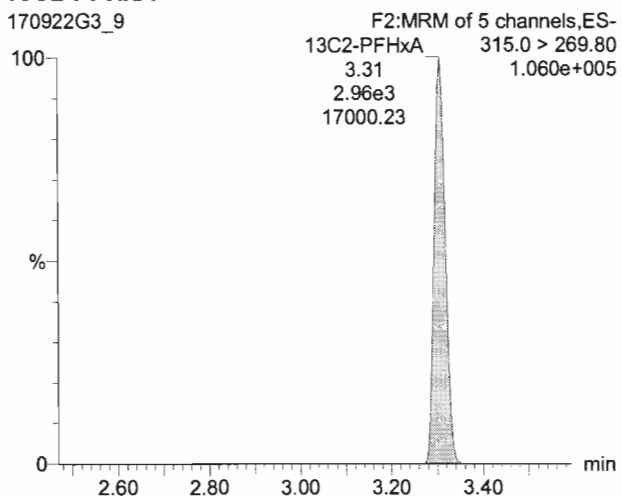
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Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_9, Date: 22-Sep-2017, Time: 23:43:12, ID: ST170922G3-8 PFC CS4 537 17H2821, Description: PFC CS4 537 17H2821

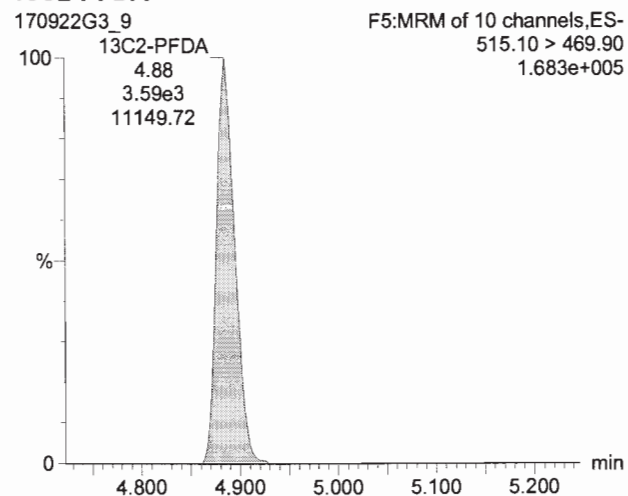
13C2-PFHxA

170922G3_9



13C2-PFDA

170922G3_9



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

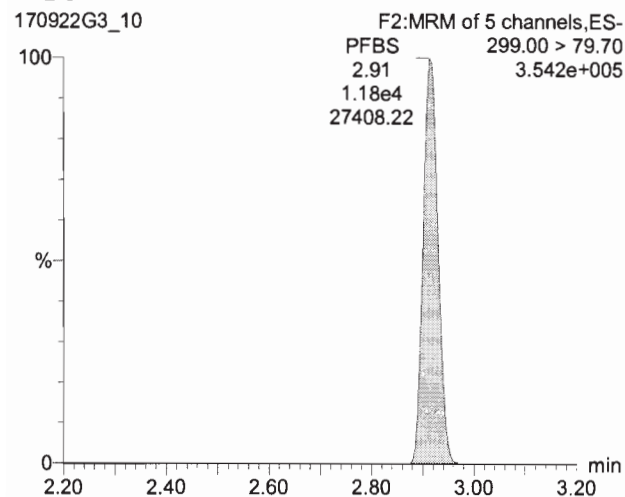
Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_10, Date: 22-Sep-2017, Time: 23:55:33, ID: ST170922G3-9 PFC CS5 537 17H2822, Description: PFC CS5 537 17H2822

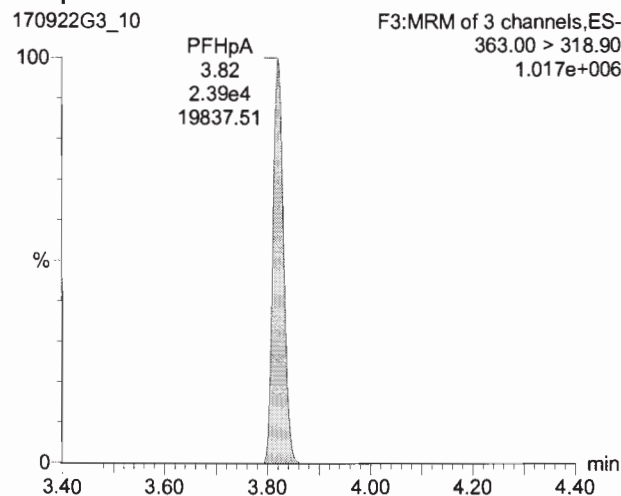
PFBS

170922G3_10



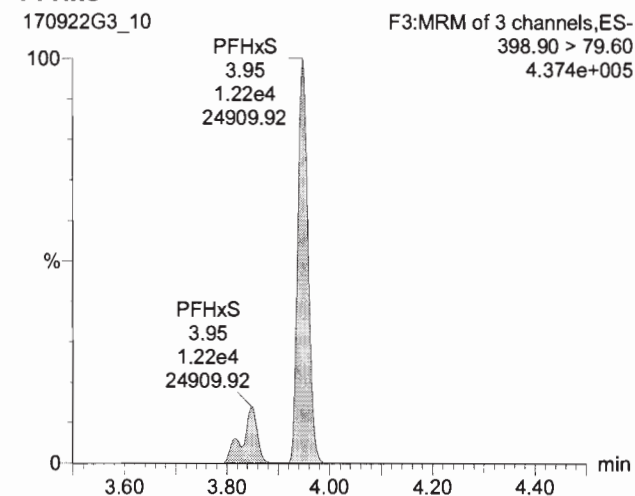
PFHpA

170922G3_10



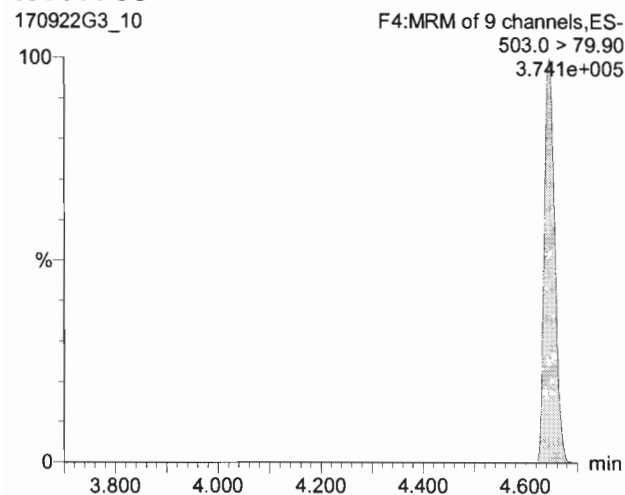
PFHxS

170922G3_10



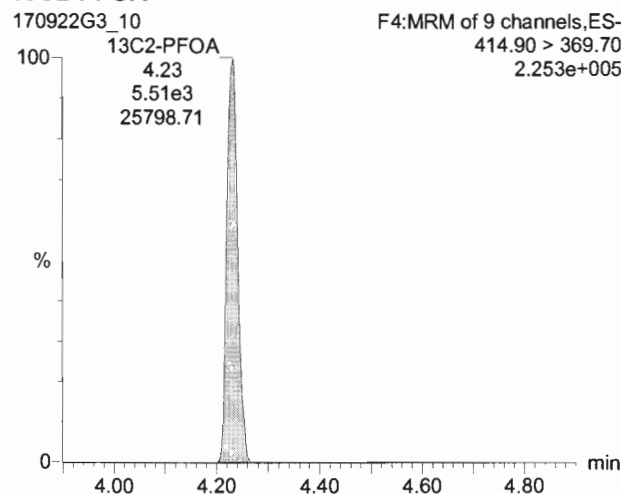
13C4-PFOS

170922G3_10



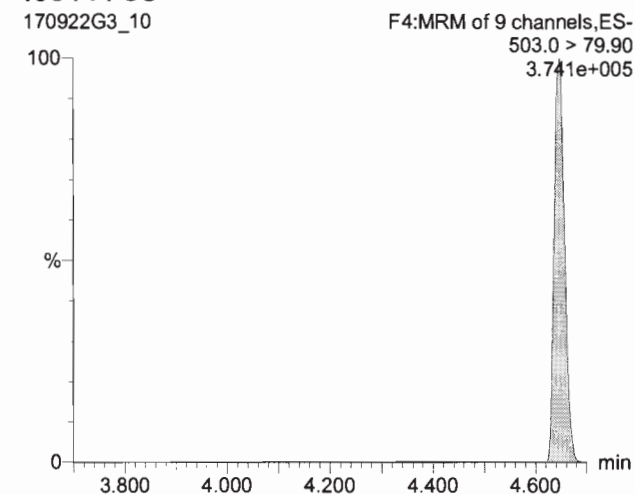
13C2-PFOA

170922G3_10



13C4-PFOS

170922G3_10



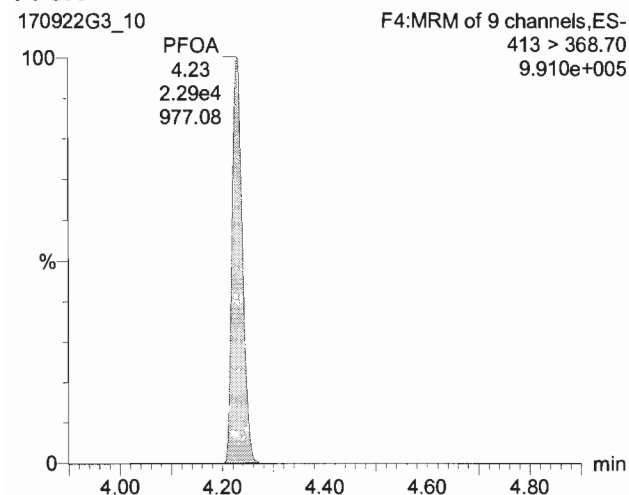
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Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

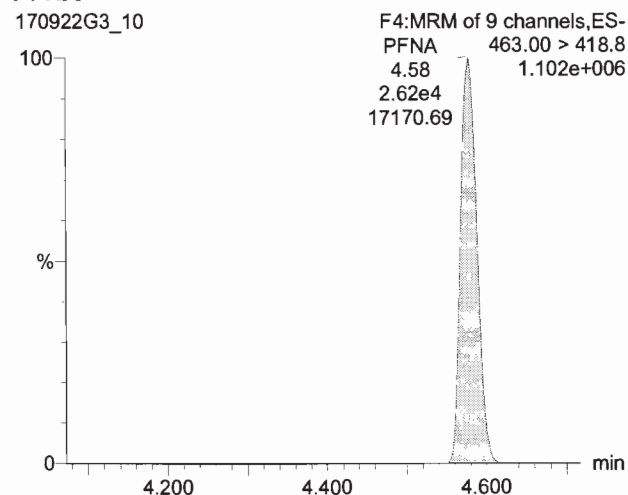
Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_10, Date: 22-Sep-2017, Time: 23:55:33, ID: ST170922G3-9 PFC CS5 537 17H2822, Description: PFC CS5 537 17H2822

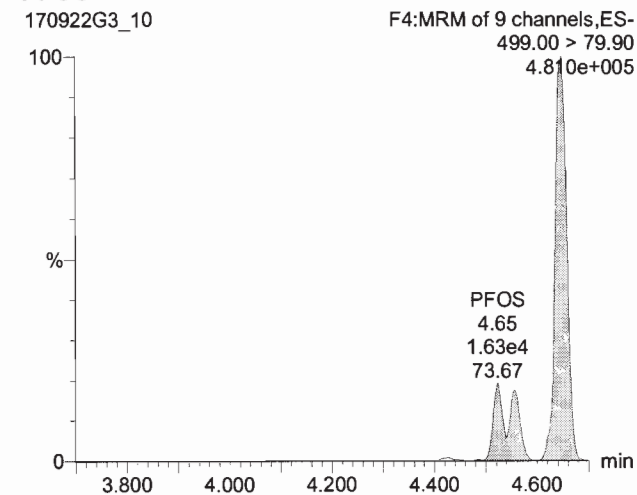
PFOA



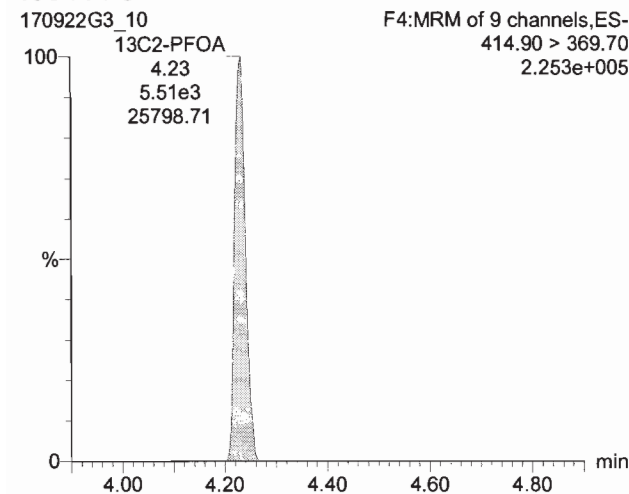
PFNA



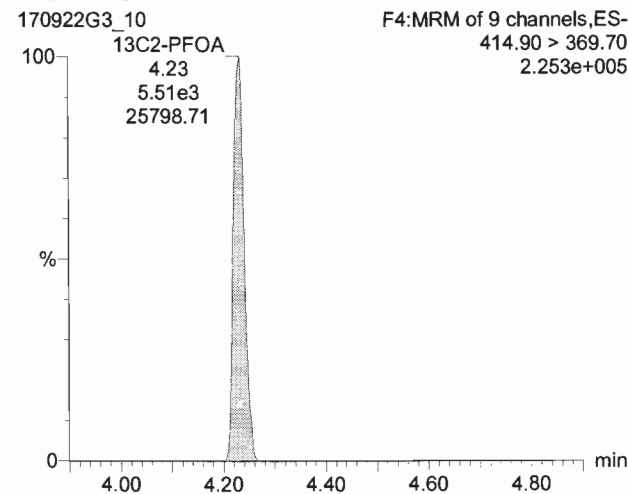
PFOS



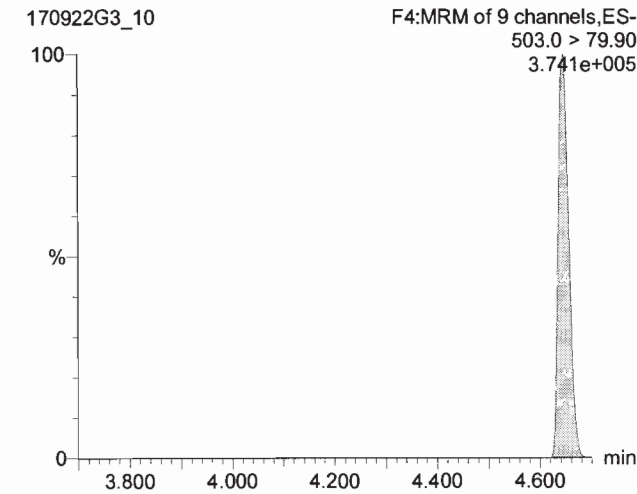
13C2-PFOA



13C2-PFOA



13C4-PFOS



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-CRV.qld

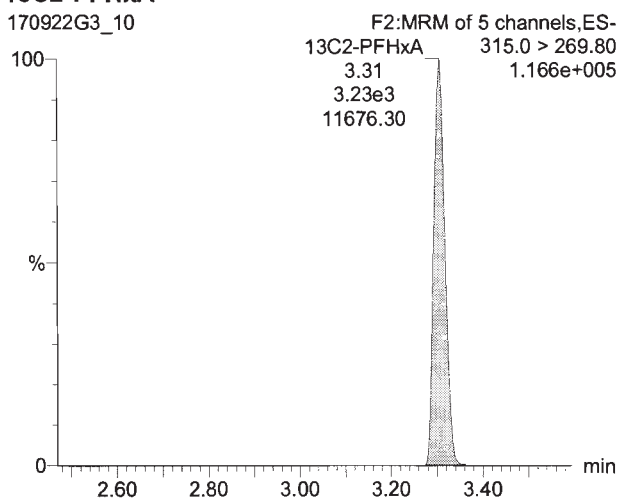
Last Altered: Tuesday, September 26, 2017 10:49:25 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 10:54:40 Pacific Daylight Time

Name: 170922G3_10, Date: 22-Sep-2017, Time: 23:55:33, ID: ST170922G3-9 PFC CS5 537 17H2822, Description: PFC CS5 537 17H2822

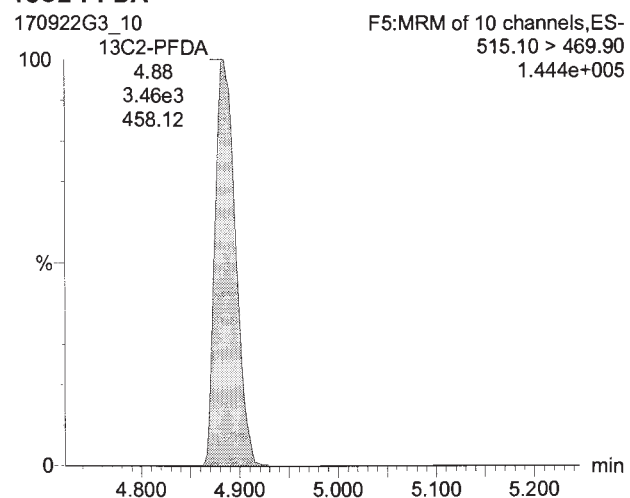
13C2-PFHxA

170922G3_10



13C2-PFDA

170922G3_10



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-12.qld

Last Altered: Tuesday, September 26, 2017 10:57:59 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 11:07:02 Pacific Daylight Time

Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170922G3_12, Date: 23-Sep-2017, Time: 00:20:22, ID: ICV170922G3-1 PFC ICV 537 17H2823, Description: PFC ICV 537 17H2823

	#.Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec	Recovery	Mod.C...
1	1 PFBS	299.00 > 79...	2.62e3	9.20e3		1.000	2.91	9.85	98.5	70-100	NO
2	2 PFHpA	363.00 > 31...	4.78e3	6.05e3		1.000	3.82	9.48	94.8		NO
3	3 PFHxS	398.90 > 79...	2.64e3	9.20e3		1.000	3.95	9.72	97.2		NO
4	4 PFOA	413 > 368.70	5.05e3	6.05e3		1.000	4.23	11.0	110.1		NO
5	5 PFNA	463.00 > 41...	5.21e3	6.05e3		1.000	4.58	9.26	92.6		NO
6	6 PFOS	499.00 > 79...	3.59e3	9.20e3		1.000	4.65	10.4	104.2		NO
7	7 13C2-PFHxA	315.0 > 269...	3.26e3	6.05e3	0.544	1.000	3.31	9.90	99.0		NO
8	8 13C2-PFDA	515.10 > 46...	3.62e3	6.05e3	0.667	1.000	4.88	8.97	89.7		NO
9	9 13C2-PFOA	414.90 > 36...	6.05e3	6.05e3	1.000	1.000	4.23	10.0	100.0		NO
10	10 13C4-PFOS	503.0 > 79.90	9.20e3	9.20e3	1.000	1.000	4.65	28.7	100.0		NO

for 9/26/17

✓
JA, 9/26/17

Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-12.qld

Last Altered: Tuesday, September 26, 2017 10:57:59 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 11:04:56 Pacific Daylight Time

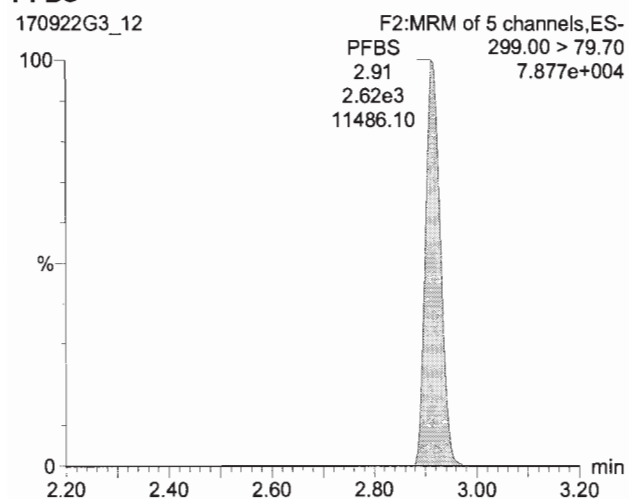
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57

Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170922G3_12, Date: 23-Sep-2017, Time: 00:20:22, ID: ICV170922G3-1 PFC ICV 537 17H2823, Description: PFC ICV 537 17H2823

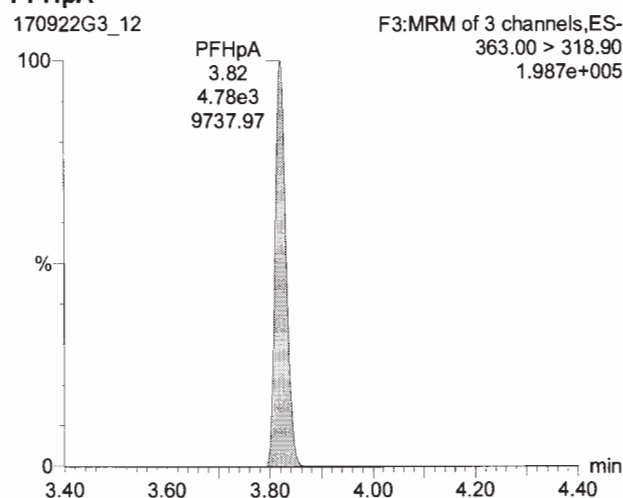
PFBS

170922G3_12



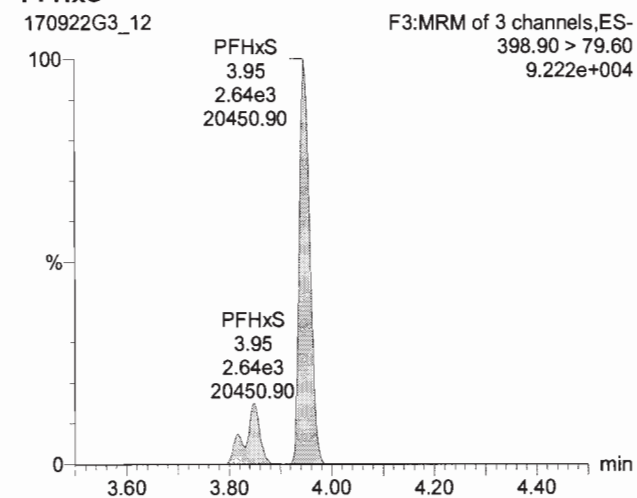
PFHpA

170922G3_12



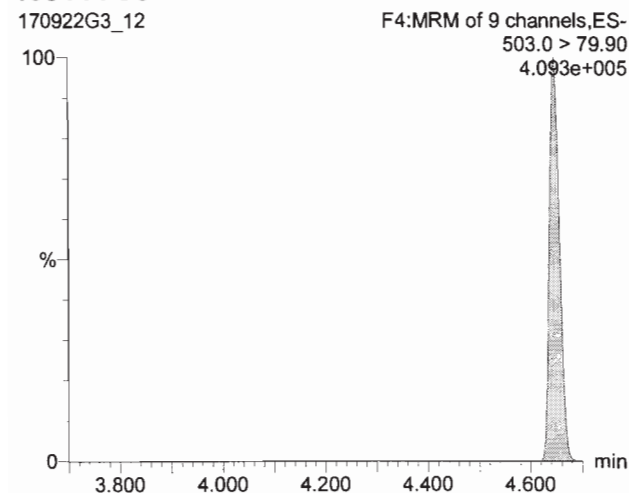
PFHxS

170922G3_12



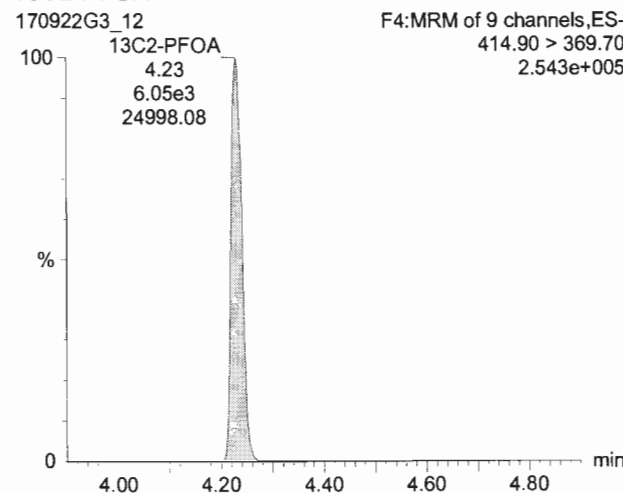
13C4-PFOS

170922G3_12



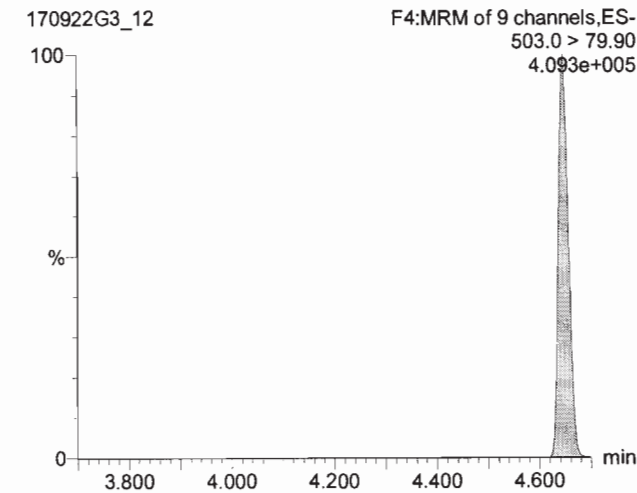
13C2-PFOA

170922G3_12



13C4-PFOS

170922G3_12



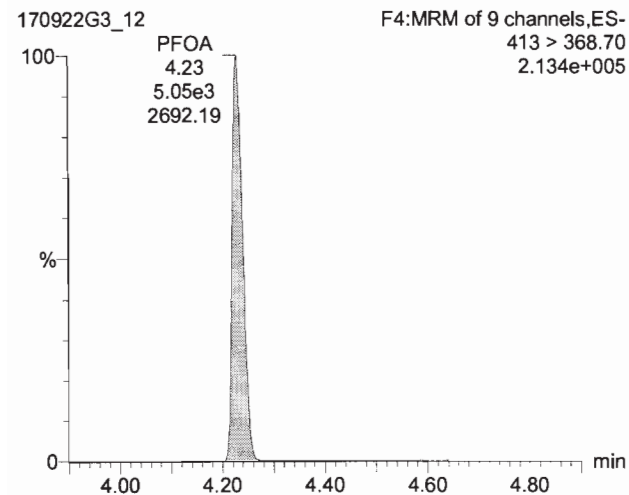
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Last Altered: Tuesday, September 26, 2017 10:57:59 Pacific Daylight Time

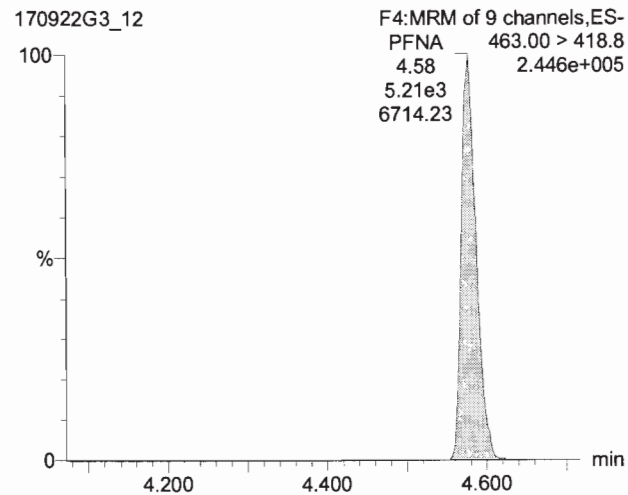
Printed: Tuesday, September 26, 2017 11:04:56 Pacific Daylight Time

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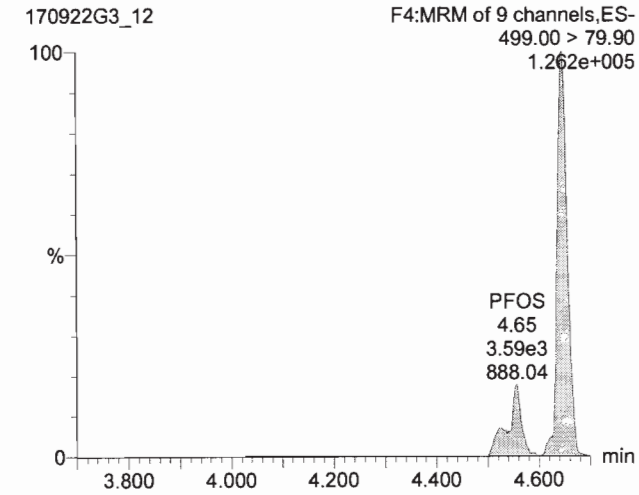
PFOA



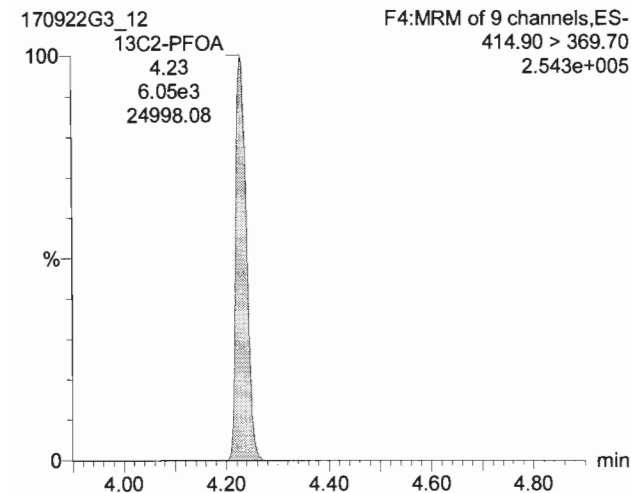
PFNA



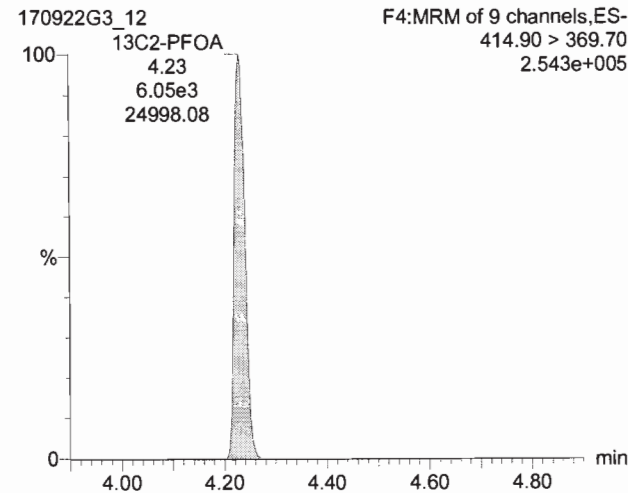
PFOS



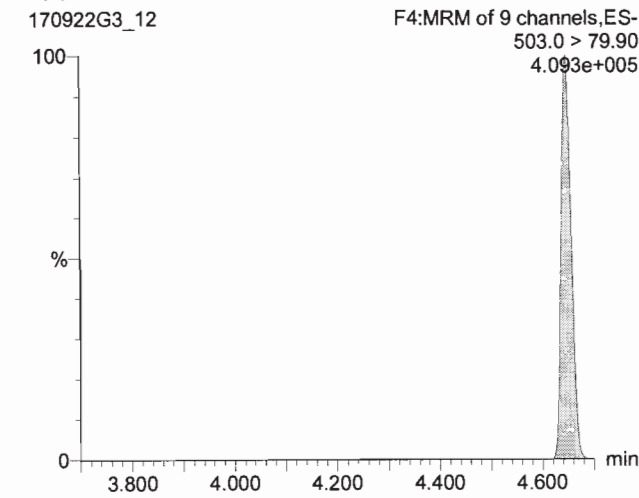
13C2-PFOA



13C2-PFOA



13C4-PFOS



Dataset: U:\G1.PRO\Results\2017\170922G3\170922G3-12.qld

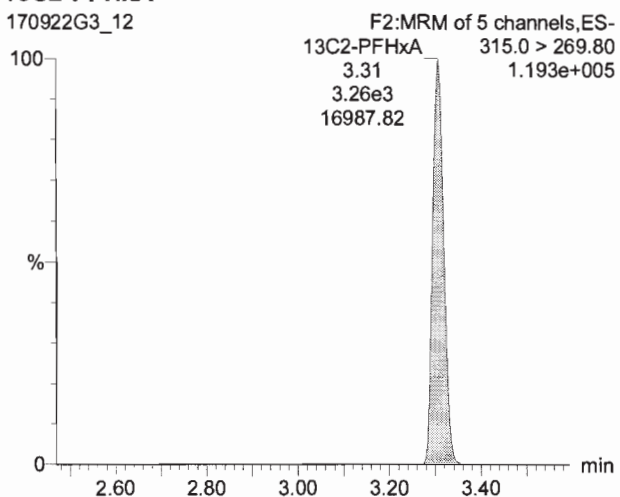
Last Altered: Tuesday, September 26, 2017 10:57:59 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 11:04:56 Pacific Daylight Time

Name: 170922G3_12, Date: 23-Sep-2017, Time: 00:20:22, ID: ICV170922G3-1 PFC ICV 537 17H2823, Description: PFC ICV 537 17H2823

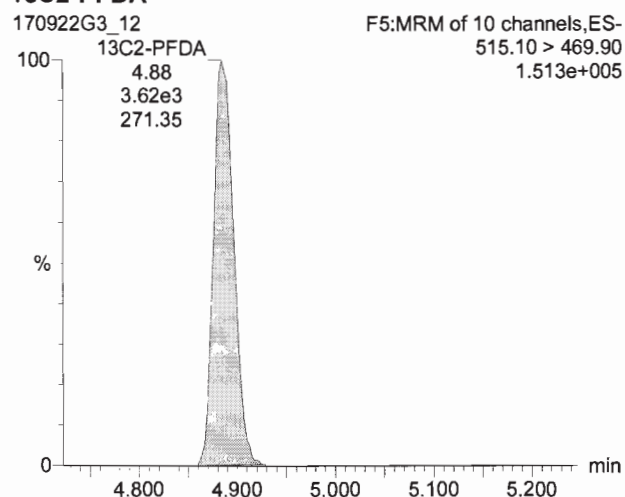
13C2-PFHxA

170922G3_12



13C2-PFDA

170922G3_12



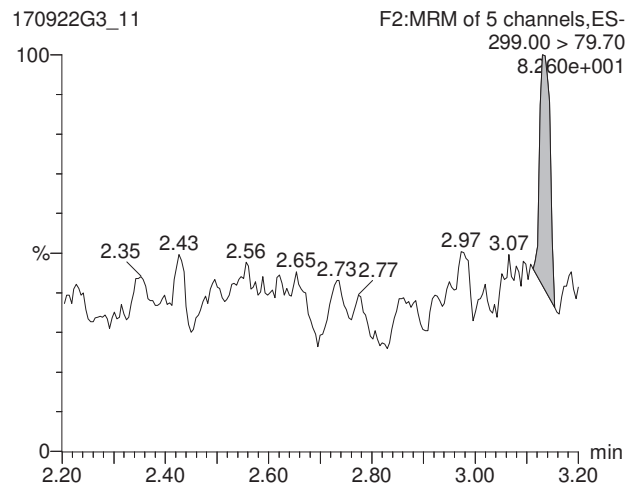
Dataset: Untitled

Last Altered: Tuesday, September 26, 2017 11:08:49 Pacific Daylight Time
Printed: Tuesday, September 26, 2017 11:09:04 Pacific Daylight Time

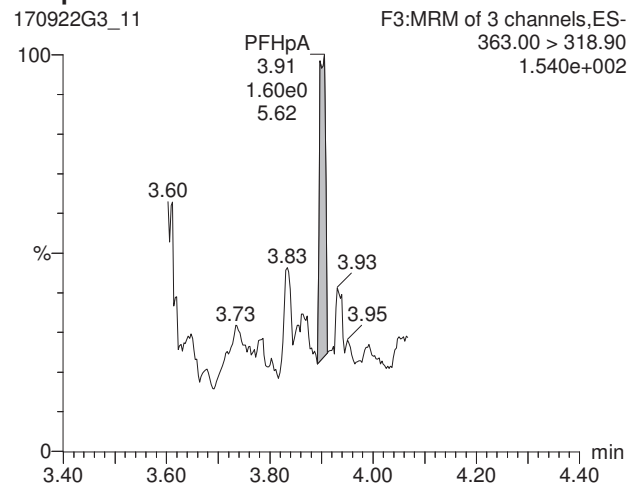
Method: C:\Projects\Q1.PRO\MethDB\PFAS_L6_DW_0905.mdb 05 Sep 2017 09:31:57
Calibration: U:\G1.PRO\CurveDB\C18_537_Q1_09-22-17_L6.cdb 26 Sep 2017 10:49:25

Name: 170922G3_11, Date: 23-Sep-2017, Time: 00:07:56, ID: IPA, Description: IPA

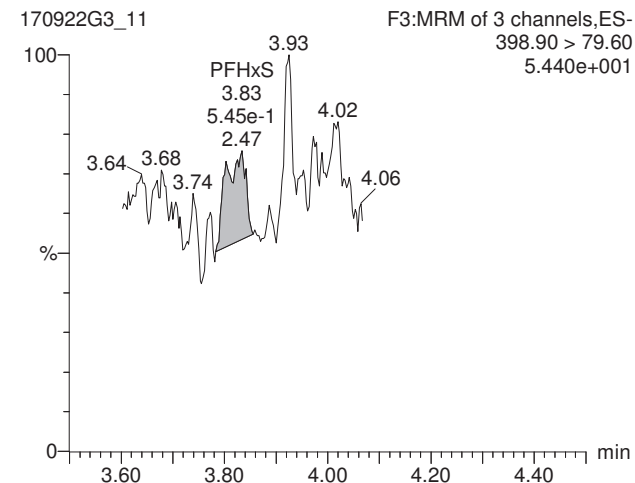
PFBS



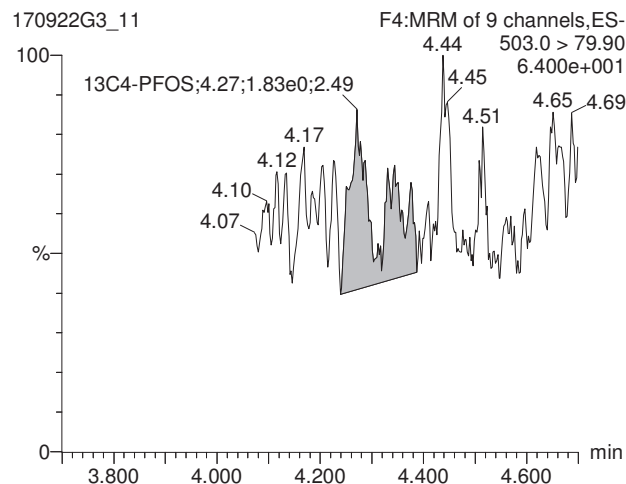
PFHpA



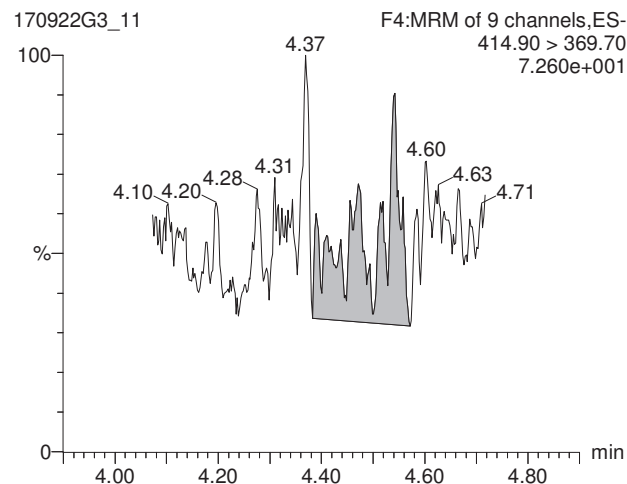
PFHxS



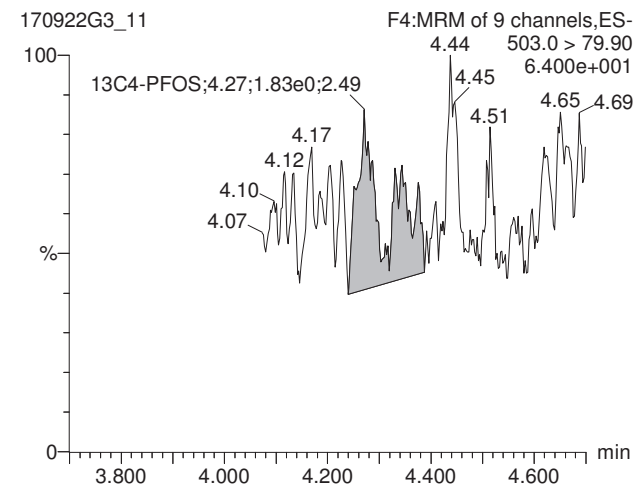
13C4-PFOS



13C2-PFOA



13C4-PFOS



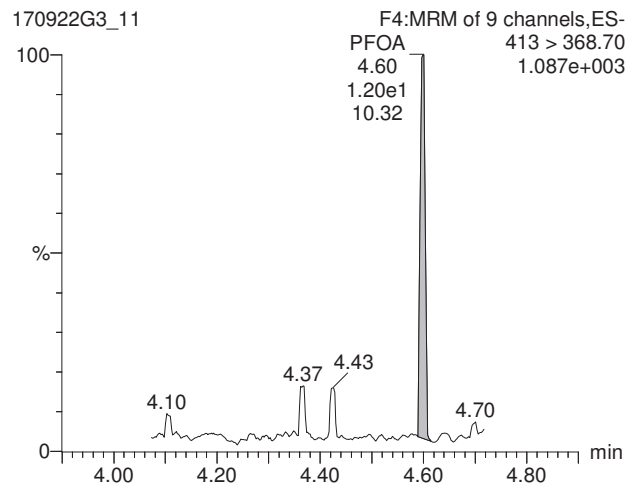
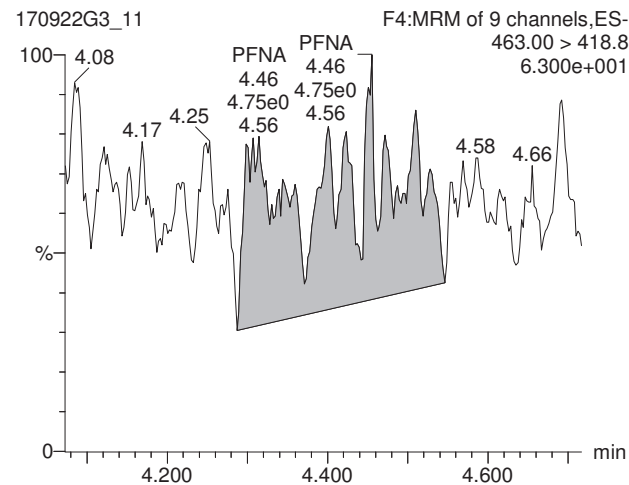
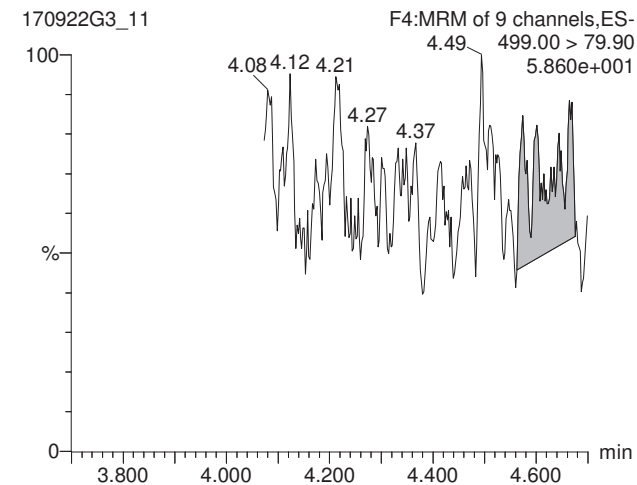
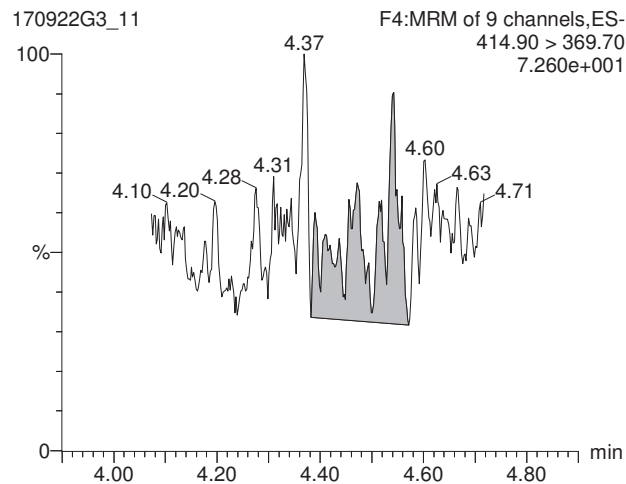
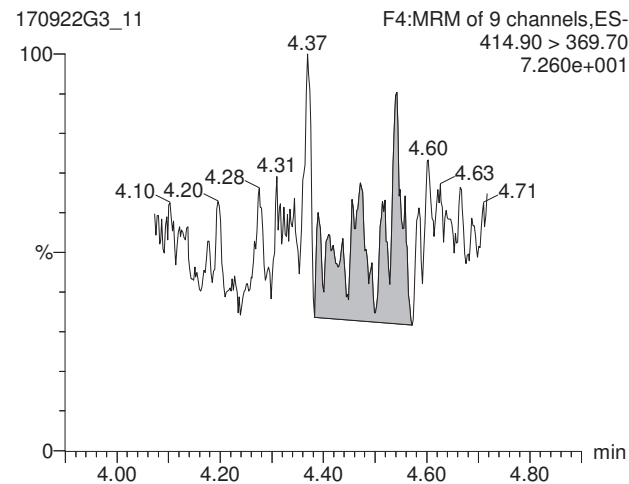
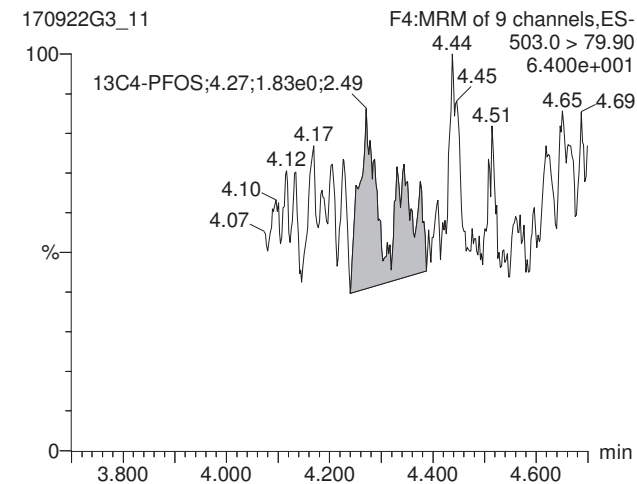
Vista Analytical Laboratory Q1

Dataset: Untitled

Last Altered: Tuesday, September 26, 2017 11:08:49 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 11:09:04 Pacific Daylight Time

Name: 170922G3_11, Date: 23-Sep-2017, Time: 00:07:56, ID: IPA, Description: IPA

PFOA**PFNA****PFOS****13C2-PFOA****13C2-PFOA****13C4-PFOS**

Vista Analytical Laboratory Q1

Dataset: Untitled

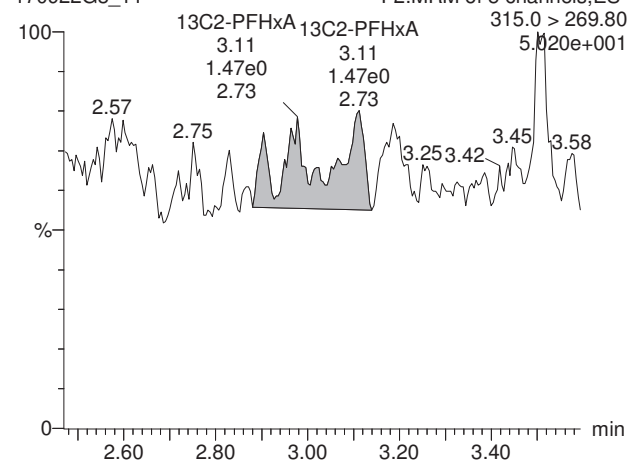
Last Altered: Tuesday, September 26, 2017 11:08:49 Pacific Daylight Time

Printed: Tuesday, September 26, 2017 11:09:04 Pacific Daylight Time

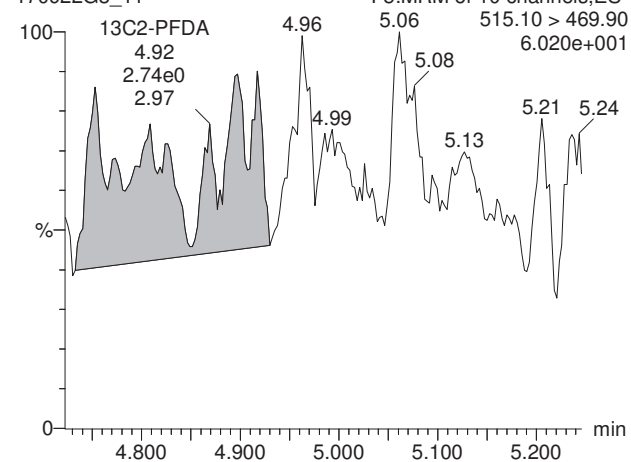
Name: 170922G3_11, Date: 23-Sep-2017, Time: 00:07:56, ID: IPA, Description: IPA

13C2-PFHxA

170922G3_11 F2:MRM of 5 channels,ES-

**13C2-PFDA**

170922G3_11 F5:MRM of 10 channels,ES-



Contract ID	DO_CTO_Number	Place	Installation ID	Sample Name	CHYM Code	Analysis Group	Analytical Method	PRC Code	Lab Code	Lab Name	Leachate Method	Sample Base	Extraction Method	Result Type	Lab_OC_Type	Sample_Medium	QC Level	Date/Time Collected	Date Received	Leachate Date	Leachate Time	Extraction Date	Extraction Time	Analysis Date	Analysis Time	Lab Sample ID	Dilution	Run Number	Percent Moisture	Percent Lipid	Chem Name	Analyte ID	Analyte Value	Original_Analyte_Value	Result Units	Lab Qualifier	Validator Qualifier	QC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	QC_Accuracy	Control_Limit_Date	QC_Narrative	Detection_MDL	OSM Version	OL	LOD	LOQ	SDC	Analysis Batch	Validator_Name	Vis Date								
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:37	09/21/2017			20170922	09:00:00	20170923	01:47:00	1701286-01	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	2.54	2.54	MG L	J	PR	TRG									5.1	0.453	5.11	10.2	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:37	09/21/2017			20170922	09:00:00	20170923	01:47:00	1701286-01	1	999			Perfluorooctanoic acid (PFOA)	335-67-1	3.30	3.30	MG L	J	PR	TRG									5.1	1.10	5.11	10.2	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:37	09/21/2017			20170922	09:00:00	20170923	01:47:00	1701286-01	1	999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	13.4	13.4	MG L	J	PR	TRG									5.1	1.06	5.11	10.2	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:37	09/21/2017			20170922	09:00:00	20170923	01:47:00	1701286-01	1	999			13C2-PFHAA	335-67-1	98.8	98.8	PCT REC		PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:38	09/21/2017			20170922	09:00:00	20170923	01:59:00	1701286-02	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.44	5.44	MG L	U	PR	TRG									5.1	0.462	5.44	10.9	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:38	09/21/2017			20170922	09:00:00	20170923	01:59:00	1701286-02	1	999			Perfluorooctanoic acid (PFOA)	335-67-1	5.44	5.44	MG L	U	PR	TRG									5.1	1.13	5.44	10.9	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:38	09/21/2017			20170922	09:00:00	20170923	01:59:00	1701286-02	1	999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.44	5.44	MG L	U	PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB01-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 09:38	09/21/2017			20170922	09:00:00	20170923	01:59:00	1701286-02	1	999			13C2-PFHAA	335-67-1	105	105	PCT REC		PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:23	09/21/2017			20170922	09:00:00	20170923	02:11:00	1701286-03	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.21	5.21	MG L	U	PR	TRG									5.1	0.462	5.21	10.4	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:23	09/21/2017			20170922	09:00:00	20170923	02:11:00	1701286-03	1	999			Perfluorooctanoic acid (PFOA)	335-67-1	5.21	5.21	MG L	U	PR	TRG									5.1	1.13	5.21	10.4	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:23	09/21/2017			20170922	09:00:00	20170923	02:11:00	1701286-03	1	999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.21	5.21	MG L	U	PR	TRG									5.1	1.06	5.21	10.4	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:23	09/21/2017			20170922	09:00:00	20170923	02:11:00	1701286-03	1	999			13C2-PFHAA	335-67-1	104	104	PCT REC		PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:24	09/21/2017			20170922	09:00:00	20170923	02:24:00	1701286-04	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.07	5.07	MG L	U	PR	TRG									5.1	0.449	5.07	10.1	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:24	09/21/2017			20170922	09:00:00	20170923	02:24:00	1701286-04	1	999			Perfluorooctanoic acid (PFOA)	335-67-1	5.07	5.07	MG L	U	PR	TRG									5.1	1.09	5.07	10.1	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:24	09/21/2017			20170922	09:00:00	20170923	02:24:00	1701286-04	1	999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.07	5.07	MG L	U	PR	TRG									5.1	1.05	5.07	10.1	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB02-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 10:24	09/21/2017			20170922	09:00:00	20170923	02:24:00	1701286-04	1	999			13C2-PFHAA	335-67-1	110	110	PCT REC		PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:02	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-05	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.93	4.93	MG L	U	PR	TRG									5.1	0.437	4.93	9.86	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:02	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-05	1	999			Perfluorooctanoic acid (PFOA)	335-67-1	4.93	4.93	MG L	U	PR	TRG									5.1	1.06	4.93	9.86	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:02	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-05	1	999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	4.93	4.93	MG L	U	PR	TRG									5.1	1.05	4.93	9.86	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:02	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-05	1	999			13C2-PFHAA	335-67-1	99.5	99.5	PCT REC		PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:03	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-06	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.13	5.13	MG L	U	PR	TRG									5.1	0.455	5.13	10.3	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:03	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-06	1	999			Perfluorooctanoic acid (PFOA)	335-67-1	5.13	5.13	MG L	U	PR	TRG									5.1	1.11	5.13	10.3	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:03	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-06	1	999			Perfluorooctane Sulfonate (PFOS)	1763-23-1	5.13	5.13	MG L	U	PR	TRG									5.1	1.07	5.13	10.3	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-FB03-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:03	09/21/2017			20170922	09:00:00	20170923	02:40:00	1701286-06	1	999			13C2-PFHAA	335-67-1	98.5	98.5	PCT REC		PR	TRG									5.1																
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW04-0917	NONS	SVGA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	06/20/2017 11:38	09/21/2017			20170922	09:00:00	20170923	03:01:00	1701286-07	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	4.89	4.89	MG L	U	PR	TRG									5.1	0.433	4.89	9.77	1701286	ST0054											
N6274016D9000	3008		MERIDIAN NAS	ME-JW-RW04-0917	N																																																										

DATA VALIDATION SUMMARY REPORT
OLF JOE WILLIAMS, MERIDIAN, MISSISSIPPI

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1701286
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: OLF Joe Williams, Meridian, Mississippi
Date: October 16, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	ME-JW-RW01-0917	1701286-01	Water
2	ME-JW-FB01-0917	1701286-02	Water
3	ME-JW-RW02-0917	1701286-03	Water
3MS	ME-JW-RW02-0917MS	1701286-03MS	Water
3MSD	ME-JW-RW02-0917MSD	1701286-03MSD	Water
4	ME-JW-FB02-0917	1701286-04	Water
5	ME-JW-RW03-0917	1701286-05	Water
6	ME-JW-FB03-0917	1701286-06	Water
7	ME-JW-RW04-0917	1701286-07	Water
8	ME-JW-FB04-0917	1701286-08	Water

A full data validation was performed on the analytical data for four water samples and four aqueous field blank samples collected on September 20, 2017 by CH2M HILL at the OLF Joe Williams site in Meridian, Mississippi. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis
PFCs

Method References
USEPA Method 537

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Organic Superfund Methods Data Review," January 2017;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

Overall the data is acceptable for the intended purposes. There were no qualifications.

Perfluorinated Compounds (PFCs)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
ME-JW-FB01-0917	None - ND	-	-	-
ME-JW-FB02-0917	None - ND	-	-	-
ME-JW-FB03-0917	None - ND	-	-	-
ME-JW-FB04-0917	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:

Nancy Weaver
Nancy Weaver
Senior Chemist

Dated:

10/17/17

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

Sample ID: ME-JW-RW01-0917									
Client Data					Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1701286-01	Column:	BEH C18	
Project:	676034	Date Collected:	20-Sep-17 09:37		Date Received:	21-Sep-17 09:10			
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	2.54	0.453	5.11	10.2	J	B710113	22-Sep-17	0.244 L	23-Sep-17 01:47
PFOA	5.30	1.10	5.11	10.2	J	B710113	22-Sep-17	0.244 L	23-Sep-17 01:47
PFOS	13.4	1.06	5.11	10.2		B710113	22-Sep-17	0.244 L	23-Sep-17 01:47
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFHxA	SURR	88.8	70 - 130		B710113	22-Sep-17	0.244 L	23-Sep-17 01:47	1

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

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

1701286

Sample ID: ME-JW-FB01-0917

EPA Method 537

Client Data			Laboratory Data			
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1701286-02	Column:
Project:	676034	Date Collected:	20-Sep-17 09:38	Date Received:	21-Sep-17 09:10	BEH C18
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch
PFBS	ND	0.482	5.44	10.9		B7I0113
PFOA	ND	1.17	5.44	10.9		B7I0113
PFOS	ND	1.13	5.44	10.9		B7I0113
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Batch
13C2-PFHxA	SURR	105	70 - 130		B7I0113	B7I0113

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL - Lower control limit - upper control limit

Results reported to the DL

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

Only the linear isomer is reported for all other analytes

Analyzed	Samp Size	Extracted	Batch	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
23-Sep-17 01:59	0.230 L	22-Sep-17	B7I0113		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
23-Sep-17 01:59	0.230 L	22-Sep-17	B7I0113		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
23-Sep-17 01:59	0.230 L	22-Sep-17	B7I0113		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1
Analyzed	Samp Size	Extracted	Batch	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
23-Sep-17 01:59	0.230 L	22-Sep-17	B7I0113		B7I0113	22-Sep-17	0.230 L	23-Sep-17 01:59	1

1701286

Sample ID: ME-JW-RW02-0917				EPA Method 537			
Client Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701286-03	Column:	BEH C18
Project:	676034	Date Collected:	20-Sep-17 10:23	Date Received:	21-Sep-17 09:10		
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Dilution
PFBS	ND	0.462	5.21	10.4		B710113	23-Sep-17 02:11
PFOA	ND	1.13	5.21	10.4		B710113	23-Sep-17 02:11
PFOS	ND	1.08	5.21	10.4		B710113	23-Sep-17 02:11
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Dilution
I3C2-PFHxA	SURR	104	70 - 130		B710113	22-Sep-17	23-Sep-17 02:11

DL - Detection Limit
 LOD - Limit of Detection
 LOQ - Limit of quantitation
 LCL-UCL- Lower control limit - upper control limit
 Results reported to the DL
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
 Only the linear isomer is reported for all other analytes

1701286.17

Sample ID: ME-JW-FB02-0917

EPA Method 537

Client Data			Laboratory Data							
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1701286-04	Column:	BEH C18			
Project:	676034	Date Collected:	20-Sep-17 10:24	Date Received:	21-Sep-17 09:10					
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	0.449	5.07	10.1		B710113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
PFOA	ND	1.09	5.07	10.1		B710113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
PFOS	ND	1.05	5.07	10.1		B710113	22-Sep-17	0.247 L	23-Sep-17 02:24	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	110	70 - 130		B710113	22-Sep-17	0.247 L	23-Sep-17 02:24	1	

DL - Detection Limit
 LOD - Limit of Detection
 LOQ - Limit of quantitation
 LCL-UCL- Lower control limit - upper control limit
 Results reported to the DL
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
 Only the linear isomer is reported for all other analytes

20101617

Sample ID: ME-JW-RW03-0917						EPA Method 537			
Client Data			Laboratory Data						
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701286-05	Column:	BEH C18		
Project:	676034	Date Collected:	20-Sep-17 11:02	Date Received:	21-Sep-17 09:10				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.437	4.93	9.86		B710113	22-Sep-17	0.254 L	26-Sep-17 14:38
PFOA	ND	1.06	4.93	9.86		B710113	22-Sep-17	0.254 L	26-Sep-17 14:38
PFOS	ND	1.03	4.93	9.86		B710113	22-Sep-17	0.254 L	26-Sep-17 14:38
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	93.5	70 - 130		B710113	22-Sep-17	0.254 L	26-Sep-17 14:38	1

DL - Detection Limit

LOD - Limit of Detection

LOQ - Limit of quantitation

LCL-UCL- Lower control limit - upper control limit

Results reported to the DL

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

Only the linear isomer is reported for all other analytes

rw101617

Sample ID: ME-JW-FB03-0917										EPA Method 537			
Client Data			Laboratory Data										
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1701286-06	Column:	BEH C18						
Project:	676034	Date Collected:	20-Sep-17 11:03	Date Received:	21-Sep-17 09:10								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution			
PFBS	ND	0.455	5.13	10.3		B710113	22-Sep-17	0.244 L	23-Sep-17 02:49	1			
PFOA	ND	1.11	5.13	10.3		B710113	22-Sep-17	0.244 L	23-Sep-17 02:49	1			
PFOS	ND	1.07	5.13	10.3		B710113	22-Sep-17	0.244 L	23-Sep-17 02:49	1			
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
13C2-PFHxA	SURR	96.5	70 - 130		B710113	22-Sep-17	0.244 L	23-Sep-17 02:49	1				

DL - Detection Limit
 LOD - Limit of Detection
 LOQ - Limit of quantitation
 LCL-UCL- Lower control limit - upper control limit
 Results reported to the DL
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
 Only the linear isomer is reported for all other analytes

1701286

Sample ID: ME-JW-RW04-0917				EPA Method 537			
Client Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1701286-07	Column:	BEH C18
Project:	676034	Date Collected:	20-Sep-17 11:38	Date Received:	21-Sep-17 09:10		
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted
PFBS	ND	0.433	4.89	9.77		B710113	22-Sep-17
PFOA	ND	1.06	4.89	9.77		B710113	22-Sep-17
PFOS	ND	1.02	4.89	9.77		B710113	22-Sep-17
Labeled Standards	% Recovery	Limits	Batch	Qualifiers	Batch	Extracted	Dilution
13C2-PFHxA	104	70 - 130	B710113		B710113	22-Sep-17	23-Sep-17 03:01
DL - Detection Limit LOD - Limit of Detection LOQ - Limit of quantitation LCL-UCL- Lower control limit - upper control limit Results reported to the DL When reported, PFHxS, PFOA and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes							

1701286-07

Sample ID: ME-JW-FB04-0917					EPA Method 537				
Client Data		Laboratory Data							
Name:	CH2M Hill	Matrix:	Aqueous	Lab Sample:	1701286-08	Column:	BEH C18		
Project:	676034	Date Collected:	20-Sep-17 11:39	Date Received:	21-Sep-17 09:10				
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Dilution
PFBS	ND	0.440	4.97	9.94		B710113	22-Sep-17	0.252 L	23-Sep-17 03:13
PFOA	ND	1.07	4.97	9.94		B710113	22-Sep-17	0.252 L	23-Sep-17 03:13
PFOS	ND	1.03	4.97	9.94		B710113	22-Sep-17	0.252 L	23-Sep-17 03:13
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Dilution	
13C2-PFHxA	SURR	96.9	70 - 130		B710113	22-Sep-17	0.252 L	23-Sep-17 03:13	1

DL - Detection Limit
 LOD - Limit of Detection
 LOQ - Limit of quantitation
 LCL-UCL- Lower control limit - upper control limit
 Results reported to the DL
 When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
 Only the linear isomer is reported for all other analytes

201016117