NAVFAC
Naval Facilities Engineering Command

Groundwater Investigation Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Figure, SDG 1700280

Outlying Landing Field Coupeville
Naval Air Station Whidbey Island
Coupeville, Washington

February 2019

March 07, 2017

Vista Work Order No. 1700280

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 March 02, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'Navy Clean CTO 8 OLF Coupeville'.

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. 1700280
Case Narrative

Sample Condition on Receipt:

Seven groundwater samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. As requested by the client, the following samples were updated "WI-CV-EB06-022717" to "WI-CV-EB07-022717" and "WI-CV-EB07-022817" to "WI-CV-EB08-022817".

Analytical Notes:

Modified EPA Method 537

All samples contained particulate and were centrifuged prior to extraction.

The aqueous samples were extracted and analyzed for PFBS, PFOA, and PFOS using Modified 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 Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria

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

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1700280-01	WI-CV-GW03M-0217	27-Feb-17 13:15	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-02	WI-CV-GW03D-0217	27-Feb-17 17:05	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-03	WI-CV-EB07-022717	27-Feb-17 17:10	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-04	WI-CV-GW04M-0217	28-Feb-17 10:00	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-05	WI-CV-GW01M-0217	28-Feb-17 11:00	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-06	WI-CV-EB08-022817	28-Feb-17 12:30	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-07	WI-CV-GW01D-0217	28-Feb-17 14:00	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank — Modified EPA Method 537

Matrix:	Aqueous	QC Batch:	B7C0012	Lab Sample:	B7C0012-BLK1
Sample Size:	0.125 L	Date Extracted:	03-Mar-2017 8:25	Date Analyzed:	05-Mar-17 15:42 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.79	4.00	8.00	
PFOA	ND	0.651	2.00	8.00	
PFOS	ND	0.807	0.900	8.00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	104	60 - 150	
IS	13C2-PFOA	87.6	60 - 150	
IS	13C8-PFOS	88.7	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: OPR

Modified EPA Method 537

Matrix:	Aqueous	QC Batch:	B7C0012	Lab Sample:	B7C0012-BS1
Sample Size:	0.125 L	Date Extracted:	03-Mar-2017 8:25	Date Analyzed:	05-Mar-17 15:04 Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits
PFBS	89.8	80.0	112	60 - 130
PFOA	93.8	80.0	117	70 - 130
PFOS	81.1	80.0	101	70 - 130

	Labeled Standard	%R	LCL-UCL
IS	13C3-PFBS	105	60 - 150
IS	13C2-PFOA	89.4	60 - 150
IS	13C8-PFOS	92.3	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: WI-CV-GW03M-0217

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	27-Feb-2017 13:15
Location:	MW03M

Sample Data

Matrix:	Groundwater
Sample Size:	0.129 L

Laboratory Data

Lab Sample:	1700280-01	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 16:32	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.74	3.88	7.76	
PFOA	ND	0.631	1.94	7.76	
PFOS	ND	0.782	0.872	7.76	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	92.1	60 - 150	
IS	13C2-PFOA	85.2	60 - 150	
IS	13C8-PFOS	95.0	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW03D-0217

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	27-Feb-2017 17:05
Location:	MW03D

Sample Data

Matrix:	Groundwater
Sample Size:	0.128 L

Laboratory Data

Lab Sample:	1700280-02	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 16:45	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.75	3.91	7.81	
PFOA	ND	0.635	1.95	7.81	
PFOS	0.914	0.788	0.879	7.81	J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	86.7	60 - 150	
IS	13C2-PFOA	83.5	60 - 150	
IS	13C8-PFOS	101	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-EB07-022717

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	27-Feb-2017 17:10
Location:	Eq. Blank

Sample Data

Matrix:	Groundwater
Sample Size:	0.115 L

Laboratory Data

Lab Sample:	1700280-03	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 16:57	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.95	4.35	8.69	
PFOA	ND	0.708	2.17	8.69	
PFOS	ND	0.877	0.978	8.69	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	88.9	60 - 150	
IS	13C2-PFOA	86.3	60 - 150	
IS	13C8-PFOS	88.0	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW04M-0217

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
4 ame:	Cu 2M u ill	Matrix:	Hr6ondGater	Lab Sample:	1700280-0v	Date weceiRed:	02-Mar-2017 10:1v
Nr6Rect:	4 aRy Clean CFT 8 TLj C6opeRille	Sample Size:	0O2v L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date C6llected:	28-j eb-2017 10:00			Date Analyzed:	05-Mar-17 17:10	C6lomn:	BEu C18
L6cati6n:	M. 0vM						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
Nj BS	4 D	1080	v003	8009	
Nj TA	4 D	0959	2002	8009	
Nj TS	4 D	0813	0097	8009	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-Nj BS	W2O	90 - 150	
IS	13C2-Nj TA	W5O	90 - 150	
IS	13C8-Nj TS	107	90 - 150	

DL - Detecti6n limit

wL - wep6rting limit

LCL-UCL - L6Ger c6ntr6l limit - opper c6ntr6l limit

wesolts rep6rted t6 DLO

. hen rep6rted, Nj BS, Nj u xS, Nj TA and Nj TS inclode b6th linear and branched is6mersO

Tnly the linear is6mer is rep6rted f6r all 6ther analytesO

Sample ID: WI-CV-GW02M-0127

Modified EPA Method 537

Client Data

4 ame:	Cu 2M u ill
N r6Rect:	4 aRy Clean CFT 8 TLj C6opeRille
Date C6llected:	28-j eb-2017 11:00
L6cati6n:	M. 01M

Sample Data

Matrix:	Hr6ondGater
Sample Size:	0O27 L

Laboratory Data

Lab Sample:	1700280-05	Date weceiRed:	02-Mar-2017 10:1v
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 17:22	C6lomn:	BEu C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
Nj BS	4 D	1CJW	3C9v	7C88	
Nj TA	4 D	00Ww1	1C97	7C88	
Nj TS	4 D	0CJ95	0C88W	7C88	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-Nj BS	90C0	W0 - 150	
IS	13C2-Nj TA	93C2	W0 - 150	
IS	13C8-Nj TS	110	W0 - 150	

DL - Detecti6n limit

wL - wep6rting limit

LCL-UCL - L6Ger c6ntr6l limit - opper c6ntr6l limit

wesolts rep6rted t6 DLO

. hen rep6rted, Nj BS, Nj u xS, Nj TA and Nj TS inclode b6th linear and branched is6mersO

Tnly the linear is6mer is rep6rted f6r all 6ther analytesO

Sample ID: WI-CV-EB08-022817

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	28-Feb-2017 12:30
Location:	Eq. Blank

Sample Data

Matrix:	Groundwater
Sample Size:	0.110 L

Laboratory Data

Lab Sample:	1700280-06	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 17:35	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.04	4.55	9.12	
PFOA	ND	0.742	2.27	9.12	
PFOS	1.16	0.920	1.02	9.12	J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	103	60 - 150	
IS	13C2-PFOA	93.8	60 - 150	
IS	13C8-PFOS	85.8	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW02D-0127

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
4 ame:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-07	Date Received:	02-Mar-2017 10:16
NroRect:	4 avy Clean CFT 8 TLj Coupeville	Sample Size:	0O25 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	28-j eb-2017 16:00			Date Analyzed:	05-Mar-17 17:67	Column: BEH C18	
Location:	M. 01D						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
Nj BS	4 D	1O79	6O00	8O00	
Nj TA	4 D	0O51	2O00	8O00	
Nj TS	4 D	0O807	0O900	8O00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-Nj BS	98O2	W0 - 150	
IS	13C2-Nj TA	93O2	W0 - 150	
IS	13C8-Nj TS	82O8	W0 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DLO

. hen reported, Nj BS, Nj HxS, Nj TA and Nj TS include both linear and branched isomersO

Tnly the linear isomer is reported for all other analytesO

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

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

NELAP Accredited Test Methods

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

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

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

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

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

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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Laboratory Project ID: 1700280 Temp: 0.4 °C
Storage ID: WR-2 Storage Secured: Yes ☑ No ☐

Project ID: Navy CLEAN CTO 8 OU Keyesville P.O.#: 10006-7-10651 679580.09.FI.WS Sampler: E. Bilyeu, M. Witmer, B. Prentice (name)

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

Invoice to: Name: Katie Tippin Company: CH2M Address: City: State: Ph#: Fax#:

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brittany Prentice BP	3/1/2017	11:00	B. Benedict	03/02/17	1016
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: FedEx Overnight

ATTN: Simple Recieving

Tracking No.:

Add Analysis(es) Requested

Container(s)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	EPA 1613: 2378-TCDD	EPA 1613: 2378 TCDD/TCDF	EPA 1613: PCDD/PCDF	EPA 8290: 2378-TCDD	EPA 8290: 2378-TCDD/TCDF	EPA 8290: PCDD/PCDF	EPA 8280: 2378-TCDD	EPA 8280: 2378 TCDD/TCDF	EPA 8280: PCDD/PCDF	EPA 8280: TOTALS	EPA 1668: COPLANAR PCB's	EPA 1668: 209 CONGENERS	EPA 1668: PBDE	EPA 1668: PAH	EPA 1614: WHO-29	CARB429: Mod. EPA 537	Comments
WI-CV-GW034-0217	2/27/17	1315	MW03M	2	O	GW															X		
WI-CV-GW03D-0217	2/27/17	1405	MW03D	2	O	GW															X		
WI-CV-EB006-022717	2/27/17	1710	Eq. Blank	2	O	GW															X		
WI-CV-GW04M-0217	2/28/17	1000	MW04M	2	O	GW															X		
WI-CV-GW01M-0217	2/28/17	1100	MW01M	2	O	GW															X		
WI-CV-EB007-022817	2/28/17	1230	Eq. Blank	2	O	GW															X		
WI-CV-GW01D-0217	2/28/17	1400	MW01D	2	O	GW															X		

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M
Address: 1100 NE Circle Blvd
City: Corvallis State: OR Zip: 97330
Phone: Fax:
Email: tiffany.hill@ch2m.com

Container Types: A = 1 Liter Amber, G = Glass Jar, P = PUF, T = MM5, O = Other: 125ml HDPE

Bottle Preservation Type: T = Thiosulfate, O = Other: <6°C

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: ~~AQ~~ WW

SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

Vista Project #: 1700280 TAT 7

Samples Arrival:	**Date/Time** 03/02/17 1014	**Initials:** CBSB	**Location:** WR. 2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 3/2/17 1053 ~~1049~~ SR 3/2/17	**Initials:** SR	**Location:** WR-2 **Shelf/Rack:** E4

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

Temp °C: 0.7	(uncorrected)	**Time:** 1016	**Thermometer ID:** IR-2
Temp °C: 0.4	(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 1 of 2 Trk # 7785 4629 1697	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	

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

Comments:

March 07, 2017

Vista Work Order No. 1700280

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

Dear Ms. Hill,

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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. 1700280
Case Narrative

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Analytical Notes:

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All samples contained particulate and were centrifuged prior to extraction.

The aqueous samples were extracted and analyzed for PFBS, PFOA, and PFOS using Modified EPA Method 537.

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

Quality Control

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

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

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				HDPE Bottle, 125 mL
1700280-02	WI-CV-GW03D-0217	27-Feb-17 17:05	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-03	WI-CV-EB07-022717	27-Feb-17 17:10	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-04	WI-CV-GW04M-0217	28-Feb-17 10:00	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-05	WI-CV-GW01M-0217	28-Feb-17 11:00	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-06	WI-CV-EB08-022817	28-Feb-17 12:30	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1700280-07	WI-CV-GW01D-0217	28-Feb-17 14:00	02-Mar-17 10:14	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

Modified EPA Method 537

Matrix: Aqueous
Sample Size: 0.125 L

QC Batch: B7C0012
Date Extracted: 03-Mar-2017 8:25

Lab Sample: B7C0012-BLK1
Date Analyzed: 05-Mar-17 15:42 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.79	4.00	8.00	
PFOA	ND	0.651	2.00	8.00	
PFOS	ND	0.807	0.900	8.00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	104	60 - 150	
IS	13C2-PFOA	87.6	60 - 150	
IS	13C8-PFOS	88.7	60 - 150	

DL - Detection limit

RL - Reporting limit

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

Sample ID: OPR

Modified EPA Method 537

Matrix:	Aqueous	QC Batch:	B7C0012	Lab Sample:	B7C0012-BS1
Sample Size:	0.125 L	Date Extracted:	03-Mar-2017 8:25	Date Analyzed:	05-Mar-17 15:04 Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits
PFBS	89.8	80.0	112	60 - 130
PFOA	93.8	80.0	117	70 - 130
PFOS	81.1	80.0	101	70 - 130

	Labeled Standard	%R	LCL-UCL
IS	13C3-PFBS	105	60 - 150
IS	13C2-PFOA	89.4	60 - 150
IS	13C8-PFOS	92.3	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: WI-CV-GW03M-0217

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	27-Feb-2017 13:15
Location:	MW03M

Sample Data

Matrix:	Groundwater
Sample Size:	0.129 L

Laboratory Data

Lab Sample:	1700280-01	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 16:32	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.74	3.88	7.76	
PFOA	ND	0.631	1.94	7.76	
PFOS	ND	0.782	0.872	7.76	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	92.1	60 - 150	
IS	13C2-PFOA	85.2	60 - 150	
IS	13C8-PFOS	95.0	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW03D-0217

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	27-Feb-2017 17:05
Location:	MW03D

Sample Data

Matrix:	Groundwater
Sample Size:	0.128 L

Laboratory Data

Lab Sample:	1700280-02	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 16:45	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.75	3.91	7.81	
PFOA	ND	0.635	1.95	7.81	
PFOS	0.914	0.788	0.879	7.81	J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	86.7	60 - 150	
IS	13C2-PFOA	83.5	60 - 150	
IS	13C8-PFOS	101	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-EB07-022717

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	27-Feb-2017 17:10
Location:	Eq. Blank

Sample Data

Matrix:	Groundwater
Sample Size:	0.115 L

Laboratory Data

Lab Sample:	1700280-03	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 16:57	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.95	4.35	8.69	
PFOA	ND	0.708	2.17	8.69	
PFOS	ND	0.877	0.978	8.69	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	88.9	60 - 150	
IS	13C2-PFOA	86.3	60 - 150	
IS	13C8-PFOS	88.0	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW04M-0217

Modified EPA Method 537

Client Data

4 ame:	Cu 2M u ill
Nr6Rect:	4 aRy Clean CFT 8 TLj C6opeRille
Date C6llected:	28-j eb-2017 10:00
L6cati6n:	M. 0vM

Sample Data

Matrix:	Hr6ondGater
Sample Size:	0O2v L

Laboratory Data

Lab Sample:	1700280-0v	Date weceiRed:	02-Mar-2017 10:1v
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 17:10	C6lomn:	BEu C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
Nj BS	4 D	1080	v003	8009	
Nj TA	4 D	0O959	2002	8009	
Nj TS	4 D	0O813	00W07	8009	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-Nj BS	W2O	90 - 150	
IS	13C2-Nj TA	W5O	90 - 150	
IS	13C8-Nj TS	107	90 - 150	

DL - Detecti6n limit

wL - wep6rting limit

LCL-UCL - L6Ger c6ntr6l limit - opper c6ntr6l limit

wesolts rep6rted t6 DLO

. hen rep6rted, Nj BS, Nj u xS, Nj TA and Nj TS inclode b6th linear and branched is6mersO

Tnly the linear is6mer is rep6rted f6r all 6ther analytesO

Sample ID: WI-CV-GW02M-0127

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
4 ame:	Cu 2M u ill	Matrix:	Hr6ondGater	Lab Sample:	1700280-05	Date weceiRed:	02-Mar-2017 10:1v
NrRect:	4 aRy Clean CFT 8 TLj C6opeRille	Sample Size:	0O27 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date C6llected:	28-j eb-2017 11:00			Date Analyzed:	05-Mar-17 17:22	C6lomn:	BEu C18
L6cati6n:	M. 01M						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
Nj BS	4 D	1OW	3Ov	708	
Nj TA	4 D	00W1	1O7	708	
Nj TS	4 D	0O95	08W	708	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-Nj BS	900	W0 - 150	
IS	13C2-Nj TA	93O	W0 - 150	
IS	13C8-Nj TS	110	W0 - 150	

DL - Detecti6n limit

wL - wep6rting limit

LCL-UCL - L6Ger c6ntr6l limit - opper c6ntr6l limit

wesolts rep6rted t6 DLO

. hen rep6rted, Nj BS, Nj u xS, Nj TA and Nj TS inclode b6th linear and branched is6mersO

Tnly the linear is6mer is rep6rted f6r all 6ther analytesO

Sample ID: WI-CV-EB08-022817

Modified EPA Method 537

Client Data

Name:	CH2M Hill
Project:	Navy Clean CTO 8 OLF Coupeville
Date Collected:	28-Feb-2017 12:30
Location:	Eq. Blank

Sample Data

Matrix:	Groundwater
Sample Size:	0.110 L

Laboratory Data

Lab Sample:	1700280-06	Date Received:	02-Mar-2017 10:14
QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Analyzed:	05-Mar-17 17:35	Column:	BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.04	4.55	9.12	
PFOA	ND	0.742	2.27	9.12	
PFOS	1.16	0.920	1.02	9.12	J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	103	60 - 150	
IS	13C2-PFOA	93.8	60 - 150	
IS	13C8-PFOS	85.8	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

Sample ID: WI-CV-GW02D-0127

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
4 ame:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-07	Date Received:	02-Mar-2017 10:16
NroRect:	4 avy Clean CFT 8 TLj Coupeville	Sample Size:	0O25 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	28-j eb-2017 16:00			Date Analyzed:	05-Mar-17 17:67	Column:	BEH C18
Location:	M. 01D						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
Nj BS	4 D	1O79	6O00	8O00	
Nj TA	4 D	0O51	2O00	8O00	
Nj TS	4 D	0O807	0O900	8O00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-Nj BS	98O2	W0 - 150	
IS	13C2-Nj TA	93O2	W0 - 150	
IS	13C8-Nj TS	82O8	W0 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DLO

. hen reported, Nj BS, Nj HxS, Nj TA and Nj TS include both linear and branched isomersO

Tnly the linear isomer is reported for all other analytesO

DATA QUALIFIERS & ABBREVIATIONS

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

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

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

NELAP Accredited Test Methods

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

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

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

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

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

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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Laboratory Project ID: 1700280 Temp: 0.4 °C
Storage ID: NR-2 Storage Secured: Yes ☑ No ☐

Project ID: Navy CLEAN CTO 8 OU Keyesville P.O.#: 10006-7-10651 679580.09.FI.WS Sampler: E. Bilyeu, M. Witmer, B. Prentice (name)

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

Invoice to: Name: Katie Tippin Company: CH2M Address: City: State: Ph#: Fax#:

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brittany Prentice BP	3/1/2017	11:00	B. Benedict	03/02/17	1016
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: FedEx Overnight

ATTN: Simple Recieving

Tracking No.:

Add Analysis(es) Requested

Container(s)

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	EPA 1613: 2378-TCDD	EPA 1613: 2378 TCDD/TCDF	EPA 1613: PCDD/PCDF	EPA 8290: 2378-TCDD	EPA 8290: 2378-TCDD/TCDF	EPA 8290: PCDD/PCDF	EPA 8280: 2378-TCDD	EPA 8280: 2378 TCDD/TCDF	EPA 8280: PCDD/PCDF	EPA 8280: TOTALS	EPA 1668: COPLANAR PCB's	EPA 1668: 209 CONGENERS	EPA 1668: PBDE	EPA 1668: PAH	EPA 1614: WHO-29	CARB429: Mod. EPA 537	Comments
WI-CV-GW034-0217	2/27/17	1315	MW03M	2	O	GW															X		
WI-CV-GW03D-0217	2/27/17	1405	MW03D	2	O	GW															X		
WI-CV-EB006-022717	2/27/17	1710	Eq. Blank	2	O	GW															X		
WI-CV-GW04M-0217	2/28/17	1000	MW04M	2	O	GW															X		
WI-CV-GW01M-0217	2/28/17	1100	MW01M	2	O	GW															X		
WI-CV-EB007-022817	2/28/17	1230	Eq. Blank	2	O	GW															X		
WI-CV-GW01D-0217	2/28/17	1400	MW01D	2	O	GW															X		

Special Instructions/Comments:

SEND DOCUMENTATION AND RESULTS TO:

Name: Tiffany Hill
Company: CH2M
Address: 1100 NE Circle Blvd
City: Corvallis State: OR Zip: 97330
Phone: Fax:
Email: tiffany.hill@ch2m.com

Container Types: A = 1 Liter Amber, G = Glass Jar, P = PUF, T = MM5, O = Other: 125ml HDPE

Bottle Preservation Type: T = Thiosulfate, O = Other: <6°C

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: ~~AQ~~ WW

SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

Vista Project #: 1700280 **TAT** 7

Samples Arrival:	**Date/Time** 03/02/17 1014	**Initials:** CBSB	**Location:** WR. 2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 3/2/17 1053 ~~1049~~ SR 3/2/17	**Initials:** SR	**Location:** WR-2 **Shelf/Rack:** E4

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

Temp °C: 0.7	(uncorrected)	**Time:** 1016	**Thermometer ID:** IR-2
Temp °C: 0.4	(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 1 of 2 Trk # 7785 4629 1697	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	

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

Comments:

EXTRACTION INFORMATION

Process Sheet

Workorder: 1700280

RUSH

Prep Expiration: 2017-Mar-13
Client: CH2M Hill

Workorder Due: 09-Mar-17 00:00

TAT: 7

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

Prep Batch: B7C0012

Prep Data Entered: BP 3.6.17
Date and Initials

Version: PFOA, PFOS, PFBS

Initial Sequence: _____

LabSampleID	Recon	ClientSampleID	Date Received	Location	Comments
1700280-01	☑	WI-CV-GW03M-0217	02-Mar-17 10:14	WR-2 E-4	
1700280-02	☑	WI-CV-GW03D-0217	02-Mar-17 10:14	WR-2 E-4	
1700280-03	☑	WI-CV-EB07-022717	02-Mar-17 10:14	WR-2 E-4	
1700280-04	☑	WI-CV-GW04M-0217	02-Mar-17 10:14	WR-2 E-4	
1700280-05	☑	WI-CV-GW01M-0217	02-Mar-17 10:14	WR-2 E-4	
1700280-06	☐	~~WI-CV-EB08-022817~~ BP 3.3.17 WI-CV-EB07-022817	02-Mar-17 10:14	WR-2 E-4	
1700280-07	☑	WI-CV-GW01D-0217	02-Mar-17 10:14	WR-2 E-4	

centrifuge, use 125mLs

Vista PM: Martha Maier

Vial Box ID: The Duke

Sample Reconciled By: B. Parker 3/3/17

Page 1 of 1

Percent Solids

Vista Analytical Laboratory

Project: B7C0012 *Balance ID:* HRMS-9

Sample ID	Chemist: NA Date: Time: Boat Wt.	Sample + Boat Wt.	Chemist: NA Date: Time: Residue + Boat Wt.	Chemist/Date BP 3.3.17 pH before	pH* after	Cl
1700268-02Rel (A)				7	2	C
-04Rel (A)				7	2	C
1700280-01 (B)				7	2	C
-02 (B)				7	2	C
-03 (A)				5	2	C
-04 (B)				7	2	C
-05 (C)				7	2	C
-06 (A)				5	2	C
-07 (B)			BP 3.3.17	6	2	C

Procedure:

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

Notes:

(A) Added 2 drops HCl to adjust pH to 2

(B) Added 3 drops HCl to adjust pH to 2 BP 3.3.17

(C) Added ~~3~~ 4 drops HCl to adjust pH to 2 BP 3.3.17

- *Methods 8280, 613, 1613, 8290, 1614 – pH <9*
- *Methods 1668/PCN – pH 2-3*
- *NCASI 551 – pH 1*

%Solids rmh 5/2011

PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS DOD (LOO as mRL)

B7C0012

Chemist: G. Mendiola

Prep Date/Time: 03-Mar-17 08:25

Prepared using: LCMS - SPE Extraction-LCMS

C	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE B7C0017	RS CHEM/WIT DATE
☐	B7C0012-BLK1	NA	NA	(0.125)	on BP 3/3/17	BP 3.3.17	on BP 3/3/17
☐	B7C0012-BS1	↓	↓	(0.125)			
☐	1700268-02RE1 Ⓐ Ⓓ	92.03	26.57	0.06546			
☐	1700268-04RE1 Ⓓ	91.85	26.59	0.06526			
☐	1700280-01 Ⓑ	155.98	27.06	0.12892 ✓			
☐	1700280-02 Ⓒ	155.24	27.19	0.12805 ✓			
☐	1700280-03 Ⓒ	142.21	27.20	0.11501 ✓			
☐	1700280-04 Ⓓ	151.19	27.15	0.12404 ✓			
☐	1700280-05 Ⓑ	154.04	27.13	0.12691 ✓			
☐	1700280-06 Ⓑ	136.76	27.16	0.10960 ✓			
☐	1700280-07 ✓Ⓑ	152.16	27.18	0.12498 ✓			

Ⓐ Centrifuged to remove gelatinous substance BP 3.3.17

Ⓑ Contained very little gel (~1g) BP 3.3.17

Ⓒ Contained medium amounts of gel (~1-2g) BP 3.3.17

Ⓓ Contained ~~~~ (~2-5g) of gel BP 3.3.17

BP 3.3.17

IS Name	NS Name	RS Name		
(V3) 16L1920, 10mL	(V1) 16I2905, 10mL	(V4) 17A120, 10mL	SPE Chem: Strata X-AW 33um 200mg/6mL Ele SOLV: 0.5% NH4OH in MeOH/H2O Final Volume(s): 1mL	Check Out: Chemist/Date: BP 3.3.17 Check In: Chemist/Date: BP 3.3.17 Balance ID: HRWS-8

Comments: Assume 1 g = 1 mL

SAMPLE DATA – MODIFIED EPA METHOD 537

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time
Printed: Monday, March 06, 2017 13:02:59 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7		5.809e3		0.125			
2	4	PFOA	413 > 368.7	1.839e2	2.727e4		0.125	4.31		
3	6	PFOS	499 >79.9		6.667e3		0.125			
4	7	13C3-PFBS	302.0 > 98.8	5.809e3	1.363e4	0.410	0.125	3.03	104	104
5	10	13C2-PFOA	414.9 > 369.7	2.727e4	6.759e3	4.608	0.125	4.31	87.6	87.6
6	12	13C8-PFOS	507.0 > 79.9	6.667e3	7.841e3	0.958	0.125	4.69	88.7	88.7
7	14	13C3-PFHxS	401.9 > 79.9	1.363e4	1.363e4	1.000	0.125	4.03	100	100
8	15	13C8-PFOA	421.3 > 376	6.759e3	6.759e3	1.000	0.125	4.31	100	100
9	17	13C4-PFOS	503.0 > 79.9	7.841e3	7.841e3	1.000	0.125	4.70	100	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time
Printed: Monday, March 06, 2017 13:03:17 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		5.664e3		0.125			
2	19	Total PFHxS	398.9 > 79.6		5.664e3		0.125			
3	20	Total PFOA	413 > 368.7		2.727e4		0.125			
4	21	Total PFOS	499 > 79.9		6.667e3		0.125			

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

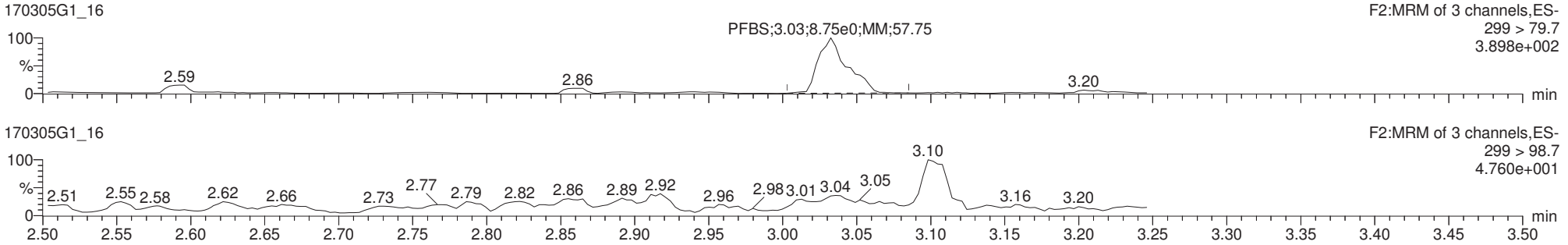
Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time
Printed: Monday, March 06, 2017 13:02:59 Pacific Standard Time

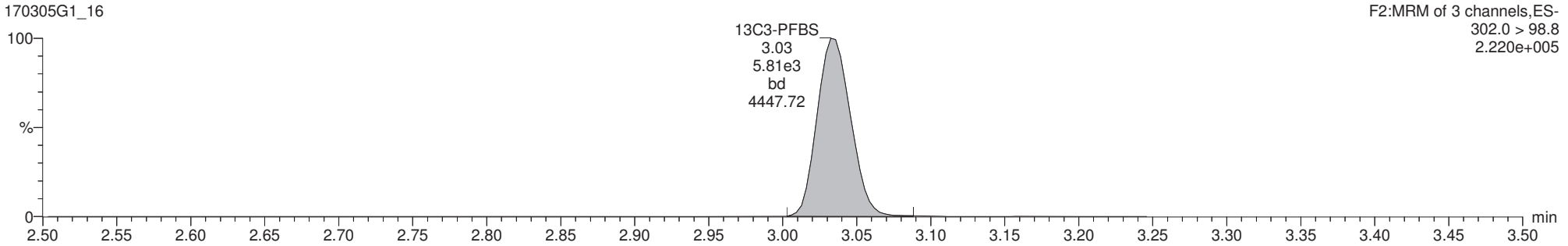
Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23, Instrument: , Lab: , User:

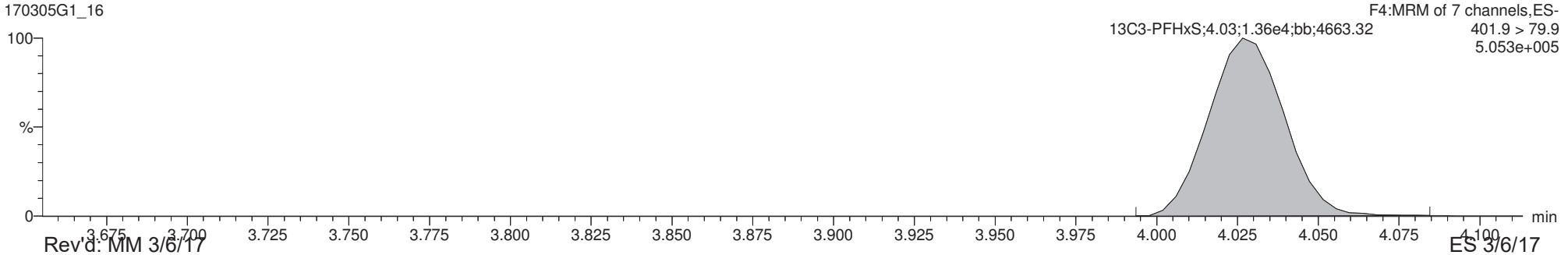
PFBS



13C3-PFBS



13C3-PFHxS



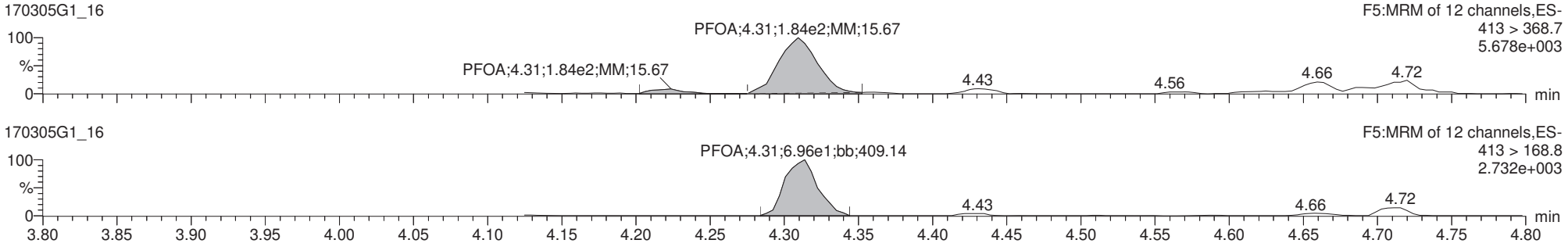
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time
Printed: Monday, March 06, 2017 13:02:59 Pacific Standard Time

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23, Instrument: , Lab: , User:

PFOA



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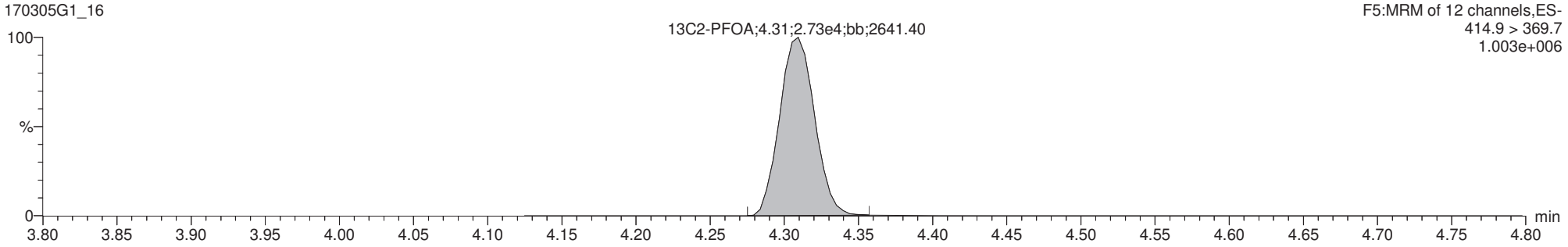
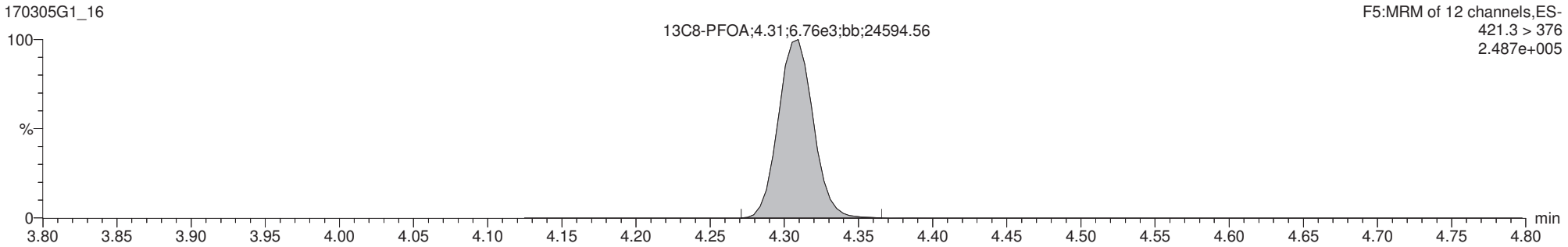


13C8-PFOA



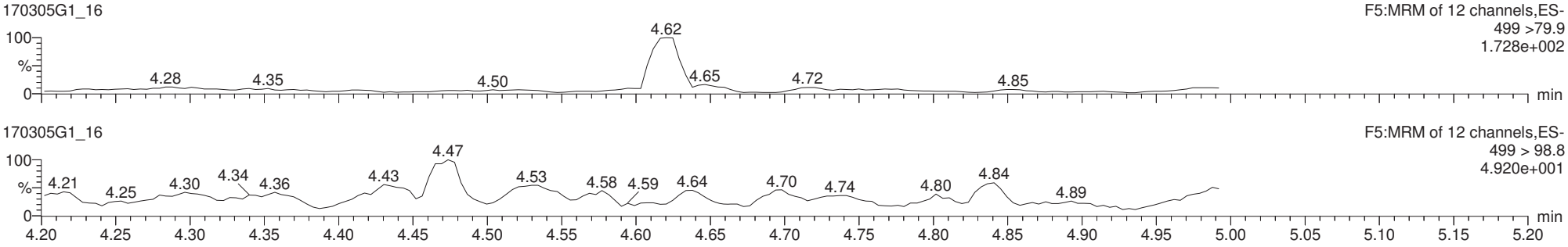
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-16.qld

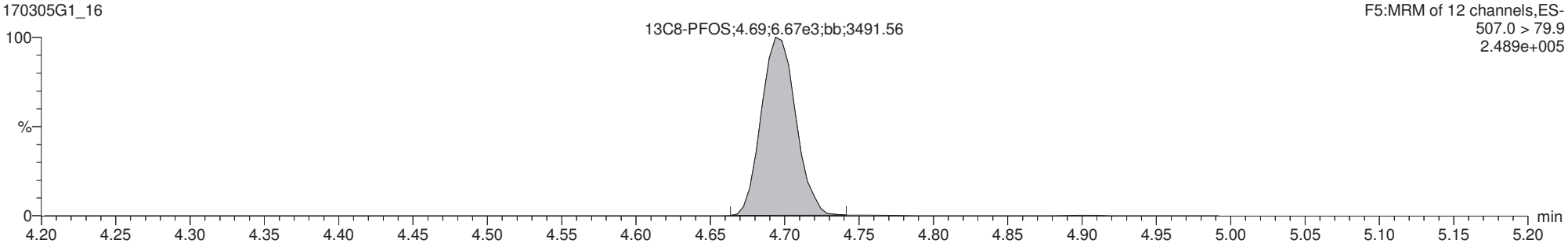
Last Altered: Monday, March 06, 2017 10:32:37 Pacific Standard Time
Printed: Monday, March 06, 2017 13:02:59 Pacific Standard Time

ID: B7C0012-BLK1 Method Blank 0.125, Description: Method Blank, Name: 170305G1_16, Date: 05-Mar-2017, Time: 15:42:23, Instrument: , Lab: , User:

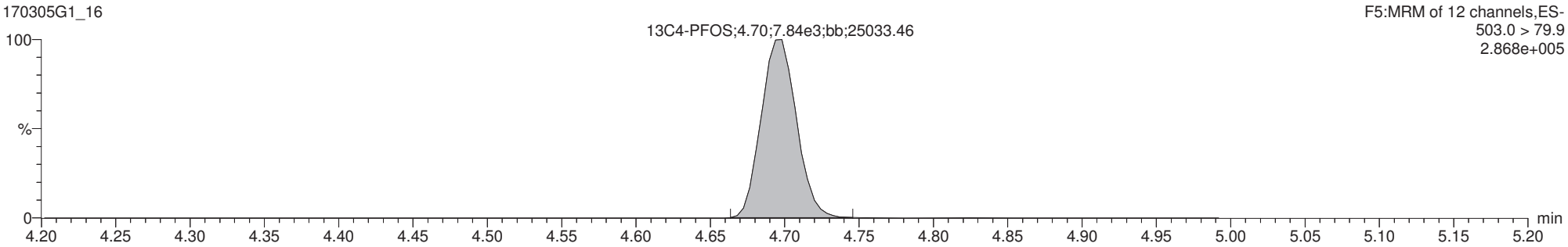
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time
Printed: Monday, March 06, 2017 13:07:56 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.163e4	5.427e3		0.125	3.04	89.8	112
2	4	PFOA	413 > 368.7	1.828e4	2.406e4		0.125	4.31	93.8	117
3	6	PFOS	499 >79.9	2.607e3	6.027e3		0.125	4.69	81.1	101
4	7	13C3-PFBS	302.0 > 98.8	5.427e3	1.265e4	0.410	0.125	3.03	105	105
5	10	13C2-PFOA	414.9 > 369.7	2.406e4	5.841e3	4.608	0.125	4.30	89.4	89.4
6	12	13C8-PFOS	507.0 > 79.9	6.027e3	6.816e3	0.958	0.125	4.69	92.3	92.3
7	14	13C3-PFHxS	401.9 > 79.9	1.265e4	1.265e4	1.000	0.125	4.03	100	100
8	15	13C8-PFOA	421.3 > 376	5.841e3	5.841e3	1.000	0.125	4.30	100	100
9	17	13C4-PFOS	503.0 > 79.9	6.816e3	6.816e3	1.000	0.125	4.69	100	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time
Printed: Monday, March 06, 2017 13:08:39 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		5.115e3		0.125		89.8	
2	20	Total PFOA	413 > 368.7		2.406e4		0.125		93.8	
3	21	Total PFOS	499 > 79.9		6.027e3		0.125		81.1	

Rev'd: MM 3/6/17

ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time
Printed: Monday, March 06, 2017 13:07:56 Pacific Standard Time

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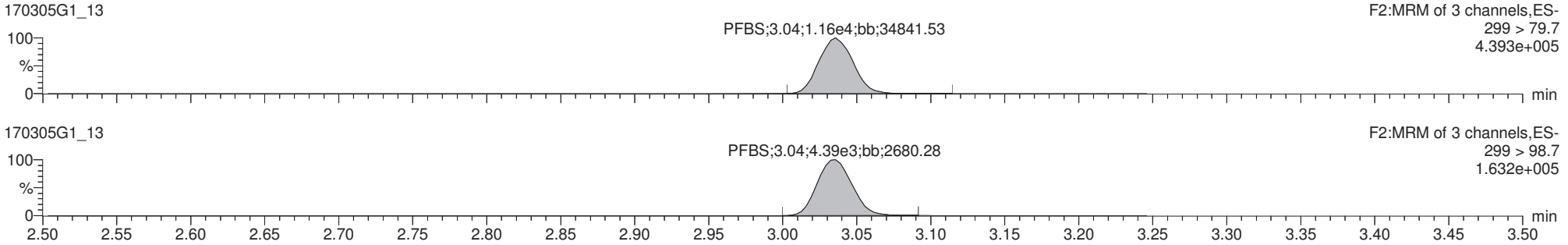
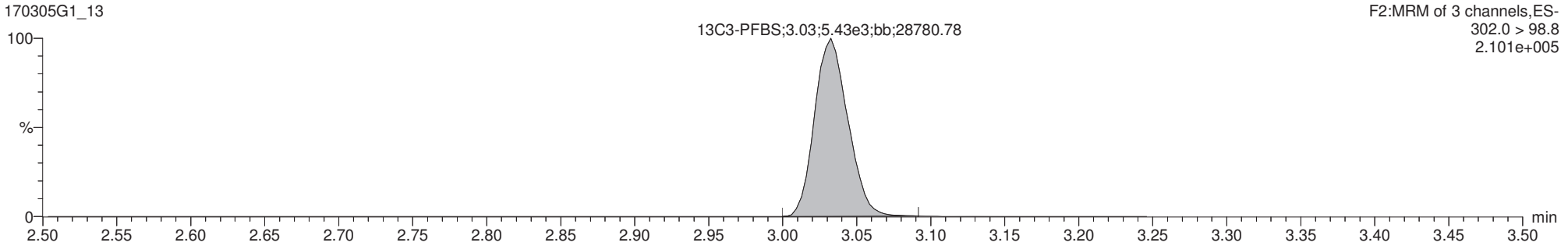
ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45, Instrument: , Lab: , User:

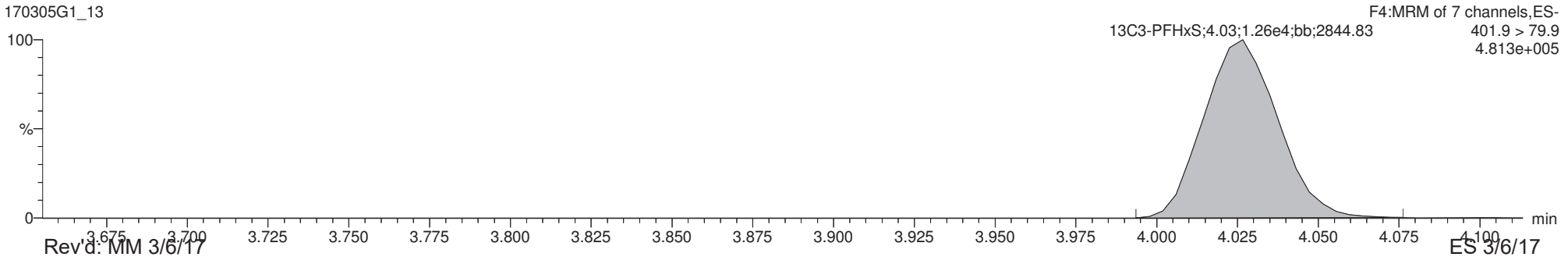
PFBS



13C3-PFBS



13C3-PFHxS



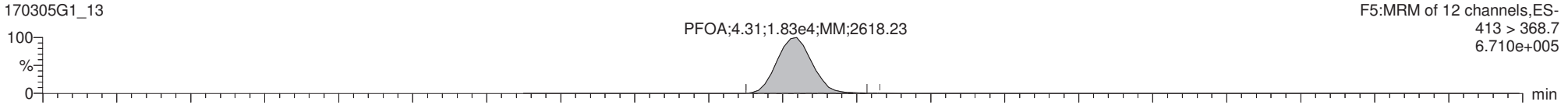
Rev'd: MM 3/6/17 ES 3/6/17

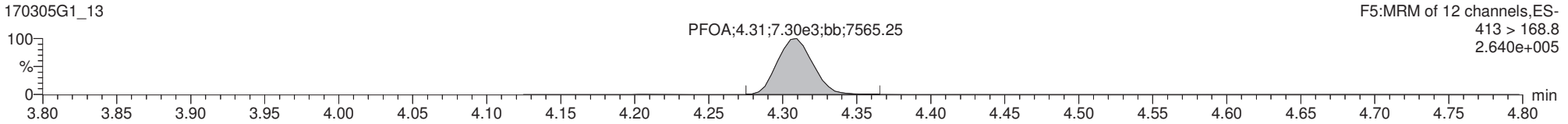
Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time
Printed: Monday, March 06, 2017 13:07:56 Pacific Standard Time

ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45, Instrument: , Lab: , User:

PFOA





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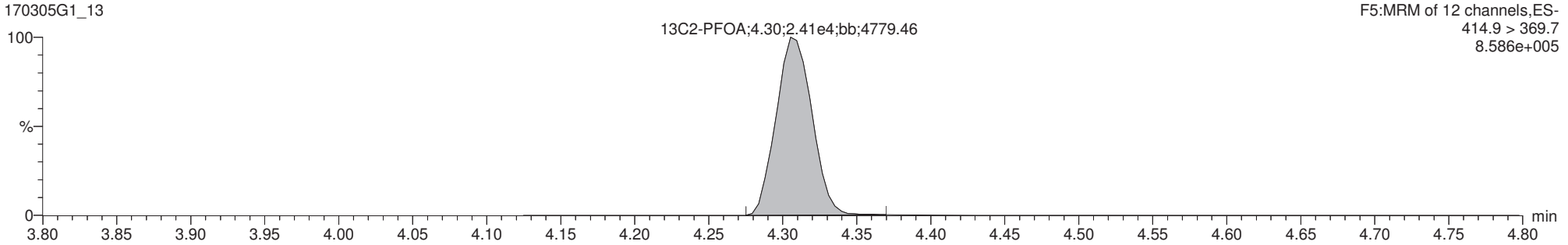
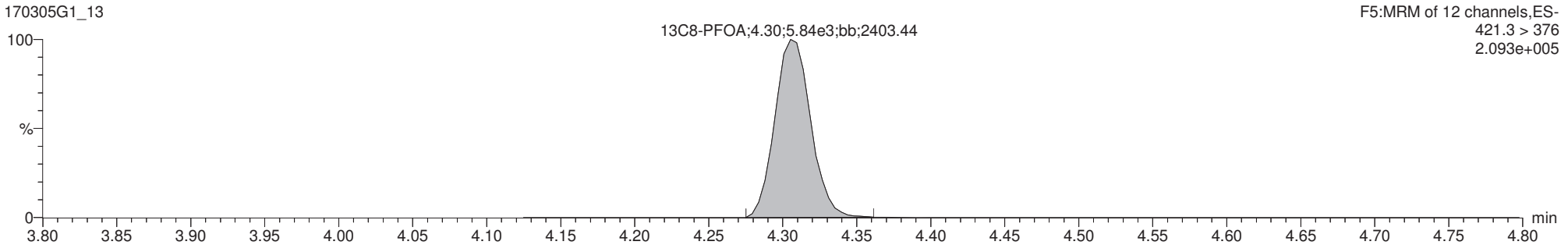


13C8-PFOA



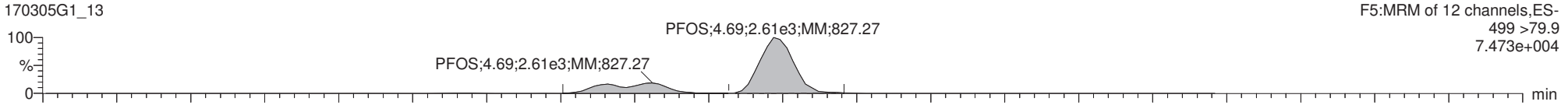
Rev'd: MM 3/6/17 ES 3/6/17

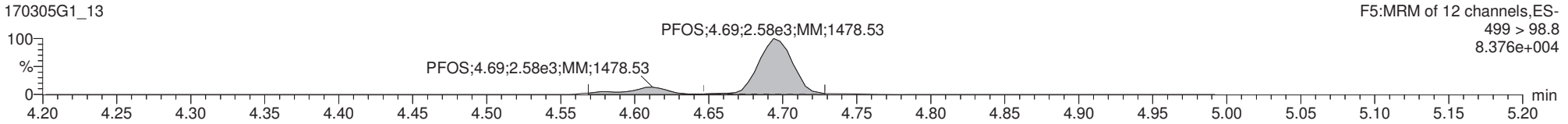
Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-13.qld

Last Altered: Monday, March 06, 2017 10:17:53 Pacific Standard Time
Printed: Monday, March 06, 2017 13:07:56 Pacific Standard Time

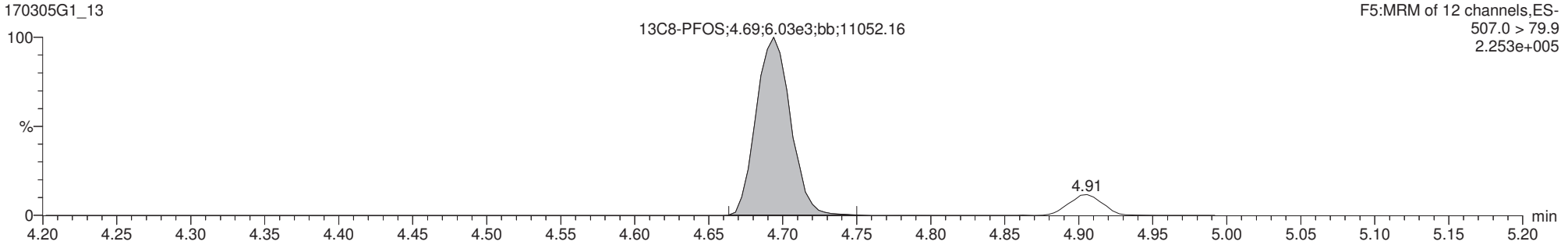
ID: B7C0012-BS1 OPR 0.125, Description: OPR, Name: 170305G1_13, Date: 05-Mar-2017, Time: 15:04:45, Instrument: , Lab: , User:

PFOS

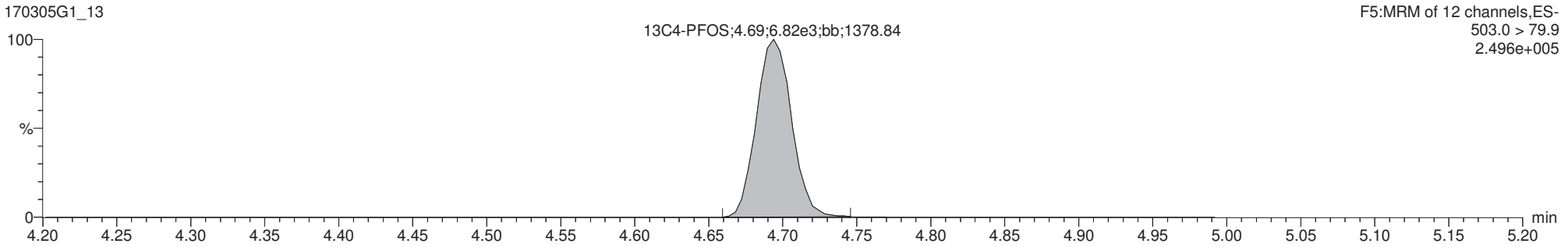




13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-20.qld

Last Altered: Monday, March 06, 2017 12:35:21 Pacific Standard Time
Printed: Monday, March 06, 2017 12:59:16 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-01 WI-CV-GW03M-0217 0.125, Description: WI-CV-GW03M-0217, Name: 170305G1_20, Date: 05-Mar-2017, Time: 16:32:34

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7	9.781e0	5.758e3		0.129	3.04		
2	4	PFOA	413 > 368.7	1.116e2	2.985e4		0.129	4.31		
3	6	PFOS	499 >79.9		7.724e3		0.129			
4	7	13C3-PFBS	302.0 > 98.8	5.758e3	1.526e4	0.410	0.129	3.04	89.3	92.1
5	10	13C2-PFOA	414.9 > 369.7	2.985e4	7.598e3	4.608	0.129	4.31	82.6	85.2
6	12	13C8-PFOS	507.0 > 79.9	7.724e3	8.488e3	0.958	0.129	4.70	92.1	95.0
7	14	13C3-PFHxS	401.9 > 79.9	1.526e4	1.526e4	1.000	0.129	4.03	97.0	100
8	15	13C8-PFOA	421.3 > 376	7.598e3	7.598e3	1.000	0.129	4.31	97.0	100
9	17	13C4-PFOS	503.0 > 79.9	8.488e3	8.488e3	1.000	0.129	4.70	97.0	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-20.qld

Last Altered: Monday, March 06, 2017 12:35:21 Pacific Standard Time
Printed: Monday, March 06, 2017 12:59:34 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-01 WI-CV-GW03M-0217 0.125, Description: WI-CV-GW03M-0217, Name: 170305G1_20, Date: 05-Mar-2017, Time: 16:32:34

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		6.759e3		0.129			
2	20	Total PFOA	413 > 368.7		2.985e4		0.129			
3	21	Total PFOS	499 > 79.9		7.724e3		0.129			

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-20.qld

Last Altered: Monday, March 06, 2017 12:35:21 Pacific Standard Time
Printed: Monday, March 06, 2017 12:59:16 Pacific Standard Time

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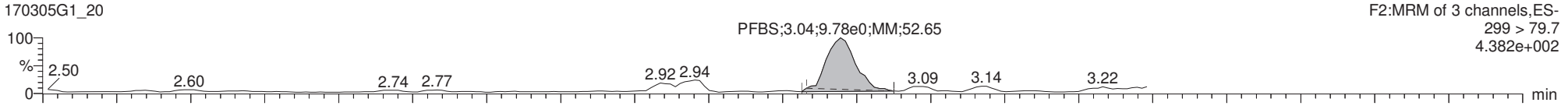
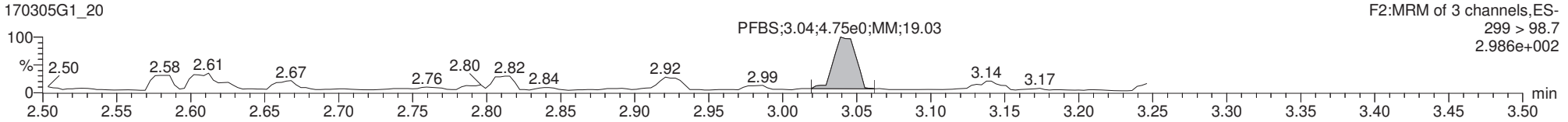
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

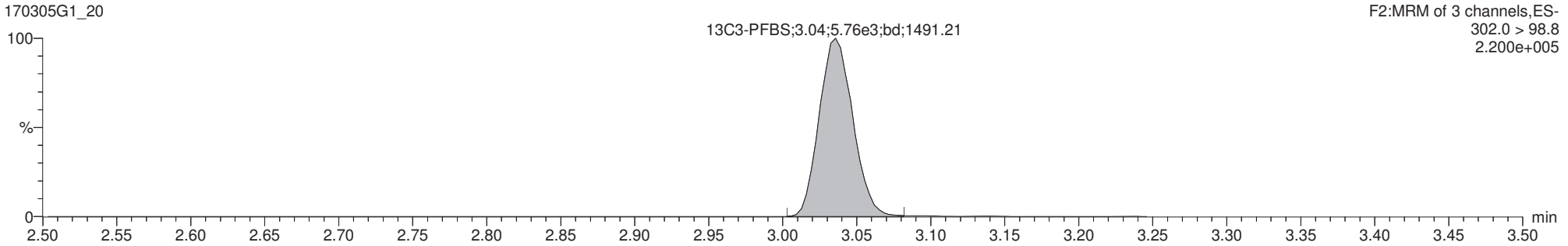
ID: 1700280-01 WI-CV-GW03M-0217 0.125, Description: WI-CV-GW03M-0217, Name: 170305G1_20, Date: 05-Mar-2017, Time: 16:32:34, Instrument: , Lab: , User:

PFBS

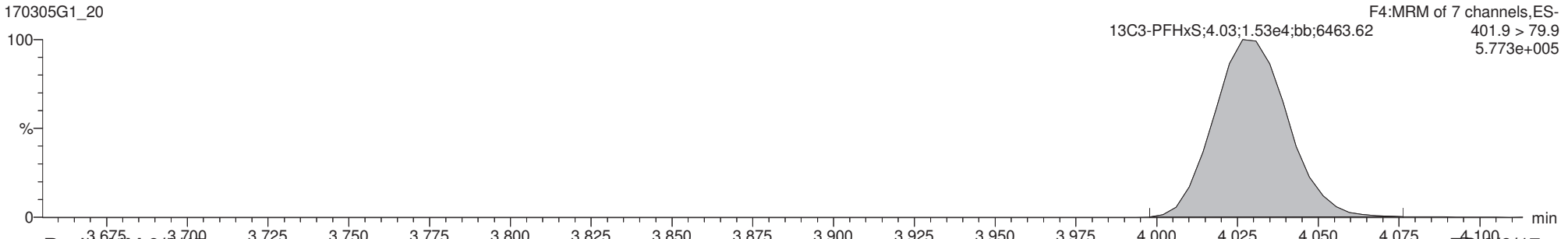




13C3-PFBS



13C3-PFHxS



Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-20.qld

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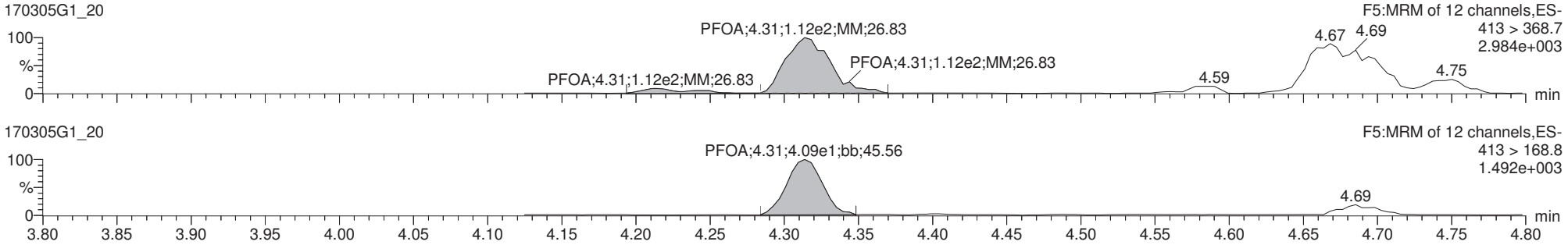
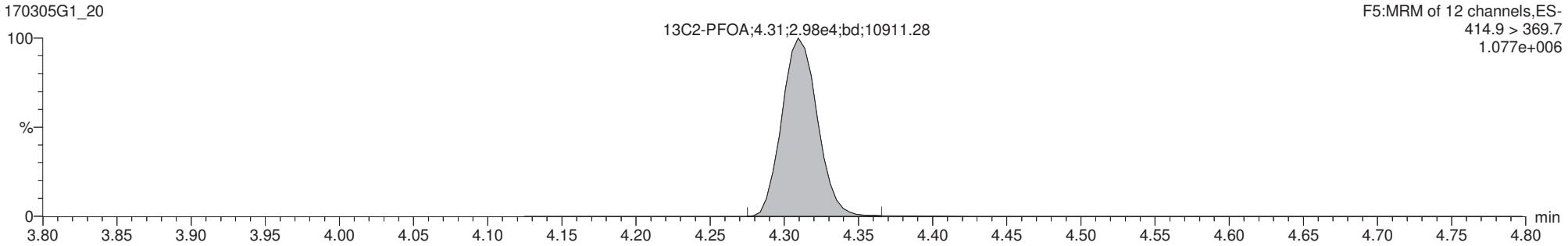
Printed: Monday, March 06, 2017 12:59:16 Pacific Standard Time

ID: 1700280-01 WI-CV-GW03M-0217 0.125, Description: WI-CV-GW03M-0217, Name: 170305G1_20, Date: 05-Mar-2017, Time: 16:32:34, Instrument: , Lab: , User:

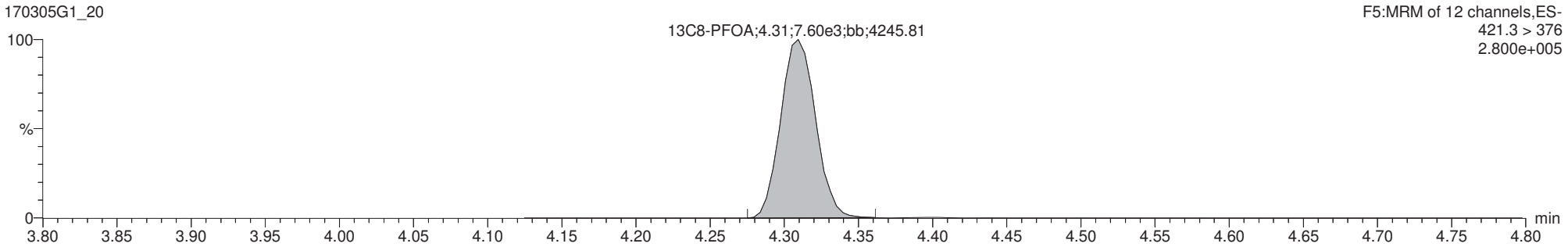
PFOA



13C2-PFOA



13C8-PFOA



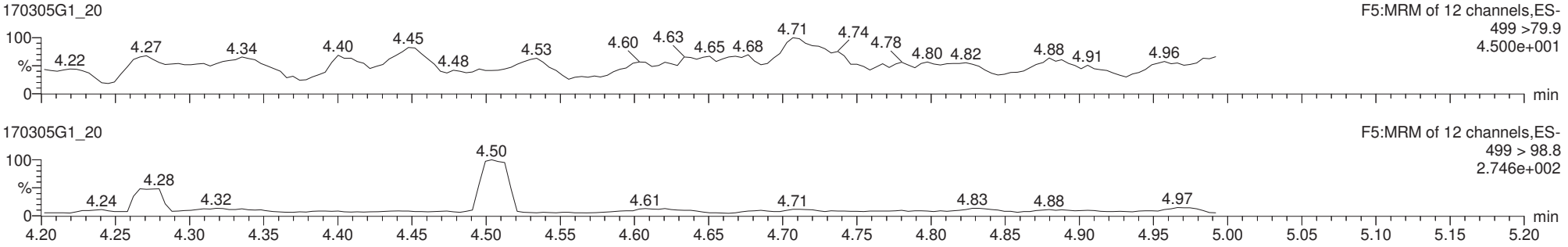
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-20.qld

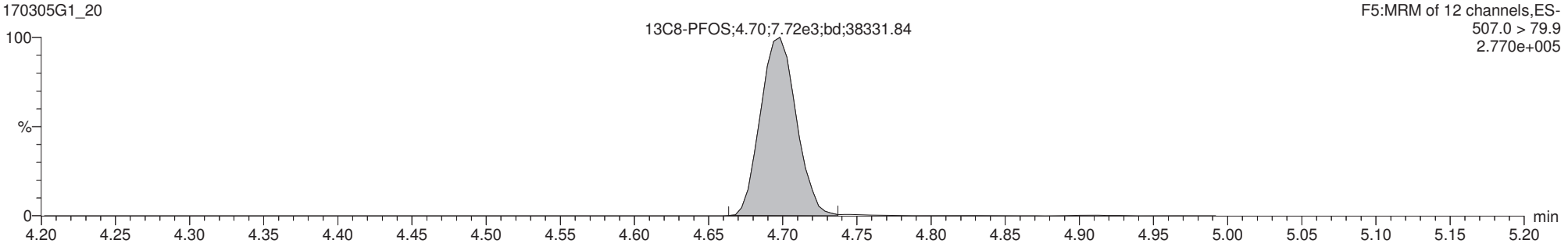
Last Altered: Monday, March 06, 2017 12:35:21 Pacific Standard Time
Printed: Monday, March 06, 2017 12:59:16 Pacific Standard Time

ID: 1700280-01 WI-CV-GW03M-0217 0.125, Description: WI-CV-GW03M-0217, Name: 170305G1_20, Date: 05-Mar-2017, Time: 16:32:34, Instrument: , Lab: , User:

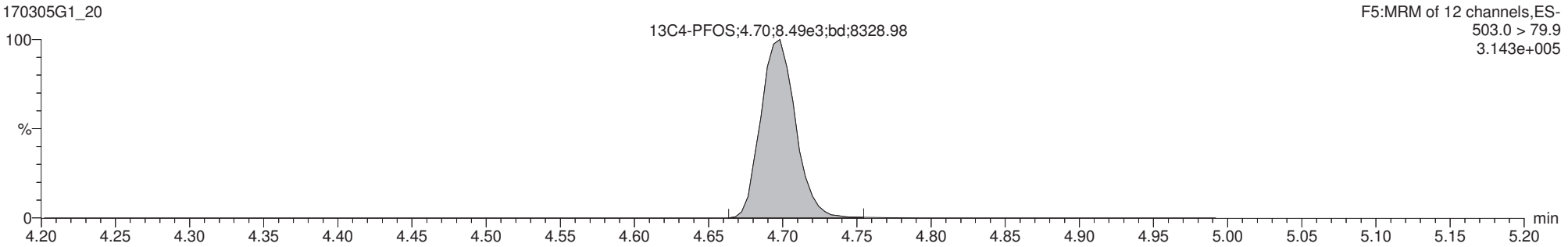
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-21.qld

Last Altered: Monday, March 06, 2017 12:42:49 Pacific Standard Time
Printed: Monday, March 06, 2017 12:57:50 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-02 WI-CV-GW03D-0217 0.125, Description: WI-CV-GW03D-0217, Name: 170305G1_21, Date: 05-Mar-2017, Time: 16:45:07

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7		5.993e3		0.128			
2	4	PFOA	413 > 368.7	2.133e2	3.539e4		0.128	4.31		
3	6	PFOS	499 >79.9	8.704e0	1.011e4		0.128	4.61	0.914	
4	7	13C3-PFBS	302.0 > 98.8	5.993e3	1.686e4	0.410	0.128	3.03	84.7	86.7
5	10	13C2-PFOA	414.9 > 369.7	3.539e4	9.199e3	4.608	0.128	4.31	81.5	83.5
6	12	13C8-PFOS	507.0 > 79.9	1.011e4	1.041e4	0.958	0.128	4.70	99.0	101
7	14	13C3-PFHxS	401.9 > 79.9	1.686e4	1.686e4	1.000	0.128	4.03	97.6	100
8	15	13C8-PFOA	421.3 > 376	9.199e3	9.199e3	1.000	0.128	4.31	97.6	100
9	17	13C4-PFOS	503.0 > 79.9	1.041e4	1.041e4	1.000	0.128	4.70	97.6	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-21.qld

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Printed: Monday, March 06, 2017 12:58:09 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-02 WI-CV-GW03D-0217 0.125, Description: WI-CV-GW03D-0217, Name: 170305G1_21, Date: 05-Mar-2017, Time: 16:45:07

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		6.971e3		0.128			
2	20	Total PFOA	413 > 368.7		3.539e4		0.128			
3	21	Total PFOS	499 > 79.9		1.011e4		0.128		0.914	

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

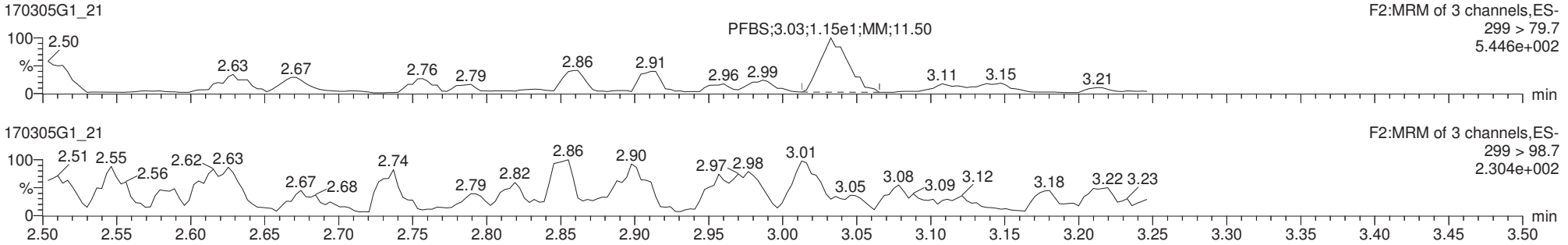
Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-21.qld

Last Altered: Monday, March 06, 2017 12:42:49 Pacific Standard Time
Printed: Monday, March 06, 2017 12:57:50 Pacific Standard Time

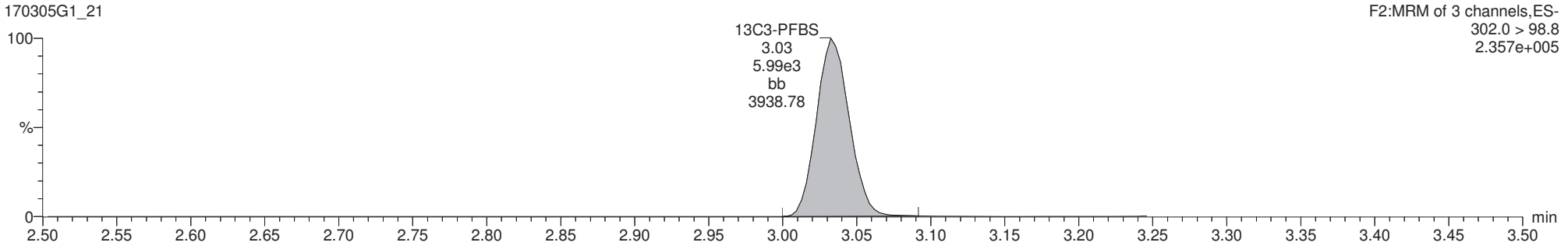
Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-02 WI-CV-GW03D-0217 0.125, Description: WI-CV-GW03D-0217, Name: 170305G1_21, Date: 05-Mar-2017, Time: 16:45:07, Instrument: , Lab: , User:

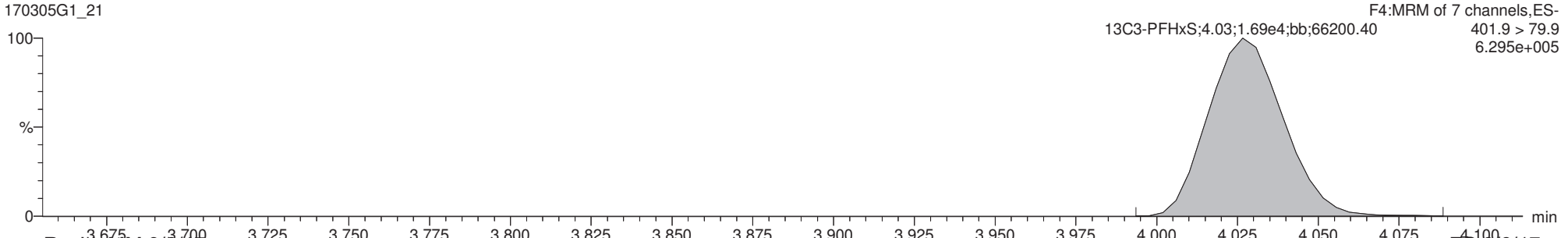
PFBS



13C3-PFBS



13C3-PFHxS



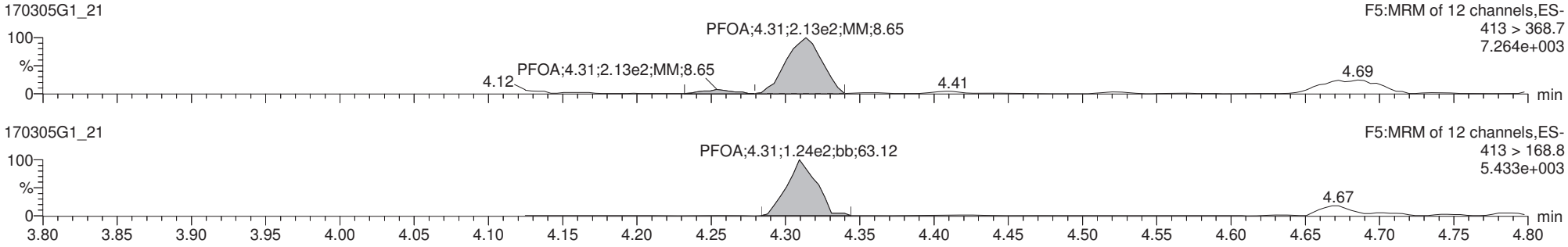
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-21.qld

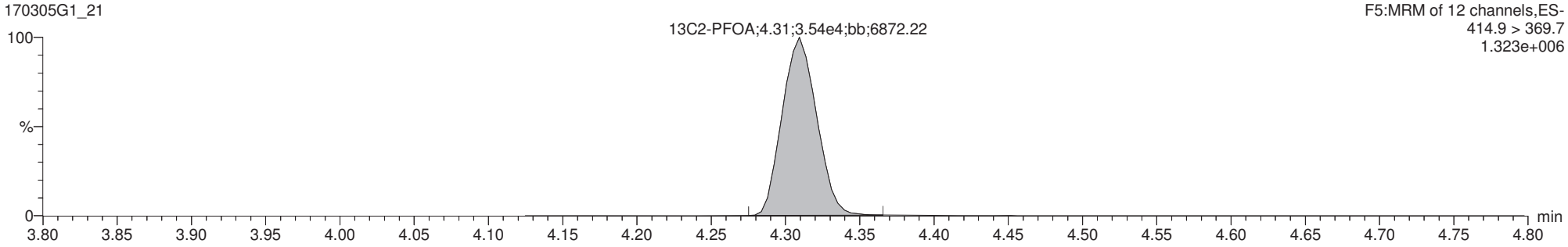
Last Altered: Monday, March 06, 2017 12:42:49 Pacific Standard Time
Printed: Monday, March 06, 2017 12:57:50 Pacific Standard Time

ID: 1700280-02 WI-CV-GW03D-0217 0.125, Description: WI-CV-GW03D-0217, Name: 170305G1_21, Date: 05-Mar-2017, Time: 16:45:07, Instrument: , Lab: , User:

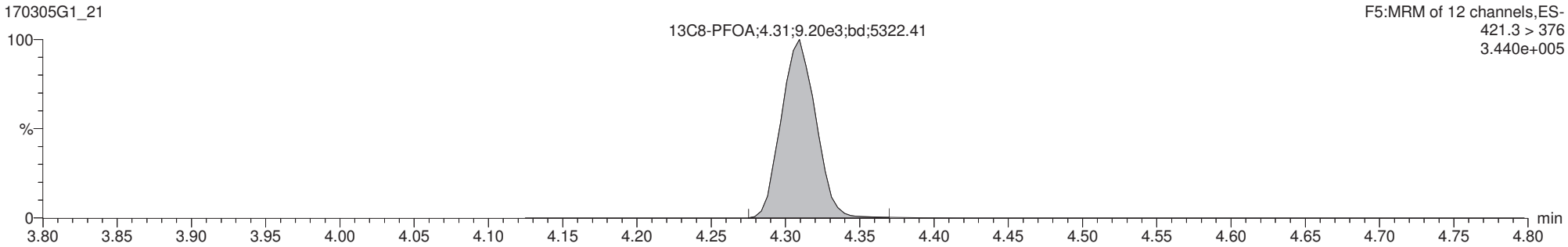
PFOA



13C2-PFOA



13C8-PFOA



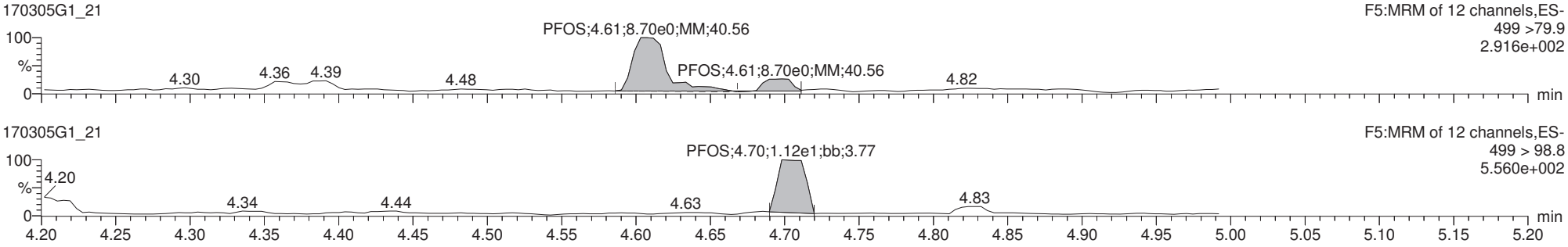
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-21.qld

Last Altered: Monday, March 06, 2017 12:42:49 Pacific Standard Time
Printed: Monday, March 06, 2017 12:57:50 Pacific Standard Time

ID: 1700280-02 WI-CV-GW03D-0217 0.125, Description: WI-CV-GW03D-0217, Name: 170305G1_21, Date: 05-Mar-2017, Time: 16:45:07, Instrument: , Lab: , User:

PFOS



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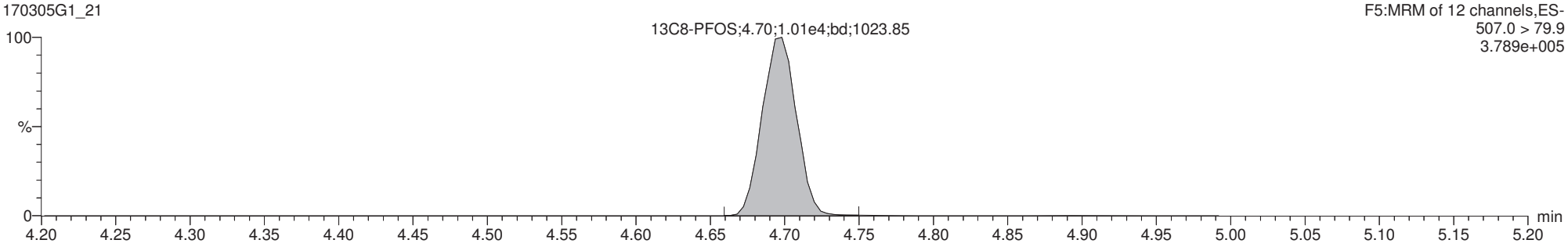
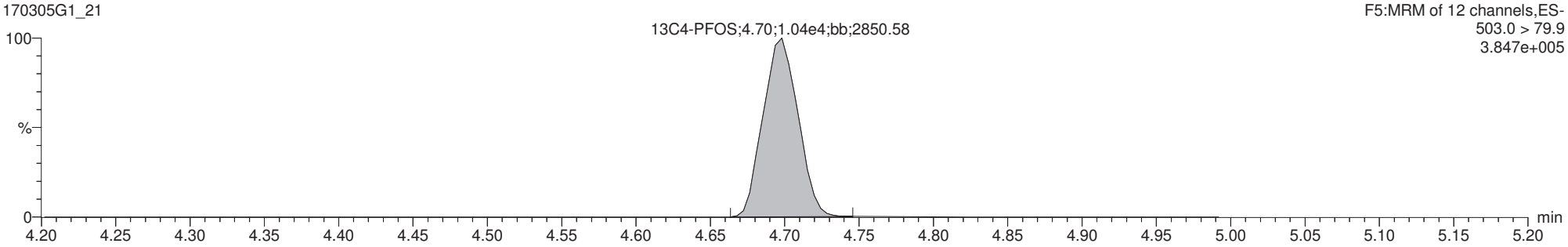


13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-22.qld

Last Altered: Monday, March 06, 2017 12:46:19 Pacific Standard Time
Printed: Monday, March 06, 2017 12:56:11 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-03 WI-CV-EB07-022717 0.125, Description: WI-CV-EB07-022717, Name: 170305G1_22, Date: 05-Mar-2017, Time: 16:57:36

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7		6.236e3		0.115			
2	4	PFOA	413 > 368.7	2.659e2	3.912e4		0.115	4.31		
3	6	PFOS	499 >79.9		1.197e4		0.115			
4	7	13C3-PFBS	302.0 > 98.8	6.236e3	1.711e4	0.410	0.115	3.04	96.6	88.9
5	10	13C2-PFOA	414.9 > 369.7	3.912e4	9.833e3	4.608	0.115	4.31	93.8	86.3
6	12	13C8-PFOS	507.0 > 79.9	1.197e4	1.419e4	0.958	0.115	4.69	95.7	88.0
7	14	13C3-PFHxS	401.9 > 79.9	1.711e4	1.711e4	1.000	0.115	4.03	109	100
8	15	13C8-PFOA	421.3 > 376	9.833e3	9.833e3	1.000	0.115	4.31	109	100
9	17	13C4-PFOS	503.0 > 79.9	1.419e4	1.419e4	1.000	0.115	4.70	109	100

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Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-22.qld

Last Altered: Monday, March 06, 2017 12:46:19 Pacific Standard Time
Printed: Monday, March 06, 2017 12:56:49 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-03 WI-CV-EB07-022717 0.125, Description: WI-CV-EB07-022717, Name: 170305G1_22, Date: 05-Mar-2017, Time: 16:57:36

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		7.048e3		0.115			
2	20	Total PFOA	413 > 368.7		3.912e4		0.115			
3	21	Total PFOS	499 > 79.9		1.197e4		0.115			

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Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-22.qld

Last Altered: Monday, March 06, 2017 12:46:19 Pacific Standard Time
Printed: Monday, March 06, 2017 12:56:11 Pacific Standard Time

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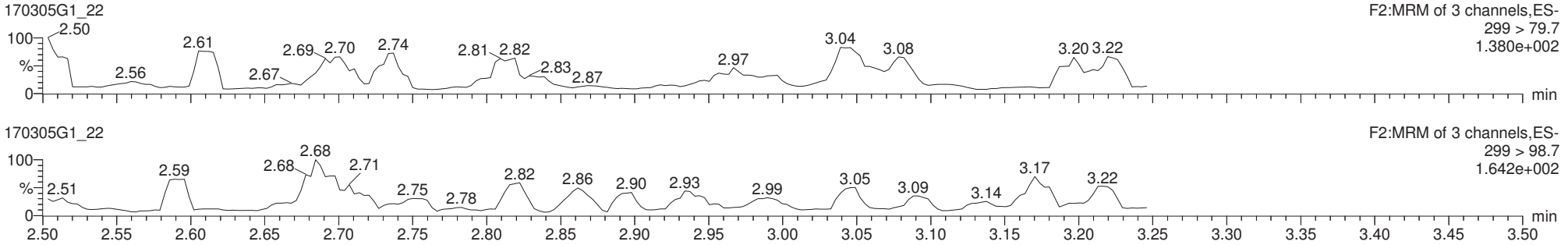
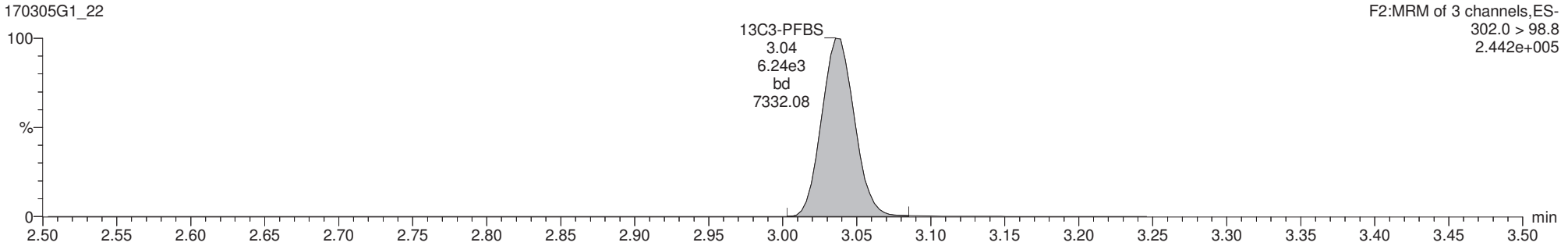
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-03 WI-CV-EB07-022717 0.125, Description: WI-CV-EB07-022717, Name: 170305G1_22, Date: 05-Mar-2017, Time: 16:57:36, Instrument: , Lab: , User:

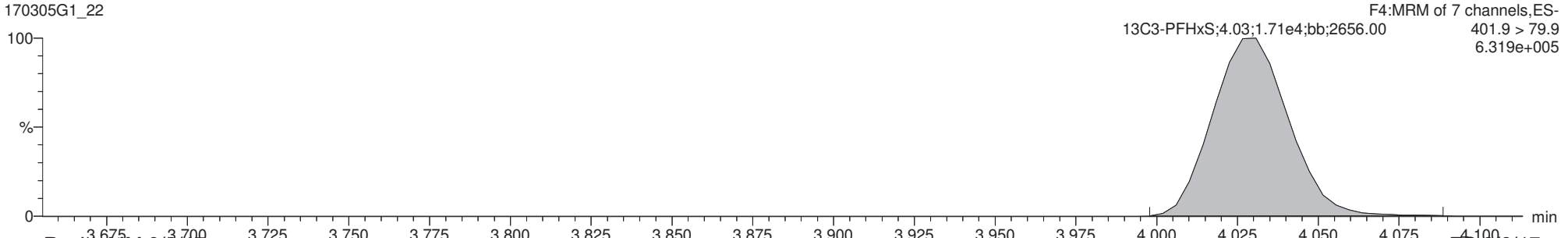
PFBS



13C3-PFBS



13C3-PFHxS



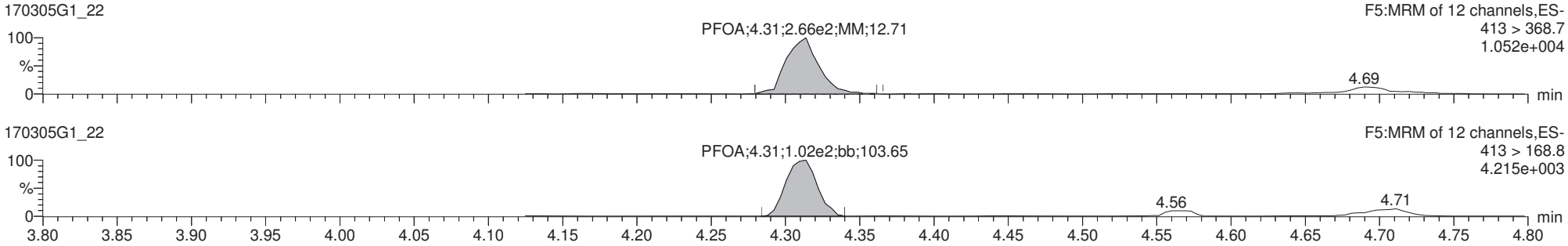
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-22.qld

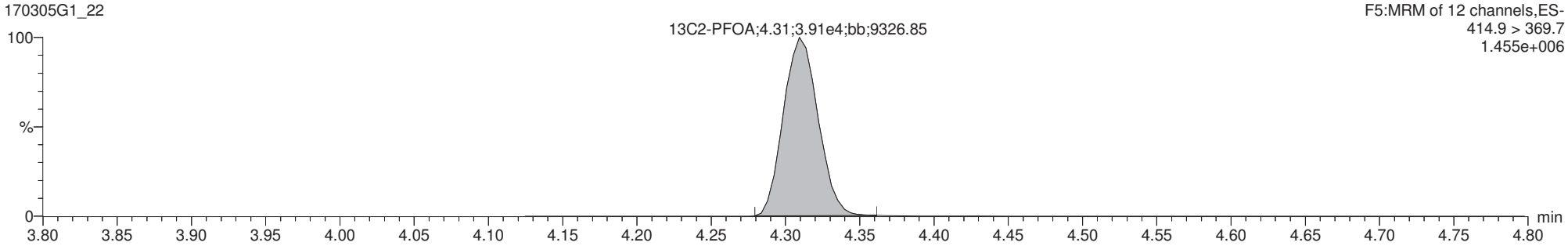
Last Altered: Monday, March 06, 2017 12:46:19 Pacific Standard Time
Printed: Monday, March 06, 2017 12:56:11 Pacific Standard Time

ID: 1700280-03 WI-CV-EB07-022717 0.125, Description: WI-CV-EB07-022717, Name: 170305G1_22, Date: 05-Mar-2017, Time: 16:57:36, Instrument: , Lab: , User:

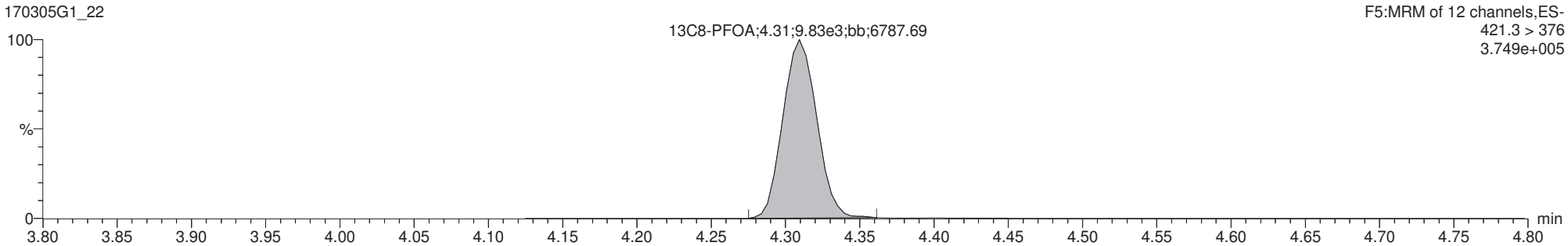
PFOA



13C2-PFOA



13C8-PFOA



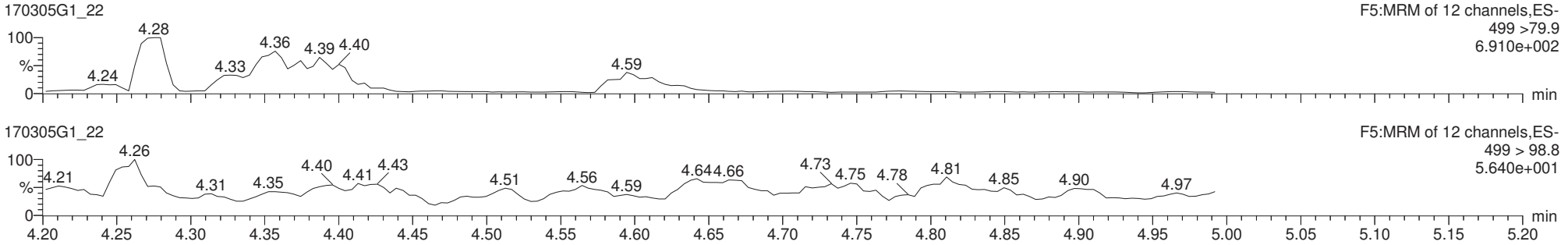
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-22.qld

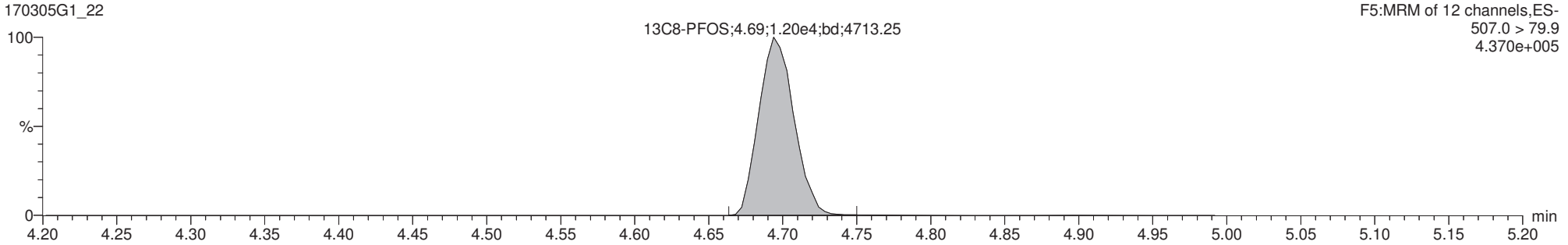
Last Altered: Monday, March 06, 2017 12:46:19 Pacific Standard Time
Printed: Monday, March 06, 2017 12:56:11 Pacific Standard Time

ID: 1700280-03 WI-CV-EB07-022717 0.125, Description: WI-CV-EB07-022717, Name: 170305G1_22, Date: 05-Mar-2017, Time: 16:57:36, Instrument: , Lab: , User:

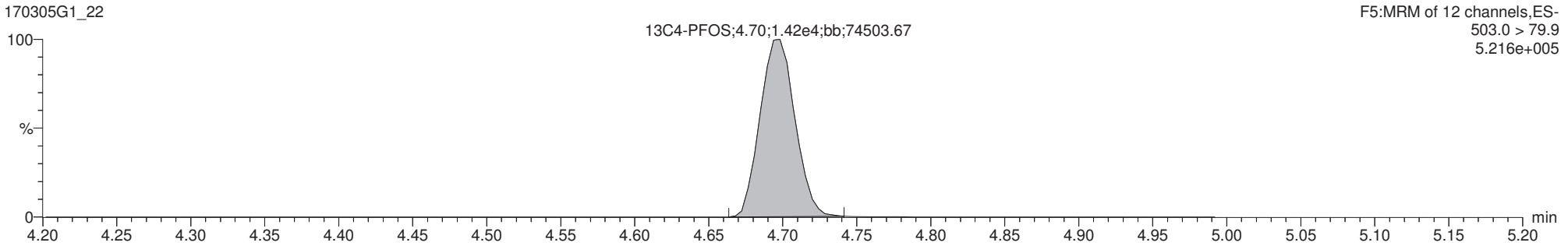
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-23.qld

Last Altered: Monday, March 06, 2017 12:51:52 Pacific Standard Time
Printed: Monday, March 06, 2017 12:54:52 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-04 WI-CV-GW04M-0217 0.125, Description: WI-CV-GW04M-0217, Name: 170305G1_23, Date: 05-Mar-2017, Time: 17:10:09

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7		6.553e3		0.124			
2	4	PFOA	413 > 368.7	6.077e2	3.687e4		0.124	4.31	0.273	
3	6	PFOS	499 >79.9		1.123e4		0.124			
4	7	13C3-PFBS	302.0 > 98.8	6.553e3	1.732e4	0.410	0.124	3.04	93.0	92.3
5	10	13C2-PFOA	414.9 > 369.7	3.687e4	8.417e3	4.608	0.124	4.31	95.8	95.1
6	12	13C8-PFOS	507.0 > 79.9	1.123e4	1.099e4	0.958	0.124	4.69	107	107
7	14	13C3-PFHxS	401.9 > 79.9	1.732e4	1.732e4	1.000	0.124	4.03	101	100
8	15	13C8-PFOA	421.3 > 376	8.417e3	8.417e3	1.000	0.124	4.31	101	100
9	17	13C4-PFOS	503.0 > 79.9	1.099e4	1.099e4	1.000	0.124	4.70	101	100

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Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-23.qld

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Printed: Monday, March 06, 2017 12:55:13 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-04 WI-CV-GW04M-0217 0.125, Description: WI-CV-GW04M-0217, Name: 170305G1_23, Date: 05-Mar-2017, Time: 17:10:09

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		7.449e3		0.124			
2	20	Total PFOA	413 > 368.7		3.687e4		0.124		0.273	
3	21	Total PFOS	499 > 79.9		1.123e4		0.124			

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-23.qld

Last Altered: Monday, March 06, 2017 12:51:52 Pacific Standard Time
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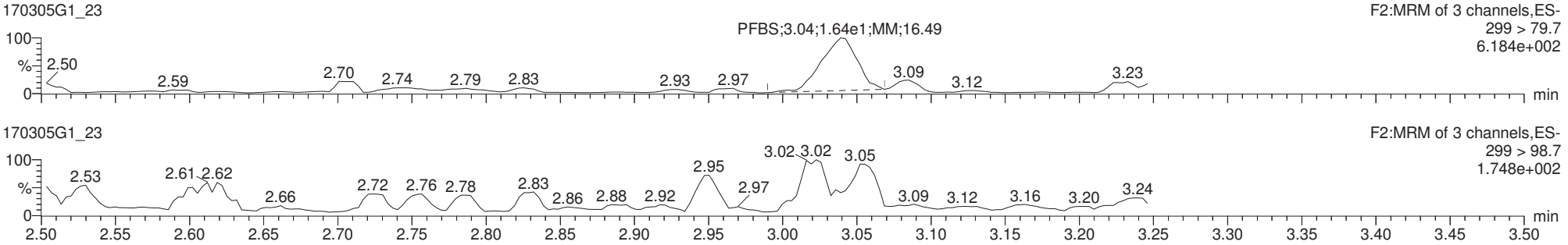
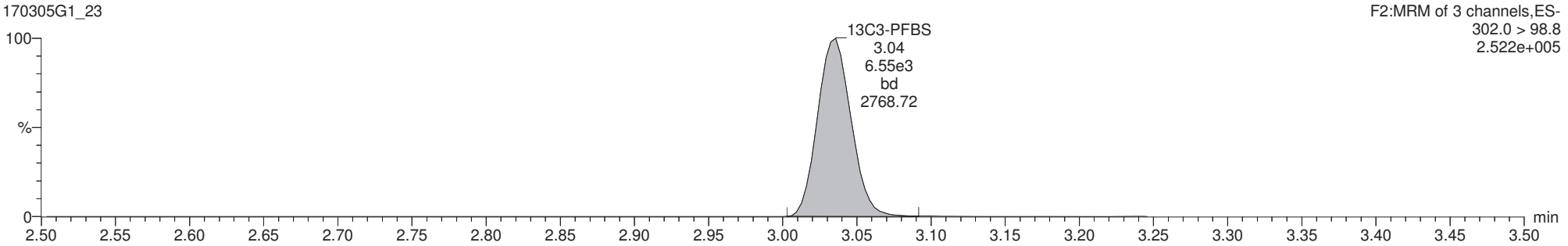
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-04 WI-CV-GW04M-0217 0.125, Description: WI-CV-GW04M-0217, Name: 170305G1_23, Date: 05-Mar-2017, Time: 17:10:09, Instrument: , Lab: , User:

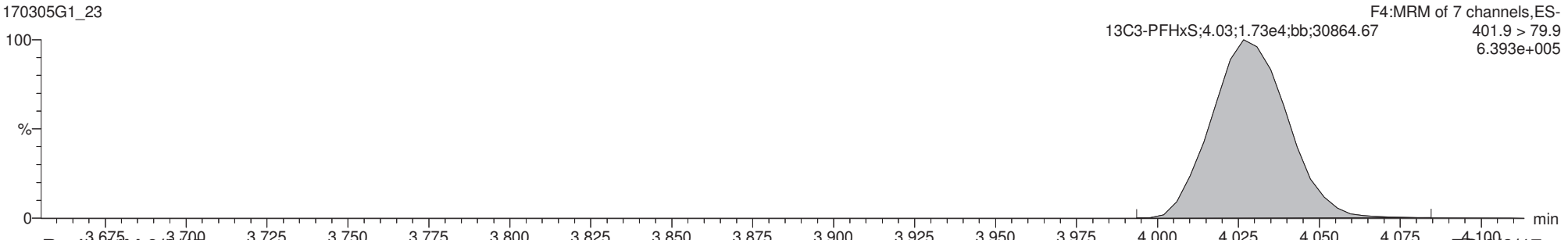
PFBS



13C3-PFBS



13C3-PFHxS



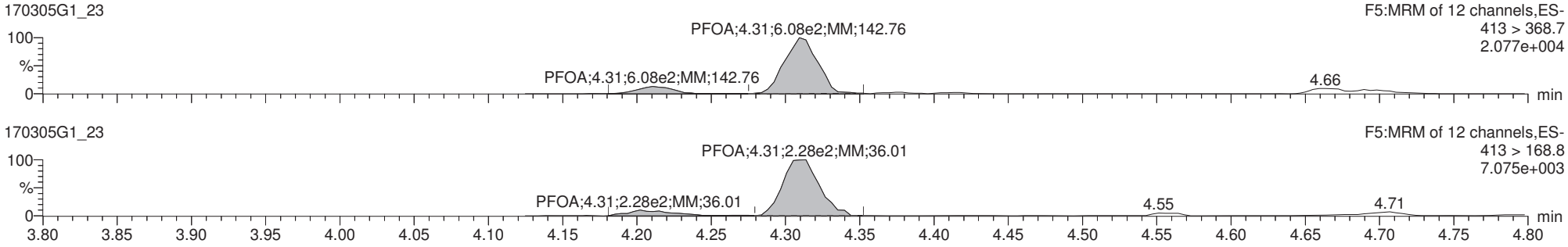
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-23.qld

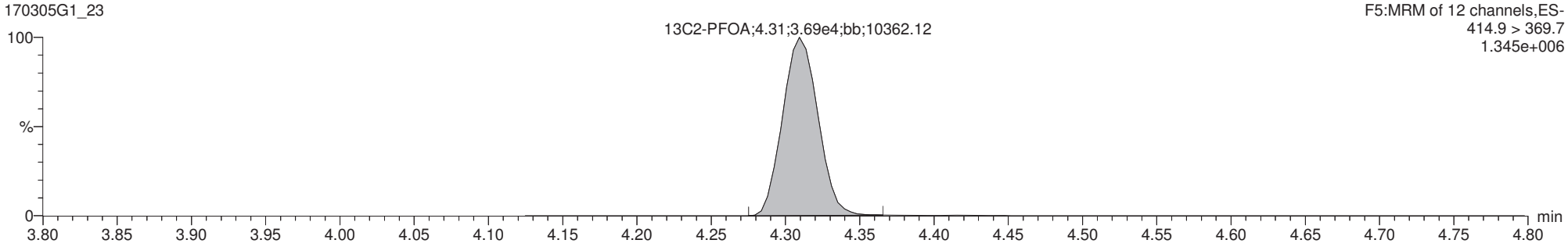
Last Altered: Monday, March 06, 2017 12:51:52 Pacific Standard Time
Printed: Monday, March 06, 2017 12:54:52 Pacific Standard Time

ID: 1700280-04 WI-CV-GW04M-0217 0.125, Description: WI-CV-GW04M-0217, Name: 170305G1_23, Date: 05-Mar-2017, Time: 17:10:09, Instrument: , Lab: , User:

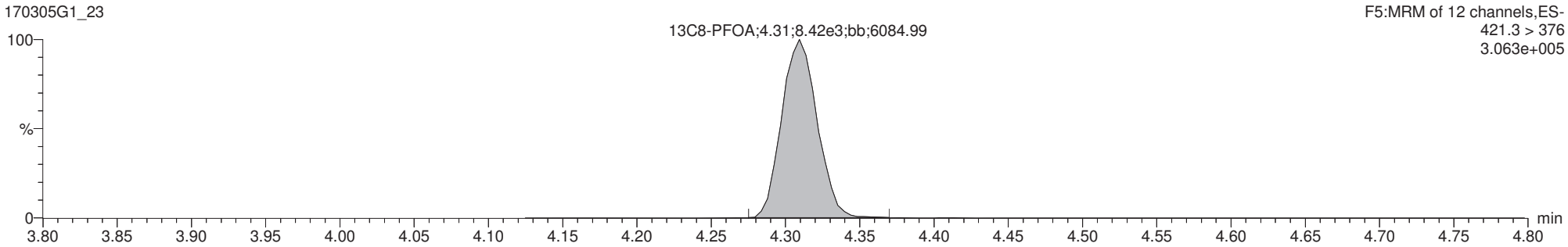
PFOA



13C2-PFOA



13C8-PFOA



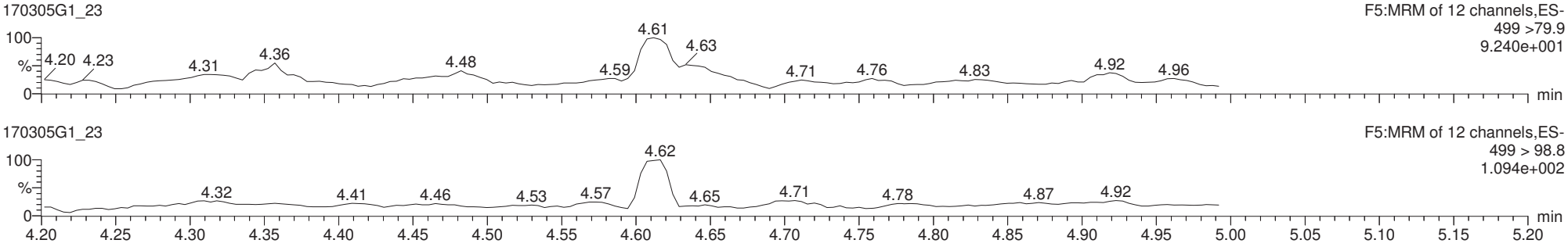
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-23.qld

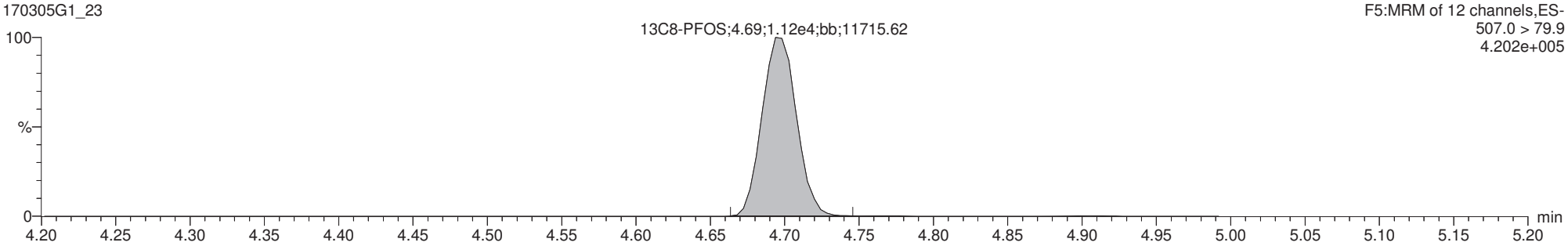
Last Altered: Monday, March 06, 2017 12:51:52 Pacific Standard Time
Printed: Monday, March 06, 2017 12:54:52 Pacific Standard Time

ID: 1700280-04 WI-CV-GW04M-0217 0.125, Description: WI-CV-GW04M-0217, Name: 170305G1_23, Date: 05-Mar-2017, Time: 17:10:09, Instrument: , Lab: , User:

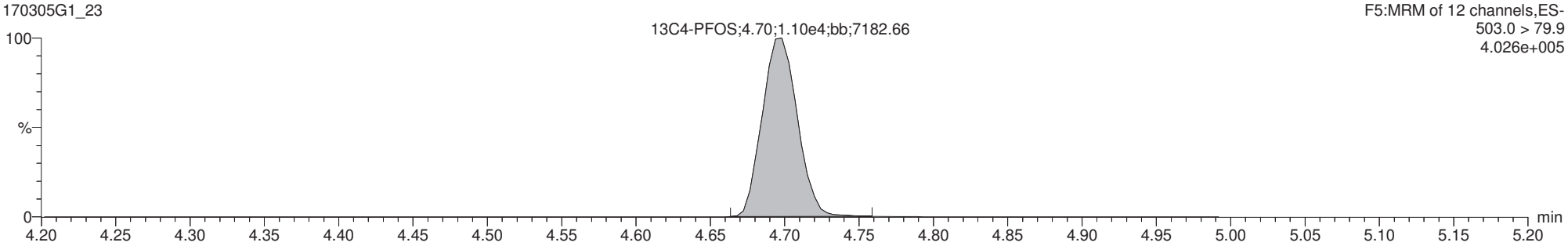
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-24.qld

Last Altered: Monday, March 06, 2017 13:25:56 Pacific Standard Time
Printed: Monday, March 06, 2017 13:29:27 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-05 WI-CV-GW01M-0217 0.125, Description: WI-CV-GW01M-0217, Name: 170305G1_24, Date: 05-Mar-2017, Time: 17:22:42

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7	5.916e0	6.033e3		0.127	3.04		
2	4	PFOA	413 > 368.7	1.819e2	3.055e4		0.127	4.31		
3	6	PFOS	499 >79.9		8.359e3		0.127			
4	7	13C3-PFBS	302.0 > 98.8	6.033e3	1.635e4	0.410	0.127	3.04	88.6	90.0
5	10	13C2-PFOA	414.9 > 369.7	3.055e4	7.115e3	4.608	0.127	4.31	91.8	93.2
6	12	13C8-PFOS	507.0 > 79.9	8.359e3	7.910e3	0.958	0.127	4.70	109	110
7	14	13C3-PFHxS	401.9 > 79.9	1.635e4	1.635e4	1.000	0.127	4.03	98.5	100
8	15	13C8-PFOA	421.3 > 376	7.115e3	7.115e3	1.000	0.127	4.31	98.5	100
9	17	13C4-PFOS	503.0 > 79.9	7.910e3	7.910e3	1.000	0.127	4.70	98.5	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-24.qld

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Printed: Monday, March 06, 2017 13:29:50 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-05 WI-CV-GW01M-0217 0.125, Description: WI-CV-GW01M-0217, Name: 170305G1_24, Date: 05-Mar-2017, Time: 17:22:42

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		6.285e3		0.127			
2	20	Total PFOA	413 > 368.7		3.055e4		0.127			
3	21	Total PFOS	499 > 79.9		8.359e3		0.127			

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-24.qld

Last Altered: Monday, March 06, 2017 13:25:56 Pacific Standard Time
Printed: Monday, March 06, 2017 13:29:27 Pacific Standard Time

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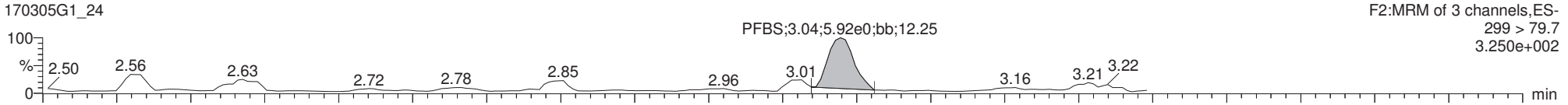
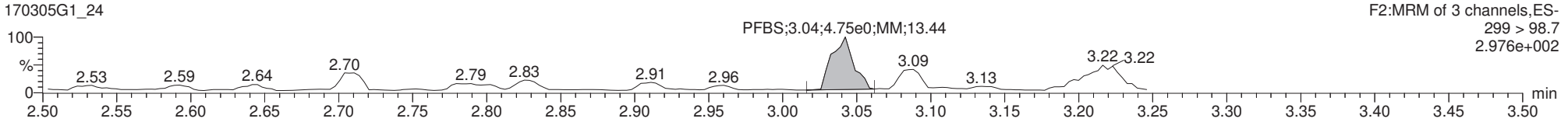
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

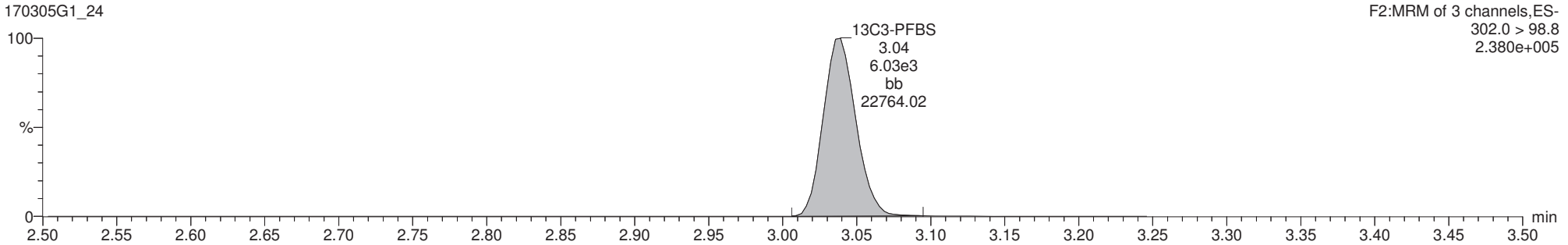
ID: 1700280-05 WI-CV-GW01M-0217 0.125, Description: WI-CV-GW01M-0217, Name: 170305G1_24, Date: 05-Mar-2017, Time: 17:22:42, Instrument: , Lab: , User:

PFBS

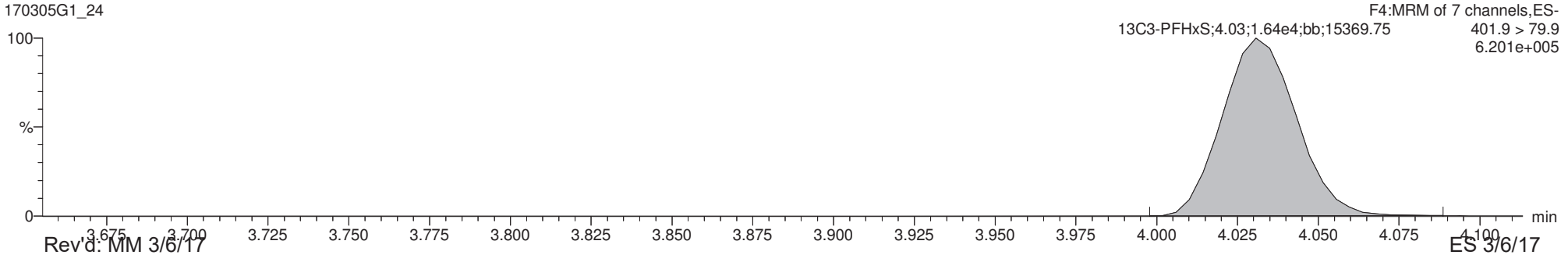




13C3-PFBS



13C3-PFHxS



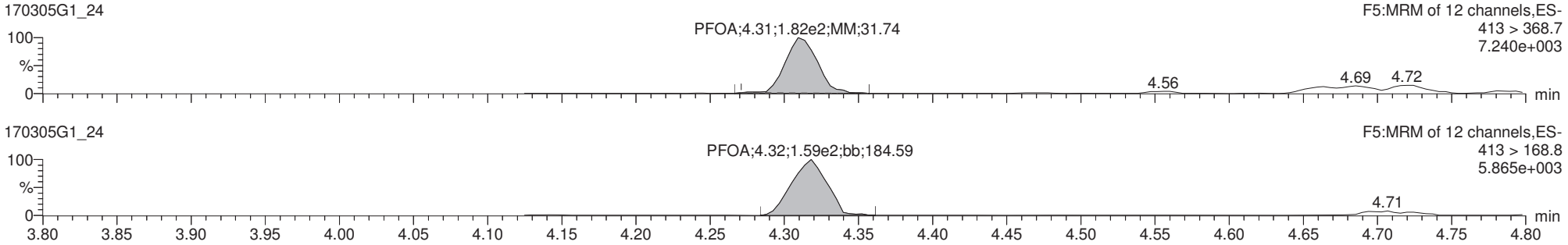
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-24.qld

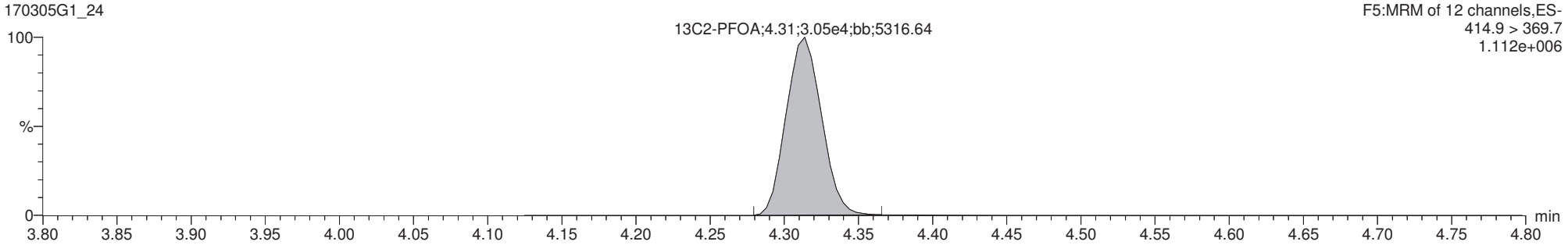
Last Altered: Monday, March 06, 2017 13:25:56 Pacific Standard Time
Printed: Monday, March 06, 2017 13:29:27 Pacific Standard Time

ID: 1700280-05 WI-CV-GW01M-0217 0.125, Description: WI-CV-GW01M-0217, Name: 170305G1_24, Date: 05-Mar-2017, Time: 17:22:42, Instrument: , Lab: , User:

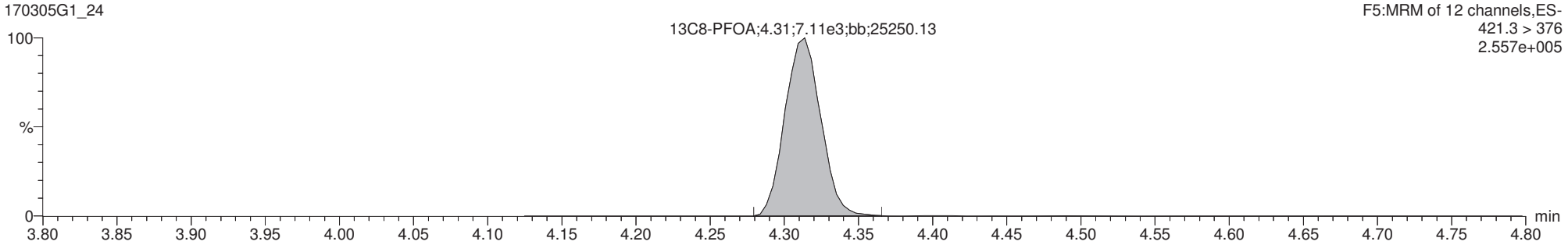
PFOA



13C2-PFOA



13C8-PFOA



Rev'd: MM 3/6/17 ES 3/6/17

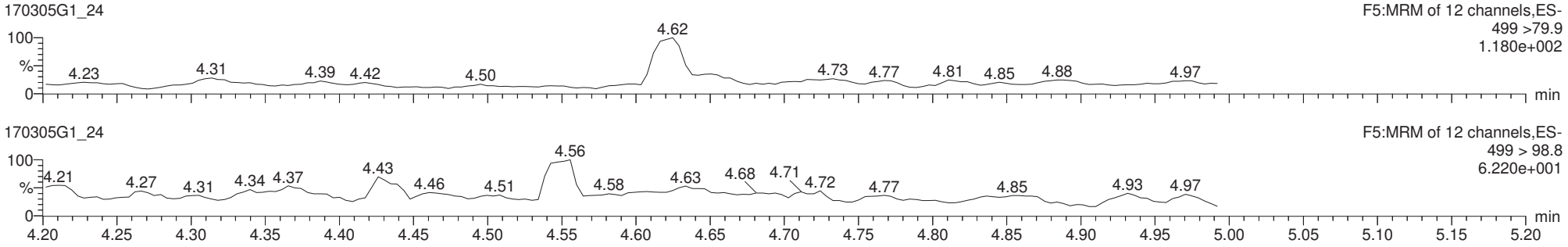
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-24.qld

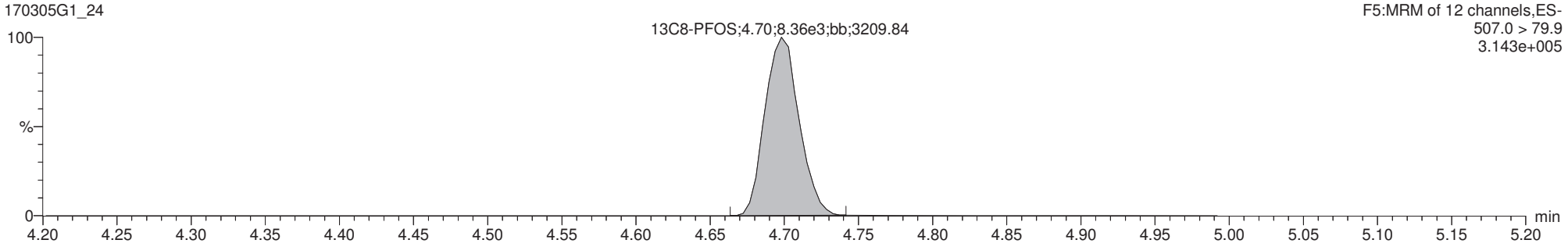
Last Altered: Monday, March 06, 2017 13:25:56 Pacific Standard Time
Printed: Monday, March 06, 2017 13:29:27 Pacific Standard Time

ID: 1700280-05 WI-CV-GW01M-0217 0.125, Description: WI-CV-GW01M-0217, Name: 170305G1_24, Date: 05-Mar-2017, Time: 17:22:42, Instrument: , Lab: , User:

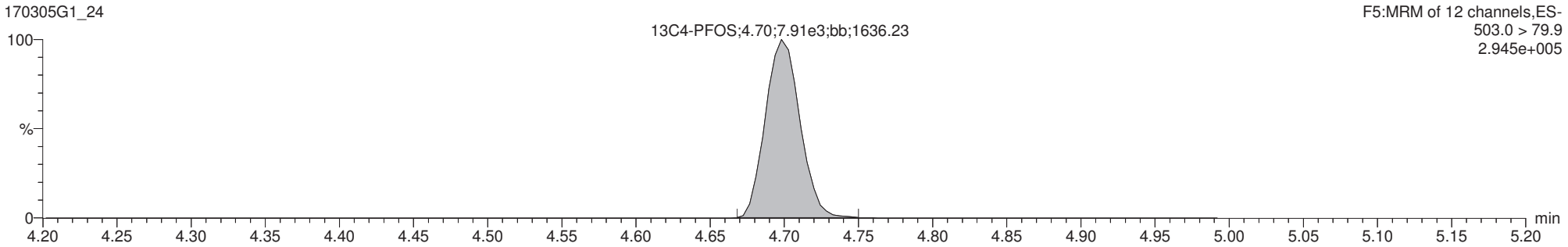
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-25.qld

Last Altered: Monday, March 06, 2017 13:32:07 Pacific Standard Time
Printed: Monday, March 06, 2017 13:34:38 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-06 WI-CV-EB08-022817 0.125, Description: WI-CV-EB08-022817, Name: 170305G1_25, Date: 05-Mar-2017, Time: 17:35:16

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7		5.668e3		0.110			
2	4	PFOA	413 > 368.7	1.252e2	2.524e4		0.110	4.31		
3	6	PFOS	499 >79.9	7.567e0	5.751e3		0.110	4.62	1.16	
4	7	13C3-PFBS	302.0 > 98.8	5.668e3	1.344e4	0.410	0.110	3.04	117	103
5	10	13C2-PFOA	414.9 > 369.7	2.524e4	5.842e3	4.608	0.110	4.31	107	93.8
6	12	13C8-PFOS	507.0 > 79.9	5.751e3	6.996e3	0.958	0.110	4.70	97.8	85.8
7	14	13C3-PFHxS	401.9 > 79.9	1.344e4	1.344e4	1.000	0.110	4.03	114	100
8	15	13C8-PFOA	421.3 > 376	5.842e3	5.842e3	1.000	0.110	4.31	114	100
9	17	13C4-PFOS	503.0 > 79.9	6.996e3	6.996e3	1.000	0.110	4.70	114	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-25.qld

Last Altered: Monday, March 06, 2017 13:32:07 Pacific Standard Time
Printed: Monday, March 06, 2017 13:34:51 Pacific Standard Time

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-06 WI-CV-EB08-022817 0.125, Description: WI-CV-EB08-022817, Name: 170305G1_25, Date: 05-Mar-2017, Time: 17:35:16

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		5.004e3		0.110			
2	20	Total PFOA	413 > 368.7		2.524e4		0.110			
3	21	Total PFOS	499 > 79.9		5.751e3		0.110		1.16	

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-25.qld

Last Altered: Monday, March 06, 2017 13:32:07 Pacific Standard Time
Printed: Monday, March 06, 2017 13:34:38 Pacific Standard Time

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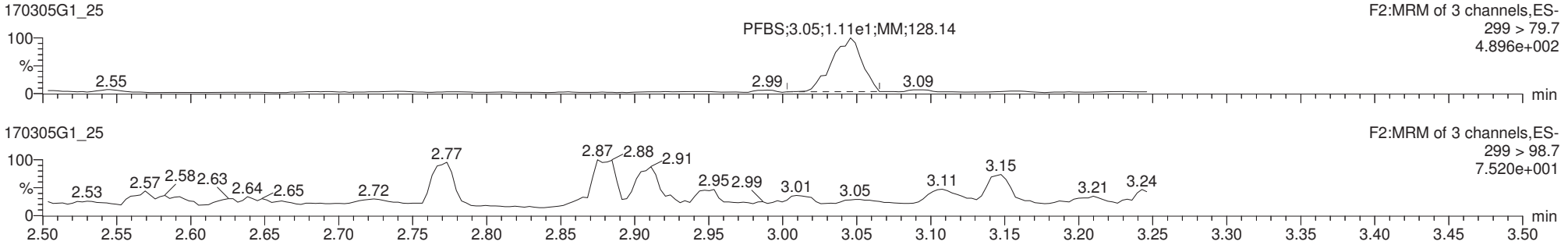
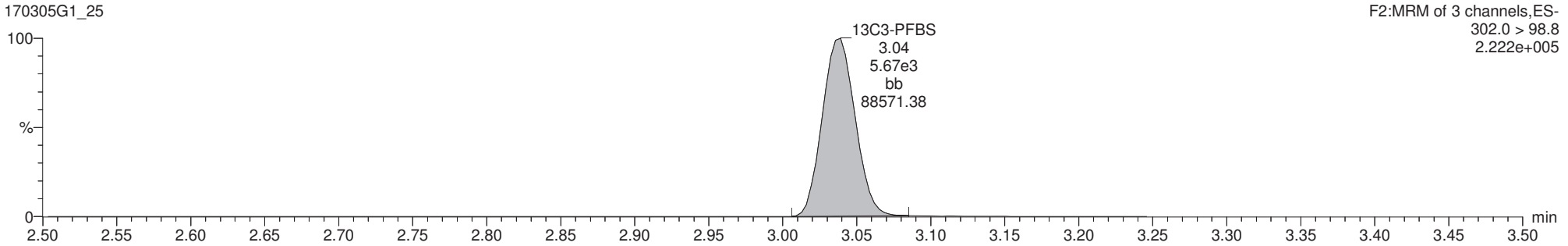
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-06 WI-CV-EB08-022817 0.125, Description: WI-CV-EB08-022817, Name: 170305G1_25, Date: 05-Mar-2017, Time: 17:35:16, Instrument: , Lab: , User:

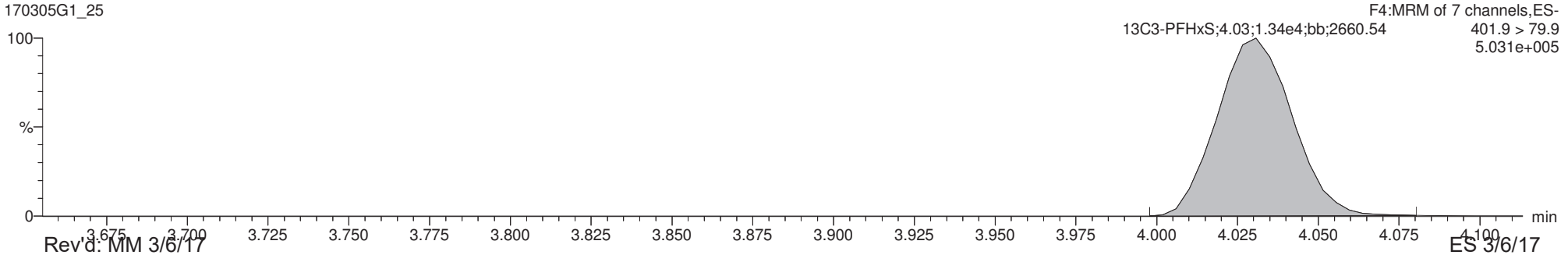
PFBS



13C3-PFBS



13C3-PFHxS



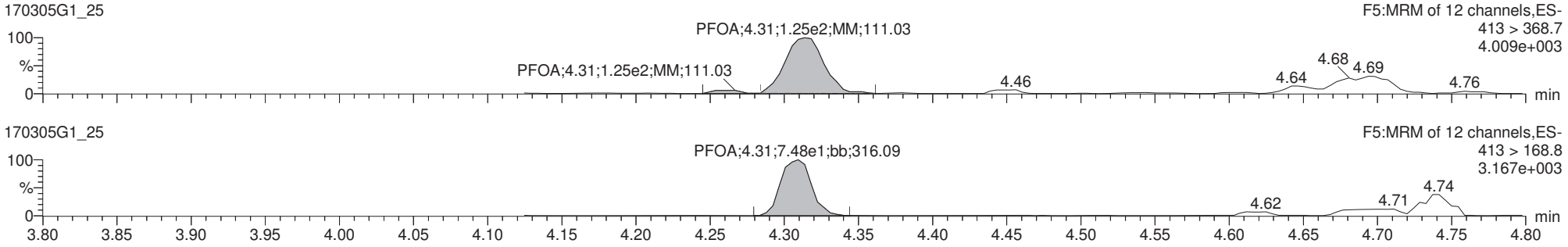
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-25.qld

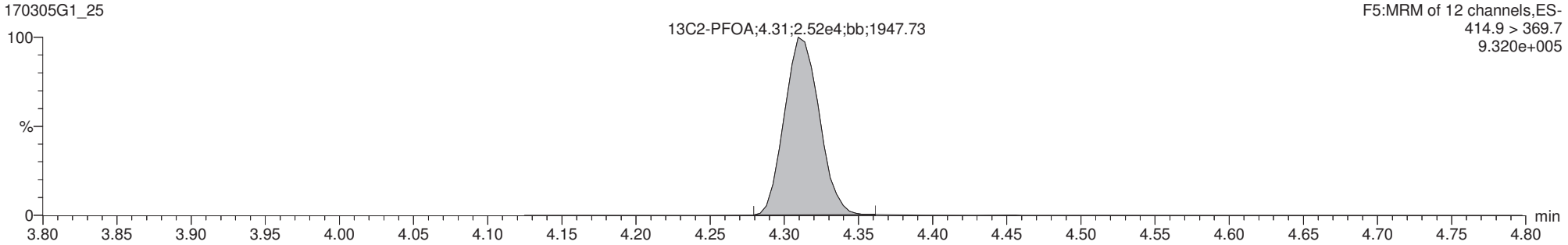
Last Altered: Monday, March 06, 2017 13:32:07 Pacific Standard Time
Printed: Monday, March 06, 2017 13:34:38 Pacific Standard Time

ID: 1700280-06 WI-CV-EB08-022817 0.125, Description: WI-CV-EB08-022817, Name: 170305G1_25, Date: 05-Mar-2017, Time: 17:35:16, Instrument: , Lab: , User:

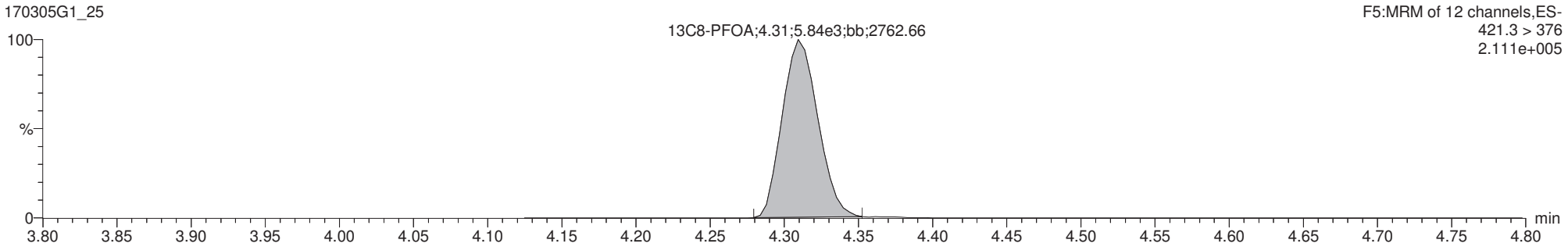
PFOA



13C2-PFOA



13C8-PFOA



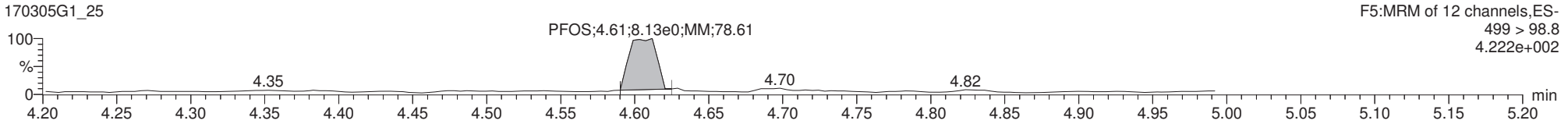
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-25.qld

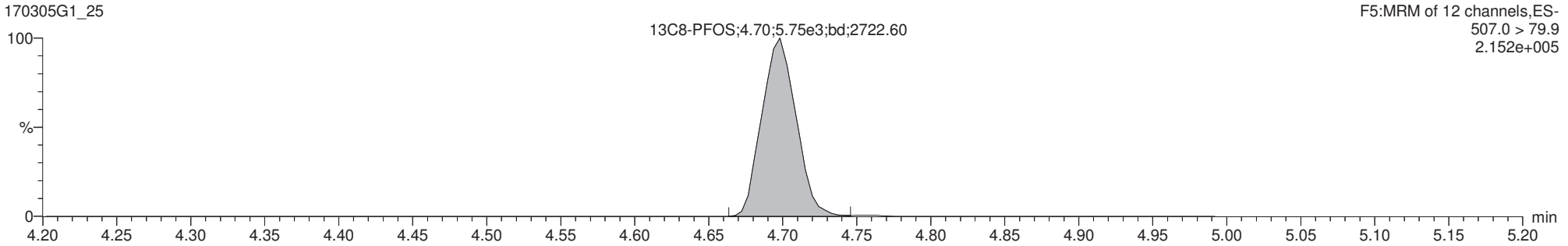
Last Altered: Monday, March 06, 2017 13:32:07 Pacific Standard Time
Printed: Monday, March 06, 2017 13:34:38 Pacific Standard Time

ID: 1700280-06 WI-CV-EB08-022817 0.125, Description: WI-CV-EB08-022817, Name: 170305G1_25, Date: 05-Mar-2017, Time: 17:35:16, Instrument: , Lab: , User:

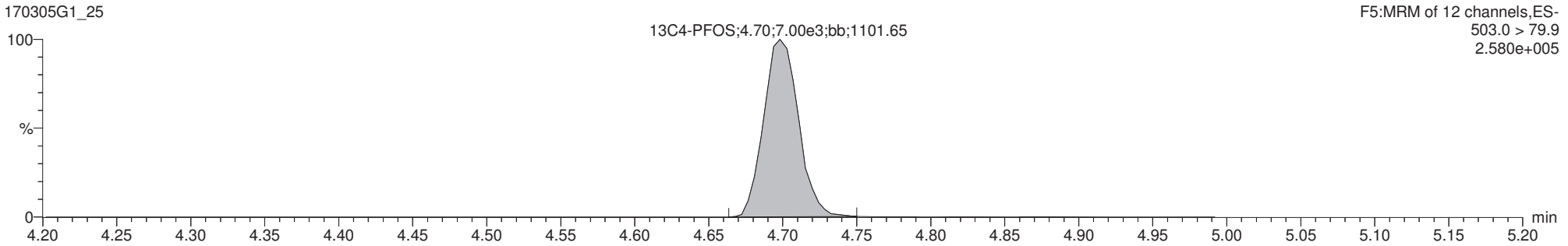
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-26.qld

Last Altered: Monday, March 06, 2017 13:38:02 Pacific Standard Time
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Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-07 WI-CV-GW01D-0217 0.125, Description: WI-CV-GW01D-0217, Name: 170305G1_26, Date: 05-Mar-2017, Time: 17:47:49

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7		5.976e3		0.125			
2	4	PFOA	413 > 368.7	1.213e2	2.933e4		0.125	4.31		
3	6	PFOS	499 >79.9		6.195e3		0.125			
4	7	13C3-PFBS	302.0 > 98.8	5.976e3	1.485e4	0.410	0.125	3.04	98.2	98.2
5	10	13C2-PFOA	414.9 > 369.7	2.933e4	6.831e3	4.608	0.125	4.31	93.2	93.2
6	12	13C8-PFOS	507.0 > 79.9	6.195e3	7.811e3	0.958	0.125	4.70	82.8	82.8
7	14	13C3-PFHxS	401.9 > 79.9	1.485e4	1.485e4	1.000	0.125	4.03	100	100
8	15	13C8-PFOA	421.3 > 376	6.831e3	6.831e3	1.000	0.125	4.31	100	100
9	17	13C4-PFOS	503.0 > 79.9	7.811e3	7.811e3	1.000	0.125	4.70	100	100

Rev'd: MM 3/6/17 ES 3/6/17

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-26.qld

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Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-07 WI-CV-GW01D-0217 0.125, Description: WI-CV-GW01D-0217, Name: 170305G1_26, Date: 05-Mar-2017, Time: 17:47:49

	#	Name	Trace	Peak Area	IS Resp	RRF Mean	wt/vol	RT	Conc.	%Rec
1	18	Total PFBS	299 > 79.7		6.766e3		0.125			
2	20	Total PFOA	413 > 368.7		2.933e4		0.125			
3	21	Total PFOS	499 > 79.9		6.195e3		0.125			

Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-26.qld

Last Altered: Monday, March 06, 2017 13:38:02 Pacific Standard Time
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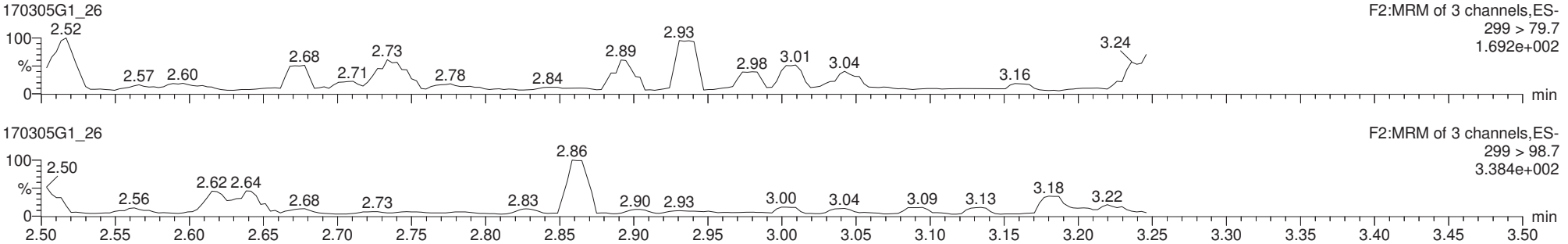
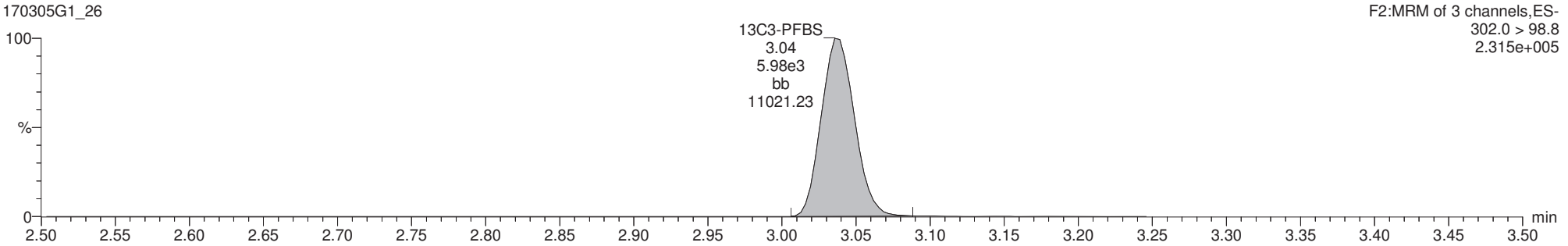
Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: 1700280-07 WI-CV-GW01D-0217 0.125, Description: WI-CV-GW01D-0217, Name: 170305G1_26, Date: 05-Mar-2017, Time: 17:47:49, Instrument: , Lab: , User:

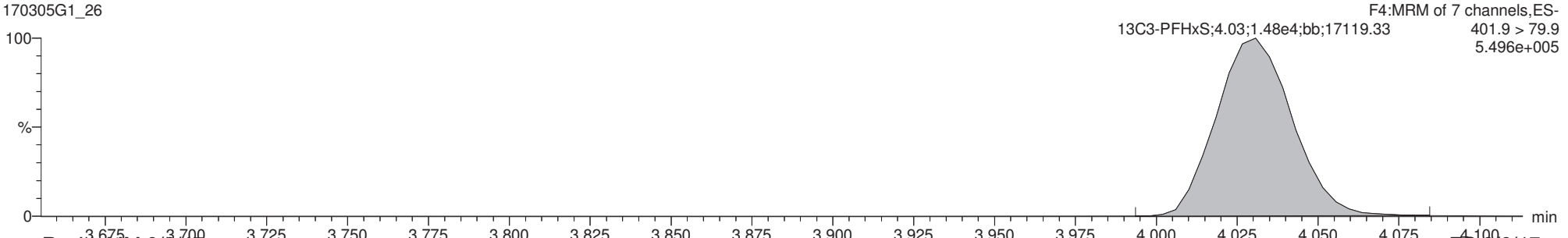
PFBS



13C3-PFBS



13C3-PFHxS



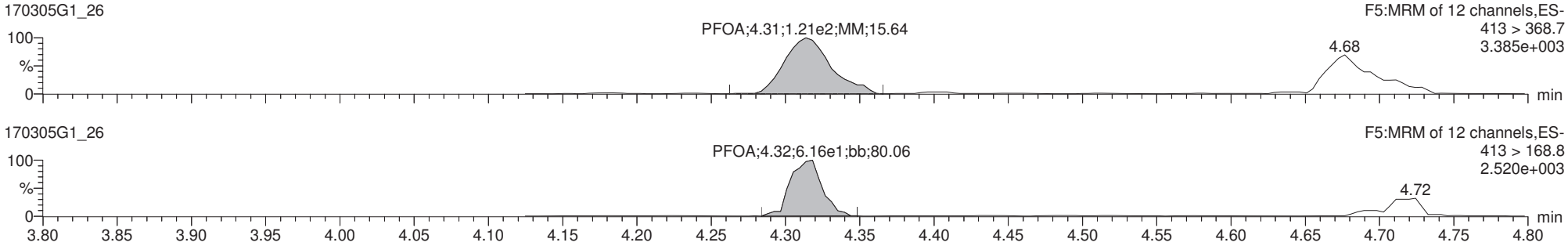
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-26.qld

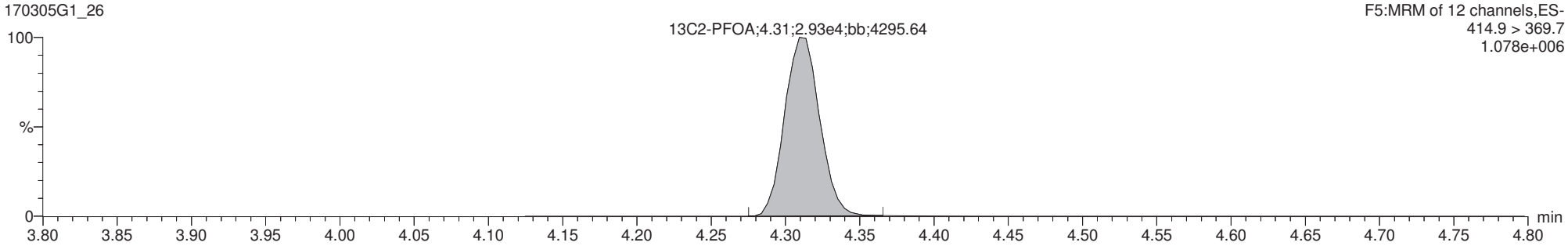
Last Altered: Monday, March 06, 2017 13:38:02 Pacific Standard Time
Printed: Monday, March 06, 2017 13:38:36 Pacific Standard Time

ID: 1700280-07 WI-CV-GW01D-0217 0.125, Description: WI-CV-GW01D-0217, Name: 170305G1_26, Date: 05-Mar-2017, Time: 17:47:49, Instrument: , Lab: , User:

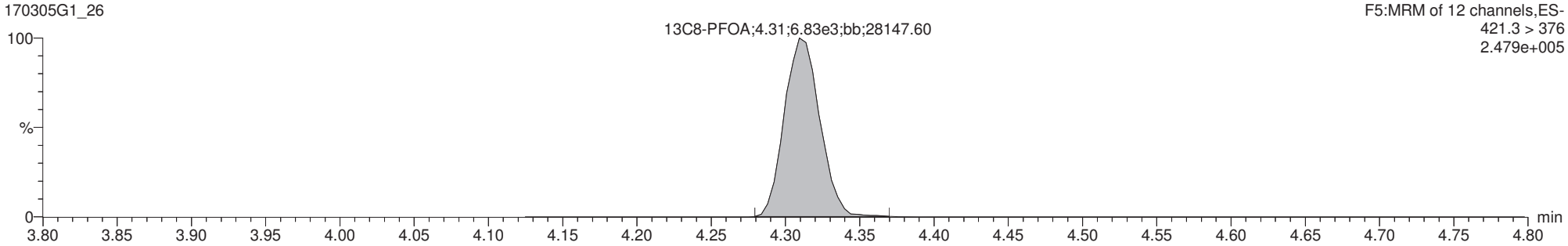
PFOA



13C2-PFOA



13C8-PFOA



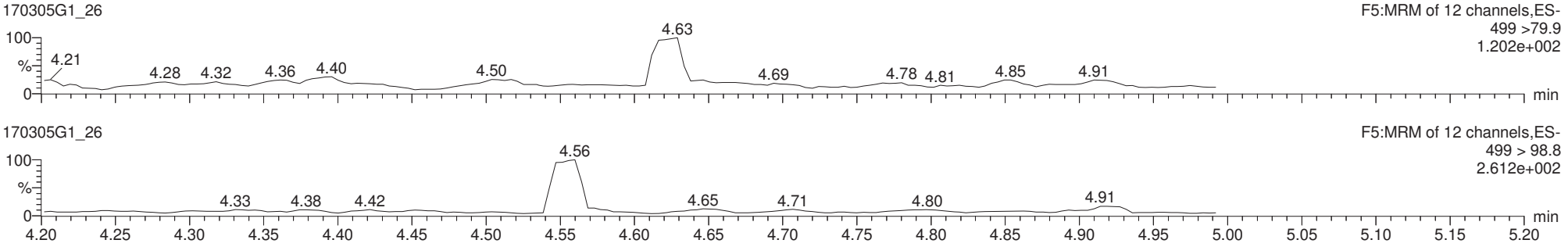
Rev'd: MM 3/6/17 ES 3/6/17

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-26.qld

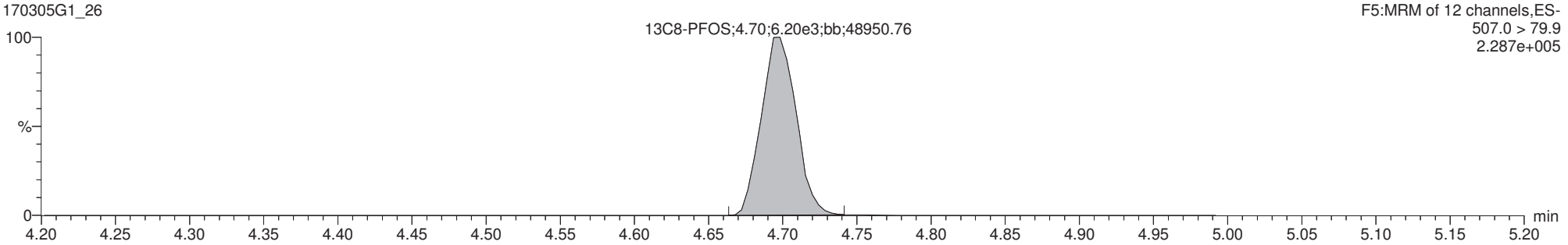
Last Altered: Monday, March 06, 2017 13:38:02 Pacific Standard Time
Printed: Monday, March 06, 2017 13:38:36 Pacific Standard Time

ID: 1700280-07 WI-CV-GW01D-0217 0.125, Description: WI-CV-GW01D-0217, Name: 170305G1_26, Date: 05-Mar-2017, Time: 17:47:49, Instrument: , Lab: , User:

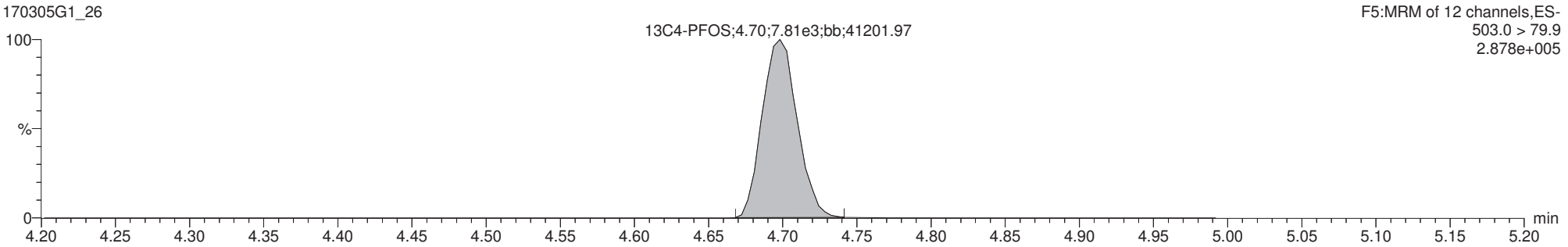
PFOS



13C8-PFOS



13C4-PFOS



Rev'd: MM 3/6/17 ES 3/6/17

CONTINUING CALIBRATION

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

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-29.qld

Last Altered: Monday, March 06, 2017 09:19:31 Pacific Standard Time
Printed: Monday, March 06, 2017 09:21:39 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A

	#	Name	Trace	Response	IS Resp	RRF	Wt/Vol	RT	Conc.	%Rec
1	1	PFBS	299 > 79.7	1.28e4	6.48e3		1.000	3.04	10.3	103.5
2	2	PFHpA	363 > 318.9	2.87e4	1.84e4		1.000	3.92	10.8	107.8
3	3	PFHxS	398.9 > 79.6	1.13e4	6.93e3		1.000	4.03	11.2	111.7
4	4	PFOA	413 > 368.7	2.58e4	3.78e4		1.000	4.31	10.5	105.0
5	5	PFNA	463 > 418.8	1.43e4	5.76e3		1.000	4.64	11.3	112.9
6	6	PFOS	499 >79.9	1.66e3	3.19e3		1.000	4.70	12.2	121.5
7	7	13C3-PFBS	302.0 > 98.8	6.48e3	1.60e4	0.410	1.000	3.04	12.3	98.6
8	8	13C4-PFHpA	367.2 > 321.8	1.84e4	1.60e4	1.098	1.000	3.92	13.0	104.4
9	9	18O2-PFHxS	403 > 102.6	6.93e3	1.60e4	0.434	1.000	4.03	12.4	99.5
10	10	13C2-PFOA	414.9 > 369.7	3.78e4	8.73e3	4.608	1.000	4.31	11.7	94.0
11	11	13C5-PFNA	468.2 > 422.9	5.76e3	6.97e3	0.867	1.000	4.64	11.9	95.3
12	12	13C8-PFOS	507.0 > 79.9	3.19e3	3.51e3	0.958	1.000	4.70	11.9	94.8
13	13	13C5-PFHxA	318>272.9	2.93e4	2.93e4	1.000	1.000	3.41	12.5	100.0
14	14	13C3-PFHxS	401.9 > 79.9	1.60e4	1.60e4	1.000	1.000	4.03	12.5	100.0
15	15	13C8-PFOA	421.3 > 376	8.73e3	8.73e3	1.000	1.000	4.31	12.5	100.0
16	16	13C9-PFNA	472.2 > 426.9	6.97e3	6.97e3	1.000	1.000	4.64	12.5	100.0
17	17	13C4-PFOS	503.0 > 79.9	3.51e3	3.51e3	1.000	1.000	4.70	12.5	100.0

75-125
60-150
50-150
60-150

ES 3/6/17

✓ AC 3/6/17

Vista Analytical Laboratory VG-11

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:13:54 Pacific Standard Time
Printed: Monday, March 06, 2017 09:14:12 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170305G1_1	IPA	05-Mar-17	12:34:35
2	170305G1_2	ST170305G1-1 PFC CS-2 17C0501	05-Mar-17	12:46:48
3	170305G1_3	ST170305G1-2 PFC CS-1 17C0502	05-Mar-17	12:59:15
4	170305G1_4	ST170305G1-3 PFC CS0 17C0503	05-Mar-17	13:11:49
5	170305G1_5	ST170305G1-4 PFC CS1 17C0504	05-Mar-17	13:24:21
6	170305G1_6	ST170305G1-5 PFC CS2 17C0505	05-Mar-17	13:36:55
7	170305G1_7	ST170305G1-6 PFC CS3 17C0506	05-Mar-17	13:49:29
8	170305G1_8	ST170305G1-7 PFC CS4 17C0507	05-Mar-17	14:02:00
9	170305G1_9	ST170305G1-8 PFC CS5 17C0508	05-Mar-17	14:14:34
10	170305G1_10	IPA	05-Mar-17	14:27:08
11	170305G1_11	SS170305G1-1 PFC SSS 17C0509	05-Mar-17	14:39:40
12	170305G1_12	IPA	05-Mar-17	14:52:09
13	170305G1_13	B7C0012-BS1 OPR 0.125	05-Mar-17	15:04:45
14	170305G1_14	B7C0010-BS1 OPR 0.125	05-Mar-17	15:17:15
15	170305G1_15	IPA	05-Mar-17	15:29:48
16	170305G1_16	B7C0012-BLK1 Method Blank 0.125	05-Mar-17	15:42:23
17	170305G1_17	B7C0010-BLK1 Method Blank 0.125	05-Mar-17	15:54:54
18	170305G1_18	1700268-02RE1 WI-CV-GW05M-0217 0.125	05-Mar-17	16:07:28
19	170305G1_19	1700268-04RE1 WI-CV-GW11M-0217 0.125	05-Mar-17	16:20:00
20	170305G1_20	1700280-01 WI-CV-GW03M-0217 0.125	05-Mar-17	16:32:34
21	170305G1_21	1700280-02 WI-CV-GW03D-0217 0.125	05-Mar-17	16:45:07
22	170305G1_22	1700280-03 WI-CV-EB07-022717 0.125	05-Mar-17	16:57:36
23	170305G1_23	1700280-04 WI-CV-GW04M-0217 0.125	05-Mar-17	17:10:09
24	170305G1_24	1700280-05 WI-CV-GW01M-0217 0.125	05-Mar-17	17:22:42
25	170305G1_25	1700280-06 WI-CV-EB08-022817 0.125	05-Mar-17	17:35:16
26	170305G1_26	1700280-07 WI-CV-GW01D-0217 0.125	05-Mar-17	17:47:49
27	170305G1_27	1700277-01 MILK-022717 0.005	05-Mar-17	18:00:22
28	170305G1_28	IPA	05-Mar-17	18:12:56
29	170305G1_29	ST170305G1-9 PFC CS3 17C0506	05-Mar-17	18:25:28
30	170305G1_30	IPA	05-Mar-17	18:38:01

LC Calibration Standards Review Checklist Q1

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	MA
Calibration ID:	ST170305G1-9	L (M) H	☑	☑	☑	☑	☑	☑	☑
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 12/6/17

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Reviewed By: AC 3/6/17
Initials/Date

Comments:
L6, 2-Trans

Vista Analytical Laboratory Q1

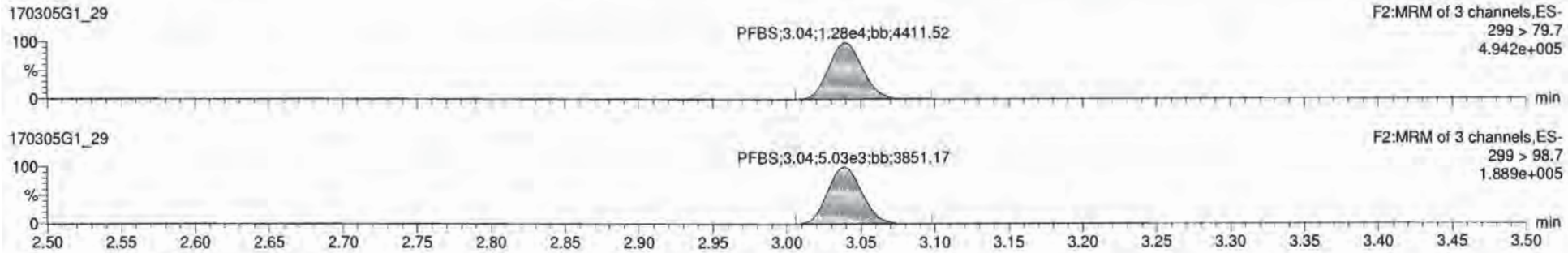
Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

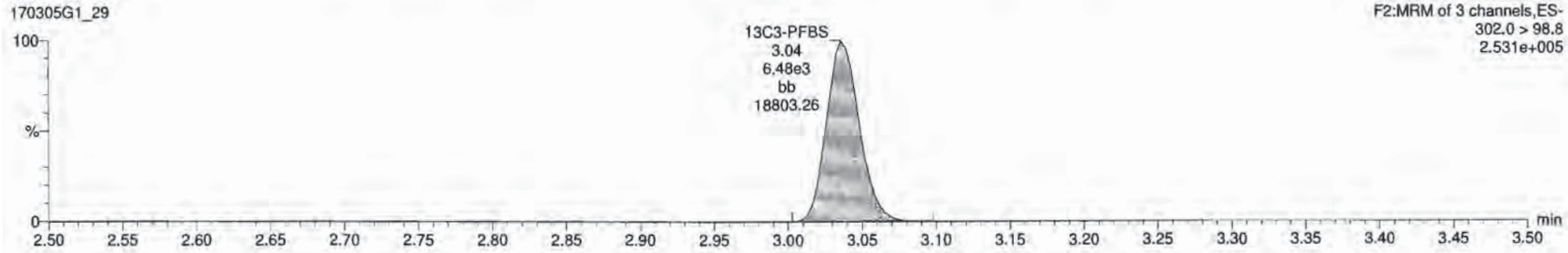
Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, Instrument: , Lab: , User:

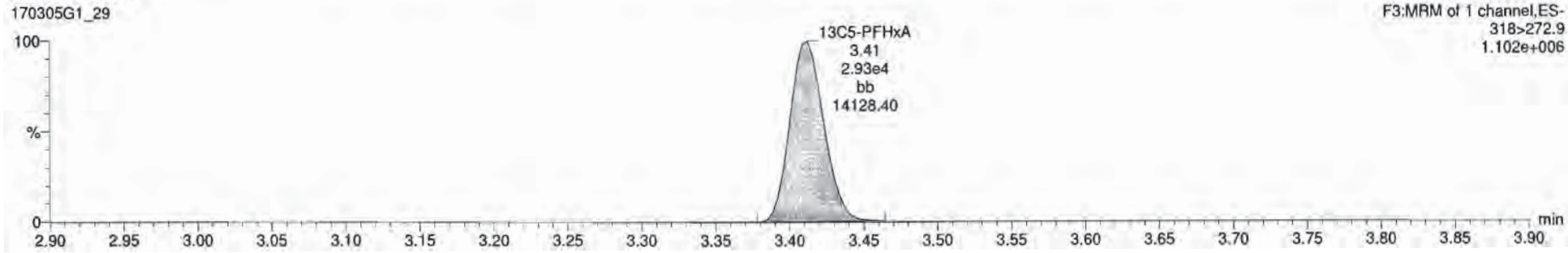
PFBS



13C3-PFBS



13C5-PFHxA

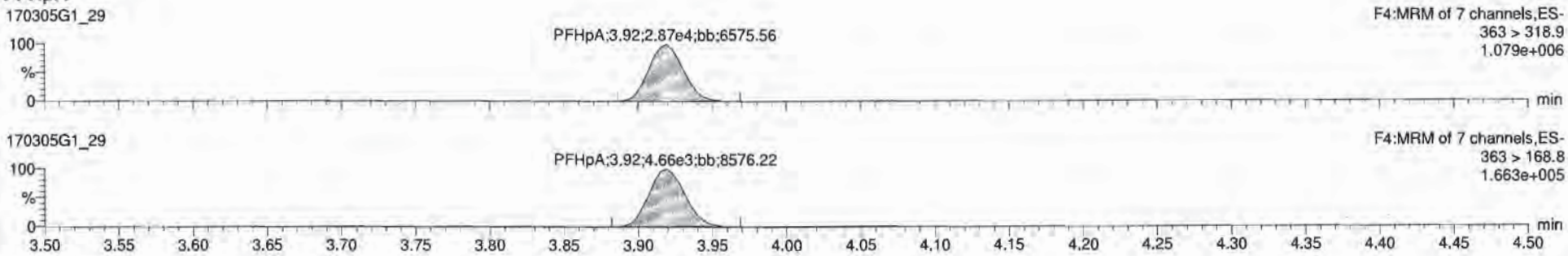


Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, Instrument: , Lab: , User:

PFHpA



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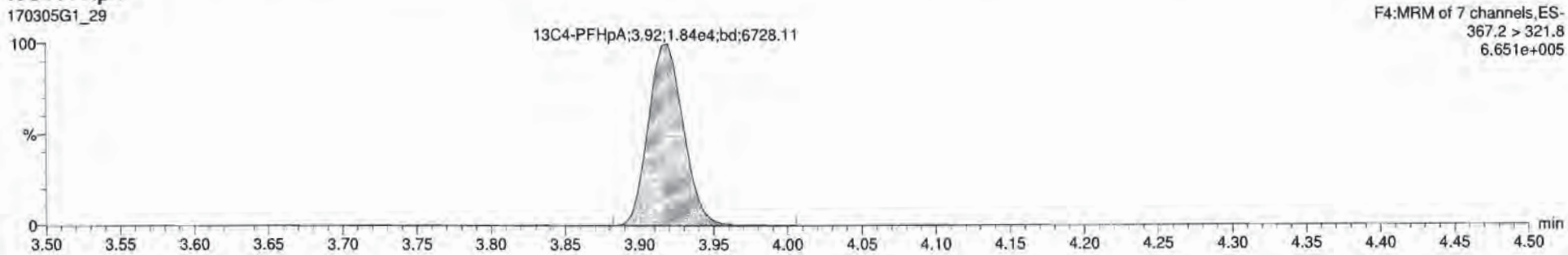

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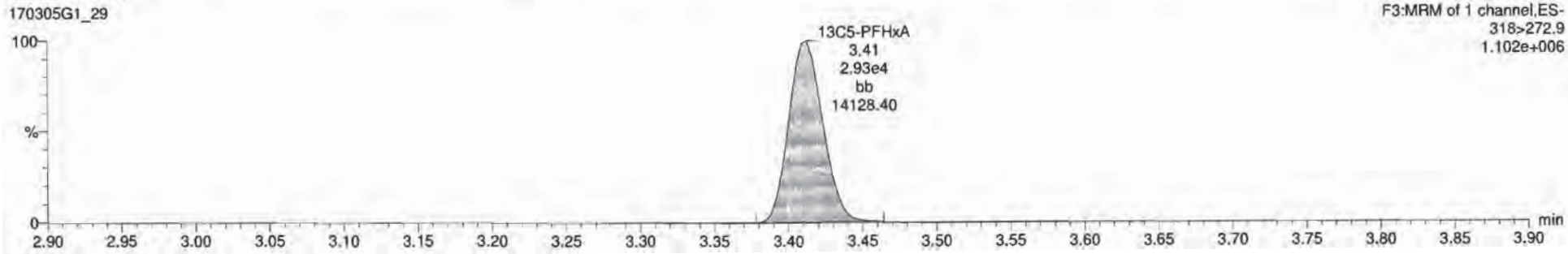


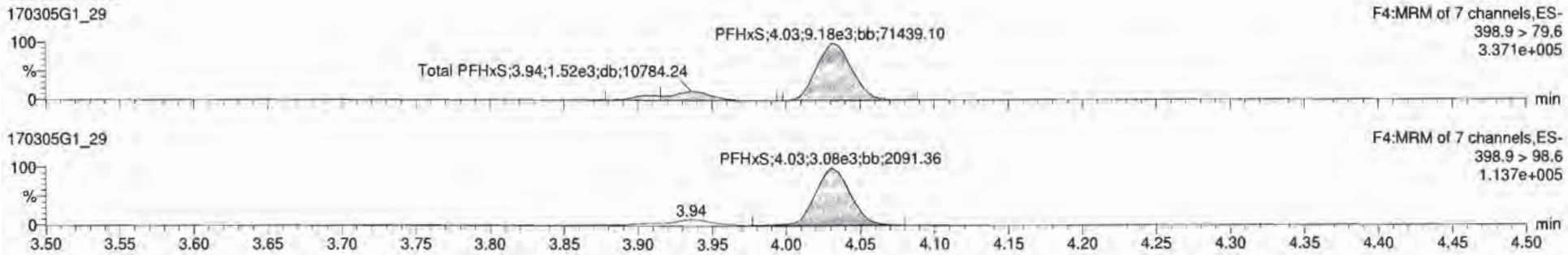
Vista Analytical Laboratory Q1

Dataset: Untitled

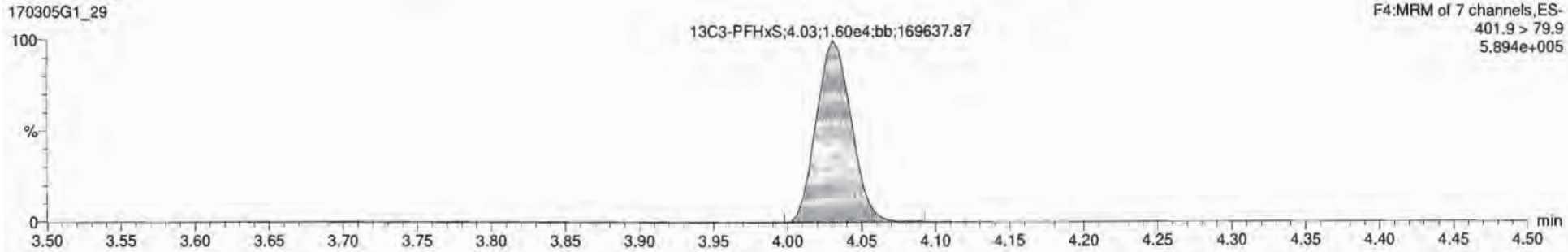
Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, Instrument: , Lab: , User:

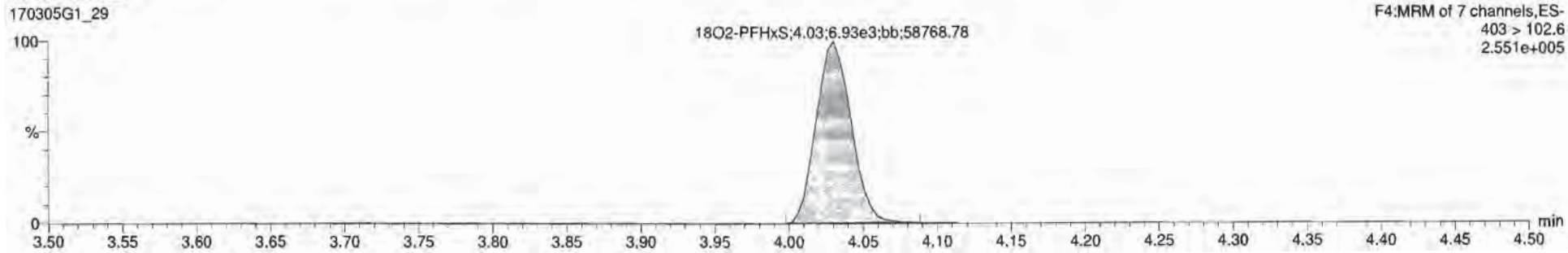
Total PFHxS

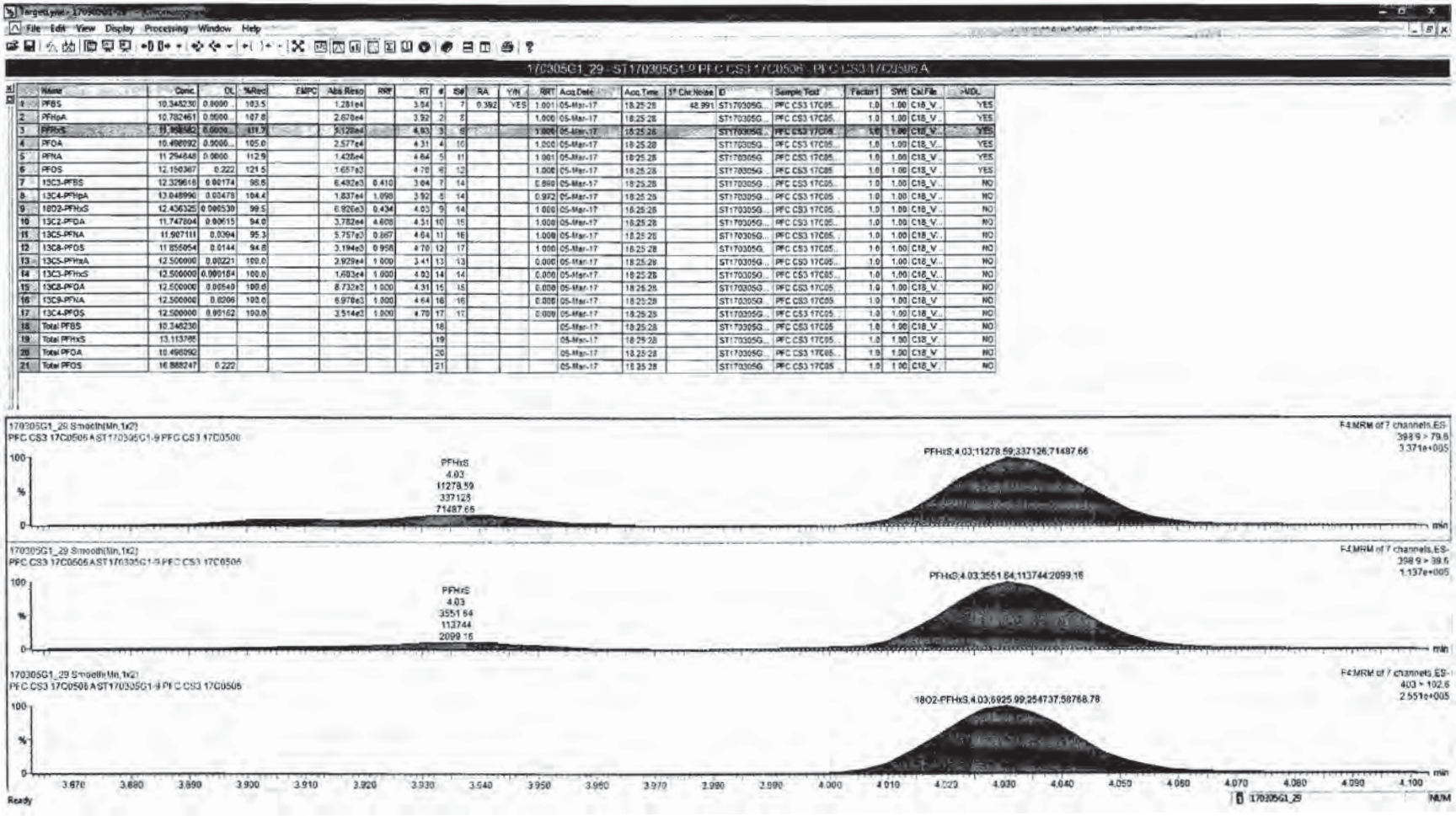


13C3-PFHxS



18O2-PFHxS





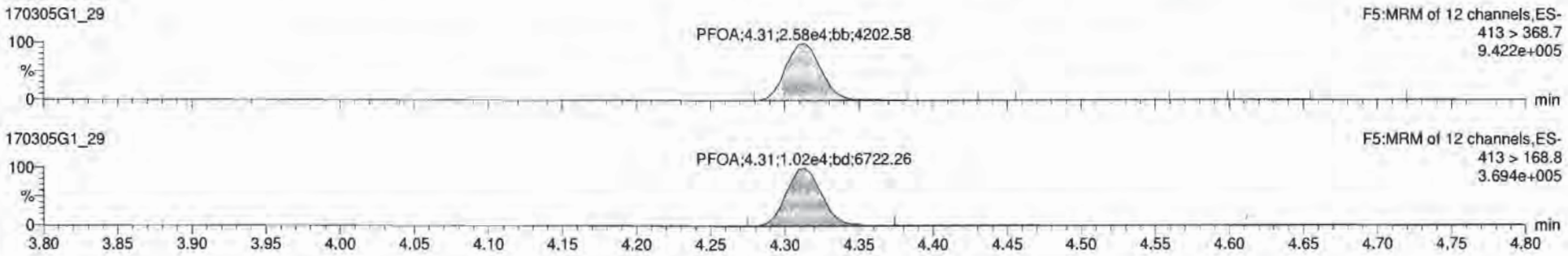
	Name	Conc.	DL	%Rec	EMPC	Abs Reso	RRF	RT	#	ISF	RA	Y/N	RRT	Acq Date	Acq Time	1st Chr Noise	ID	Sample Text	Factor1	SWt	Cal File	>MDL
1	PFBS	10.348230	0.0090	103.5		1.281e4		3.54	1	7	0.392	YES	1.001	05-Mar-17	18:25:28	48.991	ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	YES
2	PFHpA	10.782461	0.0090	107.8		2.670e4		3.92	2	8			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	YES
3	PFHxS	11.398562	0.0090	111.7		5.128e4		4.03	3	9			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	YES
4	PFOA	10.490092	0.0090	105.0		2.577e4		4.31	4	10			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	YES
5	PFNA	11.254648	0.0090	112.9		1.428e4		4.64	5	11			1.001	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	YES
6	PFOS	12.150367	0.222	121.5		1.657e2		4.70	6	12			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V	YES
7	13C3-PFBS	12.329618	0.00174	98.6		6.492e3	0.410	3.54	7	14			0.999	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
8	13C4-PFHpA	13.848990	0.00478	104.4		1.837e4	1.090	3.92	8	14			0.972	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
9	18O2-PFHxS	12.436325	0.000539	99.5		6.926e3	0.434	4.03	9	14			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
10	13C2-PFOA	11.747804	0.00615	94.0		3.782e4	4.608	4.31	10	15			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
11	13C5-PFNA	11.907111	0.0094	95.3		5.757e3	0.867	4.64	11	16			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
12	13C8-PFOS	11.856054	0.0144	94.8		3.194e3	0.958	4.70	12	17			1.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V	NO
13	13C5-PFHxA	12.500000	0.00221	100.0		2.929e4	1.000	3.41	13	13			0.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
14	13C3-PFHxS	12.500000	0.000184	100.0		1.693e4	1.000	4.03	14	14			0.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
15	13C8-PFOA	12.500000	0.00540	100.0		8.732e2	1.000	4.31	15	15			0.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V	NO
16	13C9-PFNA	12.500000	0.0206	100.0		6.978e3	1.000	4.64	16	16			0.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V	NO
17	13C4-PFOS	12.500000	0.00162	100.0		3.514e3	1.000	4.70	17	17			0.000	05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
18	Total PFBS	10.348230							18					05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
19	Total PFHxS	13.113786							19					05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO
20	Total PFOA	10.490092							20					05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V	NO
21	Total PFOS	16.868247	0.222						21					05-Mar-17	18:25:28		ST170305G...	PFC CS3 17C05...	1.0	1.00	C18_V...	NO

Dataset: Untitled

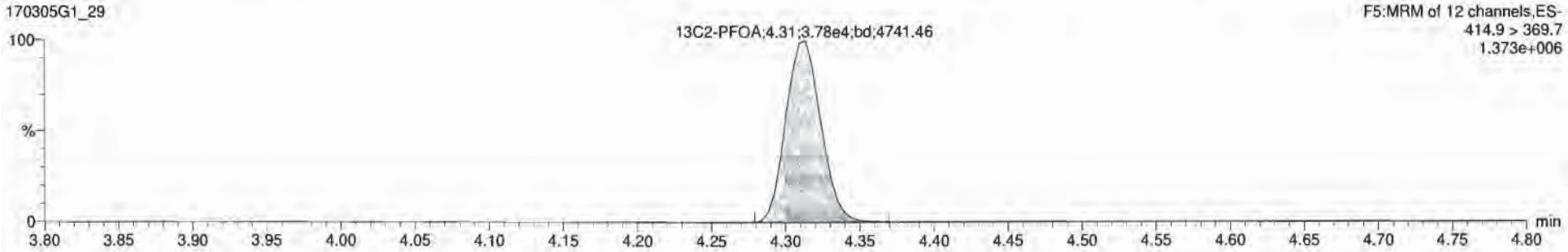
Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, Instrument: , Lab: , User:

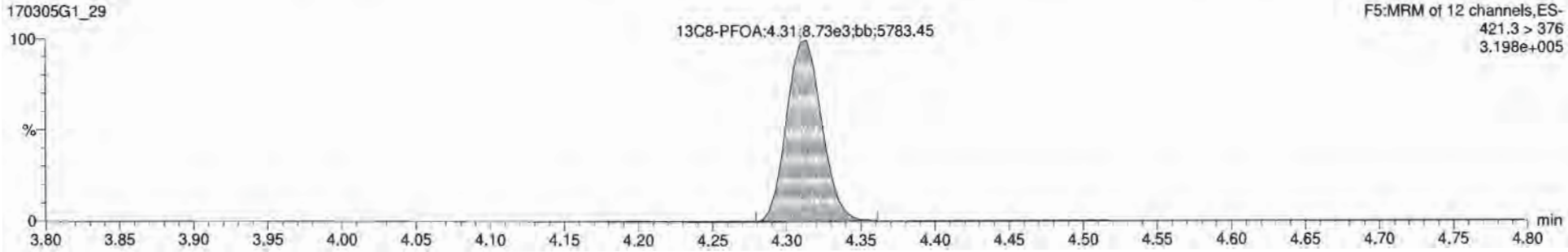
Total PFOA



13C2-PFOA



13C8-PFOA

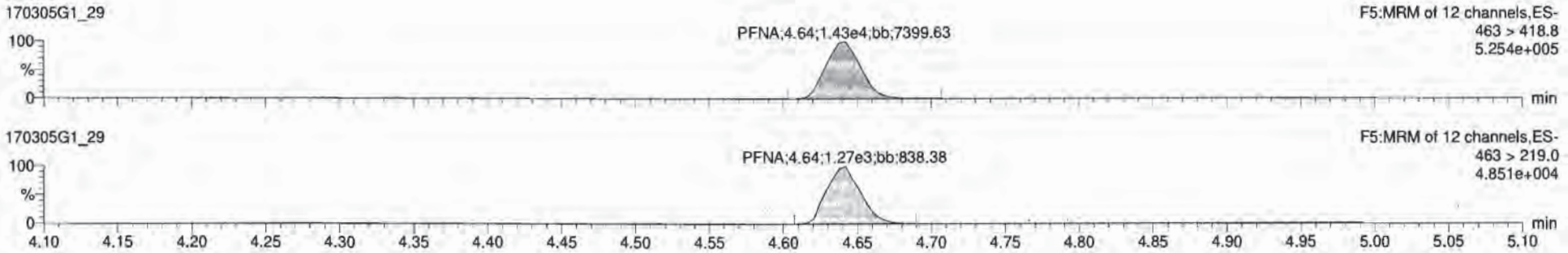


Dataset: Untitled

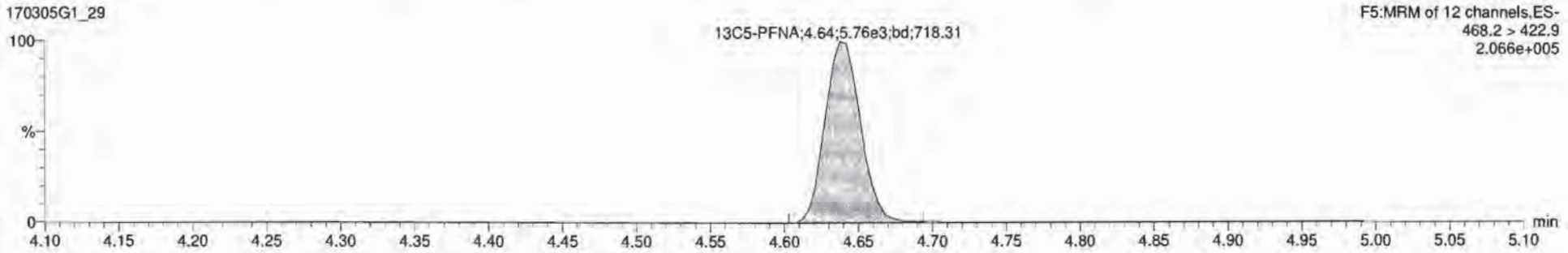
Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, Instrument: , Lab: , User:

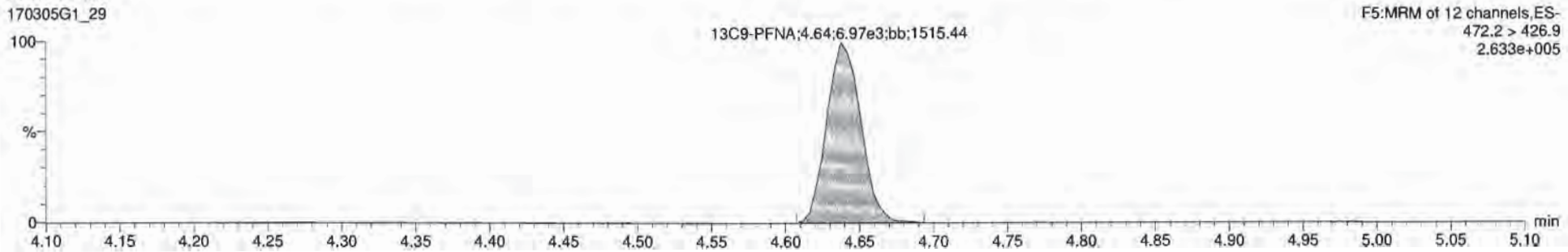
PFNA



13C5-PFNA



13C9-PFNA



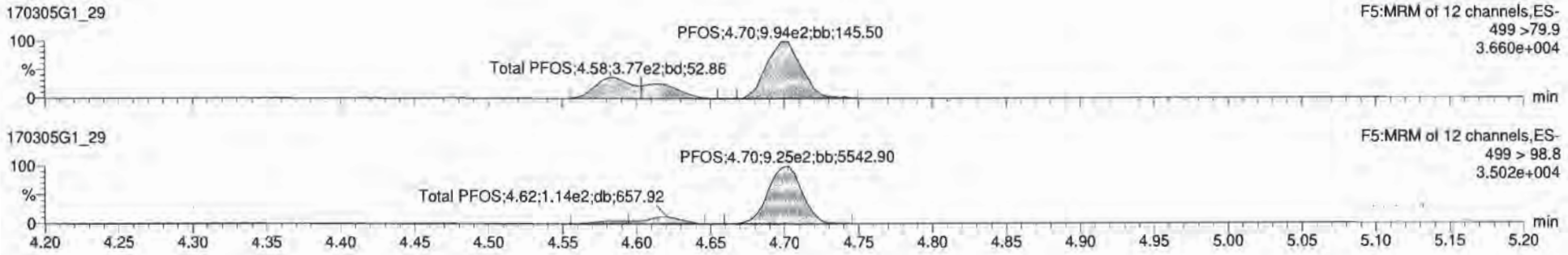
Vista Analytical Laboratory Q1

Dataset: Untitled

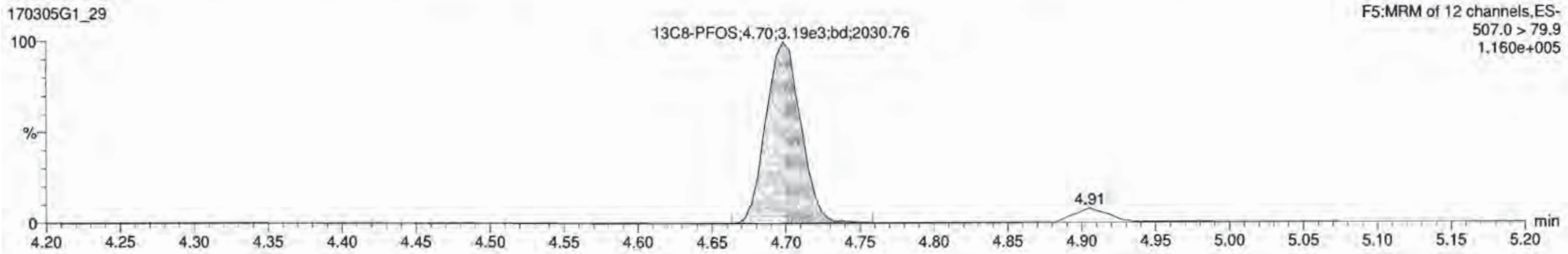
Last Altered: Monday, March 06, 2017 09:16:05 Pacific Standard Time
Printed: Monday, March 06, 2017 09:18:07 Pacific Standard Time

ID: ST170305G1-9 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_29, Date: 05-Mar-2017, Time: 18:25:28, Instrument: , Lab: , User:

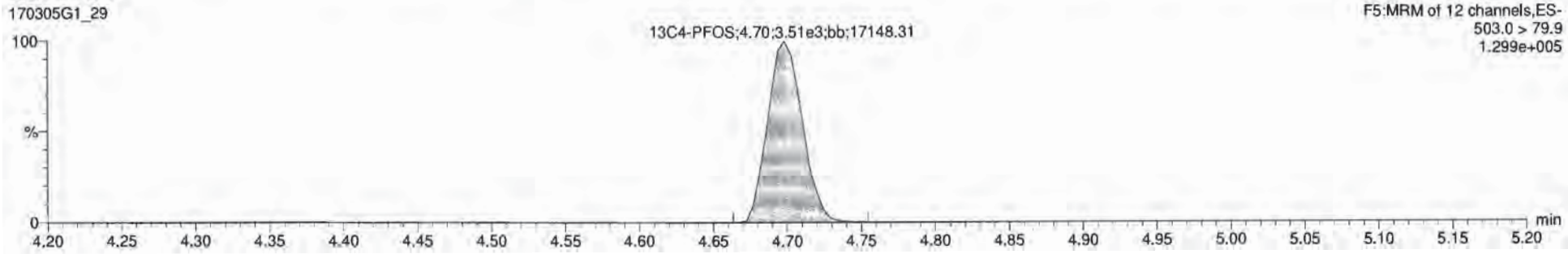
Total PFOS

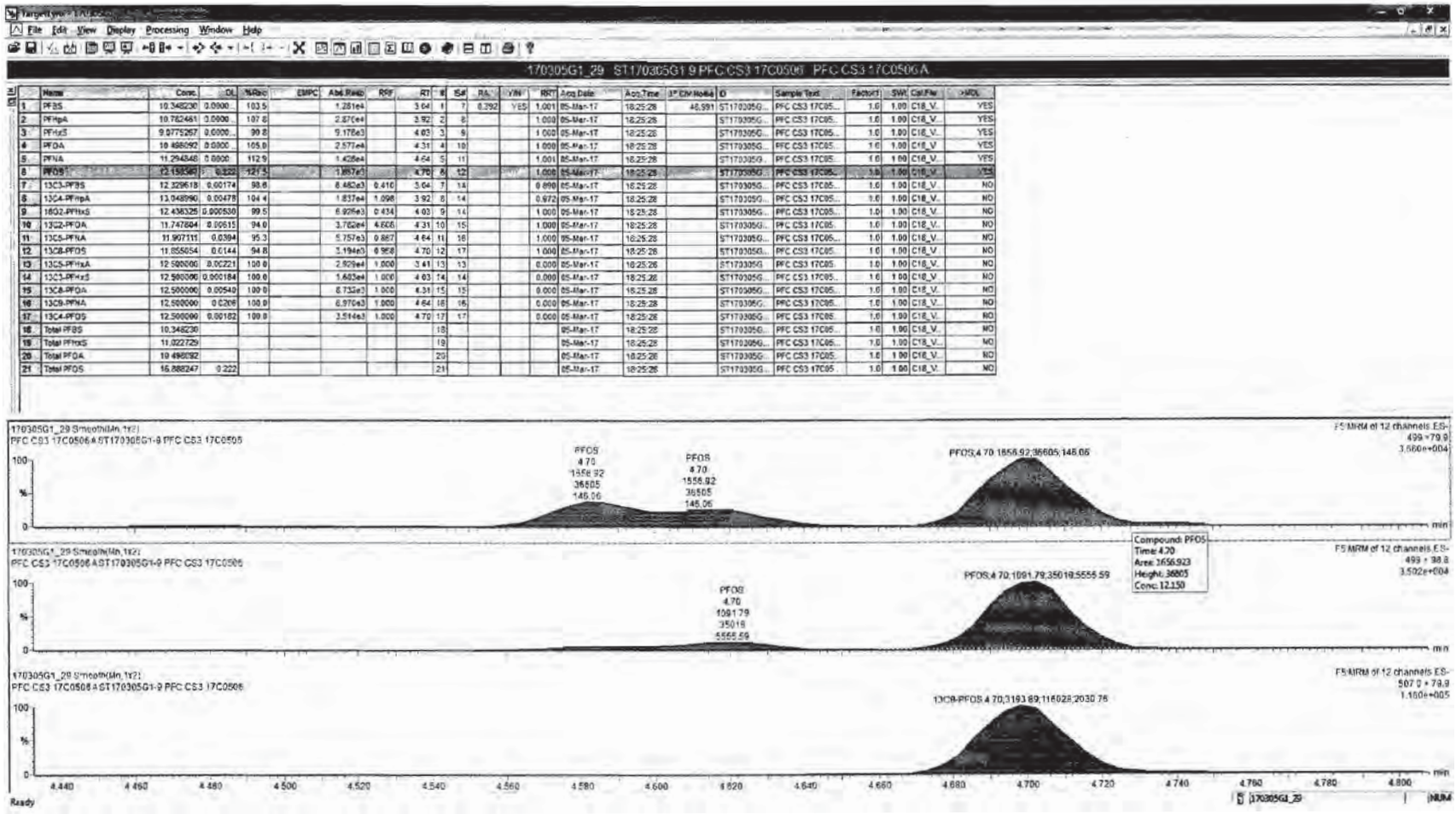


13C8-PFOS



13C4-PFOS




File Edit View Display Processing Window Help
170305G1_29 ST170305G1 9 PFC CS3 17C0506 PFC CS3 17C0506 A
PFOS 4.70 1556.92 36505 146.06
PFOS 4.70 1556.92 36505 146.06
PFOS 4.70,1556.92,36505,146.06
Compound: PFOS
Time: 4.70
Area: 1656.923
Height: 36805
Conc: 12.150
PFOS 4.70 1091.79 35018 5555.59
PFOS 4.70,1091.79,35018,5555.59
13C8-PFOS 4.70,3193.89,116028,2030.76
Ready

INITIAL CALIBRATION

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.PRO\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:19:21

Compound name: PFBS
Correlation coefficient: r = 0.999596, r^2 = 0.999192
Calibration curve: 2.38097 * x + 0.0682571
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	0.250	3.05	3.44e2	6.21e3	0.263	5.1	2.77
2	2	170305G1_3	0.500	3.05	6.19e2	6.45e3	0.475	-5.0	2.40
3	3	170305G1_4	1.00	3.04	1.07e3	5.41e3	1.01	1.1	2.47
4	4	170305G1_5	2.00	3.03	2.78e3	7.24e3	1.99	-0.7	2.40
5	5	170305G1_6	5.00	3.03	5.91e3	6.73e3	4.58	-8.4	2.20
6	6	170305G1_7	10.0	3.03	1.12e4	5.49e3	10.7	7.2	2.56
7	7	170305G1_8	50.0	3.03	5.43e4	5.58e3	51.1	2.1	2.43
8	8	170305G1_9	100	3.03	9.61e4	5.11e3	98.6	-1.4	2.35

GS 3/6/17

Compound name: PFHpA
Correlation coefficient: r = 0.999429, r^2 = 0.998857
Calibration curve: 1.79957 * x + 0.123896
Response type: Internal Std (Ref 8), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

✓ AC 3/6/17

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	0.250	3.93	7.46e2	1.70e4	0.235	-5.8	2.19
2	2	170305G1_3	0.500	3.92	1.43e3	1.69e4	0.518	3.7	2.11
3	3	170305G1_4	1.00	3.91	2.27e3	1.52e4	0.964	-3.6	1.86
4	4	170305G1_5	2.00	3.91	5.65e3	1.86e4	2.05	2.3	1.90
5	5	170305G1_6	5.00	3.91	1.36e4	1.95e4	4.78	-4.4	1.74
6	6	170305G1_7	10.0	3.91	1.98e4	1.29e4	10.6	6.4	1.93
7	7	170305G1_8	50.0	3.91	1.16e5	1.55e4	51.9	3.8	1.87
8	8	170305G1_9	100	3.91	1.99e5	1.42e4	97.6	-2.4	1.76

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
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Compound name: PFHxS
Correlation coefficient: r = 0.999200, r^2 = 0.998401
Calibration curve: 1.81334 * x + 0.103191
Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	0.250	4.04	3.26e2	7.11e3	0.259	3.8	2.29
2	2	170305G1_3	0.500	4.03	5.47e2	6.83e3	0.496	-0.9	2.00
3	3	170305G1_4	1.00	4.03	8.97e2	5.85e3	1.00	0.1	1.92
4	4	170305G1_5	2.00	4.03	2.23e3	7.43e3	2.01	0.5	1.87
5	5	170305G1_6	5.00	4.03	5.17e3	7.64e3	4.60	-8.0	1.69
6	6	170305G1_7	10.0	4.03	6.69e3	4.52e3	10.1	1.5	1.85
7	7	170305G1_8	50.0	4.03	4.78e4	6.24e3	52.8	5.6	1.92
8	8	170305G1_9	100	4.03	8.33e4	5.89e3	97.4	-2.6	1.77

Compound name: PFOA
Correlation coefficient: r = 0.998804, r^2 = 0.997609
Calibration curve: 0.794457 * x + 0.179058
Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	0.250	4.32	1.04e3	3.51e4	0.241	-3.7	1.48
2	2	170305G1_3	0.500	4.31	1.52e3	3.53e4	0.452	-9.6	1.08
3	3	170305G1_4	1.00	4.30	2.09e3	2.91e4	0.908	-9.2	0.901
4	4	170305G1_5	2.00	4.30	5.39e3	3.70e4	2.06	3.1	0.909
5	5	170305G1_6	5.00	4.30	1.24e4	3.46e4	5.43	8.5	0.898
6	6	170305G1_7	10.0	4.30	1.56e4	2.18e4	11.0	9.8	0.890
7	7	170305G1_8	50.0	4.30	1.10e5	3.30e4	52.3	4.6	0.835
8	8	170305G1_9	100	4.30	1.98e5	3.22e4	96.4	-3.6	0.767

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.999011, r^2 = 0.998022
Calibration curve: 2.73664 * x + 0.0966541
Response type: Internal Std (Ref 11), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	0.250	4.65	5.06e2	8.36e3	0.241	-3.5	3.03
2	2	170305G1_3	0.500	4.64	8.81e2	7.67e3	0.489	-2.1	2.87
3	3	170305G1_4	1.00	4.63	1.26e3	5.74e3	0.968	-3.2	2.75
4	4	170305G1_5	2.00	4.63	3.17e3	6.97e3	2.04	2.0	2.84
5	5	170305G1_6	5.00	4.63	7.77e3	7.48e3	4.71	-5.8	2.60
6	6	170305G1_7	10.0	4.63	7.05e3	2.88e3	11.1	11.4	3.06
7	7	170305G1_8	50.0	4.63	7.41e4	6.50e3	52.1	4.1	2.85
8	8	170305G1_9	100	4.63	1.56e5	7.35e3	97.1	-2.9	2.66

Compound name: PFOS
Coefficient of Determination: R^2 = 0.997963
Calibration curve: -0.000185224 * x^2 + 0.54028 * x + -0.0525057
Response type: Internal Std (Ref 12), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	0.250	4.62	3.72e1	6.28e3	0.234	-6.3	0.296 (A)
2	2	170305G1_3	0.500	4.71	7.39e1	6.57e3	0.358	-28.5	0.281
3	3	170305G1_4	1.00	4.69	1.82e2	4.73e3	0.989	-1.1	0.482
4	4	170305G1_5	2.00	4.69	5.28e2	5.18e3	2.46	23.0	0.638
5	5	170305G1_6	5.00	4.69	1.23e3	5.64e3	5.14	2.8	0.544
6	6	170305G1_7	10.0	4.69	8.60e2	1.88e3	10.7	7.1	0.571
7	7	170305G1_8	50.0	4.69	1.04e4	5.14e3	47.8	-4.4	0.507
8	8	170305G1_9	100	4.69	2.64e4	6.26e3	101	1.1	0.527

(A) Point excluded.
ES 3/6/17

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
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Compound name: 13C3-PFBS
Response Factor: 0.40994
RRF SD: 0.0411734, Relative SD: 10.0438
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	12.5	3.05	6.21e3	1.48e4	12.8	2.4	0.420
2	2	170305G1_3	12.5	3.05	6.45e3	1.61e4	12.2	-2.5	0.400
3	3	170305G1_4	12.5	3.03	5.41e3	1.44e4	11.5	-8.1	0.377
4	4	170305G1_5	12.5	3.03	7.24e3	1.74e4	12.7	1.2	0.415
5	5	170305G1_6	12.5	3.03	6.73e3	1.72e4	11.9	-4.7	0.391
6	6	170305G1_7	12.5	3.03	5.49e3	1.09e4	15.4	23.0	0.504
7	7	170305G1_8	12.5	3.03	5.58e3	1.48e4	11.5	-7.9	0.378
8	8	170305G1_9	12.5	3.03	5.11e3	1.29e4	12.1	-3.5	0.396

Compound name: 13C4-PFHpA
Response Factor: 1.09794
RRF SD: 0.0510391, Relative SD: 4.64862
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	12.5	3.92	1.70e4	1.48e4	13.1	5.0	1.15
2	2	170305G1_3	12.5	3.92	1.69e4	1.61e4	11.9	-4.5	1.05
3	3	170305G1_4	12.5	3.91	1.52e4	1.44e4	12.1	-3.4	1.06
4	4	170305G1_5	12.5	3.91	1.86e4	1.74e4	12.1	-3.1	1.06
5	5	170305G1_6	12.5	3.91	1.95e4	1.72e4	12.9	3.0	1.13
6	6	170305G1_7	12.5	3.91	1.29e4	1.09e4	13.4	7.6	1.18
7	7	170305G1_8	12.5	3.91	1.55e4	1.48e4	11.9	-4.4	1.05
8	8	170305G1_9	12.5	3.91	1.42e4	1.29e4	12.5	-0.2	1.10

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
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Compound name: 18O2-PFHxS
Response Factor: 0.434252
RRF SD: 0.0243573, Relative SD: 5.60903
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.04	7.11e3	1.48e4	13.8	10.7	0.481
2	2 170305G1_3	12.5	4.03	6.83e3	1.61e4	12.2	-2.6	0.423
3	3 170305G1_4	12.5	4.03	5.85e3	1.44e4	11.7	-6.2	0.407
4	4 170305G1_5	12.5	4.02	7.43e3	1.74e4	12.3	-1.8	0.426
5	5 170305G1_6	12.5	4.02	7.64e3	1.72e4	12.8	2.2	0.444
6	6 170305G1_7	12.5	4.02	4.52e3	1.09e4	12.0	-4.4	0.415
7	7 170305G1_8	12.5	4.02	6.24e3	1.48e4	12.1	-2.8	0.422
8	8 170305G1_9	12.5	4.02	5.89e3	1.29e4	13.1	5.0	0.456

Compound name: 13C2-PFOA
Response Factor: 4.60838
RRF SD: 0.269705, Relative SD: 5.85249
Response type: Internal Std (Ref 15), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.32	3.51e4	7.77e3	12.2	-2.0	4.51
2	2 170305G1_3	12.5	4.31	3.53e4	8.14e3	11.8	-5.8	4.34
3	3 170305G1_4	12.5	4.31	2.91e4	6.38e3	12.4	-1.0	4.56
4	4 170305G1_5	12.5	4.30	3.70e4	8.23e3	12.2	-2.4	4.50
5	5 170305G1_6	12.5	4.30	3.46e4	7.88e3	11.9	-4.6	4.40
6	6 170305G1_7	12.5	4.30	2.18e4	4.25e3	13.9	11.6	5.14
7	7 170305G1_8	12.5	4.30	3.30e4	7.29e3	12.3	-1.8	4.53
8	8 170305G1_9	12.5	4.30	3.22e4	6.59e3	13.3	6.0	4.89

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: 13C5-PFNA
Response Factor: 0.867114
RRF SD: 0.0501317, Relative SD: 5.78144
Response type: Internal Std (Ref 16), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.64	8.36e3	8.87e3	13.6	8.7	0.943
2	2 170305G1_3	12.5	4.64	7.67e3	8.20e3	13.5	7.9	0.936
3	3 170305G1_4	12.5	4.63	5.74e3	7.15e3	11.6	-7.4	0.803
4	4 170305G1_5	12.5	4.63	6.97e3	8.16e3	12.3	-1.4	0.855
5	5 170305G1_6	12.5	4.63	7.48e3	8.62e3	12.5	0.0	0.867
6	6 170305G1_7	12.5	4.63	2.88e3	3.54e3	11.7	-6.0	0.815
7	7 170305G1_8	12.5	4.63	6.50e3	7.60e3	12.3	-1.3	0.856
8	8 170305G1_9	12.5	4.63	7.35e3	8.52e3	12.4	-0.5	0.863

Compound name: 13C8-PFOS
Response Factor: 0.95832
RRF SD: 0.0597595, Relative SD: 6.23587
Response type: Internal Std (Ref 17), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.70	6.28e3	6.73e3	12.2	-2.5	0.934
2	2 170305G1_3	12.5	4.70	6.57e3	7.11e3	12.1	-3.6	0.924
3	3 170305G1_4	12.5	4.69	4.73e3	5.19e3	11.9	-4.7	0.913
4	4 170305G1_5	12.5	4.69	5.18e3	5.45e3	12.4	-0.9	0.950
5	5 170305G1_6	12.5	4.69	5.64e3	6.31e3	11.7	-6.8	0.894
6	6 170305G1_7	12.5	4.69	1.88e3	1.74e3	14.1	12.8	1.08
7	7 170305G1_8	12.5	4.69	5.14e3	5.13e3	13.1	4.4	1.00
8	8 170305G1_9	12.5	4.69	6.26e3	6.45e3	12.7	1.3	0.971

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
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Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 13), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	12.5	3.43	2.72e4	2.72e4	12.5	0.0	1.00
2	2	170305G1_3	12.5	3.43	2.95e4	2.95e4	12.5	0.0	1.00
3	3	170305G1_4	12.5	3.41	2.60e4	2.60e4	12.5	0.0	1.00
4	4	170305G1_5	12.5	3.41	3.17e4	3.17e4	12.5	0.0	1.00
5	5	170305G1_6	12.5	3.41	3.10e4	3.10e4	12.5	0.0	1.00
6	6	170305G1_7	12.5	3.41	2.37e4	2.37e4	12.5	0.0	1.00
7	7	170305G1_8	12.5	3.41	2.69e4	2.69e4	12.5	0.0	1.00
8	8	170305G1_9	12.5	3.41	2.39e4	2.39e4	12.5	0.0	1.00

Compound name: 13C3-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	12.5	4.04	1.48e4	1.48e4	12.5	0.0	1.00
2	2	170305G1_3	12.5	4.03	1.61e4	1.61e4	12.5	0.0	1.00
3	3	170305G1_4	12.5	4.03	1.44e4	1.44e4	12.5	0.0	1.00
4	4	170305G1_5	12.5	4.02	1.74e4	1.74e4	12.5	0.0	1.00
5	5	170305G1_6	12.5	4.02	1.72e4	1.72e4	12.5	0.0	1.00
6	6	170305G1_7	12.5	4.03	1.09e4	1.09e4	12.5	0.0	1.00
7	7	170305G1_8	12.5	4.02	1.48e4	1.48e4	12.5	0.0	1.00
8	8	170305G1_9	12.5	4.02	1.29e4	1.29e4	12.5	0.0	1.00

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 15), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	12.5	4.32	7.77e3	7.77e3	12.5	0.0	1.00
2	2	170305G1_3	12.5	4.31	8.14e3	8.14e3	12.5	0.0	1.00
3	3	170305G1_4	12.5	4.30	6.38e3	6.38e3	12.5	0.0	1.00
4	4	170305G1_5	12.5	4.30	8.23e3	8.23e3	12.5	0.0	1.00
5	5	170305G1_6	12.5	4.30	7.88e3	7.88e3	12.5	0.0	1.00
6	6	170305G1_7	12.5	4.30	4.25e3	4.25e3	12.5	0.0	1.00
7	7	170305G1_8	12.5	4.30	7.29e3	7.29e3	12.5	0.0	1.00
8	8	170305G1_9	12.5	4.30	6.59e3	6.59e3	12.5	0.0	1.00

Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 16), Area * (IS Conc. / IS Area)
Curve type: RF

	#	Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1	170305G1_2	12.5	4.64	8.87e3	8.87e3	12.5	0.0	1.00
2	2	170305G1_3	12.5	4.64	8.20e3	8.20e3	12.5	0.0	1.00
3	3	170305G1_4	12.5	4.63	7.15e3	7.15e3	12.5	0.0	1.00
4	4	170305G1_5	12.5	4.63	8.16e3	8.16e3	12.5	0.0	1.00
5	5	170305G1_6	12.5	4.63	8.62e3	8.62e3	12.5	0.0	1.00
6	6	170305G1_7	12.5	4.63	3.54e3	3.54e3	12.5	0.0	1.00
7	7	170305G1_8	12.5	4.63	7.60e3	7.60e3	12.5	0.0	1.00
8	8	170305G1_9	12.5	4.63	8.52e3	8.52e3	12.5	0.0	1.00

Vista Analytical Laboratory Q2

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:29:13 Pacific Standard Time

Compound name: 13C4-PFOS
Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 17), Area * (IS Conc. / IS Area)
Curve type: RF

	# Name	Std. Conc	RT	Resp	IS Resp	Conc.	%Dev	RRF
1	1 170305G1_2	12.5	4.70	6.73e3	6.73e3	12.5	0.0	1.00
2	2 170305G1_3	12.5	4.70	7.11e3	7.11e3	12.5	0.0	1.00
3	3 170305G1_4	12.5	4.69	5.19e3	5.19e3	12.5	0.0	1.00
4	4 170305G1_5	12.5	4.69	5.45e3	5.45e3	12.5	0.0	1.00
5	5 170305G1_6	12.5	4.69	6.31e3	6.31e3	12.5	0.0	1.00
6	6 170305G1_7	12.5	4.69	1.74e3	1.74e3	12.5	0.0	1.00
7	7 170305G1_8	12.5	4.69	5.13e3	5.13e3	12.5	0.0	1.00
8	8 170305G1_9	12.5	4.69	6.45e3	6.45e3	12.5	0.0	1.00

Vista Analytical Laboratory VG-11

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:13:54 Pacific Standard Time
Printed: Monday, March 06, 2017 09:14:12 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.pro\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:35:26

Compound name: PFBS

	Name	ID	Acq.Date	Acq.Time
1	170305G1_1	IPA	05-Mar-17	12:34:35
2	170305G1_2	ST170305G1-1 PFC CS-2 17C0501	05-Mar-17	12:46:48
3	170305G1_3	ST170305G1-2 PFC CS-1 17C0502	05-Mar-17	12:59:15
4	170305G1_4	ST170305G1-3 PFC CS0 17C0503	05-Mar-17	13:11:49
5	170305G1_5	ST170305G1-4 PFC CS1 17C0504	05-Mar-17	13:24:21
6	170305G1_6	ST170305G1-5 PFC CS2 17C0505	05-Mar-17	13:36:55
7	170305G1_7	ST170305G1-6 PFC CS3 17C0506	05-Mar-17	13:49:29
8	170305G1_8	ST170305G1-7 PFC CS4 17C0507	05-Mar-17	14:02:00
9	170305G1_9	ST170305G1-8 PFC CS5 17C0508	05-Mar-17	14:14:34
10	170305G1_10	IPA	05-Mar-17	14:27:08
11	170305G1_11	SS170305G1-1 PFC SSS 17C0509	05-Mar-17	14:39:40
12	170305G1_12	IPA	05-Mar-17	14:52:09
13	170305G1_13	B7C0012-BS1 OPR 0.125	05-Mar-17	15:04:45
14	170305G1_14	B7C0010-BS1 OPR 0.125	05-Mar-17	15:17:15
15	170305G1_15	IPA	05-Mar-17	15:29:48
16	170305G1_16	B7C0012-BLK1 Method Blank 0.125	05-Mar-17	15:42:23
17	170305G1_17	B7C0010-BLK1 Method Blank 0.125	05-Mar-17	15:54:54
18	170305G1_18	1700268-02RE1 WI-CV-GW05M-0217 0.125	05-Mar-17	16:07:28
19	170305G1_19	1700268-04RE1 WI-CV-GW11M-0217 0.125	05-Mar-17	16:20:00
20	170305G1_20	1700280-01 WI-CV-GW03M-0217 0.125	05-Mar-17	16:32:34
21	170305G1_21	1700280-02 WI-CV-GW03D-0217 0.125	05-Mar-17	16:45:07
22	170305G1_22	1700280-03 WI-CV-EB07-022717 0.125	05-Mar-17	16:57:36
23	170305G1_23	1700280-04 WI-CV-GW04M-0217 0.125	05-Mar-17	17:10:09
24	170305G1_24	1700280-05 WI-CV-GW01M-0217 0.125	05-Mar-17	17:22:42
25	170305G1_25	1700280-06 WI-CV-EB08-022817 0.125	05-Mar-17	17:35:16
26	170305G1_26	1700280-07 WI-CV-GW01D-0217 0.125	05-Mar-17	17:47:49
27	170305G1_27	1700277-01 MILK-022717 0.005	05-Mar-17	18:00:22
28	170305G1_28	IPA	05-Mar-17	18:12:56
29	170305G1_29	ST170305G1-9 PFC CS3 17C0506	05-Mar-17	18:25:28
30	170305G1_30	IPA	05-Mar-17	18:38:01

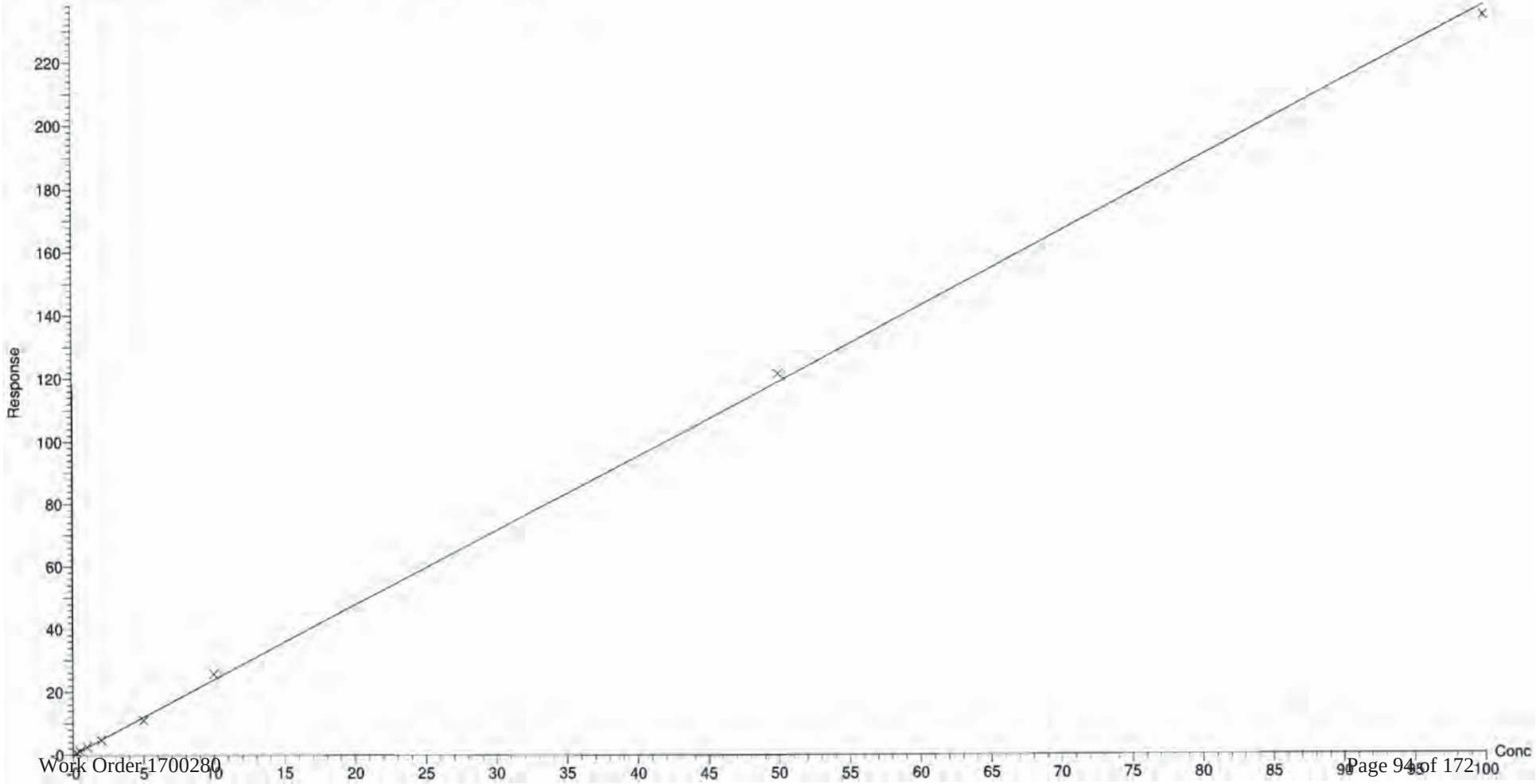
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: U:\G1.PRO\CurveDB\C18_VAL-PFC_Q1_3-05-17_L6_2Trans.cdb 06 Mar 2017 08:19:21

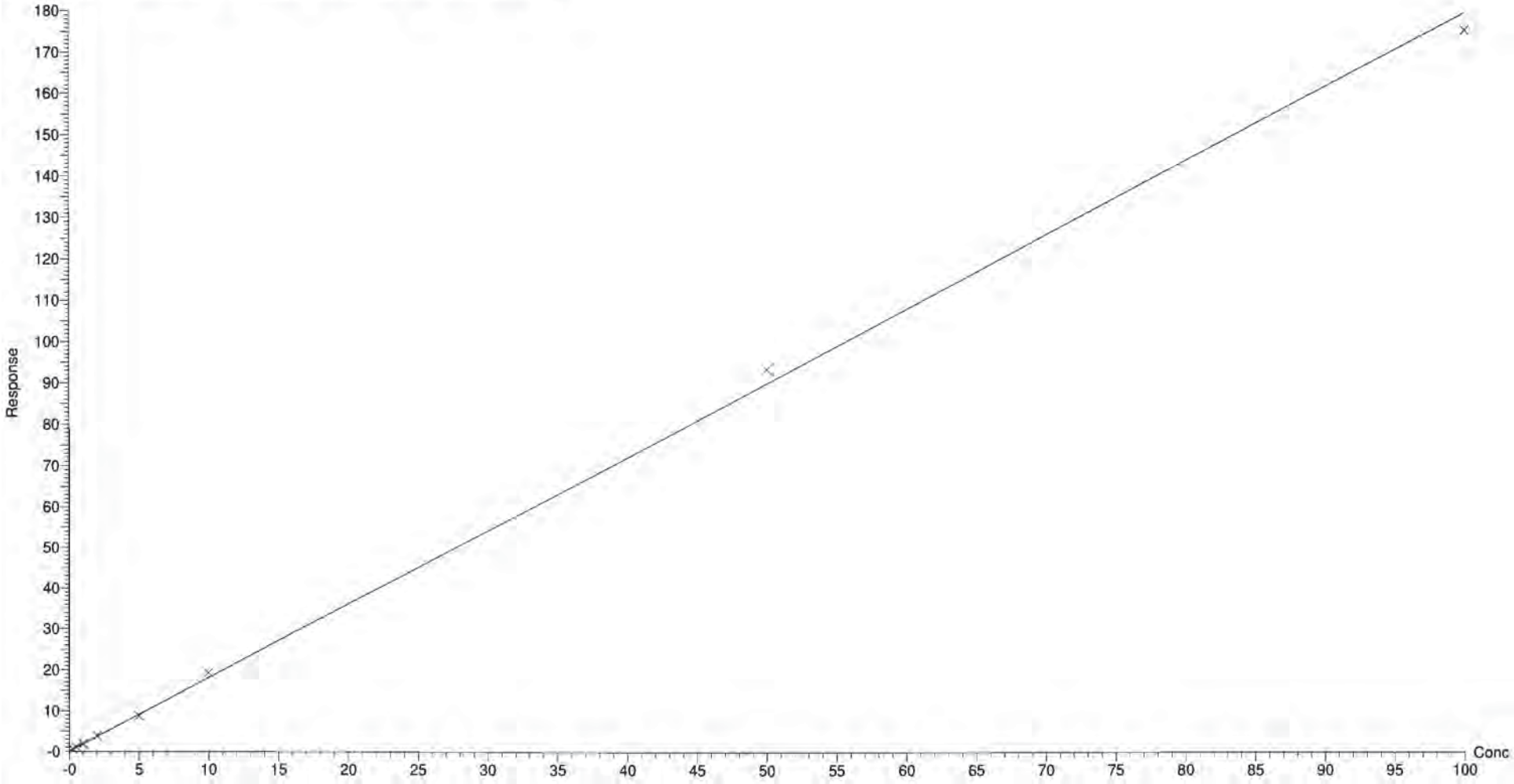
Compound name: PFBS
Correlation coefficient: r = 0.999596, r^2 = 0.999192
Calibration curve: 2.38097 * x + 0.0682571
Response type: Internal Std (Ref 7), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

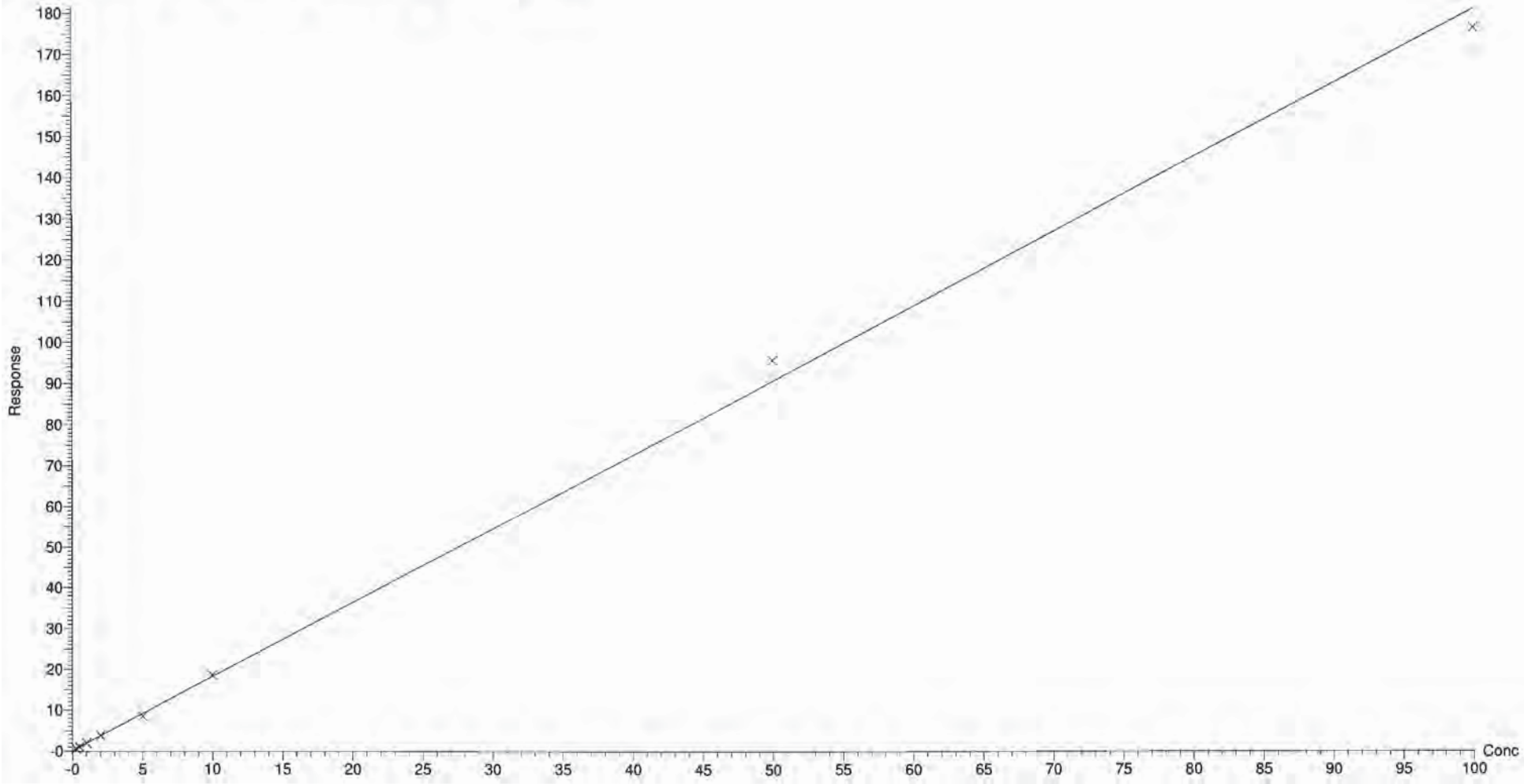
Compound name: PFHpA
Correlation coefficient: r = 0.999429, r^2 = 0.998857
Calibration curve: 1.79957 * x + 0.123896
Response type: Internal Std (Ref 8), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

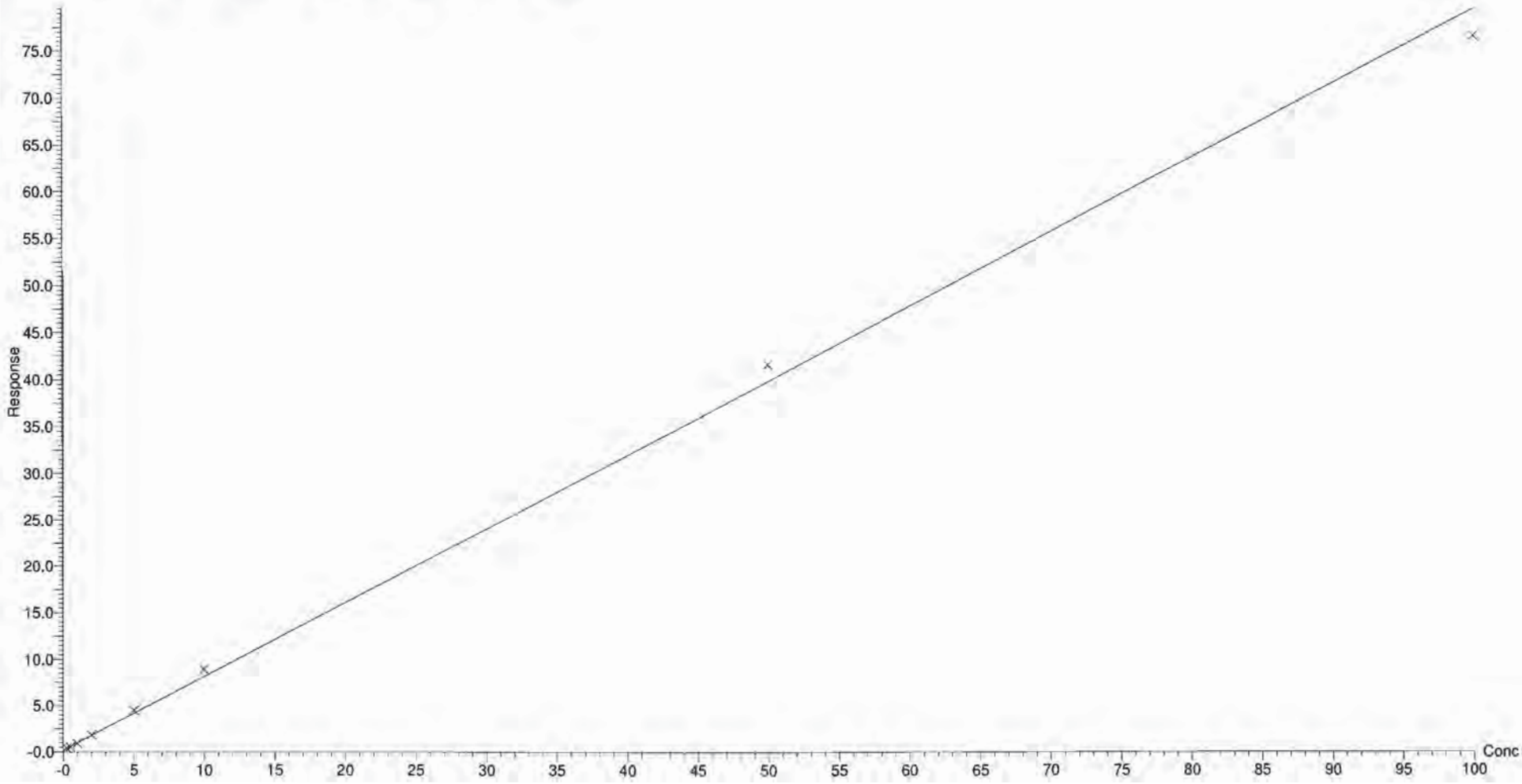
Compound name: PFHxS
Correlation coefficient: r = 0.999200, r^2 = 0.998401
Calibration curve: 1.81334 * x + 0.103191
Response type: Internal Std (Ref 9), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

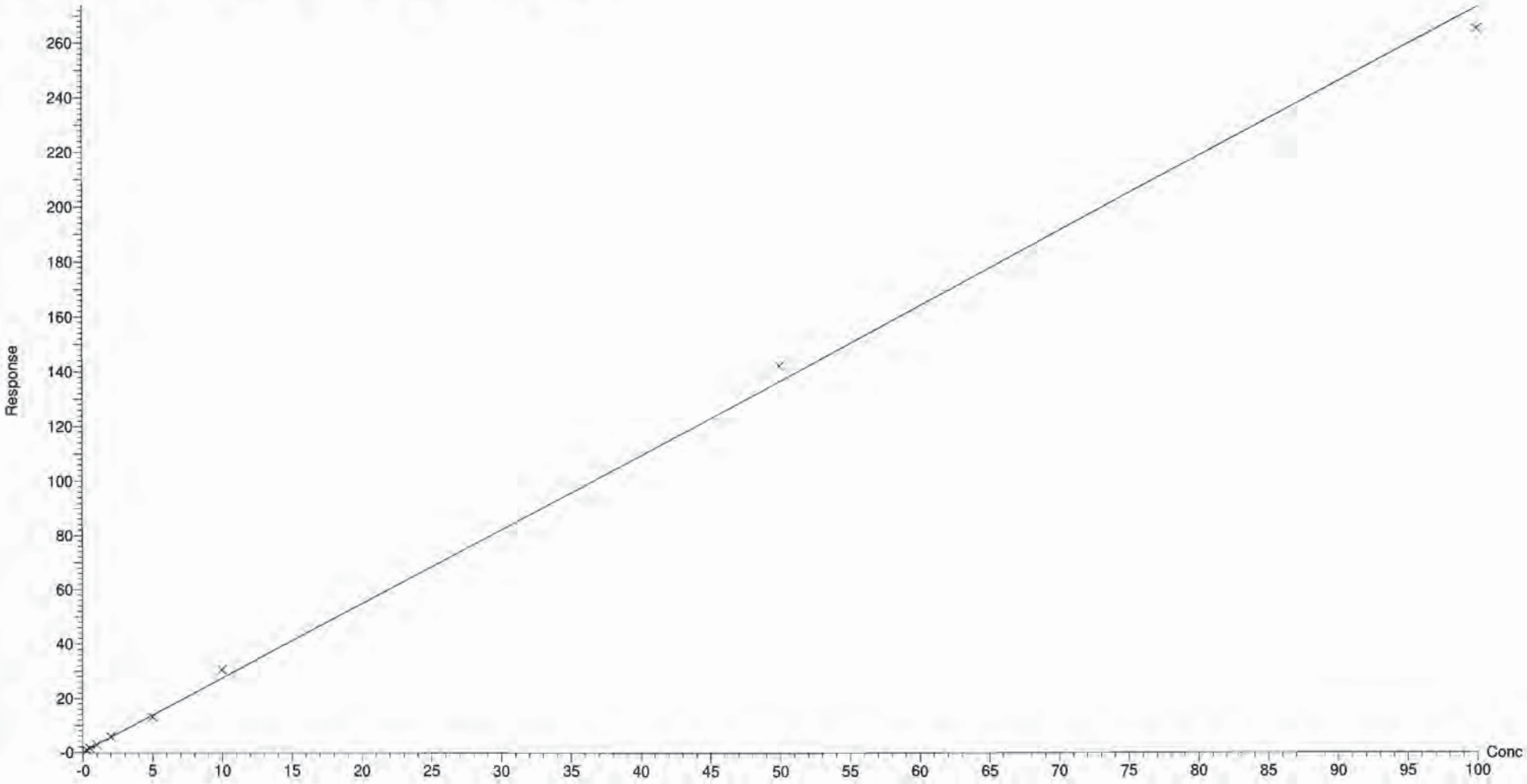
Compound name: PFOA
Correlation coefficient: r = 0.998804, r^2 = 0.997609
Calibration curve: 0.794457 * x + 0.179058
Response type: Internal Std (Ref 10), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

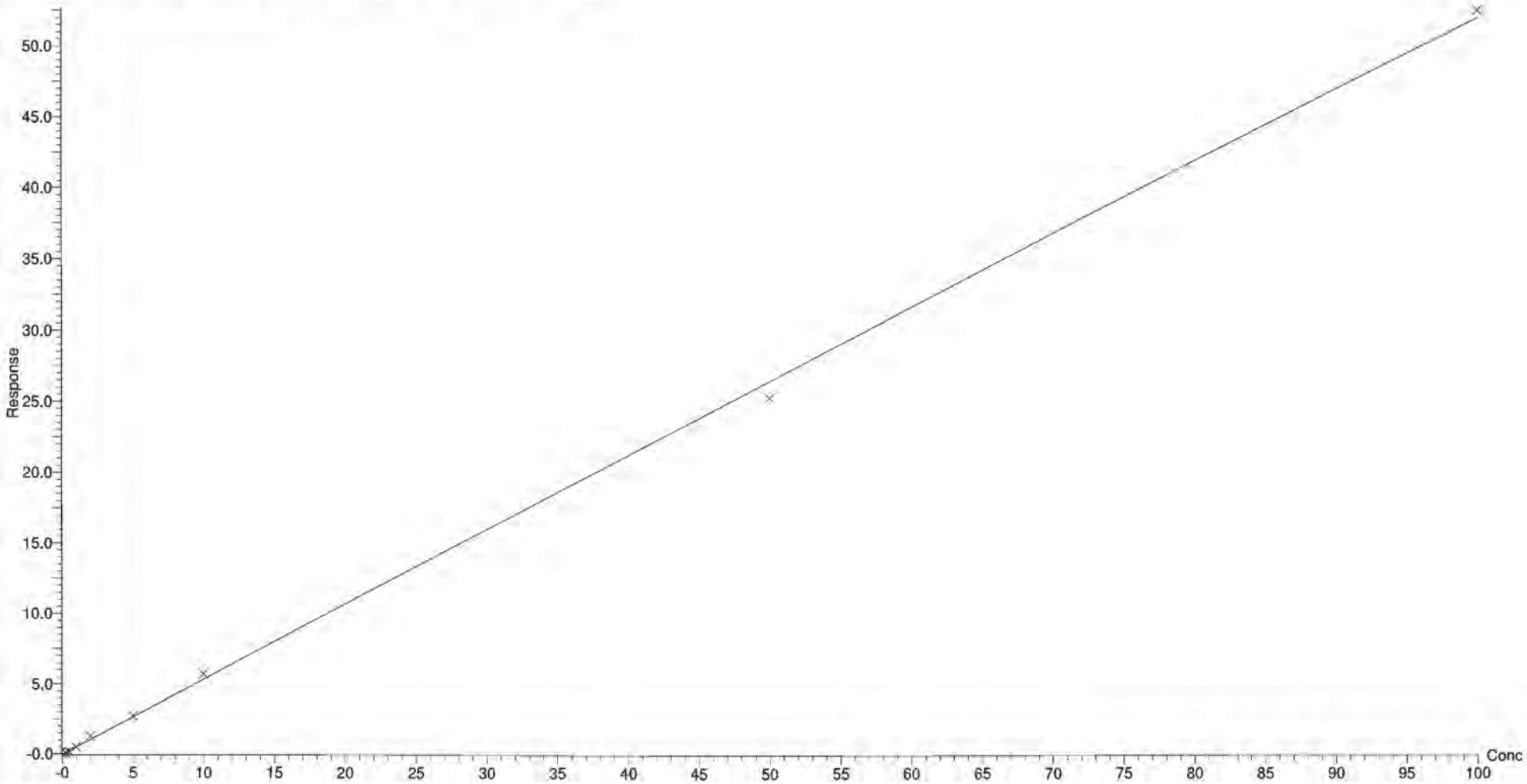
Compound name: PFNA
Correlation coefficient: r = 0.999011, r^2 = 0.998022
Calibration curve: 2.73664 * x + 0.0966541
Response type: Internal Std (Ref 11), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-CRV.qld

Last Altered: Monday, March 06, 2017 08:19:21 Pacific Standard Time
Printed: Monday, March 06, 2017 08:27:41 Pacific Standard Time

Compound name: PFOS
Coefficient of Determination: R^2 = 0.997963
Calibration curve: -0.000185224 * x^2 + 0.54028 * x + -0.0525057
Response type: Internal Std (Ref 12), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Vista Analytical Laboratory Q1

Dataset: Untitled

Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

Method: U:\G1.pro\MethDB\PFAS_6_2trans_LINEAR.mdb 02 Mar 2017 11:26:53
Calibration: 06 Mar 2017 08:36:20

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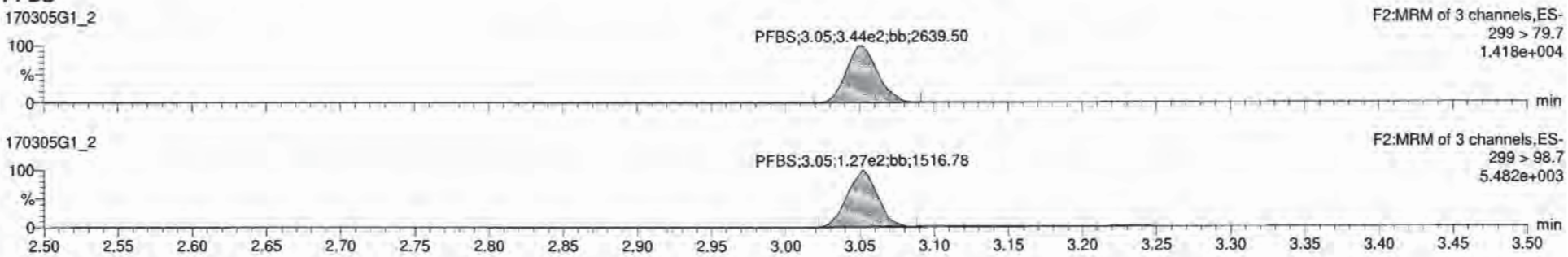
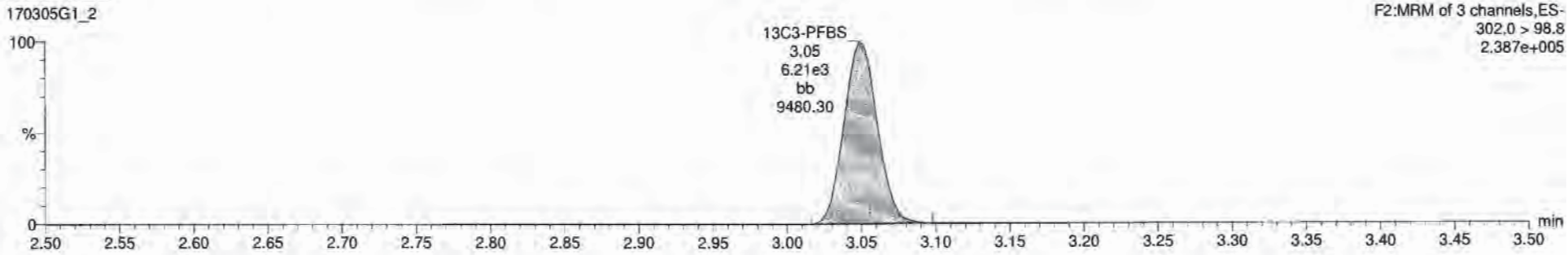
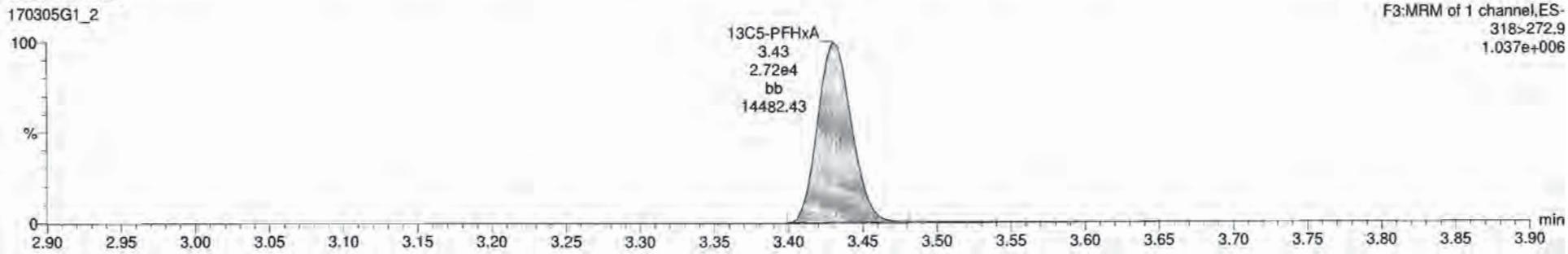
PFBS



13C3-PFBS



13C5-PFHxA



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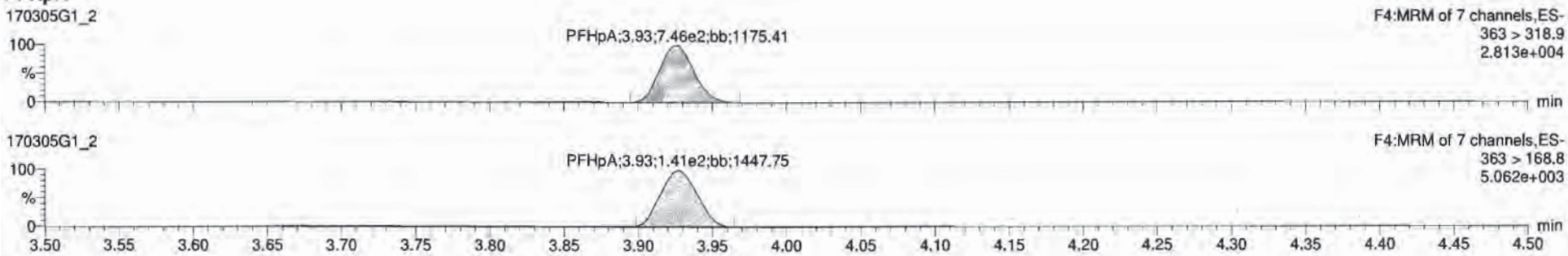
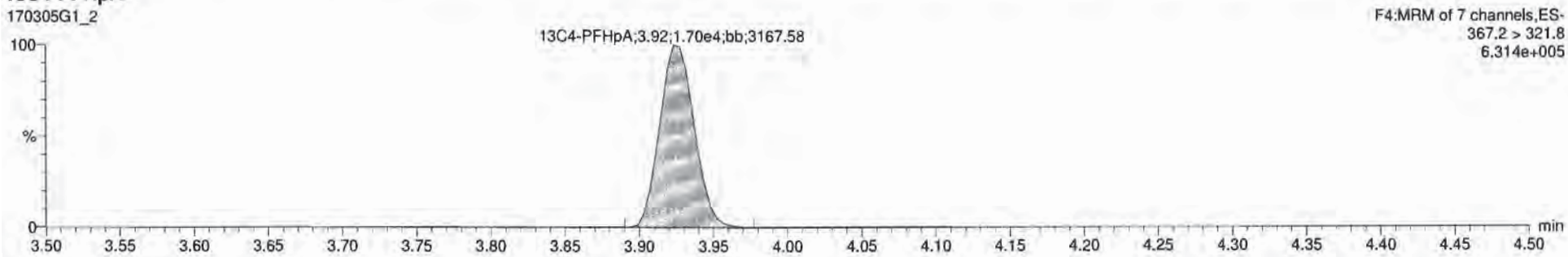
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-1 PFC CS-2 17C0501, Description: PFC CS-2 17C0501 A, Name: 170305G1_2, Date: 05-Mar-2017, Time: 12:46:48, Instrument: , Lab: , User:

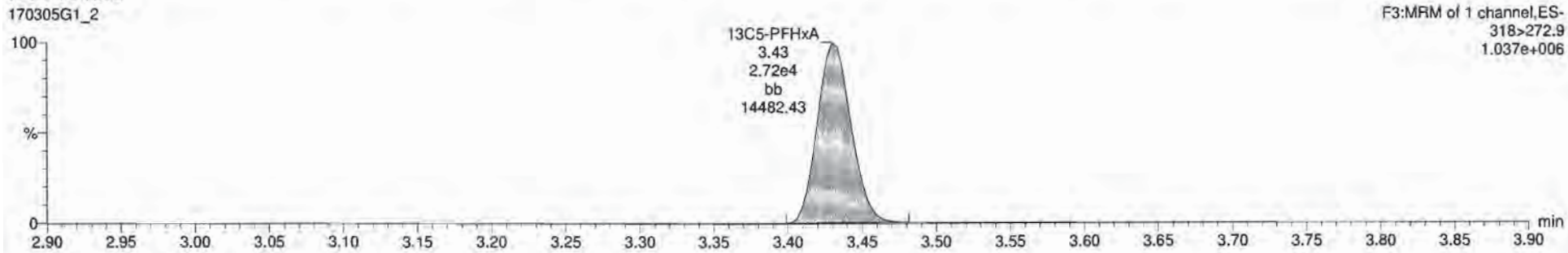
PFHpA



13C4-PFHpA



13C5-PFHxA



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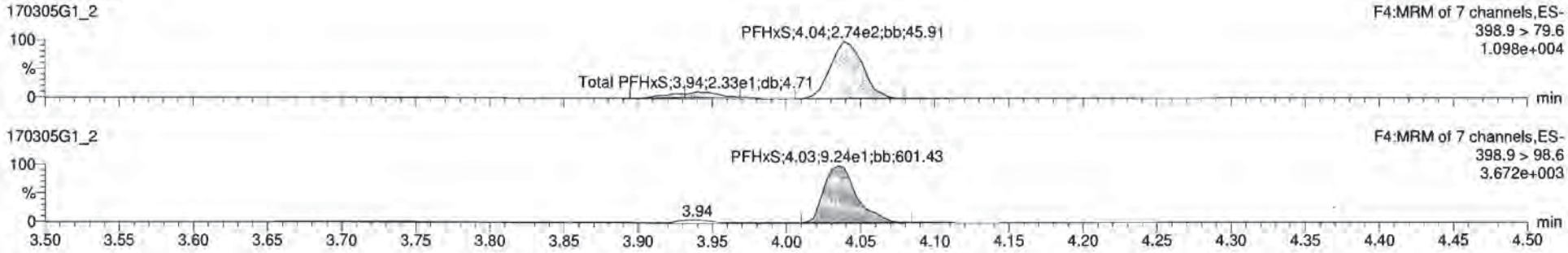
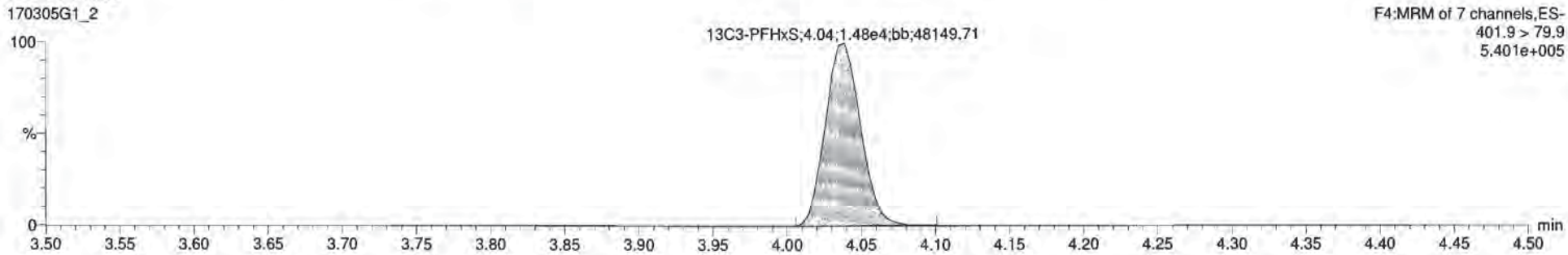
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-1 PFC CS-2 17C0501, Description: PFC CS-2 17C0501 A, Name: 170305G1_2, Date: 05-Mar-2017, Time: 12:46:48, Instrument: , Lab: , User:

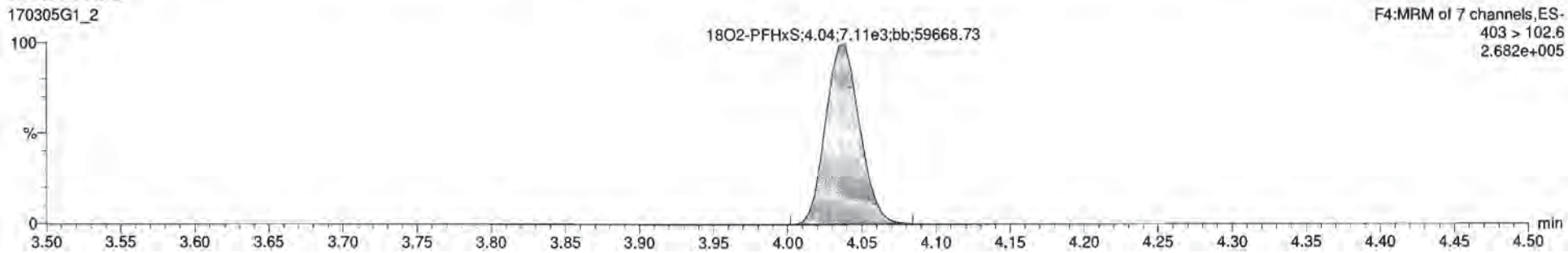
Total PFHxS

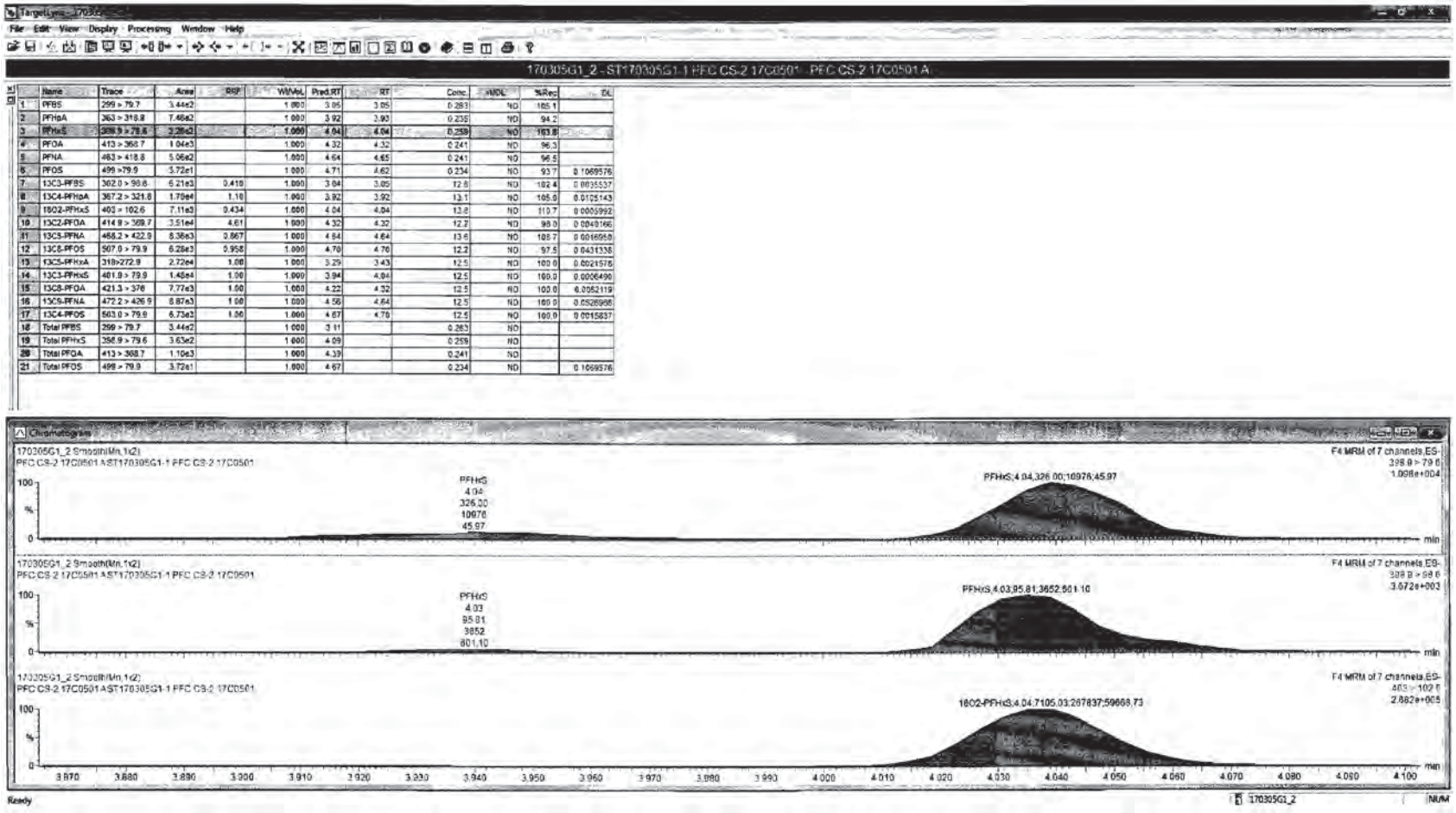


13C3-PFHxS



18O2-PFHxS





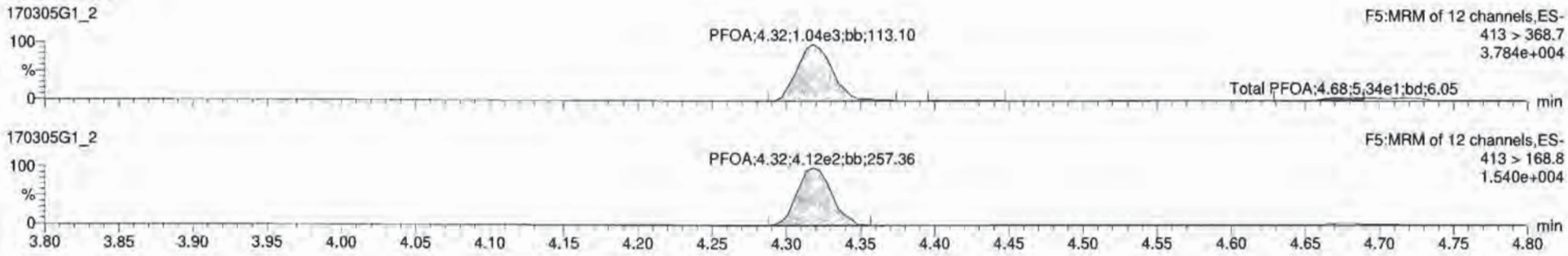
	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc.	MDL	%Rec	DL
1	PFBS	299 > 79.7	3.44e2		1.000	3.85	3.85	0.283	ND	185.1	
2	PFHpA	363 > 318.8	7.46e2		1.000	3.92	3.93	0.239	ND	94.2	
3	PFHxS	398.9 > 79.6	3.28e2		1.000	4.04	4.04	0.259	ND	163.8	
4	PFOA	413 > 368.7	1.04e3		1.000	4.32	4.32	0.241	ND	96.3	
5	PFNA	463 > 418.8	5.06e2		1.000	4.64	4.65	0.241	ND	96.5	
6	PFOS	499 >79.9	3.72e1		1.000	4.71	4.62	0.234	ND	93.7	0.1069576
7	13C3-PFBS	302.0 > 99.6	6.21e3	0.419	1.000	3.84	3.85	12.8	ND	102.4	0.0035537
8	13C4-PFHpA	367.2 > 321.8	1.78e4	1.16	1.000	3.92	3.92	13.1	ND	105.0	0.0125143
9	1802-PFHxS	403 > 102.6	7.11e3	0.434	1.000	4.04	4.04	13.8	ND	110.7	0.0005992
10	13C2-PFOA	414.9 > 369.7	3.51e4	4.61	1.000	4.32	4.32	12.7	ND	98.0	0.0040166
11	13C5-PFNA	468.2 > 422.9	8.38e3	0.867	1.000	4.64	4.64	13.6	ND	108.7	0.0016958
12	13C8-PFOS	507.0 > 79.9	6.28e3	0.958	1.000	4.70	4.70	12.2	ND	97.5	0.0431338
13	13C5-PFHxA	318>272.9	2.72e4	1.00	1.000	3.29	3.43	12.5	ND	100.0	0.0021576
14	13C3-PFHxS	401.9 > 79.9	1.45e4	1.00	1.000	3.94	4.04	12.5	ND	100.0	0.0006490
15	13C8-PFOA	421.3 > 376	7.77e3	1.00	1.000	4.22	4.32	12.5	ND	100.0	0.0052119
16	13C9-PFNA	472.2 > 426.9	8.87e3	1.00	1.000	4.56	4.64	12.5	ND	100.0	0.0526998
17	13C4-PFOS	503.0 > 79.9	6.73e3	1.00	1.000	4.67	4.76	12.5	ND	100.0	0.0015837
18	Total PFBS	299 > 79.7	3.44e2		1.000	3.11		0.283	ND		
19	Total PFHxS	398.9 > 79.6	3.63e2		1.000	4.09		0.259	ND		
20	Total PFOA	413 > 368.7	1.10e3		1.000	4.39		0.241	ND		
21	Total PFOS	499 > 79.9	3.72e1		1.000	4.67		0.234	ND		0.1069576

Dataset: Untitled

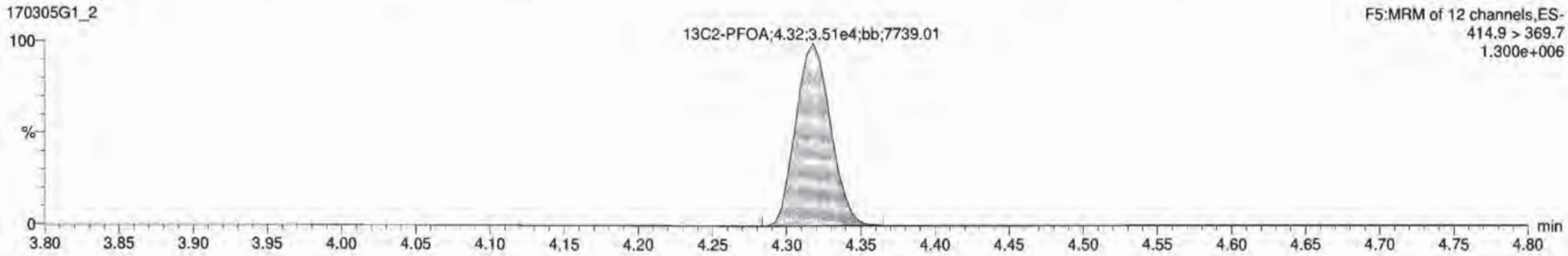
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-1 PFC CS-2 17C0501, Description: PFC CS-2 17C0501 A, Name: 170305G1_2, Date: 05-Mar-2017, Time: 12:46:48, Instrument: , Lab: , User:

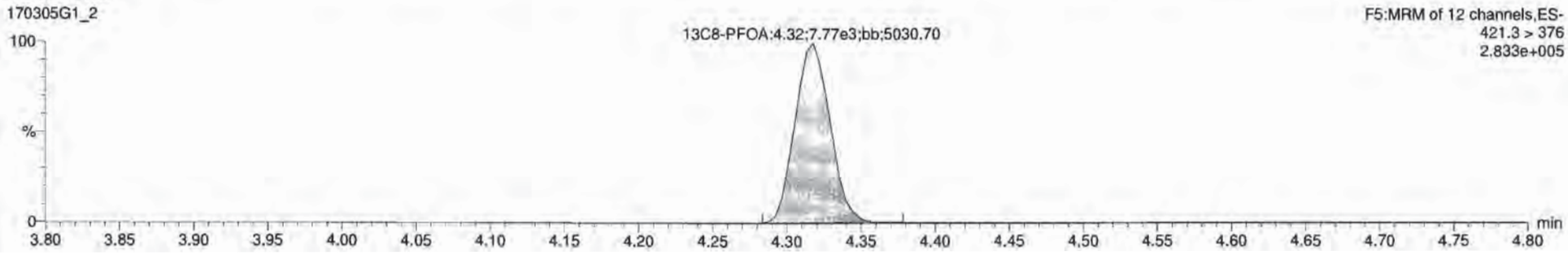
Total PFOA



13C2-PFOA



13C8-PFOA



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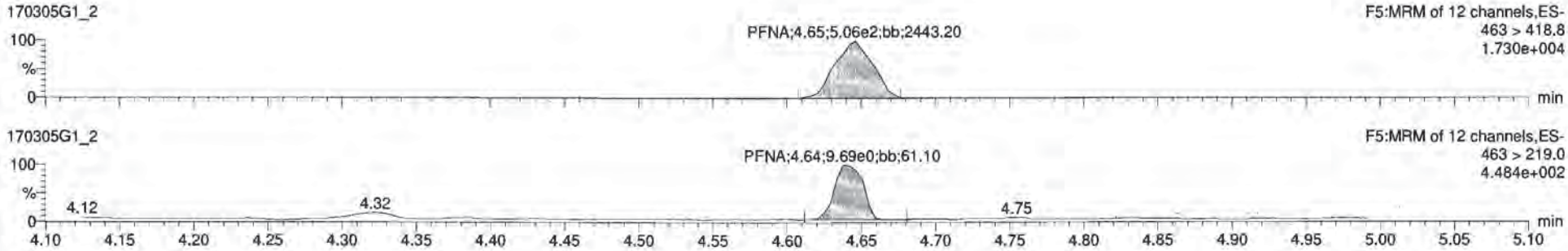
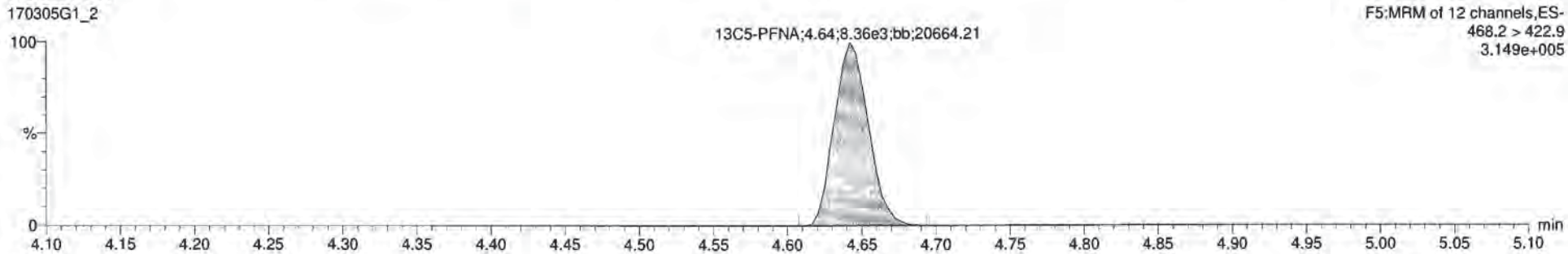
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-1 PFC CS-2 17C0501, Description: PFC CS-2 17C0501 A, Name: 170305G1_2, Date: 05-Mar-2017, Time: 12:46:48, Instrument: , Lab: , User:

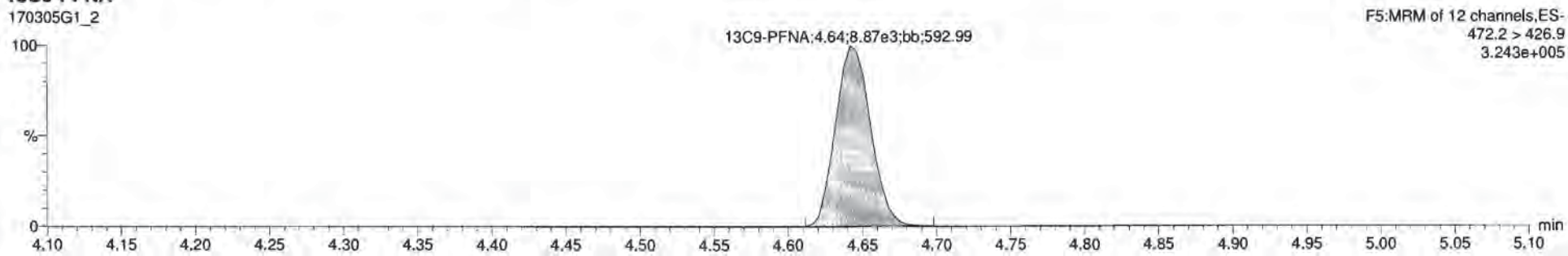
PFNA



13C5-PFNA



13C9-PFNA



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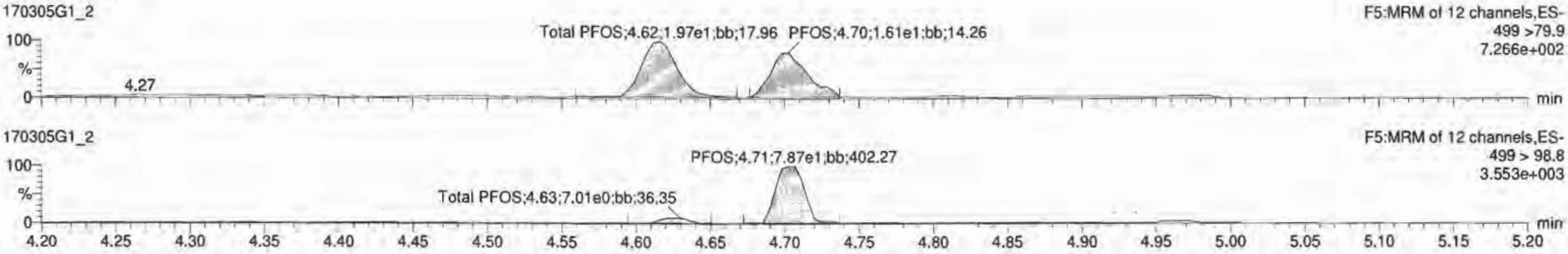
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-1 PFC CS-2 17C0501, Description: PFC CS-2 17C0501 A, Name: 170305G1_2, Date: 05-Mar-2017, Time: 12:46:48, Instrument: , Lab: , User:

Total PFOS



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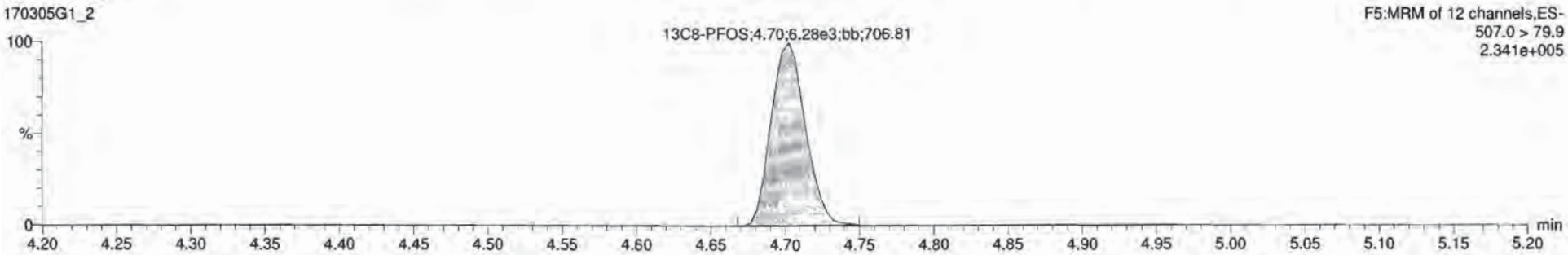

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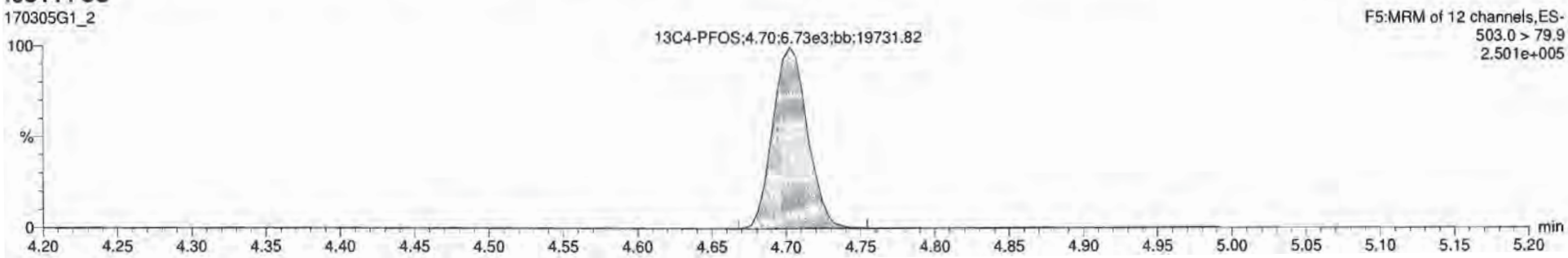
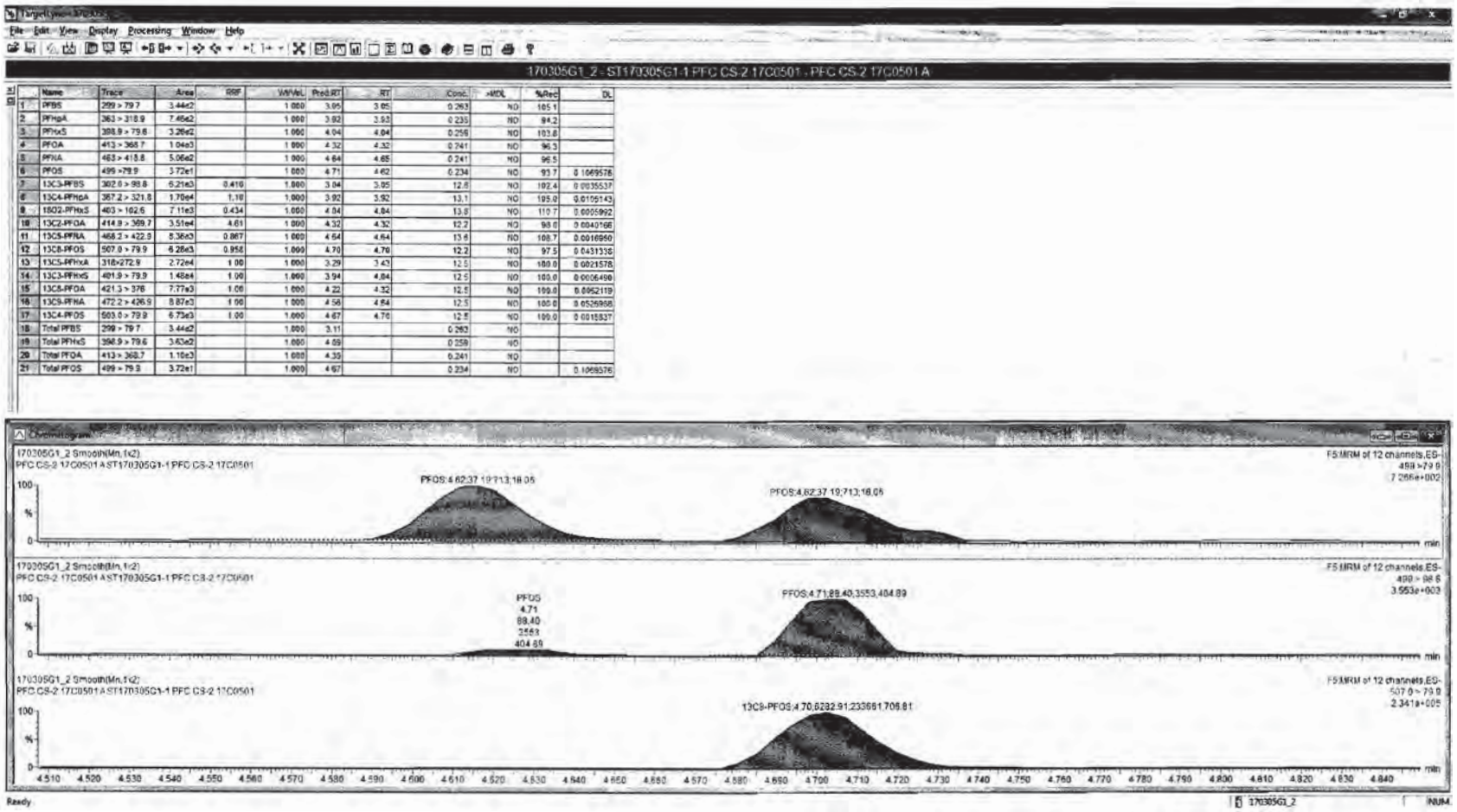


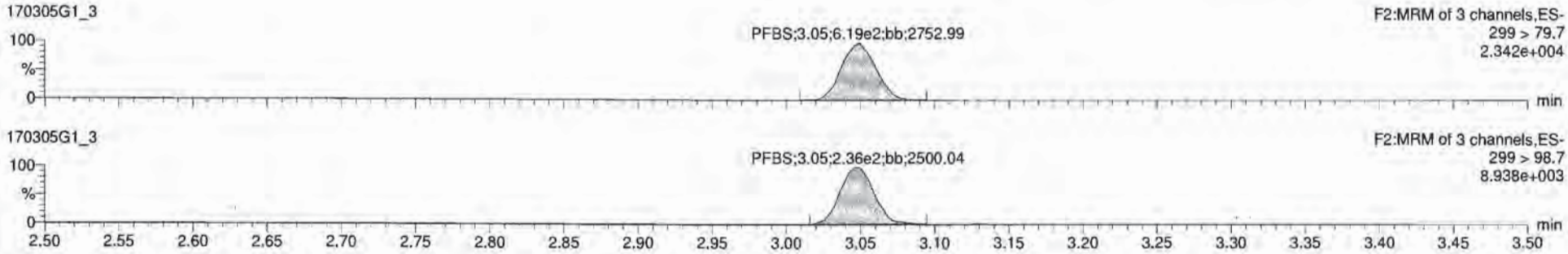

File Edit View Display Processing Window Help
170305G1_2 - ST170305G1-1 PFC CS-2 17C0501 - PFC CS-2 17C0501 A
Chromatogram
170305G1_2 Smooth(Mn,1x2)
PFC CS-2 17C0501 A ST170305G1-1 PFC CS-2 17C0501
PFOS:4.62;37.19;713;18.05
PFOS:4.62;37.19;713;18.05
F5 MRM of 12 channels,ES-
499 > 79.9
7.266e+002
PFOS
4.71
88.40
2563
404.89
PFOS:4.71;88.40;3553;404.89
F5 MRM of 12 channels,ES-
499 > 98.9
3.553e+003
13C8-PFOS:4.70;6282.91;233661.706;81
F5 MRM of 12 channels,ES-
507.0 > 79.9
2.341e+005
min
Ready
170305G1_2
NUM

Dataset: Untitled

Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-2 PFC CS-1 17C0502, Description: PFC CS-1 17C0502 A, Name: 170305G1_3, Date: 05-Mar-2017, Time: 12:59:15, Instrument: , Lab: , User:

PFBS



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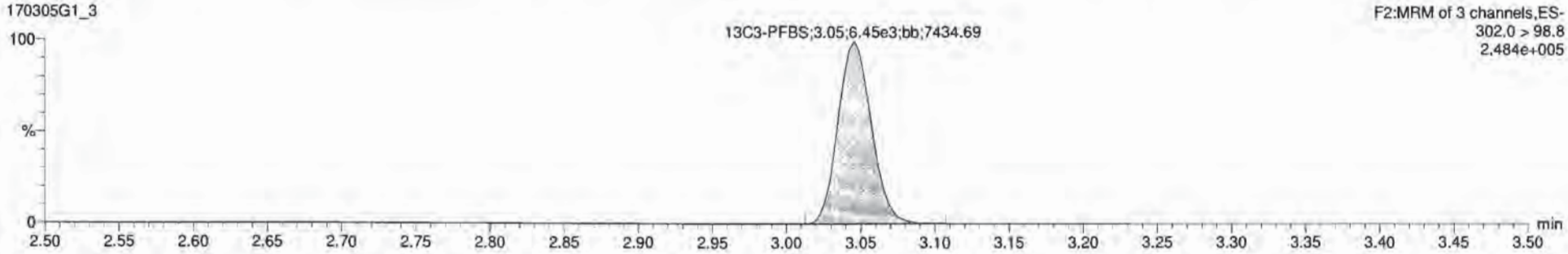

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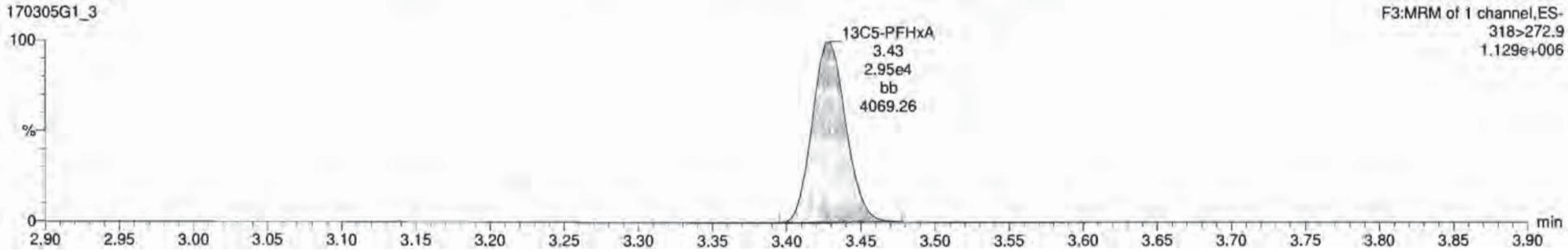

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-2 PFC CS-1 17C0502, Description: PFC CS-1 17C0502 A, Name: 170305G1_3, Date: 05-Mar-2017, Time: 12:59:15, Instrument: , Lab: , User:

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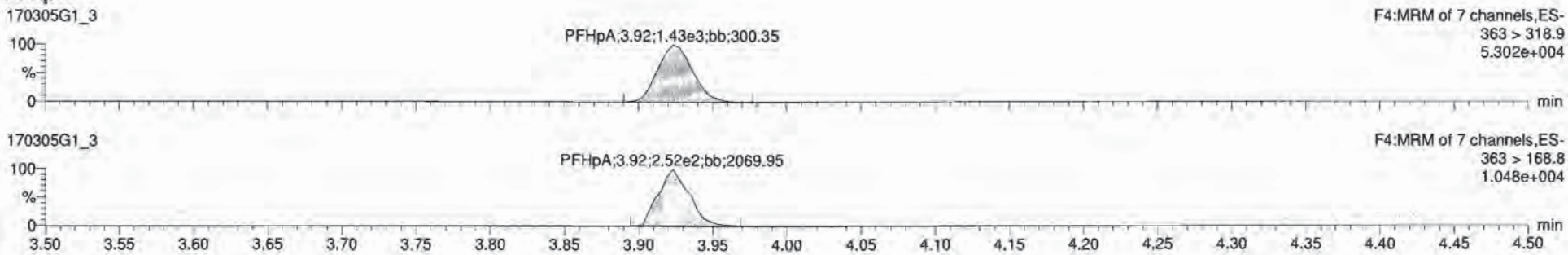

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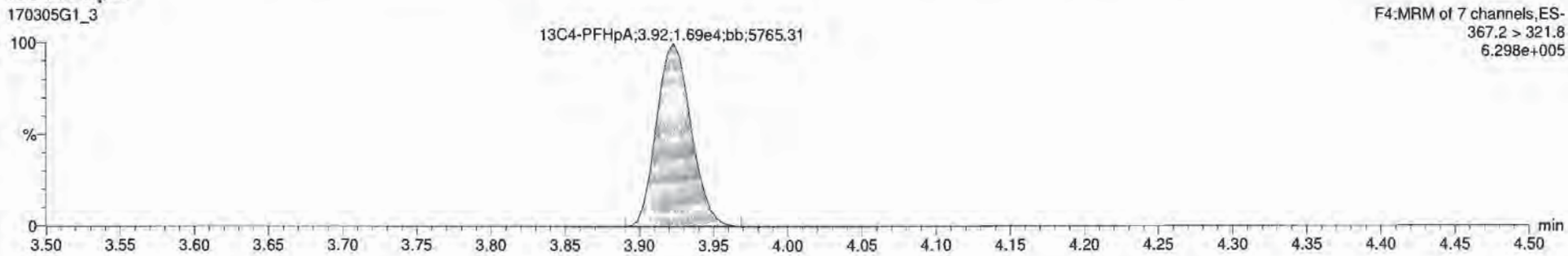

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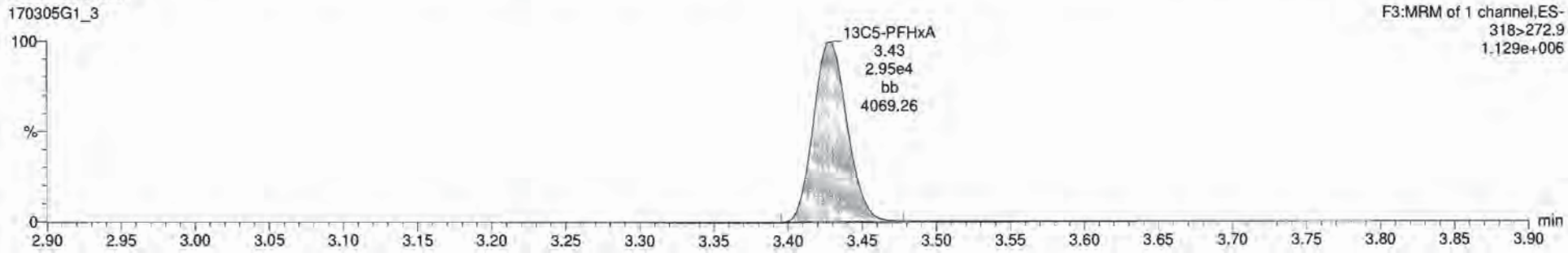

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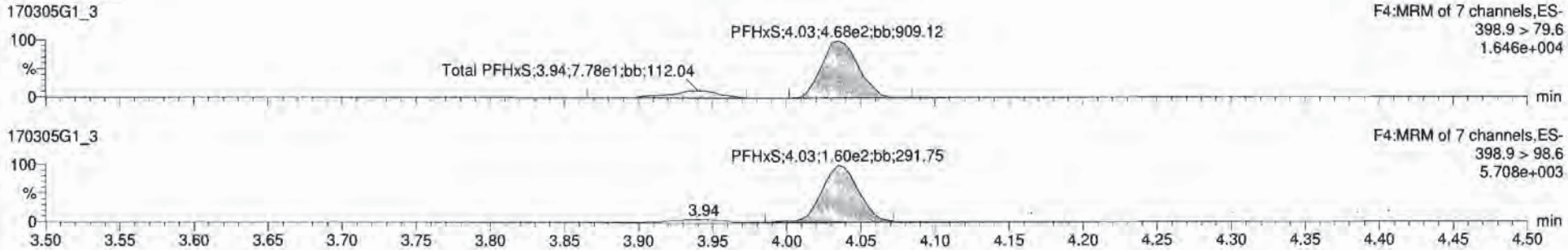
Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-2 PFC CS-1 17C0502, Description: PFC CS-1 17C0502 A, Name: 170305G1_3, Date: 05-Mar-2017, Time: 12:59:15, Instrument: , Lab: , User:

Total PFHxS



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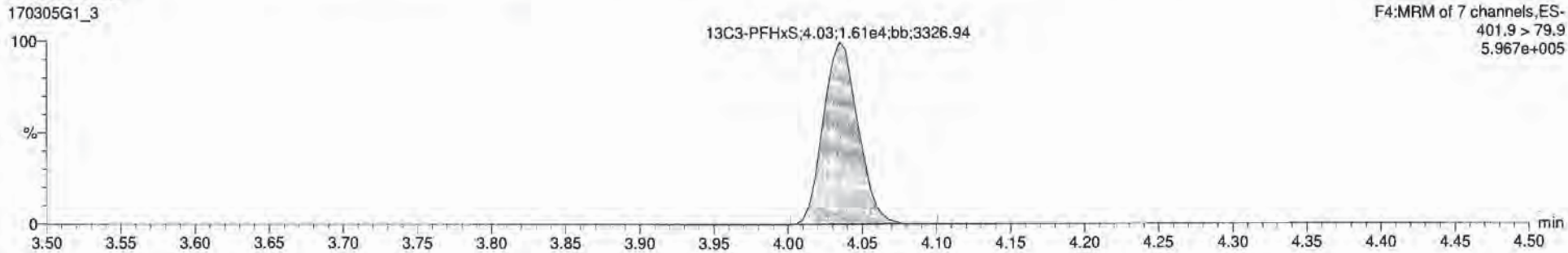
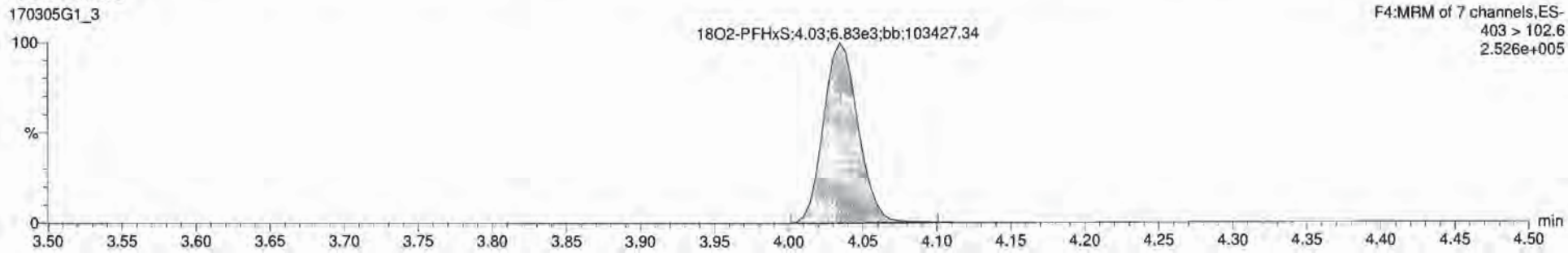
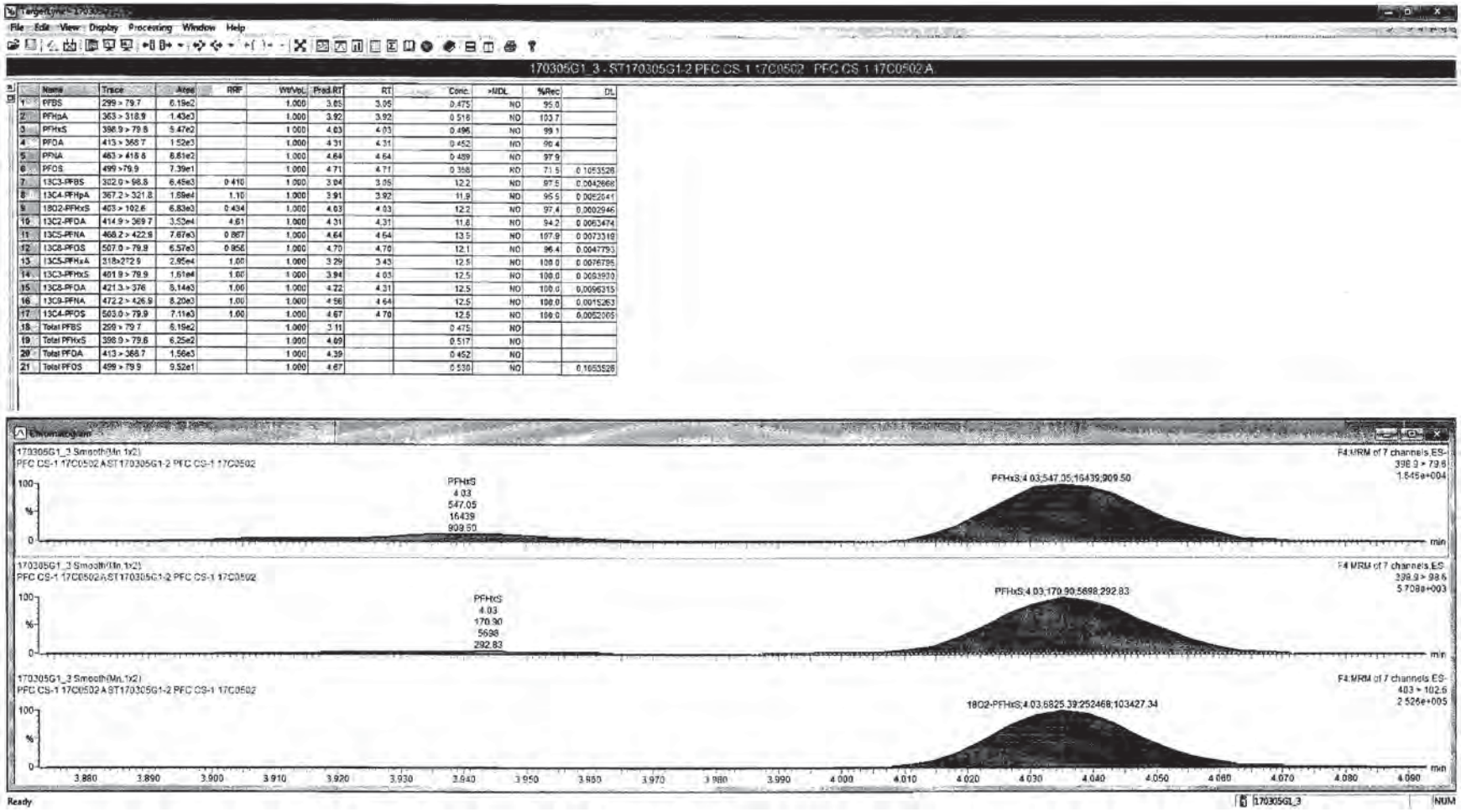


18O2-PFHxS





	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc.	>MDL	%Rec	DL
1	PFBS	299 > 79.7	6.19e2		1.000	3.85	3.95	0.475	NO	95.0	
2	PFHpA	363 > 318.9	1.43e3		1.000	3.92	3.92	0.518	NO	103.7	
3	PFHxS	398.9 > 79.8	5.47e2		1.000	4.03	4.03	0.496	NO	99.1	
4	PFOA	413 > 368.7	1.52e3		1.000	4.31	4.31	0.452	NO	90.4	
5	PFNA	463 > 418.8	8.81e2		1.000	4.64	4.64	0.459	NO	97.9	
6	PFOS	499 >79.9	7.39e1		1.000	4.71	4.71	0.358	ND	71.5	0.1053528
7	13C3-PFBS	302.0 > 98.8	6.45e3	0.410	1.000	3.94	3.95	12.2	ND	97.5	0.0042668
8	13C4-PFHpA	367.2 > 321.8	1.69e4	1.10	1.000	3.91	3.92	11.9	ND	95.5	0.0052041
9	18O2-PFHxS	403 > 102.6	6.83e3	0.434	1.000	4.03	4.03	12.2	NO	97.4	0.0002946
10	13C2-PFDA	414.9 > 369.7	3.53e4	4.61	1.000	4.31	4.31	11.8	NO	94.2	0.0063474
11	13C5-PFNA	468.2 > 422.9	7.67e3	0.867	1.000	4.64	4.64	13.5	NO	107.9	0.0073319
12	13C8-PFOS	507.0 > 79.9	6.57e3	0.956	1.000	4.70	4.70	12.1	NO	96.4	0.0047793
13	13C5-PFHxA	318>272.9	2.95e4	1.00	1.000	3.29	3.43	12.5	NO	100.0	0.0076785
14	13C3-PFHxS	401.9 > 79.9	1.61e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0053930
15	13C8-PFOA	421.3 > 376	8.14e3	1.00	1.000	4.22	4.31	12.5	NO	100.0	0.0096315
16	13C9-PFNA	472.2 > 426.9	8.20e3	1.00	1.000	4.56	4.64	12.5	NO	100.0	0.0015263
17	13C4-PFOS	503.0 > 79.9	7.11e3	1.00	1.000	4.67	4.70	12.5	NO	100.0	0.0052005
18	Total PFBS	299 > 79.7	6.19e2		1.000	3.11		0.475	NO		
19	Total PFHxS	398.9 > 79.8	6.25e2		1.000	4.09		0.517	NO		
20	Total PFOA	413 > 368.7	1.56e3		1.000	4.39		0.452	NO		
21	Total PFOS	499 > 79.9	9.52e1		1.000	4.67		0.530	NO		0.1053528

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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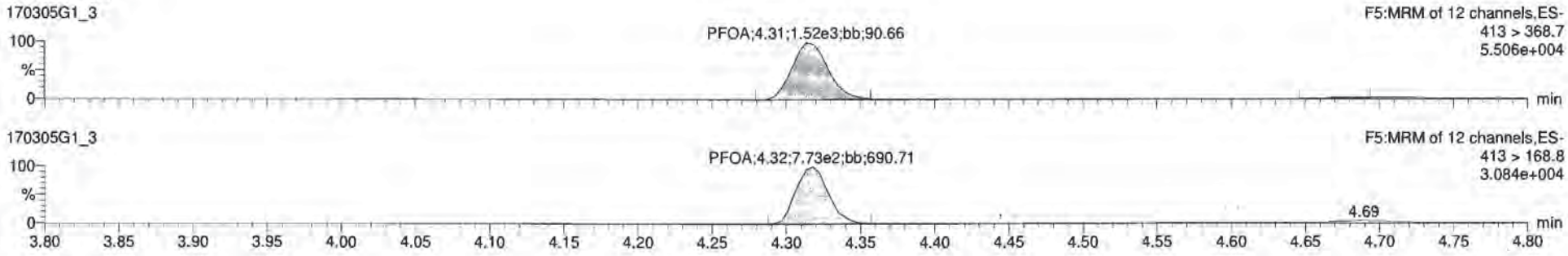
ID: ST170305G1-2 PFC CS-1 17C0502, Description: PFC CS-1 17C0502 A, Name: 170305G1_3, Date: 05-Mar-2017, Time: 12:59:15, Instrument: , Lab: , User:

Total PFOA



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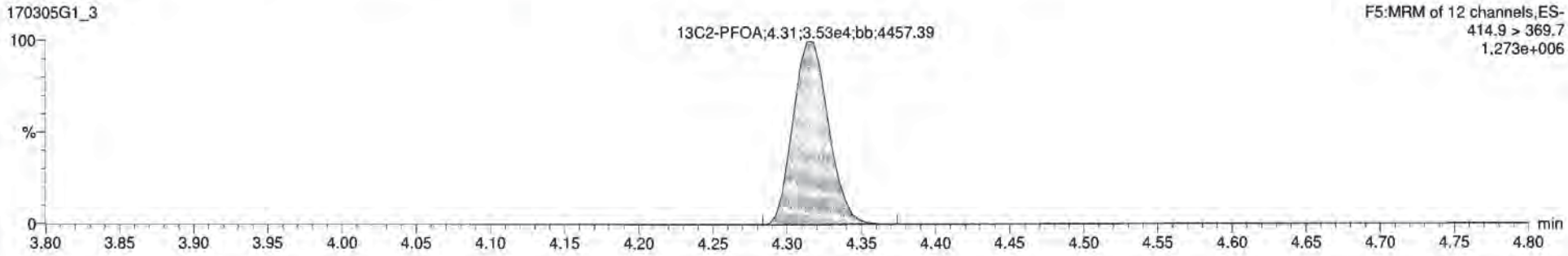

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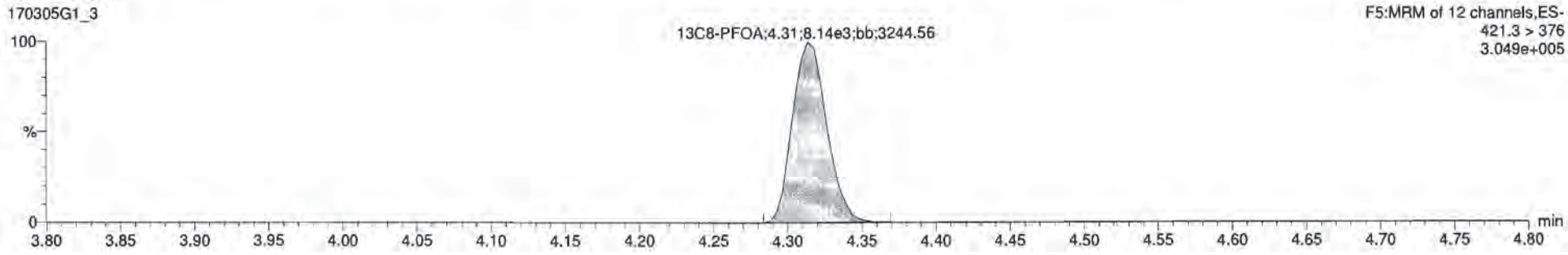

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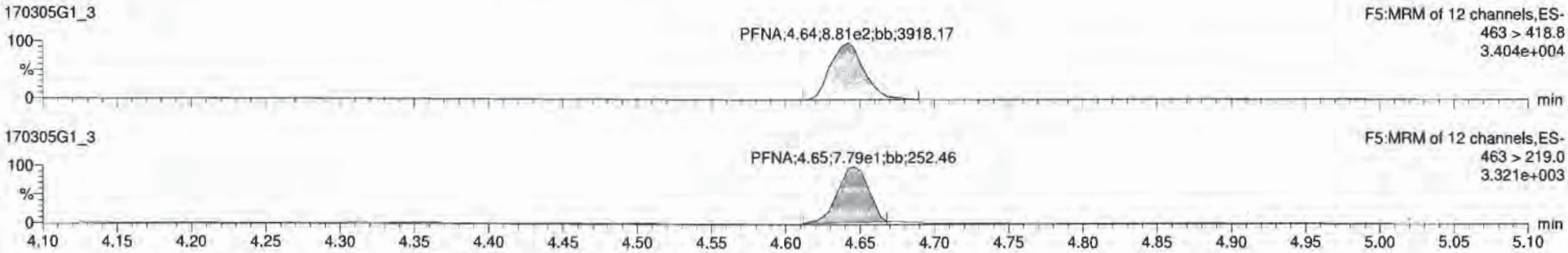
Printed: Monday, March 06, 2017 08:37:19 Pacific Standard Time

ID: ST170305G1-2 PFC CS-1 17C0502, Description: PFC CS-1 17C0502 A, Name: 170305G1_3, Date: 05-Mar-2017, Time: 12:59:15, Instrument: , Lab: , User:

PFNA



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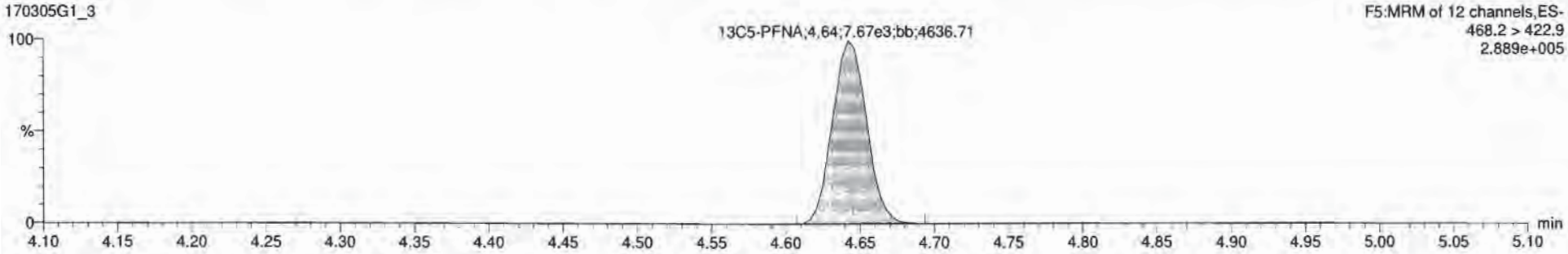

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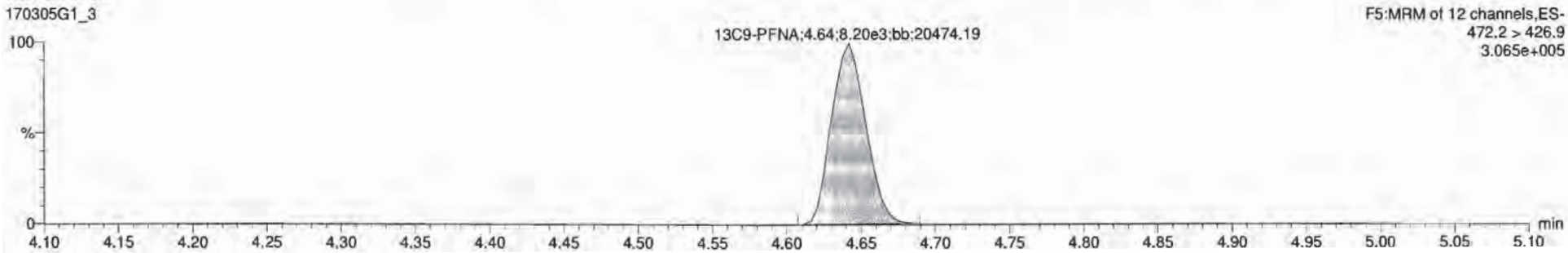

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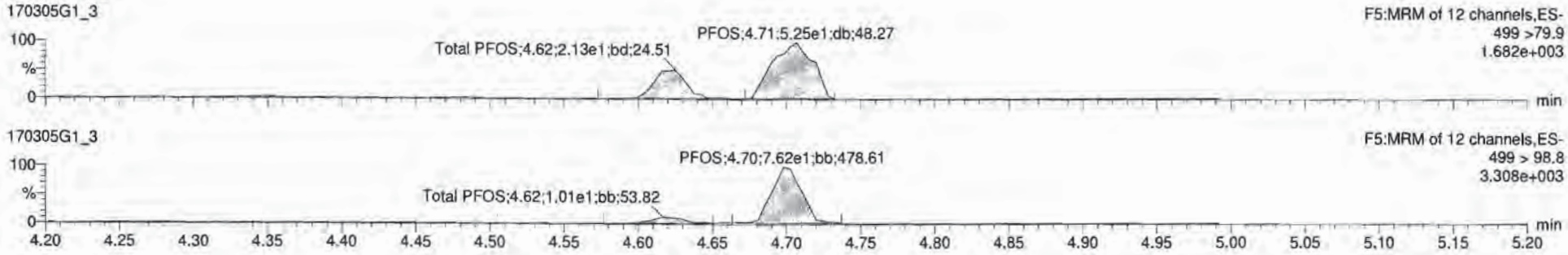
Total PFOS



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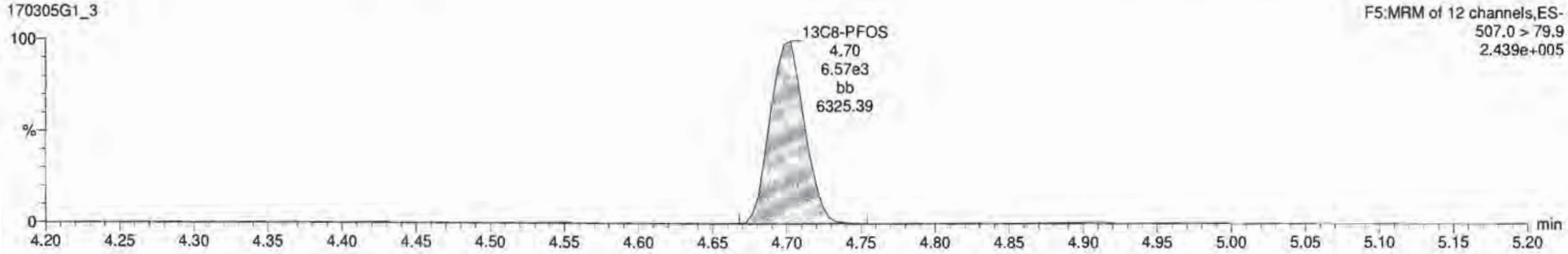

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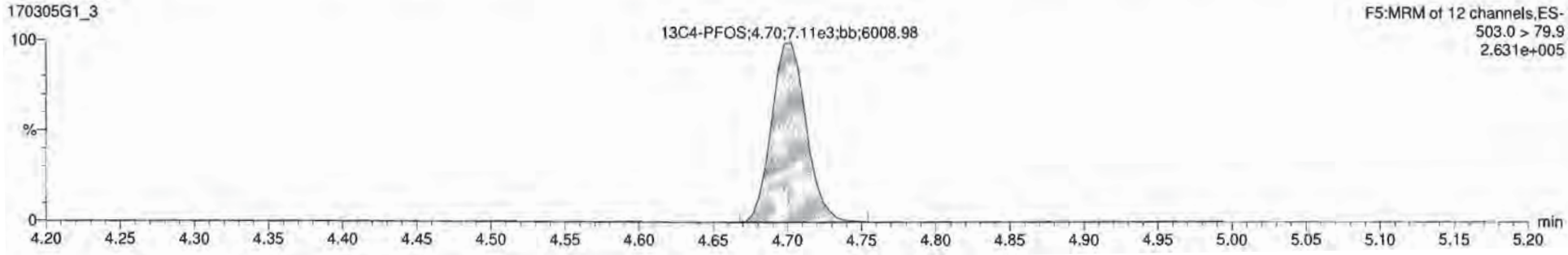

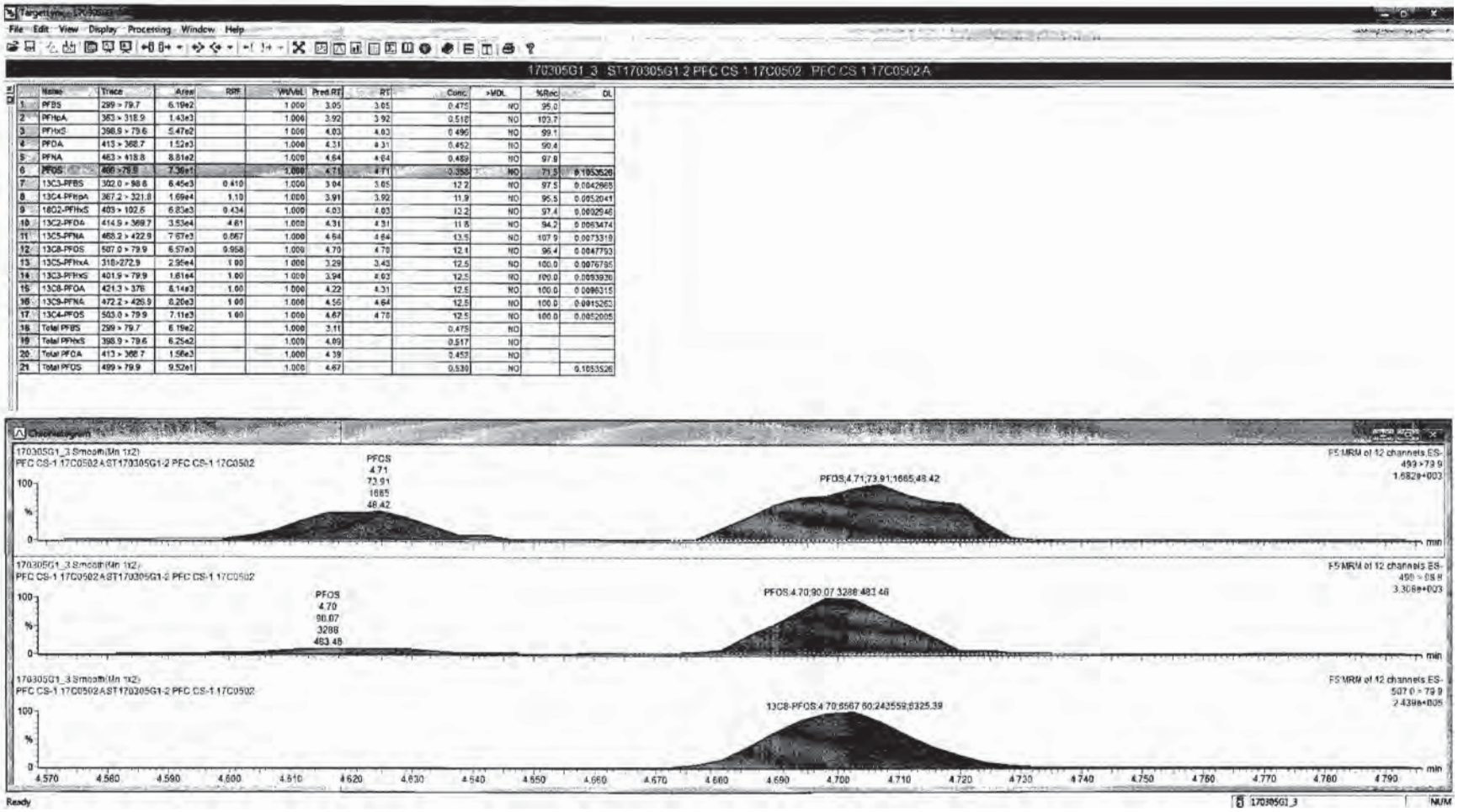

	Name	Trace	Area	RRF	Wt/VoL	Pred.RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	299 > 79.7	6.19e2		1.000	3.05	3.05	0.475	NO	95.0	
2	PFHpA	363 > 318.9	1.43e3		1.000	3.92	3.92	0.518	NO	103.7	
3	PFHxS	398.9 > 79.6	5.47e2		1.000	4.03	4.03	0.496	NO	99.1	
4	PFOA	413 > 368.7	1.52e3		1.000	4.31	4.31	0.452	NO	90.4	
5	PFNA	463 > 418.8	8.81e2		1.000	4.64	4.64	0.489	NO	97.8	
6	PFOS	499 > 79.9	7.36e1		1.000	4.71	4.71	0.358	NO	71.5	0.1053526
7	13C3-PFBS	302.0 > 98.8	6.45e3	0.410	1.000	3.04	3.05	12.2	NO	97.5	0.0042985
8	13C4-PFHpA	367.2 > 321.8	1.69e4	1.10	1.000	3.91	3.92	11.9	NO	95.5	0.0052041
9	18O2-PFHxS	403 > 102.6	6.83e3	0.434	1.000	4.03	4.03	12.2	NO	97.4	0.0032946
10	13C2-PFOA	414.9 > 369.7	3.53e4	4.61	1.000	4.31	4.31	11.8	NO	94.2	0.0063474
11	13C5-PFNA	468.2 > 422.9	7.57e3	0.857	1.000	4.64	4.64	13.5	NO	107.9	0.0073318
12	13C8-PFOS	507.0 > 79.9	6.57e3	0.958	1.000	4.70	4.70	12.1	NO	96.4	0.0047793
13	13C5-PFHxA	318>272.9	2.95e4	1.00	1.000	3.29	3.43	12.5	NO	100.0	0.0076795
14	13C3-PFHxS	401.9 > 79.9	1.61e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0093939
15	13C8-PFOA	421.3 > 376	8.14e3	1.00	1.000	4.22	4.31	12.5	NO	100.0	0.0090315
16	13C9-PFNA	472.2 > 426.9	8.20e3	1.00	1.000	4.56	4.64	12.5	NO	100.0	0.0091263
17	13C4-PFOS	503.0 > 79.9	7.11e3	1.00	1.000	4.67	4.70	12.5	NO	100.0	0.0052005
18	Total PFBS	299 > 79.7	6.19e2		1.000	3.11		0.475	NO		
19	Total PFHxS	398.9 > 79.6	6.25e2		1.000	4.09		0.517	NO		
20	Total PFOA	413 > 368.7	1.56e3		1.000	4.39		0.453	NO		
21	Total PFOS	499 > 79.9	9.52e1		1.000	4.67		0.530	NO		0.1053526

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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ID: ST170305G1-3 PFC CS0 17C0503, Description: PFC CS0 17C0503 A, Name: 170305G1_4, Date: 05-Mar-2017, Time: 13:11:49, Instrument: , Lab: , User:

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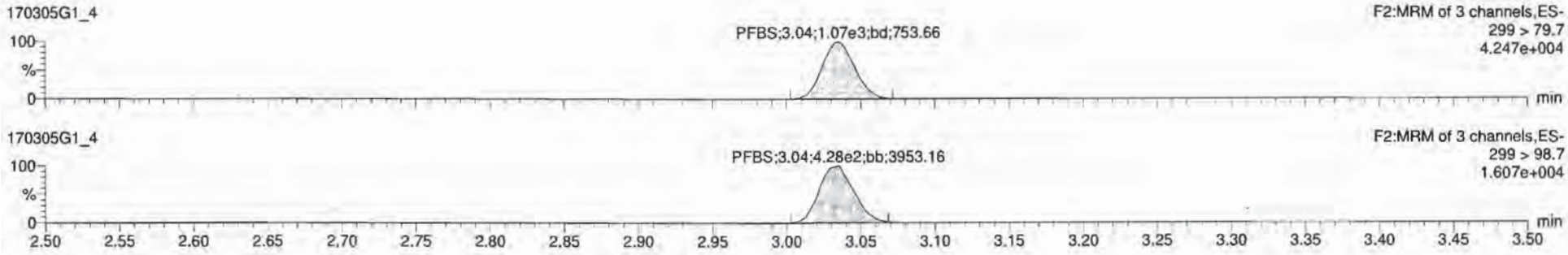

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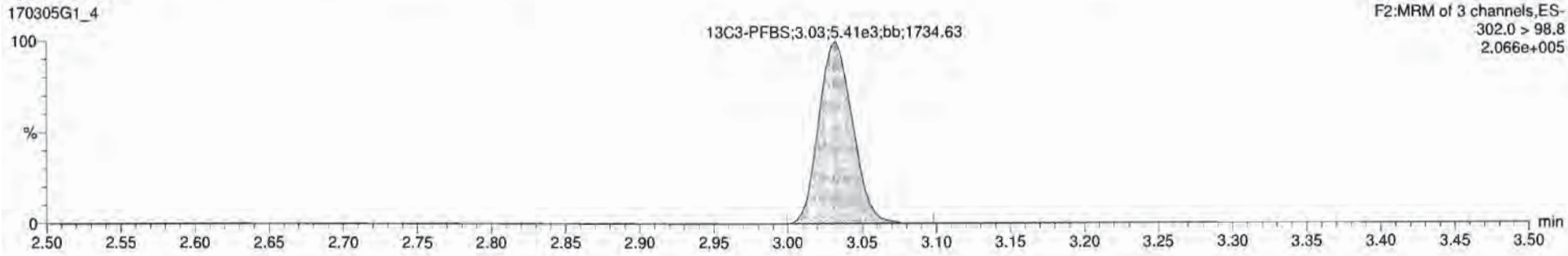

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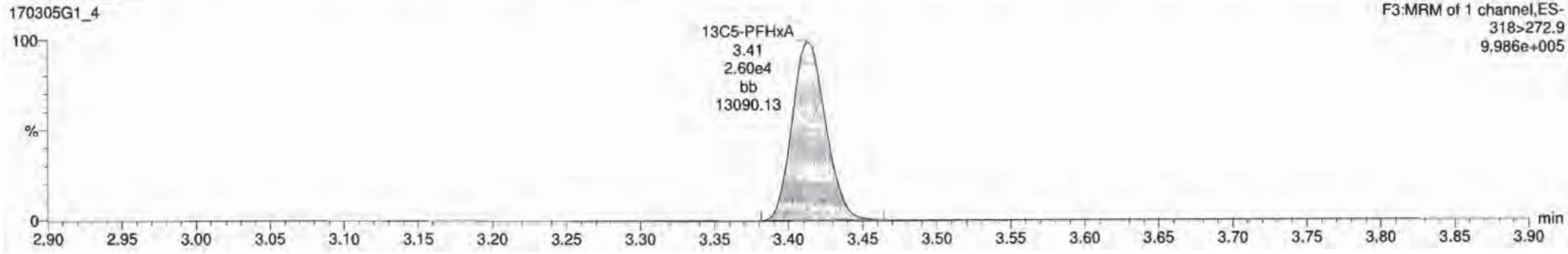

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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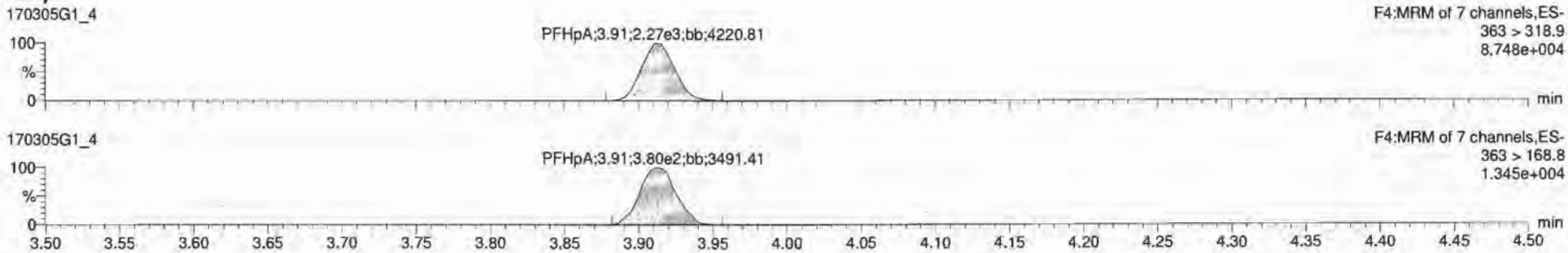
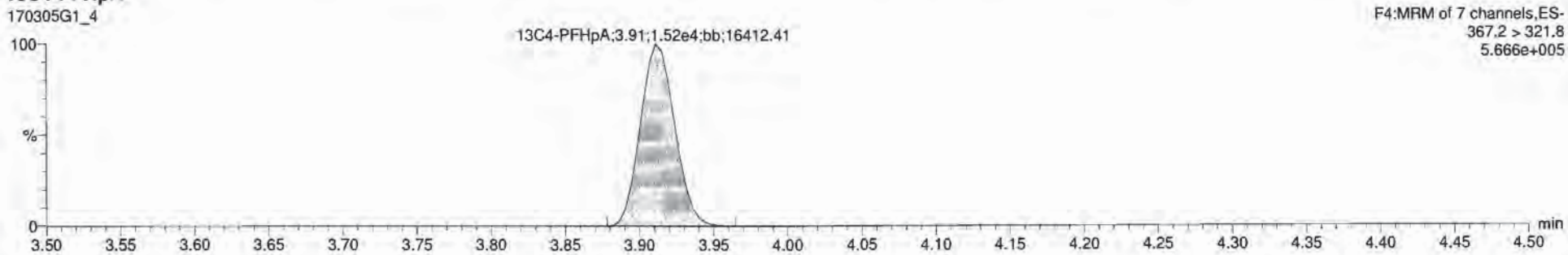
ID: ST170305G1-3 PFC CS0 17C0503, Description: PFC CS0 17C0503 A, Name: 170305G1_4, Date: 05-Mar-2017, Time: 13:11:49, Instrument: , Lab: , User:

PFHpA



13C4-PFHpA



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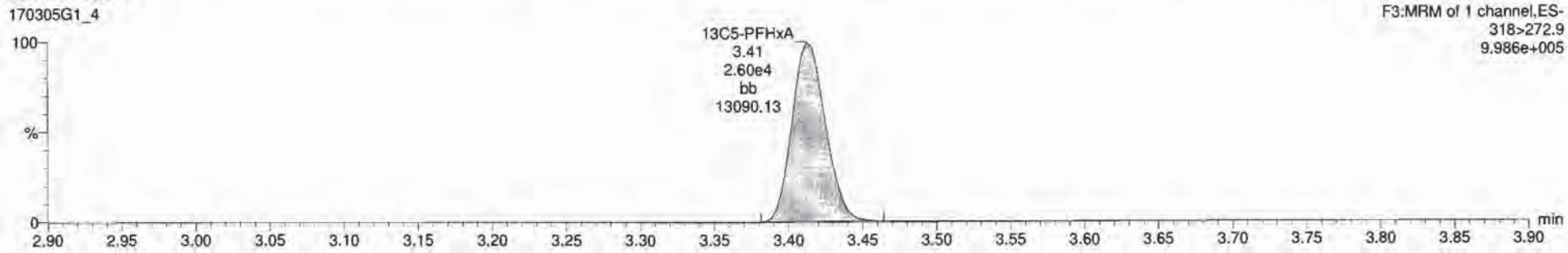

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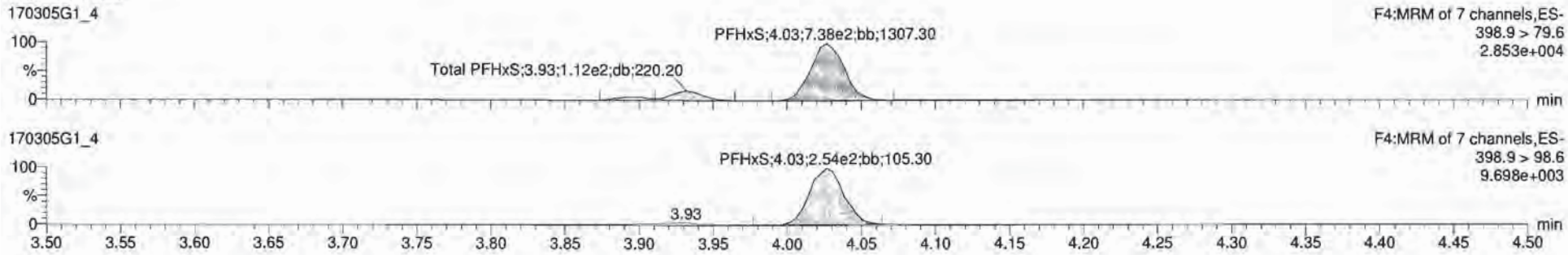
ID: ST170305G1-3 PFC CS0 17C0503, Description: PFC CS0 17C0503 A, Name: 170305G1_4, Date: 05-Mar-2017, Time: 13:11:49, Instrument: , Lab: , User:

Total PFHxS



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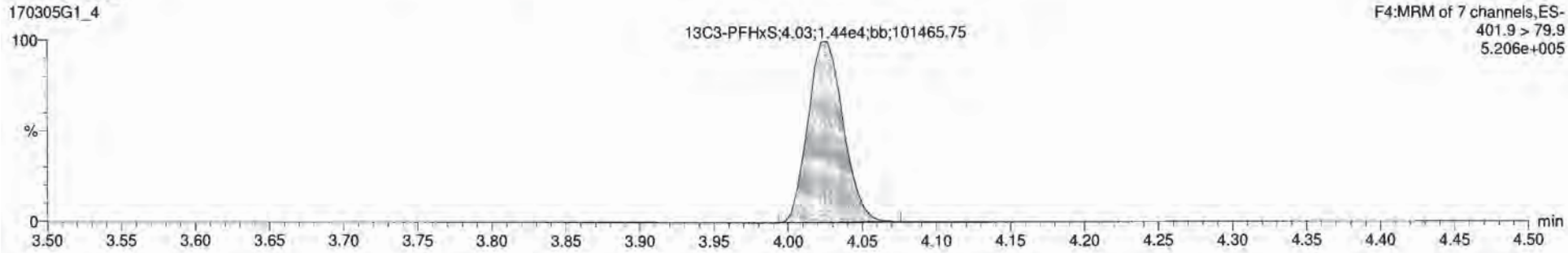
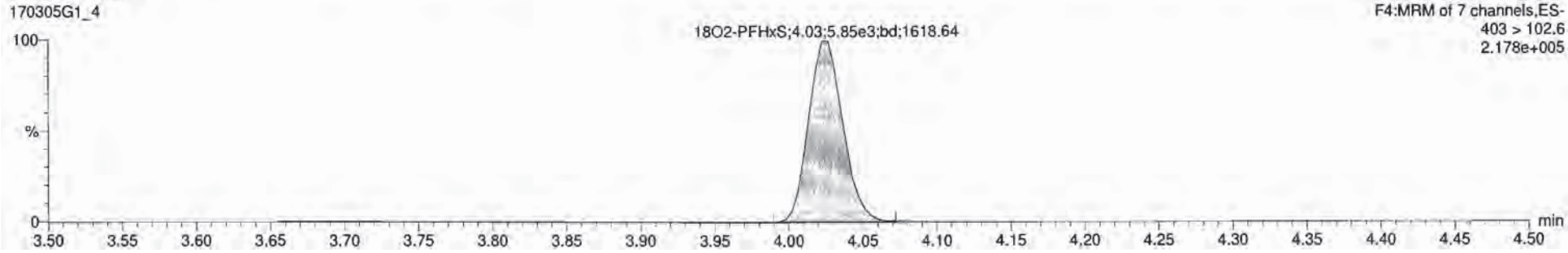
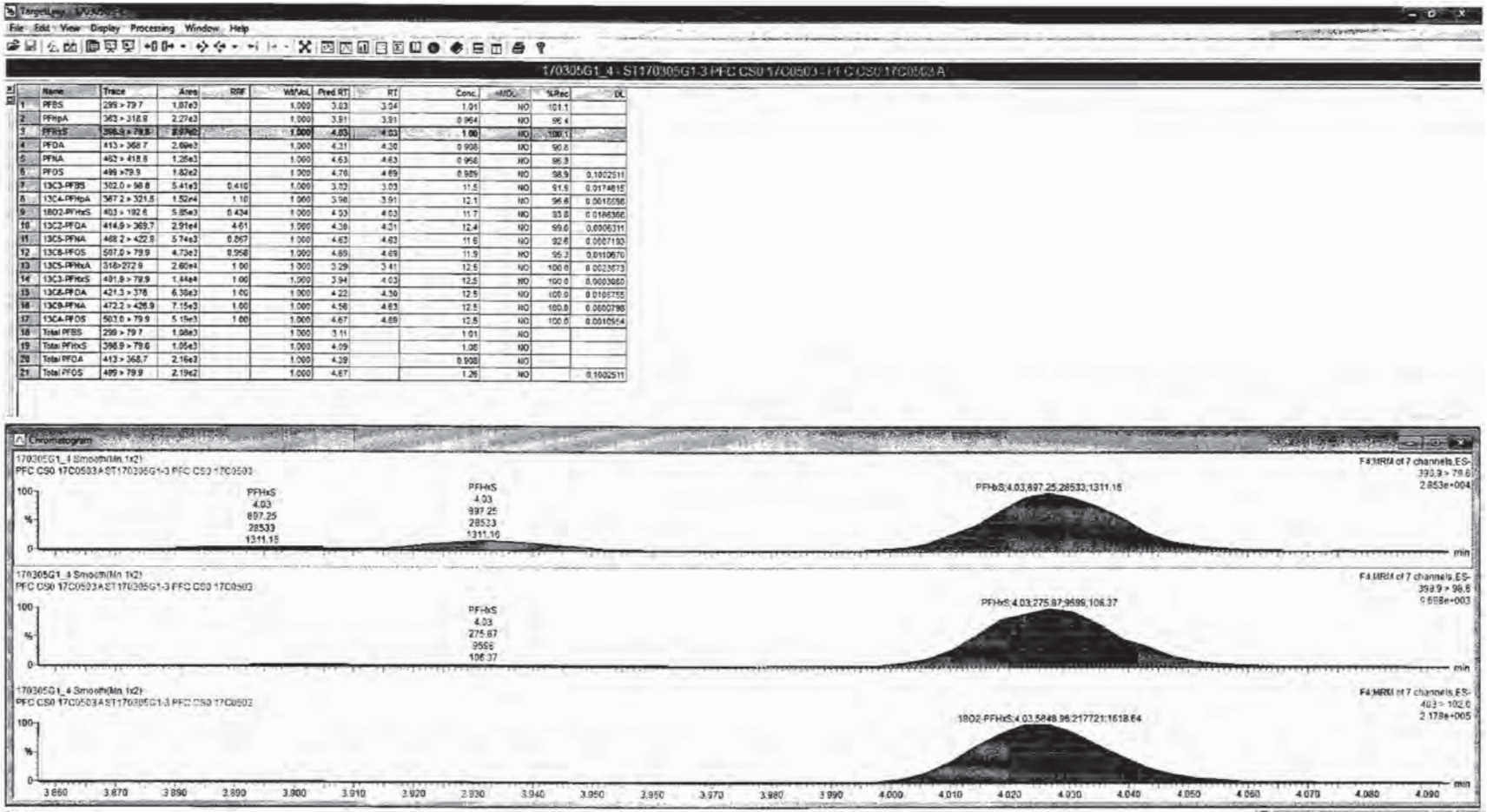


18O2-PFHxS





	Name	Trace	Area	RRF	Wt/AnL	Pred RT	RT	Conc.	+/IDL	%Rec	DL
1	PFBS	299 > 79.7	1.87e3		1.000	3.03	3.04	1.01	NO	101.1	
2	PFHpA	363 > 318.8	2.27e3		1.000	3.91	3.91	0.964	NO	96.4	
3	PFHxS	398.9 > 79.6	2.97e3		1.000	4.03	4.03	1.00	NO	100.1	
4	PFOA	413 > 368.7	2.69e3		1.000	4.31	4.30	0.908	NO	90.8	
5	PFNA	462 > 418.8	1.26e3		1.000	4.63	4.63	0.956	NO	95.3	
6	PFOS	499 >79.9	1.82e2		1.000	4.70	4.69	0.989	NO	98.9	0.1002511
7	13C3-PFBS	302.0 > 98.8	5.41e3	0.410	1.000	3.02	3.03	11.5	NO	91.5	0.0174815
8	13C4-PFHpA	367.2 > 321.5	1.52e4	1.10	1.000	3.90	3.91	12.1	NO	96.6	0.0018056
9	1802-PFHxS	403 > 102.6	5.85e3	0.434	1.000	4.03	4.03	11.7	NO	93.8	0.0186366
10	13C2-PFOA	414.9 > 369.7	2.91e4	4.61	1.000	4.30	4.31	12.4	NO	99.0	0.0006311
11	13C5-PFNA	468.2 > 422.9	5.74e3	0.867	1.000	4.63	4.63	11.6	NO	92.6	0.0007193
12	13C8-PFOS	507.0 > 79.9	4.73e3	0.958	1.000	4.69	4.69	11.9	NO	95.3	0.0110670
13	13C5-PFHxA	318>272.9	2.60e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0023673
14	13C3-PFHxS	401.9 > 79.9	1.44e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0003060
15	13C8-PFOA	421.3 > 376	6.36e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0105755
16	13C9-PFNA	472.2 > 426.9	7.15e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0600798
17	13C4-PFOS	503.0 > 79.9	5.19e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0010554
18	Total PFBS	299 > 79.7	1.88e3		1.000	3.11		1.01	NO		
19	Total PFHxS	398.9 > 79.6	1.05e3		1.000	4.09		1.06	NO		
20	Total PFOA	413 > 368.7	2.16e3		1.000	4.39		0.908	NO		
21	Total PFOS	499 > 79.9	2.19e2		1.000	4.67		1.26	NO		0.1002511

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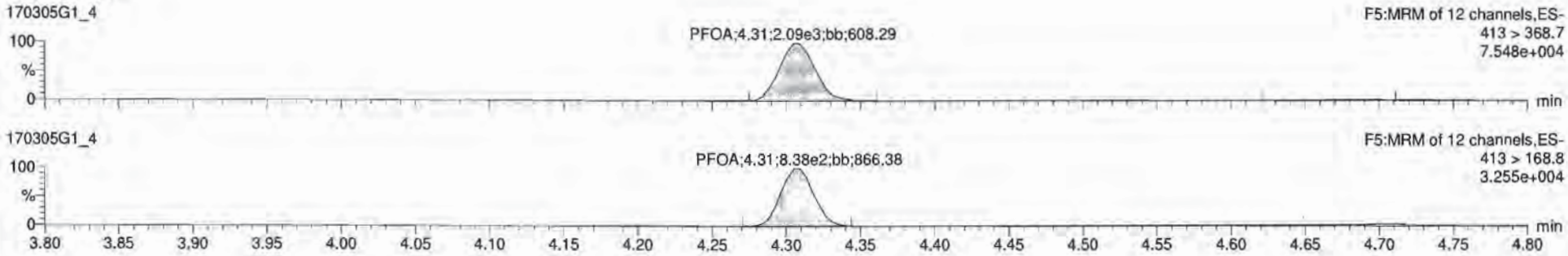
ID: ST170305G1-3 PFC CS0 17C0503, Description: PFC CS0 17C0503 A, Name: 170305G1_4, Date: 05-Mar-2017, Time: 13:11:49, Instrument: , Lab: , User:

Total PFOA



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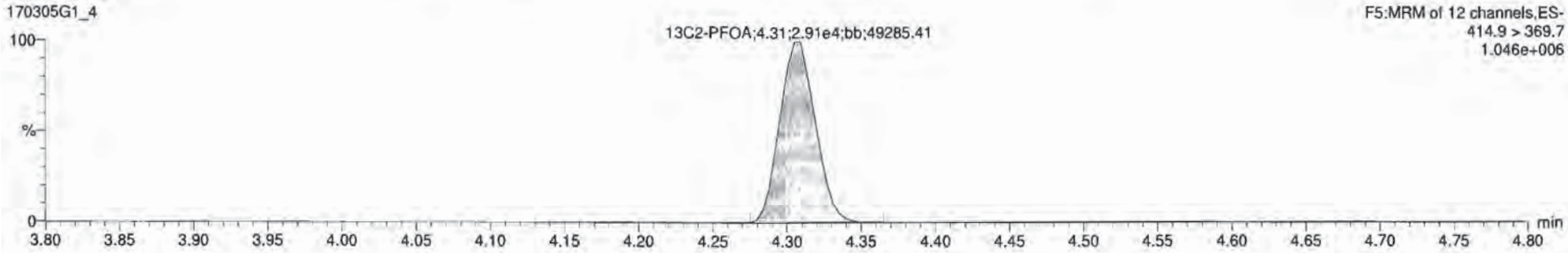

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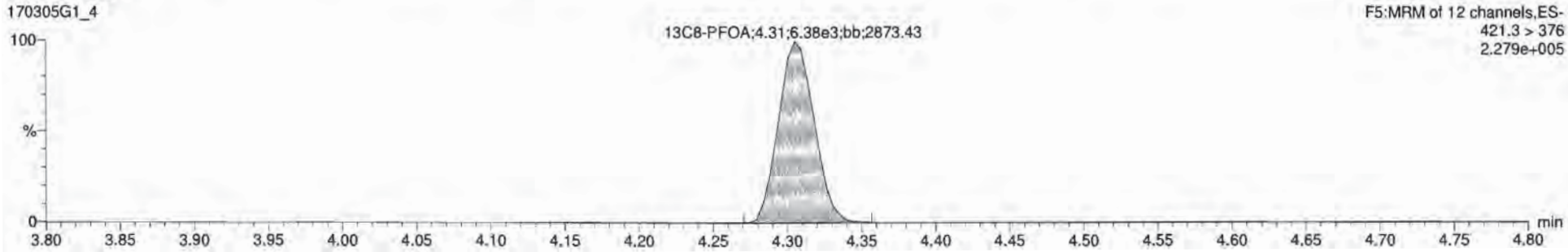

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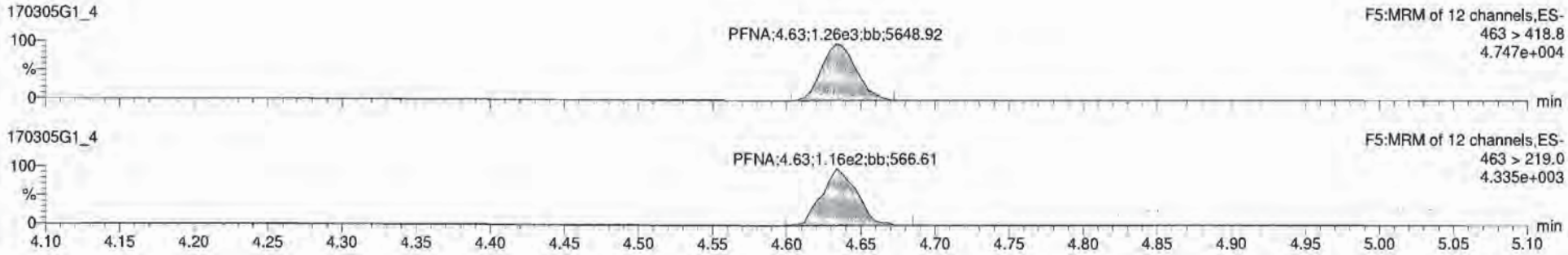

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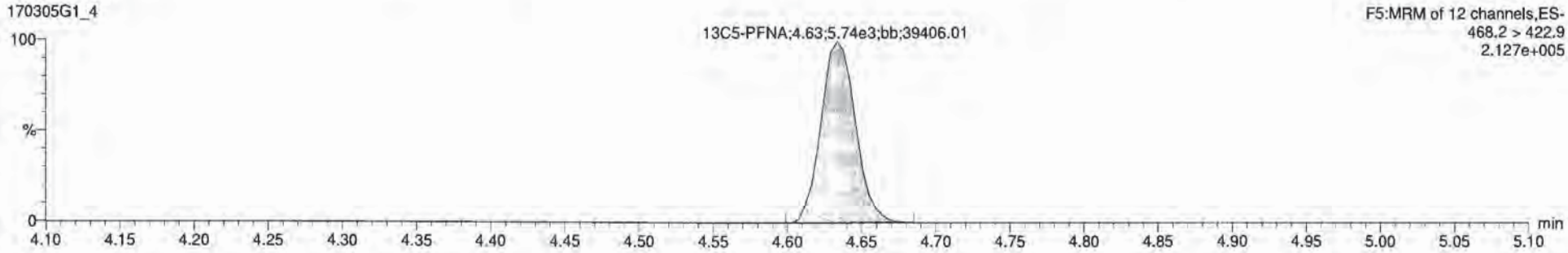

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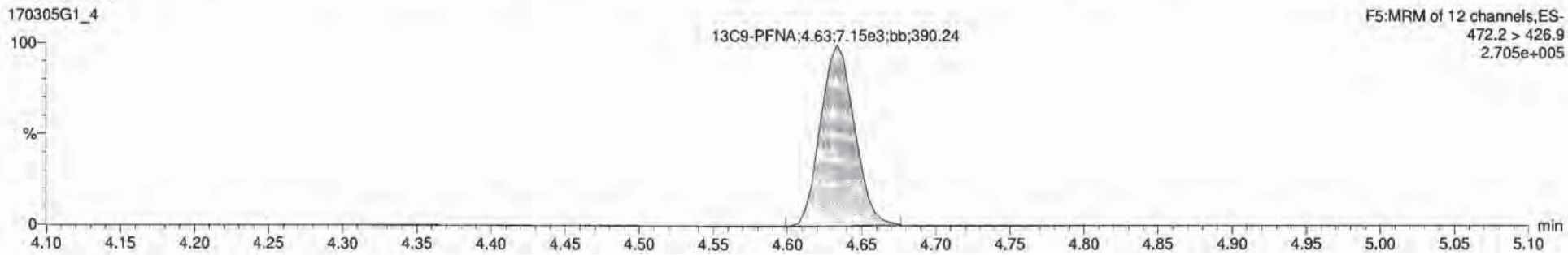

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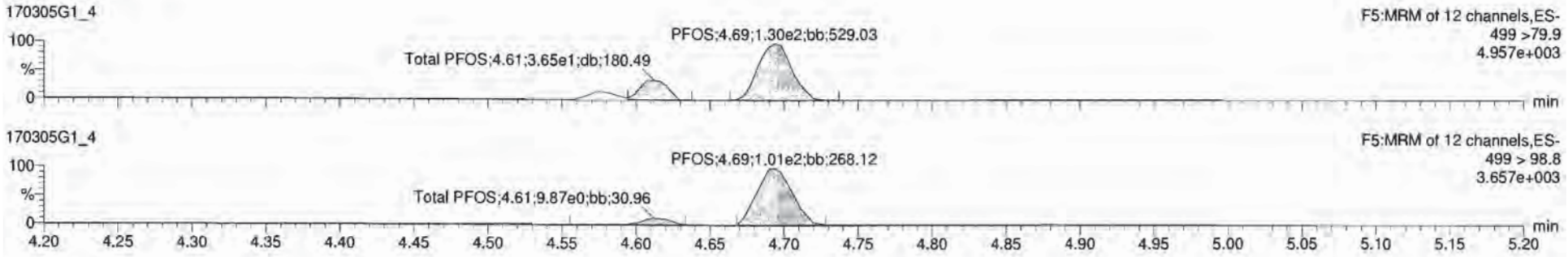
ID: ST170305G1-3 PFC CS0 17C0503, Description: PFC CS0 17C0503 A, Name: 170305G1_4, Date: 05-Mar-2017, Time: 13:11:49, Instrument: , Lab: , User:

Total PFOS



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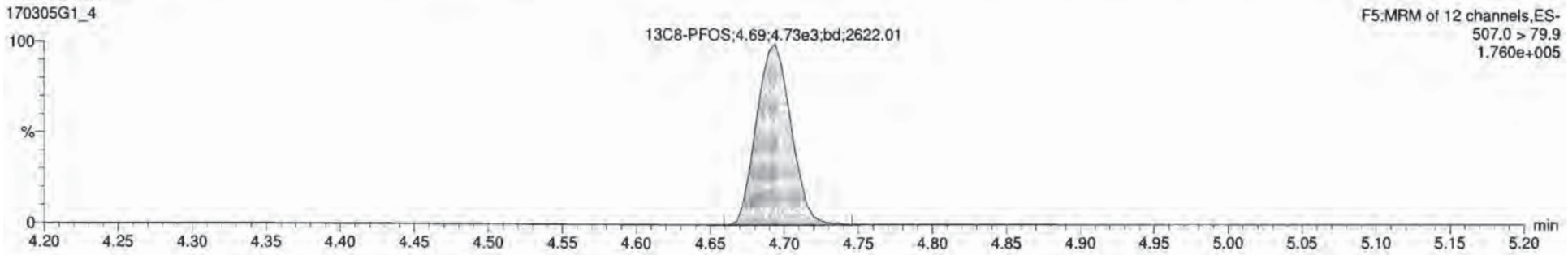

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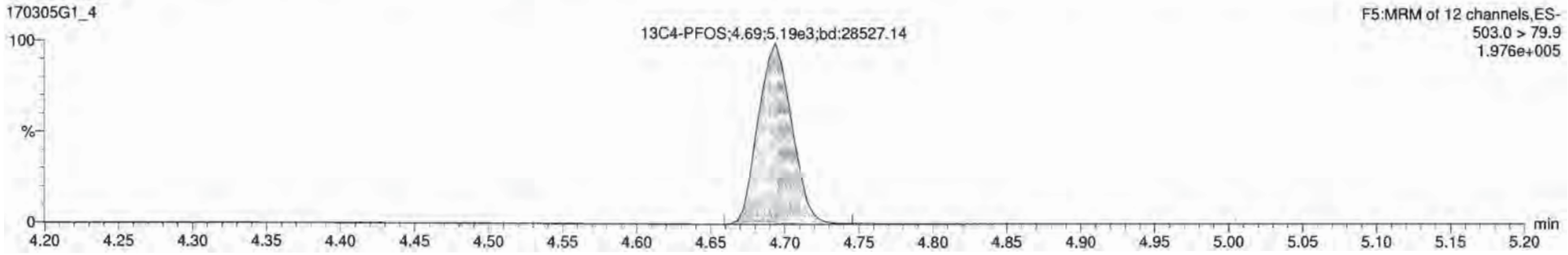

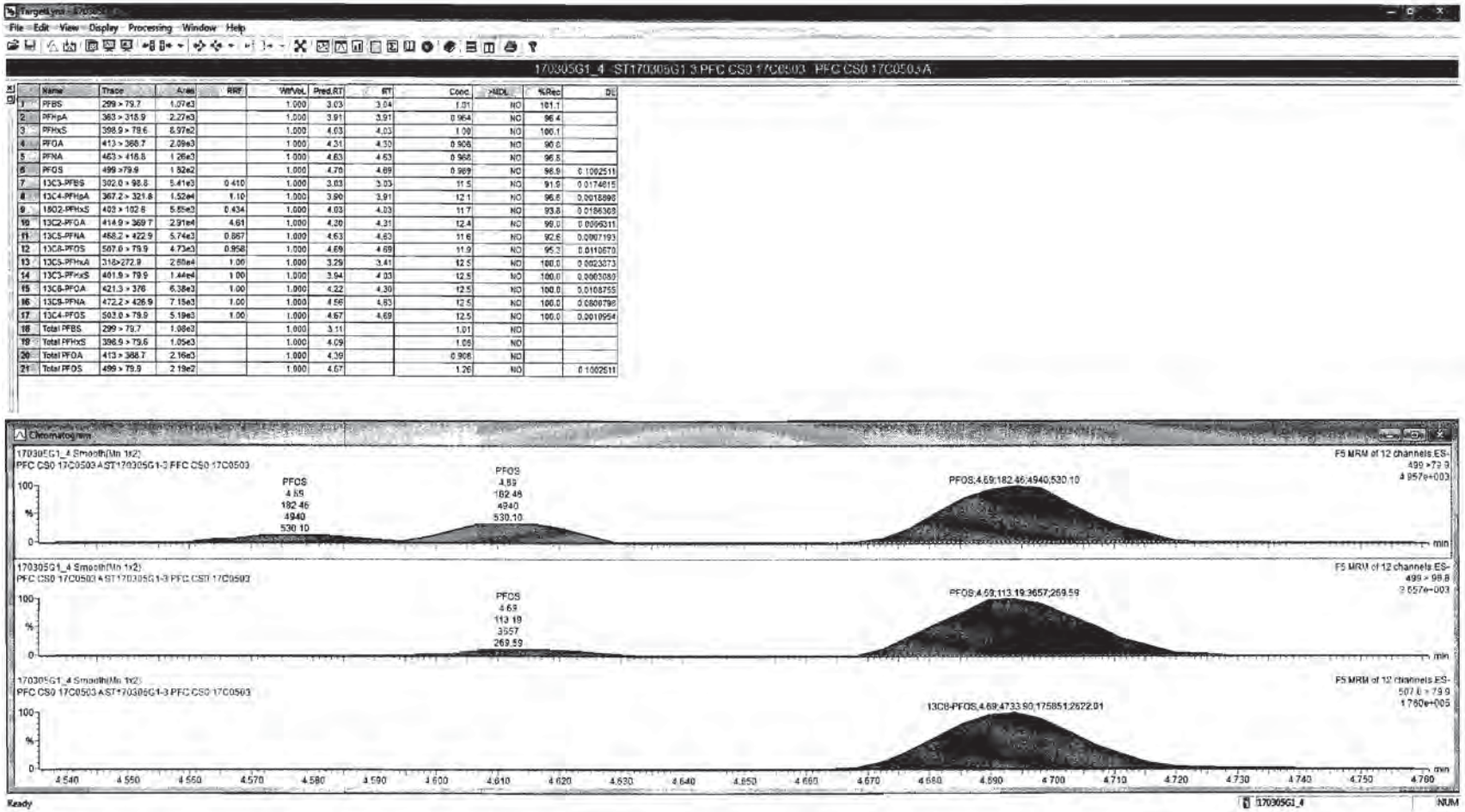

	Name	Trace	Area	RRF	WtVal	Pred.RT	RT	Conc	>MDL	%Rec	DL
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2	PFHpA	363 > 318.9	2.27e3		1.000	3.91	3.91	0.964	NO	96.4	
3	PFHxS	398.9 > 79.6	8.97e2		1.000	4.03	4.03	1.00	NO	100.1	
4	PFOA	413 > 368.7	2.09e3		1.000	4.31	4.30	0.906	NO	90.6	
5	PFNA	463 > 418.8	1.26e3		1.000	4.63	4.63	0.968	NO	96.8	
6	PFOS	499 >79.9	1.82e2		1.000	4.70	4.69	0.969	NO	96.9	0.1002511
7	13C3-PFBS	302.0 > 98.8	5.41e3	0.410	1.000	3.03	3.03	11.5	NO	91.9	0.0174815
8	13C4-PFHpA	367.2 > 321.8	1.52e4	1.10	1.000	3.90	3.91	12.1	NO	96.8	0.0018898
9	1802-PFHxS	403 > 102.8	5.85e3	0.434	1.000	4.03	4.03	11.7	NO	93.8	0.0186369
10	13C2-PFOA	414.9 > 369.7	2.91e4	4.61	1.000	4.30	4.31	12.4	NO	99.0	0.0096311
11	13C5-PFNA	468.2 > 422.9	5.74e3	0.867	1.000	4.63	4.63	11.6	NO	92.6	0.0907193
12	13C8-PFOS	507.0 > 79.9	4.73e3	0.958	1.000	4.69	4.69	11.9	NO	95.3	0.0410670
13	13C5-PFHxA	318>272.9	2.68e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0023073
14	13C3-PFHxS	401.9 > 79.9	1.44e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0063080
15	13C8-PFOA	421.3 > 376	6.38e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0108755
16	13C9-PFNA	472.2 > 426.9	7.15e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0809798
17	13C4-PFOS	503.0 > 79.9	5.19e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0010954
18	Total PFBS	299 > 79.7	1.08e3		1.000	3.11		1.01	NO		
19	Total PFHxS	398.9 > 79.6	1.05e3		1.000	4.09		1.00	NO		
20	Total PFOA	413 > 368.7	2.16e3		1.000	4.39		0.906	NO		
21	Total PFOS	499 > 79.9	2.19e2		1.000	4.67		1.26	NO		0.1002511

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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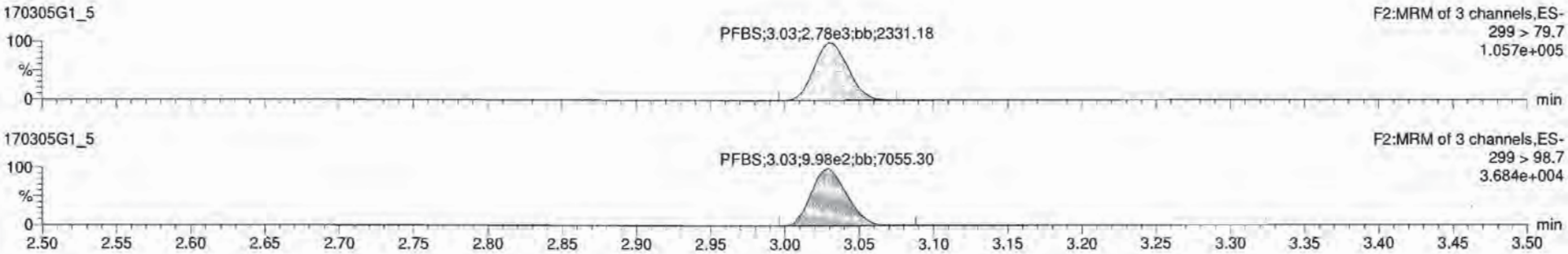
ID: ST170305G1-4 PFC CS1 17C0504, Description: PFC CS1 17C0504 A, Name: 170305G1_5, Date: 05-Mar-2017, Time: 13:24:21, Instrument: , Lab: , User:

PFBS



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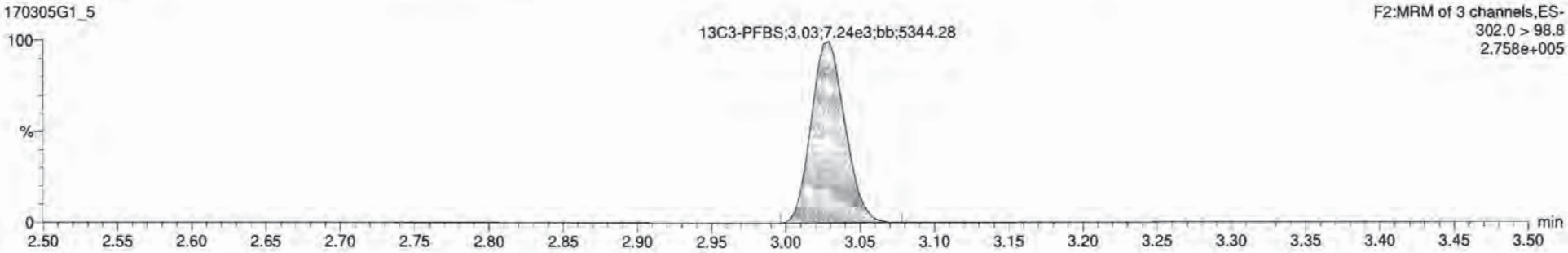

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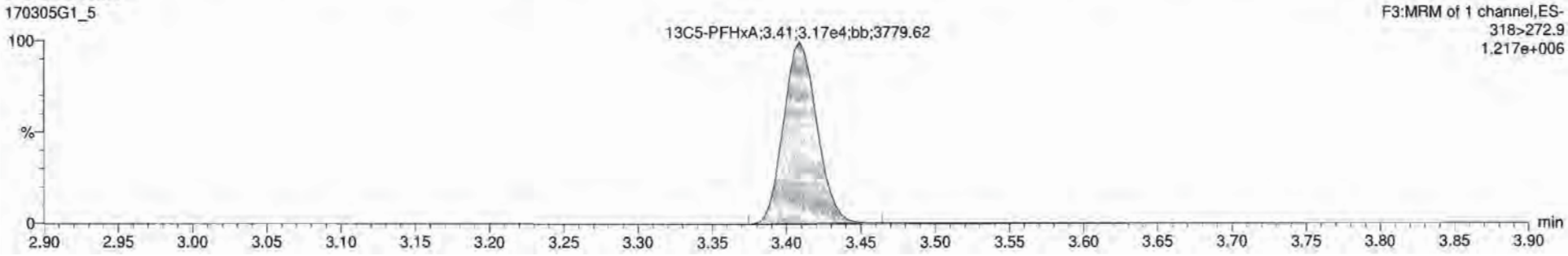

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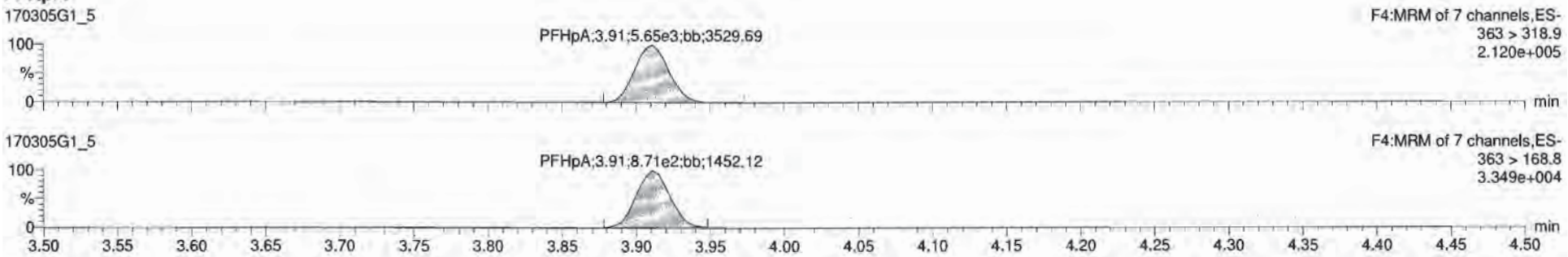

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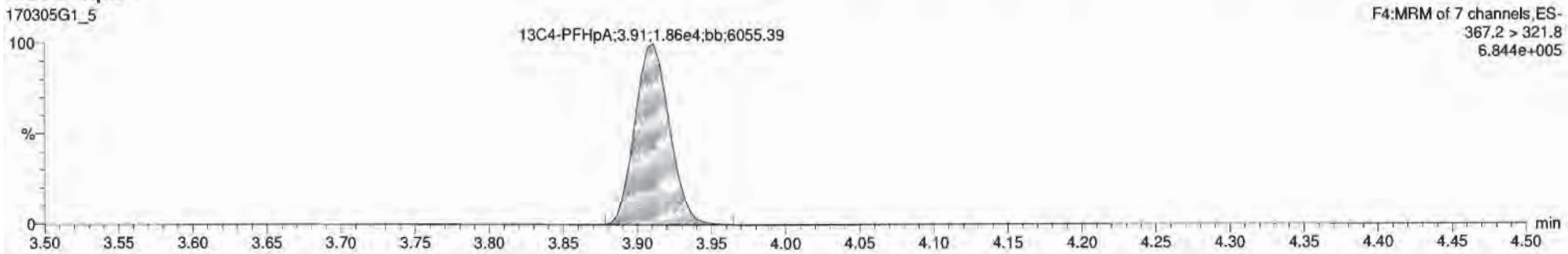

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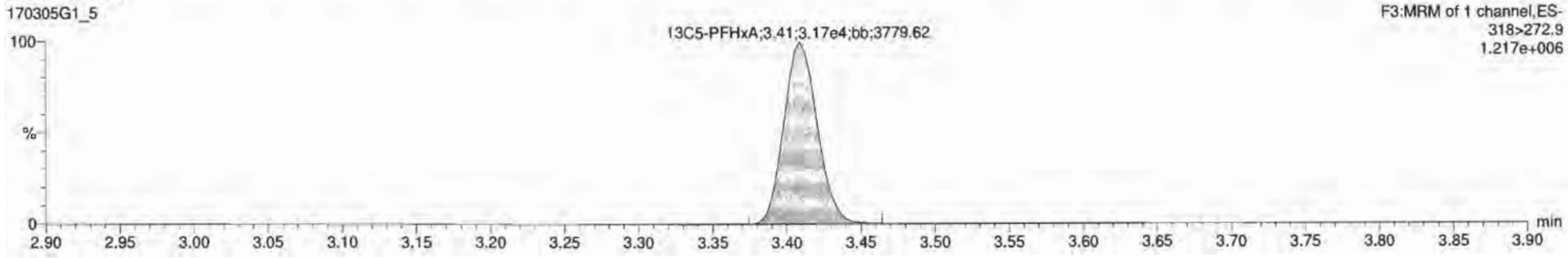

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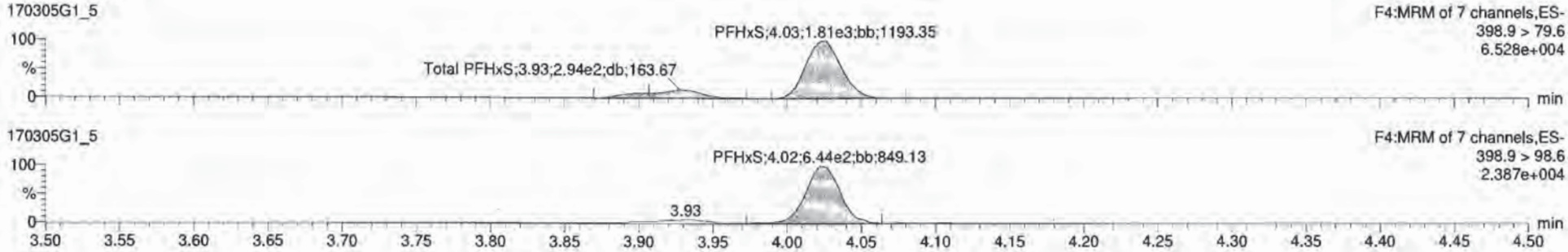
Total PFHxS



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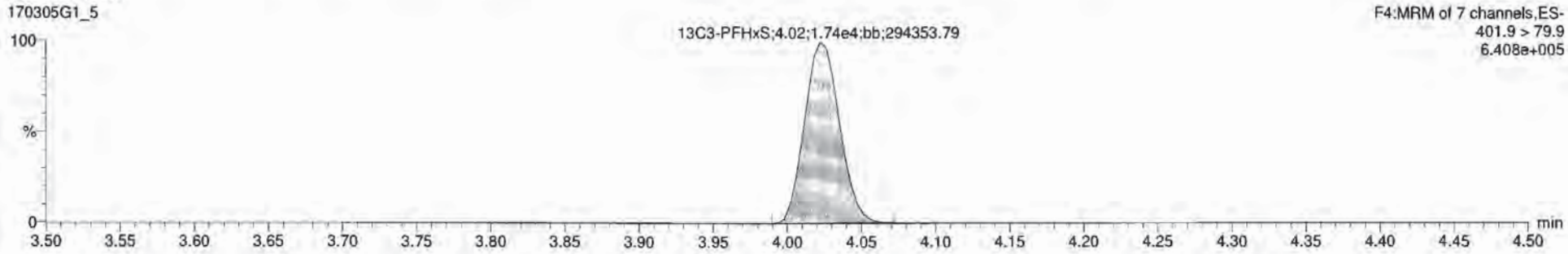
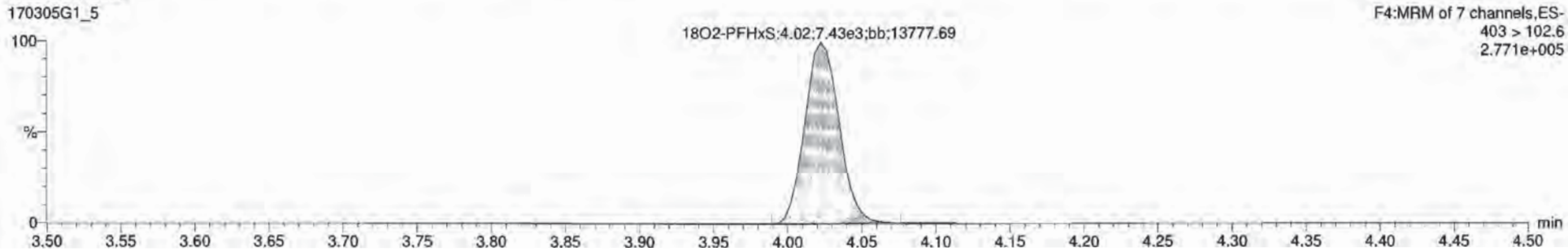
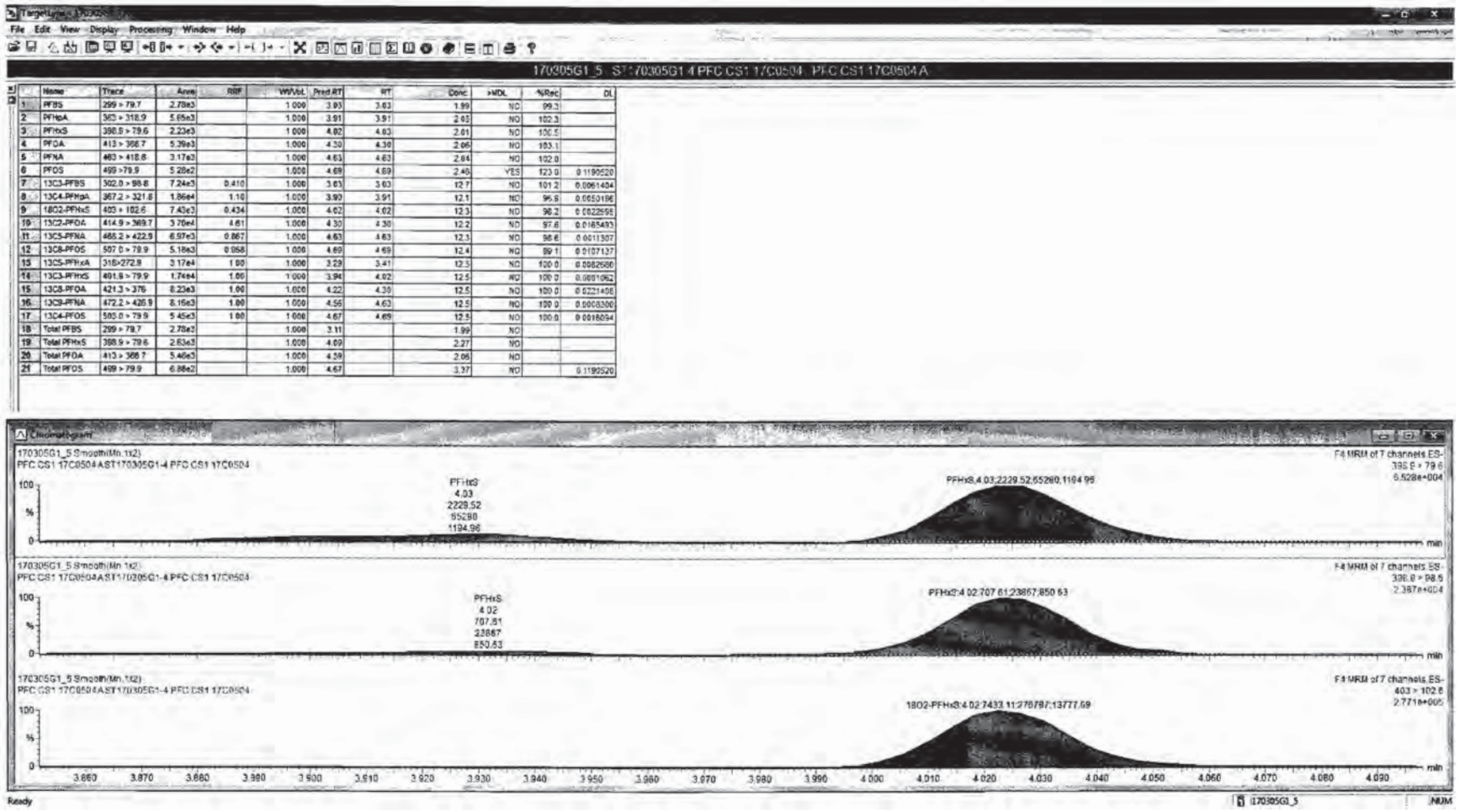


18O2-PFHxS





	Name	Trace	Area	RRF	WWtd.	Pred RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	299 > 79.7	2.78e3		1.000	3.93	3.63	1.99	NO	99.3	
2	PFHpA	363 > 318.9	5.65e3		1.000	3.91	3.91	2.03	NO	102.3	
3	PFHxS	398.9 > 79.6	2.23e3		1.000	4.02	4.03	2.01	NO	100.5	
4	PFOA	413 > 368.7	5.39e3		1.000	4.30	4.30	2.06	NO	103.1	
5	PFNA	463 > 418.8	3.17e3		1.000	4.63	4.63	2.04	NO	102.0	
6	PFOS	499 >79.9	5.28e2		1.000	4.69	4.69	2.46	YES	123.0	0.1190520
7	13C3-PFBS	302.0 > 98.8	7.24e3	0.410	1.000	3.63	3.63	12.7	NO	101.2	0.0061404
8	13C4-PFHpA	367.2 > 321.8	1.86e4	1.10	1.000	3.90	3.91	12.1	NO	96.8	0.0050196
9	18O2-PFHxS	403 > 102.8	7.43e3	0.434	1.000	4.02	4.02	12.3	NO	98.2	0.0022595
10	13C2-PFOA	414.9 > 369.7	3.70e4	4.61	1.000	4.30	4.30	12.2	NO	97.6	0.0185493
11	13C5-PFNA	468.2 > 422.9	6.97e3	0.867	1.000	4.63	4.63	12.3	NO	98.6	0.0011307
12	13C8-PFOS	507.0 > 79.9	5.18e3	0.958	1.000	4.69	4.69	12.4	NO	99.1	0.0107137
13	13C5-PFHxA	318>272.9	3.17e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0082680
14	13C3-PFHxS	401.9 > 79.9	1.74e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0091062
15	13C8-PFOA	421.3 > 376	8.23e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0221408
16	13C9-PFNA	472.2 > 426.9	8.16e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0008300
17	13C4-PFOS	503.0 > 79.9	5.45e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0018094
18	Total PFBS	299 > 79.7	2.78e2		1.000	3.11		1.99	NO		
19	Total PFHxS	398.9 > 79.6	2.63e3		1.000	4.09		2.27	NO		
20	Total PFOA	413 > 368.7	5.46e3		1.000	4.39		2.06	NO		
21	Total PFOS	499 > 79.9	6.86e2		1.000	4.67		3.37	NO		0.1190520

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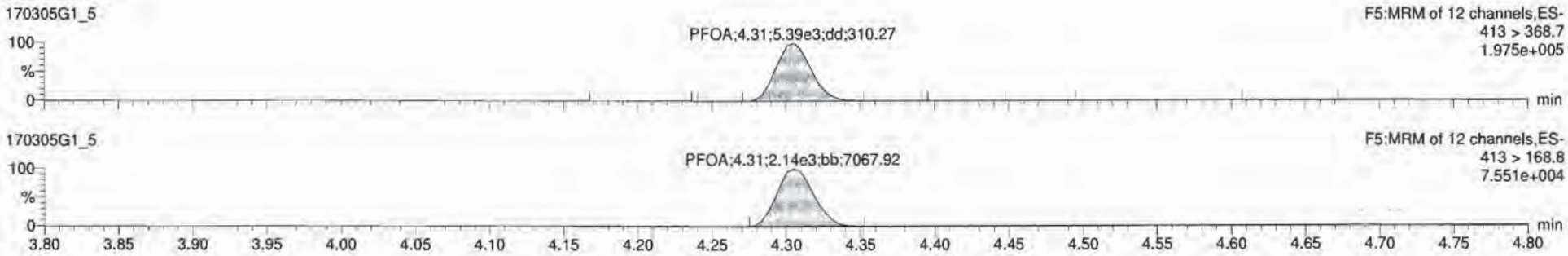
ID: ST170305G1-4 PFC CS1 17C0504, Description: PFC CS1 17C0504 A, Name: 170305G1_5, Date: 05-Mar-2017, Time: 13:24:21, Instrument: , Lab: , User:

Total PFOA



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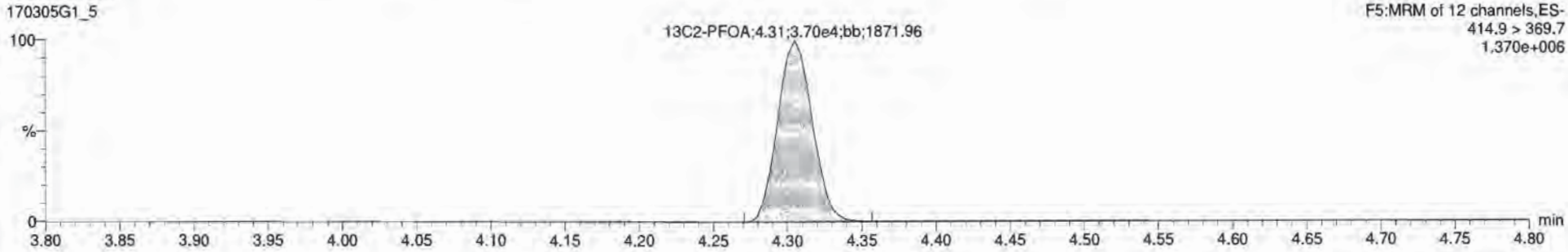

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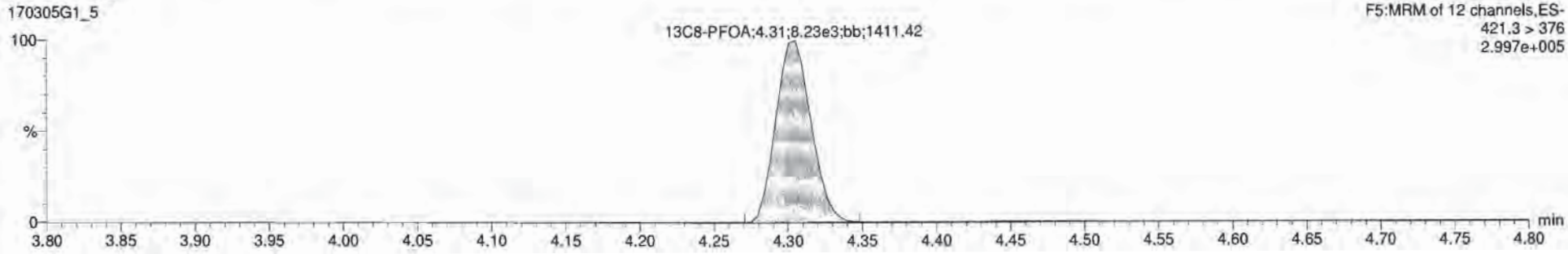

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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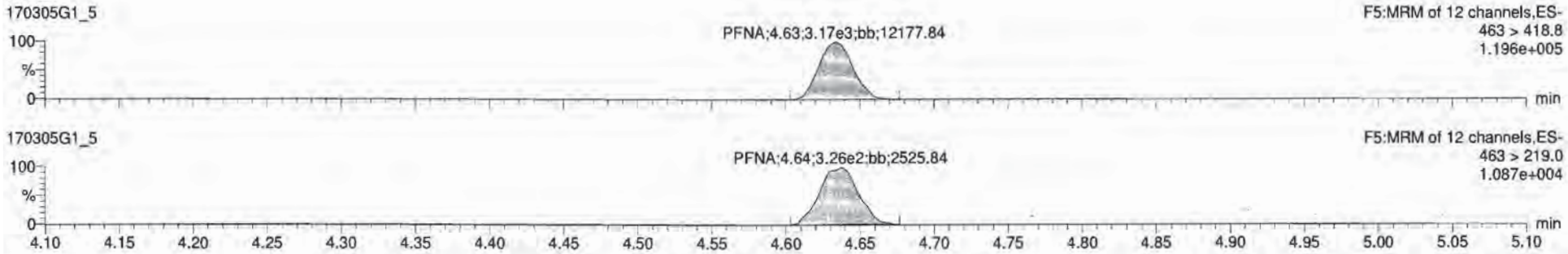
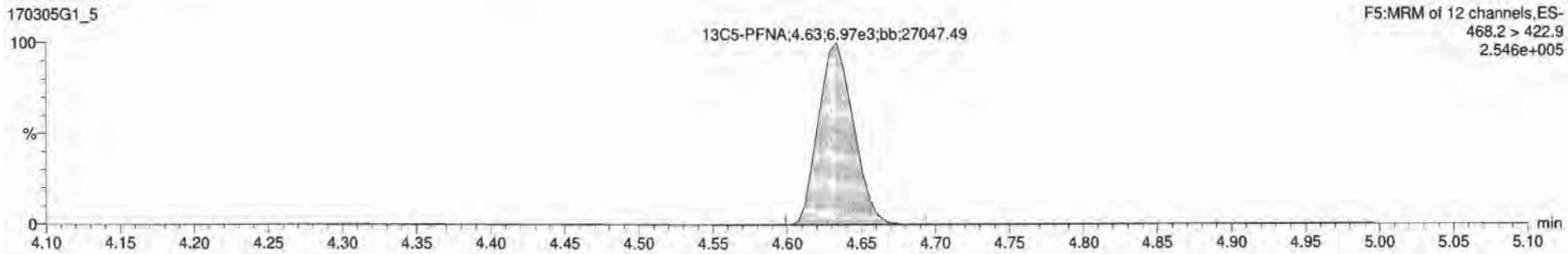
ID: ST170305G1-4 PFC CS1 17C0504, Description: PFC CS1 17C0504 A, Name: 170305G1_5, Date: 05-Mar-2017, Time: 13:24:21, Instrument: , Lab: , User:

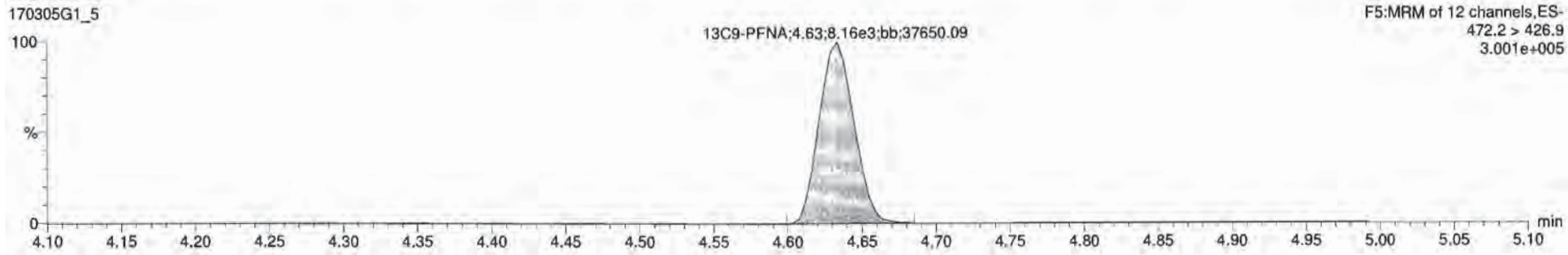
PFNA



13C5-PFNA



13C9-PFNA



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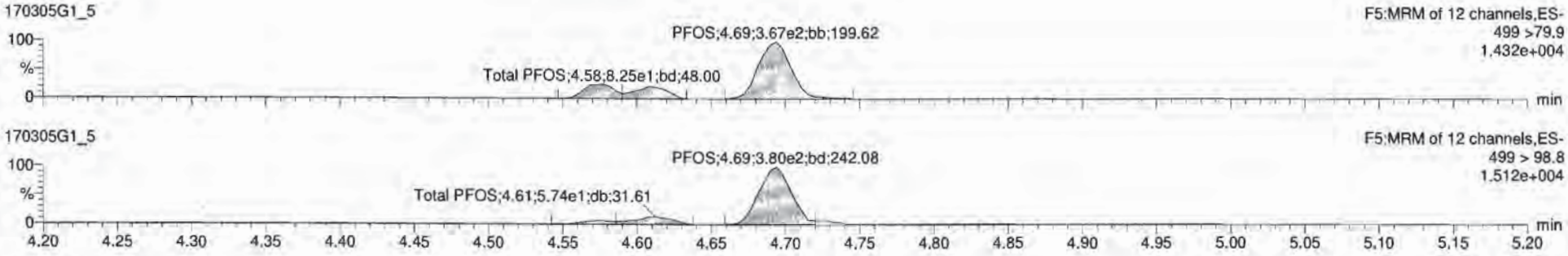
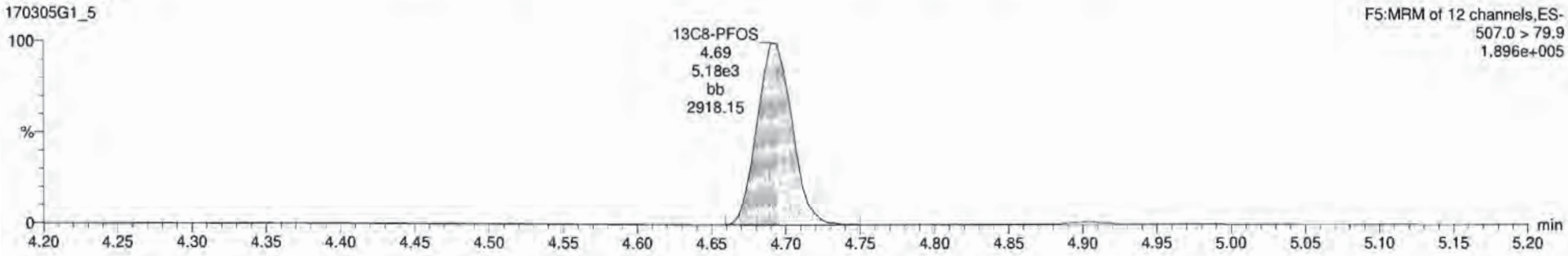
ID: ST170305G1-4 PFC CS1 17C0504, Description: PFC CS1 17C0504 A, Name: 170305G1_5, Date: 05-Mar-2017, Time: 13:24:21, Instrument: , Lab: , User:

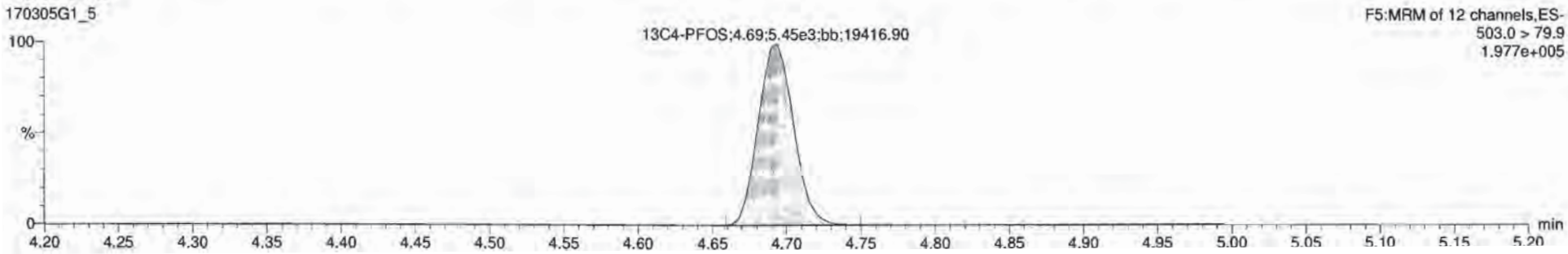
Total PFOS

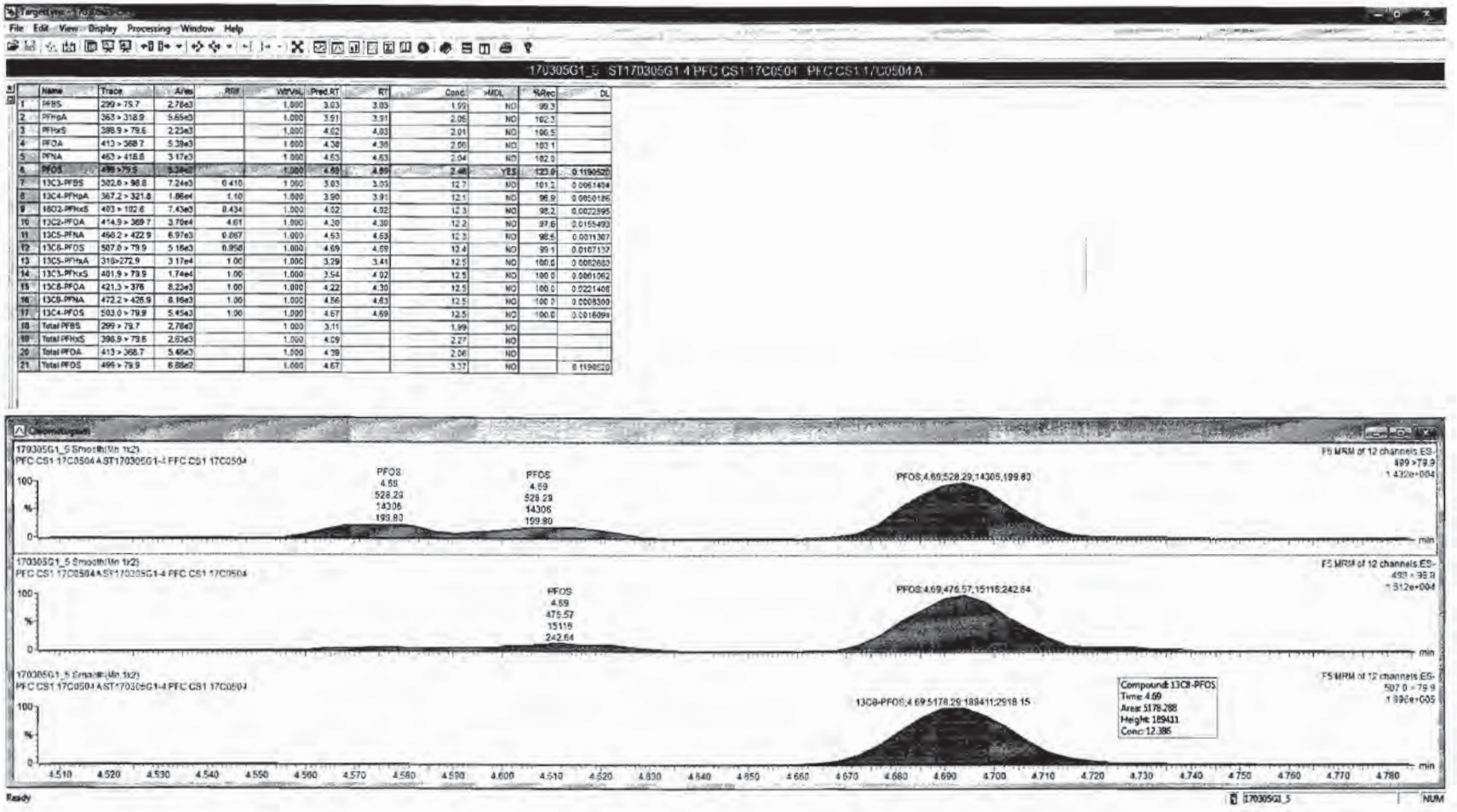


13C8-PFOS



13C4-PFOS





	Name	Trace	Area	RRF	WtVol	Pred.RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	299 > 79.7	2.78e3		1.000	3.03	3.03	1.99	NO	99.3	
2	PFHpA	363 > 318.9	5.65e3		1.000	3.91	3.91	2.05	NO	102.3	
3	PFHxS	398.9 > 79.6	2.23e3		1.000	4.02	4.03	2.01	NO	100.5	
4	PFOA	413 > 368.7	5.38e3		1.000	4.36	4.36	2.06	NO	103.1	
5	PFNA	463 > 418.8	3.17e3		1.000	4.63	4.63	2.04	NO	102.0	
6	PFOS	499 > 79.9	9.34e3		1.000	4.69	4.69	2.48	YES	123.9	0.1190520
7	13C3-PFBS	302.0 > 98.8	7.24e3	0.410	1.000	3.03	3.03	12.7	NO	101.2	0.0061404
8	13C4-PFHpA	367.2 > 321.8	1.86e4	1.10	1.000	3.90	3.91	12.1	NO	96.9	0.0650186
9	18O2-PFHxS	403 > 102.8	7.43e3	0.434	1.000	4.02	4.02	12.3	NO	98.2	0.0022895
10	13C2-PFOA	414.9 > 369.7	3.70e4	4.61	1.000	4.30	4.30	12.2	NO	97.6	0.0155493
11	13C5-PFNA	468.2 > 422.9	6.97e3	0.867	1.000	4.63	4.63	12.3	NO	98.5	0.0011367
12	13C8-PFOS	507.0 > 79.9	5.16e3	0.856	1.000	4.69	4.69	12.4	NO	99.1	0.0107137
13	13C5-PFHxA	318>272.9	3.17e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0002683
14	13C3-PFHxS	401.9 > 79.9	1.74e4	1.00	1.000	3.54	4.02	12.5	NO	100.0	0.0001062
15	13C8-PFOA	421.3 > 376	8.23e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0221408
16	13C9-PFNA	472.2 > 426.9	8.16e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0008300
17	13C4-PFOS	503.0 > 79.9	5.45e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0016099
18	Total PFBS	299 > 79.7	2.78e3		1.000	3.11		1.99	NO		
19	Total PFHxS	398.9 > 79.6	2.63e3		1.000	4.09		2.27	NO		
20	Total PFOA	413 > 368.7	5.48e3		1.000	4.39		2.06	NO		
21	Total PFOS	499 > 79.9	6.88e2		1.000	4.67		3.37	NO		0.1190520

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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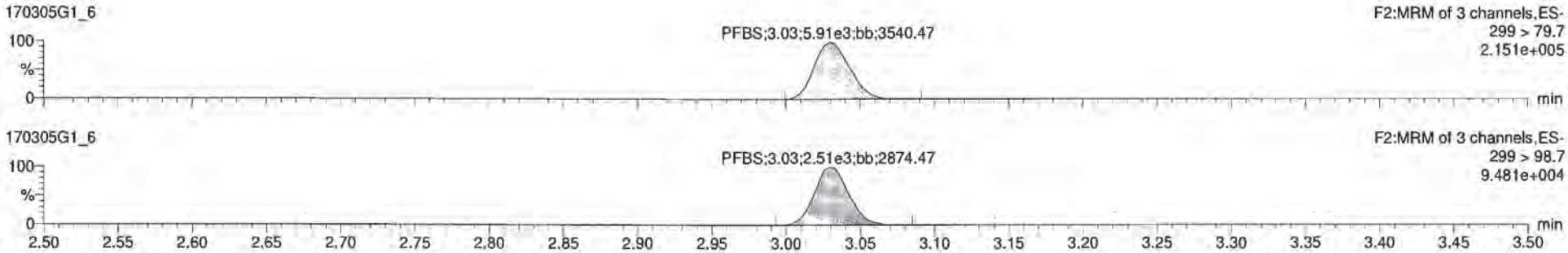
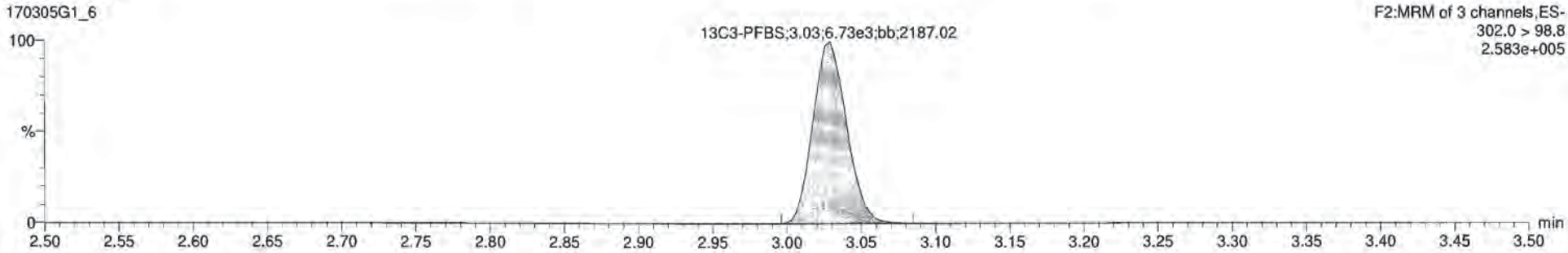
ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

PFBS



13C3-PFBS



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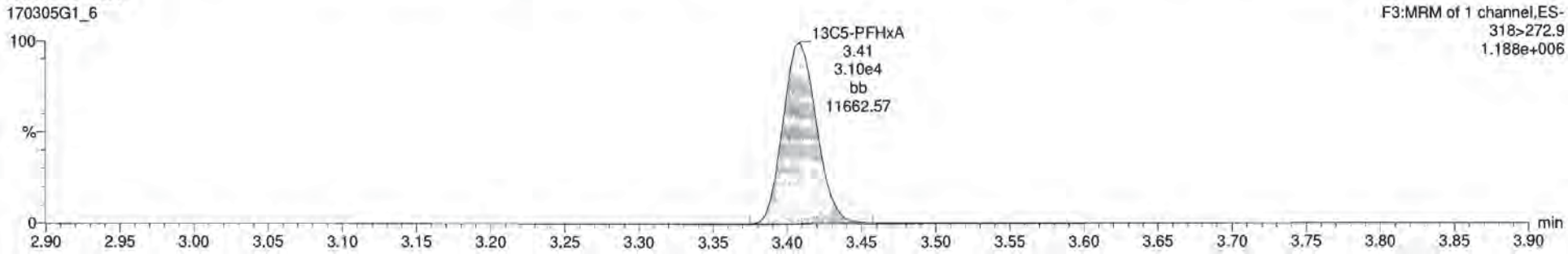

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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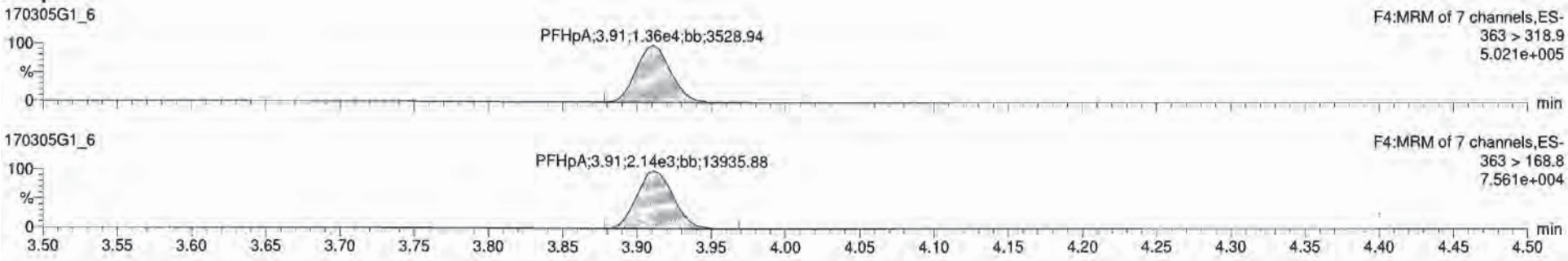
ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

PFHpA



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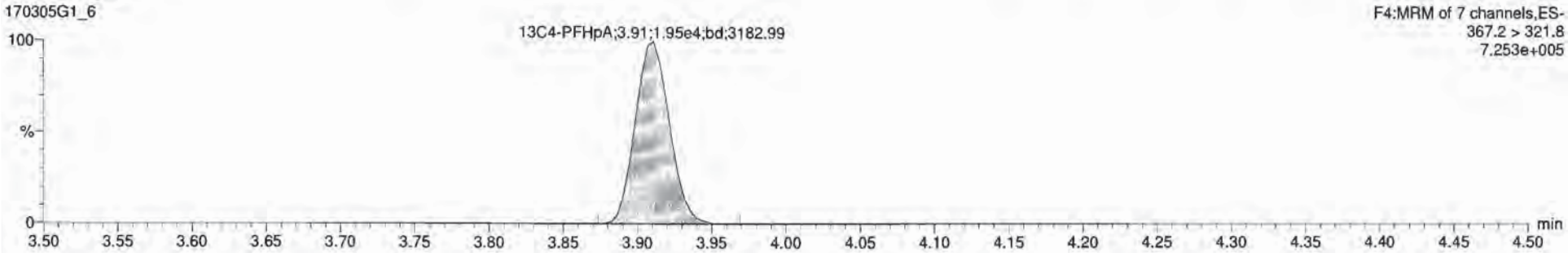

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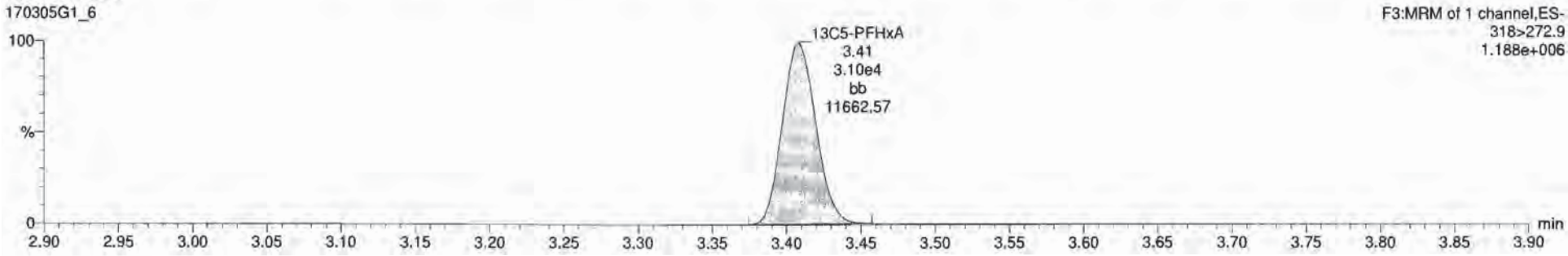

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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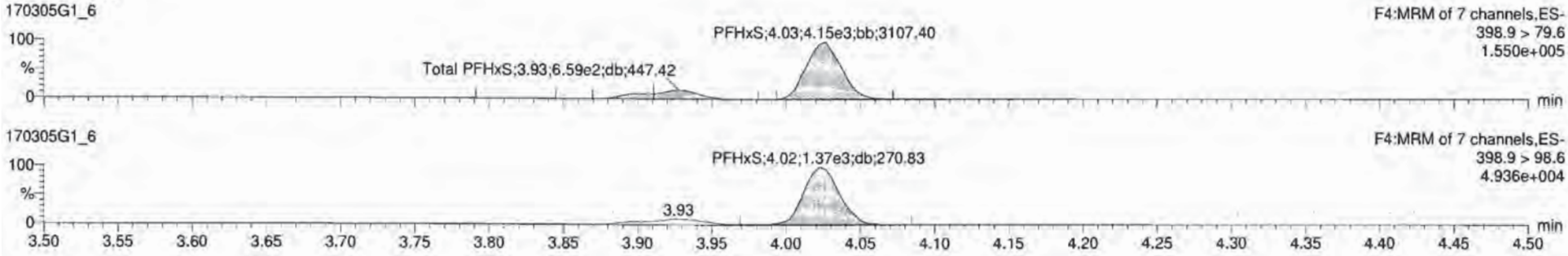
ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

Total PFHxS



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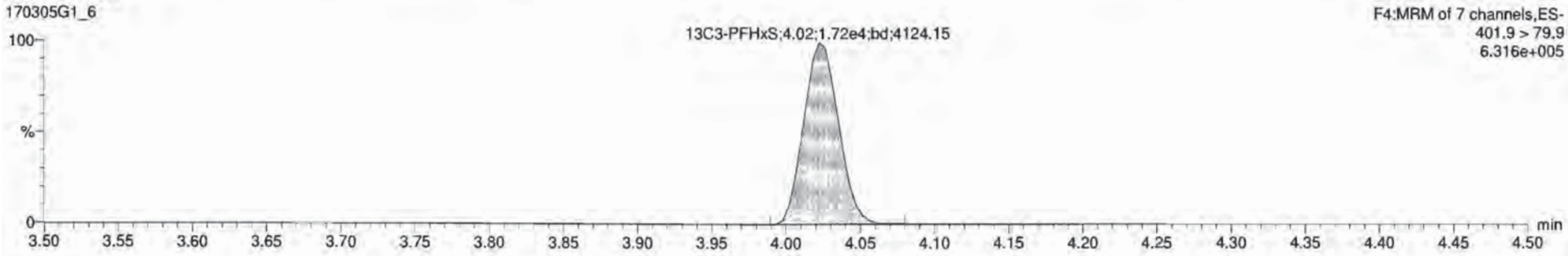
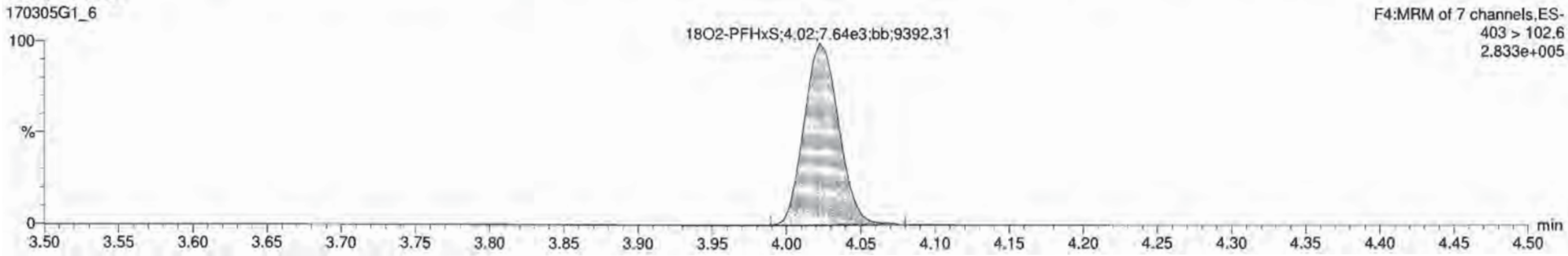
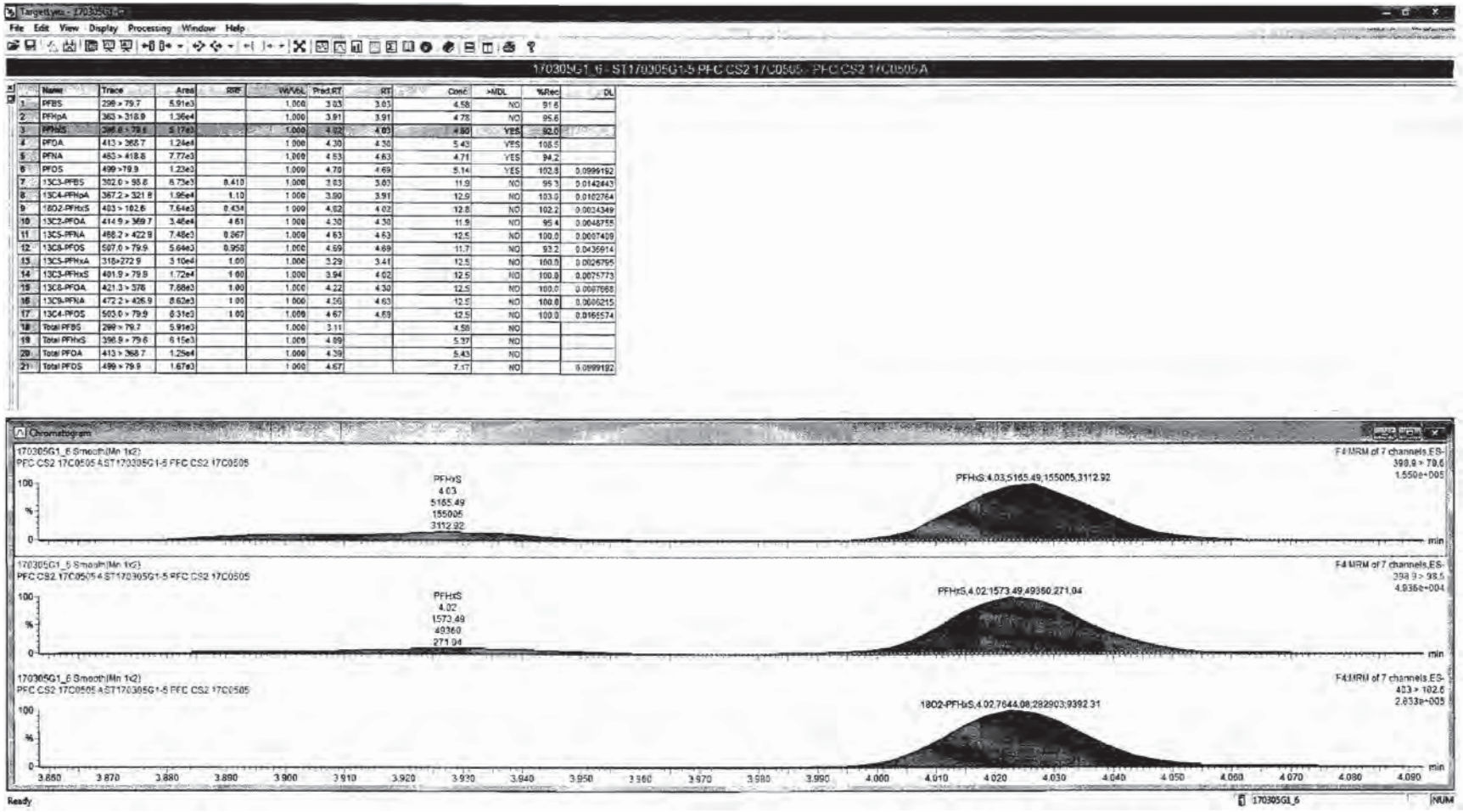


18O2-PFHxS





	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc	>MDL	%Rec	DL
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2	PFHpA	363 > 318.9	1.36e4		1.000	3.91	3.91	4.78	NO	95.6	
3	PFHxS	398.8 > 79.6	5.17e3		1.000	4.02	4.03	4.60	YES	92.0	
4	PFOA	413 > 368.7	1.24e4		1.000	4.30	4.30	5.43	YES	108.5	
5	PFNA	463 > 418.8	7.77e3		1.000	4.63	4.63	4.71	YES	94.2	
6	PFOS	499 >79.9	1.23e3		1.000	4.70	4.69	5.14	YES	102.8	0.0999192
7	13C3-PFBS	302.0 > 98.8	8.73e3	0.410	1.000	3.03	3.03	11.9	NO	95.3	0.0142443
8	13C4-PFHpA	367.2 > 321.8	1.95e4	1.10	1.000	3.90	3.91	12.9	NO	103.0	0.0102764
9	1802-PFHxS	403 > 102.6	7.64e3	0.434	1.000	4.02	4.02	12.8	NO	102.2	0.0024349
10	13C2-PFOA	414.9 > 369.7	3.46e4	4.61	1.000	4.30	4.30	11.9	NO	95.4	0.0048755
11	13C5-PFNA	468.2 > 422.9	7.48e3	0.867	1.000	4.63	4.63	12.5	NO	100.0	0.0007409
12	13C8-PFOS	507.0 > 79.9	5.64e3	0.958	1.000	4.69	4.69	11.7	NO	93.2	0.0436914
13	13C5-PFHxA	318>272.9	3.10e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0026755
14	13C3-PFHxS	401.9 > 79.9	1.72e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0075773
15	13C8-PFOA	421.3 > 376	7.88e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0007668
16	13C9-PFNA	472.2 > 426.9	8.62e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0006215
17	13C4-PFOS	503.0 > 79.9	8.31e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0166574
18	Total PFBS	299 > 79.7	5.91e3		1.000	3.11		4.58	NO		
19	Total PFHxS	398.8 > 79.6	6.15e3		1.000	4.09		5.37	NO		
20	Total PFOA	413 > 368.7	1.25e4		1.000	4.39		5.43	NO		
21	Total PFOS	499 > 79.9	1.67e3		1.000	4.67		7.17	NO		0.0999192

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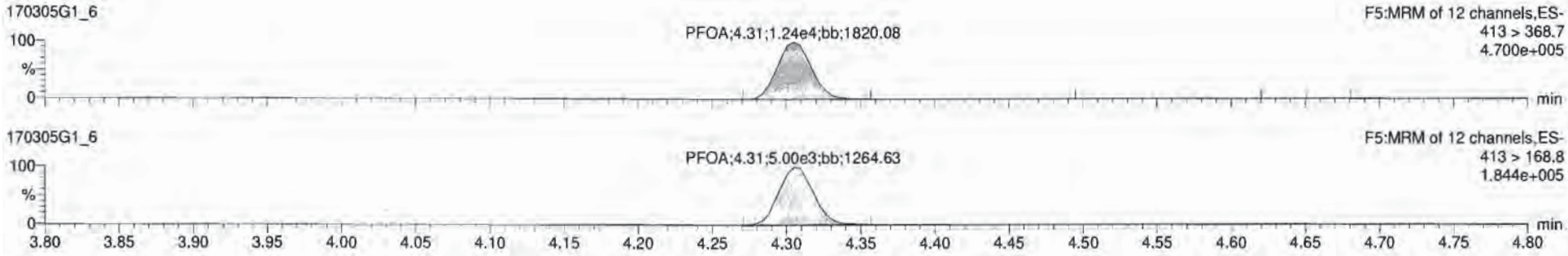
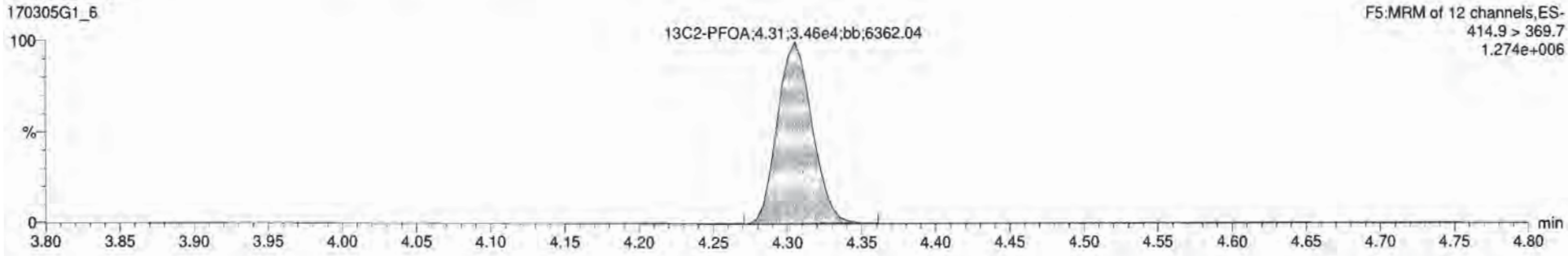
ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

Total PFOA



13C2-PFOA



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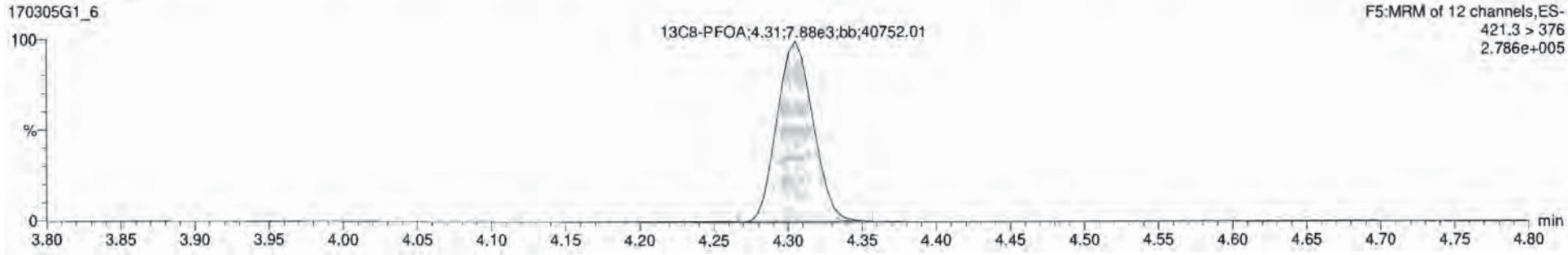

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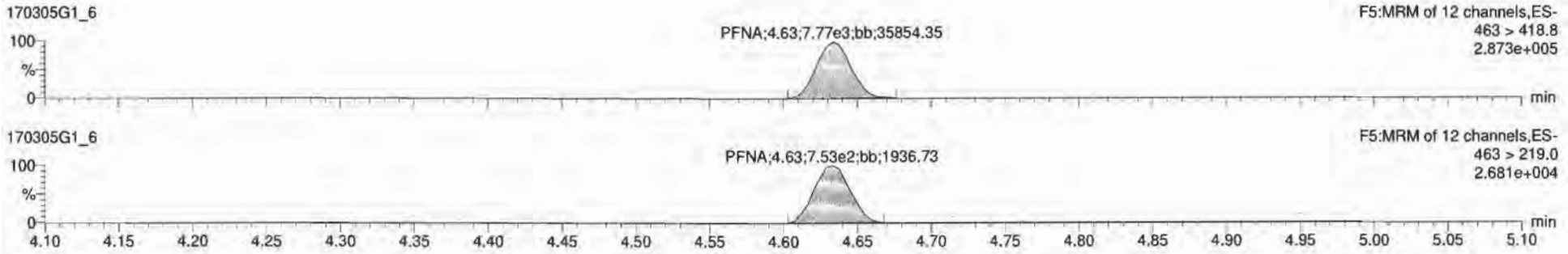
ID: ST170305G1-5 PFC CS2 17C0505, Description: PFC CS2 17C0505 A, Name: 170305G1_6, Date: 05-Mar-2017, Time: 13:36:55, Instrument: , Lab: , User:

PFNA



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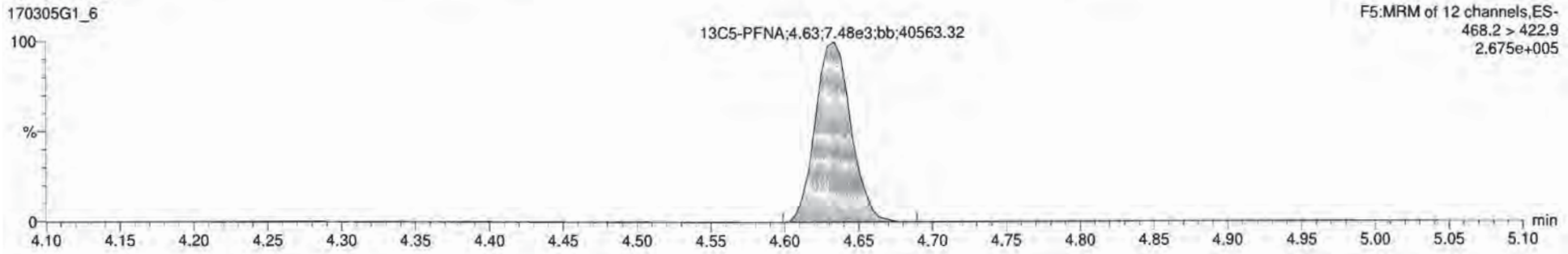
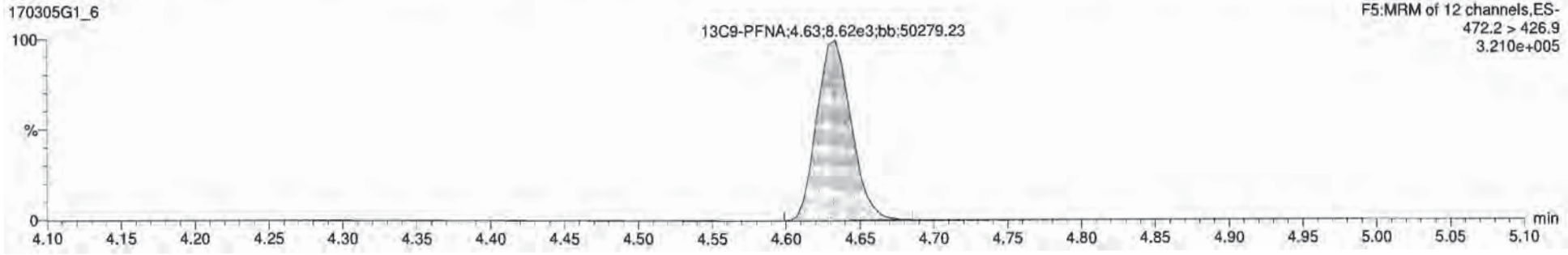


13C9-PFNA



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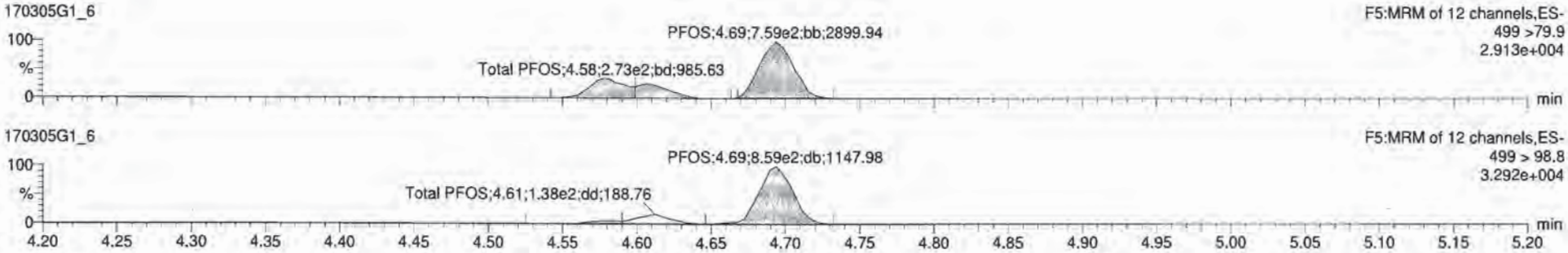
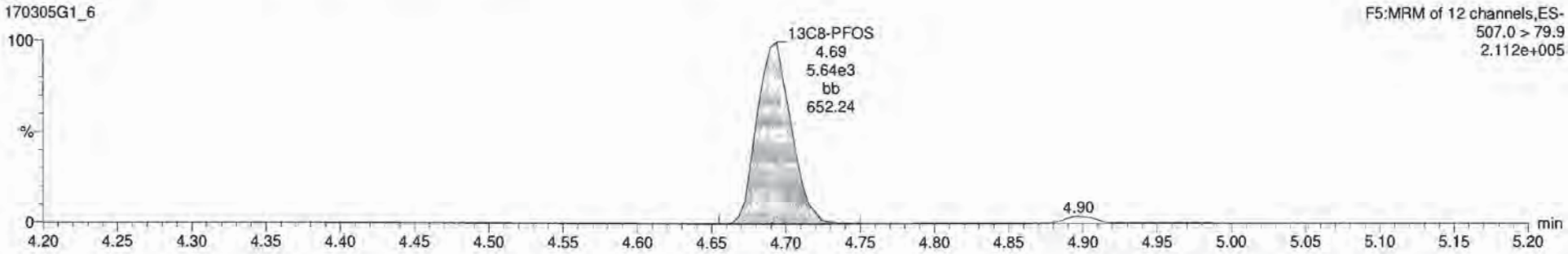
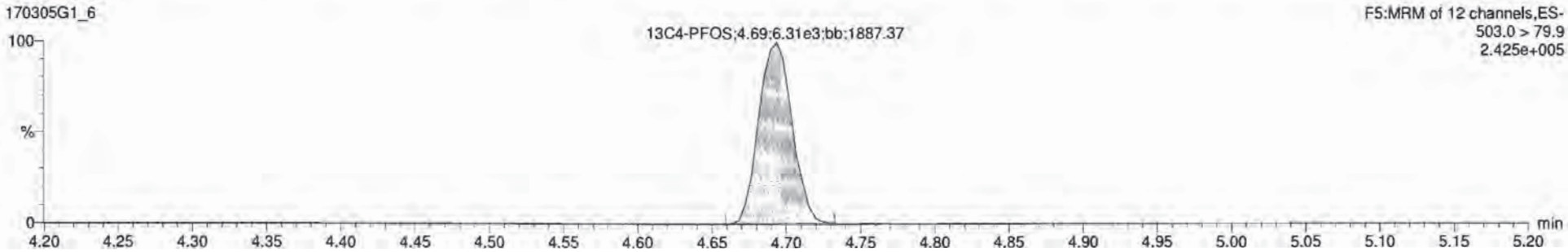
Total PFOS

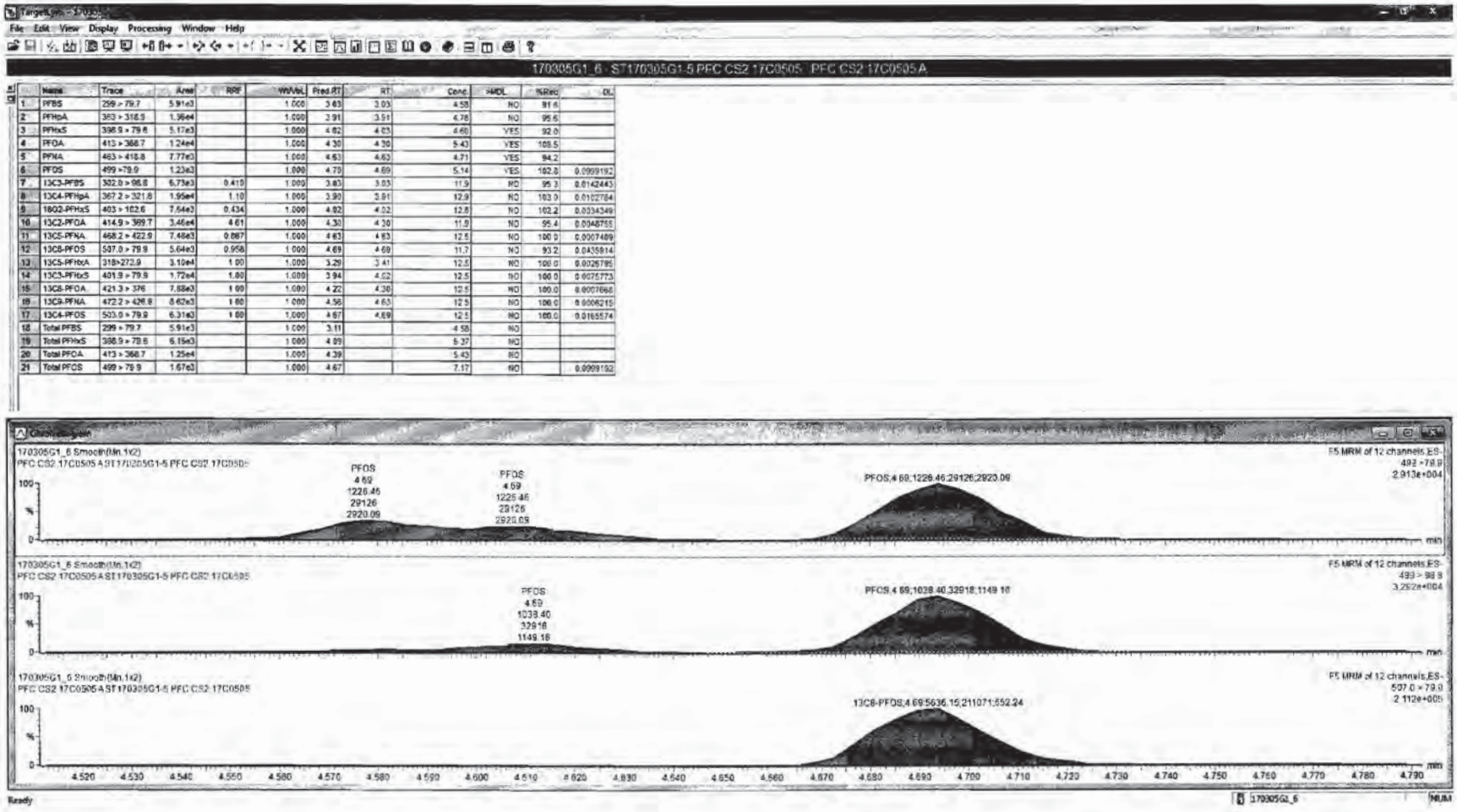


13C8-PFOS



13C4-PFOS





	Name	Trace	Area	RRF	WAVbL	Pred.RT	RT	Conc	HADL	%Rec	DL
1	PFBS	299 > 79.7	5.91e3		1.000	3.03	3.03	4.58	NO	91.6	
2	PFHpA	363 > 318.8	1.36e4		1.000	3.91	3.91	4.78	NO	95.6	
3	PFHxS	398.9 > 79.8	5.17e3		1.000	4.62	4.63	4.60	YES	92.0	
4	PFOA	413 > 368.7	1.24e4		1.000	4.30	4.30	5.43	YES	108.5	
5	PFNA	463 > 418.8	7.77e3		1.000	4.63	4.63	4.71	YES	94.2	
6	PFOS	499 > 79.9	1.23e3		1.000	4.70	4.69	5.14	YES	102.8	0.0009192
7	13C3-PFBS	302.0 > 98.8	6.73e3	0.410	1.000	3.03	3.03	11.9	NO	95.3	0.0142443
8	13C4-PFHpA	367.2 > 321.8	1.95e4	1.10	1.000	3.90	3.91	12.9	NO	103.0	0.0102764
9	1802-PFHxS	403 > 102.6	7.64e2	0.434	1.000	4.62	4.62	12.8	NO	102.2	0.0034349
10	13C2-PFOA	414.9 > 369.7	3.46e4	4.61	1.000	4.30	4.30	11.9	NO	95.4	0.0048755
11	13C5-PFNA	468.2 > 422.9	7.48e3	0.887	1.000	4.63	4.63	12.5	NO	100.0	0.0007489
12	13C8-PFOS	507.0 > 79.9	5.64e3	0.958	1.000	4.69	4.69	11.7	NO	93.2	0.0035814
13	13C5-PFHxA	318>272.9	3.10e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0026795
14	13C3-PFHxS	401.9 > 79.9	1.72e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0075773
15	13C8-PFOA	421.3 > 376	7.68e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0007668
16	13C9-PFNA	472.2 > 426.8	8.62e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0006215
17	13C4-PFOS	503.0 > 79.9	6.31e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0165574
18	Total PFBS	299 > 79.7	5.91e3		1.000	3.11		4.58	NO		
19	Total PFHxS	398.9 > 79.8	6.15e3		1.000	4.69		5.37	NO		
20	Total PFOA	413 > 368.7	1.25e4		1.000	4.39		5.43	NO		
21	Total PFOS	499 > 79.9	1.67e3		1.000	4.67		7.17	NO		0.0009192

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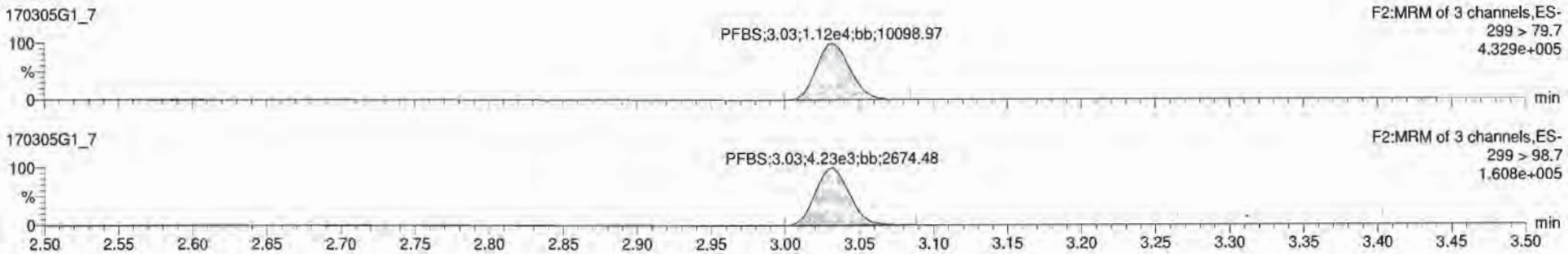
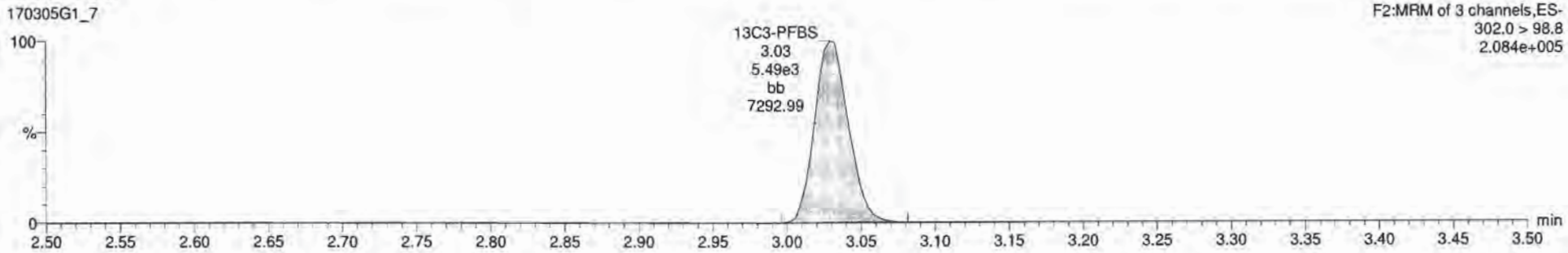
ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

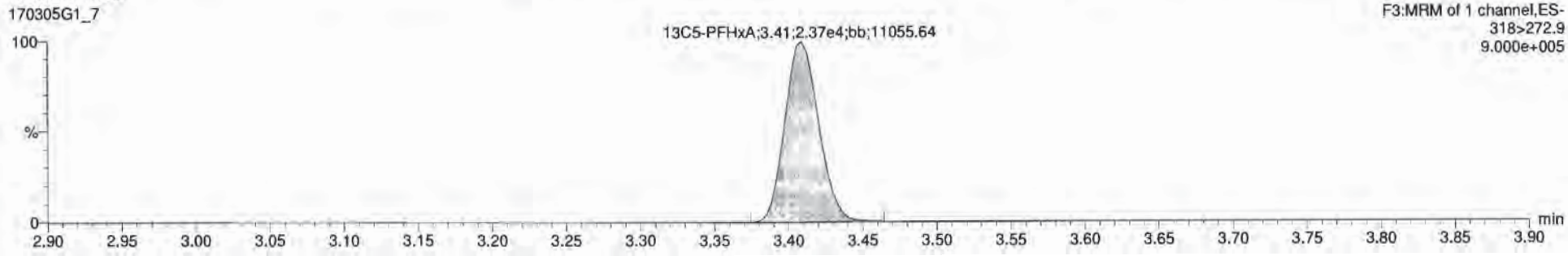
PFBS



13C3-PFBS



13C5-PFHxA



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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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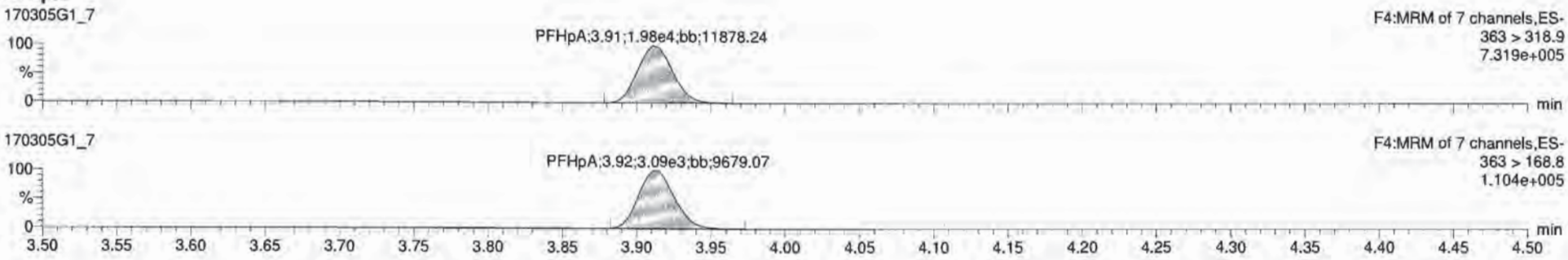
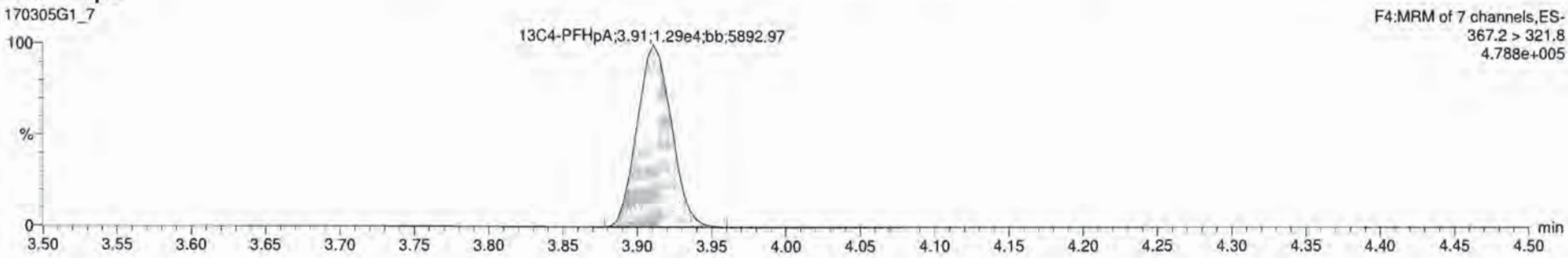
ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

PFHpA



13C4-PFHpA



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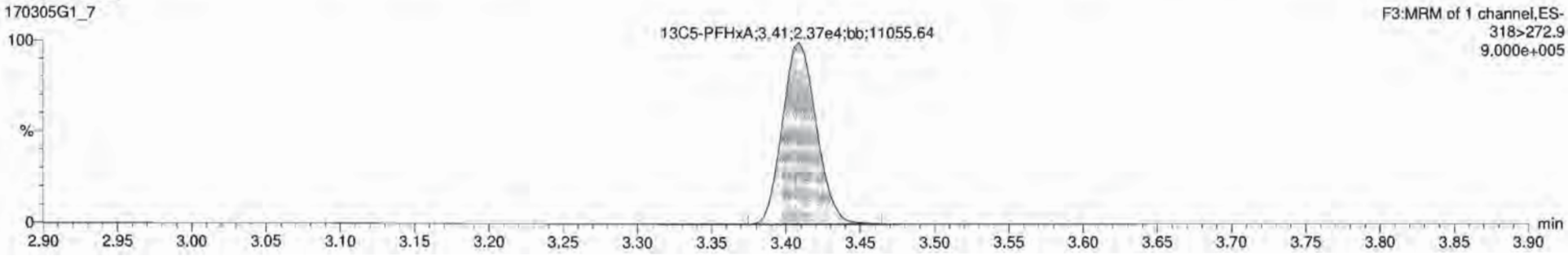

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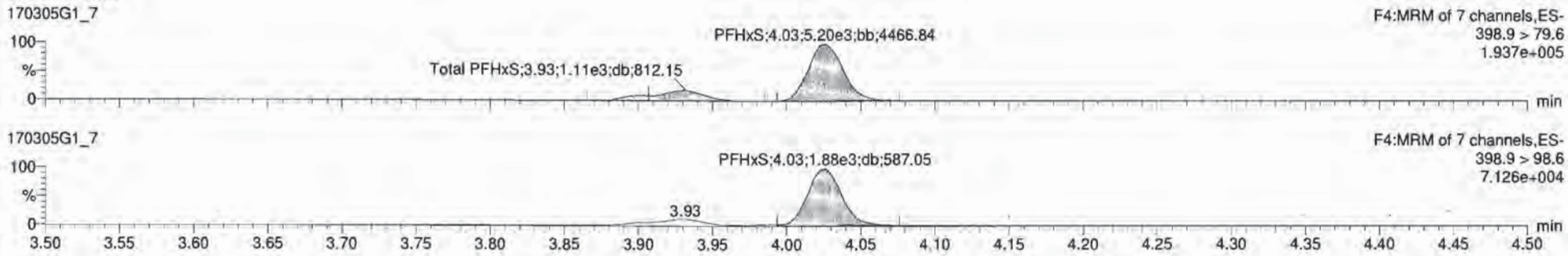
ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

Total PFHxS



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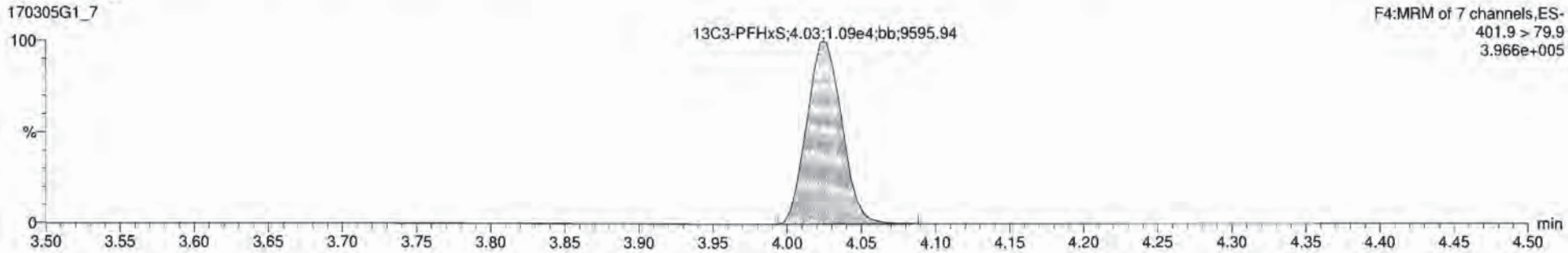

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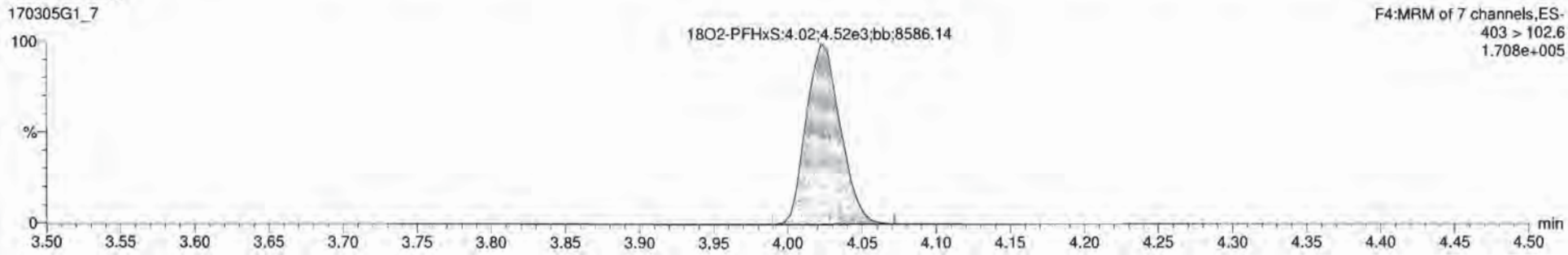

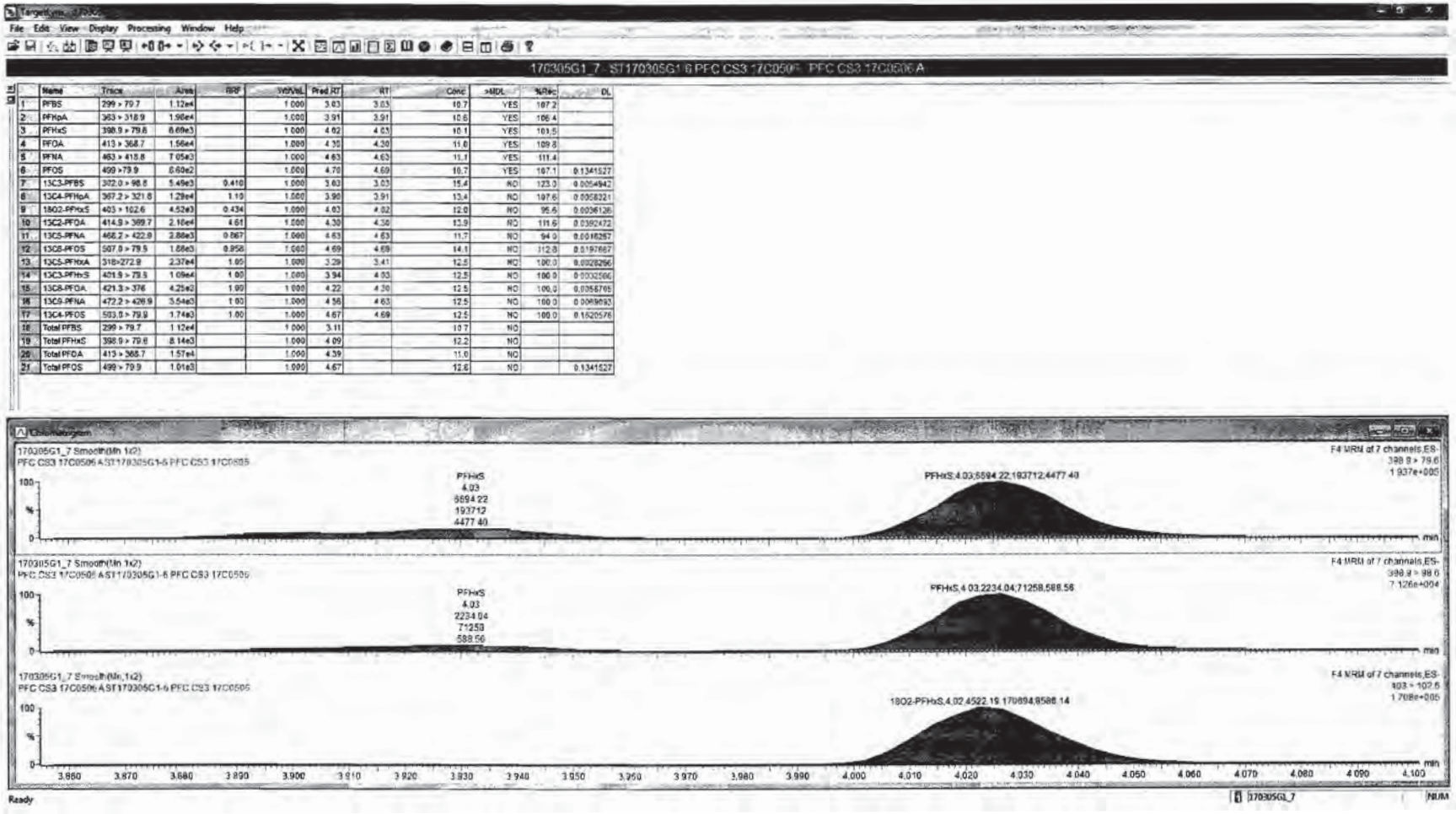

	Name	Trace	Area	RRF	IstdVal	Pred RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	299 > 79.7	1.12e4		1.000	3.83	3.83	10.7	YES	107.2	
2	PFHpA	363 > 318.9	1.98e4		1.000	3.91	3.91	10.6	YES	106.4	
3	PFHxS	398.9 > 79.6	6.69e3		1.000	4.02	4.03	10.1	YES	101.5	
4	PFOA	413 > 368.7	1.56e4		1.000	4.30	4.30	11.0	YES	109.8	
5	PFNA	463 > 418.8	7.05e3		1.000	4.63	4.63	11.1	YES	111.4	
6	PFOS	499 > 79.9	8.60e2		1.000	4.70	4.69	10.7	YES	107.1	0.1341527
7	13C3-PFBS	302.0 > 98.6	5.49e3	0.410	1.000	3.83	3.83	15.4	NO	123.3	0.0054942
8	13C4-PFHpA	367.2 > 321.8	1.29e4	1.10	1.000	3.90	3.91	13.4	NO	107.6	0.0058321
9	18O2-PFHxS	403 > 102.6	4.52e3	0.434	1.000	4.03	4.02	12.0	NO	95.6	0.0036126
10	13C2-PFOA	414.9 > 369.7	2.16e4	4.61	1.000	4.30	4.30	13.9	NO	111.6	0.0392472
11	13C5-PFNA	468.2 > 422.9	2.88e3	0.867	1.000	4.63	4.63	11.7	NO	94.0	0.0018257
12	13C8-PFOS	507.9 > 79.5	1.68e3	0.958	1.000	4.69	4.69	14.1	NO	112.8	0.0197667
13	13C5-PFHxA	318>272.9	2.37e4	1.05	1.000	3.29	3.41	12.5	NO	100.0	0.0028256
14	13C3-PFHxS	401.9 > 79.5	1.09e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0032566
15	13C8-PFOA	421.3 > 376	4.25e3	1.99	1.000	4.22	4.30	12.5	NO	100.0	0.0058705
16	13C9-PFNA	472.2 > 426.9	3.54e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0069093
17	13C4-PFOS	503.0 > 79.9	1.74e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.1620576
18	Total PFBS	299 > 79.7	1.12e4		1.000	3.11		10.7	NO		
19	Total PFHxS	398.9 > 79.6	8.14e3		1.000	4.09		12.2	NO		
20	Total PFOA	413 > 368.7	1.57e4		1.000	4.39		11.0	NO		
21	Total PFOS	499 > 79.9	1.01e3		1.000	4.67		12.6	NO		0.1341527

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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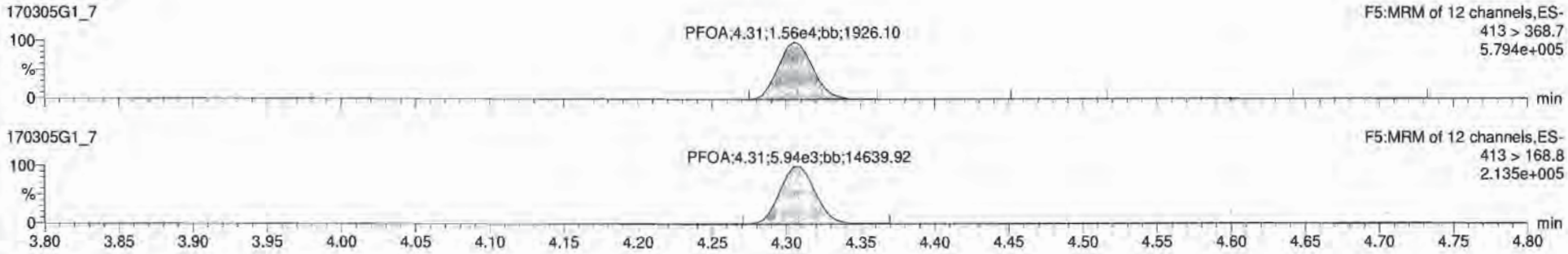
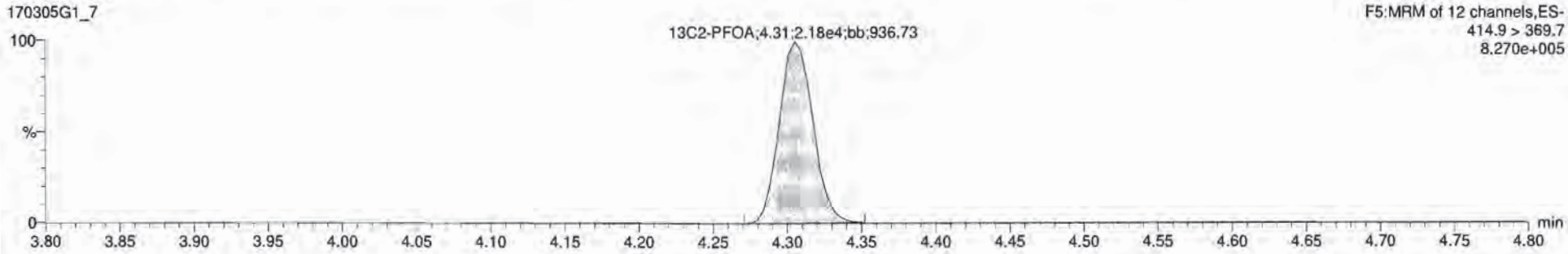
ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

Total PFOA



13C2-PFOA



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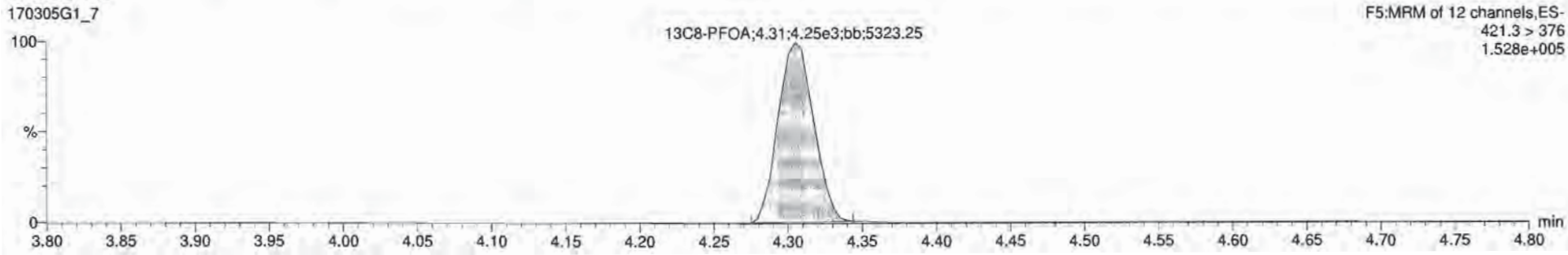

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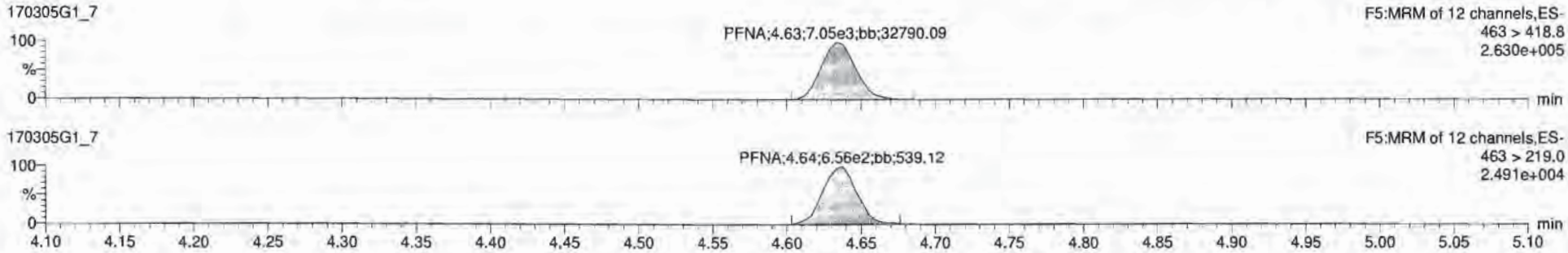

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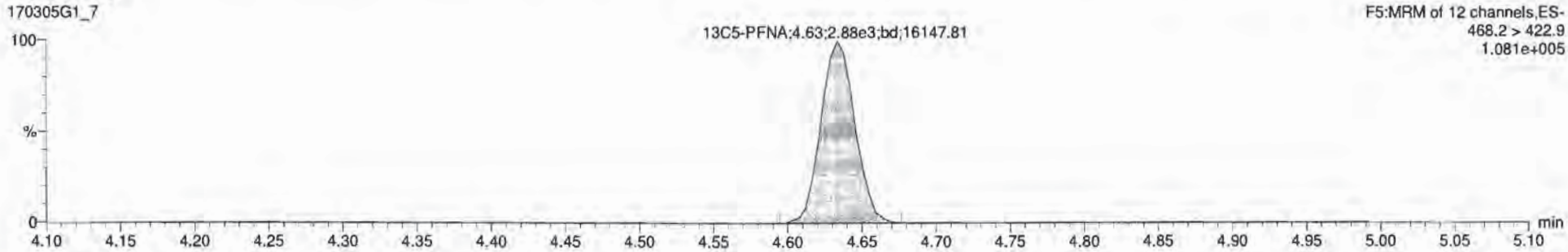

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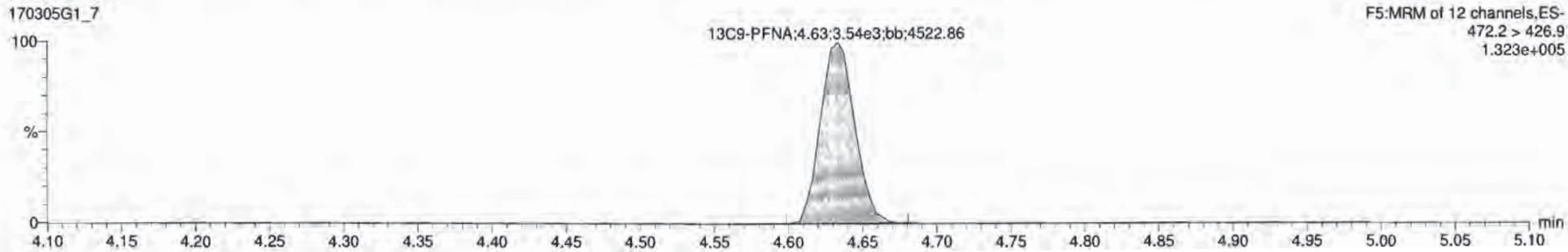

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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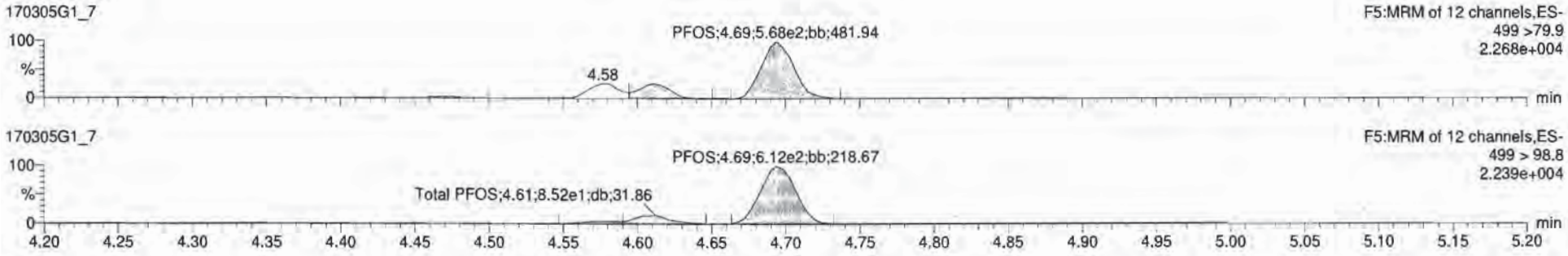
ID: ST170305G1-6 PFC CS3 17C0506, Description: PFC CS3 17C0506 A, Name: 170305G1_7, Date: 05-Mar-2017, Time: 13:49:29, Instrument: , Lab: , User:

Total PFOS



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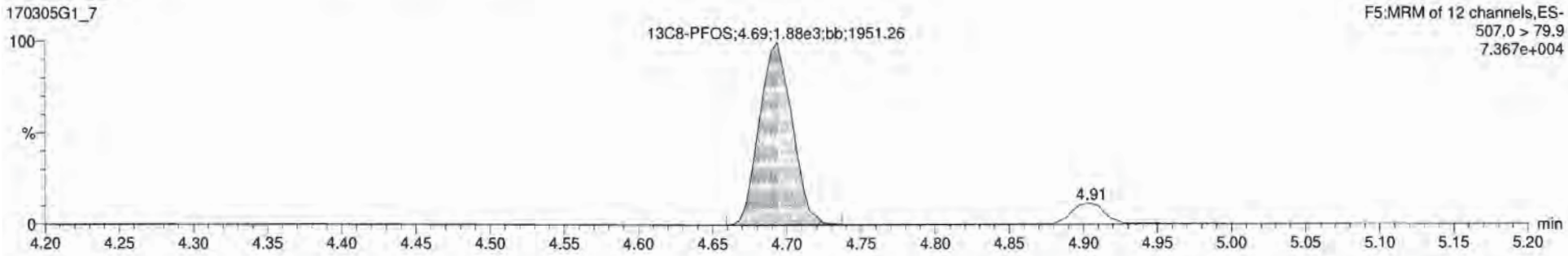

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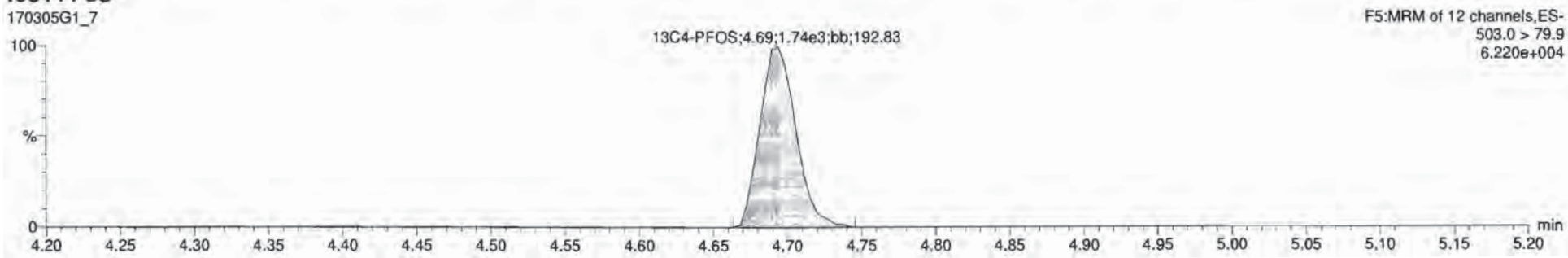

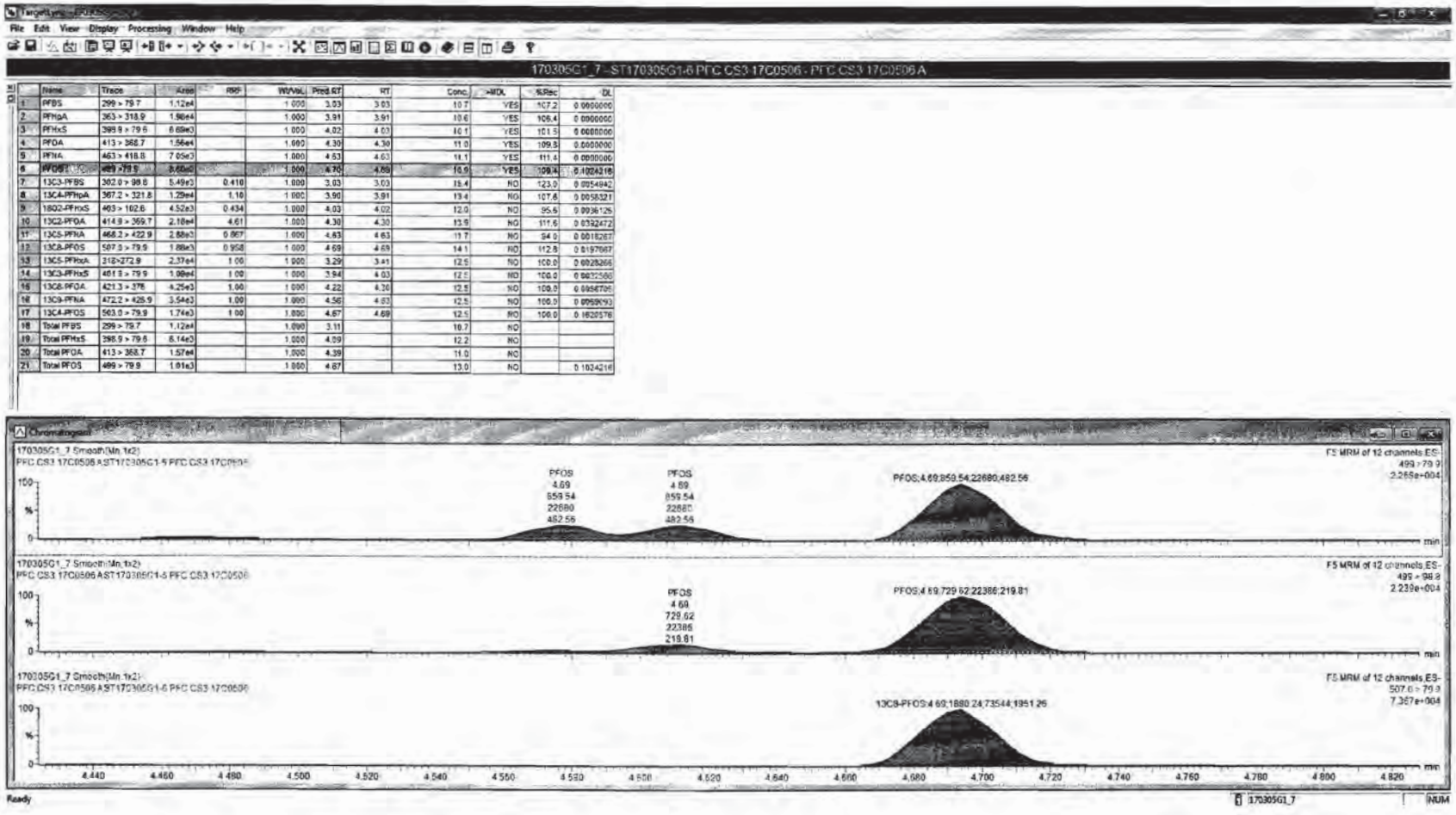

	Name	Trace	Area	RRF	Wt/Vol	Pred.RT	RT	Conc.	>MDL	%Rec	DL
1	PFBS	299 > 79.7	1.12e4		1.000	3.03	3.03	10.7	YES	107.2	0.0000000
2	PFHpA	363 > 318.9	1.98e4		1.000	3.91	3.91	10.6	YES	105.4	0.0000000
3	PFHxS	399.8 > 79.6	8.69e3		1.000	4.02	4.03	10.1	YES	101.5	0.0000000
4	PFOA	413 > 368.7	1.56e4		1.000	4.30	4.30	11.0	YES	109.8	0.0000000
5	PFNA	463 > 418.8	7.05e3		1.000	4.63	4.63	11.1	YES	111.4	0.0000000
6	PFOS	499 > 79.9	8.60e3		1.000	4.70	4.69	10.9	YES	109.4	0.1024218
7	13C3-PFBS	302.0 > 98.8	5.49e3	0.410	1.000	3.03	3.03	15.4	NO	123.0	0.0054942
8	13C4-PFHpA	367.2 > 321.8	1.29e4	1.16	1.000	3.90	3.91	13.4	NO	107.6	0.0058321
9	18O2-PFHxS	403 > 102.6	4.52e3	0.434	1.000	4.03	4.02	12.0	NO	95.6	0.0036125
10	13C2-PFOA	414.9 > 369.7	2.18e4	4.61	1.000	4.30	4.30	13.9	NO	111.6	0.0392472
11	13C5-PFNA	468.2 > 422.9	2.88e3	0.867	1.000	4.63	4.63	11.7	NO	94.0	0.0018267
12	13C8-PFOS	507.3 > 79.9	1.88e3	0.958	1.000	4.69	4.69	14.1	NO	112.8	0.0197067
13	13C5-PFHxA	318>272.9	2.37e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0028266
14	13C3-PFHxS	401.8 > 79.9	1.98e4	1.00	1.000	3.94	4.03	12.5	NO	100.0	0.0022580
15	13C8-PFOA	421.3 > 376	4.25e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0056705
16	13C9-PFNA	472.2 > 426.9	3.54e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0059093
17	13C4-PFOS	503.0 > 79.9	1.74e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.1620176
18	Total PFBS	299 > 79.7	1.12e4		1.000	3.11		10.7	NO		
19	Total PFHxS	399.9 > 79.6	8.14e3		1.000	4.09		12.2	NO		
20	Total PFOA	413 > 368.7	1.57e4		1.000	4.39		11.0	NO		
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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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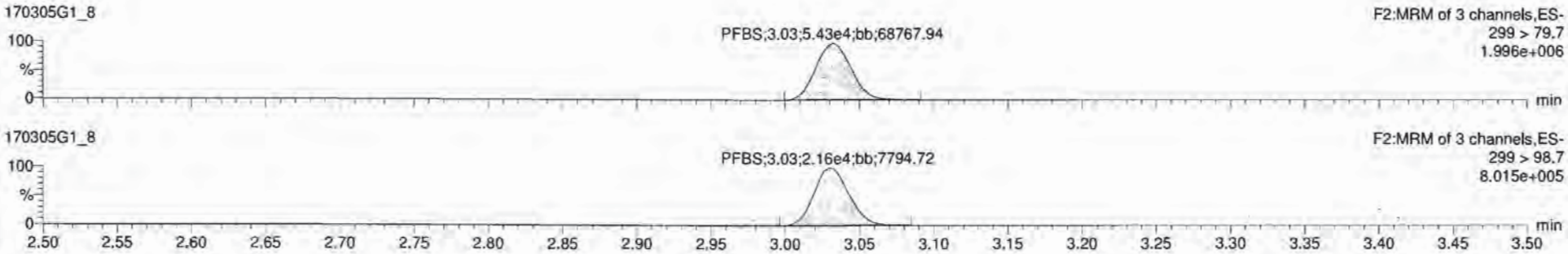
ID: ST170305G1-7 PFC CS4 17C0507, Description: PFC CS4 17C0507 A, Name: 170305G1_8, Date: 05-Mar-2017, Time: 14:02:00, Instrument: , Lab: , User:

PFBS



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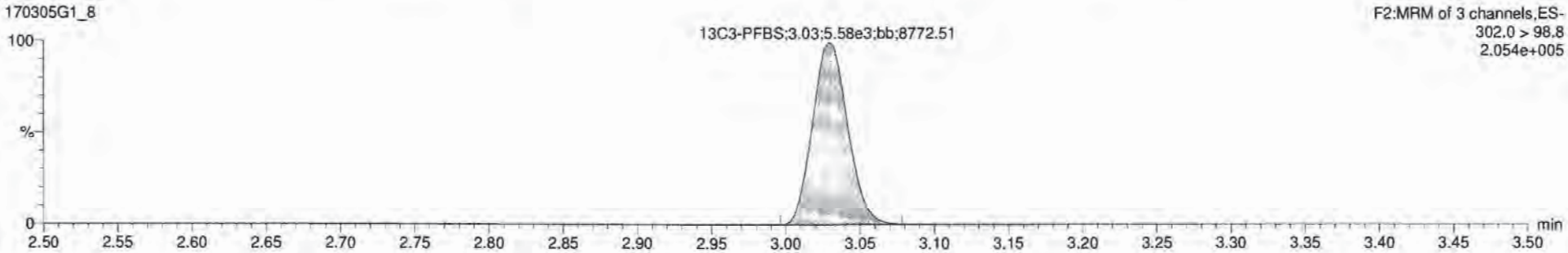

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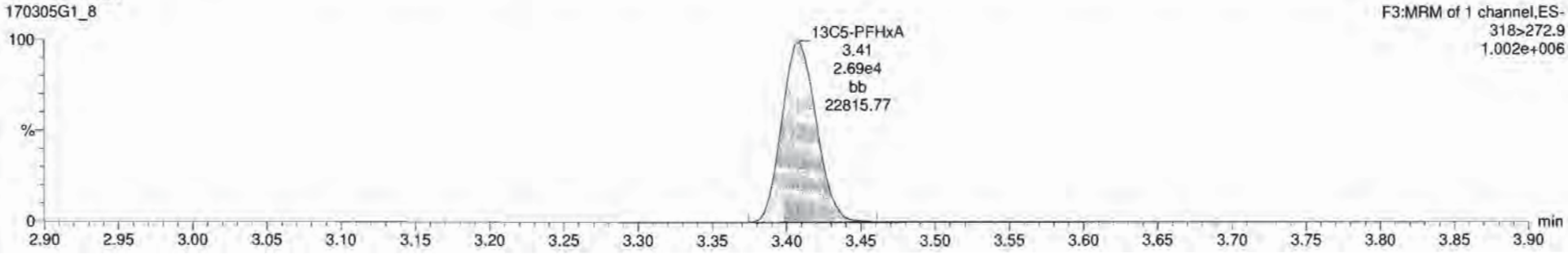

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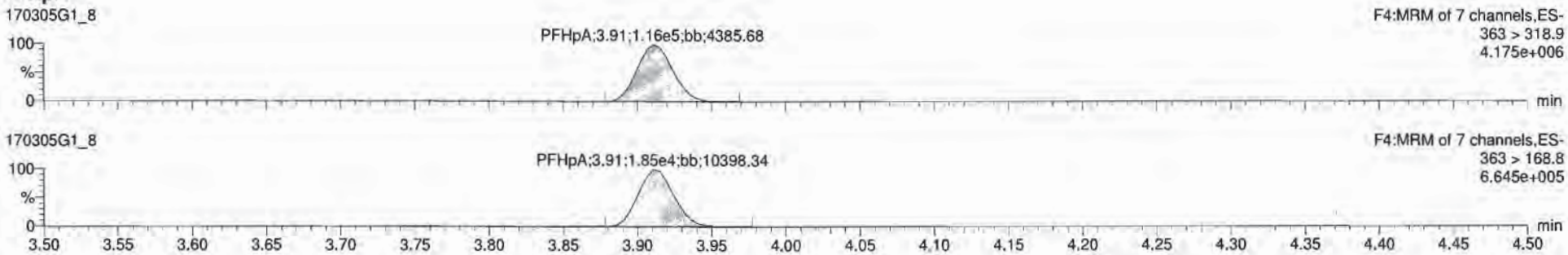
ID: ST170305G1-7 PFC CS4 17C0507, Description: PFC CS4 17C0507 A, Name: 170305G1_8, Date: 05-Mar-2017, Time: 14:02:00, Instrument: , Lab: , User:

PFHpA



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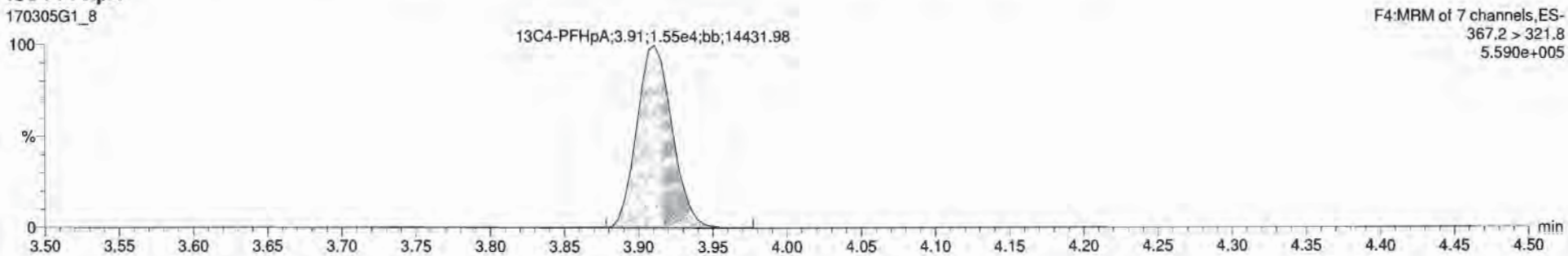

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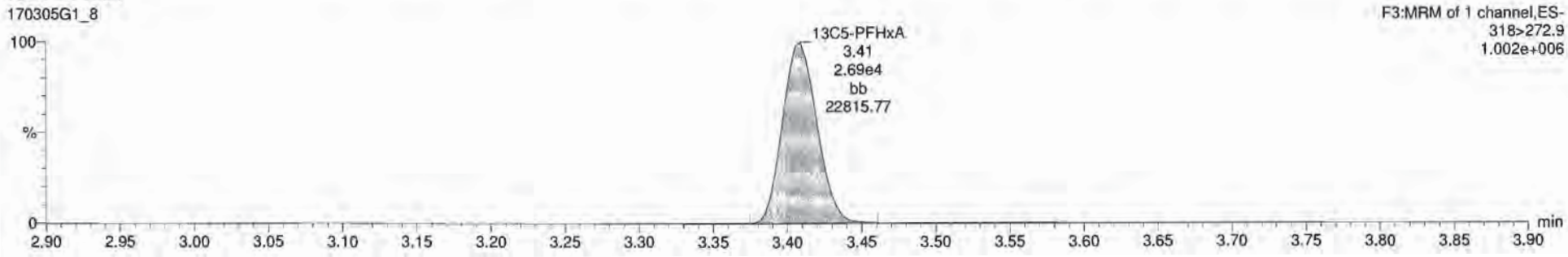

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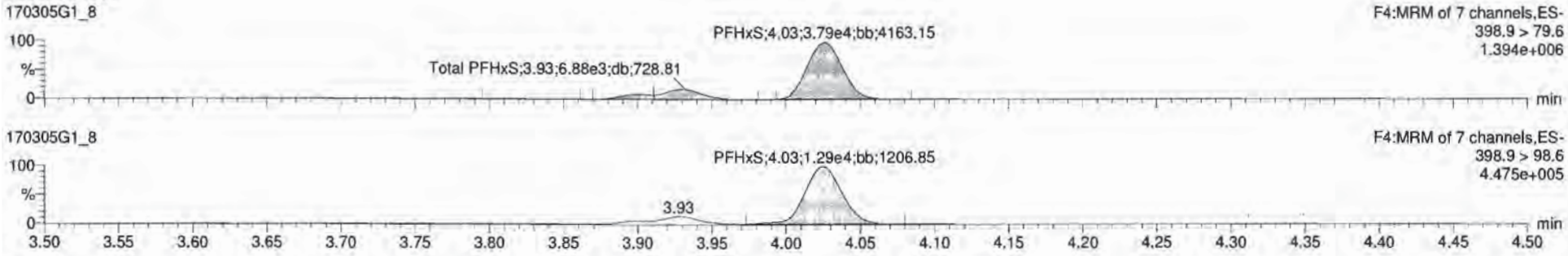
Total PFHxS



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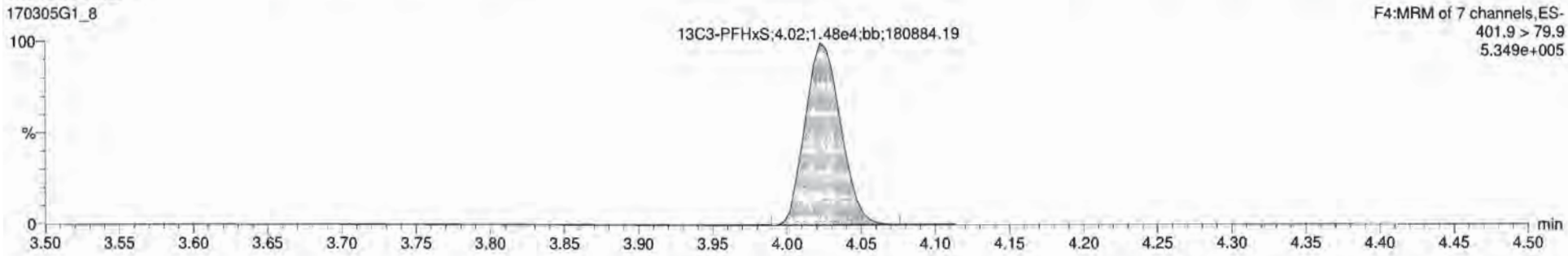
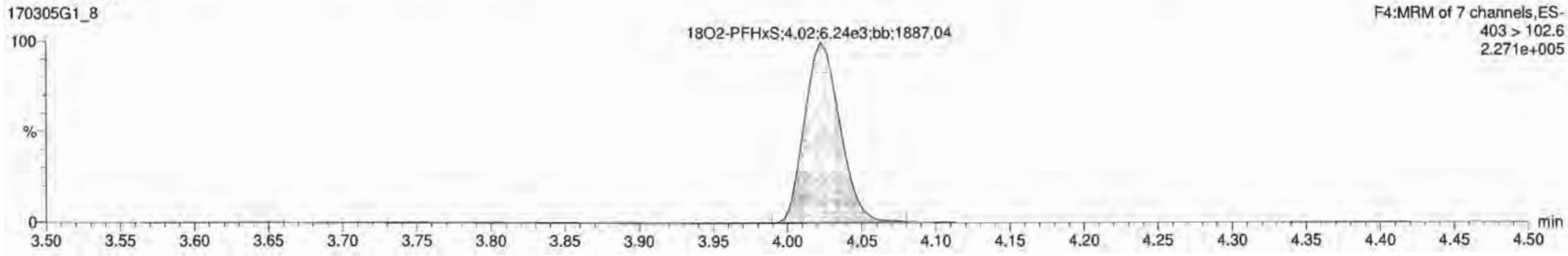
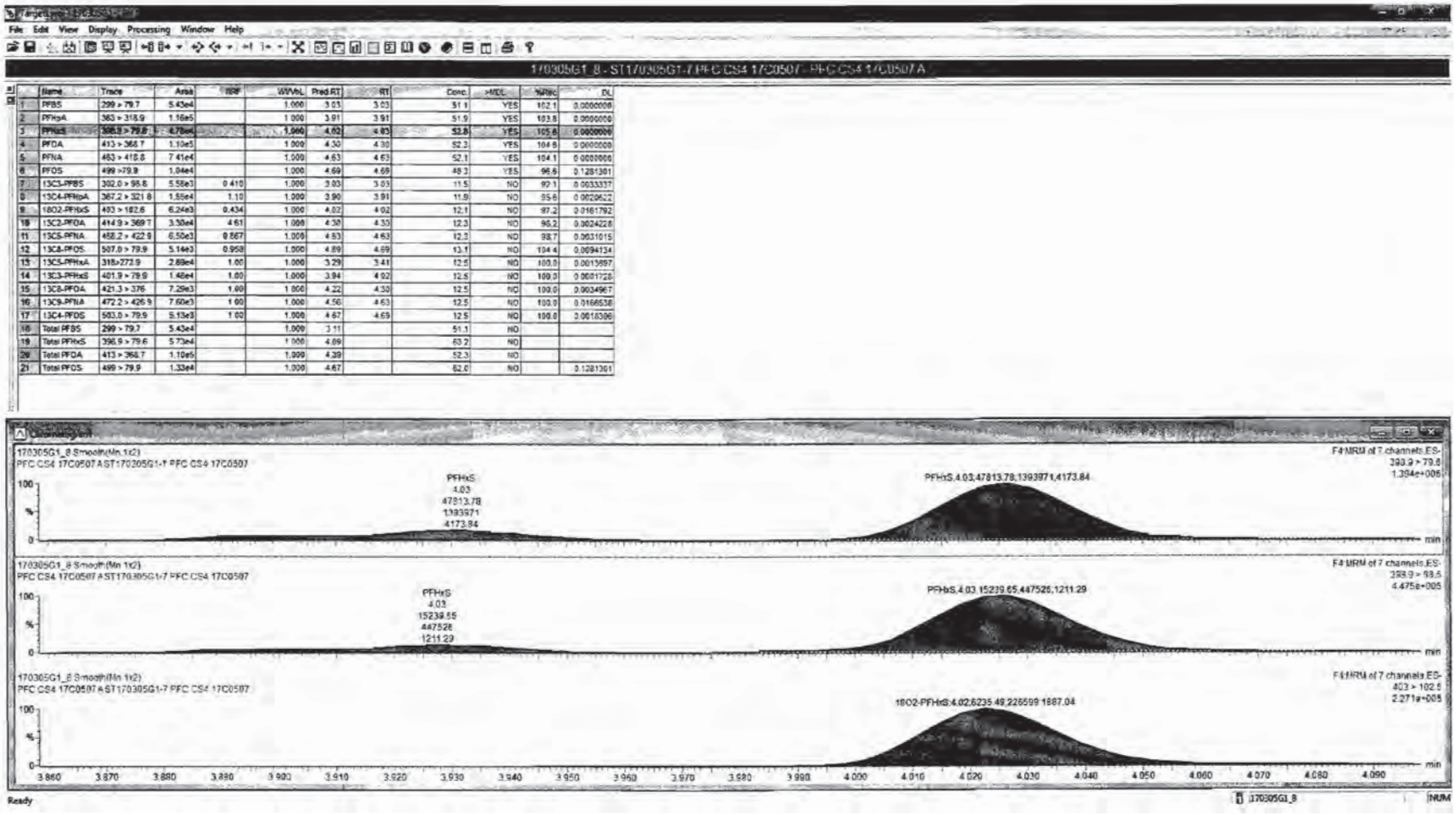


18O2-PFHxS





	Name	Trace	Area	RRF	WWbL	Pred RT	RT	Conc	>MDL	%Rec	DL
1	PFBS	299 > 79.7	5.43e4		1.000	3.03	3.03	51.1	YES	102.1	0.0000000
2	PFHpA	363 > 318.9	1.18e5		1.000	3.91	3.91	51.9	YES	103.8	0.0000000
3	PFHxS	399.9 > 79.8	4.78e4		1.000	4.02	4.03	52.8	YES	105.6	0.0000000
4	PFDA	413 > 368.7	1.10e5		1.000	4.30	4.30	52.3	YES	104.6	0.0000000
5	PFNA	463 > 418.8	7.41e4		1.000	4.63	4.63	52.1	YES	104.1	0.0000000
6	PFOS	499 >79.9	1.04e4		1.000	4.69	4.69	48.3	YES	96.6	0.1281301
7	13C3-PFBS	302.0 > 98.8	5.58e3	0.410	1.000	3.03	3.03	11.5	NO	92.1	0.0033337
8	13C4-PFHpA	367.2 > 321.8	1.55e4	1.10	1.000	3.90	3.91	11.9	NO	95.6	0.0029622
9	1802-PFHxS	403 > 102.6	6.24e3	0.434	1.000	4.02	4.02	12.1	NO	97.2	0.0161792
10	13C2-PFDA	414.9 > 369.7	3.50e4	4.61	1.000	4.30	4.30	12.3	NO	98.2	0.0024228
11	13C5-PFNA	468.2 > 422.9	6.50e3	0.867	1.000	4.63	4.63	12.3	NO	98.7	0.0031015
12	13C8-PFOS	507.0 > 79.9	5.14e3	0.958	1.000	4.69	4.69	13.1	NO	104.4	0.0094134
13	13C5-PFHxA	318>272.9	2.89e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0013897
14	13C3-PFHxS	401.9 > 79.9	1.46e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0001728
15	13C8-PFOA	421.3 > 376	7.29e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0034967
16	13C9-PFNA	472.2 > 426.9	7.60e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0166538
17	13C4-PFOS	503.0 > 79.9	5.13e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0018096
18	Total PFBS	299 > 79.7	5.43e4		1.000	3.11		51.1	NO		
19	Total PFHxS	399.9 > 79.8	5.73e4		1.000	4.09		63.2	NO		
20	Total PFDA	413 > 368.7	1.10e5		1.000	4.39		52.3	NO		
21	Total PFOS	499 > 79.9	1.33e4		1.000	4.67		62.0	NO		0.1281301

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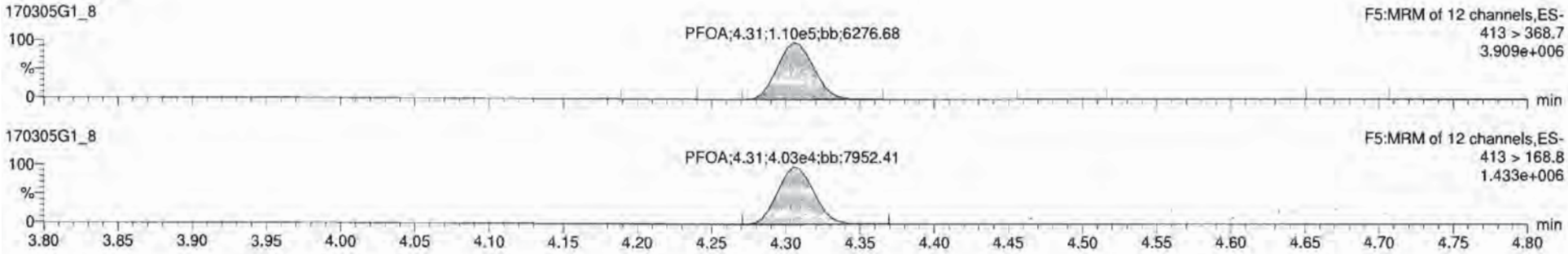
ID: ST170305G1-7 PFC CS4 17C0507, Description: PFC CS4 17C0507 A, Name: 170305G1_8, Date: 05-Mar-2017, Time: 14:02:00, Instrument: , Lab: , User:

Total PFOA



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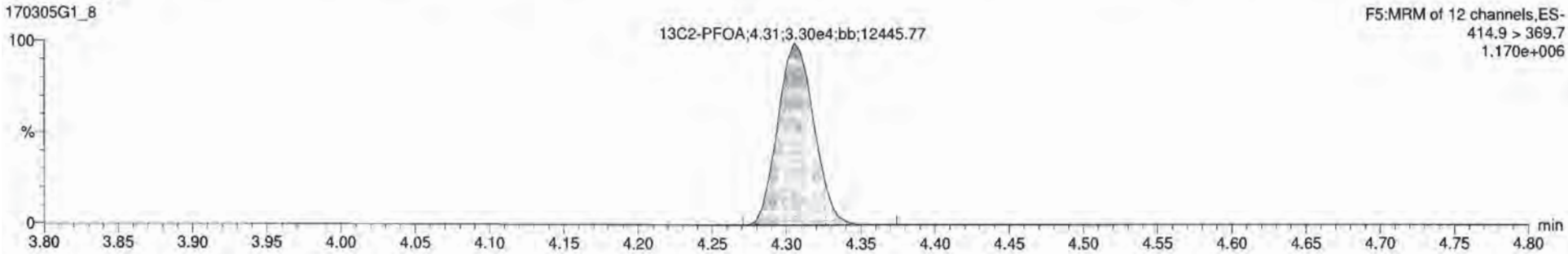
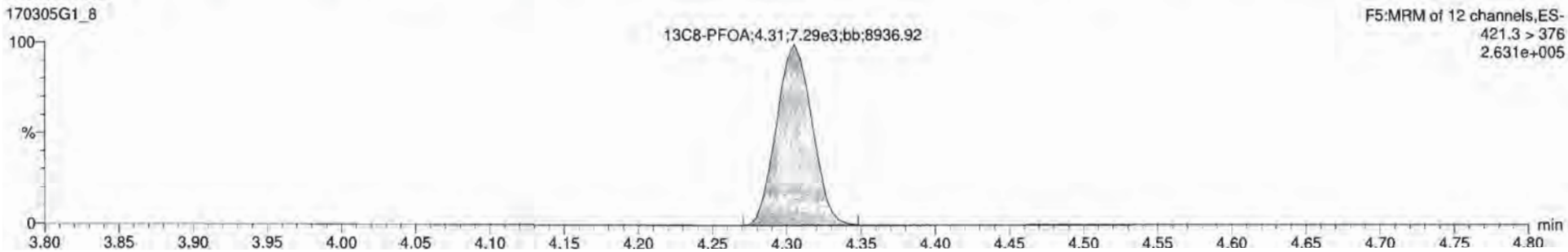


13C8-PFOA



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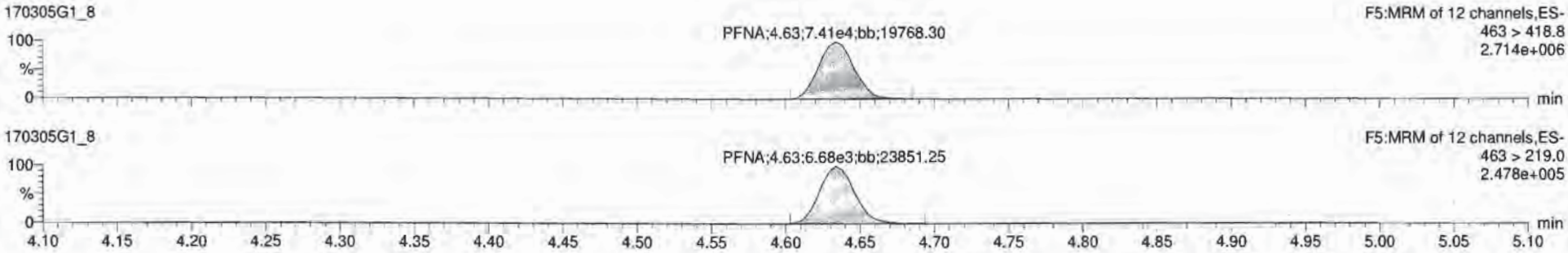
ID: ST170305G1-7 PFC CS4 17C0507, Description: PFC CS4 17C0507 A, Name: 170305G1_8, Date: 05-Mar-2017, Time: 14:02:00, Instrument: , Lab: , User:

PFNA



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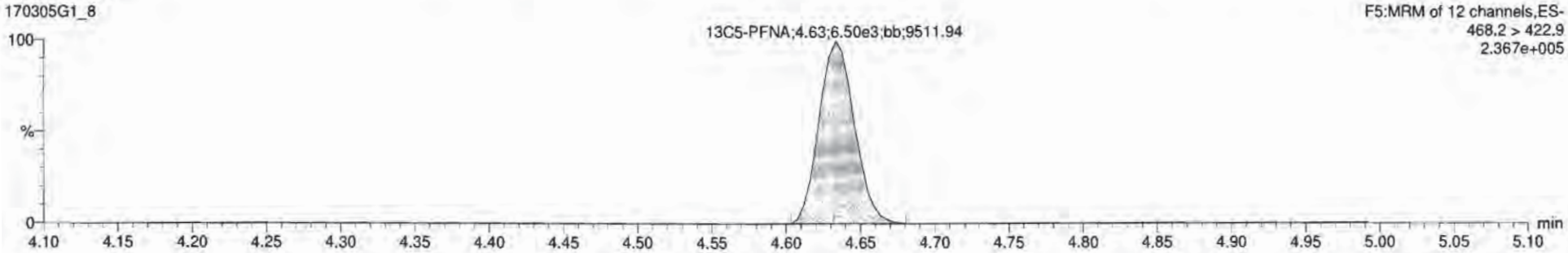
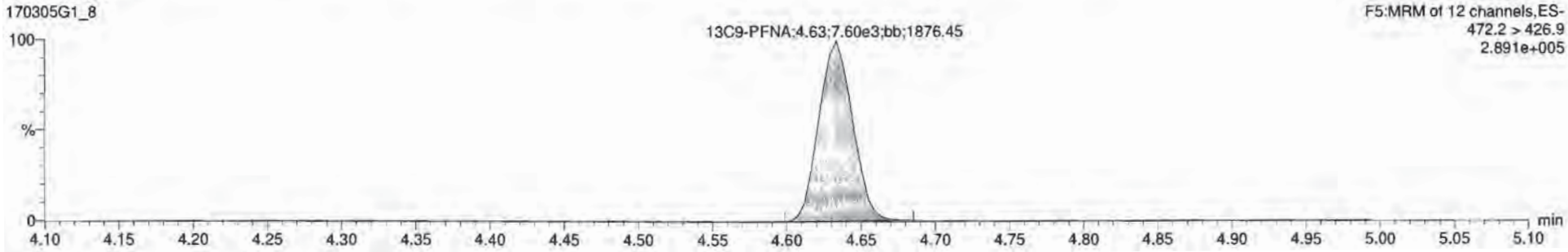


13C9-PFNA



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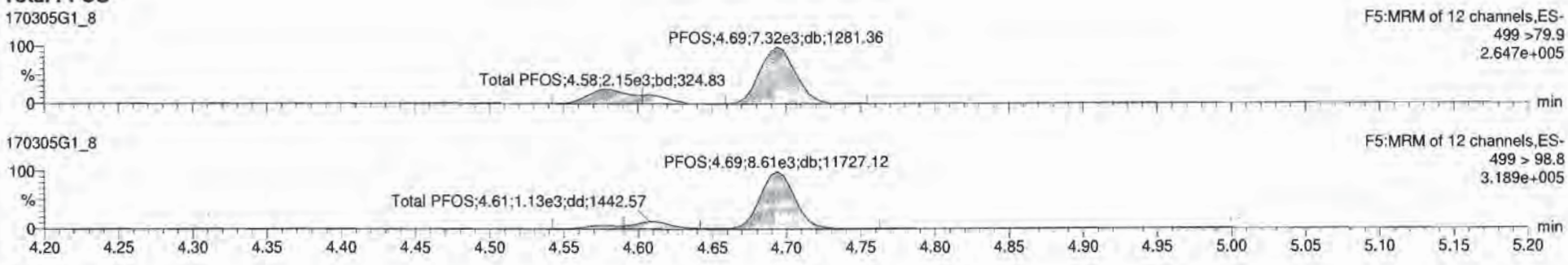
ID: ST170305G1-7 PFC CS4 17C0507, Description: PFC CS4 17C0507 A, Name: 170305G1_8, Date: 05-Mar-2017, Time: 14:02:00, Instrument: , Lab: , User:

Total PFOS



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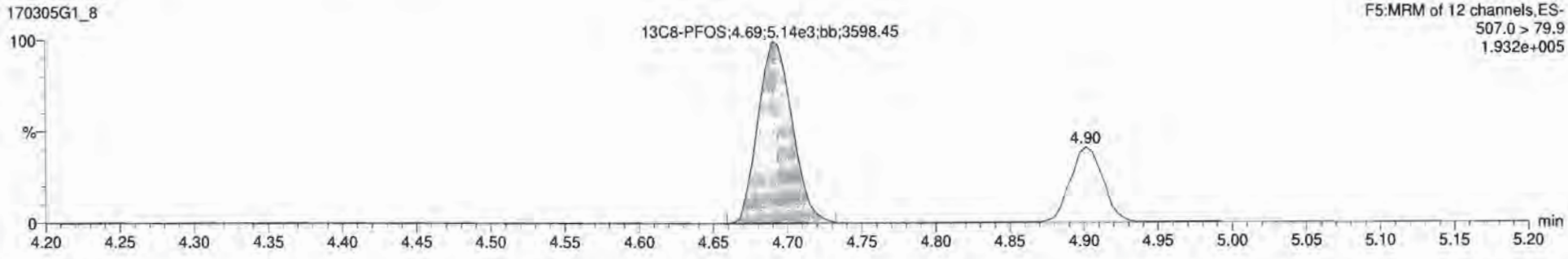
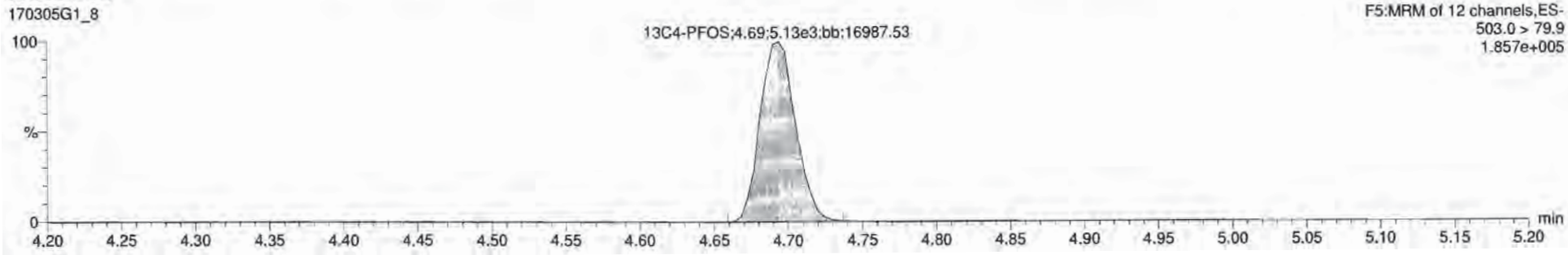
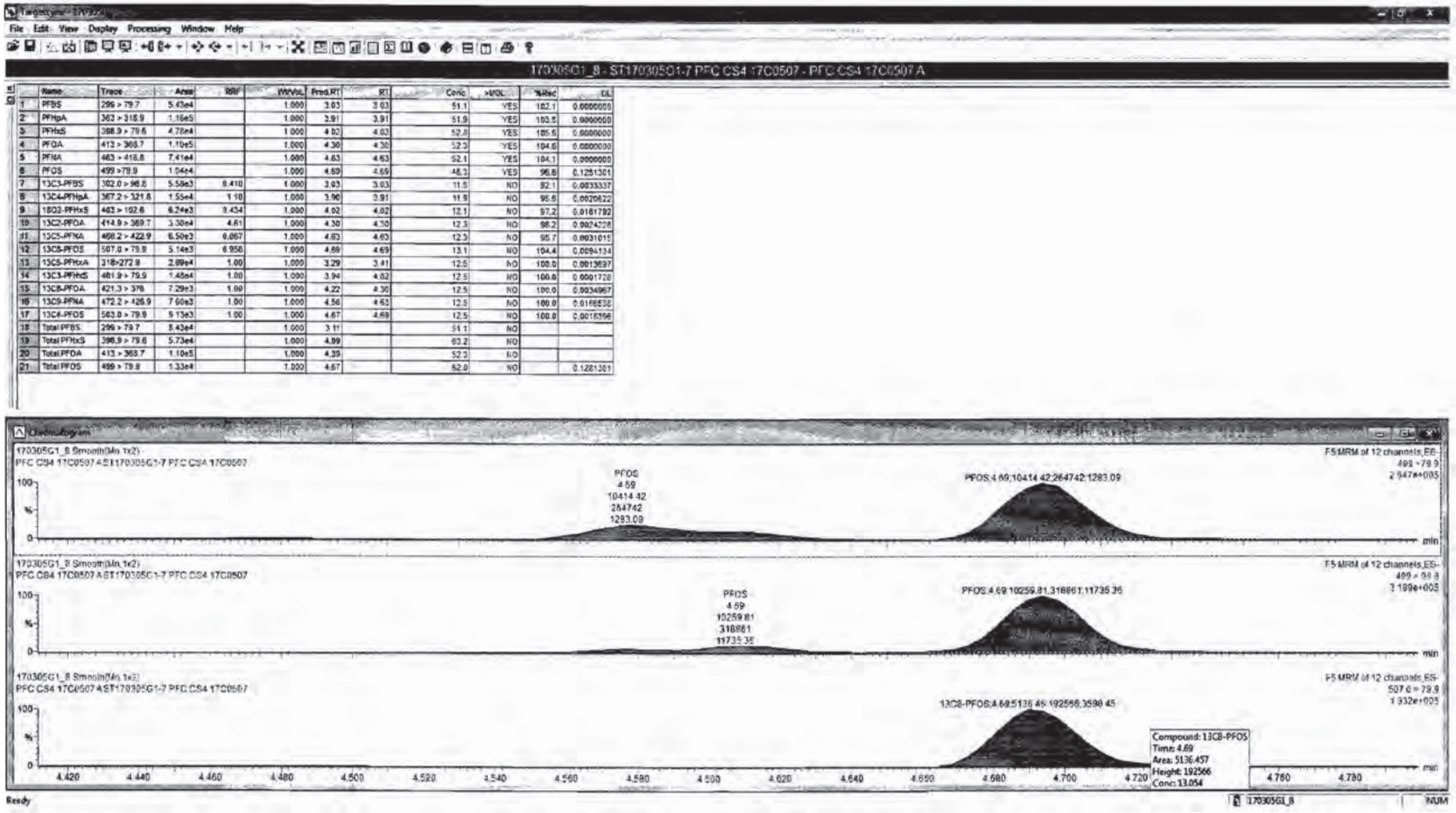


13C4-PFOS





	Name	Trace	Area	RRF	RRVal	Pred.RT	RT	Conc	>LOQ	%Rec	EL
1	PFBS	299 > 79.7	5.43e4		1.000	3.03	3.03	51.1	YES	102.1	0.0000000
2	PFHpA	363 > 318.9	1.16e5		1.000	3.91	3.91	51.9	YES	103.8	0.0000000
3	PFHxS	398.9 > 79.8	4.78e4		1.000	4.02	4.03	52.8	YES	105.5	0.0000000
4	PFOA	413 > 368.7	1.10e5		1.000	4.30	4.30	52.3	YES	104.6	0.0000000
5	PFNA	463 > 418.8	7.41e4		1.000	4.63	4.63	52.1	YES	104.1	0.0000000
6	PFOS	499 > 79.9	1.04e4		1.000	4.69	4.69	48.3	YES	96.6	0.1251301
7	13C3-PFBS	302.0 > 98.8	5.58e3	0.410	1.000	3.03	3.03	11.5	NO	92.1	0.0033337
8	13C4-PFHpA	367.2 > 321.8	1.55e4	1.10	1.000	3.90	3.91	11.9	NO	95.6	0.0020622
9	1802-PFHxS	403 > 102.6	6.24e3	0.434	1.000	4.02	4.02	12.1	NO	97.2	0.0181792
10	13C2-PFOA	414.9 > 369.7	3.30e4	4.61	1.000	4.30	4.30	12.3	NO	98.2	0.0024228
11	13C5-PFNA	468.2 > 422.9	6.50e3	0.867	1.000	4.63	4.63	12.3	NO	98.7	0.0031015
12	13C8-PFOS	507.0 > 79.9	5.14e3	0.956	1.000	4.69	4.69	13.1	NO	104.4	0.0094134
13	13C5-PFHxA	318>272.9	2.89e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0013697
14	13C3-PFHxS	401.9 > 79.9	1.48e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0001720
15	13C8-PFOA	421.3 > 376	7.29e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0034967
16	13C9-PFNA	472.2 > 426.9	7.60e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0186538
17	13C4-PFOS	503.0 > 79.9	5.13e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0016596
18	Total PFBS	299 > 79.7	8.43e4		1.000	3.11		51.1	NO		
19	Total PFHxS	398.9 > 79.8	5.73e4		1.000	4.09		65.2	NO		
20	Total PFOA	413 > 368.7	1.10e5		1.000	4.35		52.3	NO		
21	Total PFOS	499 > 79.9	1.33e4		1.000	4.67		62.0	NO		0.1281301

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Last Altered: Monday, March 06, 2017 08:36:20 Pacific Standard Time
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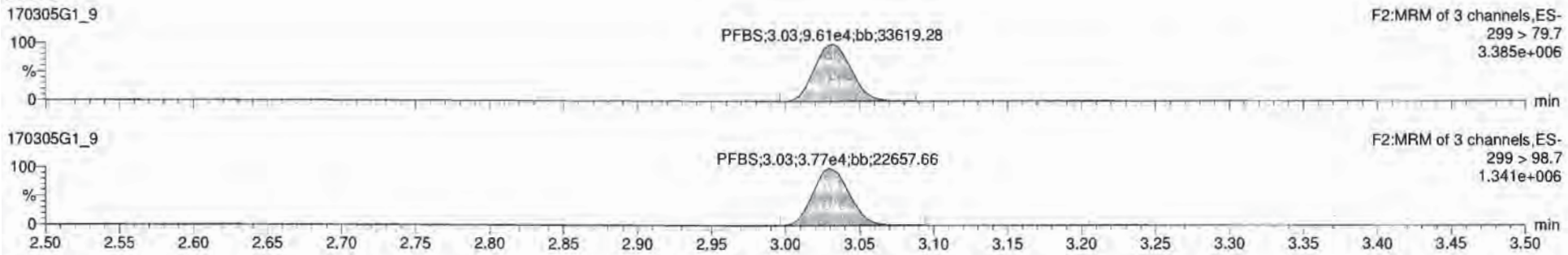
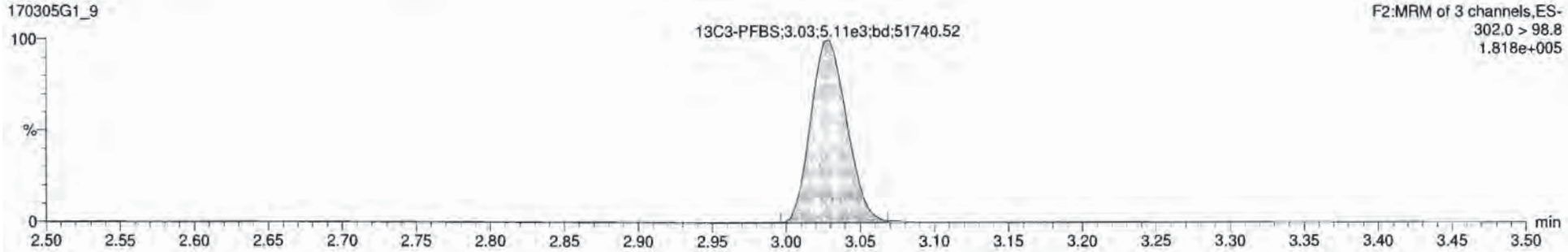
ID: ST170305G1-8 PFC CS5 17C0508, Description: PFC CS5 17C0508 A, Name: 170305G1_9, Date: 05-Mar-2017, Time: 14:14:34, Instrument: , Lab: , User:

PFBS



13C3-PFBS



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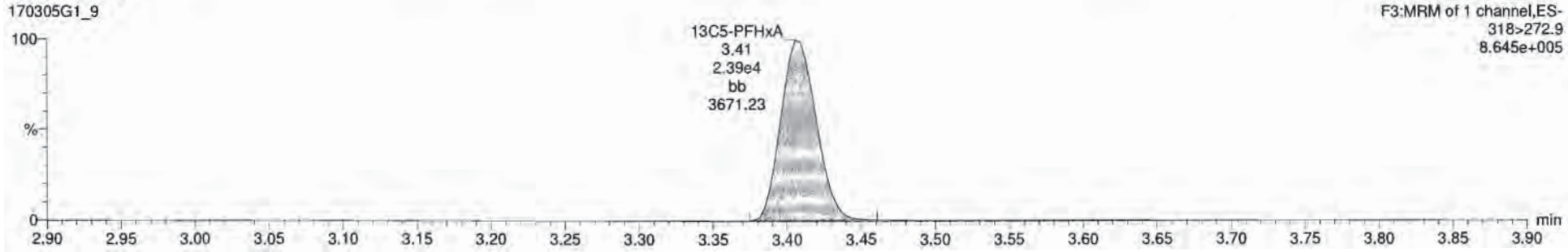

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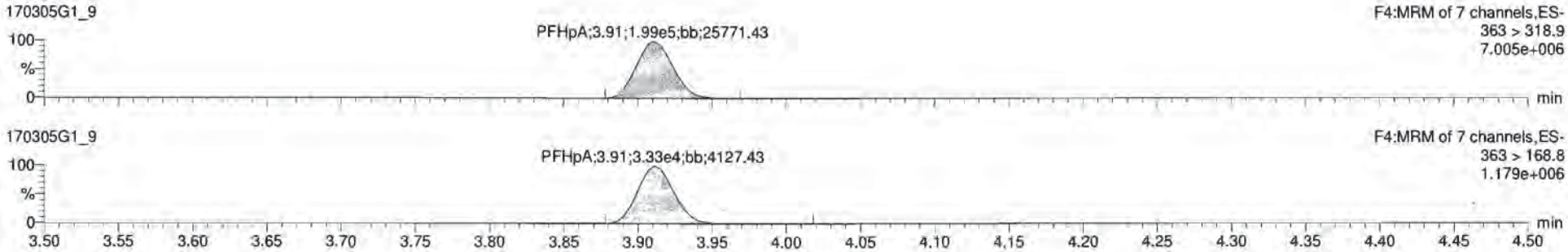
PFHpA



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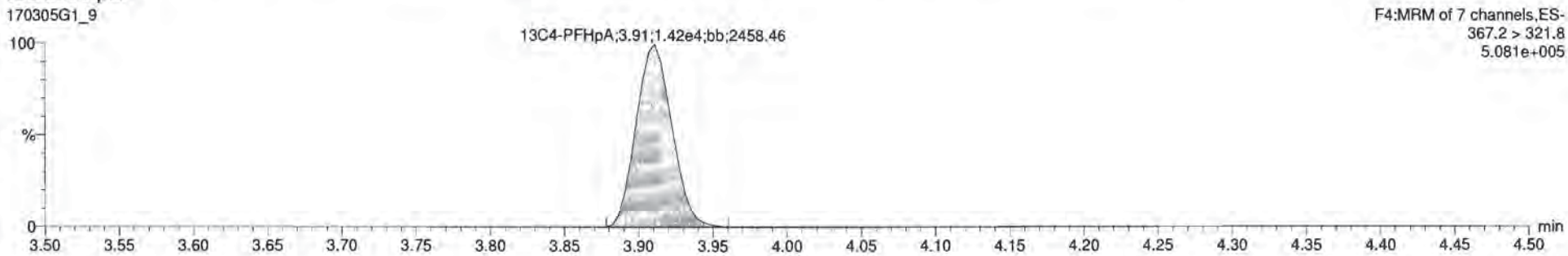

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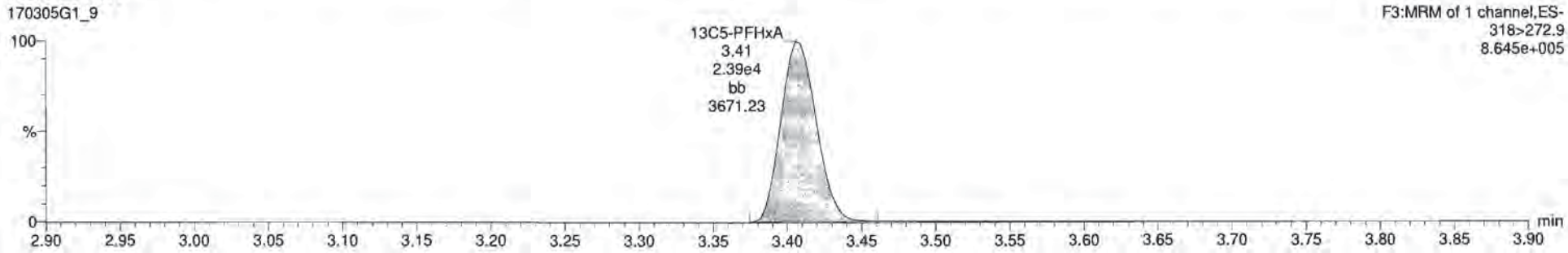

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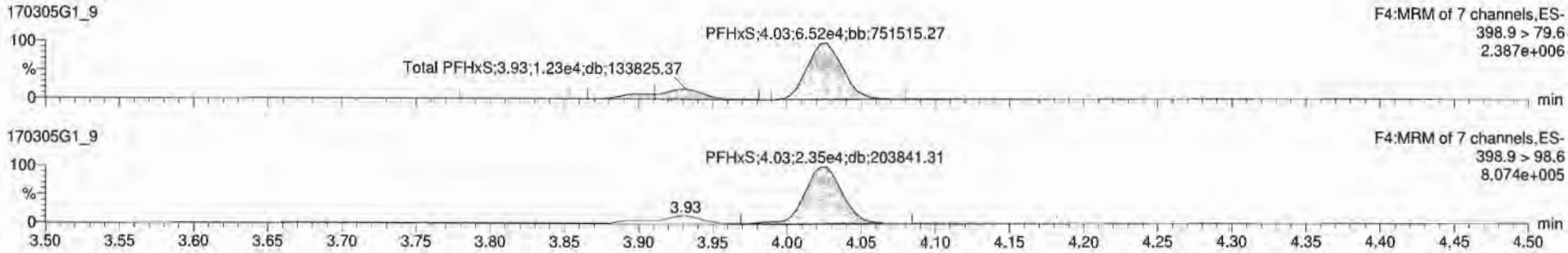
Total PFHxS



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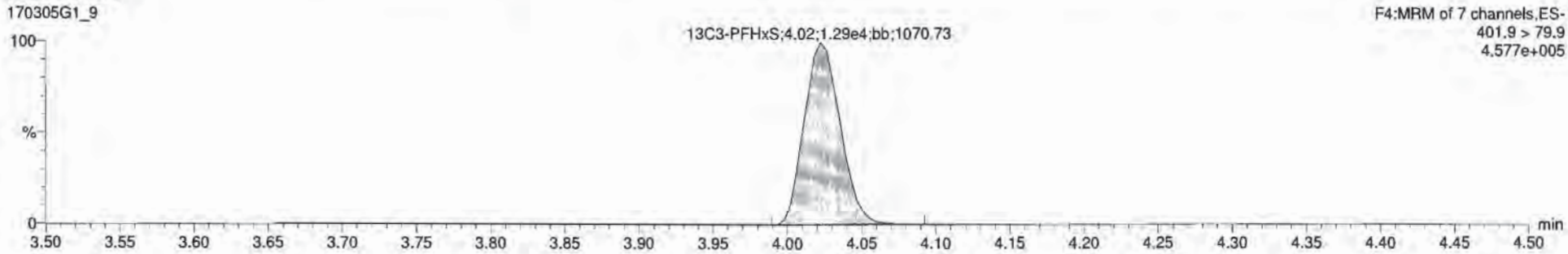
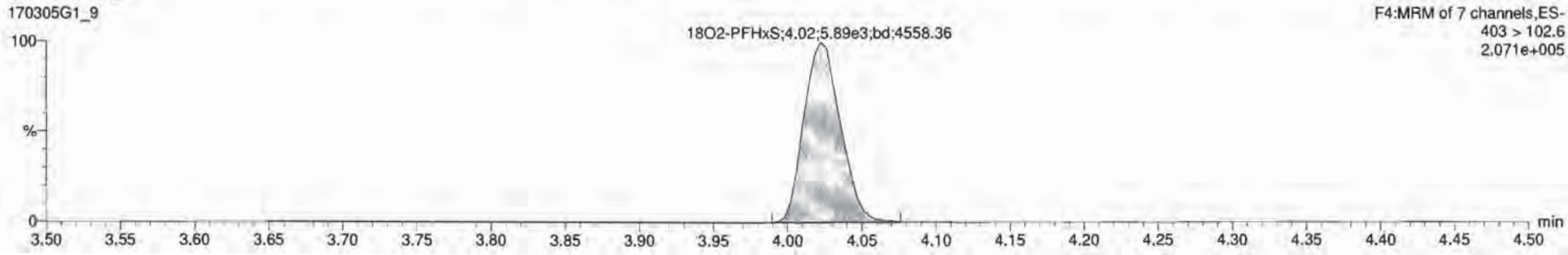
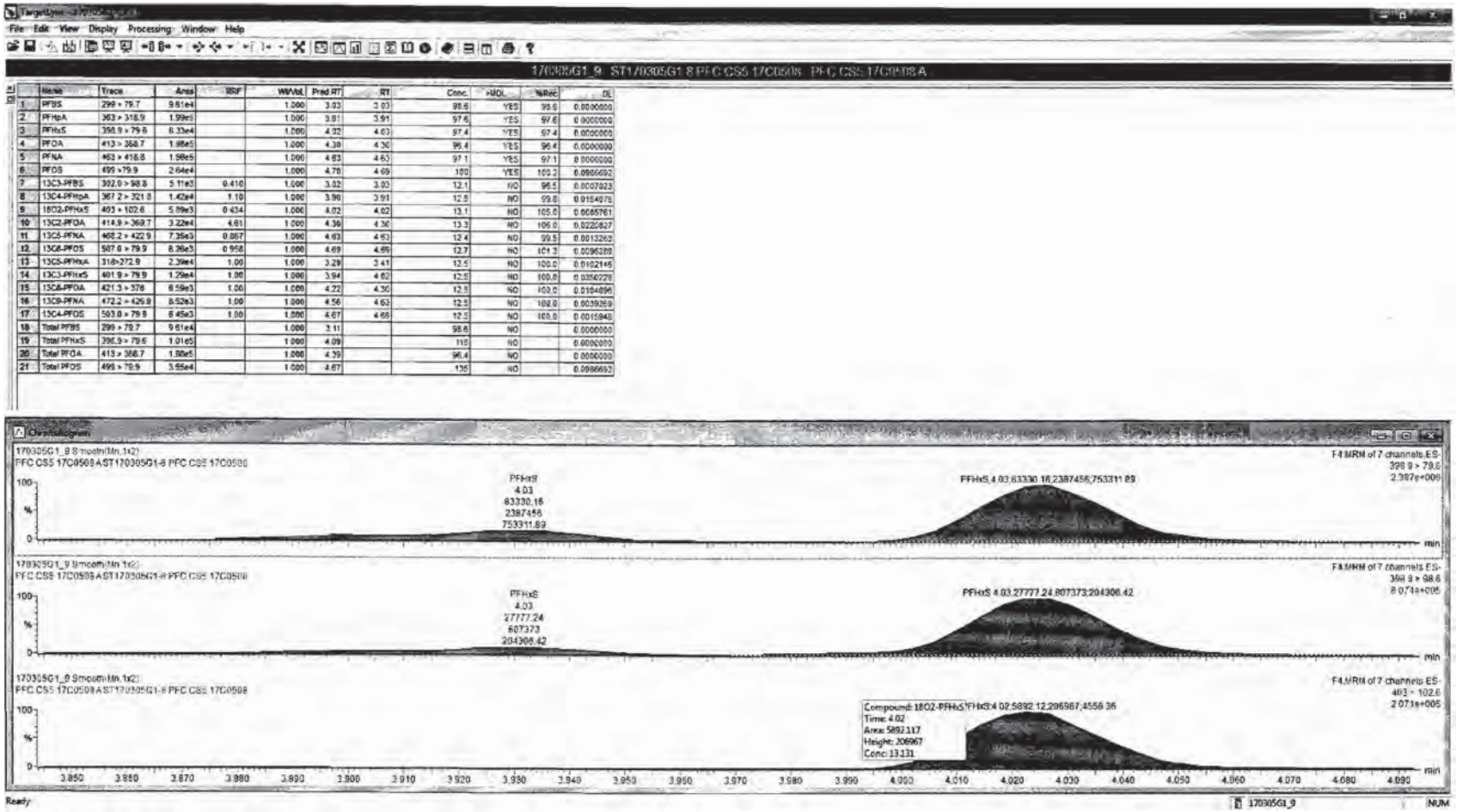


18O2-PFHxS





	Name	Trace	Area	RSF	WtVal	Pred RT	RT	Conc.	>IDL	%Rec	DL
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2	PFHpA	363 > 318.9	1.99e5		1.000	3.91	3.91	97.6	YES	97.6	0.0000000
3	PFHxS	398.9 > 79.8	8.33e4		1.000	4.02	4.03	97.4	YES	97.4	0.0000000
4	PFOA	413 > 368.7	1.98e5		1.000	4.39	4.30	96.4	YES	96.4	0.0000000
5	PFNA	463 > 418.8	1.98e5		1.000	4.83	4.63	97.1	YES	97.1	0.0000000
6	PFOS	499 > 79.9	2.64e4		1.000	4.70	4.69	100	YES	100.2	0.0986692
7	13C3-PFBS	302.0 > 98.8	5.11e3	0.410	1.000	3.02	3.03	12.1	NO	96.5	0.0007923
8	13C4-PFHpA	367.2 > 321.8	1.42e4	1.10	1.000	3.90	3.91	12.5	NO	99.8	0.0154076
9	18O2-PFHxS	403 > 102.6	5.89e3	0.434	1.000	4.02	4.02	13.1	NO	105.0	0.0065761
10	13C2-PFOA	414.9 > 369.7	3.22e4	4.61	1.000	4.39	4.30	13.3	NO	106.0	0.0220827
11	13C5-PFNA	468.2 > 422.9	7.35e3	0.867	1.000	4.83	4.63	12.4	NO	99.5	0.0013263
12	13C8-PFOS	507.0 > 79.9	8.26e3	0.958	1.000	4.69	4.69	12.7	NO	101.3	0.0096289
13	13C5-PFHxA	318>272.9	2.39e4	1.00	1.000	3.29	3.41	12.5	NO	100.0	0.0102146
14	13C3-PFHxS	401.9 > 79.9	1.29e4	1.00	1.000	3.94	4.02	12.5	NO	100.0	0.0350228
15	13C8-PFOA	421.3 > 376	8.59e3	1.00	1.000	4.22	4.30	12.5	NO	100.0	0.0104896
16	13C9-PFNA	472.2 > 426.9	8.52e3	1.00	1.000	4.56	4.63	12.5	NO	100.0	0.0039269
17	13C4-PFOS	503.0 > 79.9	8.45e3	1.00	1.000	4.67	4.69	12.5	NO	100.0	0.0015948
18	Total PFBS	299 > 79.7	9.61e4		1.000	3.11		98.6	NO		0.0000000
19	Total PFHxS	398.9 > 79.8	1.01e5		1.000	4.09		118	NO		0.0000000
20	Total PFOA	413 > 368.7	1.98e5		1.000	4.39		96.4	NO		0.0000000
21	Total PFOS	499 > 79.9	3.55e4		1.000	4.67		135	NO		0.0986692

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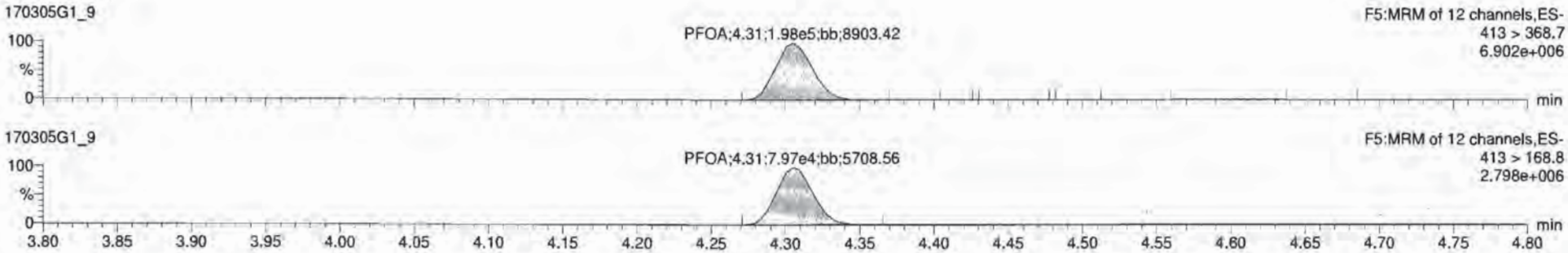
ID: ST170305G1-8 PFC CS5 17C0508, Description: PFC CS5 17C0508 A, Name: 170305G1_9, Date: 05-Mar-2017, Time: 14:14:34, Instrument: , Lab: , User:

Total PFOA



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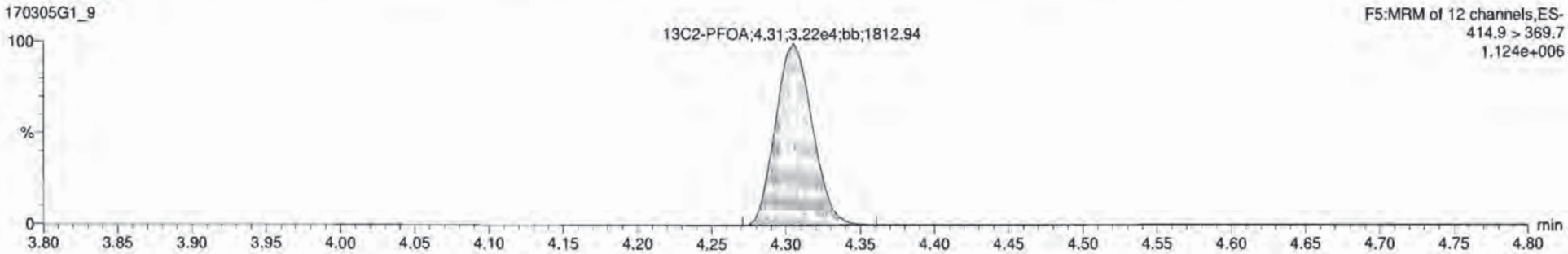

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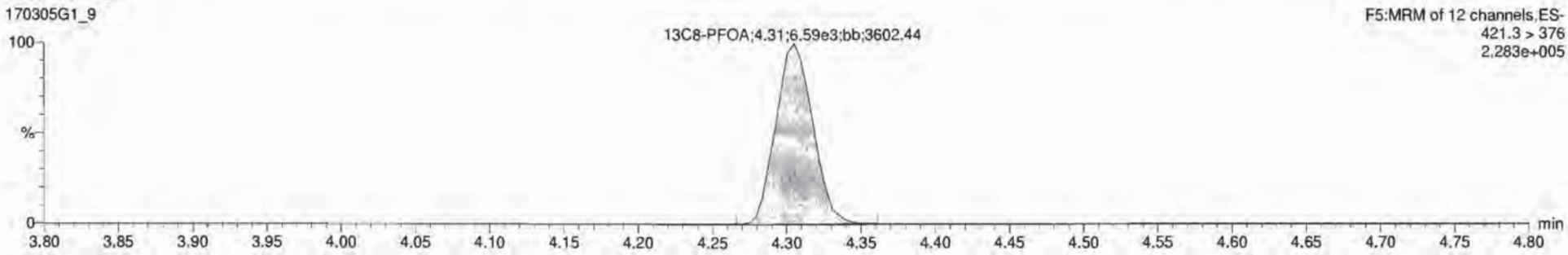

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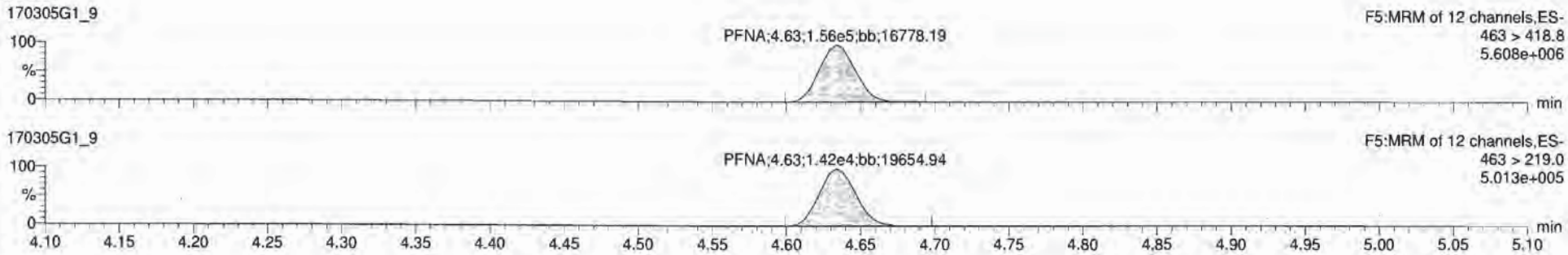

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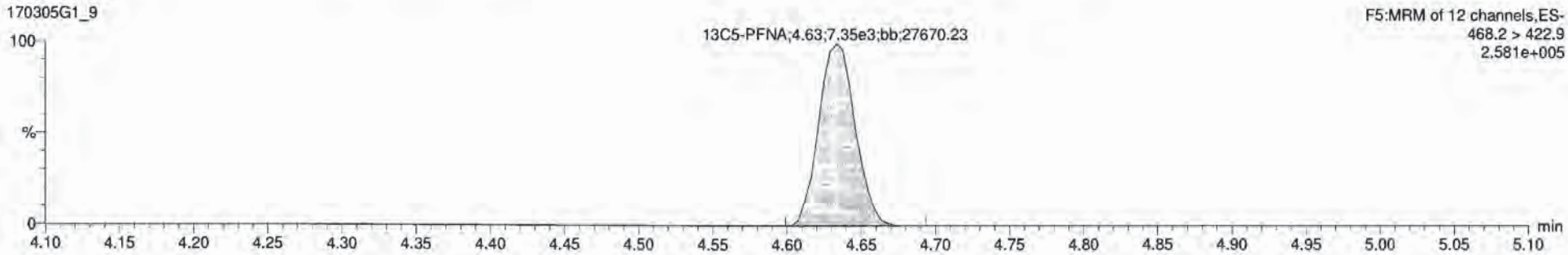

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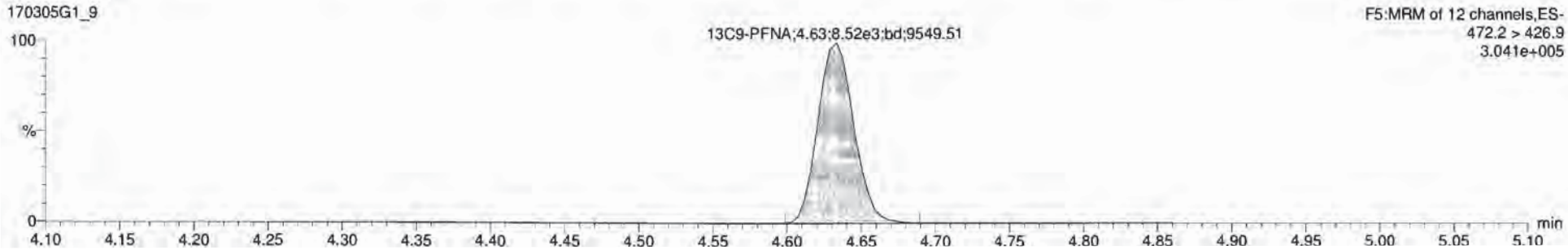

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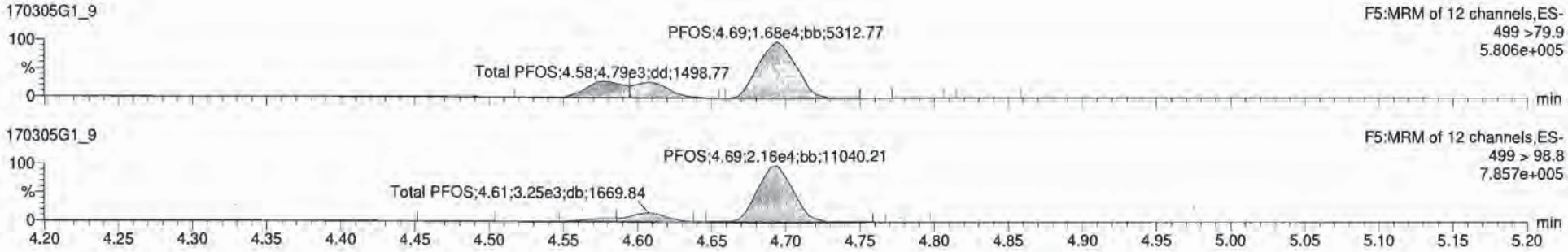
Total PFOS



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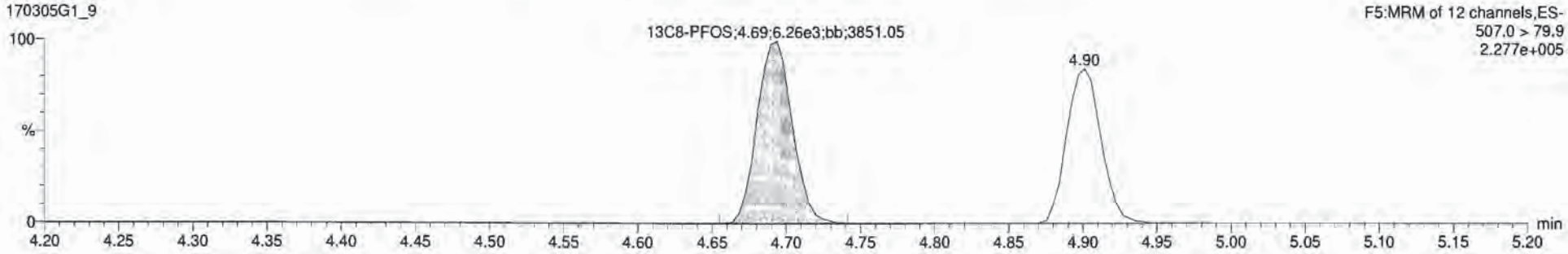

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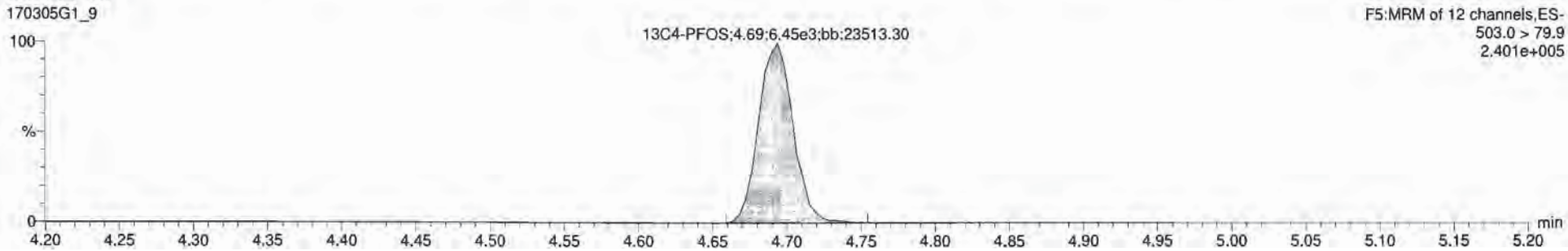

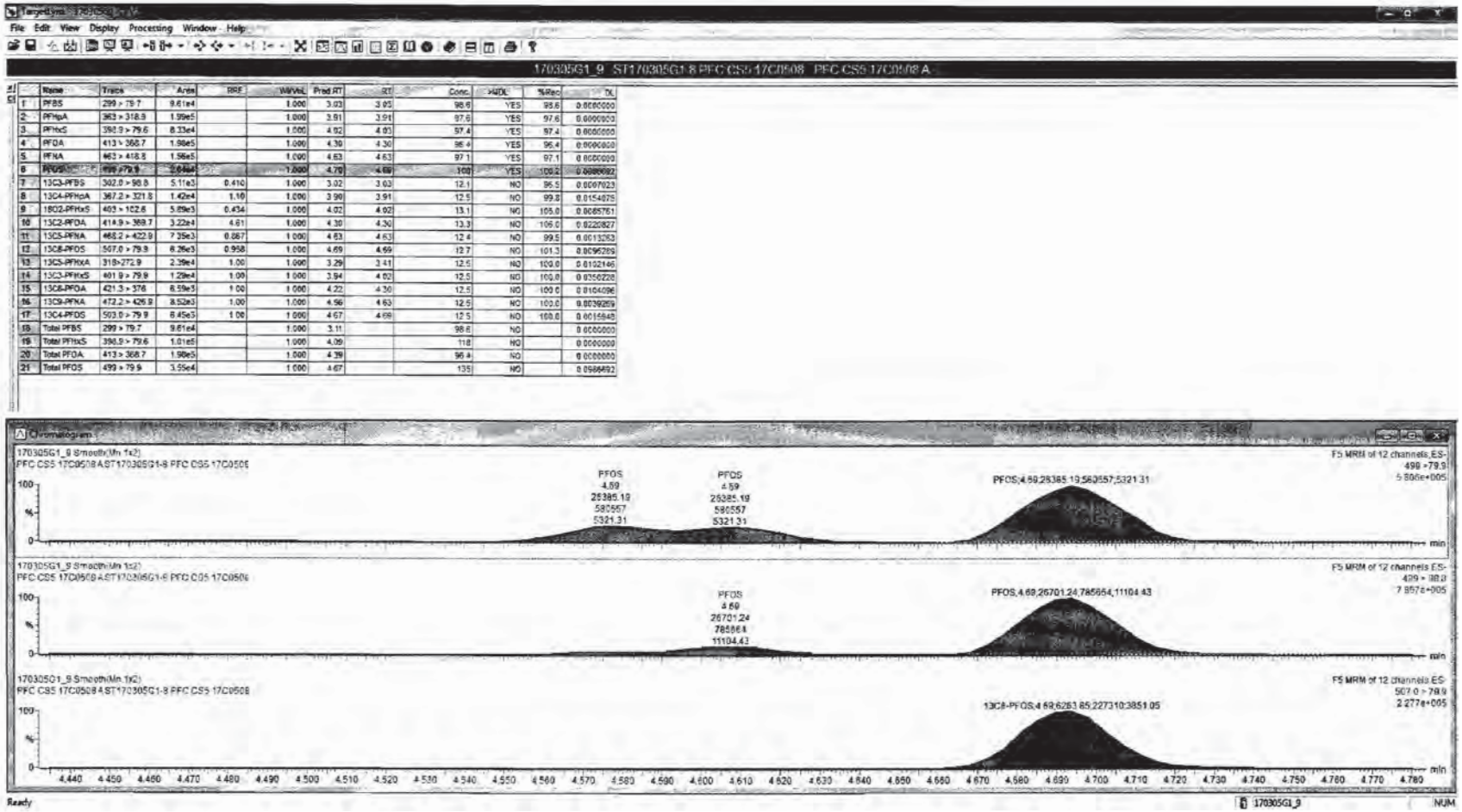
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170305G1_9 ST170305G1-8 PFC CS5 17C0508 PFC CS5 17C0508 A
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Quantify Sample Summary Report **MassLynx 4.1 SCN815**
Vista Analytical Laboratory Q1

Dataset: U:\G1.PRO\Results\2017\170305G1\170305G1-11.qld

Last Altered: Monday, March 06, 2017 09:12:14 Pacific Standard Time
Printed: Monday, March 06, 2017 09:13:06 Pacific Standard Time

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1	1	PFBS	299 > 79.7	1.09e4	6.54e3		1.000	3.03	8.70	87.0
2	2	PFHpA	363 > 318.9	2.52e4	1.73e4		1.000	3.91	10.0	100.4
3	3	PFHxS	398.9 > 79.6	8.94e3	6.56e3		1.000	4.03	9.33	93.3
4	4	PFOA	413 > 368.7	2.26e4	3.20e4		1.000	4.31	10.9	108.7
5	5	PFNA	463 > 418.8	1.28e4	5.80e3		1.000	4.63	10.0	100.4
6	6	PFOS	499 >79.9	2.01e3	4.01e3		1.000	4.69	11.7	117.2
7	7	13C3-PFBS	302.0 > 98.8	6.54e3	1.49e4	0.410	1.000	3.03	13.4	106.8
8	8	13C4-PFHpA	367.2 > 321.8	1.73e4	1.49e4	1.098	1.000	3.91	13.2	105.7
9	9	18O2-PFHxS	403 > 102.6	6.56e3	1.49e4	0.434	1.000	4.02	12.6	101.2
10	10	13C2-PFOA	414.9 > 369.7	3.20e4	7.38e3	4.608	1.000	4.31	11.8	94.1
11	11	13C5-PFNA	468.2 > 422.9	5.80e3	6.69e3	0.867	1.000	4.63	12.5	99.9
12	12	13C8-PFOS	507.0 > 79.9	4.01e3	4.48e3	0.958	1.000	4.69	11.7	93.4
13	13	13C5-PFHxA	318>272.9	2.89e4	2.89e4	1.000	1.000	3.41	12.5	100.0
14	14	13C3-PFHxS	401.9 > 79.9	1.49e4	1.49e4	1.000	1.000	4.03	12.5	100.0
15	15	13C8-PFOA	421.3 > 376	7.38e3	7.38e3	1.000	1.000	4.31	12.5	100.0
16	16	13C9-PFNA	472.2 > 426.9	6.69e3	6.69e3	1.000	1.000	4.63	12.5	100.0
17	17	13C4-PFOS	503.0 > 79.9	4.48e3	4.48e3	1.000	1.000	4.69	12.5	100.0

75-125

ES 3/6/17

✓AC 3/6/17

Vista Analytical Laboratory Q1

Dataset: Untitled

Last Altered: Monday, March 06, 2017 09:10:12 Pacific Standard Time
Printed: Monday, March 06, 2017 09:10:17 Pacific Standard Time

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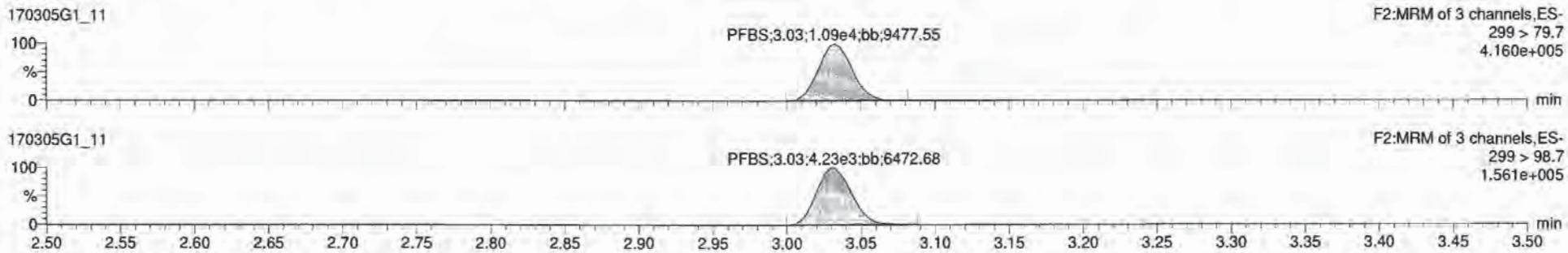
PFBS



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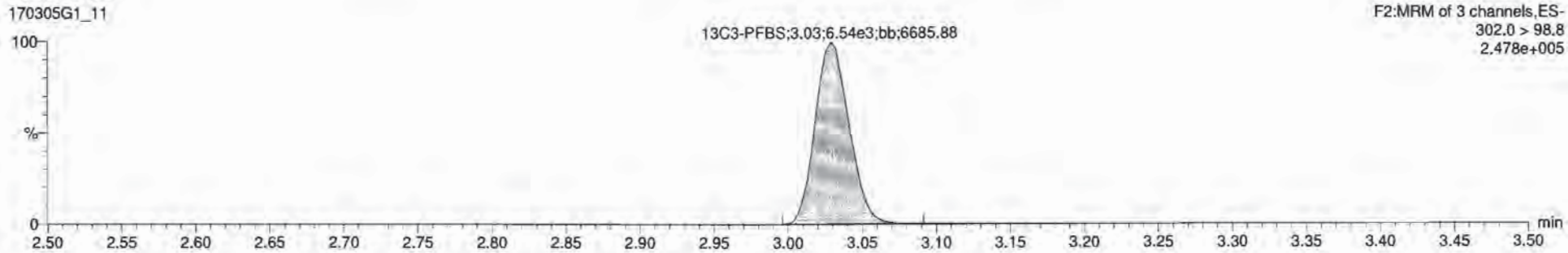

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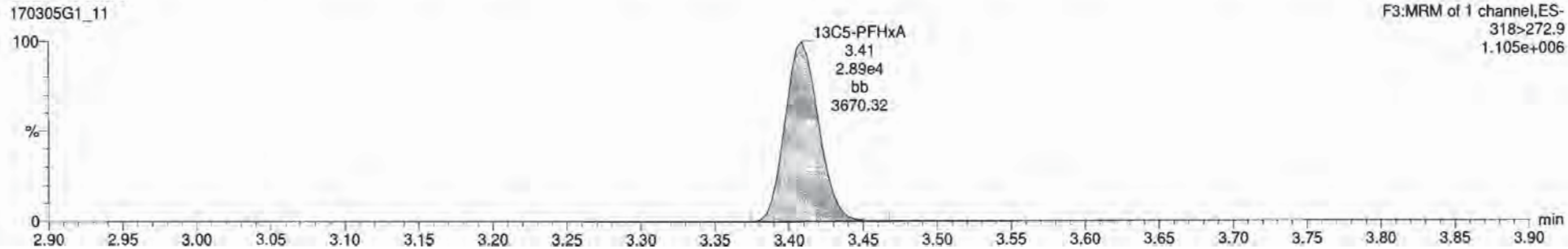

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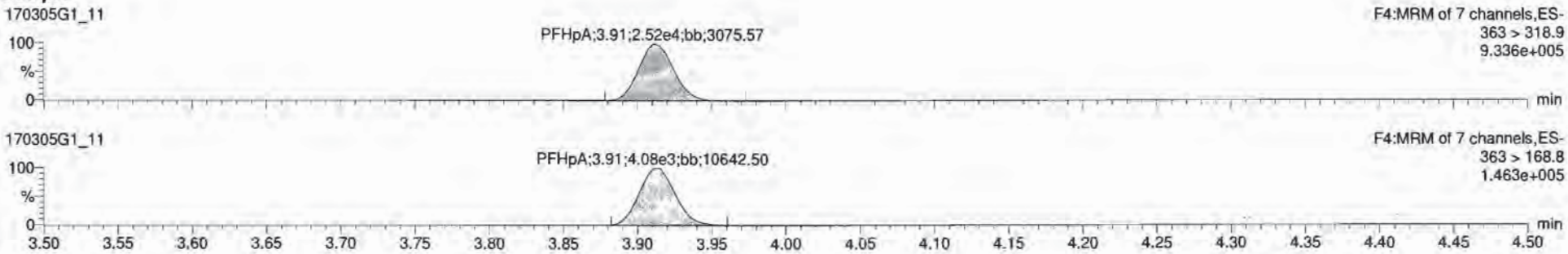

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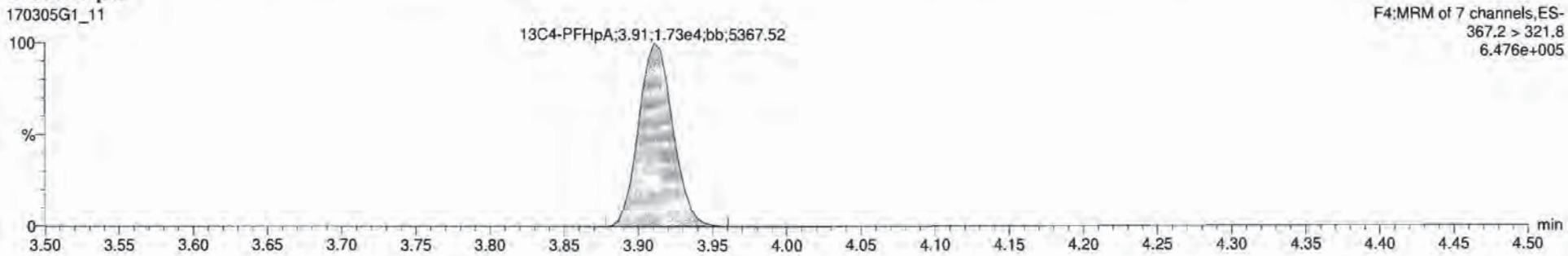

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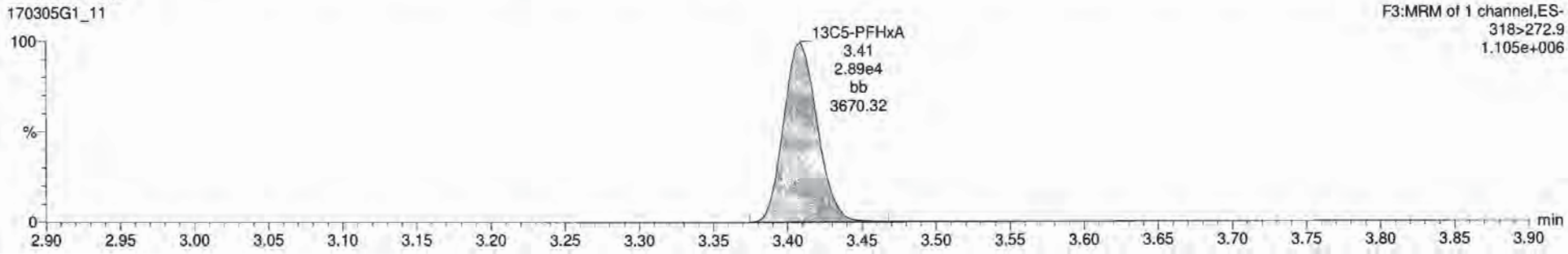

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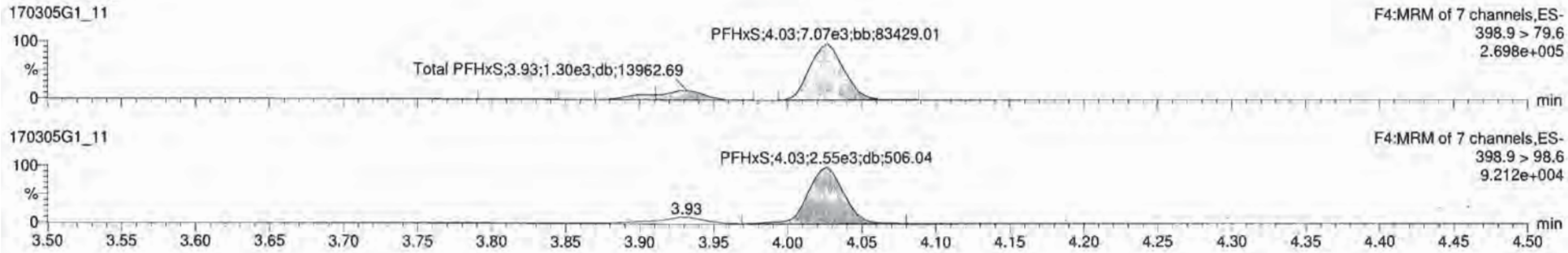

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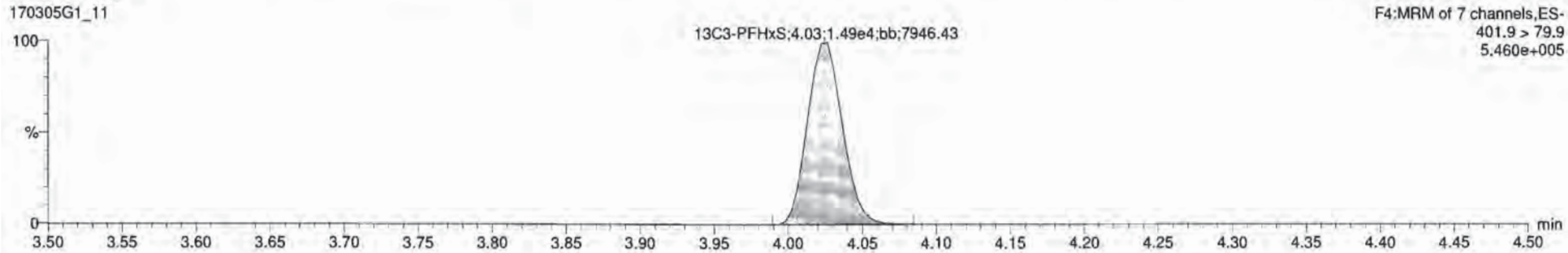

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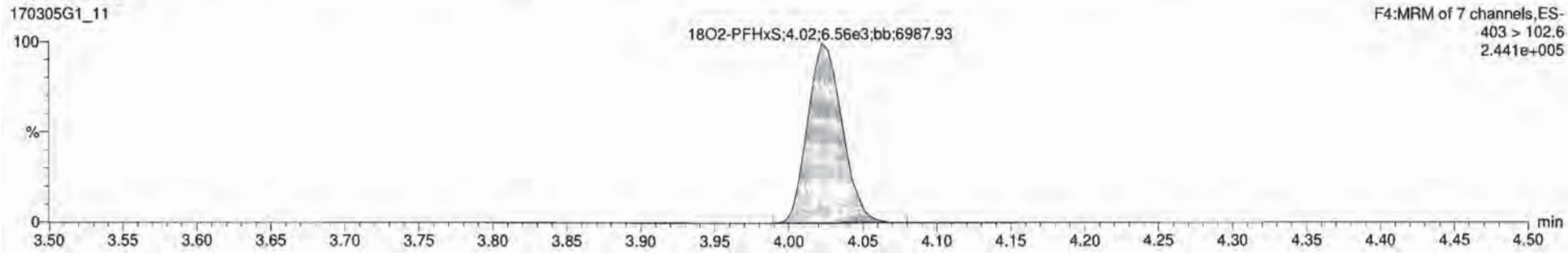

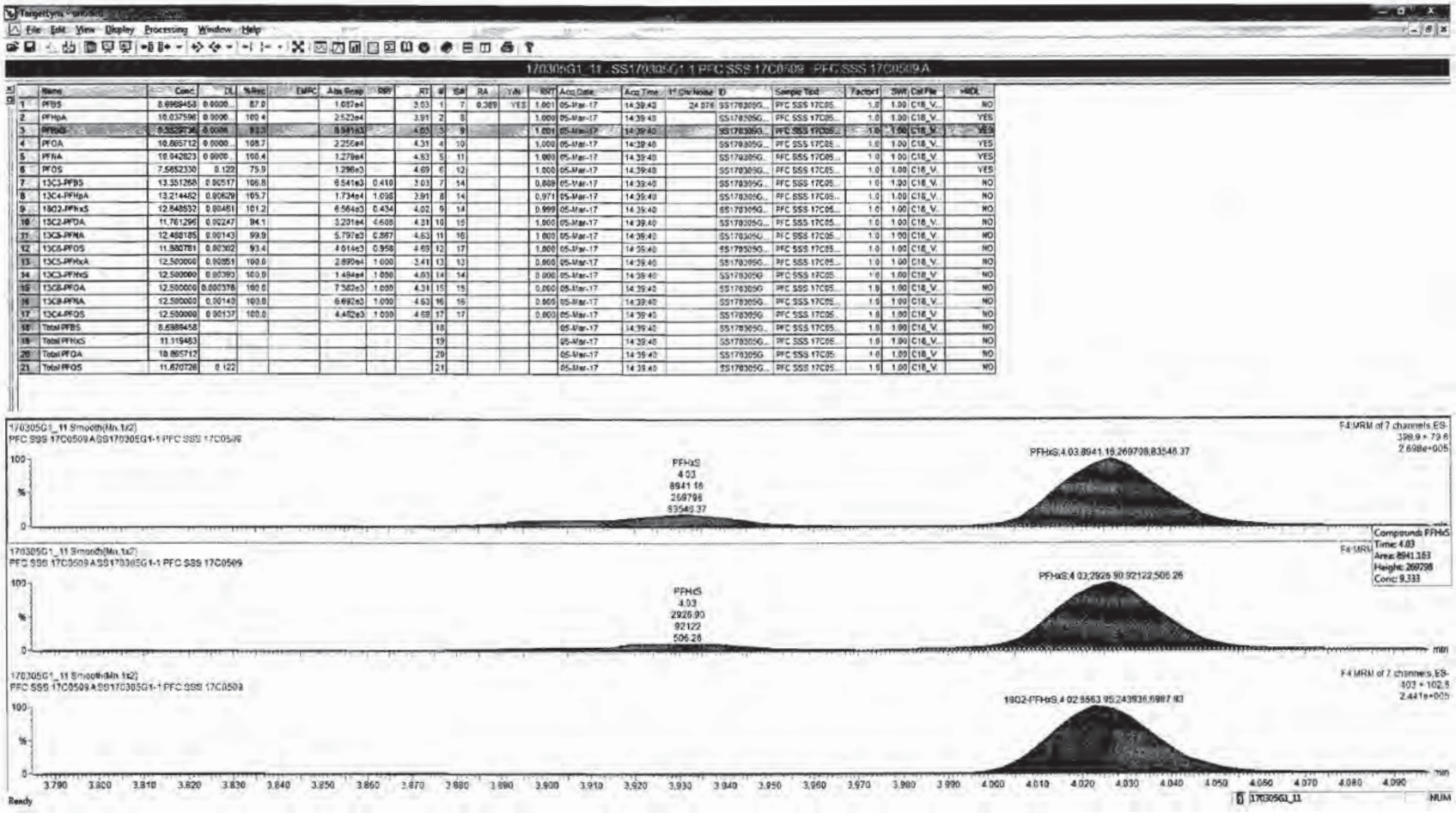
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Vista Analytical Laboratory Q1

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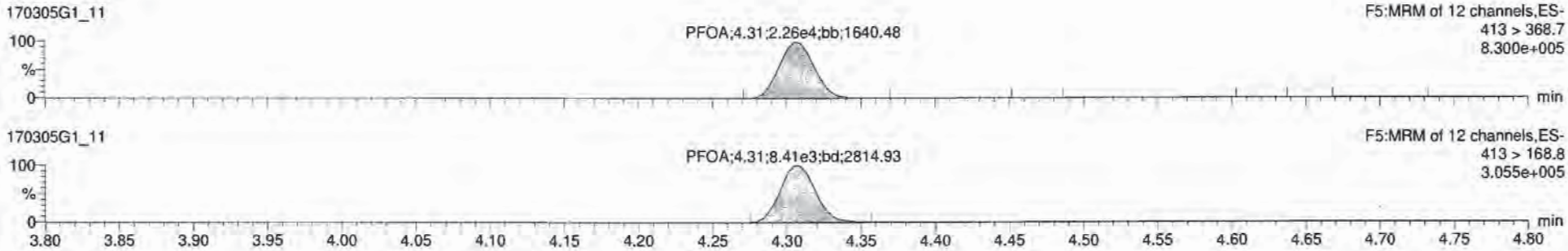

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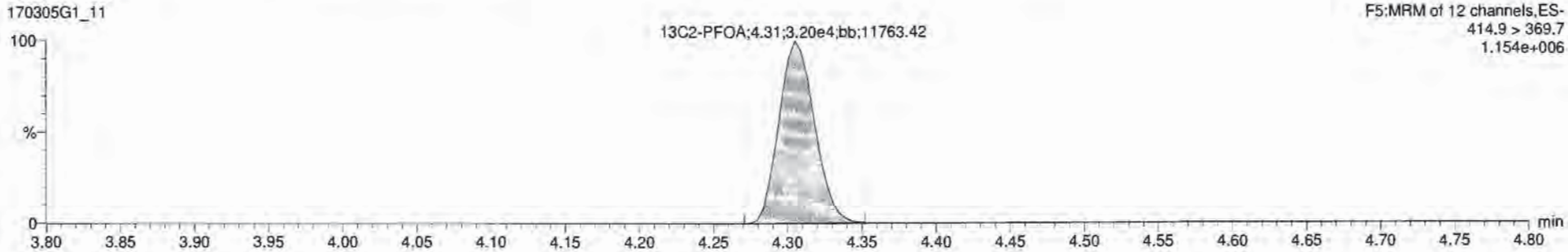

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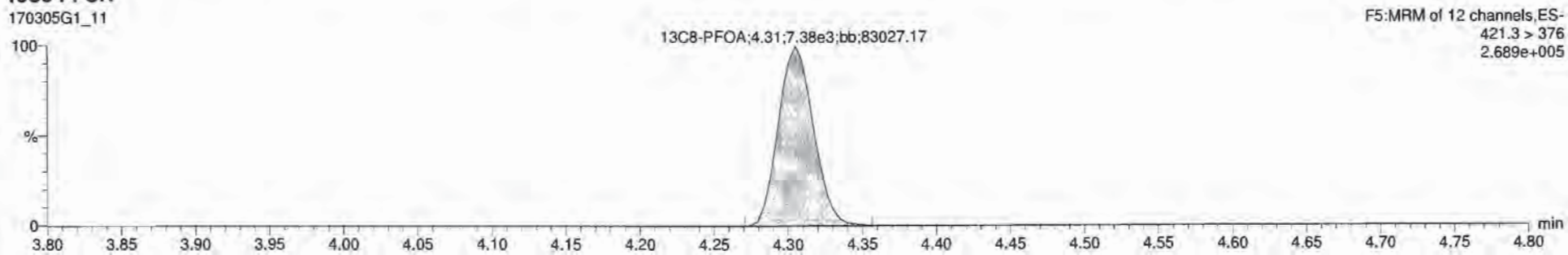

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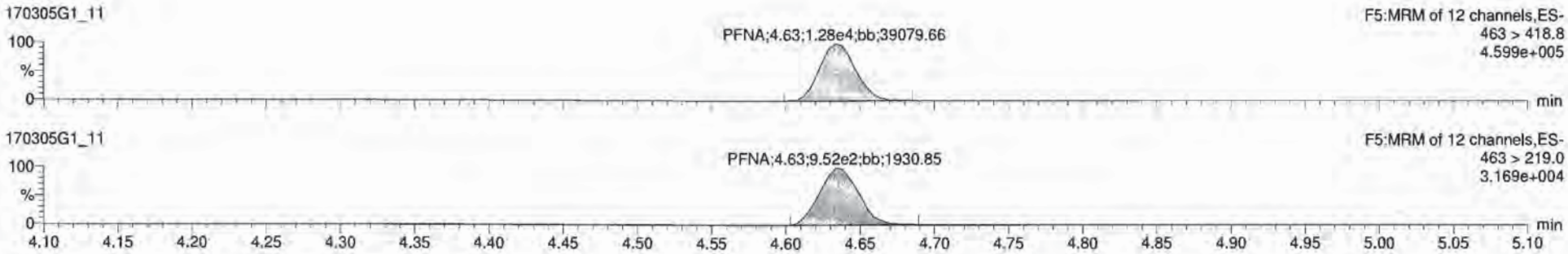

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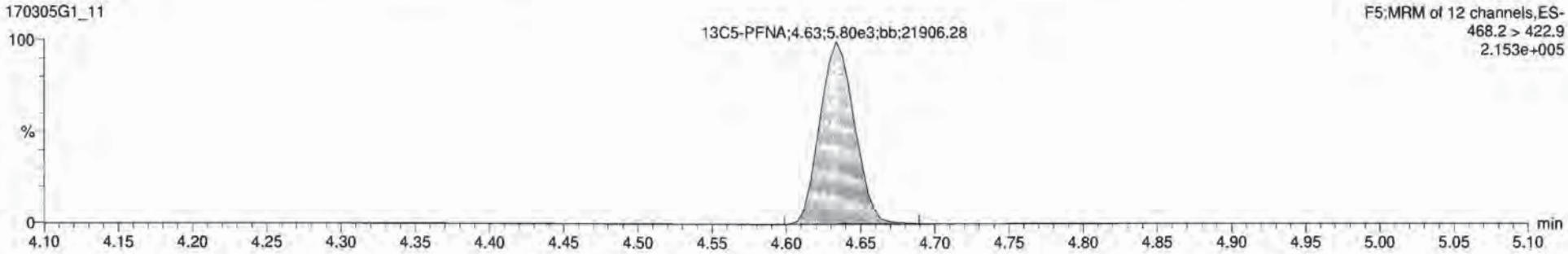

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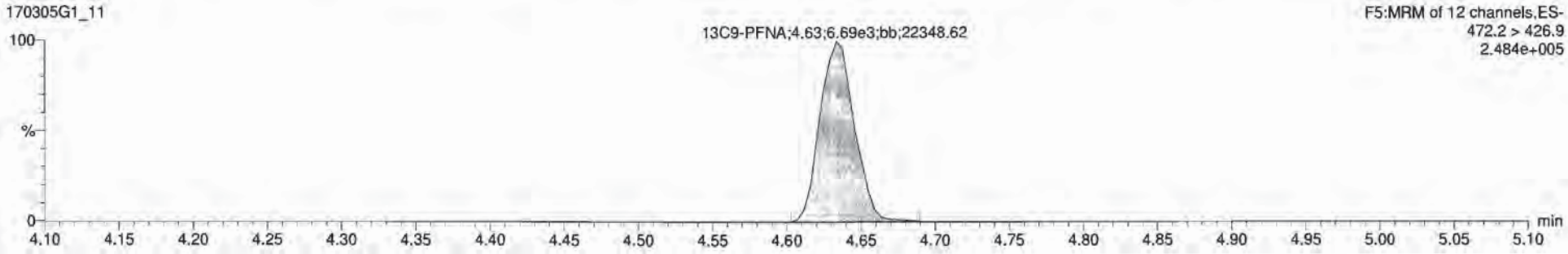

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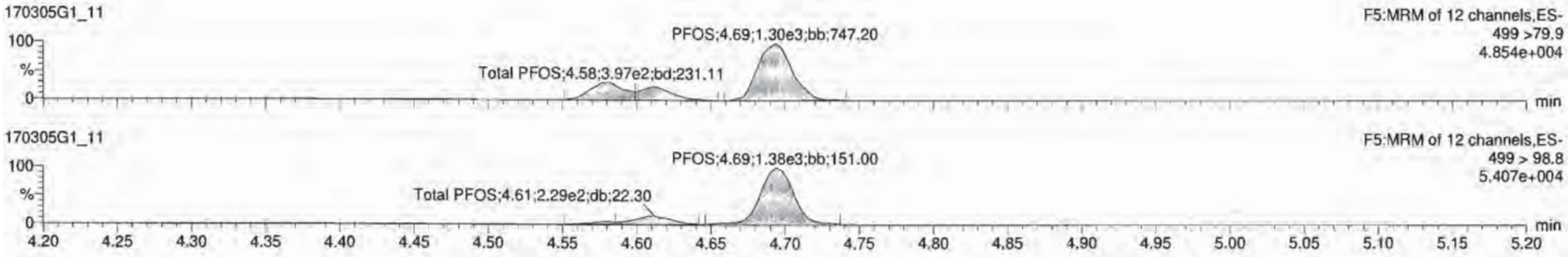

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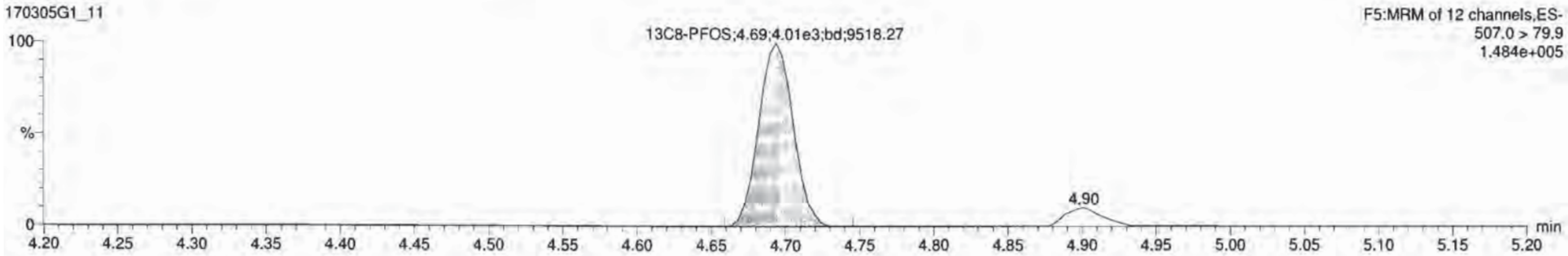

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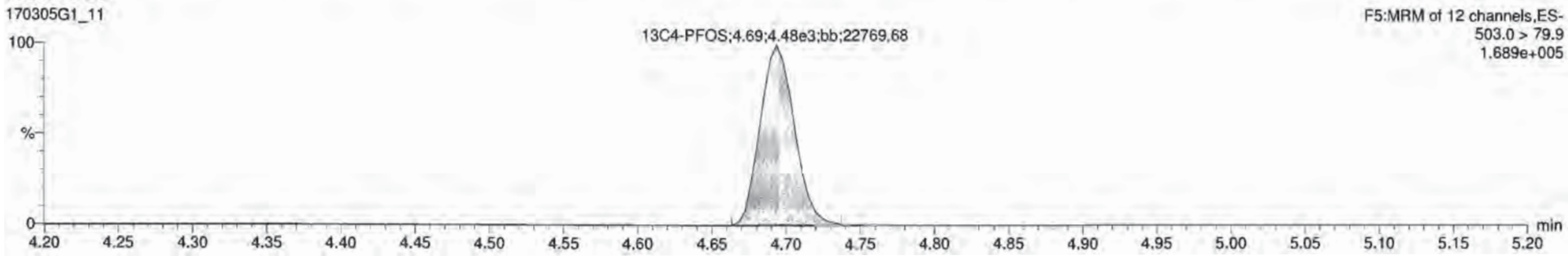

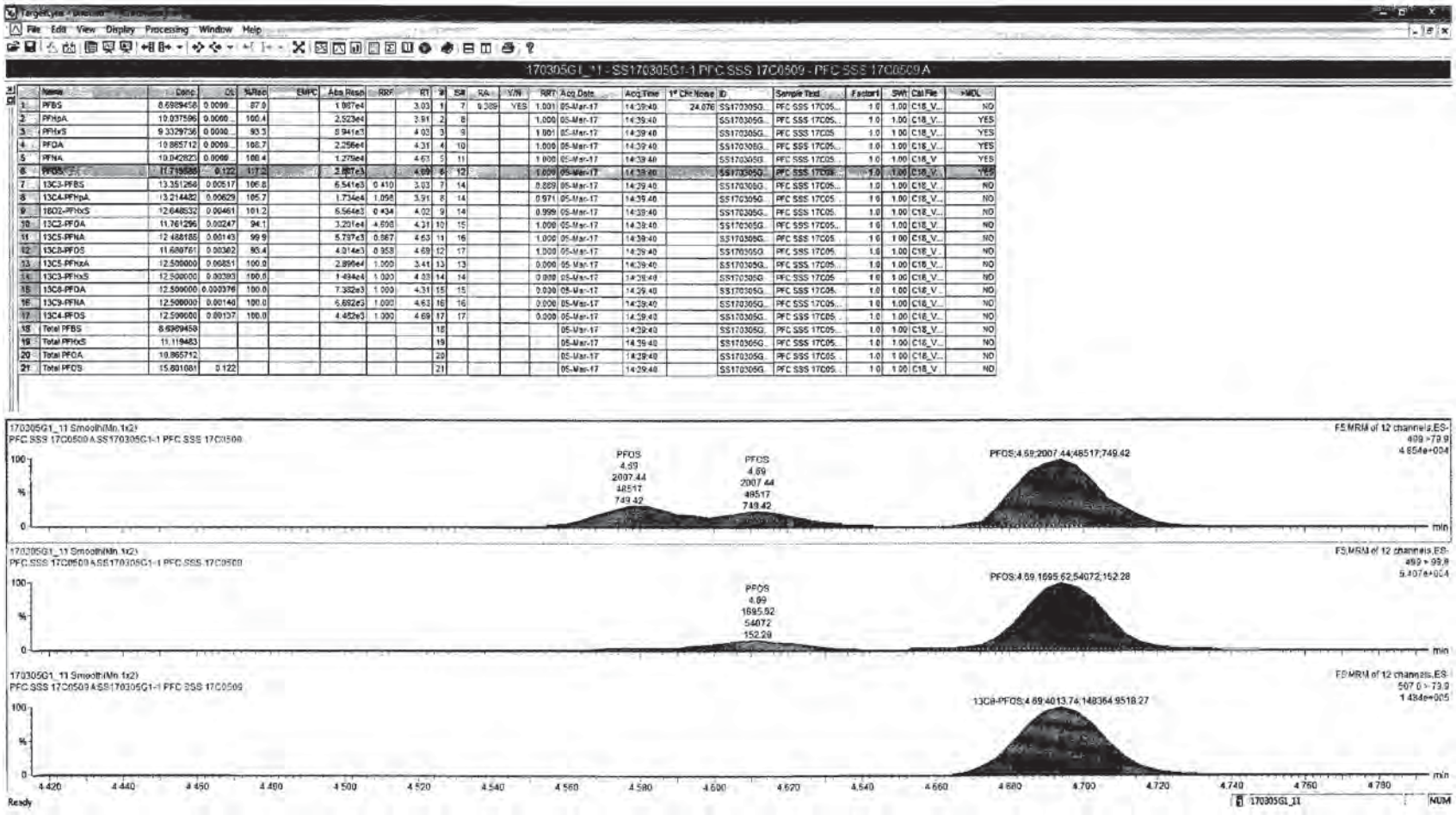
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N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W	4	02/28/2017 14:00	03/02/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/03/2017 08:25	03/03/2017	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/03/2017 08:25	03/03/2017	

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Sample_Name	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
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		20170303	08:25:00	20170305	16:32:00	1700280-01	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		3.88	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		20170303	08:25:00	20170305	16:32:00	1700280-01	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		1.94	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		20170303	08:25:00	20170305	16:32:00	1700280-01	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.872	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		20170303	08:25:00	20170305	16:32:00	1700280-01	1	-999			13C3-PFBS	13C3-PFBS		92.1	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		20170303	08:25:00	20170305	16:32:00	1700280-01	1	-999			13C2-PFOA	13C2-PFOA		85.2	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		20170303	08:25:00	20170305	16:32:00	1700280-01	1	-999			13C8-PFOS	13C8-PFOS		95.0	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		20170303	08:25:00	20170305	16:45:00	1700280-02	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		3.91	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		20170303	08:25:00	20170305	16:45:00	1700280-02	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		1.95	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		20170303	08:25:00	20170305	16:45:00	1700280-02	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.914	NG_L	J
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		20170303	08:25:00	20170305	16:45:00	1700280-02	1	-999			13C3-PFBS	13C3-PFBS		86.7	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		20170303	08:25:00	20170305	16:45:00	1700280-02	1	-999			13C2-PFOA	13C2-PFOA		83.5	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		20170303	08:25:00	20170305	16:45:00	1700280-02	1	-999			13C8-PFOS	13C8-PFOS		101	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		20170303	08:25:00	20170305	16:57:00	1700280-03	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.35	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		20170303	08:25:00	20170305	16:57:00	1700280-03	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		2.17	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		20170303	08:25:00	20170305	16:57:00	1700280-03	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.978	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		20170303	08:25:00	20170305	16:57:00	1700280-03	1	-999			13C3-PFBS	13C3-PFBS		88.9	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		20170303	08:25:00	20170305	16:57:00	1700280-03	1	-999			13C2-PFOA	13C2-PFOA		86.3	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		20170303	08:25:00	20170305	16:57:00	1700280-03	1	-999			13C8-PFOS	13C8-PFOS		88.0	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		20170303	08:25:00	20170305	17:10:00	1700280-04	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.03	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		20170303	08:25:00	20170305	17:10:00	1700280-04	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		2.02	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		20170303	08:25:00	20170305	17:10:00	1700280-04	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.907	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		20170303	08:25:00	20170305	17:10:00	1700280-04	1	-999			13C3-PFBS	13C3-PFBS		92.3	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		20170303	08:25:00	20170305	17:10:00	1700280-04	1	-999			13C2-PFOA	13C2-PFOA		95.1	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		20170303	08:25:00	20170305	17:10:00	1700280-04	1	-999			13C8-PFOS	13C8-PFOS		107	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		20170303	08:25:00	20170305	17:22:00	1700280-05	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		3.94	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		20170303	08:25:00	20170305	17:22:00	1700280-05	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		1.97	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		20170303	08:25:00	20170305	17:22:00	1700280-05	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.886	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		20170303	08:25:00	20170305	17:22:00	1700280-05	1	-999			13C3-PFBS	13C3-PFBS		90.0	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		20170303	08:25:00	20170305	17:22:00	1700280-05	1	-999			13C2-PFOA	13C2-PFOA		93.2	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		20170303	08:25:00	20170305	17:22:00	1700280-05	1	-999			13C8-PFOS	13C8-PFOS		110	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		20170303	08:25:00	20170305	17:35:00	1700280-06	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.55	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		20170303	08:25:00	20170305	17:35:00	1700280-06	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		2.27	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		20170303	08:25:00	20170305	17:35:00	1700280-06	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		1.16	NG_L	J
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		20170303	08:25:00	20170305	17:35:00	1700280-06	1	-999			13C3-PFBS	13C3-PFBS		103	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		20170303	08:25:00	20170305	17:35:00	1700280-06	1	-999			13C2-PFOA	13C2-PFOA		93.8	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		20170303	08:25:00	20170305	17:35:00	1700280-06	1	-999			13C8-PFOS	13C8-PFOS		85.8	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		20170303	08:25:00	20170305	17:47:00	1700280-07	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.00	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		20170303	08:25:00	20170305	17:47:00	1700280-07	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		2.00	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		20170303	08:25:00	20170305	17:47:00	1700280-07	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.900	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		20170303	08:25:00	20170305	17:47:00	1700280-07	1	-999			13C3-PFBS	13C3-PFBS		98.2	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		20170303	08:25:00	20170305	17:47:00	1700280-07	1	-999			13C2-PFOA	13C2-PFOA		93.2	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		20170303	08:25:00	20170305	17:47:00	1700280-07	1	-999			13C8-PFOS	13C8-PFOS		82.8	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		20170303	08:25:00	20170305	15:42:00	B7C0012-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		4.00	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		20170303	08:25:00	20170305	15:42:00	B7C0012-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		2.00	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		20170303	08:25:00	20170305	15:42:00	B7C0012-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.900	NG_L	U
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		20170303	08:25:00	20170305	15:42:00	B7C0012-BLK1	1	-999			13C3-PFBS	13C3-PFBS		104	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		20170303	08:25:00	20170305	15:42:00	B7C0012-BLK1	1	-999			13C2-PFOA	13C2-PFOA		87.6	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		20170303	08:25:00	20170305	15:42:00	B7C0012-BLK1	1	-999			13C8-PFOS	13C8-PFOS		88.7	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		20170303	08:25:00	20170305	15:04:00	B7C0012-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		89.8	NG_L	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		20170303	08:25:00	20170305	15:04:00	B7C0012-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		93.8	NG_L	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		20170303	08:25:00	20170305	15:04:00	B7C0012-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		81.1	NG_L	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		20170303	08:25:00	20170305	15:04:00	B7C0012-BS1	1	-999			13C3-PFBS	13C3-PFBS		105	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		20170303	08:25:00	20170305	15:04:00	B7C0012-BS1	1	-999			13C2-PFOA	13C2-PFOA		89.4	PCT_REC	
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		20170303	08:25:00	20170305	15:04:00	B7C0012-BS1	1	-999			13C8-PFOS	13C8-PFOS		92.3	PCT_REC	

Contract_ID	DO_CTO_ Number	Phase	Installation_ID	Sample_Name	Validator_ Qualifier	GC_ Column_ Type	Analysis_ Result_ Type	Result_ Narrative	QC_Control_ Limit_Code	QC_ Accuracy_ Upper	QC_ Accuracy_ Lower	Control_Limit_ Date	QC_ Narrative	MDL	Detection_ Limit	QSM_ Version	DL	LOD	LOQ	SDG	Analysis_ Batch	Validator_ Name	Val_Date
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		PR	TRG									5.0	1.74	3.88	7.76	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		PR	TRG									5.0	0.631	1.94	7.76	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		PR	TRG									5.0	0.782	0.872	7.76	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		PR	TRG									5.0	1.75	3.91	7.81	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		PR	TRG									5.0	0.635	1.95	7.81	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		PR	TRG									5.0	0.788	0.879	7.81	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW03D-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		PR	TRG									5.0	1.95	4.35	8.69	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		PR	TRG									5.0	0.708	2.17	8.69	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		PR	TRG									5.0	0.877	0.978	8.69	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB07-022717		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		PR	TRG									5.0	1.80	4.03	8.06	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		PR	TRG									5.0	0.656	2.02	8.06	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		PR	TRG									5.0	0.813	0.907	8.06	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW04M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		PR	TRG									5.0	1.76	3.94	7.88	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		PR	TRG									5.0	0.641	1.97	7.88	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		PR	TRG									5.0	0.795	0.886	7.88	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01M-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		PR	TRG									5.0	2.04	4.55	9.12	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		PR	TRG									5.0	0.742	2.27	9.12	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		PR	TRG									5.0	0.920	1.02	9.12	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-EB08-022817		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		PR	TRG									5.0	1.79	4.00	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		PR	TRG									5.0	0.651	2.00	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		PR	TRG									5.0	0.807	0.900	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-GW01D-0217		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		PR	TRG									5.0	1.79	4.00	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		PR	TRG									5.0	0.651	2.00	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		PR	TRG									5.0	0.807	0.900	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	Blank		PR	IS		SLSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		PR	TRG		LSA	130	60					5.0	1.79	4.00	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		PR	TRG		LSA	130	70					5.0	0.651	2.00	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		PR	TRG		LSA	130	70					5.0	0.807	0.900	8.00	1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		PR	IS		LSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		PR	IS		LSA	150	60					5.0				1700280	S7C0008		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS		PR	IS		LSA	150	60					5.0				1700280	S7C0008		

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
COUPEVILLE, WASHINGTON

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 1700280
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: Coupeville, CTO-0008, Washington
Date: March 24, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-GW03M-0217	1700280-01	Water
2	WI-CV-GW03D-0217	1700280-02	Water
3	WI-CV-EB07-022717	1700280-03	Water
4	WI-CV-GW04M-0217	1700280-04	Water
5	WI-CV-GW01M-0217	1700280-05	Water
6	WI-CV-EB08-022817	1700280-06	Water
7	WI-CV-GW01D-0217	1700280-07	Water

A full data validation was performed on the analytical data for five water samples and two aqueous equipment blank samples collected on February 27-28, 2017 by CH2M HILL at the Coupeville site in Washington. 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	*Method References*
PFCs	USEPA Method 537 Modified

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 Superfund Organic Methods Data Review," August 2014;
- 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
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate recovery (%R)
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Ongoing Precision and Recovery (OPR)
- 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

Initial Calibration

- All percent difference (%D) 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

- The field blank samples were free of contamination except for the following.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WI-CV-EB07-022717	None - ND	-	-	-
WI-CV-EB08-022817	Perfluorooctanesulfonate	1.16	-	None - All Associated ND
WI-CV-FB01-031217 (SDG 1700293)	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- A MS/MSD sample was not collected.

Ongoing Precision and Recovery (OPR)

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

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 Dated: 3/24/17

Nancy Weaver
Senior Chemist

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.

1

Sample ID: WI-CV-GW03M-0217

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-01	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.129 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	27-Feb-2017 13:15			Date Analyzed:	05-Mar-17 16:32	Column:	BEH C18
Location:	MW03M						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.74	3.88	7.76	
PFOA	ND	0.631	1.94	7.76	
PFOS	ND	0.782	0.872	7.76	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	92.1	60 - 150	
IS	13C2-PFOA	85.2	60 - 150	
IS	13C8-PFOS	95.0	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

NW 3/24/17

2

Sample ID: WI-CV-GW03D-0217 — **Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-02	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.128 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	27-Feb-2017 17:05			Date Analyzed:	05-Mar-17 16:45	Column:	BEH C18
Location:	MW03D						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.75	3.91	7.81	
PFOA	ND	0.635	1.95	7.81	
PFOS	0.914	0.788	0.879	7.81	J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	86.7	60 - 150	
IS	13C2-PFOA	83.5	60 - 150	
IS	13C8-PFOS	101	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

MW 3/24/17

Sample ID: WI-CV-EB07-022717

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-03	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.115 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	27-Feb-2017 17:10			Date Analyzed:	05-Mar-17 16:57	Column:	BEH C18
Location:	Eq. Blank						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.95	4.35	8.69	
PFOA	ND	0.708	2.17	8.69	
PFOS	ND	0.877	0.978	8.69	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	88.9	60 - 150	
IS	13C2-PFOA	86.3	60 - 150	
IS	13C8-PFOS	88.0	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

NW 3/24/17

4

Sample ID: WI-CV-GW04M-0217 — **Modified EPA Method 537**

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-04	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.124 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	28-Feb-2017 10:00			Date Analyzed:	05-Mar-17 17:10	Column:	BEH C18
Location:	MW04M						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.80	4.03	8.06	
PFOA	ND	0.656	2.02	8.06	
PFOS	ND	0.813	0.907	8.06	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	92.3	60 - 150	
IS	13C2-PFOA	95.1	60 - 150	
IS	13C8-PFOS	107	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

MW 3/24/17

5

Sample ID: WI-CV-GW01M-0217

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-05	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.127 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	28-Feb-2017 11:00			Date Analyzed:	05-Mar-17 17:22	Column:	BEH C18
Location:	MW01M						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.76	3.94	7.88	
PFOA	ND	0.641	1.97	7.88	
PFOS	ND	0.795	0.886	7.88	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	90.0	60 - 150	
IS	13C2-PFOA	93.2	60 - 150	
IS	13C8-PFOS	110	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

nw 3/24/17

6

Sample ID: WI-CV-EB08-022817

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-06	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.110 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	28-Feb-2017 12:30			Date Analyzed:	05-Mar-17 17:35	Column:	BEH C18
Location:	Eq. Blank						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	2.04	4.55	9.12	
PFOA	ND	0.742	2.27	9.12	
PFOS	1.16	0.920	1.02	9.12	J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	103	60 - 150	
IS	13C2-PFOA	93.8	60 - 150	
IS	13C8-PFOS	85.8	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

MW 3/24/17

Sample ID: WI-CV-GW01D-0217

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	CH2M Hill	Matrix:	Groundwater	Lab Sample:	1700280-07	Date Received:	02-Mar-2017 10:14
Project:	Navy Clean CTO 8 OLF Coupeville	Sample Size:	0.125 L	QC Batch:	B7C0012	Date Extracted:	03-Mar-2017 8:25
Date Collected:	28-Feb-2017 14:00			Date Analyzed:	05-Mar-17 17:47	Column:	BEH C18
Location:	MW01D						

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers
PFBS	ND	1.79	4.00	8.00	
PFOA	ND	0.651	2.00	8.00	
PFOS	ND	0.807	0.900	8.00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C3-PFBS	98.2	60 - 150	
IS	13C2-PFOA	93.2	60 - 150	
IS	13C8-PFOS	82.8	60 - 150	

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

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

Only the linear isomer is reported for all other analytes.

NW 3/24/17

R:\N\Navy\CLEAN\MULTI_REGION\PFC_679580\MapFiles\NW\Whidbey_NAS\Coupeville_Reporting\Figure_10_Detections_PFAS_GW.mxd5/25/2017bmailhes

CV-MW11-M	2/26/17
Depth (ft bgs)	170.43
PFBS	7.66 U
PFOS	1.72 U
PFOA	3.83 U

CV-MW11-S	2/26/17
Depth (ft bgs)	140.43
PFBS	3.91 U
PFOS	**1.0 J**
PFOA	1.95 U

CV-MW08-S	3/2/17
Depth (ft bgs)	131.26
PFBS	3.85 U
PFOS	0.865 U
PFOA	1.92 U

CV-MW08-M	3/4/17
Depth (ft bgs)	165.21
PFBS	3.91 U
PFOS	0.879 U
PFOA	1.95 U

CV-MW07-S	3/4/17
Depth (ft bgs)	145.02
PFBS	4.39 U
PFOS	0.987 U
PFOA	2.19 U

Building 11	9/19/16
Depth (ft bgs)	162
PFBS	10 U
PFOS	10 U
PFOA	3 U

CV-MW01-M	2/28/17
Depth (ft bgs)	163.36
PFBS	3.94 U
PFOS	0.886 U
PFOA	1.97 U

CV-MW07-M	3/4/17
Depth (ft bgs)	193.75
PFBS	3.91 U
PFOS	**0.844 J**
PFOA	1.95 U

CV-MW01-D	2/28/17
Depth (ft bgs)	217.42
PFBS	4 U
PFOS	0.9 U
PFOA	2 U

CV-MW04-M	2/28/17
Depth (ft bgs)	159.05
PFBS	4.03 U
PFOS	0.907 U
PFOA	2.02 U

CV-MW02-S	3/1/17
Depth (ft bgs)	106.86
PFBS	**332** D
PFOS	**54.7**
PFOA	**571**

CV-MW04-S	3/1/17
Depth (ft bgs)	126.93
PFBS	3.91 U
PFOS	0.879 U
PFOA	1.95 U

CV-MW02-M	3/1/17
Depth (ft bgs)	167.96
PFBS	3.88 U
PFOS	0.872 U
PFOA	1.94 U

CV-MW14-M	3/4/17
Depth (ft bgs)	176.34
PFBS	**111**
PFOS	**0.898 J**
PFOA	**166**

CV-MW05-S	2/24/17
Depth (ft bgs)	124.56
PFBS	**12.9**
PFOS	0.922 U
PFOA	**9.87**

CV-MW03-D	2/27/17
Depth (ft bgs)	237.43
PFBS	3.91 U
PFOS	**0.914 J**
PFOA	1.95 U

CV-MW05-M	2/23/17
Depth (ft bgs)	175.35
PFBS	**473**
PFOS	**3.26 J**
PFOA	**1190**

Building 11

WI-CV-WL01

CV-MW03-M	2/27/17
Depth (ft bgs)	160.35
PFBS	3.88 U
PFOS	0.872 U
PFOA	1.94 U

CV-MW06-S	2/22/17
Depth (ft bgs)	140.43
PFBS	3.97 U
PFOS	0.893 U
PFOA	1.98 U

CV-MW13-S	3/3/17
Depth (ft bgs)	114.98
PFBS	4.07 U
PFOS	0.915 U
PFOA	2.03 U

Building 2807

WI-CV-WL02

CV-MW13-M	2/22/17
Depth (ft bgs)	187.76
PFBS	**139**
PFOS	0.872 U
PFOA	**20.4**

CV-MW06-M	2/21/17
Depth (ft bgs)	189.51
PFBS	3.91 U
PFOS	0.879 U
PFOA	1.95 U

CV-MW09-M	2/23/17
Depth (ft bgs)	197.33
PFBS	**11.2**
PFOS	0.915 U
PFOA	2.03 U

CV-MW10-D	2/20/17
Depth (ft bgs)	206.67
PFBS	3.85 U
PFOS	0.865 U
PFOA	1.92 U

CV-MW09-S	NA
Depth (ft bgs)	110.92
PFBS	NS
PFOS	NS
PFOA	NS

Building 2807	9/19/16
Depth (ft bgs)	178
PFBS	**110**
PFOS	10 U
PFOA	**17.5 J**

CV-MW10-S	2/22/17
Depth (ft bgs)	159.45
PFBS	**3.07 J**
PFOS	0.938 U
PFOA	2.08 U

CV-MW12-S	NA
Depth (ft bgs)	106.92
PFBS	NS
PFOS	NS
PFOA	NS

CV-MW12-D	3/1/17
Depth (ft bgs)	198.03
PFBS	3.97 U
PFOS	0.893 U
PFOA	1.98 U

Notes
PFBS - Perfluorobutanesulfonic acid
PFOS - Perfluorooctane Sulfonate
PFOA - Perfluorooctanoic acid
LHA - lifetime health advisory
units - nanograms per liter (ng/L)
ft bgs - feet below ground surface
NS - not sampled
J - analyte detected, concentration is estimated
U - not detected
D - diluted sample
Bold indicates detection
Shaded text indicates exceedance of USEPA LHA
Samples were not collected from CV-GW09S and CV-GW12S because the wells were dry at the time of sampling.
Samples collected from the wells within Buildings 2807 and 11 were analyzed by ALS-Kelso using Method 537 for drinking water.

	LHA
PFBS	--
PFOS	70
PFOA	70

Legend
- Base Supply Well
- Monitoring well with no exceedance of LHA
- Monitoring well with LHA exceedance
- No detections of PFAS
- Not Sampled
- Direction of Middle Zone Groundwater Flow
- Direction of Deep Zone Groundwater Flow
- Base Boundary

N

0 0.1 0.2 Miles

1 inch = 0.2 mile

Imagery Source: Esri

Figure 10
Detections of PFAS in Groundwater
Outlying Landing Field Coupeville
Coupeville, Washington

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