NAVFAC
Naval Facilities Engineering Command

Off-Base Drinking Water Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Figure, SDG J25130-1

Naval Air Station Whidbey Island
Oak Harbor, Washington

June 2019

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-25130-1
Client Project/Site: Whidbey Island

For:
CH2M Hill Constructors, Inc.
1100 NE Circle Blvd
Corvallis, Oregon 97330

Attn: Tiffany Hill

Authorized for release by:
1/26/2017 8:35:34 AM

Laura Turpen, Project Manager I
(916)374-4414
laura.turpen@testamericainc.com

Table of Contents

Definitions/Glossary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Qualifiers

LCMS

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-25130-1

Laboratory: TestAmerica Sacramento

Narrative

CASE NARRATIVE

Client: CH2M Hill Constructors, Inc.

Project: Whidbey Island

Report Number: 320-25130-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 01/19/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.6 C.

PFOA/PFOS

Samples WI-AF-1RW10-0117 (320-25130-1) and WI-AF-1FB10-0117 (320-25130-2) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 01/21/2017 and analyzed on 01/25/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Client Sample ID: WI-AF-1RW10-0117 **Lab Sample ID: 320-25130-1**

No Detections.

Client Sample ID: WI-AF-1FB10-0117 **Lab Sample ID: 320-25130-2**

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: WI-AF-1RW10-0117

Lab Sample ID: 320-25130-1

Date Collected: 01/17/17 09:12

Matrix: Water

Date Received: 01/19/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.015	ug/L		01/21/17 11:49	01/25/17 10:19	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0093	ug/L		01/21/17 11:49	01/25/17 10:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.047	ug/L		01/21/17 11:49	01/25/17 10:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*106*		*70 - 130*	*01/21/17 11:49*	*01/25/17 10:19*	*1*
13C2 PFDA	*109*		*70 - 130*	*01/21/17 11:49*	*01/25/17 10:19*	*1*

Client Sample ID: WI-AF-1FB10-0117

Lab Sample ID: 320-25130-2

Date Collected: 01/17/17 09:13

Matrix: Water

Date Received: 01/19/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L		01/21/17 11:49	01/25/17 11:49	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0093	ug/L		01/21/17 11:49	01/25/17 11:49	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/21/17 11:49	01/25/17 11:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*104*		*70 - 130*	*01/21/17 11:49*	*01/25/17 11:49*	*1*
13C2 PFDA	*97*		*70 - 130*	*01/21/17 11:49*	*01/25/17 11:49*	*1*

Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	3C2 PFHx (70-130)	3C2 PFDA (70-130)								
320-25130-1	WI-AF-1RW10-0117	106	109								
320-25130-1 MS	WI-AF-1RW10-0117	110	116								
320-25130-1 MSD	WI-AF-1RW10-0117	112	113								
320-25130-2	WI-AF-1FB10-0117	104	97								
LLCS 320-147297/2-A	Lab Control Sample	104	107								
MB 320-147297/1-A	Method Blank	98	102								

Surrogate Legend

13C2 PFHxA = 13C2 PFHxA
13C2 PFDA = 13C2 PFDA

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MB 320-147297/1-A
Matrix: Water
Analysis Batch: 147664

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147297

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.016	ug/L		01/21/17 11:49	01/25/17 09:19	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		01/21/17 11:49	01/25/17 09:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		01/21/17 11:49	01/25/17 09:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*98*		*70 - 130*	*01/21/17 11:49*	*01/25/17 09:19*	*1*
13C2 PFDA	*102*		*70 - 130*	*01/21/17 11:49*	*01/25/17 09:19*	*1*

Lab Sample ID: LLCS 320-147297/2-A
Matrix: Water
Analysis Batch: 147664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147297

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0306	J	ug/L		76	50 - 150
Perfluorooctanoic acid (PFOA)	0.0198	0.0174	J M	ug/L		88	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0729	J	ug/L		81	50 - 150

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*107*		*70 - 130*

Lab Sample ID: 320-25130-1 MS
Matrix: Water
Analysis Batch: 147664

Client Sample ID: WI-AF-1RW10-0117
Prep Type: Total/NA
Prep Batch: 147297

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.160	0.159		ug/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	0.024	U	0.0780	0.0746		ug/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.359	0.350		ug/L		98	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFHxA	*110*		*70 - 130*
13C2 PFDA	*116*		*70 - 130*

Lab Sample ID: 320-25130-1 MSD
Matrix: Water
Analysis Batch: 147664

Client Sample ID: WI-AF-1RW10-0117
Prep Type: Total/NA
Prep Batch: 147297

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.159	0.158		ug/L		100	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	0.024	U	0.0773	0.0771		ug/L		100	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.356	0.360		ug/L		101	70 - 130	3	30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 320-25130-1 MSD
Matrix: Water
Analysis Batch: 147664

Client Sample ID: WI-AF-1RW10-0117
Prep Type: Total/NA
Prep Batch: 147297

Surrogate	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	112		70 - 130
13C2 PFDA	113		70 - 130

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

LCMS

Prep Batch: 147297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25130-1	WI-AF-1RW10-0117	Total/NA	Water	537	
320-25130-2	WI-AF-1FB10-0117	Total/NA	Water	537	
MB 320-147297/1-A	Method Blank	Total/NA	Water	537	
LLCS 320-147297/2-A	Lab Control Sample	Total/NA	Water	537	
320-25130-1 MS	WI-AF-1RW10-0117	Total/NA	Water	537	
320-25130-1 MSD	WI-AF-1RW10-0117	Total/NA	Water	537	

Analysis Batch: 147664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25130-1	WI-AF-1RW10-0117	Total/NA	Water	537	147297
320-25130-2	WI-AF-1FB10-0117	Total/NA	Water	537	147297
MB 320-147297/1-A	Method Blank	Total/NA	Water	537	147297
LLCS 320-147297/2-A	Lab Control Sample	Total/NA	Water	537	147297
320-25130-1 MS	WI-AF-1RW10-0117	Total/NA	Water	537	147297
320-25130-1 MSD	WI-AF-1RW10-0117	Total/NA	Water	537	147297

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Client Sample ID: WI-AF-1RW10-0117

Lab Sample ID: 320-25130-1

Date Collected: 01/17/17 09:12

Matrix: Water

Date Received: 01/19/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			252.7 mL	1 mL	147297	01/21/17 11:49	KMK	TAL SAC
Total/NA	Analysis	537		1			147664	01/25/17 10:19	JRB	TAL SAC

Client Sample ID: WI-AF-1FB10-0117

Lab Sample ID: 320-25130-2

Date Collected: 01/17/17 09:13

Matrix: Water

Date Received: 01/19/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			252.9 mL	1 mL	147297	01/21/17 11:49	KMK	TAL SAC
Total/NA	Analysis	537		1			147664	01/25/17 11:49	JRB	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Method	Method Description	Protocol	Laboratory
537	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-25130-1	WI-AF-1RW10-0117	Water	01/17/17 09:12	01/19/17 09:30
320-25130-2	WI-AF-1FB10-0117	Water	01/17/17 09:13	01/19/17 09:30

TestAmerica Sacramento
880 Riverside Parkway

West Sacramento, CA 95605
phone 916.373.5600 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Katie Tippin	Site Contact: Eric Epple	Date: 1/18/2017	COC No: 1
Tiffany Hill	Tel/Fax: (757) 671-6258	Lab Contact: Laura Turpen	Carrier: FedEx	_____ of _____ COCs
Project Chemist	**Analysis Turnaround Time**			Sampler:
1100 NE Circle Blvd Ste 300 Corvallis, OR 97330	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(541) 768-3109	TAT if different from Below _____7-Day_____			Walk-in Client:
(541) 908-3794	☐ 2 weeks			Lab Sampling:
Project Name: CTO-08	☐ 1 week			
Site: NAS Whidbey Island	☐ 2 days			Job / SDG No.:
P O #: 100067106050 - 679580.06.FI.FS	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	USEPA Method 537 (PFOA, PFOS, and PFBS)	Sample Specific Notes:
WI-AF-1RW10-0117	01/17/17	9:12	G	DW	2	N	N	X	
WI-AF-1RW10-0117-MS	01/17/17	9:12	G	DW	2	N	Y	X	
WI-AF-1RW10-0117-MSD	01/17/17	9:12	G	DW	2	N	Y	X	
WI-AF-1FB10-0117	01/17/17	9:13	G	DW	2	N	N	X	
								6	

320-25130 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _Trizma__

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 2.9 Corr'd: 2.6 | Therm ID No.: 12

Relinquished by:	Company: CH2M	Date/Time: 1/18/17 1209	Received by:	Company: TAWS	Date/Time: 1/19/17 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-25130-1

Login Number: 25130
List Number: 1
Creator: Nelson, Kym D

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 320-25130-1

Job Description: Whidbey Island

For:
CH2M Hill Constructors, Inc.
1100 NE Circle Blvd
Corvallis, OR 97330

Attention: Tiffany Hill

Approved for release.
Laura Turpen
Project Manager I
1/26/2017 8:36 AM

Laura Turpen, Project Manager I
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4414
laura.turpen@testamericainc.com
01/26/2017

Table of Contents

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LCMS

Qualifier	Qualifier Description
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DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: CH2M Hill Constructors, Inc.

Project: Whidbey Island

Report Number: 320-25130-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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RECEIPT
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PFOA/PFOS
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No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Client Sample ID: WI-AF-1RW10-0117 — Lab Sample ID: 320-25130-1

No Detections.

Client Sample ID: WI-AF-1FB10-0117 — Lab Sample ID: 320-25130-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: WI-AF-1RW10-0117

Lab Sample ID: 320-25130-1

Date Collected: 01/17/17 09:12

Matrix: Water

Date Received: 01/19/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.015	ug/L		01/21/17 11:49	01/25/17 10:19	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0093	ug/L		01/21/17 11:49	01/25/17 10:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.047	ug/L		01/21/17 11:49	01/25/17 10:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*106*		*70 - 130*	*01/21/17 11:49*	*01/25/17 10:19*	*1*
13C2 PFDA	*109*		*70 - 130*	*01/21/17 11:49*	*01/25/17 10:19*	*1*

Client Sample ID: WI-AF-1FB10-0117

Lab Sample ID: 320-25130-2

Date Collected: 01/17/17 09:13

Matrix: Water

Date Received: 01/19/17 09:30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L		01/21/17 11:49	01/25/17 11:49	1
Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.0093	ug/L		01/21/17 11:49	01/25/17 11:49	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/21/17 11:49	01/25/17 11:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*104*		*70 - 130*	*01/21/17 11:49*	*01/25/17 11:49*	*1*
13C2 PFDA	*97*		*70 - 130*	*01/21/17 11:49*	*01/25/17 11:49*	*1*

Default Detection Limits

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Prep: 537

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	0.14	0.048	ug/L	537
Perfluorooctanesulfonic acid (PFOS)	0.060	0.016	ug/L	537
Perfluorooctanoic acid (PFOA)	0.030	0.0094	ug/L	537

Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		3C2 PFHx	3C2 PFDA								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
320-25130-1	WI-AF-1RW10-0117	106	109								
320-25130-1 MS	WI-AF-1RW10-0117	110	116								
320-25130-1 MSD	WI-AF-1RW10-0117	112	113								
320-25130-2	WI-AF-1FB10-0117	104	97								
LLCS 320-147297/2-A	Lab Control Sample	104	107								
MB 320-147297/1-A	Method Blank	98	102								

Surrogate Legend

13C2 PFHxA = 13C2 PFHxA
13C2 PFDA = 13C2 PFDA

Method: 537 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MB 320-147297/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 147664 — **Prep Batch: 147297**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.016	ug/L		01/21/17 11:49	01/25/17 09:19	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		01/21/17 11:49	01/25/17 09:19	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		01/21/17 11:49	01/25/17 09:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*98*		*70 - 130*	*01/21/17 11:49*	*01/25/17 09:19*	*1*
13C2 PFDA	*102*		*70 - 130*	*01/21/17 11:49*	*01/25/17 09:19*	*1*

Lab Sample ID: LLCS 320-147297/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 147664 — **Prep Batch: 147297**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0306	J	ug/L		76	50 - 150
Perfluorooctanoic acid (PFOA)	0.0198	0.0174	J M	ug/L		88	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0729	J	ug/L		81	50 - 150

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*107*		*70 - 130*

Lab Sample ID: 320-25130-1 MS — **Client Sample ID: WI-AF-1RW10-0117**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 147664 — **Prep Batch: 147297**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.160	0.159		ug/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	0.024	U	0.0780	0.0746		ug/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.359	0.350		ug/L		98	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFHxA	*110*		*70 - 130*
13C2 PFDA	*116*		*70 - 130*

Lab Sample ID: 320-25130-1 MSD — **Client Sample ID: WI-AF-1RW10-0117**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 147664 — **Prep Batch: 147297**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.159	0.158		ug/L		100	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	0.024	U	0.0773	0.0771		ug/L		100	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.356	0.360		ug/L		101	70 - 130	3	30

Method: 537 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 320-25130-1 MSD
Matrix: Water
Analysis Batch: 147664

Client Sample ID: WI-AF-1RW10-0117
Prep Type: Total/NA
Prep Batch: 147297

Surrogate	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	112		70 - 130
13C2 PFDA	113		70 - 130

LCMS

Prep Batch: 147297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25130-1	WI-AF-1RW10-0117	Total/NA	Water	537	
320-25130-2	WI-AF-1FB10-0117	Total/NA	Water	537	
MB 320-147297/1-A	Method Blank	Total/NA	Water	537	
LLCS 320-147297/2-A	Lab Control Sample	Total/NA	Water	537	
320-25130-1 MS	WI-AF-1RW10-0117	Total/NA	Water	537	
320-25130-1 MSD	WI-AF-1RW10-0117	Total/NA	Water	537	

Analysis Batch: 147664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25130-1	WI-AF-1RW10-0117	Total/NA	Water	537	147297
320-25130-2	WI-AF-1FB10-0117	Total/NA	Water	537	147297
MB 320-147297/1-A	Method Blank	Total/NA	Water	537	147297
LLCS 320-147297/2-A	Lab Control Sample	Total/NA	Water	537	147297
320-25130-1 MS	WI-AF-1RW10-0117	Total/NA	Water	537	147297
320-25130-1 MSD	WI-AF-1RW10-0117	Total/NA	Water	537	147297

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Client Sample ID: WI-AF-1RW10-0117

Lab Sample ID: 320-25130-1

Date Collected: 01/17/17 09:12

Matrix: Water

Date Received: 01/19/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			147297	01/21/17 11:49	KMK	TAL SAC
Total/NA	Analysis	537		1	147664	01/25/17 10:19	JRB	TAL SAC

Client Sample ID: WI-AF-1FB10-0117

Lab Sample ID: 320-25130-2

Date Collected: 01/17/17 09:13

Matrix: Water

Date Received: 01/19/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			147297	01/21/17 11:49	KMK	TAL SAC
Total/NA	Analysis	537		1	147664	01/25/17 11:49	JRB	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Method	Method Description	Protocol	Laboratory
537	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Whidbey Island

TestAmerica Job ID: 320-25130-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-25130-1	WI-AF-1RW10-0117	Water	01/17/17 09:12	01/19/17 09:30
320-25130-2	WI-AF-1FB10-0117	Water	01/17/17 09:13	01/19/17 09:30

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Instrument ID: A6 Analysis Batch Number: 147661

Lab Sample ID: STD 320-147661/3 IC Client Sample ID:

Date Analyzed: 01/24/17 16:04 Lab File ID: 24JAN2017A6A_003.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	19.43	Split Peak	barnettj	01/25/17 09:52
Perfluorooctanoic acid (PFOA)	20.09	Split Peak	barnettj	01/25/17 09:52

Lab Sample ID: STD 320-147661/4 IC Client Sample ID:

Date Analyzed: 01/24/17 16:33 Lab File ID: 24JAN2017A6A_004.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	19.43	Split Peak	barnettj	01/25/17 09:52
Perfluorooctanoic acid (PFOA)	20.09	Split Peak	barnettj	01/25/17 09:52

Lab Sample ID: CCV 320-147661/10 CCVL Client Sample ID:

Date Analyzed: 01/24/17 19:31 Lab File ID: 24JAN2017A6A_010.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluoroheptanoic acid	19.44	Split Peak	barnettj	01/25/17 10:08
Perfluorooctanoic acid (PFOA)	20.11	Split Peak	barnettj	01/25/17 10:08

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Instrument ID: A6 Analysis Batch Number: 147664

Lab Sample ID: LLCS 320-147297/2-A Client Sample ID:

Date Analyzed: 01/25/17 09:49 Lab File ID: 24JAN2017A6A_039.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.08	Split Peak	barnettj	01/25/17 13:49

Lab Sample ID: 320-25130-1 Client Sample ID: WI-AF-1RW10-0117

Date Analyzed: 01/25/17 10:19 Lab File ID: 24JAN2017A6A_040.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	17.67	Missed Peak	barnettj	01/25/17 13:50

Lab Sample ID: 320-25130-2 Client Sample ID: WI-AF-1FB10-0117

Date Analyzed: 01/25/17 11:49 Lab File ID: 24JAN2017A6A_043.d GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	20.14	Split Peak	barnettj	01/25/17 13:52
Perfluorooctanesulfonic acid (PFOS)	20.73	Missed Peak	barnettj	01/25/17 13:52

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LC537-ICV_00019	03/01/17	12/20/16	MeOH/H2O, Lot 067374	10 mL	LC537-IS_00028	200 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
.LC537-IS_00028	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-ICV_00019	03/01/17	12/20/16	MeOH/H2O, Lot 067374	10 mL	LC537-SU_00027	500 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
					LC537ICIM_00014	25 uL	Perfluorobutanesulfonic acid (PFBS)	114.77 ng/mL
							Perfluorooctanoic acid (PFOA)	25.0232 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	27.2389 ng/mL
.LC537-SU_00027	06/19/17	12/19/16	Methanol, Lot 104453	20000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00009	80 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.LC537ICIM_00014	03/01/17	12/20/16	Methanol, Lot 090285	25 mL	LC537-PFBS2_00005	0.5 mL	Perfluorobutanesulfonic acid (PFBS)	45.908 ug/mL
					LC537-PFOA2_00008	0.142 mL	Perfluorooctanoic acid (PFOA)	10.0093 ug/mL
					LC537-PFOS2_00005	0.22 mL	Perfluorooctanesulfonic acid (PFOS)	10.8956 ug/mL
..LC537-PFBS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537_PFBS2_00001	0.023 g	Perfluorobutanesulfonic acid (PFBS)	2295.4 ug/mL
...LC537_PFBS2_00001	08/09/17	Santa Cruz Biotechnology, Lot H0112			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	0.998 g/g
..LC537-PFOA2_00008	07/25/17	12/20/16	Methanol, Lot 090285	10 mL	LC537_PFOA2_00001	0.0178 g	Perfluorooctanoic acid (PFOA)	1762.2 ug/mL
...LC537_PFOA2_00001	07/25/17	Afla Aesar, Lot D24Y026			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.99 g/g
..LC537-PFOS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537_PFOS2_00001	0.0159 g	Perfluorooctanesulfonic acid (PFOS)	1238.13 ug/mL
...LC537_PFOS2_00001	07/26/17	Sigma, Lot BCBF5116V			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.7787 g/g
LC537-IS_00030	07/17/17	01/17/17	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-L1_00017	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00028	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-MSP_00017	25 uL	Perfluorobutanesulfonic acid (PFBS)	8.976 ng/mL
							Perfluoroheptanoic acid	0.99 ng/mL
							Perfluorohexanesulfonic acid	3.02582 ng/mL
							Perfluorononanoic acid	2.07415 ng/mL
							Perfluorooctanoic acid (PFOA)	1.95189 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	4.00664 ng/mL
					LC537-SU_00026	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LC537-IS_00028	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-MSP_00017	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	200 uL	Perfluorobutanesulfonic acid (PFBS)	1795.2 ng/mL
							Perfluoroheptanoic acid	198 ng/mL
							Perfluorohexanesulfonic acid	605.164 ng/mL
							Perfluorononanoic acid	414.831 ng/mL
							Perfluorooctanoic acid (PFOA)	390.378 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	801.328 ng/mL
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-SU_00026	06/14/17	12/16/16	Methanol, Lot 104453	20000 uL	LC537-SU_00025	10000 uL	13C2 PFDA	0.2 ug/mL
							13C2 PFHxA	0.2 ug/mL
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.4 ug/mL
					LCMPFHxA_00009	80 uL	13C2 PFHxA	0.4 ug/mL
...LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
...LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L2_00016	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	34 uL	Perfluorobutanesulfonic acid (PFBS)	22.8888 ng/mL
							Perfluoroheptanoic acid	2.5245 ng/mL
							Perfluorohexanesulfonic acid	7.71585 ng/mL
							Perfluorononanoic acid	5.28909 ng/mL
							Perfluorooctanoic acid (PFOA)	4.97733 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanesulfonic acid (PFOS)	10.2169 ng/mL
					LC537-IS_00028	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00026	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	371.25 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	777.808 ng/mL
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00028	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00026	06/14/17	12/16/16	Methanol, Lot 104453	20000 uL	LC537-SU_00025	10000 uL	13C2 PFDA	0.2 ug/mL
							13C2 PFHxA	0.2 ug/mL
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.4 ug/mL
					LCMPFHxA_00009	80 uL	13C2 PFHxA	0.4 ug/mL
...LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815		(Purchased Reagent)		13C2 PFDA	50 ug/mL
...LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFHxA	50 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LC537-L3_00019	06/14/17	01/20/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	67 uL	Perfluorobutanesulfonic acid (PFBS)	45.1044 ng/mL
							Perfluoroheptanoic acid	4.97475 ng/mL
							Perfluorohexanesulfonic acid	15.2048 ng/mL
							Perfluorononanoic acid	10.4226 ng/mL
							Perfluorooctanoic acid (PFOA)	9.80826 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	20.1334 ng/mL
					LC537-IS_00030	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00029	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	371.25 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	777.808 ng/mL
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00030	07/17/17	01/17/17	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00029	07/17/17	01/17/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C2 PFDA	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFHxA_00013	80 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFDA_00012	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L4_00017	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	135 uL	Perfluorobutanesulfonic acid (PFBS)	90.882 ng/mL
							Perfluoroheptanoic acid	10.0238 ng/mL
							Perfluorohexanesulfonic acid	30.6364 ng/mL
							Perfluorononanoic acid	21.0008 ng/mL
							Perfluorooctanoic acid (PFOA)	19.7629 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	40.5672 ng/mL
					LC537-IS_00028	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00026	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	371.25 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	777.808 ng/mL
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00028	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00026	06/14/17	12/16/16	Methanol, Lot 104453	20000 uL	LC537-SU_00025	10000 uL	13C2 PFDA	0.2 ug/mL
							13C2 PFHxA	0.2 ug/mL
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.4 ug/mL
					LCMPFHxA_00009	80 uL	13C2 PFHxA	0.4 ug/mL
...LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
...LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L5_00020	06/14/17	01/20/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	200 uL	Perfluorobutanesulfonic acid (PFBS)	134.64 ng/mL
							Perfluoroheptanoic acid	14.85 ng/mL
							Perfluorohexanesulfonic acid	45.3873 ng/mL
							Perfluorononanoic acid	31.1123 ng/mL
							Perfluorooctanoic acid (PFOA)	29.2784 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	60.0996 ng/mL
					LC537-IS_00030	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00029	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	371.25 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	777.808 ng/mL
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00030	07/17/17	01/17/17	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00029	07/17/17	01/17/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00013	80 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L6_00016	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	265 uL	Perfluorobutanesulfonic acid (PFBS)	178.398 ng/mL
							Perfluoroheptanoic acid	19.6763 ng/mL
							Perfluorohexanesulfonic acid	60.1382 ng/mL
							Perfluorononanoic acid	41.2238 ng/mL
							Perfluorooctanoic acid (PFOA)	38.7939 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	79.632 ng/mL
					LC537-IS_00028	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00026	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	371.25 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	777.808 ng/mL
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00028	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LC537-SU_00026	06/14/17	12/16/16	Methanol, Lot 104453	20000 uL	LC537-SU_00025	10000 uL	13C2 PFDA	0.2 ug/mL
							13C2 PFHxA	0.2 ug/mL
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.4 ug/mL
					LCMPFHxA_00009	80 uL	13C2 PFHxA	0.4 ug/mL
...LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
...LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-LSP_00016	05/04/17	11/04/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00015	50 uL	Perfluorobutane Sulfonate	448.8 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	448.8 ng/mL
							Perfluoroheptanoic acid	53.7429 ng/mL
							Perfluorohexanesulfonic acid	151.291 ng/mL
							Perfluorononanoic acid	101.553 ng/mL
							Perfluorooctanoic acid (PFOA)	99.234 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	200.332 ng/mL
.LC537SPIM_00015	05/04/17	11/04/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutane Sulfonate	89.76 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00011	100 uL	Perfluoroheptanoic acid	10.7486 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00009	200 uL	Perfluorononanoic acid	20.3105 ug/mL
					LC537-PFOA_00010	100 uL	Perfluorooctanoic acid (PFOA)	19.8468 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
..LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutane Sulfonate	2040 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
...LC537_PFBS_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
..LC537-PFHpA_00011	11/04/17	11/04/16	Methanol, Lot 090285	7 mL	LC537_PFHpA_00002	0.0076 g	Perfluoroheptanoic acid	1074.86 ug/mL
...LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
...LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA_00009	11/04/17	11/04/16	Methanol, Lot 090285	5.5 mL	LC537_PFNA_00002	0.0058 g	Perfluorononanoic acid	1015.53 ug/mL
...LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
..LC537-PFOA_00010	11/04/17	11/04/16	Methanol, Lot 090285	7.5 mL	LC537_PFOA_00002	0.0149 g	Perfluorooctanoic acid (PFOA)	1984.68 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
..LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
...LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
LC537-MSP_00017	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	200 uL	Perfluorobutane Sulfonate	1795.2 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	1795.2 ng/mL
							Perfluoroheptanoic acid	198 ng/mL
							Perfluorohexanesulfonic acid	605.164 ng/mL
							Perfluorononanoic acid	414.831 ng/mL
							Perfluorooctanoic acid (PFOA)	390.378 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	801.328 ng/mL
.LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutane Sulfonate	89.76 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHpA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFHxS_00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA_00011	200 uL	Perfluorononanoic acid	20.7415 ug/mL
					LC537-PFOA_00011	100 uL	Perfluorooctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL
..LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutane Sulfonate	2040 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
...LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
..LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
...LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
..LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
...LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
...LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
..LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluorooctanoic acid (PFOA)	1951.89 ug/mL
...LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	0.999 g/g
..LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluorooctanesulfonic acid (PFOS)	1001.66 ug/mL
...LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	0.9106 g/g
LC537-SU_00029	07/17/17	01/17/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00013	80 uL	13C2 PFHxA	0.2 ug/mL
.LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL

Reagent

LC537_PFBS_00002

R: 4/1/15 SPV

SIGMA-ALDRICH®

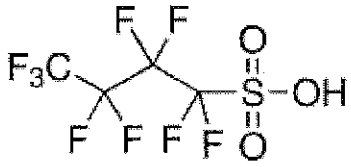
sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
Nonafluorobutane-1-sulfonic acid - 97%

Product Number:	**562629**
Batch Number:	**MKBP8842V**
Brand:	ALDRICH
CAS Number:	375-73-5
MDL Number:	MFCD01320794
Formula:	C4HF9O3S
Formula Weight:	300.10 g/mol
Storage Temperature:	Store at 2 - 8 °C
Quality Release Date:	11 OCT 2013



PFBS

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
Infrared Spectrum	Conforms to Structure	Conforms
Fluorine NMR Spectrum	Conforms to Structure	Conforms
Purity (Titration by NaOH)	96.5 - 103.5 %	101.6 %

Jamie Gleason

Jamie Gleason, Manager
Quality Control
Milwaukee, Wisconsin US

Reagent

LC537_PFBS2_00001

CERTIFICATE OF ANALYSIS

The Power to Question

Catalog Number:	sc-236187
Product Name:	Nonafluorobutane-1-sulfonic acid
CAS Number:	375-73-5
Molecular Formula:	$C_4HF_9O_3S$
Molecular Weight:	300.10
Lot Number:	H0112

Test		Result
Refractive Index	1.3200 to 1.3290	1.3219
Purity (Titration)	min. 98.0%	99.8%

Test Conditions: Refractive Indea: n20/D

Reagent

LC537_PFHpA_00002

P: 4/1/15 SRV

SIGMA-ALDRICH®

3050 Spruce Street, Saint Louis, MO 63103 USA
Email USA: techserv@sial.com Outside USA: eurtechserv@sial.com

Certificate of Analysis

PFHpA

Product Name:	PERFLUOROHEPTANOIC ACID 99 %
Product Number:	342041
Batch Number:	BCBM2579V
Brand:	Aldrich
CAS Number:	375-85-9
Formula:	$CF_3(CF_2)_5CO_2H$
Formula Weight:	364.06
Quality Release Date:	06 DEC 2013
Recommended Retest Date:	OCT 2018

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	COLORLESS OR WHITE	WHITE
APPEARANCE (FORM)	LIQUID OR SOLID	SOLID
TITRATION	98.5 - 101.5 %	99.8 %
TITRATION (METHOD)	-	BACK TITRATION
PURITY (GC AREA %)	≥ 98.5 %	99.5 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

Claudia Geitner

Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

Reagent

LC537_PFHxS_00002

Y: 4/1/15 SKV

SIGMA-ALDRICH®

3050 Spruce Street, Saint Louis, MO 63103 USA
Email USA: techserv@sial.com Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:	TRIDECAFLUOROHEXANE-1-SULFONIC ACID POTASSIUM SALT >= 98.0 % T
Product Number:	50929
Batch Number:	BCBL3545V
Brand:	Aldrich
CAS Number:	3871-99-6
Formula:	$C_6F_{13}KO_3S$
Formula Weight:	438.20
Quality Release Date:	20 JUN 2013

PFH_xS-K

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	WHITE TO FAINT BEIGE	WHITE
APPEARANCE (FORM)	POWDER OR CRYSTALS	POWDER
TITRATION (ION EXCHANGE)	≥ 98.0 %	99.5 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

Claudia Geitner

Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

$$\text{MW corr} = \frac{(\text{k form}) - (\text{K}) + (\text{H})}{(438.20 - 39.10 + 1.01)} = \frac{0.91307}{438.20\ (\text{K form})}$$ (anion form)

Purity = 90.94 % w/m.w correction

SKV 4/1/15

Reagent

LC537_PFNA_00002

R: 4/1/15 SKV

Certificate of Analysis

Apr 2, 2015 (JST)

TOKYO CHEMICAL INDUSTRY CO.,LTD.
4-10-1 Nihonbashi-Honcho, Chuo-ku, Tokyo 103-0023 Japan

Chemical Name: Heptadecafluorononanoic Acid		
Product Number: H0843 CAS: 375-95-1	Lot: QN44F	

Tests	Results	Specifications
Purity(GC)	96.3 %	min. 95.0 %
Purity(Neutralization titration)	98.1 %	min. 95.0 %
Melting point	63.3 deg-C	62.0 to 67.0 deg-C

TCI Lot numbers are 4-5 characters in length.
Characters listed after the first 4-5 characters are control numbers for internal purpose only.

Customer service:

TCI AMERICA
Tel: +1-800-423-8616 / +1-503-283-1681
Fax: +1-888-520-1075 / +1-503-283-1987
E-mail: Sales-US@TCIchemicals.com

PFNA

Reagent

LC537_PFOA_00002

P: 3/26/15 RV

SIGMA-ALDRICH®

CERTIFICATE OF ANALYSIS

Sigma-Aldrich Laborchemikalien GmbH D-30918 Seelze
Telefon: +49 5137 8238-150

Seelze, 13.11.2013/505378/13/24029

Order-No.:
Customer-No.:

Order-Code:

Quantity:

Production Date: 04.Nov.2013
Expiry Date: 04.Nov.2018

Article/Product: 33824 Batch : SZBD308XV

PFOA

Pentadecafluorooctanoic acid OEKANAL®

Reference Material (RM)

1. General Information

Formula: C8HF15O2
CAS-No.: [335-67-1]
Usage : PFOA

Molar mass: 414.07 g/Mole
Recomm. storage temp.: roomtemp.

The estimated uncertainty of a single measurement of the assay can be expected to be 0.5 % relative (confidence level = 95%, n= 6) whereby the assay measurements are calculated by 100% minus found impurities.

2. Batch Analysis

identiy (GC-MS)	complying
Assay (GCMS)	99.4 %
Date of Analysis	13.Nov.2013

3. Advice and Remarks

- The expiry date is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.
- Whenever the container is opened for removal of aliqout portions of the substance, the person handling the substance must assure, that the integrity of the substance is maintained and proper records of all its handlings are kept. Special care has to be taken to avoid any contamination or adulteration of the substance.
- We herewith confirm that the delivery is effected according to the technical delivery conditions agreed.
- Particular properties of the products or the suitability for a particular area of application are not assured.
- We guarantee a proper quality within our General Conditions of Sales.

Sigma-Aldrich Laborchemikalien GmbH
Quality Management SA-LC

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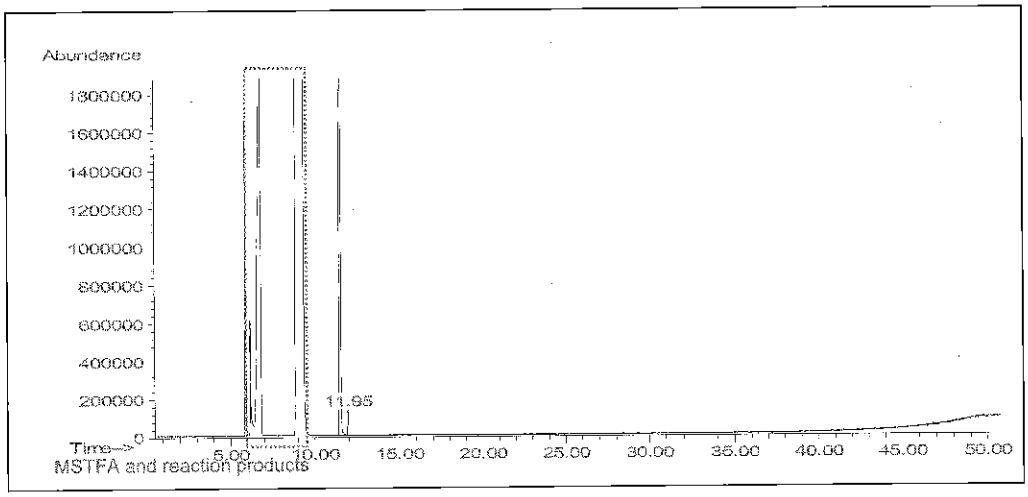
GC/MS-Method

Analytical Department

Article: **Pentadecafluorooctanoic acid OEKANAL**
Article-No.: **33824**
Batch: **SZBD308XV**

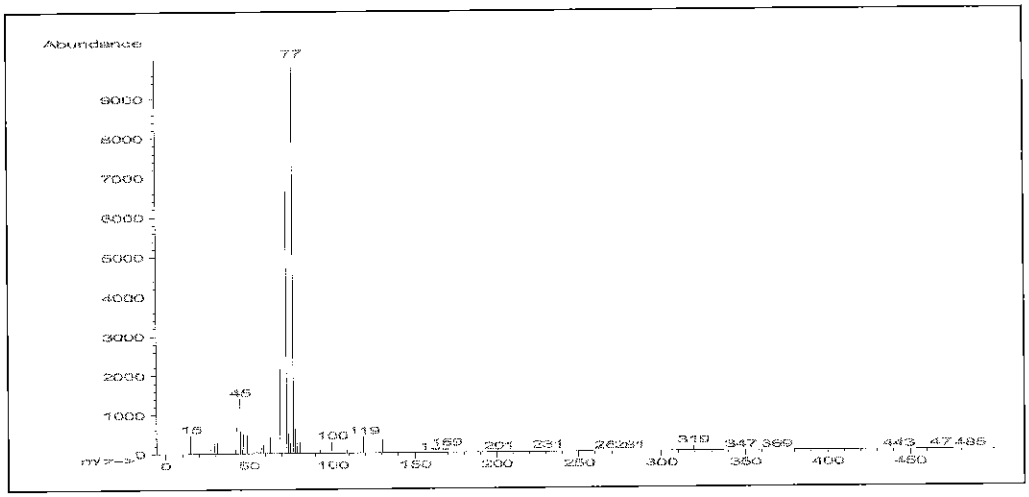
Column:	XTI-5 (Restek); 30 m; fs cap.; I.D.:0.25 mm; 1 µm df
Injector:	Split mode
Injection:	approx. 1 µl of reaction mixture with MSTFA (approx. 10 mg + 200 µl MSTFA)
Inj.-temp.:	280°C
Oven-temp.:	40°C (for 2 min) to 320°C (6°C/min) hold for 2 min
Split:	1:100
Flow:	1 ml He/min (Constant flow mode)
Detector:	MSD
Mass range:	10-600 amu (Scan mode)
Evaluation:	Purity: Total Ion Chromatogram (MSTFA and reaction products blinded out in report) Identity: Mass spectrum complies
Operator:	Ahrens / 2013-11-13

Total Ion Chromatogram:



Ret.time	Area	Area-%	Com
11.54	565.1670	99.4	Pentadecafluorooctanoic acid (as TMS-ester)
11.95	3.6792	0.64	

Mass spectrum (rt = 11.54 min):



Reagent

LC537_PFOA2_00001

Certificate of Analysis

Alfa Aesar
A Johnson Matthey Company

Product No.:	L08862
Product:	Perfluorooctanoic acid, 95%
Lot No.:	D24Y026

PFOA

Appearance	White solid
Melting point	58 - 60°C
Assay	99 %
Identity	Matches reference

This document has been electronically generated and does not require a signature.

Reagent

LC537_PFOS_00002

Γ: 4/1/15 SV

SIGMA-ALDRICH®

CERTIFICATE OF ANALYSIS

Sigma-Aldrich Laborchemikalien GmbH D-30918 Seelze
Telefon: +49 5137 8238-150

Seelze, 13.08.2012/419060/12/17583

Order-No.:
Customer-No.:

Order-Code:

Quantity:

Production Date: 09.Aug.2012
Expiry Date: 09.Aug.2017 – EXP date

Article/Product: 33829 Batch : SZBC222XV

Heptadecafluorooctanesulfonic acid potassium salt OEKANAL® PFOS-K+

Reference Material (RM)

1. General Information

Formula: C8F17KO3S
CAS-No.: [2795-39-3]
Usage : PFOS

Molar mass: 538.22 g/Mole
Recomm. storage temp.: roomtemp.

The estimated uncertainty of a single measurement of the assay can be expected to be 0.5 % relative (confidence level = 95%, n= 6) whereby the assay measurements are calculated by 100% minus found impurities.

2. Batch Analysis

Identity	complying
Assay (LC-MS)	98 %
Date of Analysis	10.Aug.2012

PFOS-Correction: $\frac{538.22 - 39.10 + 1.01}{538.22} = \frac{500.13}{538.22} = 0.92923$

Purity = 91.66 %

3. Advice and Remarks

- The minimum shelf life is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.
- Whenever the container is opened for removal of aliqout portions of the substance, the person handling the substance must assure, that the integrity of the substance is maintained and proper records of all its handlings are kept. Special care has to be taken to avoid any contamination or adulteration of the substance.
- We herewith confirm that the delivery is effected according to the technical delivery conditions agreed.
- Particular properties of the products or the suitability for a particular area of application are not assured.
- We guarantee a proper quality within our General Conditions of Sales.

Sigma-Aldrich Laborchemikalien GmbH
Quality Management SA-LC

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Reagent

LC537_PFOS2_00001

Industriestrasse 25, CH-9471 Buchs (SG), Switzerland
Tel: +41 81 755 2511 Fax: +41 81 756 5449

Inv 820
12LCMS 0579

Certificate of Analysis

Product Name: HEPTADECAFLUOROOCTANESULFONIC ACID TETRAETHYLAMMONIUM SALT 98 %
Product Number: 365289
Product Brand: Aldrich
Molecular Formula: $C_{16}H_{20}F_{17}NO_3S$
Molecular Mass: 629.37
CAS Number: 56773-42-3

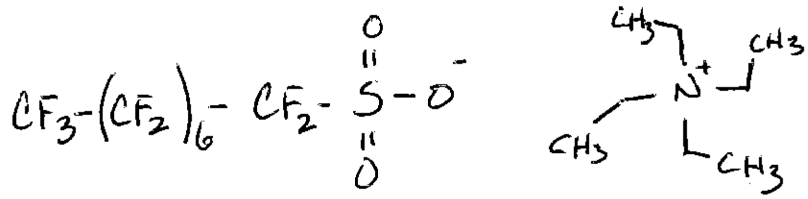
TEST	SPECIFICATION	LOT BCBF5116V RESULTS
APPEARANCE (COLOR)	OFF-WHITE TO WHITE	WHITE
APPEARANCE (FORM)	POWDER, LUMPS OR CHUNKS	POWDER WITH LUMPS
CARBON CONTENT	29.77 % - 31.29 %	30.52
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS

QC RELEASE DATE 13/APR/11

MW correction = $\frac{500.125}{629.37}$ = 0.7946 ~~100-79.467~~ DEL 7-26-12

Purity + MW Correction = 77.87%.

Edeltraud Schwärzler, Manager
Quality Control
Buchs, Switzerland



	$C_8F_{17}SO_3+H$	$C_8H_{20}N$
C = 12.011	96.088	96.088
F = 18.998	322.966	-
S = 32.066	32.066	-
O = 15.999	47.997	-
H = 1.008	1.008	20.160
N = 14.007	-	14.007
	500.125	130.255 →

SIGMA-ALDRICH

3050 Spruce Street, Saint Louis, MO 63103 USA
Website: www.sigmaaldrich.com
Email USA techserv@sial.com
Outside USA eurtechserv@sial.com

Certificate of Origin

Product Name:	Heptadecafluorooctanesulfonic acid tetraethylammonium salt 98 %
Product Number:	365289
Product Brand:	Aldrich
Lot:	BCBF5116V
Molecular Formula:	$C_{16}H_{20}F_{17}NO_3S$
Molecular Mass:	629.37
CAS Number:	56773-42-3
Date of Issue:	30-MAR-11

Country of Origin	China

product is of synthetic origin	yes
only synthetic materials used in the manufacturing process	yes
compounds of animal origin used	no
genetically modified organisms used	no
allergenic materials used	no
procedures in place to avoid cross contamination with residue of animal, human, GMO or allergenes in manufacturing process	yes

Sigma-Aldrich has quality systems and procedures in place for monitoring the production process, traceablility and batch consistency.

Document issued by Sigma-Aldrich Corporation "Sigma-Aldrich". This document is valid without signature and has been produced digitally.

This information is to be used for the purpose of determining animal or other biological origin only and not to be confused with "Country of Origin" for import/export purposes. Data provided on this document are property of Sigma-Aldrich.

This information is considered accurate and reliable as of the date appearing on the document and is presented in good faith.

Sigma-Aldrich shall not be held liable for any damage resulting from handling or from processing the above product(s). This document does not make any warranty, express or implied, of fitness for any particular use of the product(s). Purchaser must determine the suitability of the product(s) for its use under the applicable law and regulations.

For further questions please contact your local Sigma-Aldrich representative.

We are committed to the success of our Customers, Employees and Shareholders through leadership in Life Science, High Technology and Service.

Reagent

LCM2PFOA_00005

Rec'd 2/10/15 SV

WELLINGTON LABORATORIES

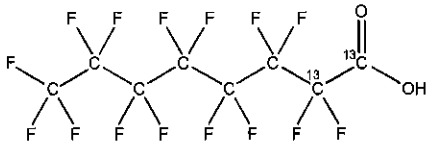
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2PFOA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid

LOT NUMBER: M2PFOA0613

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: $^{13}C_2{}^{12}C_6HF_{15}O_2$
CONCENTRATION: 50 ± 2.5 µg/ml

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 06/19/2013
EXPIRY DATE: (mm/dd/yyyy) 06/19/2018
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 416.05
SOLVENT(S): Methanol
Water (<1%)

ISOTOPIC PURITY: ≥99% ^{13}C ($1,2\text{-}^{13}C_2$)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 07/16/2013 (mm/dd/yyyy)

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

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. They are designed to be used as reference standards for the identification and/or quantification of specific chemical compound(s).

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external, ISO/IEC 17025:2005 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

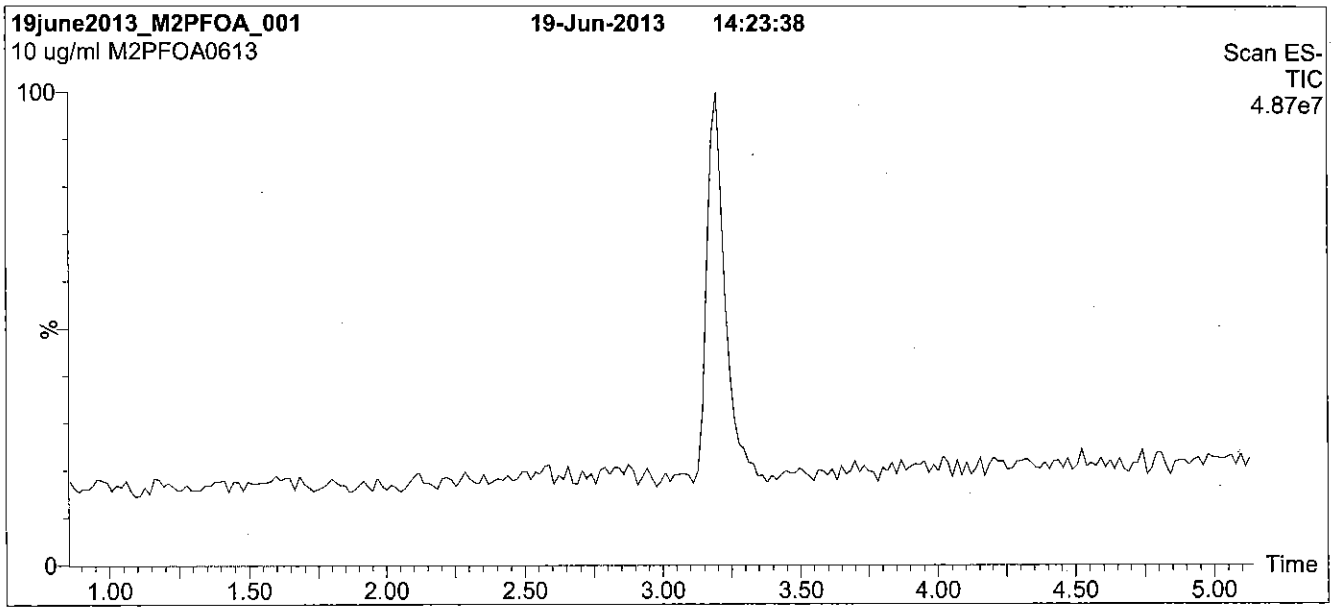
This product was produced using a Quality Management System registered to ISO 9001:2008 by SAI Global, ISO/IEC 17025:2005 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34:2009 by ACLASS (certificate number AR-1523).

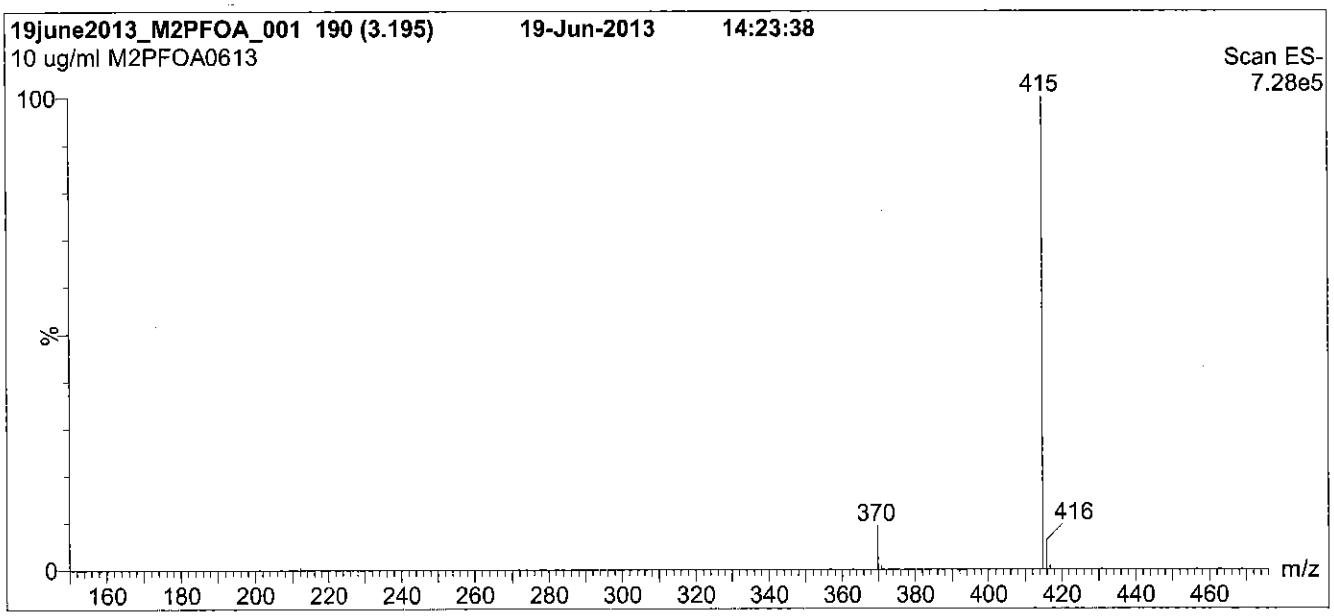
CALA Testing Accreditation No. A1226

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER

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

Figure 1: **M2PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 10 min

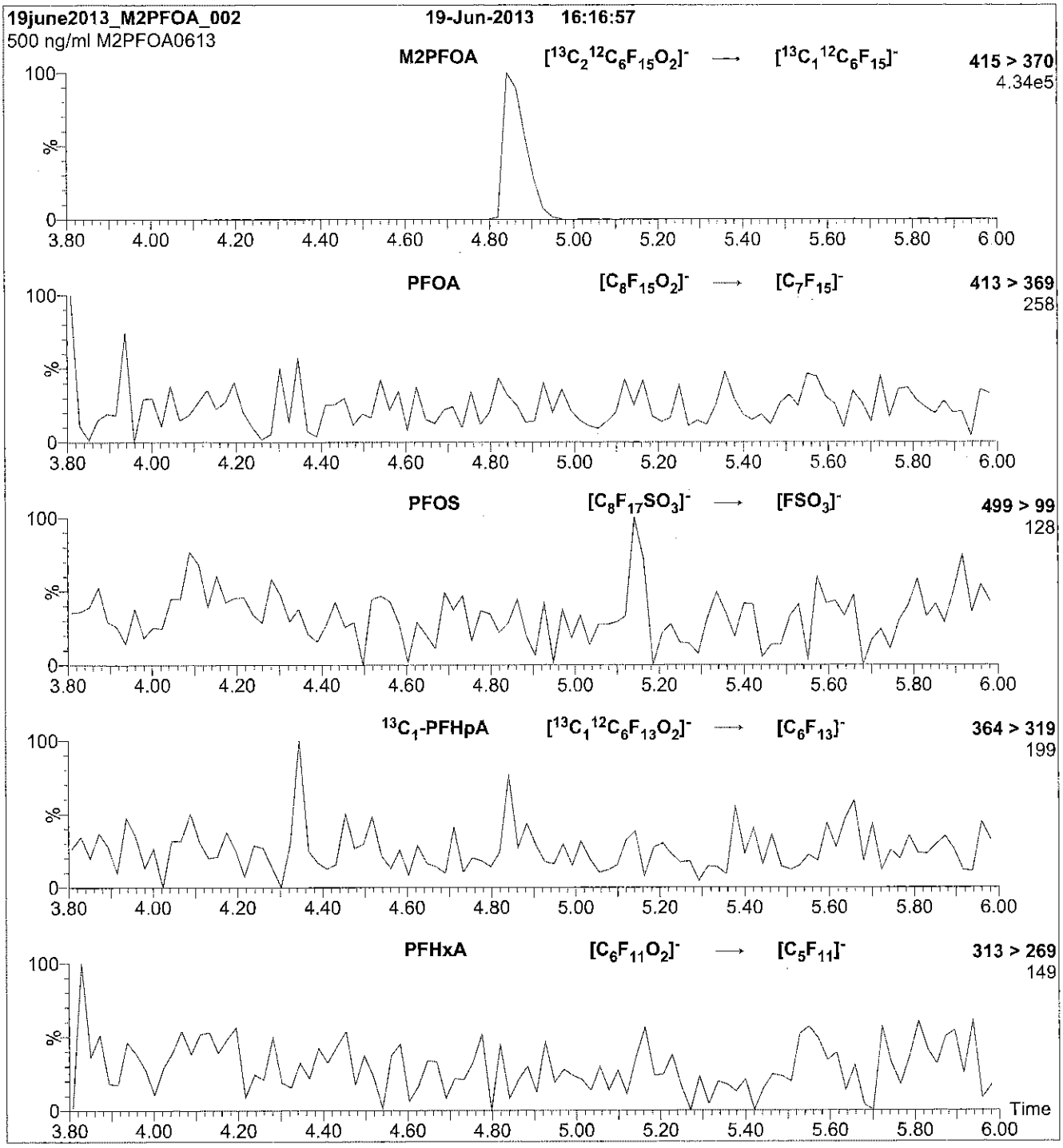
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: **M2PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection:	Direct loop injection 10 µl (500 ng/ml M2PFOA)
Mobile phase:	Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O (both with 10 mM NH_4OAc buffer)
Flow:	300 µl/min

MS Parameters

Collision Gas (mbar) = 3.66e-3
Collision Energy (eV) = 11

Reagent

LCMPFDA_00008

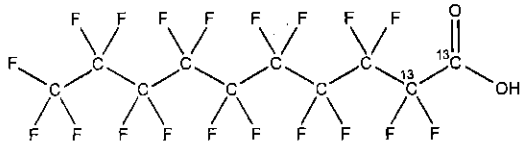
605243
ID: LCMPFDA_00008
Exp: 08/19/20 Prpd: CBW
13C2-Perfluorodecanoic a

Rec. 3/29/16 JRB ✓

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFDA	**LOT NUMBER:**	MPFDA0815
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8HF_{19}O_2$	**MOLECULAR WEIGHT:**	516.07
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	08/19/2015		
EXPIRY DATE: (mm/dd/yyyy)	08/19/2020		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of $^{13}C_1$-PFNA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ B.G. Chittim **Date:** 08/21/2015 (mm/dd/yyyy)

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

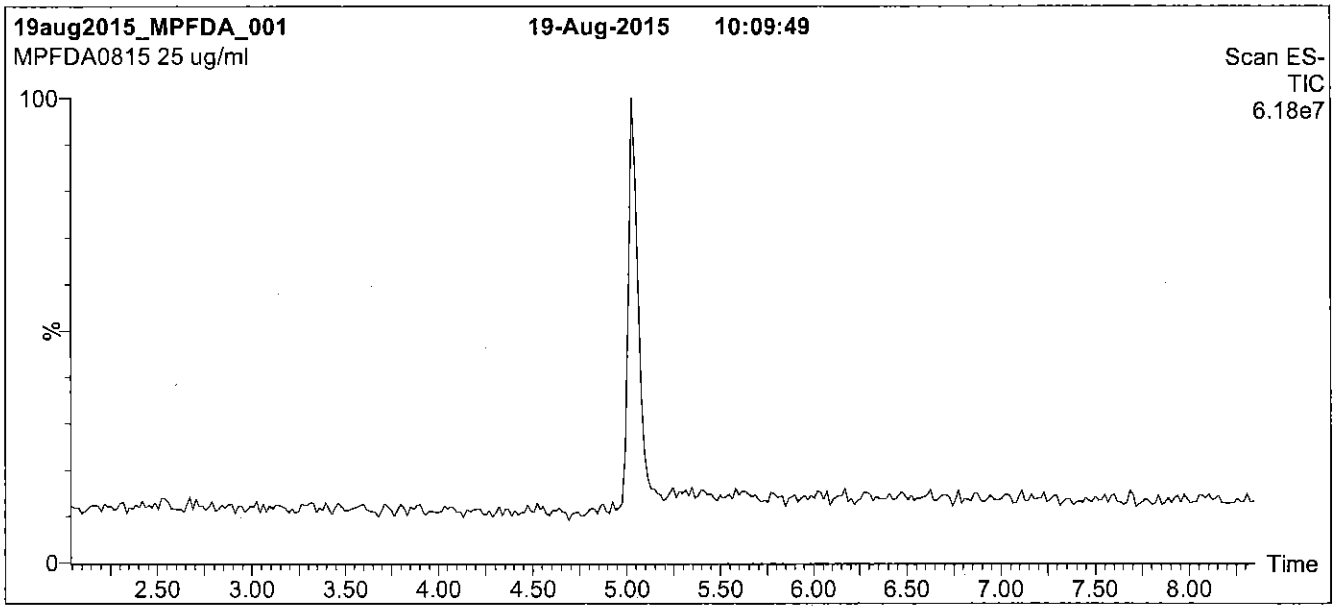
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

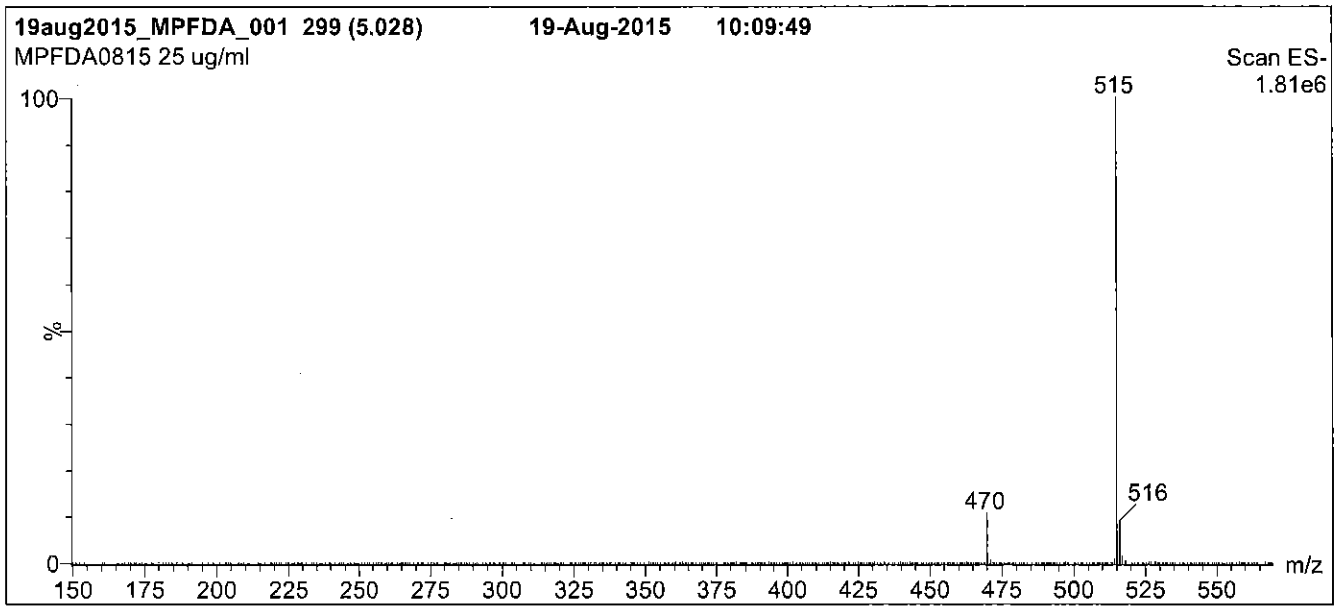
CALA Testing

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

Figure 1: **MPFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 0.5 min.
Time: 10 min

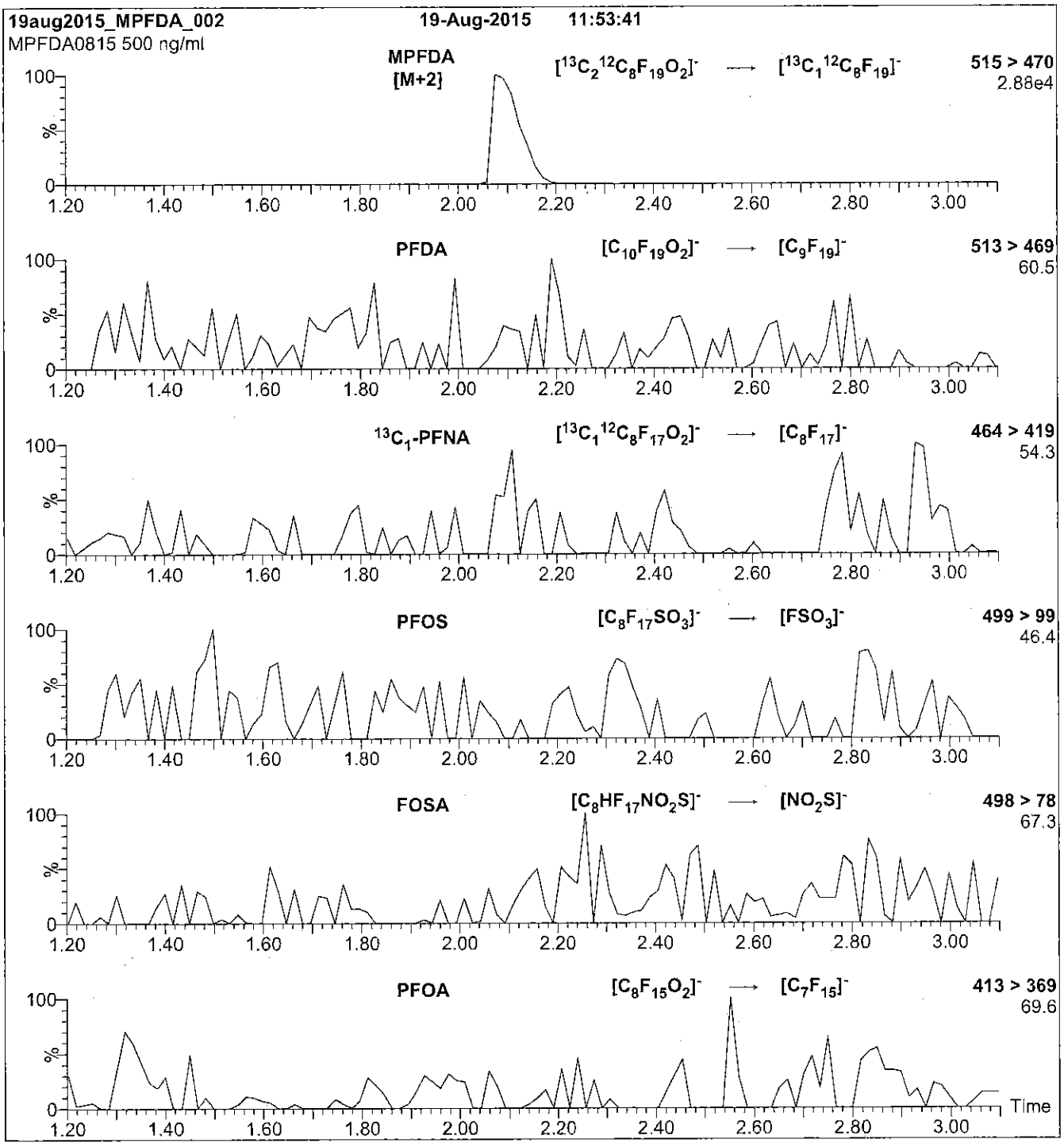
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 13

Reagent

LCMPFHxA_00009

Rec. 3/29/16 JRB ✓

WELLINGTON LABORATORIES

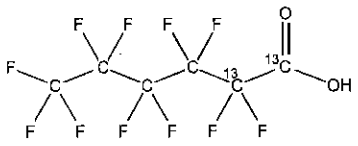
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid

LOT NUMBER: MPFHxA0415

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_4HF_{11}O_2$	**MOLECULAR WEIGHT:**	316.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	04/09/2015		
EXPIRY DATE: (mm/dd/yyyy)	04/09/2020		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 04/14/2015 (mm/dd/yyyy)

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

INTENDED USE:

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HAZARDS:

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

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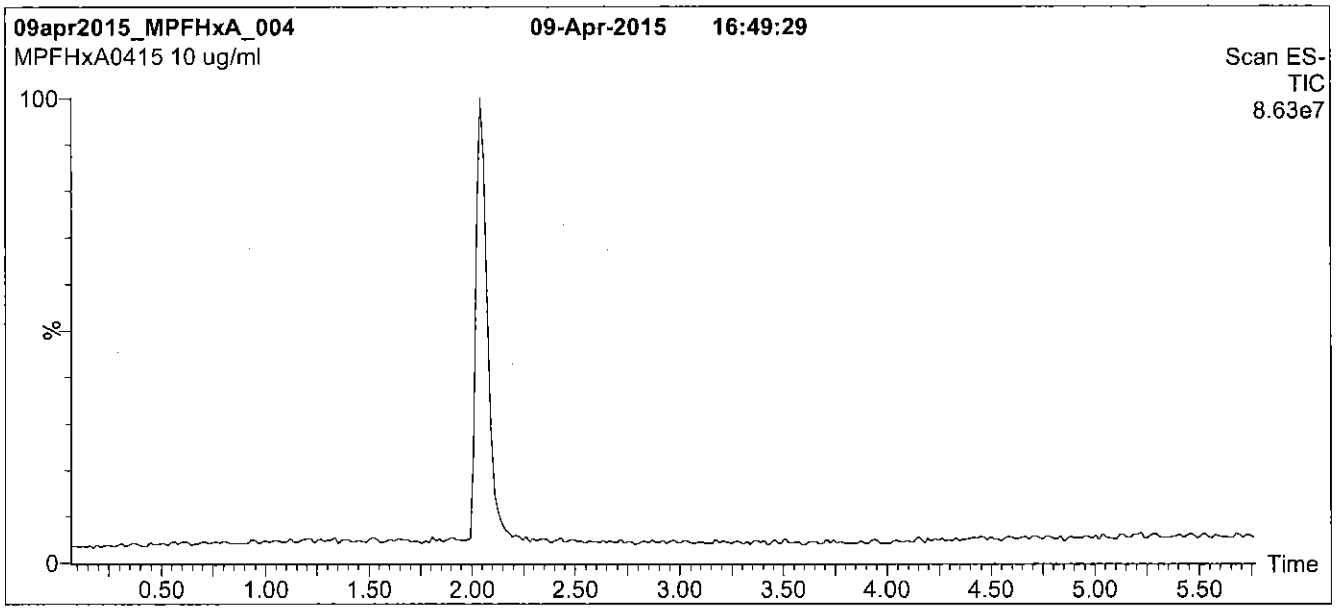
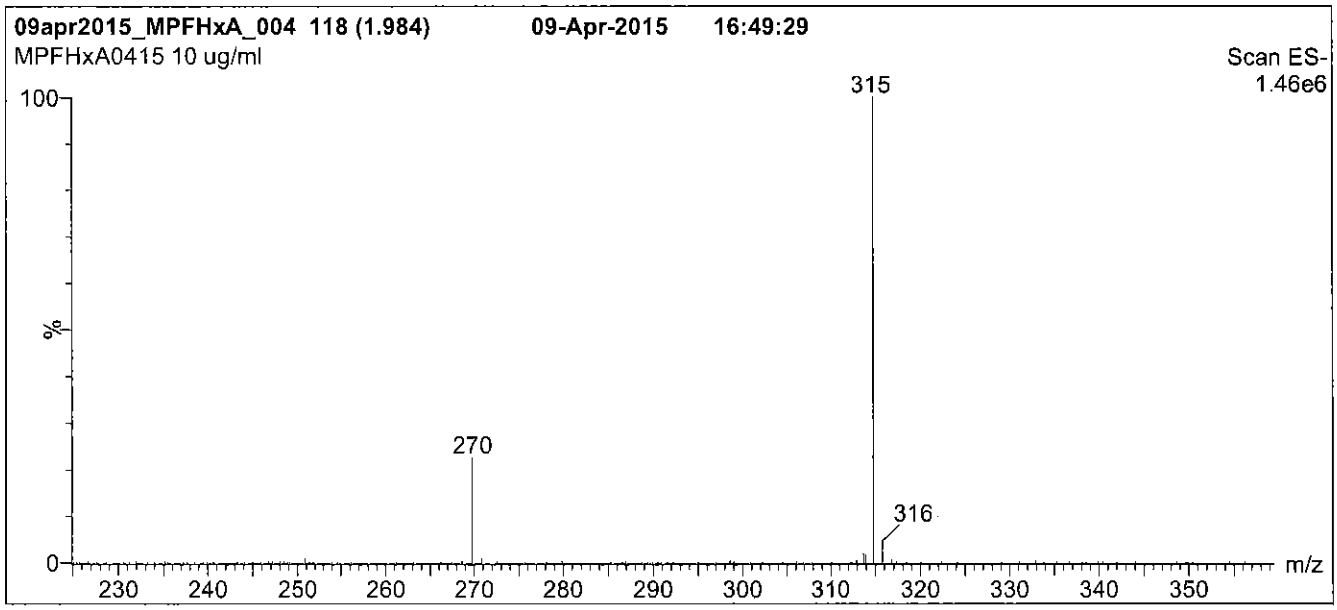
CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

Figure 1: **MPFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions over 0.5 min.
Time: 10 min

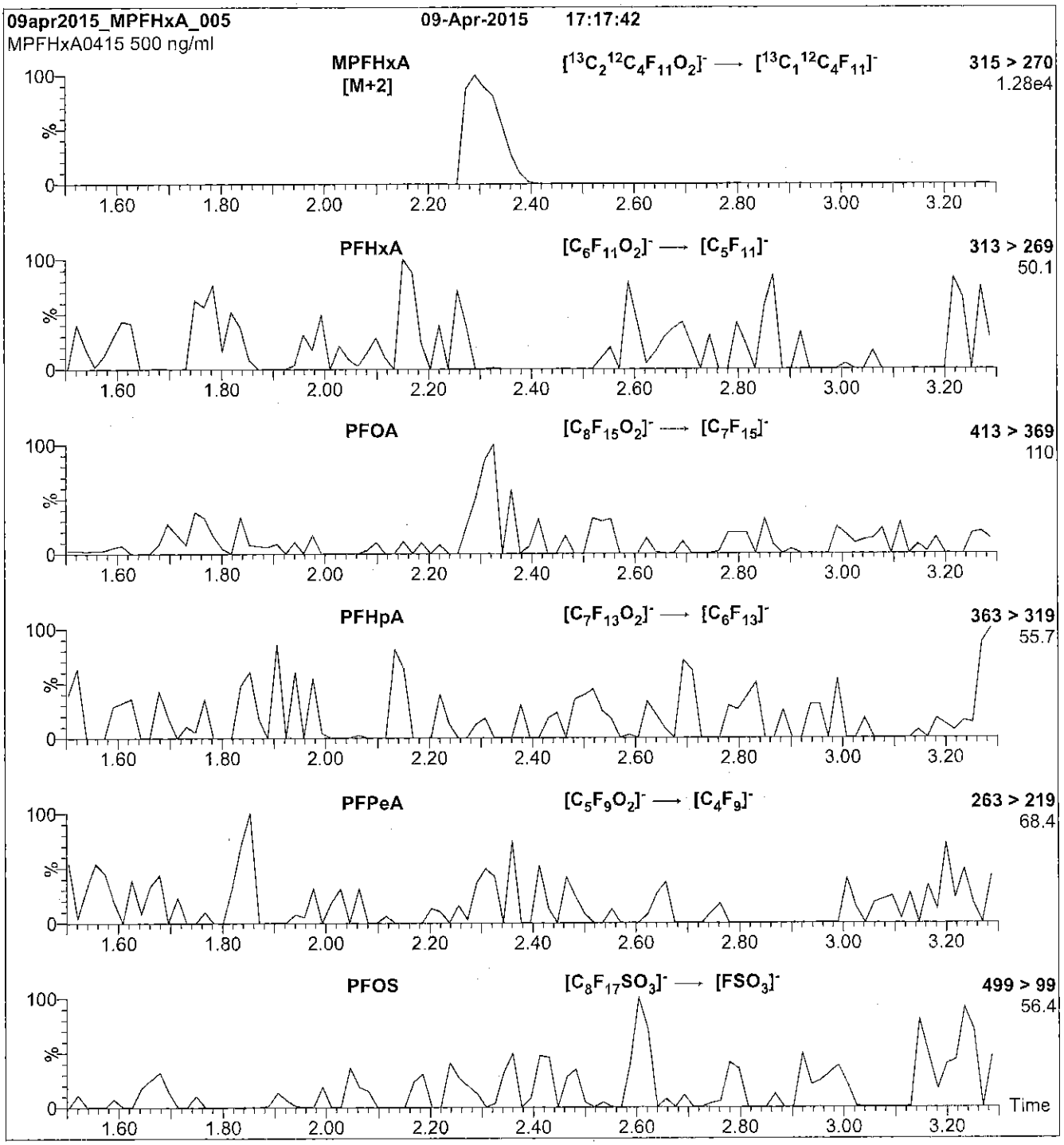
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: **MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 10

Reagent

LCMPFOS_00018

R: SBC 9/22/16

738686
ID: LCMPFOS_00018
Exp: 08/03/21 Ppd: SBC
13C4-Perfluorooctanesulfo

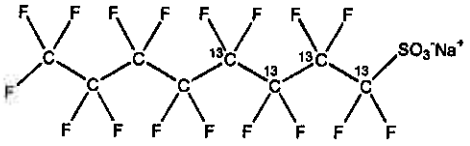
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0816

COMPOUND: Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	526.08
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (MPFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4\text{-}^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	08/03/2016		
EXPIRY DATE: (mm/dd/yyyy)	08/03/2021		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.8% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 08/05/2016 (mm/dd/yyyy)

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

Form#:27, Issued 2004-11-10
Revision#:3, Revised 2015-03-24

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

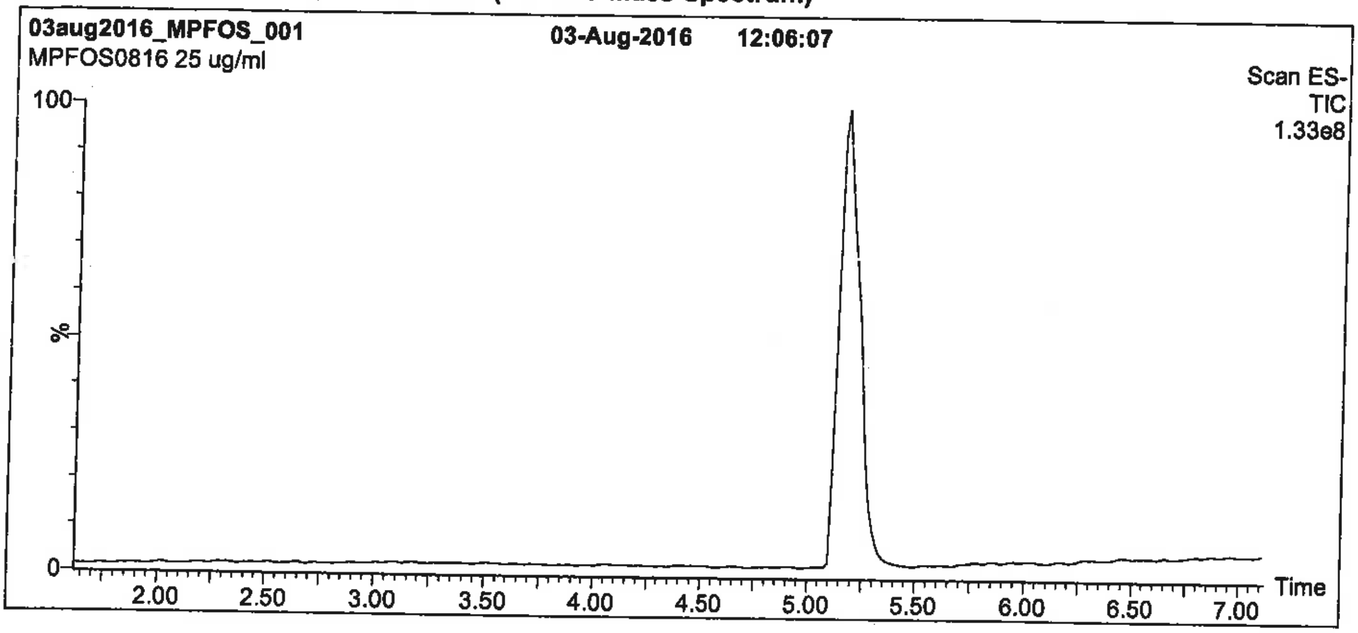
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

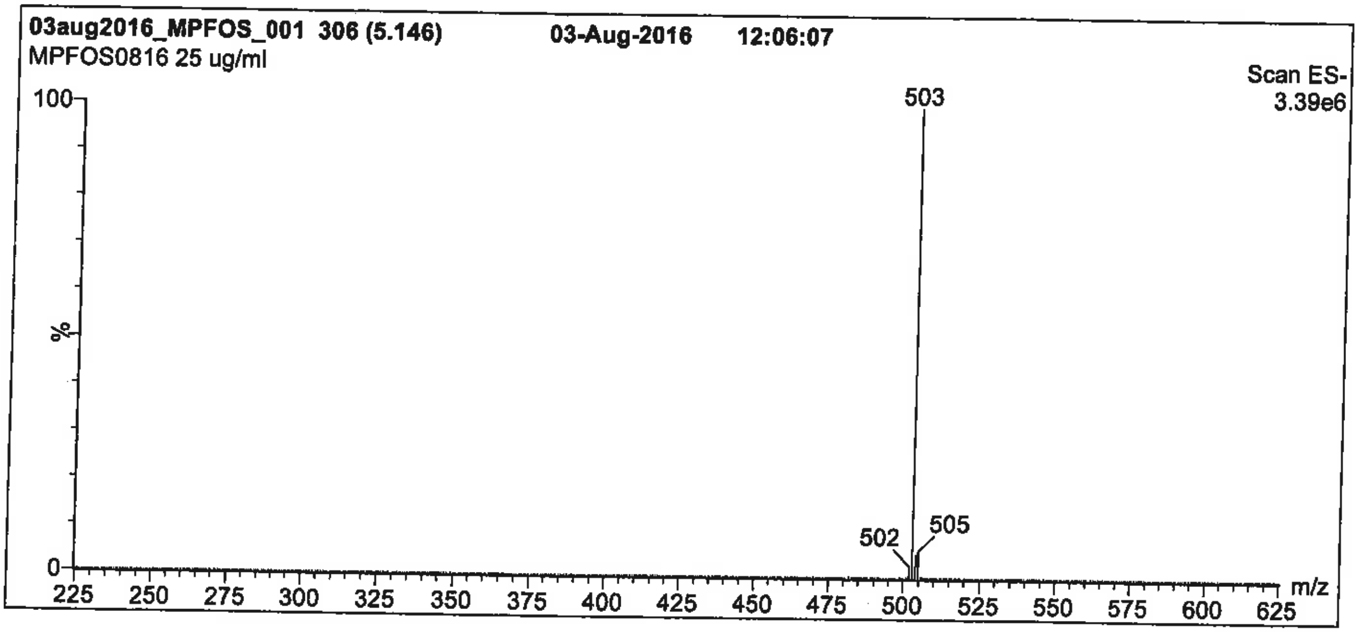
CALA

ANAB ACCREDITED

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

Figure 1: **MPFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.
Time: 10 min

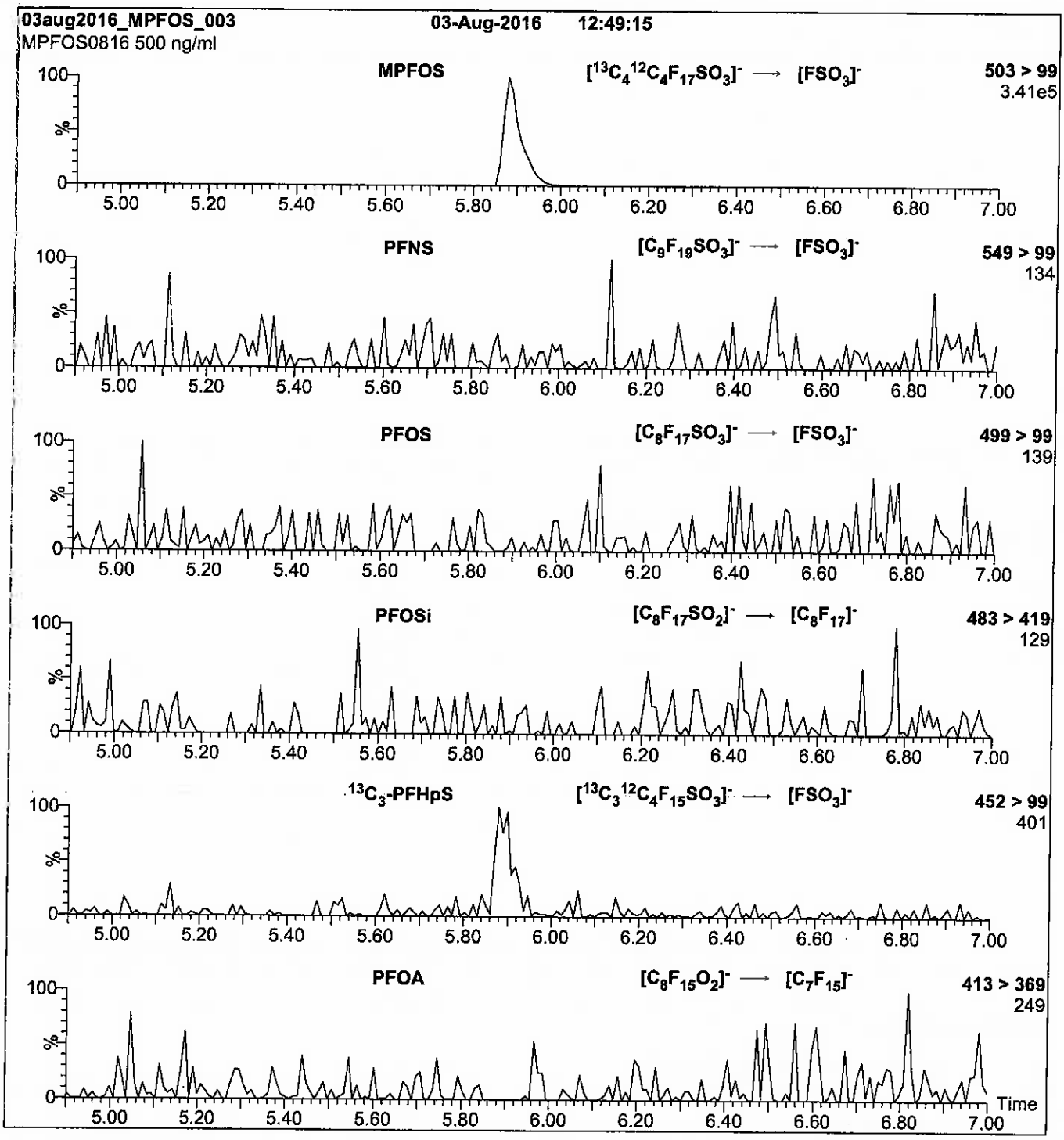
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 40

Method 537 DOD

Perfluorinated Alkyl Acids (LC/MS) by Method 537 DOD

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
WI-AF-1RW10-0117	320-25130-1	106	109
WI-AF-1FB10-0117	320-25130-2	104	97
	MB 320-147297/1-A	98	102
	LLCS 320-147297/2-A	104	107
WI-AF-1RW10-0117 MS	320-25130-1 MS	110	116
WI-AF-1RW10-0117 MSD	320-25130-1 MSD	112	113

	QC LIMITS
PFHxA = 13C2 PFHxA	70-130
PFDA = 13C2 PFDA	70-130

Column to be used to flag recovery values

FORM II 537

FORM III
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 24JAN2017A6A_039.d

Lab ID: LLCS 320-147297/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LLCS CONCENTRATION (ug/L)	LLCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0306 J	76	50-150	
Perfluorooctanoic acid (PFOA)	0.0198	0.0174 J	88	50-150	M
Perfluorobutanesulfonic acid (PFBS)	0.0898	0.0729 J	81	50-150	

Column to be used to flag recovery and RPD values

FORM III 537

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 24JAN2017A6A_041.d

Lab ID: 320-25130-1 MS Client ID: WI-AF-1RW10-0117 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.160	0.047 U	0.159	99	70-130	
Perfluorooctanoic acid (PFOA)	0.0780	0.024 U	0.0746	96	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.359	0.11 U	0.350	98	70-130	

Column to be used to flag recovery and RPD values

FORM III 537

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 24JAN2017A6A_042.d

Lab ID: 320-25130-1 MSD Client ID: WI-AF-1RW10-0117 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.159	0.158	100	1	30	70-130	
Perfluorooctanoic acid (PFOA)	0.0773	0.0771	100	3	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.356	0.360	101	3	30	70-130	

Column to be used to flag recovery and RPD values

FORM III 537

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Lab File ID: 24JAN2017A6A_038.d Lab Sample ID: MB 320-147297/1-A

Matrix: Water Date Extracted: 01/21/2017 11:49

Instrument ID: A6 Date Analyzed: 01/25/2017 09:19

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LLCS 320-147297/2-A	24JAN2017A6A_039.d	01/25/2017 09:49
WI-AF-1RW10-0117	320-25130-1	24JAN2017A6A_040.d	01/25/2017 10:19
WI-AF-1RW10-0117 MS	320-25130-1 MS	24JAN2017A6A_041.d	01/25/2017 10:48
WI-AF-1RW10-0117 MSD	320-25130-1 MSD	24JAN2017A6A_042.d	01/25/2017 11:19
WI-AF-1FB10-0117	320-25130-2	24JAN2017A6A_043.d	01/25/2017 11:49

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Instrument ID: A6 Calibration Start Date: 01/24/2017 16:04

GC Column: Acquity ID: 2.1(mm) Calibration End Date: 01/24/2017 18:32

Calibration ID: 27898

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		653829	20.10	1228760	20.73		
UPPER LIMIT		980744	20.60	1843140	21.23		
LOWER LIMIT		326915	19.60	614380	20.23		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCV 320-147661/10 CCVL		685988	20.11	1294038	20.75		
ICV 320-147661/12		604008	20.11	1139050	20.74		
CCV 320-147664/36 CCVIS		625069	20.08	1085864	20.71		
MB 320-147297/1-A		630968	20.08	1282606	20.71		
LLCS 320-147297/2-A		627354	20.08	1321123	20.71		
320-25130-1	WI-AF-1RW10-0117	590276	20.09	1434853	20.73		
320-25130-1 MS	WI-AF-1RW10-0117 MS	569598	20.08	1220507	20.73		
320-25130-1 MSD	WI-AF-1RW10-0117 MSD	557588	20.08	1217689	20.71		
320-25130-2	WI-AF-1FB10-0117	644433	20.08	1364952	20.71		
CCV 320-147664/48 CCVIS		710003	20.08	1331891	20.71		

13PFOA = 13C2-PFOA
PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Sample No.: CCV 320-147664/36 Date Analyzed: 01/25/2017 08:20

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 24JAN2017A6A_036.d Heated Purge: (Y/N) N

Calibration ID: 27898

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		625069	20.08	1085864	20.71		
UPPER LIMIT		875097	20.58	1520210	21.21		
LOWER LIMIT		437548	19.58	760105	20.21		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-147297/1-A		630968	20.08	1282606	20.71		
LLCS 320-147297/2-A		627354	20.08	1321123	20.71		
320-25130-1	WI-AF-1RW10-0117	590276	20.09	1434853	20.73		
320-25130-1 MS	WI-AF-1RW10-0117 MS	569598	20.08	1220507	20.73		
320-25130-1 MSD	WI-AF-1RW10-0117 MSD	557588	20.08	1217689	20.71		
320-25130-2	WI-AF-1FB10-0117	644433	20.08	1364952	20.71		

13PFOA = 13C2-PFOA
PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Sample No.: CCV 320-147664/48 Date Analyzed: 01/25/2017 14:17

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 24JAN2017A6A_048.d Heated Purge: (Y/N) N

Calibration ID: 27898

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		710003	20.08	1331891	20.71		
UPPER LIMIT		994004	20.58	1864647	21.21		
LOWER LIMIT		497002	19.58	932324	20.21		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-147297/1-A		630968	20.08	1282606	20.71		
LLCS 320-147297/2-A		627354	20.08	1321123	20.71		
320-25130-1	WI-AF-1RW10-0117	590276	20.09	1434853	20.73		
320-25130-1 MS	WI-AF-1RW10-0117 MS	569598	20.08	1220507	20.73		
320-25130-1 MSD	WI-AF-1RW10-0117 MSD	557588	20.08	1217689	20.71		
320-25130-2	WI-AF-1FB10-0117	644433	20.08	1364952	20.71		

13PFOA = 13C2-PFOA
PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: WI-AF-1RW10-0117 Lab Sample ID: 320-25130-1

Matrix: Water Lab File ID: 24JAN2017A6A_040.d

Analysis Method: 537 Date Collected: 01/17/2017 09:12

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 252.7(mL) Date Analyzed: 01/25/2017 10:19

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	106		70-130
STL00996	13C2 PFDA	109		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_040.d
Lims ID: 320-25130-A-1-A
Client ID: WI-AF-1RW10-0117
Sample Type: Client
Inject. Date: 25-Jan-2017 10:19:05 ALS Bottle#: 19 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-1-a
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:50:28

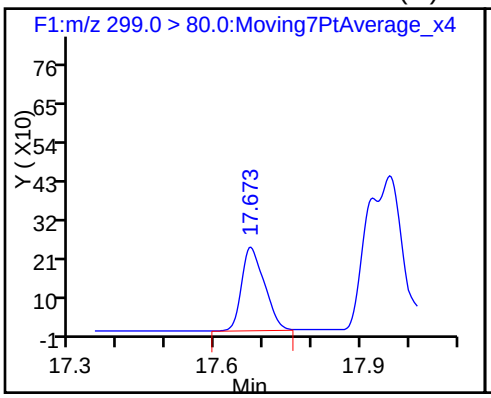
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								M
299.0 > 80.0	17.673	17.685	-0.012	1.000	780	0.0214	4.0	M
$ 2 13C2 PFHxA								
315.0 > 270.0	18.649	18.658	-0.009	1.000	798684	10.6	26569	
* 5 13C2-PFOA								
415.0 > 370.0	20.094	20.096	-0.002		590276	10.0	16099	
* 8 13C4 PFOS								
503.0 > 80.0	20.726	20.730	-0.004		1434853	28.7	19609	
$ 10 13C2 PFDA								
515.0 > 470.0	21.533	21.541	-0.008	1.000	700597	10.9	23742	

QC Flag Legend

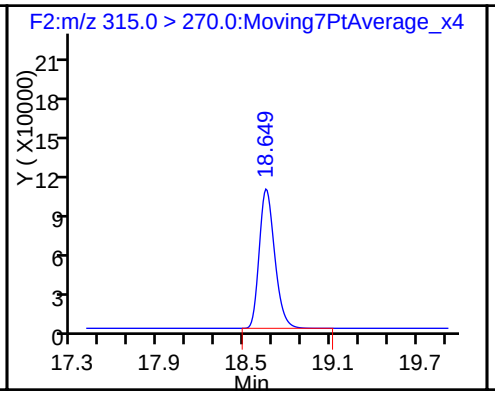
Review Flags
M - Manually Integrated

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_040.d
Injection Date: 25-Jan-2017 10:19:05 Instrument ID: A6
Lims ID: 320-25130-A-1-A Lab Sample ID: 320-25130-1
Client ID: WI-AF-1RW10-0117
Operator ID: CBW ALS Bottle#: 19 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

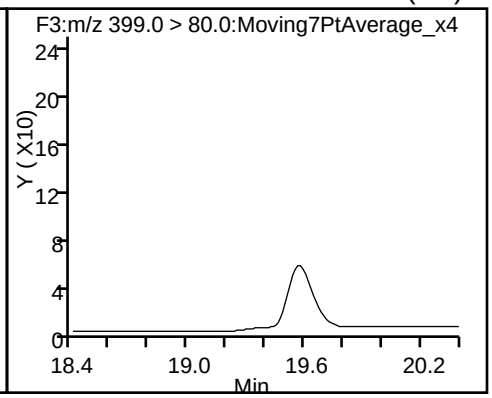
1 Perfluorobutanesulfonic acid (M)



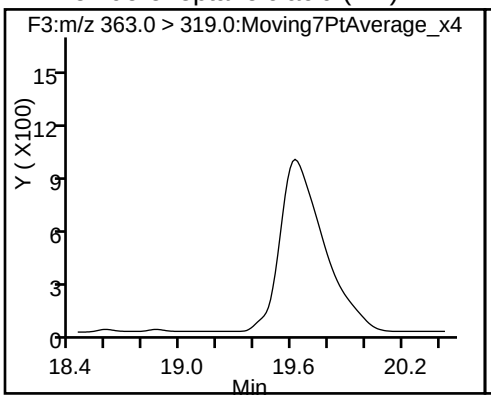
$ 2 13C2 PFHxA



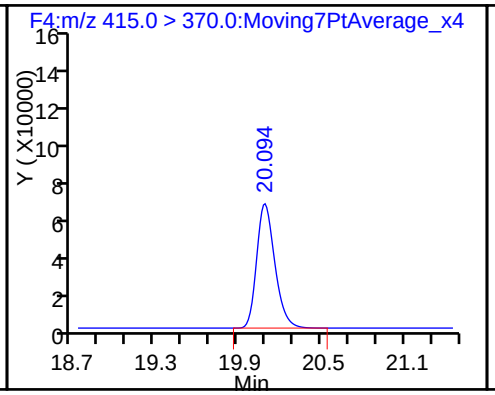
3 Perfluorohexanesulfonic acid (ND)



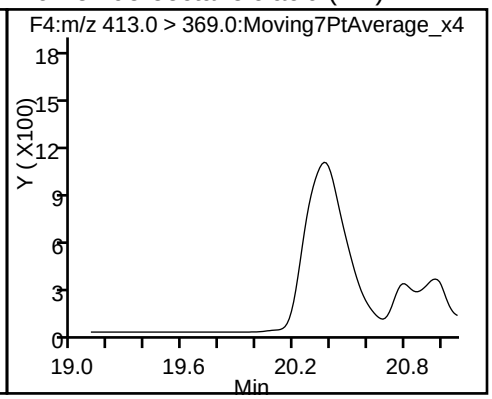
4 Perfluoroheptanoic acid (ND)



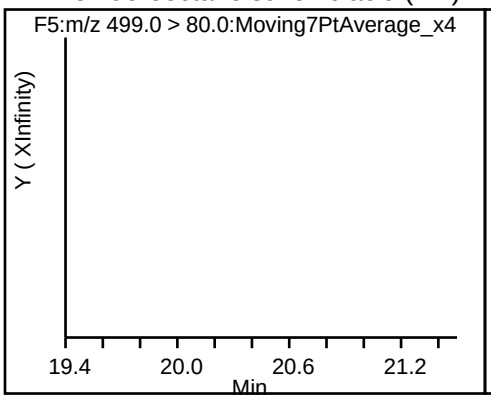
* 5 13C2-PFOA



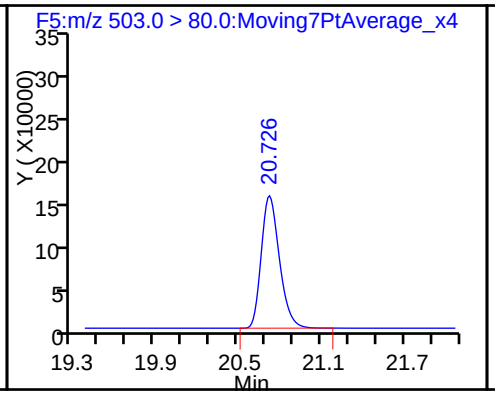
6 Perfluorooctanoic acid (ND)



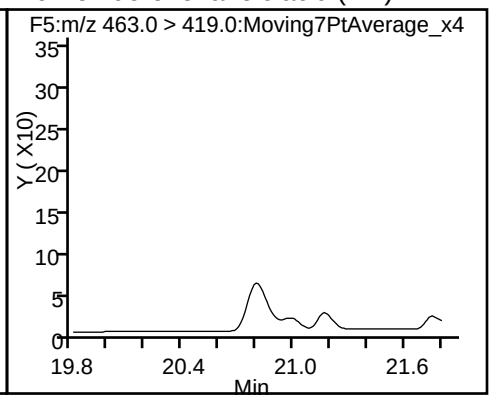
7 Perfluorooctane sulfonic acid (ND)



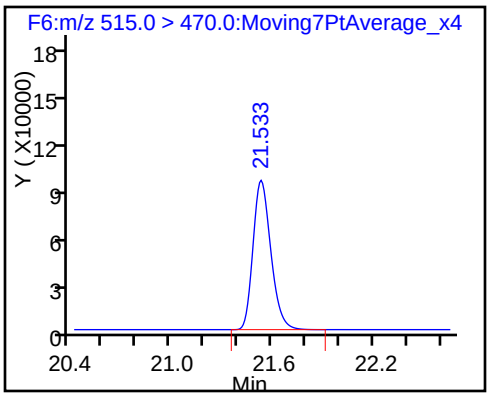
* 8 13C4 PFOS



9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_040.d
Lims ID: 320-25130-A-1-A
Client ID: WI-AF-1RW10-0117
Sample Type: Client
Inject. Date: 25-Jan-2017 10:19:05 ALS Bottle#: 19 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-1-a
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:50:28

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	10.0	10.6	106.49
$ 10 13C2 PFDA	10.0	10.9	109.45

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

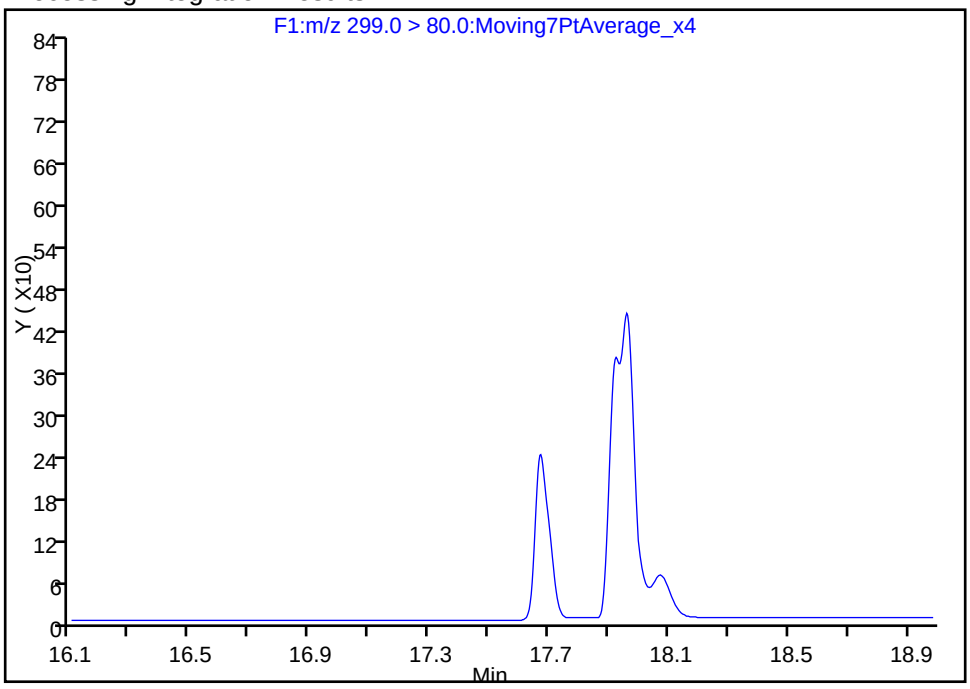
Data File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_040.d				
Injection Date:	25-Jan-2017 10:19:05	Instrument ID:	A6		
Lims ID:	320-25130-A-1-A	Lab Sample ID:	320-25130-1		
Client ID:	WI-AF-1RW10-0117				
Operator ID:	CBW	ALS Bottle#:	19	Worklist Smp#:	40
Injection Vol:	10.0 ul	Dil. Factor:	1.0000		
Method:	537__A6	Limit Group:	LC 537 ICAL		
Column:	Acquity BEH C18 (2.10 mm)	Detector	F1:MRM		

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

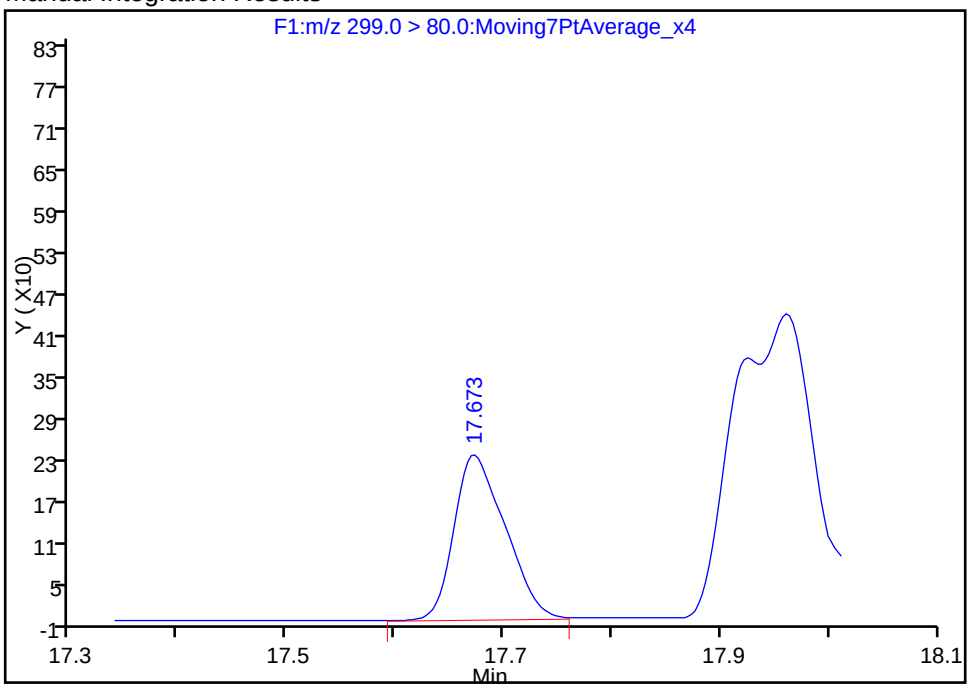
Not Detected
Expected RT: 17.68

Processing Integration Results



Manual Integration Results

RT: 17.67
Area: 780
Amount: 0.021447
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 13:50:28
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: WI-AF-1FB10-0117 Lab Sample ID: 320-25130-2

Matrix: Water Lab File ID: 24JAN2017A6A_043.d

Analysis Method: 537 Date Collected: 01/17/2017 09:13

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 252.9(mL) Date Analyzed: 01/25/2017 11:49

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	104		70-130
STL00996	13C2 PFDA	97		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_043.d
Lims ID: 320-25130-A-2-A
Client ID: WI-AF-1FB10-0117
Sample Type: Client
Inject. Date: 25-Jan-2017 11:49:12 ALS Bottle#: 22 Worklist Smp#: 43
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-2-a
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:52:55

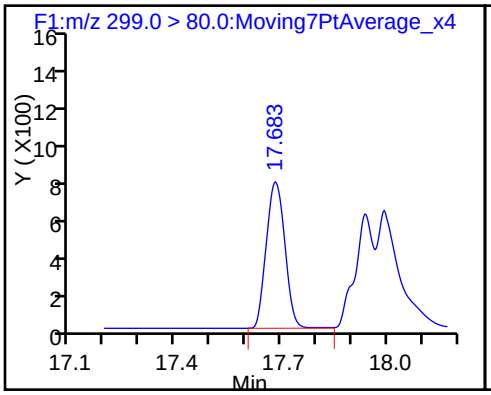
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.683	17.685	-0.002	1.000	2821	0.0815	6.6	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.649	18.658	-0.009	1.000	850556	10.4	28507	
3 Perfluorohexanesulfonic acid								M
399.0 > 80.0	19.380	19.403	-0.023	1.000	942	0.0213	8.4	M
4 Perfluoroheptanoic acid								M
363.0 > 319.0	19.451	19.437	0.014	1.000	654	0.008589	0.9	M
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		644433	10.0	17656	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.141	20.096	0.045	1.000	1475	0.0214	1.2	M
7 Perfluorooctane sulfonic acid								M
499.0 > 80.0	20.726	20.468	0.258	1.000	1585	0.0306	47.0	M
* 8 13C4 PFOS								
503.0 > 80.0	20.714	20.730	-0.016		1364952	28.7	37268	
9 Perfluorononanoic acid								M
463.0 > 419.0	20.785	20.803	-0.018	1.000	2325	0.0292	35.9	M
$ 10 13C2 PFDA								
515.0 > 470.0	21.524	21.541	-0.017	1.000	678642	9.71	22582	

QC Flag Legend

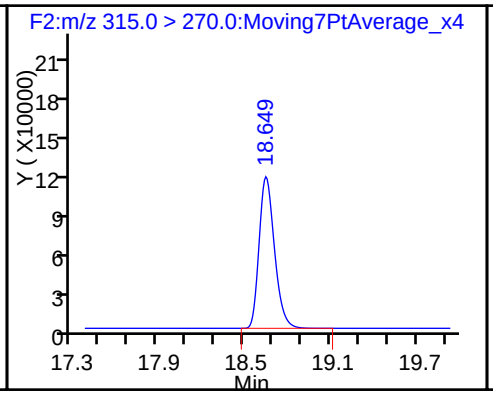
Review Flags
M - Manually Integrated

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_043.d
Injection Date: 25-Jan-2017 11:49:12 Instrument ID: A6
Lims ID: 320-25130-A-2-A Lab Sample ID: 320-25130-2
Client ID: WI-AF-1FB10-0117
Operator ID: CBW ALS Bottle#: 22 Worklist Smp#: 43
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

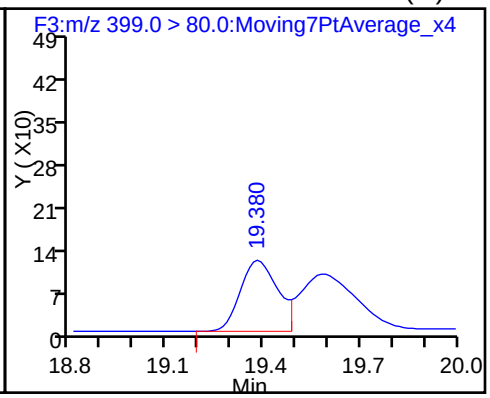
1 Perfluorobutanesulfonic acid



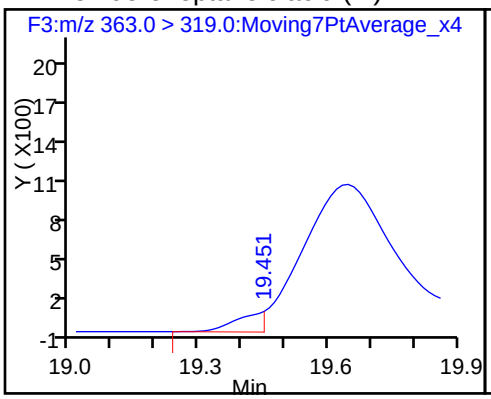
$ 2 13C2 PFHxA



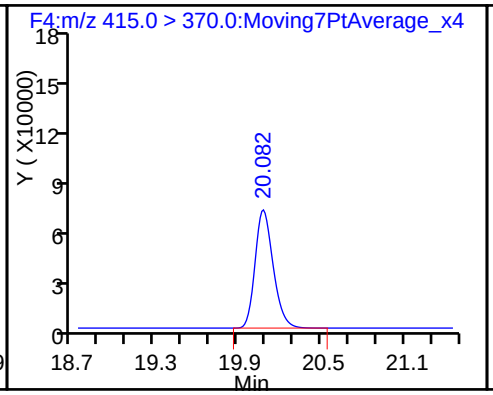
3 Perfluorohexanesulfonic acid (M)



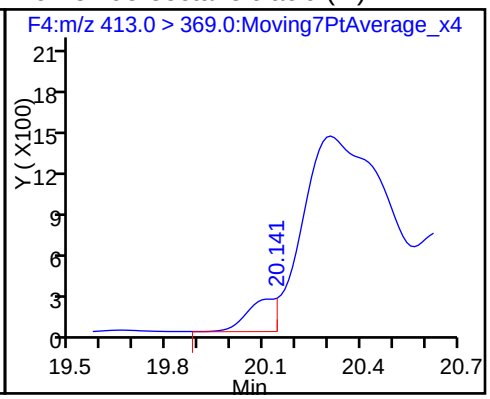
4 Perfluoroheptanoic acid (M)



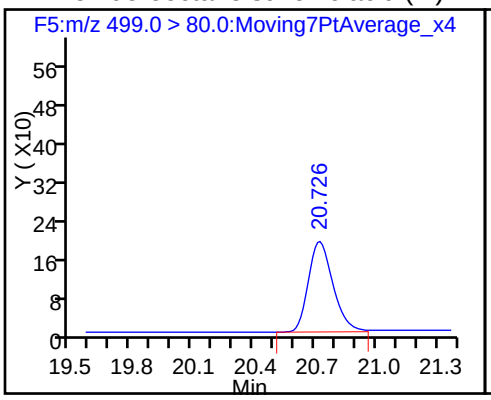
* 5 13C2-PFOA



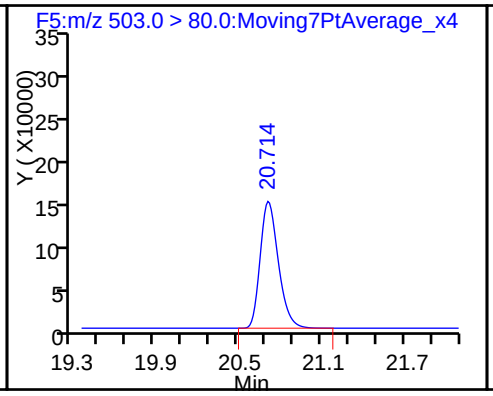
6 Perfluorooctanoic acid (M)



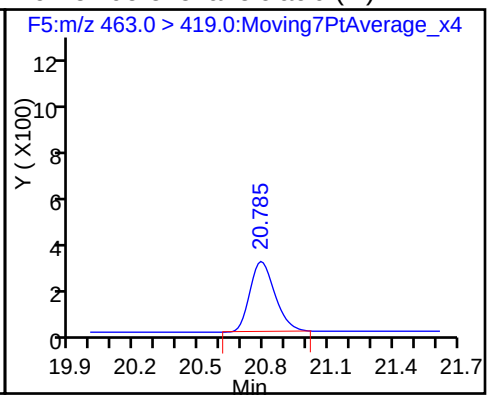
7 Perfluorooctane sulfonic acid (M)



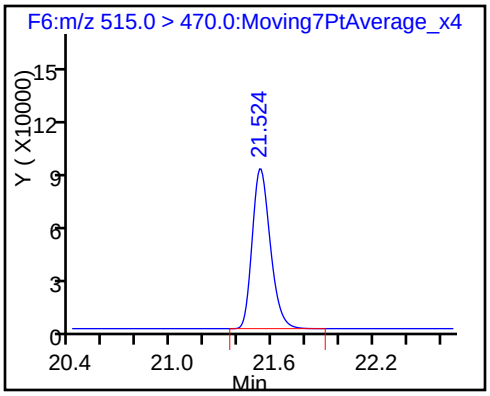
* 8 13C4 PFOS



9 Perfluorononanoic acid (M)



$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_043.d
Lims ID: 320-25130-A-2-A
Client ID: WI-AF-1FB10-0117
Sample Type: Client
Inject. Date: 25-Jan-2017 11:49:12 ALS Bottle#: 22 Worklist Smp#: 43
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-2-a
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:52:55

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	10.0	10.4	103.87
$ 10 13C2 PFDA	10.0	9.71	97.11

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

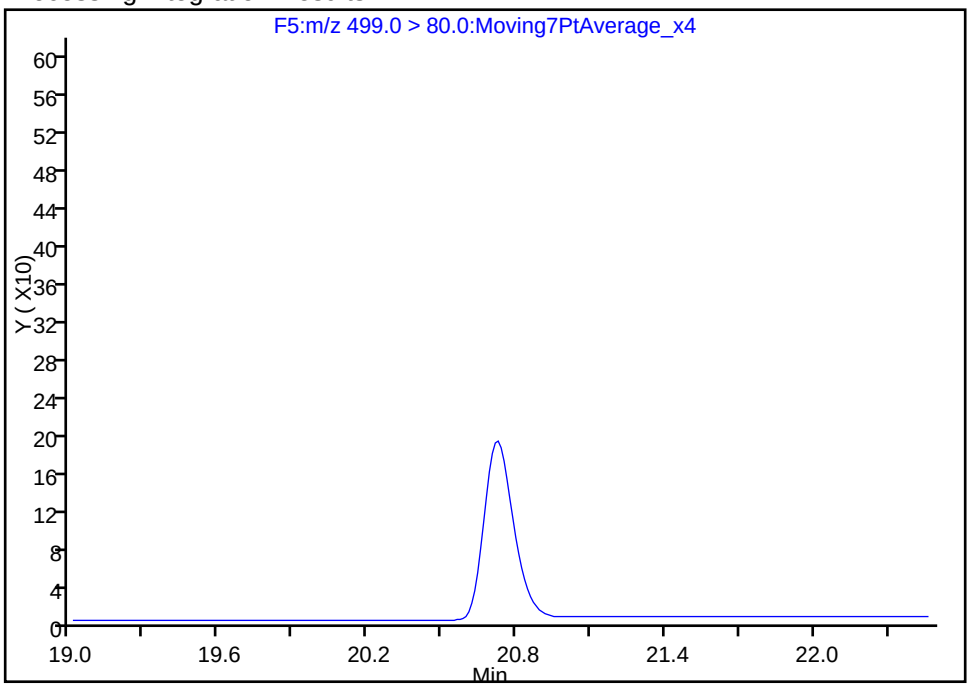
Data File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_043.d				
Injection Date:	25-Jan-2017 11:49:12	Instrument ID:	A6		
Lims ID:	320-25130-A-2-A	Lab Sample ID:	320-25130-2		
Client ID:	WI-AF-1FB10-0117				
Operator ID:	CBW	ALS Bottle#:	22	Worklist Smp#:	43
Injection Vol:	10.0 ul	Dil. Factor:	1.0000		
Method:	537__A6	Limit Group:	LC 537 ICAL		
Column:	Acquity BEH C18 (2.10 mm)	Detector	F5:MRM		

7 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

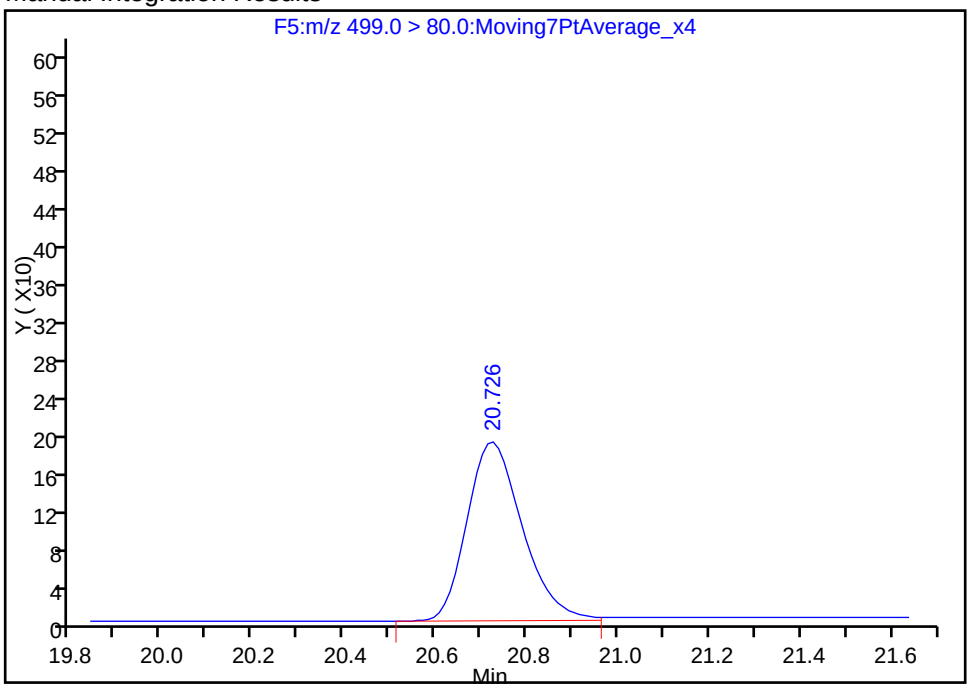
Processing Integration Results

Not Detected
Expected RT: 20.47



Manual Integration Results

RT: 20.73
Area: 1585
Amount: 0.030625
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 13:52:55
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

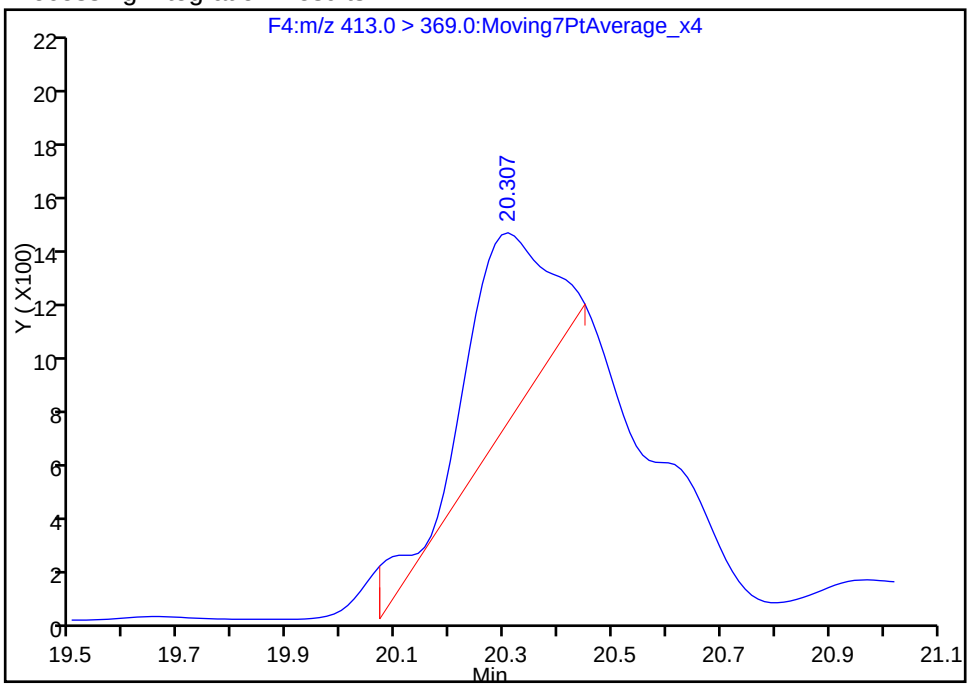
Data File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_043.d				
Injection Date:	25-Jan-2017 11:49:12	Instrument ID:	A6		
Lims ID:	320-25130-A-2-A	Lab Sample ID:	320-25130-2		
Client ID:	WI-AF-1FB10-0117				
Operator ID:	CBW	ALS Bottle#:	22	Worklist Smp#:	43
Injection Vol:	10.0 ul	Dil. Factor:	1.0000		
Method:	537__A6	Limit Group:	LC 537 ICAL		
Column:	Acquity BEH C18 (2.10 mm)	Detector	F4:MRM		

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

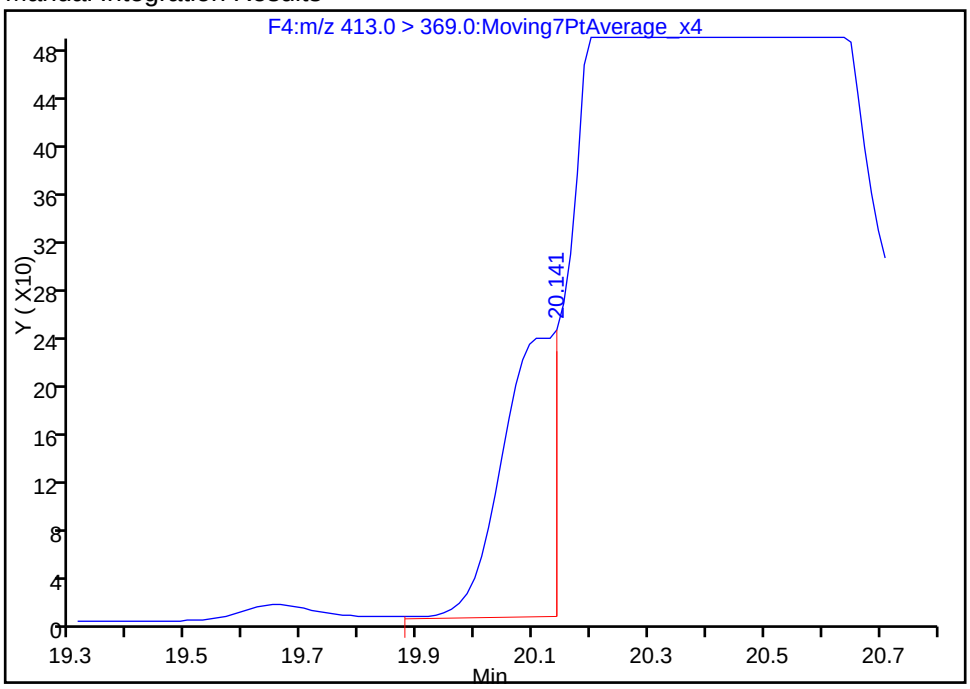
Processing Integration Results

RT: 20.31
Area: 7155
Amount: 0.103776
Amount Units: ng/ml



Manual Integration Results

RT: 20.14
Area: 1475
Amount: 0.021393
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 13:52:55

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1 Analy Batch No.: 147661

SDG No.:

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2017 16:04 Calibration End Date: 01/24/2017 18:32 Calibration ID: 27898

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-147661/3	24JAN2017A6A_003.d
Level 2	STD 320-147661/4	24JAN2017A6A_004.d
Level 3	STD 320-147661/5	24JAN2017A6A_005.d
Level 4	STD 320-147661/6	24JAN2017A6A_006.d
Level 5	STD 320-147661/7	24JAN2017A6A_007.d
Level 6	STD 320-147661/8	24JAN2017A6A_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanesulfonic acid (PFBS)	0.7240 0.6936	0.7843	0.7732	0.7241	0.6625	Ave		0.7270				6.4		30.0			
Perfluorohexanesulfonic acid	0.8475 0.9755	0.9230	0.9507	0.9667	0.9035	Ave		0.9278				5.1		30.0			
Perfluoroheptanoic acid	1.2619 1.0890	1.2736	1.1788	1.2241	1.0619	Ave		1.1816				7.5		30.0			
Perfluorooctanoic acid (PFOA)	1.0507 1.1089	1.1693	0.9554	1.1498	0.9852	Ave		1.0699				8.2		30.0			
Perfluorooctanesulfonic acid (PFOS)	0.9568 1.1822	1.0466	1.0874	1.1607	1.0912	Ave		1.0875				7.5		30.0			
Perfluorononanoic acid	1.3391 1.1974	1.2929	1.2031	1.3206	1.0485	Ave		1.2336				8.8		30.0			
13C2 PFHxA	1.2029 1.3245	1.1943	1.2160	1.3847	1.3016	Ave		1.2707				6.1		30.0			
13C2 PFDA	1.0118 1.1311	1.0452	1.0462	1.1378	1.1344	Ave		1.0844				5.2		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1 Analy Batch No.: 147661

SDG No.:

Instrument ID: A6 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2017 16:04 Calibration End Date: 01/24/2017 18:32 Calibration ID: 27898

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-147661/3	24JAN2017A6A_003.d
Level 2	STD 320-147661/4	24JAN2017A6A_004.d
Level 3	STD 320-147661/5	24JAN2017A6A_005.d
Level 4	STD 320-147661/6	24JAN2017A6A_006.d
Level 5	STD 320-147661/7	24JAN2017A6A_007.d
Level 6	STD 320-147661/8	24JAN2017A6A_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	294327 4661120	836915	1619491	2616556	3682649	8.98 178	22.9	45.1	90.9	135
Perfluorohexanesulfonic acid	PFOS	Ave	116135 2209984	331991	671200	1177606	1693136	3.03 60.1	7.72	15.2	30.6	45.4
Perfluoroheptanoic acid	13PFOA	Ave	80877 1336981	216684	422942	741749	1028185	0.990 19.7	2.52	4.97	10.0	14.9
Perfluorooctanoic acid (PFOA)	13PFOA	Ave	132774 2684196	392200	675822	1373612	1880740	1.95 38.8	4.98	9.81	19.8	29.3
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	173628 3546373	498504	1016551	1872091	2707686	4.01 79.6	10.2	20.1	40.6	60.1
Perfluorononanoic acid	13PFOA	Ave	179817 3079855	460843	904369	1676501	2126918	2.07 41.2	5.29	10.4	21.0	31.1
13C2 PFHxA	13PFOA	Ave	778758 826398	804846	877015	837038	848632	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PFOA	Ave	655015 705744	704379	754518	687782	739638	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:
Ave = Average ISTD

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1 Analy Batch No.: 147661

SDG No.:

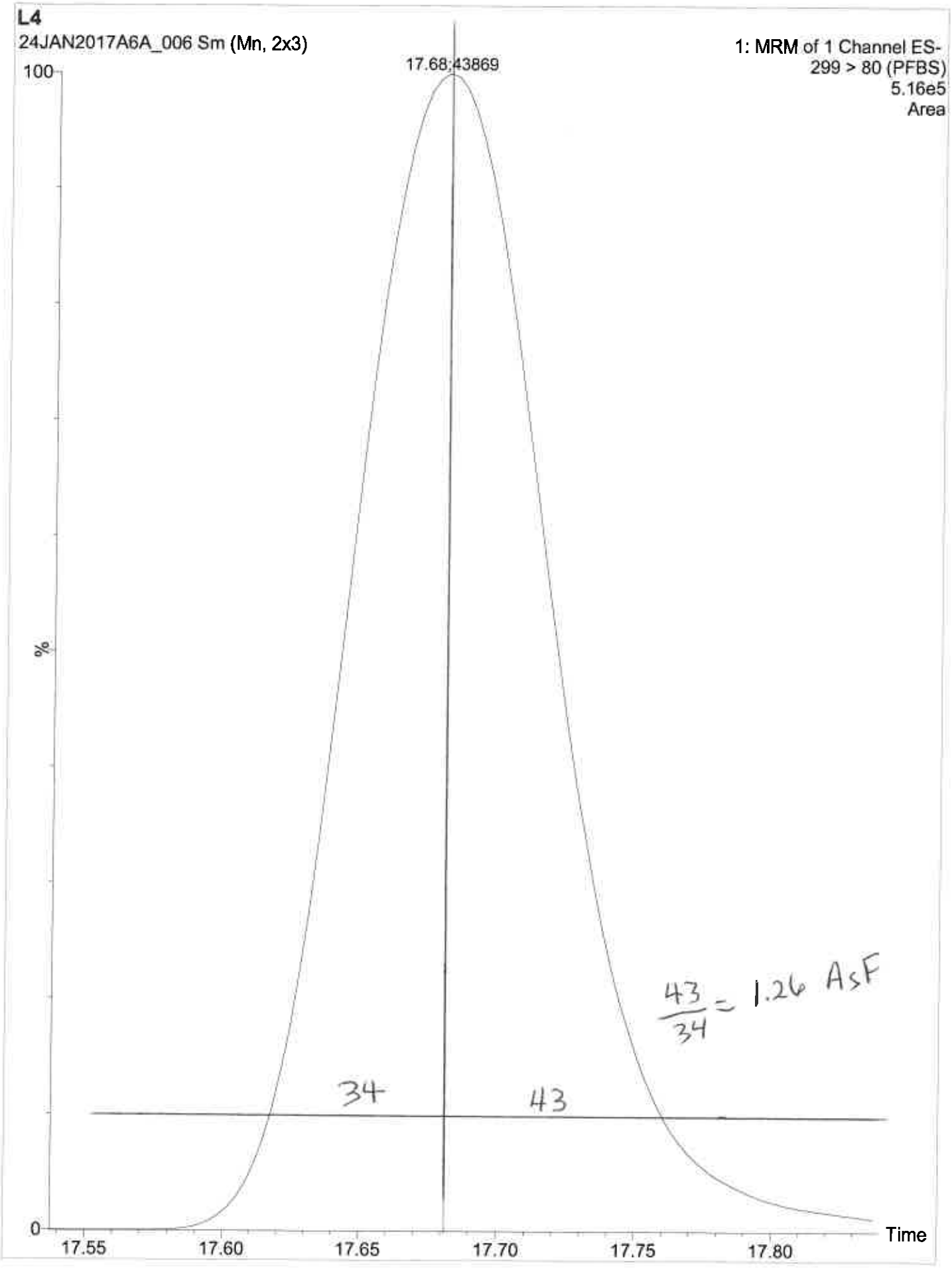
Instrument ID: A6 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

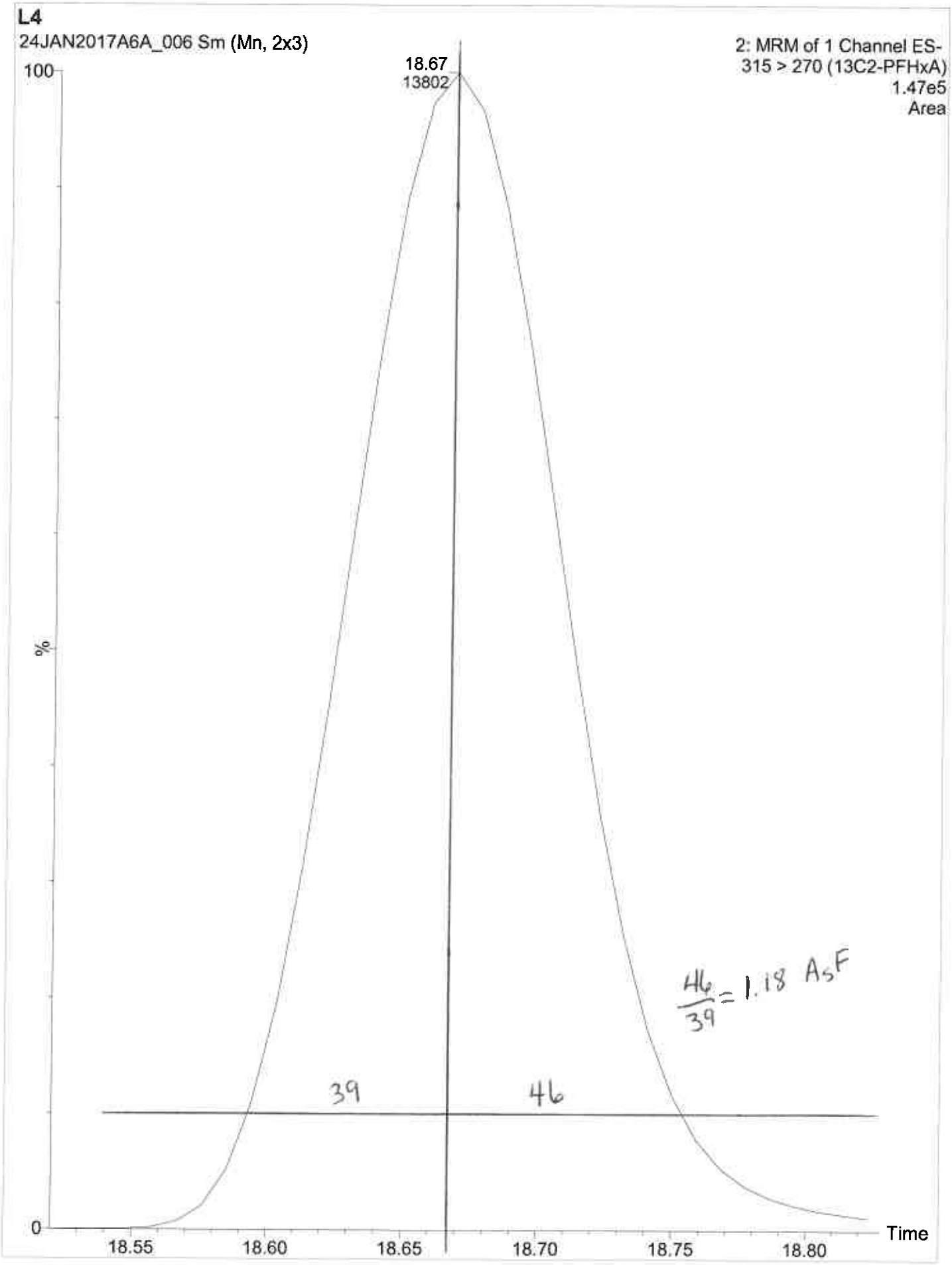
Calibration Start Date: 01/24/2017 16:04 Calibration End Date: 01/24/2017 18:32 Calibration ID: 27898

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD 320-147661/3	24JAN2017A6A_003.d
Level 2	STD 320-147661/4	24JAN2017A6A_004.d
Level 3	STD 320-147661/5	24JAN2017A6A_005.d
Level 4	STD 320-147661/6	24JAN2017A6A_006.d
Level 5	STD 320-147661/7	24JAN2017A6A_007.d
Level 6	STD 320-147661/8	24JAN2017A6A_008.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	-0.4	7.9	6.4	-0.4	-8.9	-4.6	50	50	50	50	50	50
Perfluorohexanesulfonic acid	-8.7	-0.5	2.5	4.2	-2.6	5.1	50	50	50	50	50	50
Perfluoroheptanoic acid	6.8	7.8	-0.2	3.6	-10.1	-7.8	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	-1.8	9.3	-10.7	7.5	-7.9	3.6	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-12.0	-3.8	0.0	6.7	0.3	8.7	50	50	50	50	50	50
Perfluorononanoic acid	8.6	4.8	-2.5	7.1	-15.0	-2.9	50	50	50	50	50	50
13C2 PFHxA	-5.3	-6.0	-4.3	9.0	2.4	4.2	30	30	30	30	30	30
13C2 PFDA	-6.7	-3.6	-3.5	4.9	4.6	4.3	30	30	30	30	30	30


L4
24JAN2017A6A_006 Sm (Mn, 2x3)
1: MRM of 1 Channel ES-
299 > 80 (PFBS)
5.16e5
Area
17.68;43869
100
%
0
17.55
17.60
17.65
17.70
17.75
17.80
Time
34
43
43/34 = 1.26 AsF


L4
24JAN2017A6A_006 Sm (Mn, 2x3)
2: MRM of 1 Channel ES-
315 > 270 (13C2-PFHxA)
1.47e5
Area
18.67
13802
100
%
0
39
46
46/39 = 1.18 AsF
18.55
18.60
18.65
18.70
18.75
18.80
Time

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_003.d
Lims ID: STD L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 24-Jan-2017 16:04:08 ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: STD L1 L1
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:24:31 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 09:52:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.696	17.685	0.011	1.000	294327	8.94	406	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	778758	9.47	26147	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.391	19.403	-0.012	1.000	116135	2.76	2918	
4 Perfluoroheptanoic acid								M
363.0 > 319.0	19.427	19.437	-0.010	1.000	80877	1.06	45.3	M
* 5 13C2-PFOA								
415.0 > 370.0	20.094	20.096	-0.002		647399	10.0	17760	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.094	20.096	-0.002	1.000	132774	1.92	70.3	M
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.466	20.468	-0.002	1.000	173628	3.53	1325	
* 8 13C4 PFOS								
503.0 > 80.0	20.726	20.730	-0.004		1298918	28.7	35348	
9 Perfluorononanoic acid								
463.0 > 419.0	20.797	20.803	-0.006	1.000	179817	2.25	3952	
$ 10 13C2 PFDA								
515.0 > 470.0	21.542	21.541	0.001	1.000	655015	9.33	21944	

QC Flag Legend

Review Flags

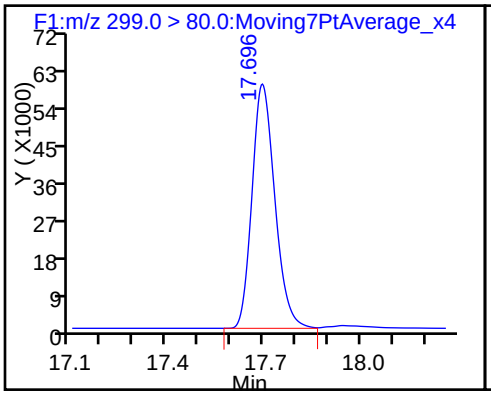
M - Manually Integrated

Reagents:

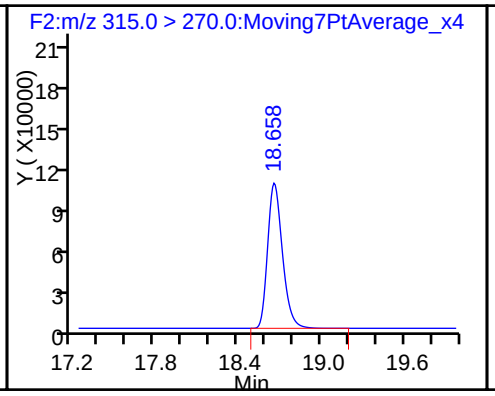
LC537-L1_00017 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_003.d
Injection Date: 24-Jan-2017 16:04:08 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

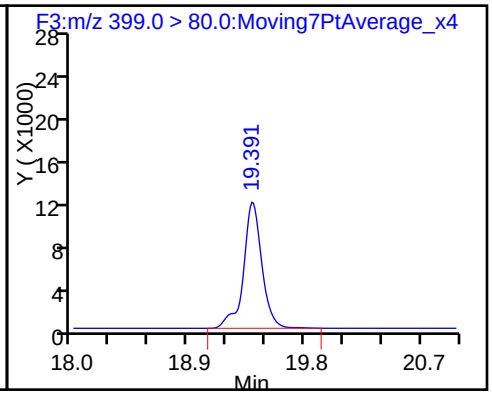
1 Perfluorobutanesulfonic acid



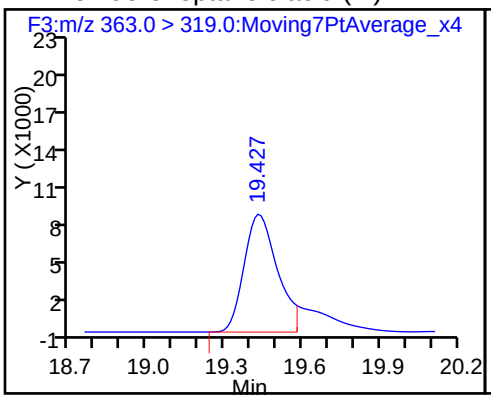
$ 2 13C2 PFHxA



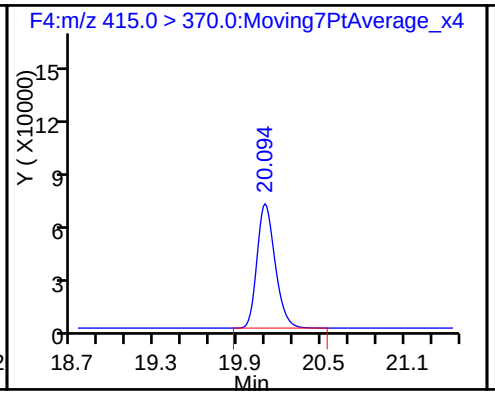
3 Perfluorohexanesulfonic acid



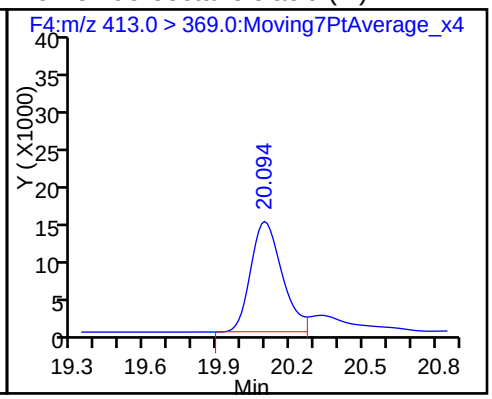
4 Perfluoroheptanoic acid (M)



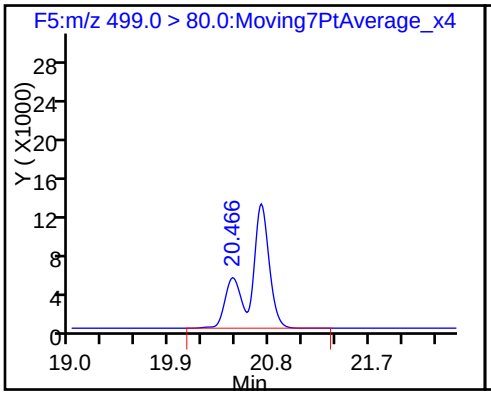
* 5 13C2-PFOA



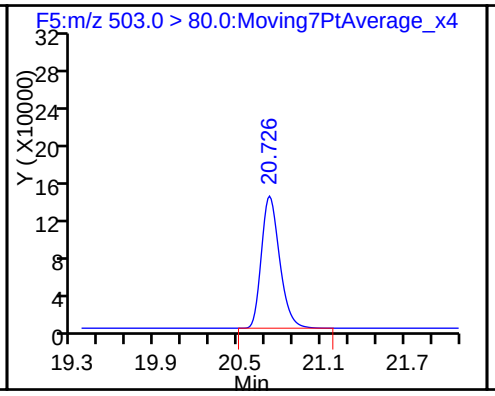
6 Perfluorooctanoic acid (M)



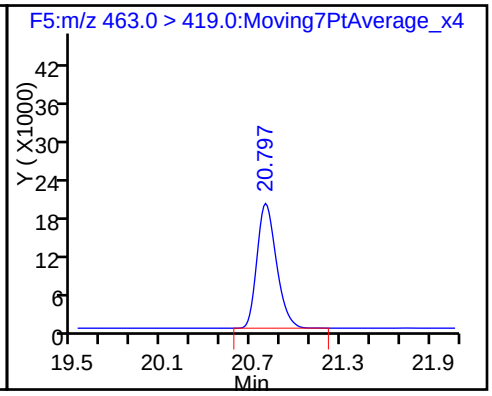
7 Perfluorooctane sulfonic acid



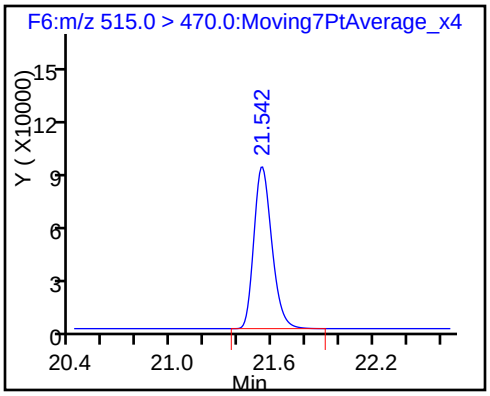
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

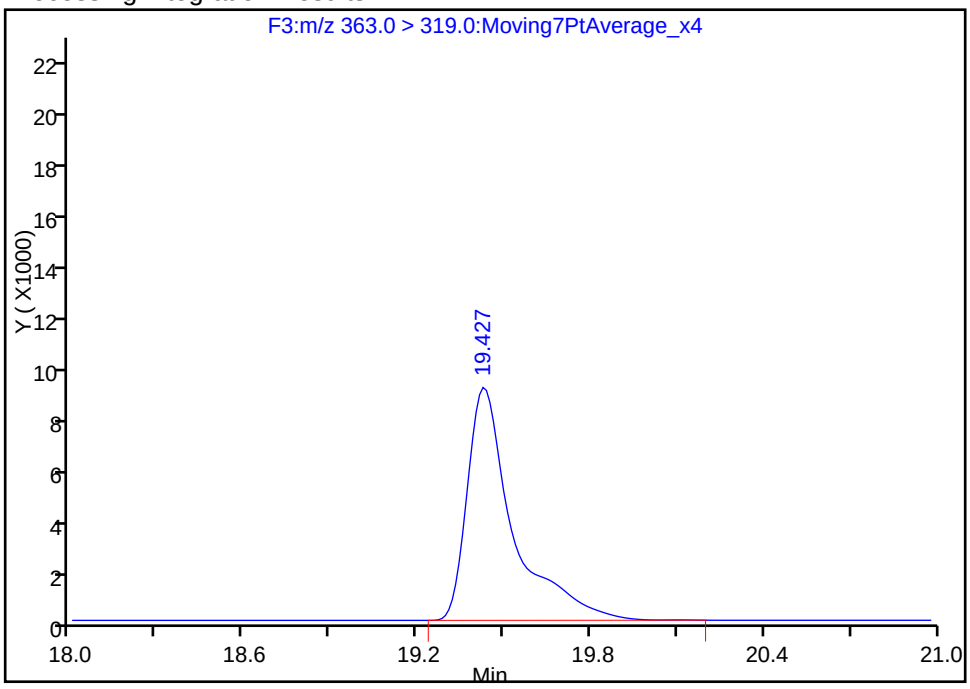
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_003.d
Injection Date: 24-Jan-2017 16:04:08 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F3:MRM

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

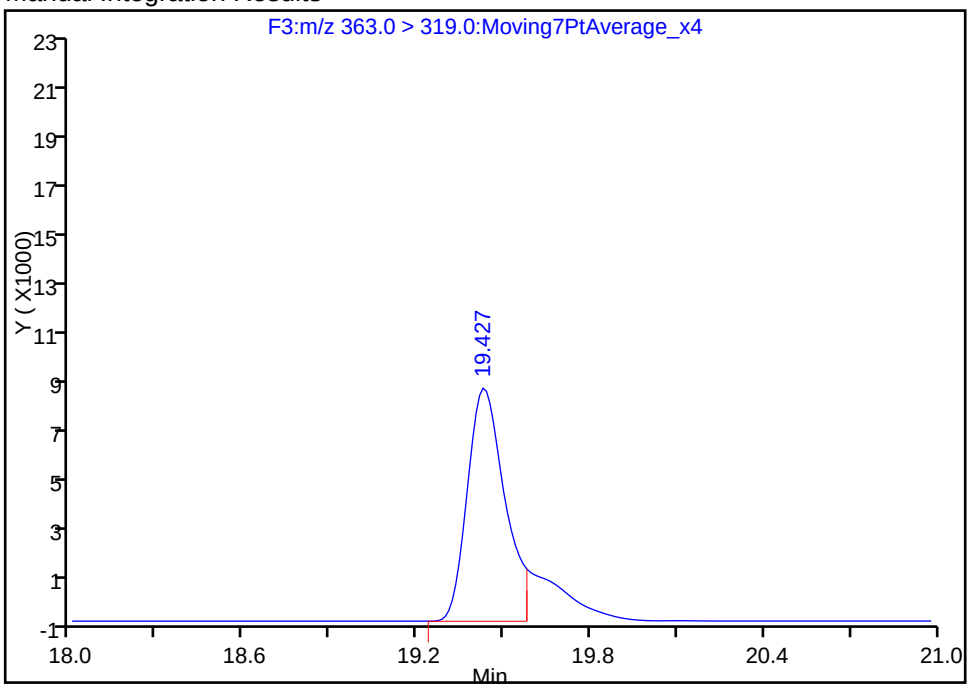
Processing Integration Results

RT: 19.43
Area: 99579
Amount: 1.250312
Amount Units: ng/ml



Manual Integration Results

RT: 19.43
Area: 80877
Amount: 1.057287
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 09:52:59
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

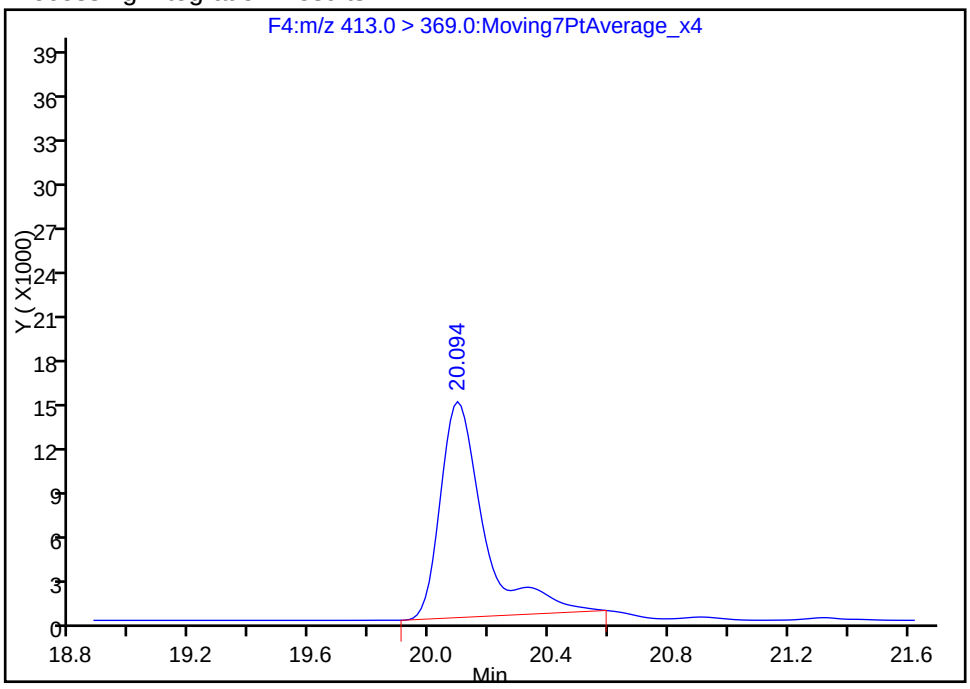
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_003.d
Injection Date: 24-Jan-2017 16:04:08 Instrument ID: A6
Lims ID: STD L1
Client ID:
Operator ID: CBW ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

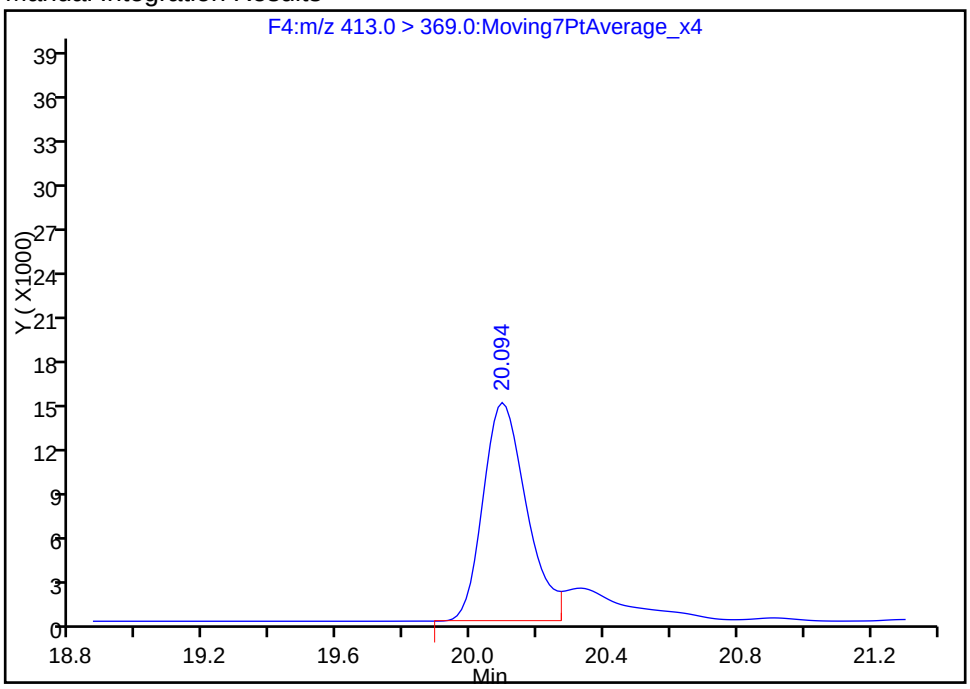
Processing Integration Results

RT: 20.09
Area: 147106
Amount: 2.086973
Amount Units: ng/ml



Manual Integration Results

RT: 20.09
Area: 132774
Amount: 1.916927
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 09:52:59
Audit Action: Manually Integrated Audit Reason: Split Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_004.d
Lims ID: STD L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jan-2017 16:33:43 ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: STD L2 L2
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:24:32 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 09:52:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.692	17.685	0.007	1.000	836915	24.7	644	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	804846	9.40	26897	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.403	19.403	0.0	1.000	331991	7.68	7924	
4 Perfluoroheptanoic acid								M
363.0 > 319.0	19.427	19.437	-0.010	1.000	216684	2.72	151	M
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.094	20.096	-0.002	1.000	392200	5.44	206	M
* 5 13C2-PFOA								
415.0 > 370.0	20.094	20.096	-0.002		673912	10.0	18520	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.466	20.468	-0.002	1.000	498504	9.83	4010	
* 8 13C4 PFOS								
503.0 > 80.0	20.726	20.730	-0.004		1337002	28.7	36400	
9 Perfluorononanoic acid								
463.0 > 419.0	20.797	20.803	-0.006	1.000	460843	5.54	12656	
$ 10 13C2 PFDA								
515.0 > 470.0	21.542	21.541	0.001	1.000	704379	9.64	23893	

QC Flag Legend

Review Flags

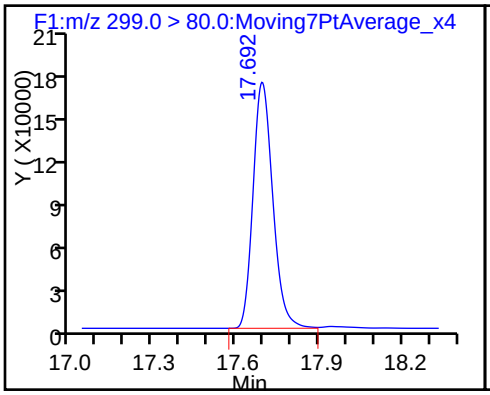
M - Manually Integrated

Reagents:

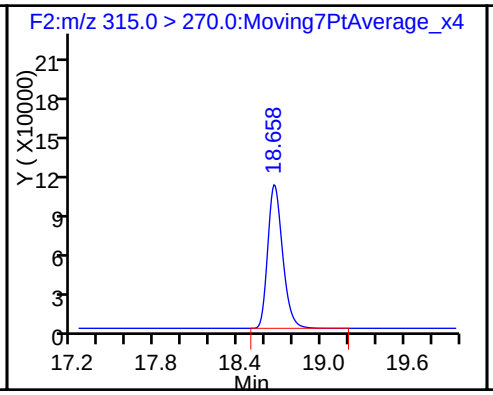
LC537-L2_00016 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_004.d
Injection Date: 24-Jan-2017 16:33:43 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

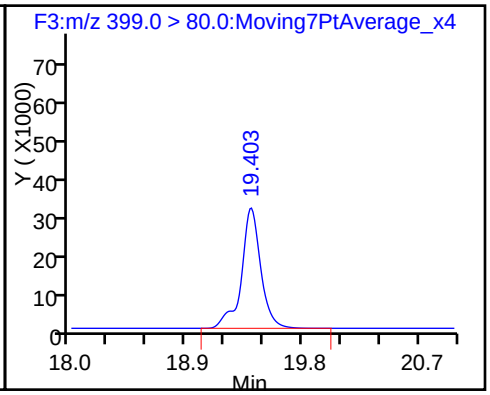
1 Perfluorobutanesulfonic acid



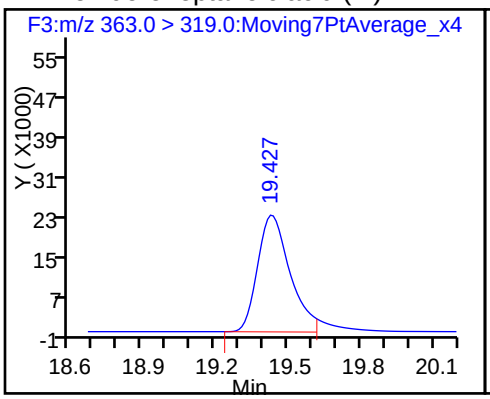
$ 2 13C2 PFHxA



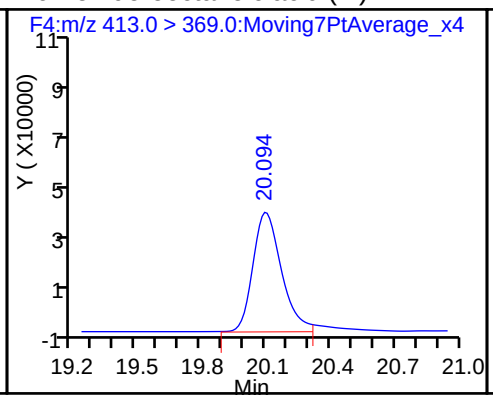
3 Perfluorohexanesulfonic acid



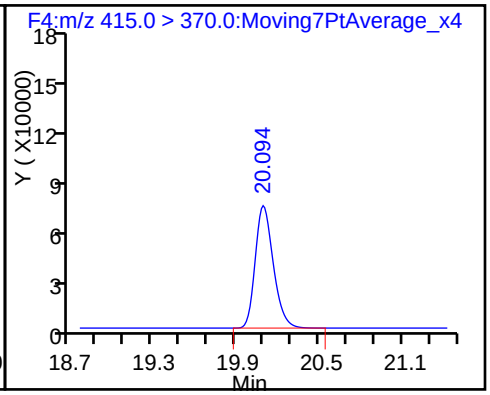
4 Perfluoroheptanoic acid (M)



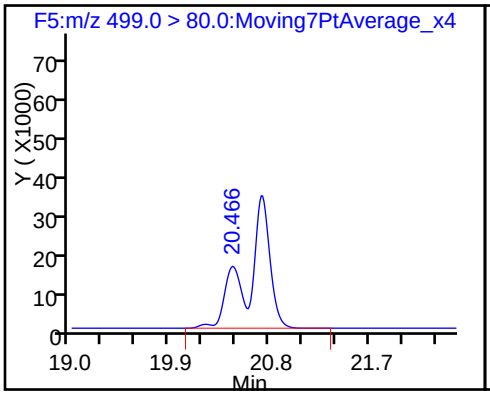
6 Perfluorooctanoic acid (M)



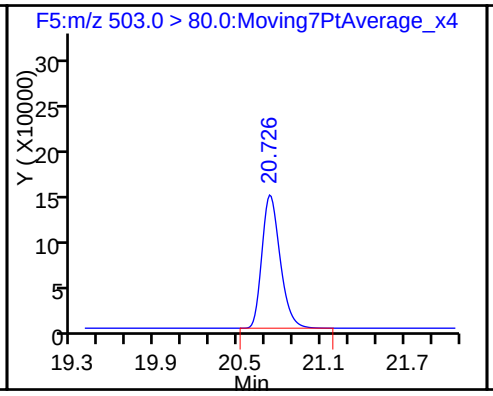
* 5 13C2-PFOA



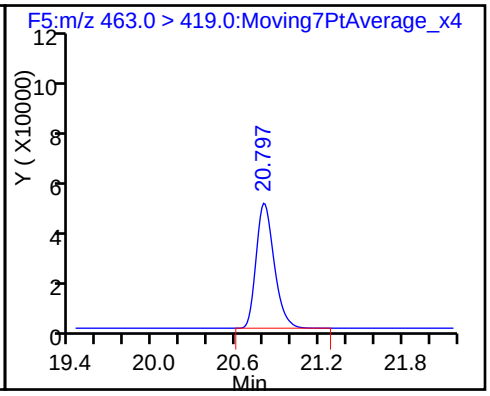
7 Perfluorooctane sulfonic acid



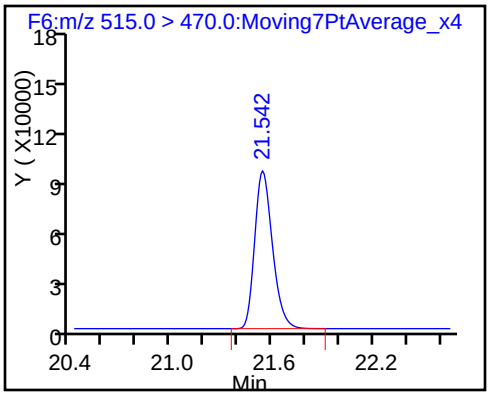
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

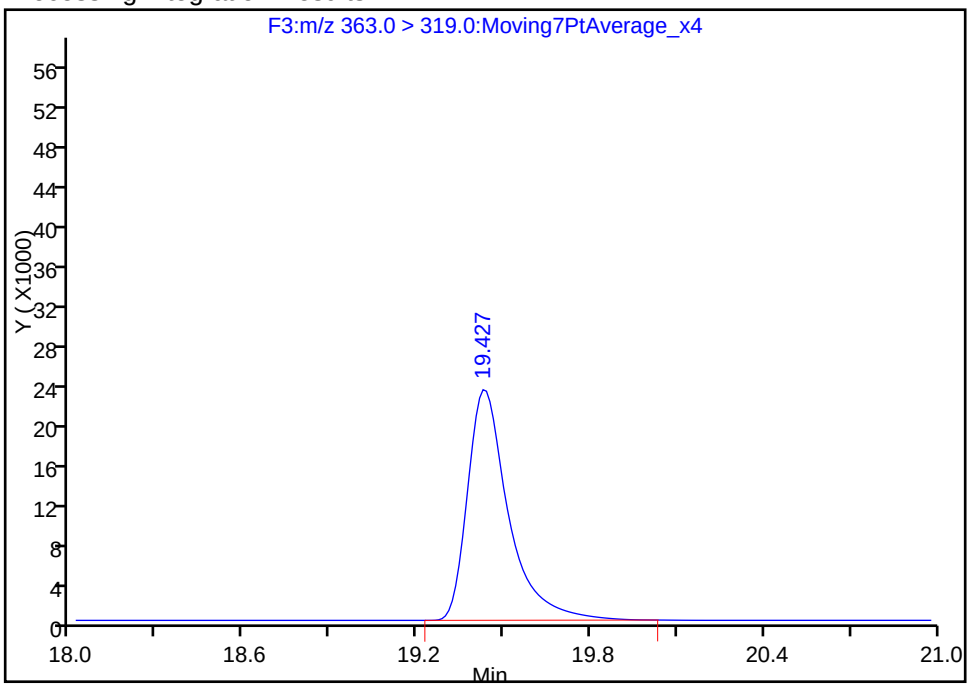
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_004.d
Injection Date: 24-Jan-2017 16:33:43 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F3:MRM

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

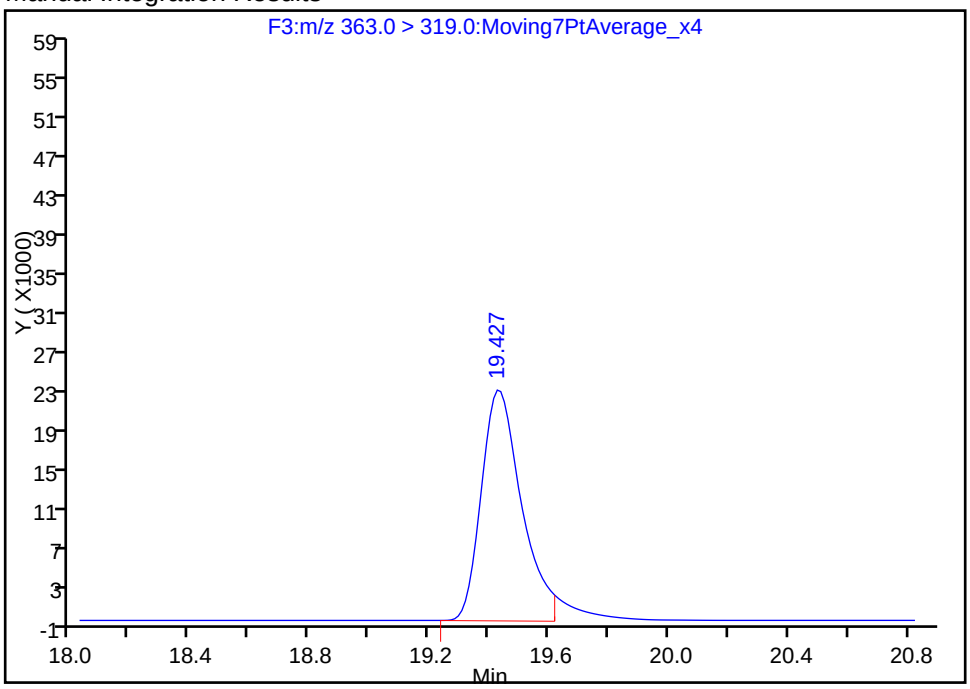
Processing Integration Results

RT: 19.43
Area: 229238
Amount: 2.993407
Amount Units: ng/ml



Manual Integration Results

RT: 19.43
Area: 216684
Amount: 2.721220
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 09:52:22
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

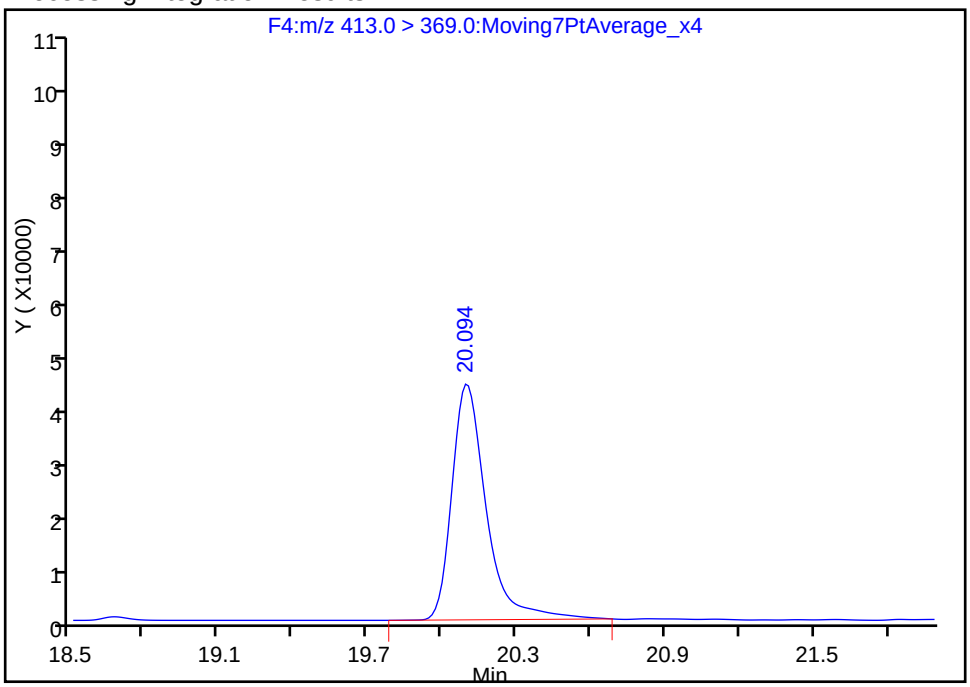
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_004.d
Injection Date: 24-Jan-2017 16:33:43 Instrument ID: A6
Lims ID: STD L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

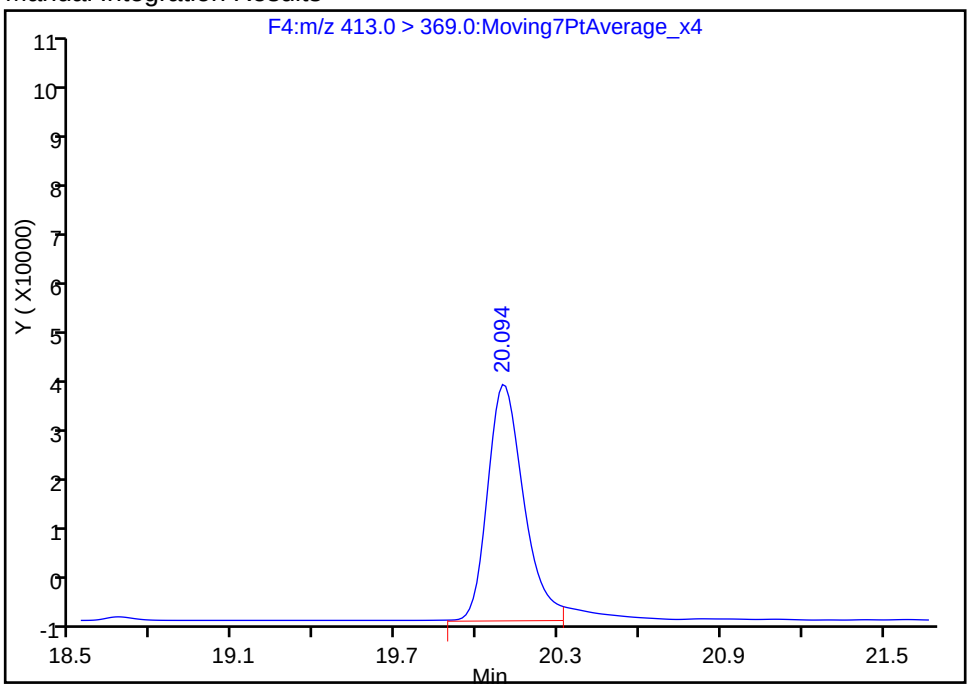
Processing Integration Results

RT: 20.09
Area: 406644
Amount: 5.505747
Amount Units: ng/ml



Manual Integration Results

RT: 20.09
Area: 392200
Amount: 5.439626
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 09:52:22
Audit Action: Manually Integrated Audit Reason: Split Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_005.d
Lims ID: STD L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 24-Jan-2017 17:03:19 ALS Bottle#: 3 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: STD L3 L3
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:24:33 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

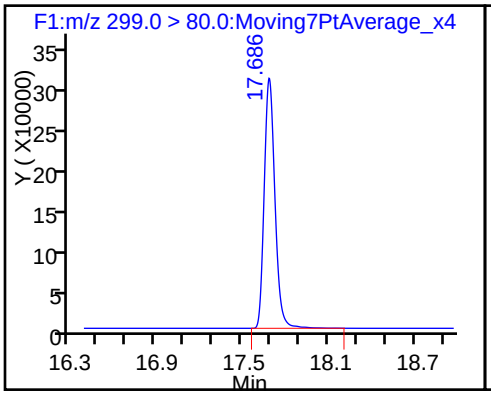
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.686	17.685	0.001	1.000	1619491	48.0	31029	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	877015	9.57	29230	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.403	19.403	0.0	1.000	671200	15.6	12708	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.439	19.437	0.002	1.000	422942	4.96	8716	
* 5 13C2-PFOA								
415.0 > 370.0	20.094	20.096	-0.002		721212	10.0	19834	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.094	20.096	-0.002	1.000	675822	8.76	554	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.465	20.468	-0.003	1.000	1016551	20.1	8469	
* 8 13C4 PFOS								
503.0 > 80.0	20.726	20.730	-0.004		1331746	28.7	36078	
9 Perfluorononanoic acid								
463.0 > 419.0	20.809	20.803	0.006	1.000	904369	10.2	14125	
$ 10 13C2 PFDA								
515.0 > 470.0	21.542	21.541	0.001	1.000	754518	9.65	25470	

Reagents:

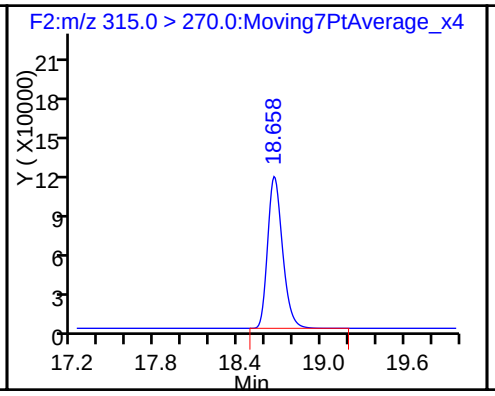
LC537-L3_00019 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_005.d
Injection Date: 24-Jan-2017 17:03:19 Instrument ID: A6
Lims ID: STD L3
Client ID:
Operator ID: CBW ALS Bottle#: 3 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

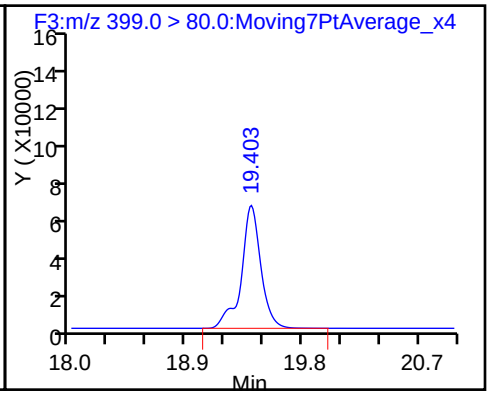
1 Perfluorobutanesulfonic acid



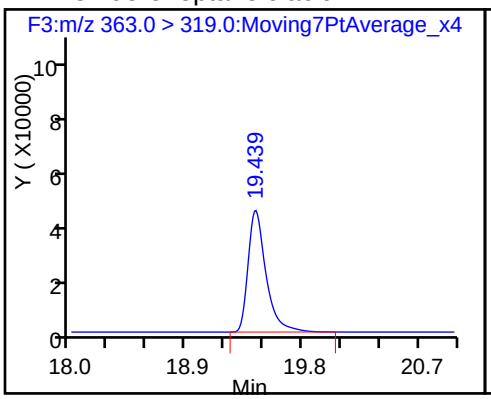
$ 2 13C2 PFHxA



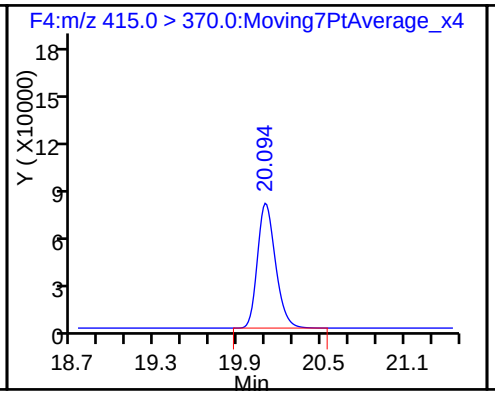
3 Perfluorohexanesulfonic acid



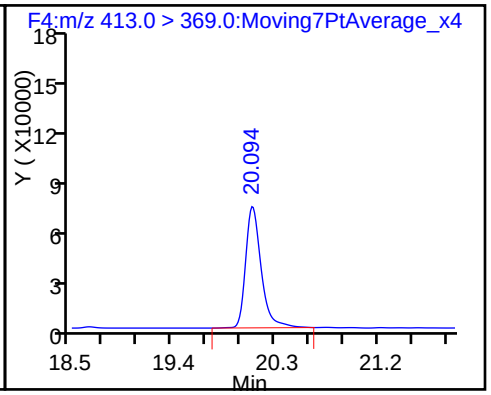
4 Perfluoroheptanoic acid



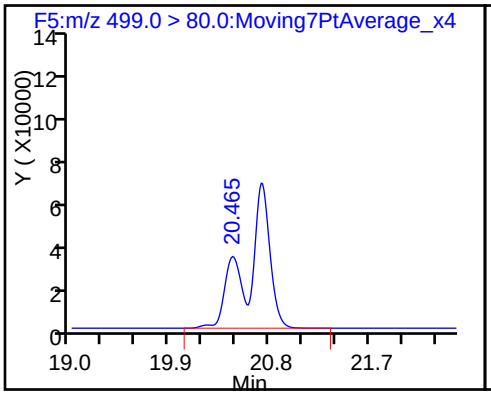
* 5 13C2-PFOA



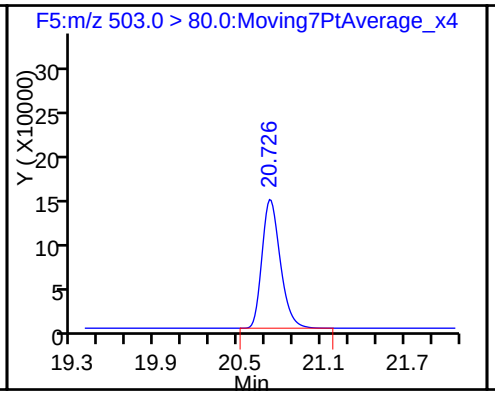
6 Perfluorooctanoic acid



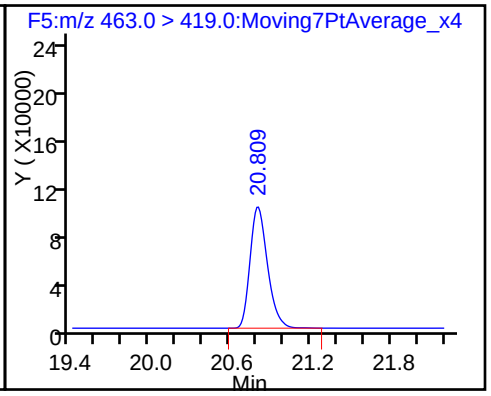
7 Perfluorooctane sulfonic acid



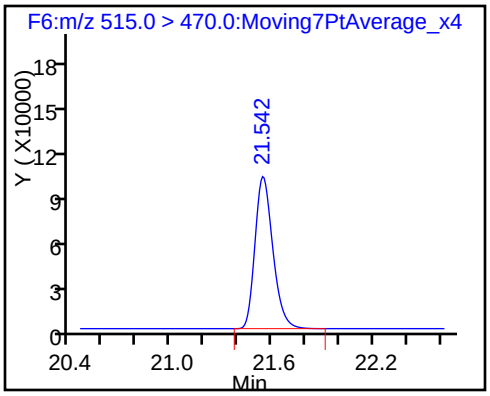
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_006.d
Lims ID: STD L4
Client ID:
Sample Type: ICISAV Calib Level: 4
Inject. Date: 24-Jan-2017 17:32:54 ALS Bottle#: 4 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: STD L4 L4
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:24:34 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.679	17.685	-0.006	1.000	2616556	90.5	1742	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	837038	10.9	28026	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.403	19.403	0.0	1.000	1177606	31.9	27855	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.439	19.437	0.002	1.000	741749	10.4	15638	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.094	20.096	-0.002	1.000	1373612	21.2	1064	
* 5 13C2-PFOA								
415.0 > 370.0	20.094	20.096	-0.002		604498	10.0	16375	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.466	20.468	-0.002	1.000	1872091	43.3	15402	
* 8 13C4 PFOS								
503.0 > 80.0	20.738	20.730	0.008		1140325	28.7	20547	
9 Perfluorononanoic acid								
463.0 > 419.0	20.809	20.803	0.006	1.000	1676501	22.5	10761	
$ 10 13C2 PFDA								
515.0 > 470.0	21.542	21.541	0.001	1.000	687782	10.5	23064	

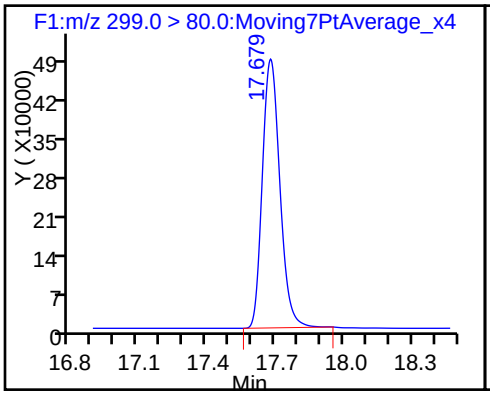
Reagents:

LC537-L4_00017 Amount Added: 1.00 Units: mL

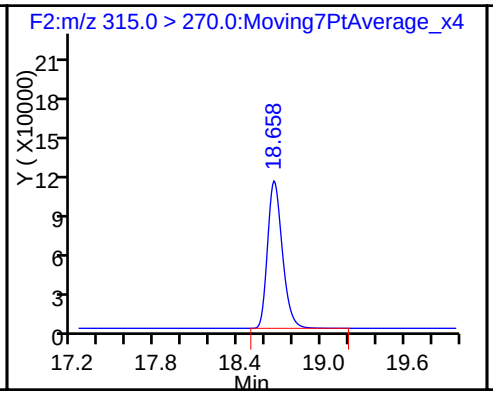
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_006.d
Injection Date: 24-Jan-2017 17:32:54 Instrument ID: A6
Lims ID: STD L4
Client ID:
Operator ID: CBW ALS Bottle#: 4 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

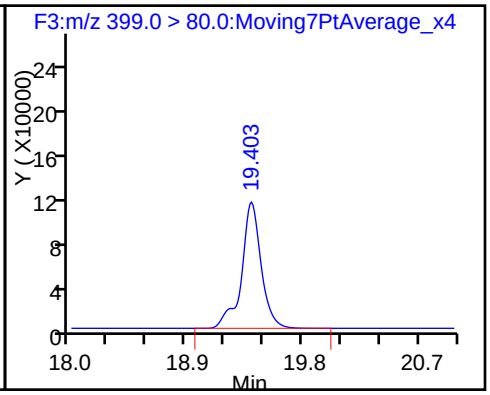
1 Perfluorobutanesulfonic acid



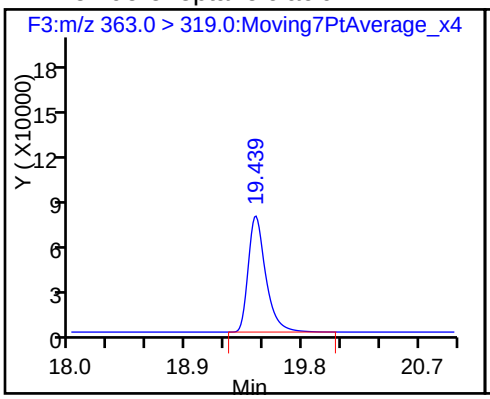
$ 2 13C2 PFHxA



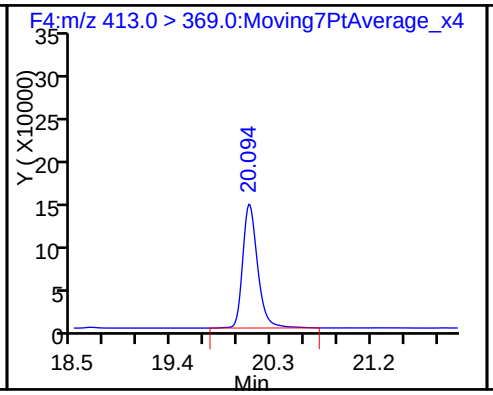
3 Perfluorohexanesulfonic acid



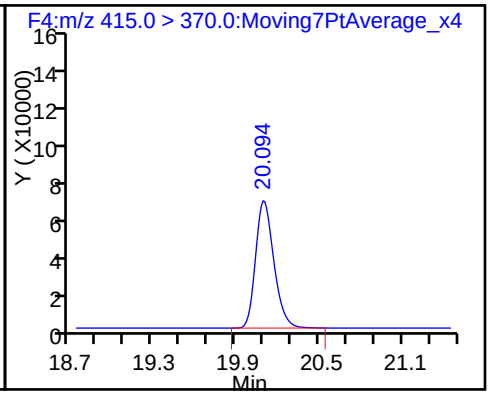
4 Perfluoroheptanoic acid



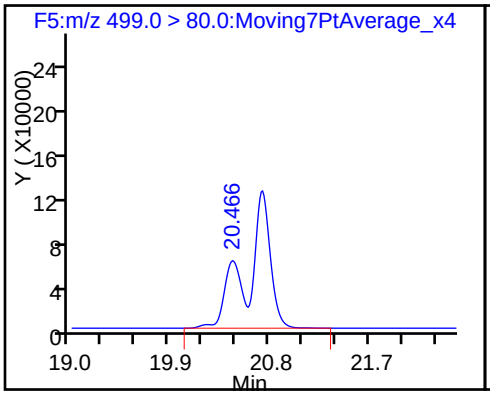
6 Perfluorooctanoic acid



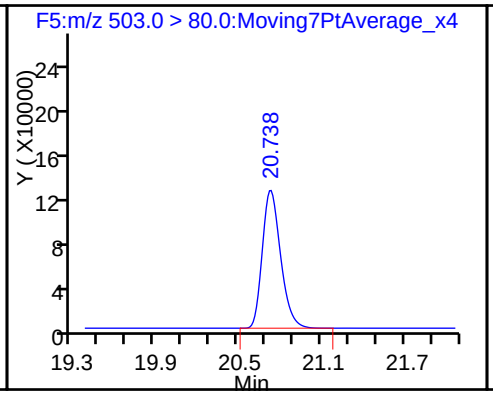
* 5 13C2-PFOA



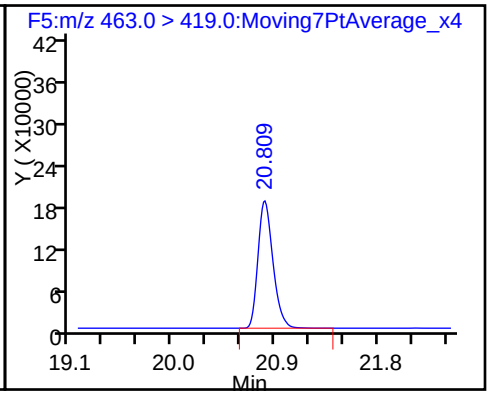
7 Perfluorooctane sulfonic acid



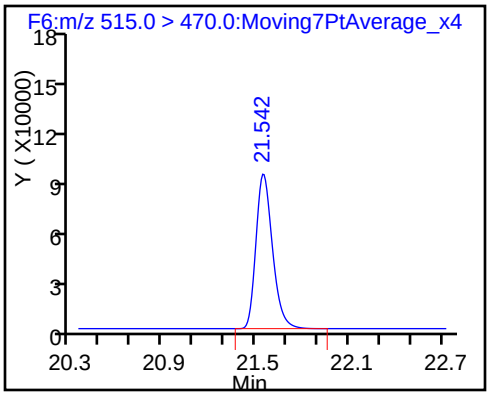
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_007.d
Lims ID: STD L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 24-Jan-2017 18:02:30 ALS Bottle#: 5 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: STD L5 L5
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:24:35 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

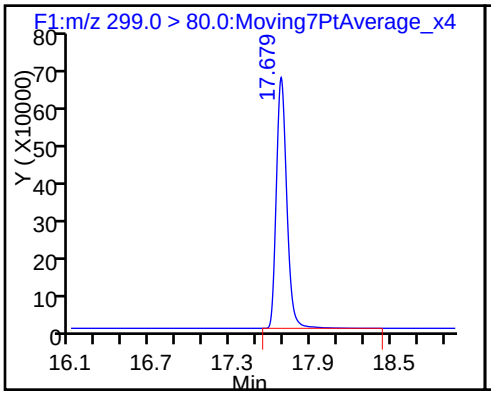
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.679	17.685	-0.006	1.000	3682649	122.7	33770	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	848632	10.2	28266	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.403	19.403	0.0	1.000	1693136	44.2	39384	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.439	19.437	0.002	1.000	1028185	13.3	15459	
* 5 13C2-PFOA								
415.0 > 370.0	20.094	20.096	-0.002		651996	10.0	17896	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.094	20.096	-0.002	1.000	1880740	27.0	2528	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.466	20.468	-0.002	1.000	2707686	60.3	23903	
* 8 13C4 PFOS								
503.0 > 80.0	20.726	20.730	-0.004		1184136	28.7	31885	
9 Perfluorononanoic acid								
463.0 > 419.0	20.797	20.803	-0.006	1.000	2126918	26.4	25583	
$ 10 13C2 PFDA								
515.0 > 470.0	21.533	21.541	-0.008	1.000	739638	10.5	33062	

Reagents:

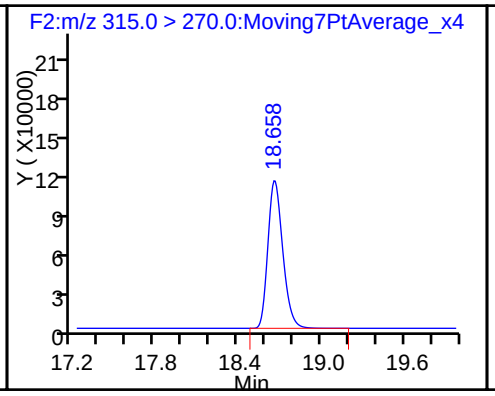
LC537-L5_00020 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_007.d
Injection Date: 24-Jan-2017 18:02:30 Instrument ID: A6
Lims ID: STD L5
Client ID:
Operator ID: CBW ALS Bottle#: 5 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

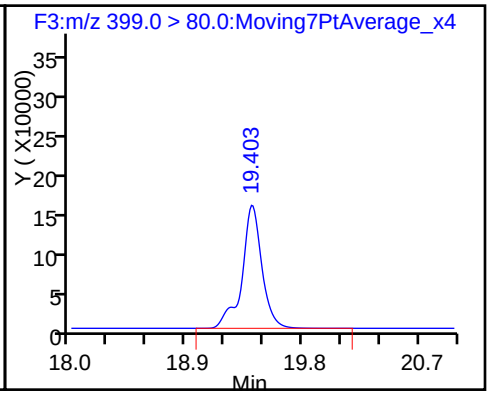
1 Perfluorobutanesulfonic acid



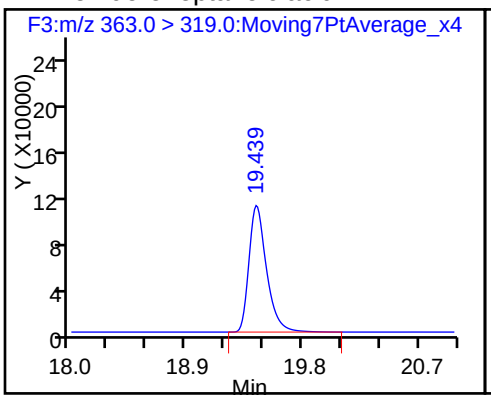
$ 2 13C2 PFHxA



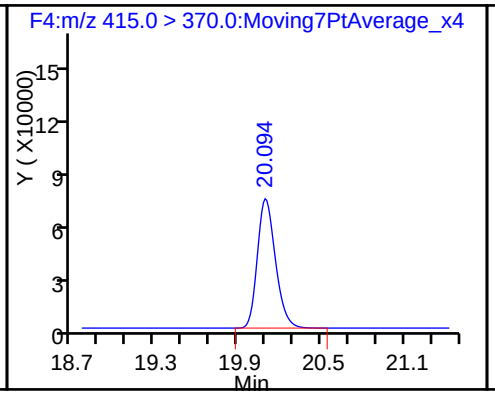
3 Perfluorohexanesulfonic acid



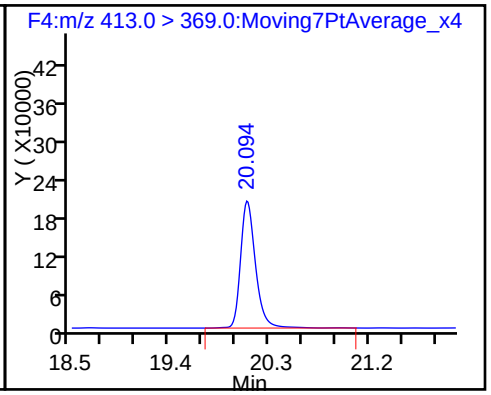
4 Perfluoroheptanoic acid



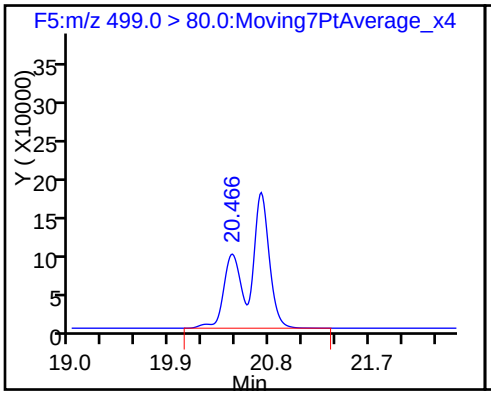
* 5 13C2-PFOA



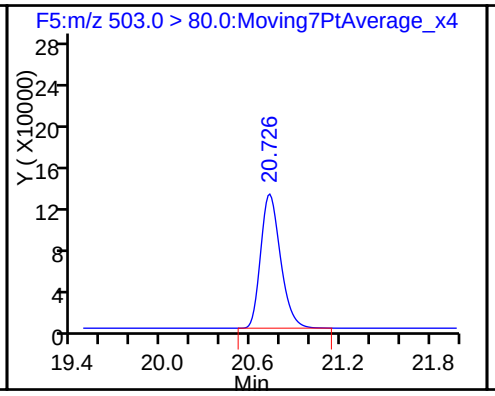
6 Perfluorooctanoic acid



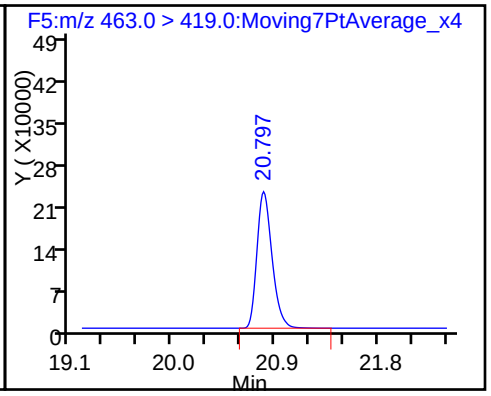
7 Perfluorooctane sulfonic acid



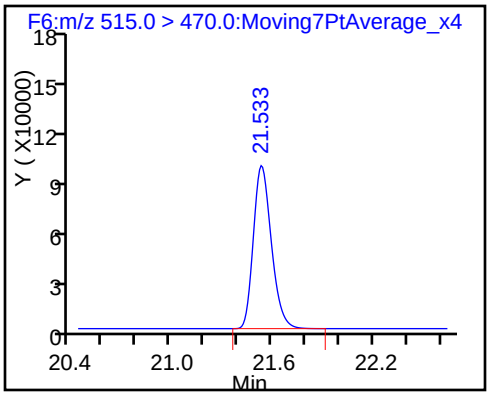
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d
Lims ID: STD L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 24-Jan-2017 18:32:06 ALS Bottle#: 6 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: STD L6 L6
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:24:36 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 10:22:02

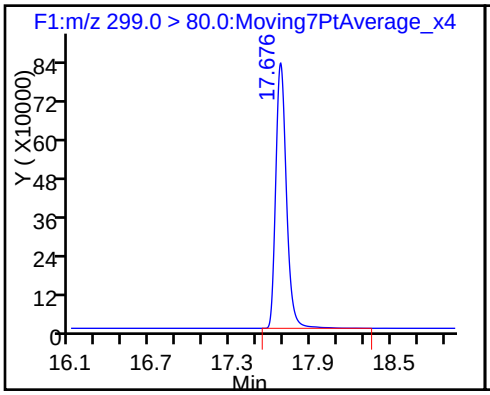
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.676	17.685	-0.009	1.000	4661120	170.2	22002	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	826398	10.4	27617	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.415	19.403	0.012	1.000	2209984	63.2	25355	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.451	19.437	0.014	1.000	1336981	18.1	27944	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.106	20.096	0.010	1.000	2684196	40.2	1997	
* 5 13C2-PFOA								
415.0 > 370.0	20.106	20.096	0.010		623954	10.0	17050	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.477	20.468	0.009	1.000	3546373	86.6	15457	
* 8 13C4 PFOS								
503.0 > 80.0	20.738	20.730	0.008		1080434	28.7	29097	
9 Perfluorononanoic acid								
463.0 > 419.0	20.809	20.803	0.006	1.000	3079855	40.0	25508	
$ 10 13C2 PFDA								
515.0 > 470.0	21.542	21.541	0.001	1.000	705744	10.4	23928	

Reagents:

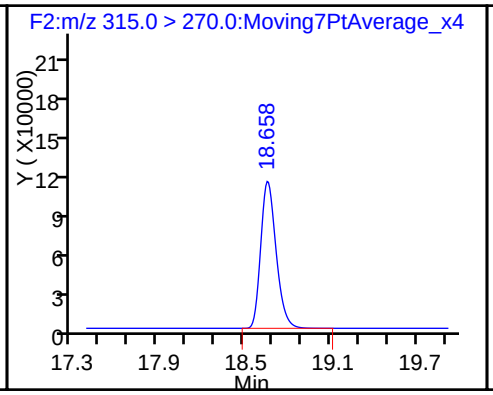
LC537-L6_00016 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d
Injection Date: 24-Jan-2017 18:32:06 Instrument ID: A6
Lims ID: STD L6
Client ID:
Operator ID: CBW ALS Bottle#: 6 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

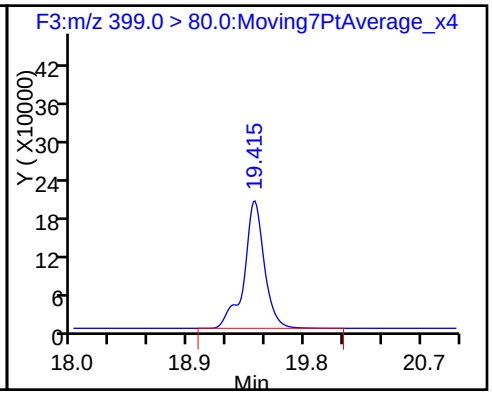
1 Perfluorobutanesulfonic acid



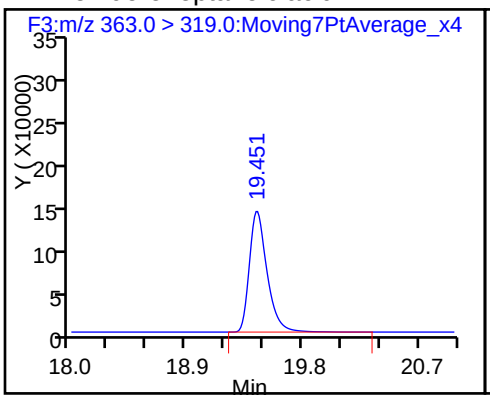
$ 2 13C2 PFHxA



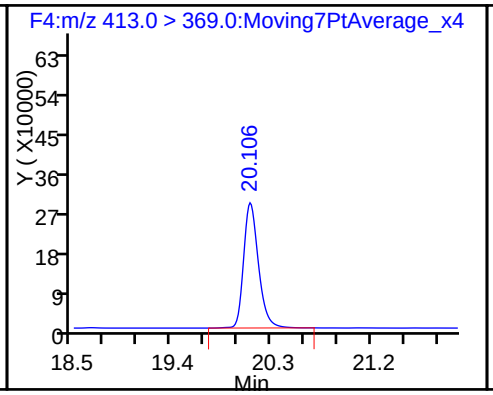
3 Perfluorohexanesulfonic acid



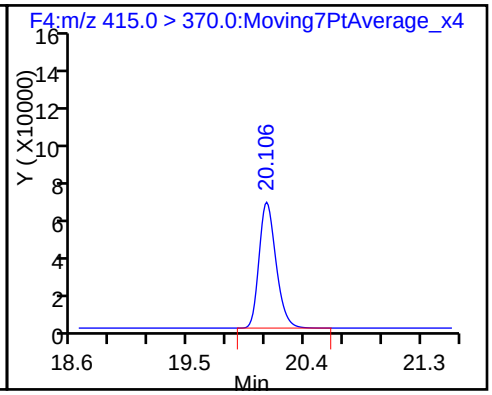
4 Perfluoroheptanoic acid



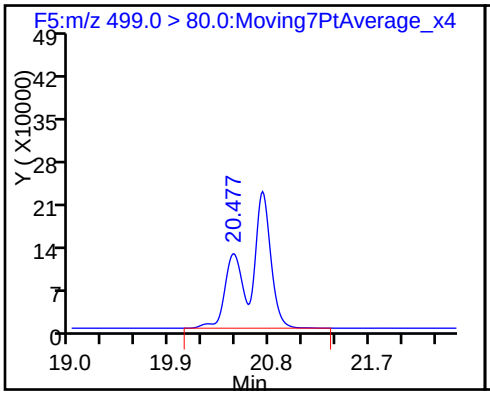
6 Perfluorooctanoic acid



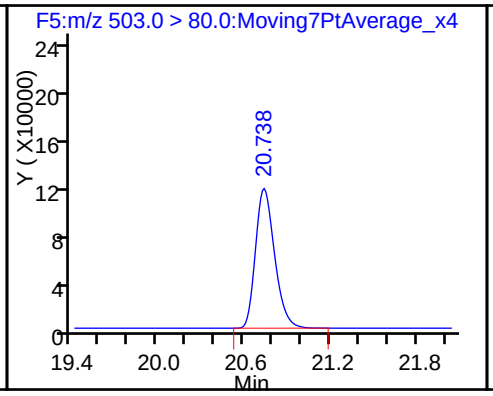
* 5 13C2-PFOA



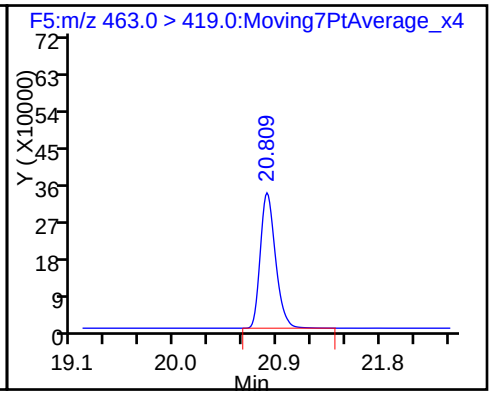
7 Perfluorooctane sulfonic acid



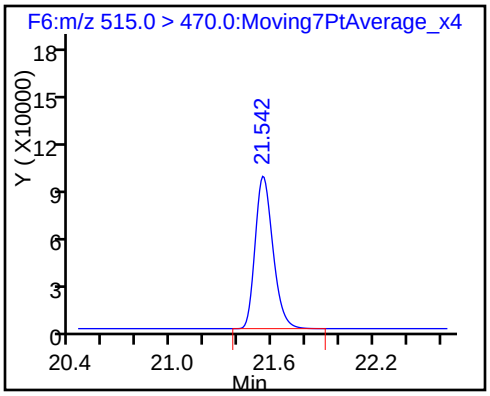
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Lab Sample ID: CCV 320-147661/10 Calibration Date: 01/24/2017 19:31

Instrument ID: A6 Calib Start Date: 01/24/2017 16:04

GC Column: Acquity ID: 2.10(mm) Calib End Date: 01/24/2017 18:32

Lab File ID: 24JAN2017A6A_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7270	0.7782		24.5	22.9	7.1	50.0
Perfluorohexanesulfonic acid	Ave	0.9278	0.9185		7.64	7.72	-1.0	50.0
Perfluoroheptanoic acid	Ave	1.182	1.187		2.54	2.52	0.5	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.070	1.096		5.10	4.98	2.5	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.062		9.97	10.2	-2.4	50.0
Perfluorononanoic acid	Ave	1.234	1.285		5.51	5.29	4.2	50.0
13C2 PFHxA	Ave	1.271	1.203		9.47	10.0	-5.3	30.0
13C2 PFDA	Ave	1.084	1.044		9.63	10.0	-3.7	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_010.d
Lims ID: CCV L2
Client ID:
Sample Type: CCVL
Inject. Date: 24-Jan-2017 19:31:17 ALS Bottle#: 2 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: CCV L2 CCV L2
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:22:12 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 10:08:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.666	17.685	-0.019	1.000	803696	24.5	952	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.649	18.658	-0.009	1.000	825193	9.47	15677	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.415	19.403	0.012	1.000	319747	7.64	7726	
4 Perfluoroheptanoic acid								M
363.0 > 319.0	19.439	19.437	0.002	1.000	205628	2.54	117	M
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.106	20.096	0.010	1.000	374382	5.10	207	M
* 5 13C2-PFOA								
415.0 > 370.0	20.106	20.096	0.010		685988	10.0	18843	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.750	20.468	0.282	1.000	489360	9.97	8610	
* 8 13C4 PFOS								
503.0 > 80.0	20.750	20.730	0.020		1294038	28.7	35177	
9 Perfluorononanoic acid								
463.0 > 419.0	20.821	20.803	0.018	1.000	466253	5.51	12868	
$ 10 13C2 PFDA								
515.0 > 470.0	21.551	21.541	0.010	1.000	716048	9.63	24184	

QC Flag Legend

Review Flags

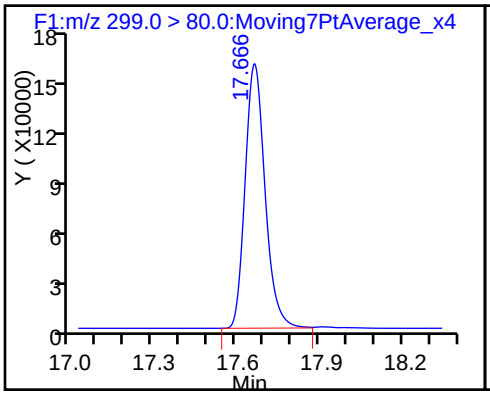
M - Manually Integrated

Reagents:

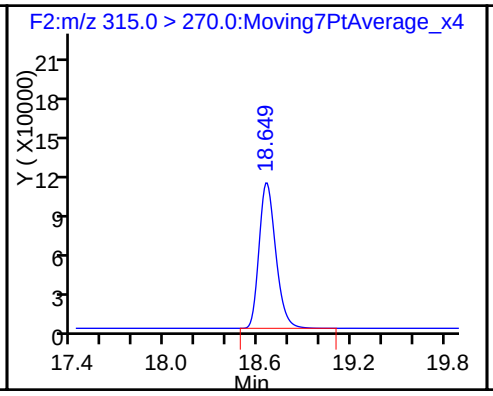
LC537-L2_00016 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_010.d
Injection Date: 24-Jan-2017 19:31:17 Instrument ID: A6
Lims ID: CCV L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

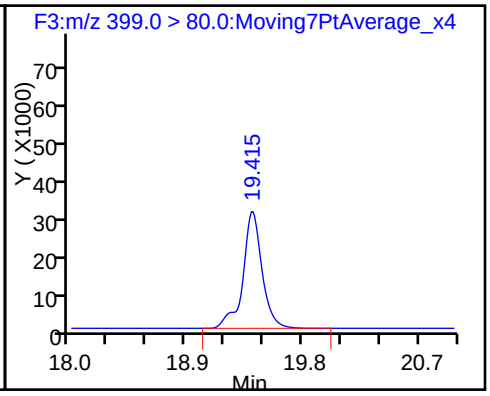
1 Perfluorobutanesulfonic acid



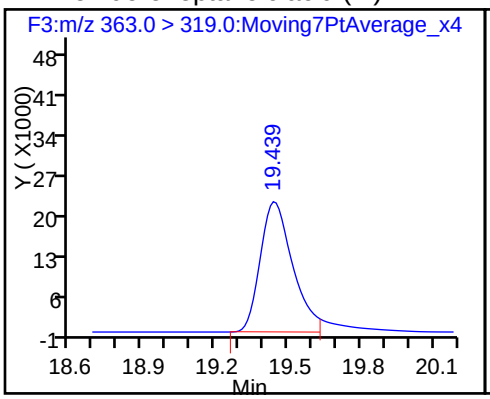
$ 2 13C2 PFHxA



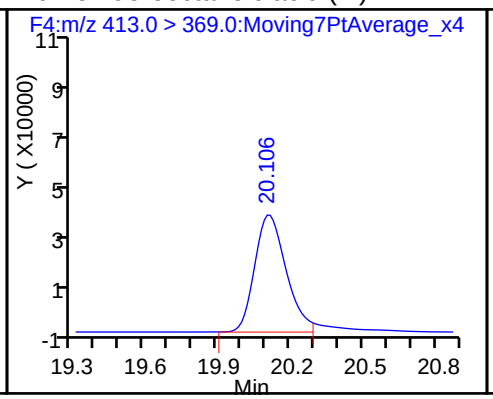
3 Perfluorohexanesulfonic acid



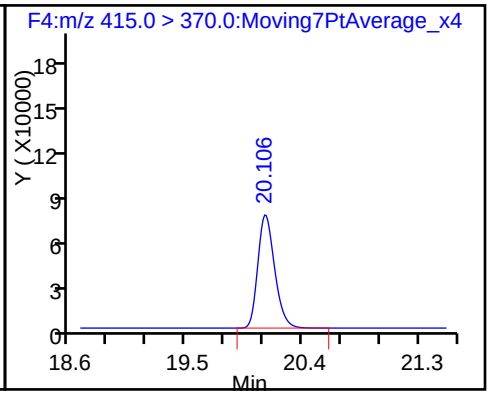
4 Perfluoroheptanoic acid (M)



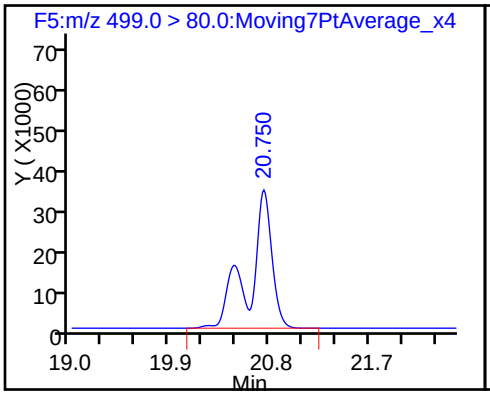
6 Perfluorooctanoic acid (M)



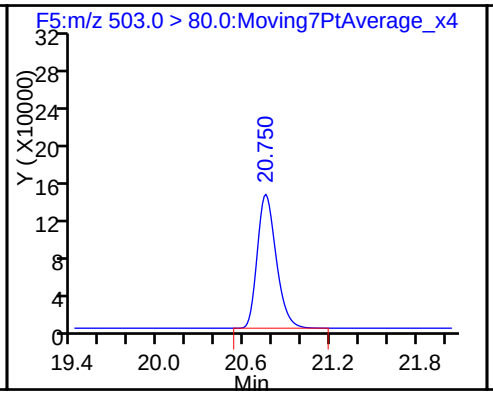
* 5 13C2-PFOA



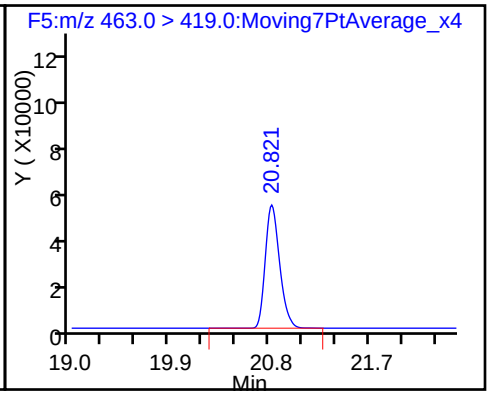
7 Perfluorooctane sulfonic acid



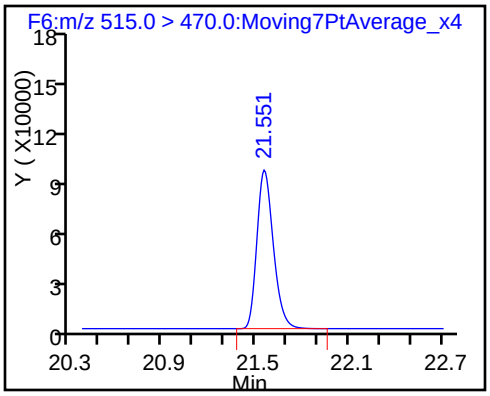
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

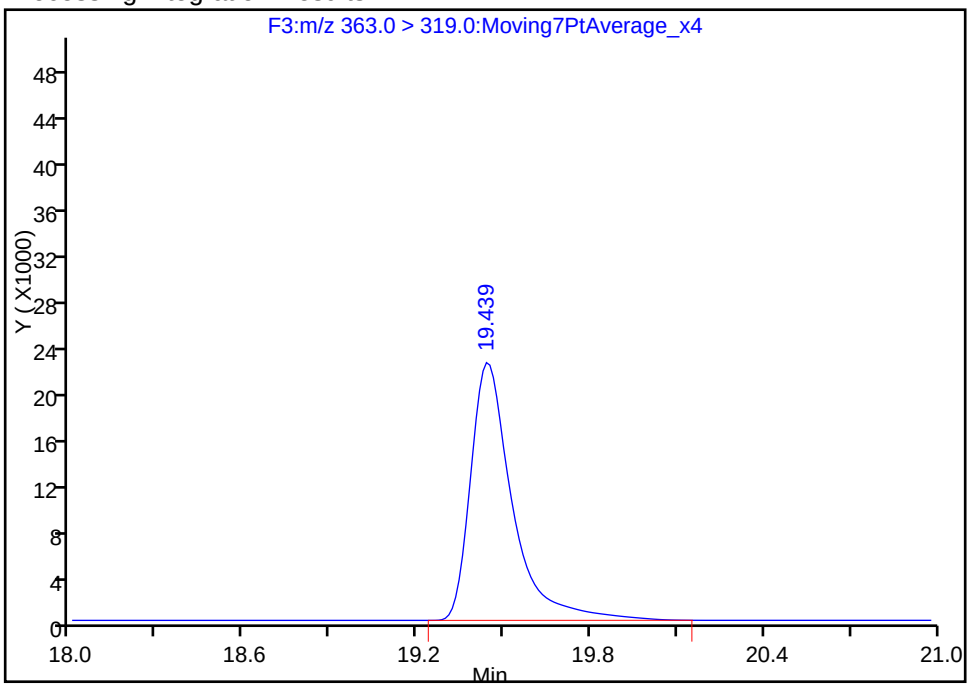
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_010.d
Injection Date: 24-Jan-2017 19:31:17 Instrument ID: A6
Lims ID: CCV L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F3:MRM

4 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

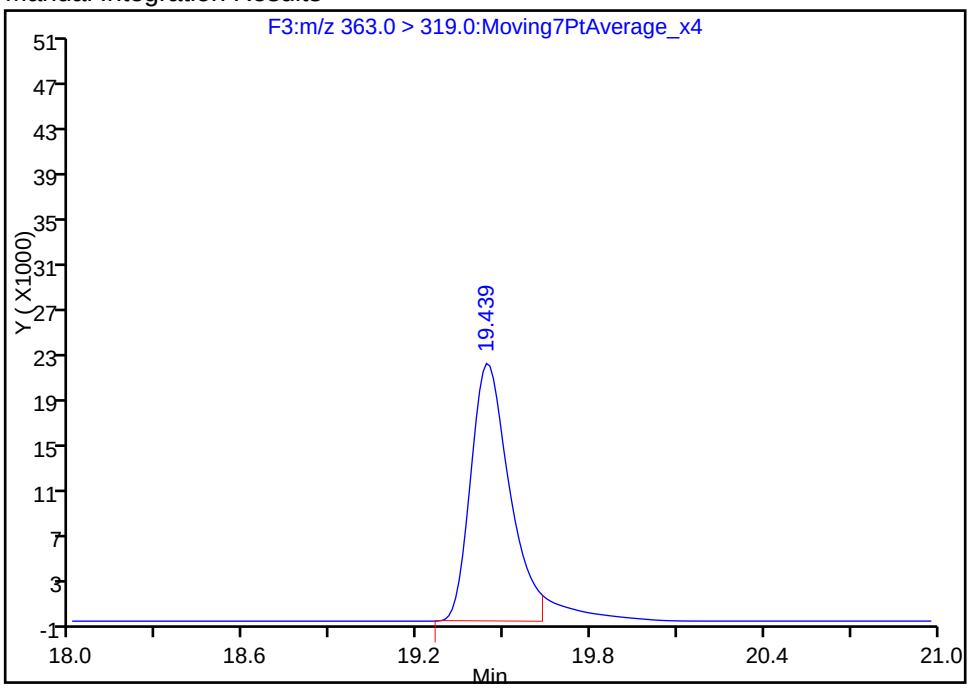
Processing Integration Results

RT: 19.44
Area: 223578
Amount: 2.758370
Amount Units: ng/ml



Manual Integration Results

RT: 19.44
Area: 205628
Amount: 2.536914
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 10:08:05
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

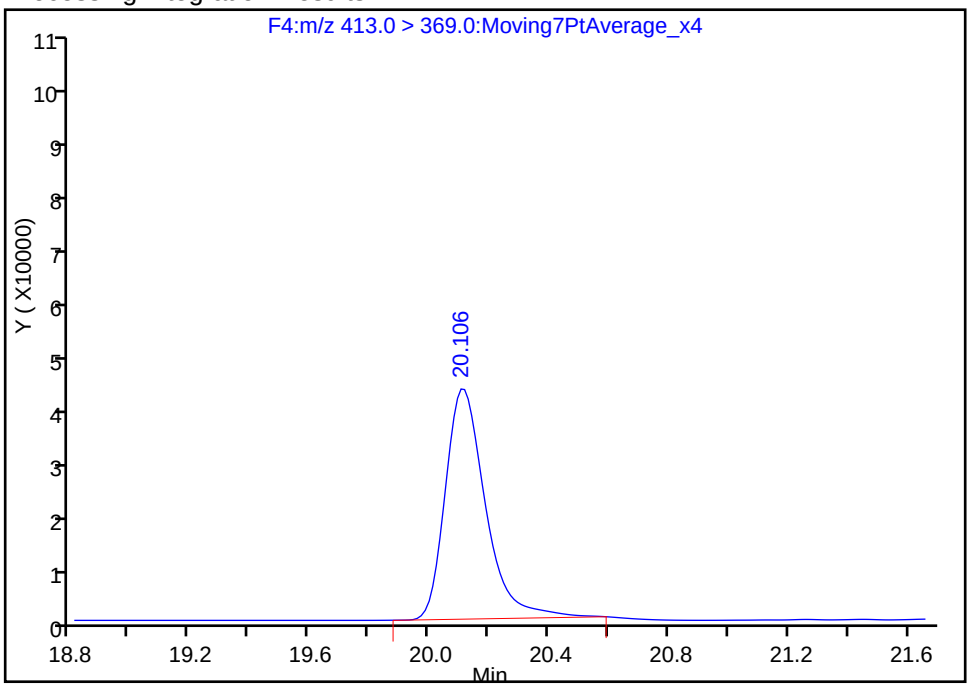
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_010.d
Injection Date: 24-Jan-2017 19:31:17 Instrument ID: A6
Lims ID: CCV L2
Client ID:
Operator ID: CBW ALS Bottle#: 2 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

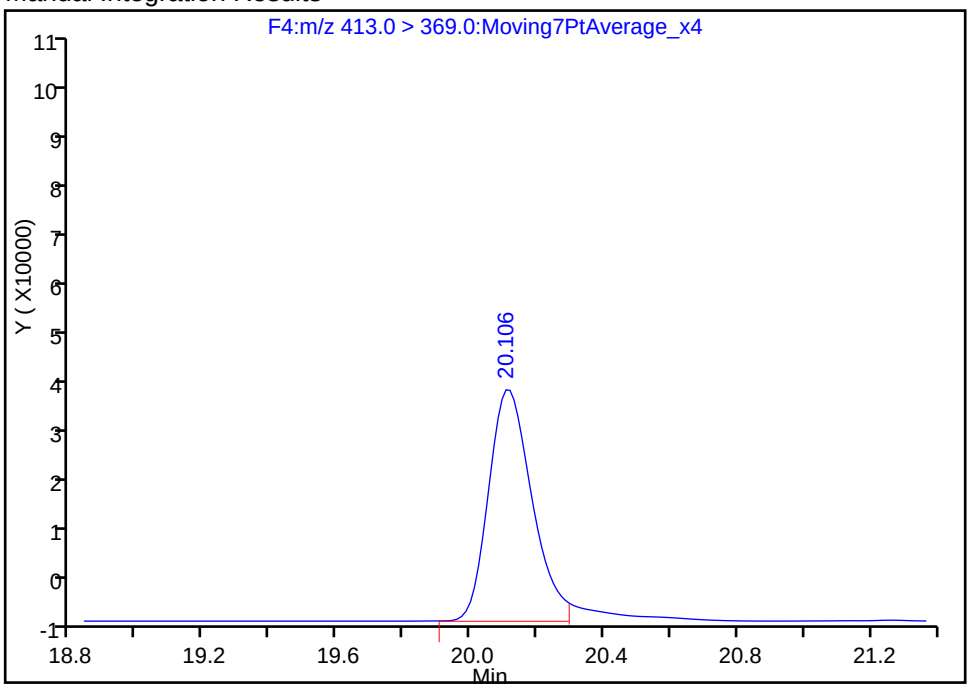
Processing Integration Results

RT: 20.11
Area: 385048
Amount: 5.246419
Amount Units: ng/ml



Manual Integration Results

RT: 20.11
Area: 374382
Amount: 5.101091
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 10:08:05
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Lab Sample ID: ICV 320-147661/12 Calibration Date: 01/24/2017 20:30

Instrument ID: A6 Calib Start Date: 01/24/2017 16:04

GC Column: Acquity ID: 2.10(mm) Calib End Date: 01/24/2017 18:32

Lab File ID: 24JAN2017A6A_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7270	0.5866		92.6	115	-19.3	30.0
Perfluorohexanesulfonic acid	Ave	0.9278	0.7684		21.9	26.5	-17.2	30.0
Perfluoroheptanoic acid	Ave	1.182	1.133		12.1	12.6	-4.1	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.070	0.8954		20.9	25.0	-16.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	0.8813		22.1	27.2	-19.0	30.0
Perfluorononanoic acid	Ave	1.234	1.039		21.1	25.0	-15.8	30.0
13C2 PFHxA	Ave	1.271	1.458		11.5	10.0	14.7	30.0
13C2 PFDA	Ave	1.084	1.110		10.2	10.0	2.4	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_012.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 24-Jan-2017 20:30:30 ALS Bottle#: 7 Worklist Smp#: 12
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: ICV ICV
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist:

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 10:22:15 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

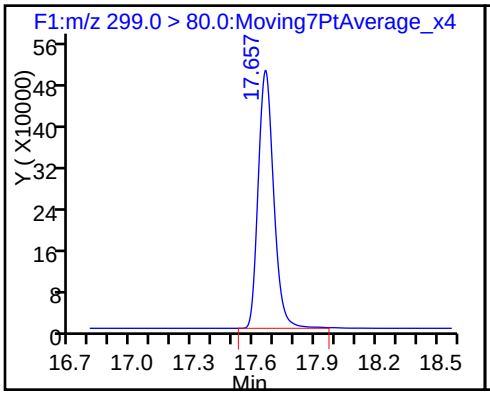
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.657	17.685	-0.028	1.000	2673771	92.6	2930	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.658	18.658	0.0	1.000	880359	11.5	29110	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.415	19.403	0.012	1.000	808128	21.9	19175	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.451	19.437	0.014	1.000	862609	12.1	17968	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.106	20.096	0.010	1.000	1353374	20.9	1260	
* 5 13C2-PFOA								
415.0 > 370.0	20.106	20.096	0.010		604008	10.0	16643	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.477	20.468	0.009	1.000	953425	22.1	8036	
* 8 13C4 PFOS								
503.0 > 80.0	20.738	20.730	0.008		1139050	28.7	30933	
9 Perfluorononanoic acid								
463.0 > 419.0	20.809	20.803	0.006	1.000	1569480	21.1	21356	
$ 10 13C2 PFDA								
515.0 > 470.0	21.542	21.541	0.001	1.000	670720	10.2	22653	

Reagents:

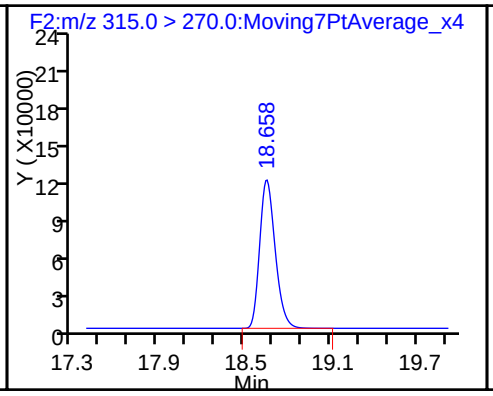
LC537-ICV_00019 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_012.d
Injection Date: 24-Jan-2017 20:30:30 Instrument ID: A6
Lims ID: ICV
Client ID:
Operator ID: CBW ALS Bottle#: 7 Worklist Smp#: 12
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

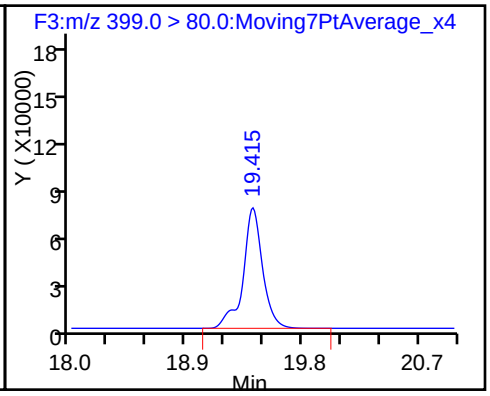
1 Perfluorobutanesulfonic acid



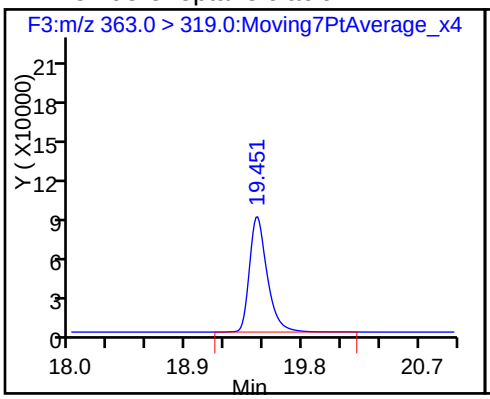
$ 2 13C2 PFHxA



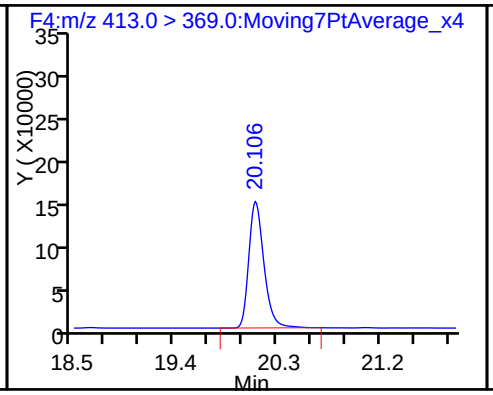
3 Perfluorohexanesulfonic acid



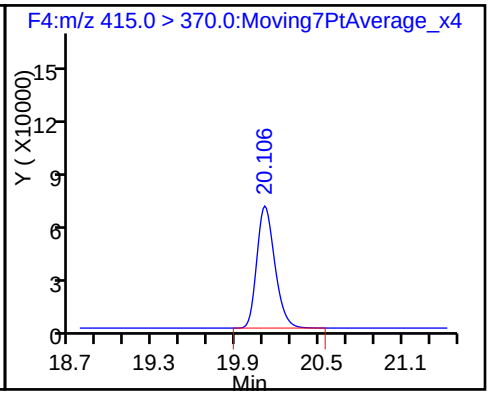
4 Perfluoroheptanoic acid



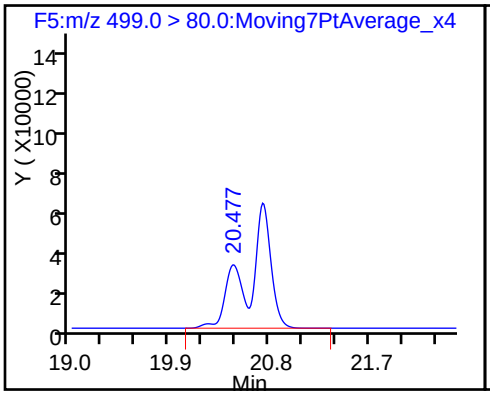
6 Perfluorooctanoic acid



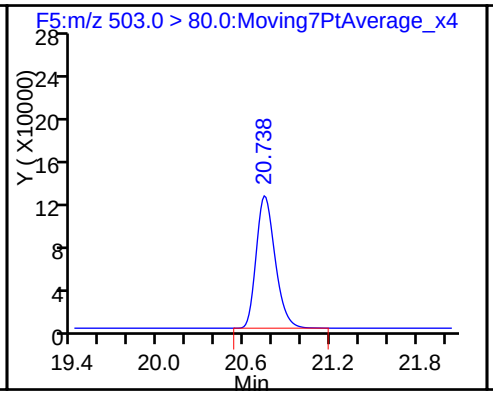
* 5 13C2-PFOA



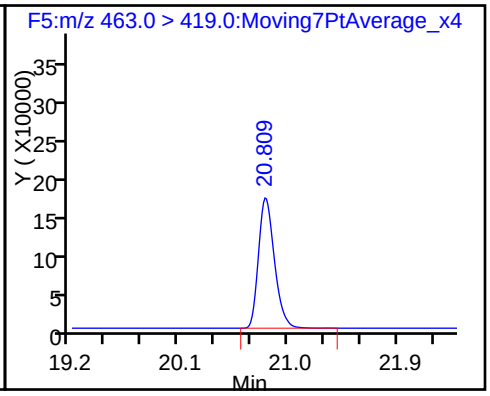
7 Perfluorooctane sulfonic acid



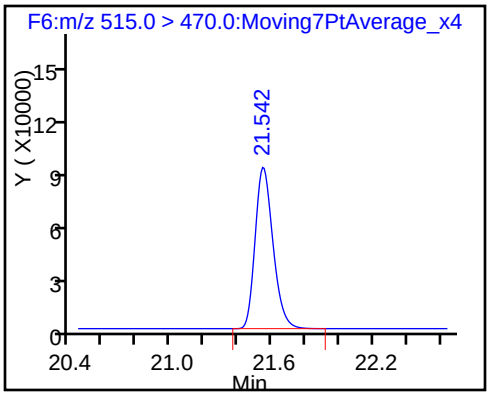
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Lab Sample ID: CCV 320-147664/36 Calibration Date: 01/25/2017 08:20

Instrument ID: A6 Calib Start Date: 01/24/2017 16:04

GC Column: Acquity ID: 2.10(mm) Calib End Date: 01/24/2017 18:32

Lab File ID: 24JAN2017A6A_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7270	0.6676		124	135	-8.2	30.0
Perfluorohexanesulfonic acid	Ave	0.9278	0.9169		44.9	45.4	-1.2	30.0
Perfluoroheptanoic acid	Ave	1.182	1.059		13.3	14.9	-10.4	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.070	0.9720		26.6	29.3	-9.1	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.131		62.5	60.1	4.0	30.0
Perfluorononanoic acid	Ave	1.234	1.083		27.3	31.1	-12.2	30.0
13C2 PFHxA	Ave	1.271	1.283		10.1	10.0	1.0	30.0
13C2 PFDA	Ave	1.084	1.101		10.2	10.0	1.5	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_036.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 25-Jan-2017 08:20:42 ALS Bottle#: 5 Worklist Smp#: 36
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 13:32:27 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

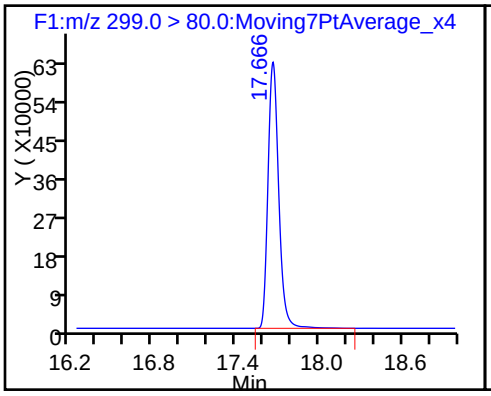
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.666	17.685	-0.019	1.000	3403251	123.6	30015	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.649	18.658	-0.009	1.000	801996	10.1	26950	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.392	19.403	-0.011	1.000	1575615	44.9	24754	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.427	19.437	-0.010	1.000	982536	13.3	7993	
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		625069	10.0	16949	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.082	20.096	-0.014	1.000	1778853	26.6	1612	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.454	20.468	-0.014	1.000	2574579	62.5	22417	
* 8 13C4 PFOS								
503.0 > 80.0	20.714	20.730	-0.016		1085864	28.7	23330	
9 Perfluorononanoic acid								
463.0 > 419.0	20.785	20.803	-0.018	1.000	2105246	27.3	17647	
$ 10 13C2 PFDA								
515.0 > 470.0	21.524	21.541	-0.017	1.000	688196	10.2	23560	

Reagents:

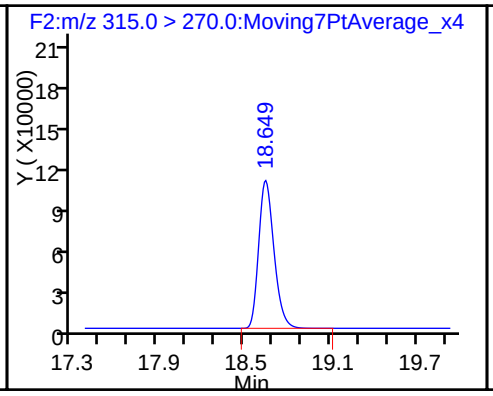
LC537-L5_00020 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_036.d
Injection Date: 25-Jan-2017 08:20:42 Instrument ID: A6
Lims ID: CCV L5
Client ID:
Operator ID: CBW ALS Bottle#: 5 Worklist Smp#: 36
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

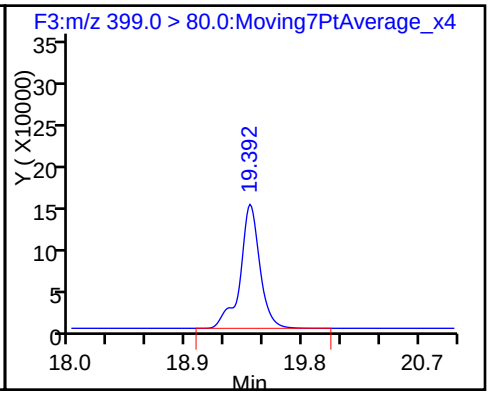
1 Perfluorobutanesulfonic acid



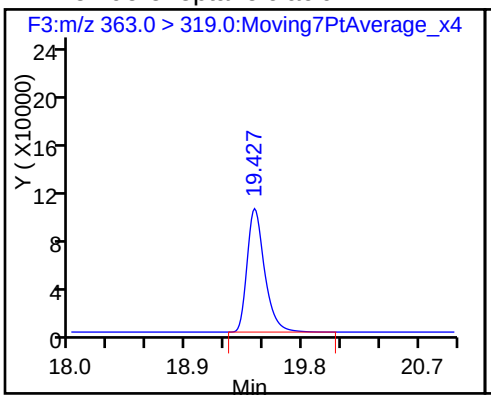
$ 2 13C2 PFHxA



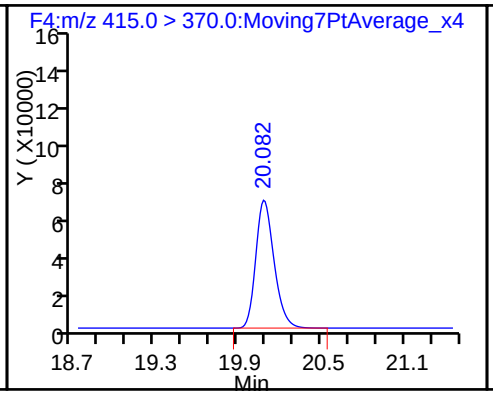
3 Perfluorohexanesulfonic acid



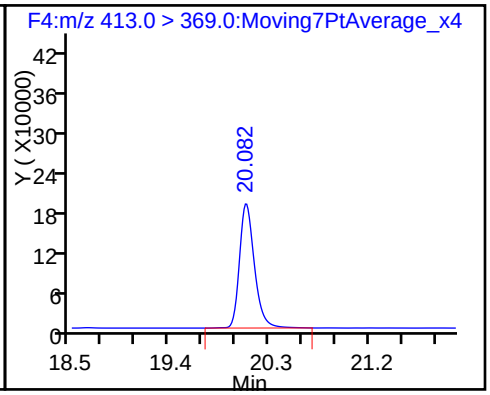
4 Perfluoroheptanoic acid



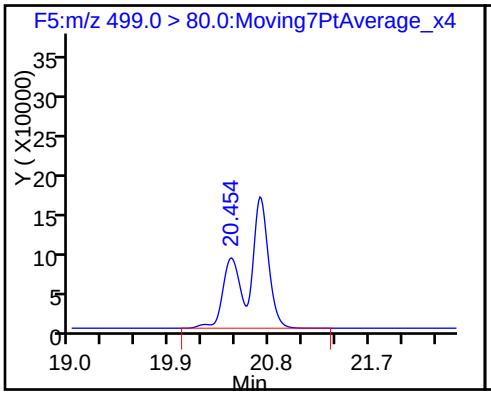
* 5 13C2-PFOA



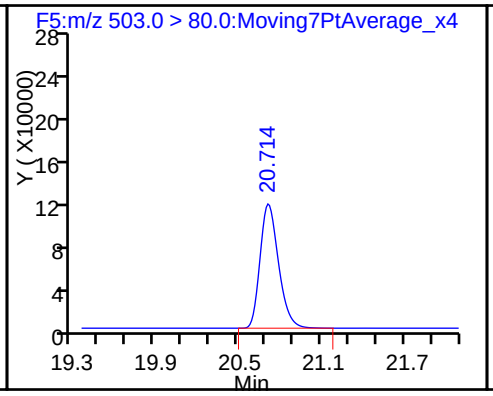
6 Perfluorooctanoic acid



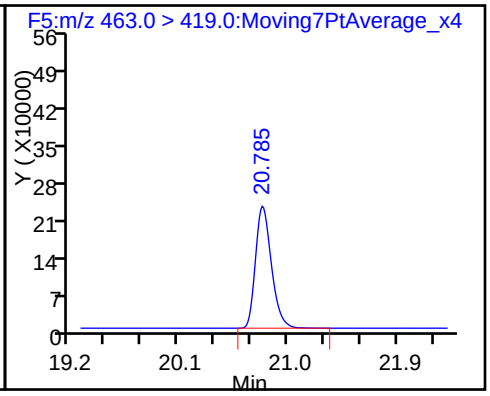
7 Perfluorooctane sulfonic acid



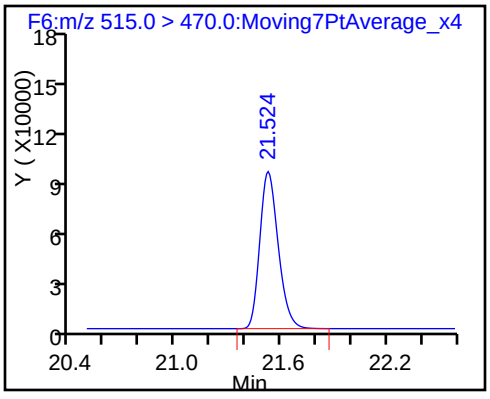
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Lab Sample ID: CCV 320-147664/48 Calibration Date: 01/25/2017 14:17

Instrument ID: A6 Calib Start Date: 01/24/2017 16:04

GC Column: Acquity ID: 2.10(mm) Calib End Date: 01/24/2017 18:32

Lab File ID: 24JAN2017A6A_048.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	0.7270	0.7377		45.8	45.1	1.5	30.0
Perfluorohexanesulfonic acid	Ave	0.9278	0.9068		14.9	15.2	-2.3	30.0
Perfluoroheptanoic acid	Ave	1.182	1.218		5.13	4.97	3.1	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.070	0.997		9.14	9.81	-6.8	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.079		20.0	20.1	-0.7	30.0
Perfluorononanoic acid	Ave	1.234	1.169		9.88	10.4	-5.2	30.0
13C2 PFHxA	Ave	1.271	1.239		9.75	10.0	-2.5	30.0
13C2 PFDA	Ave	1.084	1.053		9.71	10.0	-2.9	30.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_048.d
Lims ID: CCV L3
Client ID:
Sample Type: CCVIS
Inject. Date: 25-Jan-2017 14:17:11 ALS Bottle#: 3 Worklist Smp#: 48
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: CCV L3
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6
Sublist: chrom-537__A6*sub3

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:48:13 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

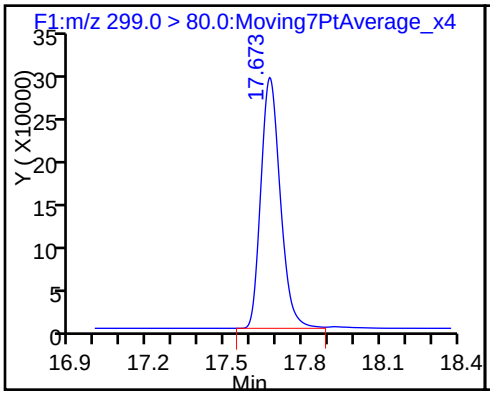
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.673	17.685	-0.012	1.000	1545129	45.8	833	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.640	18.658	-0.018	1.000	879395	9.75	23287	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.380	19.403	-0.023	1.000	640292	14.9	15508	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.415	19.437	-0.022	1.000	430094	5.13	4478	
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		710003	10.0	15455	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.082	20.096	-0.014	1.000	694642	9.14	650	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.454	20.468	-0.014	1.000	1009259	20.0	8225	
* 8 13C4 PFOS								
503.0 > 80.0	20.714	20.730	-0.016		1331891	28.7	36012	
9 Perfluorononanoic acid								
463.0 > 419.0	20.785	20.803	-0.018	1.000	865281	9.88	18981	
$ 10 13C2 PFDA								
515.0 > 470.0	21.524	21.541	-0.017	1.000	747560	9.71	25154	

Reagents:

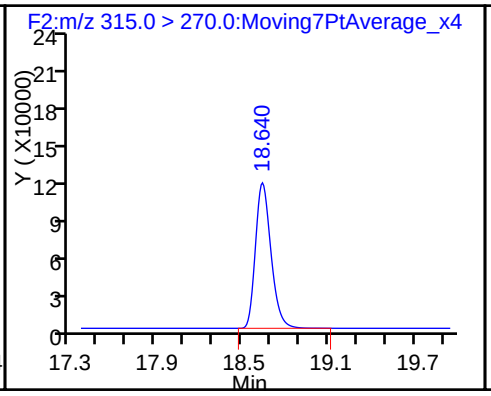
LC537-L3_00019 Amount Added: 1.00 Units: mL

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_048.d
Injection Date: 25-Jan-2017 14:17:11 Instrument ID: A6
Lims ID: CCV L3
Client ID:
Operator ID: CBW ALS Bottle#: 3 Worklist Smp#: 48
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

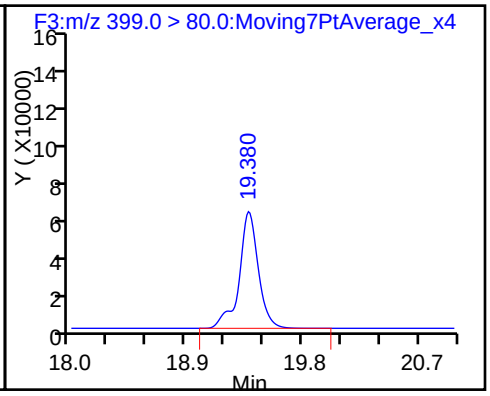
1 Perfluorobutanesulfonic acid



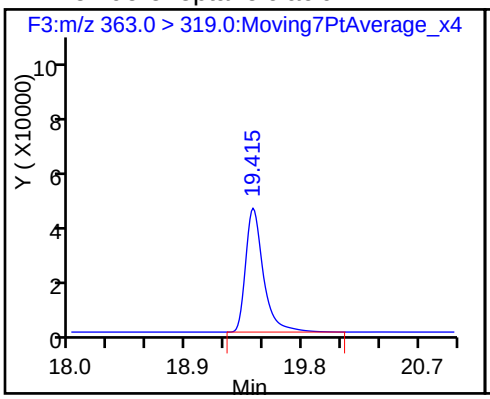
$ 2 13C2 PFHxA



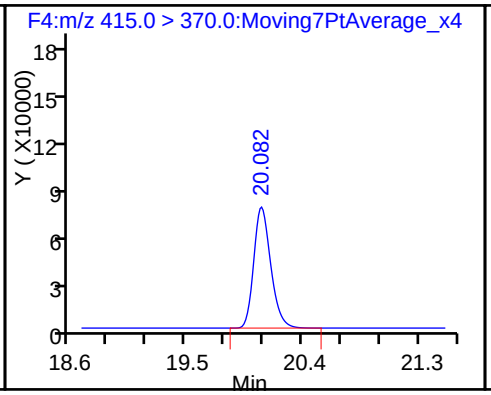
3 Perfluorohexanesulfonic acid



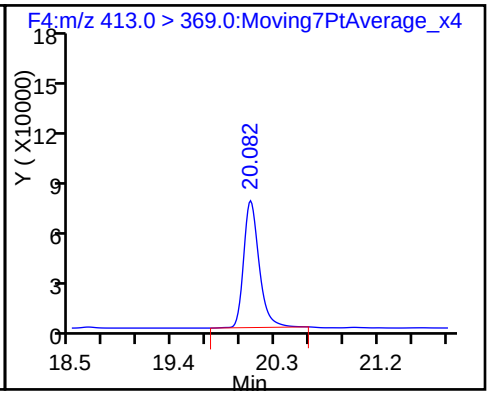
4 Perfluoroheptanoic acid



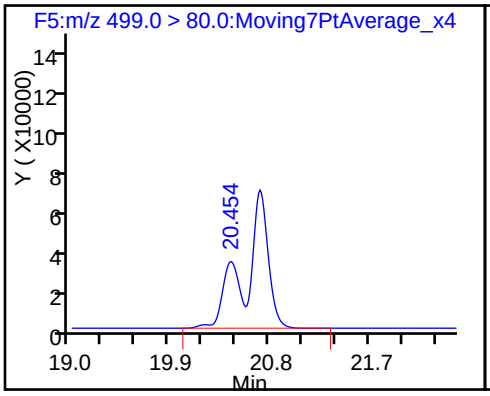
* 5 13C2-PFOA



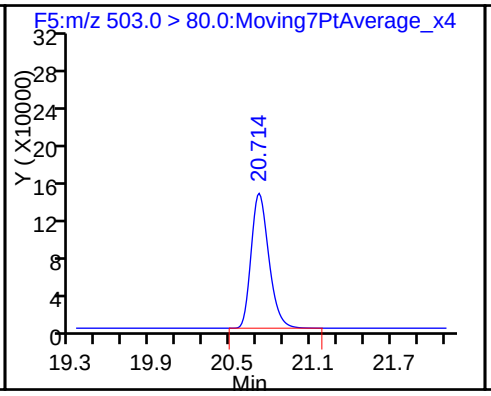
6 Perfluorooctanoic acid



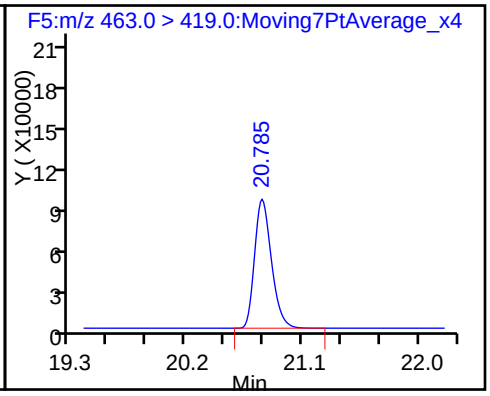
7 Perfluorooctane sulfonic acid



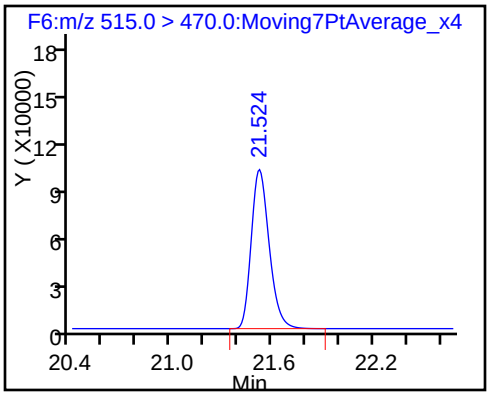
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-147297/1-A

Matrix: Water Lab File ID: 24JAN2017A6A_038.d

Analysis Method: 537 Date Collected:

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 250(mL) Date Analyzed: 01/25/2017 09:19

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	102		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_038.d
Lims ID: MB 320-147297/1-A
Client ID:
Sample Type: MB
Inject. Date: 25-Jan-2017 09:19:54 ALS Bottle#: 17 Worklist Smp#: 38
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-147297/1-a BOX 53
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:48:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
$ 2 13C2 PFHxA								
315.0 > 270.0	18.640	18.658	-0.018	1.000	789419	9.85	25838	
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		630968	10.0	17422	
* 8 13C4 PFOS								
503.0 > 80.0	20.714	20.730	-0.016		1282606	28.7	23417	
$ 10 13C2 PFDA								
515.0 > 470.0	21.516	21.541	-0.025	1.000	698987	10.2	23691	

Report Date: 25-Jan-2017 14:24:41 Chrom Revision: 2.2 10-Jan-2017 11:26:10

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_038.d

Injection Date: 25-Jan-2017 09:19:54 Instrument ID: A6

Lims ID: MB 320-147297/1-A

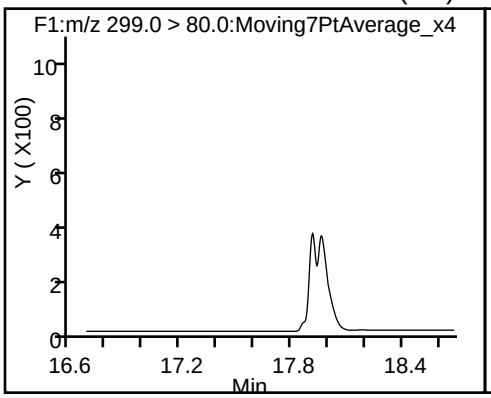
Client ID:

Operator ID: CBW ALS Bottle#: 17 Worklist Smp#: 38

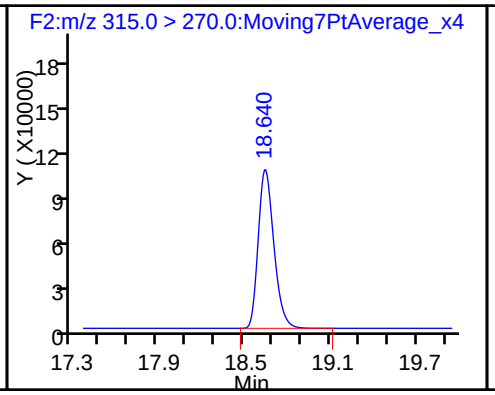
Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: 537__A6 Limit Group: LC 537 ICAL

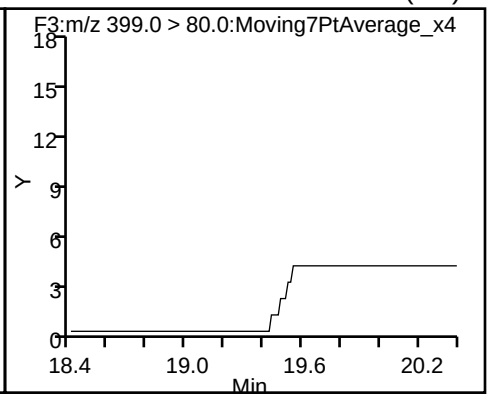
1 Perfluorobutanesulfonic acid (ND)



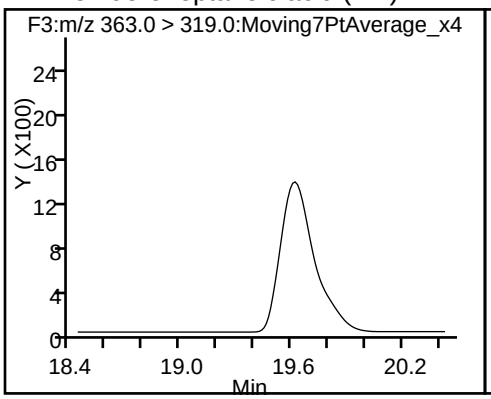
$ 2 13C2 PFHxA



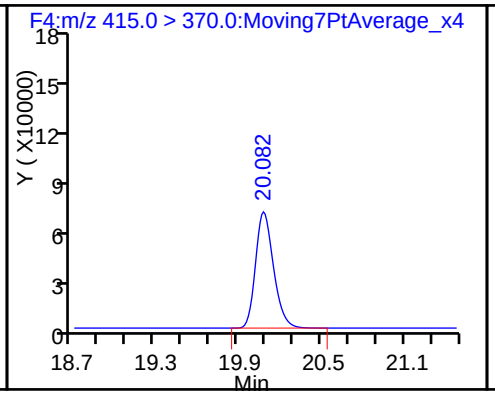
3 Perfluorohexanesulfonic acid (ND)



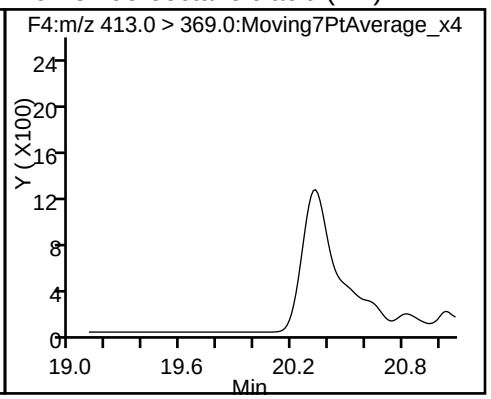
4 Perfluoroheptanoic acid (ND)



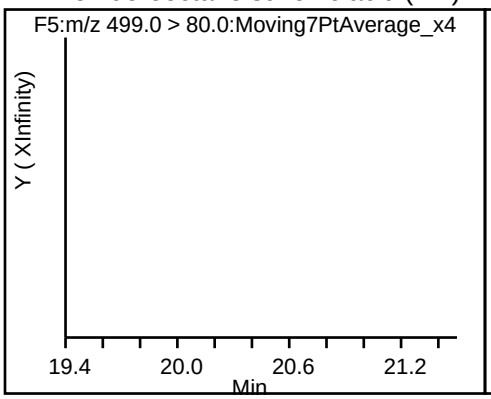
* 5 13C2-PFOA



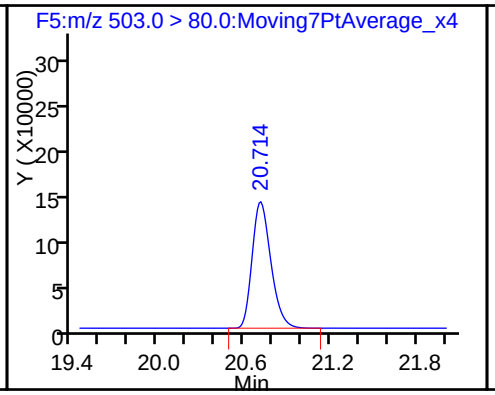
6 Perfluorooctanoic acid (ND)



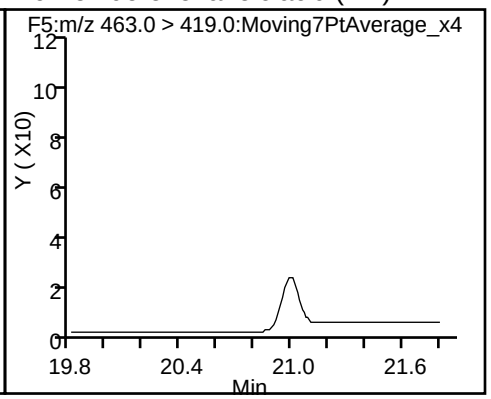
7 Perfluorooctane sulfonic acid (ND)



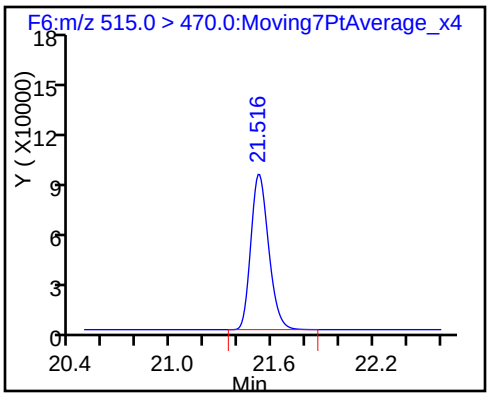
* 8 13C4 PFOS



9 Perfluorononanoic acid (ND)



$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_038.d				
Lims ID:	MB 320-147297/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	25-Jan-2017 09:19:54	ALS Bottle#:	17	Worklist Smp#:	38
Injection Vol:	10.0 ul	Dil. Factor:	1.0000		
Sample Info:	mb 320-147297/1-a BOX 53				
Misc. Info.:	Acquity BEH 1.7um, 3X150mm T=35*C				
Operator ID:	CBW	Instrument ID:	A6		
Method:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m				
Limit Group:	LC 537 ICAL				
Last Update:	25-Jan-2017 14:24:26	Calib Date:	24-Jan-2017 18:32:06		
Integrator:	Picker				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d				
Column 1 :	Acquity BEH C18 (2.10 mm)		Det: F1:MRM		
Process Host:	XAWRK015				
First Level Reviewer: barnettj		Date:	25-Jan-2017 13:48:45		

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	10.0	9.85	98.46
$ 10 13C2 PFDA	10.0	10.2	102.16

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-25130-1

SDG No.:

Client Sample ID: | Lab Sample ID: LLCS 320-147297/2-A

Matrix: Water | Lab File ID: 24JAN2017A6A_039.d

Analysis Method: 537 | Date Collected:

Extraction Method: 537 | Date Extracted: 01/21/2017 11:49

Sample wt/vol: 250(mL) | Date Analyzed: 01/25/2017 09:49

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 10(uL) | GC Column: Acquity ID: 2.1(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0306	J	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.0174	J M	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.0729	J	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	104		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_039.d
Lims ID: LLCS 320-147297/2-A
Client ID:
Sample Type: LLCS
Inject. Date: 25-Jan-2017 09:49:30 ALS Bottle#: 18 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: llcs 320-147297/2-a
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:49:37

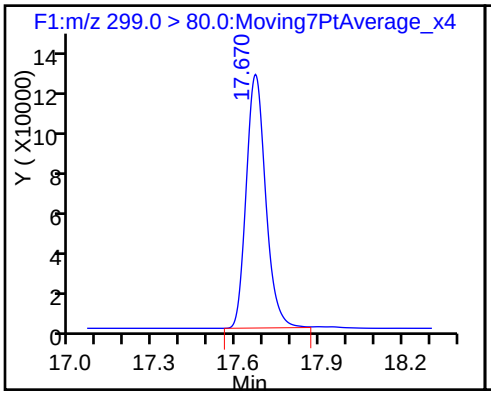
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.670	17.685	-0.015	1.000	610446	18.2	775	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.640	18.658	-0.018	1.000	826881	10.4	27492	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.392	19.403	-0.011	1.000	260806	6.10	6400	
4 Perfluoroheptanoic acid								M
363.0 > 319.0	19.415	19.437	-0.022	1.000	186275	2.51	124	M
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		627354	10.0	17238	
6 Perfluorooctanoic acid								M
413.0 > 369.0	20.082	20.096	-0.014	1.000	292162	4.35	304	M
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.454	20.468	-0.014	1.000	383386	7.65	2926	
* 8 13C4 PFOS								
503.0 > 80.0	20.714	20.730	-0.016		1321123	28.7	36118	
9 Perfluorononanoic acid								
463.0 > 419.0	20.785	20.803	-0.018	1.000	317102	4.10	1174	
$ 10 13C2 PFDA								
515.0 > 470.0	21.515	21.541	-0.026	1.000	726077	10.7	24618	

QC Flag Legend

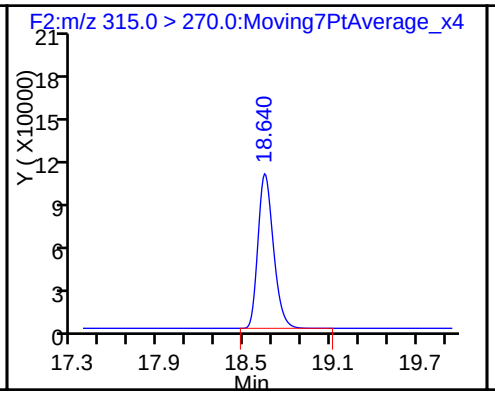
Review Flags
M - Manually Integrated

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_039.d
Injection Date: 25-Jan-2017 09:49:30 Instrument ID: A6
Lims ID: LLCS 320-147297/2-A
Client ID:
Operator ID: CBW ALS Bottle#: 18 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

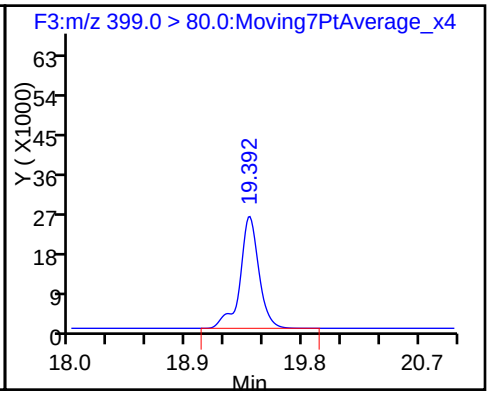
1 Perfluorobutanesulfonic acid



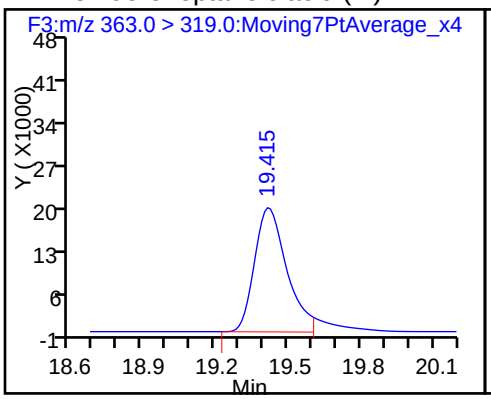
$ 2 13C2 PFHxA



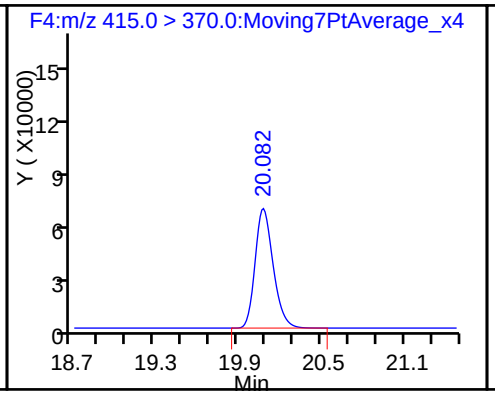
3 Perfluorohexanesulfonic acid



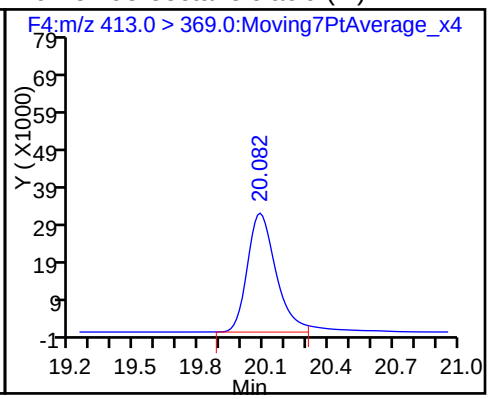
4 Perfluoroheptanoic acid (M)



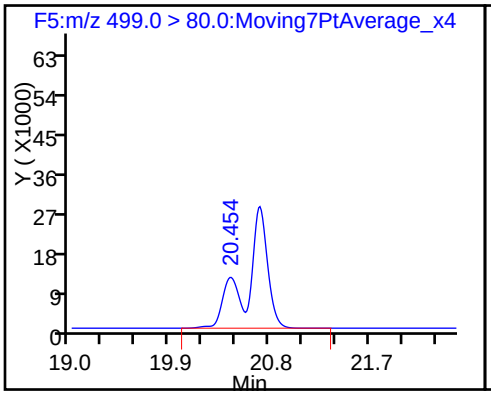
* 5 13C2-PFOA



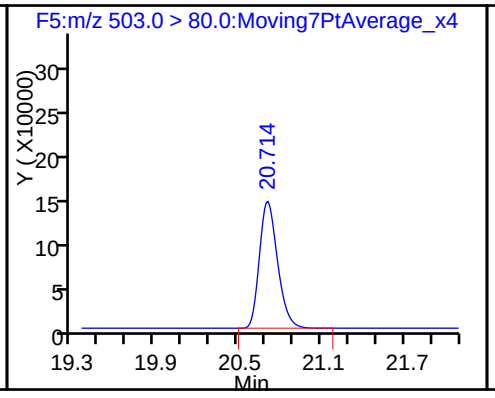
6 Perfluorooctanoic acid (M)



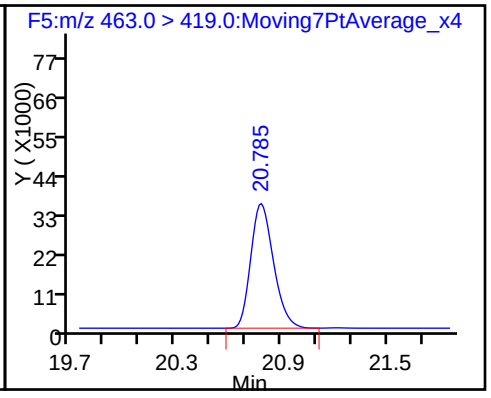
7 Perfluorooctane sulfonic acid



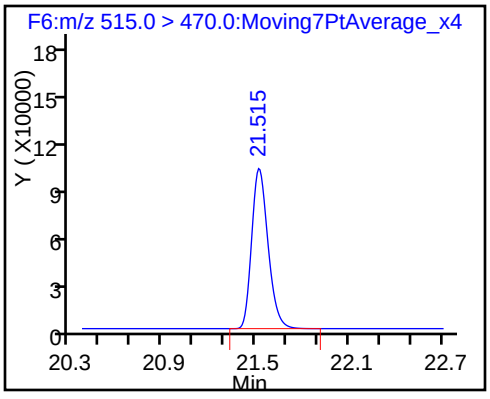
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_039.d
Lims ID: LLCS 320-147297/2-A
Client ID:
Sample Type: LLCS
Inject. Date: 25-Jan-2017 09:49:30 ALS Bottle#: 18 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: llcs 320-147297/2-a
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:49:37

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	10.0	10.4	103.73
$ 10 13C2 PFDA	10.0	10.7	106.73

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

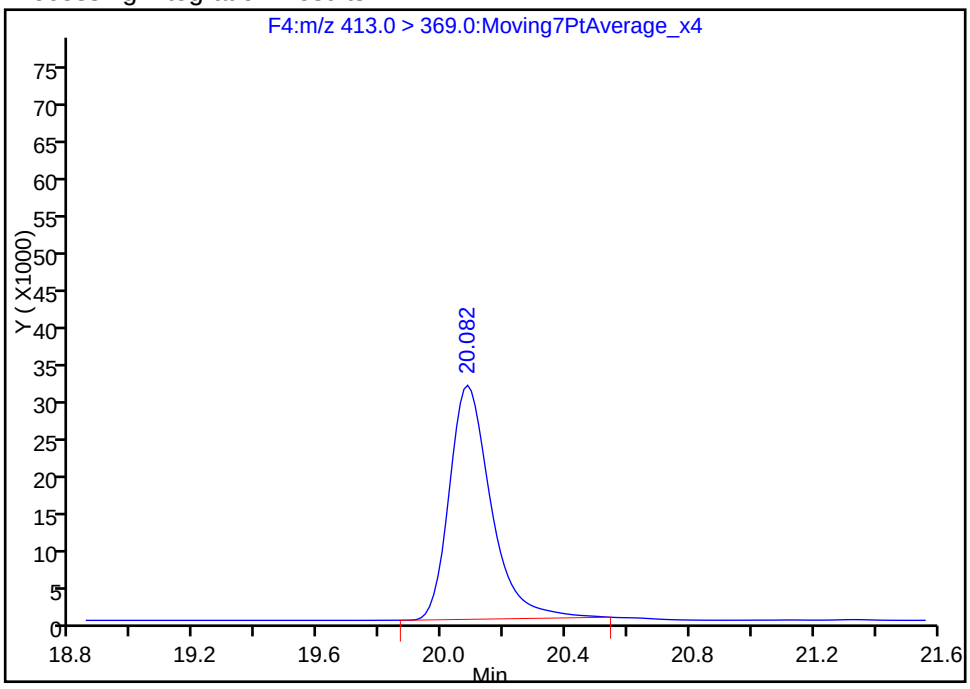
Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_039.d
Injection Date: 25-Jan-2017 09:49:30 Instrument ID: A6
Lims ID: LLCS 320-147297/2-A
Client ID:
Operator ID: CBW ALS Bottle#: 18 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL
Column: Acquity BEH C18 (2.10 mm) Detector F4:MRM

6 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

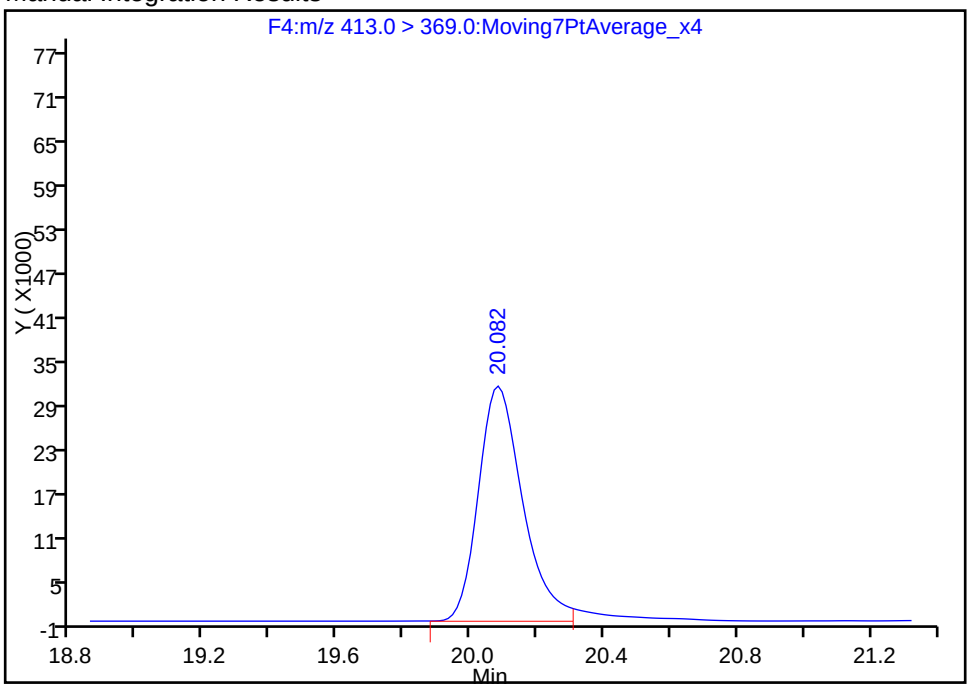
Processing Integration Results

RT: 20.08
Area: 295352
Amount: 4.400397
Amount Units: ng/ml



Manual Integration Results

RT: 20.08
Area: 292162
Amount: 4.352870
Amount Units: ng/ml



Reviewer: barnettj, 25-Jan-2017 13:49:37
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: WI-AF-1RW10-0117 MS Lab Sample ID: 320-25130-1 MS

Matrix: Water Lab File ID: 24JAN2017A6A_041.d

Analysis Method: 537 Date Collected: 01/17/2017 09:12

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 250.1(mL) Date Analyzed: 01/25/2017 10:48

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.159		0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.0746		0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.350		0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	110		70-130
STL00996	13C2 PFDA	116		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_041.d
Lims ID: 320-25130-A-1-B MS
Client ID: WI-AF-1RW10-0117
Sample Type: MS
Inject. Date: 25-Jan-2017 10:48:39 ALS Bottle#: 20 Worklist Smp#: 41
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-1-b ms
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

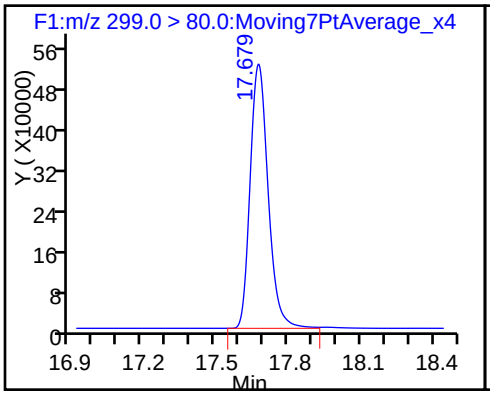
Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:50:50

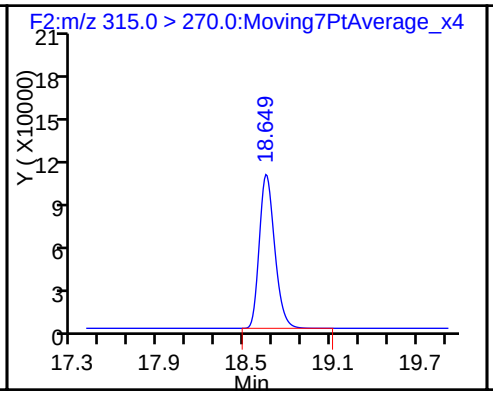
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.679	17.685	-0.006	1.000	2710491	87.6	1420	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.649	18.658	-0.009	1.000	793965	11.0	26556	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.391	19.403	-0.012	1.000	1188189	30.1	28324	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.427	19.437	-0.010	1.000	709685	10.5	2762	
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		569598	10.0	15510	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.094	20.096	-0.002	1.000	1137624	18.7	1060	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.454	20.468	-0.014	1.000	1841837	39.8	14818	
* 8 13C4 PFOS								
503.0 > 80.0	20.726	20.730	-0.004		1220507	28.7	18800	
9 Perfluorononanoic acid								
463.0 > 419.0	20.797	20.803	-0.006	1.000	1491062	21.2	17971	
$ 10 13C2 PFDA								
515.0 > 470.0	21.524	21.541	-0.017	1.000	716968	11.6	24185	

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_041.d
Injection Date: 25-Jan-2017 10:48:39 Instrument ID: A6
Lims ID: 320-25130-A-1-B MS
Client ID: WI-AF-1RW10-0117
Operator ID: CBW ALS Bottle#: 20 Worklist Smp#: 41
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

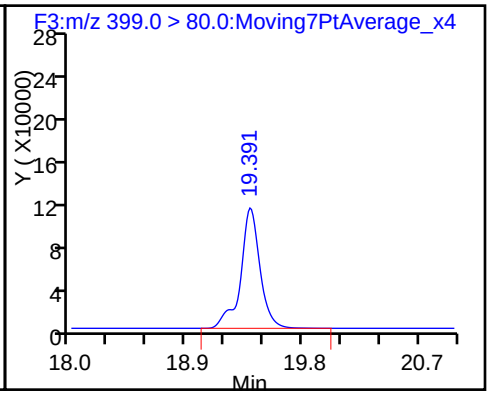
1 Perfluorobutanesulfonic acid



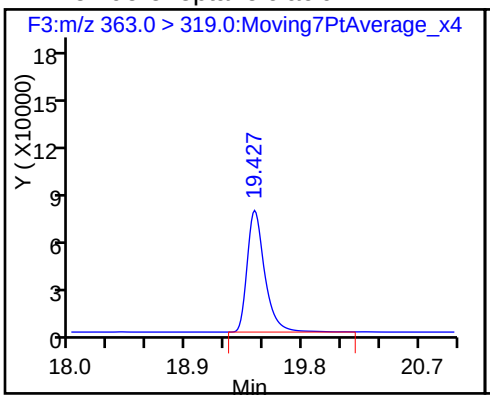
$ 2 13C2 PFHxA



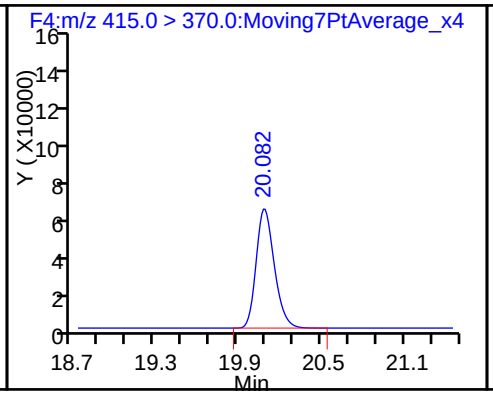
3 Perfluorohexanesulfonic acid



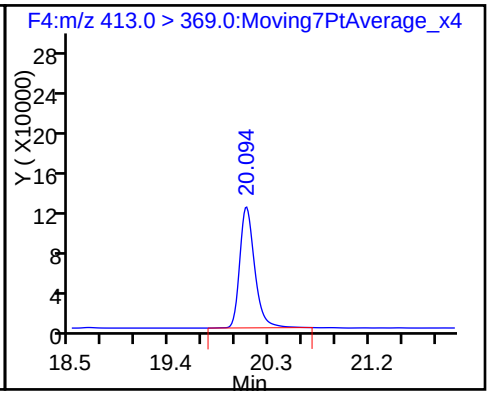
4 Perfluoroheptanoic acid



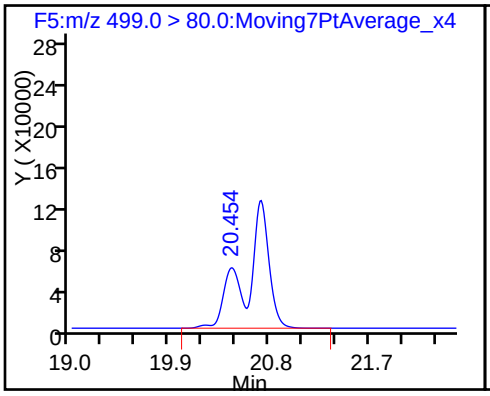
* 5 13C2-PFOA



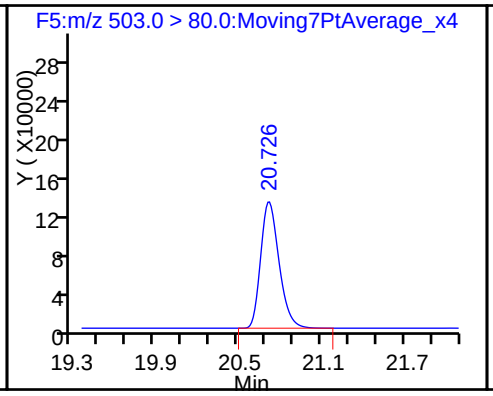
6 Perfluorooctanoic acid



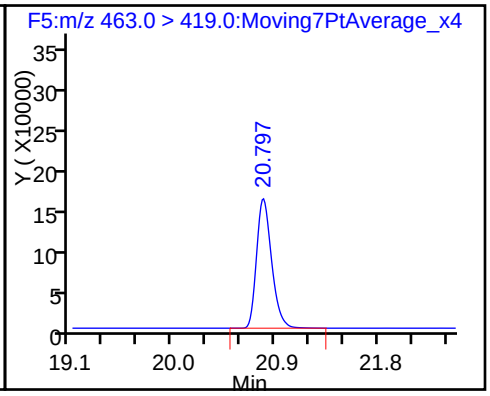
7 Perfluorooctane sulfonic acid



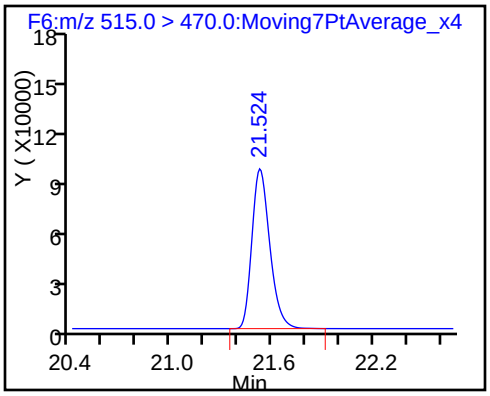
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_041.d
Lims ID: 320-25130-A-1-B MS
Client ID: WI-AF-1RW10-0117
Sample Type: MS
Inject. Date: 25-Jan-2017 10:48:39 ALS Bottle#: 20 Worklist Smp#: 41
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-1-b ms
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 25-Jan-2017 13:50:50

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	10.0	11.0	109.70
$ 10 13C2 PFDA	10.0	11.6	116.08

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: WI-AF-1RW10-0117 MSD Lab Sample ID: 320-25130-1 MSD

Matrix: Water Lab File ID: 24JAN2017A6A_042.d

Analysis Method: 537 Date Collected: 01/17/2017 09:12

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 252.4(mL) Date Analyzed: 01/25/2017 11:19

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.158		0.059	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.0771		0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.360		0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	112		70-130
STL00996	13C2 PFDA	113		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_042.d
Lims ID: 320-25130-A-1-C MSD
Client ID: WI-AF-1RW10-0117
Sample Type: MSD
Inject. Date: 25-Jan-2017 11:19:35 ALS Bottle#: 21 Worklist Smp#: 42
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 320-25130-a-1-c msd
Misc. Info.: Acquity BEH 1.7um, 3X150mm T=35*C
Operator ID: CBW Instrument ID: A6

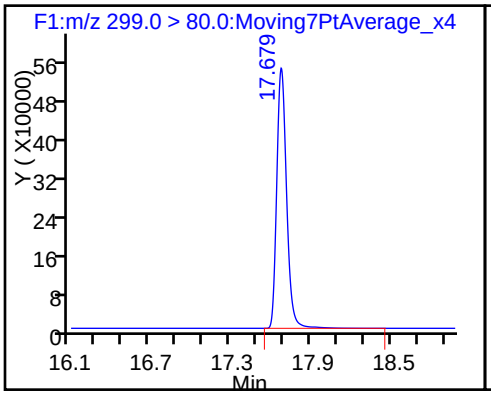
Method: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m
Limit Group: LC 537 ICAL
Last Update: 25-Jan-2017 14:24:26 Calib Date: 24-Jan-2017 18:32:06
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d

Column 1 : Acquity BEH C18 (2.10 mm) Det: F1:MRM
Process Host: XAWRK015

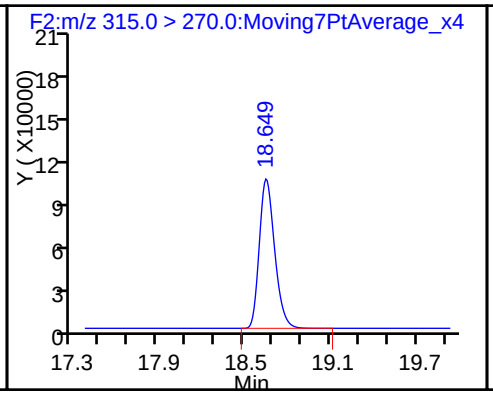
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	S/N	Flags
1 Perfluorobutanesulfonic acid								
299.0 > 80.0	17.679	17.685	-0.006	1.000	2803470	90.8	136364	
$ 2 13C2 PFHxA								
315.0 > 270.0	18.649	18.658	-0.009	1.000	792680	11.2	26579	
3 Perfluorohexanesulfonic acid								
399.0 > 80.0	19.392	19.403	-0.011	1.000	1244144	31.6	29847	
4 Perfluoroheptanoic acid								
363.0 > 319.0	19.427	19.437	-0.010	1.000	735815	11.2	19326	
* 5 13C2-PFOA								
415.0 > 370.0	20.082	20.096	-0.014		557588	10.0	15268	
6 Perfluorooctanoic acid								
413.0 > 369.0	20.082	20.096	-0.014	1.000	1160852	19.5	1290	
7 Perfluorooctane sulfonic acid								
499.0 > 80.0	20.454	20.468	-0.014	1.000	1841710	39.9	15209	
* 8 13C4 PFOS								
503.0 > 80.0	20.714	20.730	-0.016		1217689	28.7	22207	
9 Perfluorononanoic acid								
463.0 > 419.0	20.785	20.803	-0.018	1.000	1576249	22.9	14378	
$ 10 13C2 PFDA								
515.0 > 470.0	21.524	21.541	-0.017	1.000	682756	11.3	23182	

Data File: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_042.d
Injection Date: 25-Jan-2017 11:19:35 Instrument ID: A6
Lims ID: 320-25130-A-1-C MSD
Client ID: WI-AF-1RW10-0117
Operator ID: CBW ALS Bottle#: 21 Worklist Smp#: 42
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Method: 537__A6 Limit Group: LC 537 ICAL

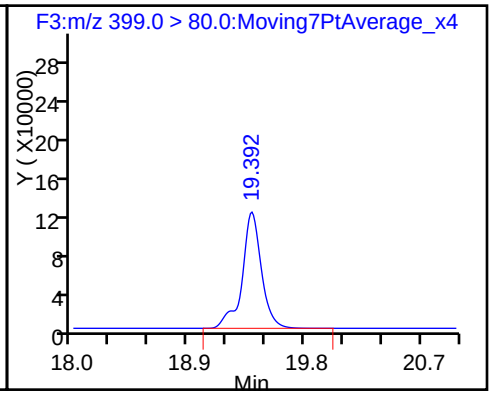
1 Perfluorobutanesulfonic acid



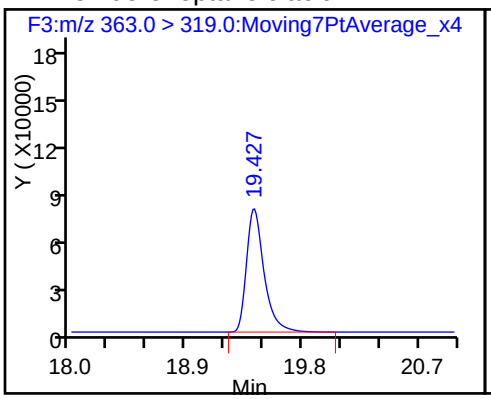
$ 2 13C2 PFHxA



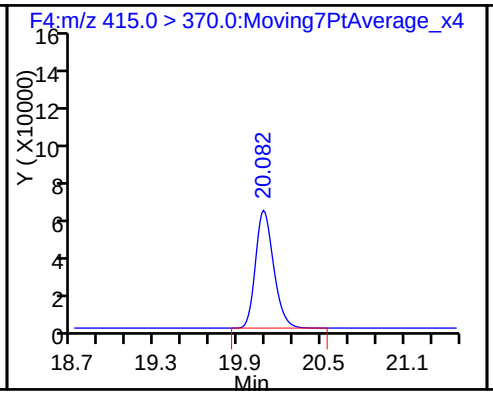
3 Perfluorohexanesulfonic acid



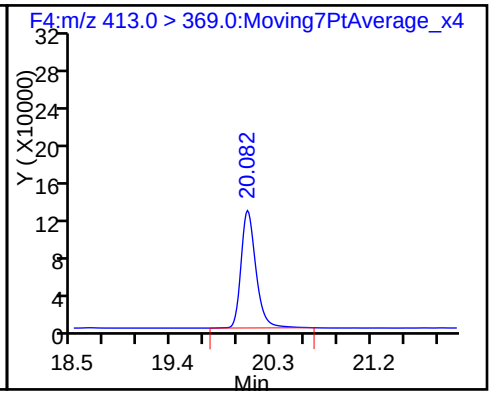
4 Perfluoroheptanoic acid



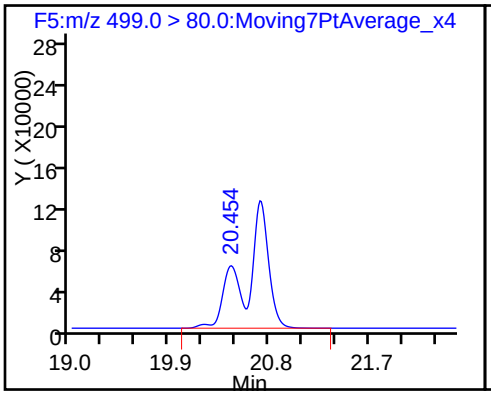
* 5 13C2-PFOA



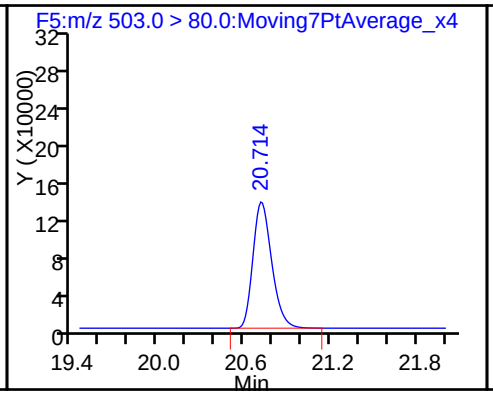
6 Perfluorooctanoic acid



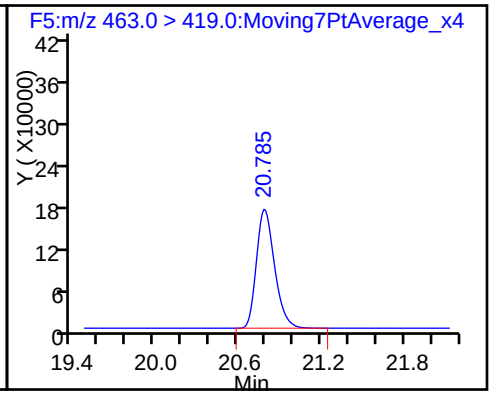
7 Perfluorooctane sulfonic acid



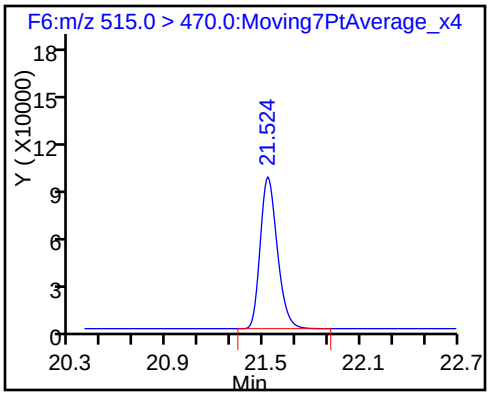
* 8 13C4 PFOS



9 Perfluorononanoic acid



$ 10 13C2 PFDA



TestAmerica Sacramento
Recovery Report

Data File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_042.d				
Lims ID:	320-25130-A-1-C MSD				
Client ID:	WI-AF-1RW10-0117				
Sample Type:	MSD				
Inject. Date:	25-Jan-2017 11:19:35	ALS Bottle#:	21	Worklist Smp#:	42
Injection Vol:	10.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-25130-a-1-c msd				
Misc. Info.:	Acquity BEH 1.7um, 3X150mm T=35*C				
Operator ID:	CBW	Instrument ID:	A6		
Method:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\537__A6.m				
Limit Group:	LC 537 ICAL				
Last Update:	25-Jan-2017 14:24:26	Calib Date:	24-Jan-2017 18:32:06		
Integrator:	Picker				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Sacramento\ChromData\A6\20170124-39144.b\24JAN2017A6A_008.d				
Column 1 :	Acquity BEH C18 (2.10 mm)		Det: F1:MRM		
Process Host:	XAWRK015				

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	10.0	11.2	111.88
$ 10 13C2 PFDA	10.0	11.3	112.92

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Instrument ID: A6 Start Date: 01/24/2017 16:04

Analysis Batch Number: 147661 End Date: 01/25/2017 02:25

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD 320-147661/3 IC		01/24/2017 16:04	1	24JAN2017A6A_003.d	Acquity 2.1(mm)
STD 320-147661/4 IC		01/24/2017 16:33	1	24JAN2017A6A_004.d	Acquity 2.1(mm)
STD 320-147661/5 IC		01/24/2017 17:03	1	24JAN2017A6A_005.d	Acquity 2.1(mm)
STD 320-147661/6 ICISAV		01/24/2017 17:32	1	24JAN2017A6A_006.d	Acquity 2.1(mm)
STD 320-147661/7 IC		01/24/2017 18:02	1	24JAN2017A6A_007.d	Acquity 2.1(mm)
STD 320-147661/8 IC		01/24/2017 18:32	1	24JAN2017A6A_008.d	Acquity 2.1(mm)
ZZZZZ		01/24/2017 19:01	1		Acquity 2.1(mm)
CCV 320-147661/10 CCVL		01/24/2017 19:31	1	24JAN2017A6A_010.d	Acquity 2.1(mm)
ZZZZZ		01/24/2017 20:00	1		Acquity 2.1(mm)
ICV 320-147661/12		01/24/2017 20:30	1	24JAN2017A6A_012.d	Acquity 2.1(mm)
ZZZZZ		01/24/2017 21:00	1		Acquity 2.1(mm)
ZZZZZ		01/24/2017 21:29	1		Acquity 2.1(mm)
ZZZZZ		01/24/2017 21:59	1		Acquity 2.1(mm)
ZZZZZ		01/24/2017 22:28	1		Acquity 2.1(mm)
ZZZZZ		01/24/2017 22:58	1		Acquity 2.1(mm)
ZZZZZ		01/24/2017 23:28	1		Acquity 2.1(mm)
ZZZZZ		01/24/2017 23:57	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 00:27	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 00:56	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 01:26	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 01:56	1		Acquity 2.1(mm)
CCV 320-147661/24 CCVIS		01/25/2017 02:25	1		Acquity 2.1(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Instrument ID: A6 Start Date: 01/25/2017 08:20

Analysis Batch Number: 147664 End Date: 01/25/2017 14:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-147664/36 CCVIS		01/25/2017 08:20	1	24JAN2017A6A_036.d	Acquity 2.1(mm)
ZZZZZ		01/25/2017 08:50	1		Acquity 2.1(mm)
MB 320-147297/1-A		01/25/2017 09:19	1	24JAN2017A6A_038.d	Acquity 2.1(mm)
LLCS 320-147297/2-A		01/25/2017 09:49	1	24JAN2017A6A_039.d	Acquity 2.1(mm)
320-25130-1		01/25/2017 10:19	1	24JAN2017A6A_040.d	Acquity 2.1(mm)
320-25130-1 MS		01/25/2017 10:48	1	24JAN2017A6A_041.d	Acquity 2.1(mm)
320-25130-1 MSD		01/25/2017 11:19	1	24JAN2017A6A_042.d	Acquity 2.1(mm)
320-25130-2		01/25/2017 11:49	1	24JAN2017A6A_043.d	Acquity 2.1(mm)
ZZZZZ		01/25/2017 12:18	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 12:48	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 13:18	1		Acquity 2.1(mm)
ZZZZZ		01/25/2017 13:47	1		Acquity 2.1(mm)
CCV 320-147664/48 CCVIS		01/25/2017 14:17	1	24JAN2017A6A_048.d	Acquity 2.1(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Batch Number: 147297 Batch Start Date: 01/21/17 11:48 Batch Analyst: Kolstad, Kate M

Batch Method: 537 Batch End Date: 01/23/17 13:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00030
MB 320-147297/1		537, 537				250 mL	1 mL	7 SU	20 uL
LLCS 320-147297/2		537, 537				250 mL	1 mL	7 SU	20 uL
320-25130-A-1	WI-AF-1RW10-0117	537, 537	T	279.90 g	27.20 g	252.7 mL	1 mL	7 SU	20 uL
320-25130-A-1 MS	WI-AF-1RW10-0117	537, 537	T	276.97 g	26.90 g	250.1 mL	1 mL	7 SU	20 uL
320-25130-A-1 MSD	WI-AF-1RW10-0117	537, 537	T	279.50 g	27.09 g	252.4 mL	1 mL	7 SU	20 uL
320-25130-A-2	WI-AF-1FB10-0117	537, 537	T	279.26 g	26.35 g	252.9 mL	1 mL	7 SU	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-LSP 00016	LC537-MSP 00017	LC537-SU 00029	AnalysisComment		
MB 320-147297/1		537, 537				50 uL	chlorine=ND		
LLCS 320-147297/2		537, 537		50 uL		50 uL	chlorine=ND		
320-25130-A-1	WI-AF-1RW10-0117	537, 537	T			50 uL	chlorine=ND		
320-25130-A-1 MS	WI-AF-1RW10-0117	537, 537	T		50 uL	50 uL	chlorine=ND		
320-25130-A-1 MSD	WI-AF-1RW10-0117	537, 537	T		50 uL	50 uL	chlorine=ND		
320-25130-A-2	WI-AF-1FB10-0117	537, 537	T			50 uL	chlorine=ND		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Batch Number: 147297 Batch Start Date: 01/21/17 11:48 Batch Analyst: Kolstad, Kate M

Batch Method: 537 Batch End Date: 01/23/17 13:50

Batch Notes	
Manifold ID	3
Methanol ID	827185
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	NSH
Analyst ID - IS Reagent Drop Witness	CCB
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	KMK
Analyst ID - TA Reagent Drop	VPM
Analyst ID - TA Reagent Drop Witness	KMK
SPE Cartridge ID	6341059-03
Trizma ID	SLBR4303V
Reagent Water ID	SIZ 1-13-17

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

Method 537 CCV/Data Review Checklist

A6

Job No: 25130 25119 Instrument ID & Date: 1-25-17 ICAL Batch: 147661
Extraction Batch: 147297 Worklist #: 39144 TALS Batch: 147664

Review Items	--- Level 1 --- Yes	No	N/A	Level 2
Initial Calibration				
1. Is ICAL verified and locked in Chrom & TALS?	✓			✓
2. Is ICV properly linked in TALS?	✓			✓
Continuing Calibration				
1. **Low-range CCV injected at start of analytical run?** CCV injected after every 10 samples and at the end of the analytical run and alternated between Low-range, Mid-range and High-range?	✓			✓
2. If sequence was not after an ICAL was a low and mid range CCV injected at the start of the analytical run?			✓	
3. Native compounds and surrogates in control? Low-range within ±50% of true value Mid and High-range within ±30% of true value	✓			✓
4. Internal Standard areas in control? Areas ≥ 50% of average area of the ICal and 70-140% of the most recent CCV.	✓			✓
Client Samples & QC Sample Results				
1. Were preparation and analysis done within holding times?	✓			✓
2. Are Chromatograms reviewed and spectra verified?	✓			✓
3. Are positive results within calibration range?	✓			✓
4. Dilutions due to target cpds? ____ Dilutions due to non-targets? ____			✓	
5. All target compounds in MB < 1/3 RL ? **(Requires NCM if "no.")**	✓			✓
6. Are target constituents in LCS/LCSD within method control limits?	✓			✓
7. Internal Standard areas in control for all samples and QC reported? ±50% from the average area of the ICAL and 70-140% of the most recent CCV	✓			✓
8. Do results (e.g., dilutions/trip blanks) make sense?	✓			✓
9. Are MS/MSD recoveries and RPDs within method control limits?	✓			✓
10. Are all QC samples properly linked in TALS?	✓			✓
11. All manual integrations appropriate and completely documented?	✓			✓
12. Are nonconformances documented as NCMs?			✓	
13. Are all Chrom graphics uploaded?	✓			✓

1st Level Reviewer / Date: JRB 1-25-17 2nd Level Reviewer / Date: MMurray 1/25/2017

NCM # and Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

Method 537 ICAL Checklist

A6

Instrument ID & Date: 1-24-17 Worklist#: 39144

ICAL Batch: 147661, 147662 Calibration ID number: 27898, 27899

Review Items	— Level 1 — Yes	No	N/A	Level 2
Initial Calibration				
1. Mass calibration, as needed, verified by full scan of PFC stock standard. All PFC ions used for quantitation are within 0.3 m/z of true mass?	✓			✓
2. Responses increase with increasing concentration?	✓			✓
3. Fit used (circle): (Average) Linear (1/x²)Linear Quadratic (6 points minimum)				
4. Meets fit criteria? Intercept ≤ ½ RL RSD ≤ 30% for Average $R^2 \geq 0.990$ for Linear $R^2 \geq 0.990$ for Quadratic NOTE: "Force through Zero" must be used and weighted if needed	✓			✓
5. If quadratic fit used the curve does not "bend over".			✓	
6. Feed calibration points into the calculated curve. Are points ≤MRL within ±50% of true value? Are points >MRL within ±30% of true value?	✓			✓
7. Any carryover from the high calibration point must be ≤ 1/3 RL	✓			✓
8. Asymmetry check meets criteria for the first two eluting peaks?.(0.8 - 1.5).	✓			✓
9. Is the asymmetry check scanned and linked in TALS to the calibration point?	✓			✓
10. Is ICV (2nd source) ± 30% of true value?	✓			✓
11. Is ICV (2nd source) internal standards ±50% of average area of the ICAL?	✓			✓
12. ICal locked in Chrom and uploaded to TALS?	✓			
13. ICal locked in TALS and scanned?				✓

1st Level Reviewer / Date: JRB 1-25-17 2nd Level Reviewer / Date: MWay 1/25/2017

NCM # and Comments:

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 24JAN2017A_A6 537 Worklist Number: 39144
Instrument Name: A6 Chrom Method: 537__A6
Data Directory: \\ChromNA\Sacramento\ChromData\A6\20170124-39144.b
QC Batching: Enabled Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 147661	LC 537 CS ICAL Raw Batch: 147662
# 1 RB	# 1 RB	
# 2 RB	# 2 RB	
# 3 STD L1	# 3 STD L1	# 3 STD L1
# 4 STD L2	# 4 STD L2	# 4 STD L2
# 5 STD L3	# 5 STD L3	# 5 STD L3
# 6 STD L4	# 6 STD L4	# 6 STD L4
# 7 STD L5	# 7 STD L5	# 7 STD L5
# 8 STD L6	# 8 STD L6	# 8 STD L6
# 9 RB	# 9 RB	# 9 RB
#10 CCV L2	#10 CCV L2	#10 CCV L2
#11 RB	#11 RB	#11 RB
#12 ICV	#12 ICV	#12 ICV
#13 RB	#13 RB	
#14 MB 320-147289/1-A	#14 MB 320-147289/1-A	
#15 LCSD 320-147289/3-A	#15 LCSD 320-147289/3-A	
#16 320-25114-A-9-A	#16 320-25114-A-9-A	
#17 MB 320-147285/1-A	#17 MB 320-147285/1-A	
#18 320-25070-A-1-A	#18 320-25070-A-1-A	
#19 MB 320-147301/1-A	#19 MB 320-147301/1-A	
#20 LCS 320-147301/2-A	#20 LCS 320-147301/2-A	
#21 320-25158-A-1-A	#21 320-25158-A-1-A	
#22 320-25158-A-2-A	#22 320-25158-A-2-A	
#23 320-25158-A-3-A	#23 320-25158-A-3-A	
#24 CCV L3	#24 CCV L3	

QC Batch: 2	LC 537 ICAL Raw Batch: 147663
#24 CCV L3	#24 CCV L3
#25 RB	#25 RB
#26 320-25158-A-4-A	#26 320-25158-A-4-A
#27 320-25158-A-5-A	#27 320-25158-A-5-A
#28 320-25158-A-5-B MS	#28 320-25158-A-5-B MS
#29 320-25158-A-5-C MSD	#29 320-25158-A-5-C MSD
#30 320-25158-A-6-A	#30 320-25158-A-6-A
#31 320-25158-A-7-A	#31 320-25158-A-7-A
#32 320-25158-A-8-A	#32 320-25158-A-8-A
#33 320-25158-A-9-A	#33 320-25158-A-9-A
#34 320-25158-A-10-A	#34 320-25158-A-10-A
#35 320-25158-A-11-A	#35 320-25158-A-11-A
#36 CCV L5	#36 CCV L5

QC Batch: 3	LC 537 ICAL Raw Batch: 147664
#36 CCV L5	#36 CCV L5
#37 RB	#37 RB
#38 MB 320-147297/1-A	#38 MB 320-147297/1-A
#39 LLCS 320-147297/2-A	#39 LLCS 320-147297/2-A
#40 320-25130-A-1-A	#40 320-25130-A-1-A
#41 320-25130-A-1-B MS	#41 320-25130-A-1-B MS
#42 320-25130-A-1-C MSD	#42 320-25130-A-1-C MSD
#43 320-25130-A-2-A	#43 320-25130-A-2-A
#44 320-25119-A-1-A	#44 320-25119-A-1-A

QC Batch: 3	LC 537 ICAL Raw Batch: 147664
#45 320-25119-A-2-A	#45 320-25119-A-2-A
#46 320-25119-A-3-A	#46 320-25119-A-3-A
#47 320-25119-A-4-A	#47 320-25119-A-4-A
#48 CCV L3	#48 CCV L3
#49 RB	#49 RB

53

Screen AB 1/23/17

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-147297

Method Code: 320-537_Prep-320

Analyst: Kolstad, Kate M

Batch Open: 1/21/2017 11:48:00AM

Batch End: 1/21/17 13:50

Extraction of Perfluorinated Alkyl Acids

NO-DL Due 1/26

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-147297/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	chlorine=ND	
				1 mL								
2	LLCS~320-147297/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	chlorine=ND	
				1 mL								
3	320-25130-A-1 (537_DOD5)	N/A (320-25130-1)	279.90 g	252.7 mL	7			1/23/17	5_Days	4	chlorine=ND	
			27.20 g	1 mL								
4	320-25130-A-1~MS (537_DOD5)	N/A (320-25130-1)	276.97 g	250.1 mL	7			1/23/17	5_Days	4	chlorine=ND	
			26.90 g	1 mL								
5	320-25130-A-1~MSD (537_DOD5)	N/A (320-25130-1)	279.50 g	252.4 mL	7			1/23/17	5_Days	4	chlorine=ND	
			27.09 g	1 mL								
6	320-25130-A-2 (537_DOD5)	N/A (320-25130-1)	279.26 g	252.9 mL	7			1/23/17	5_Days	4	chlorine=ND	
			26.35 g	1 mL								
7	320-25119-A-1 (537_DOD5)	N/A (320-25119-1)	276.77 g	249.2 mL	7			1/23/17	5_Days	4	chlorine=ND	
			27.57 g	1 mL								
8	320-25119-A-2 (537_DOD5)	N/A (320-25119-1)	278.49 g	252.5 mL	7			1/23/17	5_Days	4	chlorine=ND	
			26.03 g	1 mL								
9	320-25119-A-3 (537_DOD5)	N/A (320-25119-1)	274.84 g	246.4 mL	7			1/23/17	5_Days	4	chlorine=ND	
			28.42 g	1 mL								
10	320-25119-A-4 (537_DOD5)	N/A (320-25119-1)	281.46 g	254.7 mL	7			1/23/17	5_Days	4	chlorine=ND	
			26.76 g	1 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-147297

Method Code: 320-537_Prep-320

Analyst: Kolstad, Kate M

Batch Open: 1/21/2017 11:48:00AM

Batch End:

Batch Notes

Manifold ID	3
Trizma ID	SLBR4303V
SPE Cartridge ID	6341059-03
Methanol ID	827185
Reagent Water ID	SIZ 1-13-17
Pipette ID	MD05306
Analyst ID - TA Reagent Drop	VPM
Analyst ID - TA Reagent Drop Witness	KMK
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	KMK
Analyst ID - IS Reagent Drop	NSH 827698
Analyst ID - IS Reagent Drop Witness	CCB
Batch Comment	

Comments

Login Comments for Job 25119: Per client request:
WI-CV-1RW48-0117 & WI-CV-1FB48-0117 logged as WI-CV-1RW59-0117 & WI-CV-1FB59-0117
WI-CV-1RW49-0117 & WI-CV-1FB49-0117 logged as WI-CV-1RW60-0117 & WI-CV-1FB60-0117

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-147297

Method Code: 320-537_Prep-320

Analyst: Kolstad, Kate M

Batch Open: 1/21/2017 11:48:00AM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-147297/1	LC537-SU_00029	50 uL	1 mL		KMK 1-21-17
LLCS 320-147297/2	LC537-LSP_00016	50 uL	1 mL	VPM 1/21/17	
LLCS 320-147297/2	LC537-SU_00029	50 uL	1 mL		
320-25130-A-1	LC537-SU_00029	50 uL	1 mL		
320-25130-A-1 MS	LC537-MSP_00017	50 uL	1 mL		
320-25130-A-1 MS	LC537-SU_00029	50 uL	1 mL		
320-25130-A-1 MSD	LC537-MSP_00017	50 uL	1 mL		
320-25130-A-1 MSD	LC537-SU_00029	50 uL	1 mL		
320-25130-A-2	LC537-SU_00029	50 uL	1 mL		
320-25119-A-1	LC537-SU_00029	50 uL	1 mL		
320-25119-A-2	LC537-SU_00029	50 uL	1 mL		
320-25119-A-3	LC537-SU_00029	50 uL	1 mL		
320-25119-A-4	LC537-SU_00029	50 uL	1 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-147297

Method Code: 320-537_Prep-320

Analyst: Kolstad, Kate M

Batch Open: 1/21/2017 11:48:00AM

Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 147297 Test: 537_Prep

Earliest Holding Time: 1-31-17

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: VPM Date: 1/23/17

2nd Level Reviewer: [illegible] Date: 1-23-17

Comments:

Shipping and Receiving Documents

TestAmerica Sacramento
880 Riverside Parkway

West Sacramento, CA 95605
phone 916.373.5600 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Katie Tippin	Site Contact: Eric Epple	Date: 1/18/2017	COC No: 1
Tiffany Hill	Tel/Fax: (757) 671-6258	Lab Contact: Laura Turpen	Carrier: FedEx	_____ of _____ COCs
Project Chemist	Analysis Turnaround Time			Sampler:
1100 NE Circle Blvd Ste 300 Corvallis, OR 97330	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(541) 768-3109	TAT if different from Below _____7-Day_____			Walk-in Client:
(541) 908-3794	☐ 2 weeks			Lab Sampling:
Project Name: CTO-08	☐ 1 week			
Site: NAS Whidbey Island	☐ 2 days			Job / SDG No.:
P O #: 100067106050 - 679580.06.FI.FS	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	USEPA Method 537 (PFOA, PFOS, and PFBS)	Sample Specific Notes:
WI-AF-1RW10-0117	01/17/17	9:12	G	DW	2	N	N	X	
WI-AF-1RW10-0117-MS	01/17/17	9:12	G	DW	2	N	Y	X	
WI-AF-1RW10-0117-MSD	01/17/17	9:12	G	DW	2	N	Y	X	
WI-AF-1FB10-0117	01/17/17	9:13	G	DW	2	N	N	X	
								6	

320-25130 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _Trizma__

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: 2.9 Corr'd: 2.6	Therm ID No.: 12
Relinquished by:	Company: CH2M	Date/Time: 1/18/17 1209	Received by:	Company: TAWS	Date/Time: 1/19/17 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-25130-1

Login Number: 25130
List Number: 1
Creator: Nelson, Kym D

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	CH2M_Code	Analysis_Group	Analytical_Method	PRC_Code	Lab_Code	Lab_Name	Leachate_Method	Sample_Basis	Extraction_Method	Result_Type	Lab_QC_Type	Sample_Medium	QC_Level	DateTime_Collected	Date_Received	Leachate_Date	Leachate_Time	Extraction_Date	Extraction_Time	Analysis_Date	Analysis_Time	Lab_Sample_ID	Dilution	Run_Number	Percent_Moisture	Percent_Lipid	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier	Validator_Qualifier	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-AF-1RW06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:11	01/18/2017			20170119	14:14:00	20170121	19:49:00	320-25077-1	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.049	UG_L	U		PR	TRG					00000000				5.0	0.016	0.049	0.061	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:11	01/18/2017			20170119	14:14:00	20170121	19:49:00	320-25077-1	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U M		PR	TRG					00000000				5.0	0.0096	0.024	0.031	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:11	01/18/2017			20170119	14:14:00	20170121	19:49:00	320-25077-1	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.049	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:11	01/18/2017			20170119	14:14:00	20170121	19:49:00	320-25077-1	1	1			13C2 PFHXA	13C2 PFHXA		116	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:11	01/18/2017			20170119	14:14:00	20170121	19:49:00	320-25077-1	1	1			13C2 PFDA	13C2 PFDA		117	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:12	01/18/2017			20170119	14:14:00	20170121	20:19:00	320-25077-2	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U M		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:12	01/18/2017			20170119	14:14:00	20170121	20:19:00	320-25077-2	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U M		PR	TRG					00000000				5.0	0.0093	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:12	01/18/2017			20170119	14:14:00	20170121	20:19:00	320-25077-2	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:12	01/18/2017			20170119	14:14:00	20170121	20:19:00	320-25077-2	1	1			13C2 PFHXA	13C2 PFHXA		115	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB06-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:12	01/18/2017			20170119	14:14:00	20170121	20:19:00	320-25077-2	1	1			13C2 PFDA	13C2 PFDA		112	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:50	01/18/2017			20170119	14:14:00	20170121	20:48:00	320-25077-3	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U		PR	TRG					00000000				5.0	0.016	0.048	0.060	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:50	01/18/2017			20170119	14:14:00	20170121	20:48:00	320-25077-3	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0095	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:50	01/18/2017			20170119	14:14:00	20170121	20:48:00	320-25077-3	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.048	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:50	01/18/2017			20170119	14:14:00	20170121	20:48:00	320-25077-3	1	1			13C2 PFHXA	13C2 PFHXA		115	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:50	01/18/2017			20170119	14:14:00	20170121	20:48:00	320-25077-3	1	1			13C2 PFDA	13C2 PFDA		111	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:51	01/18/2017			20170119	14:14:00	20170121	21:18:00	320-25077-4	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U		PR	TRG					00000000				5.0	0.015	0.048	0.060	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:51	01/18/2017			20170119	14:14:00	20170121	21:18:00	320-25077-4	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0094	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:51	01/18/2017			20170119	14:14:00	20170121	21:18:00	320-25077-4	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:51	01/18/2017			20170119	14:14:00	20170121	21:18:00	320-25077-4	1	1			13C2 PFHXA	13C2 PFHXA		126	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB07-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 09:51	01/18/2017			20170119	14:14:00	20170121	21:18:00	320-25077-4	1	1			13C2 PFDA	13C2 PFDA		115	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:13	01/18/2017			20170119	14:14:00	20170121	21:47:00	320-25077-5	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U		PR	TRG					00000000				5.0	0.015	0.048	0.060	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:13	01/18/2017			20170119	14:14:00	20170121	21:47:00	320-25077-5	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0094	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:13	01/18/2017			20170119	14:14:00	20170121	21:47:00	320-25077-5	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:13	01/18/2017			20170119	14:14:00	20170121	21:47:00	320-25077-5	1	1			13C2 PFHXA	13C2 PFHXA		126	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:13	01/18/2017			20170119	14:14:00	20170121	21:47:00	320-25077-5	1	1			13C2 PFDA	13C2 PFDA		122	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:14	01/18/2017			20170119	14:14:00	20170121	22:17:00	320-25077-6	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:14	01/18/2017			20170119	14:14:00	20170121	22:17:00	320-25077-6	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.023	UG_L	U		PR	TRG					00000000				5.0	0.0092	0.023	0.029	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:14	01/18/2017			20170119	14:14:00	20170121	22:17:00	320-25077-6	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:14	01/18/2017			20170119	14:14:00	20170121	22:17:00	320-25077-6	1	1			13C2 PFHXA	13C2 PFHXA		117	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB08-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 10:14	01/18/2017			20170119	14:14:00	20170121	22:17:00	320-25077-6	1	1			13C2 PFDA	13C2 PFDA		115	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:35	01/18/2017			20170119	14:14:00	20170121	22:47:00	320-25077-7	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.049	UG_L	U M		PR	TRG					00000000				5.0	0.016	0.049	0.061	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:35	01/18/2017			20170119	14:14:00	20170121	22:47:00	320-25077-7	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U M		PR	TRG					00000000				5.0	0.0095	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:35	01/18/2017			20170119	14:14:00	20170121	22:47:00	320-25077-7	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.048	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:35	01/18/2017			20170119	14:14:00	20170121	22:47:00	320-25077-7	1	1			13C2 PFHXA	13C2 PFHXA		117	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:35	01/18/2017			20170119	14:14:00	20170121	22:47:00	320-25077-7	1	1			13C2 PFDA	13C2 PFDA		115	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:36	01/18/2017			20170119	14:14:00	20170122	00:15:00	320-25077-8	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25077-1	320-147339		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:36	01/18/2017			20170119	14:14:00	20170122	00:15:00	320-25077-8	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0093	0.024	0.030	320-25077-1	320-147339		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:36	01/18/2017			20170119	14:14:00	20170122	00:15:00	320-25077-8	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25077-1	320-147339		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:36	01/18/2017			20170119	14:14:00	20170122	00:15:00	320-25077-8	1	1			13C2 PFHXA	13C2 PFHXA		117	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147339		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB09-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/16/2017 11:36	01/18/2017			20170119	14:14:00	20170122	00:15:00	320-25077-8	1	1			13C2 PFDA	13C2 PFDA		109	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147339		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147025/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:50:00	LCS 320-147025/2-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		99	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.016	0.048	0.060	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147025/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:50:00	LCS 320-147025/2-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		93	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.0094	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147025/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:50:00	LCS 320-147025/2-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		85	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.048	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147025/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:50:00	LCS 320-147025/2-A	1	1			13C2 PFHXA	13C2 PFHXA		127	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147025/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:50:00	LCS 320-147025/2-A	1	1			13C2 PFDA	13C2 PFDA		122	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147025/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	19:19:00	LCSD 320-147025/3-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		100	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.016	0.048	0.060	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147025/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	19:19:00	LCSD 320-147025/3-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		100	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.0094	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147025/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	19:19:00	LCSD 320-147025/3-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		81	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.048	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147025/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	19:19:00	LCSD 320-147025/3-A	1	1			13C2 PFHXA	13C2 PFHXA		124	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147025/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	19:19:00	LCSD 320-147025/3-A	1	1			13C2 PFDA	13C2 PFDA		125	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147025/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:20:00	MB 320-147025/1-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U		PR	TRG					00000000				5.0	0.016	0.048	0.060	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147025/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:20:00	MB 320-147025/1-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0094	0.024	0.030	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147025/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:20:00	MB 320-147025/1-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.048	0.11	0.14	320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147025/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:20:00	MB 320-147025/1-A	1	1			13C2 PFHXA	13C2 PFHXA		111	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147025/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/19/2017 14:14	01/19/2017			20170119	14:14:00	20170121	18:20:00	MB 320-147025/1-A	1	1			13C2 PFDA	13C2 PFDA		110	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25077-1	320-147271		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:19:00	320-25130-1	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:19:00	320-25130-1	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0093	0.024	0.030	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:19:00	320-25130-1	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U M		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:19:00	320-25130-1	1	1			13C2 PFHXA	13C2 PFHXA		106	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:19:00	320-25130-1	1	1			13C2 PFDA	13C2 PFDA		109	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MS	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:48:00	320-25130-1	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		99	PCT_REC			PR	TRG		MSA	130	70	00000000				5.0	0.015	0.048	0.060	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MS	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:48:00	320-25130-1	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		96	PCT_REC			PR	TRG		MSA	130	70	00000000				5.0	0.0094	0.024	0.030	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MS	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:48:00	320-25130-1	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		98	PCT_REC			PR	TRG		MSA	130	70	00000000				5.0	0.048	0.11	0.14	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MS	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:48:00	320-25130-1	1	1			13C2 PFHXA	13C2 PFHXA		110	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MS	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	10:48:00	320-25130-1	1	1			13C2 PFDA	13C2 PFDA		116	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MSD	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	11:19:00	320-25130-1	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		100	PCT_REC			PR	TRG		MSP	130	70	00000000				5.0	0.015	0.048	0.059	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MSD	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	11:19:00	320-25130-1	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		100	PCT_REC			PR	TRG		MSP	130	70	00000000				5.0	0.0093	0.024	0.030	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MSD	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	11:19:00	320-25130-1	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		101	PCT_REC			PR	TRG		MSP	130	70	00000000				5.0	0.047	0.11	0.14	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MSD	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	11:19:00	320-25130-1	1	1			13C2 PFHXA	13C2 PFHXA		112	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	MSD	W	4	01/17/2017 09:12	01/19/2017			20170121	11:49:00	20170125	11:19:00	320-25130-1	1	1			13C2 PFDA	13C2 PFDA		113	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:13	01/19/2017			20170121	11:49:00	20170125	11:49:00	320-25130-2	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U M		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:13	01/19/2017			20170121	11:49:00	20170125	11:49:00	320-25130-2	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U M		PR	TRG					00000000				5.0	0.0093	0.024	0.030	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:13	01/19/2017			20170121	11:49:00	20170125	11:49:00	320-25130-2	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:13	01/19/2017			20170121	11:49:00	20170125	11:49:00	320-25130-2	1	1			13C2 PFHXA	13C2 PFHXA		104	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB10-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/17/2017 09:13	01/19/2017			20170121	11:49:00	20170125	11:49:00	320-25130-2	1	1			13C2 PFDA	13C2 PFDA		97	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LLCS 320-147297/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:49:00	LLCS 320-147297/2-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		76	PCT_REC	J		PR	TRG		LSA	150	50	00000000				5.0	0.016	0.048	0.060	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LLCS 320-147297/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:49:00	LLCS 320-147297/2-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		88	PCT_REC	J M		PR	TRG		LSA	150	50	00000000				5.0	0.0094	0.024	0.030	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LLCS 320-147297/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:49:00	LLCS 320-147297/2-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		81	PCT_REC	J		PR	TRG		LSA	150	50	00000000				5.0	0.048	0.11	0.14	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LLCS 320-147297/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:49:00	LLCS 320-147297/2-A	1	1			13C2 PFHXA	13C2 PFHXA		104	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LLCS 320-147297/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:49:00	LLCS 320-147297/2-A	1	1			13C2 PFDA	13C2 PFDA		107	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147297/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:19:00	MB 320-147297/1-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U		PR	TRG					00000000				5.0	0.016	0.048	0.060	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147297/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:19:00	MB 320-147297/1-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0094	0.024	0.030	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147297/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:19:00	MB 320-147297/1-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.048	0.11	0.14	320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147297/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:19:00	MB 320-147297/1-A	1	1			13C2 PFHXA	13C2 PFHXA		98	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147297/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/21/2017 11:49	01/21/2017			20170121	11:49:00	20170125	09:19:00	MB 320-147297/1-A	1	1			13C2 PFDA	13C2 PFDA		102	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25130-1	320-147664		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:09	01/21/2017			20170124	10:27:00	20170126	03:36:00	320-25188-1	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.045	UG_L	U M		PR	TRG					00000000				5.0	0.015	0.045	0.056	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:09	01/21/2017			20170124	10:27:00	20170126	03:36:00	320-25188-1	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U M		PR	TRG					00000000				5.0	0.0088	0.022	0.028	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:09	01/21/2017			20170124	10:27:00	20170126	03:36:00	320-25188-1	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.045	0.10	0.13	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:09	01/21/2017			20170124	10:27:00	20170126	03:36:00	320-25188-1	1	1			13C2 PFHXA	13C2 PFHXA		99	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:09	01/21/2017			20170124	10:27:00	20170126	03:36:00	320-25188-1	1	1			13C2 PFDA	13C2 PFDA		108	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:10	01/21/2017			20170124	10:27:00	20170126	04:05:00	320-25188-2	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.046	UG_L	U		PR	TRG					00000000				5.0	0.015	0.046	0.057	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:10	01/21/2017			20170124	10:27:00	20170126	04:05:00	320-25188-2	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.023	UG_L	U		PR	TRG					00000000				5.0	0.0089	0.023	0.028	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:10	01/21/2017			20170124	10:27:00	20170126	04:05:00	320-25188-2	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.045	0.10	0.13	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:10	01/21/2017			20170124	10:27:00	20170126	04:05:00	320-25188-2	1	1			13C2 PFHXA	13C2 PFHXA		108	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB11-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:10	01/21/2017			20170124	10:27:00	20170126	04:05:00	320-25188-2	1	1			13C2 PFDA	13C2 PFDA		110	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:33	01/21/2017			20170124	10:27:00	20170126	04:35:00	320-25188-3	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U M		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:33	01/21/2017			20170124	10:27:00	20170126	04:35:00	320-25188-3	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.0094	UG_L	J M		PR	TRG					00000000				5.0	0.0093	0.024	0.030	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:33	01/21/2017			20170124	10:27:00	20170126	04:35:00	320-25188-3	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:33	01/21/2017			20170124	10:27:00	20170126	04:35:00	320-25188-3	1	1			13C2 PFHXA	13C2 PFHXA		100	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:33	01/21/2017			20170124	10:27:00	20170126	04:35:00	320-25188-3	1	1			13C2 PFDA	13C2 PFDA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:34	01/21/2017			20170124	10:27:00	20170126	05:04:00	320-25188-4	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.045	UG_L	U		PR	TRG					00000000				5.0	0.015	0.045	0.056	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:34	01/21/2017			20170124	10:27:00	20170126	05:04:00	320-25188-4	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.023	UG_L	U		PR	TRG					00000000				5.0	0.0089	0.023	0.028	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:34	01/21/2017			20170124	10:27:00	20170126	05:04:00	320-25188-4	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.045	0.10	0.13	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:34	01/21/2017			20170124	10:27:00	20170126	05:04:00	320-25188-4	1	1			13C2 PFHXA	13C2 PFHXA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB12-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 09:34	01/21/2017			20170124	10:27:00	20170126	05:04:00	320-25188-4	1	1			13C2 PFDA	13C2 PFDA		103	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:36	01/21/2017			20170124	10:27:00	20170126	05:34:00	320-25188-5	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.046	UG_L	U		PR	TRG					00000000				5.0	0.015	0.046	0.057	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:36	01/21/2017			20170124	10:27:00	20170126	05:34:00	320-25188-5	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.023	UG_L	U		PR	TRG					00000000				5.0	0.0090	0.023	0.029	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:36	01/21/2017			20170124	10:27:00	20170126	05:34:00	320-25188-5	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U M		PR	TRG					00000000				5.0	0.046	0.11	0.13	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:36	01/21/2017			20170124	10:27:00	20170126	05:34:00	320-25188-5	1	1			13C2 PFHXA	13C2 PFHXA		103	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:36	01/21/2017			20170124	10:27:00	20170126	05:34:00	320-25188-5	1	1			13C2 PFDA	13C2 PFDA		113	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:37	01/21/2017			20170124	10:27:00	20170126	06:04:00	320-25188-6	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.045	UG_L	U		PR	TRG					00000000				5.0	0.015	0.045	0.056	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:37	01/21/2017			20170124	10:27:00	20170126	06:04:00	320-25188-6	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0088	0.022	0.028	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:37	01/21/2017			20170124	10:27:00	20170126	06:04:00	320-25188-6	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.045	0.10	0.13	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:37	01/21/2017			20170124	10:27:00	20170126	06:04:00	320-25188-6	1	1			13C2 PFHXA	13C2 PFHXA		106	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB13-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 10:37	01/21/2017			20170124	10:27:00	20170126	06:04:00	320-25188-6	1	1			13C2 PFDA	13C2 PFDA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:05	01/21/2017			20170124	10:27:00	20170126	06:33:00	320-25188-7	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.049	UG_L	U M		PR	TRG					00000000				5.0	0.016	0.049	0.061	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:05	01/21/2017			20170124	10:27:00	20170126	06:33:00	320-25188-7	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.025	UG_L	U M		PR	TRG					00000000				5.0	0.0097	0.025	0.031	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:05	01/21/2017			20170124	10:27:00	20170126	06:33:00	320-25188-7	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.049	0.11	0.14	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:05	01/21/2017			20170124	10:27:00	20170126	06:33:00	320-25188-7	1	1			13C2 PFHXA	13C2 PFHXA		106	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:05	01/21/2017			20170124	10:27:00	20170126	06:33:00	320-25188-7	1	1			13C2 PFDA	13C2 PFDA		107	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:06	01/21/2017			20170124	10:27:00	20170126	08:02:00	320-25188-8	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.045	UG_L	U		PR	TRG					00000000				5.0	0.015	0.045	0.057	320-25188-1	320-147803		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:06	01/21/2017			20170124	10:27:00	20170126	08:02:00	320-25188-8	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.023	UG_L	U		PR	TRG					00000000				5.0	0.0089	0.023	0.028	320-25188-1	320-147803		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:06	01/21/2017			20170124	10:27:00	20170126	08:02:00	320-25188-8	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.045	0.10	0.13	320-25188-1	320-147803		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:06	01/21/2017			20170124	10:27:00	20170126	08:02:00	320-25188-8	1	1			13C2 PFHXA	13C2 PFHXA		104	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147803		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB14-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/19/2017 18:06	01/21/2017			20170124	10:27:00	20170126	08:02:00	320-25188-8	1	1			13C2 PFDA	13C2 PFDA		101	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147803		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147589/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:36:00	LCS 320-147589/2-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		96	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.016	0.048	0.060	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147589/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:36:00	LCS 320-147589/2-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		90	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.0094	0.024	0.030	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147589/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:36:00	LCS 320-147589/2-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		95	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.048	0.11	0.14	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147589/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:36:00	LCS 320-147589/2-A	1	1			13C2 PFHXA	13C2 PFHXA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147589/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:36:00	LCS 320-147589/2-A	1	1			13C2 PFDA	13C2 PFDA		100	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147589/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	03:06:00	LCSD 320-147589/3-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		94	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.016	0.048	0.060	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147589/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	03:06:00	LCSD 320-147589/3-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		85	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.0094	0.024	0.030	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147589/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	03:06:00	LCSD 320-147589/3-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		98	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.048	0.11	0.14	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147589/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	03:06:00	LCSD 320-147589/3-A	1	1			13C2 PFHXA	13C2 PFHXA		101	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147589/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	03:06:00	LCSD 320-147589/3-A	1	1			13C2 PFDA	13C2 PFDA		96	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147589/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:07:00	MB 320-147589/1-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U		PR	TRG					00000000				5.0	0.016	0.048	0.060	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147589/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:07:00	MB 320-147589/1-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0094	0.024	0.030	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147589/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:07:00	MB 320-147589/1-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.048	0.11	0.14	320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147589/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:07:00	MB 320-147589/1-A	1	1			13C2 PFHXA	13C2 PFHXA		99	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147589/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/24/2017 10:27	01/24/2017			20170124	10:27:00	20170126	02:07:00	MB 320-147589/1-A	1	1			13C2 PFDA	13C2 PFDA		95	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25188-1	320-147802		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:17	01/24/2017			20170125	13:29:00	20170127	17:27:00	320-25215-1	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.044	UG_L	U		PR	TRG					00000000				5.0	0.014	0.044	0.054	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:17	01/24/2017			20170125	13:29:00	20170127	17:27:00	320-25215-1	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0085	0.022	0.027	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:17	01/24/2017			20170125	13:29:00	20170127	17:27:00	320-25215-1	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.043	0.10	0.13	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:17	01/24/2017			20170125	13:29:00	20170127	17:27:00	320-25215-1	1	1			13C2 PFHXA	13C2 PFHXA		90	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:17	01/24/2017			20170125	13:29:00	20170127	17:27:00	320-25215-1	1	1			13C2 PFDA	13C2 PFDA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:18	01/24/2017			20170125	13:29:00	20170127	18:56:00	320-25215-2	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.043	UG_L	U		PR	TRG					00000000				5.0	0.014	0.043	0.054	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:18	01/24/2017			20170125	13:29:00	20170127	18:56:00	320-25215-2	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0085	0.022	0.027	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:18	01/24/2017			20170125	13:29:00	20170127	18:56:00	320-25215-2	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.099	UG_L	U		PR	TRG					00000000				5.0	0.043	0.099	0.13	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:18	01/24/2017			20170125	13:29:00	20170127	18:56:00	320-25215-2	1	1			13C2 PFHXA	13C2 PFHXA		107	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB15-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:18	01/24/2017			20170125	13:29:00	20170127	18:56:00	320-25215-2	1	1			13C2 PFDA	13C2 PFDA		106	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:48	01/24/2017			20170125	13:29:00	20170127	19:26:00	320-25215-3	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.045	UG_L	U		PR	TRG					00000000				5.0	0.014	0.045	0.056	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:48	01/24/2017			20170125	13:29:00	20170127	19:26:00	320-25215-3	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0087	0.022	0.028	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:48	01/24/2017			20170125	13:29:00	20170127	19:26:00	320-25215-3	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.044	0.10	0.13	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:48	01/24/2017			20170125	13:29:00	20170127	19:26:00	320-25215-3	1	1			13C2 PFHXA	13C2 PFHXA		99	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:48	01/24/2017			20170125	13:29:00	20170127	19:26:00	320-25215-3	1	1			13C2 PFDA	13C2 PFDA		112	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:49	01/24/2017			20170125	13:29:00	20170127	19:55:00	320-25215-4	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.042	UG_L	U		PR	TRG					00000000				5.0	0.014	0.042	0.053	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:49	01/24/2017			20170125	13:29:00	20170127	19:55:00	320-25215-4	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.021	UG_L	U		PR	TRG					00000000				5.0	0.0083	0.021	0.026	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:49	01/24/2017			20170125	13:29:00	20170127	19:55:00	320-25215-4	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.097	UG_L	U		PR	TRG					00000000				5.0	0.042	0.097	0.12	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:49	01/24/2017			20170125	13:29:00	20170127	19:55:00	320-25215-4	1	1			13C2 PFHXA	13C2 PFHXA		103	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB16-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 09:49	01/24/2017			20170125	13:29:00	20170127	19:55:00	320-25215-4	1	1			13C2 PFDA	13C2 PFDA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:25	01/24/2017			20170125	13:29:00	20170127	20:25:00	320-25215-5	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.045	UG_L	U		PR	TRG					00000000				5.0	0.014	0.045	0.056	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:25	01/24/2017			20170125	13:29:00	20170127	20:25:00	320-25215-5	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0088	0.022	0.028	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:25	01/24/2017			20170125	13:29:00	20170127	20:25:00	320-25215-5	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U		PR	TRG					00000000				5.0	0.044	0.10	0.13	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:25	01/24/2017			20170125	13:29:00	20170127	20:25:00	320-25215-5	1	1			13C2 PFHXA	13C2 PFHXA		90	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:25	01/24/2017			20170125	13:29:00	20170127	20:25:00	320-25215-5	1	1			13C2 PFDA	13C2 PFDA		105	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:26	01/24/2017			20170125	13:29:00	20170127	20:55:00	320-25215-6	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.043	UG_L	U		PR	TRG					00000000				5.0	0.014	0.043	0.053	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:26	01/24/2017			20170125	13:29:00	20170127	20:55:00	320-25215-6	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.021	UG_L	U		PR	TRG					00000000				5.0	0.0084	0.021	0.027	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:26	01/24/2017			20170125	13:29:00	20170127	20:55:00	320-25215-6	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.098	UG_L	U		PR	TRG					00000000				5.0	0.042	0.098	0.12	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:26	01/24/2017			20170125	13:29:00	20170127	20:55:00	320-25215-6	1	1			13C2 PFHXA	13C2 PFHXA		111	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB17-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 10:26	01/24/2017			20170125	13:29:00	20170127	20:55:00	320-25215-6	1	1			13C2 PFDA	13C2 PFDA		111	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:04	01/24/2017			20170125	13:29:00	20170127	21:24:00	320-25215-7	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.043	UG_L	U		PR	TRG					00000000				5.0	0.014	0.043	0.054	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:04	01/24/2017			20170125	13:29:00	20170127	21:24:00	320-25215-7	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0085	0.022	0.027	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:04	01/24/2017			20170125	13:29:00	20170127	21:24:00	320-25215-7	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.099	UG_L	U		PR	TRG					00000000				5.0	0.043	0.099	0.13	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:04	01/24/2017			20170125	13:29:00	20170127	21:24:00	320-25215-7	1	1			13C2 PFHXA	13C2 PFHXA		107	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:04	01/24/2017			20170125	13:29:00	20170127	21:24:00	320-25215-7	1	1			13C2 PFDA	13C2 PFDA		111	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:05	01/24/2017			20170125	13:29:00	20170127	21:54:00	320-25215-8	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.043	UG_L	U		PR	TRG					00000000				5.0	0.014	0.043	0.054	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:05	01/24/2017			20170125	13:29:00	20170127	21:54:00	320-25215-8	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.021	UG_L	U		PR	TRG					00000000				5.0	0.0084	0.021	0.027	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:05	01/24/2017			20170125	13:29:00	20170127	21:54:00	320-25215-8	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.098	UG_L	U		PR	TRG					00000000				5.0	0.042	0.098	0.13	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:05	01/24/2017			20170125	13:29:00	20170127	21:54:00	320-25215-8	1	1			13C2 PFHXA	13C2 PFHXA		108	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB18-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/20/2017 11:05	01/24/2017			20170125	13:29:00	20170127	21:54:00	320-25215-8	1	1			13C2 PFDA	13C2 PFDA		113	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:13	01/24/2017			20170125	13:29:00	20170127	22:23:00	320-25215-9	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.043	UG_L	U		PR	TRG					00000000				5.0	0.014	0.043	0.053	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:13	01/24/2017			20170125	13:29:00	20170127	22:23:00	320-25215-9	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.021	UG_L	U M		PR	TRG					00000000				5.0	0.0084	0.021	0.027	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:13	01/24/2017			20170125	13:29:00	20170127	22:23:00	320-25215-9	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.098	UG_L	U		PR	TRG					00000000				5.0	0.042	0.098	0.12	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:13	01/24/2017			20170125	13:29:00	20170127	22:23:00	320-25215-9	1	1			13C2 PFHXA	13C2 PFHXA		99	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:13	01/24/2017			20170125	13:29:00	20170127	22:23:00	320-25215-9	1	1			13C2 PFDA	13C2 PFDA		115	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:14	01/24/2017			20170125	13:29:00	20170127	22:53:00	320-25215-10	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.042	UG_L	U		PR	TRG					00000000				5.0	0.014	0.042	0.053	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:14	01/24/2017			20170125	13:29:00	20170127	22:53:00	320-25215-10	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.021	UG_L	U		PR	TRG					00000000				5.0	0.0083	0.021	0.026	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:14	01/24/2017			20170125	13:29:00	20170127	22:53:00	320-25215-10	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.096	UG_L	U		PR	TRG					00000000				5.0	0.042	0.096	0.12	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:14	01/24/2017			20170125	13:29:00	20170127	22:53:00	320-25215-10	1	1			13C2 PFHXA	13C2 PFHXA		103	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB19-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 09:14	01/24/2017			20170125	13:29:00	20170127	22:53:00	320-25215-10	1	1			13C2 PFDA	13C2 PFDA		101	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:40	01/24/2017			20170125	13:29:00	20170127	23:23:00	320-25215-11	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.047	UG_L	U		PR	TRG					00000000				5.0	0.015	0.047	0.059	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:40	01/24/2017			20170125	13:29:00	20170127	23:23:00	320-25215-11	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U		PR	TRG					00000000				5.0	0.0093	0.024	0.030	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:40	01/24/2017			20170125	13:29:00	20170127	23:23:00	320-25215-11	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.047	0.11	0.14	320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:40	01/24/2017			20170125	13:29:00	20170127	23:23:00	320-25215-11	1	1			13C2 PFHXA	13C2 PFHXA		91	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:40	01/24/2017			20170125	13:29:00	20170127	23:23:00	320-25215-11	1	1			13C2 PFDA	13C2 PFDA		95	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148072		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:41	01/24/2017			20170125	13:29:00	20170128	00:51:00	320-25215-12	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.042	UG_L	U		PR	TRG					00000000				5.0	0.014	0.042	0.053	320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:41	01/24/2017			20170125	13:29:00	20170128	00:51:00	320-25215-12	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.021	UG_L	U		PR	TRG					00000000				5.0	0.0083	0.021	0.026	320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:41	01/24/2017			20170125	13:29:00	20170128	00:51:00	320-25215-12	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.096	UG_L	U		PR	TRG					00000000				5.0	0.042	0.096	0.12	320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:41	01/24/2017			20170125	13:29:00	20170128	00:51:00	320-25215-12	1	1			13C2 PFHXA	13C2 PFHXA		102	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB20-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:41	01/24/2017			20170125	13:29:00	20170128	00:51:00	320-25215-12	1	1			13C2 PFDA	13C2 PFDA		104	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20P-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:45	01/24/2017			20170125	13:29:00	20170128	01:21:00	320-25215-13	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.044	UG_L	U		PR	TRG					00000000				5.0	0.014	0.044	0.054	320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20P-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:45	01/24/2017			20170125	13:29:00	20170128	01:21:00	320-25215-13	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.022	UG_L	U		PR	TRG					00000000				5.0	0.0085	0.022	0.027	320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20P-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:45	01/24/2017			20170125	13:29:00	20170128	01:21:00	320-25215-13	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.10	UG_L	U M		PR	TRG					00000000				5.0	0.043	0.10	0.13	320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20P-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:45	01/24/2017			20170125	13:29:00	20170128	01:21:00	320-25215-13	1	1			13C2 PFHXA	13C2 PFHXA		98	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW20P-0117	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	REG	W	4	01/21/2017 10:45	01/24/2017			20170125	13:29:00	20170128	01:21:00	320-25215-13	1	1			13C2 PFDA	13C2 PFDA		104	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148073		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147777/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:31:00	LCS 320-147777/2-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		111	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.016	0.048	0.060	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147777/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:31:00	LCS 320-147777/2-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		98	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.0094	0.024	0.030	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147777/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:31:00	LCS 320-147777/2-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		97	PCT_REC			PR	TRG		LSA	130	70	00000000				5.0	0.048	0.11	0.14	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147777/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:31:00	LCS 320-147777/2-A	1	1			13C2 PFHXA	13C2 PFHXA		118	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCS 320-147777/2-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BS	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:31:00	LCS 320-147777/2-A	1	1			13C2 PFDA	13C2 PFDA		116	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147777/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	14:00:00	LCSD 320-147777/3-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		103	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.016	0.048	0.060	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147777/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	14:00:00	LCSD 320-147777/3-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		96	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.0094	0.024	0.030	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147777/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	14:00:00	LCSD 320-147777/3-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		89	PCT_REC			PR	TRG		LSP	130	70	00000000				5.0	0.048	0.11	0.14	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147777/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	14:00:00	LCSD 320-147777/3-A	1	1			13C2 PFHXA	13C2 PFHXA		110	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	LCSD 320-147777/3-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	BSD	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	14:00:00	LCSD 320-147777/3-A	1	1			13C2 PFDA	13C2 PFDA		114	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147777/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:01:00	MB 320-147777/1-A	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1		0.048	UG_L	U M		PR	TRG					00000000				5.0	0.016	0.048	0.060	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147777/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:01:00	MB 320-147777/1-A	1	1			Perfluorooctanoic acid (PFOA)	335-67-1		0.024	UG_L	U M		PR	TRG					00000000				5.0	0.0094	0.024	0.030	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147777/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:01:00	MB 320-147777/1-A	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5		0.11	UG_L	U		PR	TRG					00000000				5.0	0.048	0.11	0.14	320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147777/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:01:00	MB 320-147777/1-A	1	1			13C2 PFHXA	13C2 PFHXA		107	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	MB 320-147777/1-A	NONE		537	ORG	TAMER	Test America	NONE	NA	METHOD	000	LB1	W	4	01/25/2017 13:29	01/25/2017			20170125	13:29:00	20170127	13:01:00	MB 320-147777/1-A	1	1			13C2 PFDA	13C2 PFDA		104	PCT_REC			PR	SURR		SLSA	130	70	00000000				5.0				320-25215-1	320-148070		

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
WHIDBEY ISLAND, WASHINGTON

Client: CH2M HILL, Inc., Corvallis, Oregon
SDG: 320-25130-1
Laboratory: Test America, Sacramento, California
Site: Whidbey Island, CTO-0008, Washington
Date: February 1, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-AF-1RW10-0117	320-25130-1	Water
1MS	WI-AF-1RW10-0117MS	320-25130-1MS	Water
1MSD	WI-AF-1RW10-0117MSD	320-25130-1MSD	Water
2	WI-AF-1FB10-0117	320-25130-2	Water

A full data validation was performed on the analytical data for one water sample and one aqueous field blank sample collected on January 17, 2017 by CH2M HILL at the Whidbey Island 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 Rev 1.1 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 (DoD 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
- Gas Chromatography/Mass Spectrometry (GC/MS) Tuning

- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

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

Data Usability Assessment

There were no rejections of data.

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

Perfluorinated Compounds (PFCs)

Data Completeness, Case Narrative & Custody Documentation

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

Holding Times

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

GC/MS Tuning

- All criteria were met.

Initial Calibration

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

Continuing Calibration

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

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- The field blank samples were free of contamination.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

- The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Samples

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

Internal Standard (IS) Area Performance

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

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed: Nancy Weaver Dated: 2/2/17

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.

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

1

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: WI-AF-1RW10-0117 Lab Sample ID: 320-25130-1

Matrix: Water Lab File ID: 24JAN2017A6A_040.d

Analysis Method: 537 Date Collected: 01/17/2017 09:12

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 252.7(mL) Date Analyzed: 01/25/2017 10:19

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	106		70-130
STL00996	13C2 PFDA	109		70-130

MW 2/1/17

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

2

Lab Name: TestAmerica Sacramento Job No.: 320-25130-1

SDG No.:

Client Sample ID: WI-AF-1FB10-0117 Lab Sample ID: 320-25130-2

Matrix: Water Lab File ID: 24JAN2017A6A_043.d

Analysis Method: 537 Date Collected: 01/17/2017 09:13

Extraction Method: 537 Date Extracted: 01/21/2017 11:49

Sample wt/vol: 252.9(mL) Date Analyzed: 01/25/2017 11:49

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 10(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

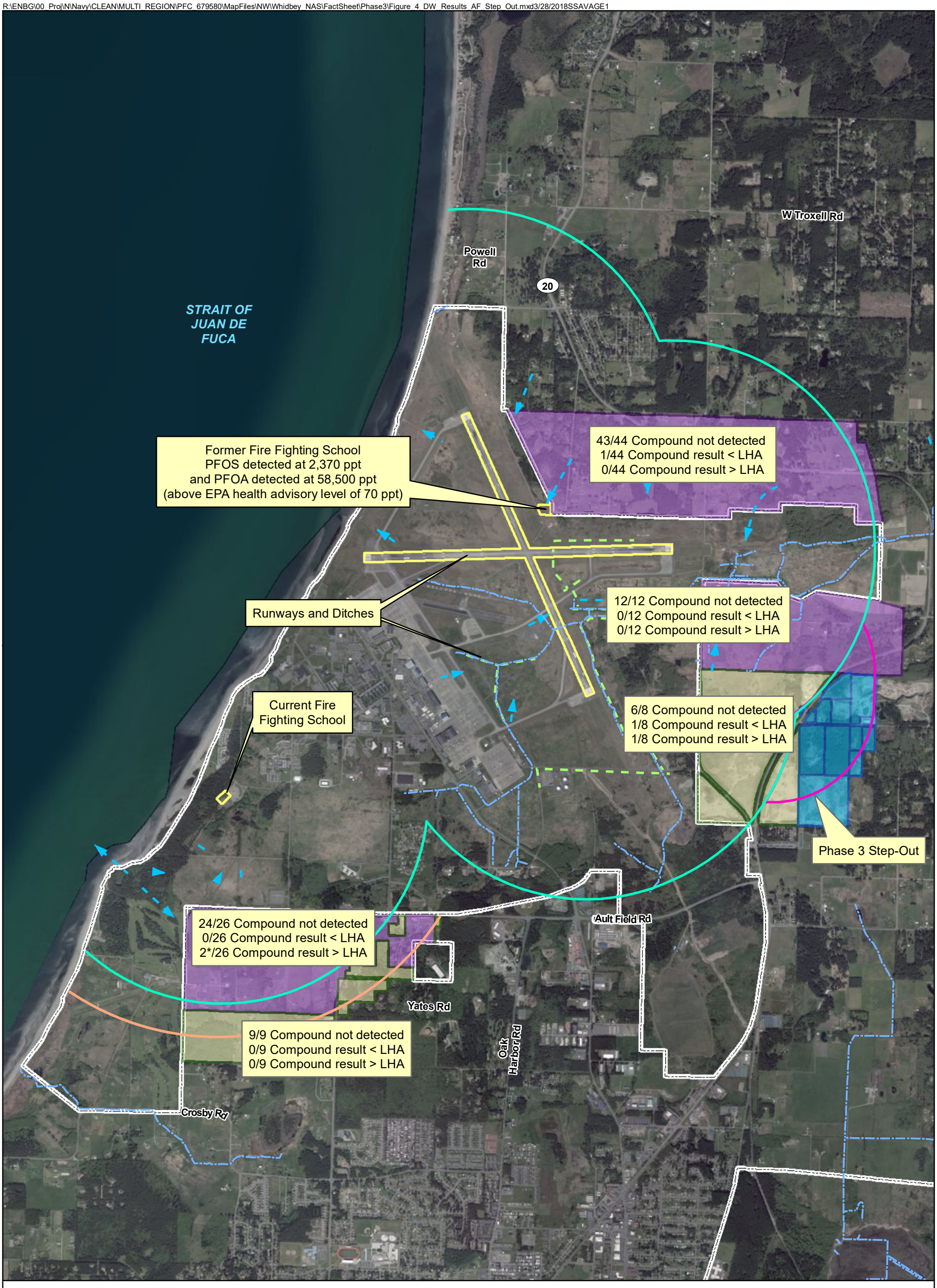
Analysis Batch No.: 147664 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U M	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	104		70-130
STL00996	13C2 PFDA	97		70-130

NW 2/1/17

R:\ENBG\00_Proj\N\Navy\CLEAN\MULTI_REGION\PFC_679580\MapFiles\NW\Whidbey_NAS\FactSheet\Phase3\Figure_4_DW_Results_AF_Step_Out.mxd3/28/2018SSAVAGE1



Legend

- 1 Mile Zone
- Half-mile Step-out Downgradient
- Surface Water
- Drainage Ditch
- Half-mile Step-out Downgradient
- Suspected Source Area
- Parcels in Phase 1 Sampling Area
- Parcels Identified in Phase 2 Sampling Area
- Parcels Identified in Phase 3 Sampling Area
- Base Boundary
- Inferred Groundwater Flow Direction

* Second result above the EPA health advisory is from a duplicate sample collected from the well with the first exceedance near Ault Field.

Note:
PFOA and PFOS results reflected on figure, PFBS results discussed in Table 2 and text.

N

0 0.225 0.45 Miles

1 inch = 0.45 mile

Imagery Source: Esri

Figure 2
Results for Drinking Water Well Sampling
Ault Field
Naval Air Station Whidbey Island
Oak Harbor, Washington