



**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 320-26006**

*Ault Field*

*Naval Air Station Whidbey Island*

*Oak Harbor, Washington*

February 2019

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

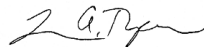
## ANALYTICAL REPORT

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

TestAmerica Job ID: 320-26006-1  
Client Project/Site: Whidbey Island

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

Attn: Tiffany Hill



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Authorized for release by:  
2/28/2017 1:28:20 PM

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### LINKS

Review your project  
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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

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

TestAmerica Job ID: 320-26006-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
Q	One or more quality control criteria failed.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
D	The reported value is from a dilution.
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

# Case Narrative

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

TestAmerica Job ID: 320-26006-1

**Job ID: 320-26006-1**

**Laboratory: TestAmerica Sacramento**

**Narrative**

## CASE NARRATIVE

**Client: CH2M Hill Constructors, Inc.**

**Project: Whidbey Island**

**Report Number: 320-26006-1**

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 02/23/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.8 C.

### **PFOA/PFOS**

Samples WI-AF-1RW32-0217 (320-26006-1), WI-AF-1FB32-0217 (320-26006-2), WI-AF-1RW33-0217 (320-26006-3), WI-AF-1FB33-0217 (320-26006-4), WI-AF-1RW34-0217 (320-26006-5), WI-AF-1FB34-0217 (320-26006-6), WI-AF-1RW35-0217 (320-26006-7), WI-AF-1FB35-0217 (320-26006-8), WI-AF-1RW36-0217 (320-26006-9), WI-AF-1FB36-0217 (320-26006-10), WI-AF-1RW37-0217 (320-26006-11) and WI-AF-1FB37-0217 (320-26006-12) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 02/25/2017 and analyzed on 02/27/2017.

Surrogate recovery for the following sample was outside control limits: WI-AF-1RW32-0217 (320-26006-1). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis was not performed. The sample extract was run at a dilution of 20X and the surrogate recoveries were in control at this dilution.

# Case Narrative

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

TestAmerica Job ID: 320-26006-1

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## Job ID: 320-26006-1 (Continued)

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### Laboratory: TestAmerica Sacramento (Continued)

Sample WI-AF-1RW32-0217 (320-26006-1)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-152216.

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

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# Detection Summary

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

TestAmerica Job ID: 320-26006-1

## Client Sample ID: WI-AF-1RW32-0217

## Lab Sample ID: 320-26006-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.023	J	0.029	0.0090	ug/L	1		537	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.13		0.13	0.045	ug/L	1		537	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	3.8	D M	1.1	0.30	ug/L	20		537	Total/NA

## Client Sample ID: WI-AF-1FB32-0217

## Lab Sample ID: 320-26006-2

No Detections.

## Client Sample ID: WI-AF-1RW33-0217

## Lab Sample ID: 320-26006-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	0.045	J	0.13	0.043	ug/L	1		537	Total/NA

## Client Sample ID: WI-AF-1FB33-0217

## Lab Sample ID: 320-26006-4

No Detections.

## Client Sample ID: WI-AF-1RW34-0217

## Lab Sample ID: 320-26006-5

No Detections.

## Client Sample ID: WI-AF-1FB34-0217

## Lab Sample ID: 320-26006-6

No Detections.

## Client Sample ID: WI-AF-1RW35-0217

## Lab Sample ID: 320-26006-7

No Detections.

## Client Sample ID: WI-AF-1FB35-0217

## Lab Sample ID: 320-26006-8

No Detections.

## Client Sample ID: WI-AF-1RW36-0217

## Lab Sample ID: 320-26006-9

No Detections.

## Client Sample ID: WI-AF-1FB36-0217

## Lab Sample ID: 320-26006-10

No Detections.

## Client Sample ID: WI-AF-1RW37-0217

## Lab Sample ID: 320-26006-11

No Detections.

## Client Sample ID: WI-AF-1FB37-0217

## Lab Sample ID: 320-26006-12

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1RW32-0217**

**Lab Sample ID: 320-26006-1**

**Date Collected: 02/21/17 11:55**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.023	J	0.029	0.0090	ug/L		02/25/17 13:09	02/27/17 15:32	1
Perfluorobutanesulfonic acid (PFBS)	0.13		0.13	0.045	ug/L		02/25/17 13:09	02/27/17 15:32	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	66	Q	70 - 130				02/25/17 13:09	02/27/17 15:32	1
13C2 PFDA	99		70 - 130				02/25/17 13:09	02/27/17 15:32	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	3.8	D M	1.1	0.30	ug/L		02/25/17 13:09	02/27/17 16:34	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	85		70 - 130				02/25/17 13:09	02/27/17 16:34	20
13C2 PFDA	93		70 - 130				02/25/17 13:09	02/27/17 16:34	20

**Client Sample ID: WI-AF-1FB32-0217**

**Lab Sample ID: 320-26006-2**

**Date Collected: 02/21/17 11:56**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 15:36	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		02/25/17 13:09	02/27/17 15:36	1
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 15:36	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	82		70 - 130				02/25/17 13:09	02/27/17 15:36	1
13C2 PFDA	92		70 - 130				02/25/17 13:09	02/27/17 15:36	1

**Client Sample ID: WI-AF-1RW33-0217**

**Lab Sample ID: 320-26006-3**

**Date Collected: 02/21/17 16:27**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 15:40	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		02/25/17 13:09	02/27/17 15:40	1
Perfluorobutanesulfonic acid (PFBS)	0.045	J	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 15:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 15:40	1
13C2 PFDA	90		70 - 130				02/25/17 13:09	02/27/17 15:40	1



# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB33-0217**

**Lab Sample ID: 320-26006-4**

**Date Collected: 02/21/17 16:28**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 15:49	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		02/25/17 13:09	02/27/17 15:49	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 15:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 15:49	1
13C2 PFDA	89		70 - 130				02/25/17 13:09	02/27/17 15:49	1

**Client Sample ID: WI-AF-1RW34-0217**

**Lab Sample ID: 320-26006-5**

**Date Collected: 02/21/17 16:46**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.014	ug/L		02/25/17 13:09	02/27/17 15:54	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0086	ug/L		02/25/17 13:09	02/27/17 15:54	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 15:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 15:54	1
13C2 PFDA	89		70 - 130				02/25/17 13:09	02/27/17 15:54	1

**Client Sample ID: WI-AF-1FB34-0217**

**Lab Sample ID: 320-26006-6**

**Date Collected: 02/21/17 16:47**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 15:58	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.0083	ug/L		02/25/17 13:09	02/27/17 15:58	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 15:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		70 - 130				02/25/17 13:09	02/27/17 15:58	1
13C2 PFDA	97		70 - 130				02/25/17 13:09	02/27/17 15:58	1

**Client Sample ID: WI-AF-1RW35-0217**

**Lab Sample ID: 320-26006-7**

**Date Collected: 02/22/17 09:20**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.014	ug/L		02/25/17 13:09	02/27/17 16:02	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.0087	ug/L		02/25/17 13:09	02/27/17 16:02	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		02/25/17 13:09	02/27/17 16:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		70 - 130				02/25/17 13:09	02/27/17 16:02	1
13C2 PFDA	92		70 - 130				02/25/17 13:09	02/27/17 16:02	1

TestAmerica Sacramento

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB35-0217**

**Lab Sample ID: 320-26006-8**

**Date Collected: 02/22/17 09:21**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 16:07	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.0084	ug/L		02/25/17 13:09	02/27/17 16:07	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 16:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				02/25/17 13:09	02/27/17 16:07	1
13C2 PFDA	87		70 - 130				02/25/17 13:09	02/27/17 16:07	1

**Client Sample ID: WI-AF-1RW36-0217**

**Lab Sample ID: 320-26006-9**

**Date Collected: 02/22/17 09:36**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.014	ug/L		02/25/17 13:09	02/27/17 16:11	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.0088	ug/L		02/25/17 13:09	02/27/17 16:11	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		02/25/17 13:09	02/27/17 16:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				02/25/17 13:09	02/27/17 16:11	1
13C2 PFDA	94		70 - 130				02/25/17 13:09	02/27/17 16:11	1

**Client Sample ID: WI-AF-1FB36-0217**

**Lab Sample ID: 320-26006-10**

**Date Collected: 02/22/17 09:37**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 16:16	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		02/25/17 13:09	02/27/17 16:16	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 16:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				02/25/17 13:09	02/27/17 16:16	1
13C2 PFDA	90		70 - 130				02/25/17 13:09	02/27/17 16:16	1

**Client Sample ID: WI-AF-1RW37-0217**

**Lab Sample ID: 320-26006-11**

**Date Collected: 02/22/17 12:12**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 16:20	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		02/25/17 13:09	02/27/17 16:20	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 16:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 16:20	1
13C2 PFDA	90		70 - 130				02/25/17 13:09	02/27/17 16:20	1

TestAmerica Sacramento

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB37-0217**

**Lab Sample ID: 320-26006-12**

**Date Collected: 02/22/17 12:13**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 16:25	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		02/25/17 13:09	02/27/17 16:25	1
Perfluorobutanesulfonic acid (PFBS)	0.096	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 16:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		70 - 130				02/25/17 13:09	02/27/17 16:25	1
13C2 PFDA	87		70 - 130				02/25/17 13:09	02/27/17 16:25	1

# Surrogate Summary

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

TestAmerica Job ID: 320-26006-1

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

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		3C2 PFHx (70-130)	3C2 PFDA (70-130)
320-26006-1	WI-AF-1RW32-0217	66 Q	99
320-26006-1 - DL	WI-AF-1RW32-0217	85	93
320-26006-2	WI-AF-1FB32-0217	82	92
320-26006-3	WI-AF-1RW33-0217	83	90
320-26006-4	WI-AF-1FB33-0217	83	89
320-26006-5	WI-AF-1RW34-0217	83	89
320-26006-6	WI-AF-1FB34-0217	92	97
320-26006-7	WI-AF-1RW35-0217	82	92
320-26006-8	WI-AF-1FB35-0217	84	87
320-26006-9	WI-AF-1RW36-0217	84	94
320-26006-10	WI-AF-1FB36-0217	84	90
320-26006-11	WI-AF-1RW37-0217	83	90
320-26006-12	WI-AF-1FB37-0217	82	87
LCS 320-152216/2-A	Lab Control Sample	86	99
LCSD 320-152216/3-A	Lab Control Sample Dup	87	94
MB 320-152216/1-A	Method Blank	83	87

### Surrogate Legend

13C2 PFHxA = 13C2 PFHxA

13C2 PFDA = 13C2 PFDA

# QC Sample Results

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

TestAmerica Job ID: 320-26006-1

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

**Lab Sample ID: MB 320-152216/1-A**  
**Matrix: Water**  
**Analysis Batch: 152402**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 152216**

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.016	ug/L		02/25/17 13:09	02/27/17 15:01	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		02/25/17 13:09	02/27/17 15:01	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.048	ug/L		02/25/17 13:09	02/27/17 15:01	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	83		70 - 130	02/25/17 13:09	02/27/17 15:01	1
13C2 PFDA	87		70 - 130	02/25/17 13:09	02/27/17 15:01	1

**Lab Sample ID: LCS 320-152216/2-A**  
**Matrix: Water**  
**Analysis Batch: 152402**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 152216**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Perfluorooctanesulfonic acid (PFOS)	0.160	0.133	M	ug/L		83	70 - 130
Perfluorooctanoic acid (PFOA)	0.0781	0.0640		ug/L		82	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.359	0.297		ug/L		83	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	86		70 - 130
13C2 PFDA	99		70 - 130

**Lab Sample ID: LCSD 320-152216/3-A**  
**Matrix: Water**  
**Analysis Batch: 152402**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 152216**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	Limits	RPD	
		Result	Qualifier					RPD	Limit
Perfluorooctanesulfonic acid (PFOS)	0.160	0.138	M	ug/L		86	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	0.0781	0.0657		ug/L		84	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	0.359	0.304		ug/L		85	70 - 130	2	30

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	87		70 - 130
13C2 PFDA	94		70 - 130

# QC Association Summary

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

TestAmerica Job ID: 320-26006-1

## LCMS

### Prep Batch: 152216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-1	WI-AF-1RW32-0217	Total/NA	Water	537	
320-26006-1 - DL	WI-AF-1RW32-0217	Total/NA	Water	537	
320-26006-2	WI-AF-1FB32-0217	Total/NA	Water	537	
320-26006-3	WI-AF-1RW33-0217	Total/NA	Water	537	
320-26006-4	WI-AF-1FB33-0217	Total/NA	Water	537	
320-26006-5	WI-AF-1RW34-0217	Total/NA	Water	537	
320-26006-6	WI-AF-1FB34-0217	Total/NA	Water	537	
320-26006-7	WI-AF-1RW35-0217	Total/NA	Water	537	
320-26006-8	WI-AF-1FB35-0217	Total/NA	Water	537	
320-26006-9	WI-AF-1RW36-0217	Total/NA	Water	537	
320-26006-10	WI-AF-1FB36-0217	Total/NA	Water	537	
320-26006-11	WI-AF-1RW37-0217	Total/NA	Water	537	
320-26006-12	WI-AF-1FB37-0217	Total/NA	Water	537	
MB 320-152216/1-A	Method Blank	Total/NA	Water	537	
LCS 320-152216/2-A	Lab Control Sample	Total/NA	Water	537	
LCSD 320-152216/3-A	Lab Control Sample Dup	Total/NA	Water	537	

### Analysis Batch: 152402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-1	WI-AF-1RW32-0217	Total/NA	Water	537	152216
320-26006-2	WI-AF-1FB32-0217	Total/NA	Water	537	152216
320-26006-3	WI-AF-1RW33-0217	Total/NA	Water	537	152216
MB 320-152216/1-A	Method Blank	Total/NA	Water	537	152216
LCS 320-152216/2-A	Lab Control Sample	Total/NA	Water	537	152216
LCSD 320-152216/3-A	Lab Control Sample Dup	Total/NA	Water	537	152216

### Analysis Batch: 152403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-4	WI-AF-1FB33-0217	Total/NA	Water	537	152216
320-26006-5	WI-AF-1RW34-0217	Total/NA	Water	537	152216
320-26006-6	WI-AF-1FB34-0217	Total/NA	Water	537	152216
320-26006-7	WI-AF-1RW35-0217	Total/NA	Water	537	152216
320-26006-8	WI-AF-1FB35-0217	Total/NA	Water	537	152216
320-26006-9	WI-AF-1RW36-0217	Total/NA	Water	537	152216
320-26006-10	WI-AF-1FB36-0217	Total/NA	Water	537	152216
320-26006-11	WI-AF-1RW37-0217	Total/NA	Water	537	152216
320-26006-12	WI-AF-1FB37-0217	Total/NA	Water	537	152216

### Analysis Batch: 152411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-1 - DL	WI-AF-1RW32-0217	Total/NA	Water	537	152216

# Lab Chronicle

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1RW32-0217**

**Date Collected: 02/21/17 11:55**

**Date Received: 02/23/17 09:55**

**Lab Sample ID: 320-26006-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			261.8 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152402	02/27/17 15:32	JRB	TAL SAC
Total/NA	Prep	537	DL		261.8 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537	DL	20			152411	02/27/17 16:34	JRB	TAL SAC

**Client Sample ID: WI-AF-1FB32-0217**

**Date Collected: 02/21/17 11:56**

**Date Received: 02/23/17 09:55**

**Lab Sample ID: 320-26006-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			277.5 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152402	02/27/17 15:36	JRB	TAL SAC

**Client Sample ID: WI-AF-1RW33-0217**

**Date Collected: 02/21/17 16:27**

**Date Received: 02/23/17 09:55**

**Lab Sample ID: 320-26006-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			275.7 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152402	02/27/17 15:40	JRB	TAL SAC

**Client Sample ID: WI-AF-1FB33-0217**

**Date Collected: 02/21/17 16:28**

**Date Received: 02/23/17 09:55**

**Lab Sample ID: 320-26006-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			283.5 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 15:49	JRB	TAL SAC

**Client Sample ID: WI-AF-1RW34-0217**

**Date Collected: 02/21/17 16:46**

**Date Received: 02/23/17 09:55**

**Lab Sample ID: 320-26006-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			274.1 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 15:54	JRB	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB34-0217**

**Lab Sample ID: 320-26006-6**

Date Collected: 02/21/17 16:47

Matrix: Water

Date Received: 02/23/17 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			282.3 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 15:58	JRB	TAL SAC

**Client Sample ID: WI-AF-1RW35-0217**

**Lab Sample ID: 320-26006-7**

Date Collected: 02/22/17 09:20

Matrix: Water

Date Received: 02/23/17 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			270.8 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 16:02	JRB	TAL SAC

**Client Sample ID: WI-AF-1FB35-0217**

**Lab Sample ID: 320-26006-8**

Date Collected: 02/22/17 09:21

Matrix: Water

Date Received: 02/23/17 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			280.2 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 16:07	JRB	TAL SAC

**Client Sample ID: WI-AF-1RW36-0217**

**Lab Sample ID: 320-26006-9**

Date Collected: 02/22/17 09:36

Matrix: Water

Date Received: 02/23/17 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			267.9 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 16:11	JRB	TAL SAC

**Client Sample ID: WI-AF-1FB36-0217**

**Lab Sample ID: 320-26006-10**

Date Collected: 02/22/17 09:37

Matrix: Water

Date Received: 02/23/17 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			284.8 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 16:16	JRB	TAL SAC

**Client Sample ID: WI-AF-1RW37-0217**

**Lab Sample ID: 320-26006-11**

Date Collected: 02/22/17 12:12

Matrix: Water

Date Received: 02/23/17 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			275.5 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 16:20	JRB	TAL SAC

TestAmerica Sacramento



# Lab Chronicle

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB37-0217**

**Lab Sample ID: 320-26006-12**

**Date Collected: 02/22/17 12:13**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			285.4 mL	1.00 mL	152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1			152403	02/27/17 16:25	JRB	TAL SAC

**Laboratory References:**

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

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# Certification Summary

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

TestAmerica Job ID: 320-26006-1

## Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17 *
Illinois	NELAP	5	200060	03-17-18
Kansas	NELAP	7	E-10375	10-31-17
L-A-B	DoD ELAP		L2468	01-20-18
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17 *
Virginia	NELAP	3	460278	03-14-17
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

\* Certification renewal pending - certification considered valid.

TestAmerica Sacramento

# Method Summary

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

TestAmerica Job ID: 320-26006-1

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

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**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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

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# Sample Summary

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

TestAmerica Job ID: 320-26006-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-26006-1	WI-AF-1RW32-0217	Water	02/21/17 11:55	02/23/17 09:55
320-26006-2	WI-AF-1FB32-0217	Water	02/21/17 11:56	02/23/17 09:55
320-26006-3	WI-AF-1RW33-0217	Water	02/21/17 16:27	02/23/17 09:55
320-26006-4	WI-AF-1FB33-0217	Water	02/21/17 16:28	02/23/17 09:55
320-26006-5	WI-AF-1RW34-0217	Water	02/21/17 16:46	02/23/17 09:55
320-26006-6	WI-AF-1FB34-0217	Water	02/21/17 16:47	02/23/17 09:55
320-26006-7	WI-AF-1RW35-0217	Water	02/22/17 09:20	02/23/17 09:55
320-26006-8	WI-AF-1FB35-0217	Water	02/22/17 09:21	02/23/17 09:55
320-26006-9	WI-AF-1RW36-0217	Water	02/22/17 09:36	02/23/17 09:55
320-26006-10	WI-AF-1FB36-0217	Water	02/22/17 09:37	02/23/17 09:55
320-26006-11	WI-AF-1RW37-0217	Water	02/22/17 12:12	02/23/17 09:55
320-26006-12	WI-AF-1FB37-0217	Water	02/22/17 12:13	02/23/17 09:55



Client Contact  
Company Name: **CH2M/Tiffany Hill**  
Address: **1100 NE Circle Blvd, Ste 200**  
City/State/Zip: **Corvallis, OR 97330**  
Phone: **541-768-3109**  
Fax: **541-908-3794**  
Project Name: **GTO-08**  
Site: **NAS Whidbey Island**  
P.O.#: **100267106650-679580.06 ELIES**

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: **Katie Tippin** Date: **2/22/2017**  
 Tell/Fax: **537-671-6288** Carrier: **Fed-Ex**  
 Analysis Turnaround Time:  CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below: **7 day**  
 2 weeks  1 week  2 days  1 day

Site Contact: **Mike Witmer** COC No.: **1** of **1** COCS  
 Lab Contact: **Laura Turpen**  
 For Lab Use Only:  
 Walk-in Client:  
 Lab Sampling:  
 Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:
W1-AF-1RW32-0217	2/21/17	11:55	G	DW	2	Y	N	
W1-AF-1FB32-0217	2/21/17	11:56	G	DW	2	Y	N	
W1-AF-1RW33-0217	2/21/17	16:27	G	DW	2	Y	N	
W1-AF-1FB33-0217	2/21/17	16:28	G	DW	2	Y	N	
W1-AF-1RW34-0217	2/21/17	16:46	G	DW	2	Y	N	
W1-AF-1FB34-0217	2/21/17	16:47	G	DW	2	Y	N	
W1-AF-1RW35-0217	2/22/17	9:20	G	DW	2	Y	N	
W1-AF-1FB35-0217	2/22/17	9:21	G	DW	2	Y	N	
W1-AF-1RW36-0217	2/22/17	9:36	G	DW	2	Y	N	
W1-AF-1FB36-0217	2/22/17	9:37	G	DW	2	Y	N	
W1-AF-1RW37-0217	2/22/17	12:12	G	DW	2	Y	N	
W1-AF-1FB37-0217	2/22/17	12:13	G	DW	2	Y	N	



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

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

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

**Special Instructions/QC Requirements & Comments:**

Cooler Temp. (°C): Obs'd: **0.5** Corrid: **0.8** Therm ID No.: **AK/Skin**

Relinquished by: **KaLabe** Date/Time: **2/22/17 14:15** Received by: **Shel Youl** Date/Time: **2/23/17 9:35**  
 Company: **CH2M** Company: **TAWS**  
 Relinquished by: **KaLabe** Date/Time: **2/22/17 14:15** Received by: **Shel Youl** Date/Time: **2/23/17 9:35**  
 Company: **CH2M** Company: **TAWS**  
 Relinquished by: **KaLabe** Date/Time: **2/22/17 14:15** Received by: **Shel Youl** Date/Time: **2/23/17 9:35**  
 Company: **CH2M** Company: **TAWS**



# Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-26006-1

**Login Number: 26006**  
**List Number: 1**  
**Creator: Nelson, Kym D**

**List Source: TestAmerica Sacramento**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <math><6\text{mm}</math> (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: 320-26006-1

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  
2/28/2017 1:29 PM

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# Definitions/Glossary

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

TestAmerica Job ID: 320-26006-1

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## Qualifiers

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### LCMS

Qualifier	Qualifier Description
Q	One or more quality control criteria failed.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
D	The reported value is from a dilution.
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

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## Glossary

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Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

## CASE NARRATIVE

**Client: CH2M Hill Constructors, Inc.**

**Project: Whidbey Island**

**Report Number: 320-26006-1**

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 02/23/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.8 C.

### **PFOA/PFOS**

Samples WI-AF-1RW32-0217 (320-26006-1), WI-AF-1FB32-0217 (320-26006-2), WI-AF-1RW33-0217 (320-26006-3), WI-AF-1FB33-0217 (320-26006-4), WI-AF-1RW34-0217 (320-26006-5), WI-AF-1FB34-0217 (320-26006-6), WI-AF-1RW35-0217 (320-26006-7), WI-AF-1FB35-0217 (320-26006-8), WI-AF-1RW36-0217 (320-26006-9), WI-AF-1FB36-0217 (320-26006-10), WI-AF-1RW37-0217 (320-26006-11) and WI-AF-1FB37-0217 (320-26006-12) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 02/25/2017 and analyzed on 02/27/2017.

Surrogate recovery for the following sample was outside control limits: WI-AF-1RW32-0217 (320-26006-1). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis was not performed. The sample extract was run at a dilution of 20X and the surrogate recoveries were in control at this dilution.

Sample WI-AF-1RW32-0217 (320-26006-1)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-152216.

No additional 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: 320-26006-1

## Client Sample ID: WI-AF-1RW32-0217

## Lab Sample ID: 320-26006-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.023	J	0.029	0.0090	ug/L	1		537	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.13		0.13	0.045	ug/L	1		537	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	3.8	D M	1.1	0.30	ug/L	20		537	Total/NA

## Client Sample ID: WI-AF-1FB32-0217

## Lab Sample ID: 320-26006-2

No Detections.

## Client Sample ID: WI-AF-1RW33-0217

## Lab Sample ID: 320-26006-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	0.045	J	0.13	0.043	ug/L	1		537	Total/NA

## Client Sample ID: WI-AF-1FB33-0217

## Lab Sample ID: 320-26006-4

No Detections.

## Client Sample ID: WI-AF-1RW34-0217

## Lab Sample ID: 320-26006-5

No Detections.

## Client Sample ID: WI-AF-1FB34-0217

## Lab Sample ID: 320-26006-6

No Detections.

## Client Sample ID: WI-AF-1RW35-0217

## Lab Sample ID: 320-26006-7

No Detections.

## Client Sample ID: WI-AF-1FB35-0217

## Lab Sample ID: 320-26006-8

No Detections.

## Client Sample ID: WI-AF-1RW36-0217

## Lab Sample ID: 320-26006-9

No Detections.

## Client Sample ID: WI-AF-1FB36-0217

## Lab Sample ID: 320-26006-10

No Detections.

## Client Sample ID: WI-AF-1RW37-0217

## Lab Sample ID: 320-26006-11

No Detections.

## Client Sample ID: WI-AF-1FB37-0217

## Lab Sample ID: 320-26006-12

No Detections.

This Detection Summary does not include radiochemical test results.

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

## Client Sample ID: WI-AF-1RW32-0217

Date Collected: 02/21/17 11:55

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-1

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.023	J	0.029	0.0090	ug/L		02/25/17 13:09	02/27/17 15:32	1
Perfluorobutanesulfonic acid (PFBS)	0.13		0.13	0.045	ug/L		02/25/17 13:09	02/27/17 15:32	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	66	Q	70 - 130				02/25/17 13:09	02/27/17 15:32	1
13C2 PFDA	99		70 - 130				02/25/17 13:09	02/27/17 15:32	1

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	3.8	D M	1.1	0.30	ug/L		02/25/17 13:09	02/27/17 16:34	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	85		70 - 130				02/25/17 13:09	02/27/17 16:34	20
13C2 PFDA	93		70 - 130				02/25/17 13:09	02/27/17 16:34	20

## Client Sample ID: WI-AF-1FB32-0217

Date Collected: 02/21/17 11:56

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-2

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 15:36	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		02/25/17 13:09	02/27/17 15:36	1
Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 15:36	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	82		70 - 130				02/25/17 13:09	02/27/17 15:36	1
13C2 PFDA	92		70 - 130				02/25/17 13:09	02/27/17 15:36	1

## Client Sample ID: WI-AF-1RW33-0217

Date Collected: 02/21/17 16:27

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-3

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 15:40	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		02/25/17 13:09	02/27/17 15:40	1
Perfluorobutanesulfonic acid (PFBS)	0.045	J	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 15:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 15:40	1
13C2 PFDA	90		70 - 130				02/25/17 13:09	02/27/17 15:40	1

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB33-0217**

**Lab Sample ID: 320-26006-4**

Date Collected: 02/21/17 16:28

Matrix: Water

Date Received: 02/23/17 09:55

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 15:49	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		02/25/17 13:09	02/27/17 15:49	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 15:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 15:49	1
13C2 PFDA	89		70 - 130				02/25/17 13:09	02/27/17 15:49	1

**Client Sample ID: WI-AF-1RW34-0217**

**Lab Sample ID: 320-26006-5**

Date Collected: 02/21/17 16:46

Matrix: Water

Date Received: 02/23/17 09:55

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.014	ug/L		02/25/17 13:09	02/27/17 15:54	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0086	ug/L		02/25/17 13:09	02/27/17 15:54	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 15:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 15:54	1
13C2 PFDA	89		70 - 130				02/25/17 13:09	02/27/17 15:54	1

**Client Sample ID: WI-AF-1FB34-0217**

**Lab Sample ID: 320-26006-6**

Date Collected: 02/21/17 16:47

Matrix: Water

Date Received: 02/23/17 09:55

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 15:58	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.0083	ug/L		02/25/17 13:09	02/27/17 15:58	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 15:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		70 - 130				02/25/17 13:09	02/27/17 15:58	1
13C2 PFDA	97		70 - 130				02/25/17 13:09	02/27/17 15:58	1

**Client Sample ID: WI-AF-1RW35-0217**

**Lab Sample ID: 320-26006-7**

Date Collected: 02/22/17 09:20

Matrix: Water

Date Received: 02/23/17 09:55

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.014	ug/L		02/25/17 13:09	02/27/17 16:02	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.0087	ug/L		02/25/17 13:09	02/27/17 16:02	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		02/25/17 13:09	02/27/17 16:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		70 - 130				02/25/17 13:09	02/27/17 16:02	1
13C2 PFDA	92		70 - 130				02/25/17 13:09	02/27/17 16:02	1

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB35-0217**

**Lab Sample ID: 320-26006-8**

**Date Collected: 02/22/17 09:21**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 16:07	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.0084	ug/L		02/25/17 13:09	02/27/17 16:07	1
Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 16:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				02/25/17 13:09	02/27/17 16:07	1
13C2 PFDA	87		70 - 130				02/25/17 13:09	02/27/17 16:07	1

**Client Sample ID: WI-AF-1RW36-0217**

**Lab Sample ID: 320-26006-9**

**Date Collected: 02/22/17 09:36**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.014	ug/L		02/25/17 13:09	02/27/17 16:11	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.0088	ug/L		02/25/17 13:09	02/27/17 16:11	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.044	ug/L		02/25/17 13:09	02/27/17 16:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				02/25/17 13:09	02/27/17 16:11	1
13C2 PFDA	94		70 - 130				02/25/17 13:09	02/27/17 16:11	1

**Client Sample ID: WI-AF-1FB36-0217**

**Lab Sample ID: 320-26006-10**

**Date Collected: 02/22/17 09:37**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 16:16	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		02/25/17 13:09	02/27/17 16:16	1
Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 16:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		70 - 130				02/25/17 13:09	02/27/17 16:16	1
13C2 PFDA	90		70 - 130				02/25/17 13:09	02/27/17 16:16	1

**Client Sample ID: WI-AF-1RW37-0217**

**Lab Sample ID: 320-26006-11**

**Date Collected: 02/22/17 12:12**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.054	0.014	ug/L		02/25/17 13:09	02/27/17 16:20	1
Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.0085	ug/L		02/25/17 13:09	02/27/17 16:20	1
Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.043	ug/L		02/25/17 13:09	02/27/17 16:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	83		70 - 130				02/25/17 13:09	02/27/17 16:20	1
13C2 PFDA	90		70 - 130				02/25/17 13:09	02/27/17 16:20	1

# Client Sample Results

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB37-0217**

**Lab Sample ID: 320-26006-12**

**Date Collected: 02/22/17 12:13**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.014	ug/L		02/25/17 13:09	02/27/17 16:25	1
Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.0083	ug/L		02/25/17 13:09	02/27/17 16:25	1
Perfluorobutanesulfonic acid (PFBS)	0.096	U	0.12	0.042	ug/L		02/25/17 13:09	02/27/17 16:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		70 - 130				02/25/17 13:09	02/27/17 16:25	1
13C2 PFDA	87		70 - 130				02/25/17 13:09	02/27/17 16:25	1



# Default Detection Limits

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

TestAmerica Job ID: 320-26006-1

## 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: 320-26006-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		3C2 PFHx (70-130)	3C2 PFD/ (70-130)
320-26006-1	WI-AF-1RW32-0217	66 Q	99
320-26006-1 - DL	WI-AF-1RW32-0217	85	93
320-26006-2	WI-AF-1FB32-0217	82	92
320-26006-3	WI-AF-1RW33-0217	83	90
320-26006-4	WI-AF-1FB33-0217	83	89
320-26006-5	WI-AF-1RW34-0217	83	89
320-26006-6	WI-AF-1FB34-0217	92	97
320-26006-7	WI-AF-1RW35-0217	82	92
320-26006-8	WI-AF-1FB35-0217	84	87
320-26006-9	WI-AF-1RW36-0217	84	94
320-26006-10	WI-AF-1FB36-0217	84	90
320-26006-11	WI-AF-1RW37-0217	83	90
320-26006-12	WI-AF-1FB37-0217	82	87
LCS 320-152216/2-A	Lab Control Sample	86	99
LCSD 320-152216/3-A	Lab Control Sample Dup	87	94
MB 320-152216/1-A	Method Blank	83	87

### Surrogate Legend

13C2 PFHxA = 13C2 PFHxA

13C2 PFDA = 13C2 PFDA

# QC Sample Results

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

TestAmerica Job ID: 320-26006-1

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

**Lab Sample ID: MB 320-152216/1-A**  
**Matrix: Water**  
**Analysis Batch: 152402**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 152216**

Analyte	MB MB		LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	0.048	U M	0.060	0.016	ug/L		02/25/17 13:09	02/27/17 15:01	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		02/25/17 13:09	02/27/17 15:01	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.048	ug/L		02/25/17 13:09	02/27/17 15:01	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	83		70 - 130	02/25/17 13:09	02/27/17 15:01	1
13C2 PFDA	87		70 - 130	02/25/17 13:09	02/27/17 15:01	1

**Lab Sample ID: LCS 320-152216/2-A**  
**Matrix: Water**  
**Analysis Batch: 152402**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 152216**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	0.0781	0.0640		ug/L		82	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.359	0.297		ug/L		83	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFHxA	86		70 - 130
13C2 PFDA	99		70 - 130

**Lab Sample ID: LCSD 320-152216/3-A**  
**Matrix: Water**  
**Analysis Batch: 152402**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 152216**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Perfluorooctanoic acid (PFOA)	0.0781	0.0657		ug/L		84	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	0.359	0.304		ug/L		85	70 - 130	2	30

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
13C2 PFHxA	87		70 - 130
13C2 PFDA	94		70 - 130

# QC Association Summary

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

TestAmerica Job ID: 320-26006-1

## LCMS

### Prep Batch: 152216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-1 - DL	WI-AF-1RW32-0217	Total/NA	Water	537	
320-26006-1	WI-AF-1RW32-0217	Total/NA	Water	537	
320-26006-2	WI-AF-1FB32-0217	Total/NA	Water	537	
320-26006-3	WI-AF-1RW33-0217	Total/NA	Water	537	
320-26006-4	WI-AF-1FB33-0217	Total/NA	Water	537	
320-26006-5	WI-AF-1RW34-0217	Total/NA	Water	537	
320-26006-6	WI-AF-1FB34-0217	Total/NA	Water	537	
320-26006-7	WI-AF-1RW35-0217	Total/NA	Water	537	
320-26006-8	WI-AF-1FB35-0217	Total/NA	Water	537	
320-26006-9	WI-AF-1RW36-0217	Total/NA	Water	537	
320-26006-10	WI-AF-1FB36-0217	Total/NA	Water	537	
320-26006-11	WI-AF-1RW37-0217	Total/NA	Water	537	
320-26006-12	WI-AF-1FB37-0217	Total/NA	Water	537	
MB 320-152216/1-A	Method Blank	Total/NA	Water	537	
LCS 320-152216/2-A	Lab Control Sample	Total/NA	Water	537	
LCSD 320-152216/3-A	Lab Control Sample Dup	Total/NA	Water	537	

### Analysis Batch: 152402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-1	WI-AF-1RW32-0217	Total/NA	Water	537	152216
320-26006-2	WI-AF-1FB32-0217	Total/NA	Water	537	152216
320-26006-3	WI-AF-1RW33-0217	Total/NA	Water	537	152216
MB 320-152216/1-A	Method Blank	Total/NA	Water	537	152216
LCS 320-152216/2-A	Lab Control Sample	Total/NA	Water	537	152216
LCSD 320-152216/3-A	Lab Control Sample Dup	Total/NA	Water	537	152216

### Analysis Batch: 152403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-4	WI-AF-1FB33-0217	Total/NA	Water	537	152216
320-26006-5	WI-AF-1RW34-0217	Total/NA	Water	537	152216
320-26006-6	WI-AF-1FB34-0217	Total/NA	Water	537	152216
320-26006-7	WI-AF-1RW35-0217	Total/NA	Water	537	152216
320-26006-8	WI-AF-1FB35-0217	Total/NA	Water	537	152216
320-26006-9	WI-AF-1RW36-0217	Total/NA	Water	537	152216
320-26006-10	WI-AF-1FB36-0217	Total/NA	Water	537	152216
320-26006-11	WI-AF-1RW37-0217	Total/NA	Water	537	152216
320-26006-12	WI-AF-1FB37-0217	Total/NA	Water	537	152216

### Analysis Batch: 152411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-26006-1 - DL	WI-AF-1RW32-0217	Total/NA	Water	537	152216

# Lab Chronicle

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

TestAmerica Job ID: 320-26006-1

## Client Sample ID: WI-AF-1RW32-0217

Date Collected: 02/21/17 11:55

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152402	02/27/17 15:32	JRB	TAL SAC
Total/NA	Prep	537	DL		152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537	DL	20	152411	02/27/17 16:34	JRB	TAL SAC

## Client Sample ID: WI-AF-1FB32-0217

Date Collected: 02/21/17 11:56

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152402	02/27/17 15:36	JRB	TAL SAC

## Client Sample ID: WI-AF-1RW33-0217

Date Collected: 02/21/17 16:27

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152402	02/27/17 15:40	JRB	TAL SAC

## Client Sample ID: WI-AF-1FB33-0217

Date Collected: 02/21/17 16:28

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 15:49	JRB	TAL SAC

## Client Sample ID: WI-AF-1RW34-0217

Date Collected: 02/21/17 16:46

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 15:54	JRB	TAL SAC

# Lab Chronicle

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

TestAmerica Job ID: 320-26006-1

## Client Sample ID: WI-AF-1FB34-0217

Date Collected: 02/21/17 16:47

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 15:58	JRB	TAL SAC

## Client Sample ID: WI-AF-1RW35-0217

Date Collected: 02/22/17 09:20

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 16:02	JRB	TAL SAC

## Client Sample ID: WI-AF-1FB35-0217

Date Collected: 02/22/17 09:21

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 16:07	JRB	TAL SAC

## Client Sample ID: WI-AF-1RW36-0217

Date Collected: 02/22/17 09:36

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 16:11	JRB	TAL SAC

## Client Sample ID: WI-AF-1FB36-0217

Date Collected: 02/22/17 09:37

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 16:16	JRB	TAL SAC

## Client Sample ID: WI-AF-1RW37-0217

Date Collected: 02/22/17 12:12

Date Received: 02/23/17 09:55

## Lab Sample ID: 320-26006-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 16:20	JRB	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

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

TestAmerica Job ID: 320-26006-1

**Client Sample ID: WI-AF-1FB37-0217**

**Lab Sample ID: 320-26006-12**

**Date Collected: 02/22/17 12:13**

**Matrix: Water**

**Date Received: 02/23/17 09:55**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	537			152216	02/25/17 13:09	JER	TAL SAC
Total/NA	Analysis	537		1	152403	02/27/17 16:25	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: 320-26006-1

## Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17 *
Illinois	NELAP	5	200060	03-17-18
Kansas	NELAP	7	E-10375	10-31-17
L-A-B	DoD ELAP		L2468	01-20-18
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17 *
Virginia	NELAP	3	460278	03-14-17
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

\* Certification renewal pending - certification considered valid.



# Method Summary

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

TestAmerica Job ID: 320-26006-1

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<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
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: 320-26006-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-26006-1	WI-AF-1RW32-0217	Water	02/21/17 11:55	02/23/17 09:55
320-26006-2	WI-AF-1FB32-0217	Water	02/21/17 11:56	02/23/17 09:55
320-26006-3	WI-AF-1RW33-0217	Water	02/21/17 16:27	02/23/17 09:55
320-26006-4	WI-AF-1FB33-0217	Water	02/21/17 16:28	02/23/17 09:55
320-26006-5	WI-AF-1RW34-0217	Water	02/21/17 16:46	02/23/17 09:55
320-26006-6	WI-AF-1FB34-0217	Water	02/21/17 16:47	02/23/17 09:55
320-26006-7	WI-AF-1RW35-0217	Water	02/22/17 09:20	02/23/17 09:55
320-26006-8	WI-AF-1FB35-0217	Water	02/22/17 09:21	02/23/17 09:55
320-26006-9	WI-AF-1RW36-0217	Water	02/22/17 09:36	02/23/17 09:55
320-26006-10	WI-AF-1FB36-0217	Water	02/22/17 09:37	02/23/17 09:55
320-26006-11	WI-AF-1RW37-0217	Water	02/22/17 12:12	02/23/17 09:55
320-26006-12	WI-AF-1FB37-0217	Water	02/22/17 12:13	02/23/17 09:55

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 147939

Lab Sample ID: IC 320-147939/4 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:03 Lab File ID: 2017.01.26\_537\_CURVE\_004. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:09

Lab Sample ID: IC 320-147939/5 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:07 Lab File ID: 2017.01.26\_537\_CURVE\_005. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:10

Lab Sample ID: IC 320-147939/6 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:11 Lab File ID: 2017.01.26\_537\_CURVE\_006. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:10

Lab Sample ID: IC 320-147939/7 ICISAV Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:16 Lab File ID: 2017.01.26\_537\_CURVE\_007. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Isomers	chandrase nas	01/26/17 12:08

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 147939

Lab Sample ID: IC 320-147939/8 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:20 Lab File ID: 2017.01.26\_537\_CURVE\_008. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:11

Lab Sample ID: IC 320-147939/9 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:25 Lab File ID: 2017.01.26\_537\_CURVE\_009. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:11

Lab Sample ID: CCVL 320-147939/11 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:33 Lab File ID: 2017.01.26\_537\_CURVE\_011. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:15

Lab Sample ID: ICV 320-147939/13 Client Sample ID: \_\_\_\_\_

Date Analyzed: 01/26/17 11:42 Lab File ID: 2017.01.26\_537\_CURVE\_013. GC Column: Acquity ID: 2.1(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Assign Peak	chandrase nas	01/26/17 12:16

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 152311

Lab Sample ID: CCV 320-152311/3 CCVL Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 11:03 Lab File ID: 2017.02.27A\_537\_003.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.31	Missed Peak	barnettj	02/27/17 16:58

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 152402

Lab Sample ID: CCV 320-152402/1 CCVIS Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 14:56 Lab File ID: 2017.02.27C\_537\_001.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

Lab Sample ID: MB 320-152216/1-A Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 15:01 Lab File ID: 2017.02.27C\_537\_002.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.51	Missed Peak	barnettj	02/27/17 16:54
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

Lab Sample ID: LCS 320-152216/2-A Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 15:05 Lab File ID: 2017.02.27C\_537\_003.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

Lab Sample ID: LCSD 320-152216/3-A Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 15:10 Lab File ID: 2017.02.27C\_537\_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 152402

Lab Sample ID: 320-26006-3 Client Sample ID: WI-AF-1RW33-0217

Date Analyzed: 02/27/17 15:40 Lab File ID: 2017.02.27C\_537\_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

Lab Sample ID: CCV 320-152402/12 CCVIS Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 15:45 Lab File ID: 2017.02.27C\_537\_012.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 152403

Lab Sample ID: CCV 320-152403/12 CCVIS Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 15:45 Lab File ID: 2017.02.27C\_537\_012.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

Lab Sample ID: 320-26006-4 Client Sample ID: WI-AF-1FB33-0217

Date Analyzed: 02/27/17 15:49 Lab File ID: 2017.02.27C\_537\_013.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:54

Lab Sample ID: 320-26006-7 Client Sample ID: WI-AF-1RW35-0217

Date Analyzed: 02/27/17 16:02 Lab File ID: 2017.02.27C\_537\_016.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:55

Lab Sample ID: 320-26006-9 Client Sample ID: WI-AF-1RW36-0217

Date Analyzed: 02/27/17 16:11 Lab File ID: 2017.02.27C\_537\_018.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.16	Missed Peak	barnettj	02/27/17 16:55



LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 152411

Lab Sample ID: 320-26006-1 DL Client Sample ID: WI-AF-1RW32-0217 DL

Date Analyzed: 02/27/17 16:34 Lab File ID: 2017.02.27C\_537\_023.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 17:07

Lab Sample ID: CCV 320-152411/24 CCVIS Client Sample ID: \_\_\_\_\_

Date Analyzed: 02/27/17 16:38 Lab File ID: 2017.02.27C\_537\_024.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.25	Missed Peak	barnettj	02/27/17 16:55

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
<b>LC537-ICV_00019</b>	03/01/17	12/20/16	MeOH/H2O, Lot 067374	10 mL	LC537-IS_00028	200 uL	13C2-PFOA	10 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
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C2-PFOA	50 ug/mL
<b>LC537-ICV_00019</b>	03/01/17	12/20/16	MeOH/H2O, Lot 067374	10 mL	LC537-SU_00027	500 uL	13C2 PFDA	10 ng/mL
.LC537-SU_00027	06/19/17	12/19/16	Methanol, Lot 104453	20000 uL	LC537ICIM_00014	25 uL	13C2 PFHxA	10 ng/mL
..LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			LC537ICIM_00014	25 uL	Perfluorobutanesulfonic acid (PFBS)	114.77 ng/mL
..LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			LC537ICIM_00014	25 uL	Perfluorooctanoic acid (PFOA)	25.0232 ng/mL
..LC537ICIM_00014	03/01/17	12/20/16	Methanol, Lot 090285	25 mL	LCMPFHxA_00009	80 uL	Perfluorooctanesulfonic acid (PFOS)	27.2389 ng/mL
..LC537-PFBS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LCMPFHxA_00009	80 uL	13C2 PFDA	0.2 ug/mL
...LC537-PFBS2_00001	08/09/17	Santa Cruz Biotechnology, Lot H0112			LCMPFHxA_00009	80 uL	13C2 PFHxA	0.2 ug/mL
..LC537-PFOA2_00008	07/25/17	12/20/16	Methanol, Lot 090285	10 mL	LC537-PFBS2_00005	0.5 mL	13C2 PFDA	50 ug/mL
..LC537-PFOA2_00001	07/25/17	Afla Aesar, Lot D24Y026			LC537-PFOA2_00008	0.142 mL	13C2 PFHxA	50 ug/mL
..LC537-PFOS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537-PFOS2_00005	0.22 mL	Perfluorobutanesulfonic acid (PFBS)	45.908 ug/mL
...LC537-PFOS2_00001	07/26/17	Sigma, Lot BCBF5116V			LC537-PFOS2_00005	0.22 mL	Perfluorooctanoic acid (PFOA)	10.0093 ug/mL
<b>LC537-IS_00030</b>	07/17/17	01/17/17	Methanol, Lot 090285	10000 uL	LC537-PFBS2_00001	0.023 g	Perfluorooctanesulfonic acid (PFOS)	10.8956 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			LC537-PFBS2_00001	0.023 g	Perfluorobutanesulfonic acid (PFBS)	2295.4 ug/mL
.LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			...LC537-PFBS2_00001		Perfluorobutanesulfonic acid (PFBS)	0.998 g/g
<b>LC537-L1_00017</b>	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	..LC537-PFOA2_00008	0.0178 g	Perfluorooctanoic acid (PFOA)	1762.2 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			..LC537-PFOA2_00001	0.0178 g	Perfluorooctanoic acid (PFOA)	0.99 g/g
.LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			..LC537-PFOS2_00005	0.0159 g	Perfluorooctanesulfonic acid (PFOS)	1238.13 ug/mL
LC537-IS_00028					..LC537-PFOS2_00001		Perfluorooctanesulfonic acid (PFOS)	0.7787 g/g
LC537-MSP_00017					LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
LC537-SU_00026					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
							13C2-PFOA	50 ug/mL
							13C4 PFOS	47.8 ug/mL
							13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
							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
							13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

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 BCM2579V			(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
<b>LC537-L2_00015</b>	05/21/17	12/19/16	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00028	100 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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration	
					Reagent ID	Volume Added			
<b>LC537-L2_00015</b>	05/21/17	12/19/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00013	34 uL	Perfluorobutanesulfonic acid (PFBS)	22.8888 ng/mL	
							Perfluorooctanoic acid (PFOA)	4.97733 ng/mL	
					LC537-SU_00026	250 uL	Perfluorooctanesulfonic acid (PFOS)	10.2169 ng/mL	
							13C2 PFDA	10 ng/mL	
.LC537-HSP_00013	05/21/17	11/21/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00017	375 uL	13C2 PFHxA	10 ng/mL	
							Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL	
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL	
..LC537SPIM_00017	05/21/17	11/21/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL	
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL	
							Perfluorooctanoic acid (PFOA)	19.5189 ug/mL	
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537-PFOA_00011	100 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL	
							Perfluorooctanoic acid (PFOA)	19.5189 ug/mL	
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537-PFOS_00006	400 uL	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL	
....LC537-PFBS_00002	04/01/18		Sigma, Lot MKBP8842V				(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	1 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	Perfluorobutanesulfonic acid (PFBS)	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	
...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
<b>LC537-L2_00016</b>	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	
					LC537-IS_00028	100 uL	Perfluorononanoic acid	5.28909 ng/mL	
							Perfluorooctanoic acid (PFOA)	4.97733 ng/mL	
							Perfluorooctanesulfonic acid (PFOS)	10.2169 ng/mL	
LC537-SU_00026	250 uL	13C2-PFOA	10 ng/mL						
		13C4 PFOS	28.68 ng/mL						
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	13C2 PFDA	10 ng/mL	
							13C2 PFHxA	10 ng/mL	
							Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL	
							Perfluoroheptanoic acid	371.25 ng/mL	
							Perfluorohexanesulfonic acid	1134.68 ng/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							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 BCM2579V		(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
<b>LC537-L3_00019</b>	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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration							
					Reagent ID	Volume Added									
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	13C2 PFHxA	10 ng/mL							
							Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL							
							Perfluoroheptanoic acid	371.25 ng/mL							
							Perfluorohexanesulfonic acid	1134.68 ng/mL							
							Perfluorononanoic acid	777.808 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	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537-PFOS_00006	400 uL	Perfluorooctanesulfonic acid (PFOS)	40.0664 ug/mL							
							LC537-PFBS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL					
							(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-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537 PFHxS_00002	0.0061 g	Perfluoroheptanoic acid	0.99 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537 PFNA_00002	0.007 g	Perfluorohexanesulfonic acid	1008.61 ug/mL							
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537 PFOA_00002	0.0127 g	Perfluorohexanesulfonic acid	0.9094 g/g							
...LC537-PFOS_00006	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537 PFOS_00002	0.0066 g	Perfluorononanoic acid	1037.08 ug/mL							
...LC537-PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g							
...LC537-PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		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							
					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							
<b>LC537-L4_00017</b>	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														

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC537-IS_00028	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 BCM2579V		(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
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C2-PFOA	50 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
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA_00008	80 uL	13C2 PFHxA	0.2 ug/mL
...LCMPFDA_00008	08/19/20		Wellington Laboratories, Lot MPFDA0815		LCMPFHxA_00009	80 uL	13C2 PFDA	0.4 ug/mL
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFHxA	0.4 ug/mL
..LCMPFHxA_00009	04/09/20		Wellington Laboratories, Lot MPFHxA0415		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
<b>LC537-L5_00020</b>	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

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
							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
							LC537-SU_00029	250 uL	13C4 PFOS	28.68 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	13C2 PFDA	10 ng/mL		
							13C2 PFHxA	10 ng/mL		
							Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL		
							Perfluoroheptanoic acid	371.25 ng/mL		
							Perfluorohexanesulfonic acid	1134.68 ng/mL		
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorononanoic acid	777.808 ng/mL		
							Perfluorooctanoic acid (PFOA)	731.96 ng/mL		
							Perfluorooctanesulfonic acid (PFOS)	1502.49 ng/mL		
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL		
							LC537-PFHxA_00013	100 uL	Perfluoroheptanoic acid	9.9 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 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-PFOS_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFB	04/01/18		Sigma, Lot MKBP8842V		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g		
...LC537-PFHxA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537 PFHxA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL		
....LC537 PFHxA_00002	04/01/18		Aldrich, Lot BCM2579V		(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		
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL		
...LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C2-PFOA	50 ug/mL		
.LC537-SU_00029	07/17/17	01/17/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C4 PFOS	47.8 ug/mL		
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916		LCMPFHxA_00013	80 uL	13C2 PFDA	0.2 ug/mL		
...LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	0.2 ug/mL		
					(Purchased Reagent)		13C2 PFDA	50 ug/mL		
					(Purchased Reagent)		13C2 PFHxA	50 ug/mL		



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
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 BCM2579V		(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		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA 00008	80 uL	13C2 PFHxA	0.2 ug/mL
					LCMPFHxA 00009	80 uL	13C2 PFDA	0.4 ug/mL
...LCMPFDA 00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFHxA	0.4 ug/mL
...LCMPFHxA 00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFDA	50 ug/mL
							13C2 PFHxA	50 ug/mL
<b>LC537-MSP_00017</b>	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-PFHxA_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-PFHxA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537 PFHxA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
...LC537 PFHxA_00002	04/01/18	Aldrich, Lot BCM2579V			(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
<b>LC537-SU_00030</b>	07/31/17	01/31/17	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

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**LC537\_PFB\_00002**

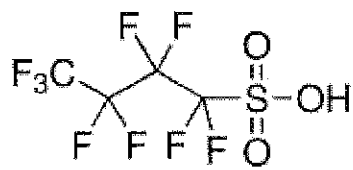
7: 4/1/15 SPV

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*

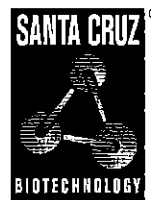
Jamie Gleason, Manager  
Quality Control  
Milwaukee, Wisconsin US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Reagent

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**LC537\_PFB2\_00001**



*The Power to Question*

# CERTIFICATE OF ANALYSIS

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 Index: n<sub>20/D</sub>

Reagent

---

**LC537\_PFHpA\_00002**

R: 4/1/15 4V

### Certificate of Analysis

**Product Name:** PERFLUOROHEPTANOIC ACID  
**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

PFHpA

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

Dr. Claudia Geitner  
Manager Quality Control  
Buchs, Switzerland

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Reagent

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**LC537\_PFHxS\_00002**

r: 4/1/15 stw

### 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<sub>6</sub>F<sub>13</sub>KO<sub>3</sub>S

**Formula Weight:** 438.20

**Quality Release Date:** 20 JUN 2013

PFH<sub>13</sub>S-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

Dr. Claudia Geitner  
Manager Quality Control  
Buchs, Switzerland

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

$$Purity = 90.94 \% \text{ w/m.w correction}$$

stw 4/1/15

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Reagent

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**LC537\_PENA\_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

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**LC537\_PFOA\_00002**

3/21/15

# 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: C<sub>8</sub>HF<sub>15</sub>O<sub>2</sub>  
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

identity (GC-MS)  
Assay (GCMS)  
Date of Analysis

complying  
99.4 %  
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 aliquot 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

This document was produced electronically and is valid without a signature

## 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

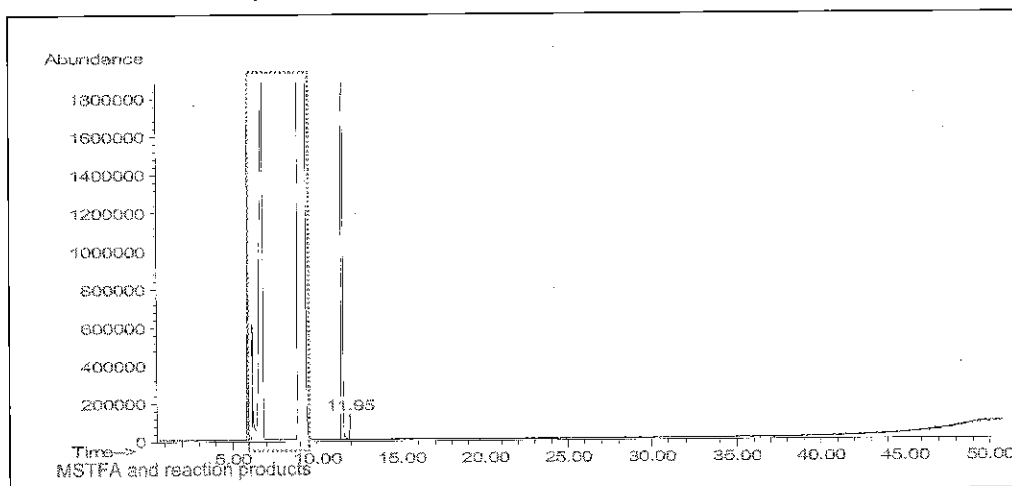
**Mass range:** 10-600 amu (Scan mode)

**Evaluation:** Purity: Total Ion Chromatogram  
(MSTFA and reaction products blinded out in report)

Identity: Mass spectrum complies

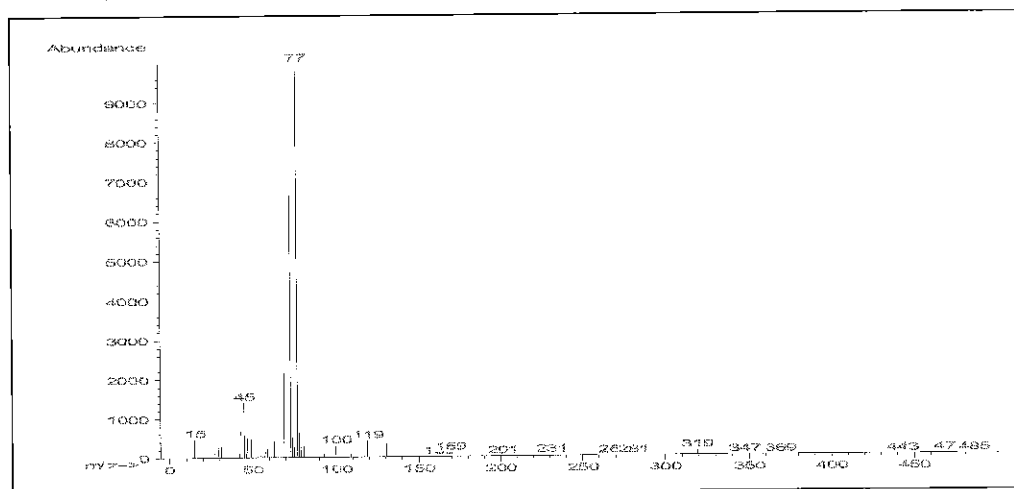
**Operator:** Ahrens / 2013-11-13

### 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

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**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.

[www.alfa.com](http://www.alfa.com)

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Fax: +1-800-322-4757  
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Fax: 00800 4577 4577 or  
+49 721 84007 300  
Email: [Eurosales@alfa.com](mailto:Eurosales@alfa.com)

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Fax: 0800 10 20 67 or  
+33 (0)3 8862 6864  
Email: [frventes@alfa.com](mailto:frventes@alfa.com)

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Fax: +91 8418 260060  
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Fax: +82-2-3140-6002  
Email: [saleskorea@alfa-asia.com](mailto:saleskorea@alfa-asia.com)

Reagent

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**LC537\_PFOs\_00002**

**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 - <i>err date</i>

Article/Product: 33829	Batch : SZBC222XV
Heptadecafluorooctanesulfonic acid potassium salt OEKANAL®	
	PFOS-K <sup>+</sup>

**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)	98.00 %
Date of Analysis	10.Aug.2012

*FW-Correction:*

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

*Purity = 91.06%*

**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 aliquot 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

Reagent

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**LC537\_PFO2\_00001**

Certificate of Analysis

Inv 820  
12LCMS 0579

Product Name: HEPTADEC AFLUORO OCTANESULFONIC ACID TETRAETHYLAMMONIUM SALT  
98 %  
Product Number: 365289  
Product Brand: Aldrich  
Molecular Formula: C<sub>16</sub>H<sub>20</sub>F<sub>17</sub>NO<sub>3</sub>S  
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

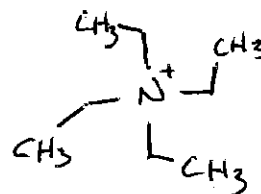
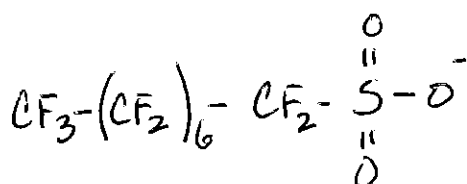
$$\text{Mw correction} = \frac{500.125}{629.37} = 0.7946$$

~~79.46%~~ Oct 7-26-12

*E. Schwarzler*

Purity + Mw Correction = 77.87%

Edeltraud Schwarzler, Manager  
Quality Control  
Buchs, Switzerland



	<u>C<sub>8</sub>F<sub>17</sub>SO<sub>3</sub>H</u>	<u>C<sub>8</sub>H<sub>20</sub>N</u>
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
	<u>500.125</u>	<u>130.255</u> →

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## 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

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**Country of Origin** China

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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, traceability and batch consistency.

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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

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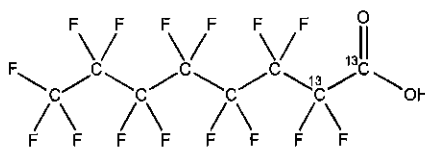
**LCM2PFOA\_00005**



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFOA **LOT NUMBER:** M2PFOA0613  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]octanoic acid  
**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>6</sub>HF<sub>15</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 416.05  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**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

### 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  $x_1, x_2, \dots, x_n$  on which it depends is:

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

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  $\pm 5\%$  (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.

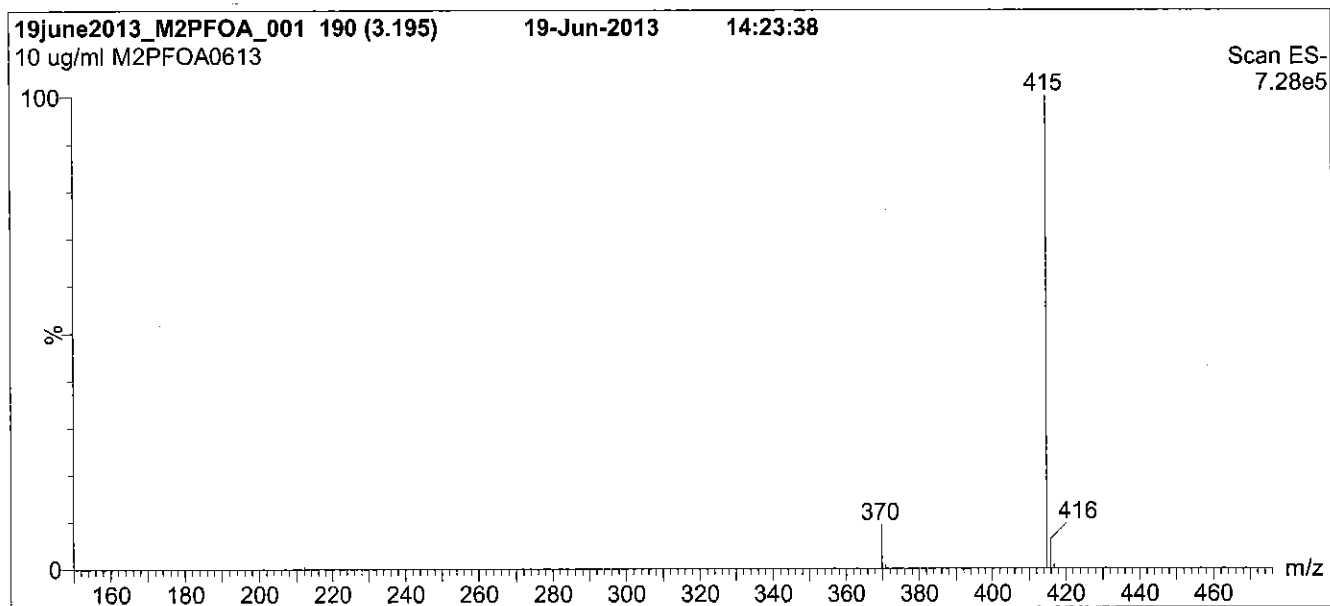
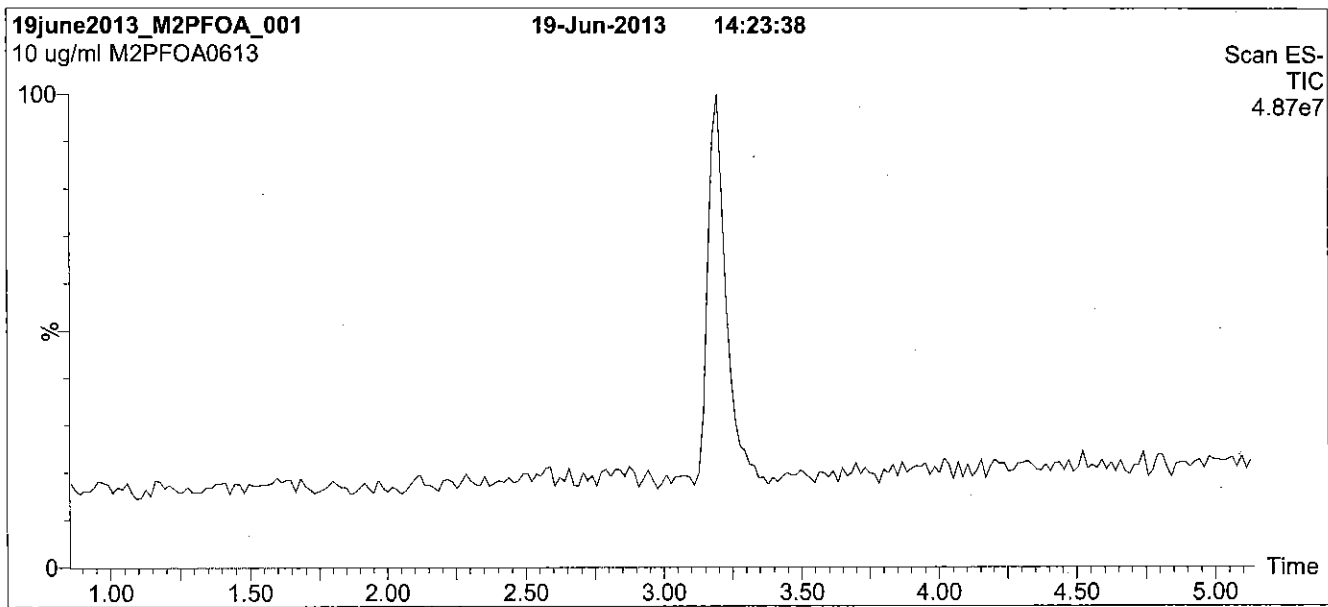
**QUALITY MANAGEMENT:**

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).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto: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<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

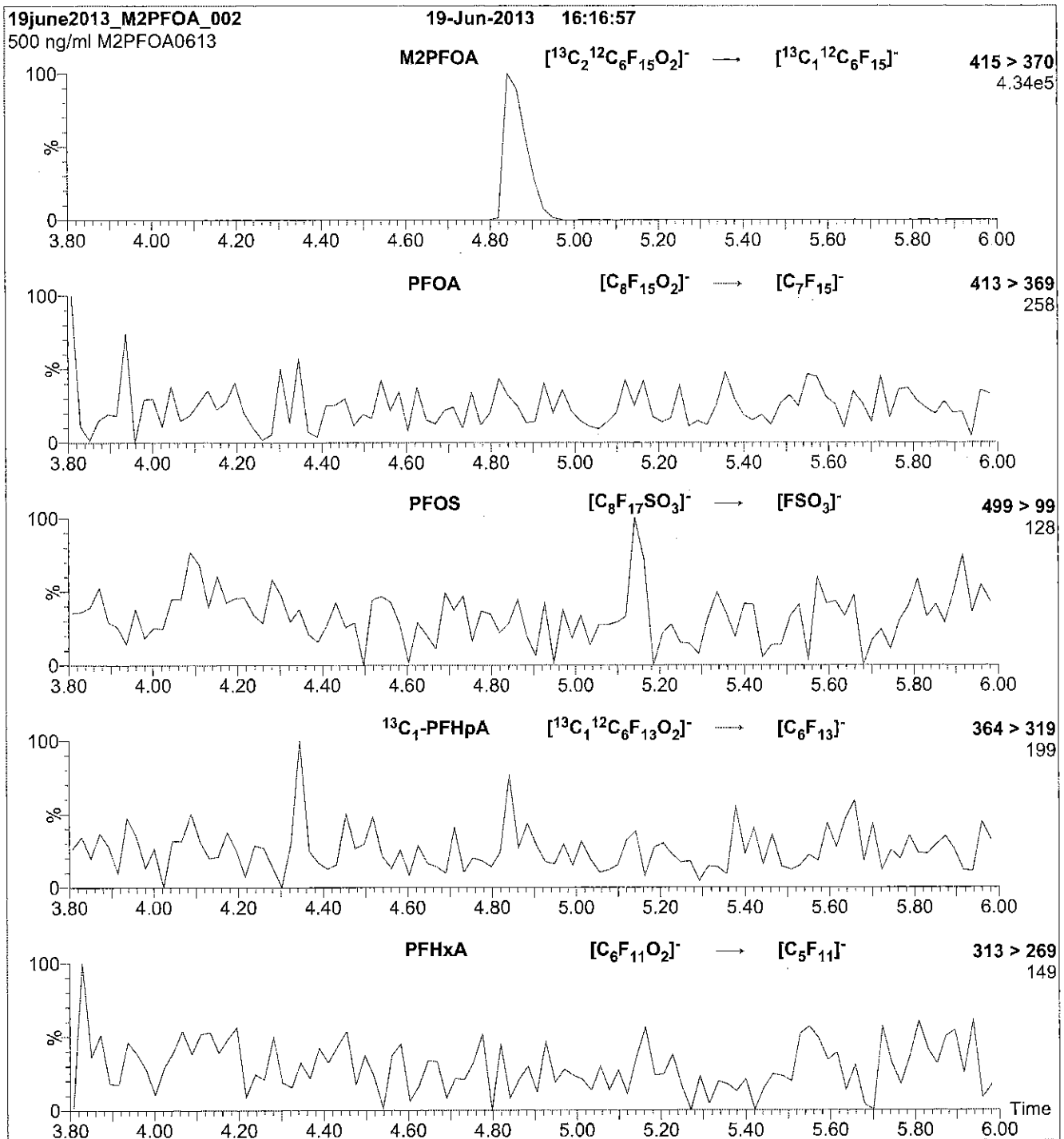
Flow: 300  $\mu$ l/min

**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  $\mu\text{l}$  (500 ng/ml M2PFOA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

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

Reagent

---

**LCMPFDA\_00008**



605243

ID: LCMPFDA\_00008

Exp: 08/19/20 Pptd: CBW

13C2-Perfluorodecanoic acid

Rec. 3/29/16 JEB ✓

**WELLINGTON**  
LABORATORIES**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION**PRODUCT CODE:**

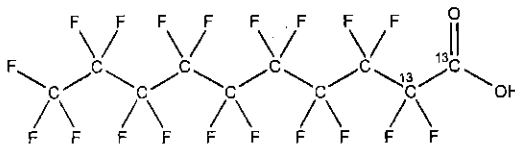
MPFDA

**LOT NUMBER:**

MPFDA0815

**COMPOUND:**Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acid**STRUCTURE:****CAS #:**

Not available

**MOLECULAR FORMULA:**<sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>HF<sub>19</sub>O<sub>2</sub>**MOLECULAR WEIGHT:**

516.07

**CONCENTRATION:**

50 ± 2.5 µg/ml

**SOLVENT(S):**

Methanol

Water (&lt;1%)

**CHEMICAL PURITY:**

&gt;98%

**ISOTOPIC PURITY:**≥99% <sup>13</sup>C**LAST TESTED:** (mm/dd/yyyy)

08/19/2015

(1,2-<sup>13</sup>C<sub>2</sub>)**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 <sup>13</sup>C<sub>1</sub>-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:**

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### **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  $x_1, x_2, \dots, x_n$  on which it depends is:

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

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  $\pm 5\%$  (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:**

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### **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.

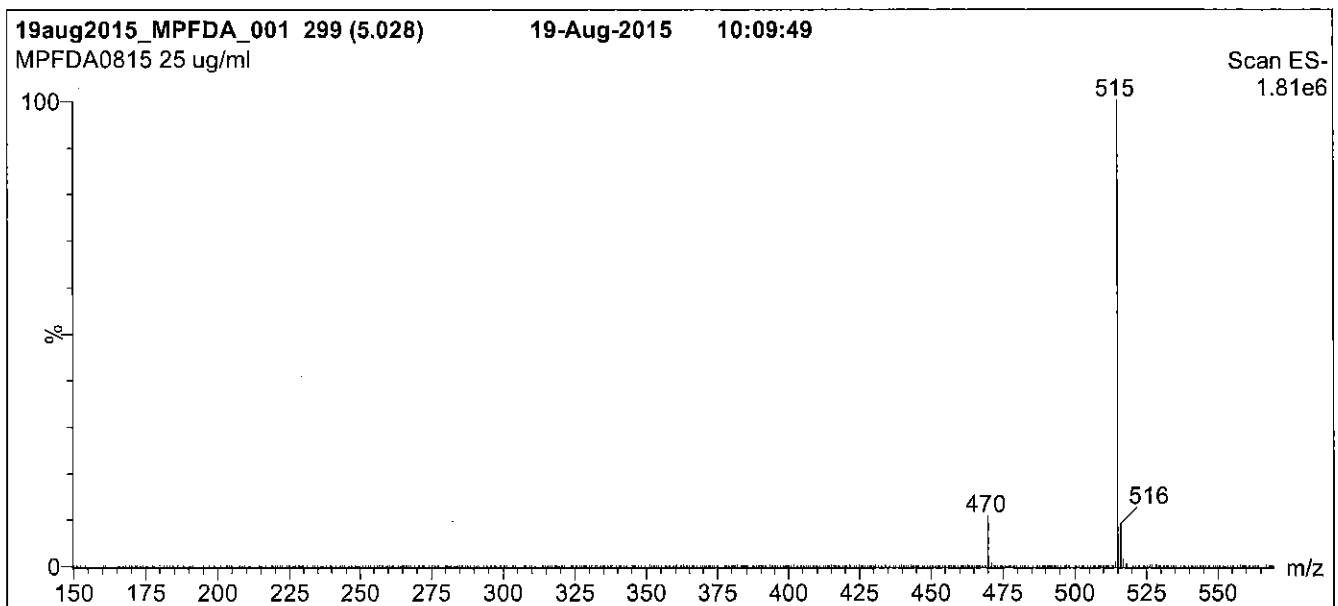
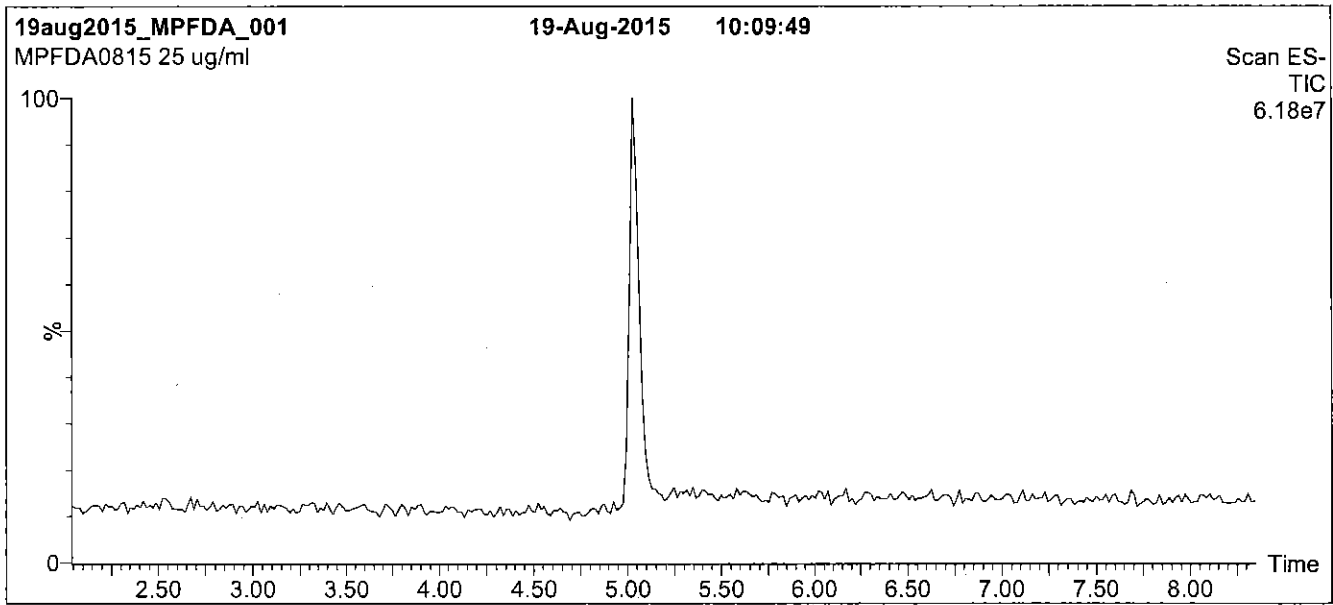
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**Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

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

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

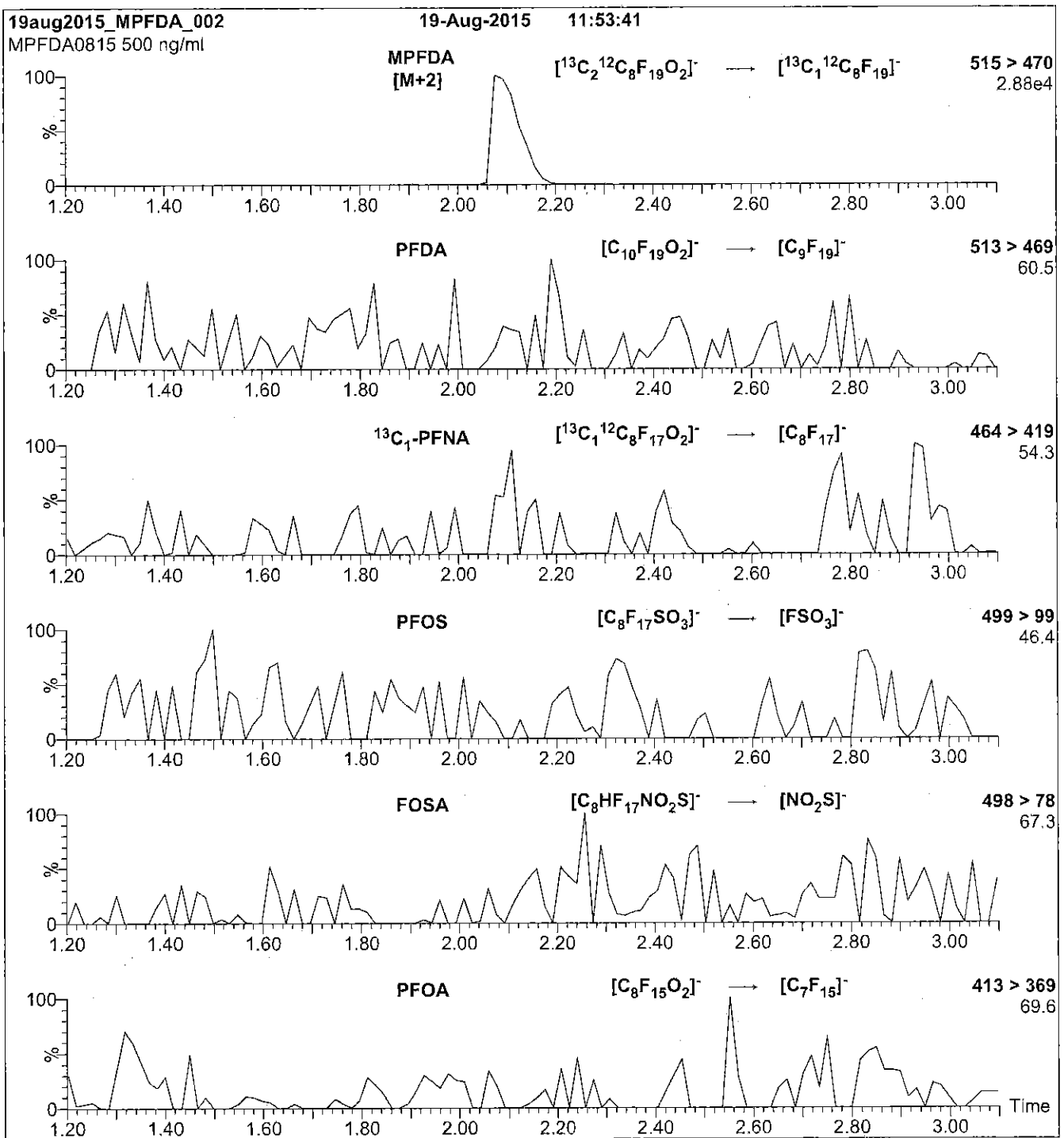
Flow: 300  $\mu$ l/min

**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  $\mu$ l (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

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



Reagent

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**LCMPFDA\_00012**

R: SBC 12/21/16



814255

ID: LCMFDA\_00012

Exp: 09/30/21 Prpd: SBC

13C2-Perfluorodecanoic a

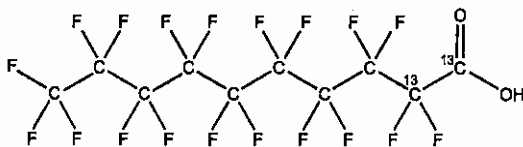


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFDA      **LOT NUMBER:** MPFDA0916  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>HF<sub>19</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 516.07  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 09/30/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 09/30/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

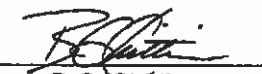
**DOCUMENTATION/ DATA ATTACHED:**

- 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 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of <sup>13</sup>C<sub>1</sub>-PFNA.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chrifim      **Date:** 10/07/2016  
(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

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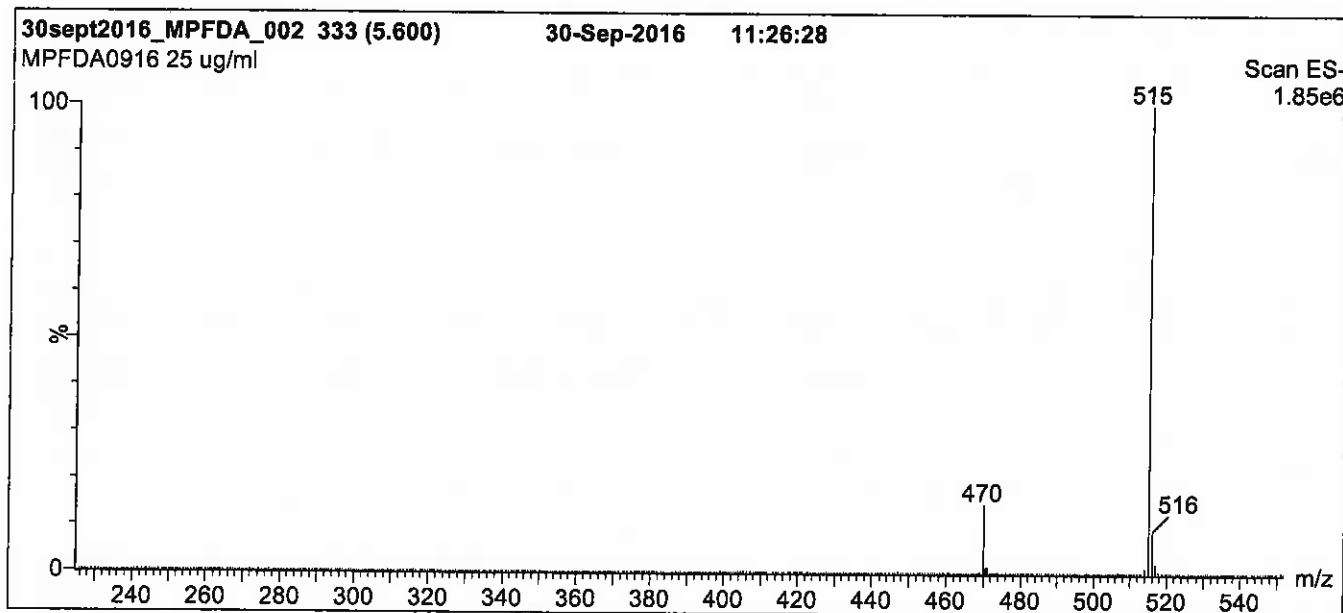
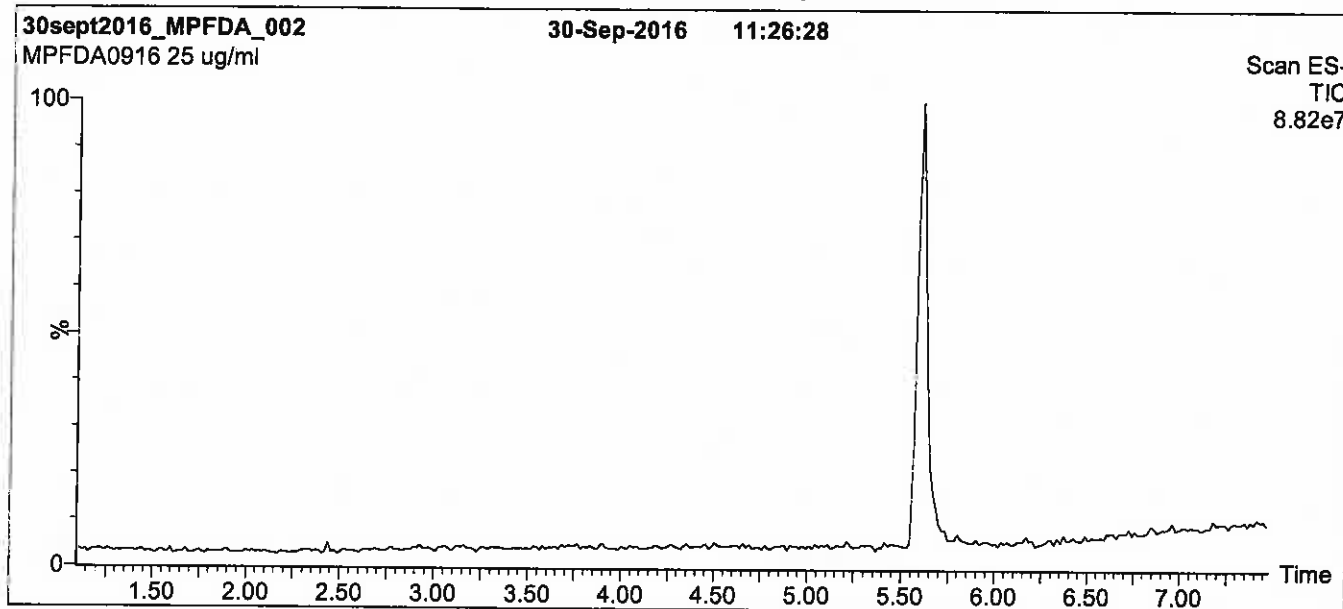
### **QUALITY MANAGEMENT:**

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**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<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

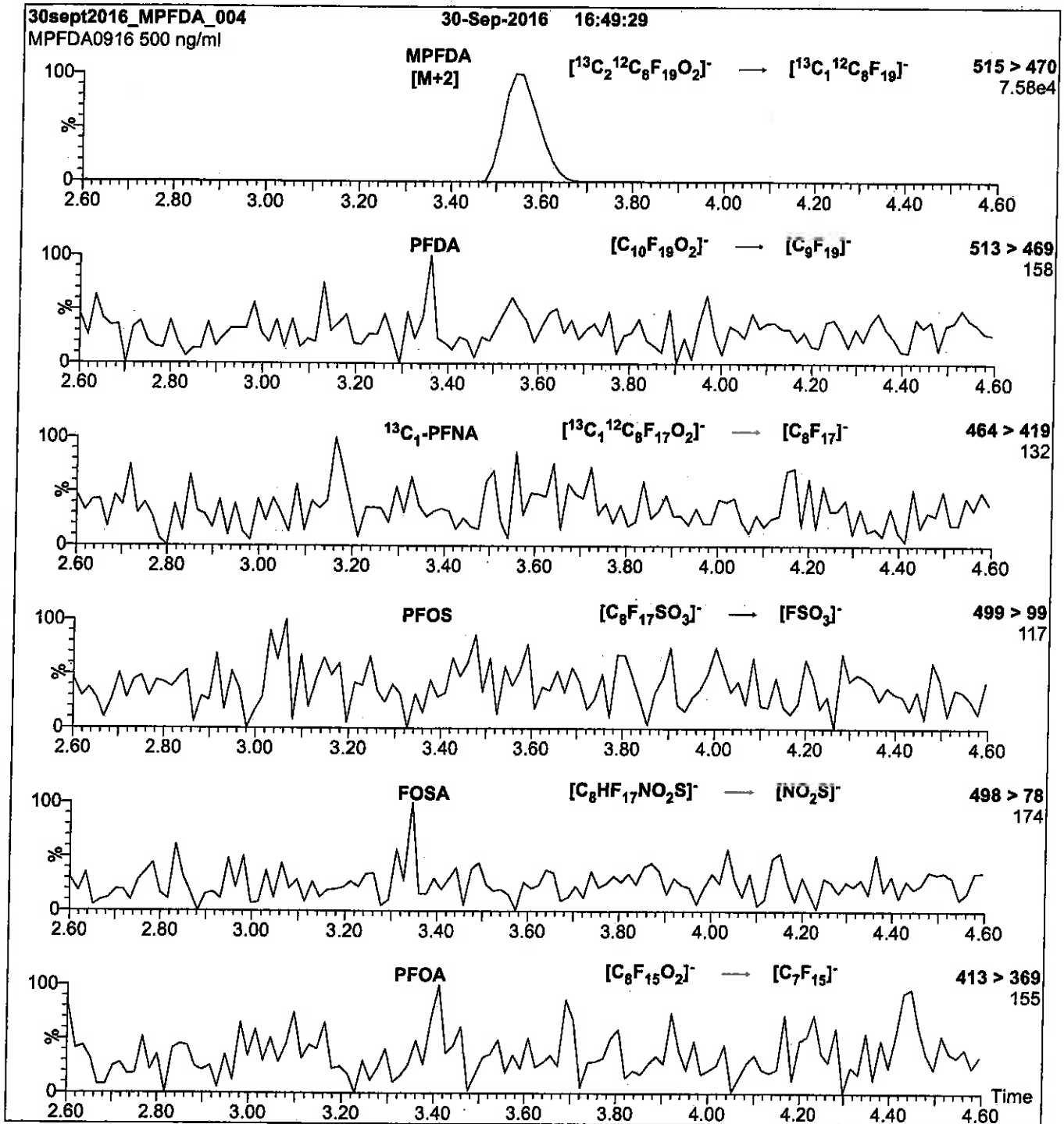
Flow: 300  $\mu$ l/min

**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) = 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  $\mu$ l (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 13

Reagent

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**LCMPFHxA\_00009**



605244  
 ID: LCMPFHxA\_00009  
 Exp: 04/09/20 Prpd: CBW  
<sup>13</sup>C<sub>2</sub>-Perfluorohexanoic ac

Rec. 3/29/16 JRB ✓



# WELLINGTON LABORATORIES

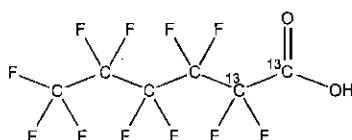
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxA  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexanoic acid

**LOT NUMBER:** MPFHxA0415

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>HF<sub>11</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 316.04  
**SOLVENT(S):** Methanol  
 Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/09/2015

**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)

**EXPIRY DATE:** (mm/dd/yyyy) 04/09/2020

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

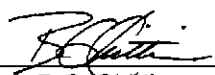
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Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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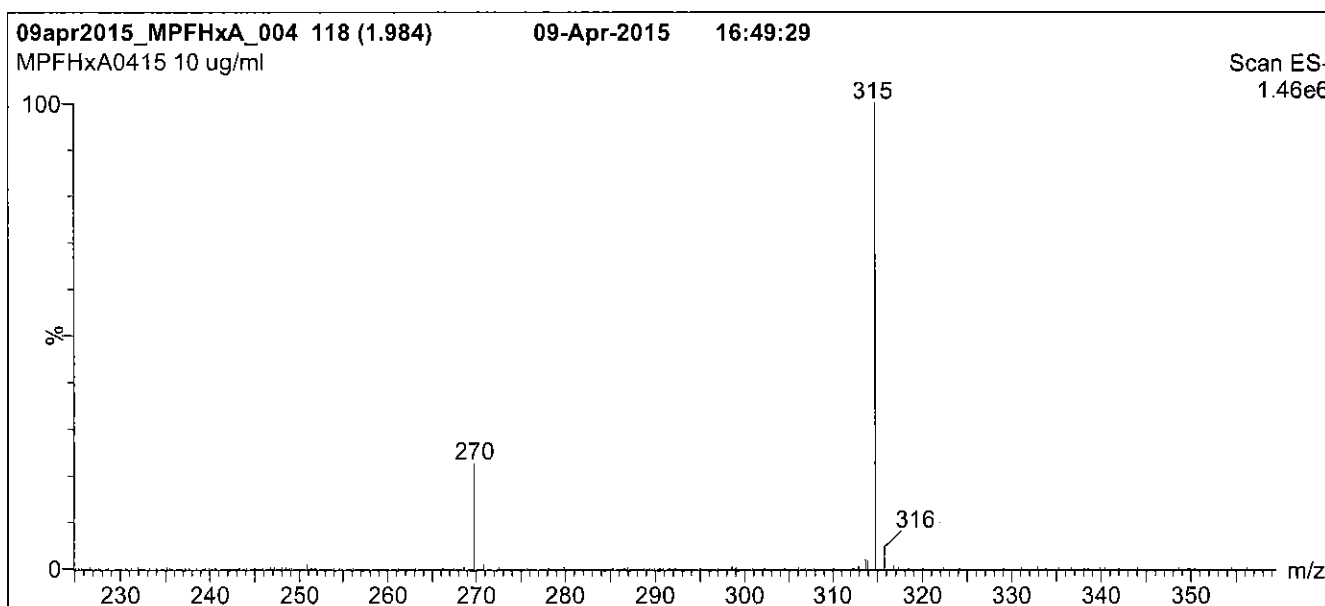
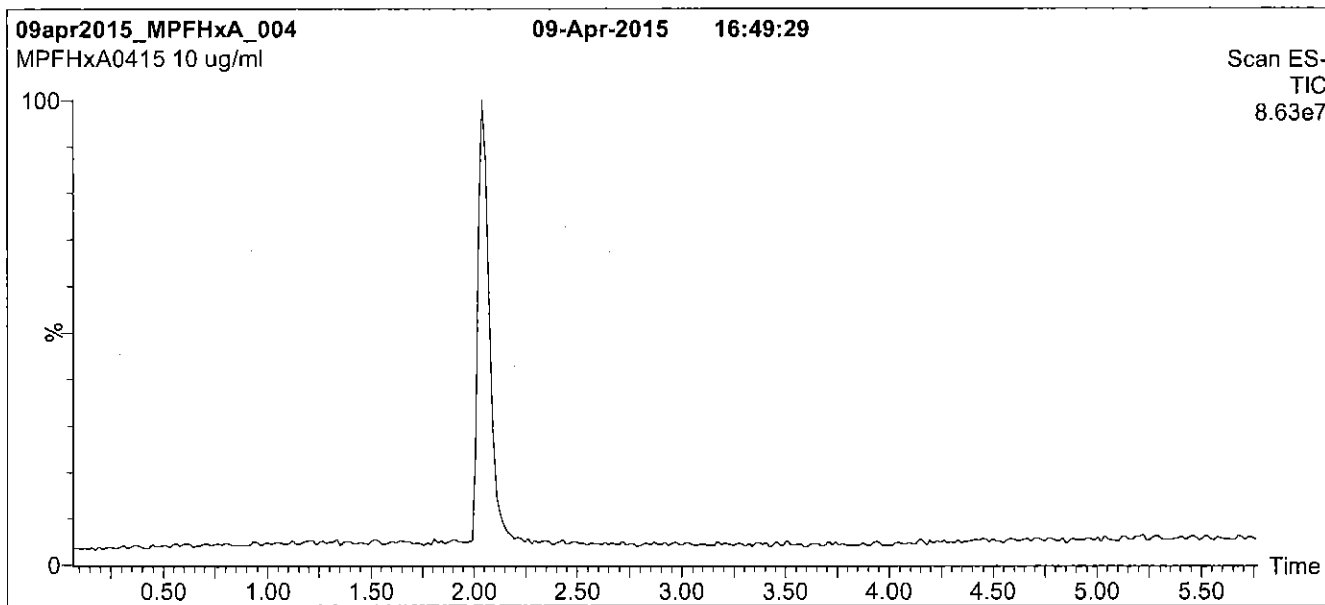
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**Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

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**MS:** Micromass Quattro *micro* API MS

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Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

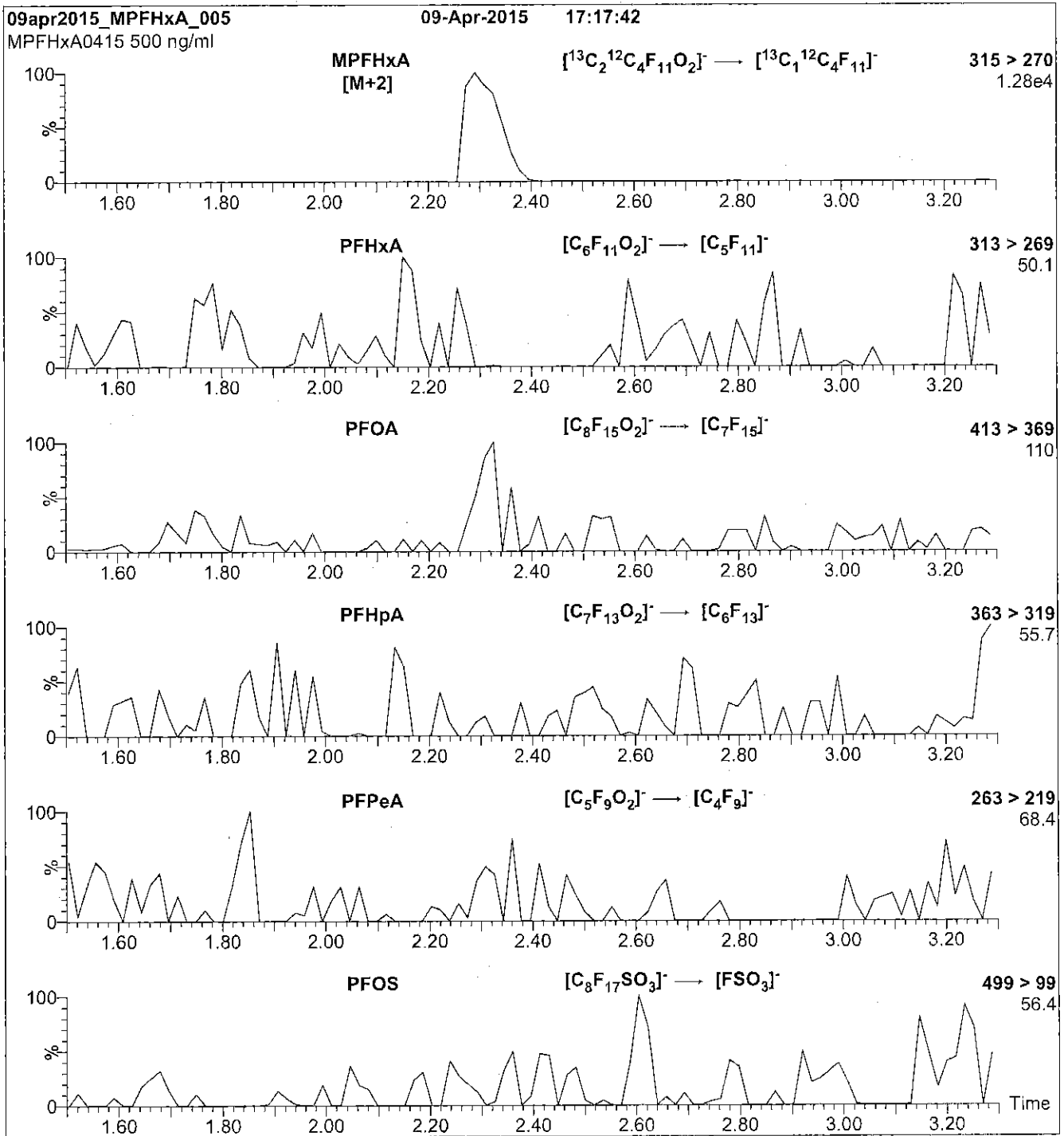
Flow: 300  $\mu$ l/min

**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  $\mu$ l (500 ng/ml MPFHxA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

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

Reagent

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**LCMPFHxA\_00013**

R: SBC 12/21/16



814258

ID: LCMPFHxA\_00013

Exp: 04/08/21 Prod: SBC

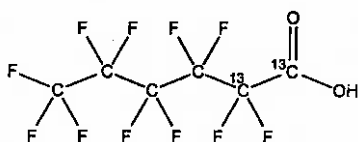
<sup>13</sup>C2-Perfluorohexanoic ac



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** MPFHxA      **LOT NUMBER:** MPFHxA0416  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexanoic acid  
**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>HF<sub>11</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 316.04  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 04/08/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 04/08/2021  
**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 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:**  **Date:** 04/29/2016  
B.G. Chittim (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:

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

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

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  $\pm 5\%$  (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.

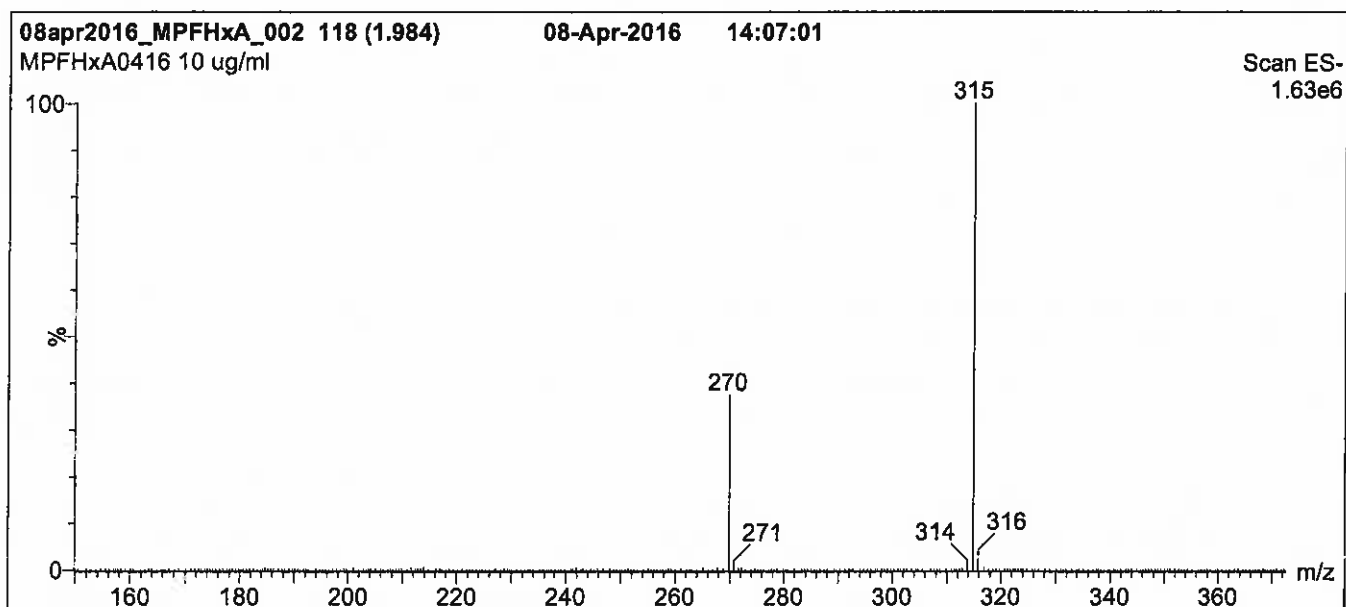
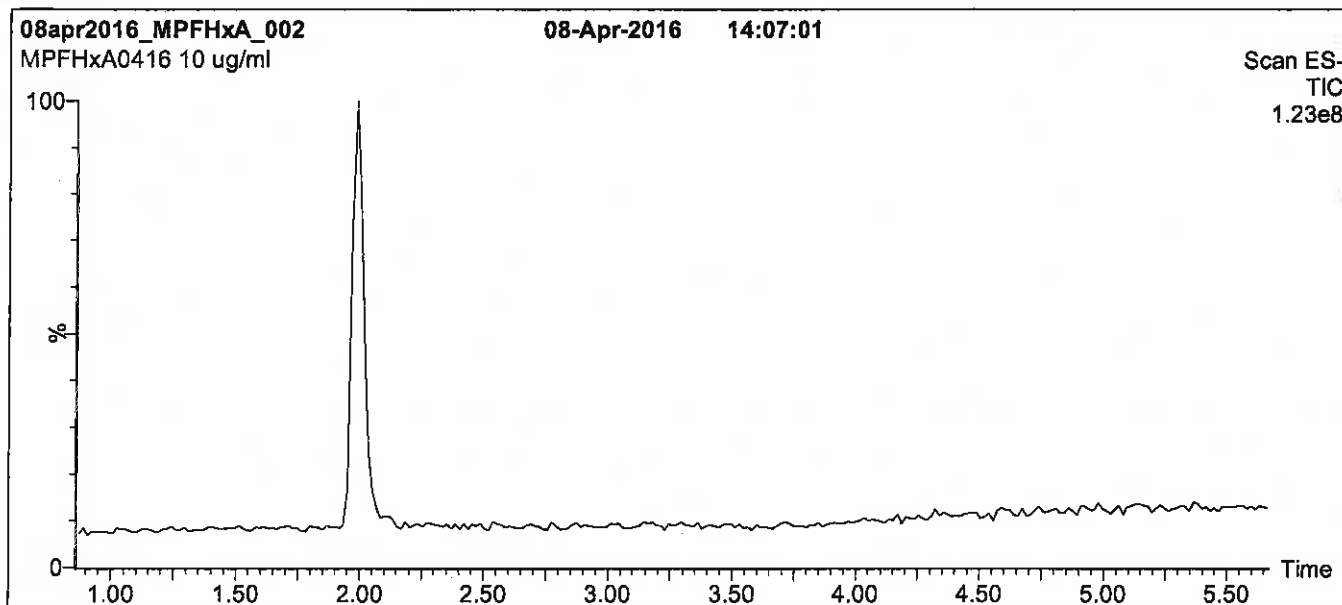
### **QUALITY MANAGEMENT:**

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).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto: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<sub>18</sub>  
 1.7 μm, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions over 0.5 min.  
 Time: 10 min

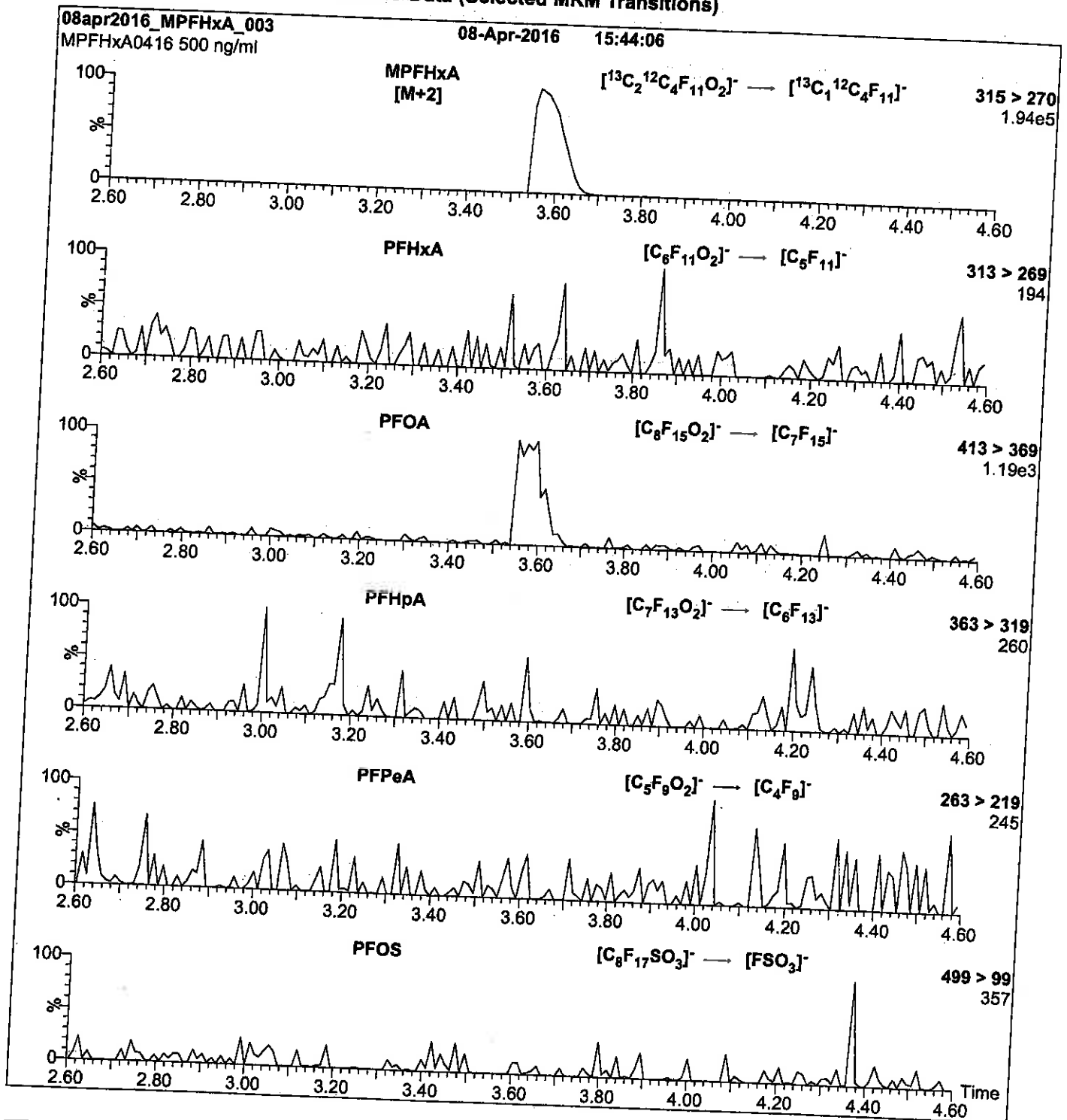
Flow: 300 μl/min

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



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 10

Reagent

---

**LCMPFOS\_00018**



R: SBC 9/22/16



738686  
ID: LCMFOS\_00018  
Exp: 08/03/21 Papi: SBC  
13C4-Perfluorooctanesulfo

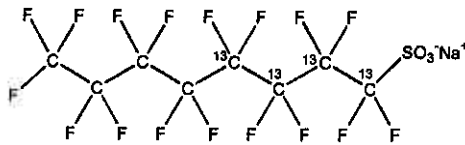


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOS **LOT NUMBER:** MPFOS0816  
**COMPOUND:** Sodium perfluoro-1-[1,2,3,4-<sup>13</sup>C]<sub>4</sub>octanesulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 526.08  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.8 ± 2.4 µg/ml (MPFOS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 08/03/2016 (1,2,3,4-<sup>13</sup>C)  
**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-<sup>13</sup>C]<sub>3</sub>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

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### **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  $x_1, x_2, \dots, x_n$  on which it depends is:

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

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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  $\pm 5\%$  (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.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

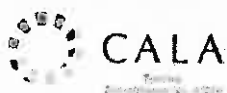
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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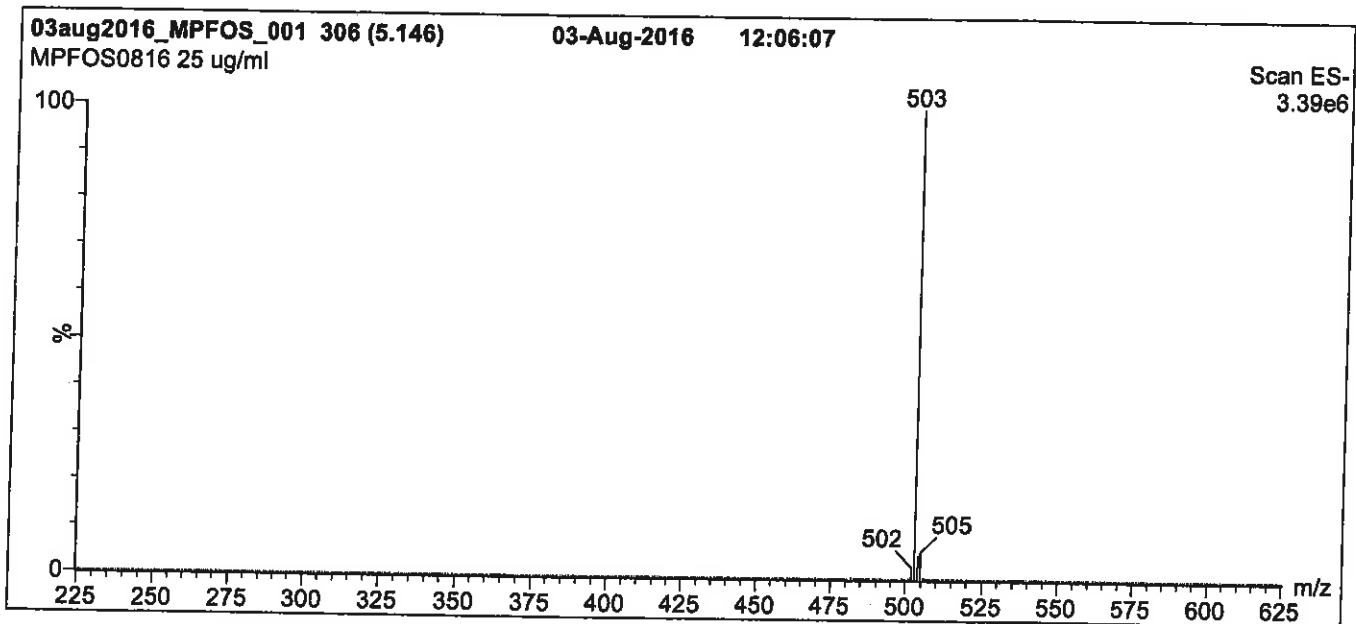
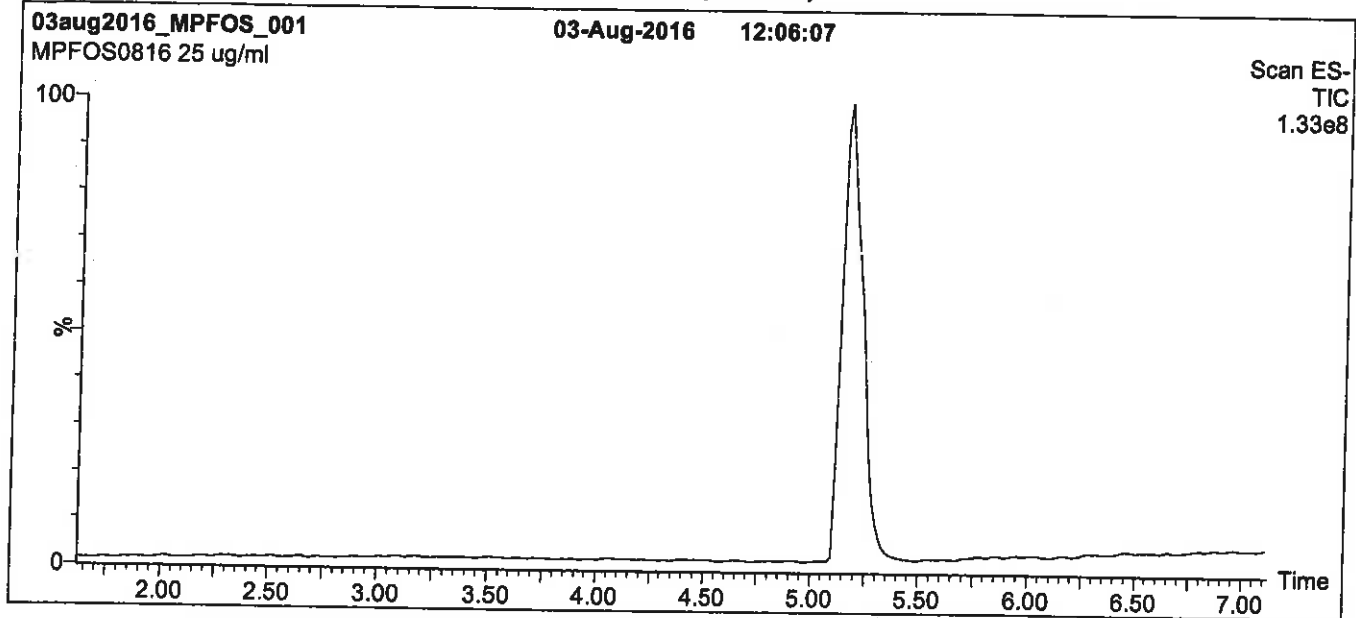
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**Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

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

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

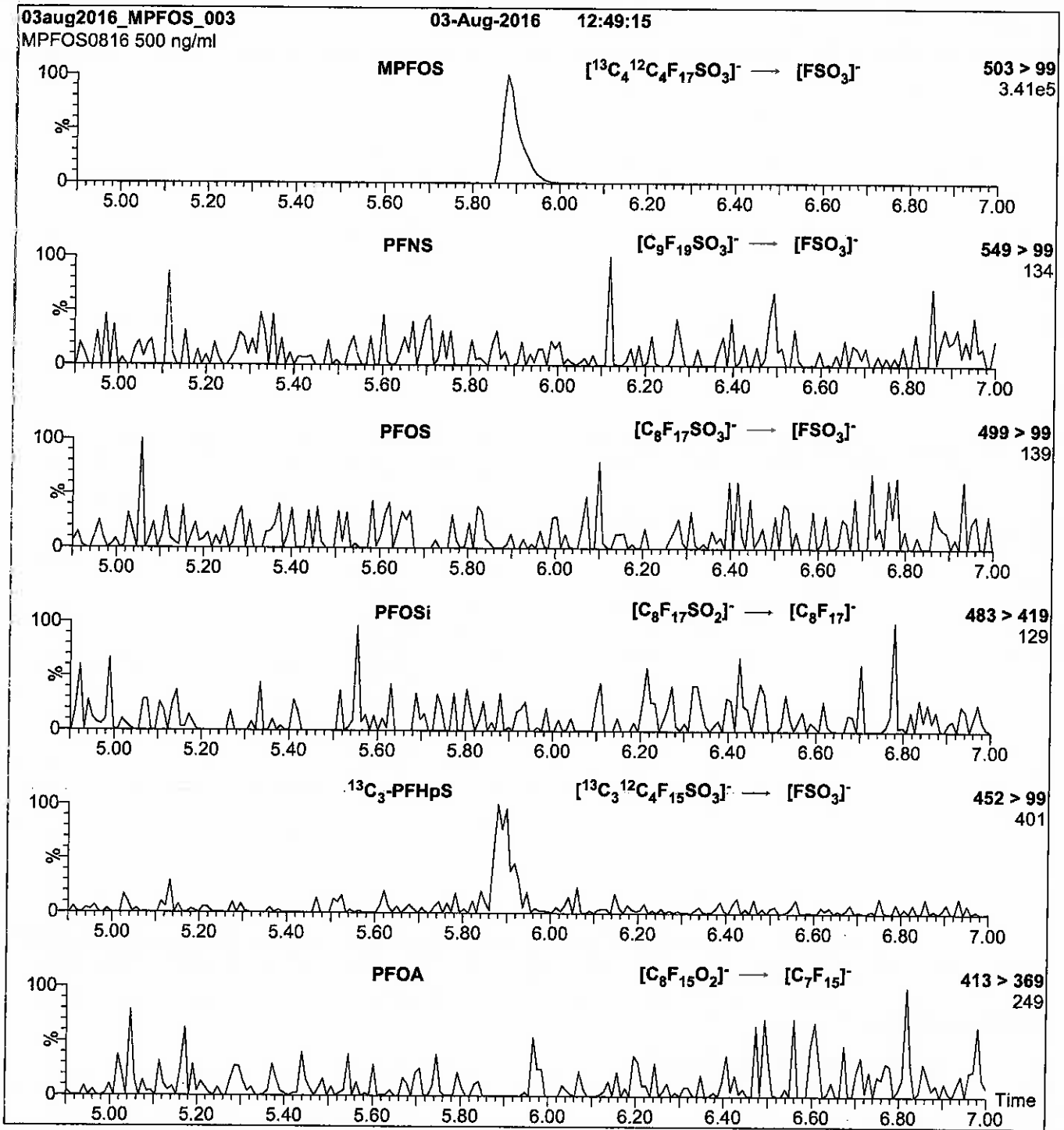
**Flow:** 300  $\mu$ l/min

**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  $\mu\text{l}$  (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

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

# Method 537 DOD

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

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Matrix: Water

Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
WI-AF-1RW32-0217	320-26006-1	66 Q	99
WI-AF-1RW32-0217 DL	320-26006-1 DL	85	93
WI-AF-1FB32-0217	320-26006-2	82	92
WI-AF-1RW33-0217	320-26006-3	83	90
WI-AF-1FB33-0217	320-26006-4	83	89
WI-AF-1RW34-0217	320-26006-5	83	89
WI-AF-1FB34-0217	320-26006-6	92	97
WI-AF-1RW35-0217	320-26006-7	82	92
WI-AF-1FB35-0217	320-26006-8	84	87
WI-AF-1RW36-0217	320-26006-9	84	94
WI-AF-1FB36-0217	320-26006-10	84	90
WI-AF-1RW37-0217	320-26006-11	83	90
WI-AF-1FB37-0217	320-26006-12	82	87
	MB 320-152216/1-A	83	87
	LCS 320-152216/2-A	86	99
	LCSD 320-152216/3-A	87	94

PFHxA = 13C2 PFHxA  
PFDA = 13C2 PFDA

QC LIMITS  
70-130  
70-130

# Column to be used to flag recovery values

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 2017.02.27C\_537\_003.d  
 Lab ID: LCS 320-152216/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.160	0.133	83	70-130	M
Perfluorooctanoic acid (PFOA)	0.0781	0.0640	82	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.359	0.297	83	70-130	

# Column to be used to flag recovery and RPD values

FORM III  
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Matrix: Water Level: Low Lab File ID: 2017.02.27C\_537\_004.d

Lab ID: LCSD 320-152216/3-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	0.160	0.138	86	4	30	70-130	M
Perfluorooctanoic acid (PFOA)	0.0781	0.0657	84	3	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.359	0.304	85	2	30	70-130	

# Column to be used to flag recovery and RPD values



FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: 2017.02.27C\_537\_002.d Lab Sample ID: MB 320-152216/1-A  
 Matrix: Water Date Extracted: 02/25/2017 13:09  
 Instrument ID: A8\_N Date Analyzed: 02/27/2017 15:01  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-152216/2-A	2017.02.27C 537 003.d	02/27/2017 15:05
	LCSD 320-152216/3-A	2017.02.27C 537 004.d	02/27/2017 15:10
WI-AF-1RW32-0217	320-26006-1	2017.02.27C 537 009.d	02/27/2017 15:32
WI-AF-1FB32-0217	320-26006-2	2017.02.27C 537 010.d	02/27/2017 15:36
WI-AF-1RW33-0217	320-26006-3	2017.02.27C 537 011.d	02/27/2017 15:40
WI-AF-1FB33-0217	320-26006-4	2017.02.27C 537 013.d	02/27/2017 15:49
WI-AF-1RW34-0217	320-26006-5	2017.02.27C 537 014.d	02/27/2017 15:54
WI-AF-1FB34-0217	320-26006-6	2017.02.27C 537 015.d	02/27/2017 15:58
WI-AF-1RW35-0217	320-26006-7	2017.02.27C 537 016.d	02/27/2017 16:02
WI-AF-1FB35-0217	320-26006-8	2017.02.27C 537 017.d	02/27/2017 16:07
WI-AF-1RW36-0217	320-26006-9	2017.02.27C 537 018.d	02/27/2017 16:11
WI-AF-1FB36-0217	320-26006-10	2017.02.27C 537 019.d	02/27/2017 16:16
WI-AF-1RW37-0217	320-26006-11	2017.02.27C 537 020.d	02/27/2017 16:20
WI-AF-1FB37-0217	320-26006-12	2017.02.27C 537 021.d	02/27/2017 16:25
WI-AF-1RW32-0217 DL	320-26006-1 DL	2017.02.27C 537 023.d	02/27/2017 16:34

FORM VIII  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N Calibration Start Date: 01/26/2017 11:03  
 GC Column: Acquity ID: 2.1(mm) Calibration End Date: 01/26/2017 11:25  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
INITIAL CALIBRATION MEAN AREA AND MEAN RT	2538555	1.98	6895045	2.22		
UPPER LIMIT	3807833	2.48	10342568	2.72		
LOWER LIMIT	1269278	1.48	3447523	1.72		
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVL 320-147939/11	2492054	1.98	6749200	2.22		
ICV 320-147939/13	2273215	1.97	6260544	2.22		
CCV 320-152402/1 CCVIS	2570921	2.00	7074074	2.25		
MB 320-152216/1-A	2526974	2.00	6466896	2.25		
LCS 320-152216/2-A	2502649	2.00	6611227	2.25		
LCSD 320-152216/3-A	2443672	2.00	6409341	2.25		
320-26006-1	WI-AF-1RW32-0217	2324446	2.01	3585503	2.25	
320-26006-2	WI-AF-1FB32-0217	2636503	2.01	6620587	2.25	
320-26006-3	WI-AF-1RW33-0217	2471949	2.02	6771054	2.25	
CCV 320-152402/12 CCVIS		2374228	2.00	6446954	2.25	
CCV 320-152403/12 CCVIS		2374228	2.00	6446954	2.25	
320-26006-4	WI-AF-1FB33-0217	2524324	2.00	6503288	2.25	
320-26006-5	WI-AF-1RW34-0217	2505696	2.00	6505454	2.25	
320-26006-6	WI-AF-1FB34-0217	2413525	2.00	6557107	2.25	
320-26006-7	WI-AF-1RW35-0217	2556784	2.01	6681017	2.25	
320-26006-8	WI-AF-1FB35-0217	2553290	2.01	6518191	2.25	
320-26006-9	WI-AF-1RW36-0217	2466187	2.00	6537723	2.25	
320-26006-10	WI-AF-1FB36-0217	2487928	2.01	6458561	2.25	
320-26006-11	WI-AF-1RW37-0217	2450096	2.00	6440089	2.25	
320-26006-12	WI-AF-1FB37-0217	2627706	2.00	6818478	2.24	
CCV 320-152403/22 CCVIS		2632377	2.00	7359216	2.24	
CCV 320-152411/22 CCVIS		2632377	2.00	7359216	2.24	
320-26006-1 DL	WI-AF-1RW32-0217 DL	2321566	2.00	5752531	2.25	
CCV 320-152411/24 CCVIS		2338893	2.00	6325059	2.25	

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  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Sample No.: CCV 320-152402/1 Date Analyzed: 02/27/2017 14:56  
 Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
 Lab File ID (Standard): 2017.02.27C\_537\_001 Heated Purge: (Y/N) N  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2570921	2.00	7074074	2.25		
UPPER LIMIT	3599289	2.50	9903704	2.75		
LOWER LIMIT	1799645	1.50	4951852	1.75		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-152216/1-A		2526974	2.00	6466896	2.25	
LCS 320-152216/2-A		2502649	2.00	6611227	2.25	
LCSD 320-152216/3-A		2443672	2.00	6409341	2.25	
320-26006-1	WI-AF-1RW32-0217	2324446	2.01	3585503	2.25	
320-26006-2	WI-AF-1FB32-0217	2636503	2.01	6620587	2.25	
320-26006-3	WI-AF-1RW33-0217	2471949	2.02	6771054	2.25	

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  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Sample No.: CCV 320-152402/12 Date Analyzed: 02/27/2017 15:45  
 Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
 Lab File ID (Standard): 2017.02.27C\_537\_012 Heated Purge: (Y/N) N  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2374228	2.00	6446954	2.25		
UPPER LIMIT	3323919	2.50	9025736	2.75		
LOWER LIMIT	1661960	1.50	4512868	1.75		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-152216/1-A		2526974	2.00	6466896	2.25	
LCS 320-152216/2-A		2502649	2.00	6611227	2.25	
LCSD 320-152216/3-A		2443672	2.00	6409341	2.25	
320-26006-1	WI-AF-1RW32-0217	2324446	2.01	3585503	2.25	
320-26006-2	WI-AF-1FB32-0217	2636503	2.01	6620587	2.25	
320-26006-3	WI-AF-1RW33-0217	2471949	2.02	6771054	2.25	

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  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Sample No.: CCV 320-152403/12 Date Analyzed: 02/27/2017 15:45  
 Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
 Lab File ID (Standard): 2017.02.27C\_537\_012 Heated Purge: (Y/N) N  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2374228	2.00	6446954	2.25		
UPPER LIMIT	3323919	2.50	9025736	2.75		
LOWER LIMIT	1661960	1.50	4512868	1.75		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-26006-4	WI-AF-1FB33-0217	2524324	2.00	6503288	2.25	
320-26006-5	WI-AF-1RW34-0217	2505696	2.00	6505454	2.25	
320-26006-6	WI-AF-1FB34-0217	2413525	2.00	6557107	2.25	
320-26006-7	WI-AF-1RW35-0217	2556784	2.01	6681017	2.25	
320-26006-8	WI-AF-1FB35-0217	2553290	2.01	6518191	2.25	
320-26006-9	WI-AF-1RW36-0217	2466187	2.00	6537723	2.25	
320-26006-10	WI-AF-1FB36-0217	2487928	2.01	6458561	2.25	
320-26006-11	WI-AF-1RW37-0217	2450096	2.00	6440089	2.25	
320-26006-12	WI-AF-1FB37-0217	2627706	2.00	6818478	2.24	

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  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Sample No.: CCV 320-152403/22 Date Analyzed: 02/27/2017 16:29  
 Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
 Lab File ID (Standard): 2017.02.27C\_537\_022 Heated Purge: (Y/N) N  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2632377	2.00	7359216	2.24		
UPPER LIMIT	3685328	2.50	10302902	2.74		
LOWER LIMIT	1842664	1.50	5151451	1.74		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-26006-4	WI-AF-1FB33-0217	2524324	2.00	6503288	2.25	
320-26006-5	WI-AF-1RW34-0217	2505696	2.00	6505454	2.25	
320-26006-6	WI-AF-1FB34-0217	2413525	2.00	6557107	2.25	
320-26006-7	WI-AF-1RW35-0217	2556784	2.01	6681017	2.25	
320-26006-8	WI-AF-1FB35-0217	2553290	2.01	6518191	2.25	
320-26006-9	WI-AF-1RW36-0217	2466187	2.00	6537723	2.25	
320-26006-10	WI-AF-1FB36-0217	2487928	2.01	6458561	2.25	
320-26006-11	WI-AF-1RW37-0217	2450096	2.00	6440089	2.25	
320-26006-12	WI-AF-1FB37-0217	2627706	2.00	6818478	2.24	

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  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Sample No.: CCV 320-152411/22 Date Analyzed: 02/27/2017 16:29  
 Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
 Lab File ID (Standard): 2017.02.27C\_537\_022 Heated Purge: (Y/N) N  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2632377	2.00	7359216	2.24		
UPPER LIMIT	3685328	2.50	10302902	2.74		
LOWER LIMIT	1842664	1.50	5151451	1.74		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-26006-1 DL	WI-AF-1RW32-0217 DL		2321566	2.00	5752531	2.25

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  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Sample No.: CCV 320-152411/24 Date Analyzed: 02/27/2017 16:38  
 Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
 Lab File ID (Standard): 2017.02.27C\_537\_024 Heated Purge: (Y/N) N  
 Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2338893	2.00	6325059	2.25		
UPPER LIMIT	3274450	2.50	8855083	2.75		
LOWER LIMIT	1637225	1.50	4427541	1.75		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-26006-1 DL	WI-AF-1RW32-0217 DL		2321566	2.00	5752531	2.25

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 I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW32-0217 Lab Sample ID: 320-26006-1  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_009.d  
 Analysis Method: 537 Date Collected: 02/21/2017 11:55  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 261.8 (mL) Date Analyzed: 02/27/2017 15:32  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	J	0.029	0.023	0.0090
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.13		0.13	0.11	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	66	Q	70-130
STL00996	13C2 PFDA	99		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_009.d  
 Lims ID: 320-26006-A-1-A  
 Client ID: WI-AF-1RW32-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:32:09 ALS Bottle#: 8 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:12:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.517	1.510	0.007	1.000	7316826	32.8		569	
298.90 > 99.00	1.517	1.510	0.007	1.000	3082845		2.37(0.00-0.00)	653	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.646	1.638	0.008	1.000	1663989	6.63		4077	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.806	1.787	0.019	1.000	37180931	176.6		1723	E
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.806	1.788	0.018	1.000	383095	1.71		11.3	
* 6 13C2-PFOA									
415.00 > 370.00	2.011	1.979	0.032		2324446	10.0		5219	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.011	1.980	0.031	1.000	1280915	5.96		45.1	
413.00 > 169.00	2.011	1.980	0.031	1.000	781770		1.64(0.00-0.00)	422	
* 7 13C4 PFOS									
503.00 > 80.00	2.253	2.220	0.033		3585503	28.7		1404	S
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	101052751	724.0		2025	EM
499.00 > 99.00	2.253	2.246	0.007	1.000	30778331		3.28(0.00-0.00)	3303	EM
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	1492883	9.95		4544	

## QC Flag Legend

### Processing Flags

E - Exceeded Maximum Amount

s - Failed ISTD Recovery Test

### Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_009.d

Injection Date: 27-Feb-2017 15:32:09

Instrument ID: A8\_N

Lims ID: 320-26006-A-1-A

Lab Sample ID: 320-26006-1

Client ID: WI-AF-1RW32-0217

Operator ID: A8-PC\A8

ALS Bottle#: 8

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

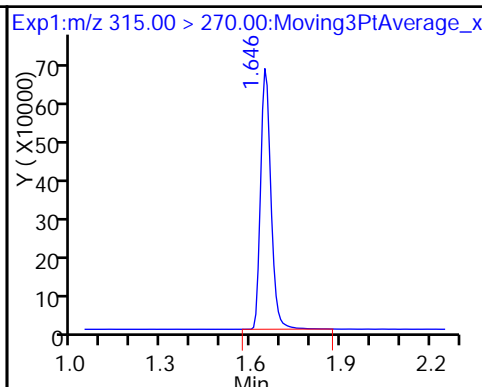
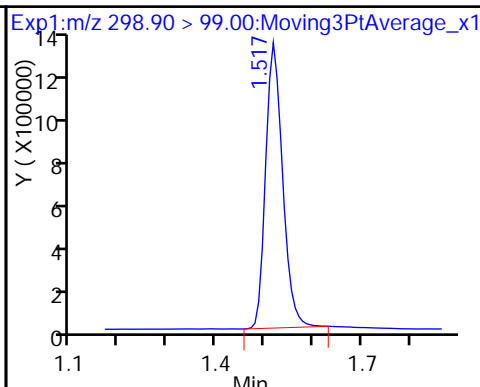
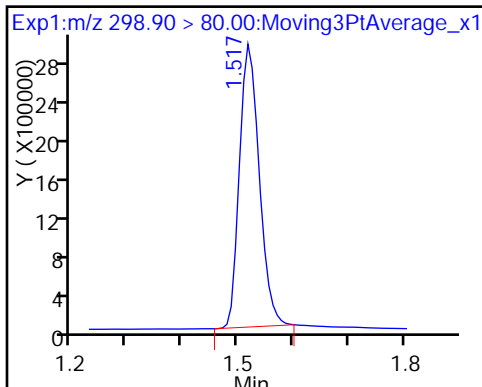
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

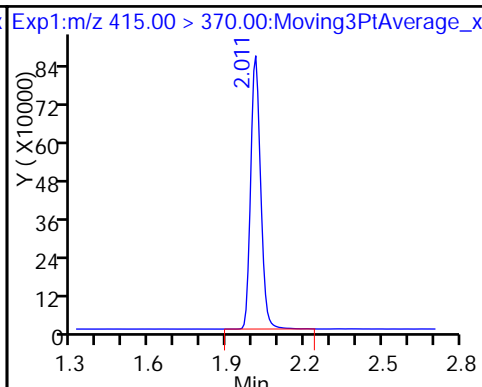
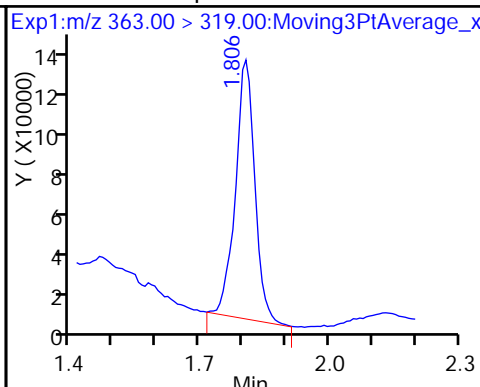
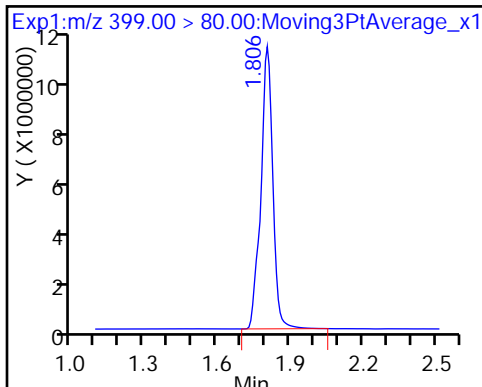
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

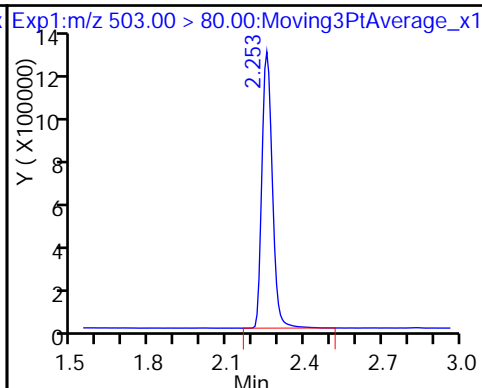
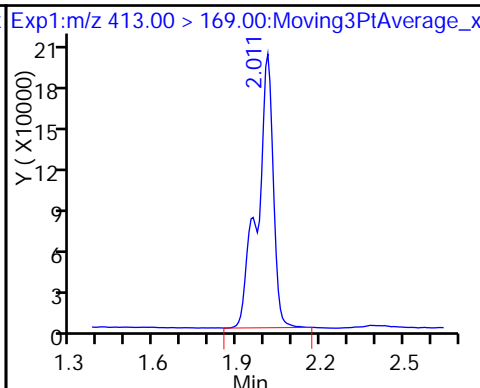
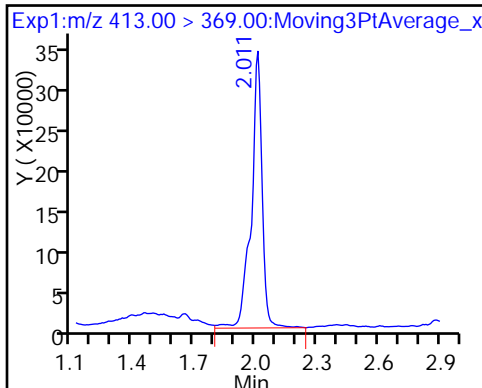
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

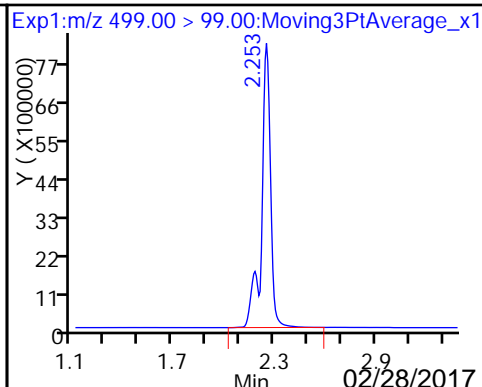
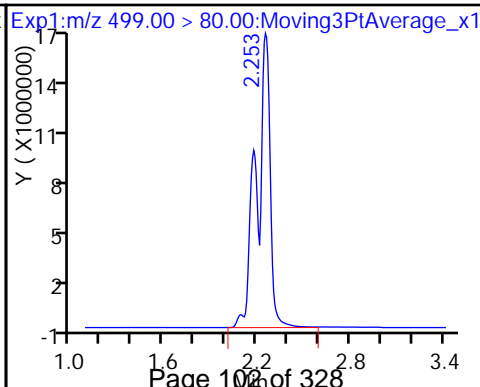
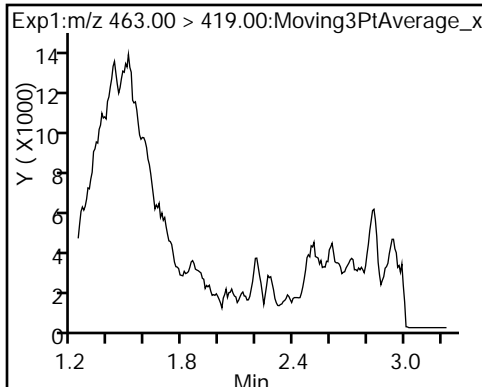
\* 7 13C4 PFOS



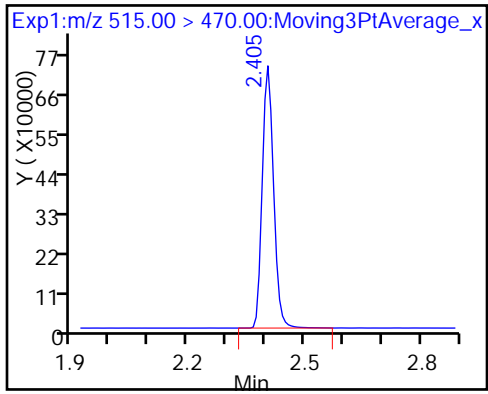
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_009.d  
 Lims ID: 320-26006-A-1-A  
 Client ID: WI-AF-1RW32-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:32:09 ALS Bottle#: 8 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:12:33

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	6.63	66.33
\$ 10 13C2 PFDA	10.0	9.95	99.48

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW32-0217 DL Lab Sample ID: 320-26006-1 DL  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_023.d  
 Analysis Method: 537 Date Collected: 02/21/2017 11:55  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 261.8 (mL) Date Analyzed: 02/27/2017 16:34  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 20  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152411 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.8	D M	1.1	0.92	0.30

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	85		70-130
STL00996	13C2 PFDA	93		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_023.d  
 Lims ID: 320-26006-A-1-A  
 Client ID: WI-AF-1RW32-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:34:07 ALS Bottle#: 20 Worklist Smp#: 23  
 Injection Vol: 2.0 ul Dil. Factor: 20.0000  
 Sample Info: 320-26006-a-1-a 20X  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 17:06:49 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:53:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	435512	1.14		59.1	
298.90 > 99.00	1.510	1.510	0.0	1.000	186970		2.33(0.00-0.00)	59.0	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	106775	0.4262		818	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.798	1.787	0.011	1.000	2688661	7.96		616	
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2321566	10.0		5333	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	69837	0.3253		6.1	
413.00 > 169.00	2.003	1.980	0.023	1.000	42964		1.63(0.00-0.00)	38.0	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		5752531	28.7		7446	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.246	2.246	0.0	1.000	11055745	49.4		3178	M
499.00 > 99.00	2.246	2.246	0.0	1.000	2599050		4.25(0.00-0.00)	1931	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	69821	0.4658		152	

QC Flag Legend

Review Flags

M - Manually Integrated



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_023.d

Injection Date: 27-Feb-2017 16:34:07

Instrument ID: A8\_N

Lims ID: 320-26006-A-1-A

Lab Sample ID: 320-26006-1

Client ID: WI-AF-1RW32-0217

Operator ID: A8-PC\A8

ALS Bottle#: 20

Worklist Smp#: 23

Injection Vol: 2.0 ul

Dil. Factor: 20.0000

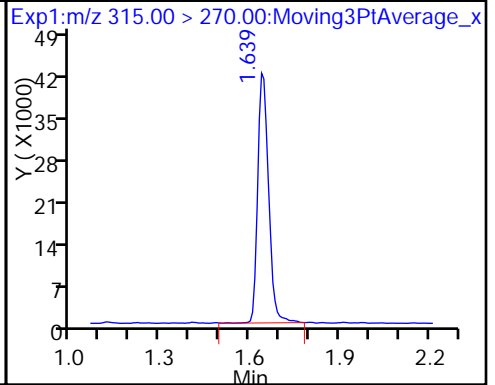
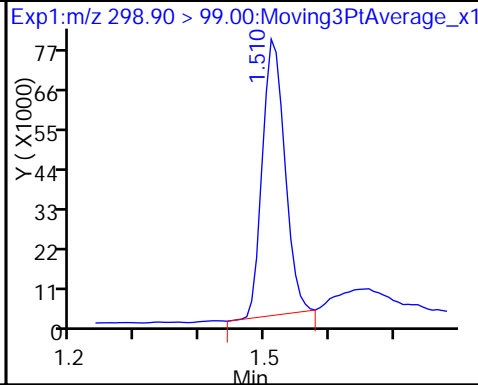
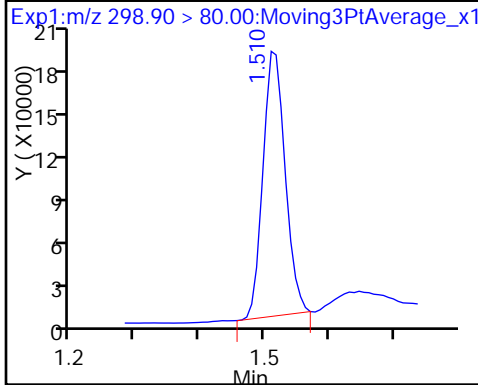
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

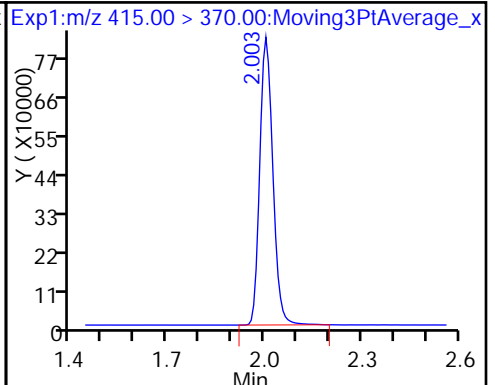
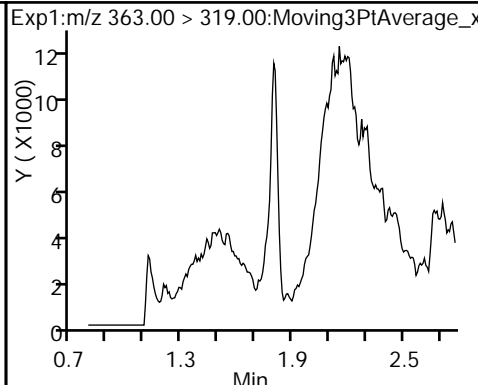
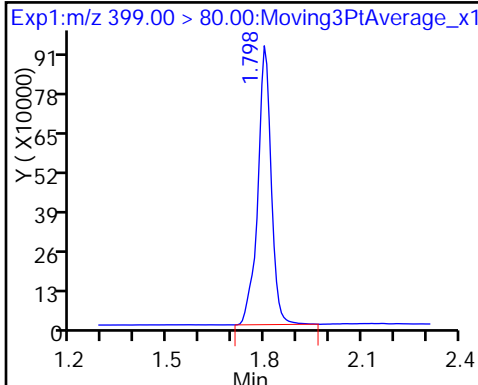
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid (ND)

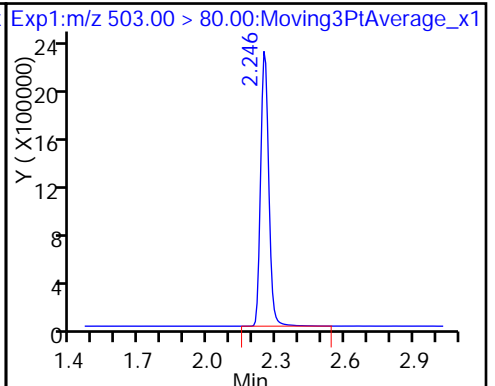
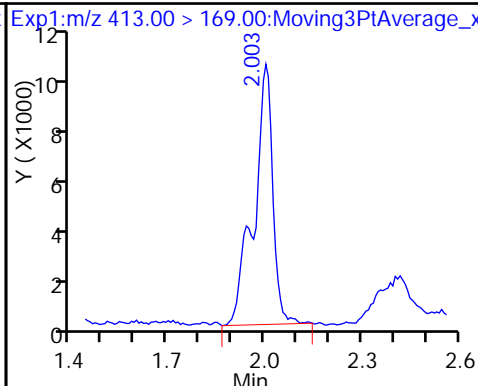
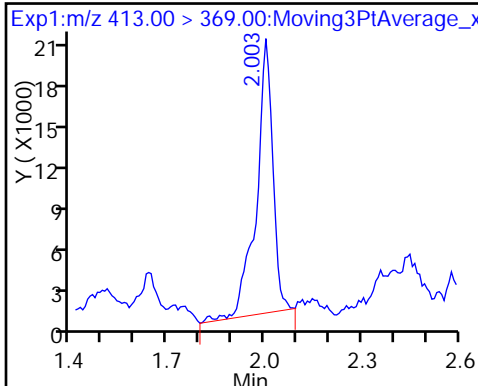
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

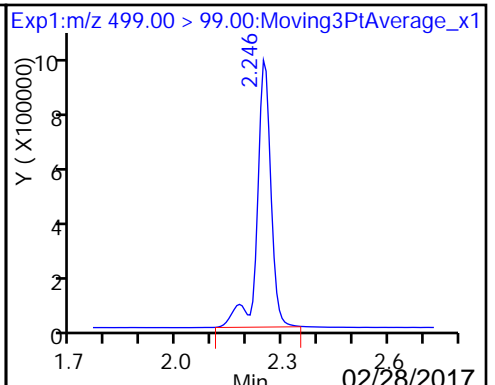
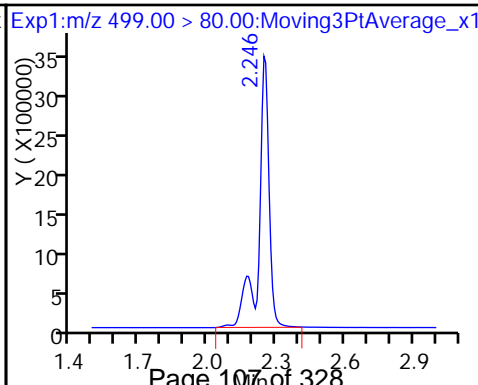
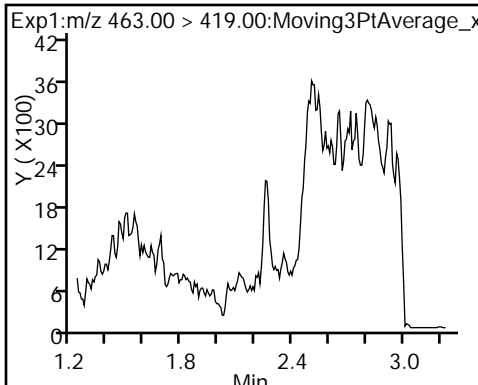
\* 7 13C4 PFOS



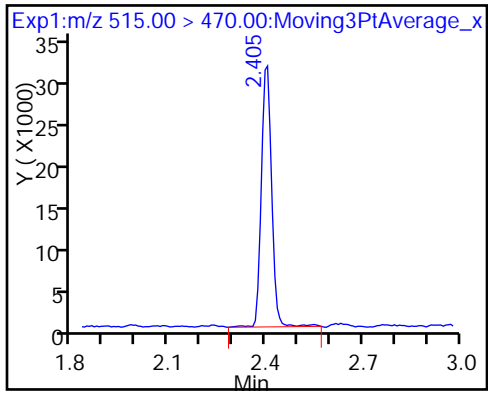
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_023.d  
 Lims ID: 320-26006-A-1-A  
 Client ID: WI-AF-1RW32-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:34:07 ALS Bottle#: 20 Worklist Smp#: 23  
 Injection Vol: 2.0 ul Dil. Factor: 20.0000  
 Sample Info: 320-26006-a-1-a 20X  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 17:06:49 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:53:24

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	0.4262	85.24
\$ 10 13C2 PFDA	10.0	0.4658	93.17

TestAmerica Sacramento

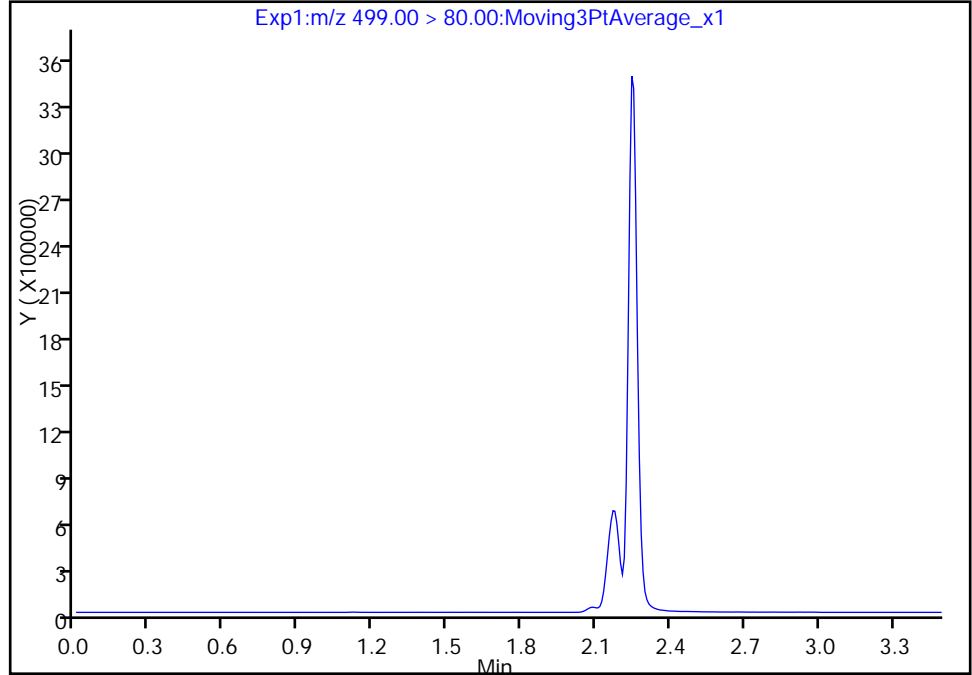
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Injection Date: 27-Feb-2017 16:34:07 Instrument ID: A8\_N  
Lims ID: 320-26006-A-1-A Lab Sample ID: 320-26006-1  
Client ID: WI-AF-1RW32-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 20 Worklist Smp#: 23  
Injection Vol: 2.0 ul Dil. Factor: 20.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

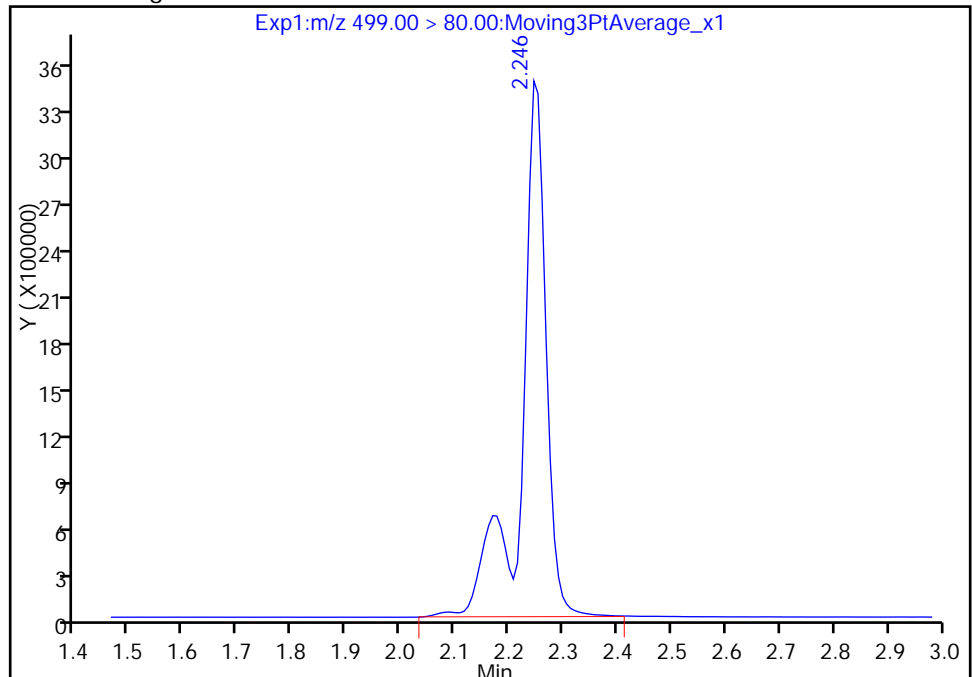
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 11055745  
Amount: 49.371718  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 17:07:06  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

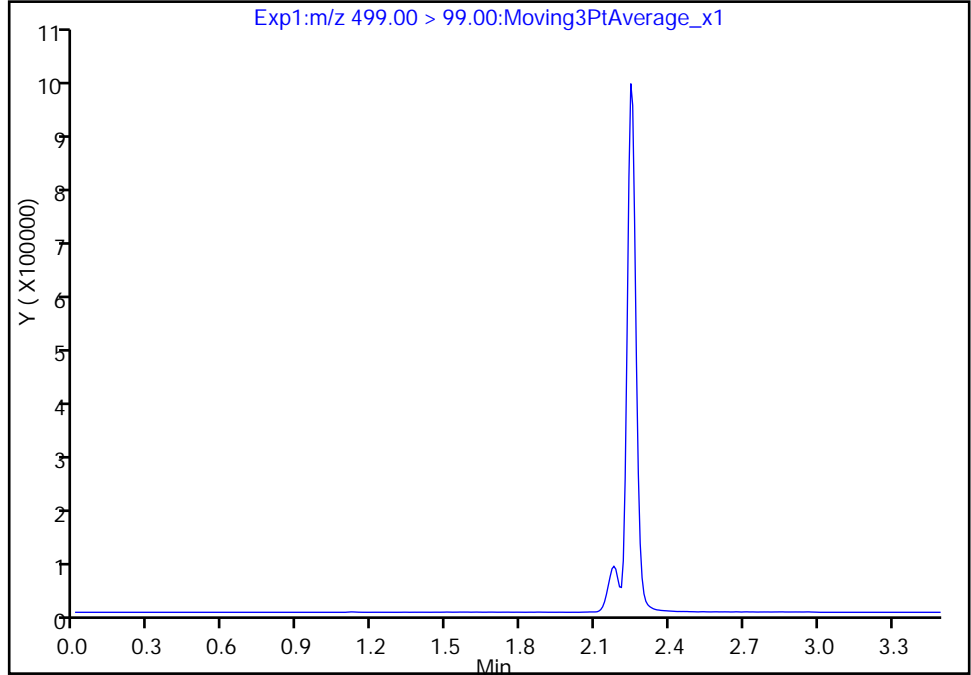
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Injection Date: 27-Feb-2017 16:34:07 Instrument ID: A8\_N  
Lims ID: 320-26006-A-1-A Lab Sample ID: 320-26006-1  
Client ID: WI-AF-1RW32-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 20 Worklist Smp#: 23  
Injection Vol: 2.0 ul Dil. Factor: 20.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

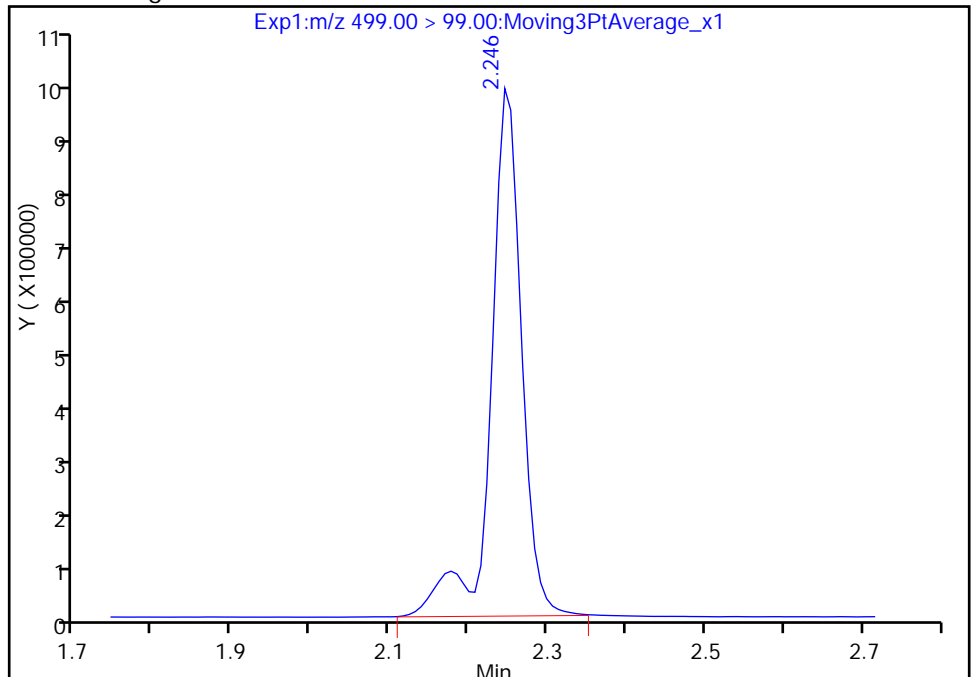
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 2599050  
Amount: 49.371718  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 17:07:06

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

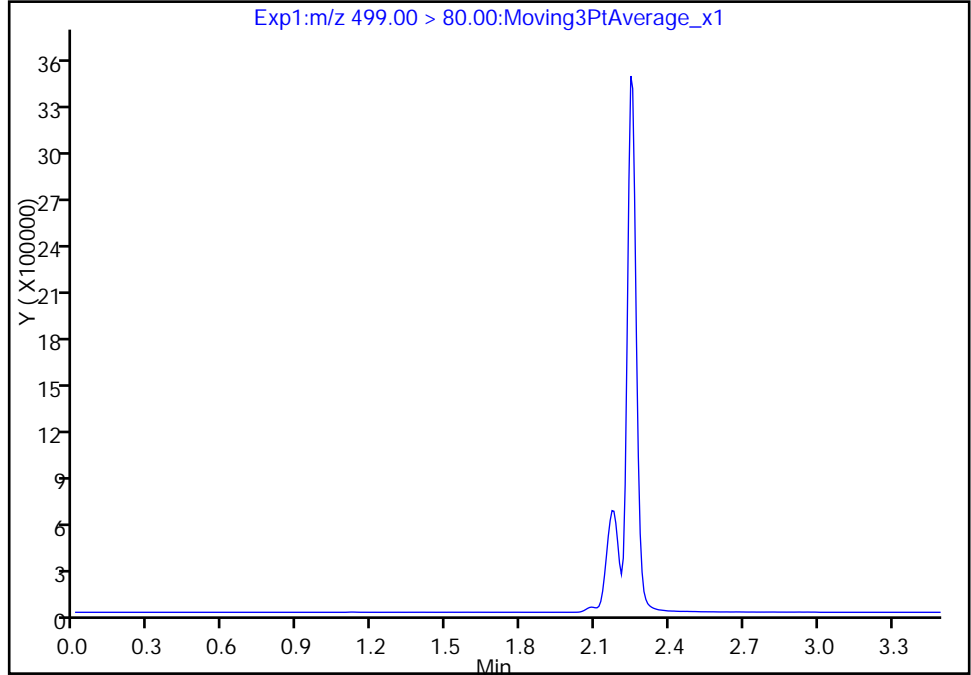
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Injection Date: 27-Feb-2017 16:34:07 Instrument ID: A8\_N  
Lims ID: 320-26006-A-1-A Lab Sample ID: 320-26006-1  
Client ID: WI-AF-1RW32-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 20 Worklist Smp#: 23  
Injection Vol: 2.0 ul Dil. Factor: 20.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

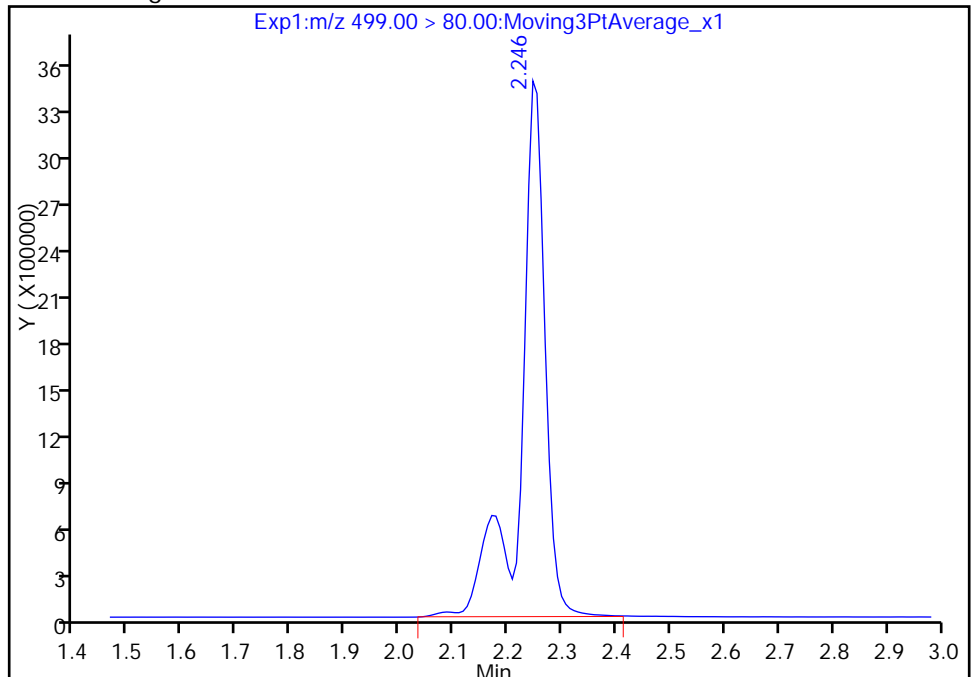
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 11055745  
Amount: 49.371718  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 17:07:06

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB32-0217 Lab Sample ID: 320-26006-2  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_010.d  
 Analysis Method: 537 Date Collected: 02/21/2017 11:56  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 277.5 (mL) Date Analyzed: 02/27/2017 15:36  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	92		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_010.d  
 Lims ID: 320-26006-A-2-A  
 Client ID: WI-AF-1FB32-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:36:33 ALS Bottle#: 9 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:14:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.646	1.638	0.008	1.000	2346941	8.25	5680	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.806	1.787	0.019	1.000	19554	0.0503		5.2	M
* 6 13C2-PFOA	415.00 > 370.00	2.011	1.979	0.032		2636503	10.0	5678	
* 7 13C4 PFOS	503.00 > 80.00	2.253	2.220	0.033		6620587	28.7	6837	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	94973	0.3685		19.5	
499.00 > 99.00	2.253	2.246	0.007	1.000	24880		3.82(0.00-0.00)	18.9	
\$ 10 13C2 PFDA	515.00 > 470.00	2.405	2.384	0.021	1.000	1571136	9.23	3775	

QC Flag Legend

Review Flags

M - Manually Integrated



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_010.d

Injection Date: 27-Feb-2017 15:36:33

Instrument ID: A8\_N

Lims ID: 320-26006-A-2-A

Lab Sample ID: 320-26006-2

Client ID: WI-AF-1FB32-0217

Operator ID: A8-PC\A8

ALS Bottle#: 9

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

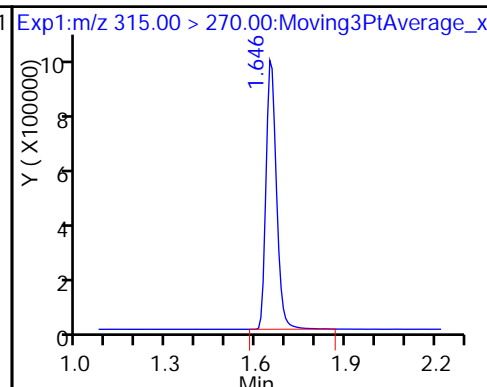
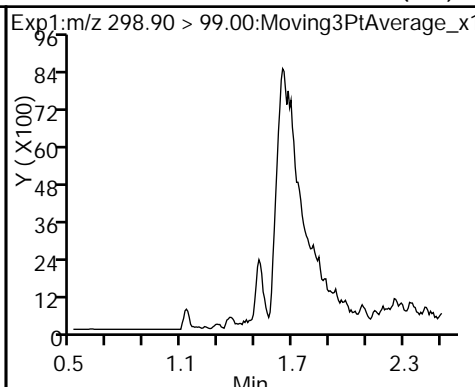
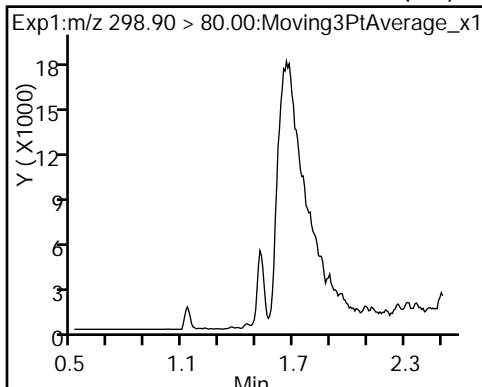
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

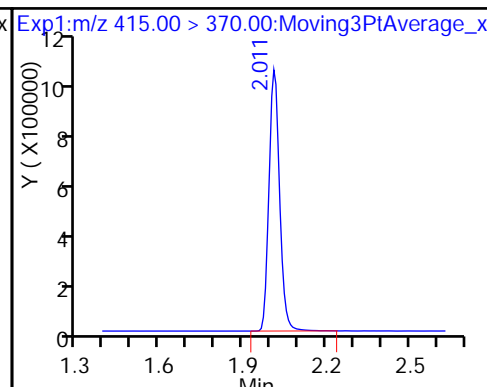
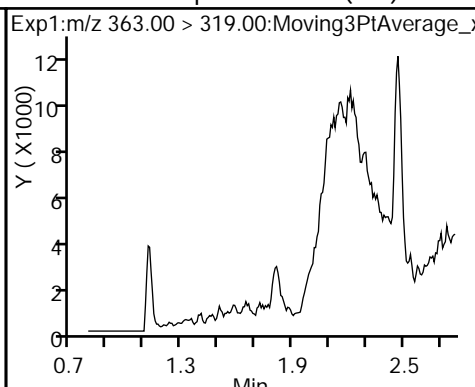
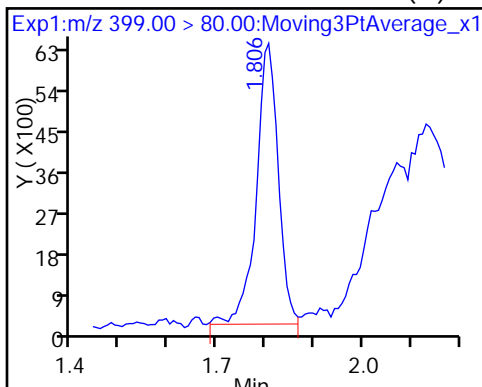
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (M)

4 Perfluoroheptanoic acid (ND)

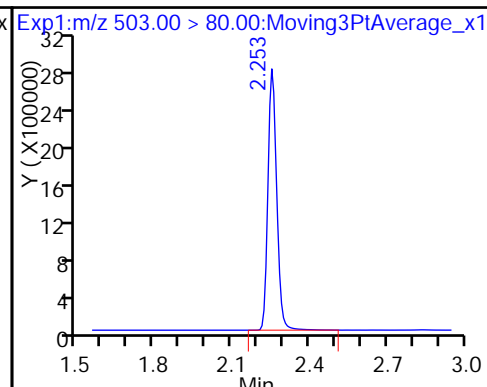
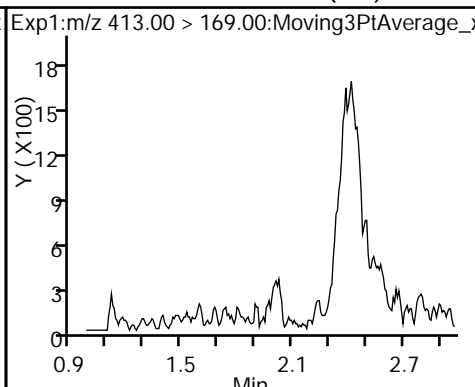
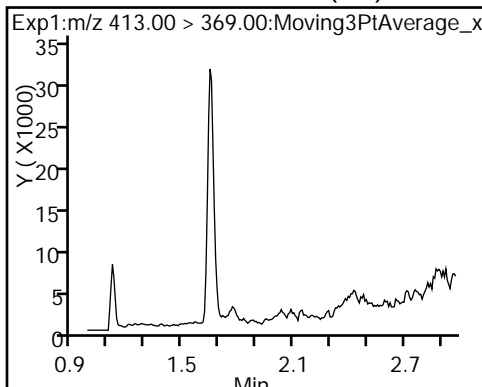
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

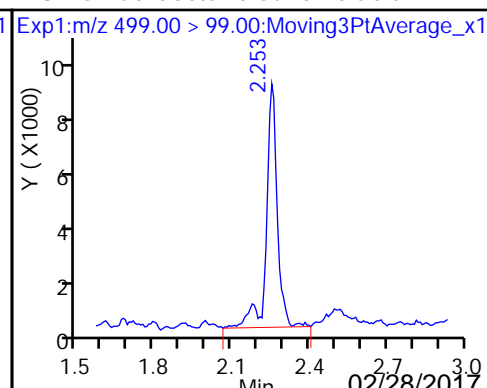
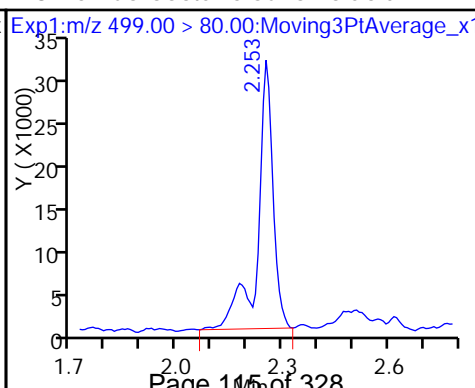
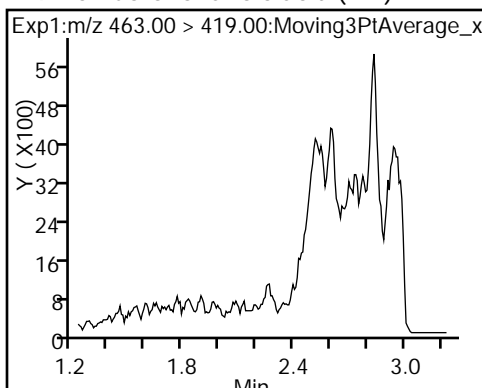
\* 7 13C4 PFOS



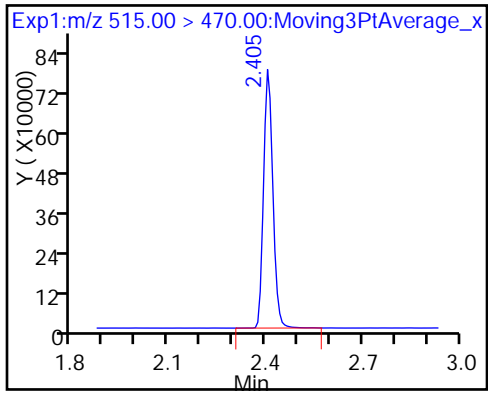
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_010.d  
 Lims ID: 320-26006-A-2-A  
 Client ID: WI-AF-1FB32-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:36:33 ALS Bottle#: 9 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:14:24

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.25	82.49
\$ 10 13C2 PFDA	10.0	9.23	92.30

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW33-0217 Lab Sample ID: 320-26006-3  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_011.d  
 Analysis Method: 537 Date Collected: 02/21/2017 16:27  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 275.7(mL) Date Analyzed: 02/27/2017 15:40  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.054	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.045	J	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	90		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_011.d  
 Lims ID: 320-26006-A-3-A  
 Client ID: WI-AF-1RW33-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:40:57 ALS Bottle#: 10 Worklist Smp#: 11  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-3-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:14:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.525	1.510	0.015	1.000	5438622	12.4		644	
298.90 > 99.00	1.525	1.510	0.015	1.000	2326715		2.34(0.00-0.00)	653	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.654	1.638	0.016	1.000	2216314	8.31		5201	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.775	1.787	-0.012	1.000	157132	0.3953		27.0	
* 6 13C2-PFOA									
415.00 > 370.00	2.018	1.979	0.039		2471949	10.0		4700	
* 7 13C4 PFOS									
503.00 > 80.00	2.253	2.220	0.033		6771054	28.7		5583	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	21747	0.0825		7.7	M
499.00 > 99.00	2.253	2.246	0.007	1.000	4532		4.80(0.00-0.00)	3.9	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	1435117	8.99		3474	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_011.d

Injection Date: 27-Feb-2017 15:40:57

Instrument ID: A8\_N

Lims ID: 320-26006-A-3-A

Lab Sample ID: 320-26006-3

Client ID: WI-AF-1RW33-0217

Operator ID: A8-PC\A8

ALS Bottle#: 10

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

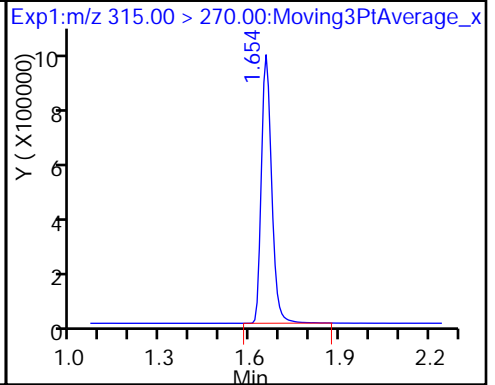
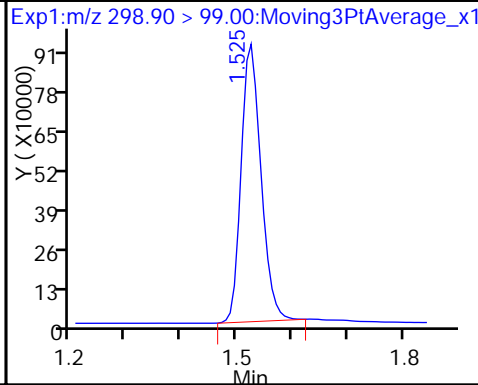
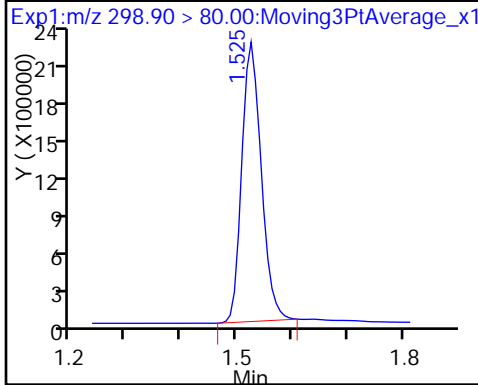
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

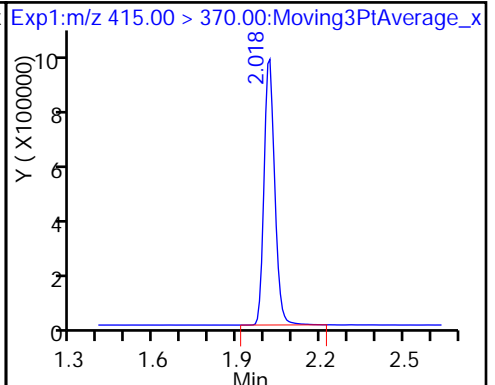
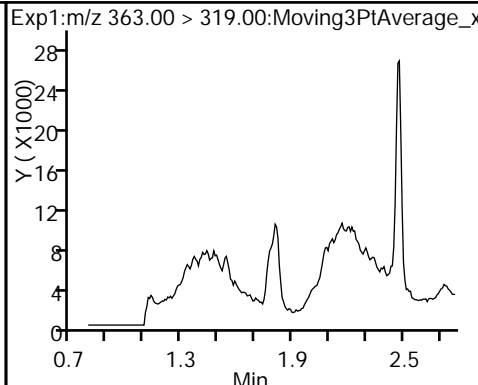
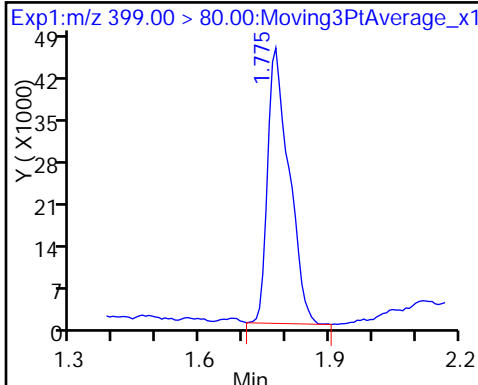
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid (ND)

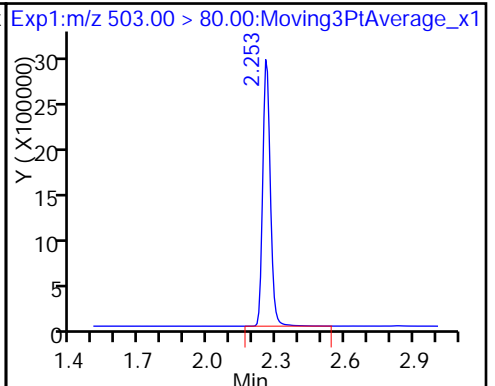
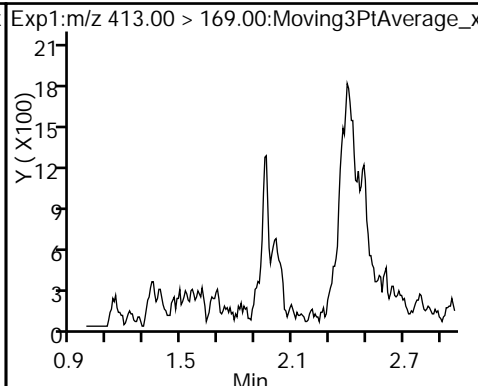
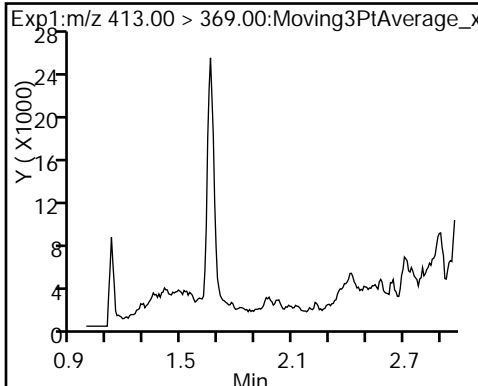
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

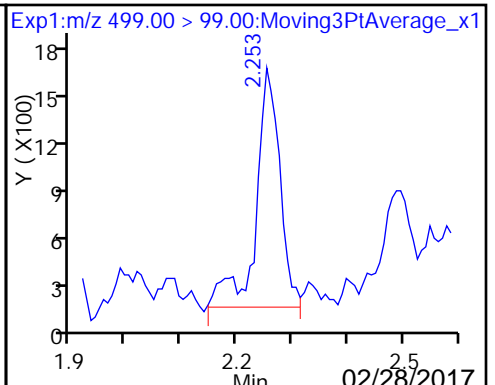
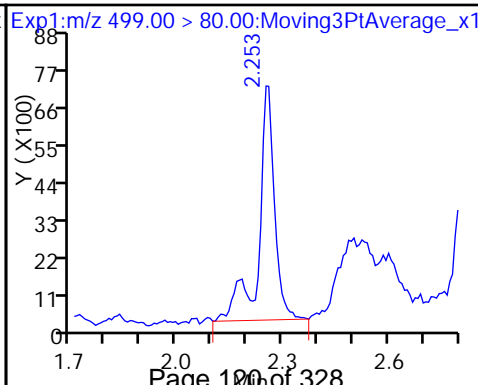
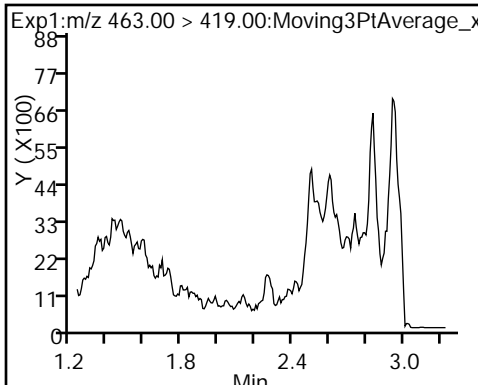
\* 7 13C4 PFOS



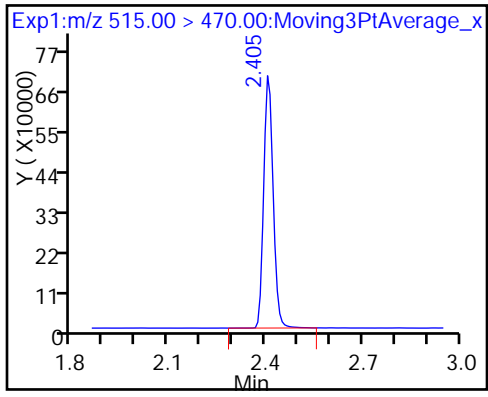
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_011.d  
 Lims ID: 320-26006-A-3-A  
 Client ID: WI-AF-1RW33-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:40:57 ALS Bottle#: 10 Worklist Smp#: 11  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-3-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:14:56

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.31	83.08
\$ 10 13C2 PFDA	10.0	8.99	89.92



TestAmerica Sacramento

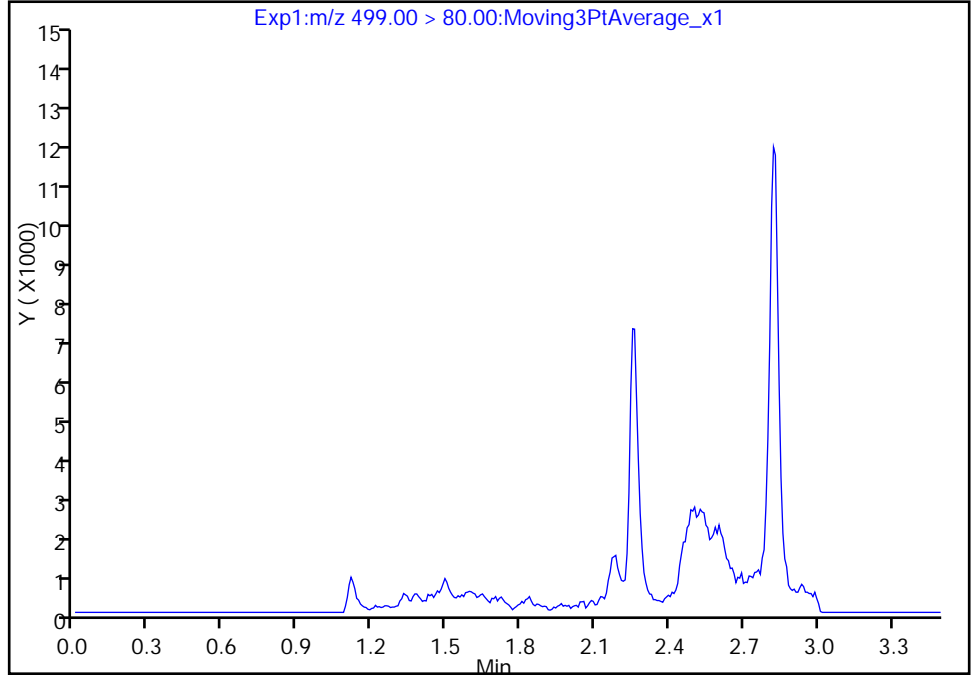
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_011.d  
Injection Date: 27-Feb-2017 15:40:57 Instrument ID: A8\_N  
Lims ID: 320-26006-A-3-A Lab Sample ID: 320-26006-3  
Client ID: WI-AF-1RW33-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 10 Worklist Smp#: 11  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

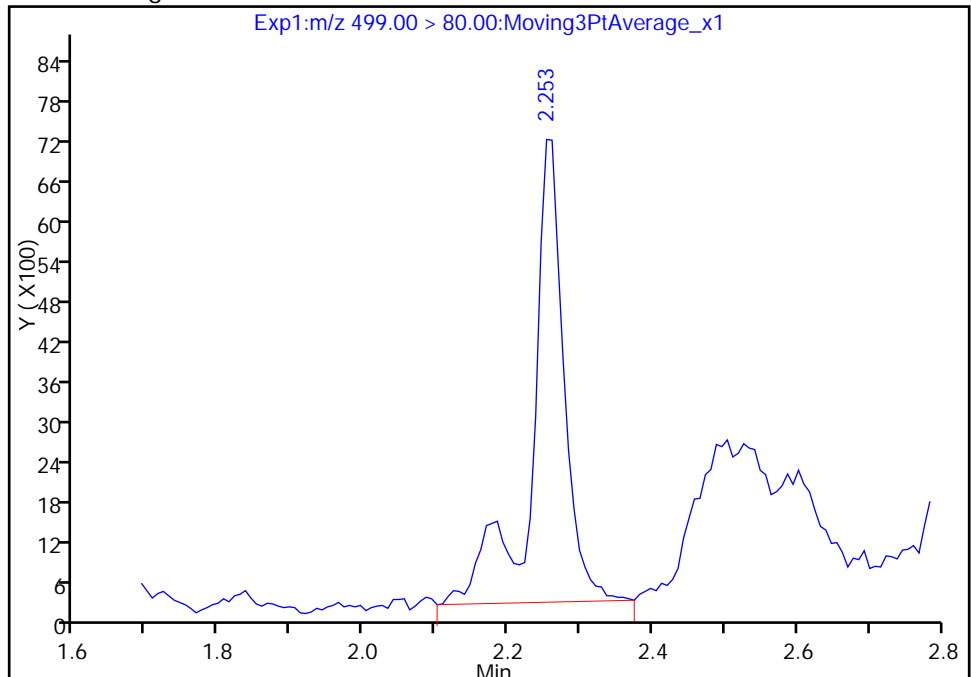
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 21747  
Amount: 0.082507  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:52  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

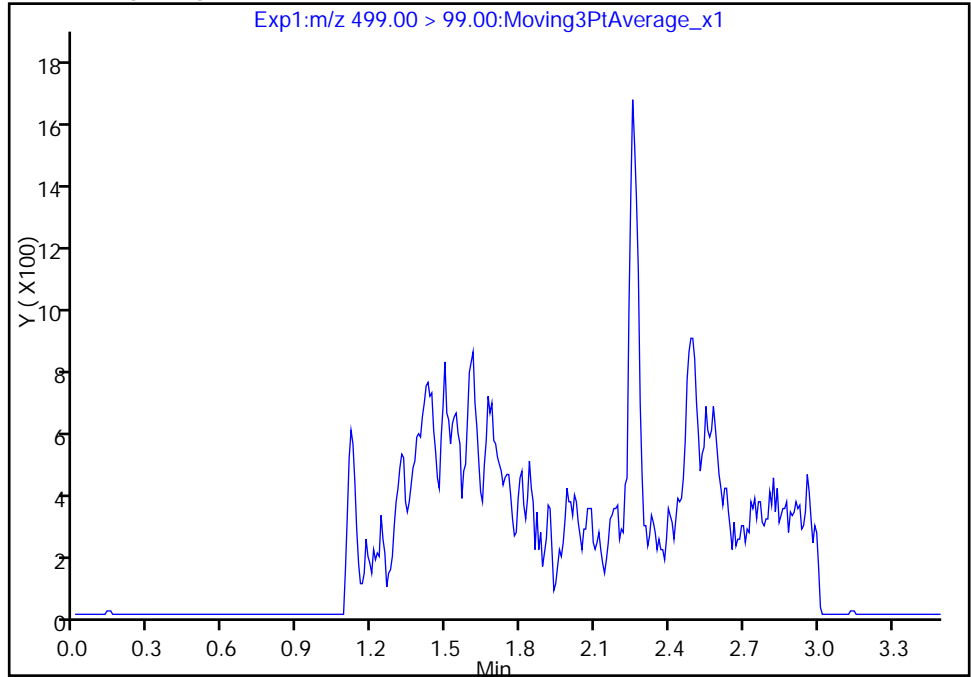
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Injection Date: 27-Feb-2017 15:40:57 Instrument ID: A8\_N  
Lims ID: 320-26006-A-3-A Lab Sample ID: 320-26006-3  
Client ID: WI-AF-1RW33-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 10 Worklist Smp#: 11  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

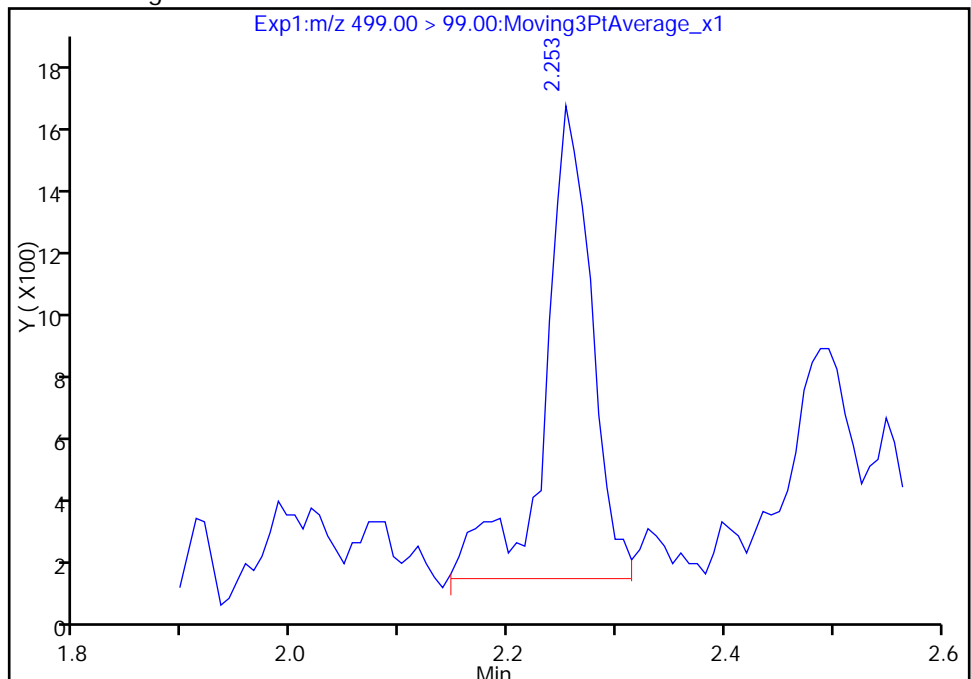
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 4532  
Amount: 0.082507  
Amount Units: ng/ml



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB33-0217 Lab Sample ID: 320-26006-4  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_013.d  
 Analysis Method: 537 Date Collected: 02/21/2017 16:28  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 283.5 (mL) Date Analyzed: 02/27/2017 15:49  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U M	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	89		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_013.d  
 Lims ID: 320-26006-A-4-A  
 Client ID: WI-AF-1FB33-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:49:47 ALS Bottle#: 11 Worklist Smp#: 13  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-4-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:21:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.646	1.638	0.008	1.000	2265955	8.32	6351	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	1.806	1.787	0.019	1.000	5204	0.0136		1.6	M
* 6 13C2-PFOA	415.00 > 370.00	2.003	1.979	0.024		2524324	10.0	5629	
* 7 13C4 PFOS	503.00 > 80.00	2.246	2.220	0.026		6503288	28.7	5437	
8 Perfluorooctane sulfonic acid									M
499.00 > 80.00	2.246	2.246	0.0	1.000	9494	0.0375		5.5	M
499.00 > 99.00	2.246	2.246	0.0	1.000	2429		3.91(0.00-0.00)	3.3	M
\$ 10 13C2 PFDA	515.00 > 470.00	2.397	2.384	0.013	1.000	1448558	8.89	3359	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_013.d

Injection Date: 27-Feb-2017 15:49:47

Instrument ID: A8\_N

Lims ID: 320-26006-A-4-A

Lab Sample ID: 320-26006-4

Client ID: WI-AF-1FB33-0217

Operator ID: A8-PC\A8

ALS Bottle#: 11

Worklist Smp#: 13

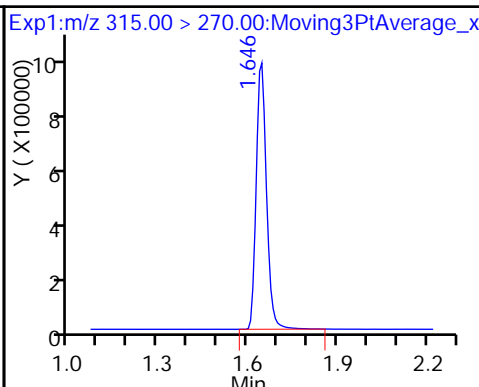
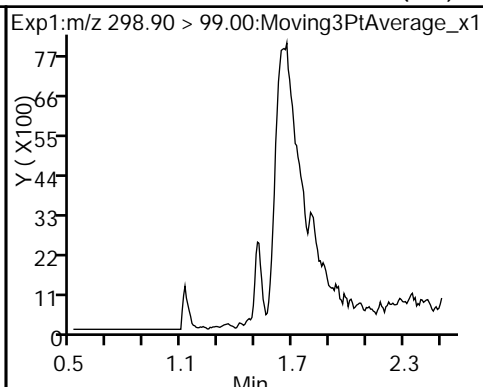
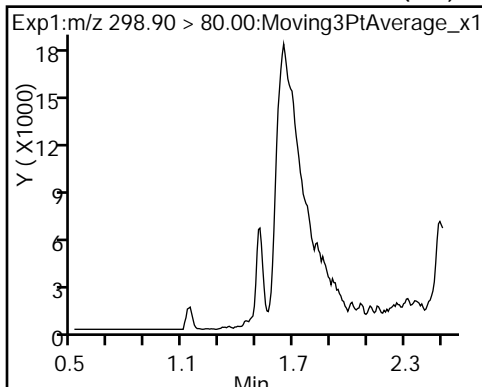
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

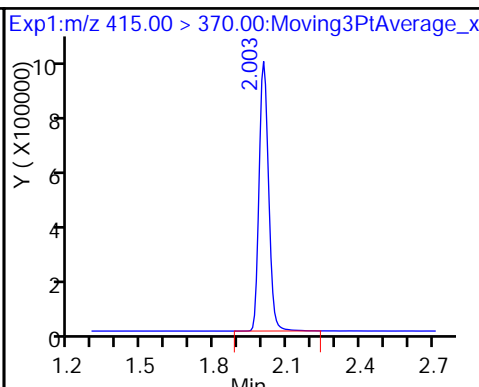
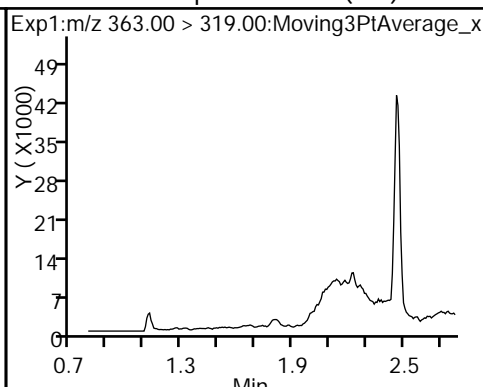
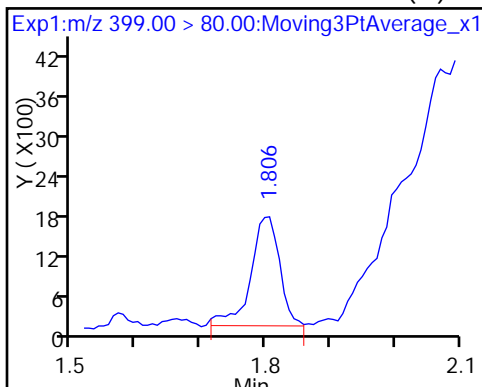
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

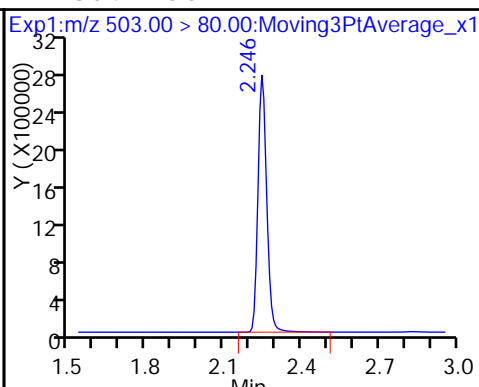
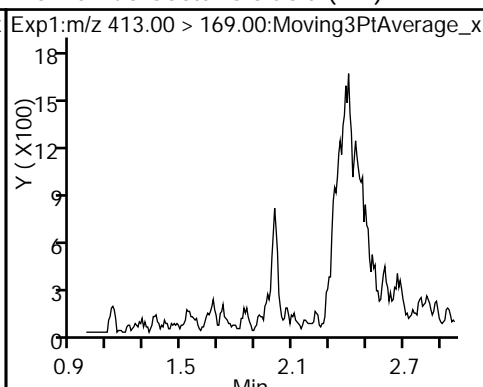
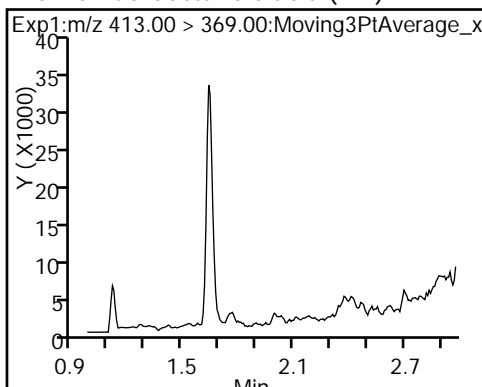
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA



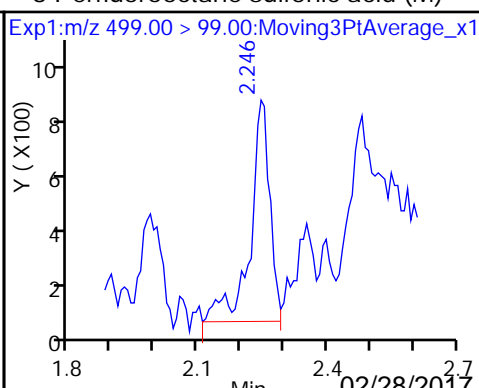
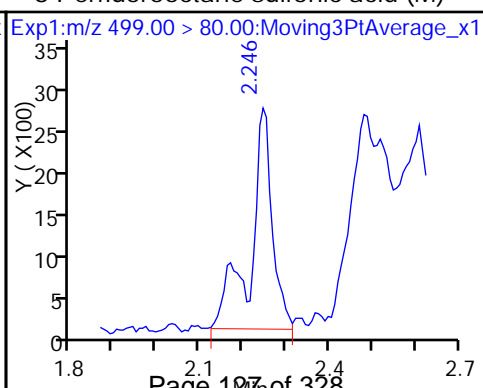
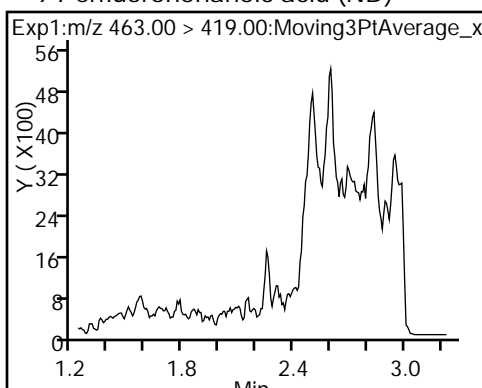
3 Perfluorohexanesulfonic acid (M) 4 Perfluoroheptanoic acid (ND) \* 6 13C2-PFOA



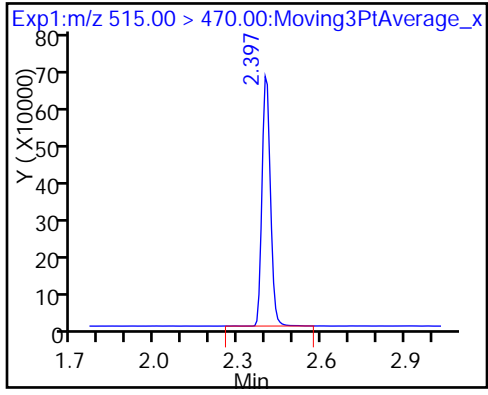
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) \* 7 13C4 PFOS



9 Perfluorononanoic acid (ND) 8 Perfluorooctane sulfonic acid (M) 8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_013.d  
 Lims ID: 320-26006-A-4-A  
 Client ID: WI-AF-1FB33-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:49:47 ALS Bottle#: 11 Worklist Smp#: 13  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-4-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:21:46

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.32	83.18
\$ 10 13C2 PFDA	10.0	8.89	88.88

TestAmerica Sacramento

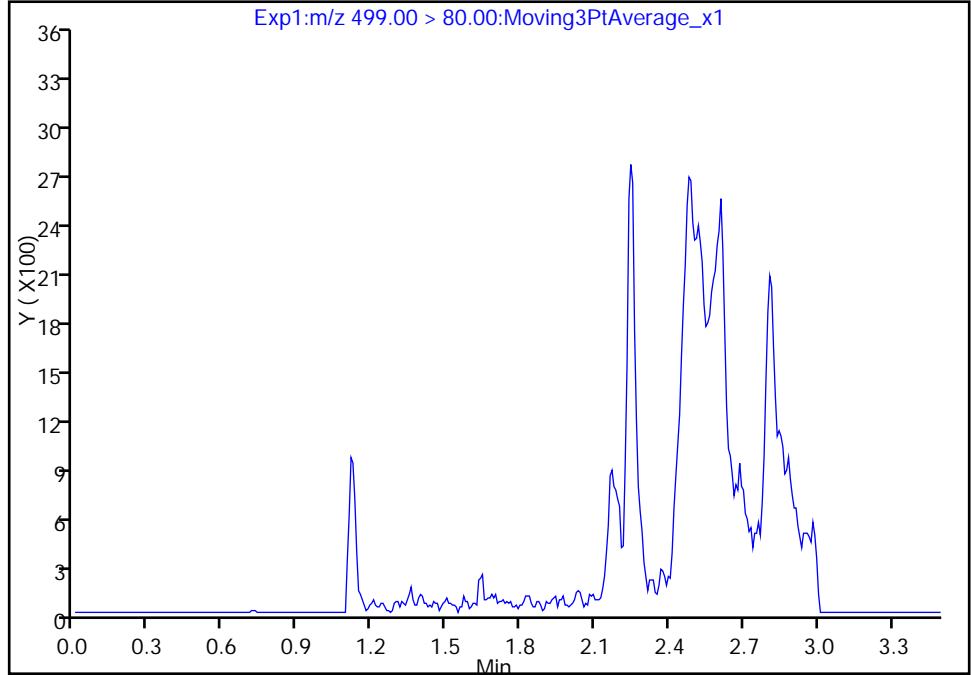
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_013.d  
Injection Date: 27-Feb-2017 15:49:47 Instrument ID: A8\_N  
Lims ID: 320-26006-A-4-A Lab Sample ID: 320-26006-4  
Client ID: WI-AF-1FB33-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 11 Worklist Smp#: 13  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

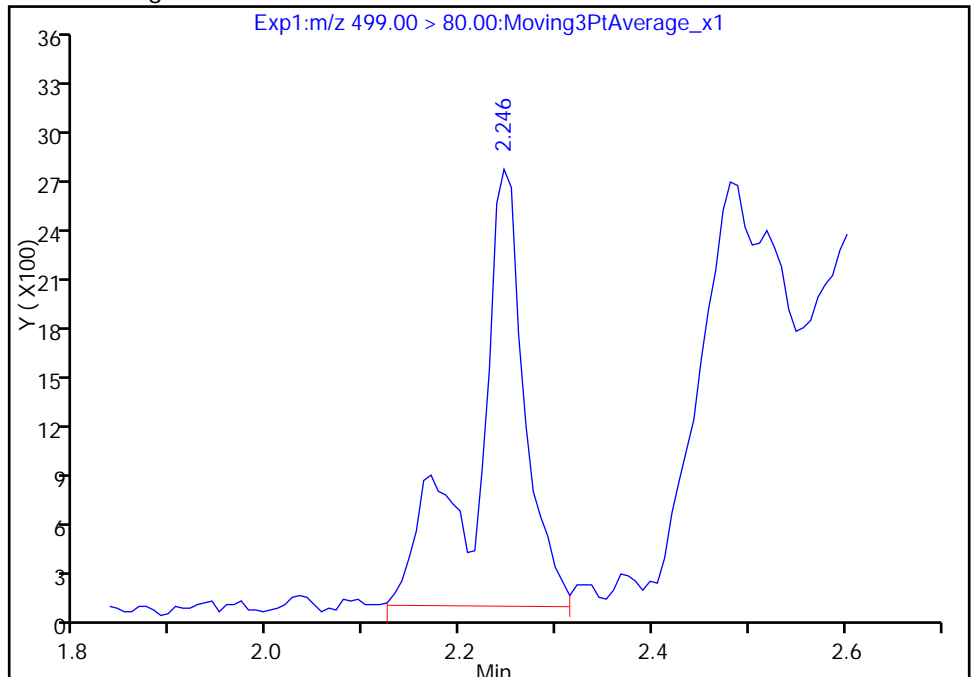
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 9494  
Amount: 0.037503  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:56  
Audit Action: Manually Integrated

Audit Reason: Missed Peak



TestAmerica Sacramento

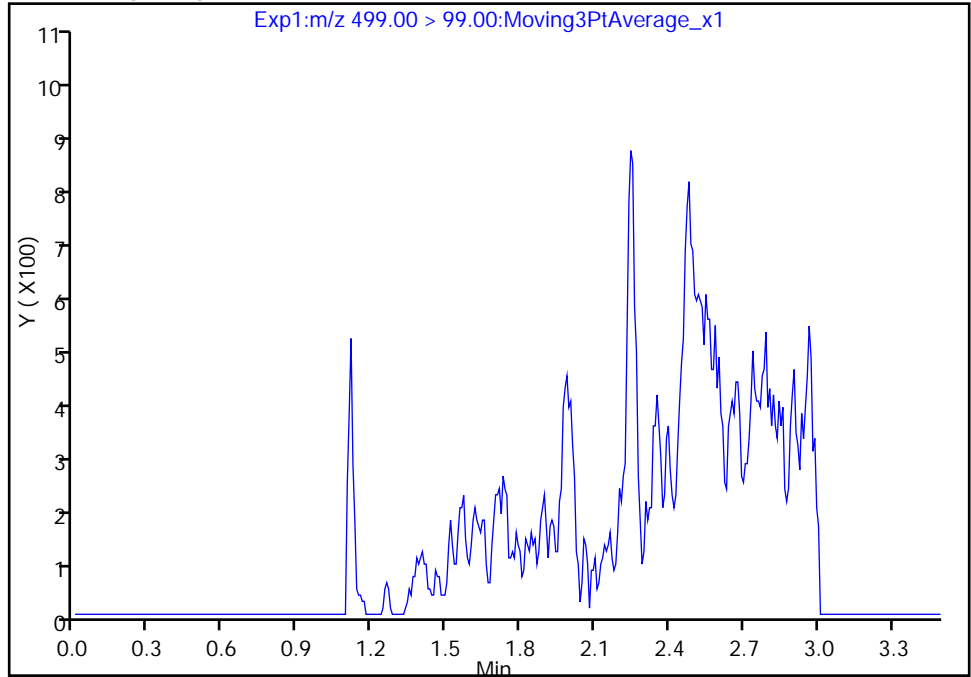
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_013.d  
Injection Date: 27-Feb-2017 15:49:47 Instrument ID: A8\_N  
Lims ID: 320-26006-A-4-A Lab Sample ID: 320-26006-4  
Client ID: WI-AF-1FB33-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 11 Worklist Smp#: 13  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

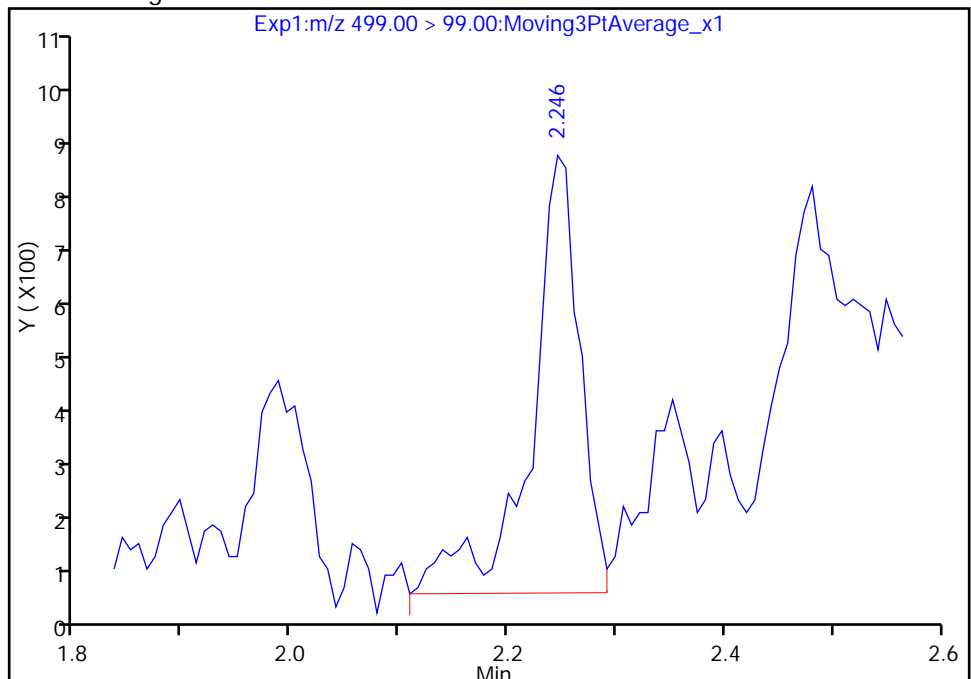
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 2429  
Amount: 0.037503  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:56

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW34-0217 Lab Sample ID: 320-26006-5  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_014.d  
 Analysis Method: 537 Date Collected: 02/21/2017 16:46  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 274.1(mL) Date Analyzed: 02/27/2017 15:54  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0086
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	89		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_014.d  
 Lims ID: 320-26006-A-5-A  
 Client ID: WI-AF-1RW34-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:54:10 ALS Bottle#: 12 Worklist Smp#: 14  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-5-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:25:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.639	1.638	0.001	1.000	2233724	8.26	5561	
* 6 13C2-PFOA	415.00 > 370.00	2.003	1.979	0.024		2505696	10.0	5445	
* 7 13C4 PFOS	503.00 > 80.00	2.246	2.220	0.026		6505454	28.7	5472	
\$ 10 13C2 PFDA	515.00 > 470.00	2.397	2.384	0.013	1.000	1432332	8.85	3686	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_014.d

Injection Date: 27-Feb-2017 15:54:10

Instrument ID: A8\_N

Lims ID: 320-26006-A-5-A

Lab Sample ID: 320-26006-5

Client ID: WI-AF-1RW34-0217

Operator ID: A8-PC\A8

ALS Bottle#: 12

Worklist Smp#: 14

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

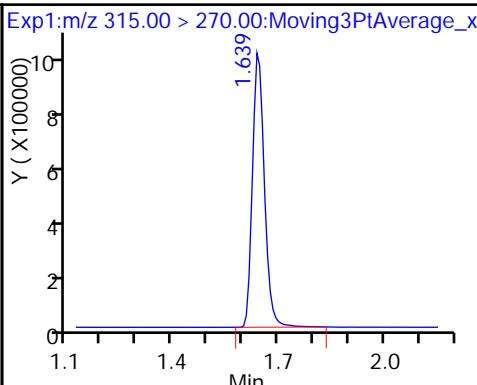
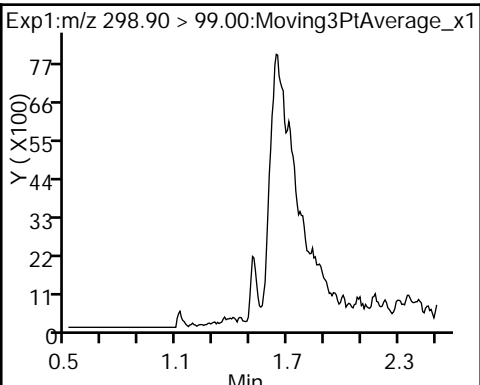
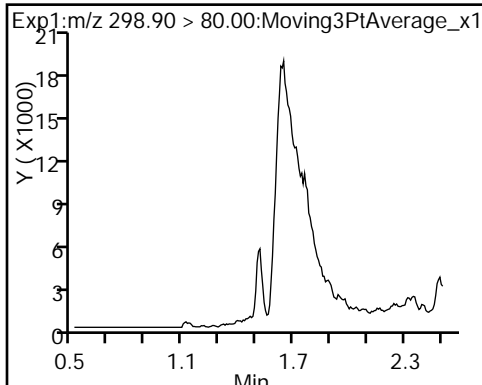
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

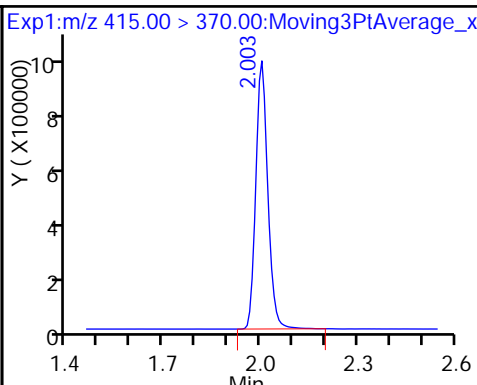
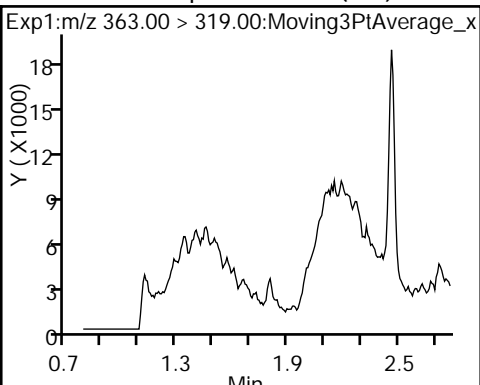
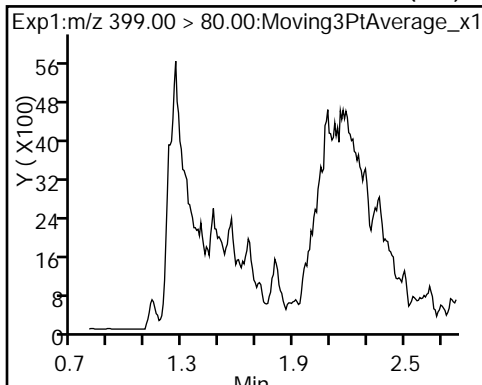
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

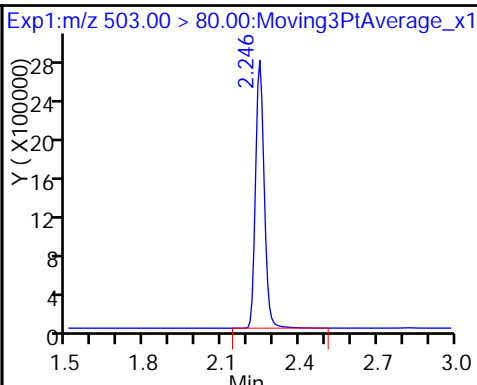
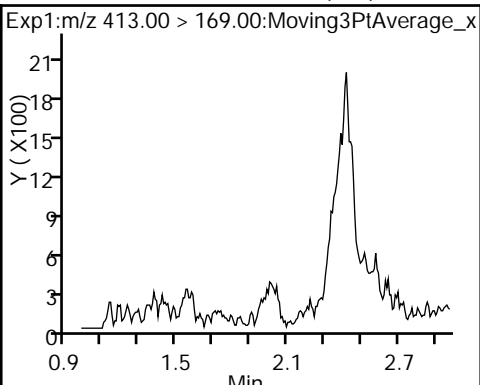
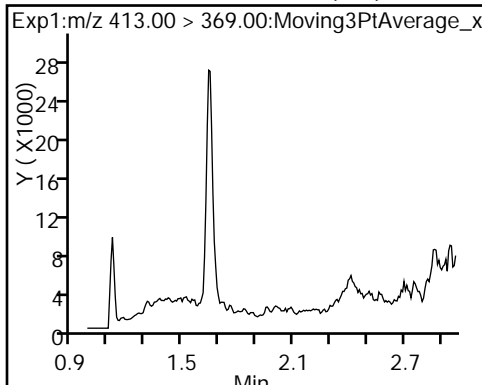
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

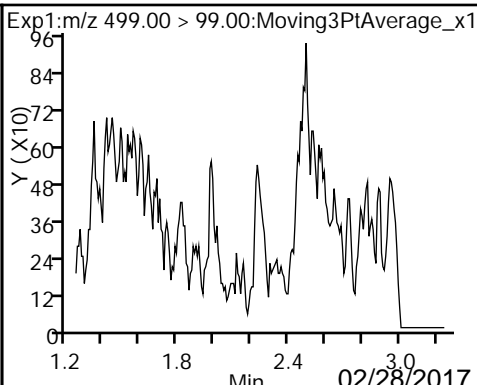
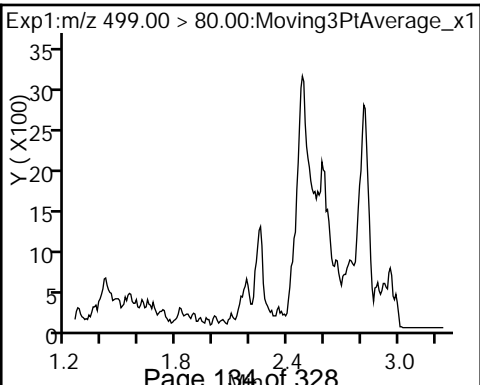
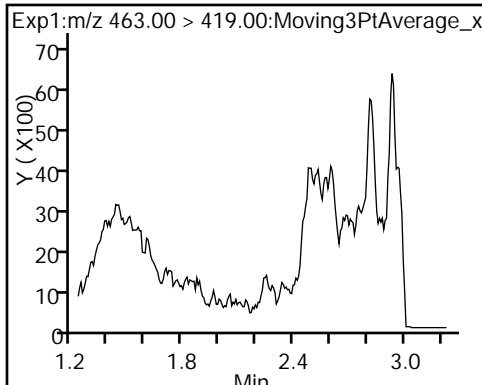
\* 7 13C4 PFOS



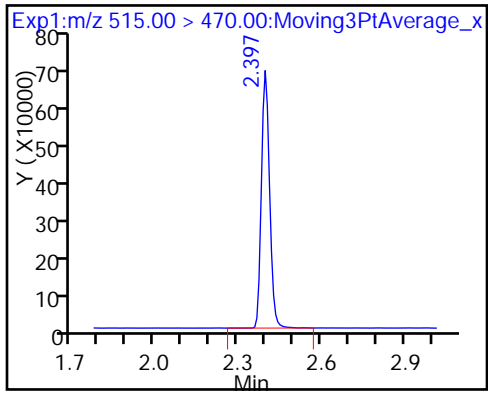
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

8 Perfluorooctane sulfonic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_014.d  
 Lims ID: 320-26006-A-5-A  
 Client ID: WI-AF-1RW34-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:54:10 ALS Bottle#: 12 Worklist Smp#: 14  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-5-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:25:05

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.26	82.61
\$ 10 13C2 PFDA	10.0	8.85	88.54

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB34-0217 Lab Sample ID: 320-26006-6  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_015.d  
 Analysis Method: 537 Date Collected: 02/21/2017 16:47  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 282.3(mL) Date Analyzed: 02/27/2017 15:58  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.053	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	97		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_015.d  
 Lims ID: 320-26006-A-6-A  
 Client ID: WI-AF-1FB34-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:58:35 ALS Bottle#: 13 Worklist Smp#: 15  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-6-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:25:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.639	1.638	0.001	1.000	2384971	9.16	6063	
* 6 13C2-PFOA	415.00 > 370.00	2.003	1.979	0.024		2413525	10.0	4655	
* 7 13C4 PFOS	503.00 > 80.00	2.246	2.220	0.026		6557107	28.7	6360	
\$ 10 13C2 PFDA	515.00 > 470.00	2.397	2.384	0.013	1.000	1516966	9.74	3287	



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_015.d

Injection Date: 27-Feb-2017 15:58:35

Instrument ID: A8\_N

Lims ID: 320-26006-A-6-A

Lab Sample ID: 320-26006-6

Client ID: WI-AF-1FB34-0217

Operator ID: A8-PC\A8

ALS Bottle#: 13

Worklist Smp#: 15

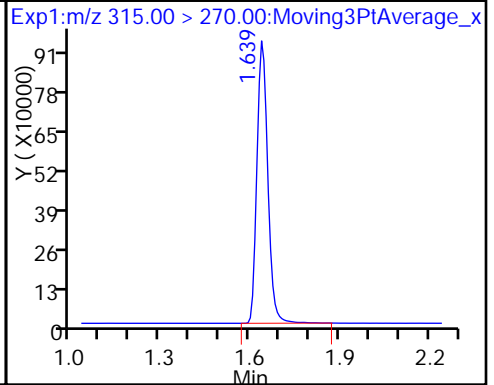
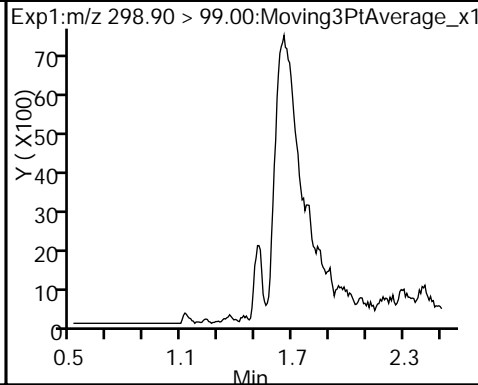
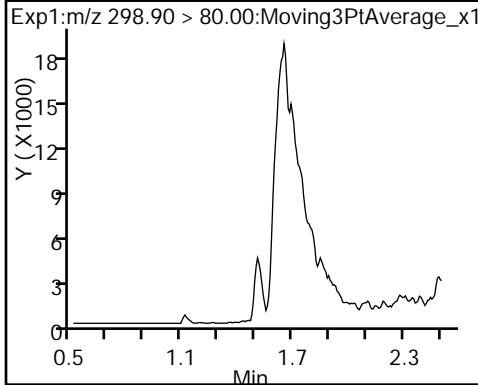
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

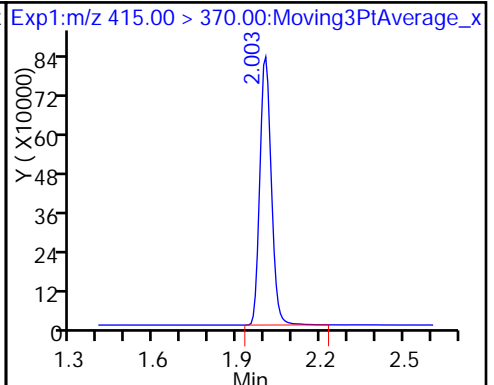
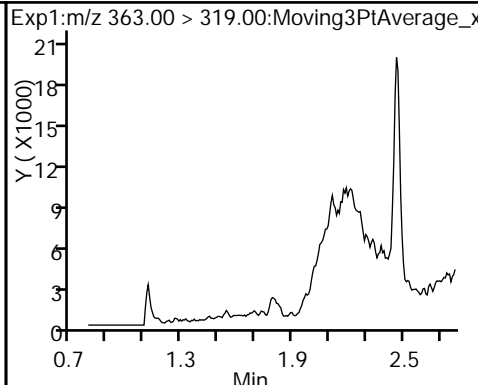
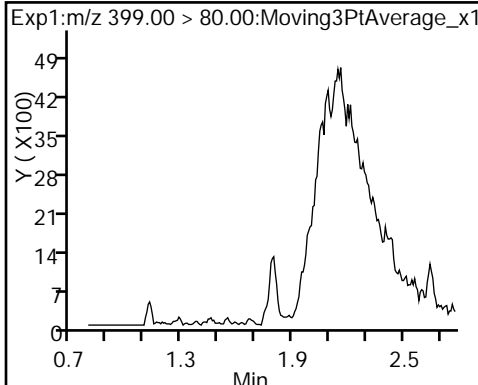
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

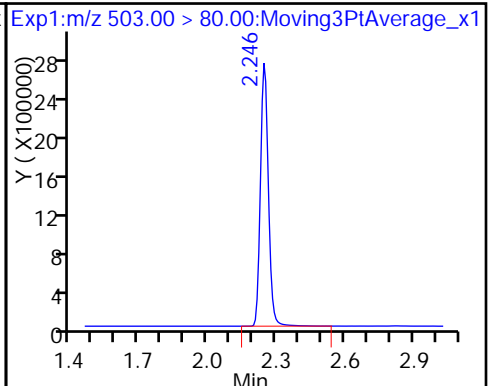
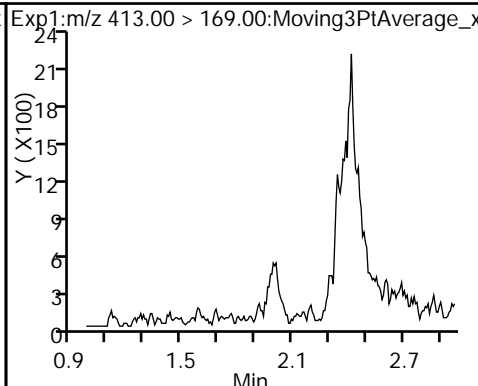
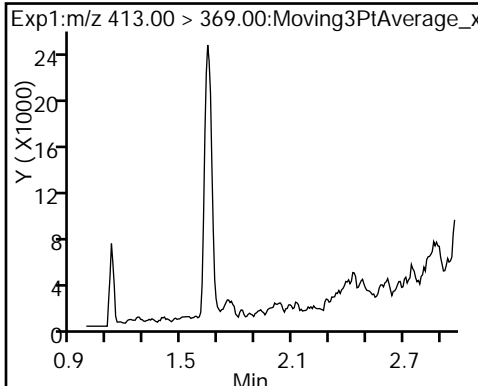
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA



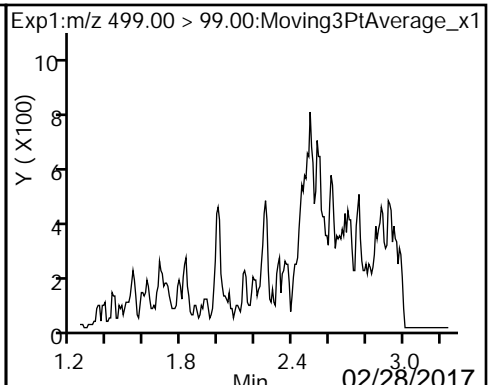
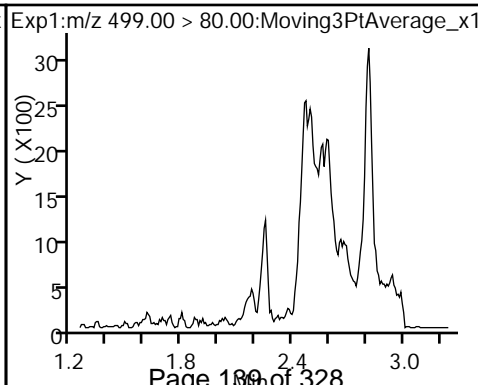
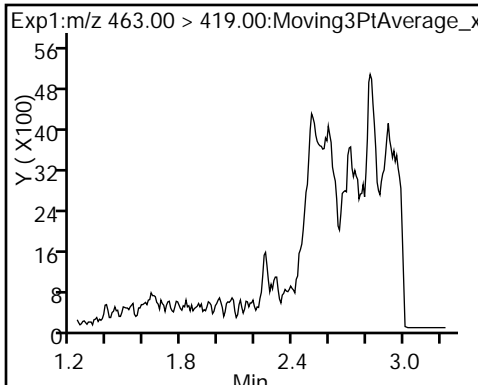
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) \* 6 13C2-PFOA



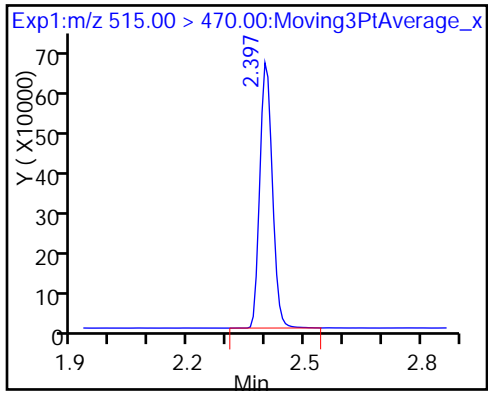
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) \* 7 13C4 PFOS



9 Perfluorononanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_015.d  
 Lims ID: 320-26006-A-6-A  
 Client ID: WI-AF-1FB34-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 15:58:35 ALS Bottle#: 13 Worklist Smp#: 15  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-6-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:25:16

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.16	91.57
\$ 10 13C2 PFDA	10.0	9.74	97.35

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW35-0217 Lab Sample ID: 320-26006-7  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_016.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:20  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 270.8 (mL) Date Analyzed: 02/27/2017 16:02  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U M	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	92		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_016.d  
 Lims ID: 320-26006-A-7-A  
 Client ID: WI-AF-1RW35-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:02:59 ALS Bottle#: 14 Worklist Smp#: 16  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-7-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:25:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA	315.00 > 270.00	1.654	1.638	0.016	1.000	2257933	8.18	5114	
* 6 13C2-PFOA	415.00 > 370.00	2.011	1.979	0.032		2556784	10.0	4693	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.011	1.980	0.031	1.000	39772	0.1682		2.6	
413.00 > 169.00	2.011	1.980	0.031	1.000	22753		1.75(0.00-0.00)	19.0	
* 7 13C4 PFOS	503.00 > 80.00	2.253	2.220	0.033		6681017	28.7	4724	
8 Perfluorooctane sulfonic acid									M
499.00 > 80.00	2.253	2.246	0.007	1.000	37052	0.1425		13.2	
499.00 > 99.00	2.253	2.246	0.007	1.000	8085		4.58(0.00-0.00)	6.4	M
\$ 10 13C2 PFDA	515.00 > 470.00	2.405	2.384	0.021	1.000	1513669	9.17	3827	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_016.d

Injection Date: 27-Feb-2017 16:02:59

Instrument ID: A8\_N

Lims ID: 320-26006-A-7-A

Lab Sample ID: 320-26006-7

Client ID: WI-AF-1RW35-0217

Operator ID: A8-PC\A8

ALS Bottle#: 14

Worklist Smp#: 16

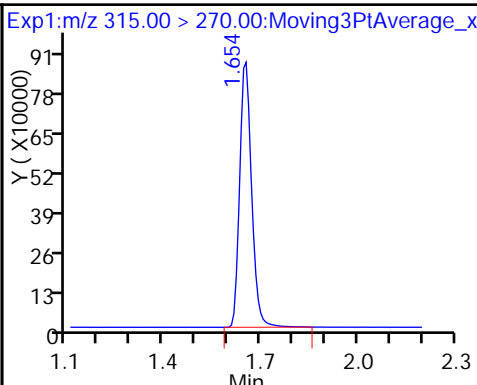
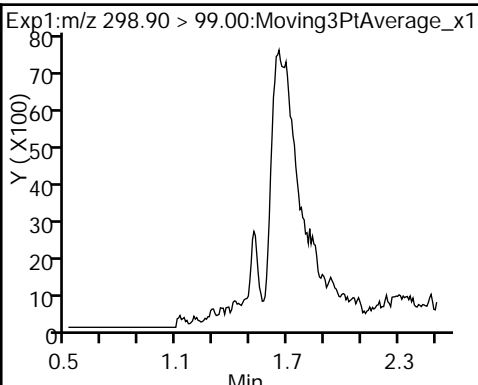
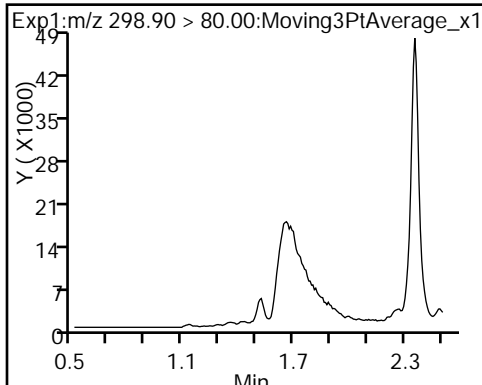
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

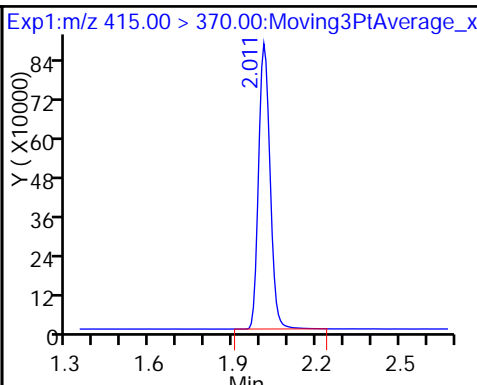
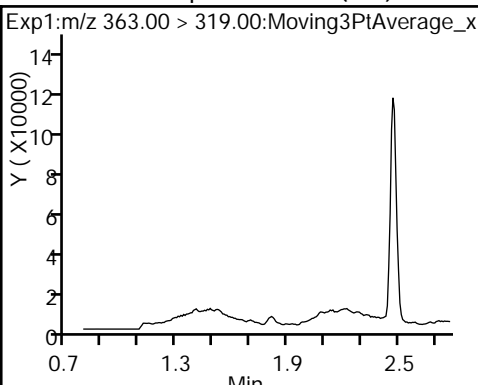
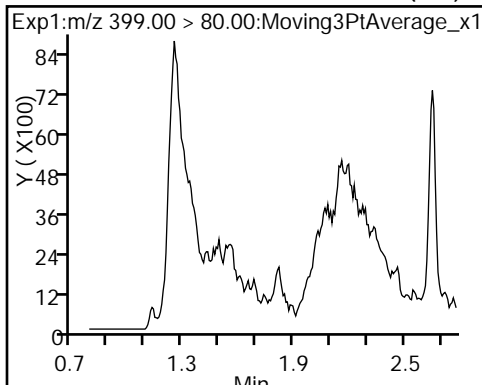
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

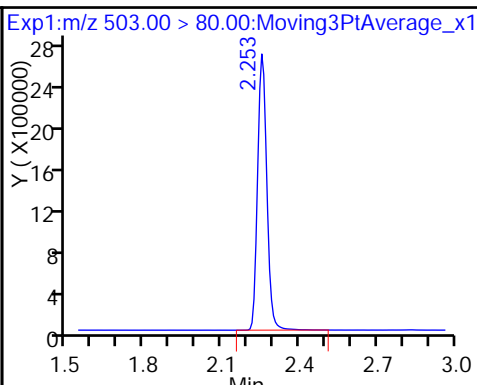
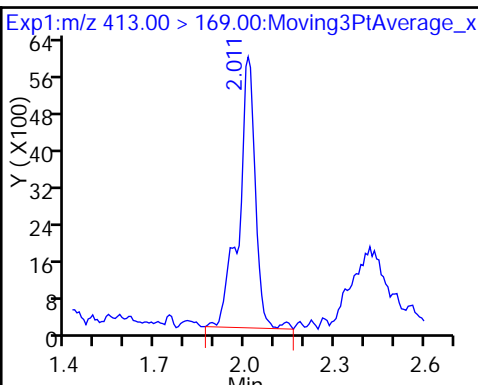
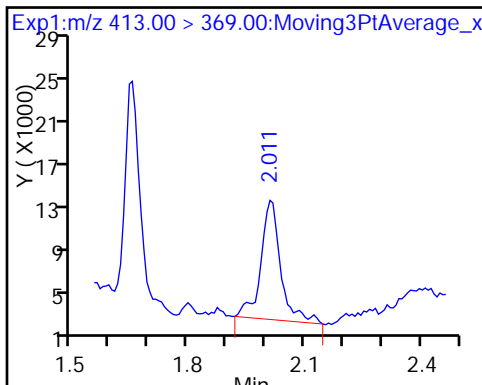
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA



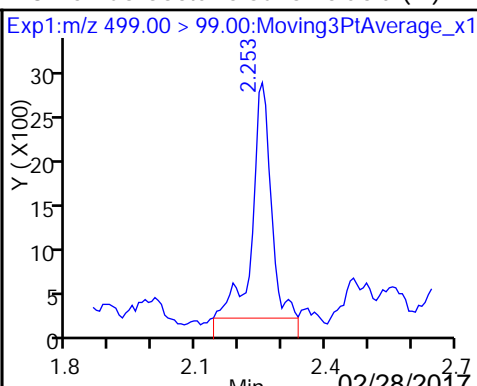
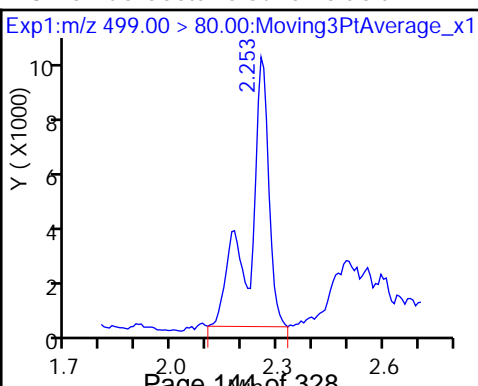
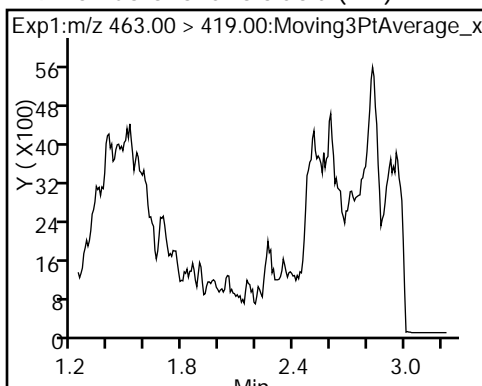
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) \* 6 13C2-PFOA



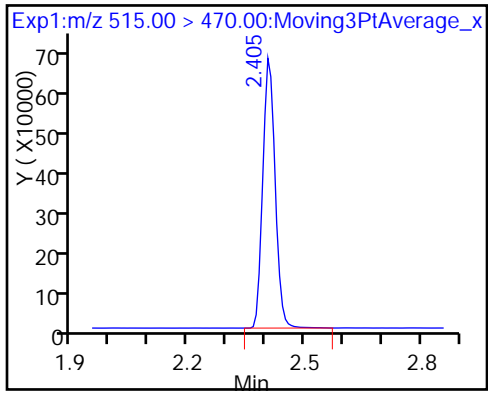
5 Perfluorooctanoic acid 5 Perfluorooctanoic acid \* 7 13C4 PFOS



9 Perfluorononanoic acid (ND) 8 Perfluorooctane sulfonic acid 8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_016.d  
 Lims ID: 320-26006-A-7-A  
 Client ID: WI-AF-1RW35-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:02:59 ALS Bottle#: 14 Worklist Smp#: 16  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-7-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:25:52

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.18	81.83
\$ 10 13C2 PFDA	10.0	9.17	91.70



TestAmerica Sacramento

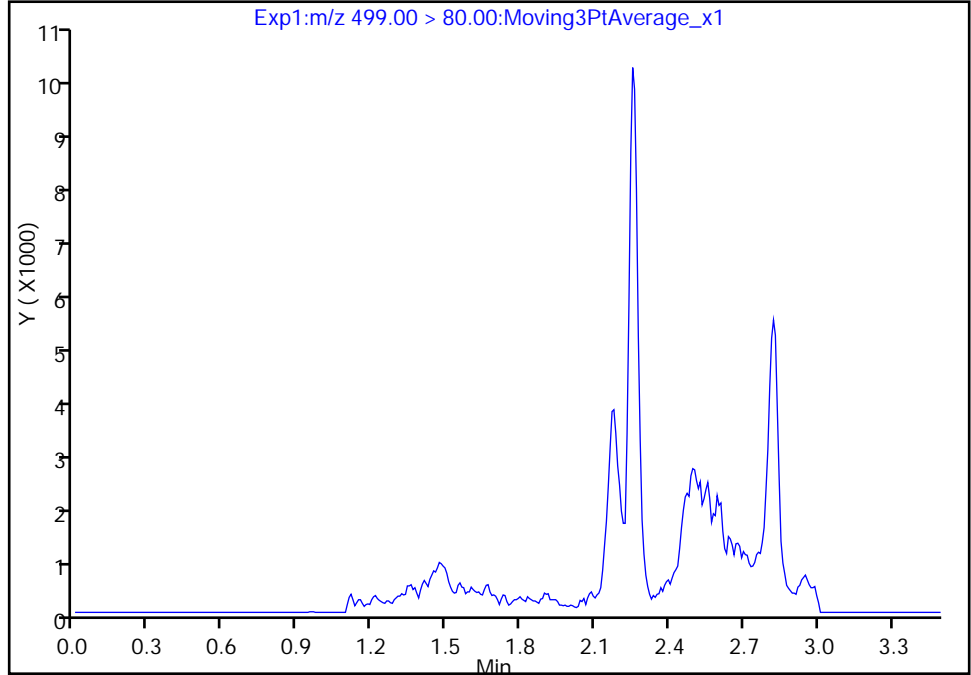
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Injection Date: 27-Feb-2017 16:02:59 Instrument ID: A8\_N  
Lims ID: 320-26006-A-7-A Lab Sample ID: 320-26006-7  
Client ID: WI-AF-1RW35-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 14 Worklist Smp#: 16  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

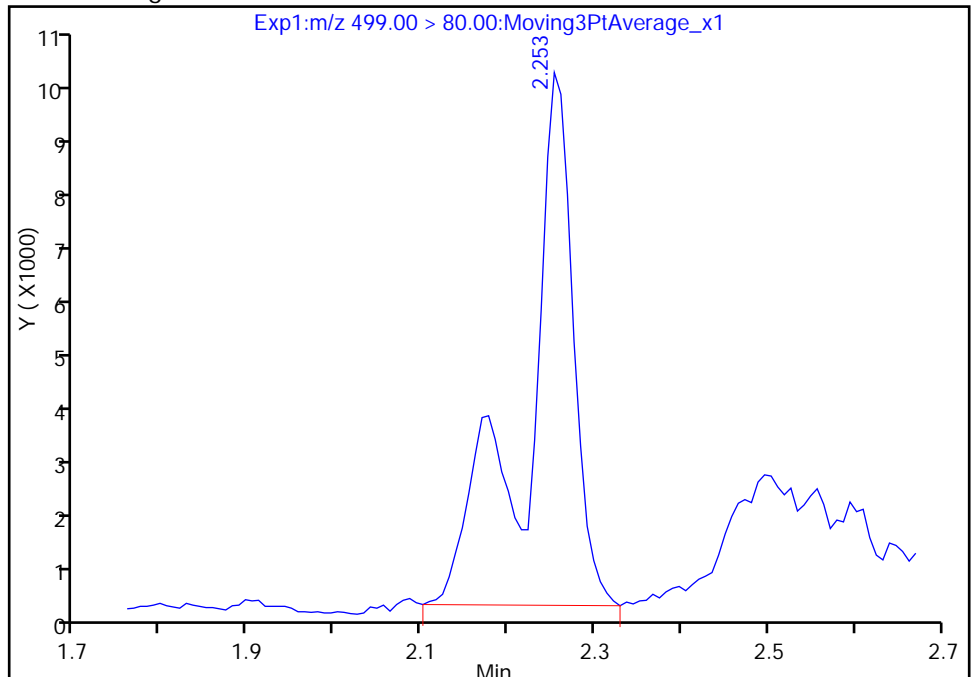
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 37052  
Amount: 0.142468  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:55:02  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

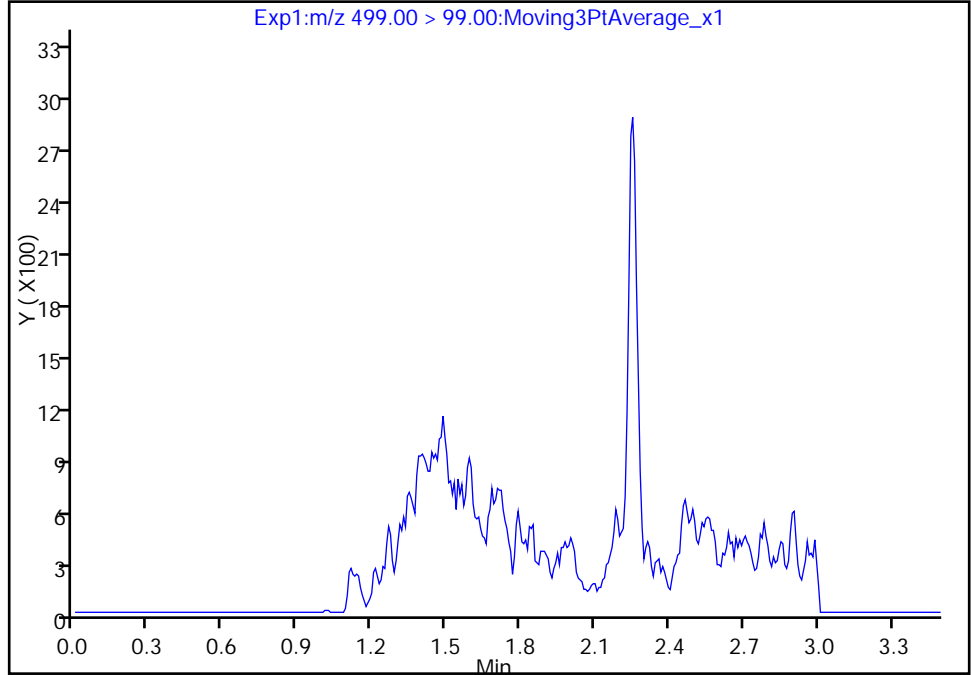
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_016.d  
Injection Date: 27-Feb-2017 16:02:59 Instrument ID: A8\_N  
Lims ID: 320-26006-A-7-A Lab Sample ID: 320-26006-7  
Client ID: WI-AF-1RW35-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 14 Worklist Smp#: 16  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

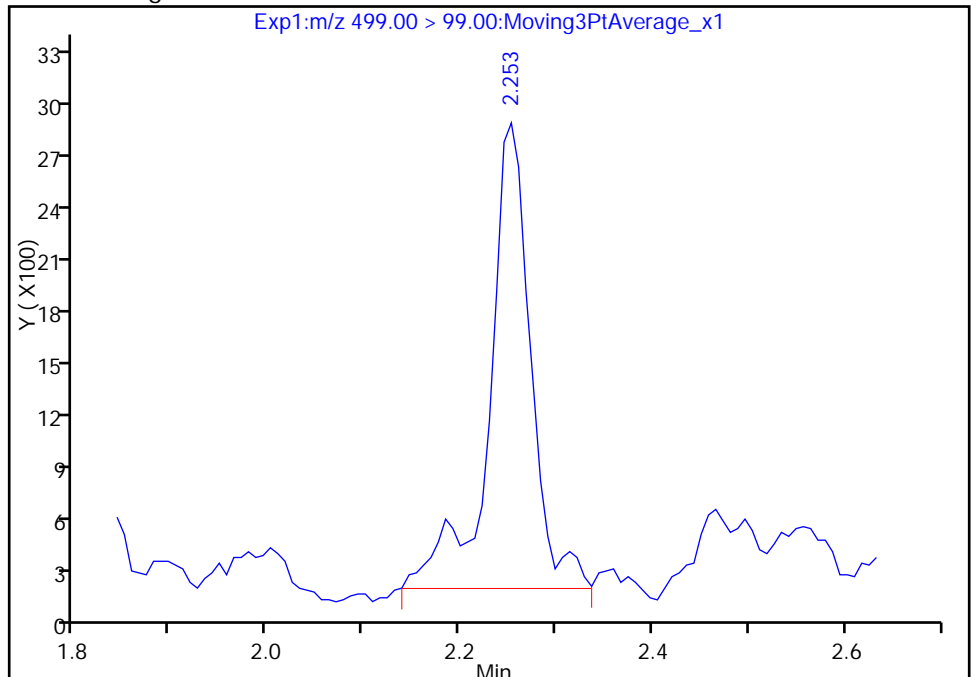
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 8085  
Amount: 0.142468  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:55:02

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB35-0217 Lab Sample ID: 320-26006-8  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_017.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:21  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 280.2 (mL) Date Analyzed: 02/27/2017 16:07  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.098	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	87		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_017.d  
 Lims ID: 320-26006-A-8-A  
 Client ID: WI-AF-1FB35-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:07:23 ALS Bottle#: 15 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-8-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:26:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.654	1.638	0.016	1.000	2302665	8.36	5072	
* 6 13C2-PFOA	415.00 > 370.00	2.011	1.979	0.032		2553290	10.0	4457	
* 7 13C4 PFOS	503.00 > 80.00	2.253	2.220	0.033		6518191	28.7	6503	
\$ 10 13C2 PFDA	515.00 > 470.00	2.405	2.384	0.021	1.000	1434645	8.70	2877	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_017.d

Injection Date: 27-Feb-2017 16:07:23

Instrument ID: A8\_N

Lims ID: 320-26006-A-8-A

Lab Sample ID: 320-26006-8

Client ID: WI-AF-1FB35-0217

Operator ID: A8-PC\A8

ALS Bottle#: 15

Worklist Smp#: 17

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

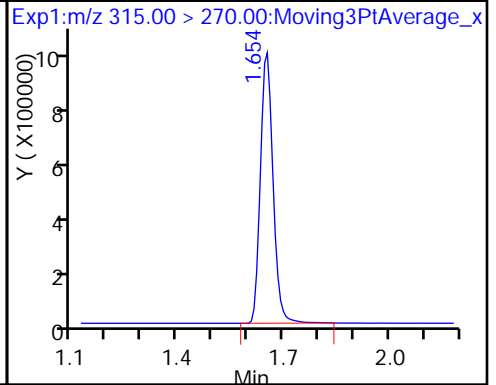
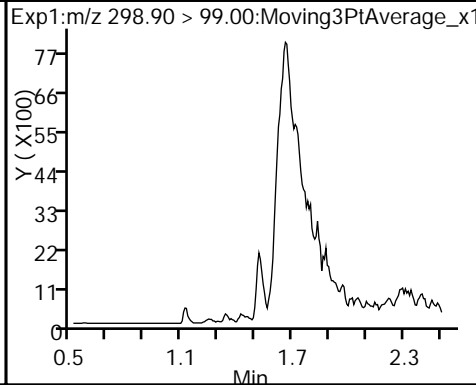
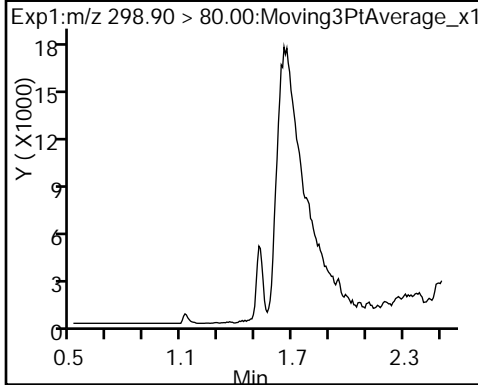
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

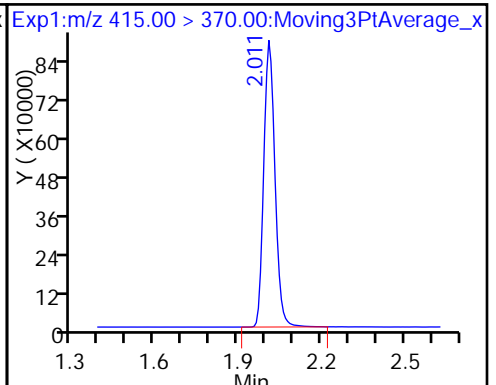
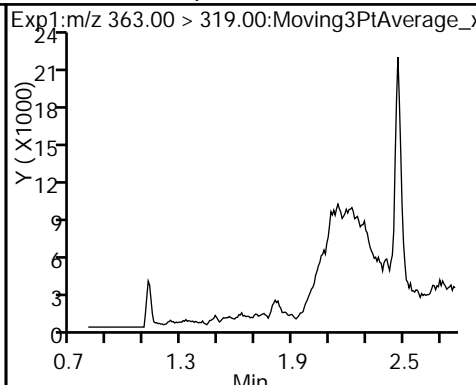
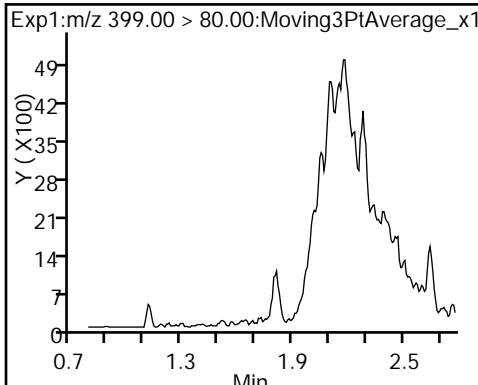
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

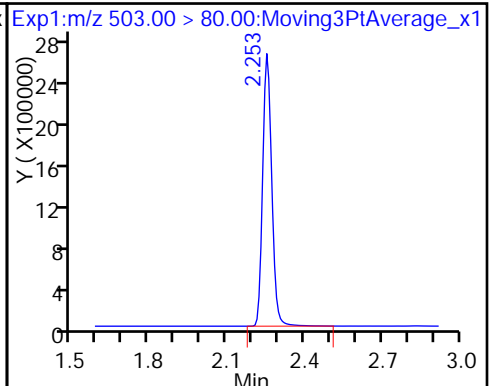
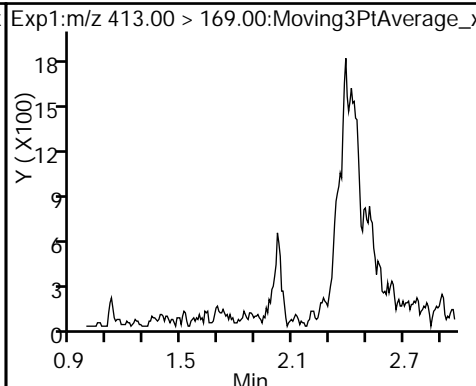
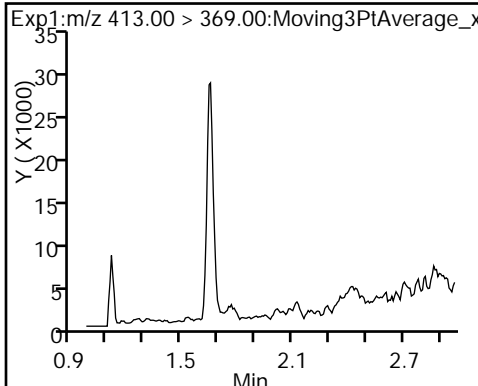
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

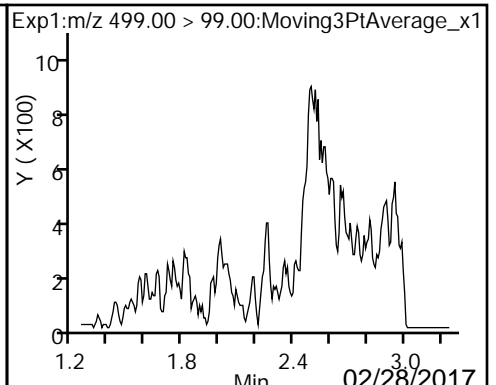
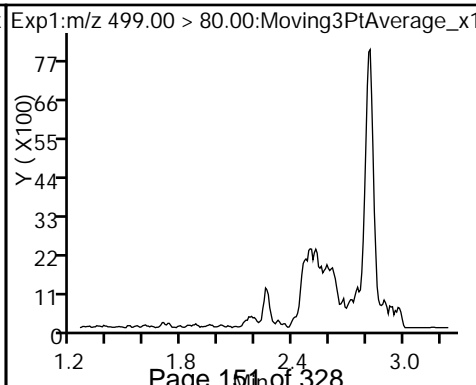
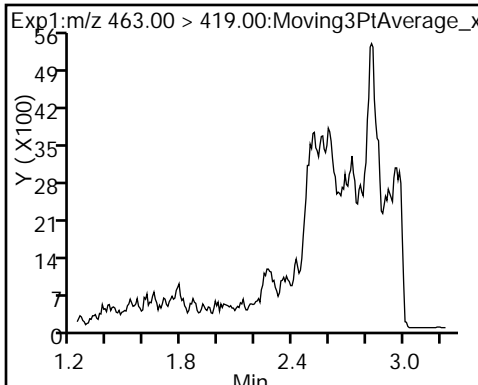
\* 7 13C4 PFOS



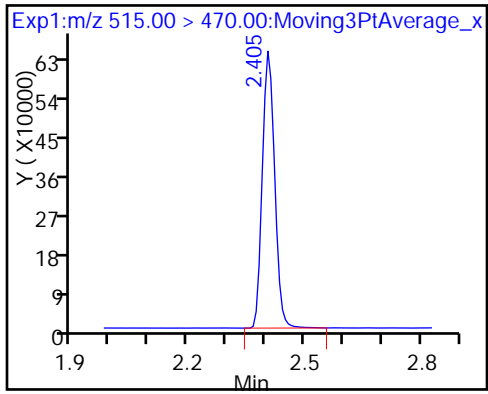
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

8 Perfluorooctane sulfonic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_017.d  
 Lims ID: 320-26006-A-8-A  
 Client ID: WI-AF-1FB35-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:07:23 ALS Bottle#: 15 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-8-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:26:06

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.36	83.57
\$ 10 13C2 PFDA	10.0	8.70	87.03

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW36-0217 Lab Sample ID: 320-26006-9  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_018.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:36  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 267.9(mL) Date Analyzed: 02/27/2017 16:11  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U M	0.056	0.045	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	94		70-130



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_018.d  
 Lims ID: 320-26006-A-9-A  
 Client ID: WI-AF-1RW36-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:11:46 ALS Bottle#: 16 Worklist Smp#: 18  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-9-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:26:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.517	1.510	0.007	1.000	786605	1.82		103	
298.90 > 99.00	1.517	1.510	0.007	1.000	332585		2.37(0.00-0.00)	113	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.646	1.638	0.008	1.000	2236676	8.40		4271	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.806	1.787	0.019	1.000	1105560	2.88		185	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.806	1.788	0.018	1.000	14630	0.0615		1.2	M
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2466187	10.0		4184	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	72121	0.3162		5.1	
413.00 > 169.00	2.011	1.980	0.031	1.004	48987		1.47(0.00-0.00)	41.8	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		6537723	28.7		3345	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.162	2.246	-0.084	1.000	200415	0.7875		52.3	M
499.00 > 99.00	2.170	2.246	-0.076	1.004	24928		8.04(0.00-0.00)	15.5	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1495745	9.39		3434	

## QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_018.d

Injection Date: 27-Feb-2017 16:11:46

Instrument ID: A8\_N

Lims ID: 320-26006-A-9-A

Lab Sample ID: 320-26006-9

Client ID: WI-AF-1RW36-0217

Operator ID: A8-PC\A8

ALS Bottle#: 16

Worklist Smp#: 18

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

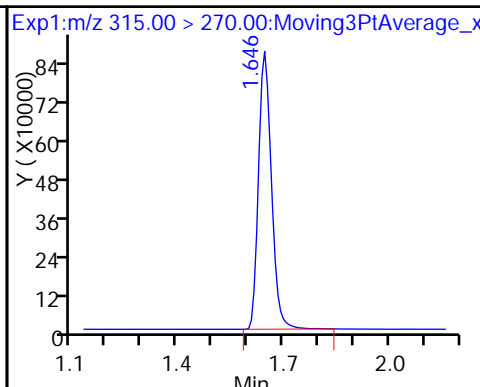
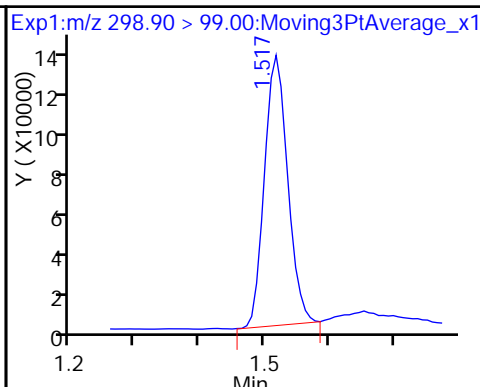
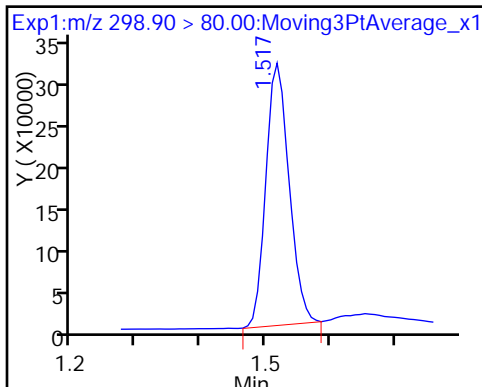
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

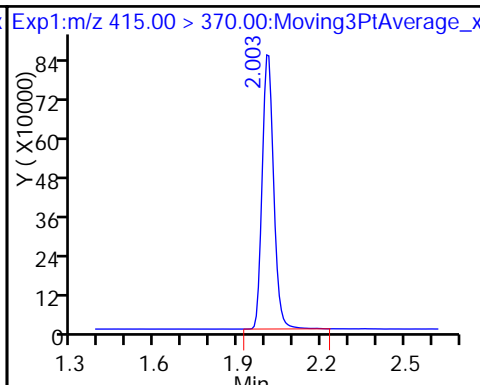
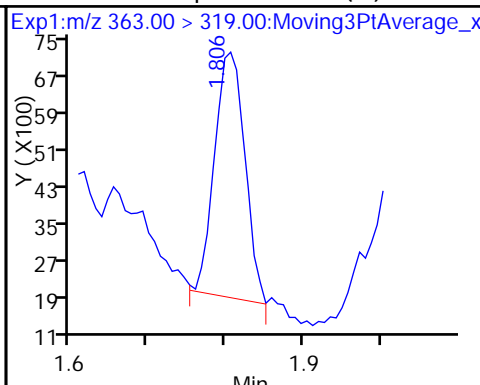
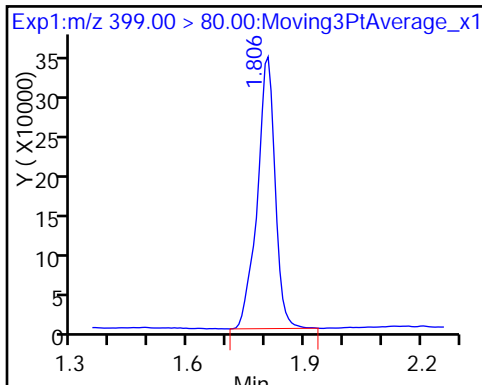
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid (M)

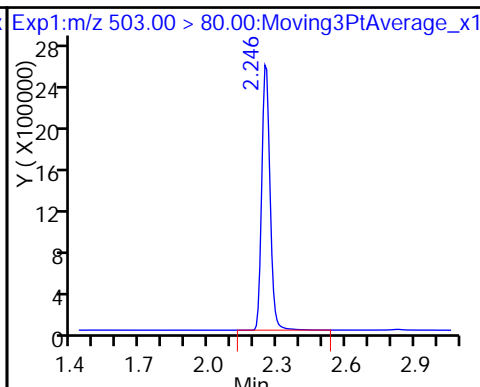
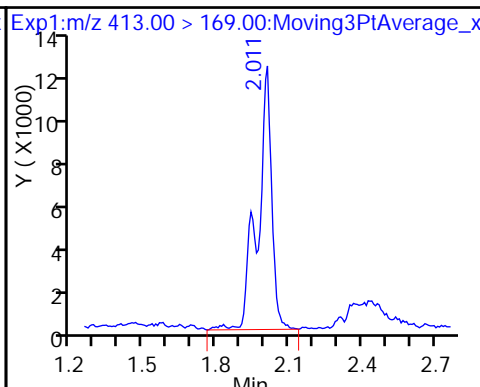
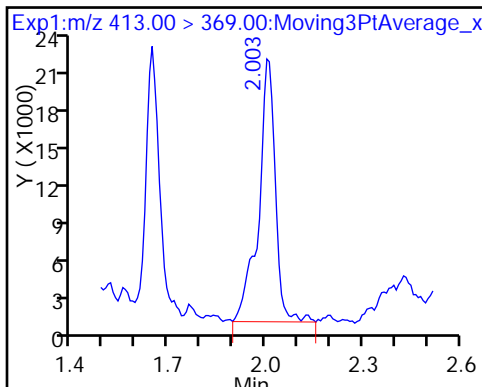
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

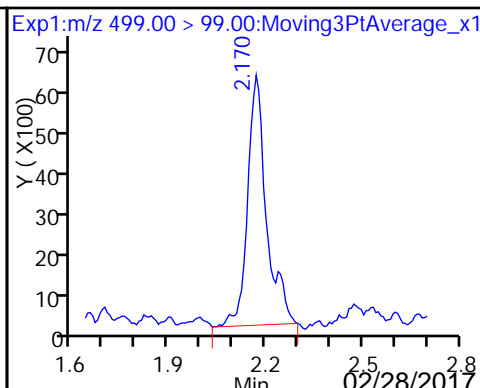
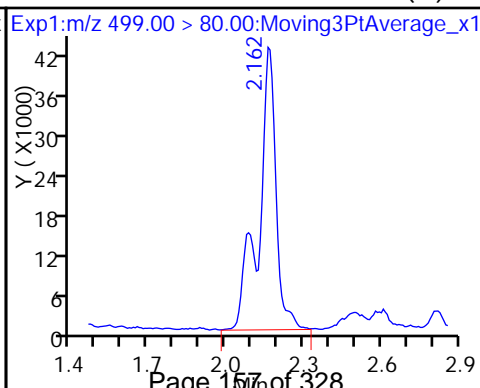
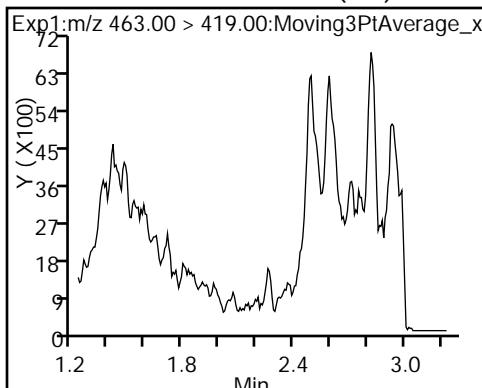
\* 7 13C4 PFOS



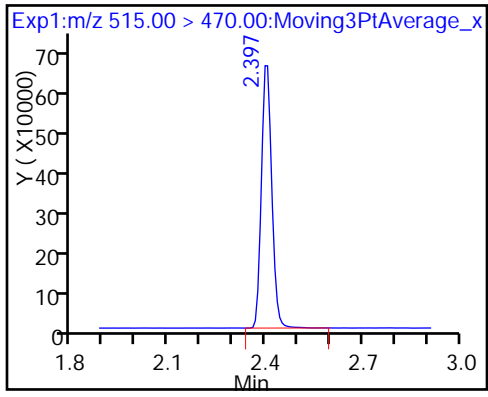
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_018.d  
 Lims ID: 320-26006-A-9-A  
 Client ID: WI-AF-1RW36-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:11:46 ALS Bottle#: 16 Worklist Smp#: 18  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-9-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:26:55

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.40	84.04
\$ 10 13C2 PFDA	10.0	9.39	93.94

TestAmerica Sacramento

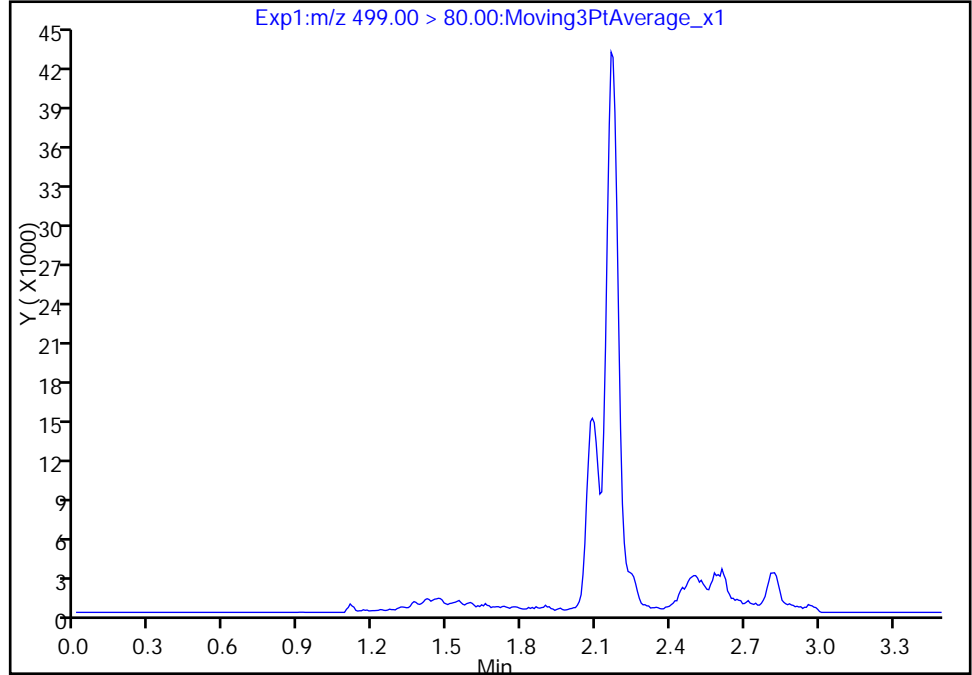
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Injection Date: 27-Feb-2017 16:11:46 Instrument ID: A8\_N  
Lims ID: 320-26006-A-9-A Lab Sample ID: 320-26006-9  
Client ID: WI-AF-1RW36-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 16 Worklist Smp#: 18  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

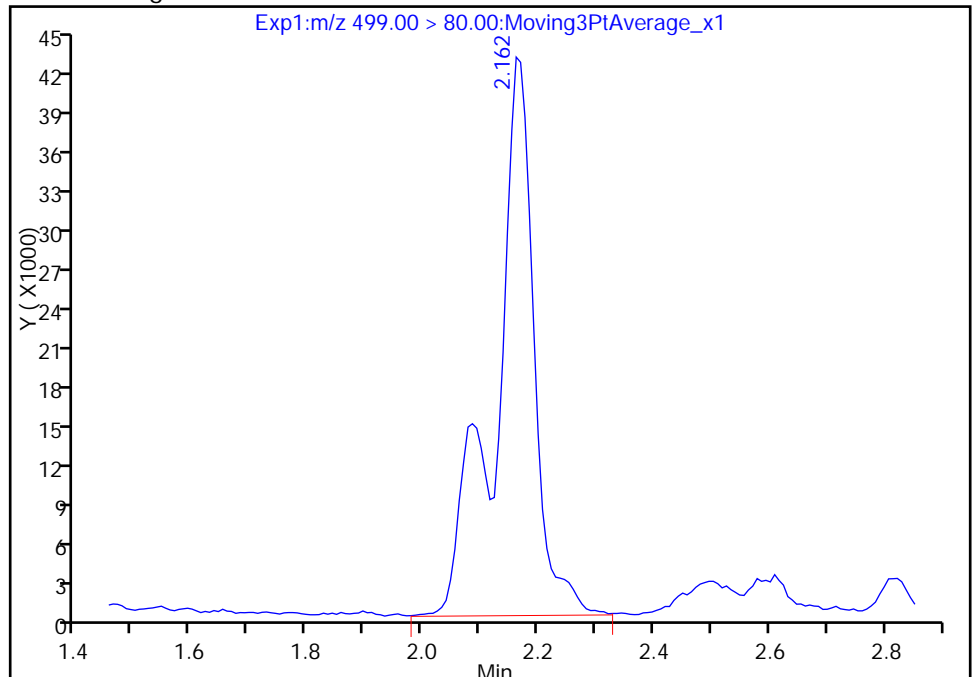
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.16  
Area: 200415  
Amount: 0.787504  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:55:08  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

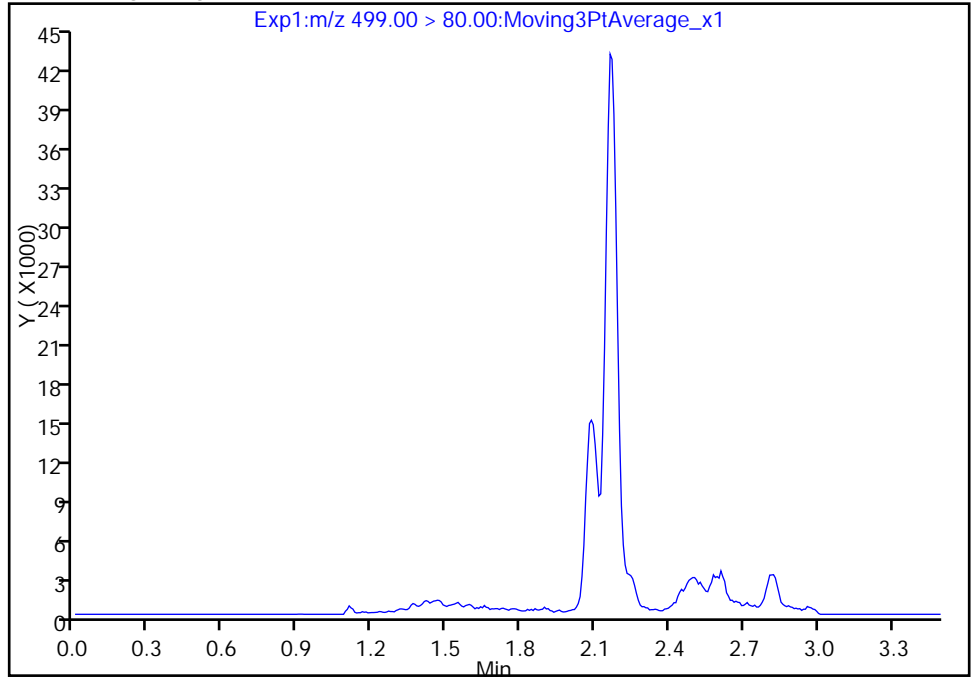
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_018.d  
Injection Date: 27-Feb-2017 16:11:46 Instrument ID: A8\_N  
Lims ID: 320-26006-A-9-A Lab Sample ID: 320-26006-9  
Client ID: WI-AF-1RW36-0217  
Operator ID: A8-PC\A8 ALS Bottle#: 16 Worklist Smp#: 18  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

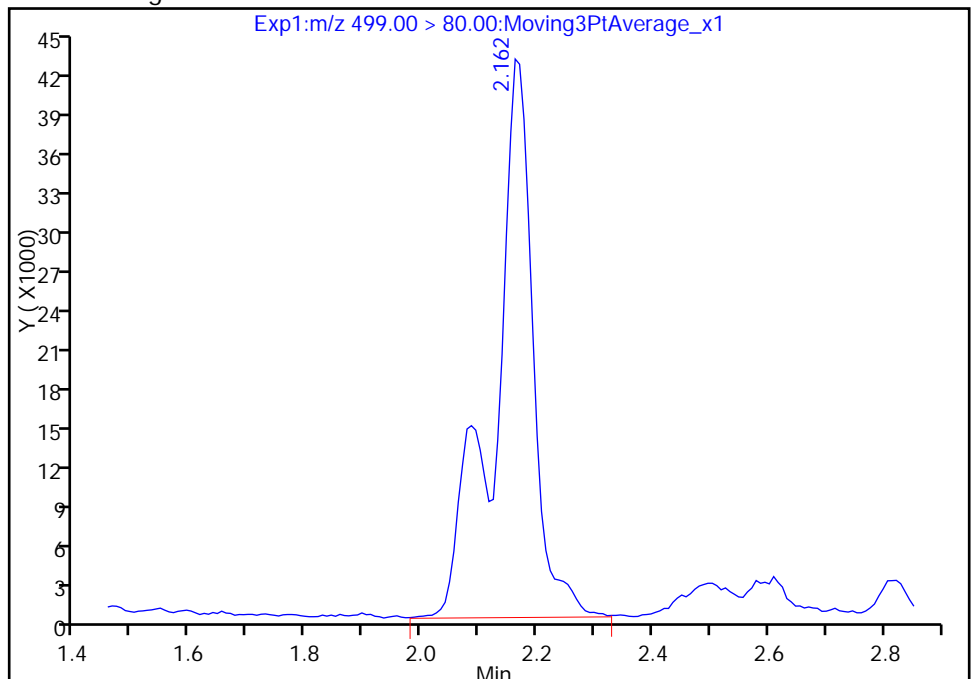
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.16  
Area: 200415  
Amount: 0.787504  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:55:08

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB36-0217 Lab Sample ID: 320-26006-10  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_019.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:37  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 284.8 (mL) Date Analyzed: 02/27/2017 16:16  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	90		70-130



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_019.d  
 Lims ID: 320-26006-A-10-A  
 Client ID: WI-AF-1FB36-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:16:10 ALS Bottle#: 17 Worklist Smp#: 19  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-10-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:50:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.646	1.638	0.008	1.000	2268073	8.45	4949	
* 6 13C2-PFOA	415.00 > 370.00	2.011	1.979	0.032		2487928	10.0	5183	
* 7 13C4 PFOS	503.00 > 80.00	2.253	2.220	0.033		6458561	28.7	6590	
\$ 10 13C2 PFDA	515.00 > 470.00	2.405	2.384	0.021	1.000	1452413	9.04	3265	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_019.d

Injection Date: 27-Feb-2017 16:16:10

Instrument ID: A8\_N

Lims ID: 320-26006-A-10-A

Lab Sample ID: 320-26006-10

Client ID: WI-AF-1FB36-0217

Operator ID: A8-PC\A8

ALS Bottle#: 17

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

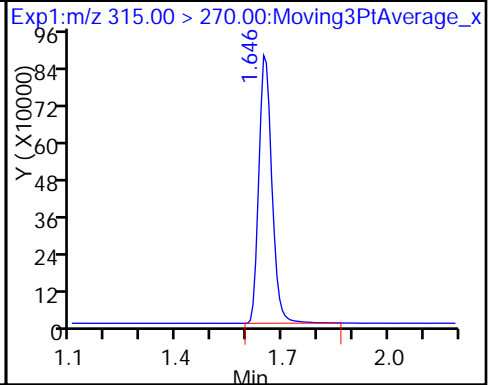
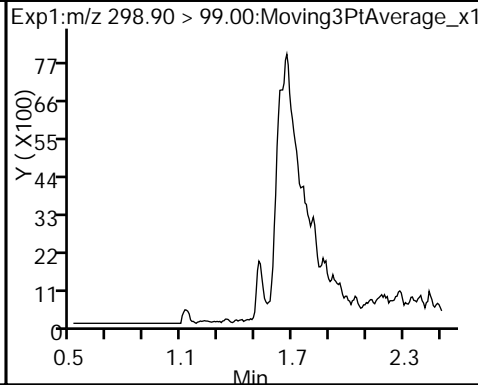
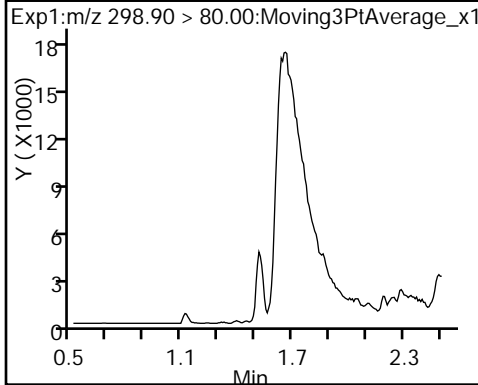
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

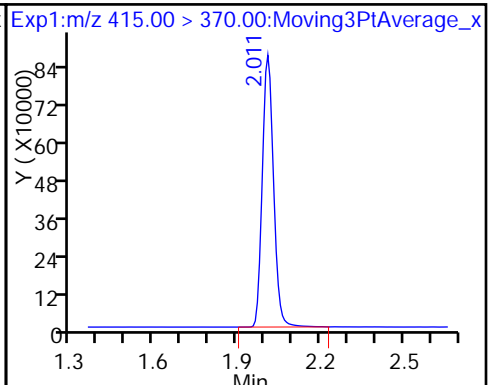
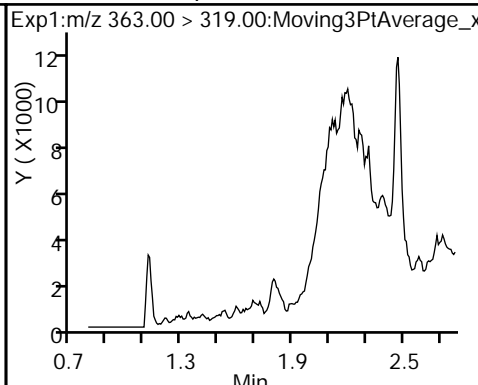
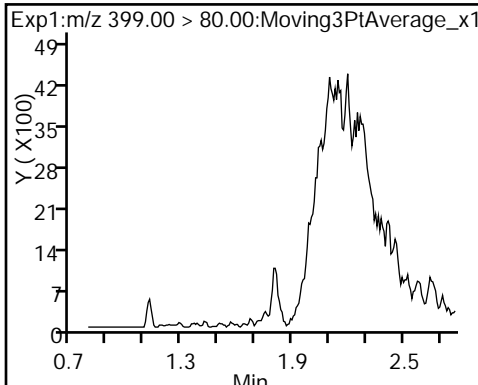
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

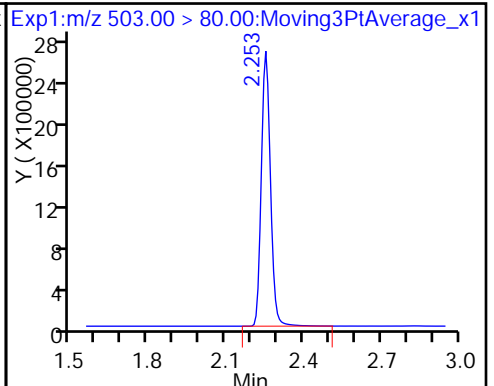
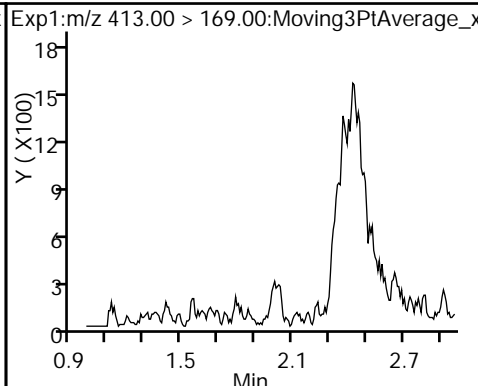
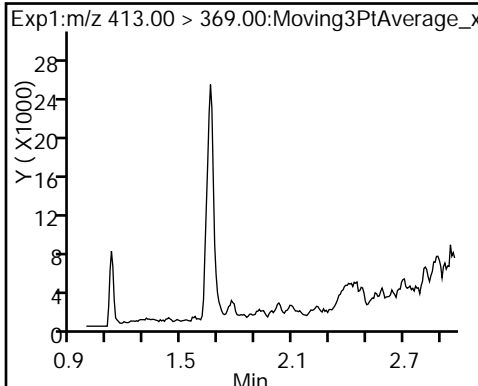
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

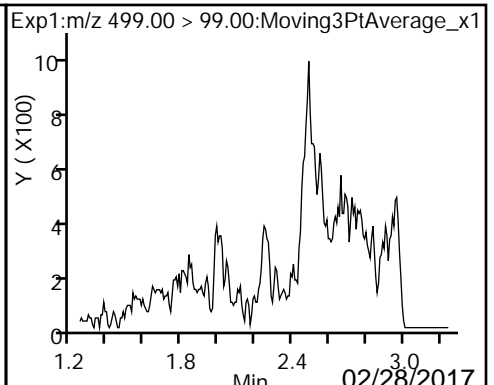
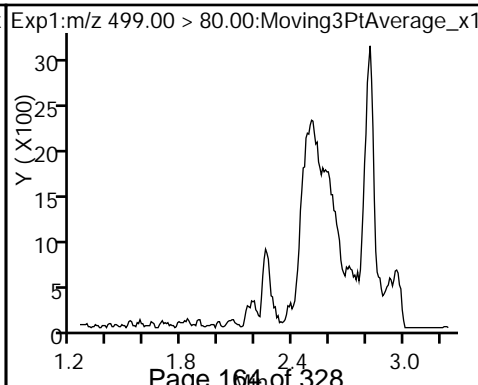
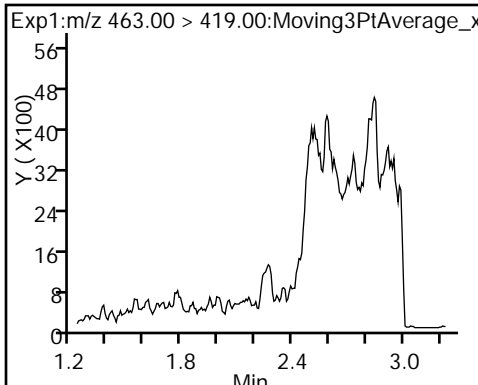
\* 7 13C4 PFOS



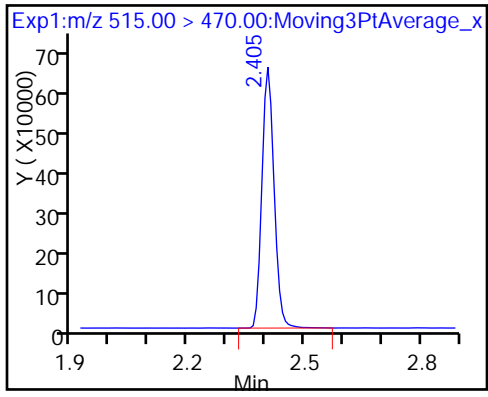
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

8 Perfluorooctane sulfonic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_019.d  
 Lims ID: 320-26006-A-10-A  
 Client ID: WI-AF-1FB36-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:16:10 ALS Bottle#: 17 Worklist Smp#: 19  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-10-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:50:58

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.45	84.47
\$ 10 13C2 PFDA	10.0	9.04	90.42

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW37-0217 Lab Sample ID: 320-26006-11  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_020.d  
 Analysis Method: 537 Date Collected: 02/22/2017 12:12  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 275.5 (mL) Date Analyzed: 02/27/2017 16:20  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.054	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	90		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_020.d  
 Lims ID: 320-26006-A-11-A  
 Client ID: WI-AF-1RW37-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:20:35 ALS Bottle#: 18 Worklist Smp#: 20  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-11-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:51:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.646	1.638	0.008	1.000	2205586	8.34	4966	
* 6 13C2-PFOA	415.00 > 370.00	2.003	1.979	0.024		2450096	10.0	4058	
* 7 13C4 PFOS	503.00 > 80.00	2.246	2.220	0.026		6440089	28.7	4814	
\$ 10 13C2 PFDA	515.00 > 470.00	2.397	2.384	0.013	1.000	1420123	8.98	3142	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_020.d

Injection Date: 27-Feb-2017 16:20:35

Instrument ID: A8\_N

Lims ID: 320-26006-A-11-A

Lab Sample ID: 320-26006-11

Client ID: WI-AF-1RW37-0217

Operator ID: A8-PC\A8

ALS Bottle#: 18

Worklist Smp#: 20

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

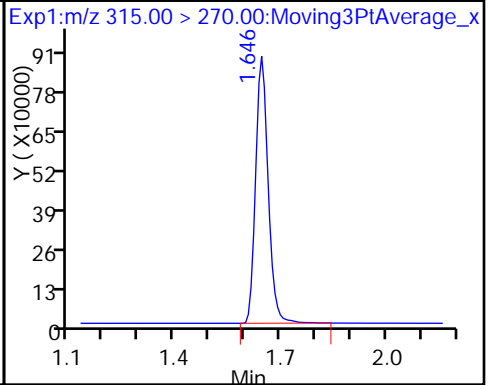
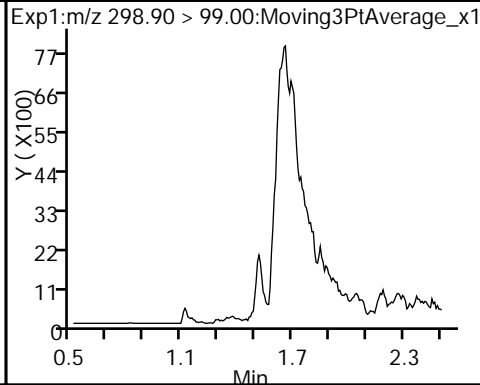
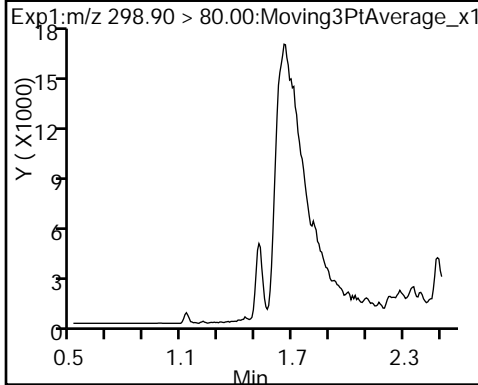
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (ND)

1 Perfluorobutanesulfonic acid (ND)

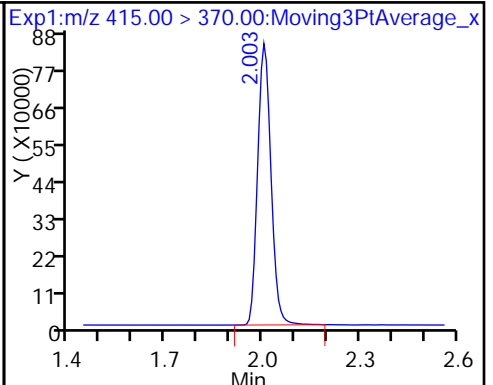
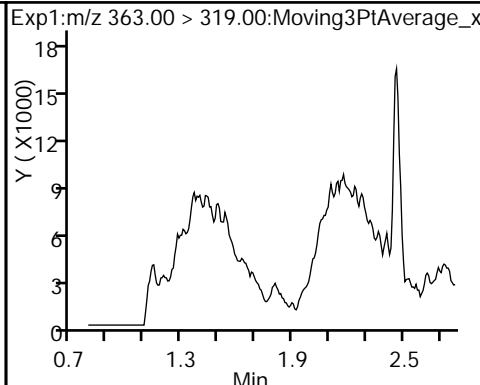
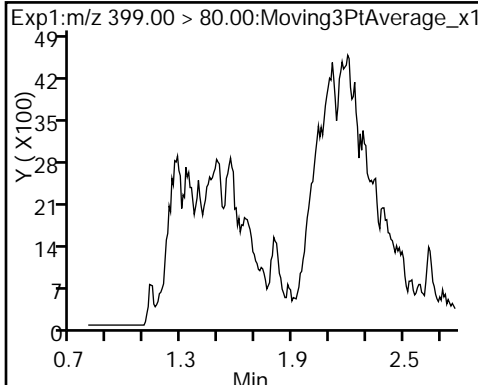
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (ND)

4 Perfluoroheptanoic acid (ND)

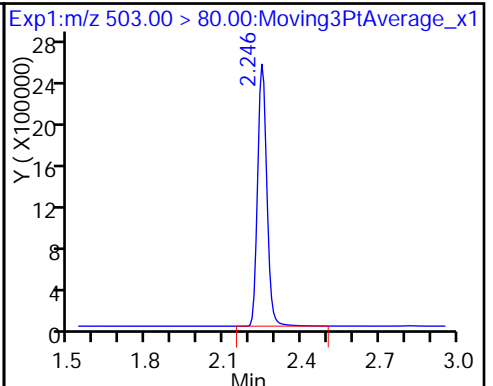
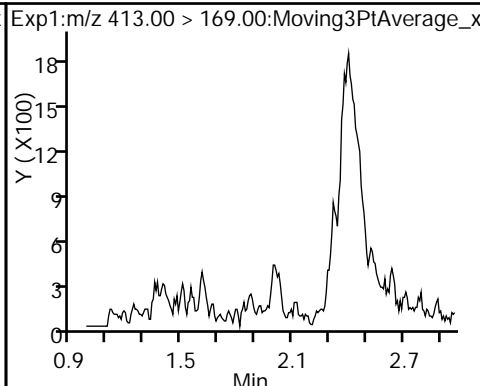
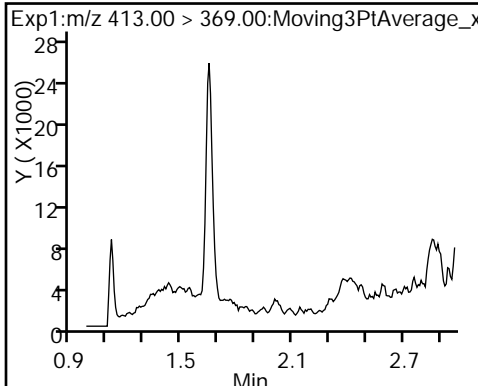
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

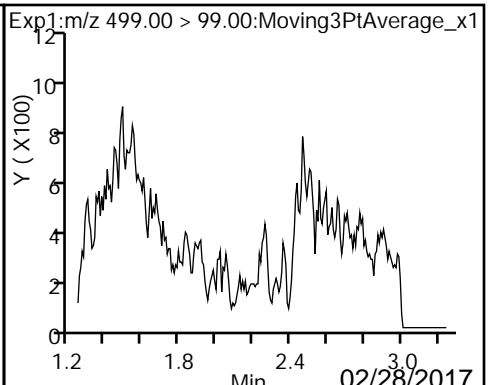
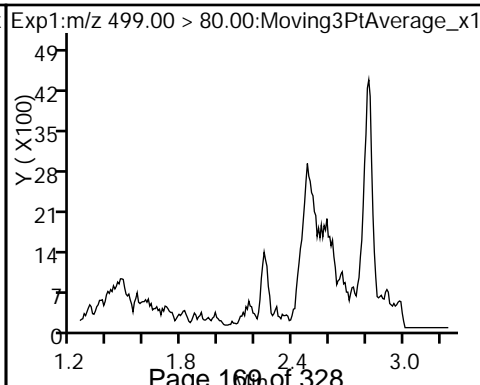
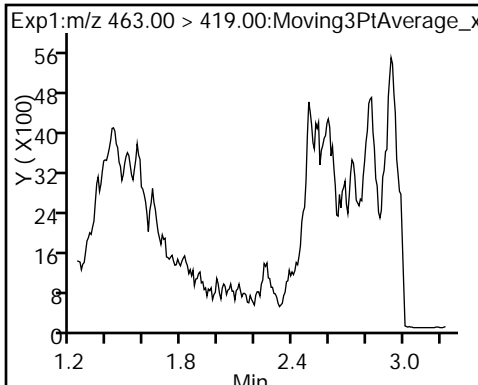
\* 7 13C4 PFOS



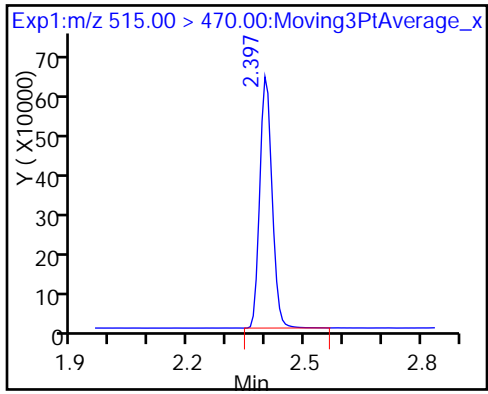
9 Perfluorononanoic acid (ND)

8 Perfluorooctane sulfonic acid (ND)

8 Perfluorooctane sulfonic acid (ND)



\$ 10 13C2 PFDA





TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_020.d  
 Lims ID: 320-26006-A-11-A  
 Client ID: WI-AF-1RW37-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:20:35 ALS Bottle#: 18 Worklist Smp#: 20  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-11-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:51:12

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.34	83.42
\$ 10 13C2 PFDA	10.0	8.98	89.78

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB37-0217 Lab Sample ID: 320-26006-12  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_021.d  
 Analysis Method: 537 Date Collected: 02/22/2017 12:13  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 285.4 (mL) Date Analyzed: 02/27/2017 16:25  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.096	U	0.12	0.096	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	87		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_021.d  
 Lims ID: 320-26006-A-12-A  
 Client ID: WI-AF-1FB37-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:25:00 ALS Bottle#: 19 Worklist Smp#: 21  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-12-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:51:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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\$ 2 13C2 PFHxA	315.00 > 270.00	1.639	1.638	0.001	1.000	2327661	8.21	5679	
* 6 13C2-PFOA	415.00 > 370.00	1.995	1.979	0.016		2627706	10.0	5277	
* 7 13C4 PFOS	503.00 > 80.00	2.238	2.220	0.018		6818478	28.7	4980	
\$ 10 13C2 PFDA	515.00 > 470.00	2.390	2.384	0.006	1.000	1483272	8.74	3264	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_021.d

Injection Date: 27-Feb-2017 16:25:00

Instrument ID: A8\_N

Lims ID: 320-26006-A-12-A

Lab Sample ID: 320-26006-12

Client ID: WI-AF-1FB37-0217

Operator ID: A8-PC\A8

ALS Bottle#: 19

Worklist Smp#: 21

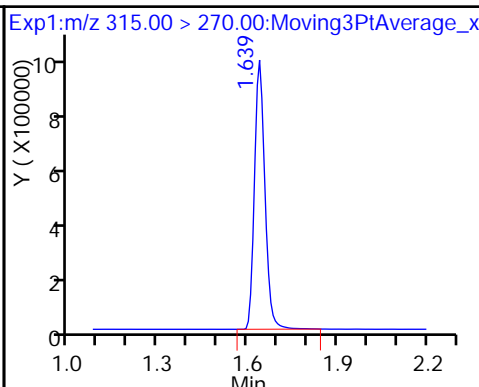
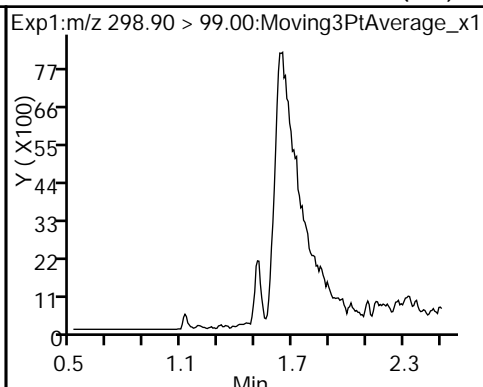
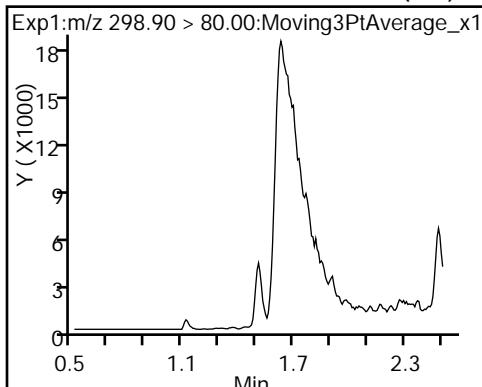
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

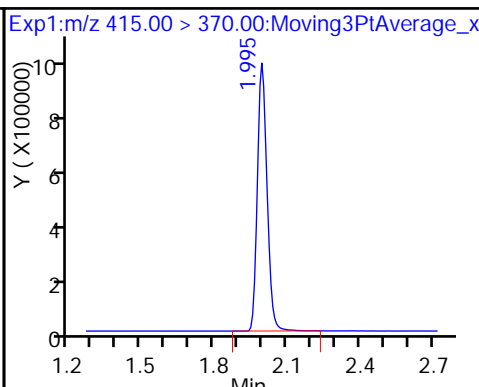
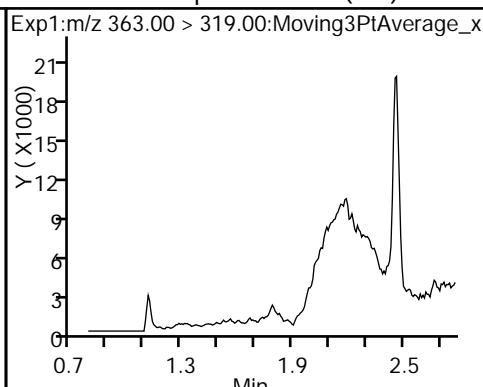
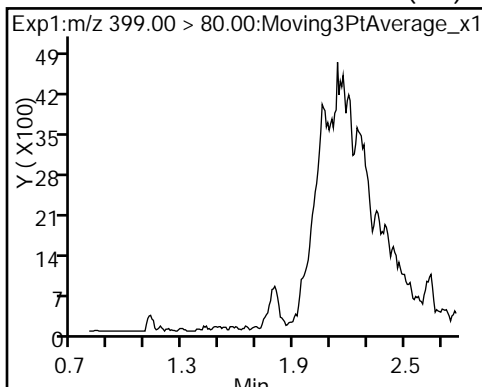
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

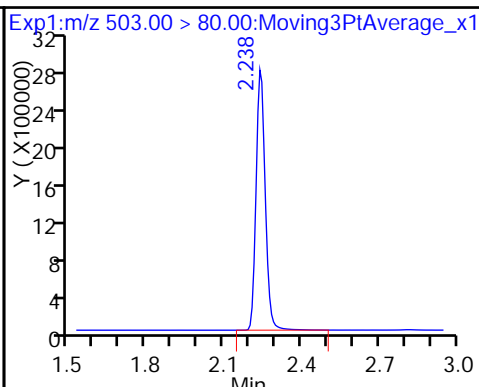
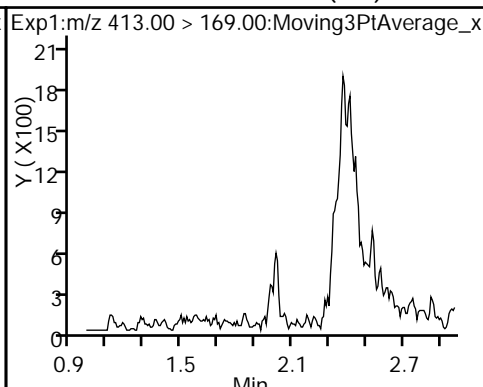
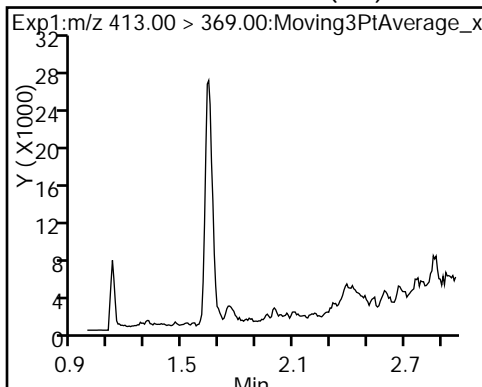
1 Perfluorobutanesulfonic acid (ND) 1 Perfluorobutanesulfonic acid (ND) \$ 2 13C2 PFHxA



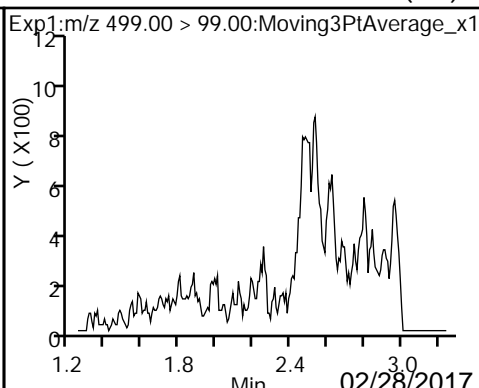
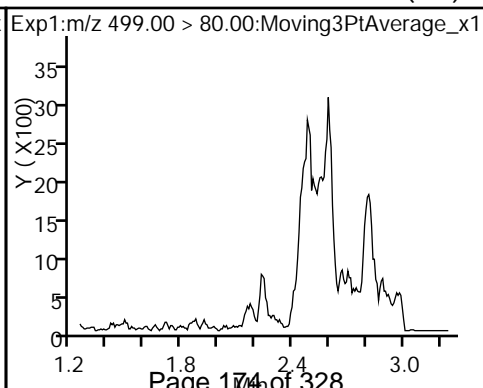
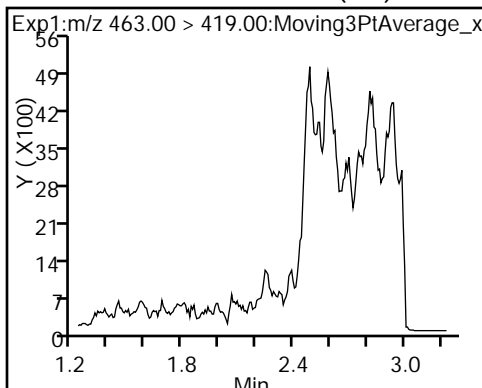
3 Perfluorohexanesulfonic acid (ND) 4 Perfluoroheptanoic acid (ND) \* 6 13C2-PFOA



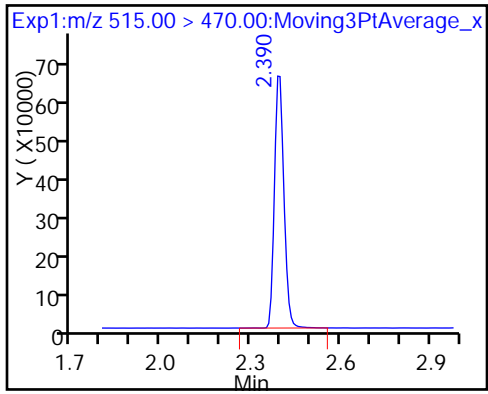
5 Perfluorooctanoic acid (ND) 5 Perfluorooctanoic acid (ND) \* 7 13C4 PFOS



9 Perfluorononanoic acid (ND) 8 Perfluorooctane sulfonic acid (ND) 8 Perfluorooctane sulfonic acid (ND)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_021.d  
 Lims ID: 320-26006-A-12-A  
 Client ID: WI-AF-1FB37-0217  
 Sample Type: Client  
 Inject. Date: 27-Feb-2017 16:25:00 ALS Bottle#: 19 Worklist Smp#: 21  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-26006-a-12-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:51:23

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.21	82.08
\$ 10 13C2 PFDA	10.0	8.74	87.43

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

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1 Analy Batch No.: 147939

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/26/2017 11:03 Calibration End Date: 01/26/2017 11:25 Calibration ID: 27929

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-147939/4	2017.01.26_537_CURVE_004.d
Level 2	IC 320-147939/5	2017.01.26_537_CURVE_005.d
Level 3	IC 320-147939/6	2017.01.26_537_CURVE_006.d
Level 4	IC 320-147939/7	2017.01.26_537_CURVE_007.d
Level 5	IC 320-147939/8	2017.01.26_537_CURVE_008.d
Level 6	IC 320-147939/9	2017.01.26_537_CURVE_009.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)	1.9734 1.2846	2.1200	1.9155	1.5235	1.3756	QuaF		1.9030	-0.003592					0.9940			0.9600
Perfluorohexanesulfonic acid	1.6352 1.6362	1.7760	1.7293	1.7290	1.5957	Ave		1.6836			4.2		30.0				
Perfluoroheptanoic acid	0.9573 0.9336	1.0304	0.9596	0.9932	0.9117	Ave		0.9643			4.4		30.0				
Perfluorooctanoic acid (PFOA)	0.9250 0.9675	1.0010	0.8570	0.9604	0.8375	Ave		0.9247			7.0		30.0				
Perfluorooctanesulfonic acid (PFOS)	1.0972 1.1381	1.1350	1.1095	1.1438	1.0749	Ave		1.1164			2.4		30.0				
Perfluorononanoic acid	0.7119 0.6901	0.7252	0.6648	0.6872	0.6088	Ave		0.6813			6.1		30.0				
13C2 PFHxA	1.0229 1.1123	1.0615	1.0571	1.1311	1.0902	Ave		1.0792			3.7		30.0				
13C2 PFDA	0.6004 0.6781	0.6484	0.6293	0.6610	0.6565	Ave		0.6456			4.2		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.: 320-26006-1 Analy Batch No.: 147939

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/26/2017 11:03 Calibration End Date: 01/26/2017 11:25 Calibration ID: 27929

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-147939/4	2017.01.26_537_CURVE_004.d
Level 2	IC 320-147939/5	2017.01.26_537_CURVE_005.d
Level 3	IC 320-147939/6	2017.01.26_537_CURVE_006.d
Level 4	IC 320-147939/7	2017.01.26_537_CURVE_007.d
Level 5	IC 320-147939/8	2017.01.26_537_CURVE_008.d
Level 6	IC 320-147939/9	2017.01.26_537_CURVE_009.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	QuaF	4091129 51739348	10992329	20307189	40111981	43425035	8.98 178	22.9	45.1	90.9	135
Perfluorohexanesulfonic acid	PFOS	Ave	1142790 22216101	3104280	6180212	15346095	16980909	3.03 60.1	7.72	15.2	30.6	45.4
Perfluoroheptanoic acid	13PF OA	Ave	226942 4381381	616263	1202991	3062534	3366172	0.990 19.7	2.52	4.97	10.0	14.9
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	432317 8951805	1180376	2118361	5838940	6096769	1.95 38.8	4.98	9.81	19.8	29.3
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	1015341 20461190	2626980	5250567	13442641	15146387	4.01 79.6	10.2	20.1	40.6	60.1
Perfluorononanoic acid	13PF OA	Ave	353574 6784989	908738	1746263	4439886	4708932	2.07 41.2	5.29	10.4	21.0	31.1
13C2 PFHxA	13PF OA	Ave	2449365 2652857	2514804	2663857	3479578	2710579	10.0 10.0	10.0	10.0	10.0	10.0
13C2 PFDA	13PF OA	Ave	1437714 1617282	1536073	1585927	2033318	1632201	10.0 10.0	10.0	10.0	10.0	10.0

Curve Type Legend:

Ave = Average ISTD
QuaF = Quadratic ISTD forced zero



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

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1 Analy Batch No.: 147939

SDG No.: \_\_\_\_\_

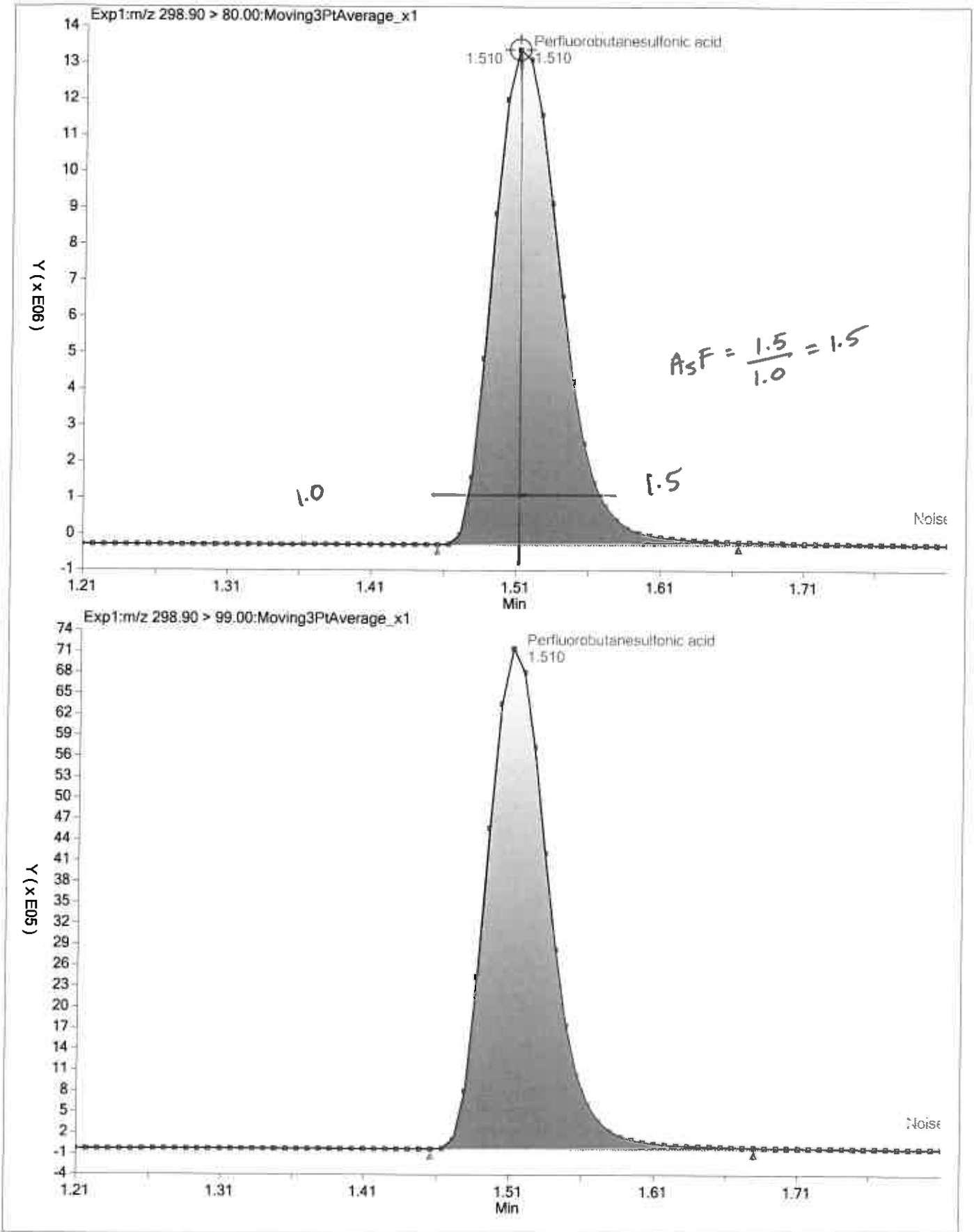
Instrument ID: A8\_N GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

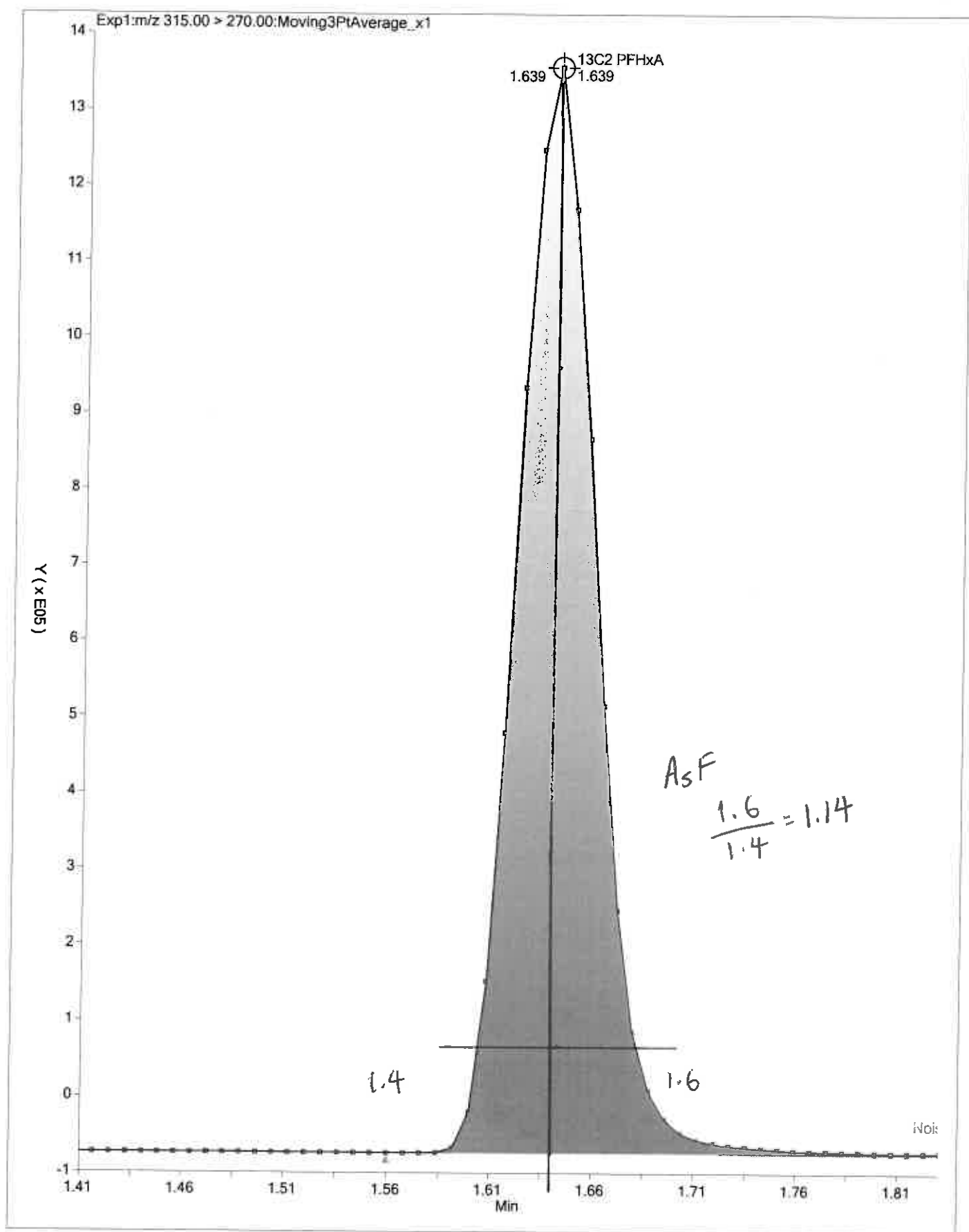
Calibration Start Date: 01/26/2017 11:03 Calibration End Date: 01/26/2017 11:25 Calibration ID: 27929

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-147939/4	2017.01.26_537_CURVE_004.d
Level 2	IC 320-147939/5	2017.01.26_537_CURVE_005.d
Level 3	IC 320-147939/6	2017.01.26_537_CURVE_006.d
Level 4	IC 320-147939/7	2017.01.26_537_CURVE_007.d
Level 5	IC 320-147939/8	2017.01.26_537_CURVE_008.d
Level 6	IC 320-147939/9	2017.01.26_537_CURVE_009.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)	5.6	17.4	11.2	-4.2	-4.6	3.7	50	50	50	50	50	50
Perfluorohexanesulfonic acid	-2.9	5.5	2.7	2.7	-5.2	-2.8	50	50	50	50	50	50
Perfluoroheptanoic acid	-0.7	6.9	-0.5	3.0	-5.5	-3.2	50	50	50	50	50	50
Perfluorooctanoic acid (PFOA)	0.0	8.2	-7.3	3.9	-9.4	4.6	50	50	50	50	50	50
Perfluorooctanesulfonic acid (PFOS)	-1.7	1.7	-0.6	2.5	-3.7	1.9	50	50	50	50	50	50
Perfluorononanoic acid	4.5	6.4	-2.4	0.9	-10.7	1.3	50	50	50	50	50	50
13C2 PFHxA	-5.2	-1.6	-2.0	4.8	1.0	3.1	30	30	30	30	30	30
13C2 PFDA	-7.0	0.4	-2.5	2.4	1.7	5.0	30	30	30	30	30	30





TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_004.d  
 Lims ID: IC L1  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 26-Jan-2017 11:03:01 ALS Bottle#: 1 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L1\_537  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:47:39 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:09:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	4091129	9.48		351	
298.90 > 99.00	1.510	1.510	0.0	1.000	1798096		2.28(0.00-0.00)	466	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2449365	9.48		6519	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	1142790	2.94		285	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	226942	0.9828		31.9	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2394556	10.0		5310	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.988	1.980	0.008	1.000	432317	1.95		33.3	
413.00 > 169.00	1.980	1.980	0.0	0.996	250514		1.73(0.00-0.00)	213	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.223	2.140	0.083	1.000	1015341	3.94		504	M
499.00 > 99.00	2.223	2.140	0.083	1.000	244165		4.16(0.00-0.00)	190	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6623994	28.7		7372	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	353574	2.17		87.2	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1437714	9.30		2384	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L1\_00017

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_004.d

Injection Date: 26-Jan-2017 11:03:01

Instrument ID: A8\_N

Lims ID: IC L1

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

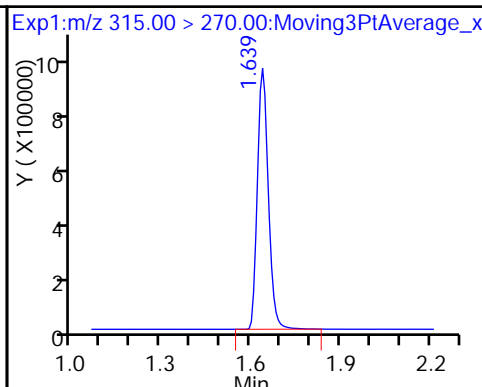
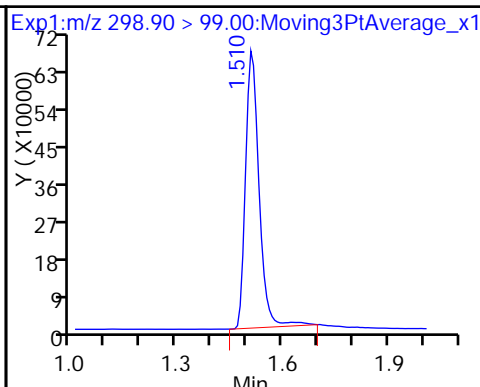
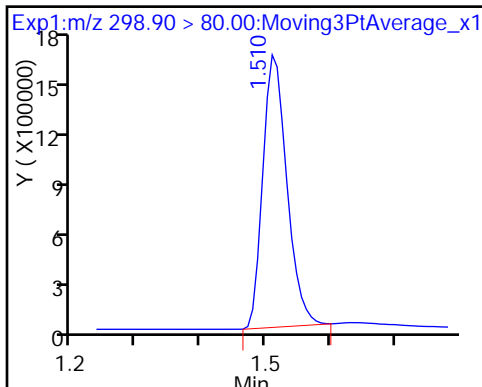
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

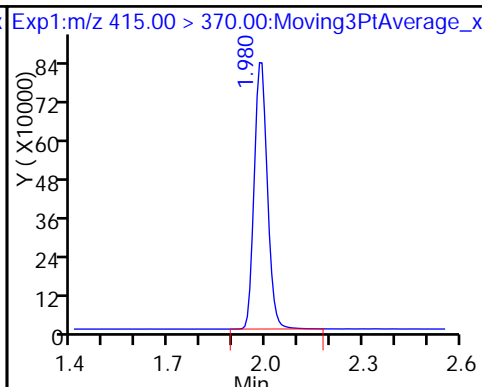
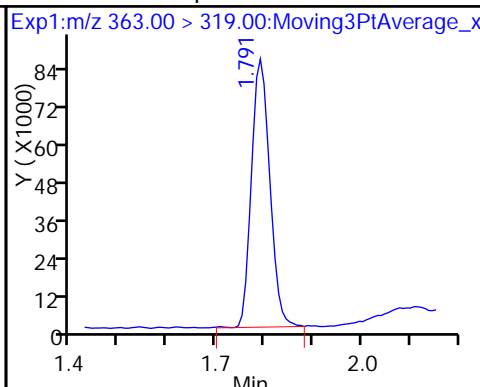
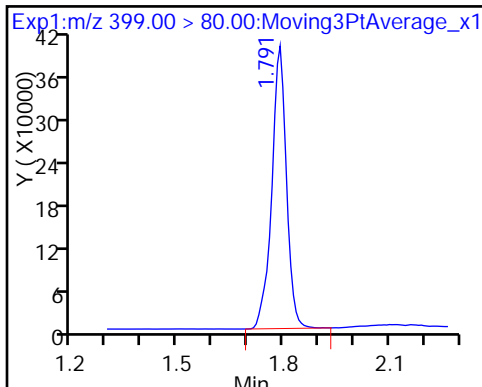
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

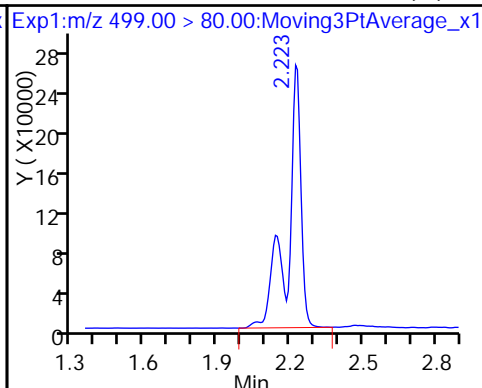
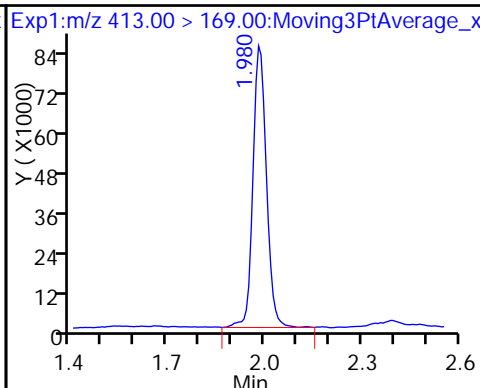
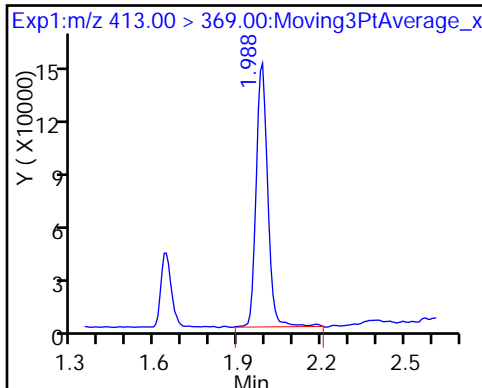
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

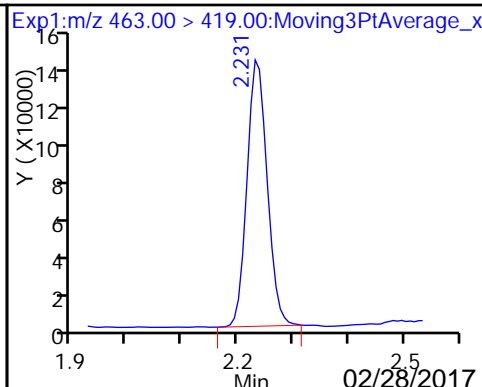
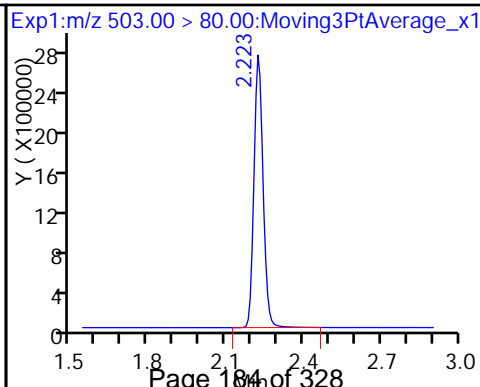
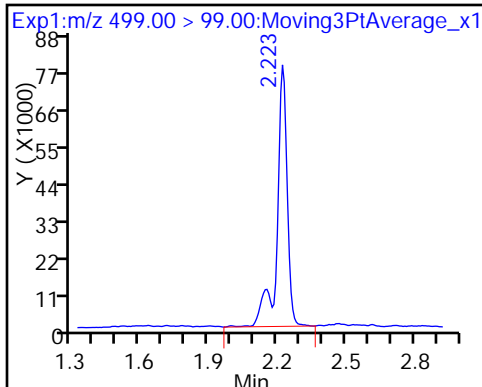
8 Perfluorooctane sulfonic acid (M)



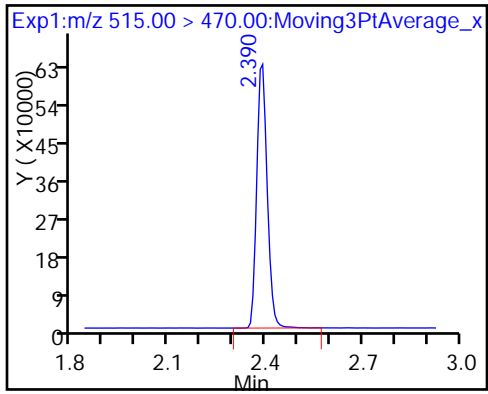
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

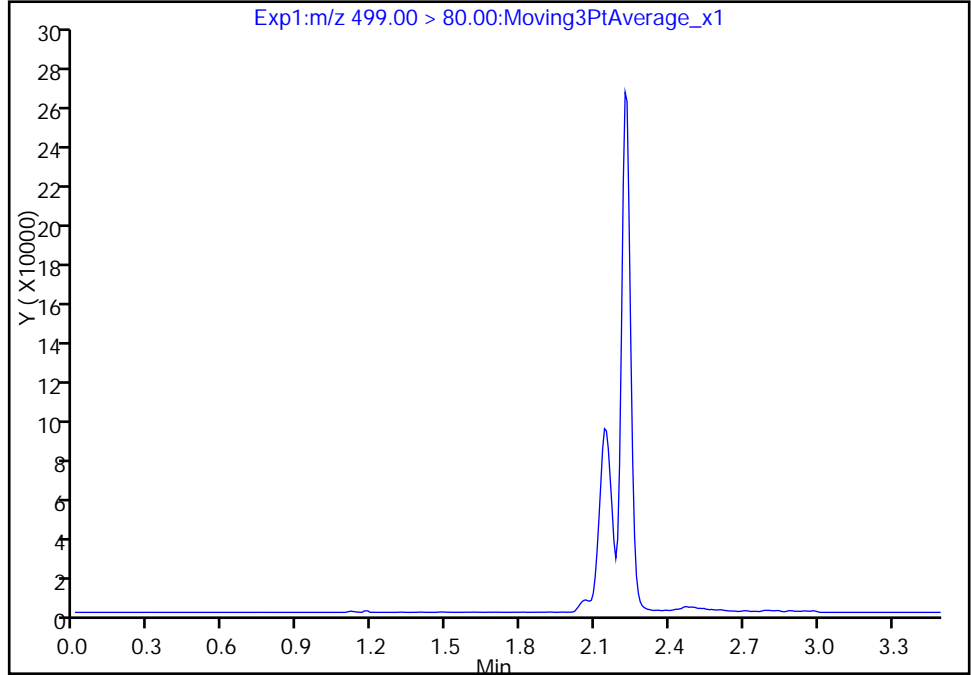
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Injection Date: 26-Jan-2017 11:03:01 Instrument ID: A8\_N  
Lims ID: IC L1  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

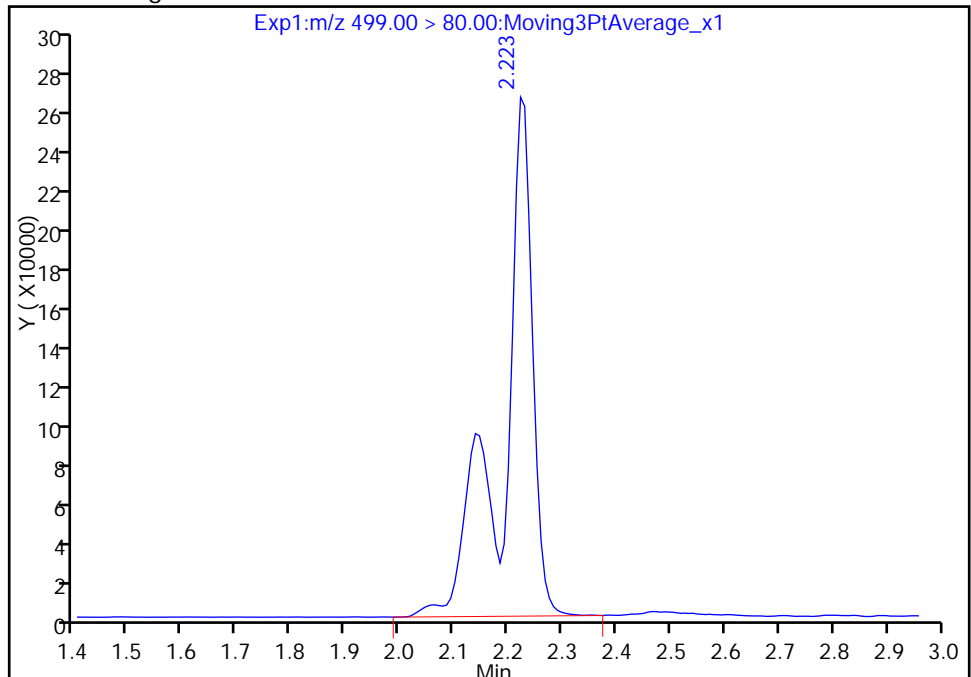
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 1015341  
Amount: 3.937687  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:09:36  
Audit Action: Manually Integrated

Audit Reason: Assign Peak



TestAmerica Sacramento

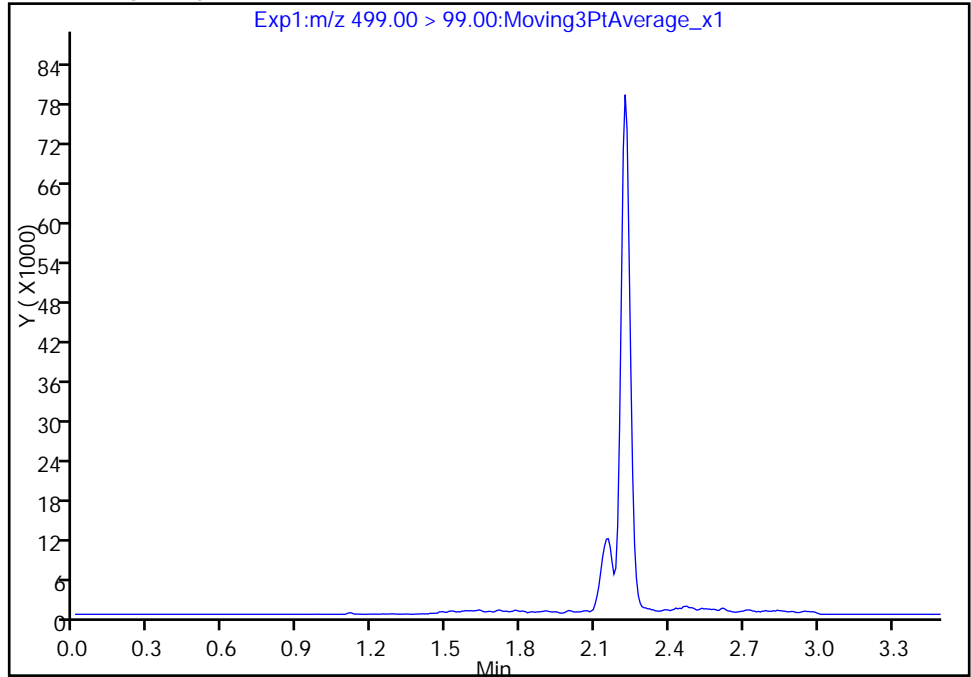
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Injection Date: 26-Jan-2017 11:03:01 Instrument ID: A8\_N  
Lims ID: IC L1  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

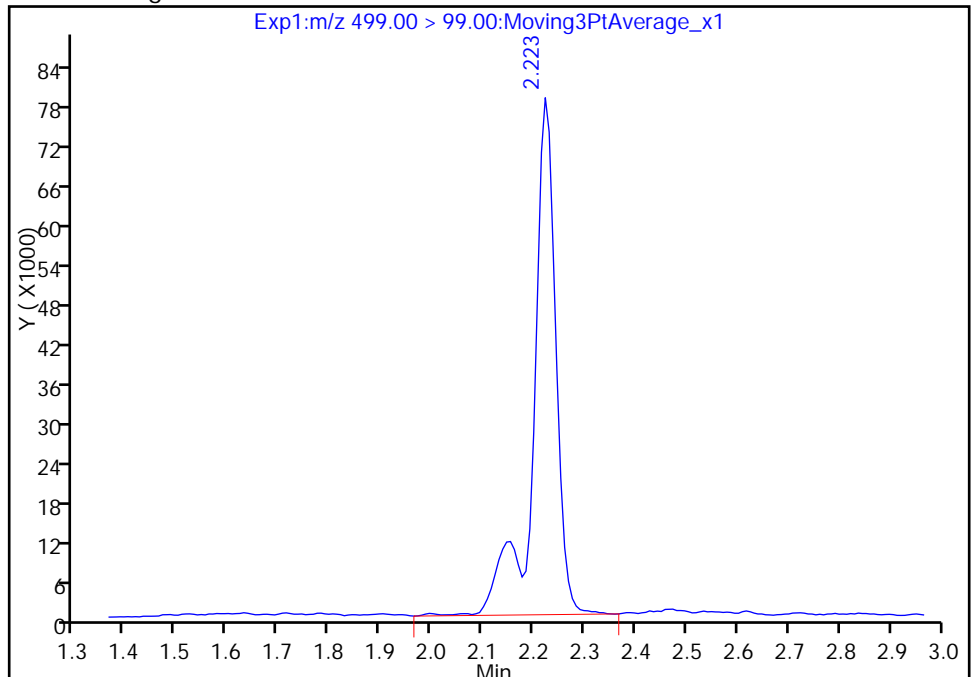
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 244165  
Amount: 3.937687  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:09:36

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_005.d  
 Lims ID: IC L2  
 Client ID:  
 Sample Type: IC Calib Level: 2  
 Inject. Date: 26-Jan-2017 11:07:28 ALS Bottle#: 2 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L2\_537  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:47:41 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:10:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	10992329	26.9		802	
298.90 > 99.00	1.510	1.510	0.0	1.000	4687208		2.35(0.00-0.00)	866	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2514804	9.84		6701	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	3104280	8.14		670	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	616263	2.70		90.7	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2369193	10.0		5564	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	1180376	5.39		87.8	
413.00 > 169.00	1.980	1.980	0.0	1.000	670918		1.76(0.00-0.00)	562	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.223	2.140	0.083	1.000	2626980	10.4		1151	M
499.00 > 99.00	2.223	2.140	0.083	1.000	641268		4.10(0.00-0.00)	512	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6496935	28.7		7906	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	908738	5.63		219	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1536073	10.0		2442	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L2\_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_005.d

Injection Date: 26-Jan-2017 11:07:28

Instrument ID: A8\_N

Lims ID: IC L2

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 2

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

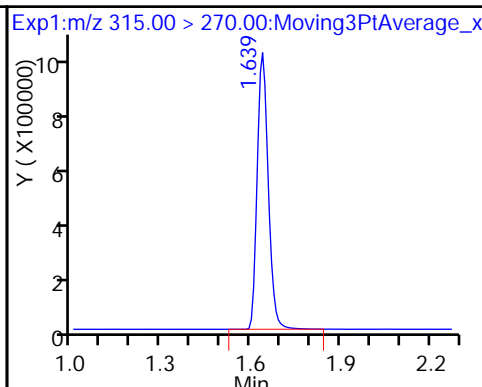
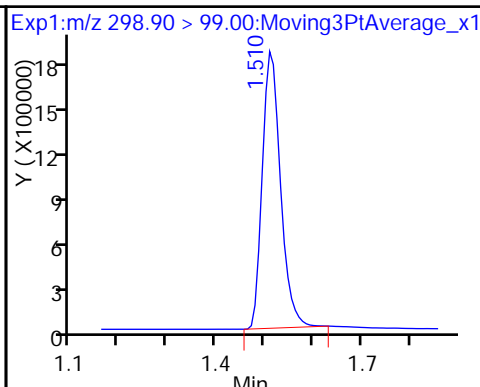
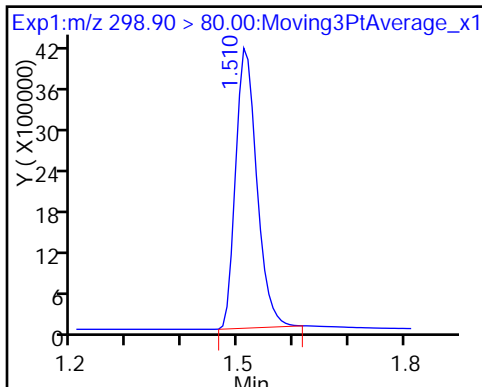
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

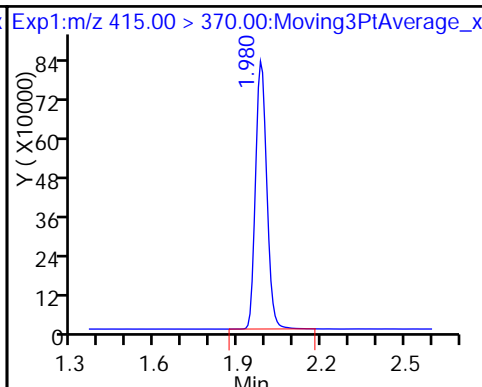
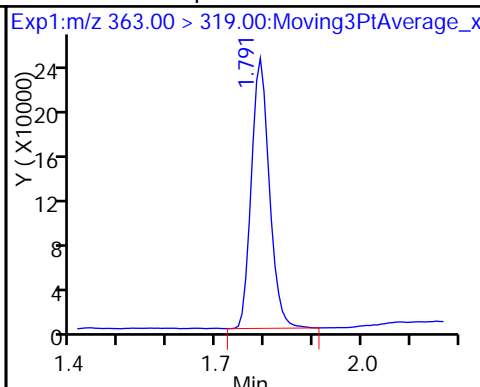
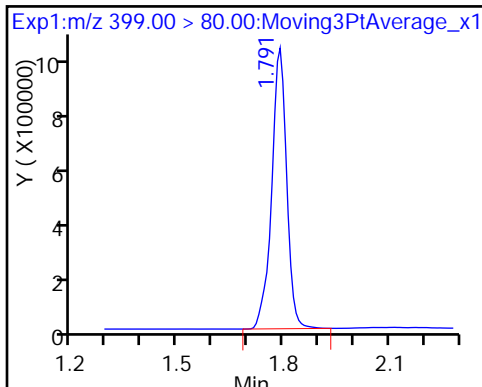
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

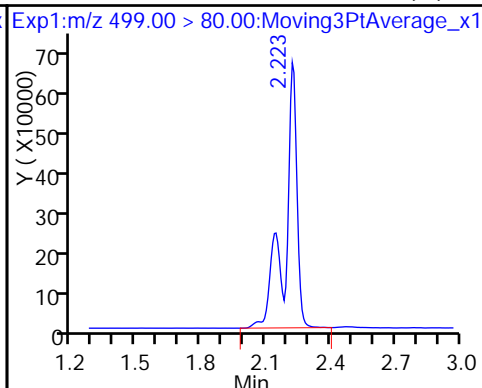
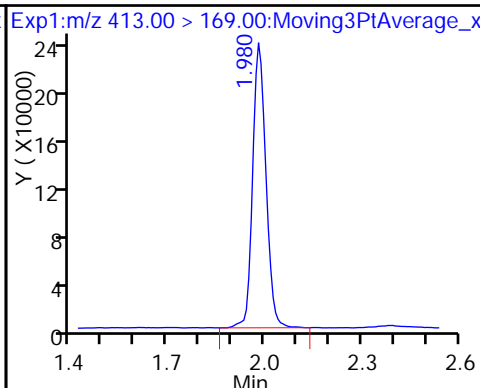
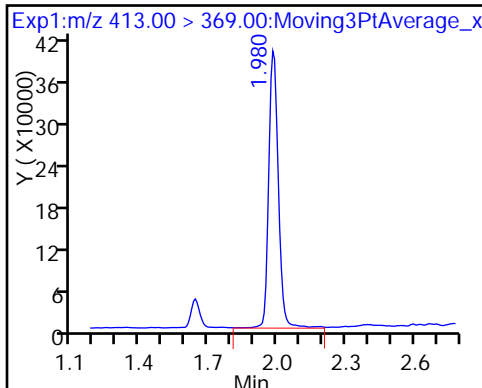
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

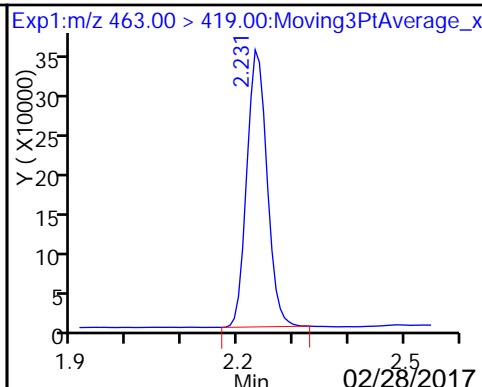
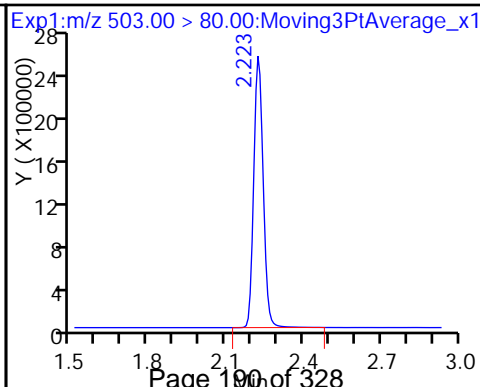
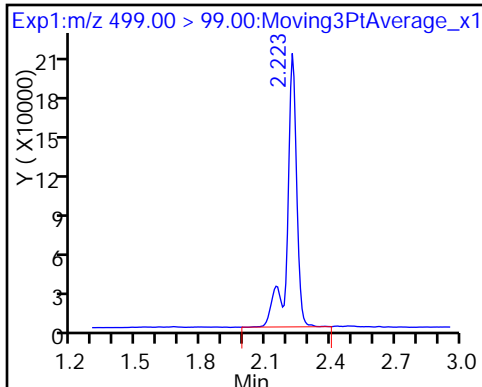
8 Perfluorooctane sulfonic acid (M)



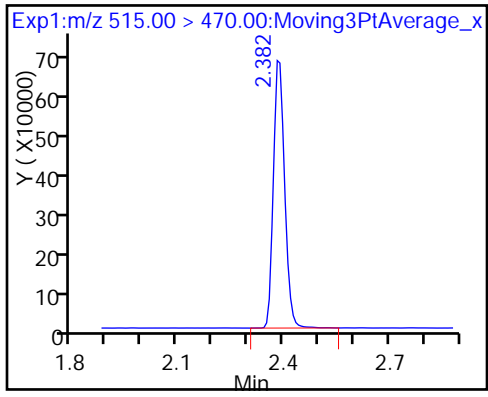
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

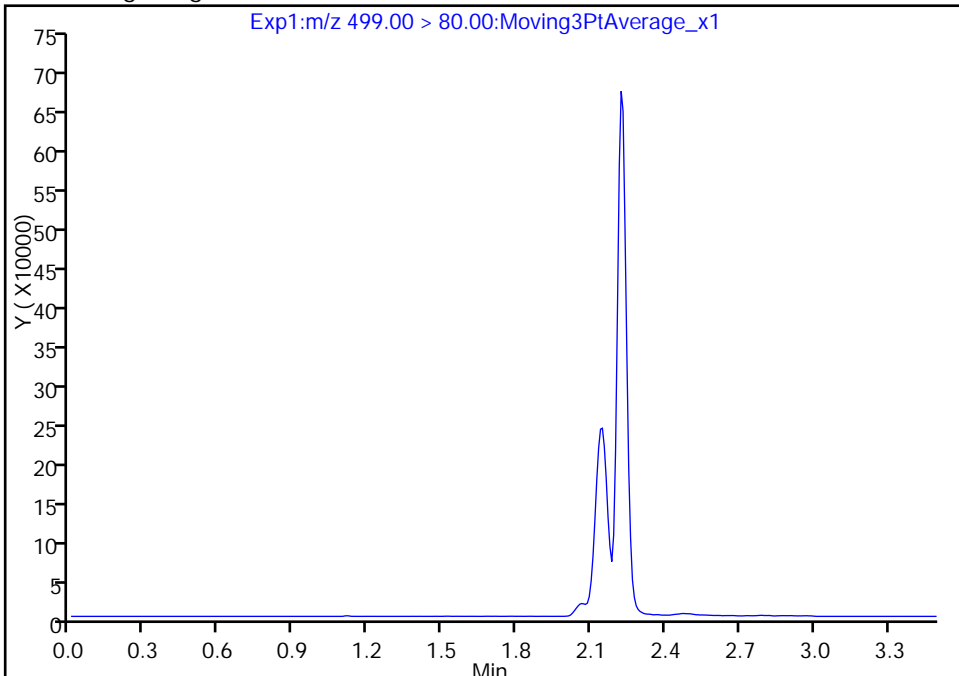
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_005.d  
Injection Date: 26-Jan-2017 11:07:28 Instrument ID: A8\_N  
Lims ID: IC L2  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

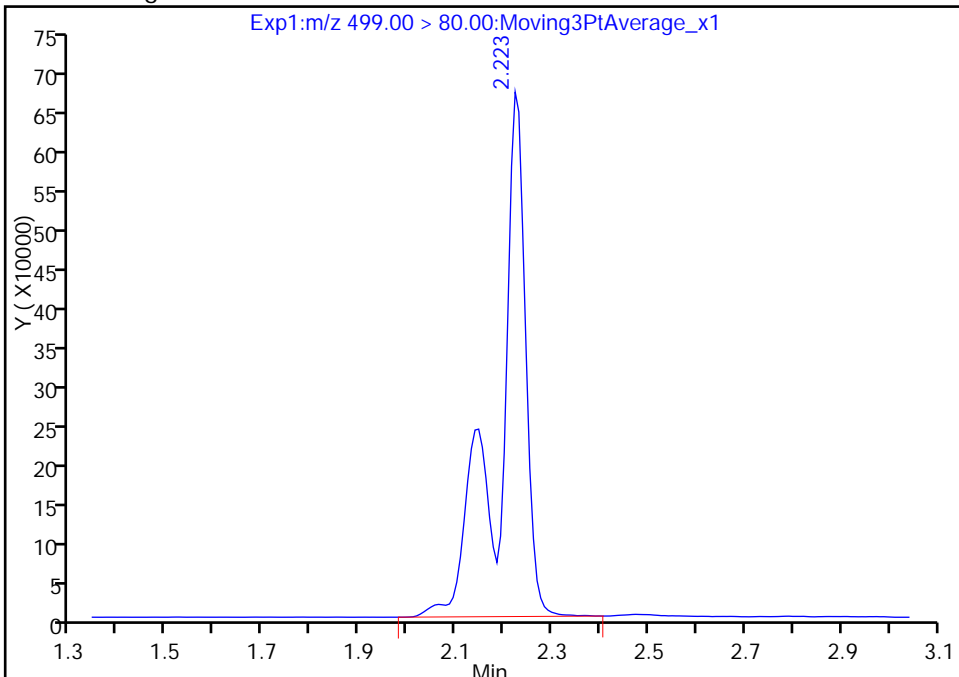
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 2626980  
Amount: 10.387175  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:10:13  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

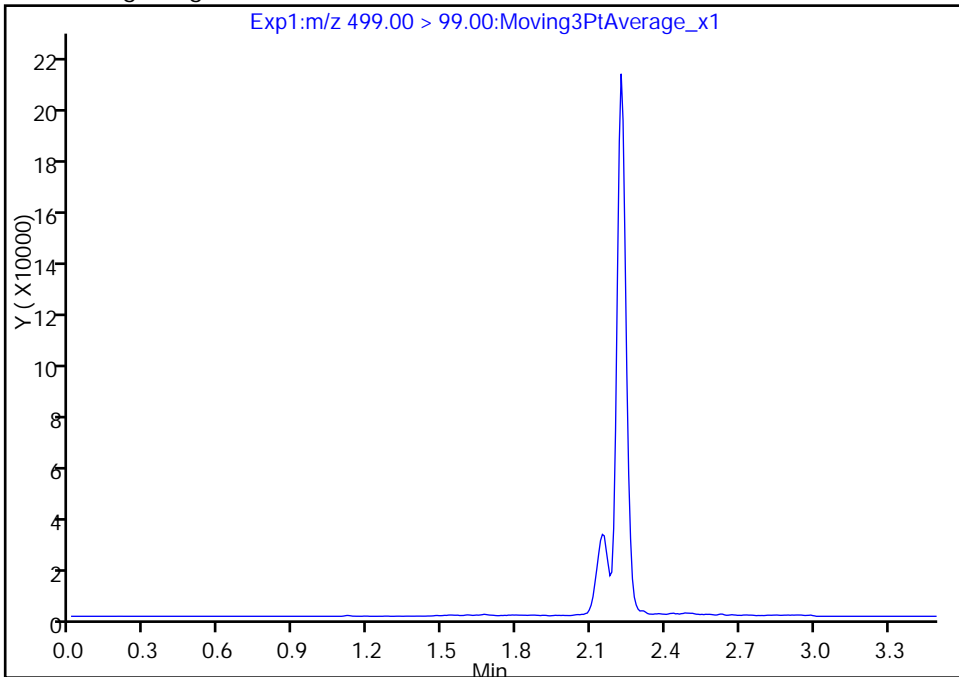
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_005.d  
Injection Date: 26-Jan-2017 11:07:28 Instrument ID: A8\_N  
Lims ID: IC L2  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

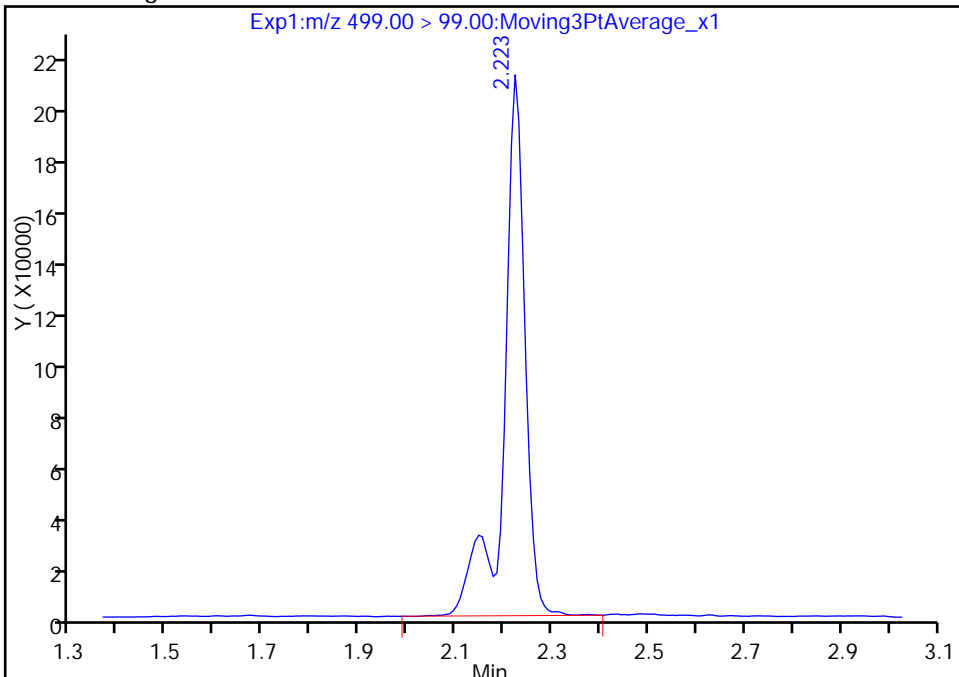
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 641268  
Amount: 10.387175  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:10:13

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_006.d  
 Lims ID: IC L3  
 Client ID:  
 Sample Type: IC Calib Level: 3  
 Inject. Date: 26-Jan-2017 11:11:53 ALS Bottle#: 3 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L3\_537  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:47:42 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:10:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	20307189	50.1		1251	
298.90 > 99.00	1.510	1.510	0.0	1.000	9133177		2.22(0.00-0.00)	1402	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2663857	9.80		5739	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	6180212	15.6		1126	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	1202991	4.95		163	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2520070	10.0		5579	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	2118361	9.09		164	
413.00 > 169.00	1.980	1.980	0.0	1.000	1215745		1.74(0.00-0.00)	978	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.223	2.140	0.083	1.000	5250567	20.0		1734	M
499.00 > 99.00	2.223	2.140	0.083	1.000	1270578		4.13(0.00-0.00)	868	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6741021	28.7		5703	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	1746263	10.2		386	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1585927	9.75		2596	



**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L3\_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_006.d

Injection Date: 26-Jan-2017 11:11:53

Instrument ID: A8\_N

Lims ID: IC L3

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 3

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

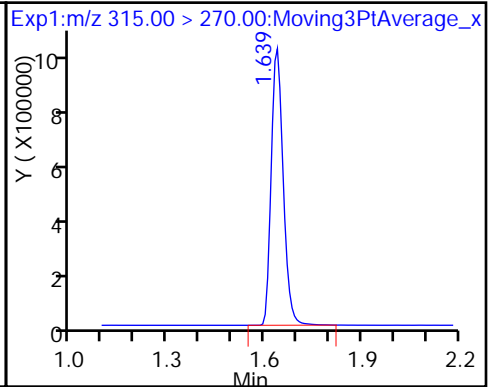
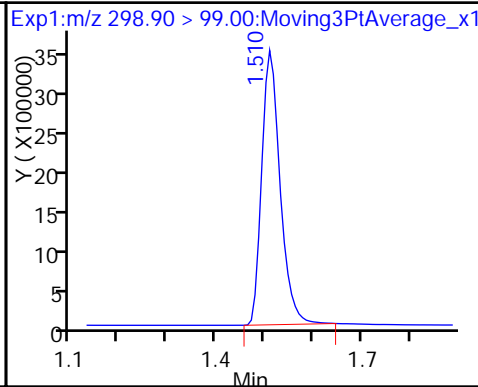
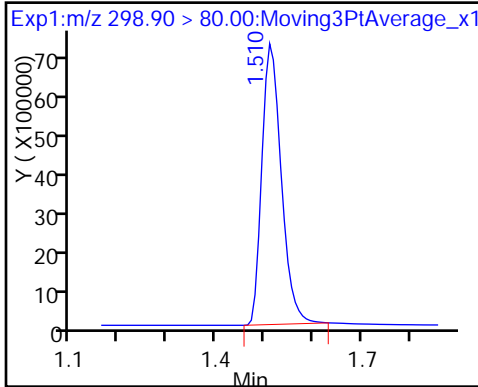
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

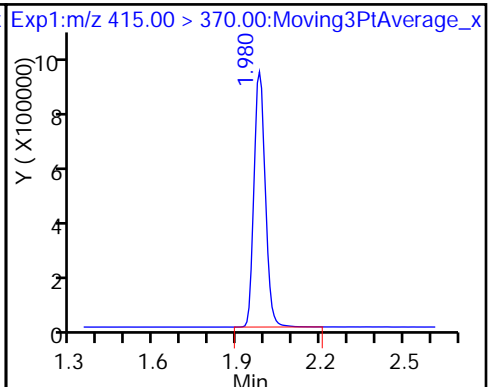
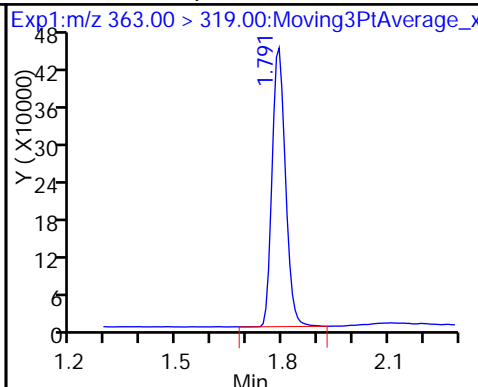
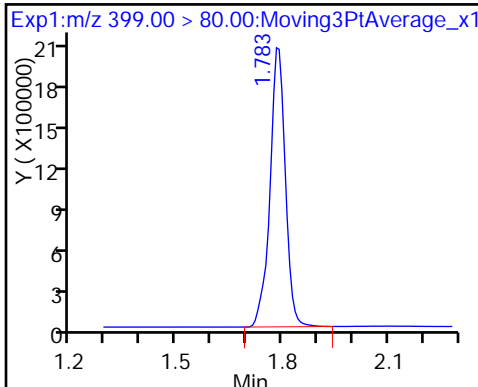
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

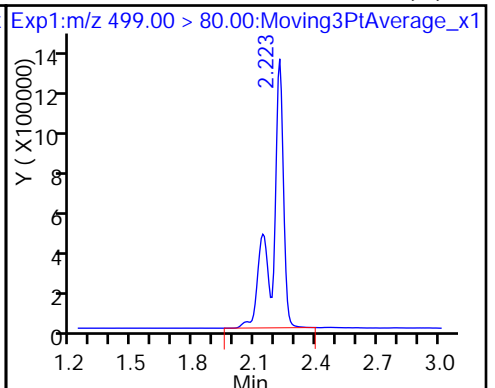
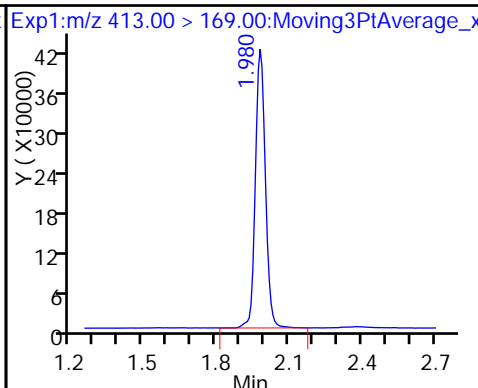
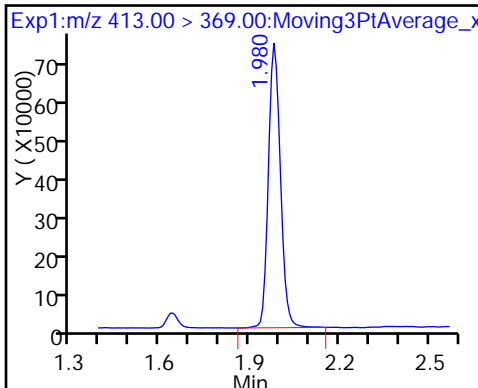
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

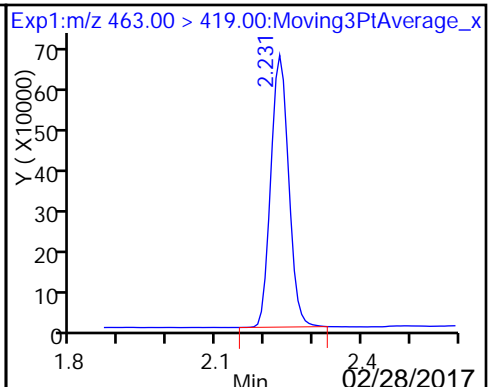
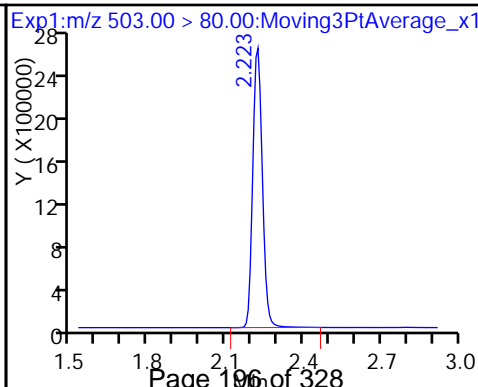
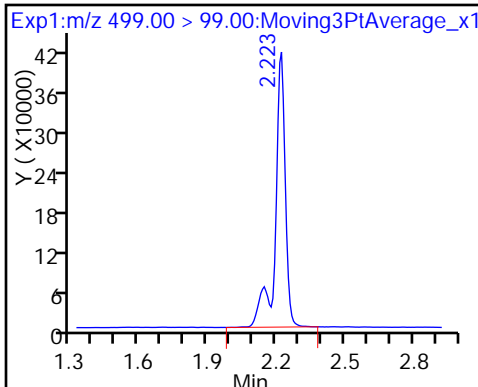
8 Perfluorooctane sulfonic acid (M)



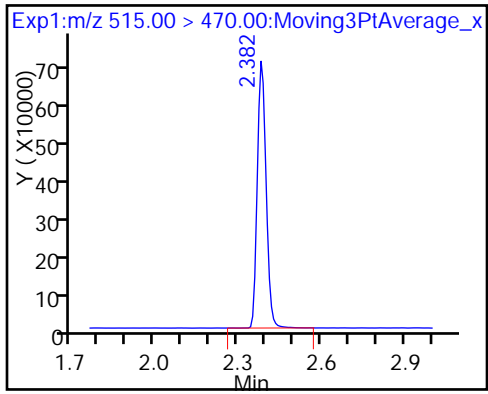
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

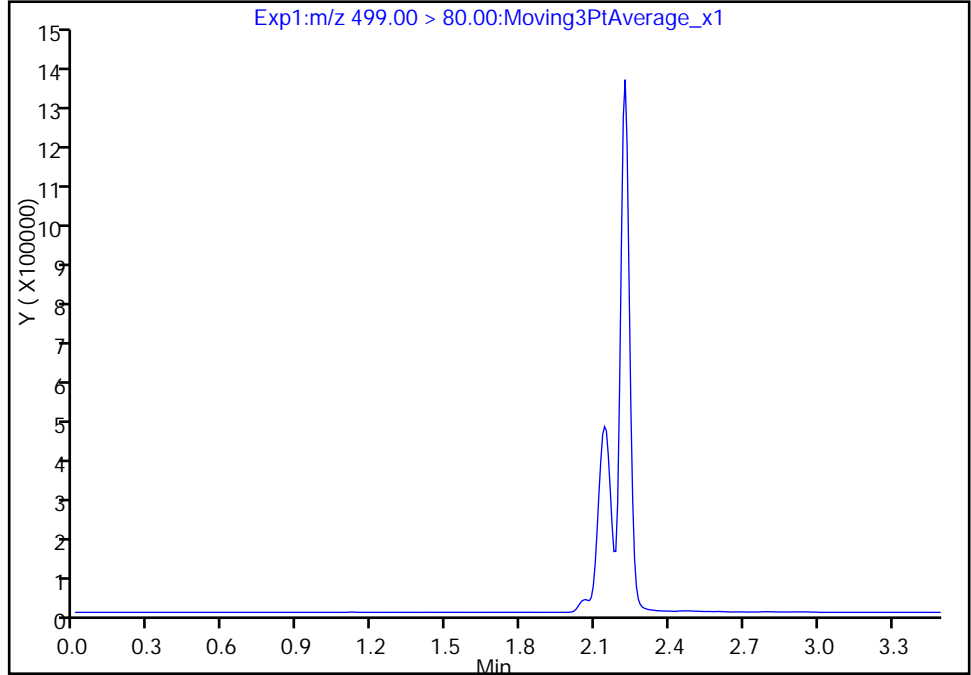
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_006.d  
Injection Date: 26-Jan-2017 11:11:53 Instrument ID: A8\_N  
Lims ID: IC L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

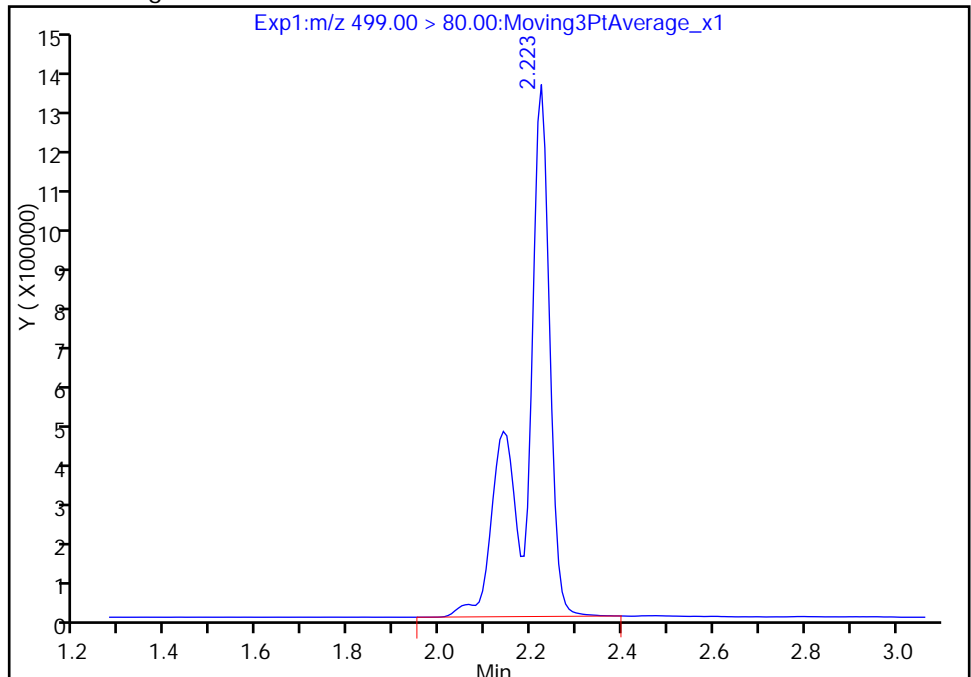
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 5250567  
Amount: 20.009200  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:10:41  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

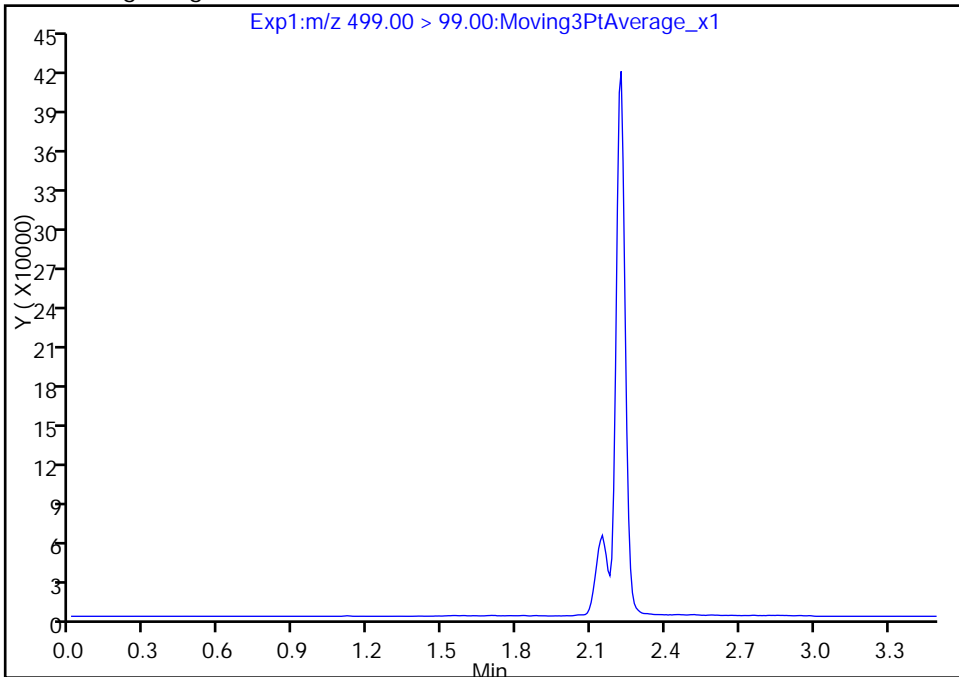
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_006.d  
Injection Date: 26-Jan-2017 11:11:53 Instrument ID: A8\_N  
Lims ID: IC L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

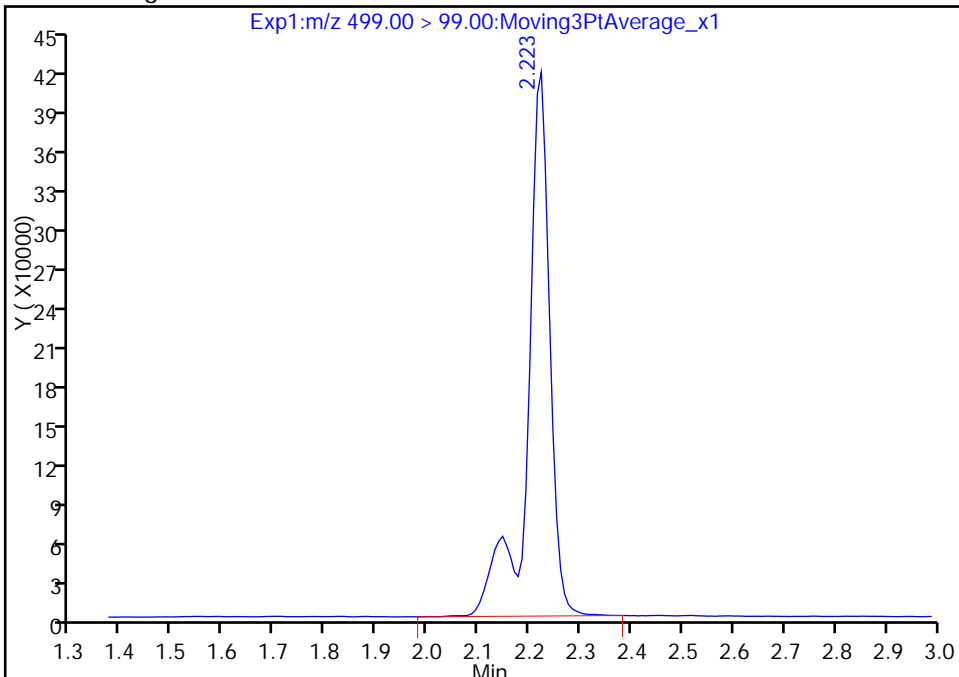
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 1270578  
Amount: 20.009200  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:10:41

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_007.d  
 Lims ID: IC L4  
 Client ID:  
 Sample Type: ICISAV Calib Level: 4  
 Inject. Date: 26-Jan-2017 11:16:16 ALS Bottle#: 4 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L4\_537  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:47:44 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:08:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	40111981	87.1		1617	
298.90 > 99.00	1.510	1.510	0.0	1.000	20577220		1.95(0.00-0.00)	2167	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	3479578	10.5		6594	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	15346095	31.5		2118	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	3062534	10.3		405	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		3076249	10.0		5651	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	5838940	20.5		395	
413.00 > 169.00	1.980	1.980	0.0	1.000	3484590		1.68(0.00-0.00)	2208	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.223	2.140	0.083	1.000	13442641	41.6		2970	M
499.00 > 99.00	2.223	2.140	0.083	1.000	3300271		4.07(0.00-0.00)	2000	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		8308914	28.7		8294	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	4439886	21.2		932	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	2033318	10.2		3084	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L4\_00017

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_007.d

Injection Date: 26-Jan-2017 11:16:16

Instrument ID: A8\_N

Lims ID: IC L4

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 4

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

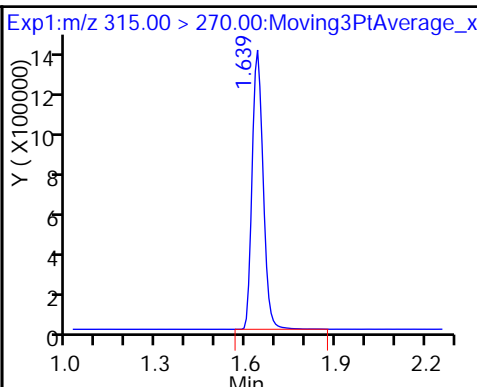
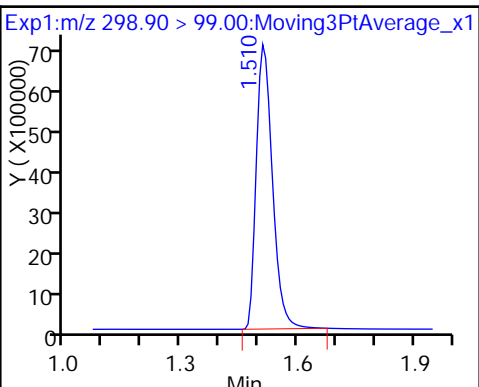
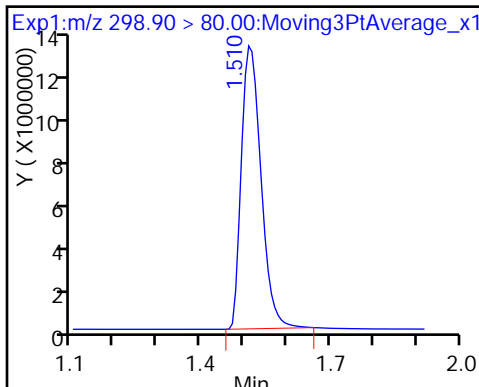
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

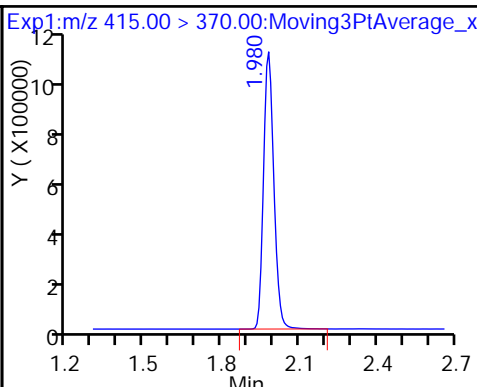
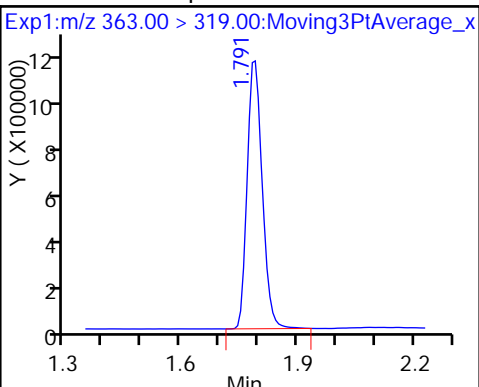
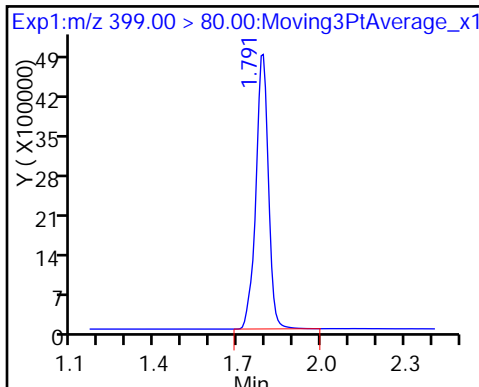
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

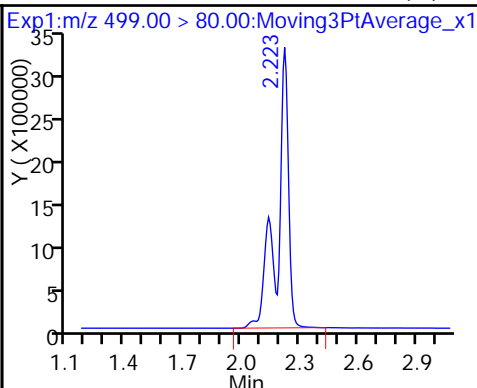
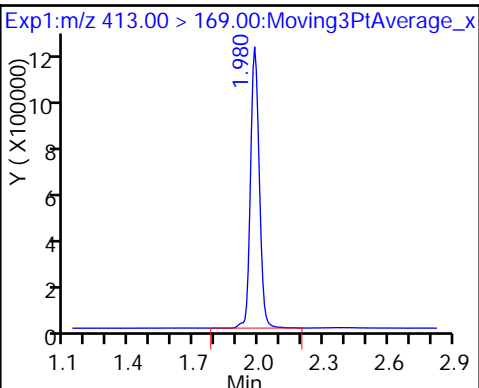
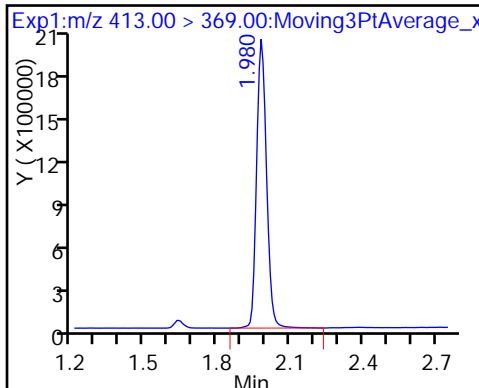
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

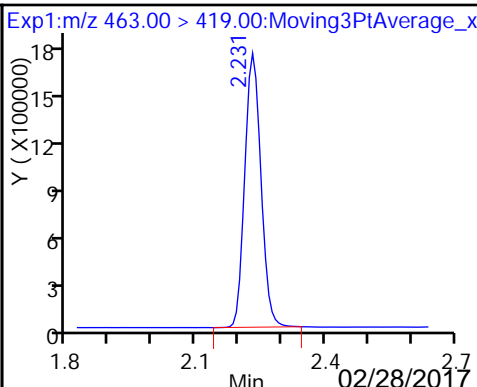
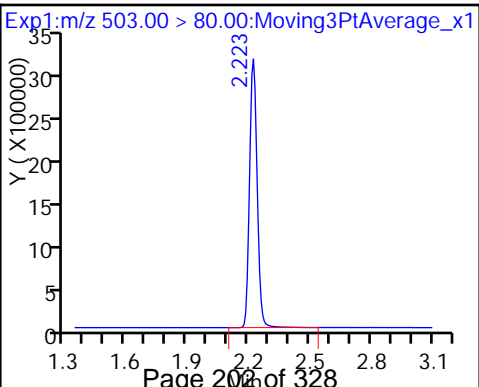
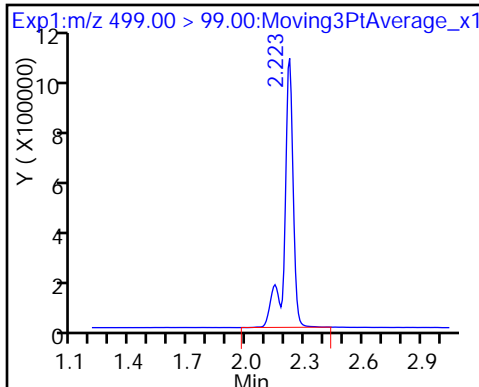
8 Perfluorooctane sulfonic acid (M)



8 Perfluorooctane sulfonic acid (M)

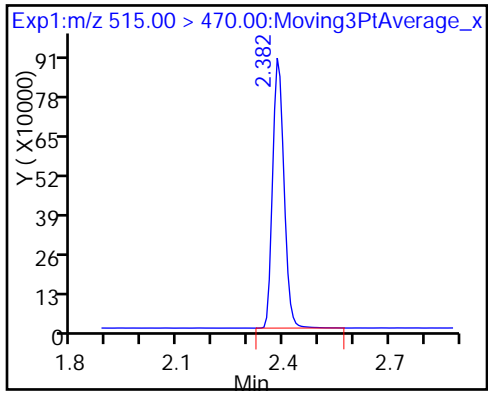
\* 7 13C4 PFOS

9 Perfluorononanoic acid





\$ 10 13C2 PFDA



TestAmerica Sacramento

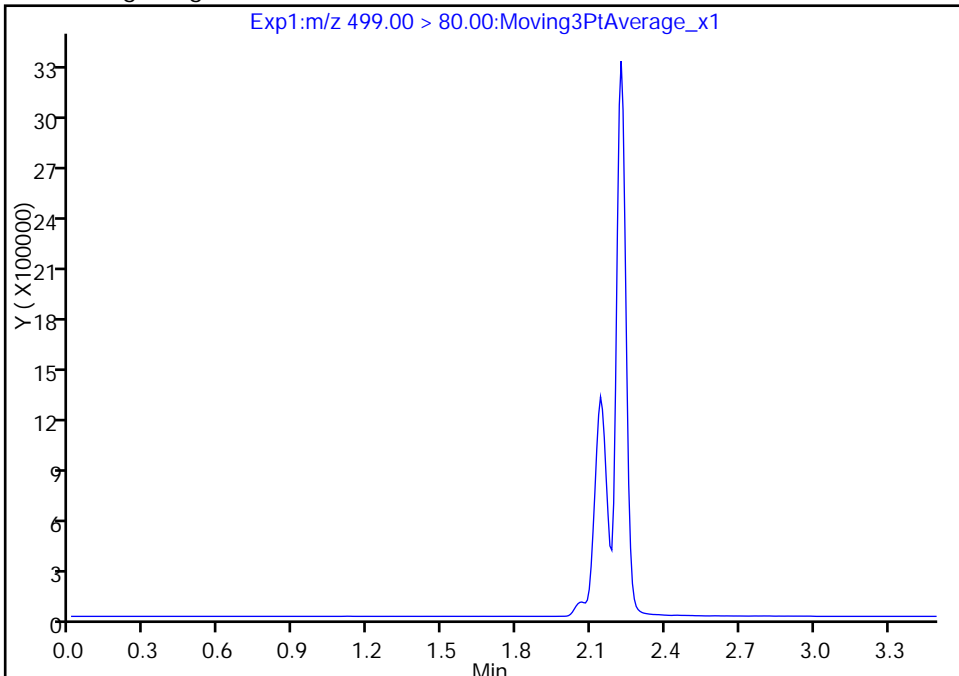
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_007.d  
Injection Date: 26-Jan-2017 11:16:16 Instrument ID: A8\_N  
Lims ID: IC L4  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 7  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

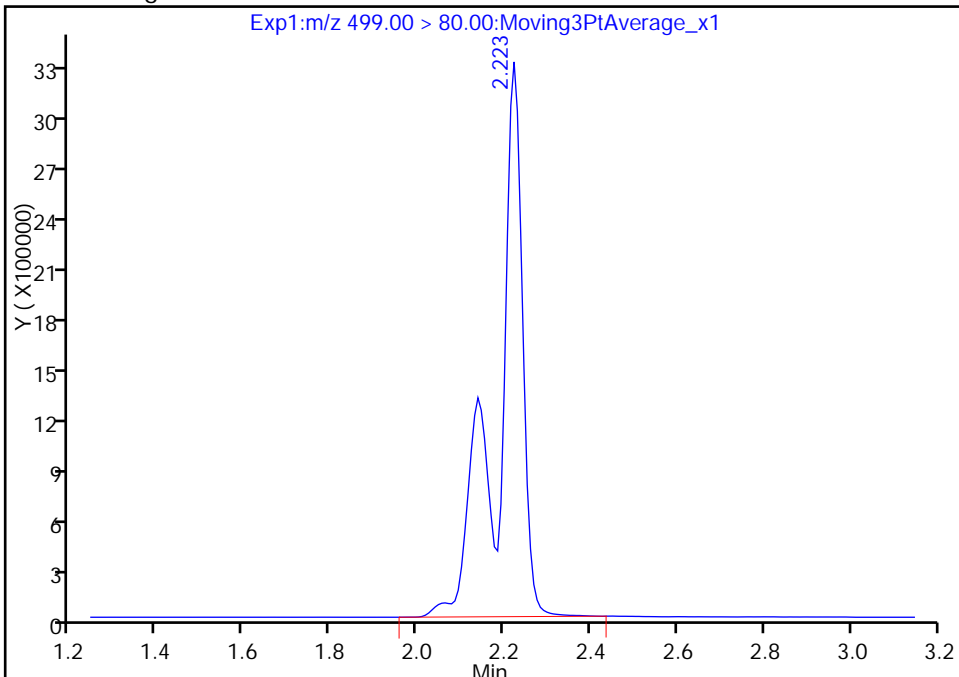
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 13442641  
Amount: 41.561339  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:08:59  
Audit Action: Assigned Compound ID

Audit Reason: Isomers

TestAmerica Sacramento

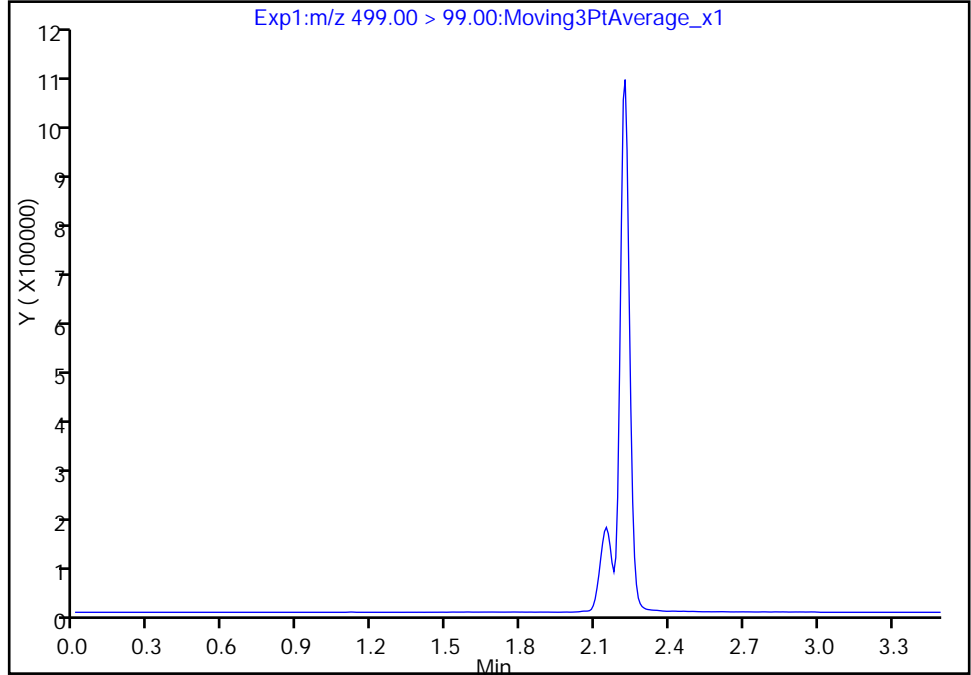
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_007.d  
Injection Date: 26-Jan-2017 11:16:16 Instrument ID: A8\_N  
Lims ID: IC L4  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 7  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

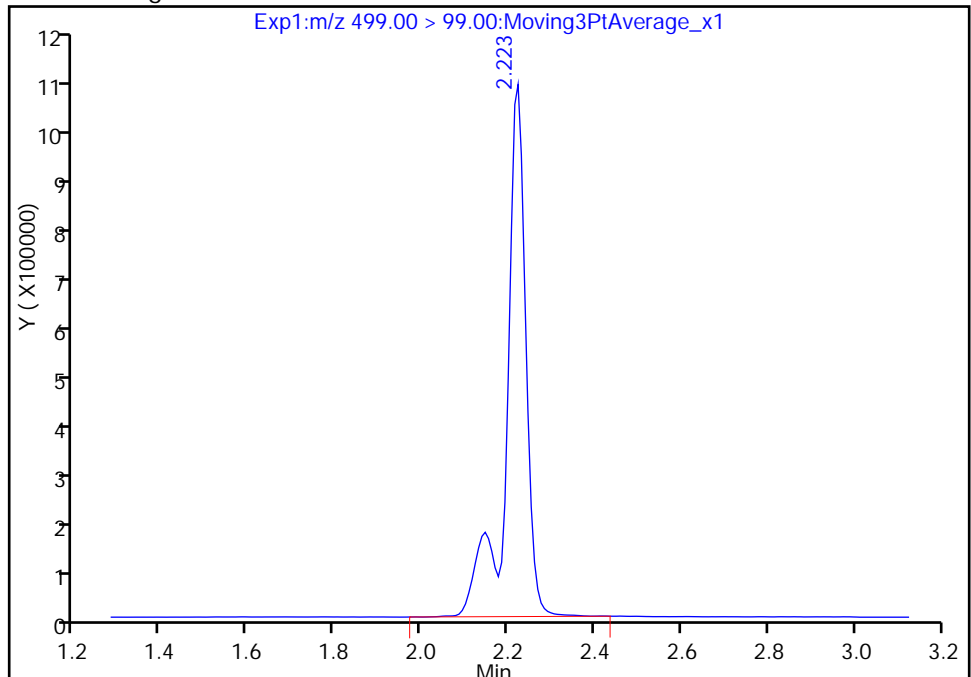
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 3300271  
Amount: 41.561339  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:08:59

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

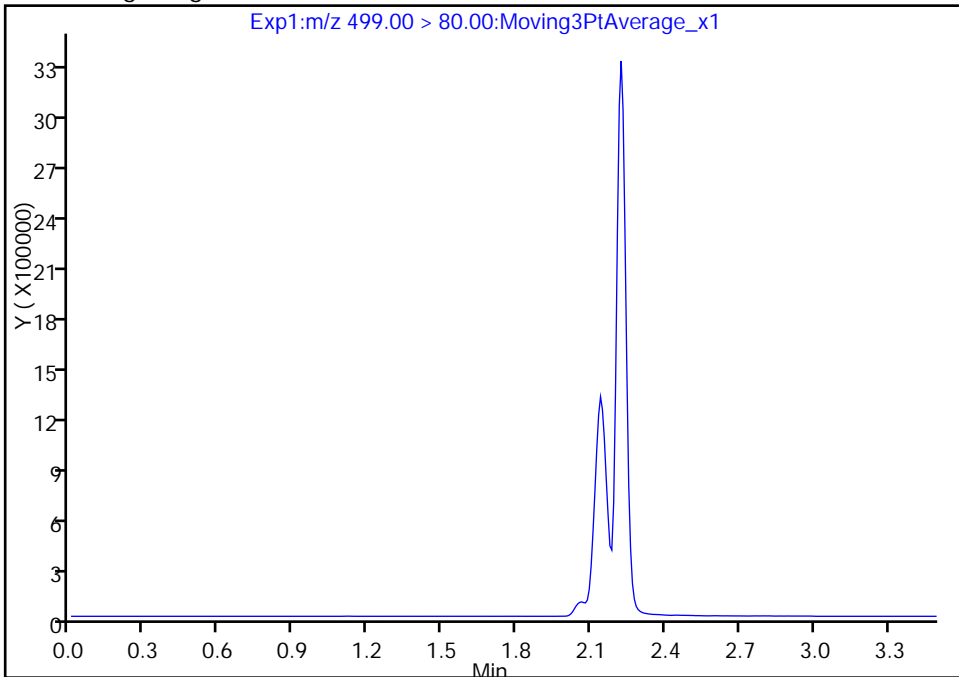
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_007.d  
Injection Date: 26-Jan-2017 11:16:16 Instrument ID: A8\_N  
Lims ID: IC L4  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 7  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

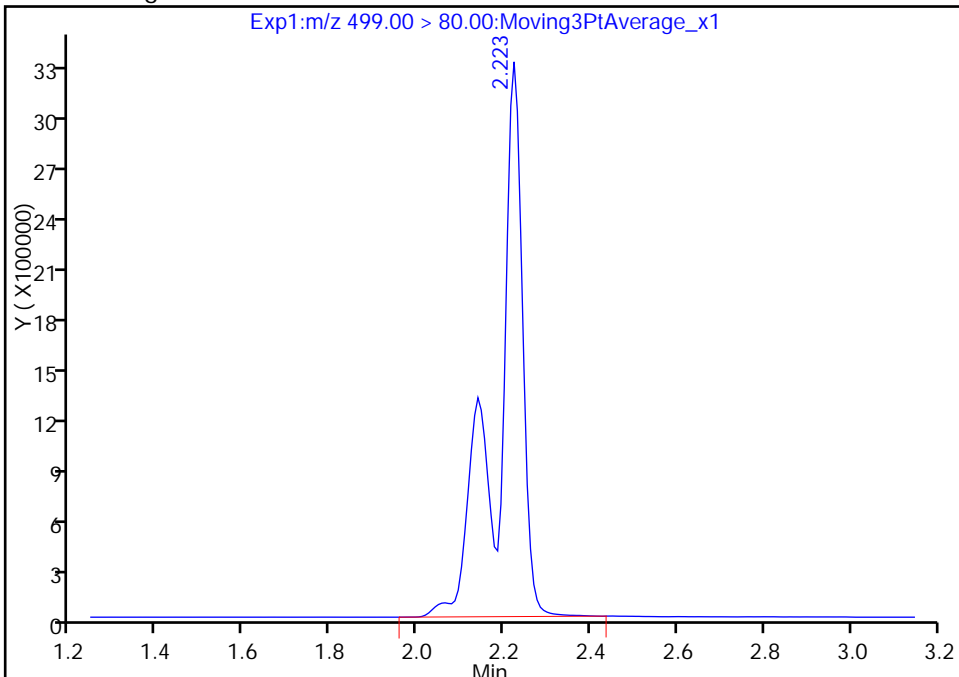
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 13442641  
Amount: 41.561339  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:08:59

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_008.d  
 Lims ID: IC L5  
 Client ID:  
 Sample Type: IC Calib Level: 5  
 Inject. Date: 26-Jan-2017 11:20:39 ALS Bottle#: 5 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L5\_537  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:47:45 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:11:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	43425035	128.5		1570	
298.90 > 99.00	1.510	1.510	0.0	1.000	22582383		1.92(0.00-0.00)	2218	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2710579	10.1		6365	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	16980909	43.0		2291	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	3366172	14.0		430	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2486274	10.0		5087	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.973	1.980	-0.007	1.000	6096769	26.5		406	
413.00 > 169.00	1.973	1.980	-0.007	1.000	3583679		1.70(0.00-0.00)	2082	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.215	2.140	0.075	1.000	15146387	57.9		3248	M
499.00 > 99.00	2.215	2.140	0.075	1.000	3738939		4.05(0.00-0.00)	2370	M
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6724206	28.7		7121	
9 Perfluorononanoic acid									
463.00 > 419.00	2.223	2.229	-0.006	1.000	4708932	27.8		956	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1632201	10.2		2499	

### QC Flag Legend

Review Flags

M - Manually Integrated

### Reagents:

LC537-L5\_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_008.d

Injection Date: 26-Jan-2017 11:20:39

Instrument ID: A8\_N

Lims ID: IC L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 5

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

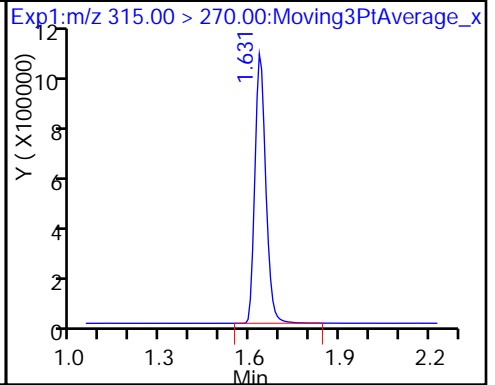
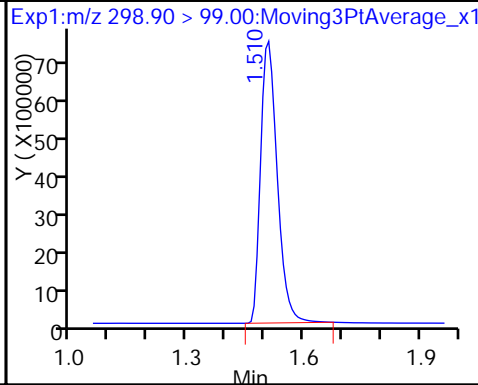
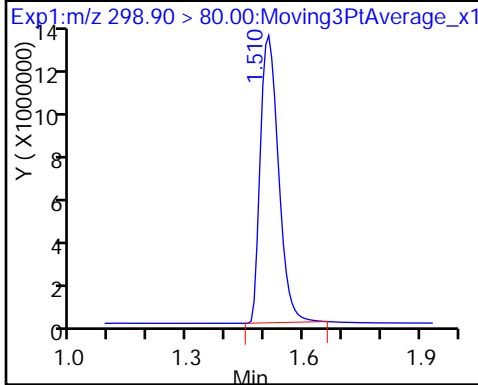
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

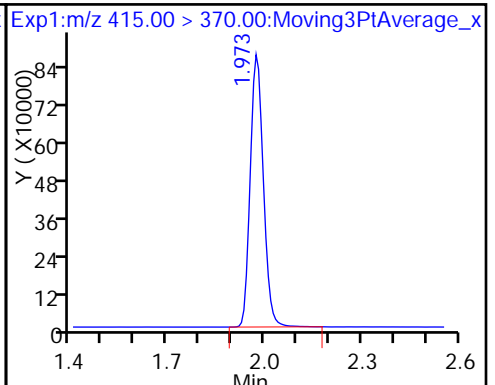
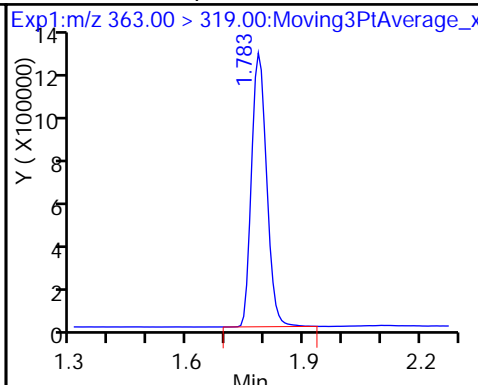
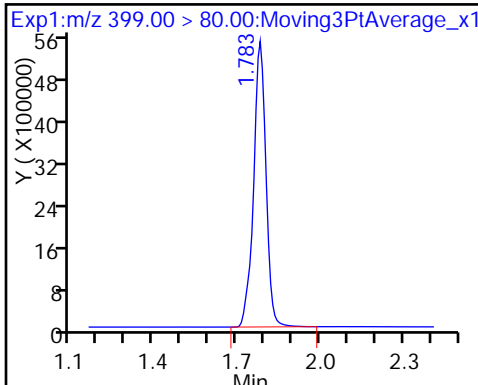
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

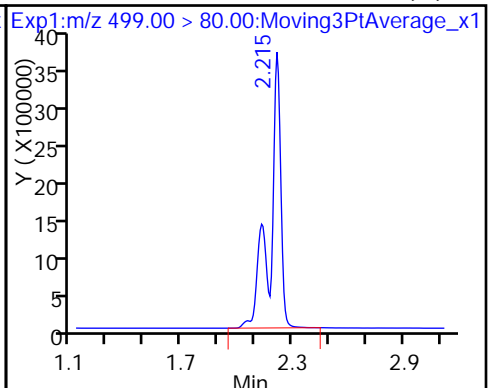
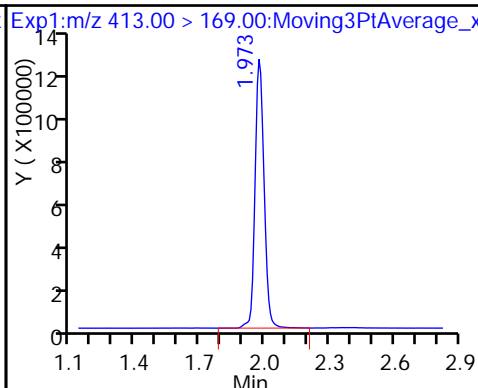
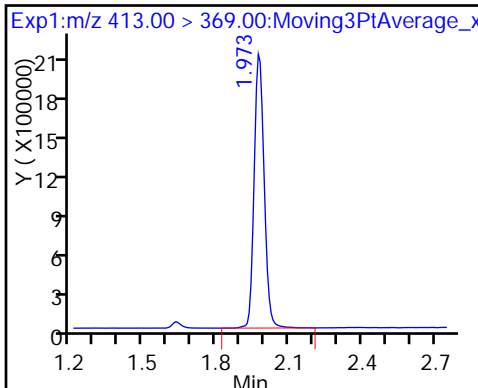
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

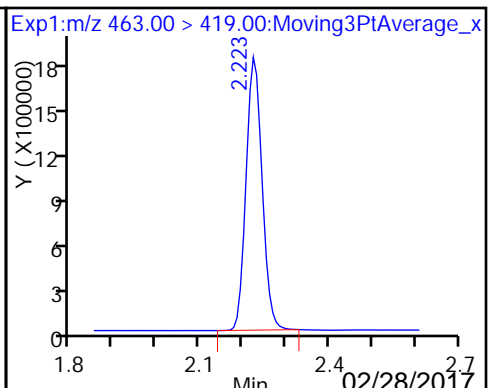
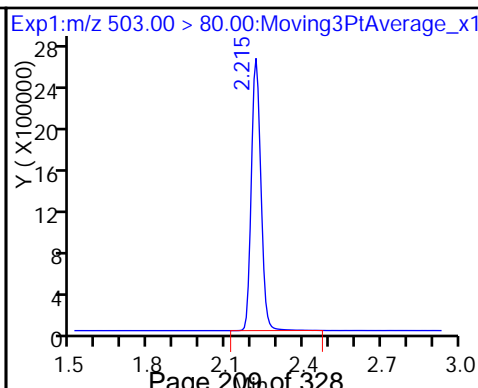
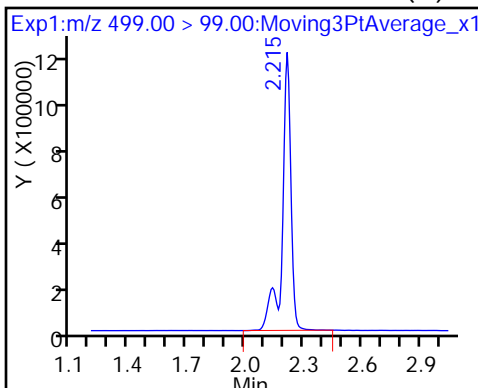
8 Perfluorooctane sulfonic acid (M)



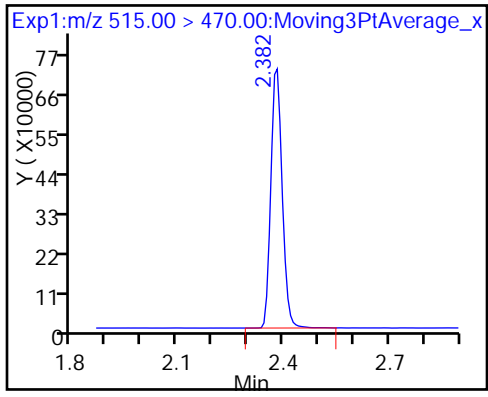
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA





TestAmerica Sacramento

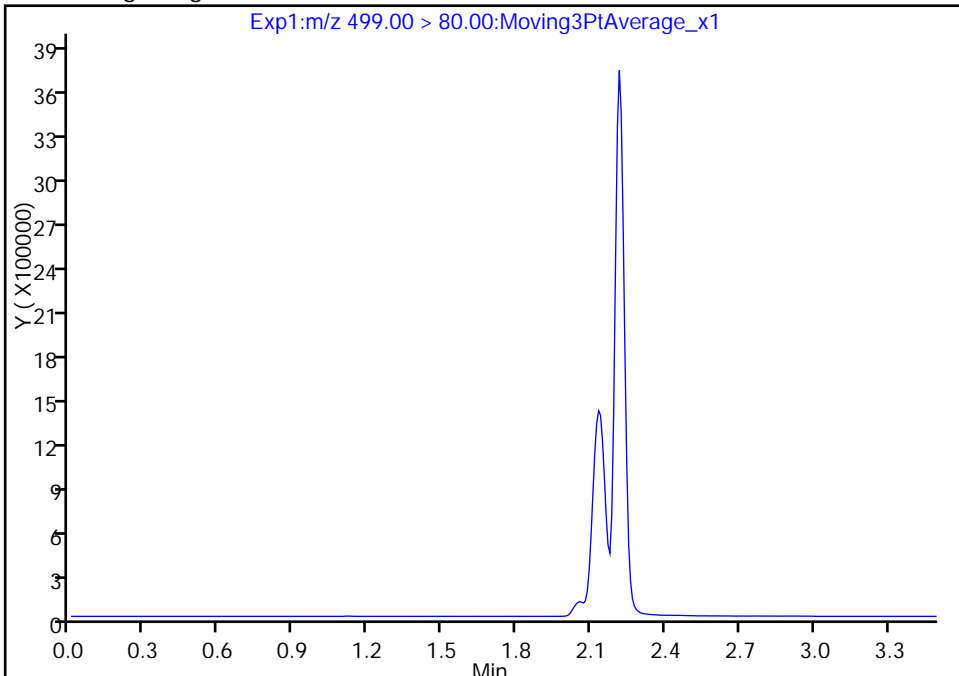
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Injection Date: 26-Jan-2017 11:20:39 Instrument ID: A8\_N  
Lims ID: IC L5  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 8  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

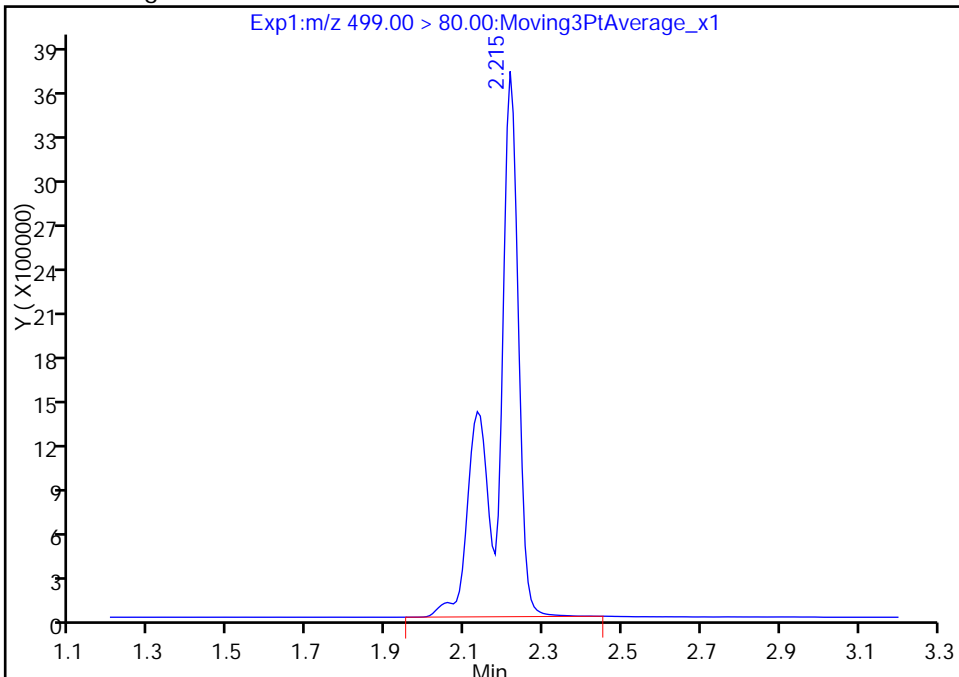
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 15146387  
Amount: 57.865170  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:11:18  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

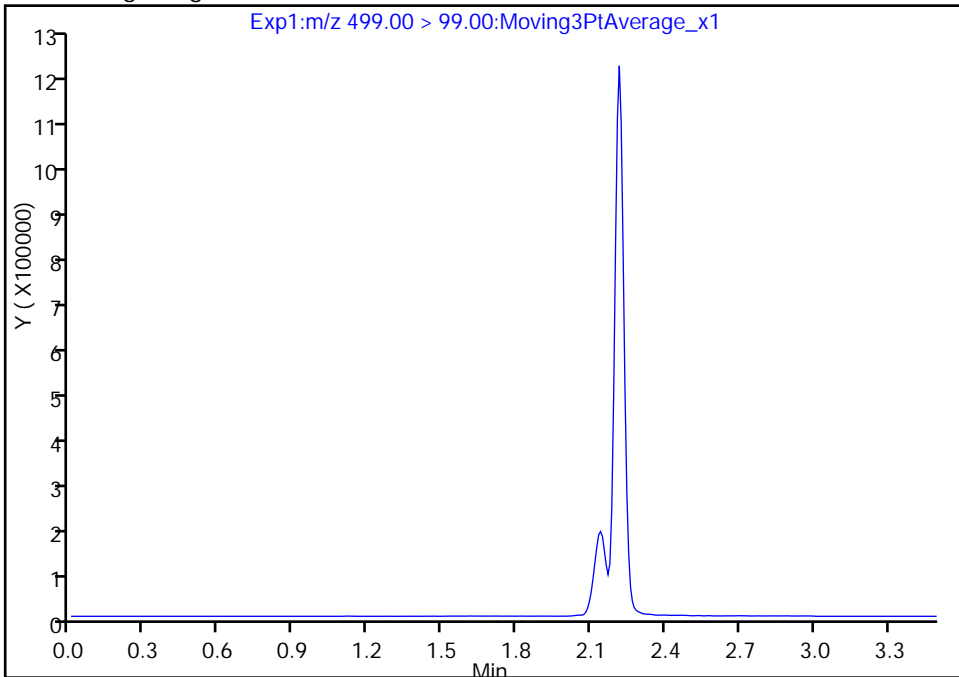
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_008.d  
Injection Date: 26-Jan-2017 11:20:39 Instrument ID: A8\_N  
Lims ID: IC L5  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 8  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

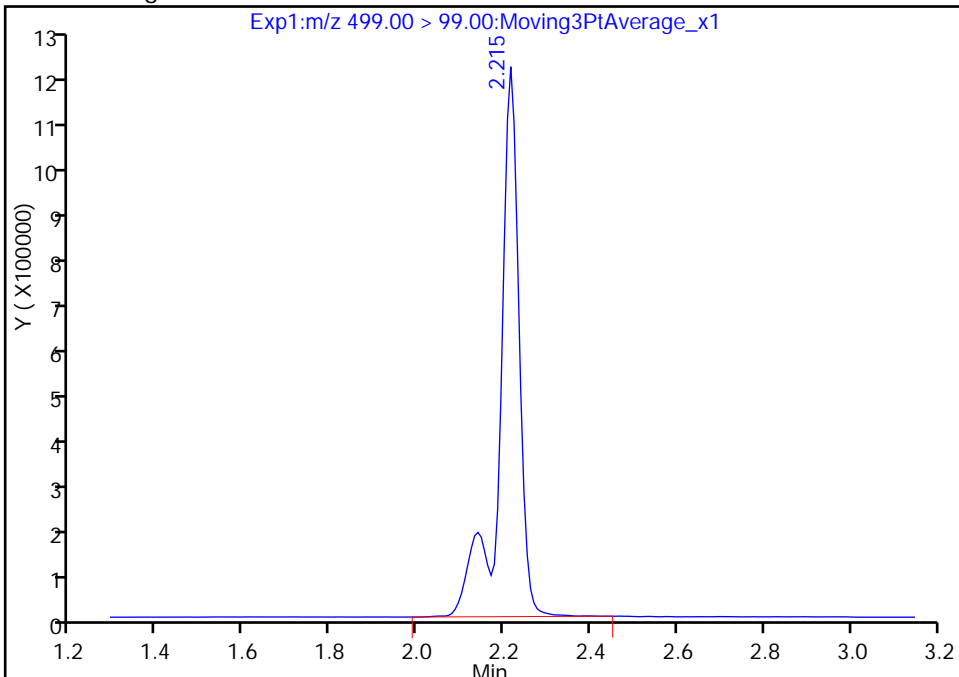
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 3738939  
Amount: 57.865170  
Amount Units: ng/ml



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Lims ID: IC L6  
 Client ID:  
 Sample Type: IC Calib Level: 6  
 Inject. Date: 26-Jan-2017 11:25:03 ALS Bottle#: 6 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L6\_537  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:47:46 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:11:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	51739348	185.1		1516	
298.90 > 99.00	1.510	1.510	0.0	1.000	28204946		1.83(0.00-0.00)	2196	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2652857	10.3		6185	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	22216101	58.4		2524	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	4381381	19.1		512	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2384986	10.0		5263	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	8951805	40.6		583	
413.00 > 169.00	1.980	1.980	0.0	1.000	5271680		1.70(0.00-0.00)	2903	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.215	2.140	0.075	1.000	20461190	81.2		3203	M
499.00 > 99.00	2.215	2.140	0.075	1.000	5166933		3.96(0.00-0.00)	2729	M
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6475201	28.7		7455	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	6784989	41.8		1253	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1617282	10.5		2359	

### QC Flag Legend

Review Flags

M - Manually Integrated

### Reagents:

LC537-L6\_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Injection Date: 26-Jan-2017 11:25:03

Instrument ID: A8\_N

Lims ID: IC L6

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 6

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

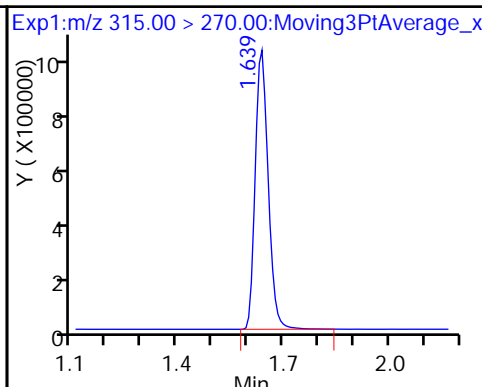
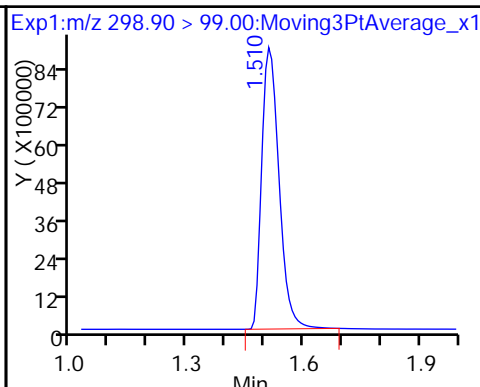
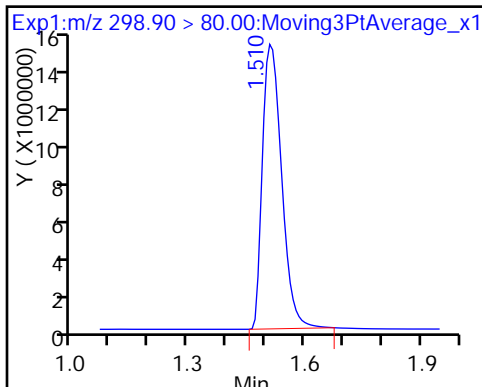
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

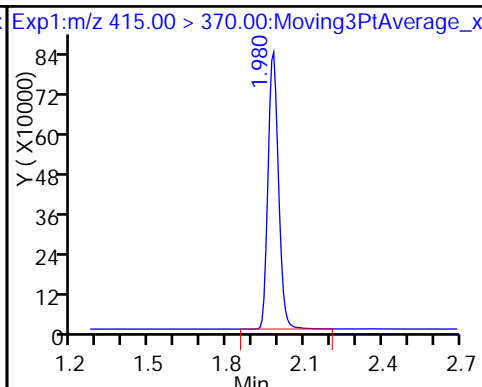
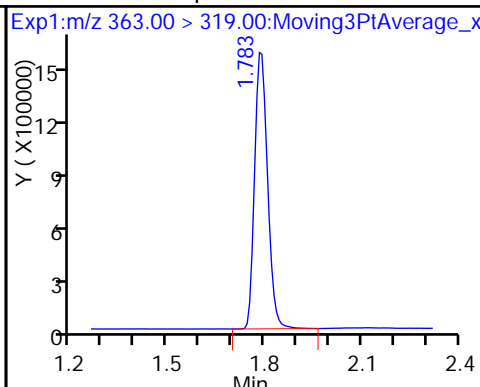
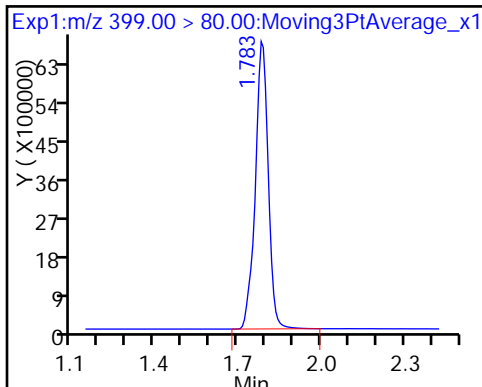
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

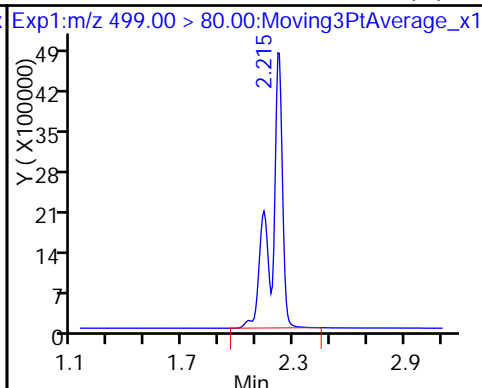
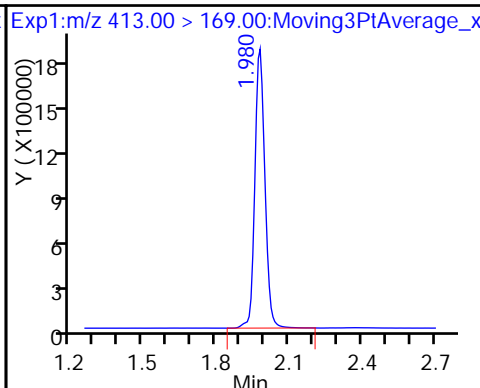
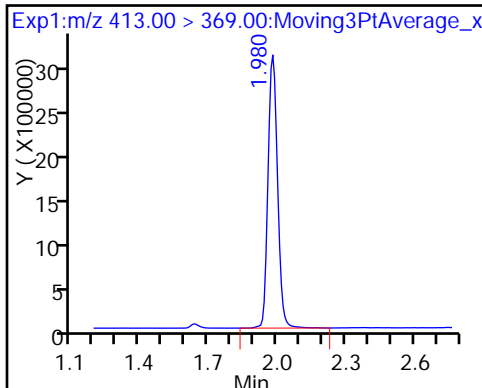
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

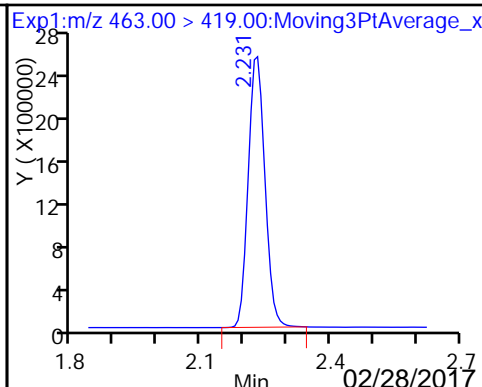
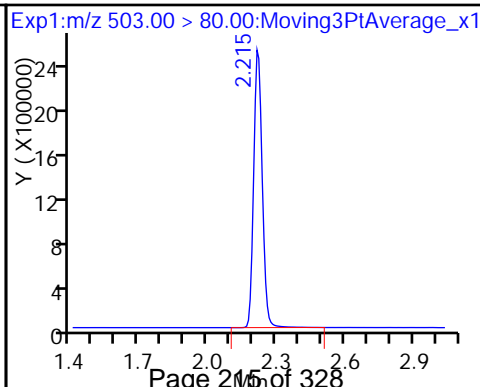
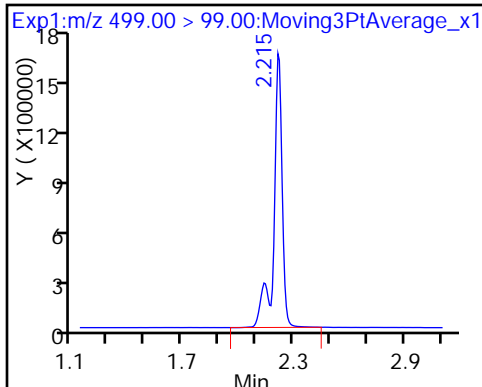
8 Perfluorooctane sulfonic acid (M)



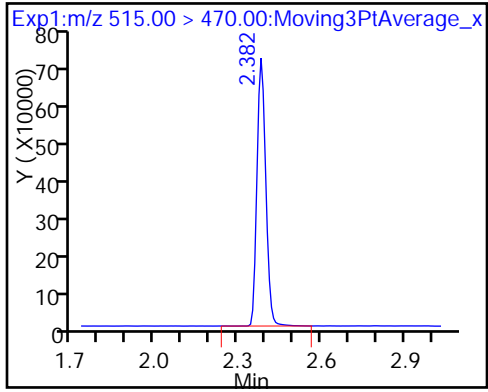
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

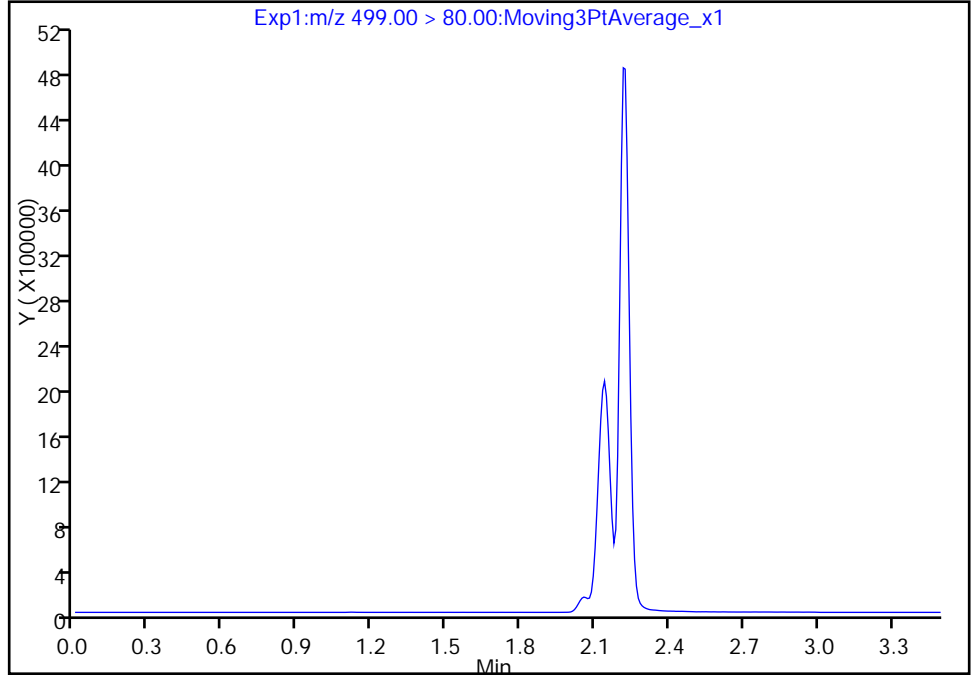
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
Injection Date: 26-Jan-2017 11:25:03 Instrument ID: A8\_N  
Lims ID: IC L6  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 9  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

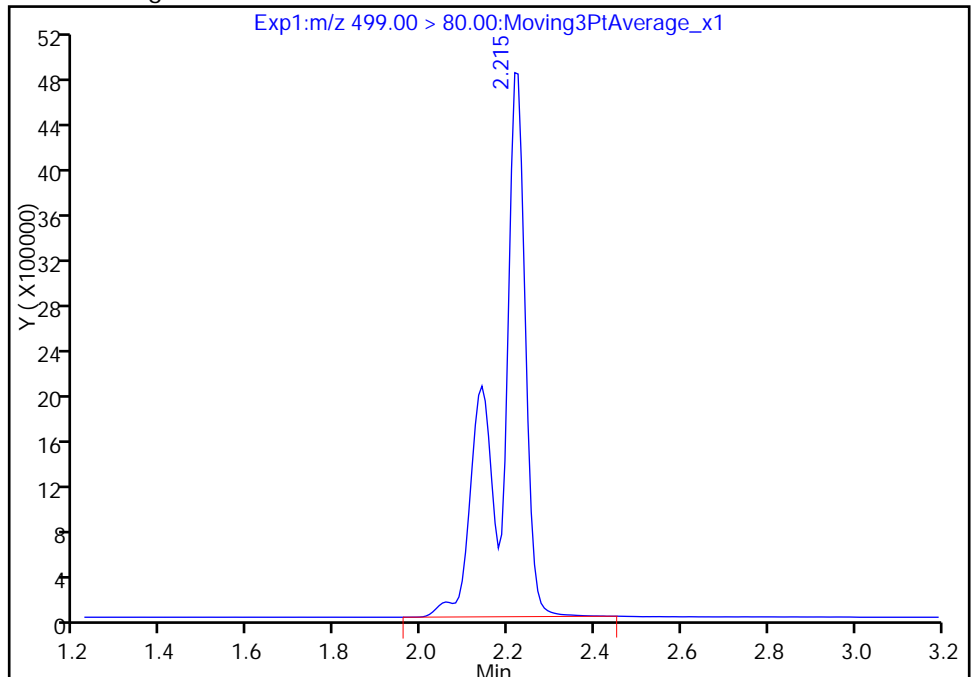
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 20461190  
Amount: 81.175847  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:11:59  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

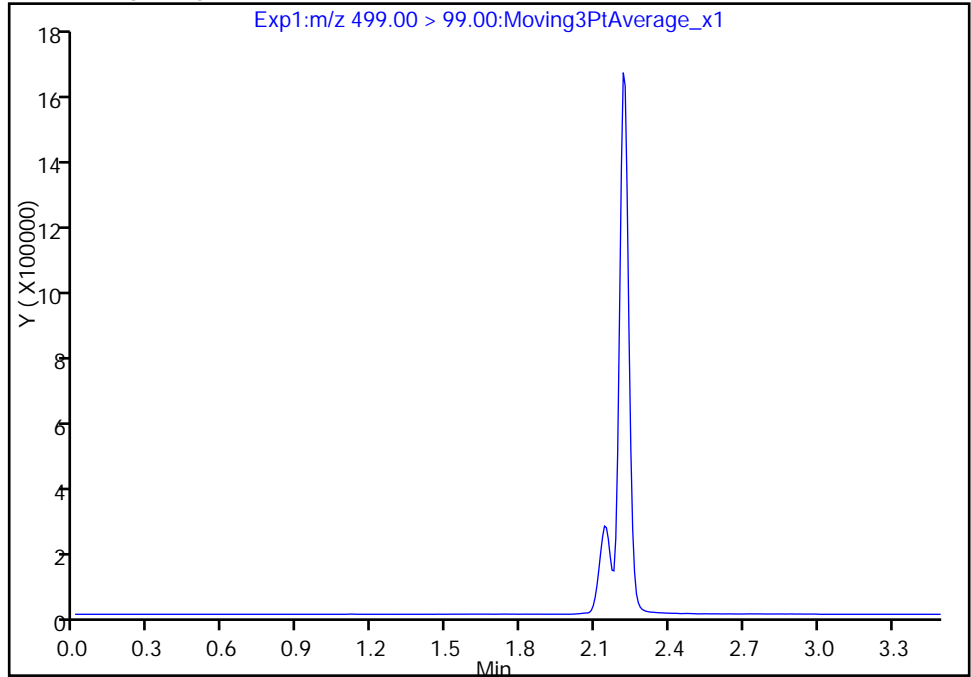
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
Injection Date: 26-Jan-2017 11:25:03 Instrument ID: A8\_N  
Lims ID: IC L6  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 9  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

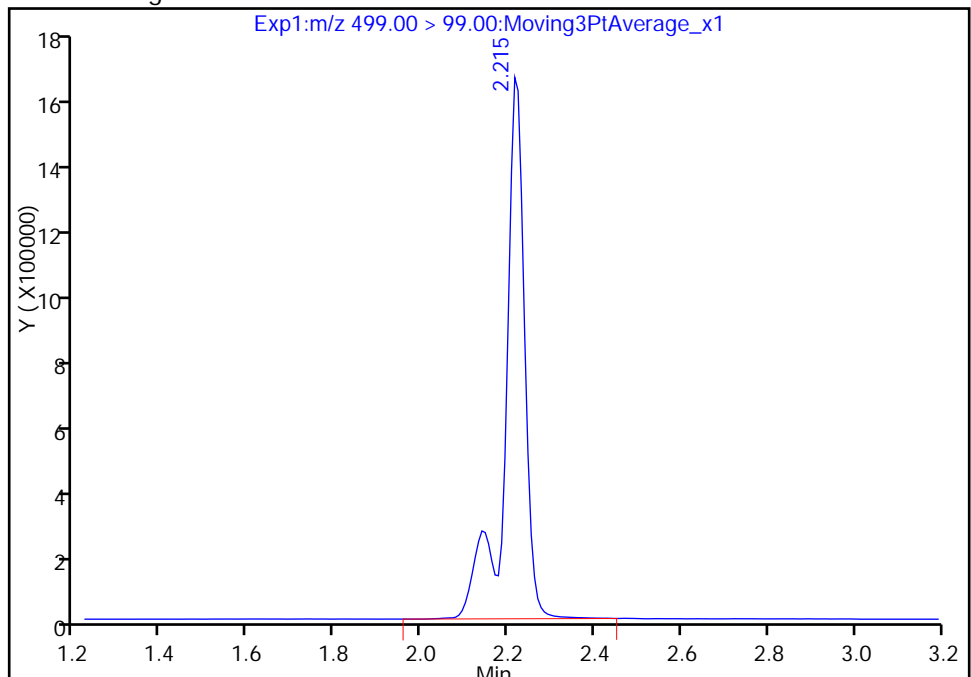
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 5166933  
Amount: 81.175847  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:11:59

Audit Action: Manually Integrated

Audit Reason: Assign Peak



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCVL 320-147939/11 Calibration Date: 01/26/2017 11:33  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.01.26\_537\_CURVE\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		2.084		26.4	22.9	15.3	50.0
Perfluorohexanesulfonic acid	Ave	1.684	1.742		7.98	7.72	3.5	50.0
Perfluoroheptanoic acid	Ave	0.9643	0.9585		2.61	2.62	-0.6	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9721		5.23	4.98	5.1	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.104		10.1	10.2	-1.1	50.0
Perfluorononanoic acid	Ave	0.6813	0.7122		5.53	5.29	4.5	50.0
13C2 PFHxA	Ave	1.079	1.049		9.72	10.0	-2.8	30.0
13C2 PFDA	Ave	0.6456	0.6245		9.67	10.0	-3.3	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_011.d  
 Lims ID: CCVL  
 Client ID:  
 Sample Type: CCVL  
 Inject. Date: 26-Jan-2017 11:33:50 ALS Bottle#: 2 Worklist Smp#: 11  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L2  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:49:21 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:15:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	11225610	26.4		808	
298.90 > 99.00	1.510	1.510	0.0	1.000	4847404		2.32(0.00-0.00)	871	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2615322	9.72		6771	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	3162827	7.98		664	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	626193	2.61		83.3	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2492054	10.0		5184	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	1205723	5.23		86.3	
413.00 > 169.00	1.980	1.980	0.0	1.000	693020		1.74(0.00-0.00)	561	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.223	2.140	0.083	1.000	2653811	10.1		1097	M
499.00 > 99.00	2.215	2.140	0.075	0.997	652679		4.07(0.00-0.00)	489	M
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6749200	28.7		8408	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	938665	5.53		233	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1556265	9.67		2401	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L2\_00015

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_011.d

Injection Date: 26-Jan-2017 11:33:50

Instrument ID: A8\_N

Lims ID: CCVL

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 2

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

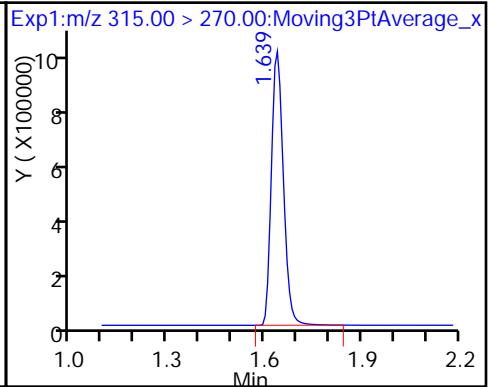
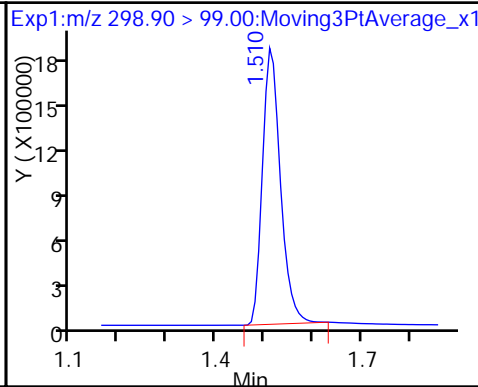
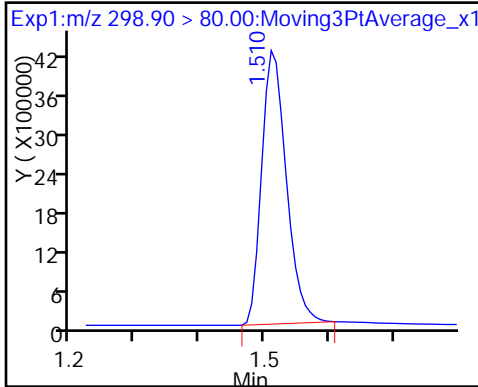
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

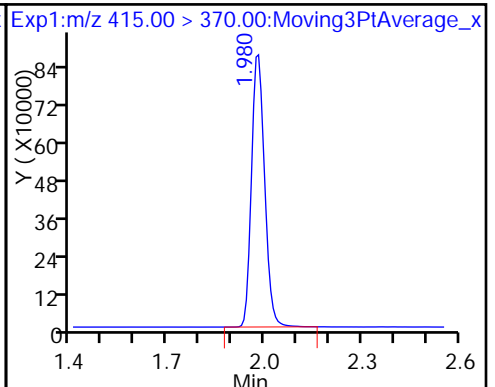
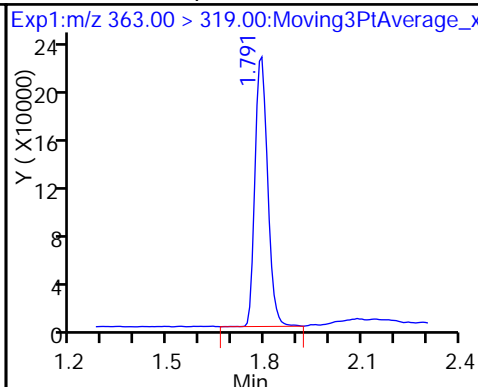
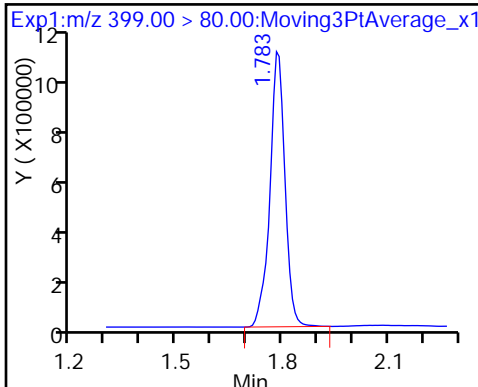
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

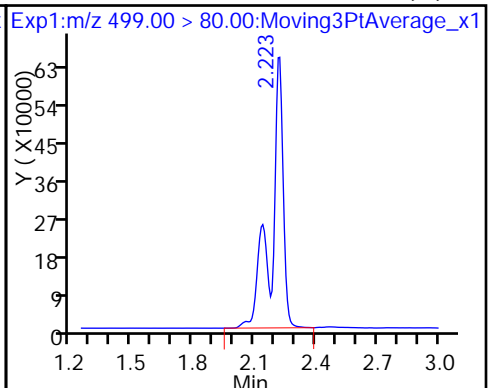
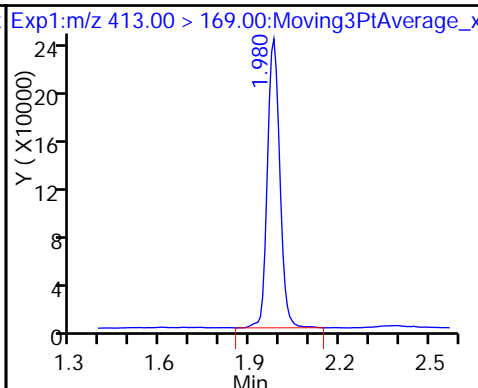
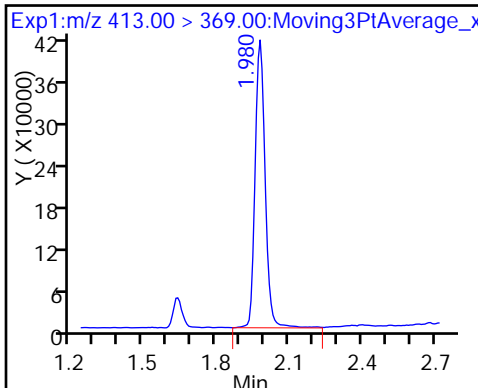
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

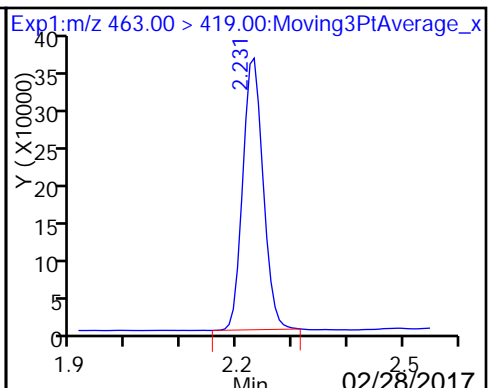
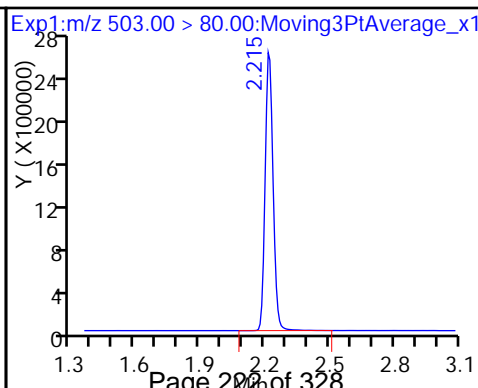
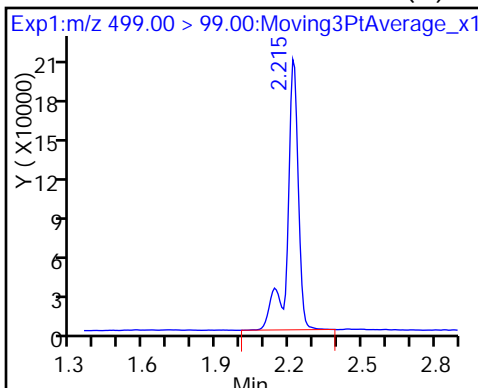
8 Perfluorooctane sulfonic acid (M)



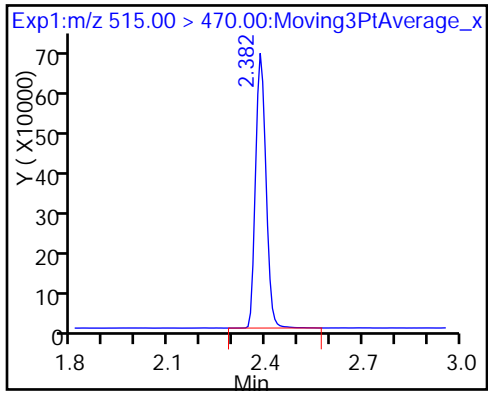
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

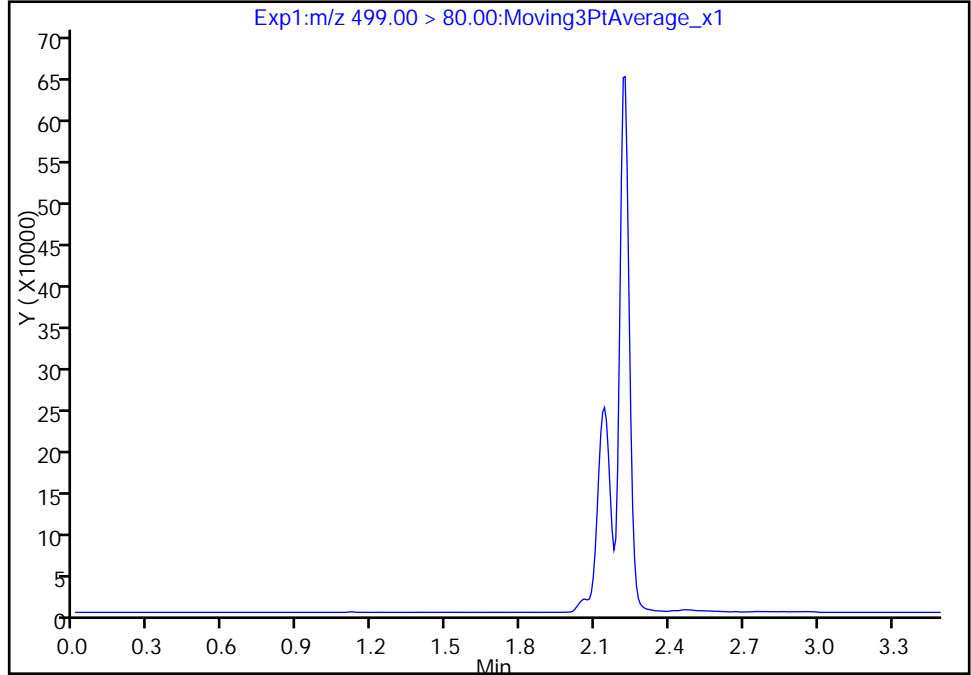
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_011.d  
Injection Date: 26-Jan-2017 11:33:50 Instrument ID: A8\_N  
Lims ID: CCVL  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 11  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

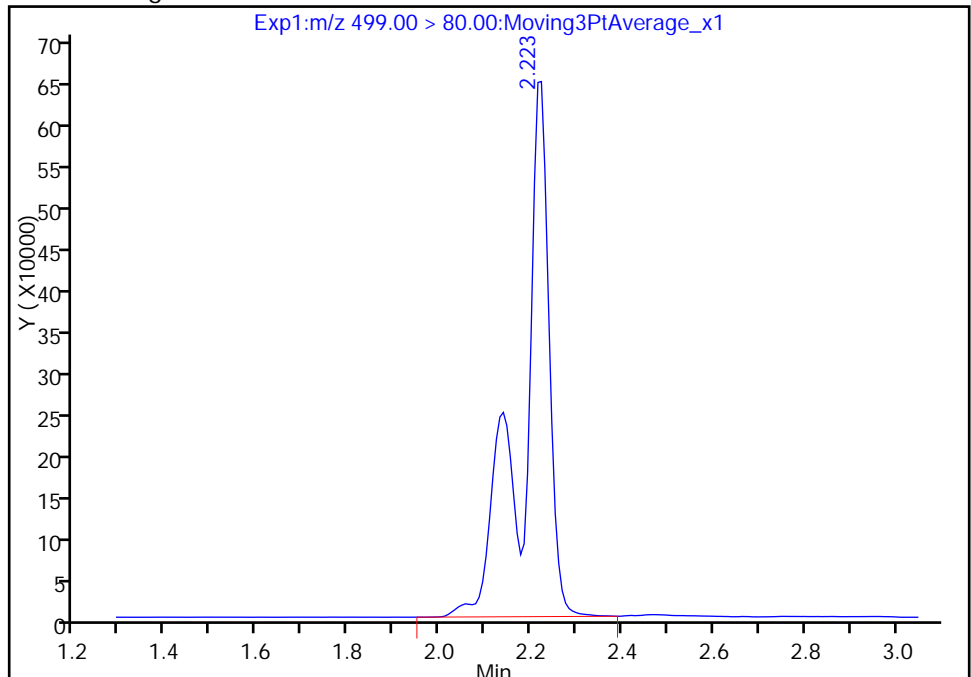
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 2653811  
Amount: 10.101058  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:15:17  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

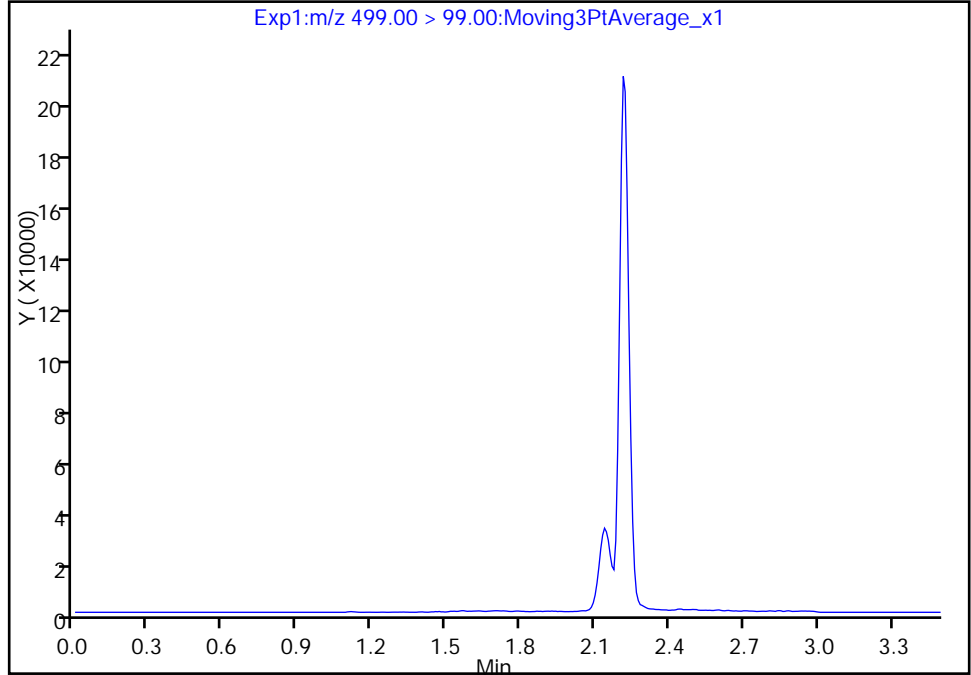
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Injection Date: 26-Jan-2017 11:33:50 Instrument ID: A8\_N  
Lims ID: CCVL  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 11  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

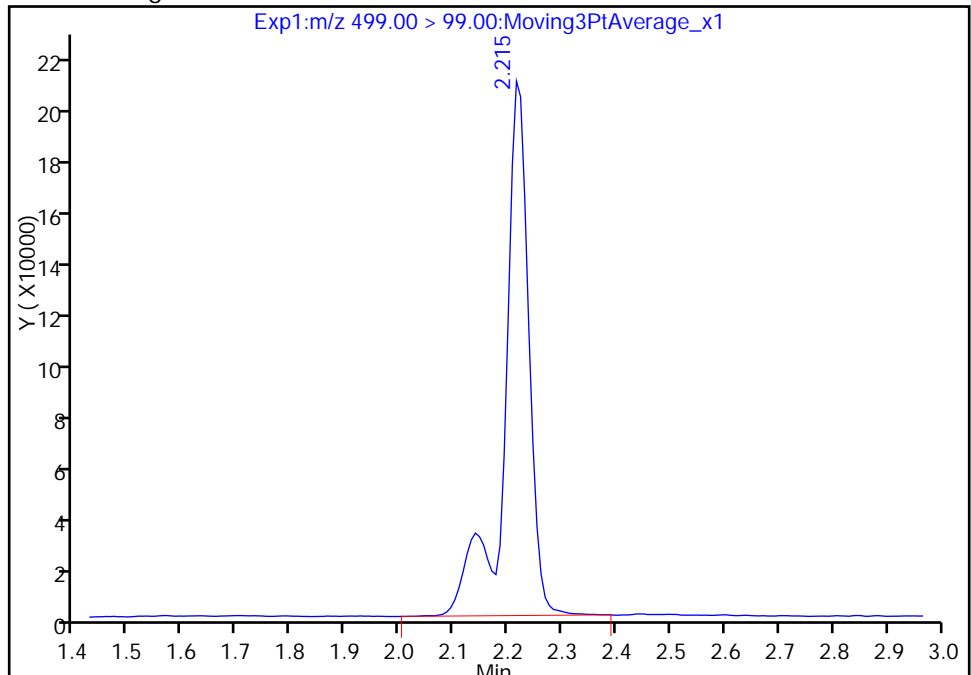
Not Detected  
Expected RT: 2.14

Processing Integration Results



Manual Integration Results

RT: 2.22  
Area: 652679  
Amount: 10.101058  
Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:15:17

Audit Action: Manually Integrated

Audit Reason: Assign Peak

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-147939/13 Calibration Date: 01/26/2017 11:42  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.01.26\_537\_CURVE\_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.349		100	115	-12.5	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.8903		11.6	12.6	-7.7	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.363		21.4	26.5	-19.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8195		22.2	25.0	-11.4	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	0.8801		21.5	27.2	-21.2	30.0
Perfluorononanoic acid	Ave	0.6813	0.6118		22.5	25.0	-10.2	30.0
13C2 PFHxA	Ave	1.079	1.180		10.9	10.0	9.4	30.0
13C2 PFDA	Ave	0.6456	0.6736		10.4	10.0	4.3	30.0



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_013.d  
 Lims ID: ICV  
 Client ID:  
 Sample Type: ICV  
 Inject. Date: 26-Jan-2017 11:42:36 ALS Bottle#: 7 Worklist Smp#: 13  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: ICV  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 30-Jan-2017 11:49:24 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 26-Jan-2017 12:16:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	33808700	100.4		1738	
298.90 > 99.00	1.510	1.510	0.0	1.000	16544440		2.04(0.00-0.00)	1886	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2683454	10.9		6152	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	7879031	21.4		1437	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	2549950	11.6		335	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2273215	10.0		4649	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.973	1.980	-0.007	1.000	4661444	22.2		343	
413.00 > 169.00	1.973	1.980	-0.007	1.000	2649388		1.76(0.00-0.00)	1872	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.215	2.140	0.075	1.000	5233022	21.5		1657	M
499.00 > 99.00	2.215	2.140	0.075	1.000	1038329		5.04(0.00-0.00)	732	M
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6260544	28.7		6453	
9 Perfluorononanoic acid									
463.00 > 419.00	2.223	2.229	-0.006	1.000	3478258	22.5		767	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.375	2.384	-0.009	1.000	1531279	10.4		2302	

### QC Flag Legend

Review Flags

M - Manually Integrated

### Reagents:

LC537-ICV\_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_013.d

Injection Date: 26-Jan-2017 11:42:36

Instrument ID: A8\_N

Lims ID: ICV

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 7

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

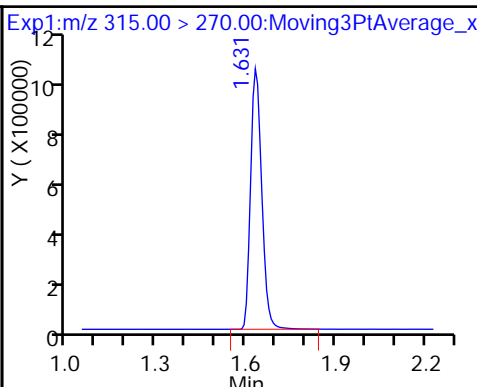
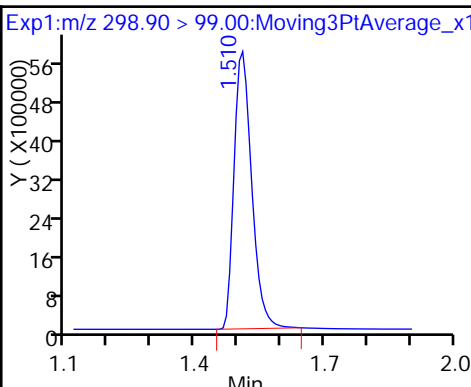
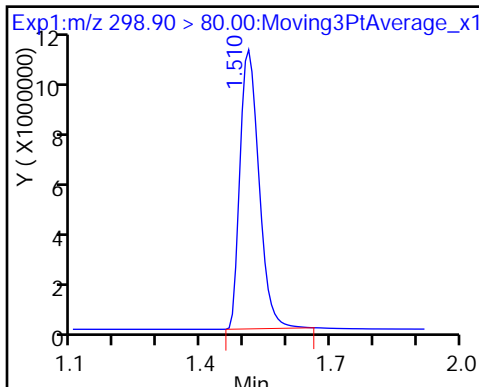
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

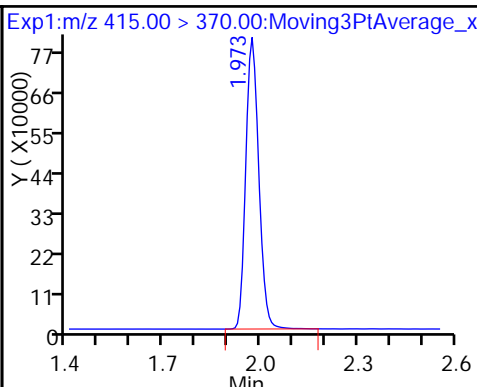
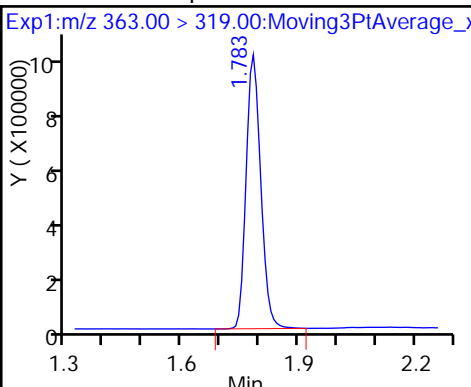
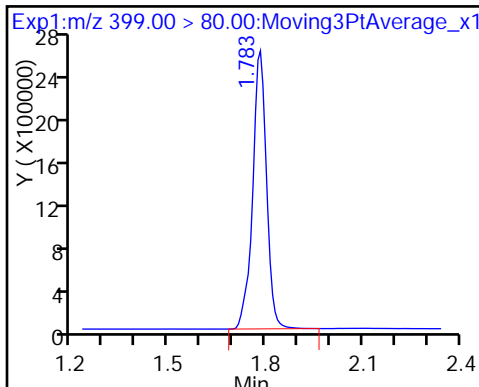
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

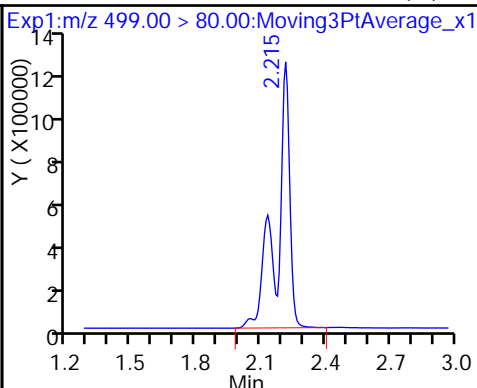
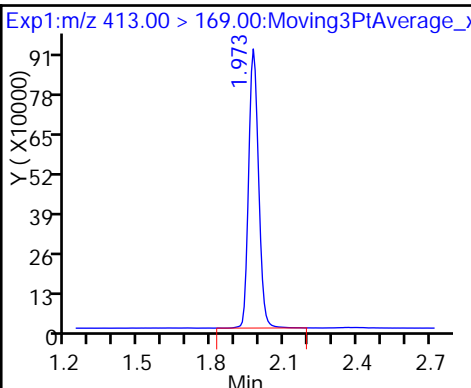
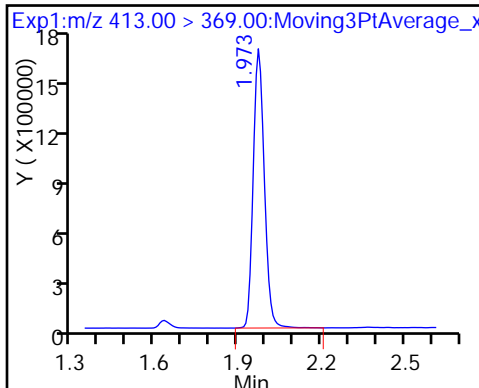
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

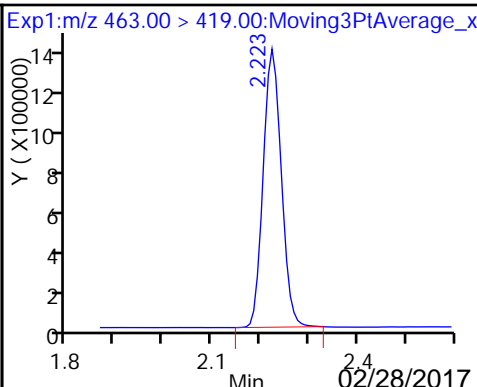
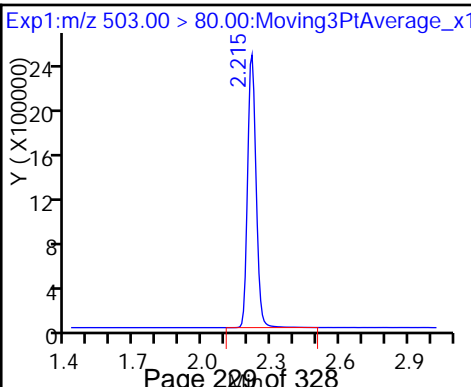
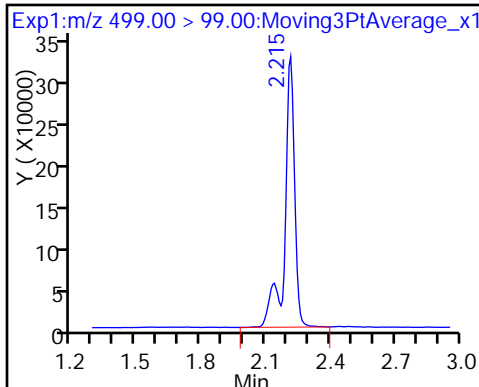
8 Perfluorooctane sulfonic acid (M)



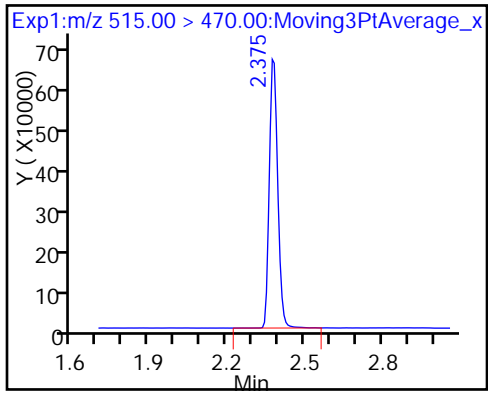
8 Perfluorooctane sulfonic acid (M)

\* 7 13C4 PFOS

9 Perfluorononanoic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

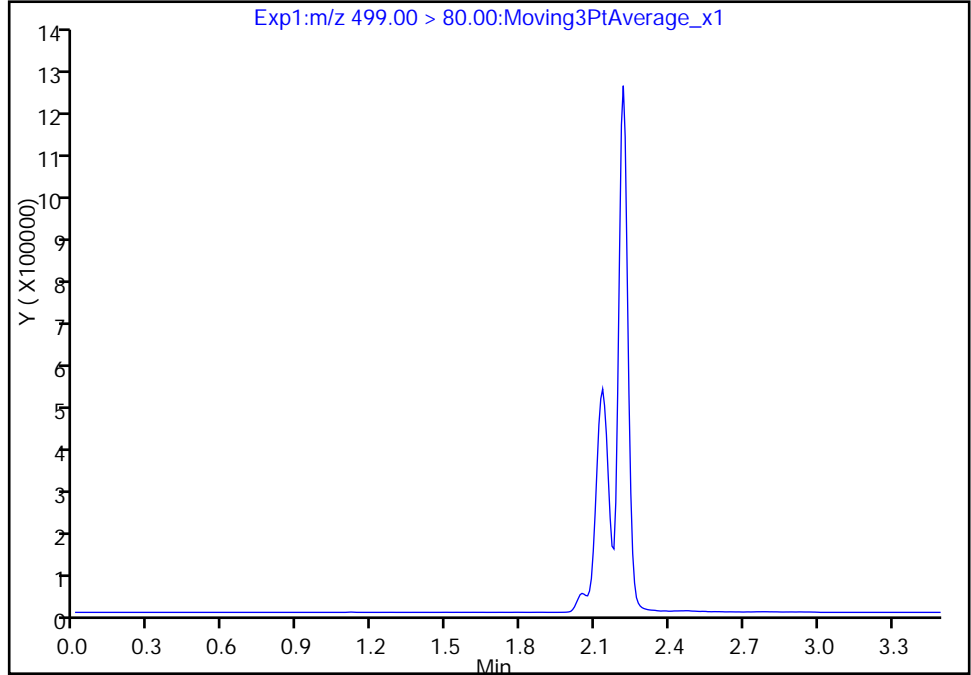
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_013.d  
Injection Date: 26-Jan-2017 11:42:36 Instrument ID: A8\_N  
Lims ID: ICV  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 7 Worklist Smp#: 13  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

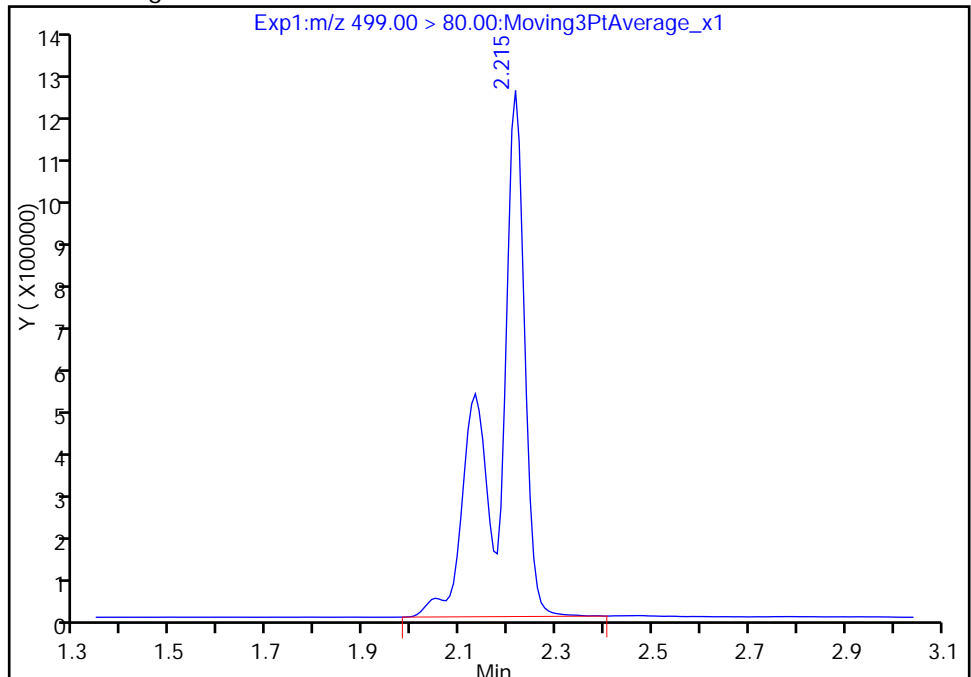
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 5233022  
Amount: 21.472850  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 26-Jan-2017 12:16:45  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

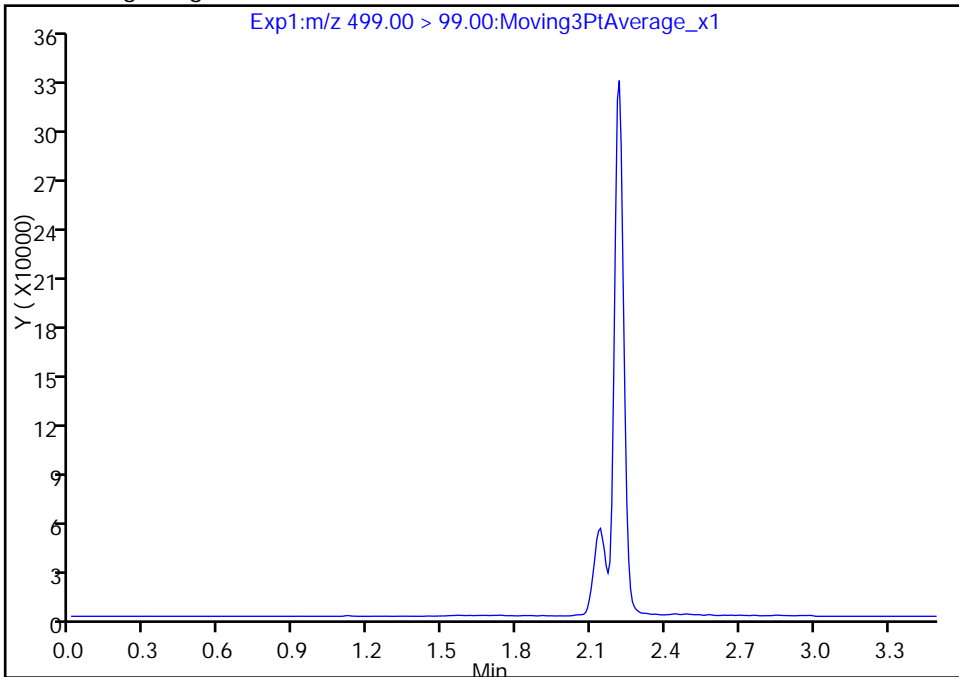
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_013.d  
Injection Date: 26-Jan-2017 11:42:36 Instrument ID: A8\_N  
Lims ID: ICV  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 7 Worklist Smp#: 13  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

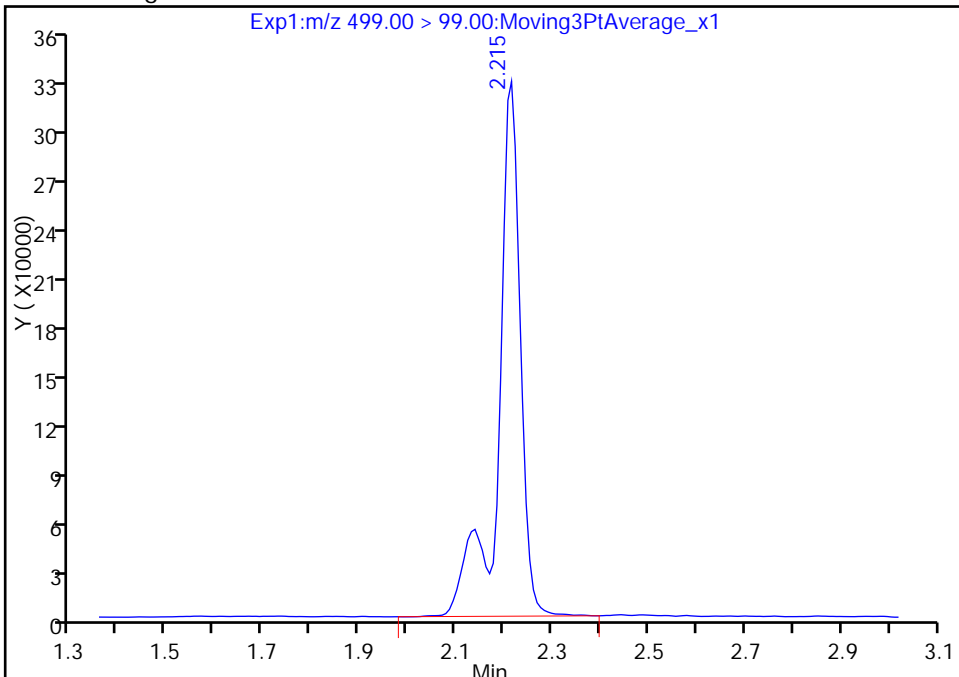
Not Detected  
Expected RT: 2.14

Processing Integration Results



RT: 2.22  
Area: 1038329  
Amount: 21.472850  
Amount Units: ng/ml

Manual Integration Results



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152311/3 Calibration Date: 02/27/2017 11:03  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27A\_537\_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		2.127		27.0	22.9	17.8	50.0
Perfluoroheptanoic acid	Ave	0.9643	1.091		2.86	2.52	13.2	50.0
Perfluorohexanesulfonic acid	Ave	1.684	1.703		7.80	7.72	1.2	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	1.024		5.51	4.98	10.7	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.126		10.3	10.2	0.9	50.0
Perfluorononanoic acid	Ave	0.6813	0.7601		5.90	5.29	11.6	50.0
13C2 PFHxA	Ave	1.079	1.115		10.3	10.0	3.3	30.0
13C2 PFDA	Ave	0.6456	0.6885		10.7	10.0	6.6	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40272.b\2017.02.27A\_537\_003.d  
 Lims ID: CCV L2  
 Client ID:  
 Sample Type: CCVL  
 Inject. Date: 27-Feb-2017 11:03:42 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L2  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40272.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:58:24 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 13:20:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.525	1.510	0.015	1.000	11307218	27.0		1210	
298.90 > 99.00	1.525	1.510	0.015	1.000	4864062		2.32(0.00-0.00)	1385	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.662	1.638	0.024	1.000	2574080	10.3		7230	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.844	1.787	0.057	1.000	3051389	7.80		842	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.844	1.788	0.056	1.000	635863	2.86		77.8	
* 6 13C2-PFOA									
415.00 > 370.00	2.071	1.979	0.092		2308394	10.0		5536	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.071	1.980	0.091	1.000	1176188	5.51		122	
413.00 > 169.00	2.071	1.980	0.091	1.000	682912		1.72(0.00-0.00)	608	
* 7 13C4 PFOS									
503.00 > 80.00	2.306	2.220	0.086		6660145	28.7		7967	
9 Perfluorononanoic acid									
463.00 > 419.00	2.314	2.229	0.085	1.000	927990	5.90		153	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.306	2.246	0.060	1.000	2671996	10.3		1759	M
499.00 > 99.00	2.306	2.246	0.060	1.000	649760		4.11(0.00-0.00)	1266	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.451	2.384	0.067	1.000	1589283	10.7		4294	



**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L2\_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40272.b\2017.02.27A\_537\_003.d

Injection Date: 27-Feb-2017 11:03:42

Instrument ID: A8\_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

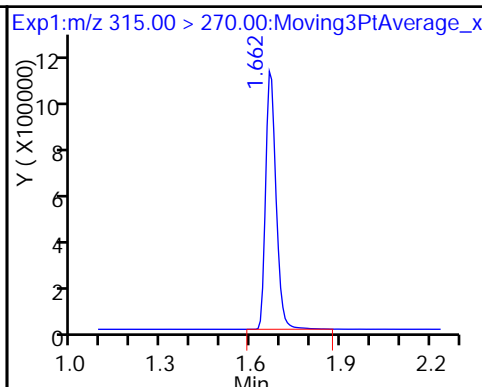
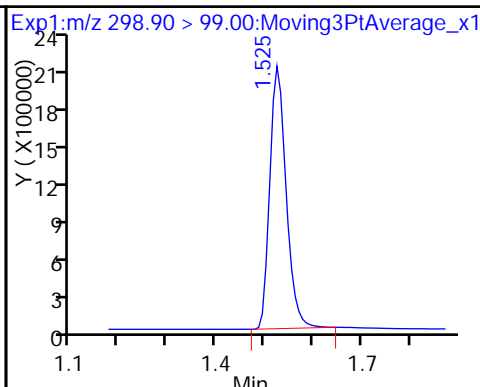
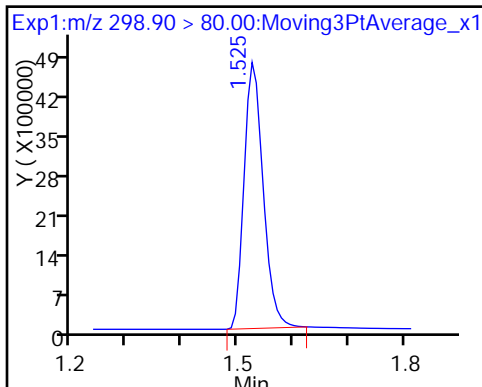
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

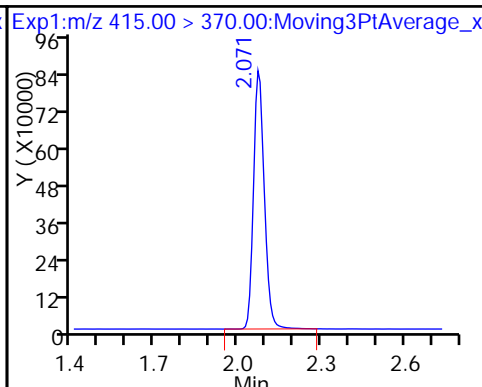
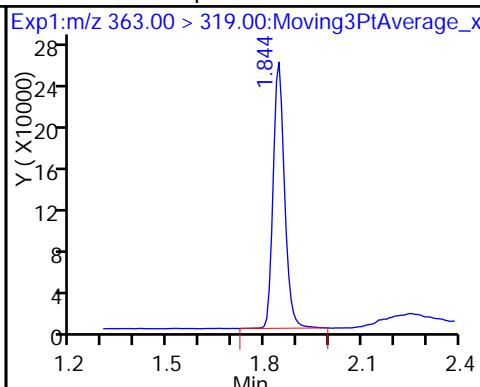
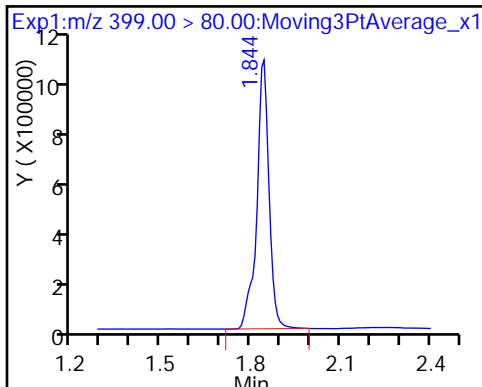
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

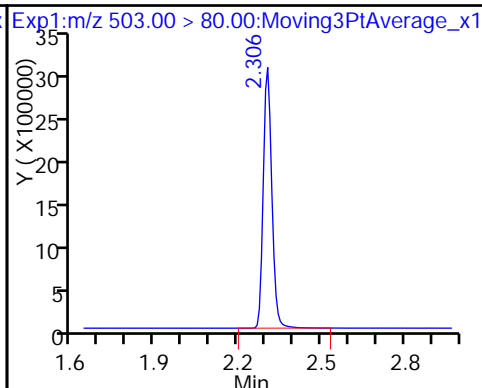
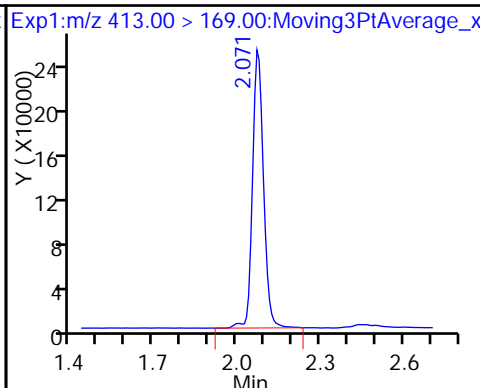
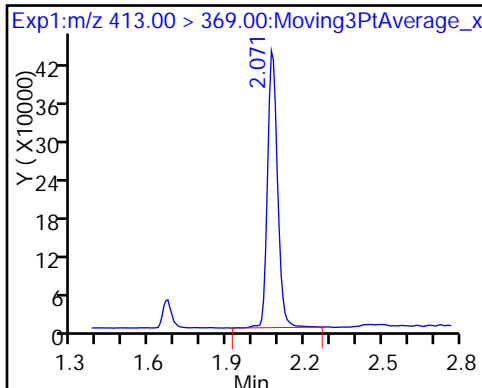
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

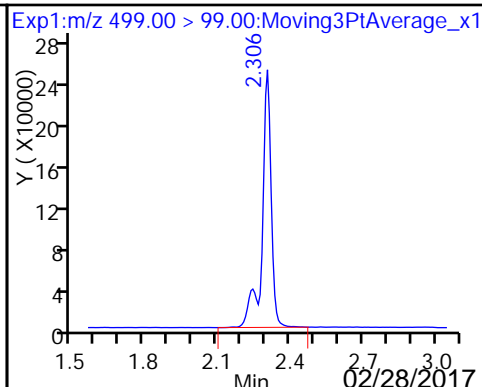
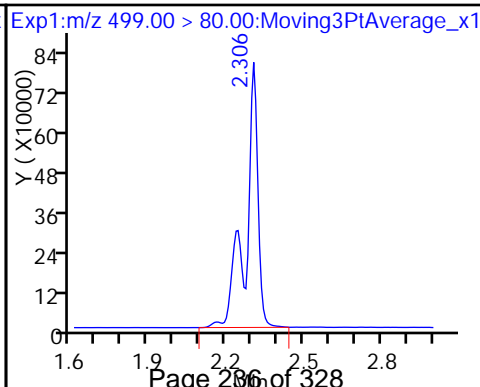
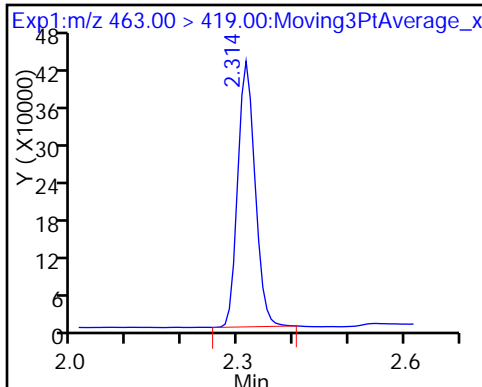
\* 7 13C4 PFOS



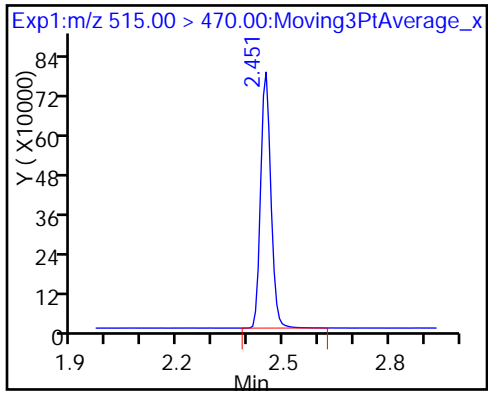
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

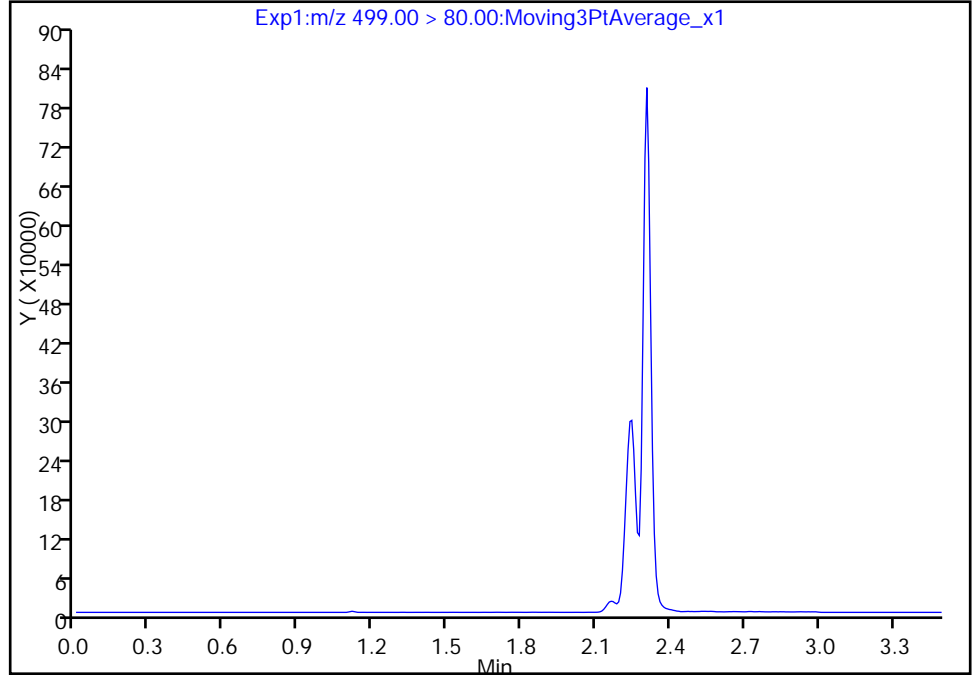
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Injection Date: 27-Feb-2017 11:03:42 Instrument ID: A8\_N  
Lims ID: CCV L2  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

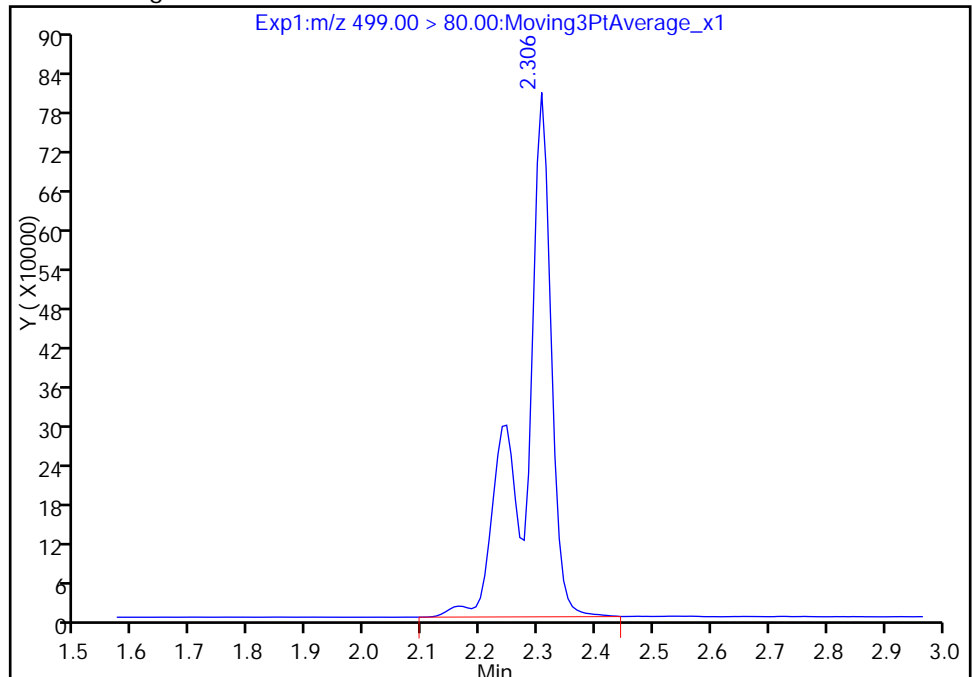
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.31  
Area: 2671996  
Amount: 10.306265  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:58:23  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

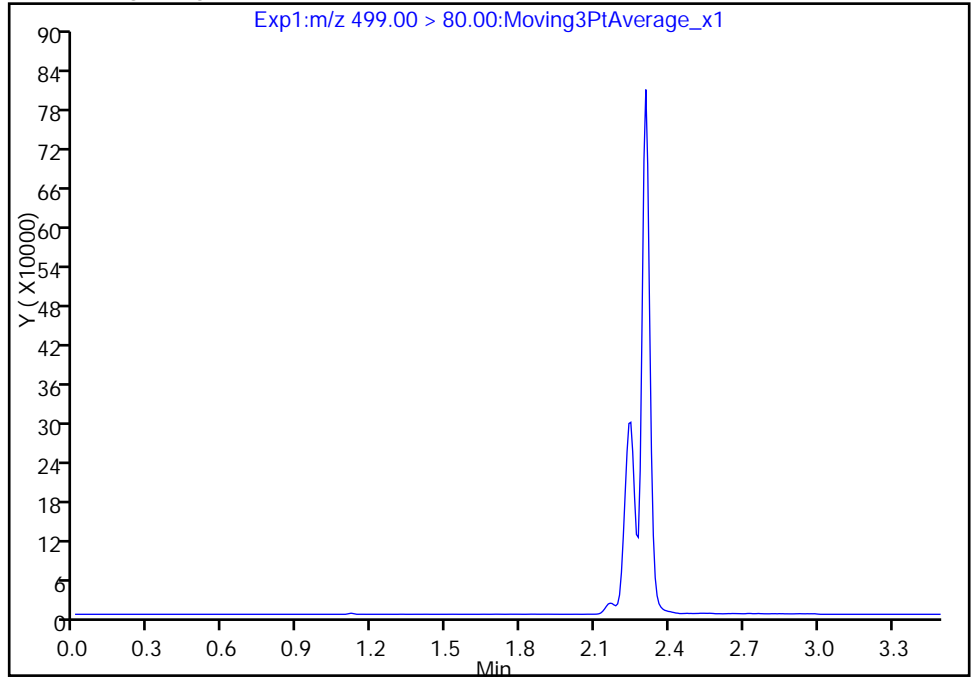
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Injection Date: 27-Feb-2017 11:03:42 Instrument ID: A8\_N  
Lims ID: CCV L2  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

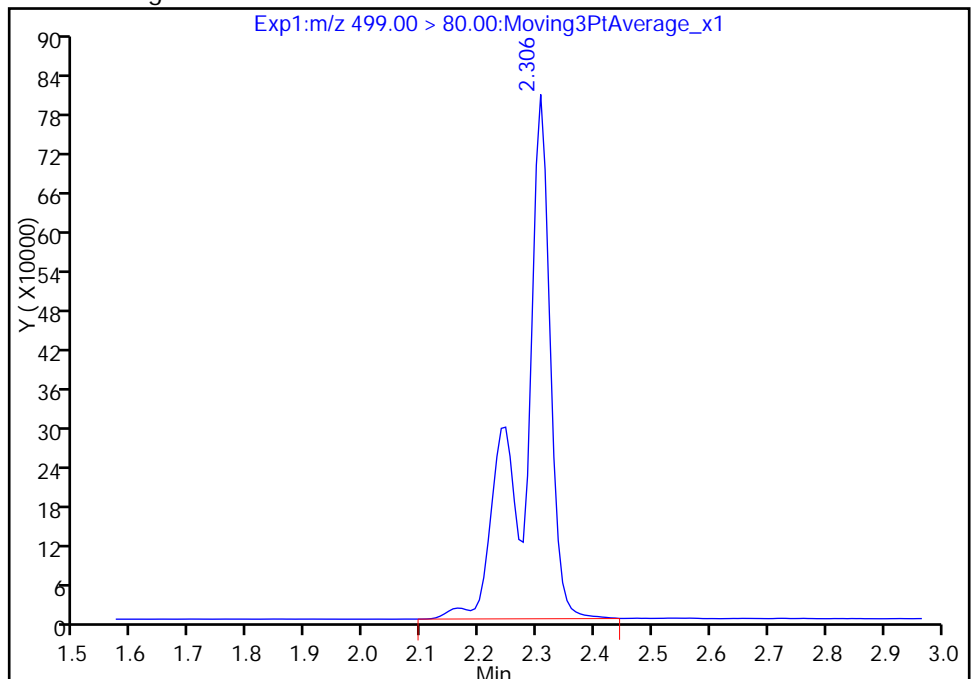
Not Detected  
Expected RT: 2.25

Processing Integration Results



RT: 2.31  
Area: 2671996  
Amount: 10.306265  
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 27-Feb-2017 16:58:23

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152402/1 Calibration Date: 02/27/2017 14:56  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27C\_537\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.237		111	135	-17.9	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.8902		13.7	14.9	-7.7	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.519		41.0	45.4	-9.8	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8878		28.1	29.3	-4.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.097		59.0	60.1	-1.8	30.0
Perfluorononanoic acid	Ave	0.6813	0.6206		28.3	31.1	-8.9	30.0
13C2 PFHxA	Ave	1.079	1.080		10.0	10.0	0.1	30.0
13C2 PFDA	Ave	0.6456	0.6898		10.7	10.0	6.8	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_001.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 27-Feb-2017 14:56:53 ALS Bottle#: 5 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:05:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	41063950	110.6		1812	
298.90 > 99.00	1.510	1.510	0.0	1.000	21515462		1.91(0.00-0.00)	2570	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2777785	10.0		7086	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.798	1.787	0.011	1.000	17009151	41.0		2493	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.798	1.788	0.010	1.000	3398640	13.7		458	
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2570921	10.0		4793	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	6682515	28.1		522	
413.00 > 169.00	2.003	1.980	0.023	1.000	3924096		1.70(0.00-0.00)	3319	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		7074074	28.7		9452	
9 Perfluorononanoic acid									
463.00 > 419.00	2.253	2.229	0.024	1.000	4963599	28.3		1283	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.246	2.246	0.0	1.000	16256587	59.0		3462	M
499.00 > 99.00	2.246	2.246	0.0	1.000	3859629		4.21(0.00-0.00)	2185	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1773326	10.7		3562	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L5\_00020

Amount Added: 1.00

Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_001.d

Injection Date: 27-Feb-2017 14:56:53

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 5

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

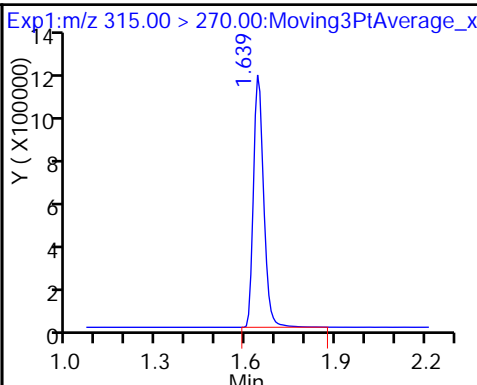
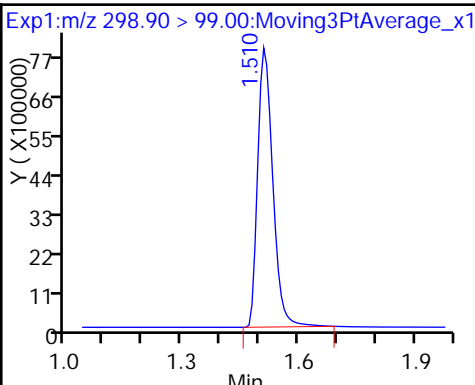
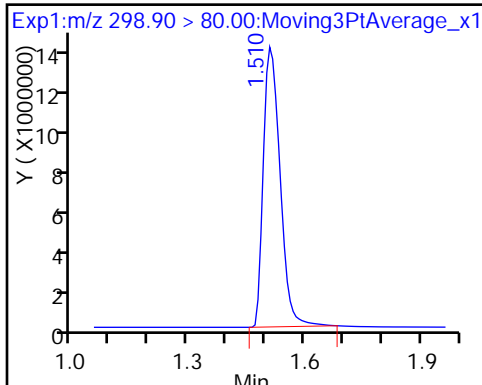
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

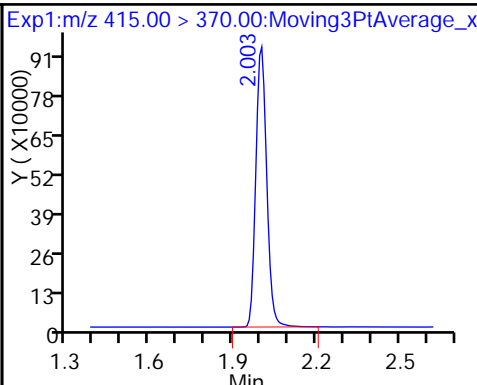
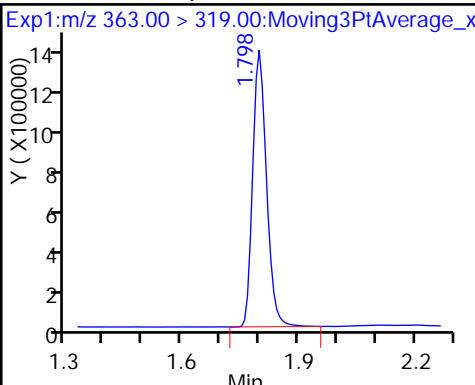
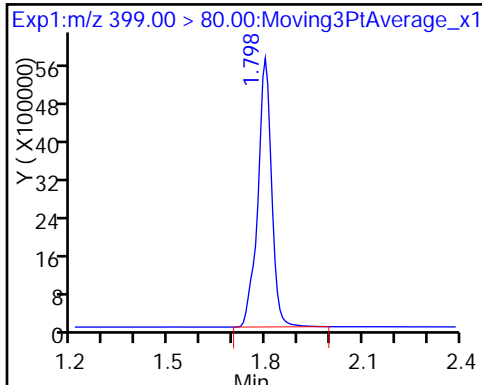
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

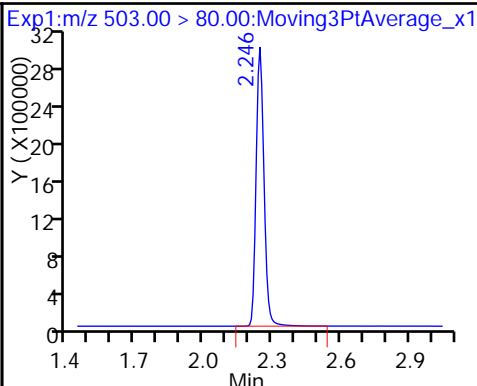
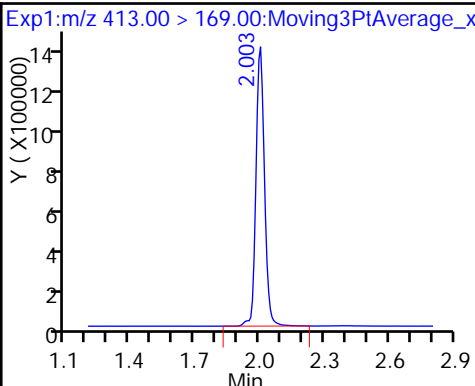
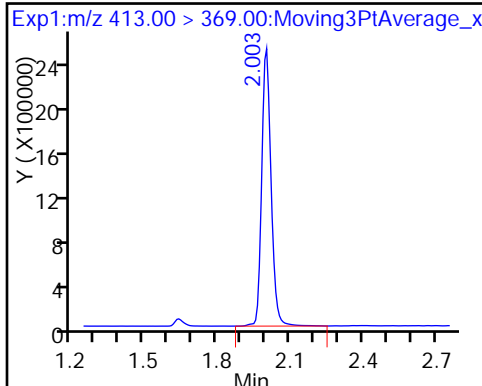
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

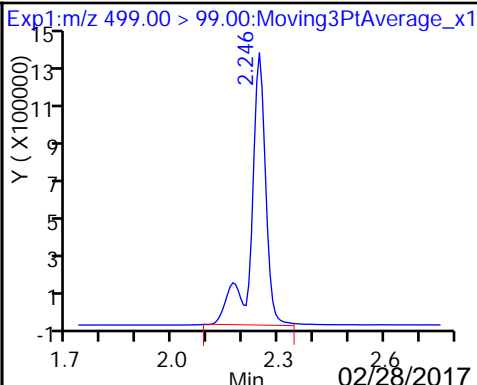
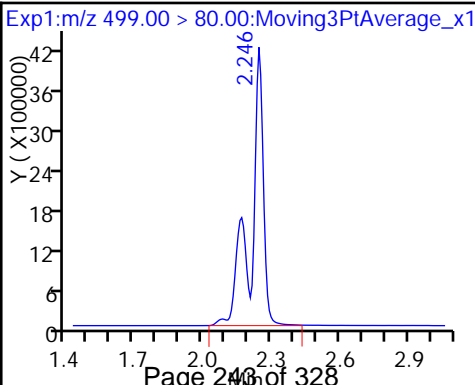
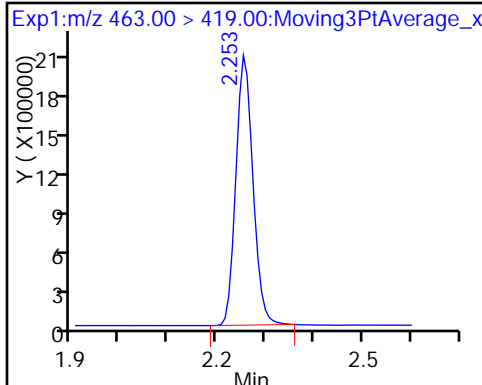
\* 7 13C4 PFOS



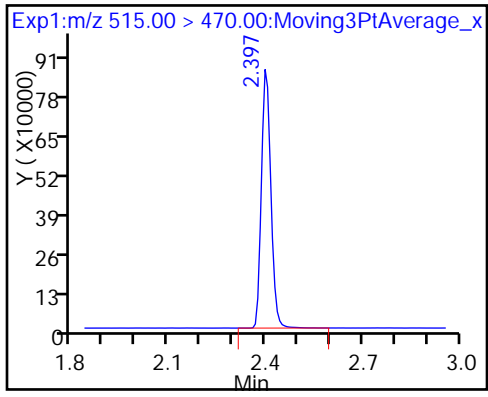
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento

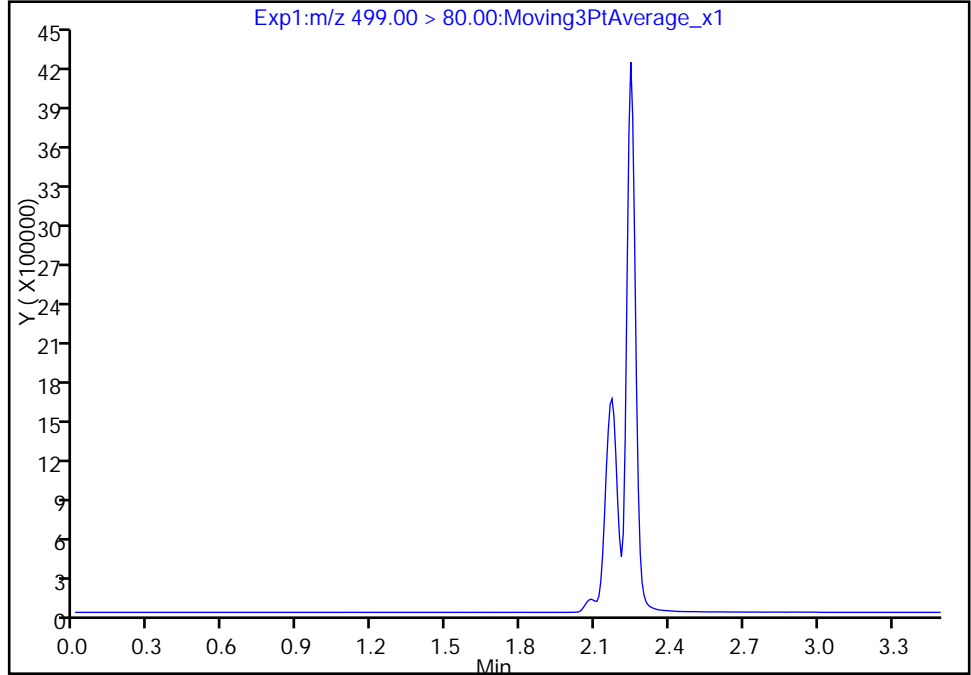
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Injection Date: 27-Feb-2017 14:56:53 Instrument ID: A8\_N  
Lims ID: CCV L5  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 1  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

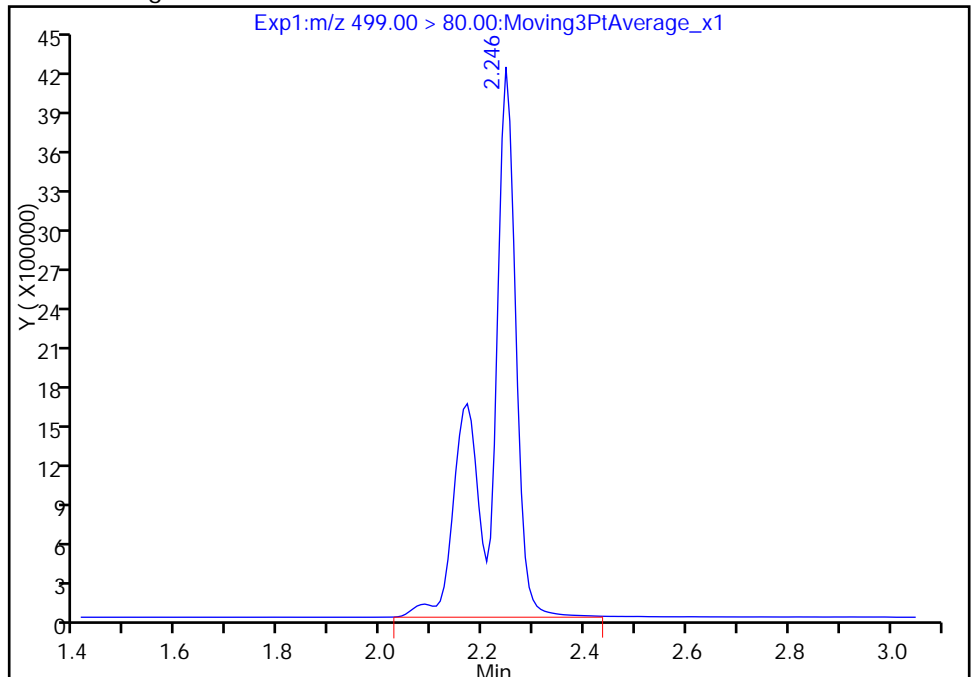
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 16256587  
Amount: 59.034918  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:27  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

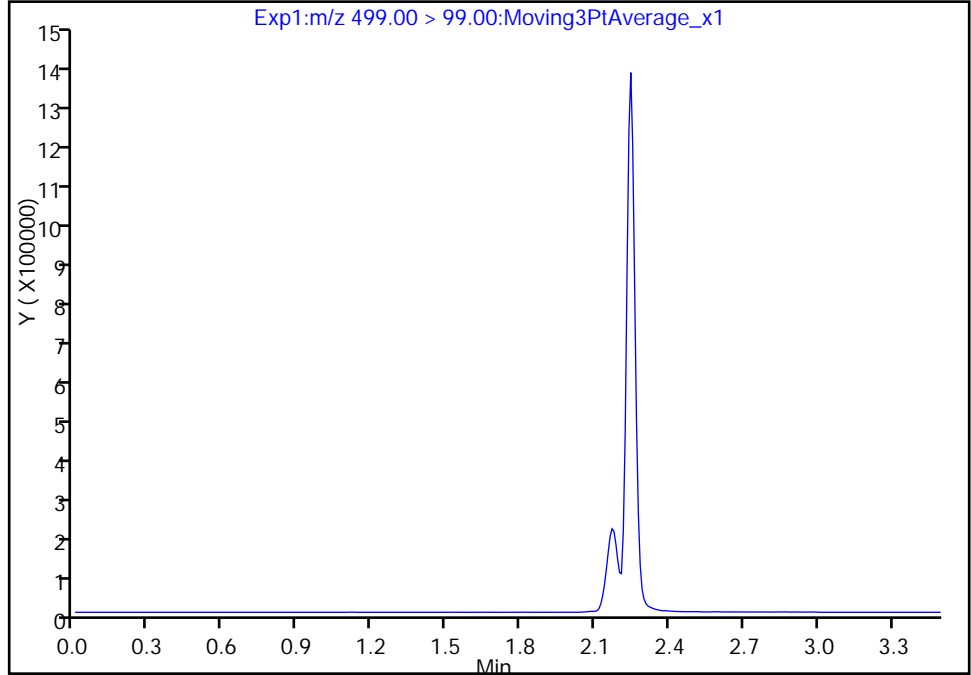
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Injection Date: 27-Feb-2017 14:56:53 Instrument ID: A8\_N  
Lims ID: CCV L5  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 1  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

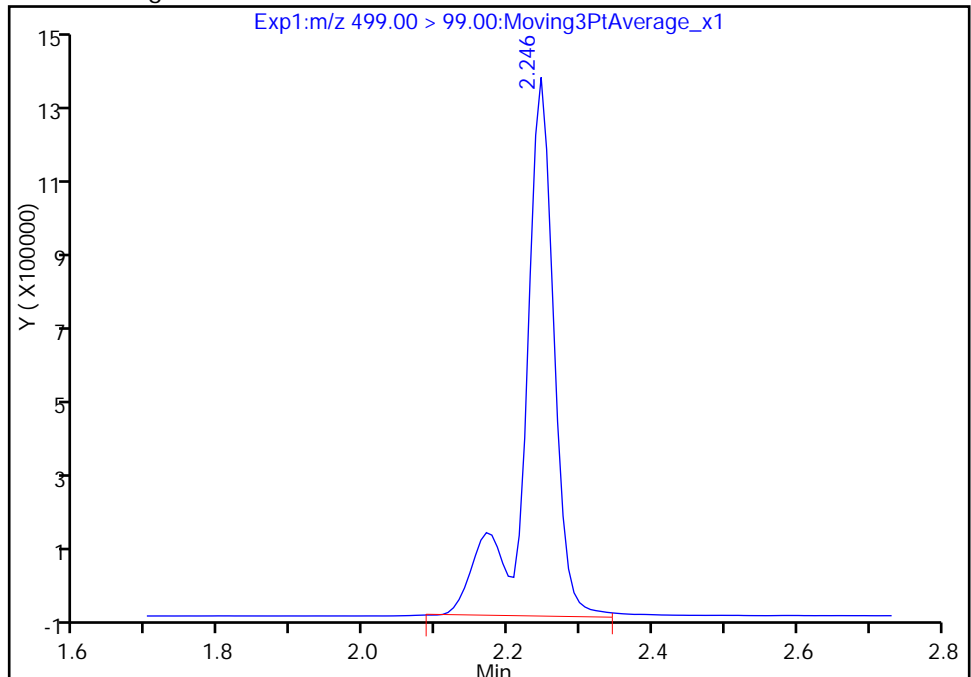
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 3859629  
Amount: 59.034918  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:27

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

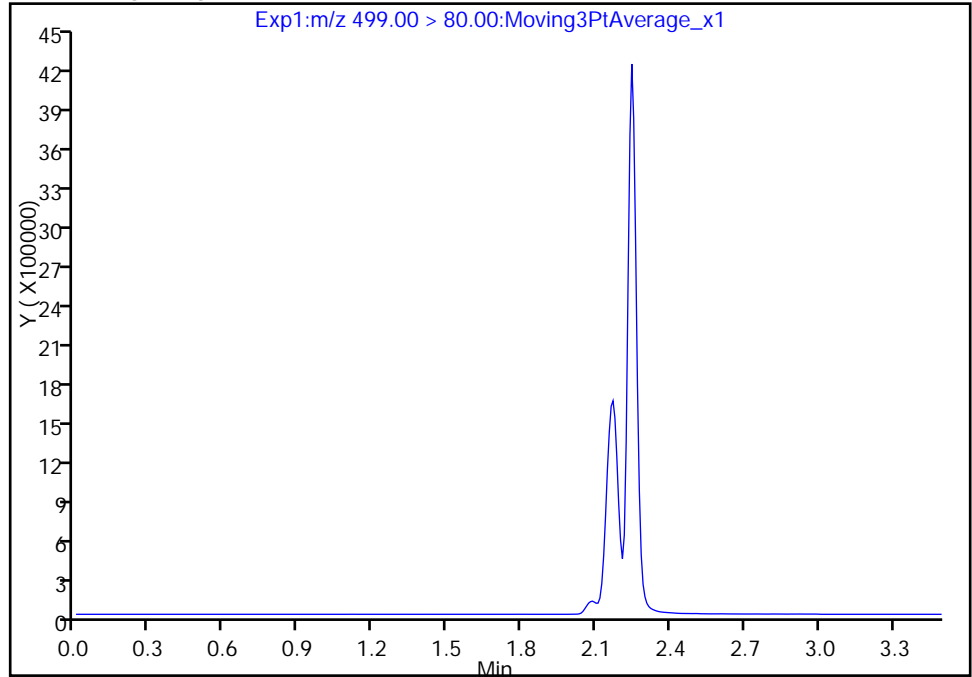
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_001.d  
Injection Date: 27-Feb-2017 14:56:53 Instrument ID: A8\_N  
Lims ID: CCV L5  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 1  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

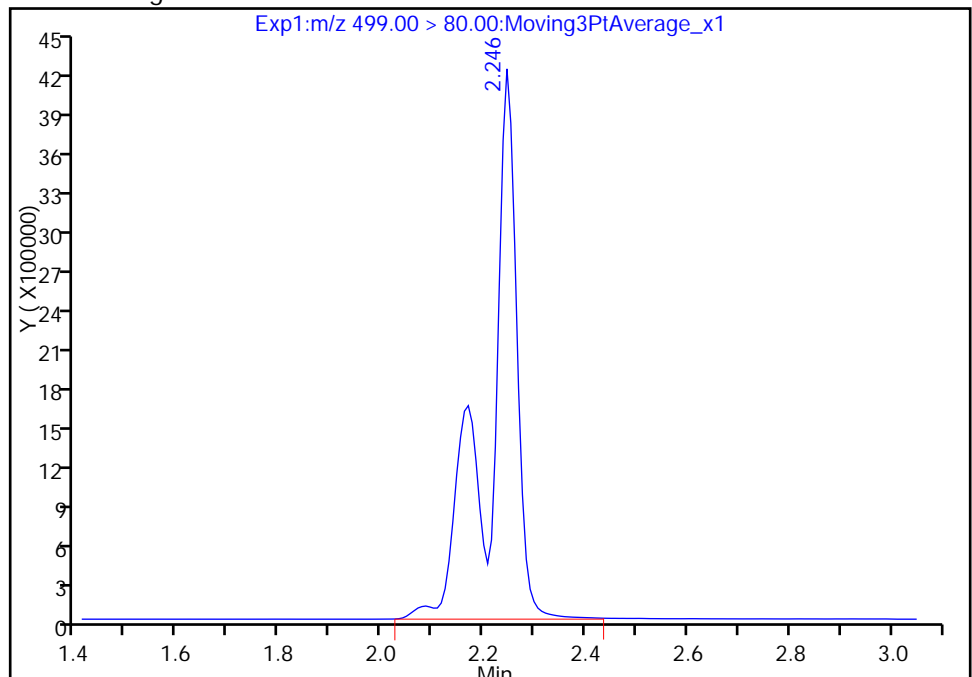
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 16256587  
Amount: 59.034918  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:27

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152402/12 Calibration Date: 02/27/2017 15:45  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27C\_537\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.793		46.6	45.1	3.3	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.640		14.8	15.2	-2.6	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9605		4.96	4.97	-0.4	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9285		9.85	9.81	0.4	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.106		20.0	20.1	-0.9	30.0
Perfluorononanoic acid	Ave	0.6813	0.7043		10.8	10.4	3.4	30.0
13C2 PFHxA	Ave	1.079	1.045		9.69	10.0	-3.1	30.0
13C2 PFDA	Ave	0.6456	0.6606		10.2	10.0	2.3	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152403/12 Calibration Date: 02/27/2017 15:45  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27C\_537\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.793		46.6	45.1	3.3	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.640		14.8	15.2	-2.6	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9605		4.96	4.97	-0.4	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9285		9.85	9.81	0.4	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.106		20.0	20.1	-0.9	30.0
Perfluorononanoic acid	Ave	0.6813	0.7043		10.8	10.4	3.4	30.0
13C2 PFHxA	Ave	1.079	1.045		9.69	10.0	-3.1	30.0
13C2 PFDA	Ave	0.6456	0.6606		10.2	10.0	2.3	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_012.d  
 Lims ID: CCV L3  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 27-Feb-2017 15:45:23 ALS Bottle#: 3 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L3  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:06:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.517	1.510	0.007	1.000	18180988	46.6		1450	
298.90 > 99.00	1.510	1.510	0.0	0.995	8357003		2.18(0.00-0.00)	1733	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.646	1.638	0.008	1.000	2481667	9.69		6523	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.798	1.787	0.011	1.000	5604477	14.8		1432	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.806	1.788	0.018	1.000	1134449	4.96		151	
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2374228	10.0		5150	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	2162280	9.85		181	
413.00 > 169.00	2.003	1.980	0.023	1.000	1240870		1.74(0.00-0.00)	1573	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		6446954	28.7		8239	
9 Perfluorononanoic acid									
463.00 > 419.00	2.261	2.229	0.032	1.000	1742811	10.8		504	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	5007270	20.0		1941	M
499.00 > 99.00	2.246	2.246	0.0	0.997	1180790		4.24(0.00-0.00)	1205	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	1568468	10.2		3038	



### QC Flag Legend

Review Flags

M - Manually Integrated

### Reagents:

LC537-L3\_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_012.d  
 Lims ID: CCV L3  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 27-Feb-2017 15:45:23 ALS Bottle#: 3 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L3  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:53 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d

Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:06:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.517	1.510	0.007	1.000	18180988	46.6		1450	
298.90 > 99.00	1.510	1.510	0.0	0.995	8357003		2.18(0.00-0.00)	1733	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.646	1.638	0.008	1.000	2481667	9.69		6523	
3 Perfluorohexanesulfonic acid									
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415.00 > 370.00	2.003	1.979	0.024		2374228	10.0		5150	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	2162280	9.85		181	
413.00 > 169.00	2.003	1.980	0.023	1.000	1240870		1.74(0.00-0.00)	1573	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		6446954	28.7		8239	
9 Perfluorononanoic acid									
463.00 > 419.00	2.261	2.229	0.032	1.000	1742811	10.8		504	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	5007270	20.0		1941	M
499.00 > 99.00	2.246	2.246	0.0	0.997	1180790		4.24(0.00-0.00)	1205	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	1568468	10.2		3038	

### QC Flag Legend

Review Flags

M - Manually Integrated

### Reagents:

LC537-L3\_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_012.d

Injection Date: 27-Feb-2017 15:45:23

Instrument ID: A8\_N

Lims ID: CCV L3

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 3

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

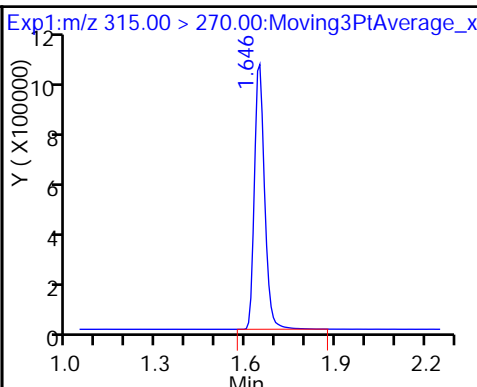
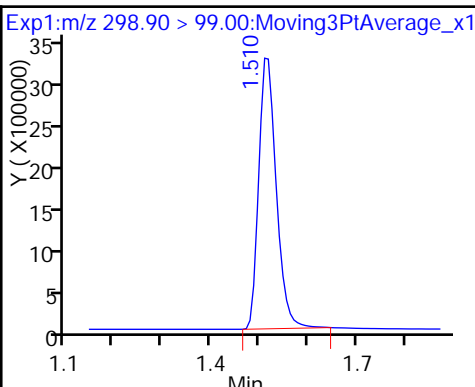
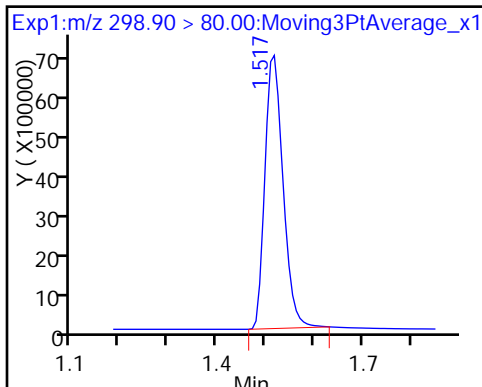
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

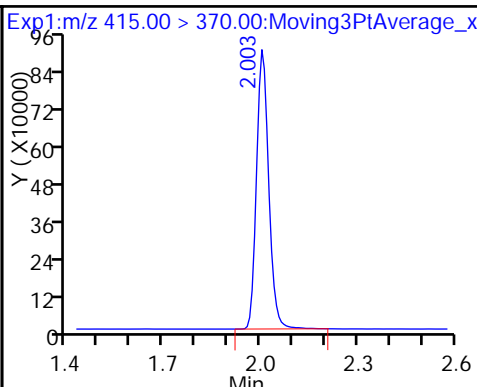
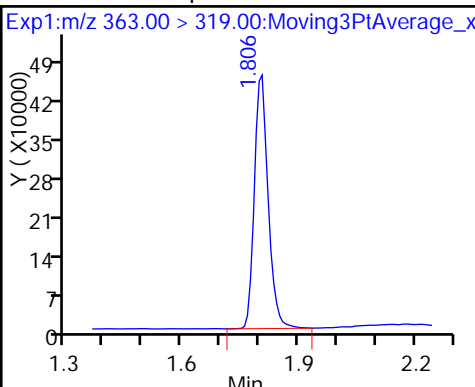
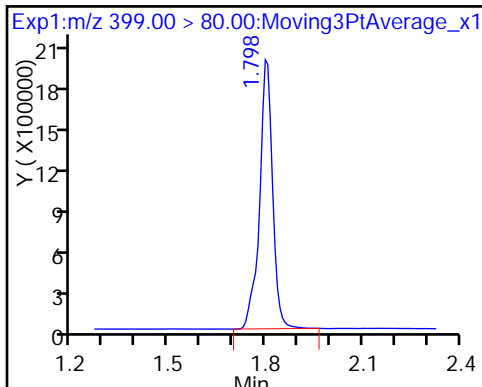
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

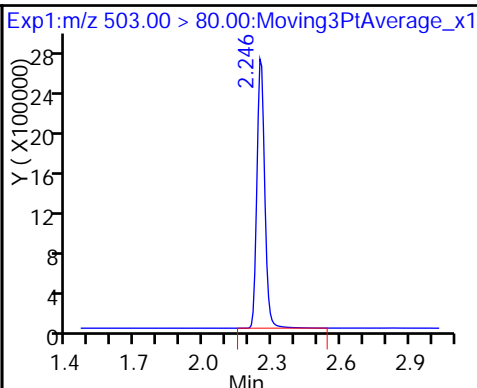
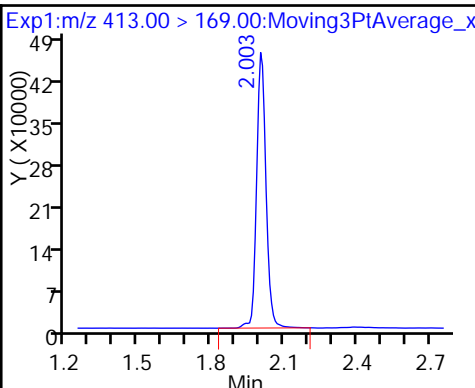
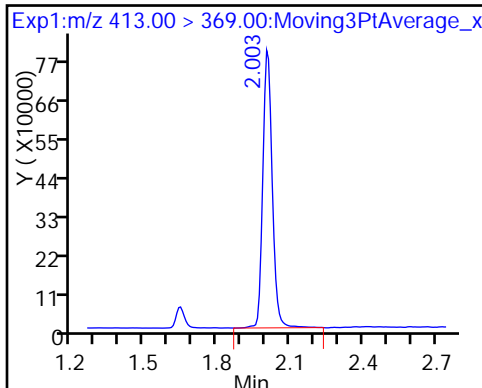
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

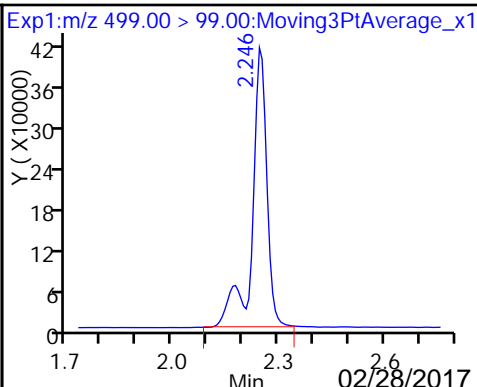
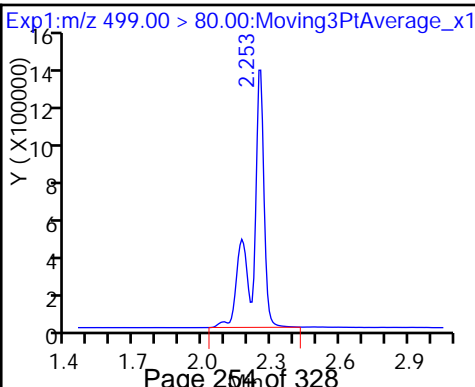
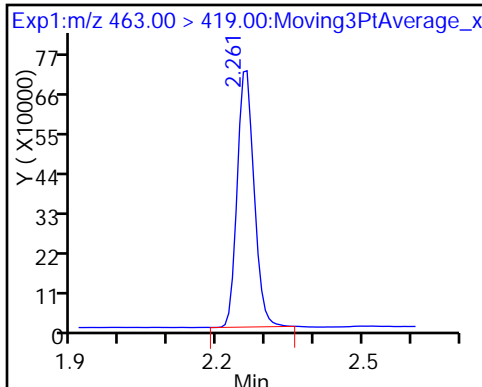
\* 7 13C4 PFOS



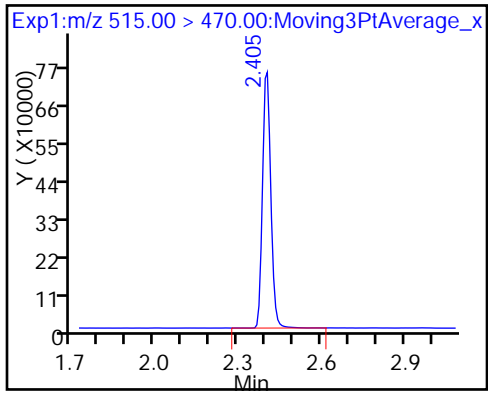
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_012.d

Injection Date: 27-Feb-2017 15:45:23

Instrument ID: A8\_N

Lims ID: CCV L3

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 3

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

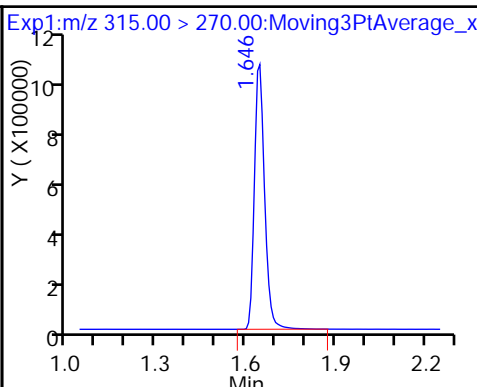
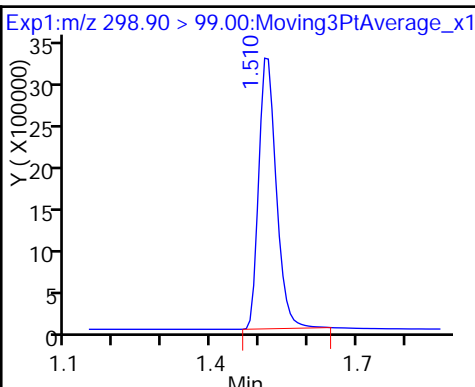
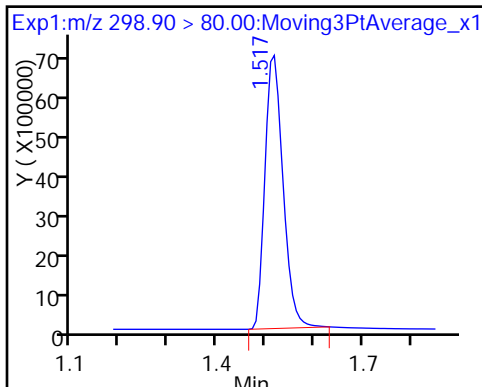
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

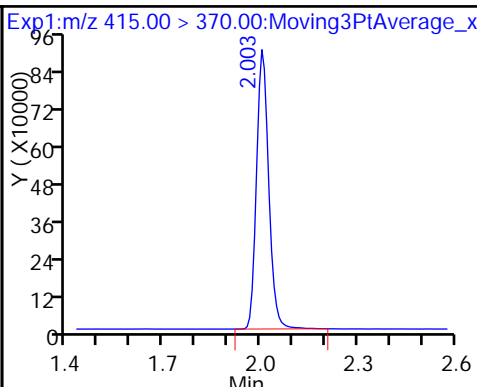
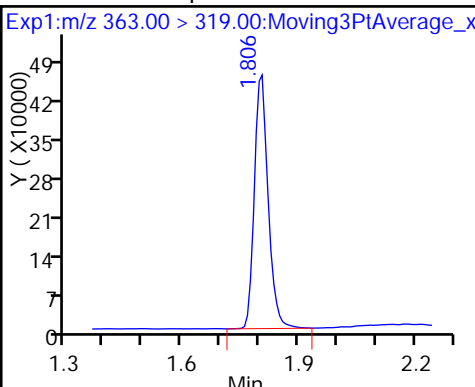
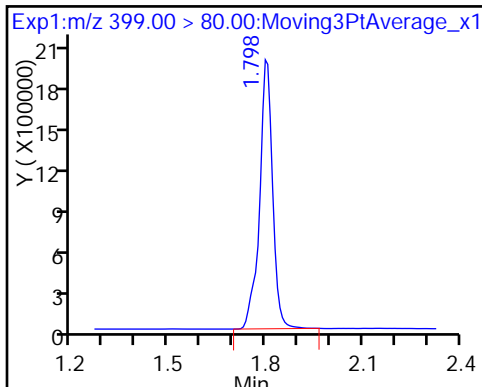
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

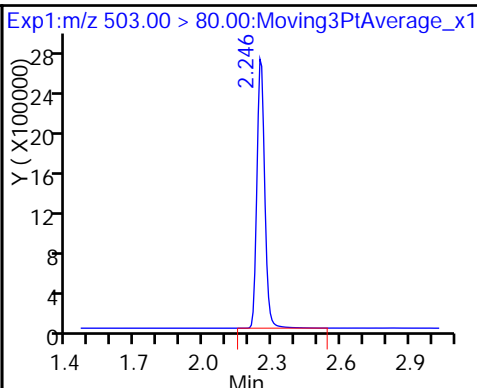
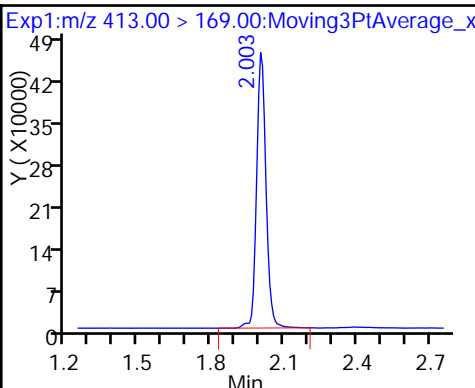
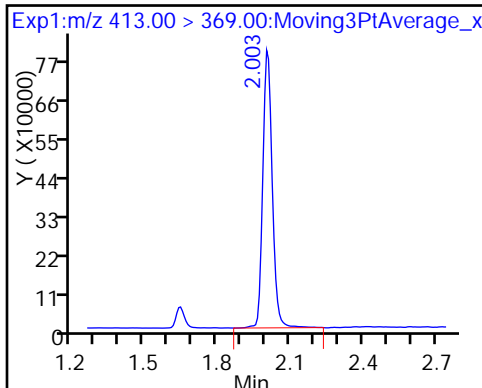
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

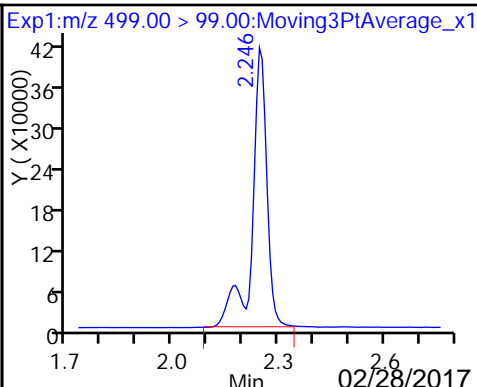
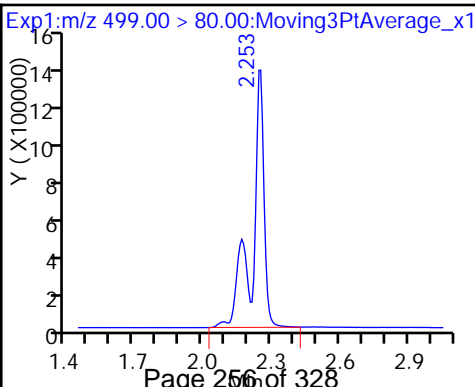
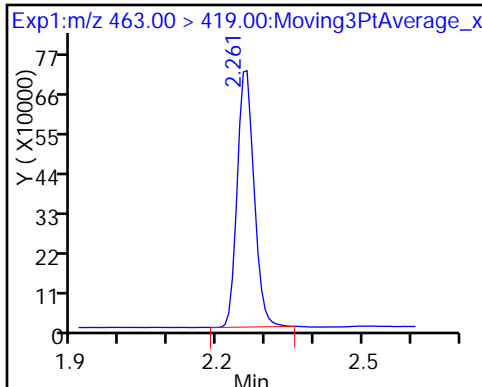
\* 7 13C4 PFOS



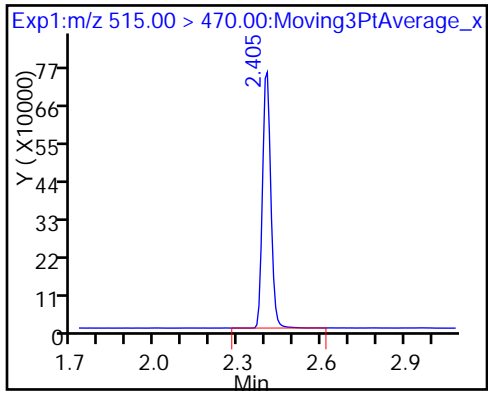
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento

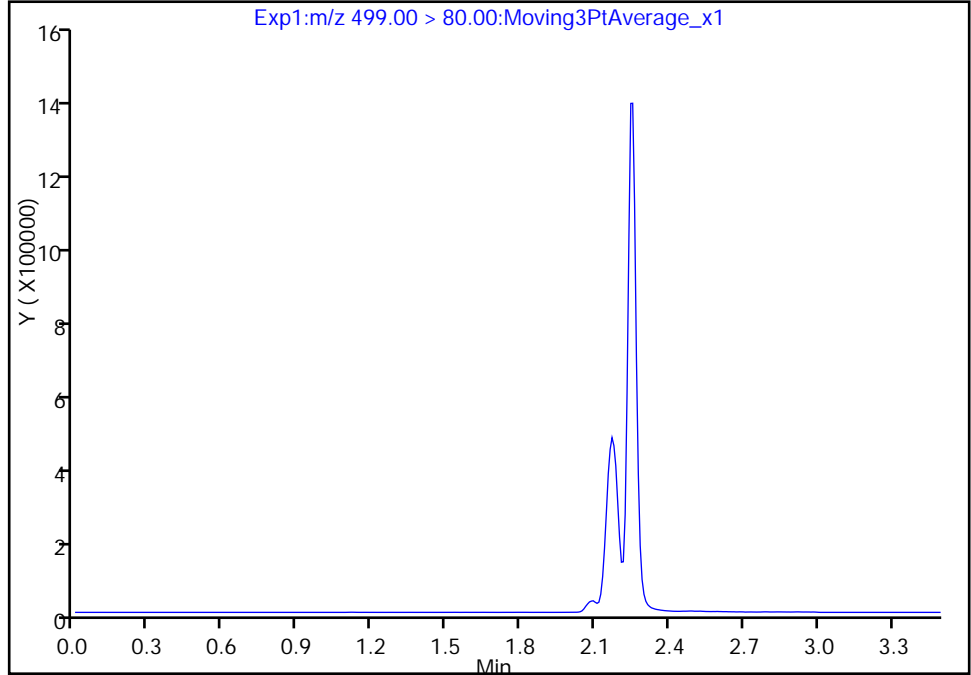
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Injection Date: 27-Feb-2017 15:45:23 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

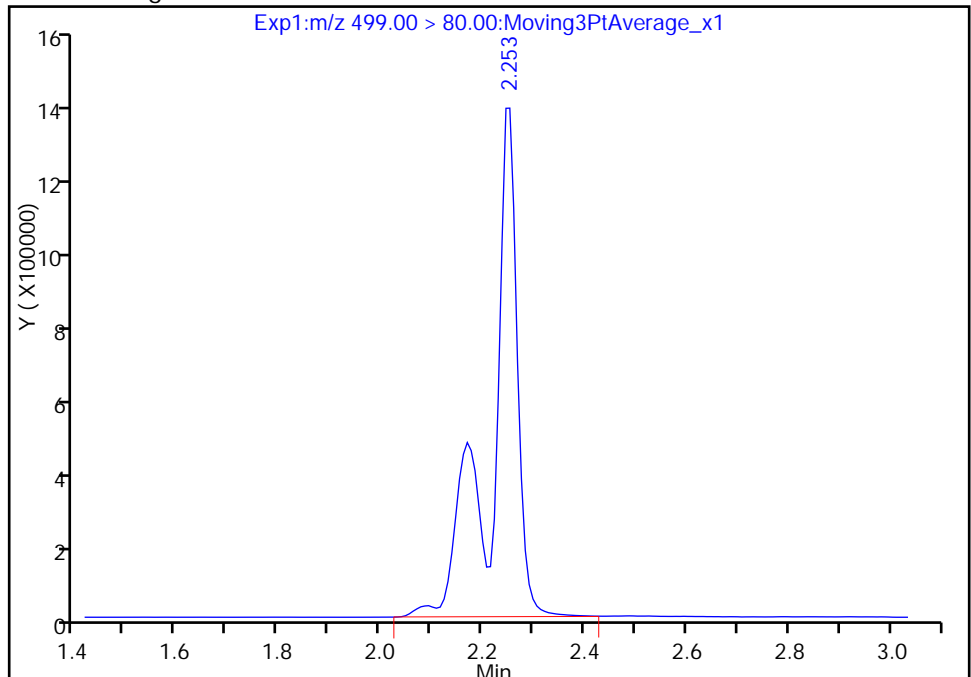
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 5007270  
Amount: 19.952422  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:53  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak



TestAmerica Sacramento

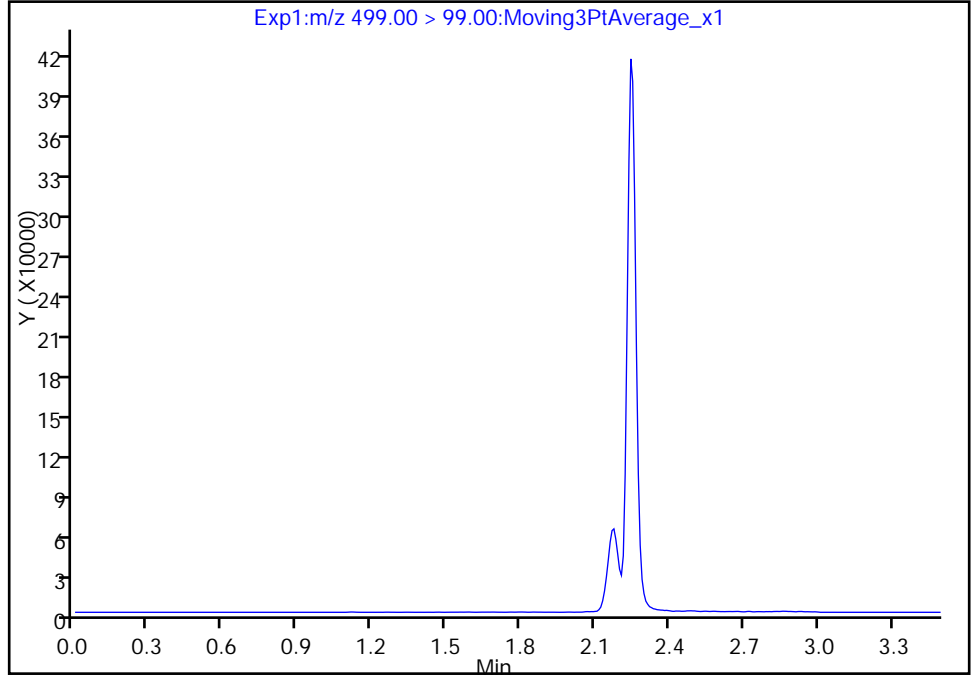
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Injection Date: 27-Feb-2017 15:45:23 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

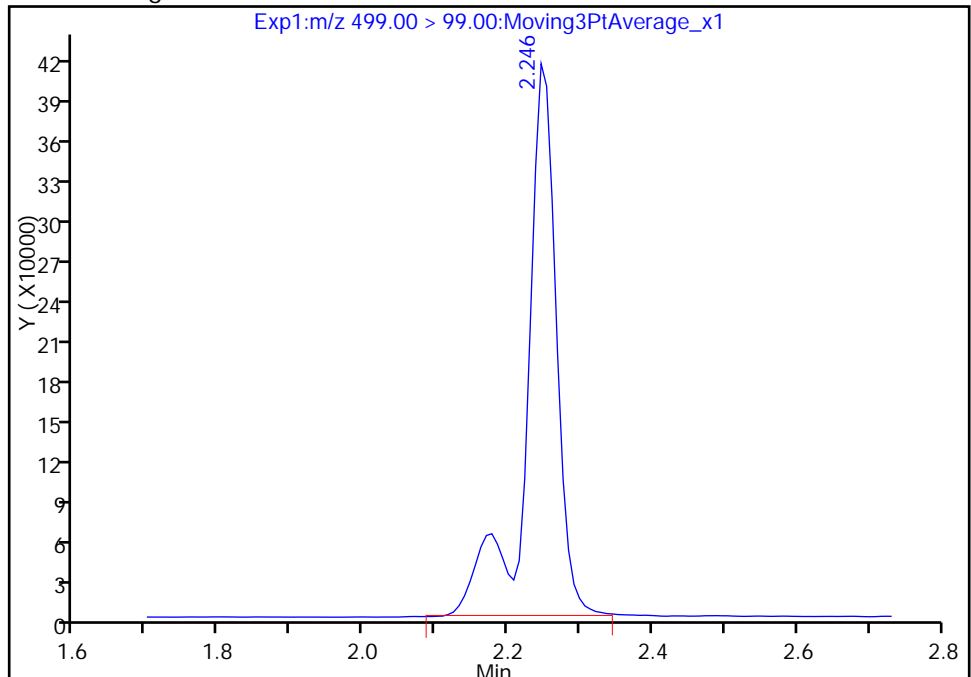
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 1180790  
Amount: 19.952422  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:53

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

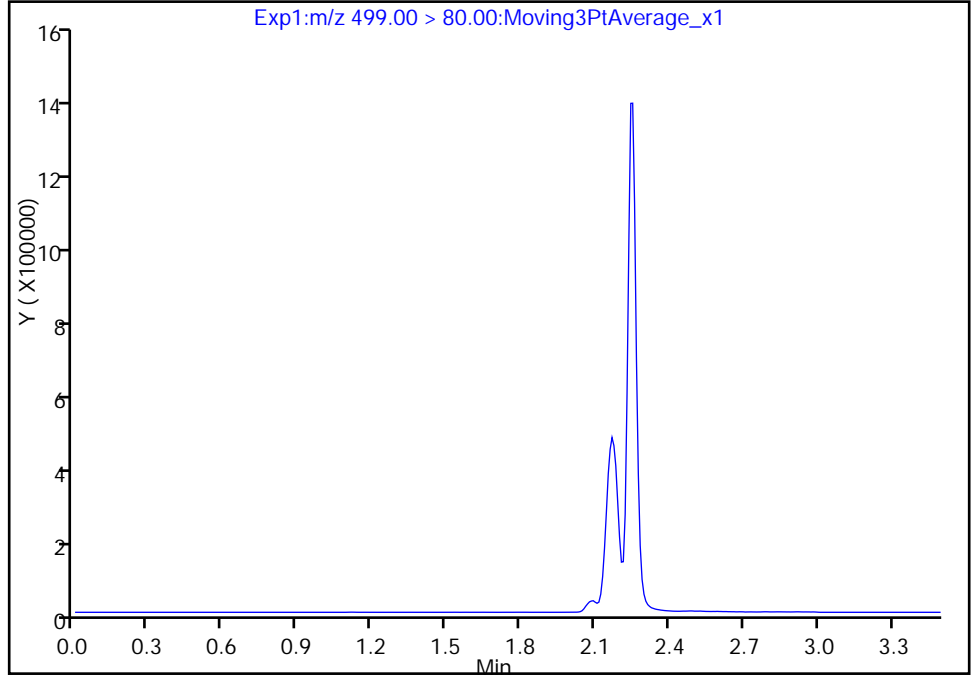
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Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

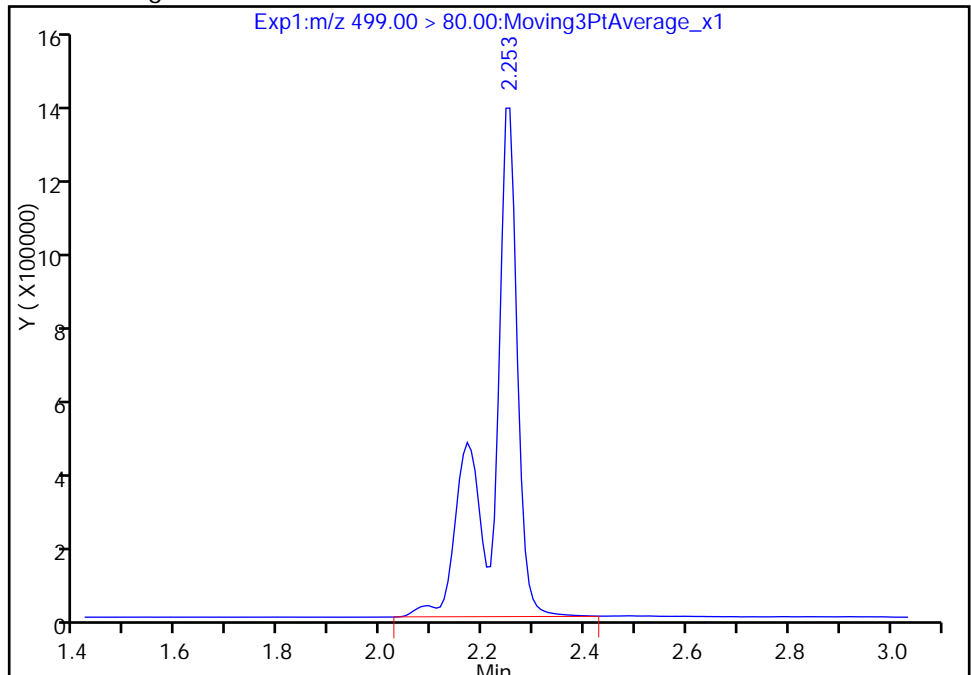
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 5007270  
Amount: 19.952422  
Amount Units: ng/ml



TestAmerica Sacramento

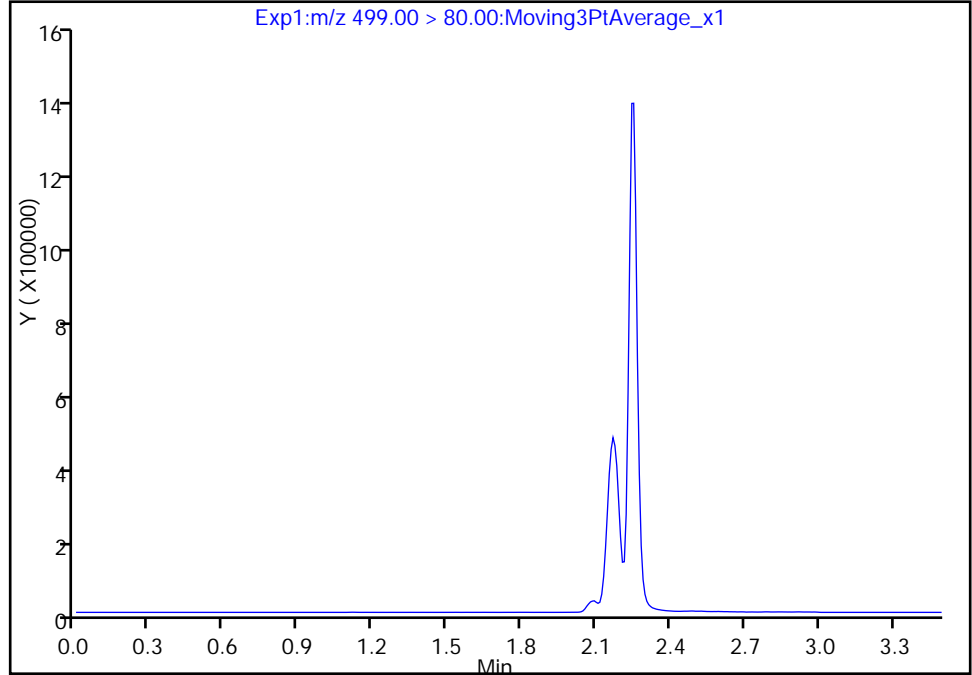
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_012.d  
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Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

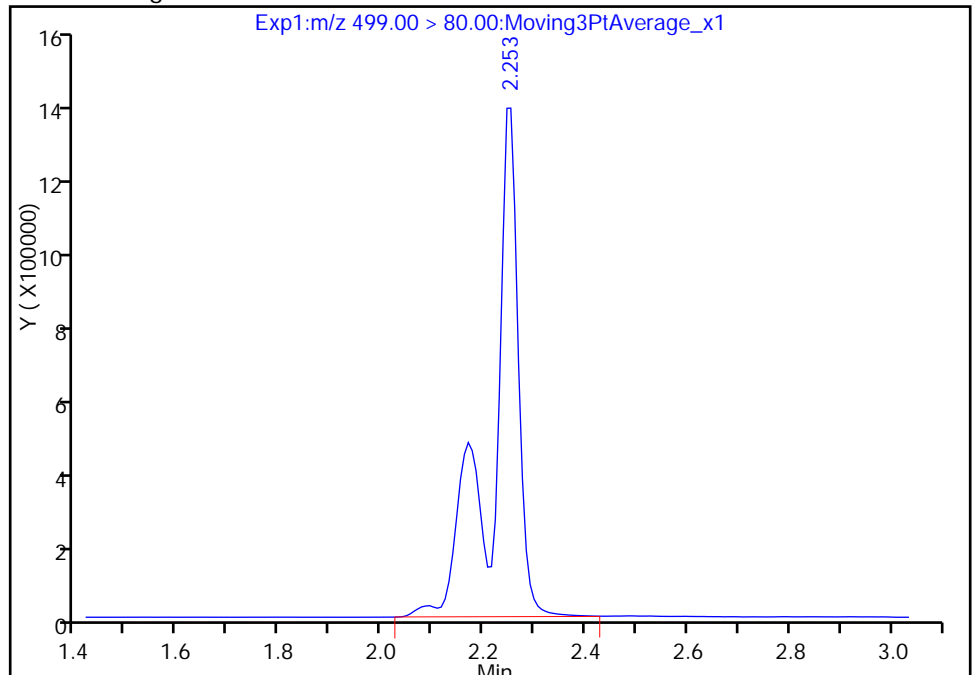
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 5007270  
Amount: 19.952422  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:53  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

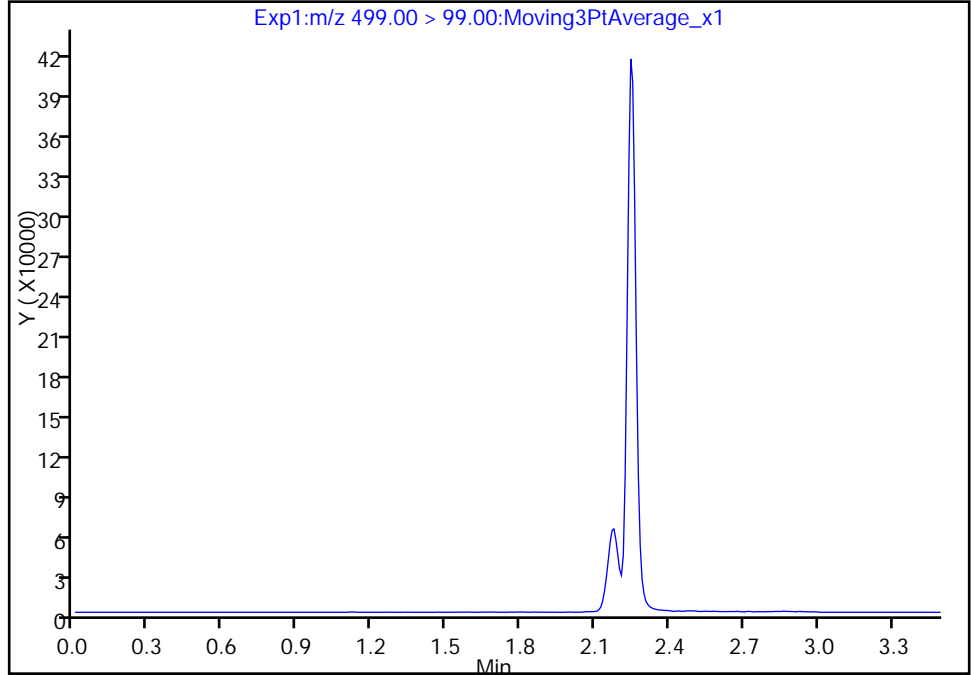
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Injection Date: 27-Feb-2017 15:45:23 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

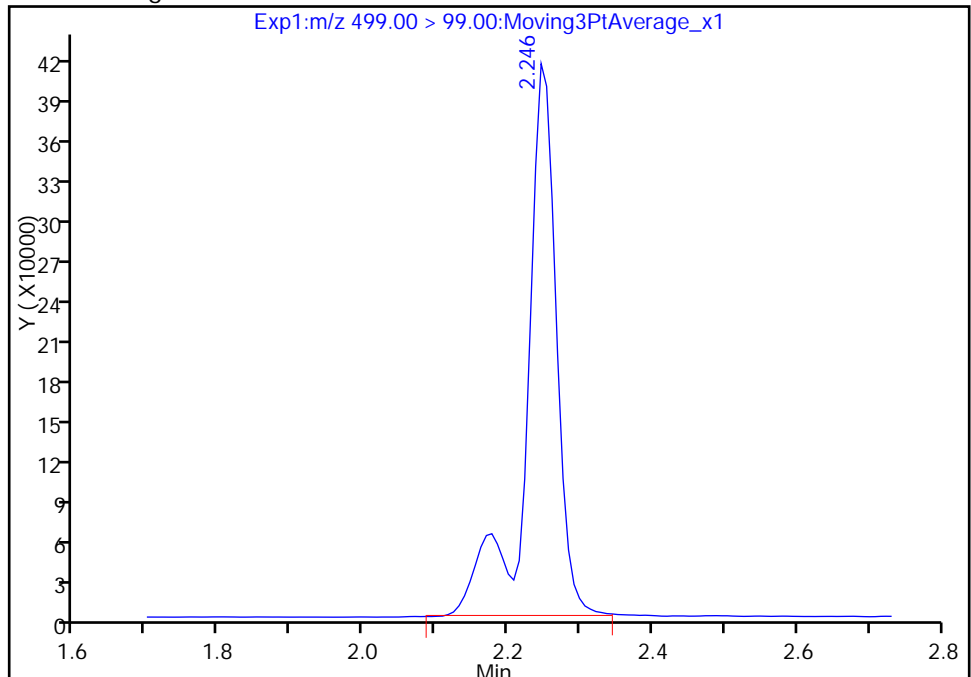
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 1180790  
Amount: 19.952422  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:53

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

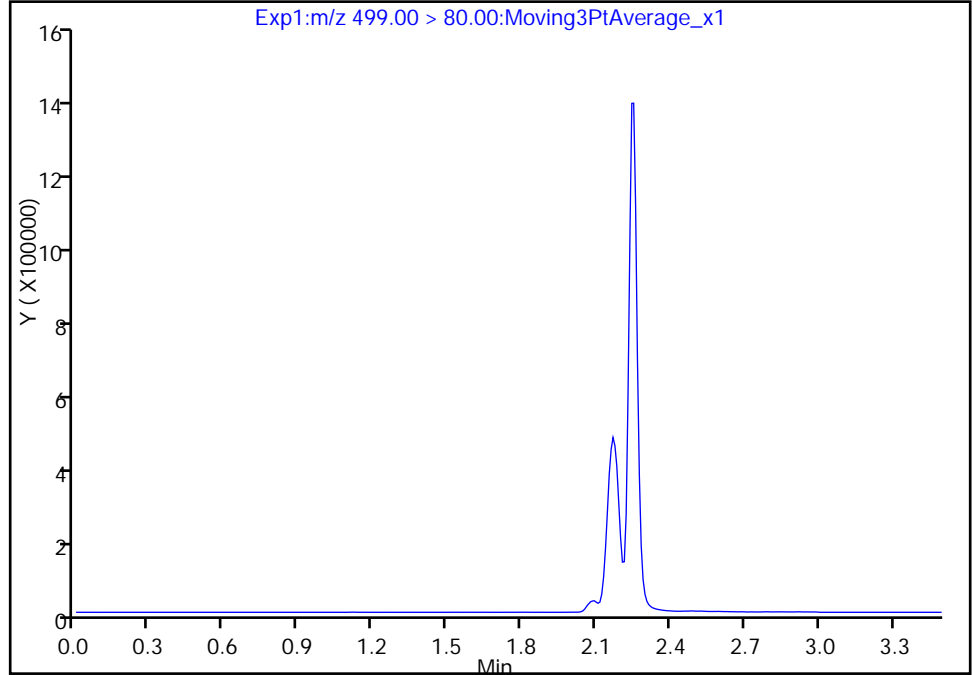
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Injection Date: 27-Feb-2017 15:45:23 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

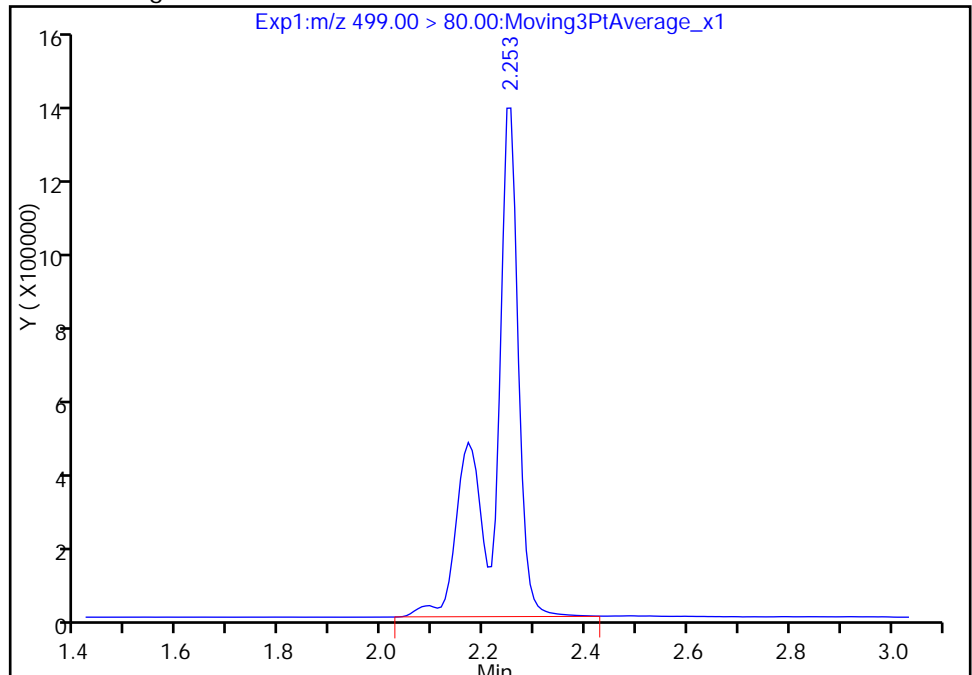
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 5007270  
Amount: 19.952422  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:53

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152403/22 Calibration Date: 02/27/2017 16:29  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27C\_537\_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.227		109	135	-18.7	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.8799		13.6	14.9	-8.7	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.523		41.1	45.4	-9.5	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9228		29.2	29.3	-0.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.087		58.5	60.1	-2.6	30.0
Perfluorononanoic acid	Ave	0.6813	0.6529		29.8	31.1	-4.2	30.0
13C2 PFHxA	Ave	1.079	1.091		10.1	10.0	1.1	30.0
13C2 PFDA	Ave	0.6456	0.6876		10.6	10.0	6.5	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152411/22 Calibration Date: 02/27/2017 16:29  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27C\_537\_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.227		109	135	-18.7	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.8799		13.6	14.9	-8.7	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.523		41.1	45.4	-9.5	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9228		29.2	29.3	-0.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.087		58.5	60.1	-2.6	30.0
Perfluorononanoic acid	Ave	0.6813	0.6529		29.8	31.1	-4.2	30.0
13C2 PFHxA	Ave	1.079	1.091		10.1	10.0	1.1	30.0
13C2 PFDA	Ave	0.6456	0.6876		10.6	10.0	6.5	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_022.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 27-Feb-2017 16:29:24 ALS Bottle#: 5 Worklist Smp#: 22  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:55:12 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:51:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	42402483	109.4		1750	
298.90 > 99.00	1.510	1.510	0.0	1.000	22421165		1.89(0.00-0.00)	2150	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2872861	10.1		5951	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	17739903	41.1		2335	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	3439718	13.6		395	
* 6 13C2-PFOA									
415.00 > 370.00	1.995	1.979	0.016		2632377	10.0		4637	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.995	1.980	0.015	1.000	7112131	29.2		558	
413.00 > 169.00	1.995	1.980	0.015	1.000	4194728		1.70(0.00-0.00)	3404	
* 7 13C4 PFOS									
503.00 > 80.00	2.238	2.220	0.018		7359216	28.7		7901	
9 Perfluorononanoic acid									
463.00 > 419.00	2.246	2.229	0.017	1.000	5347399	29.8		1298	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.162	2.246	-0.084	1.000	16768205	58.5		1081	
499.00 > 99.00	2.208	2.246	-0.038	1.021	4007736		4.18(0.00-0.00)	453	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1809917	10.6		3329	



**Reagents:**

LC537-L5\_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_022.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 27-Feb-2017 16:29:24 ALS Bottle#: 5 Worklist Smp#: 22  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:55:12 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:51:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	42402483	109.4		1750	
298.90 > 99.00	1.510	1.510	0.0	1.000	22421165		1.89(0.00-0.00)	2150	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2872861	10.1		5951	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	17739903	41.1		2335	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	3439718	13.6		395	
* 6 13C2-PFOA									
415.00 > 370.00	1.995	1.979	0.016		2632377	10.0		4637	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.995	1.980	0.015	1.000	7112131	29.2		558	
413.00 > 169.00	1.995	1.980	0.015	1.000	4194728		1.70(0.00-0.00)	3404	
* 7 13C4 PFOS									
503.00 > 80.00	2.238	2.220	0.018		7359216	28.7		7901	
9 Perfluorononanoic acid									
463.00 > 419.00	2.246	2.229	0.017	1.000	5347399	29.8		1298	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.162	2.246	-0.084	1.000	16768205	58.5		1081	
499.00 > 99.00	2.208	2.246	-0.038	1.021	4007736		4.18(0.00-0.00)	453	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1809917	10.6		3329	

**Reagents:**

LC537-L5\_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_022.d

Injection Date: 27-Feb-2017 16:29:24

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 5

Worklist Smp#: 22

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

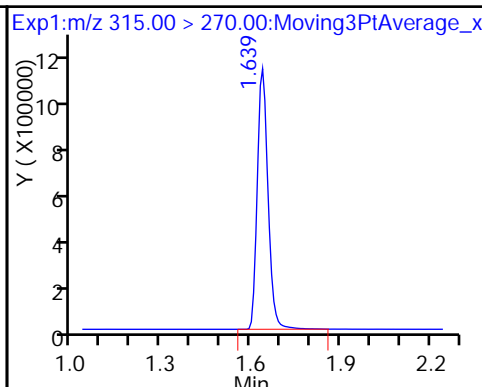
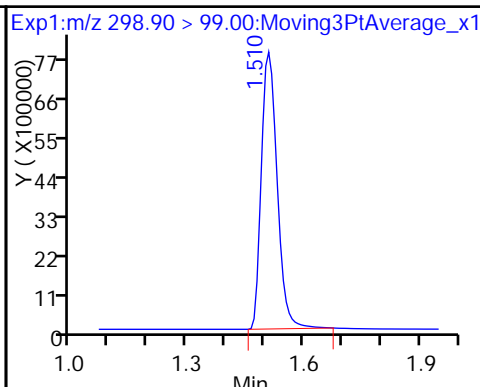
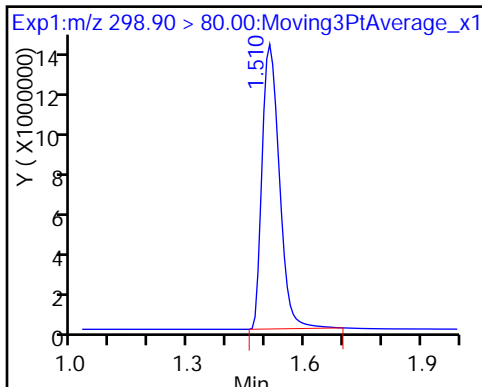
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

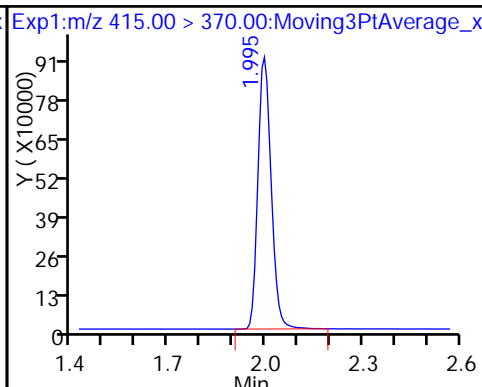
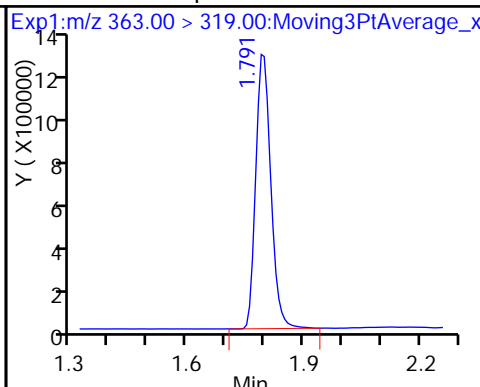
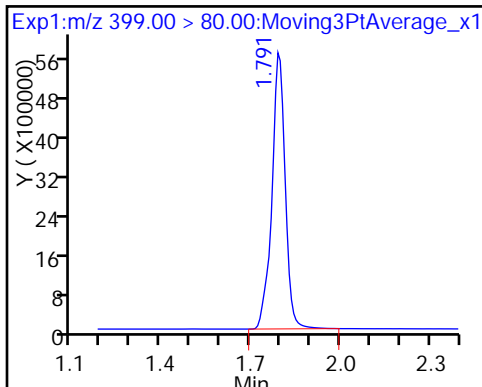
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

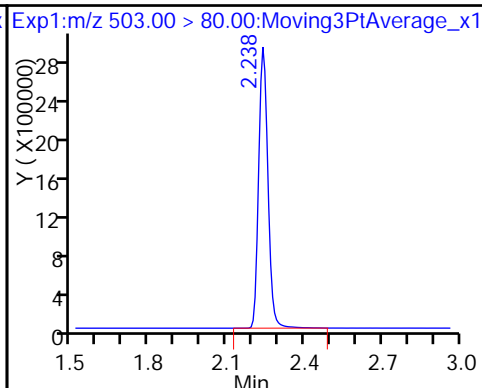
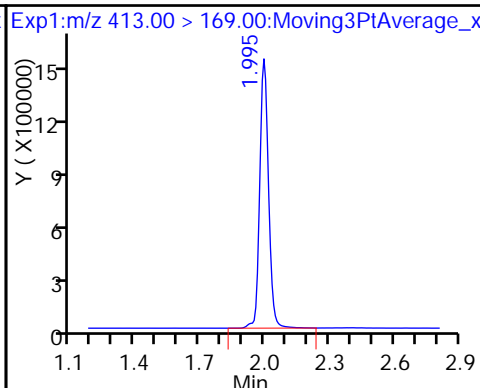
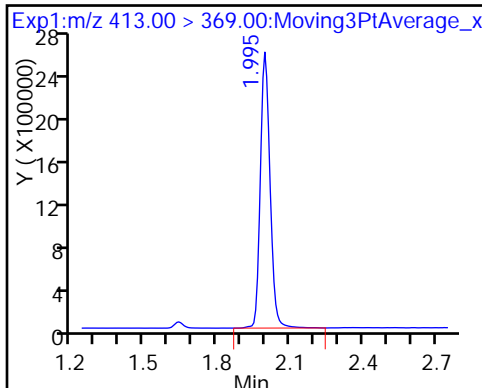
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

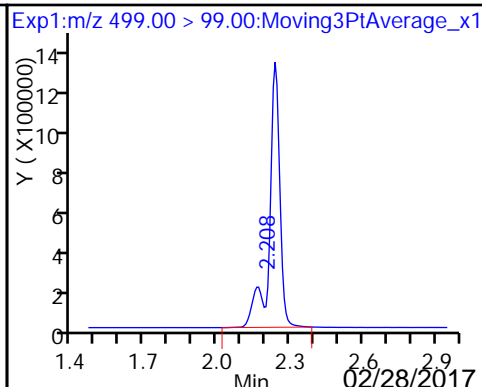
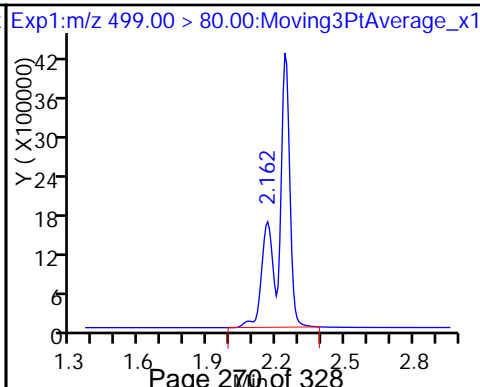
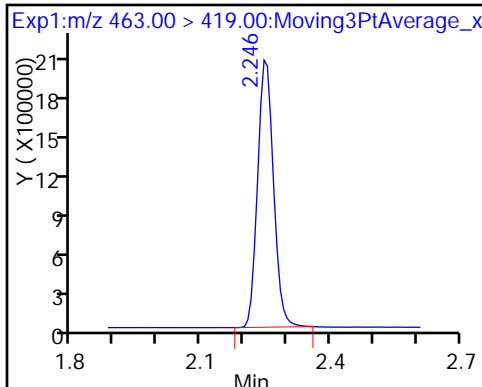
\* 7 13C4 PFOS



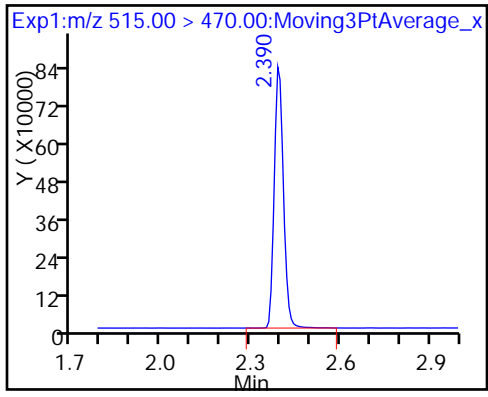
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_022.d

Injection Date: 27-Feb-2017 16:29:24

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 5

Worklist Smp#: 22

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

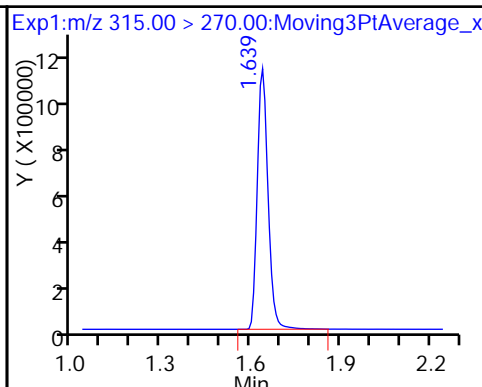
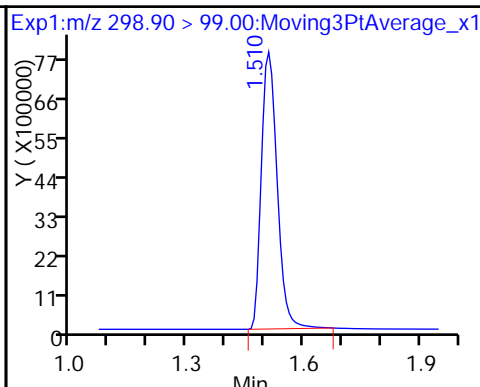
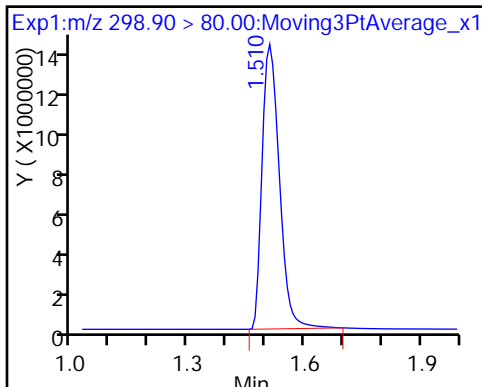
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

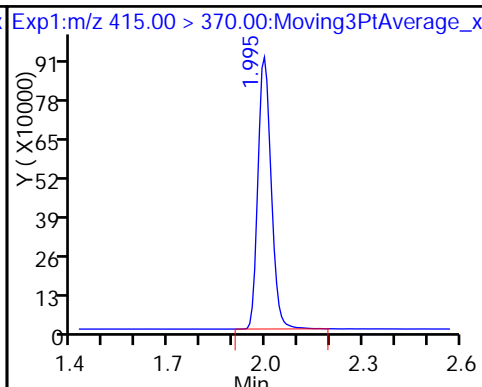
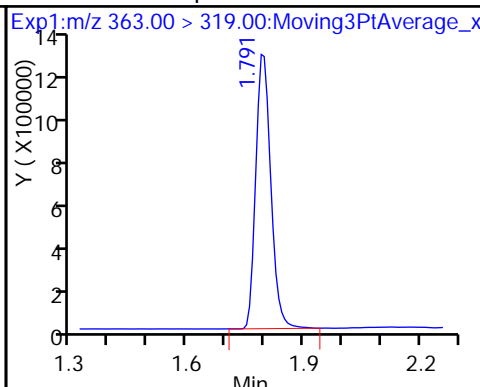
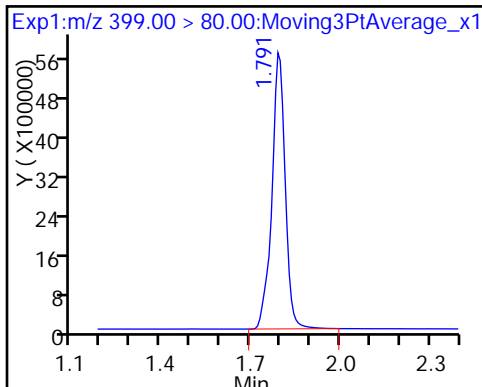
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

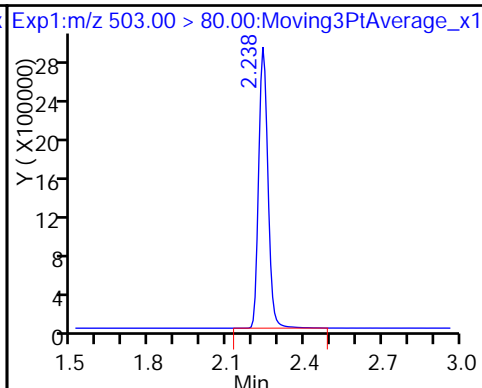
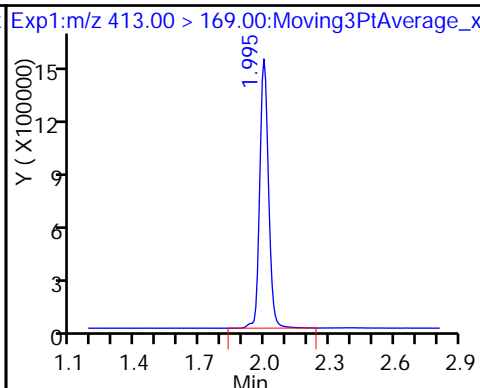
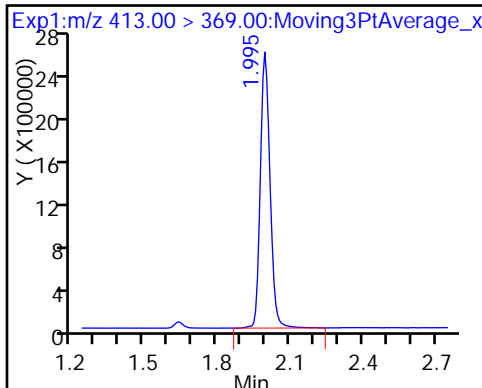
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

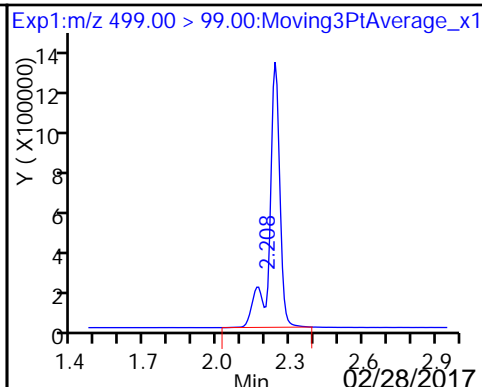
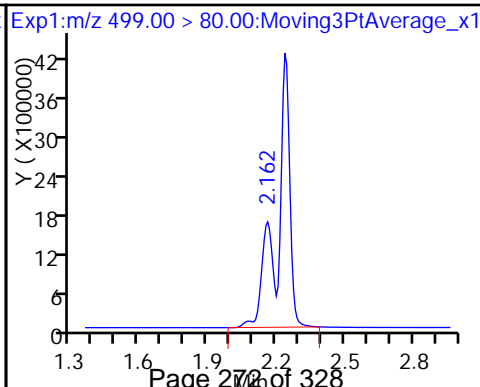
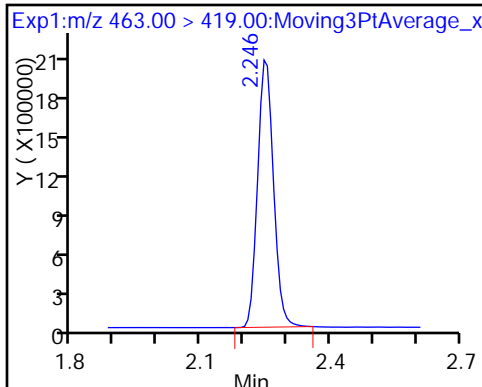
\* 7 13C4 PFOS



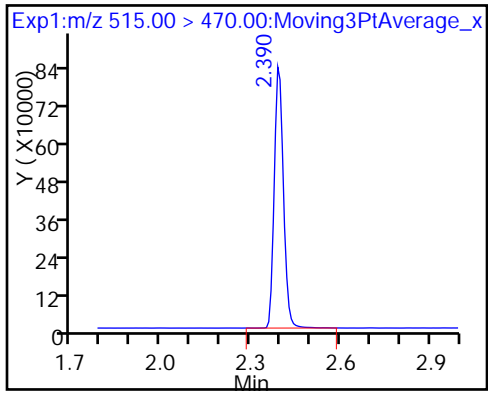
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid



\$ 10 13C2 PFDA



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-152411/24 Calibration Date: 02/27/2017 16:38  
 Instrument ID: A8\_N Calib Start Date: 01/26/2017 11:03  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 01/26/2017 11:25  
 Lab File ID: 2017.02.27C\_537\_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.803		46.9	45.1	4.0	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9390		4.84	4.97	-2.6	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.620		14.6	15.2	-3.8	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9279		9.84	9.81	0.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.095		19.7	20.1	-2.0	30.0
Perfluorononanoic acid	Ave	0.6813	0.7088		10.8	10.4	4.0	30.0
13C2 PFHxA	Ave	1.079	1.015		9.41	10.0	-5.9	30.0
13C2 PFDA	Ave	0.6456	0.6648		10.3	10.0	3.0	30.0



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_024.d  
 Lims ID: CCV L3  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 27-Feb-2017 16:38:30 ALS Bottle#: 3 Worklist Smp#: 24  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L3  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Sublist: chrom-537\_A8\_N\*sub1  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:55:14 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:52:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.517	1.510	0.007	1.000	17938568	46.9		1261	
298.90 > 99.00	1.517	1.510	0.007	1.000	8099335		2.21(0.00-0.00)	1650	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.646	1.638	0.008	1.000	2374947	9.41		5909	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.806	1.787	0.019	1.000	5430696	14.6		1233	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.806	1.788	0.018	1.000	1092529	4.84		134	
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2338893	10.0		5223	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	2128590	9.84		185	
413.00 > 169.00	2.003	1.980	0.023	1.000	1256583		1.69(0.00-0.00)	1547	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		6325059	28.7		7166	
9 Perfluorononanoic acid									
463.00 > 419.00	2.261	2.229	0.032	1.000	1727850	10.8		531	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.246	2.246	0.0	1.000	4860197	19.7		1706	M
499.00 > 99.00	2.246	2.246	0.0	1.000	1161566		4.18(0.00-0.00)	1156	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	1554774	10.3		2832	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L3\_00019

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_024.d

Injection Date: 27-Feb-2017 16:38:30

Instrument ID: A8\_N

Lims ID: CCV L3

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 3

Worklist Smp#: 24

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

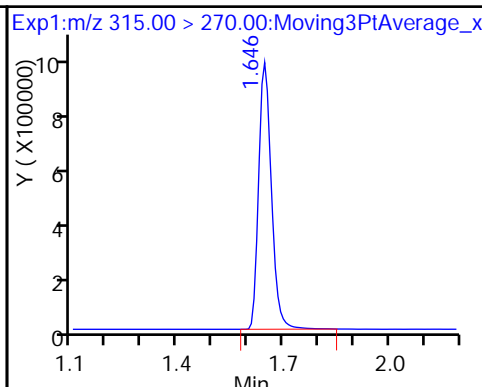
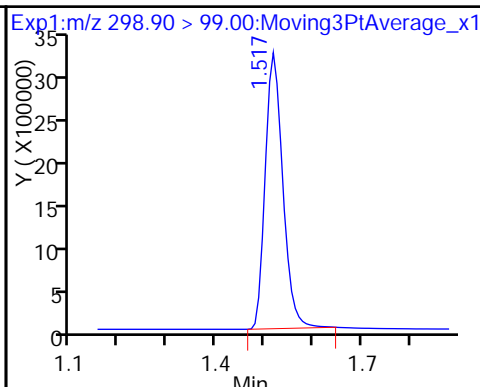
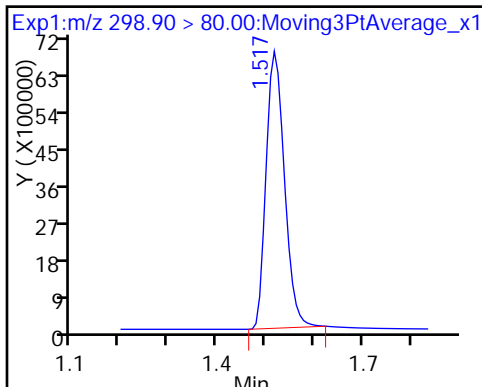
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

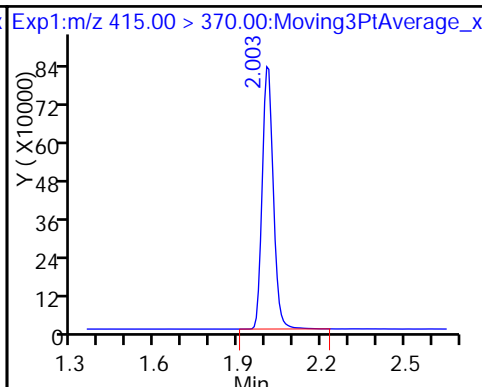
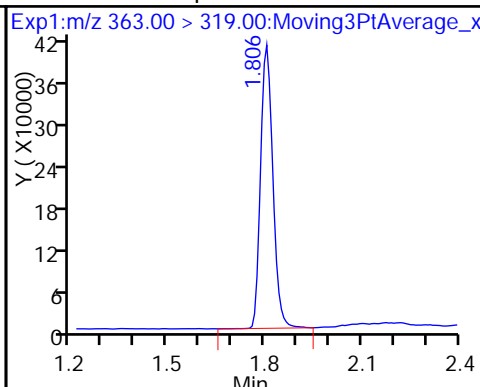
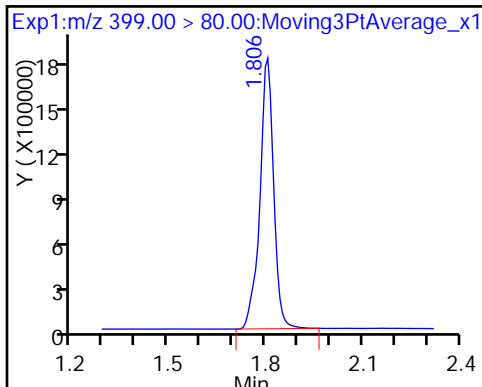
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

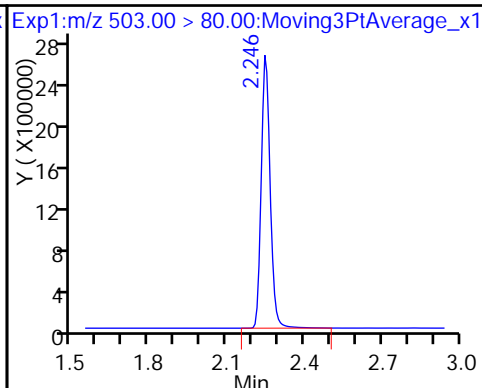
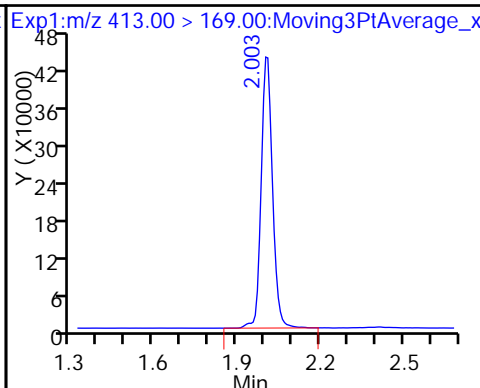
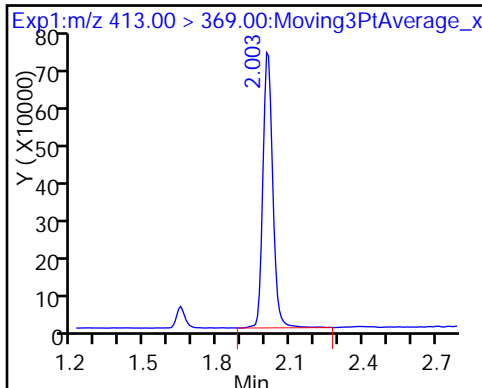
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

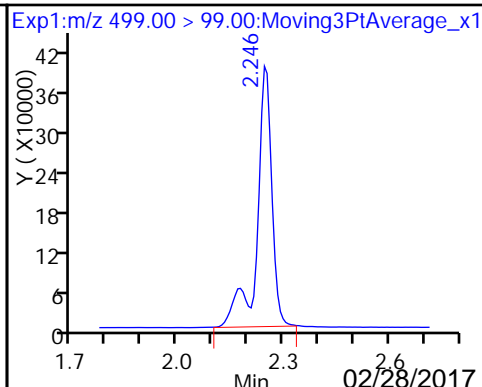
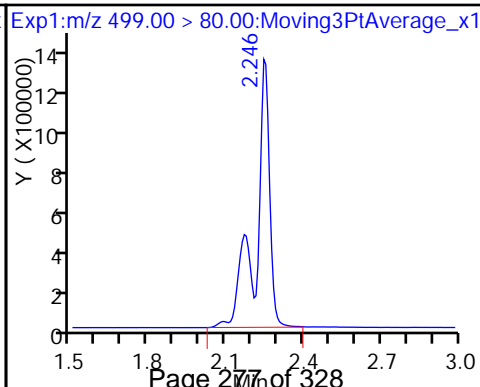
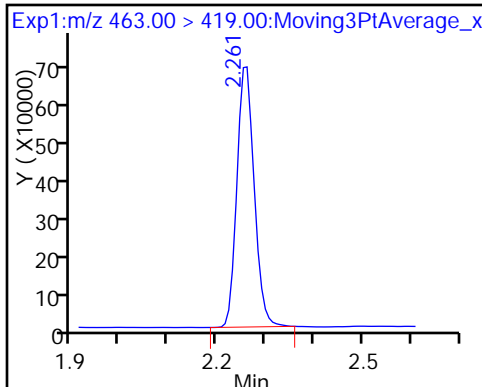
\* 7 13C4 PFOS



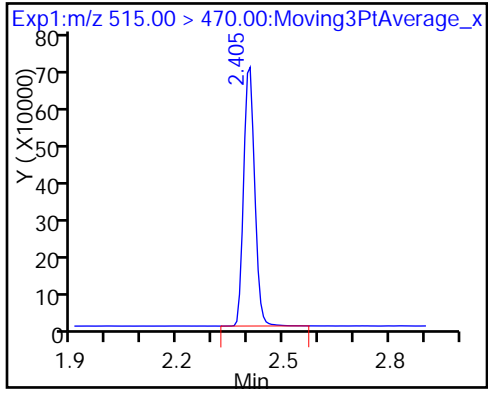
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento

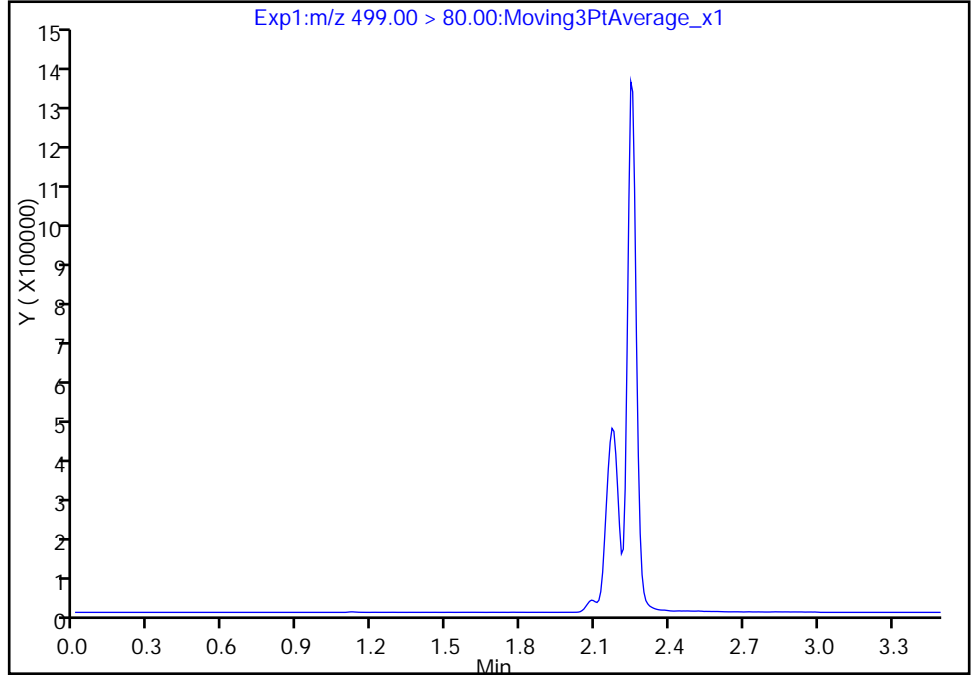
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_024.d  
Injection Date: 27-Feb-2017 16:38:30 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 24  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

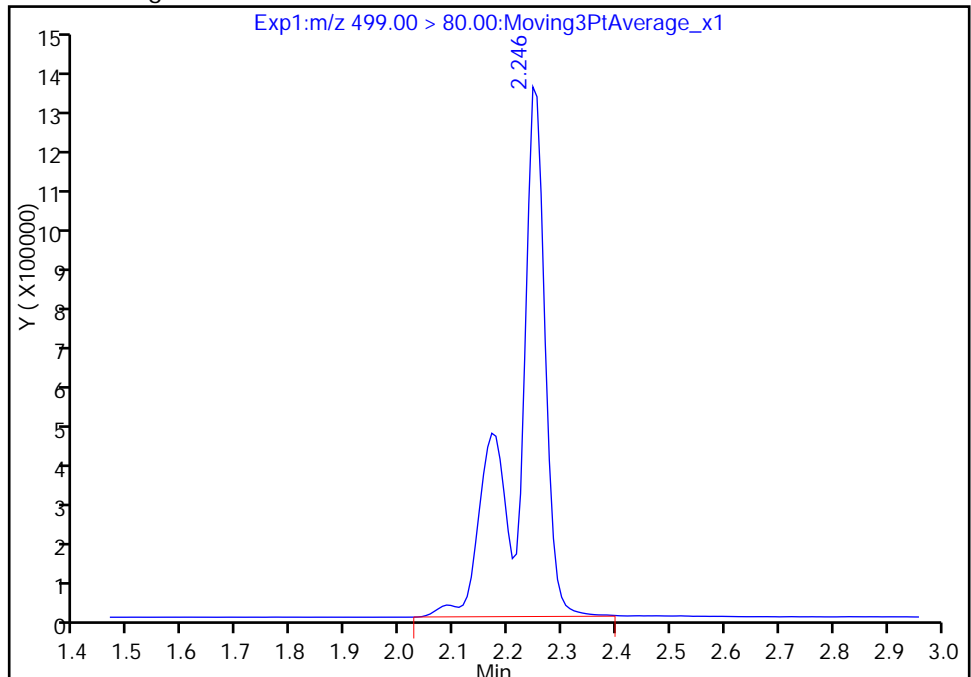
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 4860197  
Amount: 19.739606  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:55:14  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

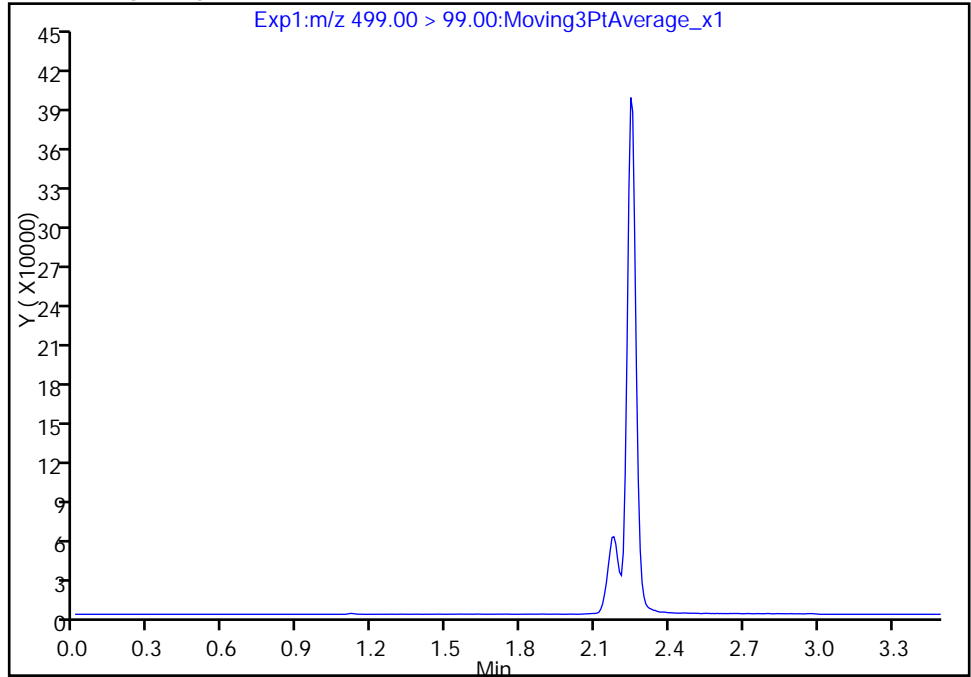
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_024.d  
Injection Date: 27-Feb-2017 16:38:30 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 24  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

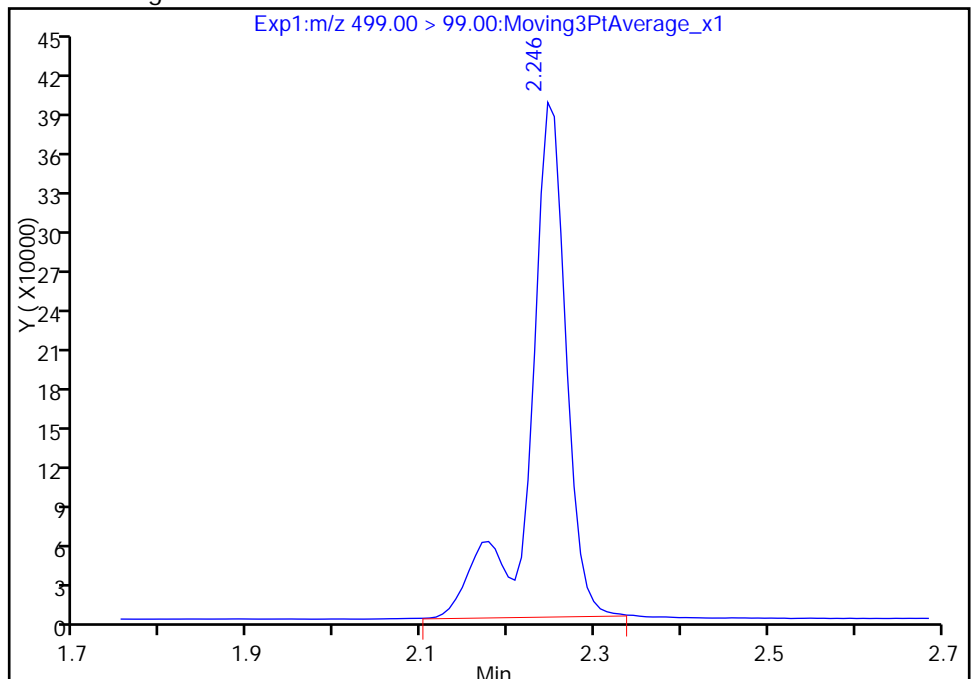
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 1161566  
Amount: 19.739606  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:55:14

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

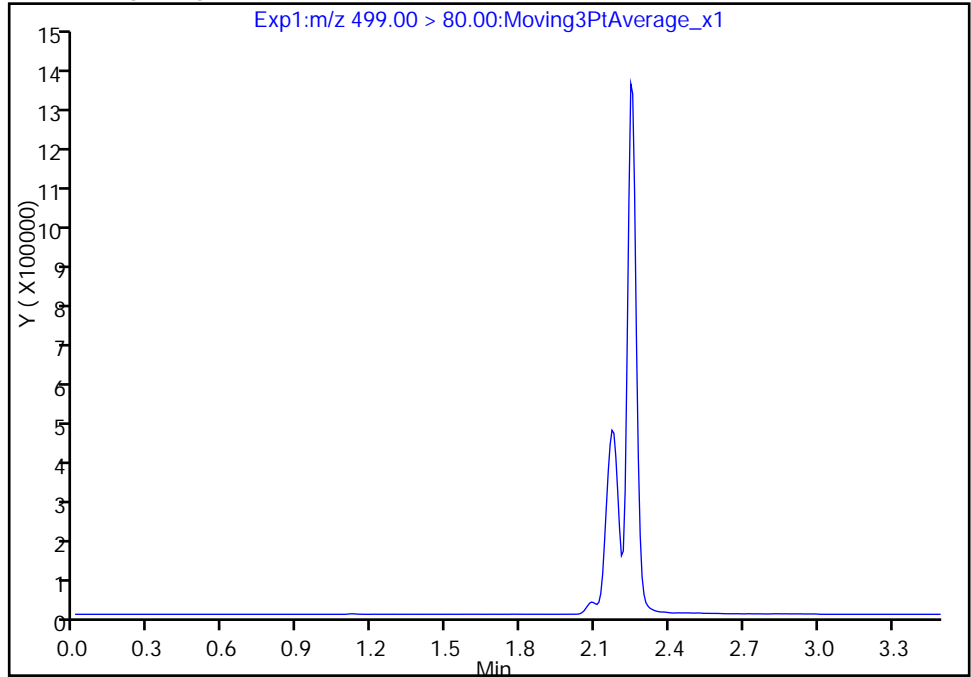
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_024.d  
Injection Date: 27-Feb-2017 16:38:30 Instrument ID: A8\_N  
Lims ID: CCV L3  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 24  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

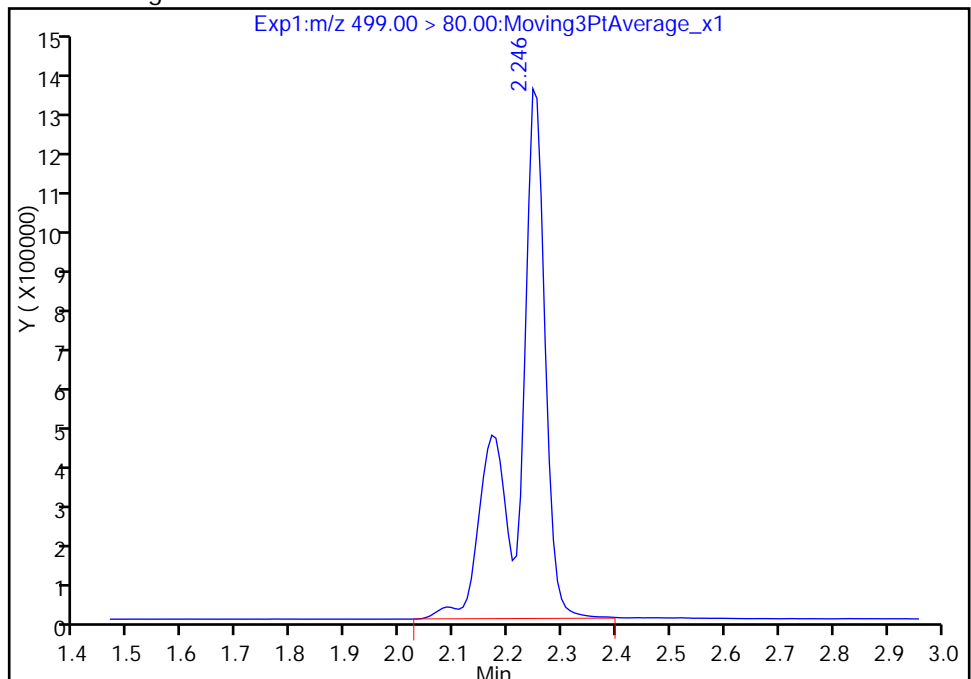
Not Detected  
Expected RT: 2.25

Processing Integration Results



RT: 2.25  
Area: 4860197  
Amount: 19.739606  
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 27-Feb-2017 16:55:14

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 320-152216/1-A  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_002.d  
 Analysis Method: 537 Date Collected: \_\_\_\_\_  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 02/27/2017 15:01  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U M	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 M	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	87		70-130



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d  
 Lims ID: MB 320-152216/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 27-Feb-2017 15:01:17 ALS Bottle#: 1 Worklist Smp#: 2  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-152216/1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:08:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	25337	0.0591		3.7	M
298.90 > 99.00	1.510	1.510	0.0	1.000	11945		2.12(0.00-0.00)	3.9	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2258319	8.28		5191	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	10052	0.0265		3.4	M
* 6 13C2-PFOA									
415.00 > 370.00	1.995	1.979	0.016		2526974	10.0		5236	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		6466896	28.7		4842	
9 Perfluorononanoic acid									
463.00 > 419.00	2.253	2.229	0.024	1.000	4308	0.0250		1.5	M
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.246	2.246	0.0	1.000	10394	0.0413		5.6	
499.00 > 99.00	2.246	2.246	0.0	1.000	2002		5.19(0.00-0.00)	3.8	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1425197	8.74		3649	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d

Injection Date: 27-Feb-2017 15:01:17

Instrument ID: A8\_N

Lims ID: MB 320-152216/1-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 1

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

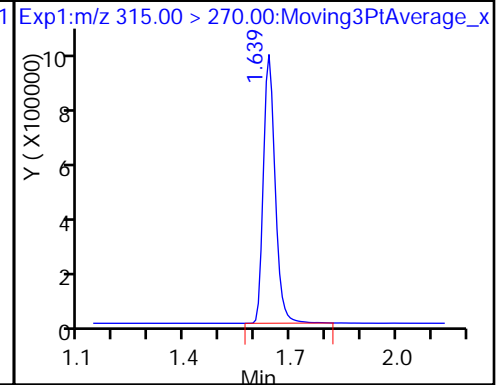
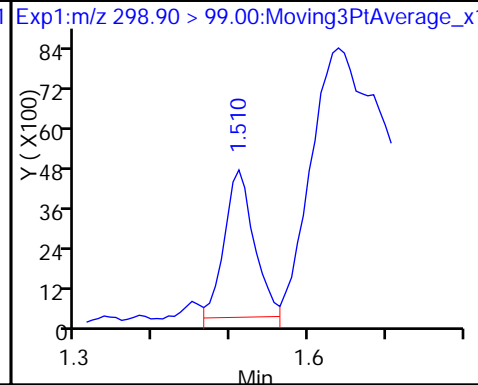
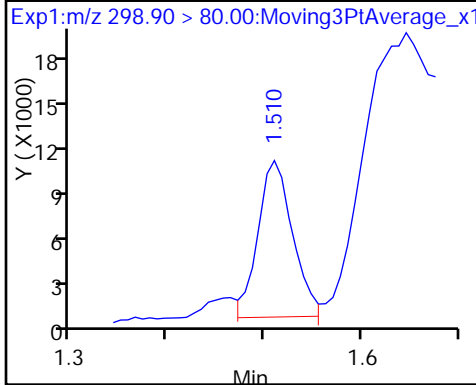
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid (M)

1 Perfluorobutanesulfonic acid (M)

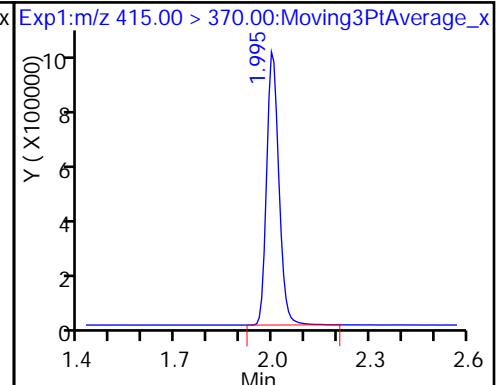
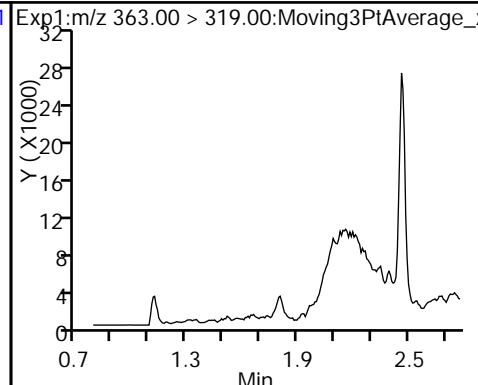
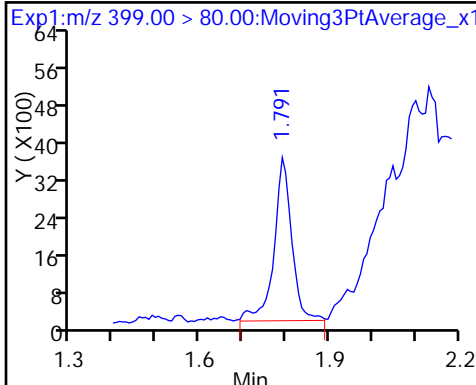
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid (M)

4 Perfluoroheptanoic acid (ND)

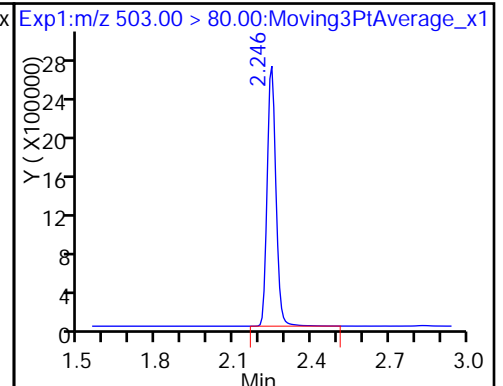
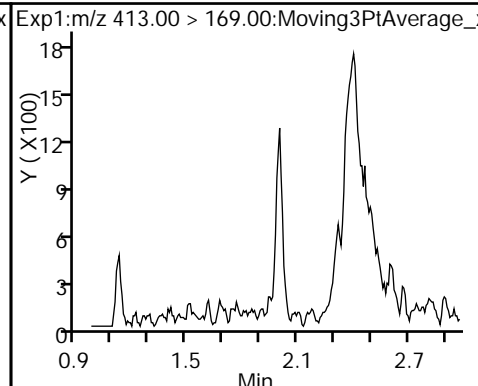
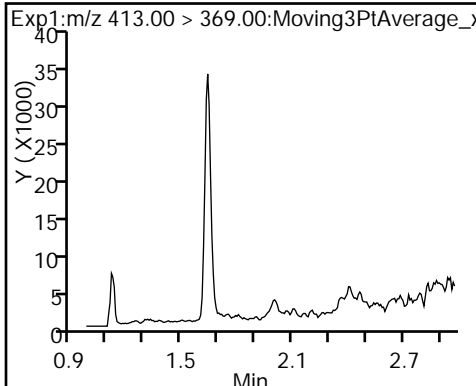
\* 6 13C2-PFOA



5 Perfluorooctanoic acid (ND)

5 Perfluorooctanoic acid (ND)

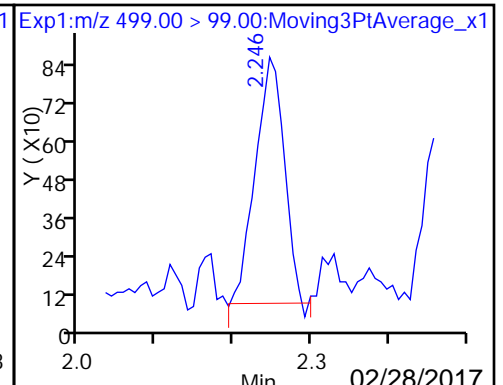
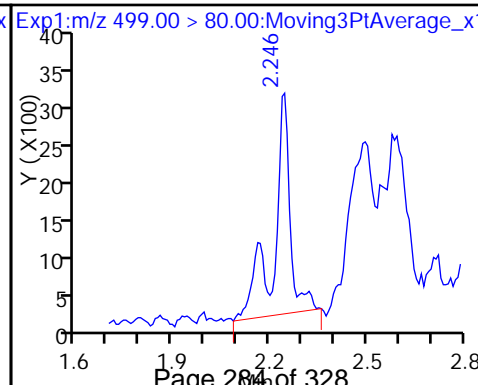
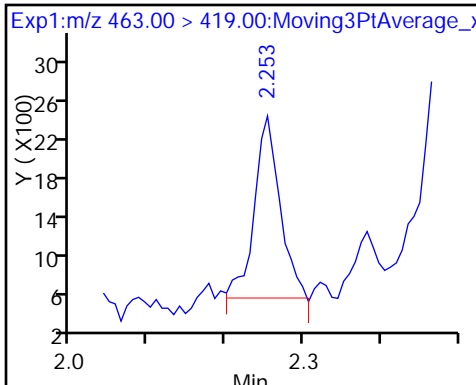
\* 7 13C4 PFOS



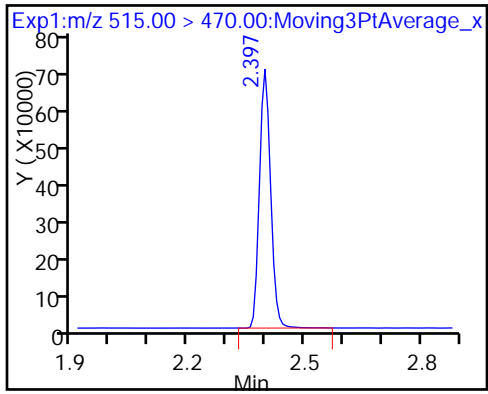
9 Perfluorononanoic acid (M)

8 Perfluorooctane sulfonic acid

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d  
 Lims ID: MB 320-152216/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 27-Feb-2017 15:01:17 ALS Bottle#: 1 Worklist Smp#: 2  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-152216/1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:08:02

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.28	82.81
\$ 10 13C2 PFDA	10.0	8.74	87.36

TestAmerica Sacramento

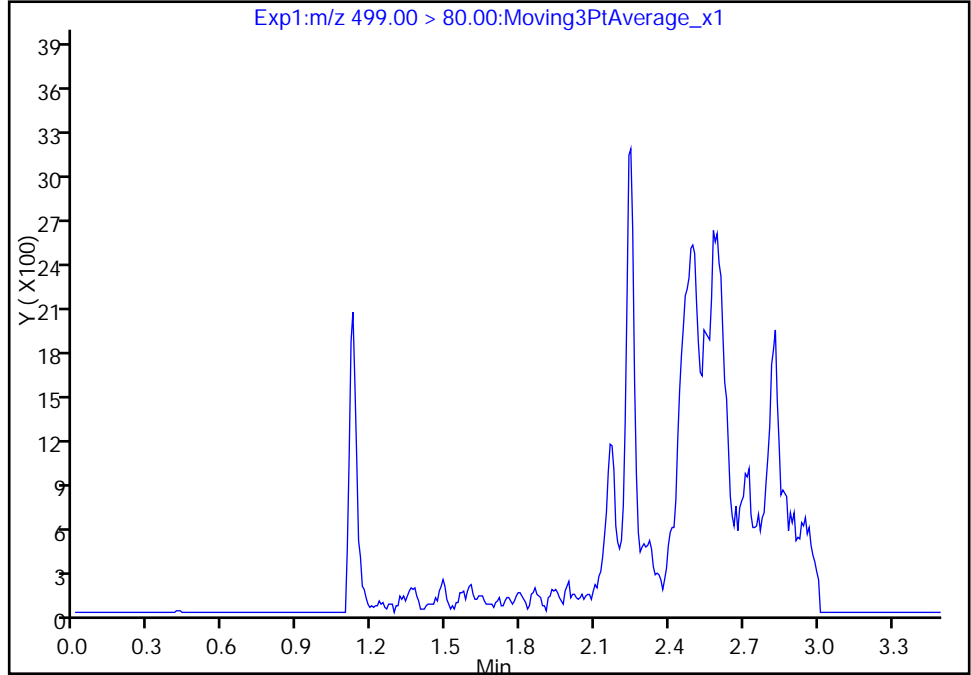
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d  
Injection Date: 27-Feb-2017 15:01:17 Instrument ID: A8\_N  
Lims ID: MB 320-152216/1-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 2  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

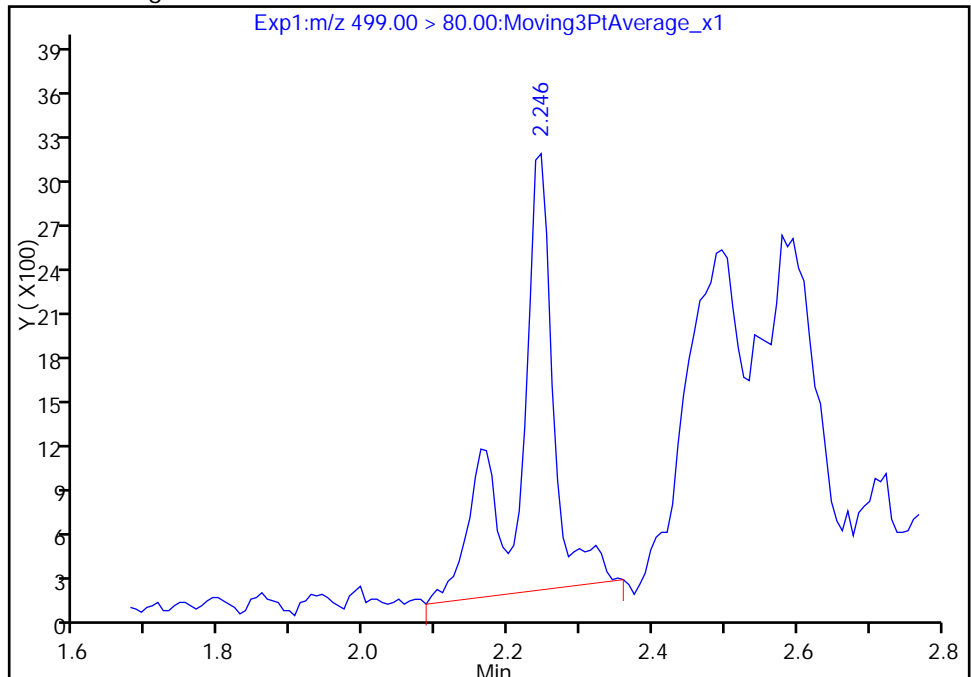
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 10394  
Amount: 0.041289  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:30  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

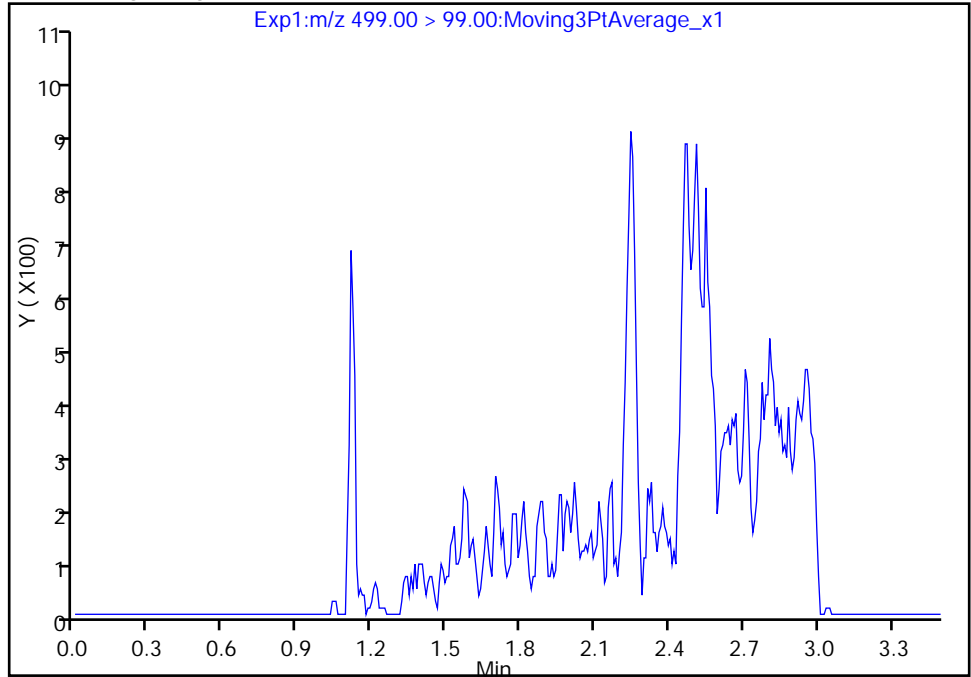
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d  
Injection Date: 27-Feb-2017 15:01:17 Instrument ID: A8\_N  
Lims ID: MB 320-152216/1-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 2  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

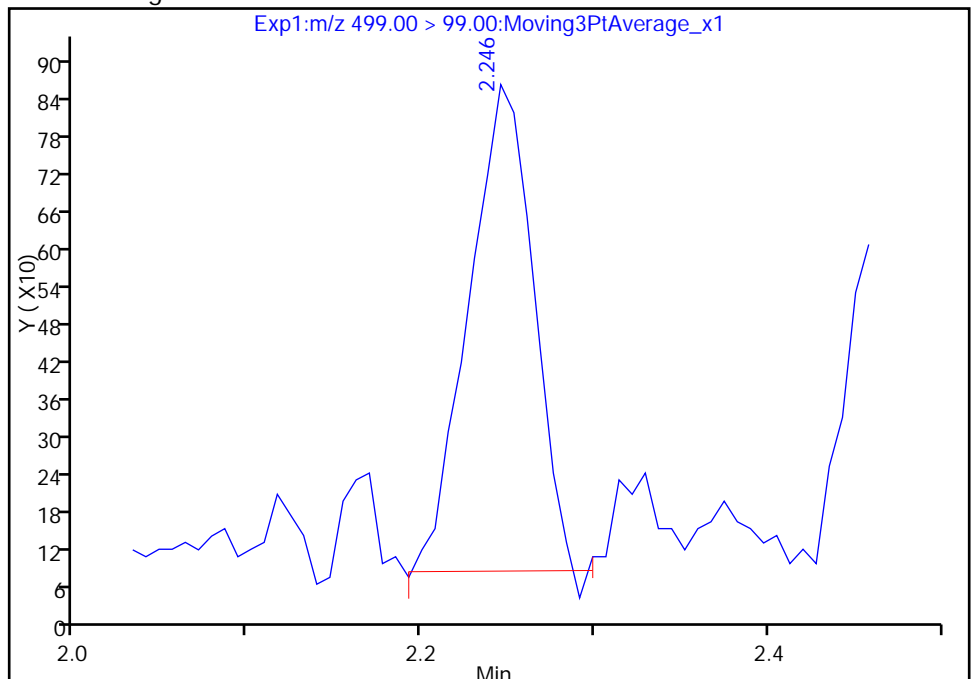
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 2002  
Amount: 0.041289  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:30

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

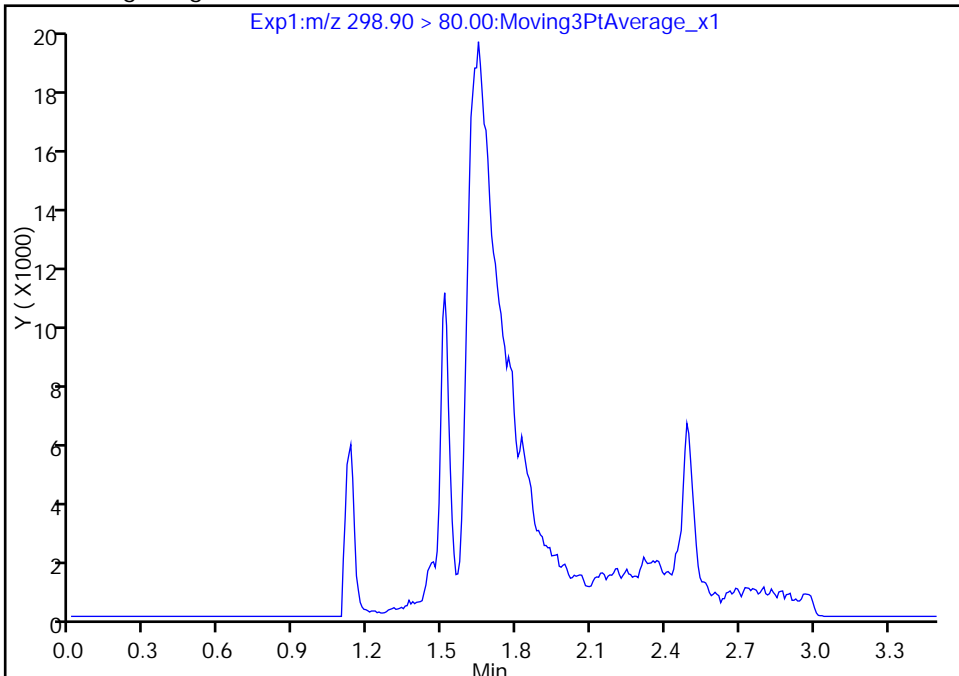
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d  
Injection Date: 27-Feb-2017 15:01:17 Instrument ID: A8\_N  
Lims ID: MB 320-152216/1-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 2  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

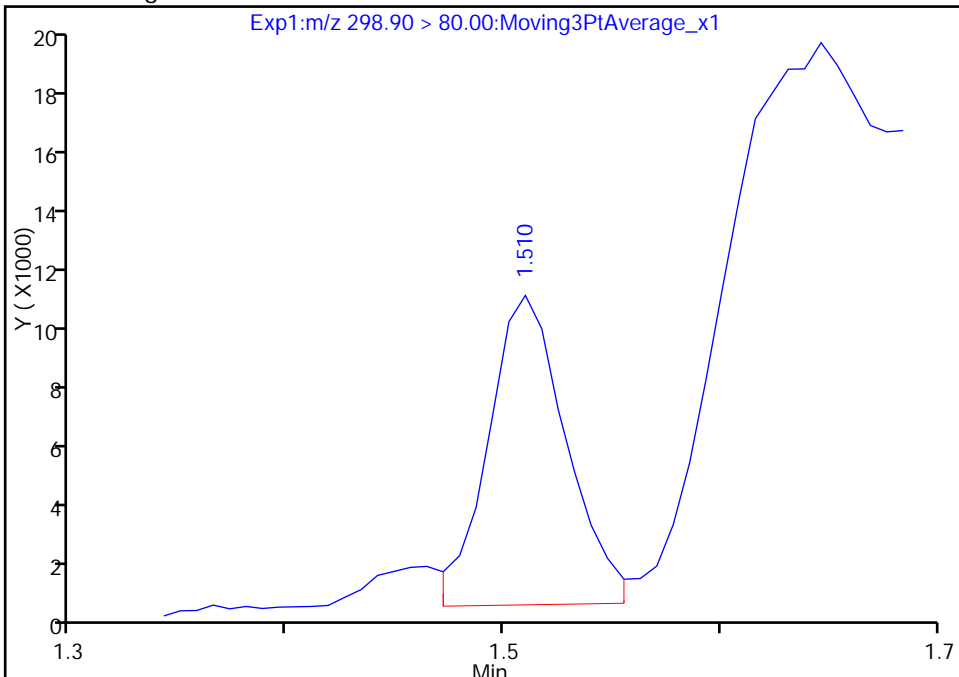
Not Detected  
Expected RT: 1.51

Processing Integration Results



Manual Integration Results

RT: 1.51  
Area: 25337  
Amount: 0.059053  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:30  
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Sacramento

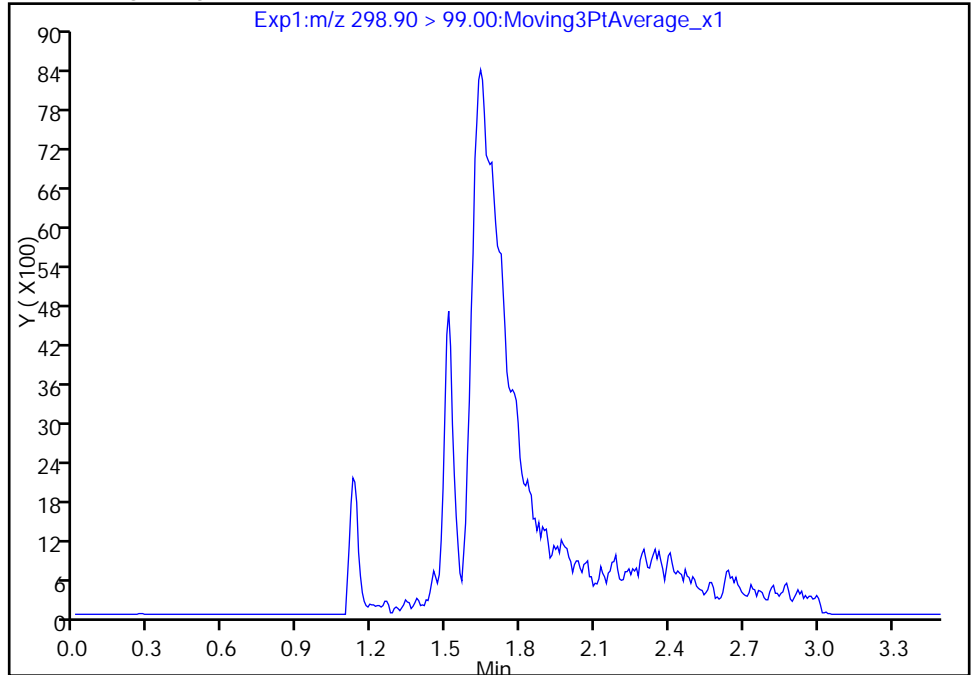
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_002.d  
Injection Date: 27-Feb-2017 15:01:17 Instrument ID: A8\_N  
Lims ID: MB 320-152216/1-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 2  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

1 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

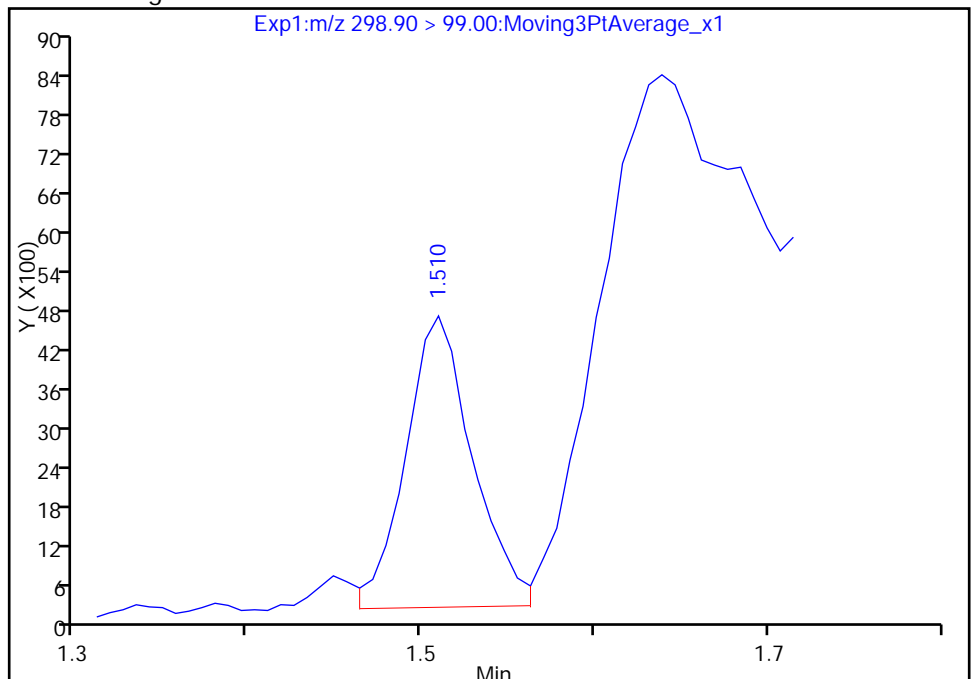
Not Detected  
Expected RT: 1.51

Processing Integration Results



Manual Integration Results

RT: 1.51  
Area: 11945  
Amount: 0.059053  
Amount Units: ng/ml





FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 320-152216/2-A  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_003.d  
 Analysis Method: 537 Date Collected: \_\_\_\_\_  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 02/27/2017 15:05  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.133	M	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.0640		0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.297		0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	99		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_003.d  
 Lims ID: LCS 320-152216/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 27-Feb-2017 15:05:42 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-152216/2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:08:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.517	1.510	0.007	1.000	27969006	74.1		1737	
298.90 > 99.00	1.517	1.510	0.007	1.000	13599032		2.06(0.00-0.00)	2073	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.646	1.638	0.008	1.000	2322780	8.60		6211	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.798	1.787	0.011	1.000	9610115	24.8		1915	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.798	1.788	0.010	1.000	1963295	8.14		223	
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2502649	10.0		5122	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	3704681	16.0		434	
413.00 > 169.00	2.003	1.980	0.023	1.000	2244325		1.65(0.00-0.00)	2252	
* 7 13C4 PFOS									
503.00 > 80.00	2.246	2.220	0.026		6611227	28.7		3509	
9 Perfluorononanoic acid									
463.00 > 419.00	2.261	2.229	0.032	1.000	3063730	18.0		733	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	8574357	33.3		2153	M
499.00 > 99.00	2.246	2.246	0.0	0.997	2066457		4.15(0.00-0.00)	1678	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.405	2.384	0.021	1.000	1596359	9.88		3902	

## QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_003.d

Injection Date: 27-Feb-2017 15:05:42

Instrument ID: A8\_N

Lims ID: LCS 320-152216/2-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

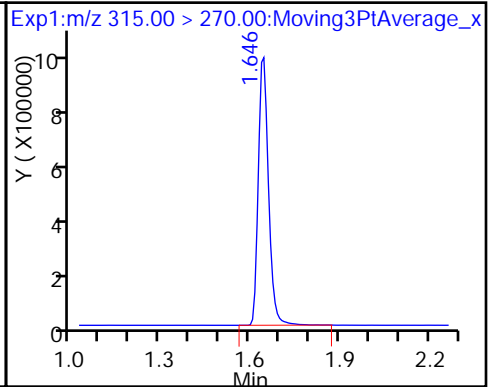
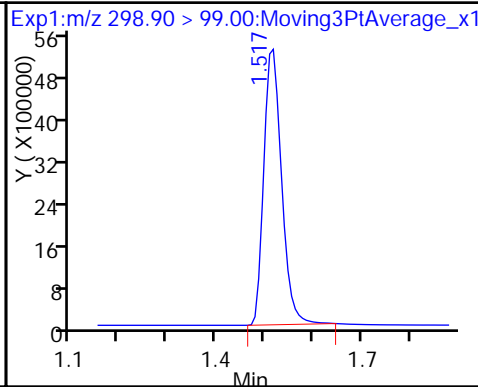
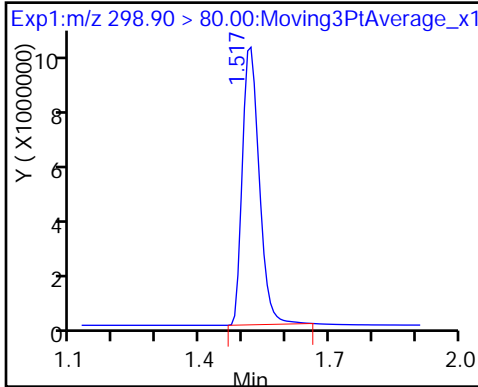
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

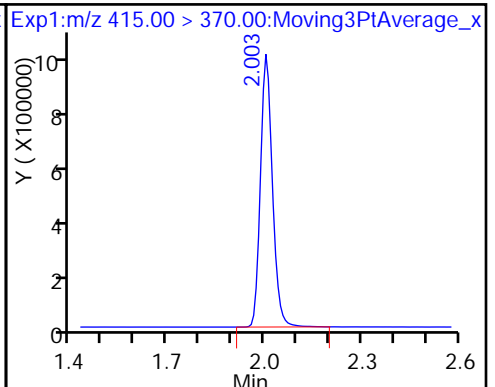
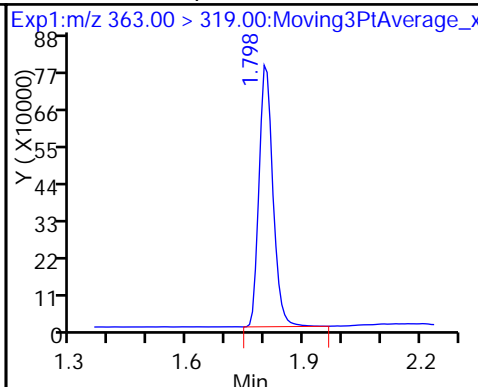
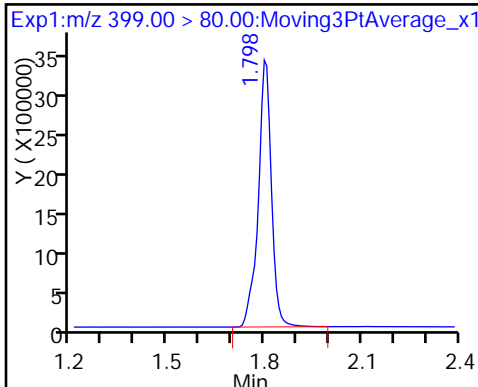
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

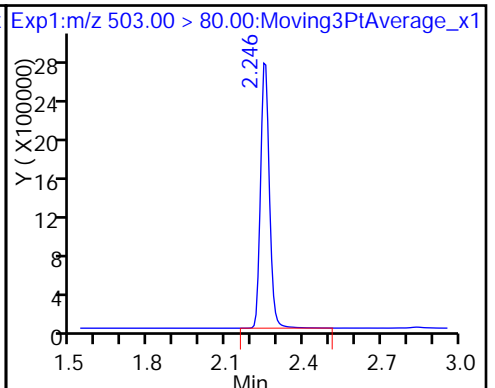
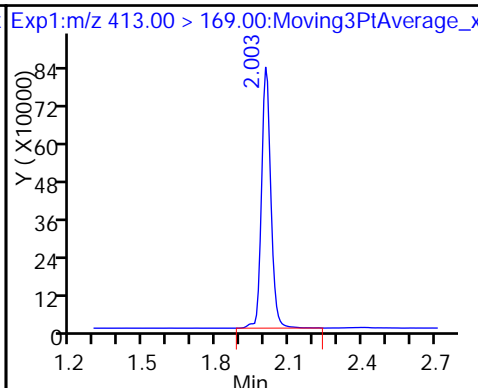
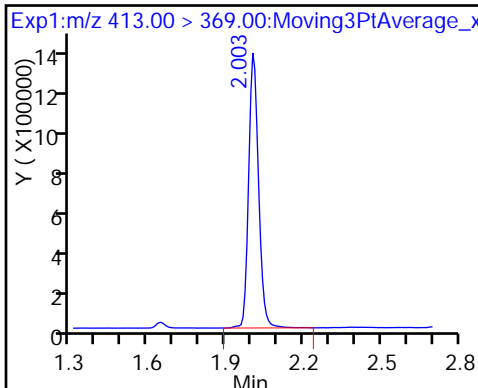
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

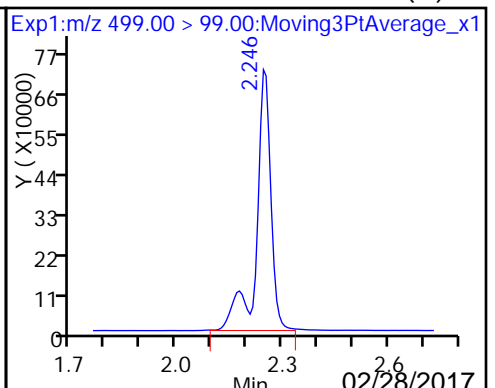
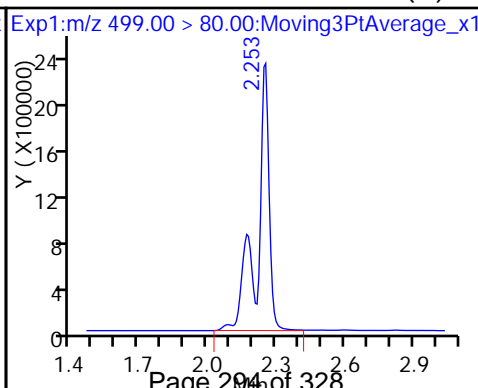
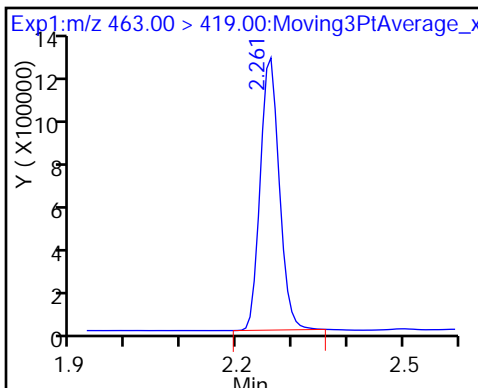
\* 7 13C4 PFOS



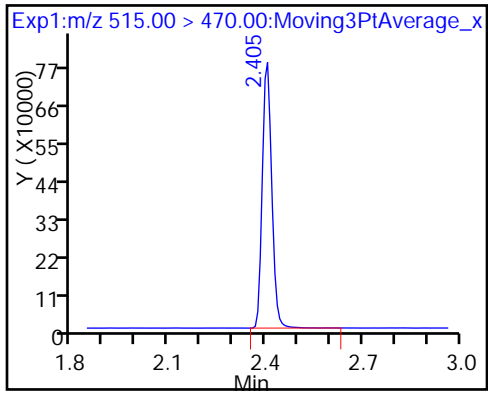
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_003.d  
 Lims ID: LCS 320-152216/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 27-Feb-2017 15:05:42 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-152216/2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:08:44

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.60	86.00
\$ 10 13C2 PFDA	10.0	9.88	98.80

TestAmerica Sacramento

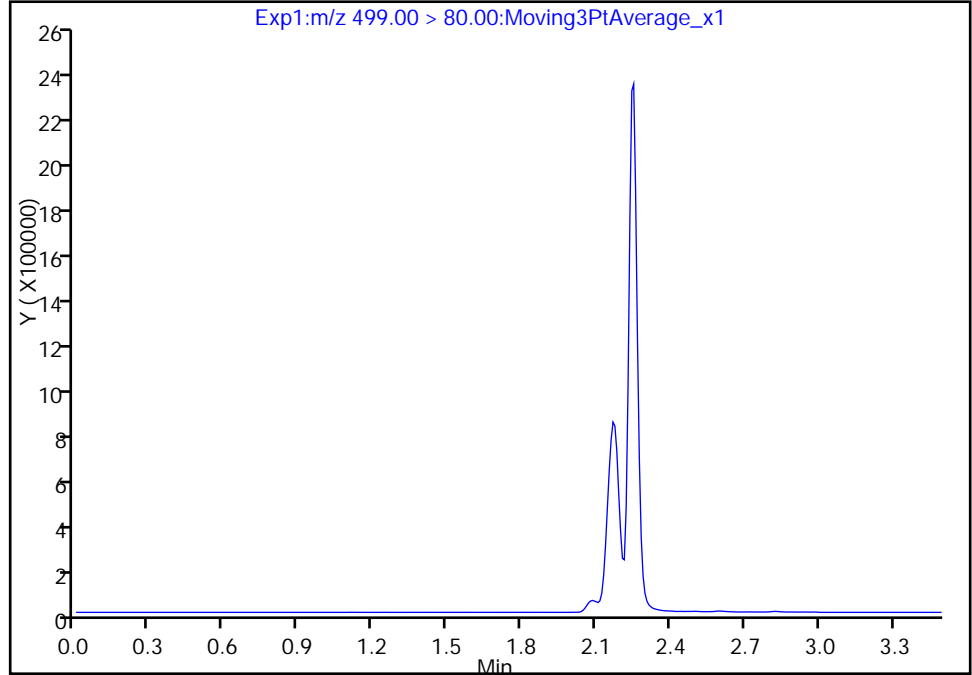
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_003.d  
Injection Date: 27-Feb-2017 15:05:42 Instrument ID: A8\_N  
Lims ID: LCS 320-152216/2-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

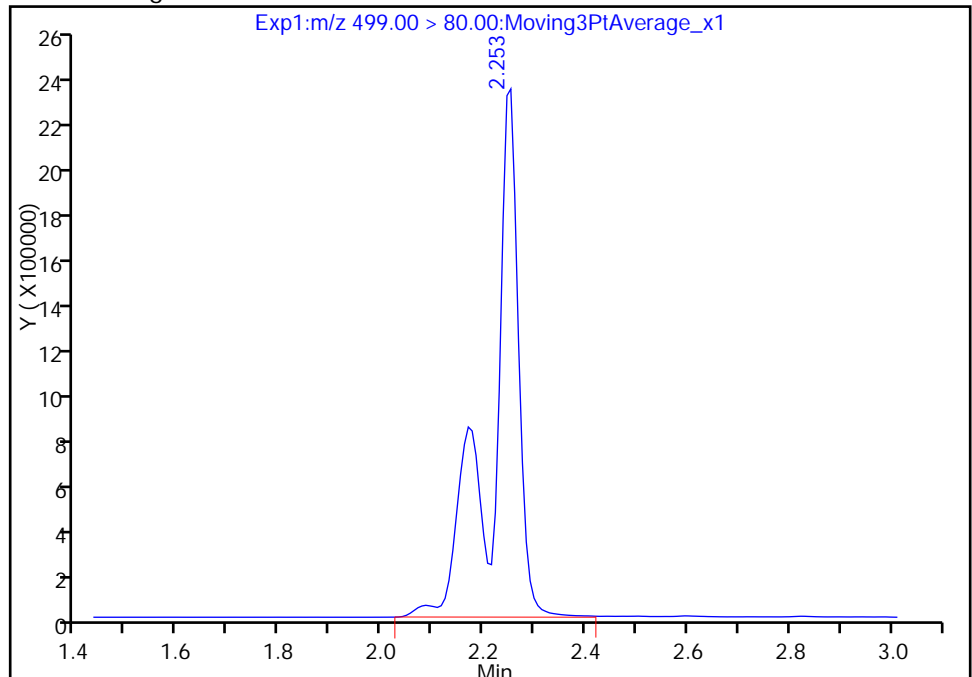
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 8574357  
Amount: 33.317215  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:33  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

TestAmerica Sacramento

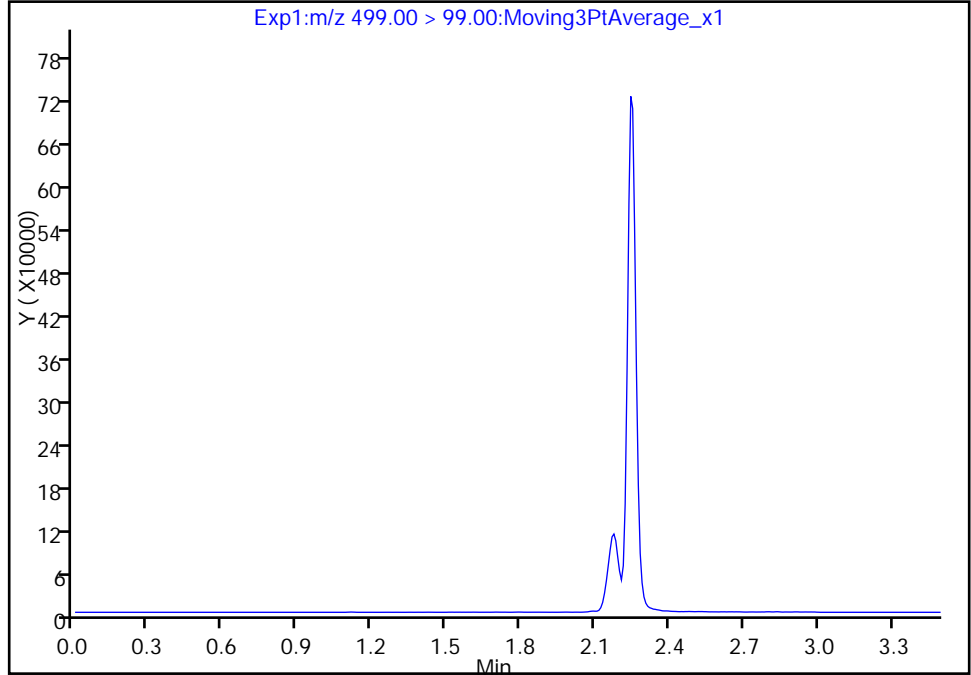
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_003.d  
Injection Date: 27-Feb-2017 15:05:42 Instrument ID: A8\_N  
Lims ID: LCS 320-152216/2-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

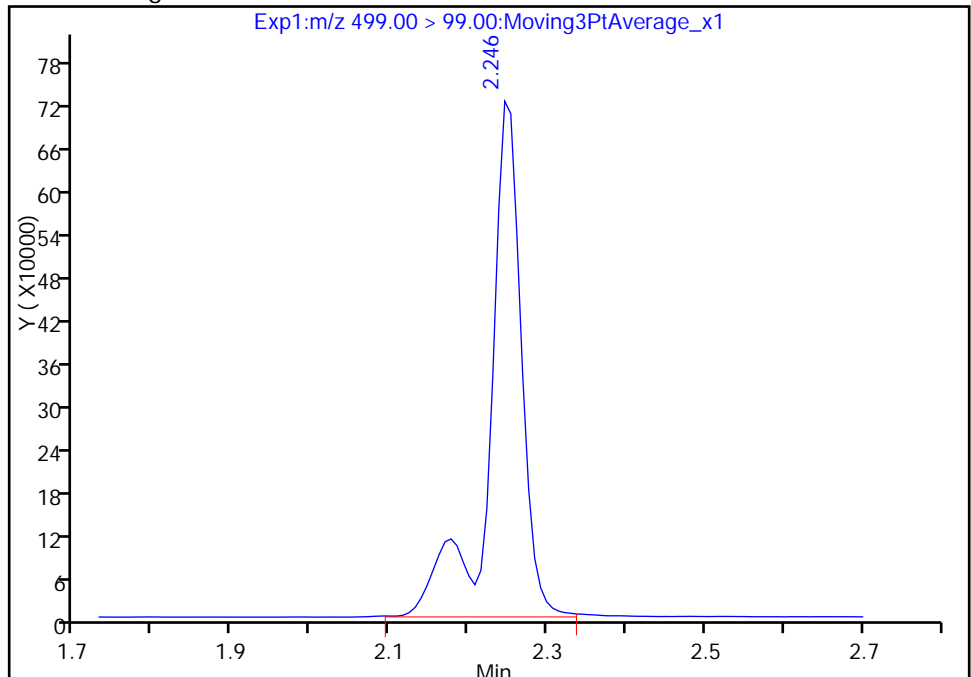
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 2066457  
Amount: 33.317215  
Amount Units: ng/ml





TestAmerica Sacramento

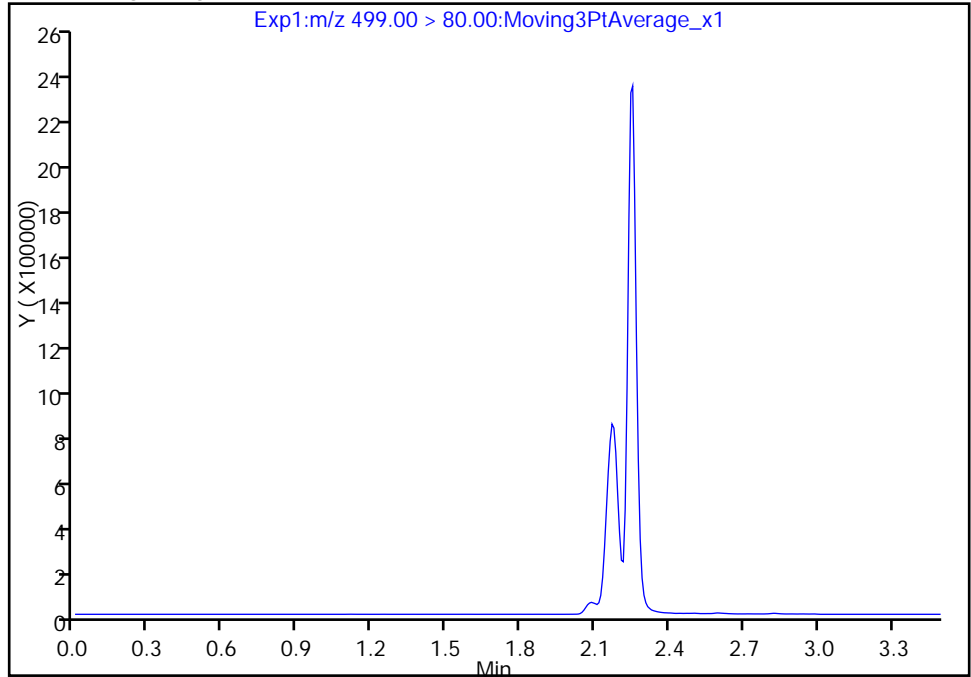
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Injection Date: 27-Feb-2017 15:05:42 Instrument ID: A8\_N  
Lims ID: LCS 320-152216/2-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

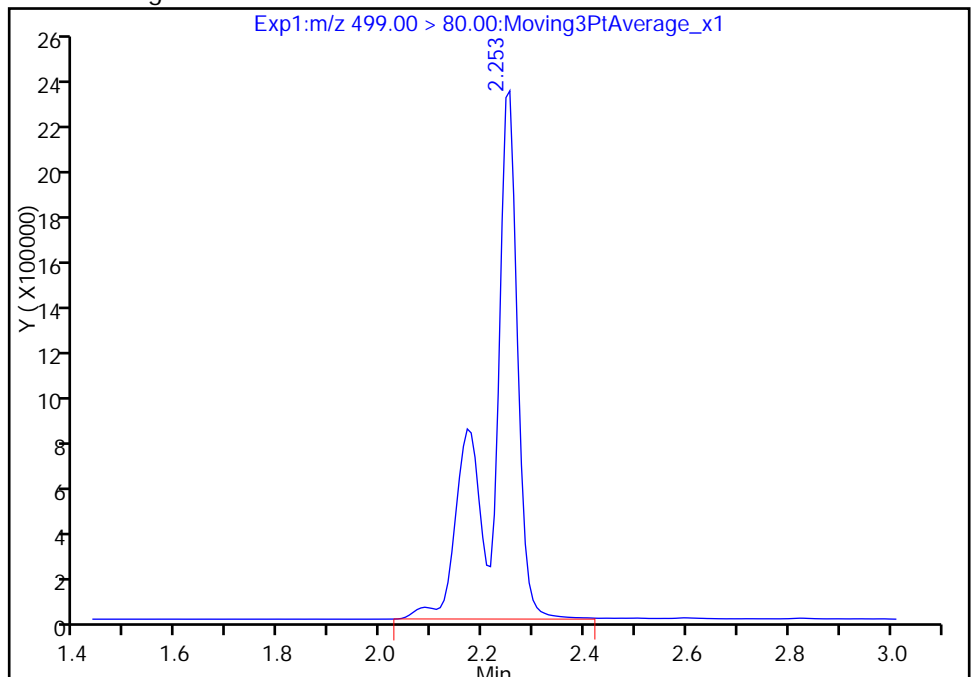
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 8574357  
Amount: 33.317215  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:33

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCSD 320-152216/3-A  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_004.d  
 Analysis Method: 537 Date Collected: \_\_\_\_\_  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 02/27/2017 15:10  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.138	M	0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.0657		0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.304		0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	87		70-130
STL00996	13C2 PFDA	94		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_004.d  
 Lims ID: LCSD 320-152216/3-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 27-Feb-2017 15:10:06 ALS Bottle#: 3 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcsd 320-152216/3-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:09:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	27655843	75.9		1578	
298.90 > 99.00	1.510	1.510	0.0	1.000	13569512		2.04(0.00-0.00)	2005	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2281961	8.65		5855	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.798	1.787	0.011	1.000	9632465	25.6		1890	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.798	1.788	0.010	1.000	2015503	8.55		237	
* 6 13C2-PFOA									
415.00 > 370.00	2.003	1.979	0.024		2443672	10.0		5038	
5 Perfluorooctanoic acid									
413.00 > 369.00	2.003	1.980	0.023	1.000	3714144	16.4		440	
413.00 > 169.00	2.003	1.980	0.023	1.000	2200318		1.69(0.00-0.00)	2082	
* 7 13C4 PFOS									
503.00 > 80.00	2.253	2.220	0.033		6409341	28.7		5872	
9 Perfluorononanoic acid									
463.00 > 419.00	2.261	2.229	0.032	1.000	3082431	18.5		880	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.253	2.246	0.007	1.000	8624620	34.6		2162	M
499.00 > 99.00	2.253	2.246	0.007	1.000	1988749		4.34(0.00-0.00)	1654	M
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1485018	9.41		3597	

## QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_004.d

Injection Date: 27-Feb-2017 15:10:06

Instrument ID: A8\_N

Lims ID: LCSD 320-152216/3-A

Client ID:

Operator ID: A8-PC\A8

ALS Bottle#: 3

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

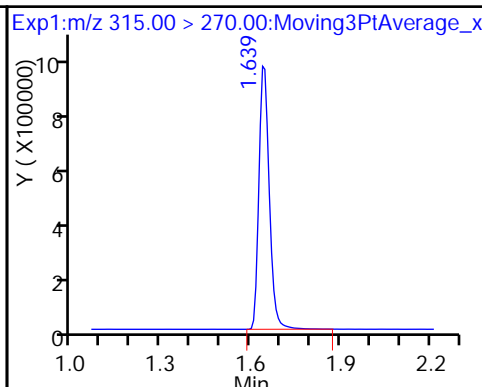
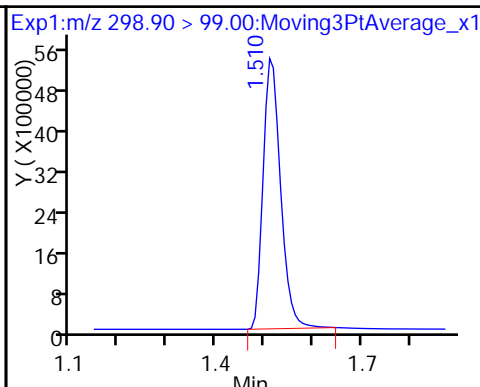
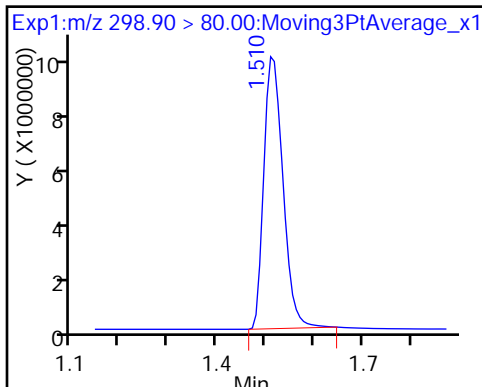
Method: 537\_A8\_N

Limit Group: LC 537 ICAL

1 Perfluorobutanesulfonic acid

1 Perfluorobutanesulfonic acid

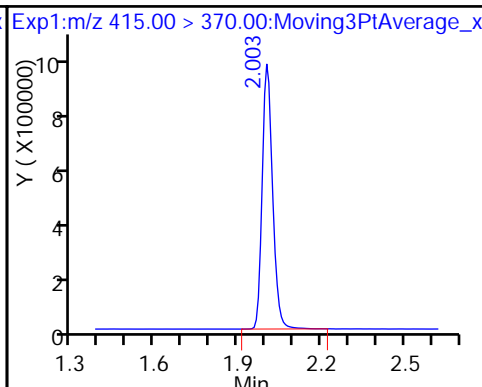
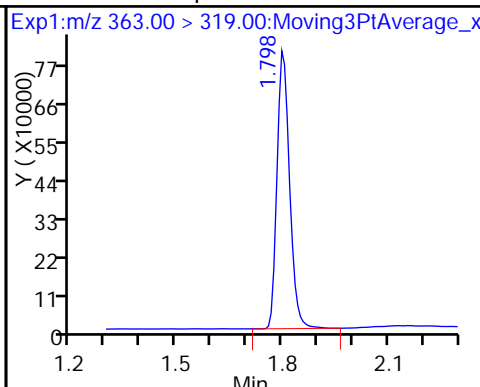
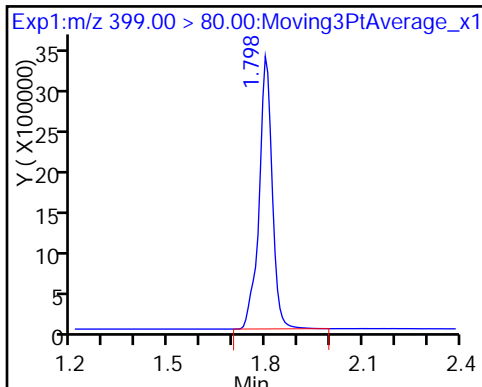
\$ 2 13C2 PFHxA



3 Perfluorohexanesulfonic acid

4 Perfluoroheptanoic acid

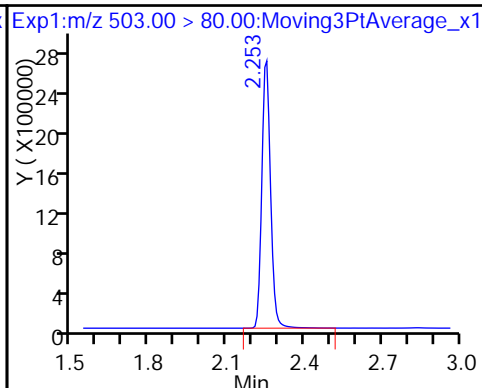
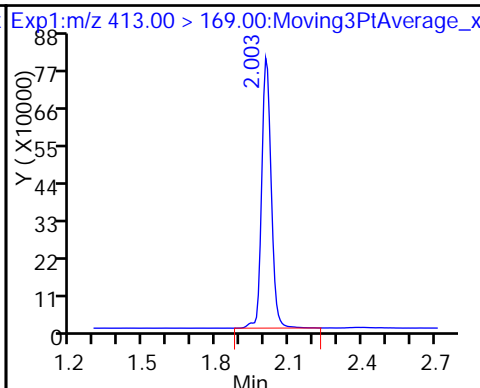
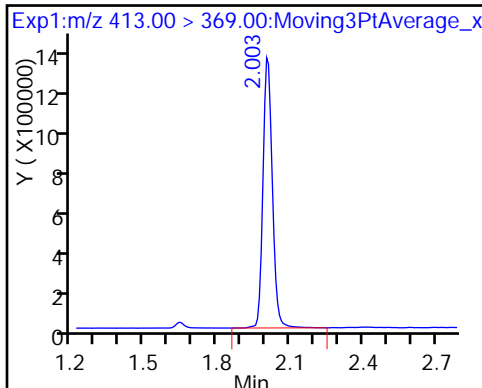
\* 6 13C2-PFOA



5 Perfluorooctanoic acid

5 Perfluorooctanoic acid

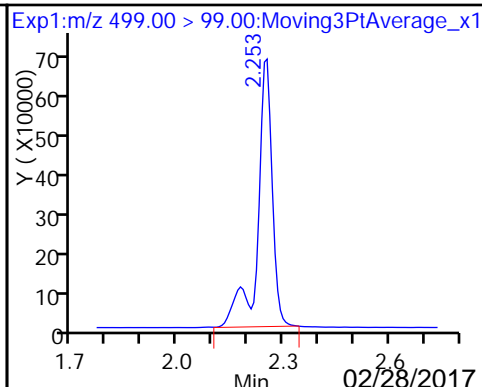
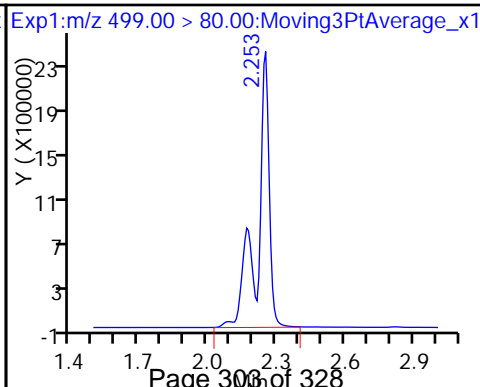
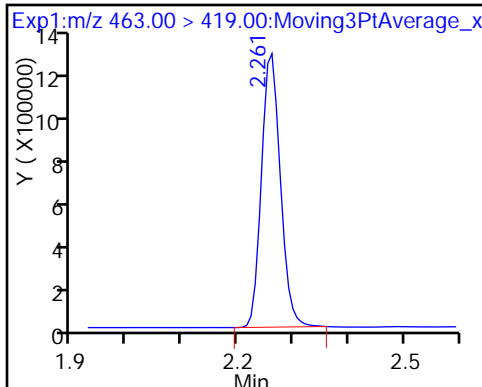
\* 7 13C4 PFOS



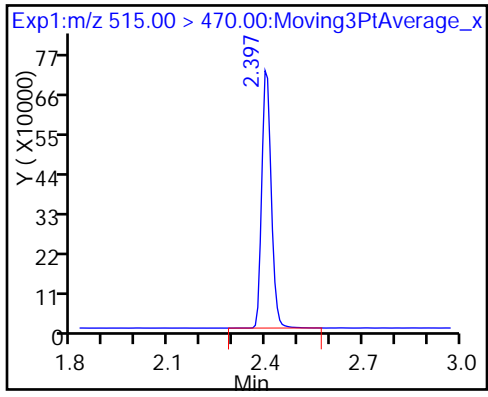
9 Perfluorononanoic acid

8 Perfluorooctane sulfonic acid (M)

8 Perfluorooctane sulfonic acid (M)



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_004.d  
 Lims ID: LCSD 320-152216/3-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 27-Feb-2017 15:10:06 ALS Bottle#: 3 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcsd 320-152216/3-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 27-Feb-2017 16:54:27 Calib Date: 26-Jan-2017 11:25:03  
 Integrator: Picker  
 Quant Method: Internal Standard Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170126-39222.b\2017.01.26\_537\_CURVE\_009.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK031

First Level Reviewer: barnettj Date: 27-Feb-2017 16:09:19

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.65	86.53
\$ 10 13C2 PFDA	10.0	9.41	94.13

TestAmerica Sacramento

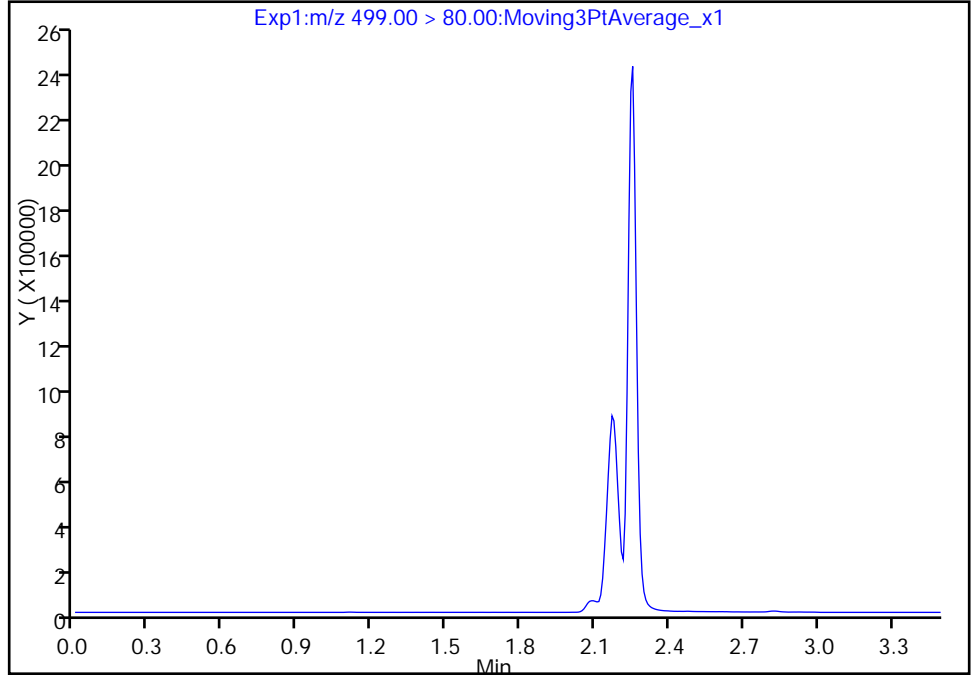
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Injection Date: 27-Feb-2017 15:10:06 Instrument ID: A8\_N  
Lims ID: LCSD 320-152216/3-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

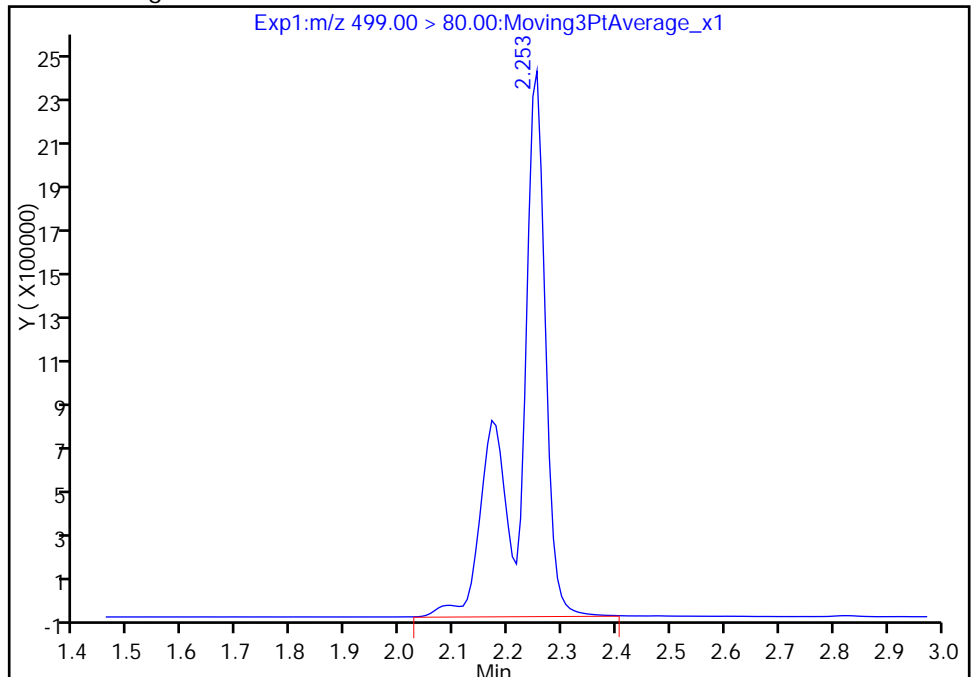
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 8624620  
Amount: 34.568122  
Amount Units: ng/ml



Reviewer: barnettj, 27-Feb-2017 16:54:36  
Audit Action: Assigned Compound ID

Audit Reason: Missed Peak



TestAmerica Sacramento

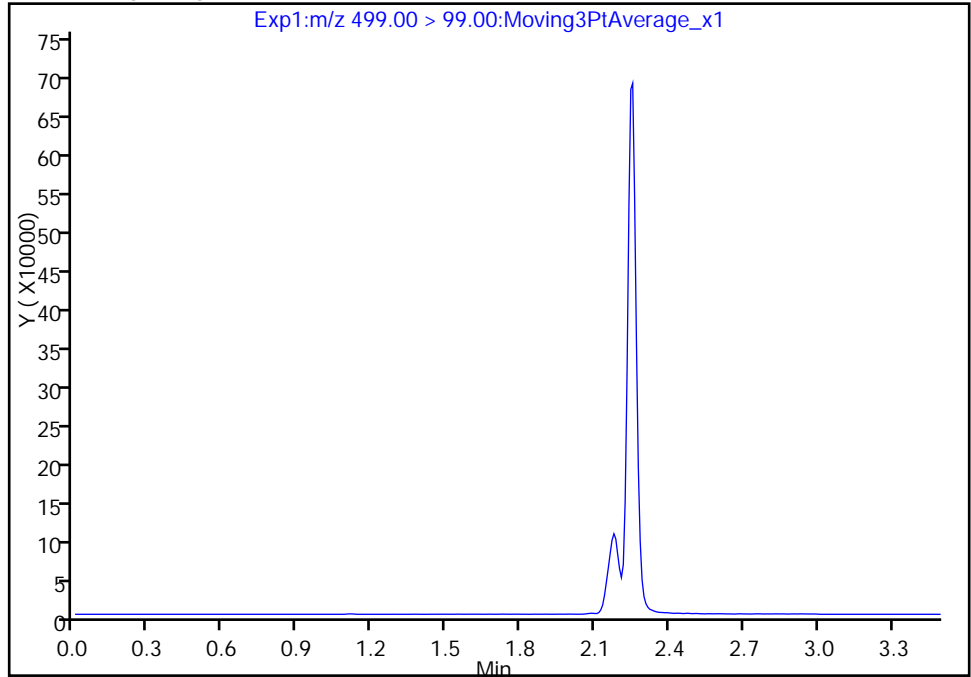
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_004.d  
Injection Date: 27-Feb-2017 15:10:06 Instrument ID: A8\_N  
Lims ID: LCSD 320-152216/3-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 2

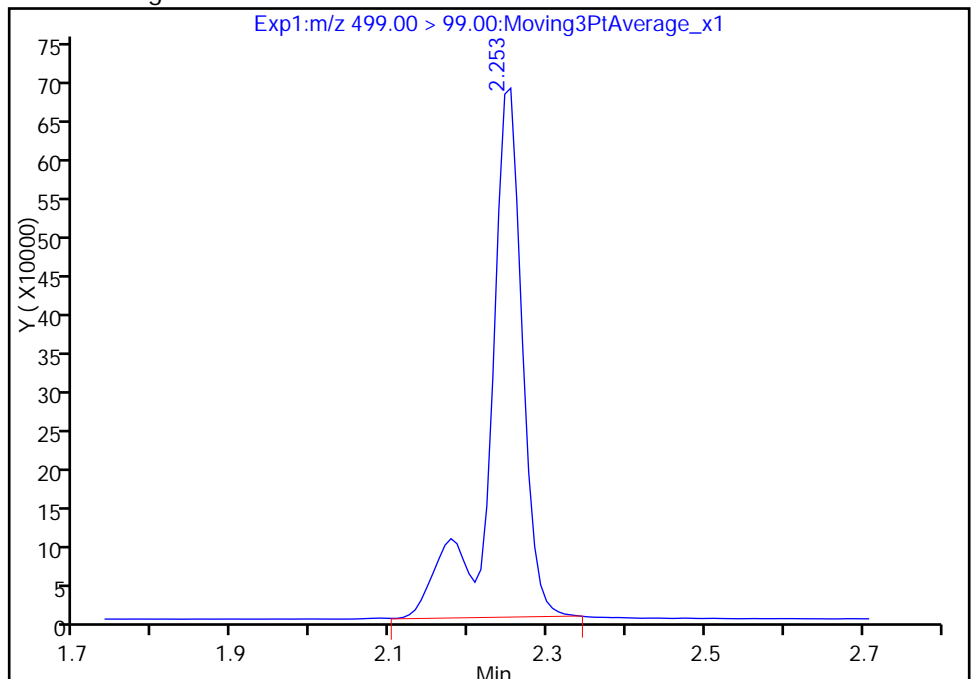
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 1988749  
Amount: 34.568122  
Amount Units: ng/ml



TestAmerica Sacramento

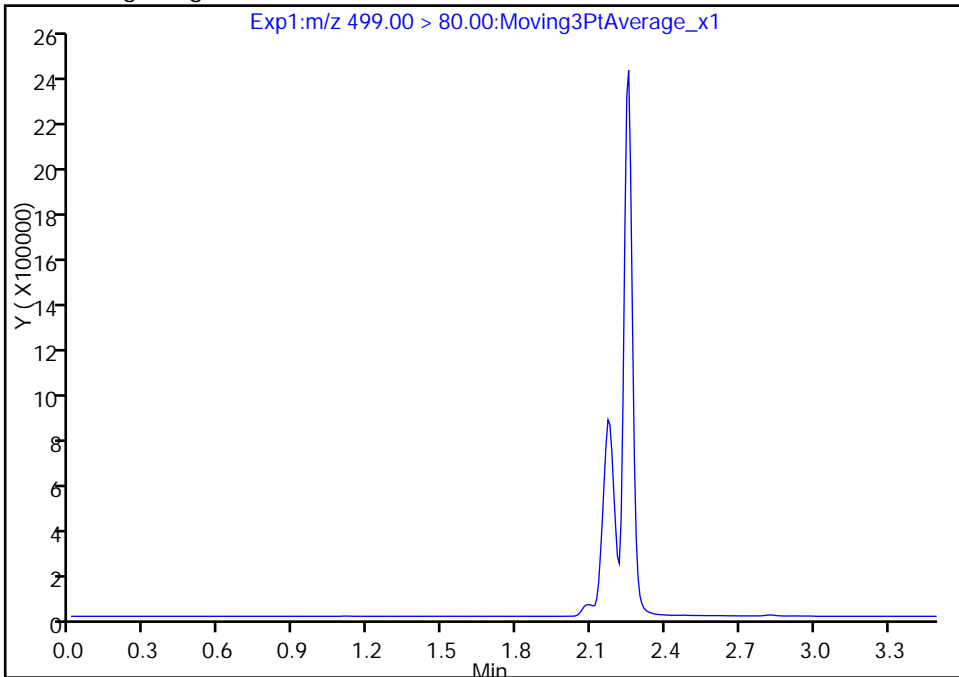
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b\2017.02.27C\_537\_004.d  
Injection Date: 27-Feb-2017 15:10:06 Instrument ID: A8\_N  
Lims ID: LCSD 320-152216/3-A  
Client ID:  
Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: 537\_A8\_N Limit Group: LC 537 ICAL  
Column: Detector EXP1

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

Signal: 1

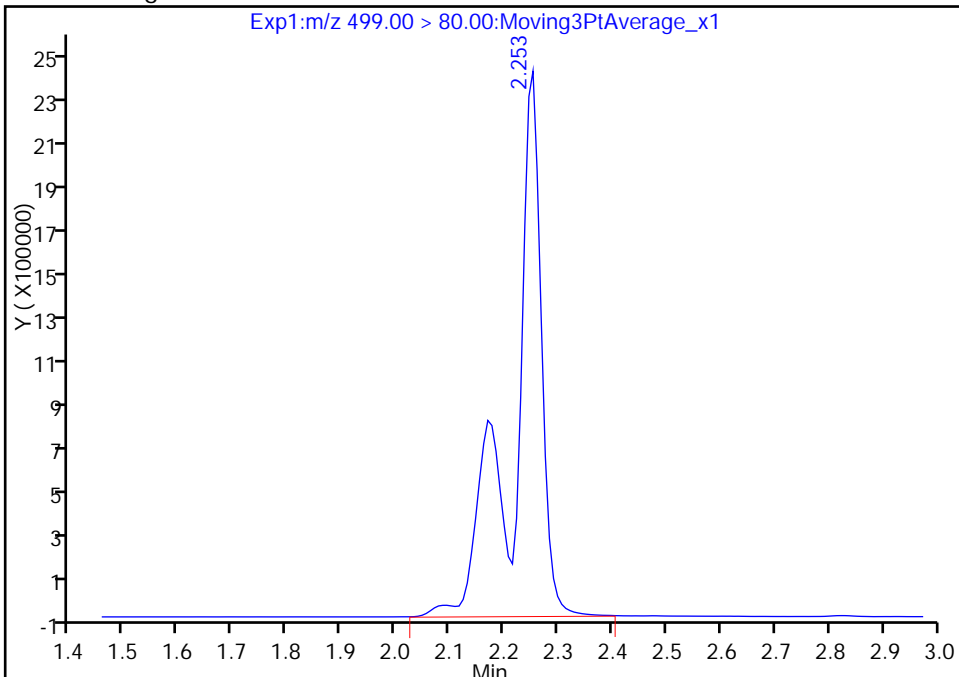
Not Detected  
Expected RT: 2.25

Processing Integration Results



Manual Integration Results

RT: 2.25  
Area: 8624620  
Amount: 34.568122  
Amount Units: ng/ml



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 01/26/2017 11:03

Analysis Batch Number: 147939 End Date: 01/26/2017 11:46

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-147939/4		01/26/2017 11:03	1	2017.01.26_537_ CURVE 004.d	Acquity 2.1(mm)
IC 320-147939/5		01/26/2017 11:07	1	2017.01.26_537_ CURVE 005.d	Acquity 2.1(mm)
IC 320-147939/6		01/26/2017 11:11	1	2017.01.26_537_ CURVE 006.d	Acquity 2.1(mm)
IC 320-147939/7 ICISAV		01/26/2017 11:16	1	2017.01.26_537_ CURVE 007.d	Acquity 2.1(mm)
IC 320-147939/8		01/26/2017 11:20	1	2017.01.26_537_ CURVE 008.d	Acquity 2.1(mm)
IC 320-147939/9		01/26/2017 11:25	1	2017.01.26_537_ CURVE 009.d	Acquity 2.1(mm)
ZZZZZ		01/26/2017 11:29	1		Acquity 2.1(mm)
CCVL 320-147939/11		01/26/2017 11:33	1	2017.01.26_537_ CURVE 011.d	Acquity 2.1(mm)
ZZZZZ		01/26/2017 11:38	1		Acquity 2.1(mm)
ICV 320-147939/13		01/26/2017 11:42	1	2017.01.26_537_ CURVE 013.d	Acquity 2.1(mm)
ZZZZZ		01/26/2017 11:46	1		Acquity 2.1(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 02/27/2017 11:03

Analysis Batch Number: 152311 End Date: 02/27/2017 11:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-152311/3 CCVL		02/27/2017 11:03	1	2017.02.27A_537 003.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 02/27/2017 14:56

Analysis Batch Number: 152402 End Date: 02/27/2017 15:45

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-152402/1 CCVIS		02/27/2017 14:56	1	2017.02.27C_537 001.d	GeminiC18 3x100 3(mm)
MB 320-152216/1-A		02/27/2017 15:01	1	2017.02.27C_537 002.d	GeminiC18 3x100 3(mm)
LCS 320-152216/2-A		02/27/2017 15:05	1	2017.02.27C_537 003.d	GeminiC18 3x100 3(mm)
LCSD 320-152216/3-A		02/27/2017 15:10	1	2017.02.27C_537 004.d	GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2017 15:14	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2017 15:18	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2017 15:23	1		GeminiC18 3x100 3(mm)
ZZZZZ		02/27/2017 15:27	1		GeminiC18 3x100 3(mm)
320-26006-1		02/27/2017 15:32	1	2017.02.27C_537 009.d	GeminiC18 3x100 3(mm)
320-26006-2		02/27/2017 15:36	1	2017.02.27C_537 010.d	GeminiC18 3x100 3(mm)
320-26006-3		02/27/2017 15:40	1	2017.02.27C_537 011.d	GeminiC18 3x100 3(mm)
CCV 320-152402/12 CCVIS		02/27/2017 15:45	1	2017.02.27C_537 012.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 02/27/2017 15:45

Analysis Batch Number: 152403 End Date: 02/27/2017 16:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-152403/12 CCVIS		02/27/2017 15:45	1	2017.02.27C_537 012.d	GeminiC18 3x100 3(mm)
320-26006-4		02/27/2017 15:49	1	2017.02.27C_537 013.d	GeminiC18 3x100 3(mm)
320-26006-5		02/27/2017 15:54	1	2017.02.27C_537 014.d	GeminiC18 3x100 3(mm)
320-26006-6		02/27/2017 15:58	1	2017.02.27C_537 015.d	GeminiC18 3x100 3(mm)
320-26006-7		02/27/2017 16:02	1	2017.02.27C_537 016.d	GeminiC18 3x100 3(mm)
320-26006-8		02/27/2017 16:07	1	2017.02.27C_537 017.d	GeminiC18 3x100 3(mm)
320-26006-9		02/27/2017 16:11	1	2017.02.27C_537 018.d	GeminiC18 3x100 3(mm)
320-26006-10		02/27/2017 16:16	1	2017.02.27C_537 019.d	GeminiC18 3x100 3(mm)
320-26006-11		02/27/2017 16:20	1	2017.02.27C_537 020.d	GeminiC18 3x100 3(mm)
320-26006-12		02/27/2017 16:25	1	2017.02.27C_537 021.d	GeminiC18 3x100 3(mm)
CCV 320-152403/22 CCVIS		02/27/2017 16:29	1	2017.02.27C_537 022.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 02/27/2017 16:29

Analysis Batch Number: 152411 End Date: 02/27/2017 16:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-152411/22 CCVIS		02/27/2017 16:29	1	2017.02.27C_537 022.d	GeminiC18 3x100 3(mm)
320-26006-1 DL		02/27/2017 16:34	20	2017.02.27C_537 023.d	GeminiC18 3x100 3(mm)
CCV 320-152411/24 CCVIS		02/27/2017 16:38	1	2017.02.27C_537 024.d	GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Batch Number: 152216 Batch Start Date: 02/25/17 13:09 Batch Analyst: Reed, Jonathan E

Batch Method: 537 Batch End Date: 02/27/17 13:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00030
MB 320-152216/1		537, 537				250.00 mL	1.00 mL	7 SU	20 uL
LCS 320-152216/2		537, 537				250.00 mL	1.00 mL	7 SU	20 uL
LCSD 320-152216/3		537, 537				250.00 mL	1.00 mL	7 SU	20 uL
320-26006-A-1	WI-AF-1RW32-0217	537, 537	T	290.70 g	28.93 g	261.8 mL	1.00 mL	7 SU	20 uL
320-26006-A-2	WI-AF-1FB32-0217	537, 537	T	304.42 g	26.89 g	277.5 mL	1.00 mL	7 SU	20 uL
320-26006-A-3	WI-AF-1RW33-0217	537, 537	T	302.52 g	26.84 g	275.7 mL	1.00 mL	7 SU	20 uL
320-26006-A-4	WI-AF-1FB33-0217	537, 537	T	309.34 g	25.82 g	283.5 mL	1.00 mL	7 SU	20 uL
320-26006-A-5	WI-AF-1RW34-0217	537, 537	T	300.33 g	26.21 g	274.1 mL	1.00 mL	7 SU	20 uL
320-26006-A-6	WI-AF-1FB34-0217	537, 537	T	308.90 g	26.58 g	282.3 mL	1.00 mL	7 SU	20 uL
320-26006-A-7	WI-AF-1RW35-0217	537, 537	T	299.45 g	28.69 g	270.8 mL	1.00 mL	7 SU	20 uL
320-26006-A-8	WI-AF-1FB35-0217	537, 537	T	306.03 g	25.83 g	280.2 mL	1.00 mL	7 SU	20 uL
320-26006-A-9	WI-AF-1RW36-0217	537, 537	T	295.16 g	27.31 g	267.9 mL	1.00 mL	7 SU	20 uL
320-26006-A-10	WI-AF-1FB36-0217	537, 537	T	311.18 g	26.42 g	284.8 mL	1.00 mL	7 SU	20 uL
320-26006-A-11	WI-AF-1RW37-0217	537, 537	T	302.59 g	27.10 g	275.5 mL	1.00 mL	7 SU	20 uL
320-26006-A-12	WI-AF-1FB37-0217	537, 537	T	311.58 g	26.21 g	285.4 mL	1.00 mL	7 SU	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC537-MSP 00017	IC537-SU 00030	AnalysisComment			
MB 320-152216/1		537, 537			50 uL	Chlorine: ND			
LCS 320-152216/2		537, 537		50 uL	50 uL	Chlorine: ND			
LCSD 320-152216/3		537, 537		50 uL	50 uL	Chlorine: ND			
320-26006-A-1	WI-AF-1RW32-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-2	WI-AF-1FB32-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-3	WI-AF-1RW33-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-4	WI-AF-1FB33-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-5	WI-AF-1RW34-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-6	WI-AF-1FB34-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-7	WI-AF-1RW35-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-8	WI-AF-1FB35-0217	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.: 320-26006-1

SDG No.: \_\_\_\_\_

Batch Number: 152216 Batch Start Date: 02/25/17 13:09 Batch Analyst: Reed, Jonathan E

Batch Method: 537 Batch End Date: 02/27/17 13:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-MSP 00017	LC537-SU 00030	AnalysisComment			
320-26006-A-9	WI-AF-1RW36-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-10	WI-AF-1FB36-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-11	WI-AF-1RW37-0217	537, 537	T		50 uL	Chlorine: ND			
320-26006-A-12	WI-AF-1FB37-0217	537, 537	T		50 uL	Chlorine: ND			

Batch Notes	
Manifold ID	1,10
Methanol ID	851507
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	HJA
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	SKV
Analyst ID - TA Reagent Drop	JER
Analyst ID - TA Reagent Drop Witness	SKV
SPE Cartridge ID	6341059-04
Trizma ID	SLBR4303V
Reagent Water ID	2/21/17

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.

A8

Job No: 26005, 26006 Instrument ID & Date: 2-27-17 ICAL Batch: 147939  
 Extraction Batch: 152216 Worklist #: 40293 TALS Batch: 152402, 152403, 152411

Review Items	-- Level 1 --			Level 2
	Yes	No	N/A	
<b>Initial Calibration</b>				
1. Is ICAL verified and locked in Chrom & TALS?	✓			✓
2. Is ICV properly linked in TALS?	✓			✓
<b>Continuing Calibration</b>				
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.	✓			✓
<b>Client Samples &amp; QC Sample Results</b>				
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? <u>1</u> Dilutions due to non-targets? <u>          </u>	✓			✓
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 2-28-17

2nd Level Reviewer / Date: Sub for MW Sk 2/28/17

NCM # and Comments: 79261

A8

Instrument ID & Date: 1-26-17 Worklist#: 39222

ICAL Batch: 147939, 147974 Calibration ID number: 27929, 27930

Review Items	-- Level 1 --			Level 2
	Yes	No	N/A	
<b>Initial Calibration</b>				
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): <u>Average</u> Linear (1/x <sup>2</sup> )Linear <u>Quadratic</u> (6 points minimum)				✓
4. Meets fit criteria? Intercept ≤ 1/2 RL RSD ≤ 30% for Average R <sup>2</sup> ≥ 0.990 for Linear R <sup>2</sup> ≥ 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 (2 <sup>nd</sup> source) ± 30% of true value?	✓			✓
11. Is ICV (2 <sup>nd</sup> 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?				✓

1<sup>st</sup> Level Reviewer / Date: JRB 1-26-17

2<sup>nd</sup> Level Reviewer / Date: mwj 1/27/2017

NCM # and Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

TestAmerica Laboratories  
 Worklist QC Batch Report

Worklist Name: 27FEB2017B\_537                      Worklist Number: 40293  
 Instrument Name: A8\_N                                  Chrom Method: 537\_A8\_N  
 Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170227-40293.b  
 QC Batching: Enabled                                      Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 152402
# 1 CCV L5	# 1 CCV L5
# 2 MB 320-152216/1-A	# 2 MB 320-152216/1-A
# 3 LCS 320-152216/2-A	# 3 LCS 320-152216/2-A
# 4 LCSD 320-152216/3-A	# 4 LCSD 320-152216/3-A
# 5 320-26005-A-1-A	# 5 320-26005-A-1-A
# 6 320-26005-A-2-A	# 6 320-26005-A-2-A
# 7 320-26005-A-3-A	# 7 320-26005-A-3-A
# 8 320-26005-A-4-A	# 8 320-26005-A-4-A
# 9 320-26006-A-1-A	# 9 320-26006-A-1-A
#10 320-26006-A-2-A	#10 320-26006-A-2-A
#11 320-26006-A-3-A	#11 320-26006-A-3-A
#12 CCV L3	#12 CCV L3

QC Batch: 2	LC 537 ICAL Raw Batch: 152403
#12 CCV L3	#12 CCV L3
#13 320-26006-A-4-A	#13 320-26006-A-4-A
#14 320-26006-A-5-A	#14 320-26006-A-5-A
#15 320-26006-A-6-A	#15 320-26006-A-6-A
#16 320-26006-A-7-A	#16 320-26006-A-7-A
#17 320-26006-A-8-A	#17 320-26006-A-8-A
#18 320-26006-A-9-A	#18 320-26006-A-9-A
#19 320-26006-A-10-A	#19 320-26006-A-10-A
#20 320-26006-A-11-A	#20 320-26006-A-11-A
#21 320-26006-A-12-A	#21 320-26006-A-12-A
#22 CCV L5	#22 CCV L5

QC Batch: 3	LC 537 ICAL Raw Batch: 152411
#22 CCV L5	#22 CCV L5
#23 320-26006-A-1-A	#23 320-26006-A-1-A
#24 CCV L3	#24 CCV L3

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-152216

Method Code: 320-537\_Prep-320

Batch Open: 2/25/2017 1:09:00PM

Batch End: 2/27/17 13:55

A8 2/27/17

## Extraction of Perfluorinated Alkyl Acids

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHs		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1 Adj2					
1 MB-320-152216/1 N/A	N/A		250.00 mL 1.00 mL	7		N/A	N/A	N/A	Chlorine: ND	MB-320-152216/1-A
2 LCS-320-152216/2 N/A	N/A		250.00 mL 1.00 mL	7		N/A	N/A	N/A	Chlorine: ND	LCS-320-152216/2-A
3 LCSD-320-152216/3 N/A	N/A		250.00 mL 1.00 mL	7		N/A	N/A	N/A	Chlorine: ND	LCSD-320-152216/3-A
4 320-26005-A-1 (537_DOD5)	N/A (320-26005-1)	297.90 g 27.74 g	270.2 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26005-A-1-A
5 320-26005-A-2 (537_DOD5)	N/A (320-26005-1)	309.10 g 26.50 g	282.6 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26005-A-2-A
6 320-26005-A-3 (537_DOD5)	N/A (320-26005-1)	302.48 g 28.47 g	274 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26005-A-3-A
7 320-26005-A-4 (537_DOD5)	N/A (320-26005-1)	305.46 g 26.48 g	279 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26005-A-4-A
8 320-26006-A-1 (537_DOD5)	N/A (320-26006-1)	290.70 g 28.93 g	261.8 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26006-A-1-A
9 320-26006-A-2 (537_DOD5)	N/A (320-26006-1)	304.42 g 26.89 g	277.5 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26006-A-2-A
10 320-26006-A-3 (537_DOD5)	N/A (320-26006-1)	302.52 g 26.84 g	275.7 mL 1.00 mL	7		2/27/17	5_Days	4	Chlorine: ND	320-26006-A-3-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)










Batch Number: 320-152216

Analyst: Reed, Jonathan E

Batch Open: 2/25/2017 1:09:00PM

Method Code: 320-537\_Prep-320

Batch End:

11	320-26006-A-4 (537_DOD5)	N/A (320-26006-1)	309.34 g 25.82 g	283.5 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
12	320-26006-A-5 (537_DOD5)	N/A (320-26006-1)	300.33 g 26.21 g	274.1 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
13	320-26006-A-6 (537_DOD5)	N/A (320-26006-1)	308.90 g 26.58 g	282.3 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
14	320-26006-A-7 (537_DOD5)	N/A (320-26006-1)	299.45 g 28.69 g	270.8 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
15	320-26006-A-8 (537_DOD5)	N/A (320-26006-1)	306.03 g 25.83 g	280.2 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
16	320-26006-A-9 (537_DOD5)	N/A (320-26006-1)	295.16 g 27.31 g	267.9 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
17	320-26006-A-10 (537_DOD5)	N/A (320-26006-1)	311.18 g 26.42 g	284.8 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
18	320-26006-A-11 (537_DOD5)	N/A (320-26006-1)	302.59 g 27.10 g	275.5 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	
19	320-26006-A-12 (537_DOD5)	N/A (320-26006-1)	311.58 g 26.21 g	285.4 mL 1.00 mL	7				2/27/17	5_Days	4	Chlorine: ND	

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152216

Analyst: Reed, Jonathan E

Batch Open: 2/25/2017 1:09:00PM

Method Code: 320-537\_Prep-320

Batch End:

Batch Notes	
Manifold ID	1,10
Trizma ID	SLBR4303V
SPE Cartridge ID	6341059-04
Methanol ID	851507
Reagent Water ID	2/21/17
Pipette ID	MD05306
Analyst ID - TA Reagent Drop	JER
Analyst ID - TA Reagent Drop Witness	SKV
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	SKV
Analyst ID - IS Reagent Drop	JER 20 µL 827698
Analyst ID - IS Reagent Drop Witness	HSA 2/21/17
Batch Comment	

Comments

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152216



Analyst: Reed, Jonathan E

Batch Open: 2/25/2017 1:09:00PM

Method Code: 320-537\_Prep-320

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-152216/1	LC537-SU_00030	50 uL	1.00 mL		
LCS 320-152216/2	LC537-MSP_00017	50 uL	1.00 mL		
LCS 320-152216/2	LC537-SU_00030	50 uL	1.00 mL		
LCSD 320-152216/3	LC537-MSP_00017	50 uL	1.00 mL		
LCSD 320-152216/3	LC537-SU_00030	50 uL	1.00 mL		
320-26005-A-1	LC537-SU_00030	50 uL	1.00 mL		
320-26005-A-2	LC537-SU_00030	50 uL	1.00 mL		
320-26005-A-3	LC537-SU_00030	50 uL	1.00 mL		
320-26005-A-4	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-1	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-2	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-3	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-4	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-5	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-6	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-7	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-8	LC537-SU_00030	50 uL	1.00 mL		
320-26006-A-9	LC537-SU_00030	50 uL	1.00 mL		



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152216

Analyst: Reed, Jonathan E

Batch Open: 2/25/2017 1:09:00PM

Method Code: 320-537\_Prep-320

Batch End:

320-26006-A-10	LC537-SU_00030	50 uL	1.00 mL	SKV	2/25/17
320-26006-A-11	LC537-SU_00030	50 uL	1.00 mL	↓	
320-26006-A-12	LC537-SU_00030	50 uL	1.00 mL		

Reagent	Amount/Units	Lot#:

NSH 2-27-17

Preparation Batch Number(s): 320-152216 Test: PFAS-DI 537

Earliest Holding Time: 3/07/17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> 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 CI 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		/	/
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1<sup>st</sup> Level Reviewer: COZ

Date: 2-27-17

2<sup>nd</sup> Level Reviewer: NSH

Date: 2-27-17

Comments: \_\_\_\_\_

This form must be used when making dilutions. It must be attached to the original bench sheet.

The following is a flow chart for making dilutions based on an original extract with a 1000 uL final volume. All dilutions (unless labeled as serial dilutions) are based on removing sample from the original extract, which has already been spiked with 20 uL of IS mix.

For serial dilutions do not add any additional IS mix until the final volume and dilution is achieved.

The amount of IS added to the diluted extract is to be entered into the run reagent field in the Chrom work list.

All volumes are in uL

537 - dilution required	Amount of 96:4 MeOH/Water	Amount of extract	Amount of IS
2X	500	500	10
5X	800	200	16
10X	900	100	18
20X	950	50	20
50X	980	20	20
100X	990	10	20
Serial dilution (from 100 x dilution)	Amount of 96:4 MeOH/Water	Amount of 100X without IS	Amount of IS
200X	500	500	20
500X	800	200	20

Sample ID	Dilution	IS ID	Analyst	Date
370-26006-1	20X	LC537-IS-00031	TD	2/27/17

# Shipping and Receiving Documents

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact  
Company Name: CH2M/Tiffany Hill  
Address: 1100 NE Circle Blvd, Ste 200  
City/State/Zip: Corvallis, OR 97330  
Phone: 541-768-3109  
Fax: 541-908-3794  
Project Name: GTO-08  
Site: NAS Whidbey Island  
P O #: 100067106650-679580.06 ELES

Project Manager: Katie Tippin  
Tel/Fax: 353-671-6258  
Analysis Turnaround Time:  WORKING DAYS 7 day  
 CALENDAR DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Site Contact: Mike Witmer Date: 2/22/2017  
Lab Contact: Laura Turpen Carrier: Fed-Ex  
Sampler: \_\_\_\_\_ of \_\_\_\_\_ COCs  
For Lab Use Only:  
Walk-in Client: \_\_\_\_\_  
Lab Sampling: \_\_\_\_\_  
Job / SDG No.: \_\_\_\_\_  
Sample Specific Notes:

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
W1-AF-1RW32-0217	2/21/17	11:55	G	DW	2	N	N	X
W1-AF-1FB32-0217	2/21/17	11:56	G	DW	2	N	N	X
W1-AF-1RW33-0217	2/21/17	16:27	G	DW	2	N	N	X
W1-AF-1FB33-0217	2/21/17	16:28	G	DW	2	N	N	X
W1-AF-1RW34-0217	2/21/17	16:46	G	DW	2	N	N	X
W1-AF-1FB34-0217	2/21/17	16:47	G	DW	2	N	N	X
W1-AF-1RW35-0217	2/22/17	9:20	G	DW	2	N	N	X
W1-AF-1FB35-0217	2/22/17	9:21	G	DW	2	N	N	X
W1-AF-1RW36-0217	2/22/17	9:36	G	DW	2	N	N	X
W1-AF-1FB36-0217	2/22/17	9:37	G	DW	2	N	N	X
W1-AF-1RW37-0217	2/22/17	12:12	G	DW	2	N	N	X
W1-AF-1FB37-0217	2/22/17	12:13	G	DW	2	N	N	X



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:  
 Reservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other  
 Possible Hazard Identification: 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

Custody Seal No.: \_\_\_\_\_  
 Relinquished by: K. Caber  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Received by: Paul Youl  
 Received by: \_\_\_\_\_  
 Received in Laboratory by: \_\_\_\_\_

Company: CH2M  
 Company: \_\_\_\_\_  
 Company: \_\_\_\_\_

Date/Time: 2/22/17 14:15  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

Cooler Temp. (°C): \_\_\_\_\_ Obs'd: 05 Corr'd: 0.8  
 Therm ID No.: AK/Skm  
 Date/Time: 2/23/17 9:55  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

# Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-26006-1

**Login Number: 26006**  
**List Number: 1**  
**Creator: Nelson, Kym D**

**List Source: TestAmerica Sacramento**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Lab_Sample_ID	Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	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
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.023	UG_L	J			PR	TRG					00000000				5.0	0.0090	0.023	0.029	320-26006-1	320-152402
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.13	UG_L				PR	TRG					00000000				5.0	0.045	0.11	0.13	320-26006-1	320-152402
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	13C2 PFHXA	13C2 PFHXA	66	PCT_REC	Q			PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152402	
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	13C2 PFDA	13C2 PFDA	99	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152402	
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	3.8	UG_L	D M			PR	TRG					00000000				5.0	0.30	0.92	1.1	320-26006-1	320-152411
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	13C2 PFHXA	13C2 PFHXA	85	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152411	
320-26006-1	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW32-0217	13C2 PFDA	13C2 PFDA	93	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152411	
320-26006-2	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB32-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.043	UG_L	U			PR	TRG					00000000				5.0	0.014	0.043	0.054	320-26006-1	320-152402
320-26006-2	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB32-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.022	UG_L	U			PR	TRG					00000000				5.0	0.0085	0.022	0.027	320-26006-1	320-152402
320-26006-2	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB32-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.099	UG_L	U			PR	TRG					00000000				5.0	0.043	0.099	0.13	320-26006-1	320-152402
320-26006-2	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB32-0217	13C2 PFHXA	13C2 PFHXA	82	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152402	
320-26006-2	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB32-0217	13C2 PFDA	13C2 PFDA	92	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152402	
320-26006-3	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW33-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.044	UG_L	U M			PR	TRG					00000000				5.0	0.014	0.044	0.054	320-26006-1	320-152402
320-26006-3	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW33-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.022	UG_L	U			PR	TRG					00000000				5.0	0.0085	0.022	0.027	320-26006-1	320-152402
320-26006-3	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW33-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.045	UG_L	J			PR	TRG					00000000				5.0	0.043	0.10	0.13	320-26006-1	320-152402
320-26006-3	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW33-0217	13C2 PFHXA	13C2 PFHXA	83	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152402	
320-26006-3	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW33-0217	13C2 PFDA	13C2 PFDA	90	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152402	
320-26006-4	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB33-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.042	UG_L	U M			PR	TRG					00000000				5.0	0.014	0.042	0.053	320-26006-1	320-152403
320-26006-4	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB33-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.021	UG_L	U			PR	TRG					00000000				5.0	0.0083	0.021	0.026	320-26006-1	320-152403
320-26006-4	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB33-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.097	UG_L	U			PR	TRG					00000000				5.0	0.042	0.097	0.12	320-26006-1	320-152403
320-26006-4	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB33-0217	13C2 PFHXA	13C2 PFHXA	83	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-4	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB33-0217	13C2 PFDA	13C2 PFDA	89	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-5	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW34-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.044	UG_L	U			PR	TRG					00000000				5.0	0.014	0.044	0.055	320-26006-1	320-152403
320-26006-5	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW34-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.022	UG_L	U			PR	TRG					00000000				5.0	0.0086	0.022	0.027	320-26006-1	320-152403
320-26006-5	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW34-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.10	UG_L	U			PR	TRG					00000000				5.0	0.043	0.10	0.13	320-26006-1	320-152403
320-26006-5	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW34-0217	13C2 PFHXA	13C2 PFHXA	83	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-5	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW34-0217	13C2 PFDA	13C2 PFDA	89	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-6	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB34-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.043	UG_L	U			PR	TRG					00000000				5.0	0.014	0.043	0.053	320-26006-1	320-152403
320-26006-6	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB34-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.021	UG_L	U			PR	TRG					00000000				5.0	0.0083	0.021	0.027	320-26006-1	320-152403
320-26006-6	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB34-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.097	UG_L	U			PR	TRG					00000000				5.0	0.042	0.097	0.12	320-26006-1	320-152403
320-26006-6	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB34-0217	13C2 PFHXA	13C2 PFHXA	92	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-6	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB34-0217	13C2 PFDA	13C2 PFDA	97	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-7	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW35-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.044	UG_L	U M			PR	TRG					00000000				5.0	0.014	0.044	0.055	320-26006-1	320-152403
320-26006-7	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW35-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.022	UG_L	U			PR	TRG					00000000				5.0	0.0087	0.022	0.028	320-26006-1	320-152403
320-26006-7	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW35-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.10	UG_L	U			PR	TRG					00000000				5.0	0.044	0.10	0.13	320-26006-1	320-152403
320-26006-7	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW35-0217	13C2 PFHXA	13C2 PFHXA	82	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-7	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW35-0217	13C2 PFDA	13C2 PFDA	92	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-8	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB35-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.043	UG_L	U			PR	TRG					00000000				5.0	0.014	0.043	0.054	320-26006-1	320-152403
320-26006-8	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB35-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.021	UG_L	U			PR	TRG					00000000				5.0	0.0084	0.021	0.027	320-26006-1	320-152403
320-26006-8	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB35-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.098	UG_L	U			PR	TRG					00000000				5.0	0.042	0.098	0.12	320-26006-1	320-152403
320-26006-8	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB35-0217	13C2 PFHXA	13C2 PFHXA	84	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-8	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1FB35-0217	13C2 PFDA	13C2 PFDA	87	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-9	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW36-0217	Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.045	UG_L	U M			PR	TRG					00000000				5.0	0.014	0.045	0.056	320-26006-1	320-152403
320-26006-9	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW36-0217	Perfluorooctanoic acid (PFOA)	335-67-1	0.022	UG_L	U			PR	TRG					00000000				5.0	0.0088	0.022	0.028	320-26006-1	320-152403
320-26006-9	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW36-0217	Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.10	UG_L	U			PR	TRG					00000000				5.0	0.044	0.10	0.13	320-26006-1	320-152403
320-26006-9	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW36-0217	13C2 PFHXA	13C2 PFHXA	84	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-9	N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-AF-1RW36-0217	13C2 PFDA	13C2 PFDA	94	PCT_REC				PR	SURR	SLSA	130	70	00000000				5.0				320-26006-1	320-152403	
320-26006-10	N6247016D9000	0																										



**DATA VALIDATION SUMMARY REPORT  
WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon  
 SDG: 320-26006-1  
 Laboratory: Test America, Sacramento, California  
 Site: Whidbey Island, CTO-0008, Washington  
 Date: March 22, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-AF-1RW32-0217	320-26006-1	Water
2	WI-AF-1FB32-0217	320-26006-2	Water
3	WI-AF-1RW33-0217	320-26006-3	Water
4	WI-AF-1FB33-0217	320-26006-4	Water
5	WI-AF-1RW34-0217	320-26006-5	Water
6	WI-AF-1FB34-0217	320-26006-6	Water
7	WI-AF-1RW35-0217	320-26006-7	Water
8	WI-AF-1FB35-0217	320-26006-8	Water
9	WI-AF-1RW36-0217	320-26006-9	Water
10	WI-AF-1FB36-0217	320-26006-10	Water
11	WI-AF-1RW37-0217	320-26006-11	Water
12	WI-AF-1FB37-0217	320-26006-12	Water

A full data validation was performed on the analytical data for six water samples and six aqueous field blank samples collected on February 21-22, 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  
PFCs

Method References  
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 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review," August 2014;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

### ***Organics***

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- 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 as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

### **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 except for the following.

Sample ID	Surrogate	%R	Qualifier
1	13C2-PFHxA	66%	J/UJ

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

- MS/MSD samples were not analyzed.

### **Laboratory Control Samples**

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

### **Internal Standard (IS) Area Performance**

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

### Target Compound Identification

- All mass spectra and quantitation criteria were met.

### Compound Quantitation

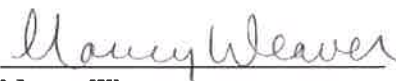
- EDS Sample ID #1 required a 20X dilution for PFOS. The reporting limits were adjusted accordingly. No action was required.

### 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  
Senior Chemist

Dated:

3/24/17

<b>Data Qualifier</b>	<b>Definition</b>
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.



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LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW32-0217 Lab Sample ID: 320-26006-1  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_009.d  
 Analysis Method: 537 Date Collected: 02/21/2017 11:55  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 261.8(mL) Date Analyzed: 02/27/2017 15:32  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.023	<del>J</del> J	0.029	0.023	0.0090
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.13	J	0.13	0.11	0.045

SSL  
SSL

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	66	<del>Q</del>	70-130
STL00996	13C2 PFDA	99		70-130

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LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Client Sample ID: WI-AF-1RW32-0217 DL Lab Sample ID: 320-26006-1 DL

Matrix: Water Lab File ID: 2017.02.27C\_537\_023.d

Analysis Method: 537 Date Collected: 02/21/2017 11:55

Extraction Method: 537 Date Extracted: 02/25/2017 13:09

Sample wt/vol: 261.8(mL) Date Analyzed: 02/27/2017 16:34

Con. Extract Vol.: 1.00(mL) Dilution Factor: 20

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 152411 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.8	<del>DN</del>	1.1	0.92	0.30

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	85		70-130
STL00996	13C2 PFDA	93		70-130



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2

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Client Sample ID: WI-AF-1FB32-0217 Lab Sample ID: 320-26006-2

Matrix: Water Lab File ID: 2017.02.27C\_537\_010.d

Analysis Method: 537 Date Collected: 02/21/2017 11:56

Extraction Method: 537 Date Extracted: 02/25/2017 13:09

Sample wt/vol: 277.5(mL) Date Analyzed: 02/27/2017 15:36

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.099	U	0.13	0.099	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	92		70-130

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3

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW33-0217 Lab Sample ID: 320-26006-3  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_011.d  
 Analysis Method: 537 Date Collected: 02/21/2017 16:27  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 275.7 (mL) Date Analyzed: 02/27/2017 15:40  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152402 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U <del>M</del>	0.054	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.045	J	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	90		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Client Sample ID: WI-AF-1FB33-0217 Lab Sample ID: 320-26006-4

Matrix: Water Lab File ID: 2017.02.27C\_537\_013.d

Analysis Method: 537 Date Collected: 02/21/2017 16:28

Extraction Method: 537 Date Extracted: 02/25/2017 13:09

Sample wt/vol: 283.5(mL) Date Analyzed: 02/27/2017 15:49

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U <del>M</del>	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	89		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Client Sample ID: WI-AF-1RW34-0217 Lab Sample ID: 320-26006-5

Matrix: Water Lab File ID: 2017.02.27C\_537\_014.d

Analysis Method: 537 Date Collected: 02/21/2017 16:46

Extraction Method: 537 Date Extracted: 02/25/2017 13:09

Sample wt/vol: 274.1(mL) Date Analyzed: 02/27/2017 15:54

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0086
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	89		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB34-0217 Lab Sample ID: 320-26006-6  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_015.d  
 Analysis Method: 537 Date Collected: 02/21/2017 16:47  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 282.3(mL) Date Analyzed: 02/27/2017 15:58  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.053	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	97		70-130

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7

Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW35-0217 Lab Sample ID: 320-26006-7  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_016.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:20  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 270.8(mL) Date Analyzed: 02/27/2017 16:02  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U <del>M</del>	0.055	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0087
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	92		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB35-0217 Lab Sample ID: 320-26006-8  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_017.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:21  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 280.2(mL) Date Analyzed: 02/27/2017 16:07  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.043	U	0.054	0.043	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.027	0.021	0.0084
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.098	U	0.12	0.098	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	87		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1RW36-0217 Lab Sample ID: 320-26006-9  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_018.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:36  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 267.9(mL) Date Analyzed: 02/27/2017 16:11  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.045	U <del>M</del>	0.056	0.045	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.028	0.022	0.0088
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.044

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	94		70-130



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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WI-AF-1FB36-0217 Lab Sample ID: 320-26006-10  
 Matrix: Water Lab File ID: 2017.02.27C\_537\_019.d  
 Analysis Method: 537 Date Collected: 02/22/2017 09:37  
 Extraction Method: 537 Date Extracted: 02/25/2017 13:09  
 Sample wt/vol: 284.8 (mL) Date Analyzed: 02/27/2017 16:16  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.097	U	0.12	0.097	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	84		70-130
STL00996	13C2 PFDA	90		70-130

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Client Sample ID: WI-AF-1RW37-0217 Lab Sample ID: 320-26006-11

Matrix: Water Lab File ID: 2017.02.27C\_537\_020.d

Analysis Method: 537 Date Collected: 02/22/2017 12:12

Extraction Method: 537 Date Extracted: 02/25/2017 13:09

Sample wt/vol: 275.5(mL) Date Analyzed: 02/27/2017 16:20

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.044	U	0.054	0.044	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.022	U	0.027	0.022	0.0085
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.10	U	0.13	0.10	0.043

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	83		70-130
STL00996	13C2 PFDA	90		70-130

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LCMS ORGANICS ANALYSIS DATA SHEET

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Lab Name: TestAmerica Sacramento Job No.: 320-26006-1

SDG No.: \_\_\_\_\_

Client Sample ID: WI-AF-1FB37-0217 Lab Sample ID: 320-26006-12

Matrix: Water Lab File ID: 2017.02.27C\_537\_021.d

Analysis Method: 537 Date Collected: 02/22/2017 12:13

Extraction Method: 537 Date Extracted: 02/25/2017 13:09

Sample wt/vol: 285.4 (mL) Date Analyzed: 02/27/2017 16:25

Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1

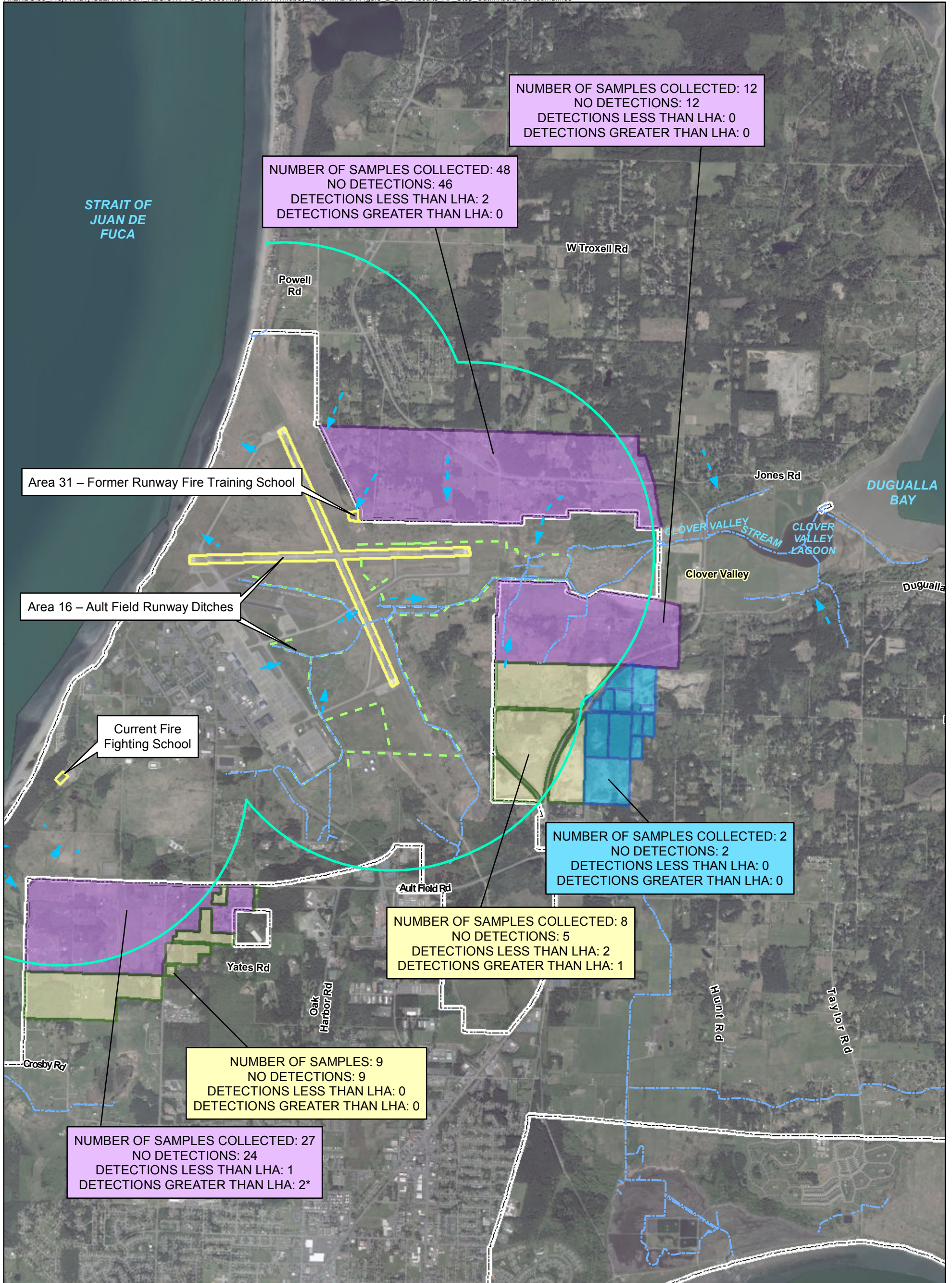
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

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

Analysis Batch No.: 152403 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.042	U	0.053	0.042	0.014
335-67-1	Perfluorooctanoic acid (PFOA)	0.021	U	0.026	0.021	0.0083
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.096	U	0.12	0.096	0.042

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	87		70-130



- Legend**
- 1 Mile Zone
  - - - Surface Water
  - - - Drainage Ditch
  - Suspected Source Area
  - Phase 1 Sampling Area
  - Phase 2 Sampling Area
  - Phase 3 Sampling Area
  - Base Boundary
  - - - ▶ Inferred Groundwater Flow Direction

**Notes:**

1. Results shown on this figure are for PFOA and PFOS. See text and Table 2 for PFBS results
2. \* Both results above the LHA are from the same well; the second sample collected was a confirmation sample.

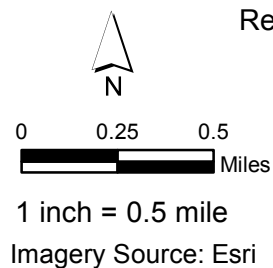


Figure 2  
 Results for Drinking Water Well Sampling  
 Near Ault Field  
 Naval Air Station Whidbey Island  
 Oak Harbor, Washington

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