



**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 320-25352**

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

February 2019

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Sacramento

880 Riverside Parkway  
West Sacramento, CA 95605

Tel: (916)373-5600

TestAmerica Job ID: 320-25352-1

Client Project/Site: Whidbey Island

For:

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

Attn: Tiffany Hill



Authorized for release by:

2/2/2017 10:52:20 AM

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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: 320-25352-1

## Qualifiers

### LCMS

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

## Glossary

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

dw	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)

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# Case Narrative

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

TestAmerica Job ID: 320-25352-1

**Job ID: 320-25352-1**

**Laboratory: TestAmerica Sacramento**

Narrative

## CASE NARRATIVE

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

**Project: Whidbey Island**

**Report Number: 320-25352-1**

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

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

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

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

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

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

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

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

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

### **RECEIPT**

The samples were received on 01/28/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.1 C.

### **PFOA/PFOS**

Samples WI -CV-1RW68-0117 (320-25352-1), WI -CV-1FB68-0117 (320-25352-2), WI -CV-1RW69-0117 (320-25352-3), WI -CV-1FB69-0117 (320-25352-4), WI -CV-1RW70-0117 (320-25352-5), WI -CV-1FB70-0117 (320-25352-6), WI -CV-1RW71-0117 (320-25352-7) and WI -CV-1FB71-0117 (320-25352-8) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 01/30/2017 and analyzed on 01/31/2017.

The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

## Case Narrative

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

TestAmerica Job ID: 320-25352-1

### Job ID: 320-25352-1 (Continued)

#### Laboratory: TestAmerica Sacramento (Continued)

The following sample was decanted prior to extraction because of having some sort of black material in the sample, which could potentially clog the column.

WI -CV-1RW71-0117 (320-25352-7)

No 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: 320-25352-1

<b>Client Sample ID: WI -CV-1RW68-0117</b>	<b>Lab Sample ID: 320-25352-1</b>	1
<input type="checkbox"/> No Detections.		2
<b>Client Sample ID: WI -CV-1FB68-0117</b>	<b>Lab Sample ID: 320-25352-2</b>	3
<input type="checkbox"/> No Detections.		4
<b>Client Sample ID: WI -CV-1RW69-0117</b>	<b>Lab Sample ID: 320-25352-3</b>	5
<input type="checkbox"/> No Detections.		6
<b>Client Sample ID: WI -CV-1FB69-0117</b>	<b>Lab Sample ID: 320-25352-4</b>	7
<input type="checkbox"/> No Detections.		8
<b>Client Sample ID: WI -CV-1RW70-0117</b>	<b>Lab Sample ID: 320-25352-5</b>	9
<input type="checkbox"/> No Detections.		10
<b>Client Sample ID: WI -CV-1FB70-0117</b>	<b>Lab Sample ID: 320-25352-6</b>	11
<input type="checkbox"/> No Detections.		12
<b>Client Sample ID: WI -CV-1RW71-0117</b>	<b>Lab Sample ID: 320-25352-7</b>	13
<input type="checkbox"/> No Detections.		14
<b>Client Sample ID: WI -CV-1FB71-0117</b>	<b>Lab Sample ID: 320-25352-8</b>	15
<input type="checkbox"/> 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: 320-25352-1

**Client Sample ID: WI -CV-1RW68-0117**

Date Collected: 01/25/17 09:11

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-1**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.052	U	0.065	0.017	ug/L		01/30/17 14:07	01/31/17 18:51	1
Perfluoroctanoic acid (PFOA)	0.026	U	0.033	0.010	ug/L		01/30/17 14:07	01/31/17 18:51	1
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.052	ug/L		01/30/17 14:07	01/31/17 18:51	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	88		70 - 130				01/30/17 14:07	01/31/17 18:51	1
13C2 PFDA	106		70 - 130				01/30/17 14:07	01/31/17 18:51	1

**Client Sample ID: WI -CV-1FB68-0117**

Date Collected: 01/25/17 09:12

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-2**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L		01/30/17 14:07	01/31/17 18:55	1
Perfluoroctanoic acid (PFOA)	0.024	U M	0.030	0.0093	ug/L		01/30/17 14:07	01/31/17 18:55	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 18:55	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	100		70 - 130				01/30/17 14:07	01/31/17 18:55	1
13C2 PFDA	112		70 - 130				01/30/17 14:07	01/31/17 18:55	1

**Client Sample ID: WI -CV-1RW69-0117**

Date Collected: 01/26/17 11:29

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-3**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.049	U M	0.062	0.016	ug/L		01/30/17 14:07	01/31/17 19:00	1
Perfluoroctanoic acid (PFOA)	0.025	U	0.031	0.0097	ug/L		01/30/17 14:07	01/31/17 19:00	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.049	ug/L		01/30/17 14:07	01/31/17 19:00	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	93		70 - 130				01/30/17 14:07	01/31/17 19:00	1
13C2 PFDA	92		70 - 130				01/30/17 14:07	01/31/17 19:00	1

**Client Sample ID: WI -CV-1FB69-0117**

Date Collected: 01/26/17 11:30

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-4**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.015	ug/L		01/30/17 14:07	01/31/17 19:04	1
Perfluoroctanoic acid (PFOA)	0.024	U	0.029	0.0092	ug/L		01/30/17 14:07	01/31/17 19:04	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 19:04	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	94		70 - 130				01/30/17 14:07	01/31/17 19:04	1
13C2 PFDA	115		70 - 130				01/30/17 14:07	01/31/17 19:04	1

TestAmerica Sacramento

# Client Sample Results

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

TestAmerica Job ID: 320-25352-1

**Client Sample ID: WI -CV-1RW70-0117**

**Lab Sample ID: 320-25352-5**

Matrix: Water

Date Collected: 01/27/17 09:03  
Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.050	U M	0.063	0.016	ug/L		01/30/17 14:07	01/31/17 19:09	1
Perfluoroctanoic acid (PFOA)	0.025	U	0.032	0.0099	ug/L		01/30/17 14:07	01/31/17 19:09	1
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.050	ug/L		01/30/17 14:07	01/31/17 19:09	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	108		70 - 130				01/30/17 14:07	01/31/17 19:09	1
13C2 PFDA	119		70 - 130				01/30/17 14:07	01/31/17 19:09	1

**Client Sample ID: WI -CV-1FB70-0117**

**Lab Sample ID: 320-25352-6**

Matrix: Water

Date Collected: 01/27/17 09:04  
Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.048	U	0.059	0.015	ug/L		01/30/17 14:07	01/31/17 19:31	1
Perfluoroctanoic acid (PFOA)	0.024	U	0.030	0.0093	ug/L		01/30/17 14:07	01/31/17 19:31	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 19:31	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	94		70 - 130				01/30/17 14:07	01/31/17 19:31	1
13C2 PFDA	105		70 - 130				01/30/17 14:07	01/31/17 19:31	1

**Client Sample ID: WI -CV-1RW71-0117**

**Lab Sample ID: 320-25352-7**

Matrix: Water

Date Collected: 01/27/17 11:33  
Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.050	U	0.063	0.016	ug/L		01/30/17 14:07	01/31/17 19:35	1
Perfluoroctanoic acid (PFOA)	0.025	U	0.031	0.0099	ug/L		01/30/17 14:07	01/31/17 19:35	1
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.050	ug/L		01/30/17 14:07	01/31/17 19:35	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	98		70 - 130				01/30/17 14:07	01/31/17 19:35	1
13C2 PFDA	107		70 - 130				01/30/17 14:07	01/31/17 19:35	1

**Client Sample ID: WI -CV-1FB71-0117**

**Lab Sample ID: 320-25352-8**

Matrix: Water

Date Collected: 01/27/17 11:34  
Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.048	U	0.060	0.015	ug/L		01/30/17 14:07	01/31/17 19:39	1
Perfluoroctanoic acid (PFOA)	0.024	U	0.030	0.0093	ug/L		01/30/17 14:07	01/31/17 19:39	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 19:39	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	97		70 - 130				01/30/17 14:07	01/31/17 19:39	1
13C2 PFDA	105		70 - 130				01/30/17 14:07	01/31/17 19:39	1

TestAmerica Sacramento

# Surrogate Summary

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

TestAmerica Job ID: 320-25352-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	3C2 PFHxA (70-130)	3C2 PFDA (70-130)
320-25352-1	WI -CV-1RW68-0117	88	106
320-25352-2	WI -CV-1FB68-0117	100	112
320-25352-3	WI -CV-1RW69-0117	93	92
320-25352-4	WI -CV-1FB69-0117	94	115
320-25352-5	WI -CV-1RW70-0117	108	119
320-25352-5 MS	WI -CV-1RW70-0117	94	99
320-25352-5 MSD	WI -CV-1RW70-0117	95	104
320-25352-6	WI -CV-1FB70-0117	94	105
320-25352-7	WI -CV-1RW71-0117	98	107
320-25352-8	WI -CV-1FB71-0117	97	105
LCS 320-148300/2-A	Lab Control Sample	93	109
MB 320-148300/1-A	Method Blank	94	105

### 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: 320-25352-1

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

**Lab Sample ID:** MB 320-148300/1-A

**Matrix:** Water

**Analysis Batch:** 148472

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 148300

Analyte	MB		LOQ	DL	Unit	D	Prepared		Analyzed	Dil Fac
	Result	Qualifier					Prepared	Analyzed		
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.016	ug/L	D	01/30/17 14:07	01/31/17 17:41		1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		01/30/17 14:07	01/31/17 17:41		1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		01/30/17 14:07	01/31/17 17:41		1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	94		70 - 130			
13C2 PFDA	105		70 - 130			

**Lab Sample ID:** LCS 320-148300/2-A

**Matrix:** Water

**Analysis Batch:** 148472

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 148300

Analyte	Spike		LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
	Added	Result						
Perfluorooctanesulfonic acid (PFOS)	0.300	0.293	ug/L	D	98	70 - 130		
Perfluorooctanoic acid (PFOA)		0.146	0.141	ug/L		96	70 - 130	
Perfluorobutanesulfonic acid (PFBS)		0.673	0.606	ug/L		90	70 - 130	

Surrogate	LCS		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	93		70 - 130			
13C2 PFDA	109		70 - 130			

**Lab Sample ID:** 320-25352-5 MS

**Matrix:** Water

**Analysis Batch:** 148474

**Client Sample ID:** WI -CV-1RW70-0117

**Prep Type:** Total/NA

**Prep Batch:** 148300

Analyte	Sample		Spike	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	0.050	U M	0.0406	0.0285	J M	ug/L	D	70	70 - 130
Perfluorooctanoic acid (PFOA)	0.025	U	0.0201	0.0153	J	ug/L		76	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.0909	0.0765	J	ug/L		84	70 - 130

Surrogate	MS		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFHxA	94		70 - 130			
13C2 PFDA	99		70 - 130			

**Lab Sample ID:** 320-25352-5 MSD

**Matrix:** Water

**Analysis Batch:** 148474

**Client Sample ID:** WI -CV-1RW70-0117

**Prep Type:** Total/NA

**Prep Batch:** 148300

Analyte	Sample		Spike	MSD Result	MSD Qualifier	Unit	D	%Rec.	Limits	RPD
	Result	Qualifier								
Perfluorooctanesulfonic acid (PFOS)	0.050	U M	0.0401	0.0294	J M	ug/L	D	74	70 - 130	3 30
Perfluorooctanoic acid (PFOA)	0.025	U	0.0198	0.0159	J	ug/L		80	70 - 130	3 30
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.0897	0.0785	J	ug/L		88	70 - 130	3 30

TestAmerica Sacramento

# QC Sample Results

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

TestAmerica Job ID: 320-25352-1

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

Lab Sample ID: 320-25352-5 MSD

Matrix: Water

Analysis Batch: 148474

Client Sample ID: WI-CV-1RW70-0117

Prep Type: Total/NA

Prep Batch: 148300

Surrogate	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	95		70 - 130
13C2 PFDA	104		70 - 130

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# QC Association Summary

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

TestAmerica Job ID: 320-25352-1

## LCMS

### Prep Batch: 148300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25352-1	WI -CV-1RW68-0117	Total/NA	Water	537	
320-25352-2	WI -CV-1FB68-0117	Total/NA	Water	537	
320-25352-3	WI -CV-1RW69-0117	Total/NA	Water	537	
320-25352-4	WI -CV-1FB69-0117	Total/NA	Water	537	
320-25352-5	WI -CV-1RW70-0117	Total/NA	Water	537	
320-25352-6	WI -CV-1FB70-0117	Total/NA	Water	537	
320-25352-7	WI -CV-1RW71-0117	Total/NA	Water	537	
320-25352-8	WI -CV-1FB71-0117	Total/NA	Water	537	
MB 320-148300/1-A	Method Blank	Total/NA	Water	537	
LCS 320-148300/2-A	Lab Control Sample	Total/NA	Water	537	
320-25352-5 MS	WI -CV-1RW70-0117	Total/NA	Water	537	
320-25352-5 MSD	WI -CV-1RW70-0117	Total/NA	Water	537	

### Analysis Batch: 148472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-148300/1-A	Method Blank	Total/NA	Water	537	148300
LCS 320-148300/2-A	Lab Control Sample	Total/NA	Water	537	148300

### Analysis Batch: 148473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25352-1	WI -CV-1RW68-0117	Total/NA	Water	537	148300
320-25352-2	WI -CV-1FB68-0117	Total/NA	Water	537	148300
320-25352-3	WI -CV-1RW69-0117	Total/NA	Water	537	148300
320-25352-4	WI -CV-1FB69-0117	Total/NA	Water	537	148300
320-25352-5	WI -CV-1RW70-0117	Total/NA	Water	537	148300

### Analysis Batch: 148474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25352-6	WI -CV-1FB70-0117	Total/NA	Water	537	148300
320-25352-7	WI -CV-1RW71-0117	Total/NA	Water	537	148300
320-25352-8	WI -CV-1FB71-0117	Total/NA	Water	537	148300
320-25352-5 MS	WI -CV-1RW70-0117	Total/NA	Water	537	148300
320-25352-5 MSD	WI -CV-1RW70-0117	Total/NA	Water	537	148300

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# Lab Chronicle

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

TestAmerica Job ID: 320-25352-1

**Client Sample ID: WI -CV-1RW68-0117**

Date Collected: 01/25/17 09:11

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-1**

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			229.2 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148473	01/31/17 18:51	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB68-0117**

Date Collected: 01/25/17 09:12

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-2**

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			254 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148473	01/31/17 18:55	JRB	TAL SAC

**Client Sample ID: WI -CV-1RW69-0117**

Date Collected: 01/26/17 11:29

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-3**

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			243 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148473	01/31/17 19:00	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB69-0117**

Date Collected: 01/26/17 11:30

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-4**

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			255 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148473	01/31/17 19:04	JRB	TAL SAC

**Client Sample ID: WI -CV-1RW70-0117**

Date Collected: 01/27/17 09:03

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-5**

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			237.9 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148473	01/31/17 19:09	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB70-0117**

Date Collected: 01/27/17 09:04

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-6**

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			252.6 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148474	01/31/17 19:31	JRB	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

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

TestAmerica Job ID: 320-25352-1

**Client Sample ID: WI -CV-1RW71-0117**

Date Collected: 01/27/17 11:33

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-7**

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			238.2 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148474	01/31/17 19:35	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB71-0117**

Date Collected: 01/27/17 11:34

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-8**

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			251.9 mL	1.0 mL	148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1			148474	01/31/17 19:39	JRB	TAL SAC

**Laboratory References:**

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

TestAmerica Sacramento

# Certification Summary

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

TestAmerica Job ID: 320-25352-1

## Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Analysis Method	Prep Method	Matrix	Analyte	

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TestAmerica Sacramento

## Method Summary

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

TestAmerica Job ID: 320-25352-1

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

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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

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## Sample Summary

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

TestAmerica Job ID: 320-25352-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-25352-1	WI -CV-1RW68-0117	Water	01/25/17 09:11	01/28/17 09:15
320-25352-2	WI -CV-1FB68-0117	Water	01/25/17 09:12	01/28/17 09:15
320-25352-3	WI -CV-1RW69-0117	Water	01/26/17 11:29	01/28/17 09:15
320-25352-4	WI -CV-1FB69-0117	Water	01/26/17 11:30	01/28/17 09:15
320-25352-5	WI -CV-1RW70-0117	Water	01/27/17 09:03	01/28/17 09:15
320-25352-6	WI -CV-1FB70-0117	Water	01/27/17 09:04	01/28/17 09:15
320-25352-7	WI -CV-1RW71-0117	Water	01/27/17 11:33	01/28/17 09:15
320-25352-8	WI -CV-1FB71-0117	Water	01/27/17 11:34	01/28/17 09:15

# Chain of Custody Record

TestAmerica Laboratories, Inc.

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact		Project Manager: Katie Tippin			Site Contact: Eric Epple			Date: 1/27/2017		COC No: 1			
Tiffany Hill		Tel/Fax: (757) 671-6258			Lab Contact: Laura Turpen			Carrier: FedEx		of COCs			
Project Chemist		Analysis Turnaround Time								Sampler:			
1100 NE Circle Blvd Ste 300 Corvallis, OR 97330		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS								For Lab Use Only:			
(541) 768-3109		TAT if different from Below 7-Day								Walk-in Client:			
(541) 908-3794		<input type="checkbox"/> 2 weeks								Lab Sampling:			
Project Name: CTO-08		<input type="checkbox"/> 1 week											
Site: OLF Coupeville		<input type="checkbox"/> 2 days								Job / SDG No.:			
P O #: 100067106050 - 679580.09.FI.FS		<input type="checkbox"/> 1 day											
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	USEPA Method 537 (PFCA, PFOS, and PFSS)	Sample Specific Notes:			
		WI-CV-1RW68-0117	1/25/17	0911	G	DW	2	N	N				X
		WI-CV-1FB68-0117	1/25/17	0912	G	DW	2	N	N				X
		WI-CV-1RW69-0117	1/26/17	1129	G	DW	2	N	N				X
		WI-CV-1FB69-0117	1/26/17	1130	G	DW	2	N	N				X
		WI-CV-1RW70-0117	1/27/17	0903	G	DW	2	N	N				X
		WI-CV-1RW70-0117-MS	1/27/17	0903	G	DW	2	N	Y				X
		WI-CV-1RW70-0117-SD	1/27/17	0903	G	DW	2	N	Y				X
		WI-CV-1FB70-0117	1/27/17	0904	G	DW	2	N	N				X
		WI-CV-1RW71-0117	1/27/17	1133	G	DW	2	N	N				X
WI-CV-1FB71-0117	1/27/17	1134	G	DW	2	N	N	X	 320-25352 Chain of Custody				
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6= Other Trizma										6			
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.										Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)			
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown										<input type="checkbox"/> Return to Client	<input checked="" type="checkbox"/> Disposal by Lab	<input type="checkbox"/> Archive for _____ Months	
Special Instructions/QC Requirements & Comments:													
Custody Seals Intact:		<input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temp. (°C): Obs'd: <u>1.4</u> Corr'd: <u>1.1</u> Therm ID No.: <u>12</u>						
Relinquished by: <u>Eric Epple / E.E.</u>		Company: CH2M			Date/Time: <u>1-27-17/10:00</u>		Received by: <u>John Higby</u>		Company: <u>CH2M</u>		Date/Time: <u>1-28-17 9:15</u>		
Relinquished by:		Company:			Date/Time:		Received by:		Company:		Date/Time:		
Relinquished by:		Company:			Date/Time:		Received in Laboratory by:		Company:		Date/Time:		

## Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-25352-1

**Login Number:** 25352

**List Source:** TestAmerica Sacramento

**List Number:** 1

**Creator:** Edman, Connor M

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

## ANALYTICAL REPORT

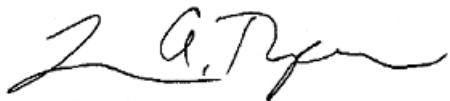
Job Number: 320-25352-1

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  
2/2/2017 10:53 AM

---

Laura Turpen, Project Manager I  
880 Riverside Parkway, West Sacramento, CA, 95605  
(916)374-4414  
laura.turpen@testamericainc.com  
02/02/2017

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# Definitions/Glossary

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

TestAmerica Job ID: 320-25352-1

## Qualifiers

### LCMS

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

## Glossary

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

## CASE NARRATIVE

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

**Project: Whidbey Island**

**Report Number: 320-25352-1**

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

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

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

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

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

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

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

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

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

### **RECEIPT**

The samples were received on 01/28/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.1 C.

### **PFOA/PFOS**

Samples WI -CV-1RW68-0117 (320-25352-1), WI -CV-1FB68-0117 (320-25352-2), WI -CV-1RW69-0117 (320-25352-3), WI -CV-1FB69-0117 (320-25352-4), WI -CV-1RW70-0117 (320-25352-5), WI -CV-1FB70-0117 (320-25352-6), WI -CV-1RW71-0117 (320-25352-7) and WI -CV-1FB71-0117 (320-25352-8) were analyzed for PFOA/PFOS in accordance with 537. The samples were prepared on 01/30/2017 and analyzed on 01/31/2017.

The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

The following sample was decanted prior to extraction because of having some sort of black material in the sample, which could potentially clog the column.

WI -CV-1RW71-0117 (320-25352-7)

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

## Detection Summary

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

TestAmerica Job ID: 320-25352-1

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**Client Sample ID: WI -CV-1RW68-0117**

**Lab Sample ID: 320-25352-1**

No Detections.

---

**Client Sample ID: WI -CV-1FB68-0117**

**Lab Sample ID: 320-25352-2**

No Detections.

---

**Client Sample ID: WI -CV-1RW69-0117**

**Lab Sample ID: 320-25352-3**

No Detections.

---

**Client Sample ID: WI -CV-1FB69-0117**

**Lab Sample ID: 320-25352-4**

No Detections.

---

**Client Sample ID: WI -CV-1RW70-0117**

**Lab Sample ID: 320-25352-5**

No Detections.

---

**Client Sample ID: WI -CV-1FB70-0117**

**Lab Sample ID: 320-25352-6**

No Detections.

---

**Client Sample ID: WI -CV-1RW71-0117**

**Lab Sample ID: 320-25352-7**

No Detections.

---

**Client Sample ID: WI -CV-1FB71-0117**

**Lab Sample ID: 320-25352-8**

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: 320-25352-1

**Client Sample ID: WI -CV-1RW68-0117**

**Lab Sample ID: 320-25352-1**

Date Collected: 01/25/17 09:11

Matrix: Water

Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.052	U	0.065	0.017	ug/L	D	01/30/17 14:07	01/31/17 18:51	1
Perfluoroctanoic acid (PFOA)	0.026	U	0.033	0.010	ug/L		01/30/17 14:07	01/31/17 18:51	1
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.052	ug/L		01/30/17 14:07	01/31/17 18:51	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	88		70 - 130				01/30/17 14:07	01/31/17 18:51	1
13C2 PFDA	106		70 - 130				01/30/17 14:07	01/31/17 18:51	1

**Client Sample ID: WI -CV-1FB68-0117**

**Lab Sample ID: 320-25352-2**

Date Collected: 01/25/17 09:12

Matrix: Water

Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.047	U M	0.059	0.015	ug/L	D	01/30/17 14:07	01/31/17 18:55	1
Perfluoroctanoic acid (PFOA)	0.024	U M	0.030	0.0093	ug/L		01/30/17 14:07	01/31/17 18:55	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U M	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 18:55	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	100		70 - 130				01/30/17 14:07	01/31/17 18:55	1
13C2 PFDA	112		70 - 130				01/30/17 14:07	01/31/17 18:55	1

**Client Sample ID: WI -CV-1RW69-0117**

**Lab Sample ID: 320-25352-3**

Date Collected: 01/26/17 11:29

Matrix: Water

Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.049	U M	0.062	0.016	ug/L	D	01/30/17 14:07	01/31/17 19:00	1
Perfluoroctanoic acid (PFOA)	0.025	U	0.031	0.0097	ug/L		01/30/17 14:07	01/31/17 19:00	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.049	ug/L		01/30/17 14:07	01/31/17 19:00	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	93		70 - 130				01/30/17 14:07	01/31/17 19:00	1
13C2 PFDA	92		70 - 130				01/30/17 14:07	01/31/17 19:00	1

**Client Sample ID: WI -CV-1FB69-0117**

**Lab Sample ID: 320-25352-4**

Date Collected: 01/26/17 11:30

Matrix: Water

Date Received: 01/28/17 09:15

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.047	U	0.059	0.015	ug/L	D	01/30/17 14:07	01/31/17 19:04	1
Perfluoroctanoic acid (PFOA)	0.024	U	0.029	0.0092	ug/L		01/30/17 14:07	01/31/17 19:04	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 19:04	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	94		70 - 130				01/30/17 14:07	01/31/17 19:04	1
13C2 PFDA	115		70 - 130				01/30/17 14:07	01/31/17 19:04	1

TestAmerica Sacramento

# Client Sample Results

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

TestAmerica Job ID: 320-25352-1

**Client Sample ID: WI -CV-1RW70-0117**

Date Collected: 01/27/17 09:03

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-5**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.050	U M	0.063	0.016	ug/L		01/30/17 14:07	01/31/17 19:09	1
Perfluoroctanoic acid (PFOA)	0.025	U	0.032	0.0099	ug/L		01/30/17 14:07	01/31/17 19:09	1
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.050	ug/L		01/30/17 14:07	01/31/17 19:09	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	108		70 - 130				01/30/17 14:07	01/31/17 19:09	1
13C2 PFDA	119		70 - 130				01/30/17 14:07	01/31/17 19:09	1

**Client Sample ID: WI -CV-1FB70-0117**

Date Collected: 01/27/17 09:04

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-6**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.048	U	0.059	0.015	ug/L		01/30/17 14:07	01/31/17 19:31	1
Perfluoroctanoic acid (PFOA)	0.024	U	0.030	0.0093	ug/L		01/30/17 14:07	01/31/17 19:31	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 19:31	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	94		70 - 130				01/30/17 14:07	01/31/17 19:31	1
13C2 PFDA	105		70 - 130				01/30/17 14:07	01/31/17 19:31	1

**Client Sample ID: WI -CV-1RW71-0117**

Date Collected: 01/27/17 11:33

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-7**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.050	U	0.063	0.016	ug/L		01/30/17 14:07	01/31/17 19:35	1
Perfluoroctanoic acid (PFOA)	0.025	U	0.031	0.0099	ug/L		01/30/17 14:07	01/31/17 19:35	1
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.050	ug/L		01/30/17 14:07	01/31/17 19:35	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	98		70 - 130				01/30/17 14:07	01/31/17 19:35	1
13C2 PFDA	107		70 - 130				01/30/17 14:07	01/31/17 19:35	1

**Client Sample ID: WI -CV-1FB71-0117**

Date Collected: 01/27/17 11:34

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-8**

Matrix: Water

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroctanesulfonic acid (PFOS)	0.048	U	0.060	0.015	ug/L		01/30/17 14:07	01/31/17 19:39	1
Perfluoroctanoic acid (PFOA)	0.024	U	0.030	0.0093	ug/L		01/30/17 14:07	01/31/17 19:39	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.047	ug/L		01/30/17 14:07	01/31/17 19:39	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	97		70 - 130				01/30/17 14:07	01/31/17 19:39	1
13C2 PFDA	105		70 - 130				01/30/17 14:07	01/31/17 19:39	1

TestAmerica Sacramento

# Default Detection Limits

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

TestAmerica Job ID: 320-25352-1

## 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: 320-25352-1

## 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)
320-25352-1	WI -CV-1RW68-0117	88	106
320-25352-2	WI -CV-1FB68-0117	100	112
320-25352-3	WI -CV-1RW69-0117	93	92
320-25352-4	WI -CV-1FB69-0117	94	115
320-25352-5	WI -CV-1RW70-0117	108	119
320-25352-5 MS	WI -CV-1RW70-0117	94	99
320-25352-5 MSD	WI -CV-1RW70-0117	95	104
320-25352-6	WI -CV-1FB70-0117	94	105
320-25352-7	WI -CV-1RW71-0117	98	107
320-25352-8	WI -CV-1FB71-0117	97	105
LCS 320-148300/2-A	Lab Control Sample	93	109
MB 320-148300/1-A	Method Blank	94	105

## 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: 320-25352-1

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

**Lab Sample ID: MB 320-148300/1-A**

**Matrix: Water**

**Analysis Batch: 148472**

Analyte	MB		LOQ	DL	Unit	D	Prepared		Dil Fac
	Result	Qualifier					Prepared	Analyzed	
Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.016	ug/L		01/30/17 14:07	01/31/17 17:41	1
Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.0094	ug/L		01/30/17 14:07	01/31/17 17:41	1
Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.048	ug/L		01/30/17 14:07	01/31/17 17:41	1
Surrogate	MB		%Recovery	Qualifier	Limits		Prepared		Dil Fac
	%Recovery	Qualifier			70 - 130		Prepared	Analyzed	
13C2 PFHxA	94		70 - 130				01/30/17 14:07	01/31/17 17:41	1
13C2 PFDA	105		70 - 130				01/30/17 14:07	01/31/17 17:41	1

**Lab Sample ID: LCS 320-148300/2-A**

**Matrix: Water**

**Analysis Batch: 148472**

Analyte	LCS		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
	%Recovery	Qualifier								
Perfluorooctanesulfonic acid (PFOS)			0.300	0.293		ug/L		98	70 - 130	
Perfluorooctanoic acid (PFOA)			0.146	0.141		ug/L		96	70 - 130	
Perfluorobutanesulfonic acid (PFBS)			0.673	0.606		ug/L		90	70 - 130	
Surrogate	LCS		%Recovery	Qualifier	Limits		D	%Rec	Limits	
	%Recovery	Qualifier			70 - 130					
13C2 PFHxA	93		70 - 130							
13C2 PFDA	109		70 - 130							

**Lab Sample ID: 320-25352-5 MS**

**Matrix: Water**

**Analysis Batch: 148474**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec.	Limits
				Result	Qualifier					
Perfluorooctanesulfonic acid (PFOS)	0.050	U M	0.0406	0.0285	J M	ug/L		70	70 - 130	
Perfluorooctanoic acid (PFOA)	0.025	U	0.0201	0.0153	J	ug/L		76	70 - 130	
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.0909	0.0765	J	ug/L		84	70 - 130	
Surrogate	MS		%Recovery	Qualifier	Limits		D	%Rec	Limits	
	%Recovery	Qualifier			70 - 130					
13C2 PFHxA	94		70 - 130							
13C2 PFDA	99		70 - 130							

**Lab Sample ID: 320-25352-5 MSD**

**Matrix: Water**

**Analysis Batch: 148474**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.	RPD
				Result	Qualifier					
Perfluorooctanesulfonic acid (PFOS)	0.050	U M	0.0401	0.0294	J M	ug/L		74	70 - 130	3
Perfluorooctanoic acid (PFOA)	0.025	U	0.0198	0.0159	J	ug/L		80	70 - 130	3
Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.0897	0.0785	J	ug/L		88	70 - 130	3

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# QC Sample Results

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

TestAmerica Job ID: 320-25352-1

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

Lab Sample ID: 320-25352-5 MSD

Client Sample ID: WI -CV-1RW70-0117

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 148474

Prep Batch: 148300

Surrogate	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	95		70 - 130
13C2 PFDA	104		70 - 130

# QC Association Summary

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

TestAmerica Job ID: 320-25352-1

## LCMS

### Prep Batch: 148300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25352-1	WI -CV-1RW68-0117	Total/NA	Water	537	
320-25352-2	WI -CV-1FB68-0117	Total/NA	Water	537	
320-25352-3	WI -CV-1RW69-0117	Total/NA	Water	537	
320-25352-4	WI -CV-1FB69-0117	Total/NA	Water	537	
320-25352-5	WI -CV-1RW70-0117	Total/NA	Water	537	
320-25352-6	WI -CV-1FB70-0117	Total/NA	Water	537	
320-25352-7	WI -CV-1RW71-0117	Total/NA	Water	537	
320-25352-8	WI -CV-1FB71-0117	Total/NA	Water	537	
MB 320-148300/1-A	Method Blank	Total/NA	Water	537	
LCS 320-148300/2-A	Lab Control Sample	Total/NA	Water	537	
320-25352-5 MS	WI -CV-1RW70-0117	Total/NA	Water	537	
320-25352-5 MSD	WI -CV-1RW70-0117	Total/NA	Water	537	

### Analysis Batch: 148472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-148300/1-A	Method Blank	Total/NA	Water	537	148300
LCS 320-148300/2-A	Lab Control Sample	Total/NA	Water	537	148300

### Analysis Batch: 148473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25352-1	WI -CV-1RW68-0117	Total/NA	Water	537	148300
320-25352-2	WI -CV-1FB68-0117	Total/NA	Water	537	148300
320-25352-3	WI -CV-1RW69-0117	Total/NA	Water	537	148300
320-25352-4	WI -CV-1FB69-0117	Total/NA	Water	537	148300
320-25352-5	WI -CV-1RW70-0117	Total/NA	Water	537	148300

### Analysis Batch: 148474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25352-6	WI -CV-1FB70-0117	Total/NA	Water	537	148300
320-25352-7	WI -CV-1RW71-0117	Total/NA	Water	537	148300
320-25352-8	WI -CV-1FB71-0117	Total/NA	Water	537	148300
320-25352-5 MS	WI -CV-1RW70-0117	Total/NA	Water	537	148300
320-25352-5 MSD	WI -CV-1RW70-0117	Total/NA	Water	537	148300

# Lab Chronicle

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

TestAmerica Job ID: 320-25352-1

**Client Sample ID: WI -CV-1RW68-0117**

Date Collected: 01/25/17 09:11

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-1**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148473	01/31/17 18:51	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB68-0117**

Date Collected: 01/25/17 09:12

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148473	01/31/17 18:55	JRB	TAL SAC

**Client Sample ID: WI -CV-1RW69-0117**

Date Collected: 01/26/17 11:29

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-3**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148473	01/31/17 19:00	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB69-0117**

Date Collected: 01/26/17 11:30

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-4**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148473	01/31/17 19:04	JRB	TAL SAC

**Client Sample ID: WI -CV-1RW70-0117**

Date Collected: 01/27/17 09:03

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-5**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148473	01/31/17 19:09	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB70-0117**

Date Collected: 01/27/17 09:04

Date Received: 01/28/17 09:15

**Lab Sample ID: 320-25352-6**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148474	01/31/17 19:31	JRB	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

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

TestAmerica Job ID: 320-25352-1

**Client Sample ID: WI -CV-1RW71-0117**

**Date Collected: 01/27/17 11:33**

**Date Received: 01/28/17 09:15**

**Lab Sample ID: 320-25352-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148474	01/31/17 19:35	JRB	TAL SAC

**Client Sample ID: WI -CV-1FB71-0117**

**Date Collected: 01/27/17 11:34**

**Date Received: 01/28/17 09:15**

**Lab Sample ID: 320-25352-8**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537			148300	01/30/17 14:07	VPM	TAL SAC
Total/NA	Analysis	537		1	148474	01/31/17 19:39	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: 320-25352-1

## Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Analysis Method	Prep Method	Matrix	Analyte	

# Method Summary

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

TestAmerica Job ID: 320-25352-1

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

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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

# Sample Summary

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

TestAmerica Job ID: 320-25352-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-25352-1	WI -CV-1RW68-0117	Water	01/25/17 09:11	01/28/17 09:15
320-25352-2	WI -CV-1FB68-0117	Water	01/25/17 09:12	01/28/17 09:15
320-25352-3	WI -CV-1RW69-0117	Water	01/26/17 11:29	01/28/17 09:15
320-25352-4	WI -CV-1FB69-0117	Water	01/26/17 11:30	01/28/17 09:15
320-25352-5	WI -CV-1RW70-0117	Water	01/27/17 09:03	01/28/17 09:15
320-25352-6	WI -CV-1FB70-0117	Water	01/27/17 09:04	01/28/17 09:15
320-25352-7	WI -CV-1RW71-0117	Water	01/27/17 11:33	01/28/17 09:15
320-25352-8	WI -CV-1FB71-0117	Water	01/27/17 11:34	01/28/17 09:15

## LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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.: 320-25352-1

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 SacramentoJob No.: 320-25352-1

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

Instrument ID: A8\_N Analysis Batch Number: 148472Lab Sample ID: CCV 320-148472/17 CCVIS Client Sample ID: \_\_\_\_\_Date Analyzed: 01/31/17 18:20 Lab File ID: 2017.01.31A\_537\_017.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.23	Isomers	barnettj	02/01/17 10:34

## LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Instrument ID: A8\_N

Analysis Batch Number: 148473

Lab Sample ID: CCV 320-148473/17 CCVIS

Client Sample ID:

Date Analyzed: 01/31/17 18:20

Lab File ID: 2017.01.31A\_537\_017.d

GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.23	Isomers	barnettj	02/01/17 10:34

Lab Sample ID: 320-25352-2

Client Sample ID: WI -CV-1FB68-0117

Date Analyzed: 01/31/17 18:55

Lab File ID: 2017.01.31A\_537\_025.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	02/01/17 10:37
Perfluorooctanoic acid (PFOA)	1.99	Missed Peak	barnettj	02/01/17 10:37
Perfluorooctanesulfonic acid (PFOS)	2.23	Isomers	barnettj	02/01/17 10:37

Lab Sample ID: 320-25352-3

Client Sample ID: WI -CV-1RW69-0117

Date Analyzed: 01/31/17 19:00

Lab File ID: 2017.01.31A\_537\_026.d

GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Missed Peak	barnettj	02/01/17 10:37

Lab Sample ID: 320-25352-5

Client Sample ID: WI -CV-1RW70-0117

Date Analyzed: 01/31/17 19:09

Lab File ID: 2017.01.31A\_537\_028.d

GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Isomers	barnettj	02/01/17 10:39

## LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica SacramentoJob No.: 320-25352-1

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

Instrument ID: A8\_N Analysis Batch Number: 148473Lab Sample ID: CCV 320-148473/29 CCVIS Client Sample ID: \_\_\_\_\_Date Analyzed: 01/31/17 19:13 Lab File ID: 2017.01.31A\_537\_029.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Isomers	barnettj	02/01/17 10:39

## LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Instrument ID: A8\_N Analysis Batch Number: 148474

Lab Sample ID: CCV 320-148474/29 CCVIS Client Sample ID:

Date Analyzed: 01/31/17 19:13 Lab File ID: 2017.01.31A\_537\_029.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Isomers	barnettj	02/01/17 10:39

Lab Sample ID: 320-25352-5 MS Client Sample ID: WI -CV-1RW70-0117 MS

Date Analyzed: 01/31/17 19:22 Lab File ID: 2017.01.31A\_537\_031.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.23	Isomers	barnettj	02/01/17 10:41

Lab Sample ID: 320-25352-5 MSD Client Sample ID: WI -CV-1RW70-0117 MSD

Date Analyzed: 01/31/17 19:26 Lab File ID: 2017.01.31A\_537\_032.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Isomers	barnettj	02/01/17 10:42

Lab Sample ID: CCV 320-148474/36 CCVIS Client Sample ID:

Date Analyzed: 01/31/17 19:44 Lab File ID: 2017.01.31A\_537\_036.d GC Column: GeminiC18 3x1 ID: 3 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	2.22	Isomers	barnettj	02/01/17 10:54

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
<b>LC537-HSP_00014</b>	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutane Sulfonate	3366 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
							Perfluoroctanoic acid (PFOA)	731.96 ng/mL
							Perfluoroctanesulfonic acid (PFOS)	1502.49 ng/mL
<b>.LC537SPIM_00018</b>	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	Perfluoroctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluoroctanesulfonic acid (PFOS)	40.0664 ug/mL
<b>..LC537-PFBS_00006</b>	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBS_00002	0.0102 g	Perfluorobutane Sulfonate	2040 ug/mL
<b>...LC537_PFBS_00002</b>	04/01/18		Sigma, Lot MKBP8842V				Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
							Perfluorobutane Sulfonate	1 g/g
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
<b>..LC537-PFHxA_00013</b>	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHxA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
<b>...LC537_PFHxA_00002</b>	04/01/18		Aldrich, Lot BCBM2579V				Perfluoroheptanoic acid	0.99 g/g
<b>..LC537-PFHxS_00008</b>	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
<b>...LC537_PFHxS_00002</b>	04/01/18		Sigma, Lot BCBL3545V				Perfluorohexanesulfonic acid	0.9094 g/g
<b>..LC537_PFNA_00011</b>	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
<b>...LC537_PFNA_00002</b>	04/01/18		TCI America, Lot QN44F				Perfluorononanoic acid	0.963 g/g
<b>..LC537_PFOA_00011</b>	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
<b>...LC537_PFOA_00002</b>	11/04/18		Fluka, Lot SZBD308XV				Perfluoroctanoic acid (PFOA)	0.999 g/g
<b>..LC537_PFOS_00006</b>	07/28/17	07/28/16	Methanol, Lot 090285	6 mL	LC537_PFOS_00002	0.0066 g	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
<b>...LC537_PFOS_00002</b>	08/09/17		Fluka, Lot SZBC222XV				Perfluoroctanesulfonic acid (PFOS)	0.9106 g/g
<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
<b>.LC537-IS_00028</b>	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C4 PFOS	28.68 ng/mL
					LCMFOS_00018	300 uL	13C2-PFOA	0.5 ug/mL
							13C4 PFOS	1.434 ug/mL
<b>..LCM2PFOA_00005</b>	06/19/18		Wellington Laboratories, Lot M2PFOA0613				13C2-PFOA	50 ug/mL
<b>..LCMPFOS_00018</b>	08/03/21		Wellington Laboratories, Lot MPFOS0816				13C4 PFOS	47.8 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
							13C2 PFHxA	10 ng/mL
					LC537ICIM_00014	25 uL	Perfluorobutanesulfonic acid (PFBS)	114.77 ng/mL
							Perfluoroctanoic acid (PFOA)	25.0232 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroctanesulfonic acid (PFOS)	27.2389 ng/mL
.LC537-SU_00027	06/19/17	12/19/16	Methanol, Lot 104453	20000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00009	80 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.LC537ICIM_00014	03/01/17	12/20/16	Methanol, Lot 090285	25 mL	LC537-PFBS2_00005	0.5 mL	Perfluorobutanesulfonic acid (PFBS)	45.908 ug/mL
					LC537-PFOA2_00008	0.142 mL	Perfluoroctanoic acid (PFOA)	10.0093 ug/mL
					LC537-PFOS2_00005	0.22 mL	Perfluoroctanesulfonic acid (PFOS)	10.8956 ug/mL
..LC537-PFBS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537_PFBS2_00001	0.023 g	Perfluorobutanesulfonic acid (PFBS)	2295.4 ug/mL
...LC537_PFBS2_00001	08/09/17	Santa Cruz Biotechnology, Lot H0112			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	0.998 g/g
..LC537-PFOA2_00008	07/25/17	12/20/16	Methanol, Lot 090285	10 mL	LC537_PFOA2_00001	0.0178 g	Perfluoroctanoic acid (PFOA)	1762.2 ug/mL
...LC537_PFOA2_00001	07/25/17	Afla Aesar, Lot D24Y026			(Purchased Reagent)		Perfluoroctanoic acid (PFOA)	0.99 g/g
..LC537-PFOS2_00005	03/01/17	02/29/16	Methanol, Lot 090285	10 mL	LC537_PFOS2_00001	0.0159 g	Perfluoroctanesulfonic acid (PFOS)	1238.13 ug/mL
...LC537_PFOS2_00001	07/26/17	Sigma, Lot BCBF5116V			(Purchased Reagent)		Perfluoroctanesulfonic acid (PFOS)	0.7787 g/g
LC537-IS_00030	07/17/17	01/17/17	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
.LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
LC537-L1_00017	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00028	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-MSP_00017	25 uL	Perfluorobutanesulfonic acid (PFBS)	8.976 ng/mL
							Perfluoroheptanoic acid	0.99 ng/mL
							Perfluorohexanesulfonic acid	3.02582 ng/mL
.LC537-IS_00028	06/19/17	12/19/16	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	Perfluorononanoic acid	2.07415 ng/mL
							Perfluoroctanoic acid (PFOA)	1.95189 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	4.00664 ng/mL
..LCM2PFOA_00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL
							13C2-PFOA	0.5 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	1.434 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
							Perfluoroctanoic acid (PFOA)	390.378 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroctanesulfonic 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	Perfluoroctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluoroctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBs_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBs_00002	04/01/18		Sigma, Lot MKBP8842V			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18		Aldrich, Lot BCBM2579V			(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g
....LC537_PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V			(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F			(Purchased Reagent)	Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV			(Purchased Reagent)	Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV			(Purchased Reagent)	Perfluoroctanesulfonic 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
..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
LC537-L2_00015	05/21/17	12/19/16	MeOH/H2O, Lot 090285	5 mL	LC537-IS_00028	100 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
					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-L2_00015	05/21/17	12/19/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00013	34 uL	Perfluorobutanesulfonic acid (PFBS)	22.8888 ng/mL
							Perfluoroctanoic acid (PFOA)	4.97733 ng/mL
							Perfluoroctanesulfonic acid (PFOS)	10.2169 ng/mL
					LC537-SU_00026	250 uL	13C2_PFDA	10 ng/mL
							13C2_PFHxA	10 ng/mL
.LC537-HSP_00013	05/21/17	11/21/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00017	375 uL	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroctanoic acid (PFOA)	731.96 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC537SPIM_00017	05/21/17	11/21/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluoroctanesulfonic acid (PFOS)	1502.49 ng/mL
					LC537-PFOA_00011	100 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFOS_00006	400 uL	Perfluoroctanoic acid (PFOA)	19.5189 ug/mL
							Perfluoroctanesulfonic 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-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluoroctanesulfonic 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
..LC537-SU_00025	06/14/17	12/14/16	Methanol, Lot 104453	10000 uL	LCMPFDA_00008	80 uL	13C2 PFDA	0.4 ug/mL
...LCMPFDA_00008	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
...LCMPFHxA_00009	04/09/20	Wellington Laboratories, Lot MPFHxA0415			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
LC537-L2_00016	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	34 uL	Perfluorobutanesulfonic acid (PFBS)	22.8888 ng/mL
							Perfluoroheptanoic acid	2.5245 ng/mL
							Perfluorohexanesulfonic acid	7.71585 ng/mL
							Perfluorononanoic acid	5.28909 ng/mL
							Perfluoroctanoic acid (PFOA)	4.97733 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluoroctanesulfonic acid (PFOS)	10.2169 ng/mL
							13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 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-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	Perfluoroctanoic acid (PFOA)	19.5189 ug/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC537-PFOS_00006	400 uL	Perfluoroctanesulfonic 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-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 BCBM2579V		(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V		(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F		(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV		(Purchased Reagent)		Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV		(Purchased Reagent)		Perfluoroctanesulfonic 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
							Perfluoroctanoic acid (PFOA)	9.80826 ng/mL
<b>LC537-HSP_00014</b>	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	Perfluorobutanesulfonic acid (PFOS)	20.1334 ng/mL
							13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..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-PFHxP_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	Perfluoroctanoic acid (PFOA)	19.5189 ug/mL
					LC537-PFOS_00006	400 uL	Perfluoroctanesulfonic 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-PFHxP_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHxP_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHxP_00002	04/01/18		Aldrich, Lot BCBM2579V			(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18		Sigma, Lot BCBL3545V			(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18		TCI America, Lot QN44F			(Purchased Reagent)	Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18		Fluka, Lot SZBD308XV			(Purchased Reagent)	Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV			(Purchased Reagent)	Perfluoroctanesulfonic acid (PFOS)	0.9106 g/g
.LC537-IS_00030	07/17/17	01/17/17	Methanol, Lot 090285	10000 uL	LCM2PFOA_00005	100 uL	13C2-PFOA	0.5 ug/mL
					LCMPFOS_00018	300 uL	13C4 PFOS	1.434 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)	13C2-PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21		Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)	13C4 PFOS	47.8 ug/mL
.LC537-SU_00029	07/17/17	01/17/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00013	80 uL	13C2 PFHxA	0.2 ug/mL
..LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)	13C2 PFDA	50 ug/mL
..LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)	13C2 PFHxA	50 ug/mL
LC537-L4_00017	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	135 uL	Perfluorobutanesulfonic acid (PFBS)	90.882 ng/mL
							Perfluoroheptanoic acid	10.0238 ng/mL
							Perfluorohexanesulfonic acid	30.6364 ng/mL
							Perfluorononanoic acid	21.0008 ng/mL
							Perfluoroctanoic acid (PFOA)	19.7629 ng/mL
							Perfluoroctanesulfonic acid (PFOS)	40.5672 ng/mL
.LC537-HSP_00014	06/22/17	12/22/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00018	375 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
							13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC537SPIM_00018	06/22/17	12/22/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluoroctanoic acid (PFOA)	731.96 ng/mL
					LC537-PFHxA 00013	100 uL	Perfluoroctanesulfonic acid (PFOS)	1502.49 ng/mL
					LC537-PFHxS 00008	300 uL	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFNA 00011	200 uL	Perfluoroheptanoic acid	9.9 ug/mL
					LC537-PFOA 00011	100 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFOS_00006	400 uL	Perfluorononanoic acid	20.7415 ug/mL
							Perfluoroctanoic acid (PFOA)	19.5189 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
							Perfluorobutanesulfonic acid (PFBS)	1 g/g
....LC537_PFBs_00002	04/01/18		Sigma, Lot MKBP8842V			(Purchased Reagent)		
...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 BCBM2579V			(Purchased Reagent)	Perfluoroheptanoic acid	0.99 g/g
....LC537_PFHxS 00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS 00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS 00002	04/01/18		Sigma, Lot BCBL3545V			(Purchased Reagent)	Perfluorohexanesulfonic acid	0.9094 g/g
....LC537_PFNAs 00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNAs 00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNAs 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	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA 00002	11/04/18		Fluka, Lot SZBD308XV			(Purchased Reagent)	Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV			(Purchased Reagent)	Perfluoroctanesulfonic 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
..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
...LC537-IS_00020	06/14/17	01/20/17	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	200 uL	Perfluorobutanesulfonic acid (PFBS)	134.64 ng/mL
							Perfluoroheptanoic acid	14.85 ng/mL
							Perfluorohexanesulfonic acid	45.3873 ng/mL
							Perfluorononanoic acid	31.1123 ng/mL
							Perfluoroctanoic acid (PFOA)	29.2784 ng/mL
							Perfluoroctanesulfonic acid (PFOS)	60.0996 ng/mL
					LC537-IS_00030	100 uL	13C2-PFOA	10 ng/mL
							13C4 PFOS	28.68 ng/mL
					LC537-SU_00029	250 uL	13C2 PFDA	10 ng/mL
							13C2 PFHxA	10 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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	Perfluorobutanesulfonic acid (PFBS)	3366 ng/mL
							Perfluoroheptanoic acid	371.25 ng/mL
							Perfluorohexanesulfonic acid	1134.68 ng/mL
							Perfluorononanoic acid	777.808 ng/mL
							Perfluoroctanoic acid (PFOA)	731.96 ng/mL
							Perfluoroctanesulfonic 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
							Perfluoroheptanoic acid	9.9 ug/mL
							Perfluorohexanesulfonic acid	30.2582 ug/mL
							Perfluorononanoic acid	20.7415 ug/mL
							Perfluoroctanoic acid (PFOA)	19.5189 ug/mL
							Perfluoroctanesulfonic acid (PFOS)	40.0664 ug/mL
...LC537-PFBS_00006	07/28/17	07/28/16	Methanol, Lot 090285	5 mL	LC537_PFBs_00002	0.0102 g	Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
....LC537_PFBs_00002	04/01/18	Sigma, Lot MKBP8842V			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1 g/g
...LC537-PFHpA_00013	06/22/17	12/22/16	Methanol, Lot 090285	56.8 mL	LC537_PFHpA_00002	0.0568 g	Perfluoroheptanoic acid	990 ug/mL
....LC537_PFHpA_00002	04/01/18	Aldrich, Lot BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxS_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxS_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxS_00002	04/01/18	Sigma, Lot BCBL3545V			(Purchased Reagent)		Perfluorohexanesulfonic acid	0.9094 g/g
...LC537-PFNA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFNA_00002	0.007 g	Perfluorononanoic acid	1037.08 ug/mL
....LC537_PFNA_00002	04/01/18	TCI America, Lot QN44F			(Purchased Reagent)		Perfluorononanoic acid	0.963 g/g
...LC537-PFOA_00011	11/21/17	11/21/16	Methanol, Lot 090285	6.5 mL	LC537_PFOA_00002	0.0127 g	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluoroctanesulfonic 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			(Purchased Reagent)		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			(Purchased Reagent)		13C2 PFDA	0.2 ug/mL
..LCMPFHxA_00013	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
<b>LC537-L6_00016</b>	06/14/17	12/23/16	MeOH/H2O, Lot 090285	5 mL	LC537-HSP_00014	265 uL	Perfluorobutanesulfonic acid (PFBS)	178.398 ng/mL
					LC537-IS_00028	100 uL	Perfluoroheptanoic acid	19.6763 ng/mL
							Perfluorohexanesulfonic acid	60.1382 ng/mL
					13C2-PFOA	10 ng/mL	Perfluorononanoic acid	41.2238 ng/mL
							Perfluoroctanoic acid (PFOA)	38.7939 ng/mL
					13C2 PFHxA	10 ng/mL	Perfluoroctanesulfonic acid (PFOS)	79.632 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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	13C4 PFOS	28.68 ng/mL
							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	Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
							Perfluoroheptanoic acid	9.9 ug/mL
							Perfluorohexanesulfonic acid	30.2582 ug/mL
							Perfluorononanoic acid	20.7415 ug/mL
							Perfluoroctanoic acid (PFOA)	19.5189 ug/mL
							Perfluoroctanesulfonic 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-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 BCBM2579V			(Purchased Reagent)		Perfluoroheptanoic acid	0.99 g/g
...LC537-PFHxA_00008	07/28/17	07/28/16	Methanol, Lot 090285	5.5 mL	LC537_PFHxA_00002	0.0061 g	Perfluorohexanesulfonic acid	1008.61 ug/mL
....LC537_PFHxA_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	Perfluoroctanoic acid (PFOA)	1951.89 ug/mL
....LC537_PFOA_00002	11/04/18	Fluka, Lot SZBD308XV			(Purchased Reagent)		Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
....LC537_PFOS_00002	08/09/17	Fluka, Lot SZBC222XV			(Purchased Reagent)		Perfluoroctanesulfonic 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-LSP_00016</b>	05/04/17	11/04/16	Methanol, Lot 090285	10000 uL	LC537SPIM_00015	50 uL	Perfluorobutane Sulfonate (PFBS)	448.8 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	448.8 ng/mL

## REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	53.7429 ng/mL
							Perfluorohexanesulfonic acid	151.291 ng/mL
							Perfluorononanoic acid	101.553 ng/mL
							Perfluoroctanoic acid (PFOA)	99.234 ng/mL
							Perfluoroctanesulfonic acid (PFOS)	200.332 ng/mL
.LC537SPIM_00015	05/04/17	11/04/16	Methanol, Lot 104453	10000 uL	LC537-PFBS_00006	440 uL	Perfluorobutane Sulfonate	89.76 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	89.76 ug/mL
					LC537-PFHxA 00011	100 uL	Perfluoroheptanoic acid	10.7486 ug/mL
					LC537-PFHxS 00008	300 uL	Perfluorohexanesulfonic acid	30.2582 ug/mL
					LC537-PFNA 00009	200 uL	Perfluorononanoic acid	20.3105 ug/mL
					LC537-PFOA 00010	100 uL	Perfluoroctanoic acid (PFOA)	19.8468 ug/mL
					LC537-PFOS_00006	400 uL	Perfluoroctanesulfonic 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
...LC537_PFBS_00002	04/01/18		Sigma, Lot MKBP8842V				Perfluorobutanesulfonic acid (PFBS)	2040 ug/mL
..LC537-PFHxA 00011	11/04/17	11/04/16	Methanol, Lot 090285	7 mL	LC537_PFHxA 00002	0.0076 g	Perfluoroheptanoic acid	1074.86 ug/mL
..LC537_PFHxA 00002	04/01/18		Aldrich, Lot BCBM2579V				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				Perfluorohexanesulfonic acid	0.9094 g/g
..LC537-PFNA 00009	11/04/17	11/04/16	Methanol, Lot 090285	5.5 mL	LC537_PFNA 00002	0.0058 g	Perfluorononanoic acid	1015.53 ug/mL
..LC537_PFNAs 00002	04/01/18		TCI America, Lot QN44F				Perfluorononanoic acid	0.963 g/g
..LC537-PFOA 00010	11/04/17	11/04/16	Methanol, Lot 090285	7.5 mL	LC537_PFOA 00002	0.0149 g	Perfluoroctanoic acid (PFOA)	1984.68 ug/mL
..LC537_PFOA 00002	11/04/18		Fluka, Lot SZBD308XV				Perfluoroctanoic 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	Perfluoroctanesulfonic acid (PFOS)	1001.66 ug/mL
...LC537_PFOS_00002	08/09/17		Fluka, Lot SZBC222XV				Perfluoroctanesulfonic acid (PFOS)	0.9106 g/g
LC537-SU_00029	07/17/17	01/17/17	Methanol, Lot 104453	20000 uL	LCMPFDA_00012	80 uL	13C2 PFDA	0.2 ug/mL
					LCMPFHxA_00013	80 uL	13C2 PFHxA	0.2 ug/mL
.LCMPFDA_00012	09/30/21		Wellington Laboratories, Lot MPFDA0916				13C2 PFDA	50 ug/mL
.LCMPFHxA_00013	04/08/21		Wellington Laboratories, Lot MPFHxA0416				13C2 PFHxA	50 ug/mL

Reagent

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**LC537\_PFBS\_00002**

C: 4/1/15 SPV

**SIGMA-ALDRICH®**

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

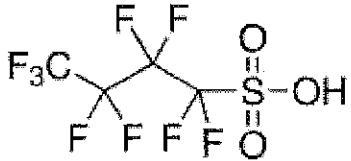
Outside USA: eurtechserv@sial.com

Product Name:

**Certificate of Analysis**

Nonafluorobutane-1-sulfonic acid - 97%

**Product Number:** 562629  
**Batch Number:** MKBP8842V  
**Brand:** ALDRICH  
**CAS Number:** 375-73-5  
**MDL Number:** MFCD01320794  
**Formula:** C<sub>4</sub>H<sub>9</sub>O<sub>3</sub>S  
**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*

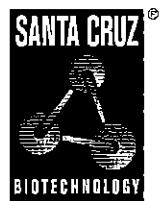
Jamie Gleason, Manager  
 Quality Control  
 Milwaukee, Wisconsin US

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: Nonanefluorobutane-1-sulfonic acid  
CAS Number: 375-73-5  
Molecular Formula: C<sub>4</sub>H<sub>9</sub>F<sub>9</sub>O<sub>3</sub>S  
Molecular Weight: 300.10  
Lot Number: H0112

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

Test Conditions: Refractive Index: n<sub>20/D</sub>

Reagent

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**LC537\_PFHpA\_00002**

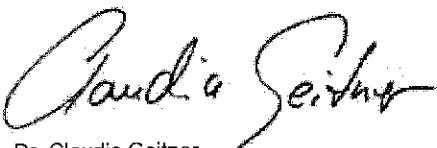
R: 4/1/15 SV

## Certificate of Analysis

Product Name: PERFLUOROHEPTANOIC ACID  
99 %  
Product Number: 342041  
Batch Number: BCBM2579V  
Brand: Aldrich  
CAS Number: 375-85-9  
Formula:  $\text{CF}_3(\text{CF}_2)_5\text{CO}_2\text{H}$   
Formula Weight: 364.06  
Quality Release Date: 06 DEC 2013  
Recommended Retest Date: OCT 2018

P F H P A

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 %)	$\geq 98.5 \%$	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: 4/11/15 SW

**SIGMA-ALDRICH®**3050 Spruce Street, Saint Louis, MO 63103 USA  
Email USA: techserv@sial.com Outside USA: eurtechserv@sial.com**Certificate of Analysis**

**Product Name:** TRIDECAFLUOROHEXANE-1-SULFONIC ACID POTASSIUM SALT  
**Spec:** >= 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>x</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

$$\text{MW corr} = \frac{(K_{\text{form}}) - (K) + (H)}{(438.20 - 391.0 + 1.0)} = 0.91307 \quad (\text{anion form})$$

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

R: 4/11/15

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\_PFNA\_00002**

R: 4/1/15 SKV



## Certificate of Analysis

Apr 2, 2015 (JST)

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

Chemical Name: Heptadecafluoronanoic 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: +1-866-520-1075 / +1-503-283-1987

E-mail: Sales-US@TCIchemicals.com

PFNA

Reagent

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**LC537\_PFOA\_00002**

13/21/15 PV

**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

Pentadecafluorooctanoic acid OEKANAL®

PFCA

**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**

Identify (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

**GC/MS-Method****Analytical Department****Article:** Pentadecafluoroctanoic 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)

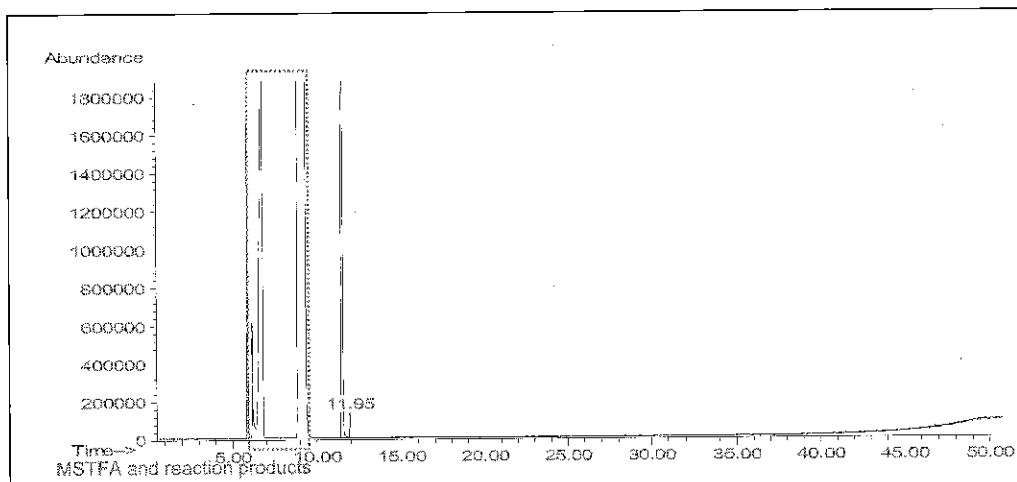
Detector: MSD

Mass range: 10-600 amu (Scan mode)

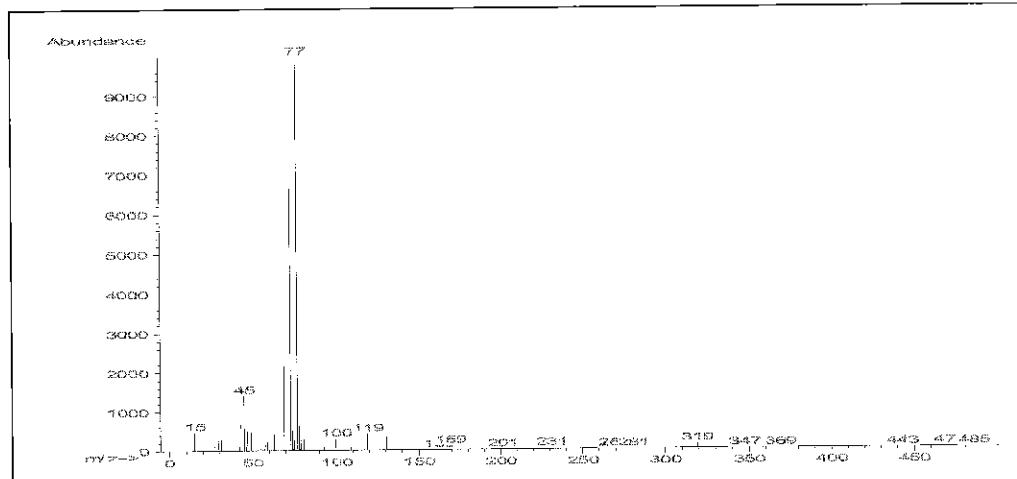
Evaluation: Purity: Total Ion Chromatogram  
(MSTFA and reaction products blinded out in report)

Identity: Mass spectrum complies

Operator: Ahrens / 2013-11-13

**Total Ion Chromatogram:**

Ret.time Area Area-% Com

11.54 565.1670 99.4 Pentadecafluoroctanoic 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%

PFOA

Lot No.: D24Y026

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.

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.Email: Eurosales@alfa.com

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Email: UKsales@alfa.com

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Fax: 0800 10 20 67 or  
+33 (0)3 8862 6864  
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**KOREA**  
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Fax: +82-2-3140-6002  
Email: 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 - ~~exp date~~

Article/Product: 33829

Batch : SZBC222XV

Heptadecafluoroctanesulfonic acid potassium salt OEKANAL®

PFOS-K<sup>+</sup>**Reference Material (RM)****1. General Information**Formula: C<sub>8</sub>F<sub>17</sub>KO<sub>3</sub>S

Molar mass: 538.22 g/Mole

CAS-No.: [2795-39-3]

Recomm. storage temp.: roomtemp.

Usage : PFOS

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  
Assay (LC-MS)  
Date of Analysis

complying  
98 %  
10.Aug.2012

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

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\_PFOS2\_00001**

## Certificate of Analysis

Inv 820  
12LCMS 0579

**Product Name:** HEPTADECAFLUOROOCTANESULFONIC ACID TETRAETHYLMAMMONIUM 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

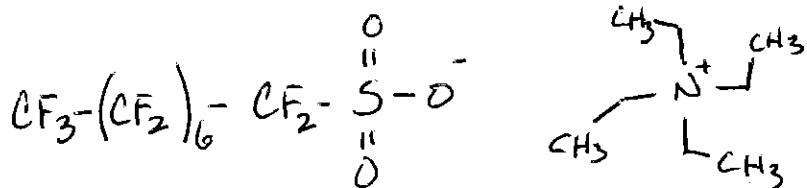
**CAS Number:** 56773-42-3

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

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

0.7946 - 79.16% = 77.87%  
02h 7-26-12

*E. Schwärzler*Edeltraud Schwärzler, 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	322.96%	-
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:** Heptadecafluoroctanesulfonic acid tetraethylammonium salt  
98 %  
**Product Number:** 365289  
**Product Brand:** Aldrich  
**Lot:** BCBF5116V  
**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  
**Date of Issue:** 30-MAR-11

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**Country of Origin** China

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

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Reagent

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**LCM2PFOA\_00005**

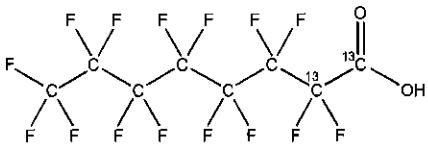


# WELLINGTON LABORATORIES

## 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



<b>MOLECULAR FORMULA:</b>	<sup>13</sup> C <sub>2</sub> <sup>12</sup> C <sub>6</sub> HF <sub>15</sub> O <sub>2</sub>	<b>MOLECULAR WEIGHT:</b>	416.05
<b>CONCENTRATION:</b>	50 ± 2.5 µg/ml	<b>SOLVENT(S):</b>	Methanol
<b>CHEMICAL PURITY:</b>	>98%	<b>ISOTOPIC PURITY:</b>	>99% <sup>13</sup> C
<b>LAST TESTED:</b> (mm/dd/yyyy)	06/19/2013		(1,2- <sup>13</sup> C <sub>2</sub> )
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	06/19/2018		
<b>RECOMMENDED STORAGE:</b>	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](mailto: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.

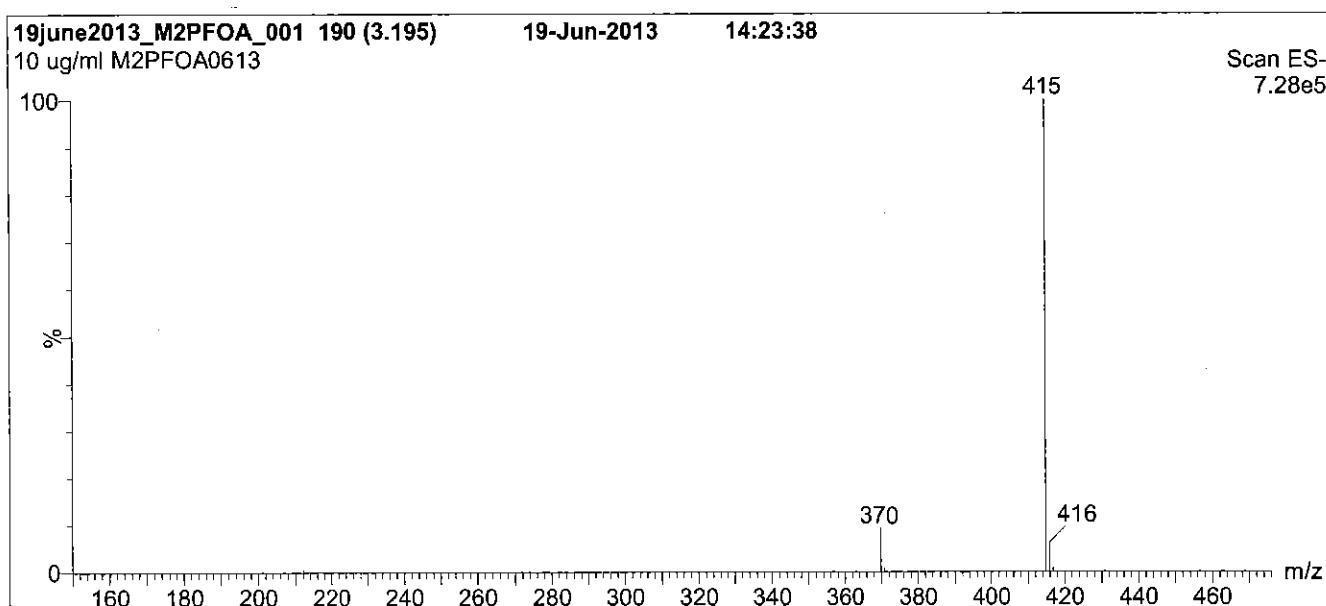
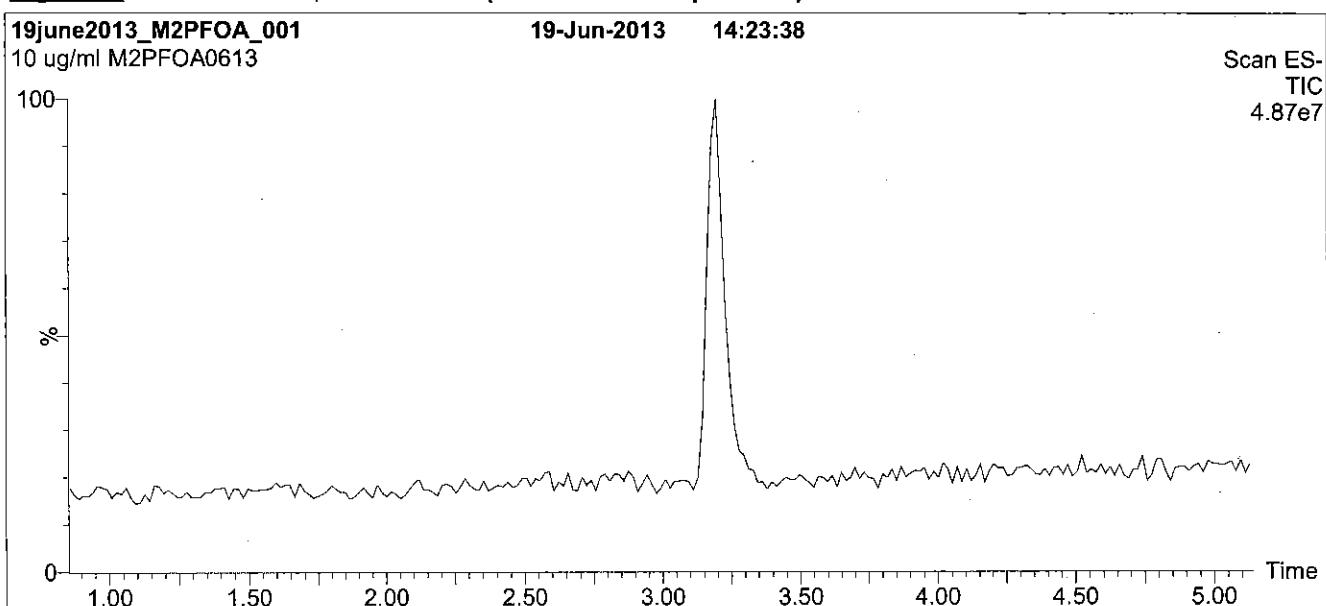
**QUALITY MANAGEMENT:**

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 ACCLASS (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 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 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

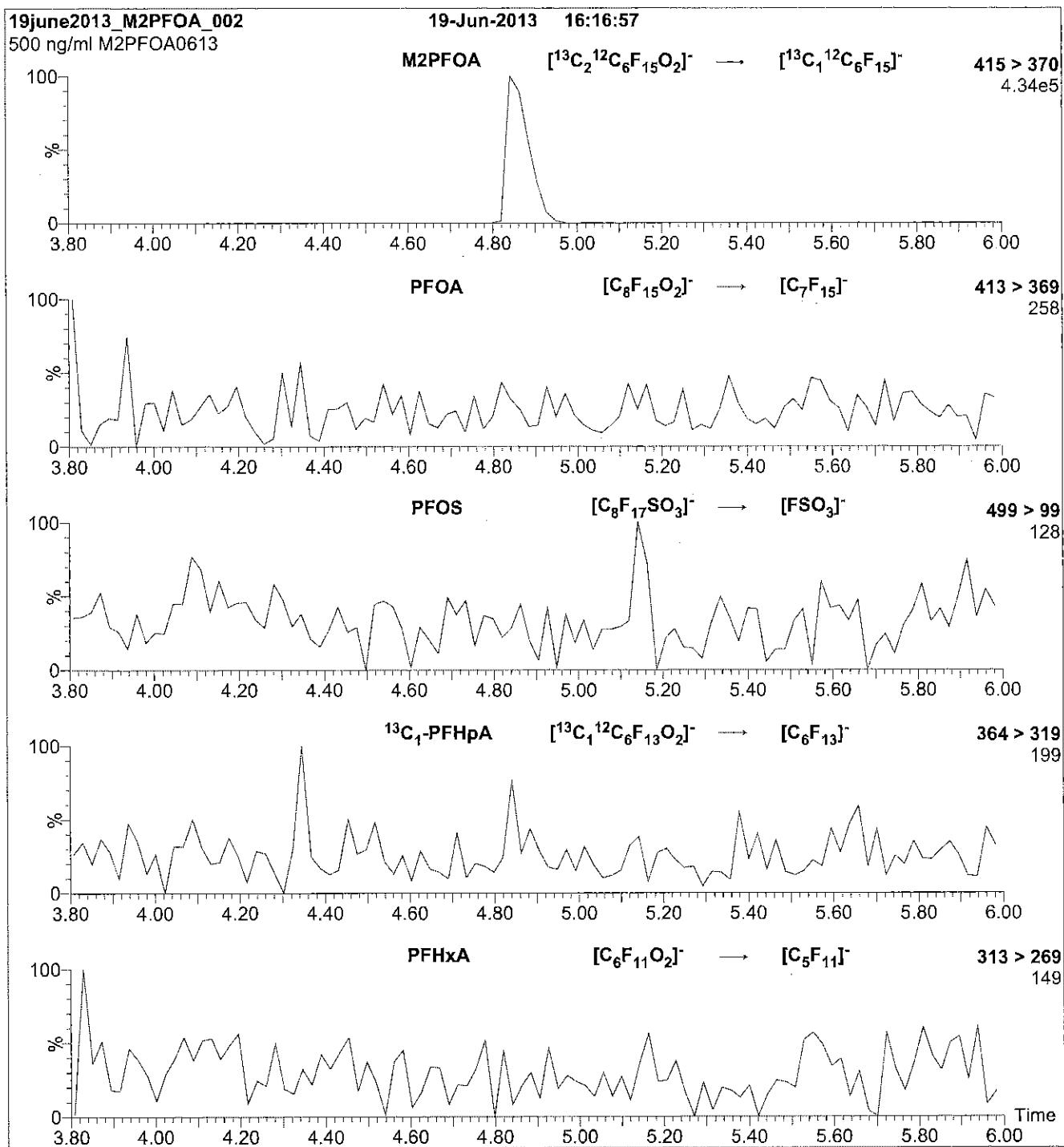
Flow: 300 µl/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

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

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



#### **Conditions for Figure 2:**

**Injection:** Direct loop injection  
10 µl (500 ng/ml M2PFOA)

## MS Parameters

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

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

Flow: 300  $\mu$ l/min

Reagent

---

**LCMPFDA\_00008**



605243

ID: LCMPFDA\_00008  
Exp: 08/19/20 Prpd: CBW  
13C2-Perfluorodecanoic a

Rec. 3/29/16 JRB ✓



# WELLINGTON

## LABORATORIES

## CERTIFICATE OF ANALYSIS

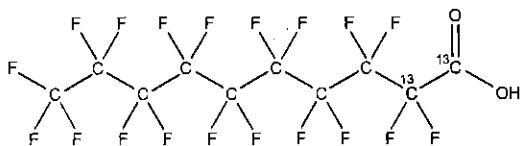
### DOCUMENTATION

PRODUCT CODE:

MPFDA

LOT NUMBER: MPFDA0815COMPOUND:Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acidSTRUCTURE: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: 516.07CONCENTRATION:

50 ± 2.5 µg/ml

SOLVENT(S): MethanolCHEMICAL PURITY:

&gt;98%

ISOTOPIC PURITY: >99% <sup>13</sup>CLAST 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

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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:**

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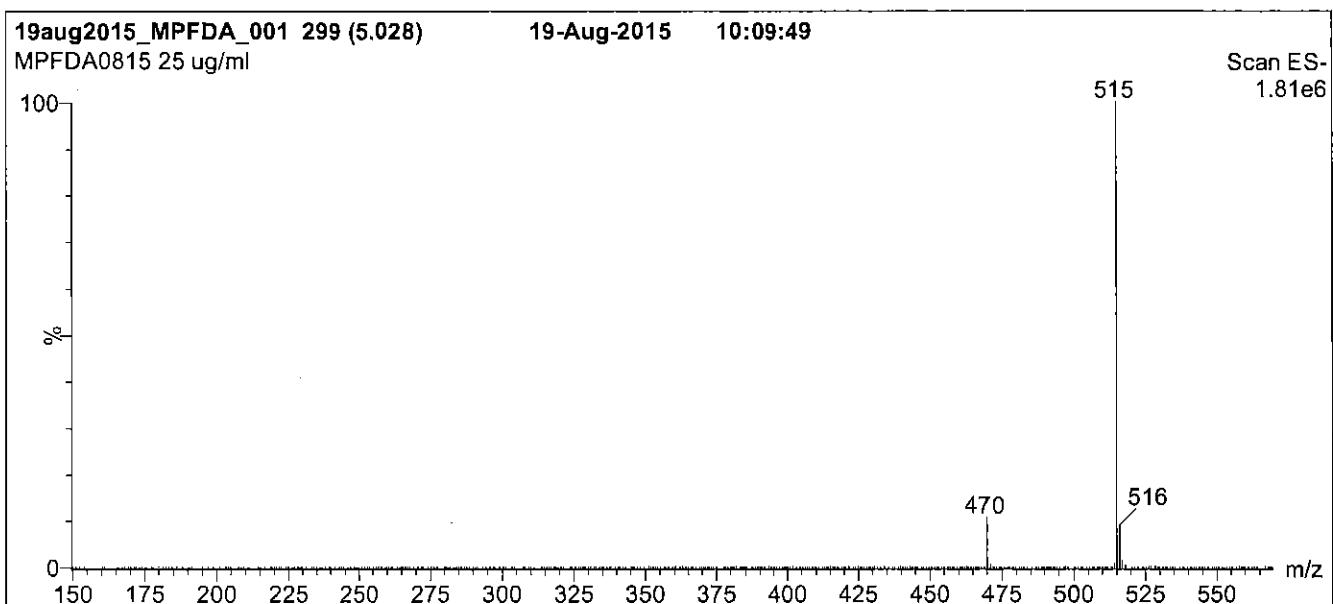
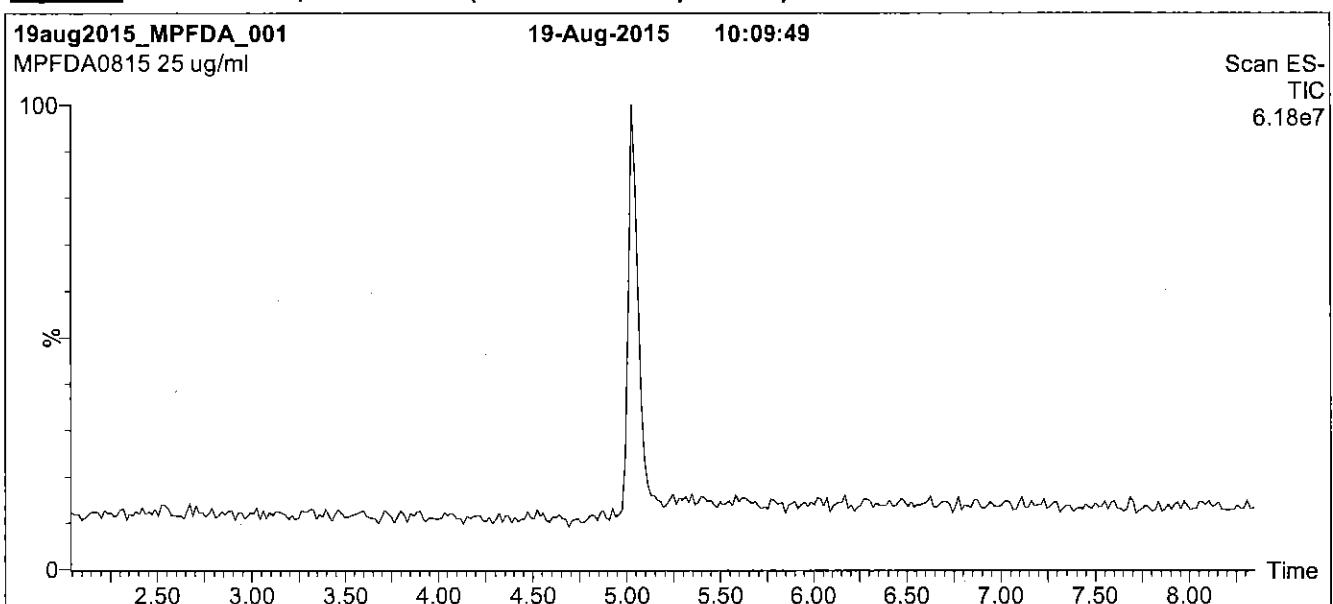
#### **QUALITY MANAGEMENT:**

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).



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



**Conditions for Figure 1:**

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

**Chromatographic Conditions**

Column: Acuity 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 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

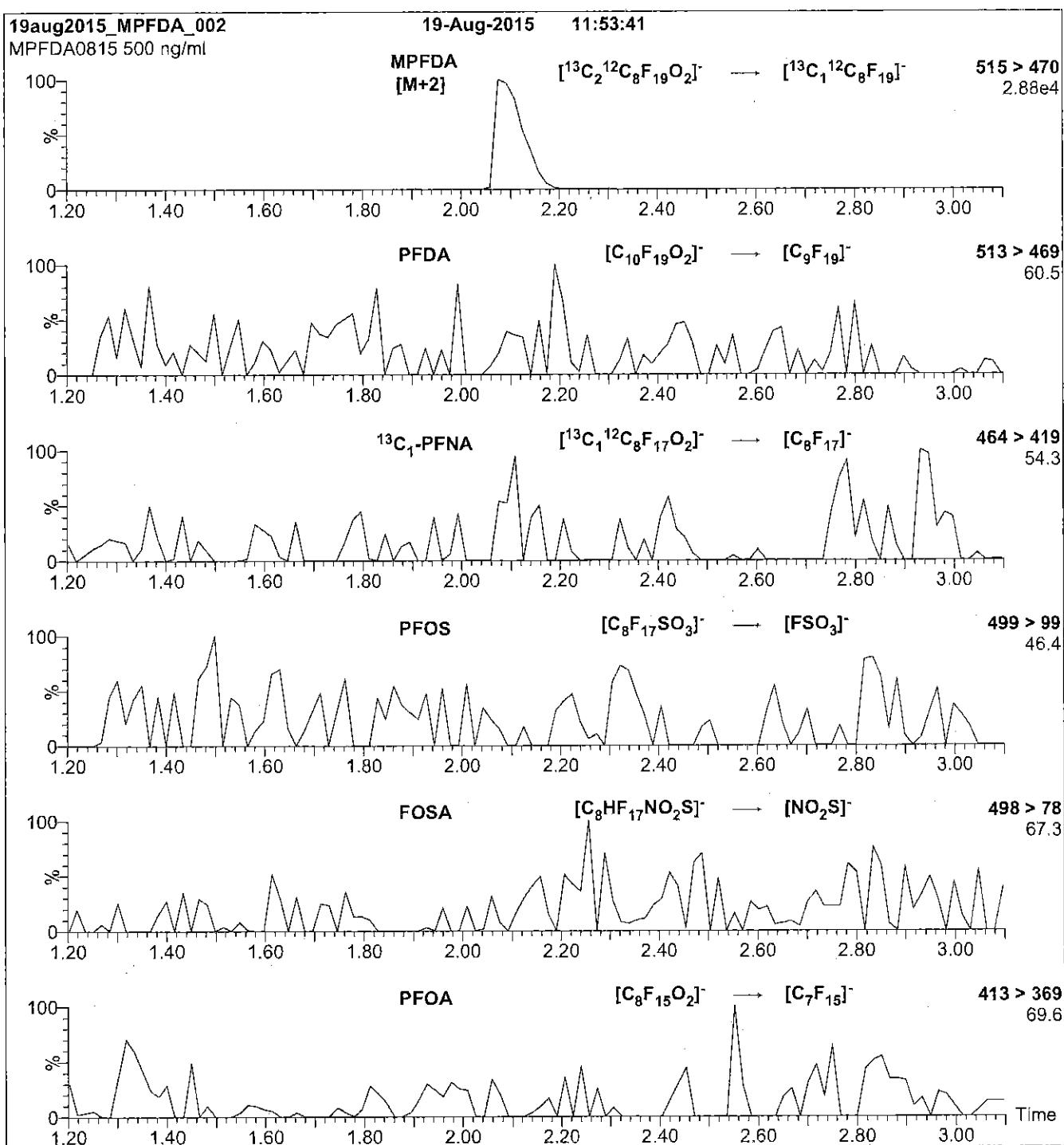
Flow: 300 µl/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

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

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



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFDA)

**MS Parameters**

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

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  $\mu\text{l}/\text{min}$

Reagent

---

**LCMPFHxA\_00009**



605244

ID: LCMPFHxA\_00009

Exp: 04/09/20 Prp: CBW

13C2-Perfluorohexanoic ac

Rec. 3/29/16 JRB ✓



**WELLINGTON  
LABORATORIES**

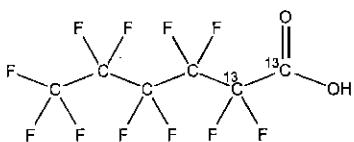
**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**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**CHEMICAL PURITY:**

&gt;98%

**SOLVENT(S):** Methanol**LAST TESTED:** (mm/dd/yyyy)

04/09/2015

Water (&lt;1%)

**EXPIRY DATE:** (mm/dd/yyyy)

04/09/2020

**ISOTOPIC PURITY:** >99%<sup>13</sup>C**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

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

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

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

**ADDITIONAL INFORMATION:**

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

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

Certified By:

B.G. Chittim

Date: 04/14/2015

(mm/dd/yyyy)

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

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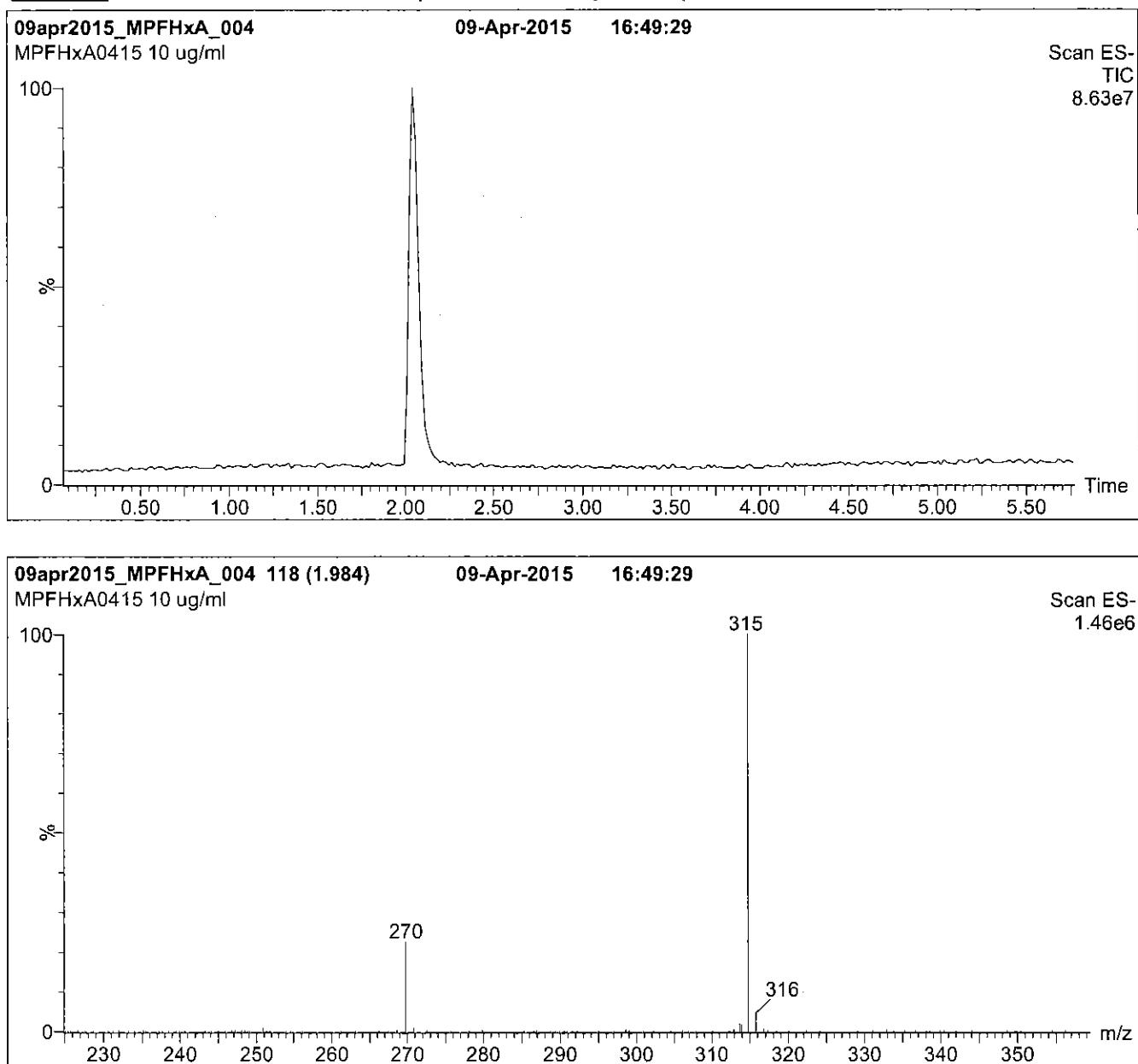
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**Figure 1:** MPFHxA; LC/MS Data (TIC and Mass Spectrum)



**Conditions for Figure 1:**

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

**Chromatographic Conditions**

Column: Acuity 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

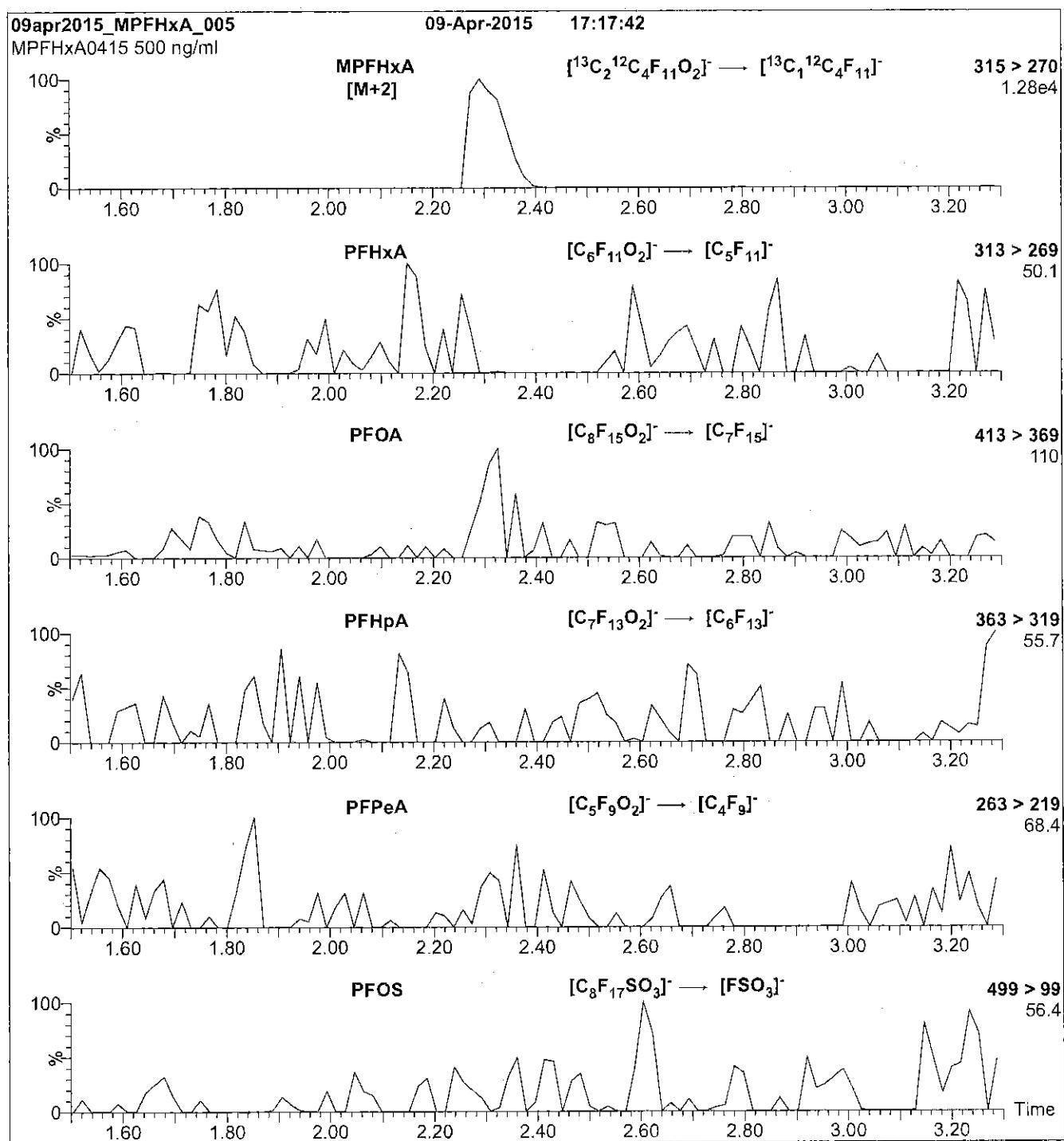
Flow: 300  $\mu$ l/min

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

**MS Parameters**

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

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  $\mu\text{l}/\text{min}$

Reagent

---

**LCMPFOS\_00018**

R: SBe 9/22/16



738686  
ID: LCMPFOS\_00018  
Exp: 08/03/21 Ppd: SBC  
13C4-Perfluorooctanesulfonate

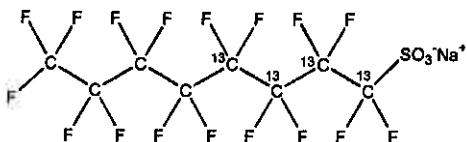


WELLINGTON  
LABORATORIES

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<sub>4</sub>)  
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)

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

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:**

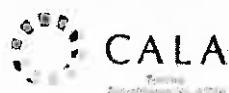
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

#### **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.

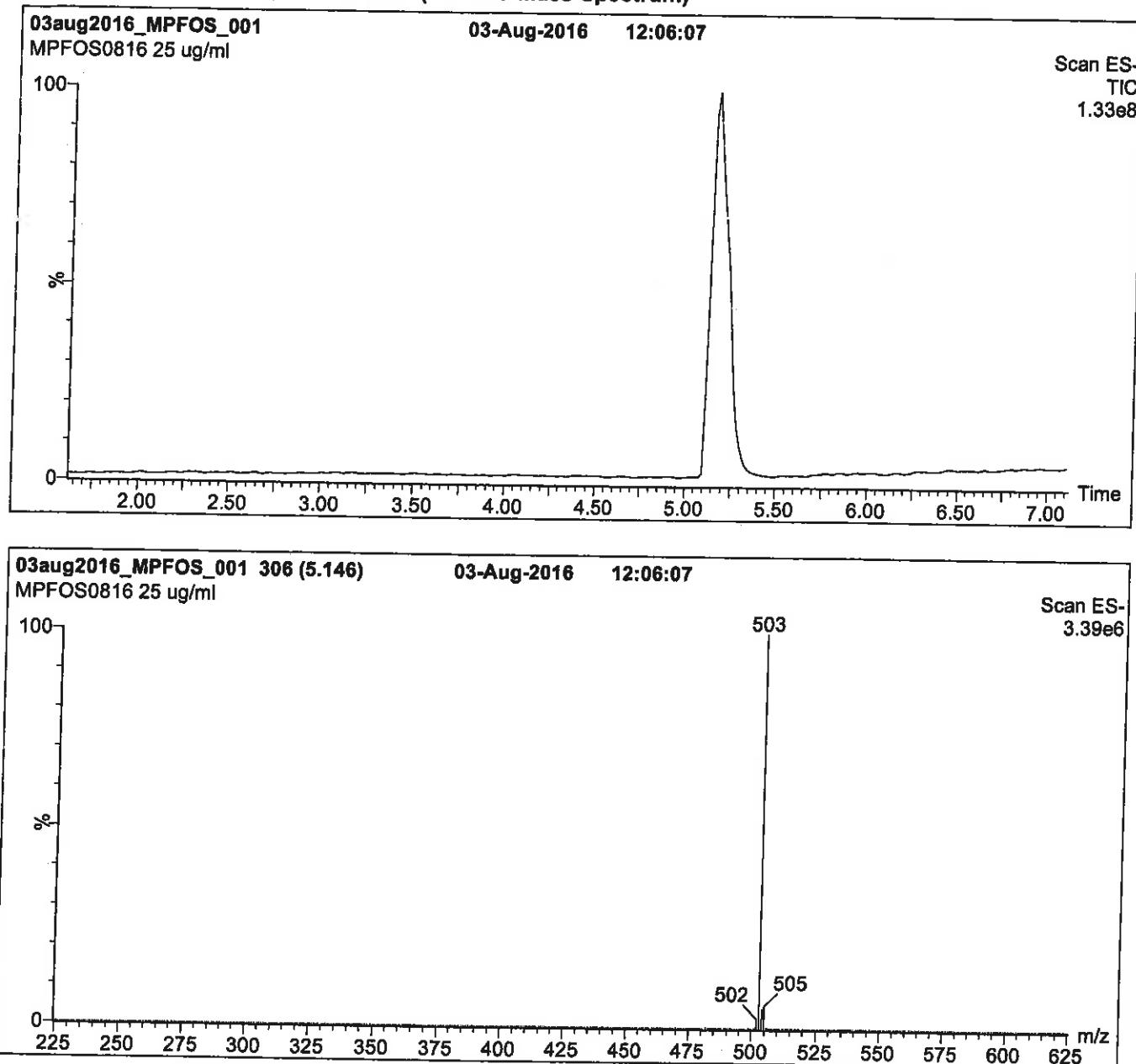
#### **QUALITY MANAGEMENT:**

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:** 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 μm, 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

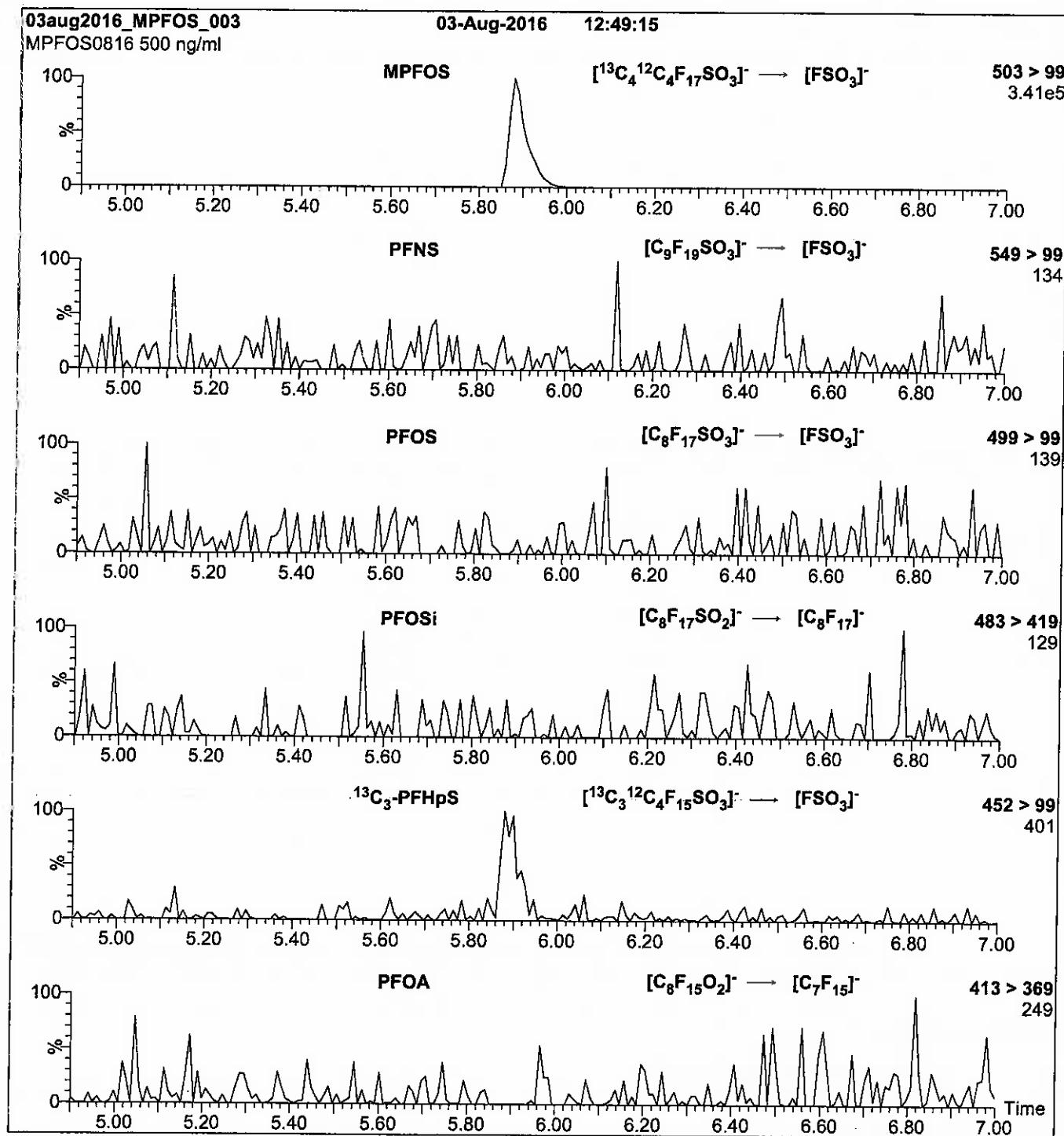
Flow: 300 μl/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

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

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



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu\text{l}$  (500 ng/ml MPFOS)

**MS Parameters**

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

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

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

# **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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Matrix: Water Level: Low  
GC Column (1): Geminic18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
WI -CV-1RW68-0117	320-25352-1	88	106
WI -CV-1FB68-0117	320-25352-2	100	112
WI -CV-1RW69-0117	320-25352-3	93	92
WI -CV-1FB69-0117	320-25352-4	94	115
WI -CV-1RW70-0117	320-25352-5	108	119
WI -CV-1FB70-0117	320-25352-6	94	105
WI -CV-1RW71-0117	320-25352-7	98	107
WI -CV-1FB71-0117	320-25352-8	97	105
	MB 320-148300/1-A	94	105
	LCS 320-148300/2-A	93	109
WI -CV-1RW70-0117 MS	320-25352-5 MS	94	99
WI -CV-1RW70-0117 MSD	320-25352-5 MSD	95	104

PFHxA = 13C2 PFHxA  
PFDA = 13C2 PFDA

QC LIMITS  
70-130  
70-130

# Column to be used to flag recovery values

FORM II 537

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1

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

Matrix: Water Level: Low Lab File ID: 2017.01.31A\_537\_009.d

Lab ID: LCS 320-148300/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.300	0.293	98	70-130	
Perfluorooctanoic acid (PFOA)	0.146	0.141	96	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.673	0.606	90	70-130	

# Column to be used to flag recovery and RPD values

FORM III 537

FORM III  
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Matrix: Water Level: Low Lab File ID: 2017.01.31A\_537\_031.d  
Lab ID: 320-25352-5 MS Client ID: WI -CV-1RW70-0117 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.0406	0.050 U	0.0285 J	70	70-130	M
Perfluorooctanoic acid (PFOA)	0.0201	0.025 U	0.0153 J	76	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.0909	0.12 U	0.0765 J	84	70-130	

# Column to be used to flag recovery and RPD values

FORM III 537

FORM III  
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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

Matrix: Water Level: Low Lab File ID: 2017.01.31A\_537\_032.d

Lab ID: 320-25352-5 MSD Client ID: WI -CV-1RW70-0117 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanesulfonic acid (PFOS)	0.0401	0.0294 J	74	3	30	70-130	M
Perfluorooctanoic acid (PFOA)	0.0198	0.0159 J	80	3	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.0897	0.0785 J	88	3	30	70-130	

# Column to be used to flag recovery and RPD values

FORM III 537

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab File ID: 2017.01.31A\_537\_008.d Lab Sample ID: MB 320-148300/1-A  
Matrix: Water Date Extracted: 01/30/2017 14:07  
Instrument ID: A8\_N Date Analyzed: 01/31/2017 17:41  
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-148300/2-A	2017.01.31A 537 009.d	01/31/2017 17:45
WI -CV-1RW68-0117	320-25352-1	2017.01.31A 537 024.d	01/31/2017 18:51
WI -CV-1FB68-0117	320-25352-2	2017.01.31A 537 025.d	01/31/2017 18:55
WI -CV-1RW69-0117	320-25352-3	2017.01.31A 537 026.d	01/31/2017 19:00
WI -CV-1FB69-0117	320-25352-4	2017.01.31A 537 027.d	01/31/2017 19:04
WI -CV-1RW70-0117	320-25352-5	2017.01.31A 537 028.d	01/31/2017 19:09
WI -CV-1RW70-0117 MS	320-25352-5 MS	2017.01.31A 537 031.d	01/31/2017 19:22
WI -CV-1RW70-0117 MSD	320-25352-5 MSD	2017.01.31A 537 032.d	01/31/2017 19:26
WI -CV-1FB70-0117	320-25352-6	2017.01.31A 537 033.d	01/31/2017 19:31
WI -CV-1RW71-0117	320-25352-7	2017.01.31A 537 034.d	01/31/2017 19:35
WI -CV-1FB71-0117	320-25352-8	2017.01.31A 537 035.d	01/31/2017 19:39

FORM VIII  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
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 320-148472/4 CCVL		2383498	2.00	6668385	2.24		
CCV 320-148472/5 CCVIS		2405110	1.99	6668803	2.24		
MB 320-148300/1-A		2530107	1.99	6516236	2.24		
LCS 320-148300/2-A		2425127	1.99	6406861	2.23		
CCV 320-148472/17 CCVIS		2513223	1.98	6723009	2.22		
CCV 320-148473/17 CCVIS		2513223	1.98	6723009	2.22		
320-25352-1	WI -CV-1RW68-0117	2598678	1.97	6632746	2.22		
320-25352-2	WI -CV-1FB68-0117	2528683	1.98	6512685	2.22		
320-25352-3	WI -CV-1RW69-0117	2536414	1.98	6620633	2.22		
320-25352-4	WI -CV-1FB69-0117	2529253	1.97	6463977	2.22		
320-25352-5	WI -CV-1RW70-0117	2186468	1.97	5609138	2.22		
CCV 320-148473/29 CCVIS		2530721	1.97	6584918	2.22		
CCV 320-148474/29 CCVIS		2530721	1.97	6584918	2.22		
320-25352-5 MS	WI -CV-1RW70-0117 MS	2594579	1.98	6560082	2.22		
320-25352-5 MSD	WI -CV-1RW70-0117 MSD	2645221	1.97	6629871	2.22		
320-25352-6	WI -CV-1FB70-0117	2600919	1.98	6670155	2.22		
320-25352-7	WI -CV-1RW71-0117	2489518	1.98	6560667	2.22		
320-25352-8	WI -CV-1FB71-0117	2549074	1.97	6583393	2.22		
CCV 320-148474/36 CCVIS		2593892	1.97	6661663	2.22		

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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Sample No.: CCV 320-148472/5 Date Analyzed: 01/31/2017 17:27  
Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
Lab File ID (Standard): 2017.01.31A\_537\_005 Heated Purge: (Y/N) N  
Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2405110	1.99	6668803	2.24		
UPPER LIMIT	3367154	2.49	9336324	2.74		
LOWER LIMIT	1683577	1.49	4668162	1.74		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-148300/1-A		2530107	1.99	6516236	2.24	
LCS 320-148300/2-A		2425127	1.99	6406861	2.23	

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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Sample No.: CCV 320-148472/17 Date Analyzed: 01/31/2017 18:20  
Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
Lab File ID (Standard): 2017.01.31A\_537\_017 Heated Purge: (Y/N) N  
Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2513223	1.98	6723009	2.22		
UPPER LIMIT	3518512	2.48	9412213	2.72		
LOWER LIMIT	1759256	1.48	4706106	1.72		
LAB SAMPLE ID	CLIENT SAMPLE ID					
MB 320-148300/1-A		2530107	1.99	6516236	2.24	
LCS 320-148300/2-A		2425127	1.99	6406861	2.23	

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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Sample No.: CCV 320-148473/17 Date Analyzed: 01/31/2017 18:20  
Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
Lab File ID (Standard): 2017.01.31A\_537\_017 Heated Purge: (Y/N) N  
Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2513223	1.98	6723009	2.22		
UPPER LIMIT	3518512	2.48	9412213	2.72		
LOWER LIMIT	1759256	1.48	4706106	1.72		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-25352-1	WI -CV-1RW68-0117	2598678	1.97	6632746	2.22	
320-25352-2	WI -CV-1FB68-0117	2528683	1.98	6512685	2.22	
320-25352-3	WI -CV-1RW69-0117	2536414	1.98	6620633	2.22	
320-25352-4	WI -CV-1FB69-0117	2529253	1.97	6463977	2.22	
320-25352-5	WI -CV-1RW70-0117	2186468	1.97	5609138	2.22	

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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Sample No.: CCV 320-148473/29 Date Analyzed: 01/31/2017 19:13  
Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
Lab File ID (Standard): 2017.01.31A\_537\_029 Heated Purge: (Y/N) N  
Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2530721	1.97	6584918	2.22		
UPPER LIMIT	3543009	2.47	9218885	2.72		
LOWER LIMIT	1771505	1.47	4609443	1.72		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-25352-1	WI -CV-1RW68-0117	2598678	1.97	6632746	2.22	
320-25352-2	WI -CV-1FB68-0117	2528683	1.98	6512685	2.22	
320-25352-3	WI -CV-1RW69-0117	2536414	1.98	6620633	2.22	
320-25352-4	WI -CV-1FB69-0117	2529253	1.97	6463977	2.22	
320-25352-5	WI -CV-1RW70-0117	2186468	1.97	5609138	2.22	

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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Sample No.: CCV 320-148474/29 Date Analyzed: 01/31/2017 19:13  
Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
Lab File ID (Standard): 2017.01.31A\_537\_029 Heated Purge: (Y/N) N  
Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2530721	1.97	6584918	2.22		
UPPER LIMIT	3543009	2.47	9218885	2.72		
LOWER LIMIT	1771505	1.47	4609443	1.72		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-25352-5 MS	WI -CV-1RW70-0117 MS	2594579	1.98	6560082	2.22	
320-25352-5 MSD	WI -CV-1RW70-0117 MSD	2645221	1.97	6629871	2.22	
320-25352-6	WI -CV-1FB70-0117	2600919	1.98	6670155	2.22	
320-25352-7	WI -CV-1RW71-0117	2489518	1.98	6560667	2.22	
320-25352-8	WI -CV-1FB71-0117	2549074	1.97	6583393	2.22	

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.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Sample No.: CCV 320-148474/36 Date Analyzed: 01/31/2017 19:44  
Instrument ID: A8\_N GC Column: GeminiC18 3x100 ID: 3 (mm)  
Lab File ID (Standard): 2017.01.31A\_537\_036 Heated Purge: (Y/N) N  
Calibration ID: 27929

	13PFOA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
12/24 HOUR STD	2593892	1.97	6661663	2.22		
UPPER LIMIT	3631449	2.47	9326328	2.72		
LOWER LIMIT	1815724	1.47	4663164	1.72		
LAB SAMPLE ID	CLIENT SAMPLE ID					
320-25352-5 MS	WI -CV-1RW70-0117 MS	2594579	1.98	6560082	2.22	
320-25352-5 MSD	WI -CV-1RW70-0117 MSD	2645221	1.97	6629871	2.22	
320-25352-6	WI -CV-1FB70-0117	2600919	1.98	6670155	2.22	
320-25352-7	WI -CV-1RW71-0117	2489518	1.98	6560667	2.22	
320-25352-8	WI -CV-1FB71-0117	2549074	1.97	6583393	2.22	

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.: 320-25352-1  
 SDG No.:  
 Client Sample ID: WI -CV-1RW68-0117 Lab Sample ID: 320-25352-1  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_024.d  
 Analysis Method: 537 Date Collected: 01/25/2017 09:11  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 229.2 (mL) Date Analyzed: 01/31/2017 18:51  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture:  
 Analysis Batch No.: 148473 GPC Cleanup: (Y/N) N  
 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.052	U	0.065	0.052	0.017
335-67-1	Perfluorooctanoic acid (PFOA)	0.026	U	0.033	0.026	0.010
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.052

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	88		70-130
STL00996	13C2 PFDA	106		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_024.d  
 Lims ID: 320-25352-A-1-A  
 Client ID: WI -CV-1RW68-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 18:51:29 ALS Bottle#: 16 Worklist Smp#: 24  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

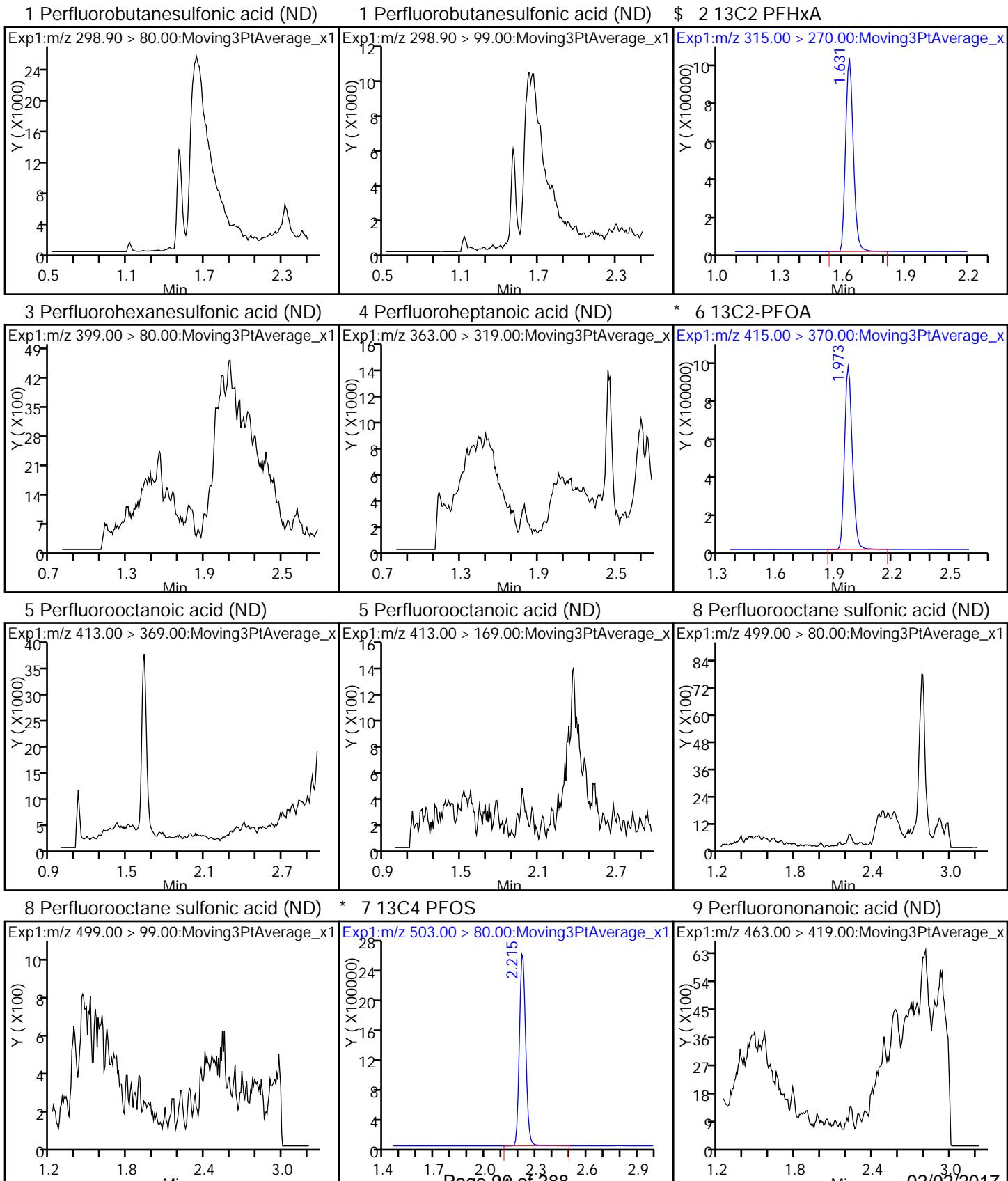
First Level Reviewer: barnettj Date: 01-Feb-2017 10:36:05

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	1.631	1.638	-0.007	1.000	2480566	8.85		4931	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2598678	10.0		5558	
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6632746	28.7		5337	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1773083	10.6		2450	

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_024.d  
 Injection Date: 31-Jan-2017 18:51:29 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-1-A Lab Sample ID: 320-25352-1  
 Client ID: WI -CV-1RW68-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 16 Worklist Smp#: 24  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

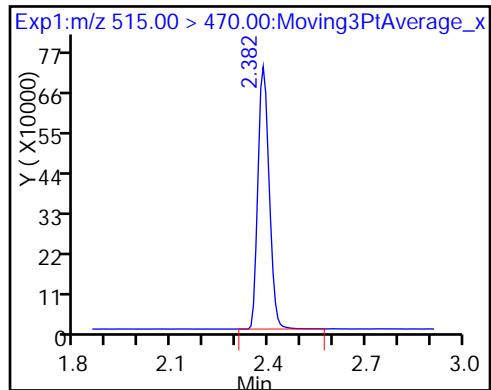


Report Date: 01-Feb-2017 10:55:32

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_024.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_024.d  
 Lims ID: 320-25352-A-1-A  
 Client ID: WI -CV-1RW68-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 18:51:29 ALS Bottle#: 16 Worklist Smp#: 24  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:36:05

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	8.85	88.45
\$ 10 13C2 PFDA	10.0	10.6	105.68

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.:  
 Client Sample ID: WI -CV-1FB68-0117 Lab Sample ID: 320-25352-2  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_025.d  
 Analysis Method: 537 Date Collected: 01/25/2017 09:12  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 254 (mL) Date Analyzed: 01/31/2017 18:55  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture:  
 Analysis Batch No.: 148473 GPC Cleanup: (Y/N) N  
 Units: ug/L

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

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	100		70-130
STL00996	13C2 PFDA	112		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_025.d  
 Lims ID: 320-25352-A-2-A  
 Client ID: WI -CV-1FB68-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 18:55:53 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:37:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									M
298.90 > 80.00	1.510	1.510	0.0	1.000	40576	0.0939		4.3	M
298.90 > 99.00	1.510	1.510	0.0	1.000	16880		2.40(0.00-0.00)	3.7	M
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2729330	10.0			6028
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2528683	10.0			4877
5 Perfluorooctanoic acid									M
413.00 > 369.00	1.988	1.980	0.008	1.000	25960	0.1110		1.4	
413.00 > 169.00	1.980	1.980	0.0	0.996	7290		3.56(0.00-0.00)	9.2	M
8 Perfluorooctane sulfonic acid									M
499.00 > 80.00	2.231	2.215	0.016	1.000	91911	0.3625		40.1	M
499.00 > 99.00	2.223	2.215	0.008	0.997	21003		4.38(0.00-0.00)	30.2	
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6512685	28.7			5250
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1828382	11.2			2494

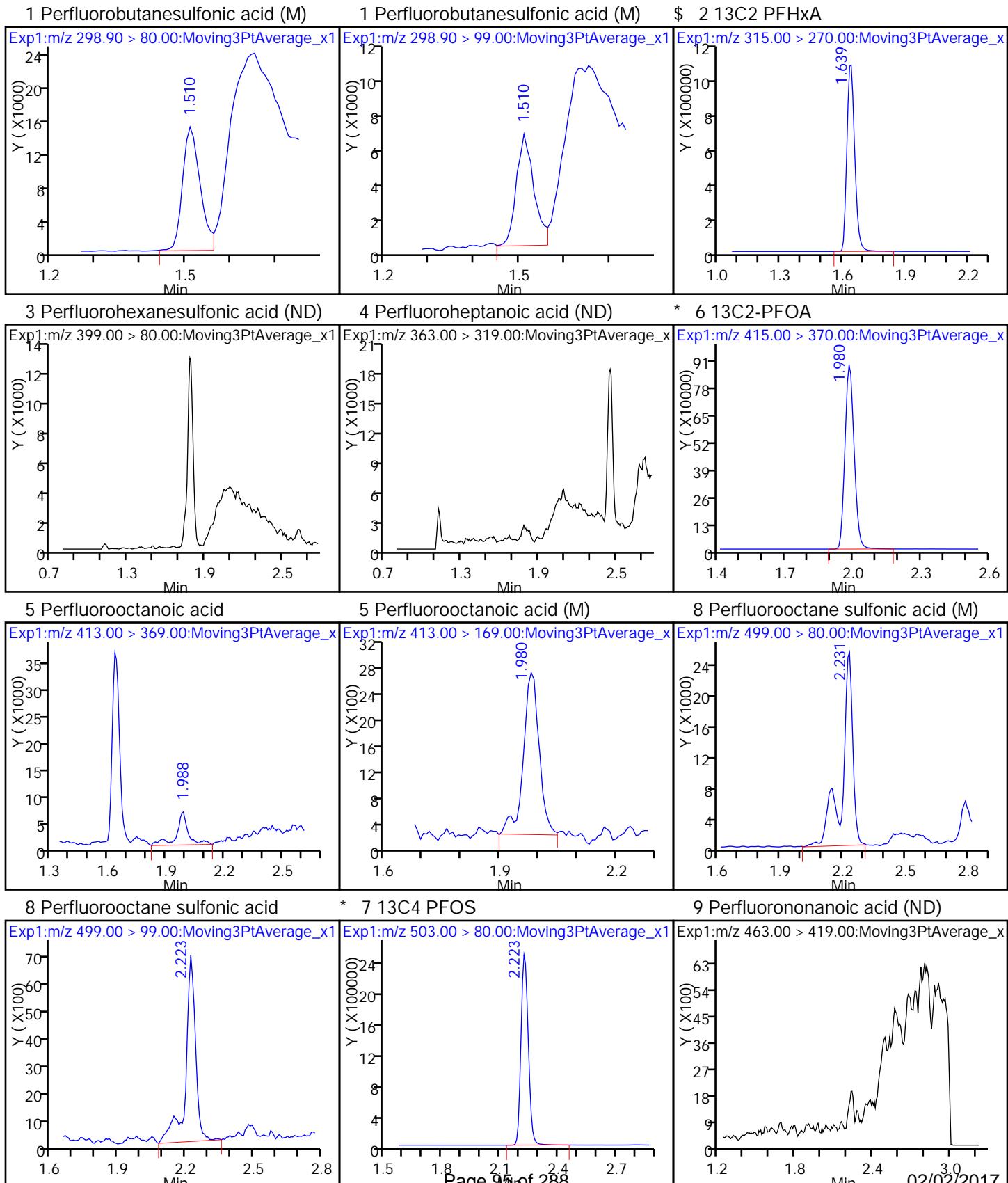
### QC Flag Legend

Review Flags

M - Manually Integrated

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

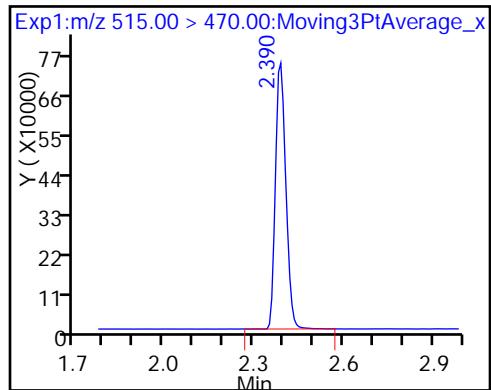


Report Date: 01-Feb-2017 10:55:33

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_025.d  
 Lims ID: 320-25352-A-2-A  
 Client ID: WI -CV-1FB68-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 18:55:53 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:37:27

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.0	100.02
\$ 10 13C2 PFDA	10.0	11.2	112.00

## TestAmerica Sacramento

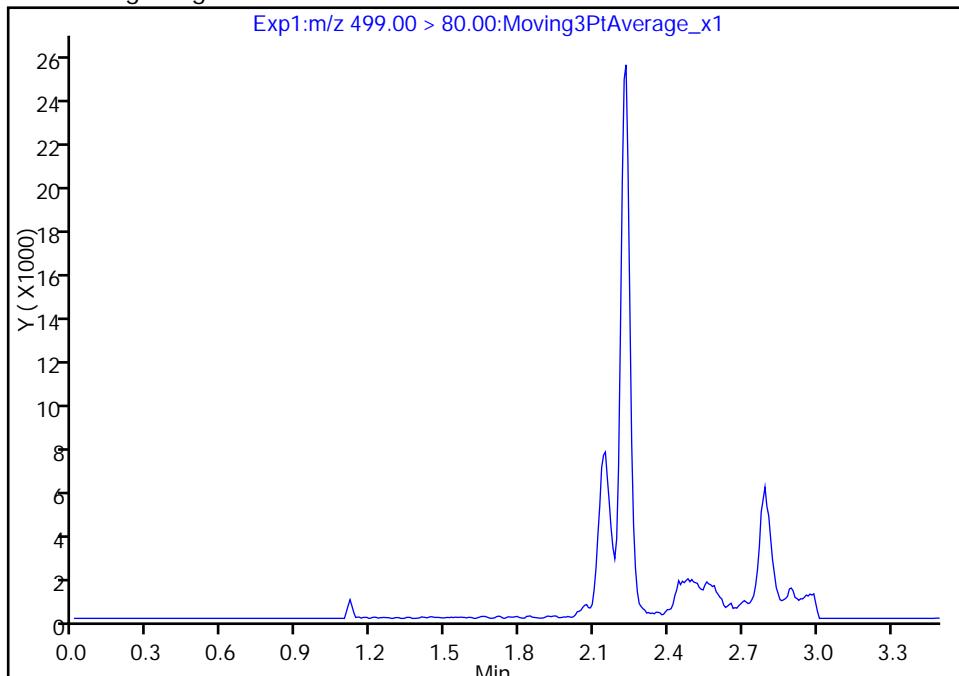
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

## 8 Perfluoroctane sulfonic acid, CAS: 1763-23-1

Signal: 1

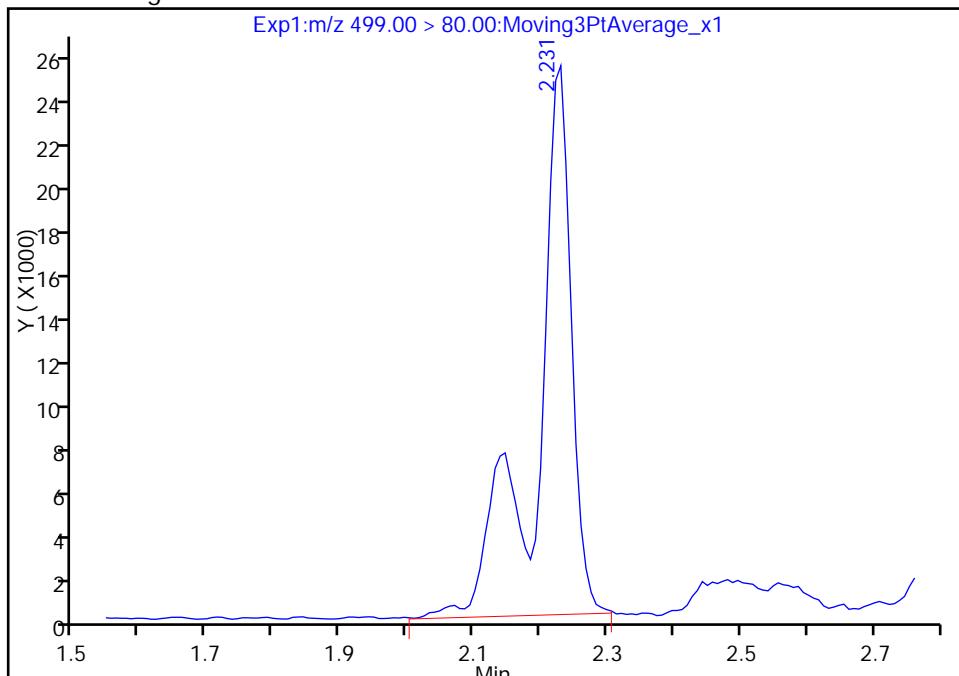
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 91911  
 Amount: 0.362541  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:37:27

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

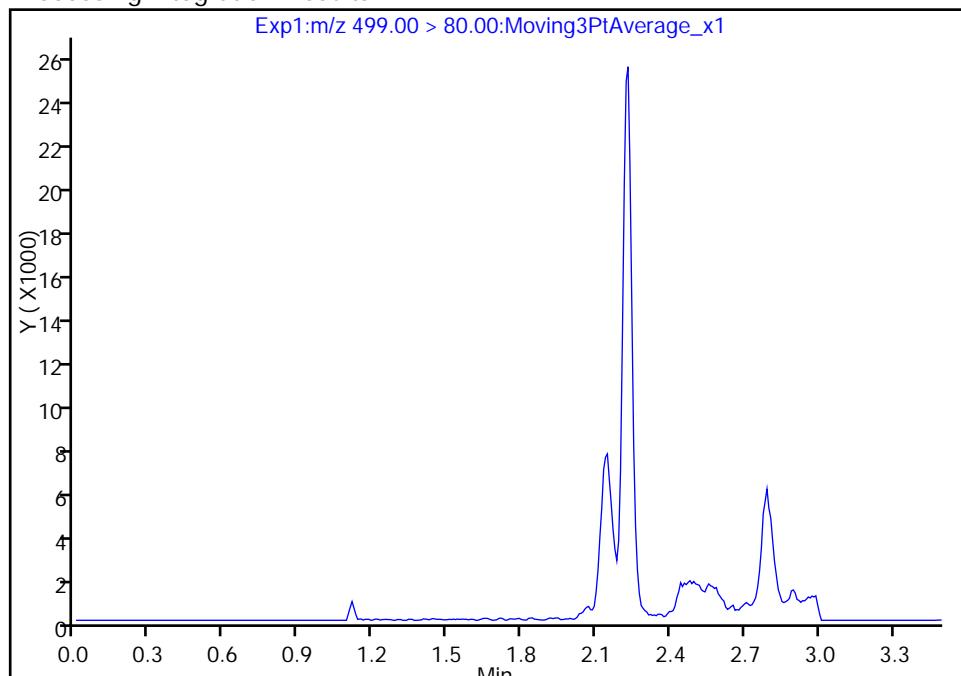
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

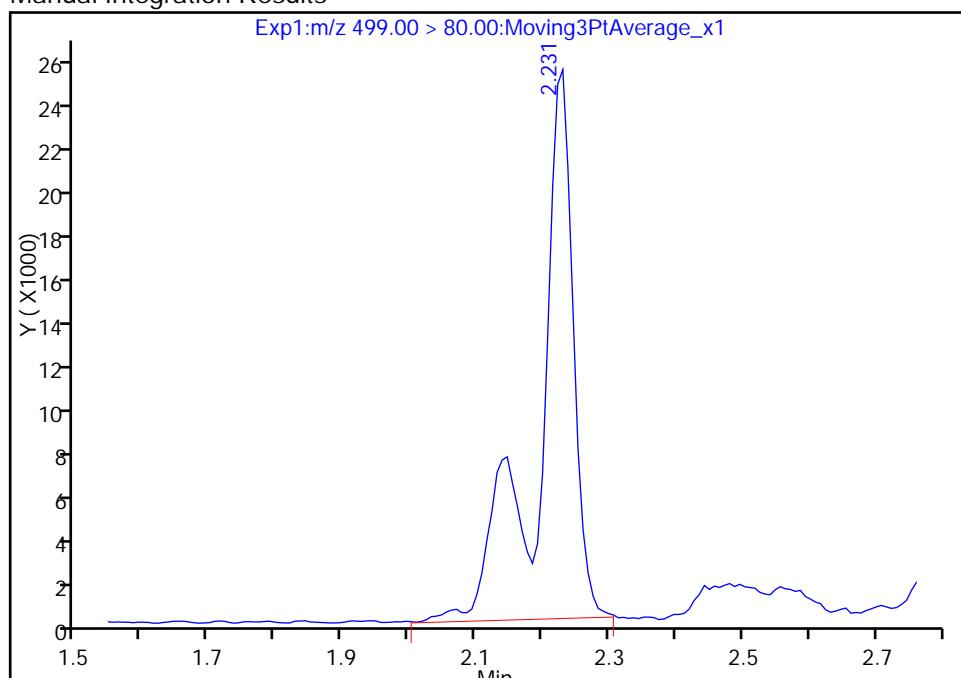
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 91911  
 Amount: 0.362541  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:37:27

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

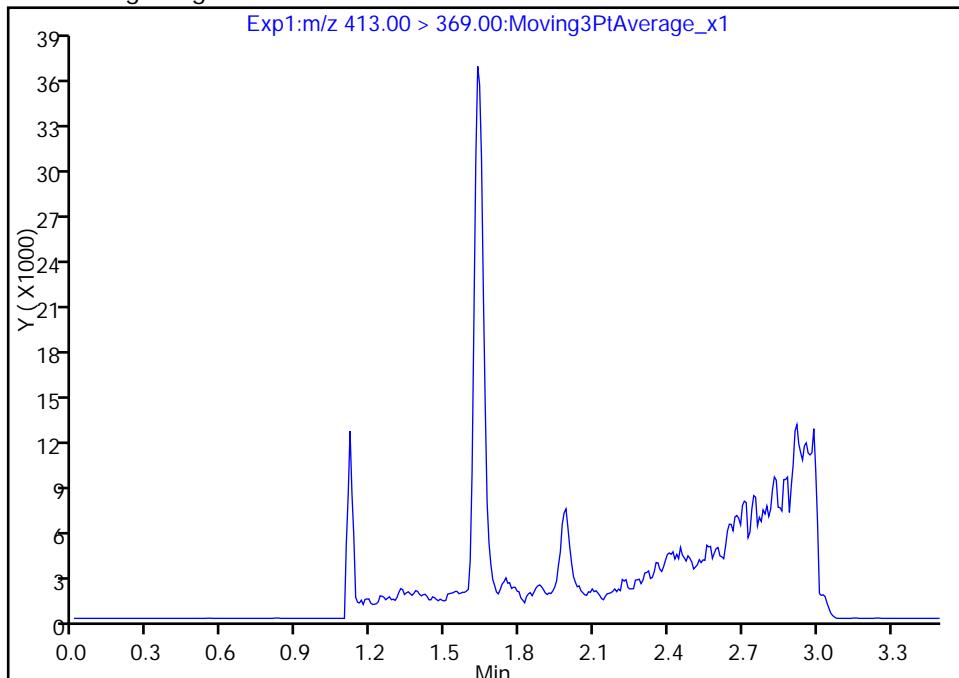
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

## 5 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

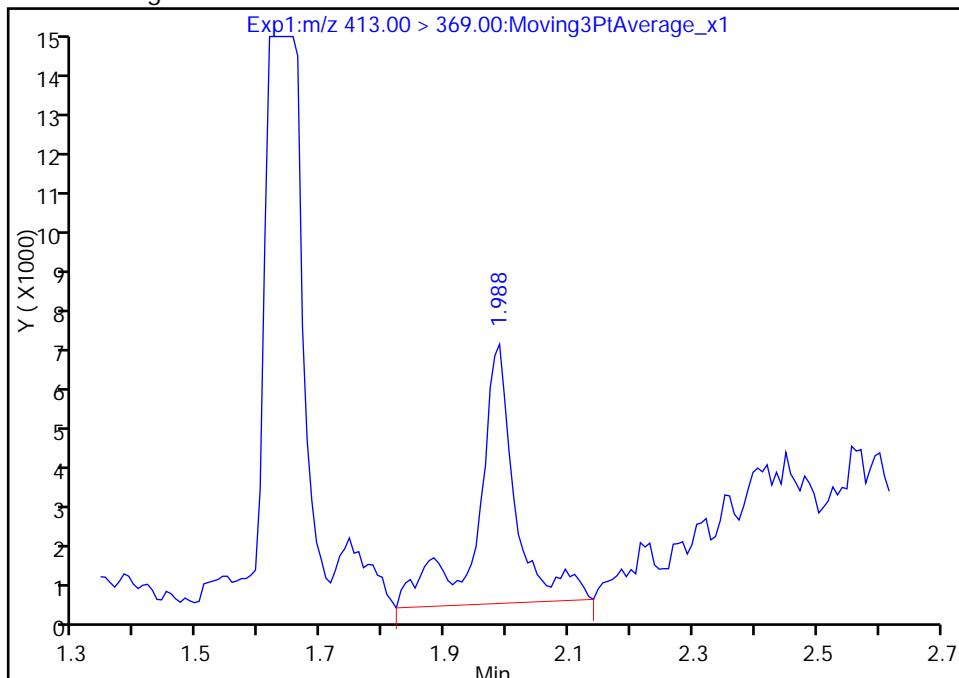
Not Detected  
 Expected RT: 1.98

## Processing Integration Results



## Manual Integration Results

RT: 1.99  
 Area: 25960  
 Amount: 0.111017  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:37:27

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

## TestAmerica Sacramento

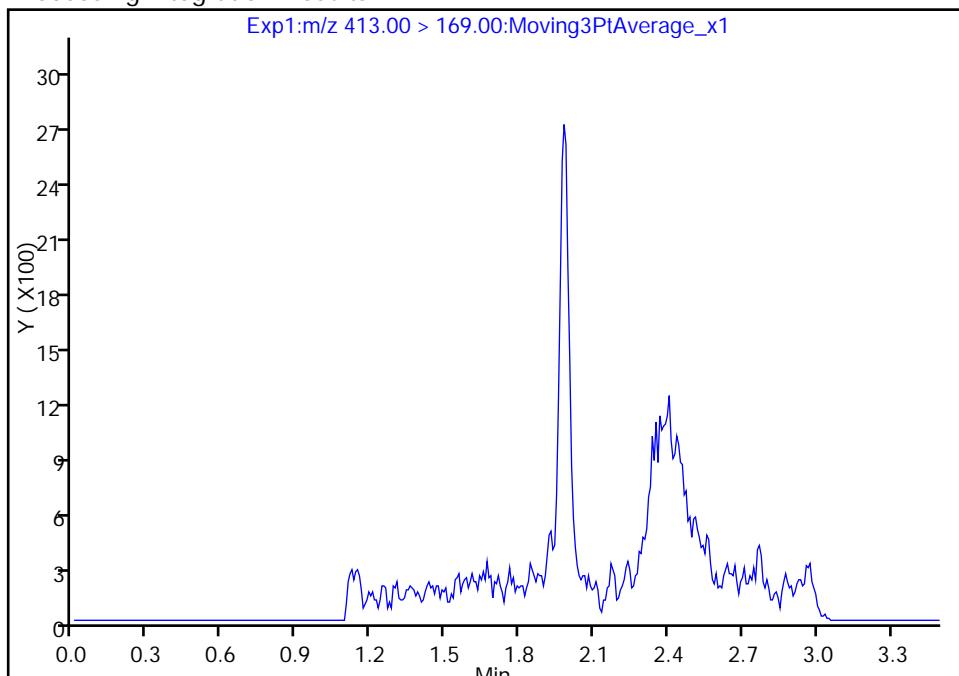
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

## 5 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

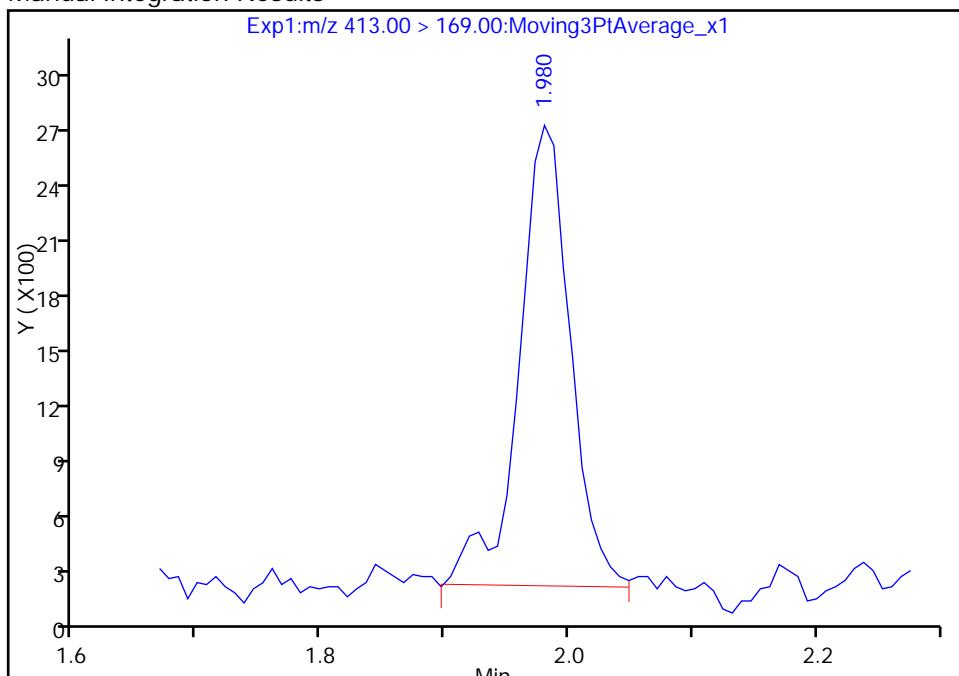
Not Detected  
 Expected RT: 1.98

## Processing Integration Results



## Manual Integration Results

RT: 1.98  
 Area: 7290  
 Amount: 0.111017  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:37:27

Audit Action: Manually Integrated

Audit Reason: Missed Peak

## TestAmerica Sacramento

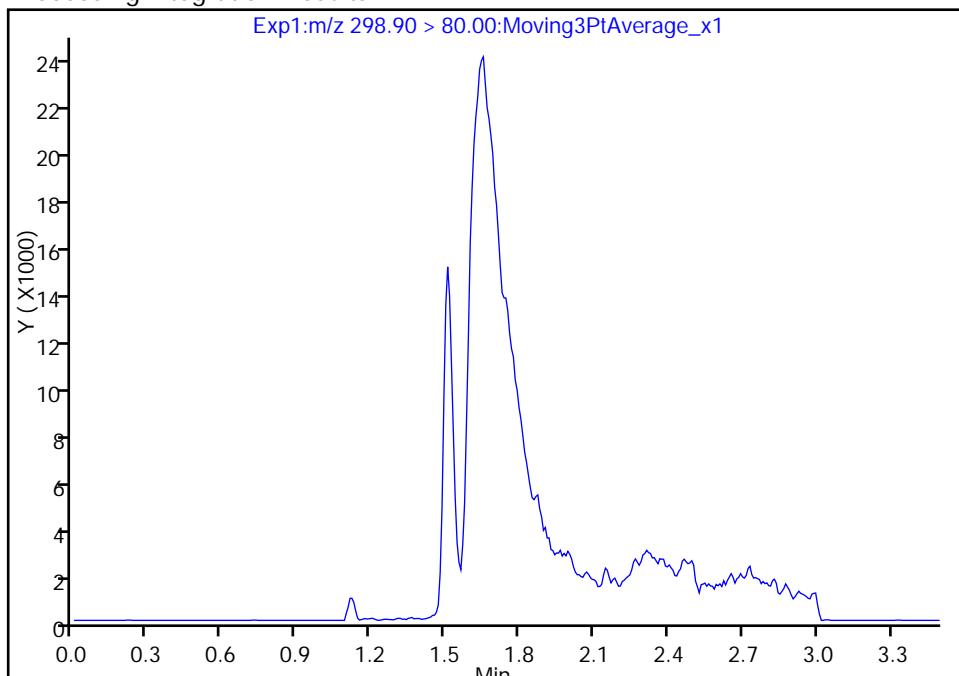
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 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

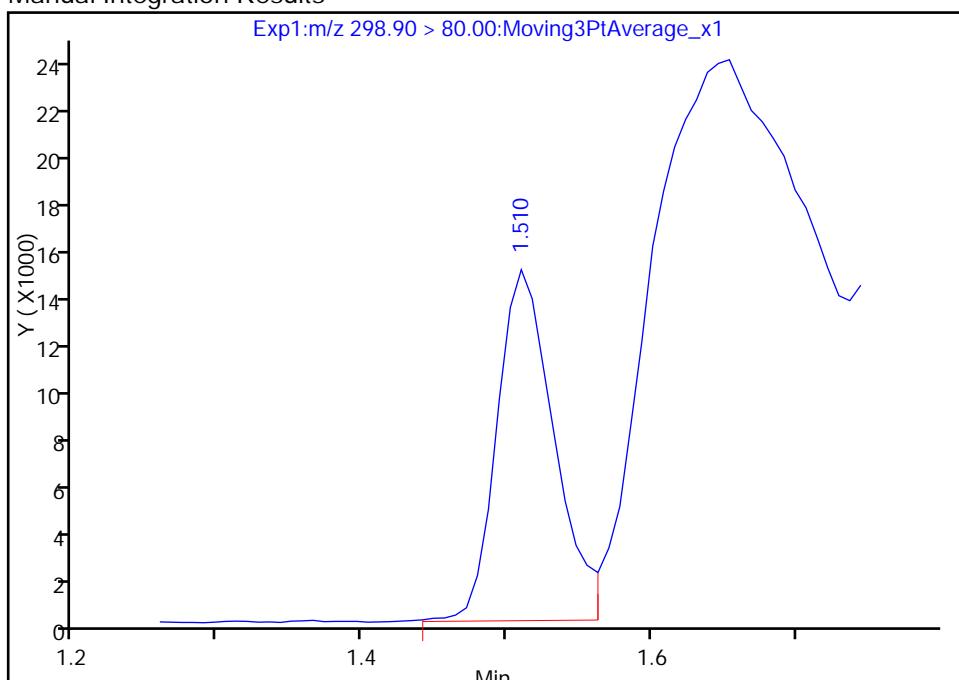
Not Detected  
 Expected RT: 1.51

## Processing Integration Results



## Manual Integration Results

RT: 1.51  
 Area: 40576  
 Amount: 0.093912  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:37:27

Audit Action: Manually Integrated

Audit Reason: Missed Peak

## TestAmerica Sacramento

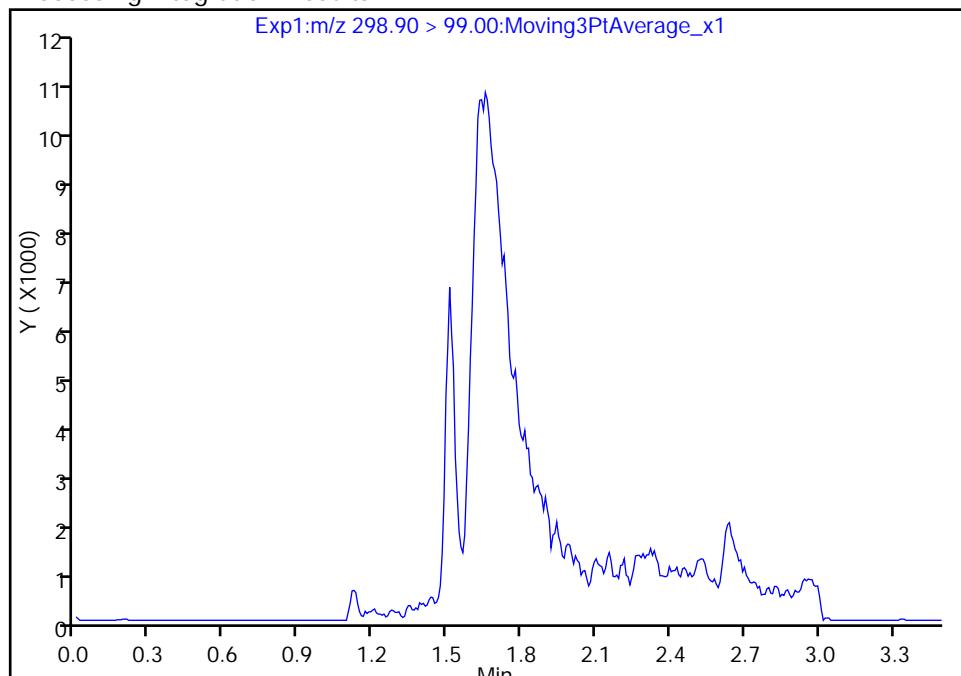
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_025.d  
 Injection Date: 31-Jan-2017 18:55:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-2-A Lab Sample ID: 320-25352-2  
 Client ID: WI -CV-1FB68-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 17 Worklist Smp#: 25  
 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

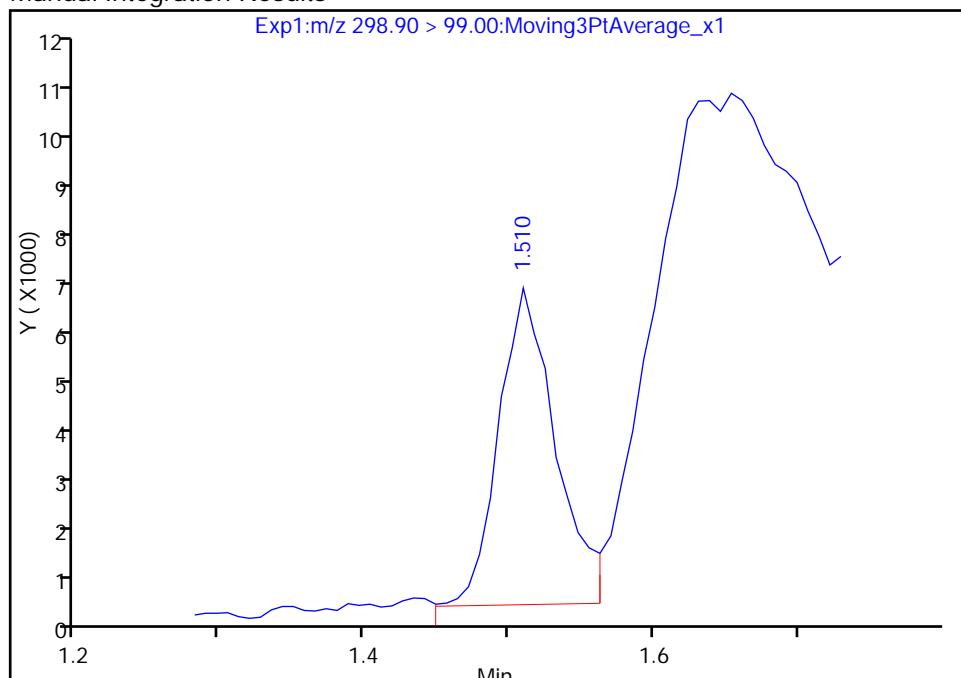
Not Detected  
 Expected RT: 1.51

## Processing Integration Results



RT: 1.51  
 Area: 16880  
 Amount: 0.093912  
 Amount Units: ng/ml

## Manual Integration Results



Reviewer: barnettj, 01-Feb-2017 10:37:27

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.:  
 Client Sample ID: WI -CV-1RW69-0117 Lab Sample ID: 320-25352-3  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_026.d  
 Analysis Method: 537 Date Collected: 01/26/2017 11:29  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 243 (mL) Date Analyzed: 01/31/2017 19:00  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture:  
 Analysis Batch No.: 148473 GPC Cleanup: (Y/N) N  
 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.049	U M	0.062	0.049	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.031	0.025	0.0097
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.049

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	92		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_026.d  
 Lims ID: 320-25352-A-3-A  
 Client ID: WI -CV-1RW69-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:00:17 ALS Bottle#: 18 Worklist Smp#: 26  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-3-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:37:59

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	1.631	1.638	-0.007	1.000	2537428	9.27			4774
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2536414	10.0			5132
8 Perfluorooctane sulfonic acid									M
499.00 > 80.00	2.223	2.215	0.008	1.000	29267	0.1136			14.9
499.00 > 99.00	2.223	2.215	0.008	1.000	6716		4.36(0.00-0.00)	6.9	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6620633	28.7			6065
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1510151	9.22			2159

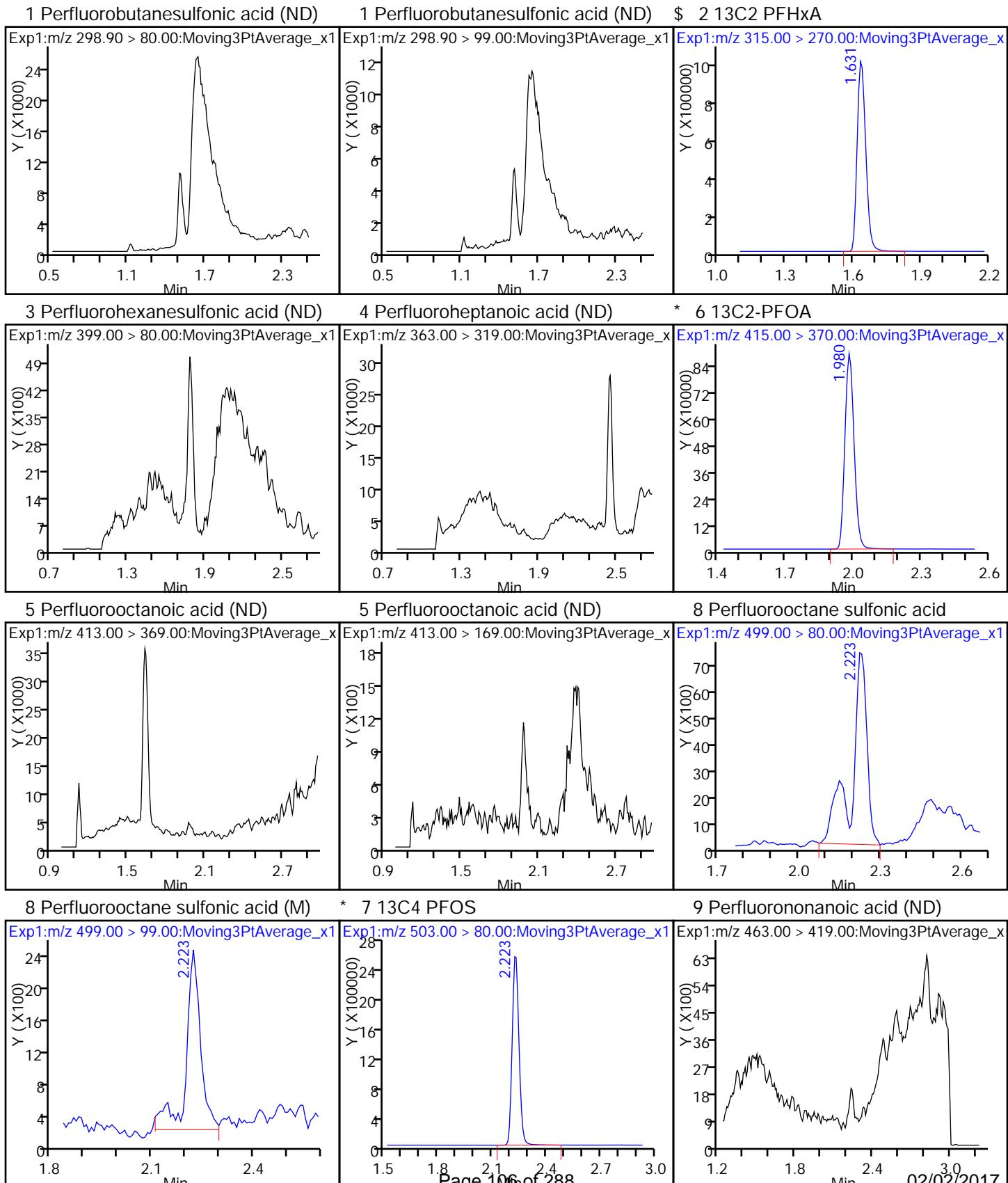
### QC Flag Legend

#### Review Flags

M - Manually Integrated

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_026.d  
 Injection Date: 31-Jan-2017 19:00:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-3-A Lab Sample ID: 320-25352-3  
 Client ID: WI -CV-1RW69-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 18 Worklist Smp#: 26  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

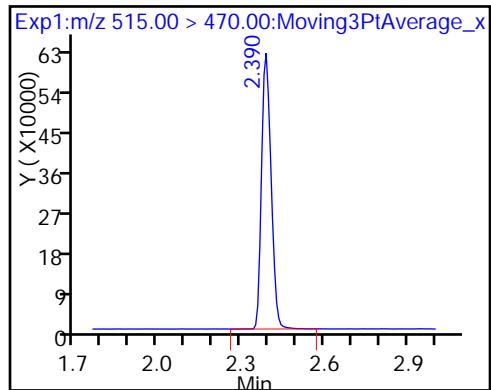


Report Date: 01-Feb-2017 10:55:34

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_026.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_026.d  
 Lims ID: 320-25352-A-3-A  
 Client ID: WI -CV-1RW69-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:00:17 ALS Bottle#: 18 Worklist Smp#: 26  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-3-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:37:59

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.27	92.70
\$ 10 13C2 PFDA	10.0	9.22	92.22

## TestAmerica Sacramento

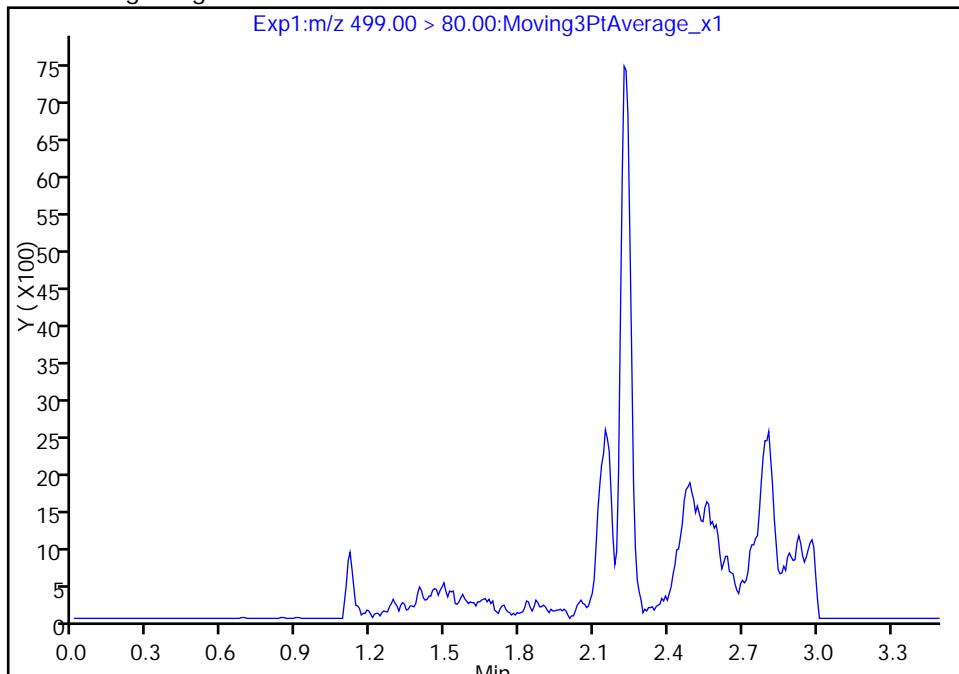
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_026.d  
 Injection Date: 31-Jan-2017 19:00:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-3-A Lab Sample ID: 320-25352-3  
 Client ID: WI -CV-1RW69-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 18 Worklist Smp#: 26  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

## 8 Perfluoroctane sulfonic acid, CAS: 1763-23-1

Signal: 1

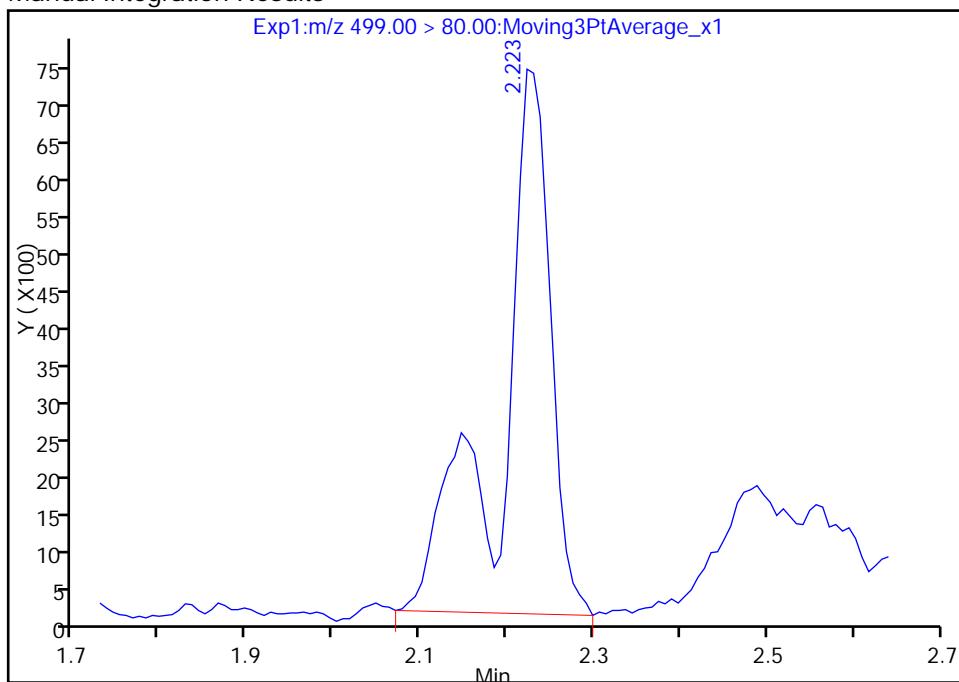
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 29267  
 Amount: 0.113561  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:37:59

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

## TestAmerica Sacramento

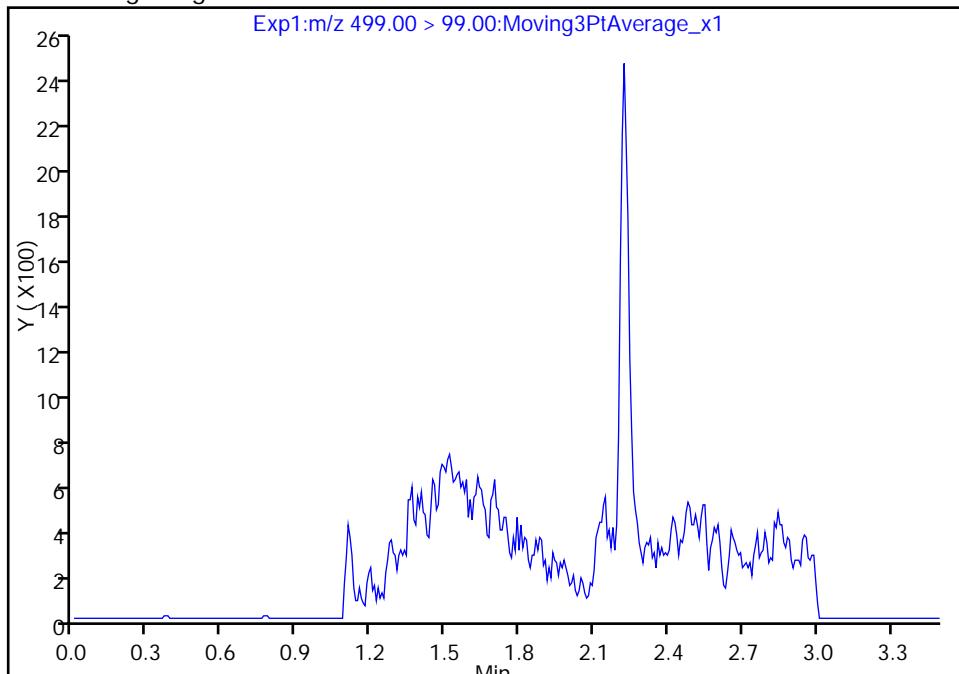
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_026.d  
 Injection Date: 31-Jan-2017 19:00:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-3-A Lab Sample ID: 320-25352-3  
 Client ID: WI -CV-1RW69-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 18 Worklist Smp#: 26  
 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

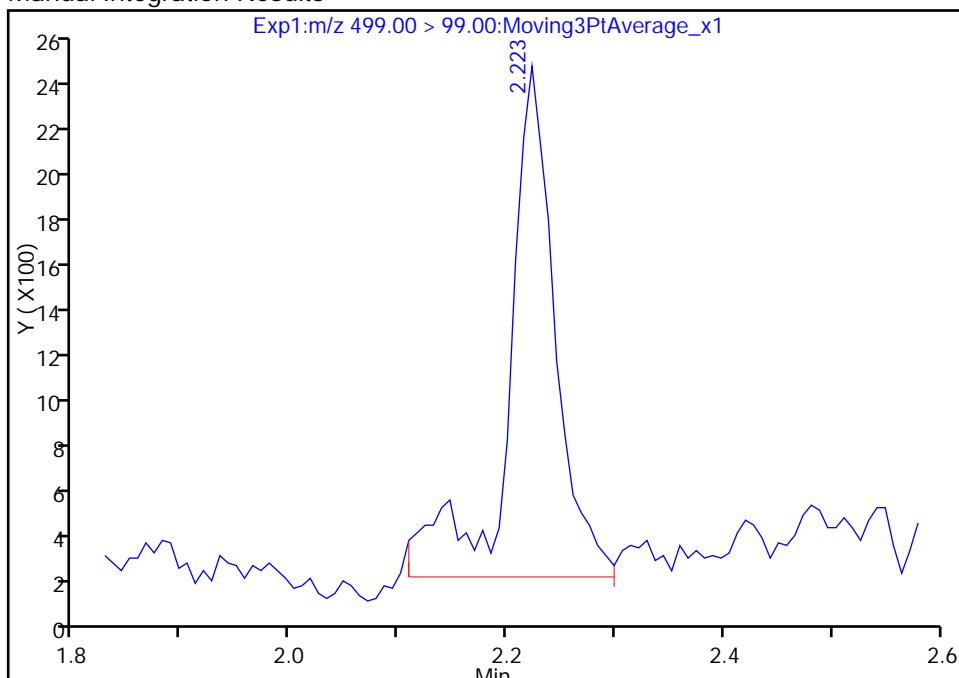
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



RT: 2.22  
 Area: 6716  
 Amount: 0.113561  
 Amount Units: ng/ml

## Manual Integration Results



Reviewer: barnettj, 01-Feb-2017 10:37:59

Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.:  
Client Sample ID: WI -CV-1FB69-0117 Lab Sample ID: 320-25352-4  
Matrix: Water Lab File ID: 2017.01.31A\_537\_027.d  
Analysis Method: 537 Date Collected: 01/26/2017 11:30  
Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
Sample wt/vol: 255 (mL) Date Analyzed: 01/31/2017 19:04  
Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
% Moisture:  
Analysis Batch No.: 148473 GPC Cleanup: (Y/N) N  
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.029	0.024	0.0092
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	115		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_027.d  
 Lims ID: 320-25352-A-4-A  
 Client ID: WI -CV-1FB69-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:04:40 ALS Bottle#: 19 Worklist Smp#: 27  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-4-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

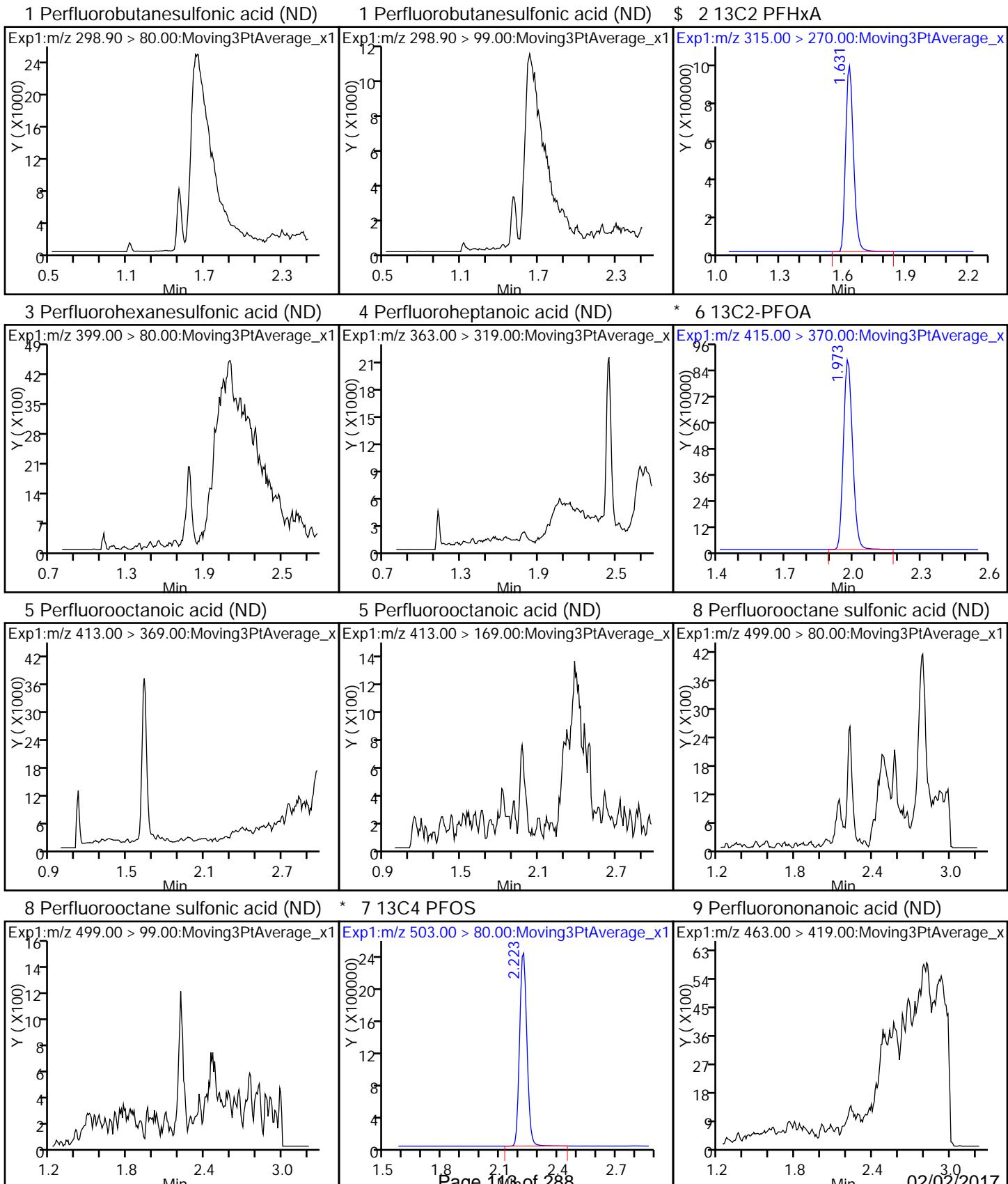
First Level Reviewer: barnettj Date: 01-Feb-2017 10:38:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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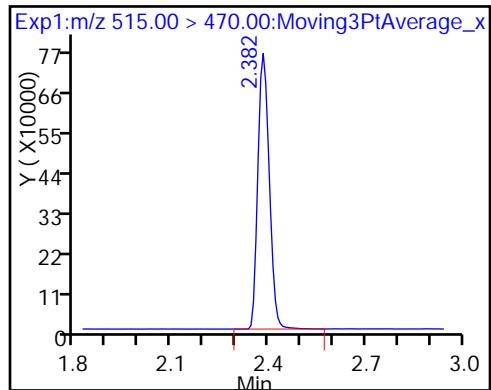
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2567099	9.40			4876
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2529253	10.0			4593
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6463977	28.7			5764
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1881935	11.5			2374

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_027.d  
 Injection Date: 31-Jan-2017 19:04:40 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-4-A Lab Sample ID: 320-25352-4  
 Client ID: WI -CV-1FB69-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 19 Worklist Smp#: 27  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_027.d  
 Lims ID: 320-25352-A-4-A  
 Client ID: WI -CV-1FB69-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:04:40 ALS Bottle#: 19 Worklist Smp#: 27  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-4-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:38:29

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.40	94.05
\$ 10 13C2 PFDA	10.0	11.5	115.25

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.:  
Client Sample ID: WI -CV-1RW70-0117 Lab Sample ID: 320-25352-5  
Matrix: Water Lab File ID: 2017.01.31A\_537\_028.d  
Analysis Method: 537 Date Collected: 01/27/2017 09:03  
Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
Sample wt/vol: 237.9 (mL) Date Analyzed: 01/31/2017 19:09  
Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
% Moisture:  
Analysis Batch No.: 148473 GPC Cleanup: (Y/N) N  
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.050	U M	0.063	0.050	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.032	0.025	0.0099
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.050

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	108		70-130
STL00996	13C2 PFDA	119		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_028.d  
 Lims ID: 320-25352-A-5-A  
 Client ID: WI -CV-1RW70-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:09:04 ALS Bottle#: 20 Worklist Smp#: 28  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-5-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:39:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2540703	10.8		5782	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2186468	10.0		4835	
8 Perfluorooctane sulfonic acid									M
499.00 > 80.00	2.223	2.215	0.008	1.000	65381	0.2994		29.0	M
499.00 > 99.00	2.223	2.215	0.008	1.000	14926		4.38(0.00-0.00)	15.8	
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		5609138	28.7		5455	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1686059	11.9		2167	

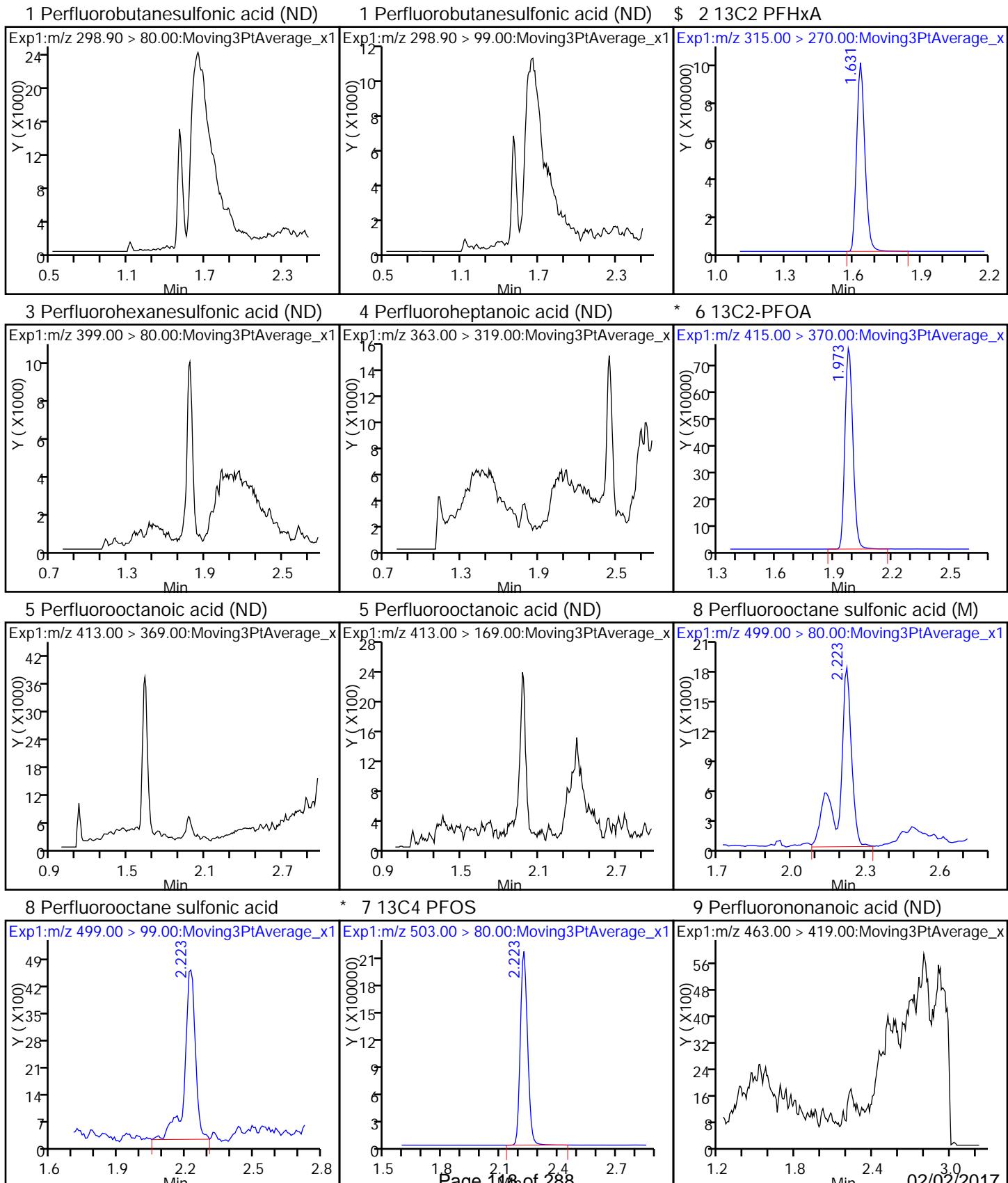
### QC Flag Legend

Review Flags

M - Manually Integrated

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_028.d  
 Injection Date: 31-Jan-2017 19:09:04 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-A Lab Sample ID: 320-25352-5  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 20 Worklist Smp#: 28  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

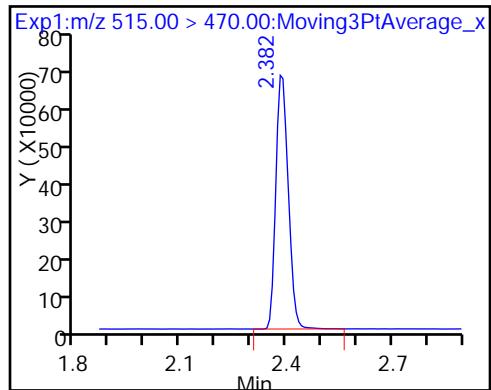


Report Date: 01-Feb-2017 10:55:36

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_028.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_028.d  
 Lims ID: 320-25352-A-5-A  
 Client ID: WI -CV-1RW70-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:09:04 ALS Bottle#: 20 Worklist Smp#: 28  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-5-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:25 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: XAWRK010  
 First Level Reviewer: barnettj Date: 01-Feb-2017 10:39:08

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	10.8	107.68
\$ 10 13C2 PFDA	10.0	11.9	119.44

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_028.d  
 Injection Date: 31-Jan-2017 19:09:04 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-A Lab Sample ID: 320-25352-5  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 20 Worklist Smp#: 28  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

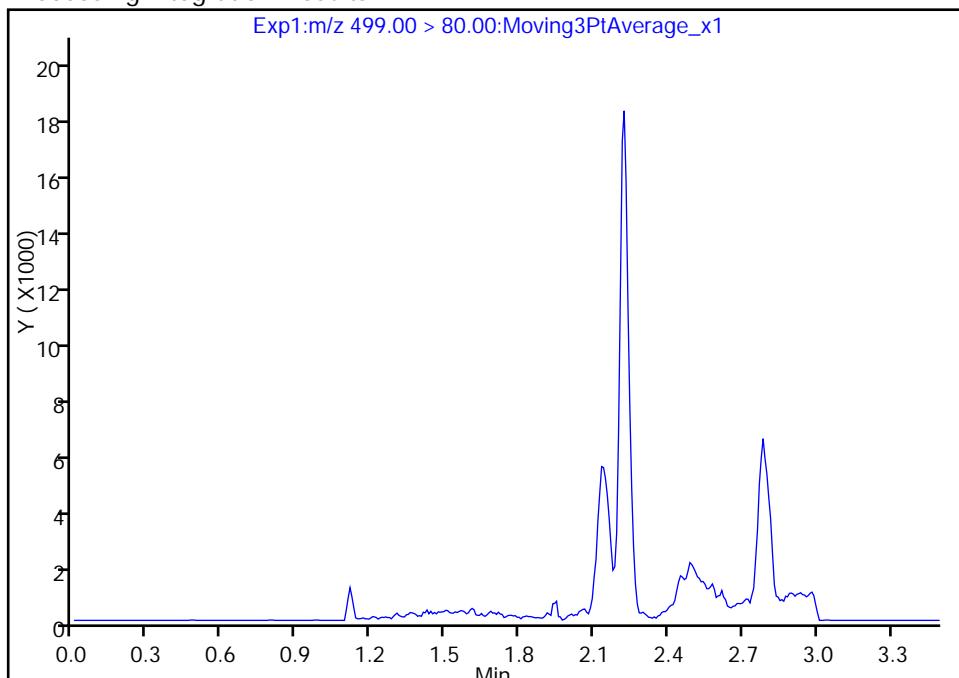
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

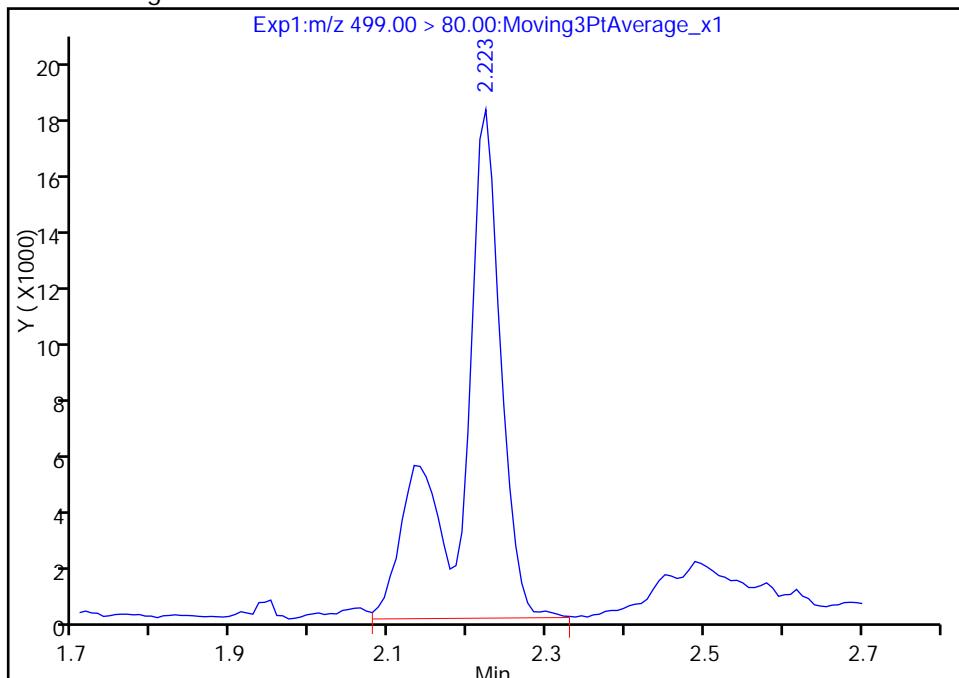
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 65381  
 Amount: 0.299436  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:08

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_028.d  
 Injection Date: 31-Jan-2017 19:09:04      Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-A      Lab Sample ID: 320-25352-5  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\A8      ALS Bottle#: 20      Worklist Smp#: 28  
 Injection Vol: 2.0 ul      Dil. Factor: 1.0000  
 Method: 537\_A8\_N      Limit Group: LC 537 ICAL  
 Column:      Detector EXP1

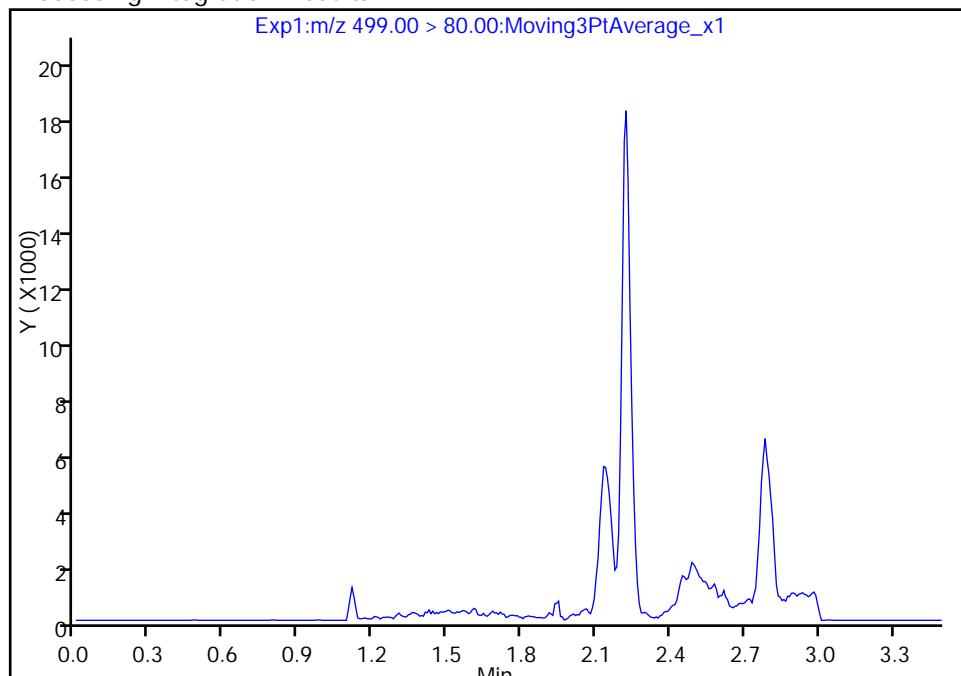
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

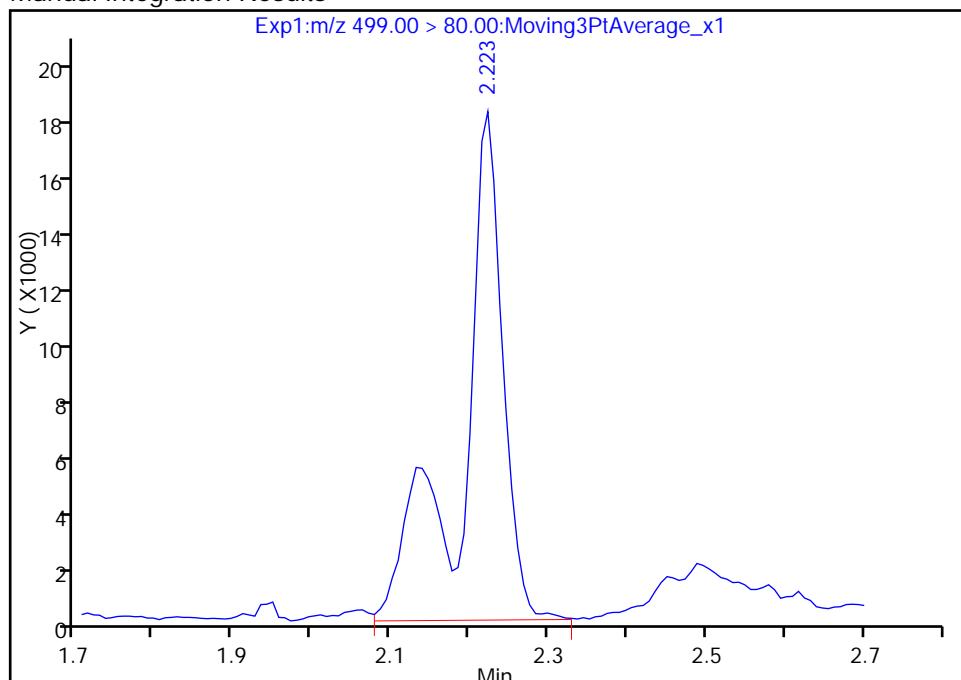
Not Detected

Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results



Reviewer: barnettj, 01-Feb-2017 10:39:08

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.:  
Client Sample ID: WI -CV-1FB70-0117 Lab Sample ID: 320-25352-6  
Matrix: Water Lab File ID: 2017.01.31A\_537\_033.d  
Analysis Method: 537 Date Collected: 01/27/2017 09:04  
Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
Sample wt/vol: 252.6 (mL) Date Analyzed: 01/31/2017 19:31  
Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
% Moisture:  
Analysis Batch No.: 148474 GPC Cleanup: (Y/N) N  
Units: ug/L

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

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	105		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_033.d  
 Lims ID: 320-25352-A-6-A  
 Client ID: WI -CV-1FB70-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:31:04 ALS Bottle#: 23 Worklist Smp#: 33  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-6-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

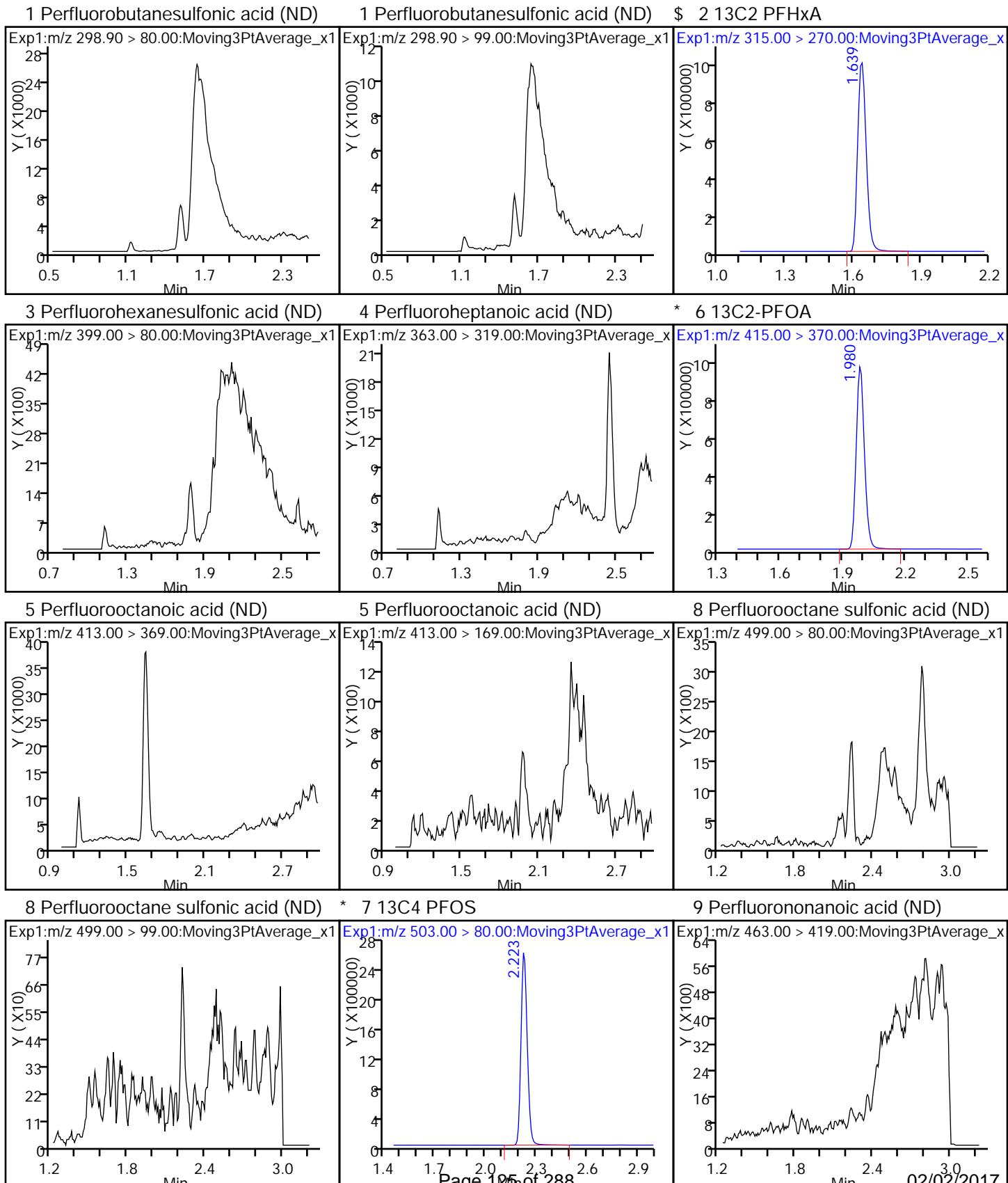
First Level Reviewer: barnettj Date: 01-Feb-2017 10:42:43

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	---------------	-----	-------

\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2646385	9.43			5438
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2600919	10.0			5112
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6670155	28.7			7197
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1770876	10.5			2342

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_033.d  
 Injection Date: 31-Jan-2017 19:31:04 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-6-A Lab Sample ID: 320-25352-6  
 Client ID: WI -CV-1FB70-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 23 Worklist Smp#: 33  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

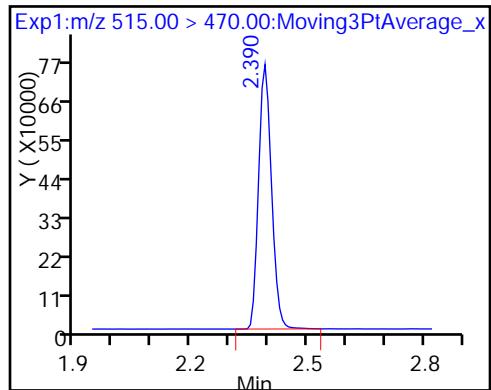


Report Date: 01-Feb-2017 10:55:46

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_033.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_033.d  
 Lims ID: 320-25352-A-6-A  
 Client ID: WI -CV-1FB70-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:31:04 ALS Bottle#: 23 Worklist Smp#: 33  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-6-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:42:43

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.43	94.28
\$ 10 13C2 PFDA	10.0	10.5	105.46

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.:  
Client Sample ID: WI -CV-1RW71-0117 Lab Sample ID: 320-25352-7  
Matrix: Water Lab File ID: 2017.01.31A\_537\_034.d  
Analysis Method: 537 Date Collected: 01/27/2017 11:33  
Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
Sample wt/vol: 238.2 (mL) Date Analyzed: 01/31/2017 19:35  
Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
% Moisture:  
Analysis Batch No.: 148474 GPC Cleanup: (Y/N) N  
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.050	U	0.063	0.050	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.031	0.025	0.0099
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.050

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	107		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_034.d  
 Lims ID: 320-25352-A-7-A  
 Client ID: WI -CV-1RW71-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:35:30 ALS Bottle#: 24 Worklist Smp#: 34  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-7-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

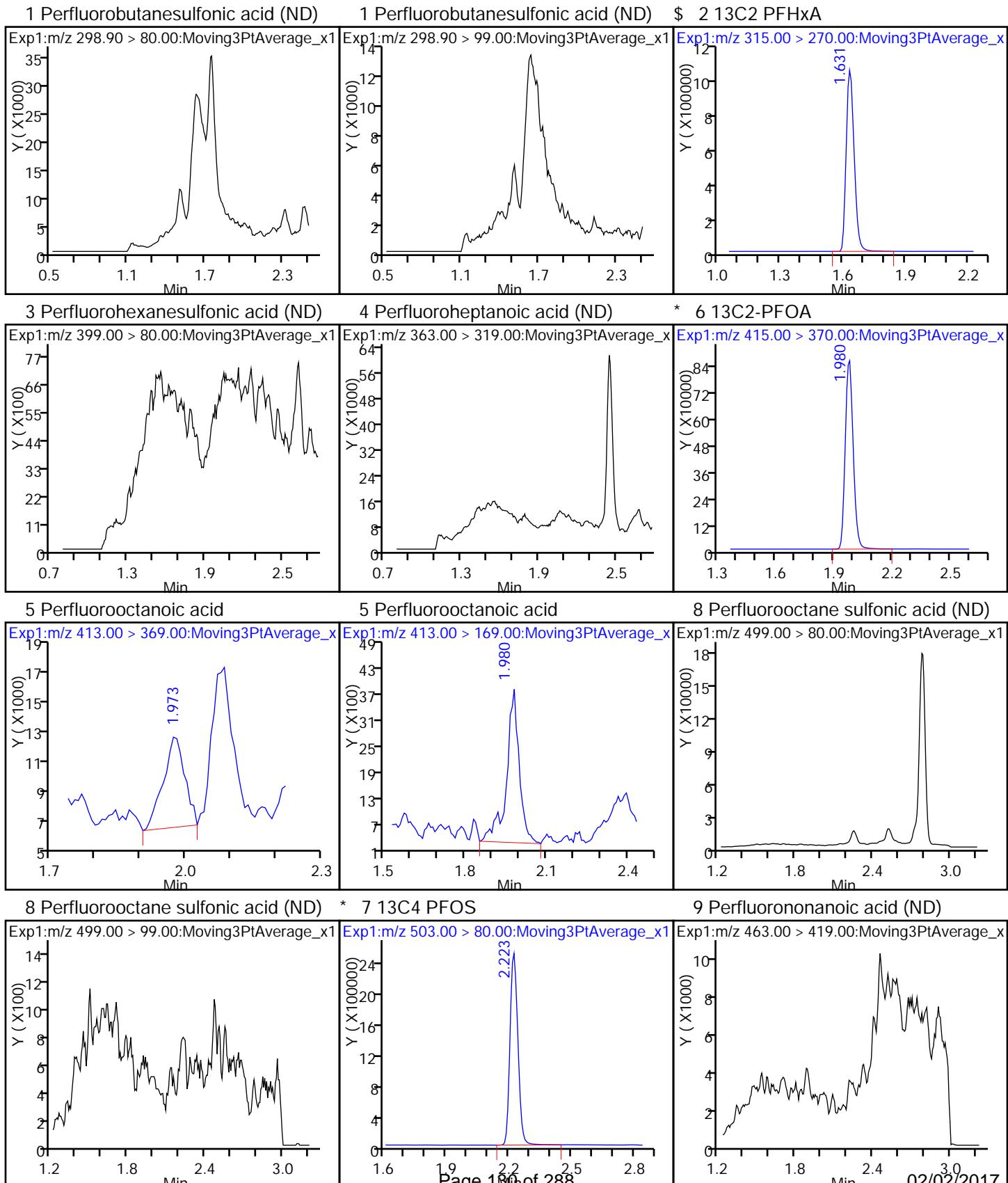
First Level Reviewer: barnettj Date: 01-Feb-2017 10:43:16

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	1.631	1.638	-0.007	1.000	2639779	9.83			4853
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2489518	10.0			4969
5 Perfluorooctanoic acid									
413.00 > 369.00	1.973	1.980	-0.007	1.000	19271	0.0837			0.7
413.00 > 169.00	1.980	1.980	0.0	1.004	11791		1.63(0.00-0.00)		8.5
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6560667	28.7			884
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1718276	10.7			2887

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_034.d  
 Injection Date: 31-Jan-2017 19:35:30 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-7-A Lab Sample ID: 320-25352-7  
 Client ID: WI -CV-1RW71-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 24 Worklist Smp#: 34  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

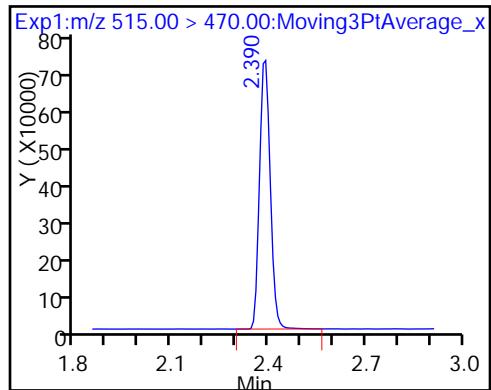


Report Date: 01-Feb-2017 10:55:47

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_034.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_034.d  
 Lims ID: 320-25352-A-7-A  
 Client ID: WI -CV-1RW71-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:35:30 ALS Bottle#: 24 Worklist Smp#: 34  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-7-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:43:16

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.83	98.26
\$ 10 13C2 PFDA	10.0	10.7	106.91

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.:  
 Client Sample ID: WI -CV-1FB71-0117 Lab Sample ID: 320-25352-8  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_035.d  
 Analysis Method: 537 Date Collected: 01/27/2017 11:34  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 251.9 (mL) Date Analyzed: 01/31/2017 19:39  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture:  
 Analysis Batch No.: 148474 GPC Cleanup: (Y/N) N  
 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	97		70-130
STL00996	13C2 PFDA	105		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_035.d  
 Lims ID: 320-25352-A-8-A  
 Client ID: WI -CV-1FB71-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:39:53 ALS Bottle#: 25 Worklist Smp#: 35  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-8-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

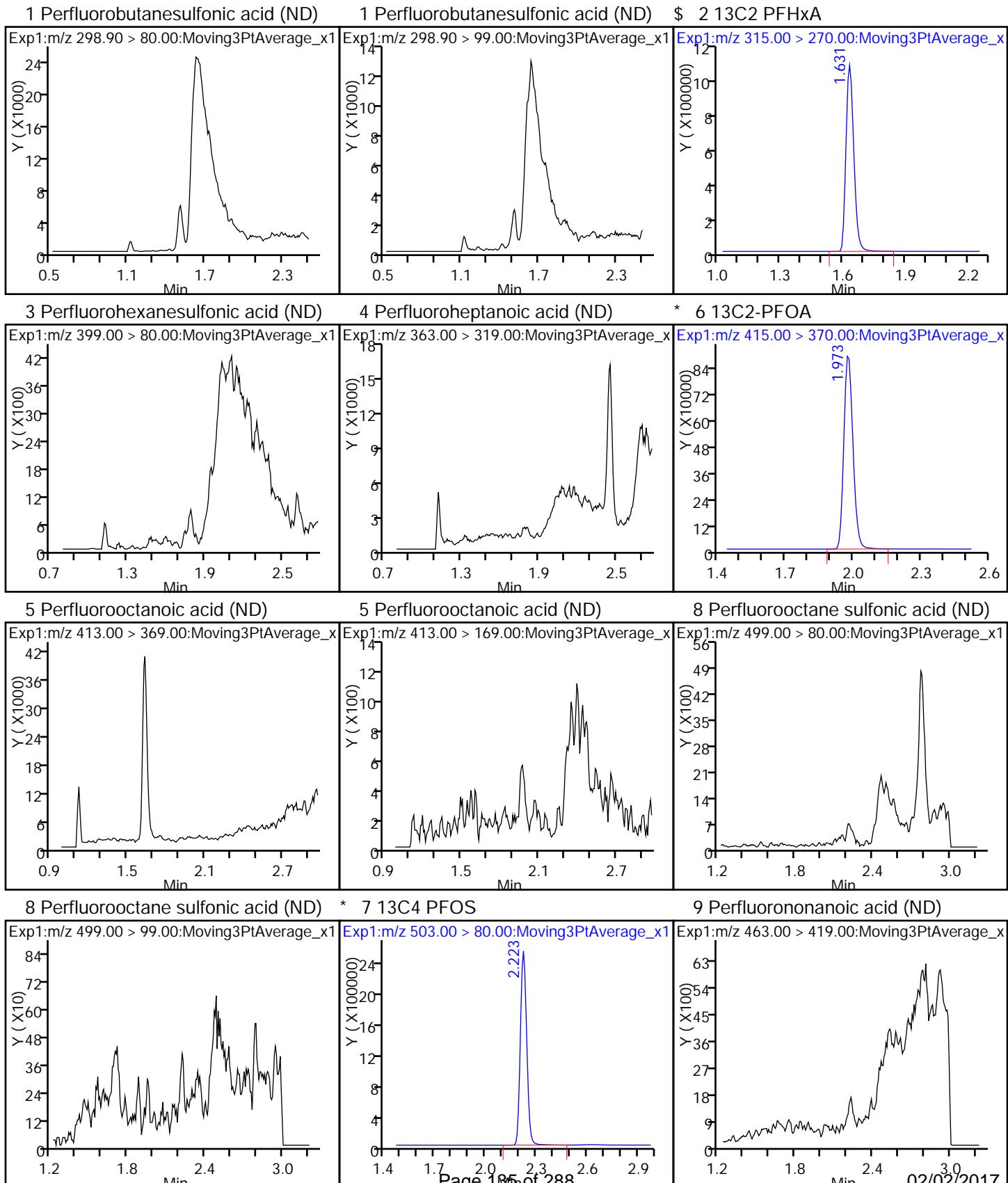
First Level Reviewer: barnettj Date: 01-Feb-2017 10:43:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	---------------	-----	-------

\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2667694	9.70			5517
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2549074	10.0			4355
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6583393	28.7			2875
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1732633	10.5			2263

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_035.d  
 Injection Date: 31-Jan-2017 19:39:53 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-8-A Lab Sample ID: 320-25352-8  
 Client ID: WI -CV-1FB71-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 25 Worklist Smp#: 35  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

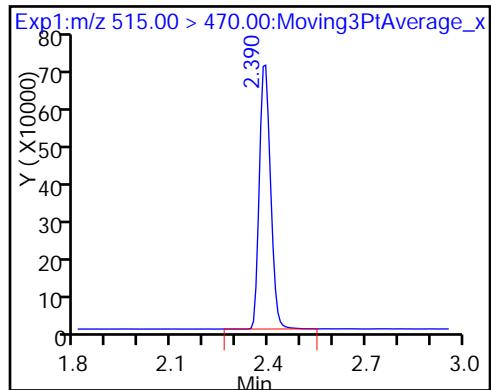


Report Date: 01-Feb-2017 10:55:48

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_035.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_035.d  
 Lims ID: 320-25352-A-8-A  
 Client ID: WI -CV-1FB71-0117  
 Sample Type: Client  
 Inject. Date: 31-Jan-2017 19:39:53      ALS Bottle#: 25      Worklist Smp#: 35  
 Injection Vol: 2.0 ul      Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-8-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8      Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43      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: XAWRK010

First Level Reviewer: barnettj      Date: 01-Feb-2017 10:43:30

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.70	96.98
\$ 10 13C2 PFDA	10.0	10.5	105.28

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

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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 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.: 320-25352-1

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.: 320-25352-1      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								M	
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:

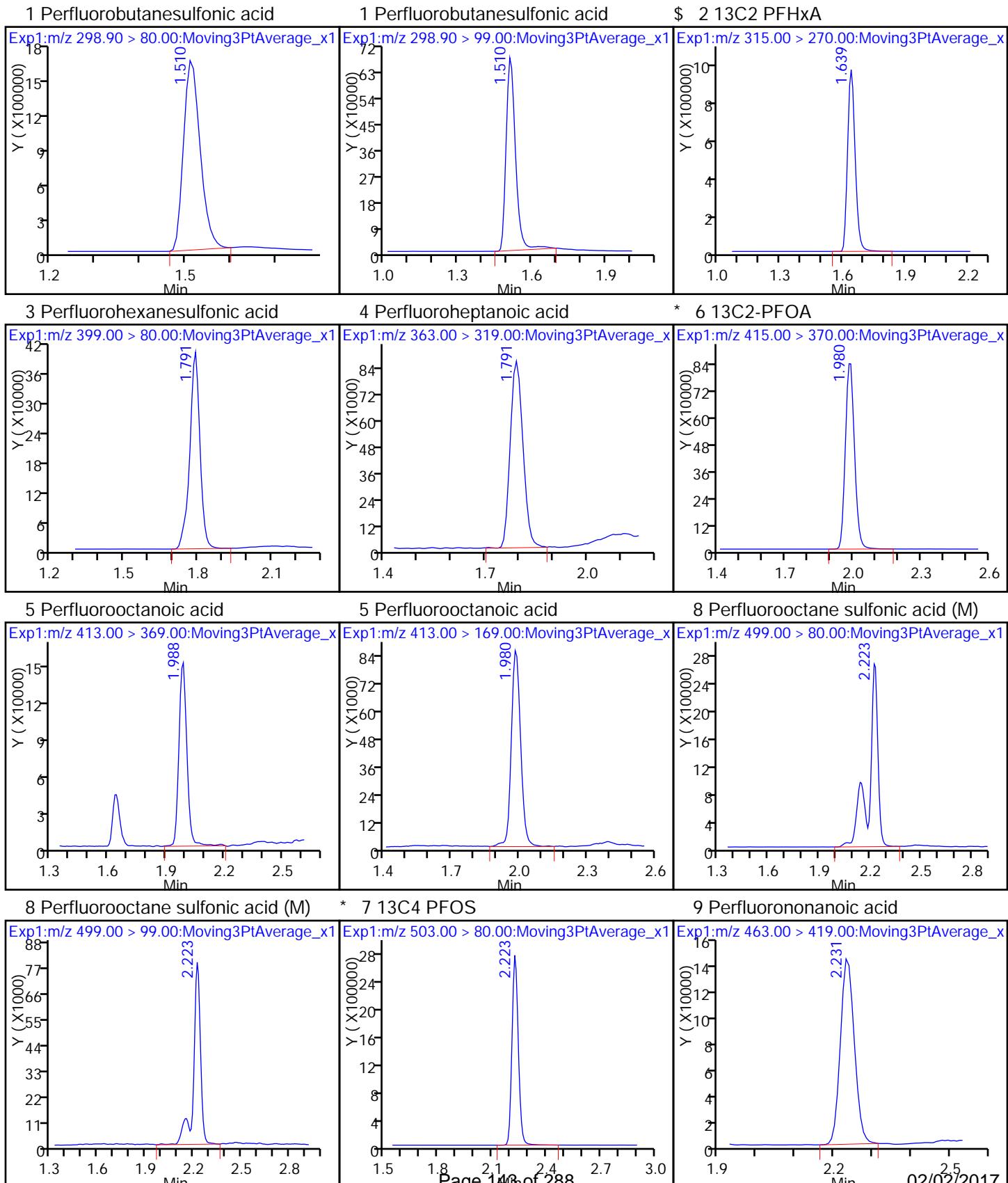
LC537-L1\_00017

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

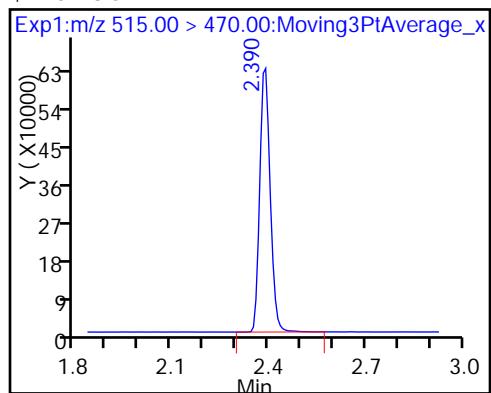


Report Date: 30-Jan-2017 11:47:40

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_004.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

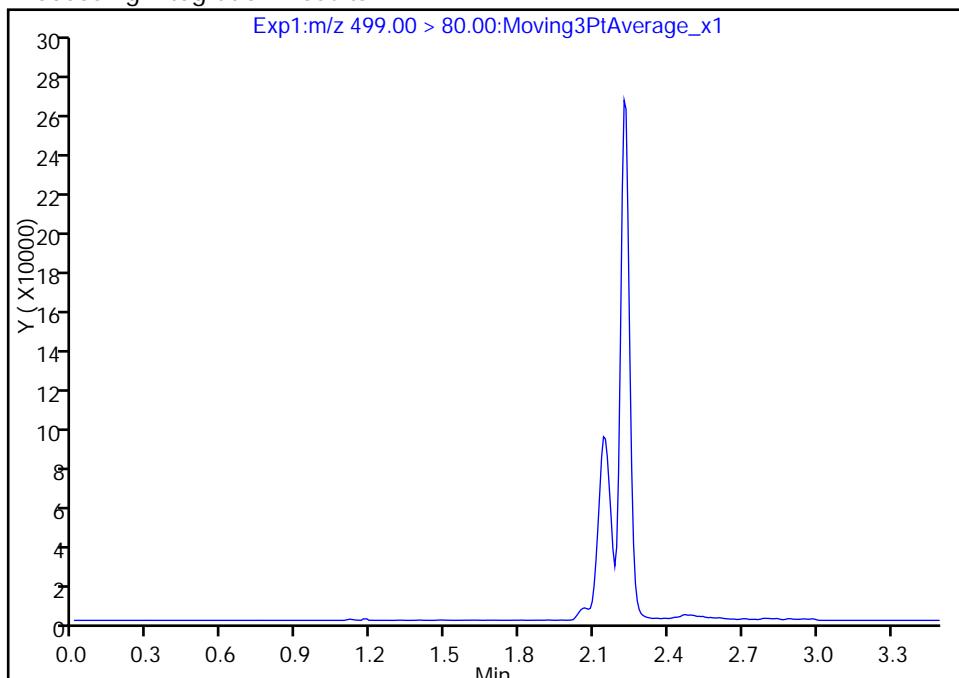
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_004.d  
 Injection Date: 26-Jan-2017 11:03:01 Instrument ID: A8\_N  
 Lims ID: IC L1  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 1 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

**8 Perfluoroctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

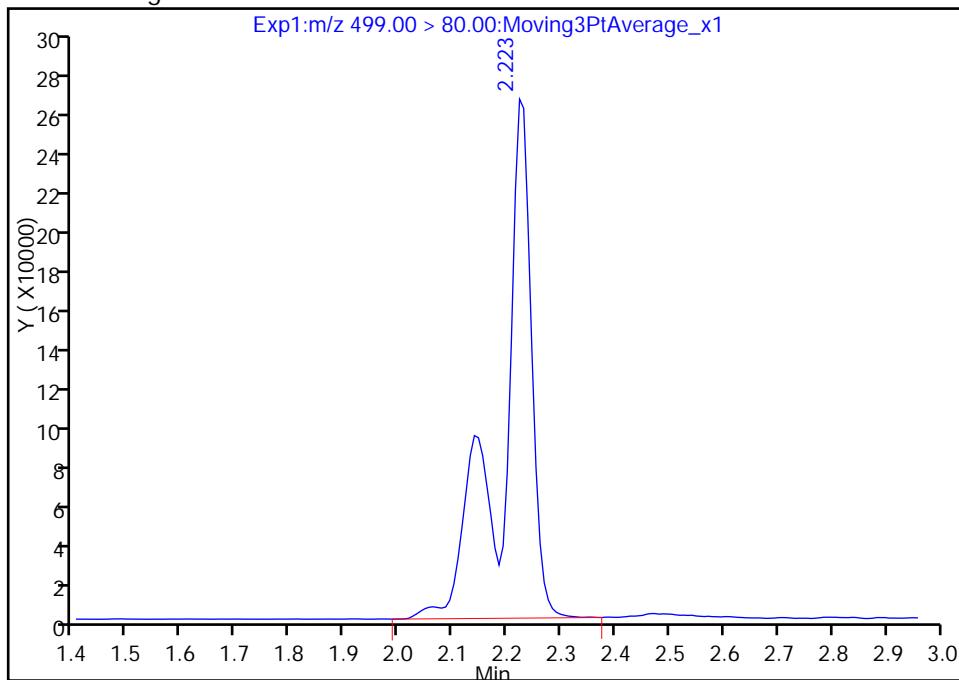
Not Detected  
 Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 1015341  
 Amount: 3.937687  
 Amount Units: ng/ml



Reviewer: chandrasenash, 26-Jan-2017 12:09:36

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\_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  
 Column: Detector EXP1

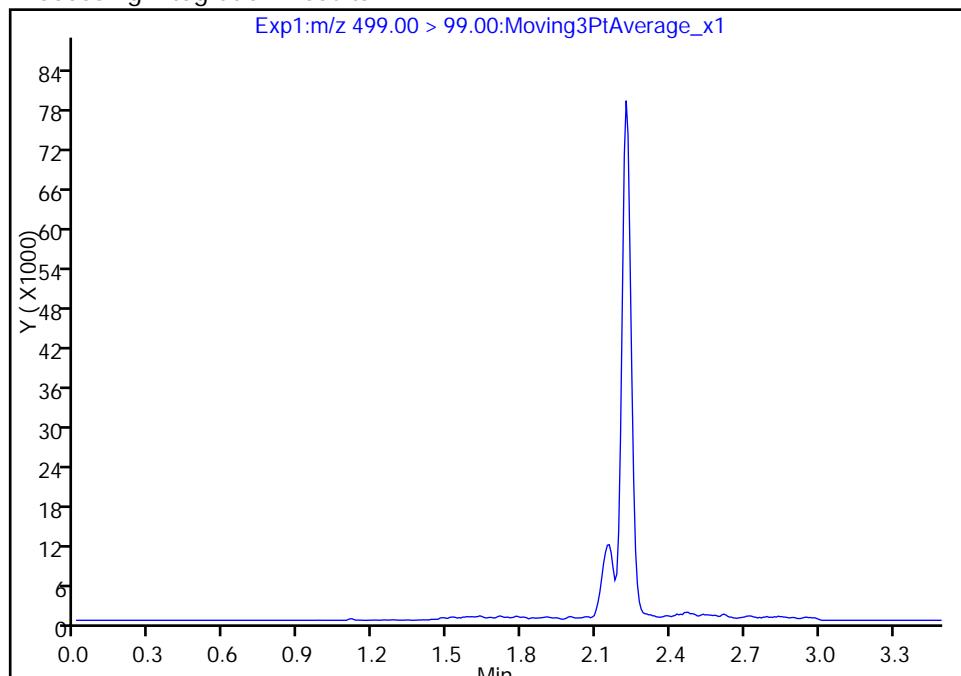
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

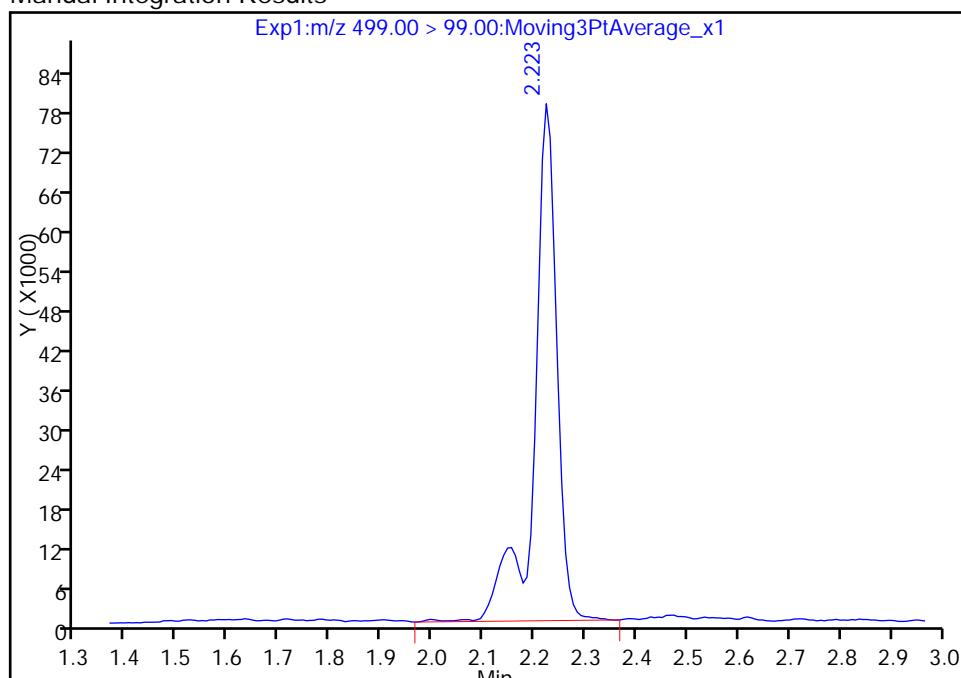
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 244165  
 Amount: 3.937687  
 Amount Units: ng/ml



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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	2514804	9.84		6701	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.791	1.787	0.004	1.000	3104280	8.14		670	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.791	1.788	0.003	1.000	616263	2.70		90.7	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.980	1.979	0.001		2369193	10.0		5564	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.223	2.220	0.003		6496935	28.7		7906	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.231	2.229	0.002	1.000	908738	5.63		219	
<b>\$ 10 13C2 PFDA</b>									
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

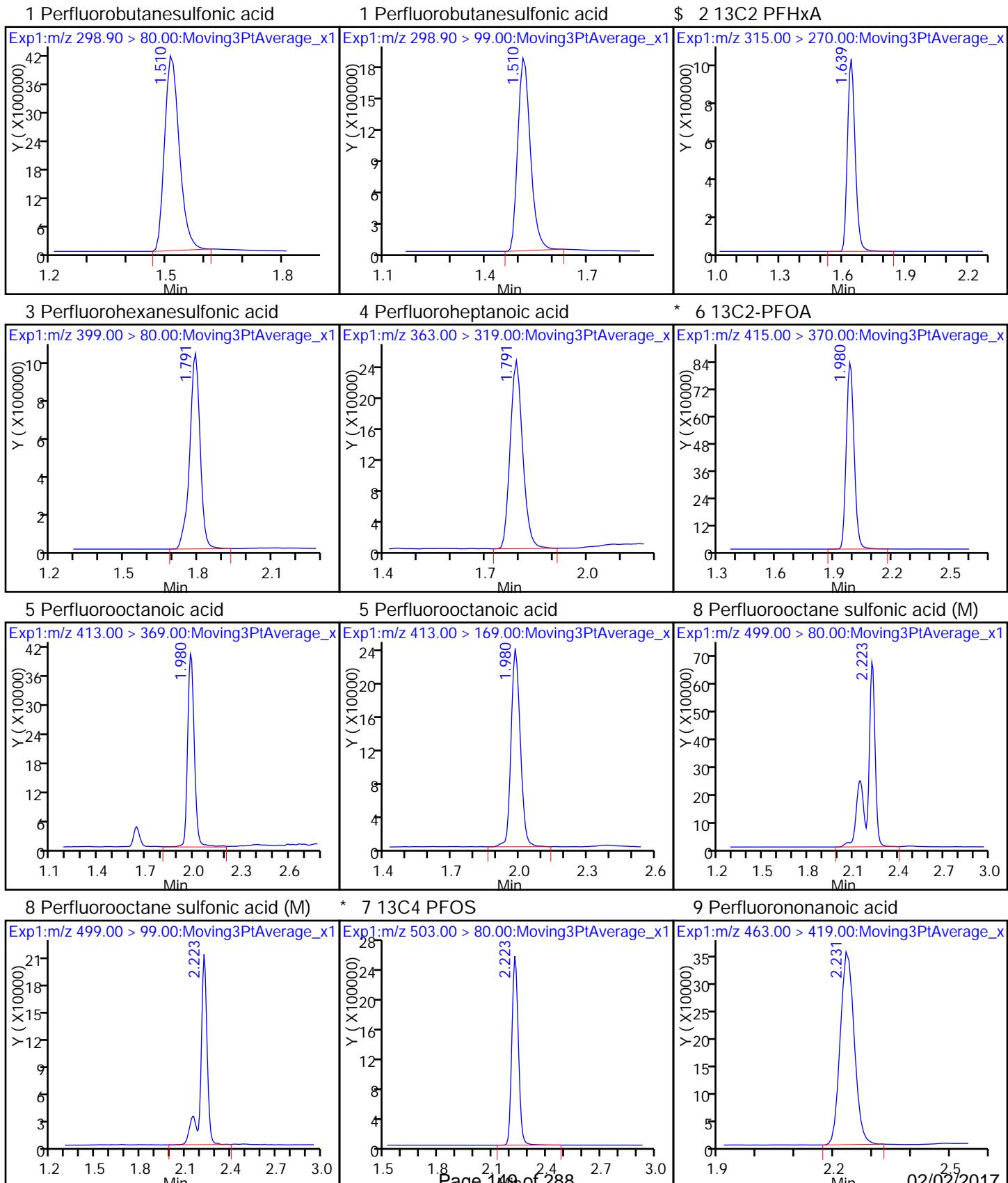
Units: mL

Report Date: 30-Jan-2017 11:47:41

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## 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

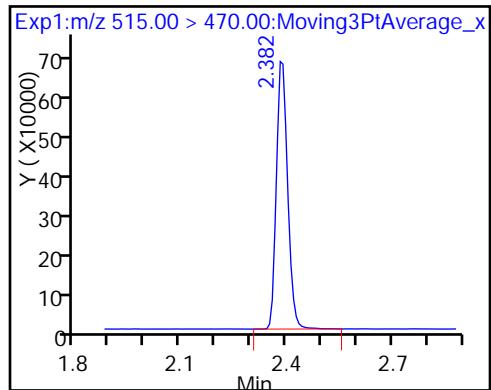


Report Date: 30-Jan-2017 11:47:41

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_005.d

\$ 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

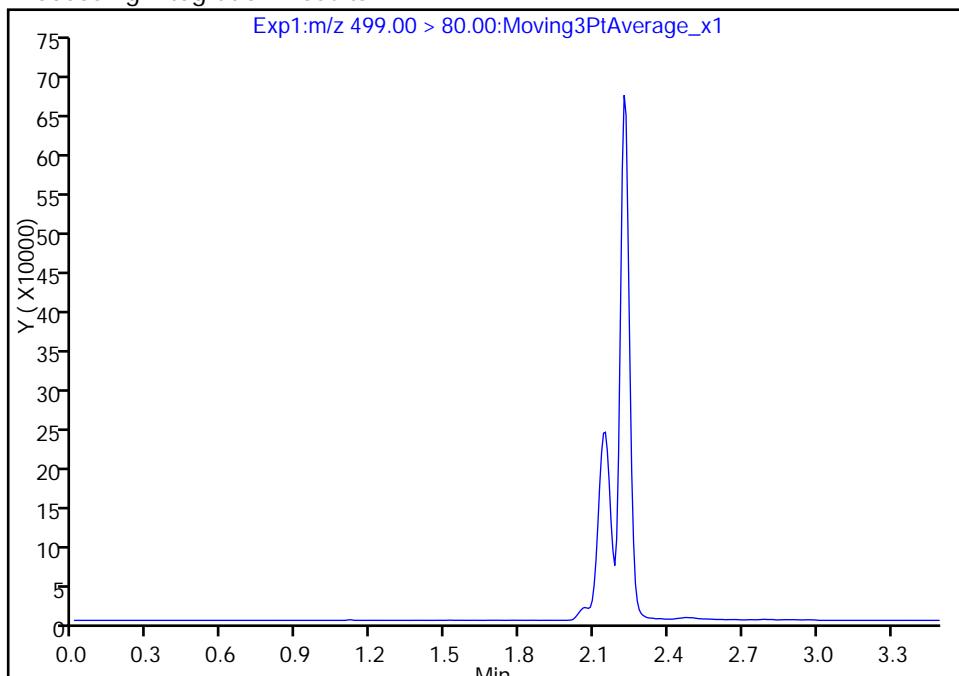
**8 Perfluoroctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

Not Detected

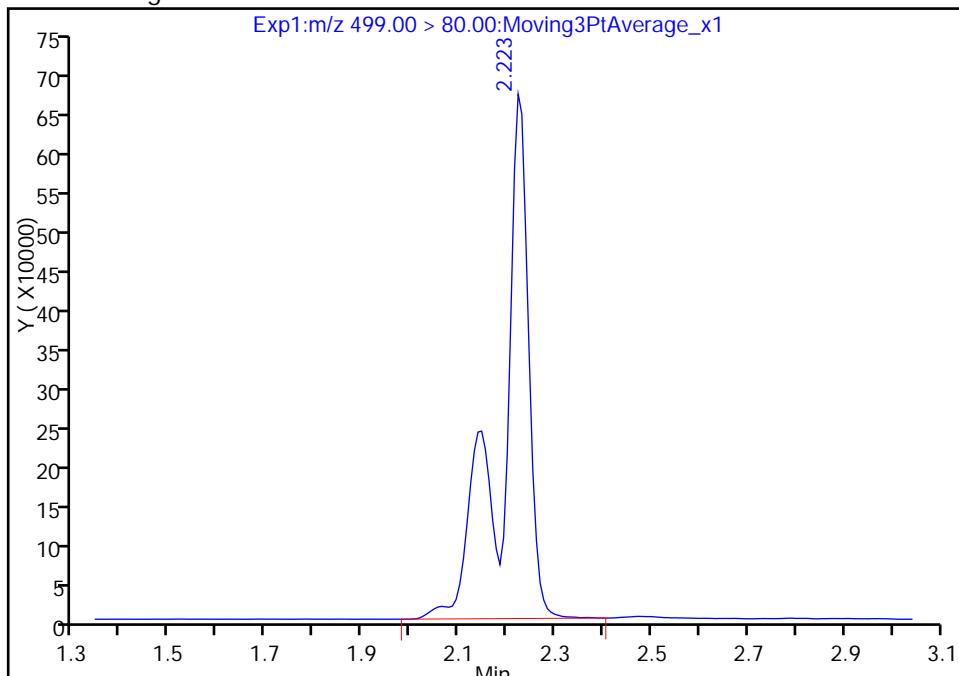
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 2626980  
 Amount: 10.387175  
 Amount Units: ng/ml



Reviewer: chandrasenash, 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

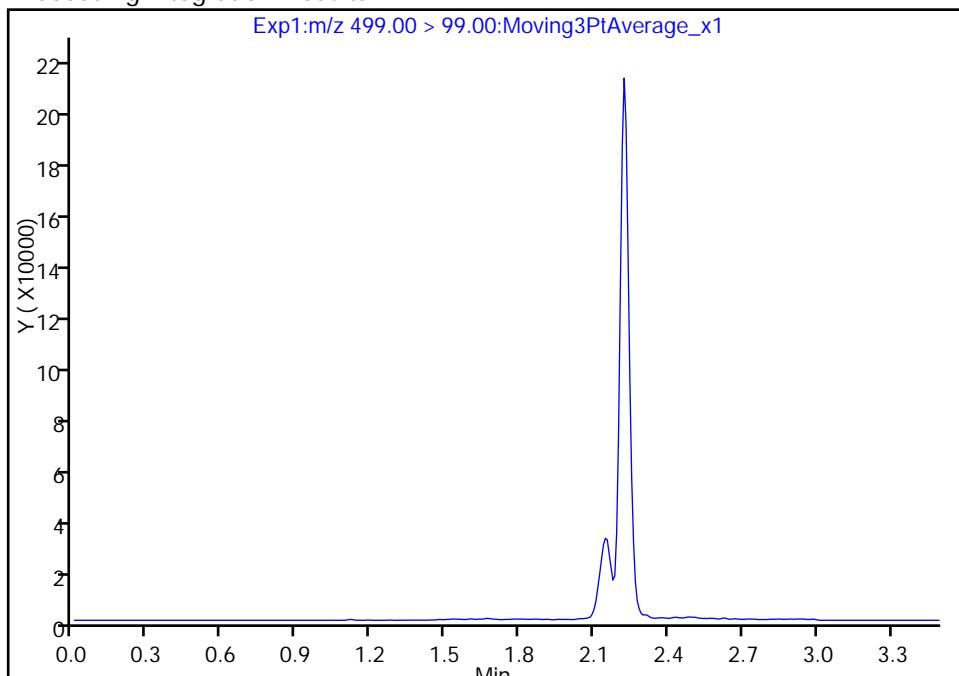
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

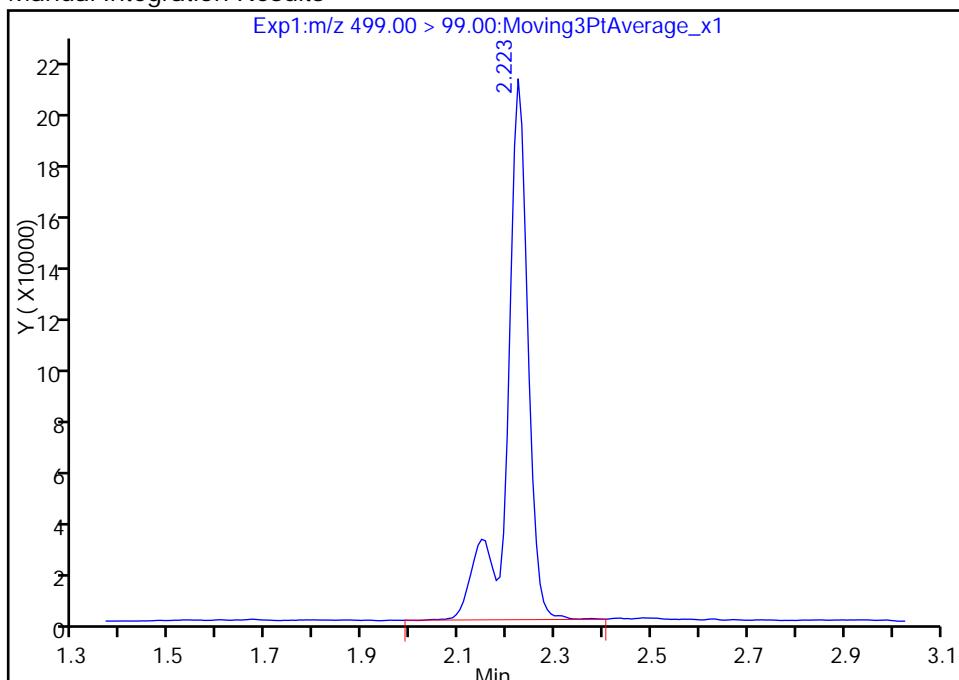
Expected RT: 2.14

## 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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	2663857	9.80		5739	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.783	1.787	-0.004	1.000	6180212	15.6		1126	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.791	1.788	0.003	1.000	1202991	4.95		163	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.980	1.979	0.001		2520070	10.0		5579	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.223	2.220	0.003		6741021	28.7		5703	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.231	2.229	0.002	1.000	1746263	10.2		386	
<b>\$ 10 13C2 PFDA</b>									
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:

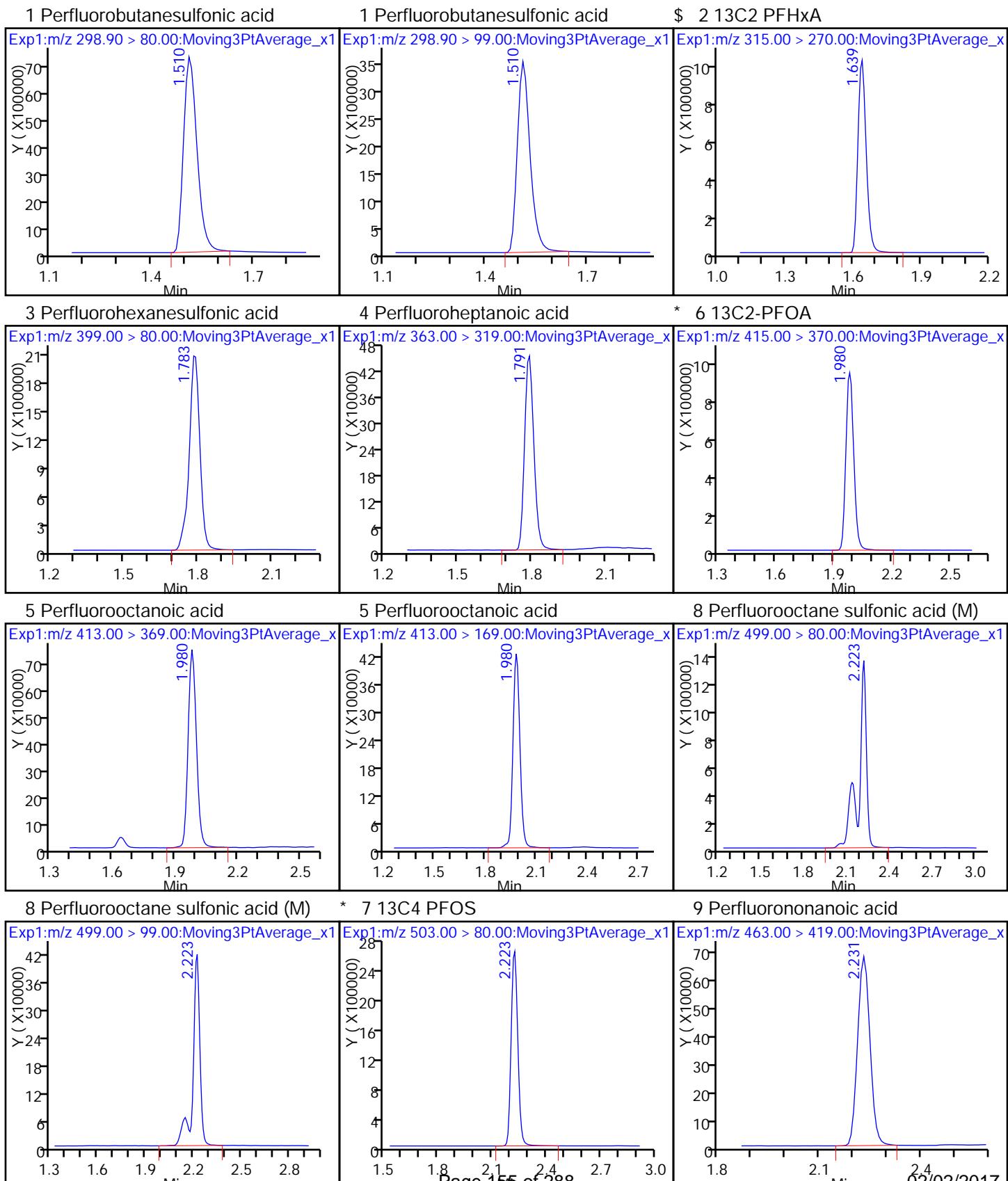
LC537-L3\_00019

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

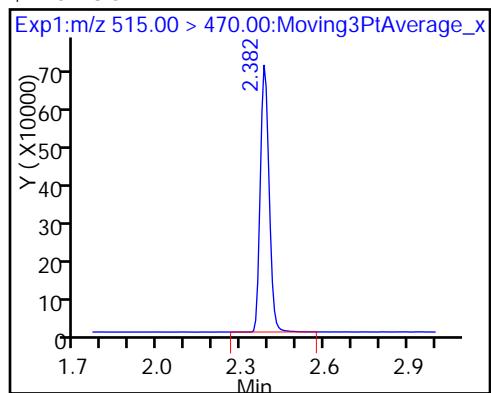


Report Date: 30-Jan-2017 11:47:43

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_006.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

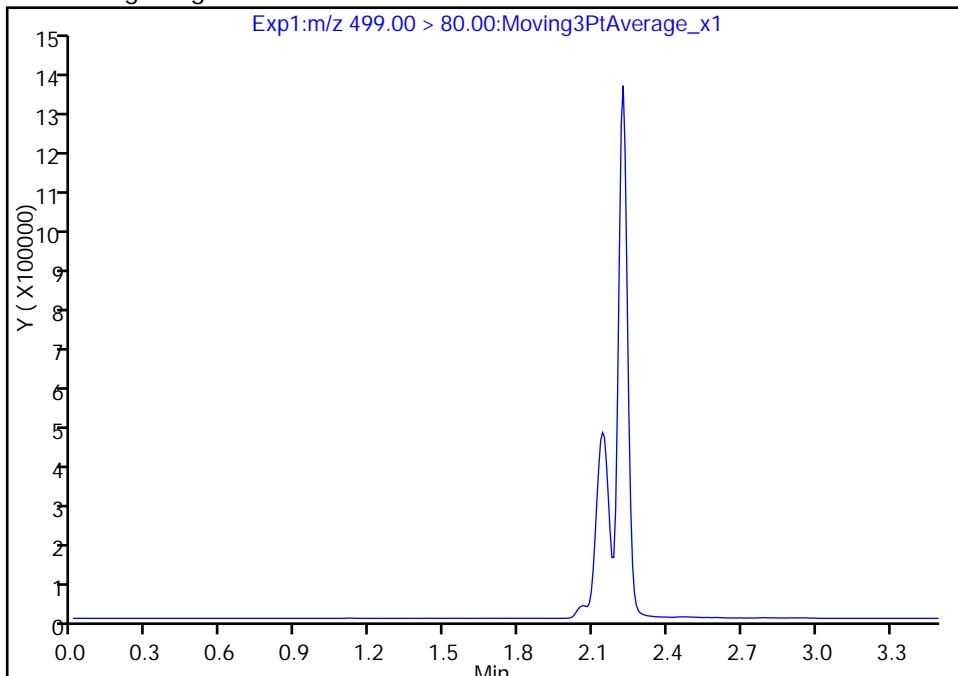
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_006.d  
 Injection Date: 26-Jan-2017 11:11:53 Instrument ID: A8\_N  
 Lims ID: IC L3  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 3 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

## 8 Perfluoroctane sulfonic acid, CAS: 1763-23-1

Signal: 1

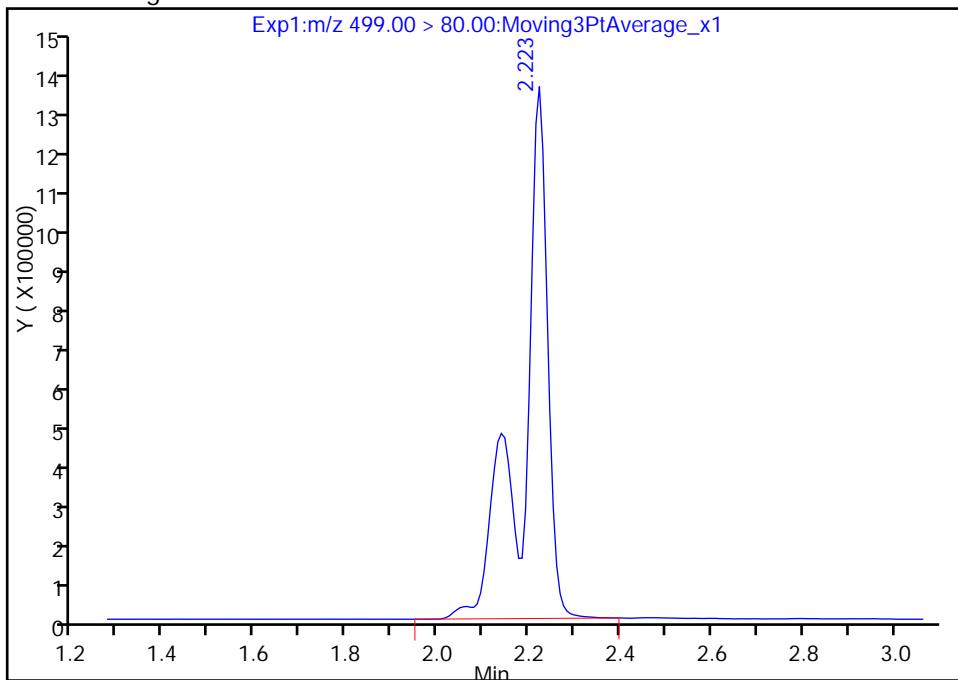
Not Detected  
 Expected RT: 2.14

## 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

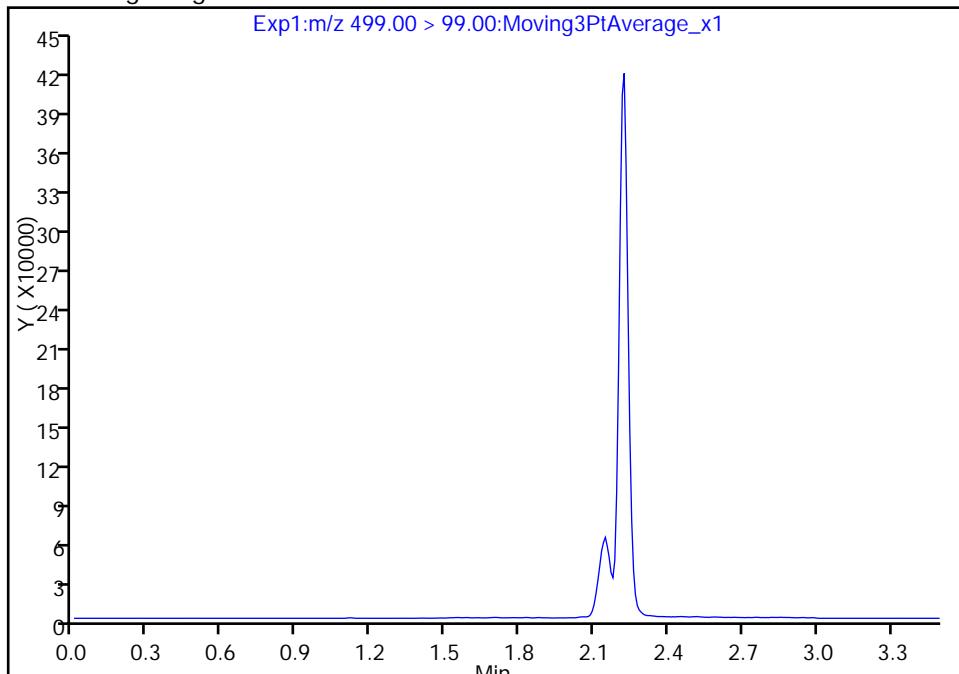
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

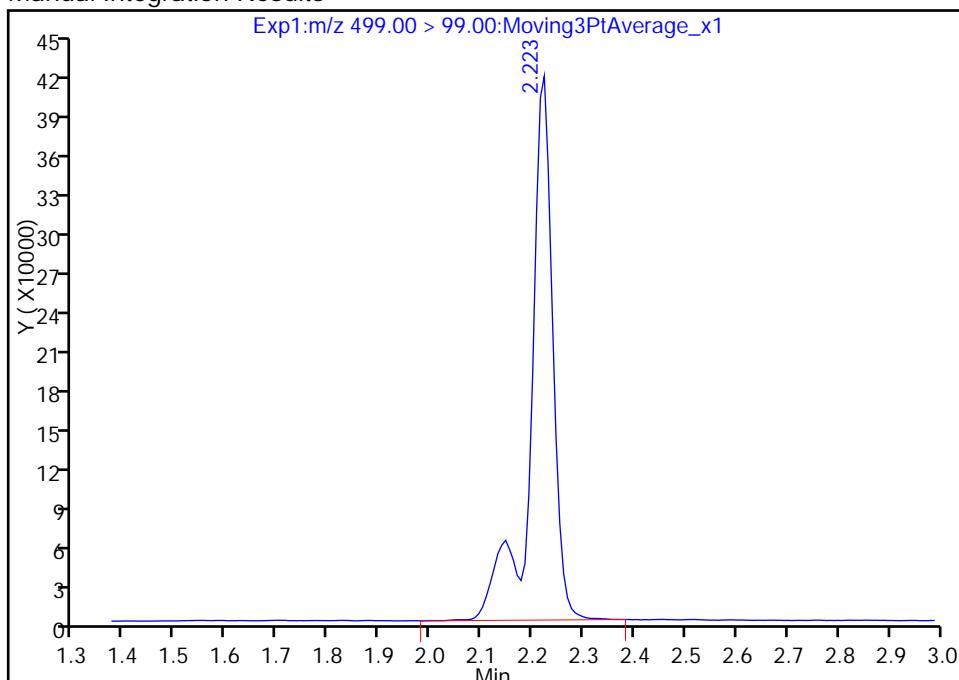
Expected RT: 2.14

## 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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	3479578	10.5		6594	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.791	1.787	0.004	1.000	15346095	31.5		2118	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.791	1.788	0.003	1.000	3062534	10.3		405	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.980	1.979	0.001		3076249	10.0		5651	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.223	2.220	0.003		8308914	28.7		8294	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.231	2.229	0.002	1.000	4439886	21.2		932	
<b>\$ 10 13C2 PFDA</b>									
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:

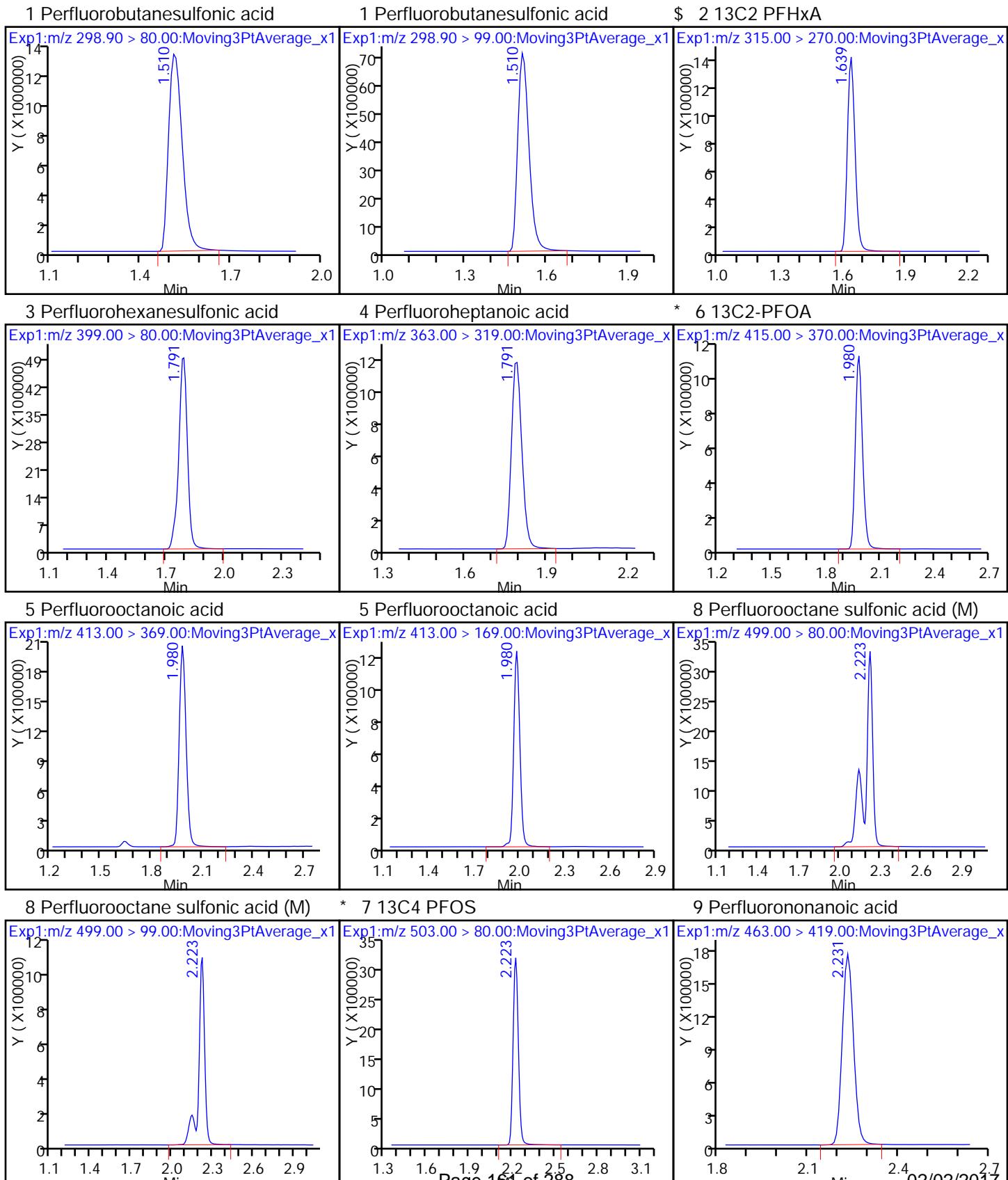
LC537-L4\_00017

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

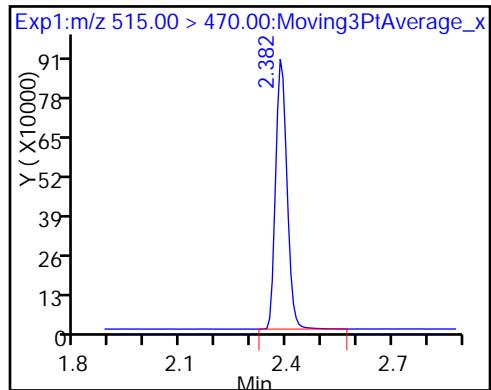


Report Date: 30-Jan-2017 11:47:44

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_007.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

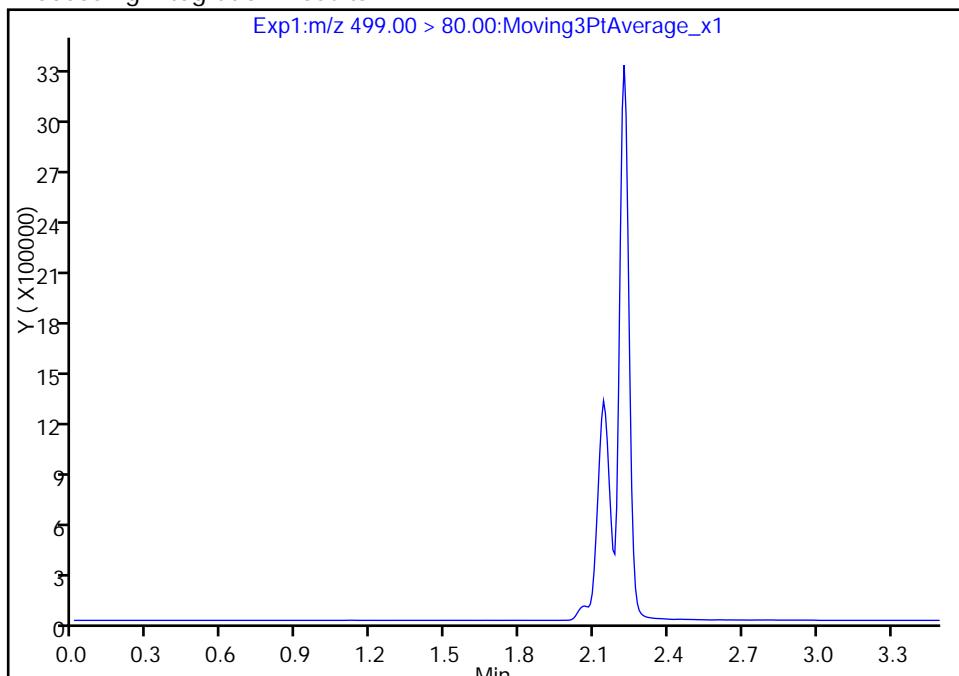
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_007.d  
 Injection Date: 26-Jan-2017 11:16:16 Instrument ID: A8\_N  
 Lims ID: IC L4  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 4 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

**8 Perfluoroctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

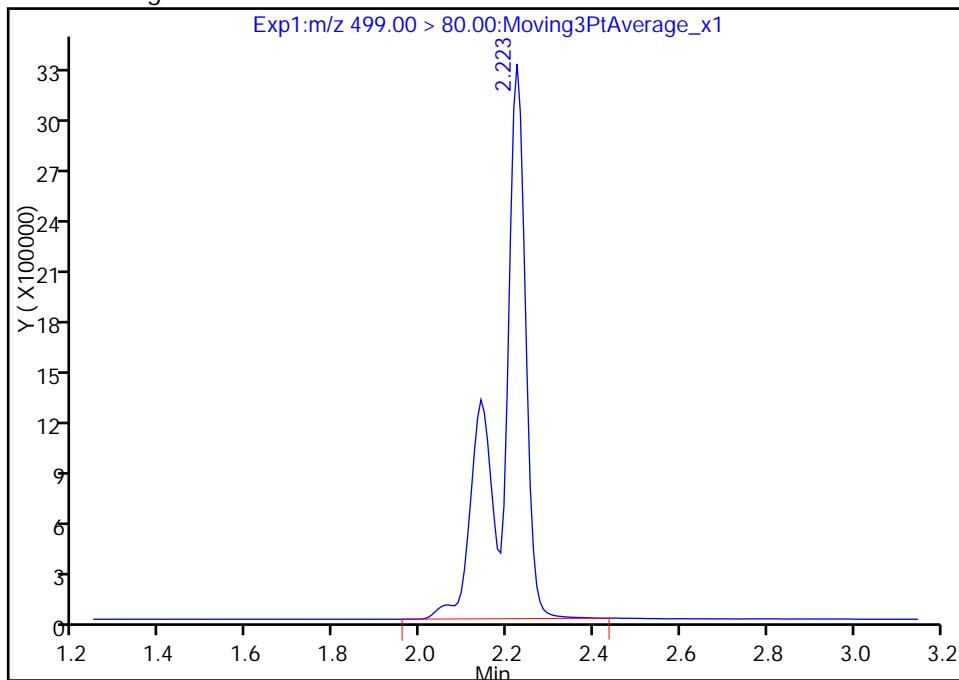
Not Detected  
 Expected RT: 2.14

## 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: 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

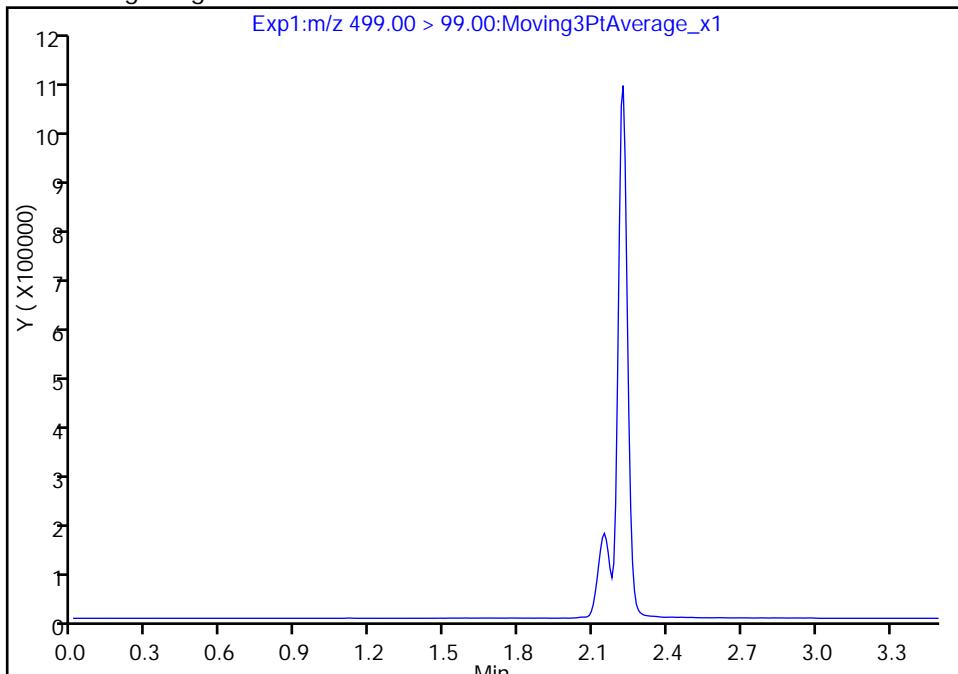
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

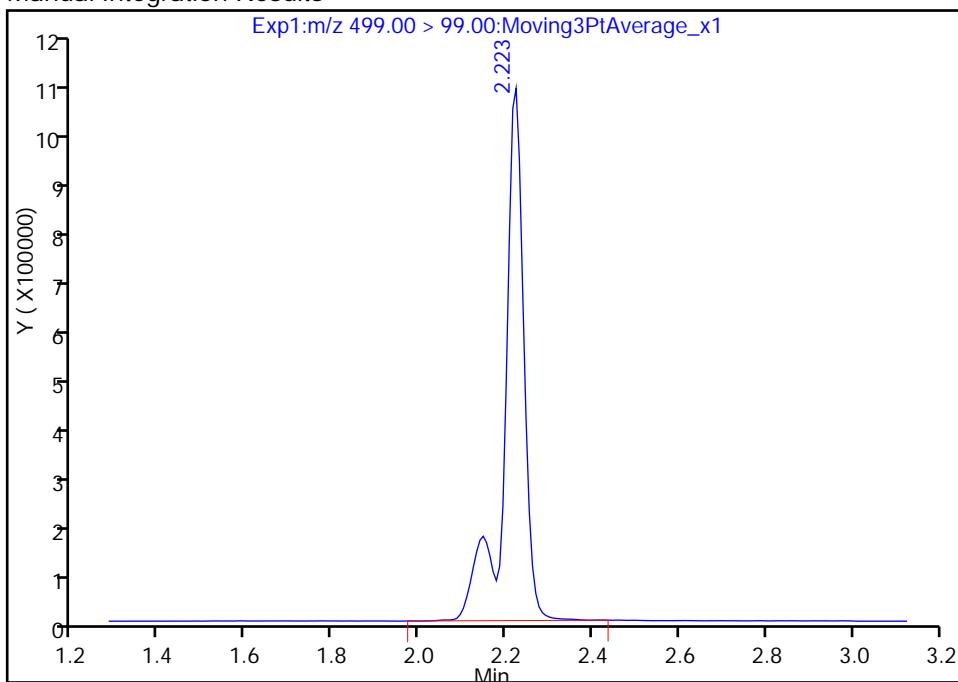
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 3300271  
 Amount: 41.561339  
 Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:08:59

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

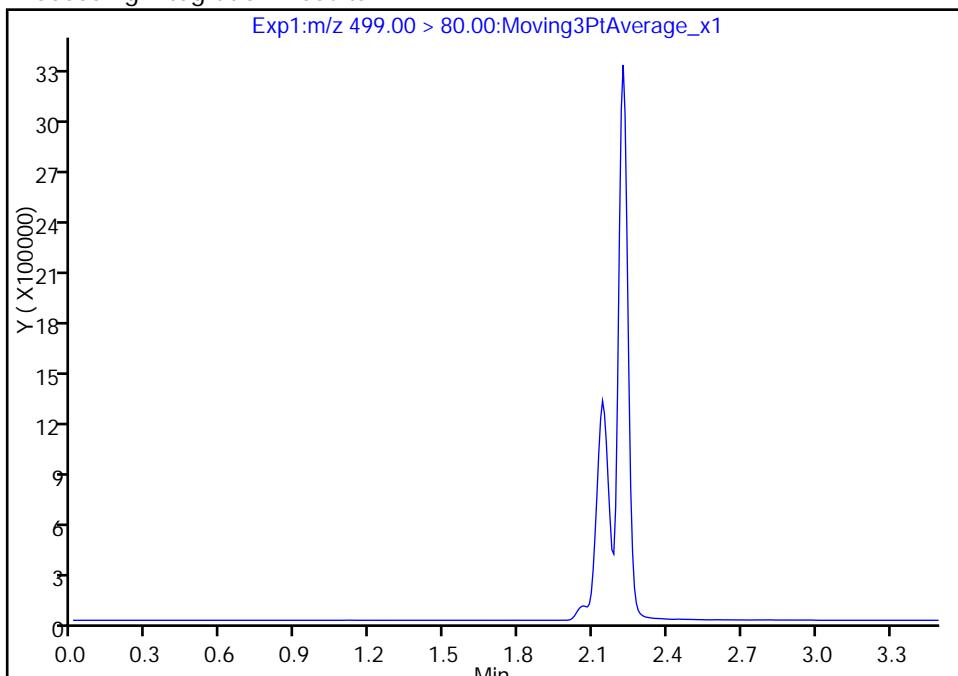
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_007.d  
 Injection Date: 26-Jan-2017 11:16:16 Instrument ID: A8\_N  
 Lims ID: IC L4  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 4 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

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

Signal: 1

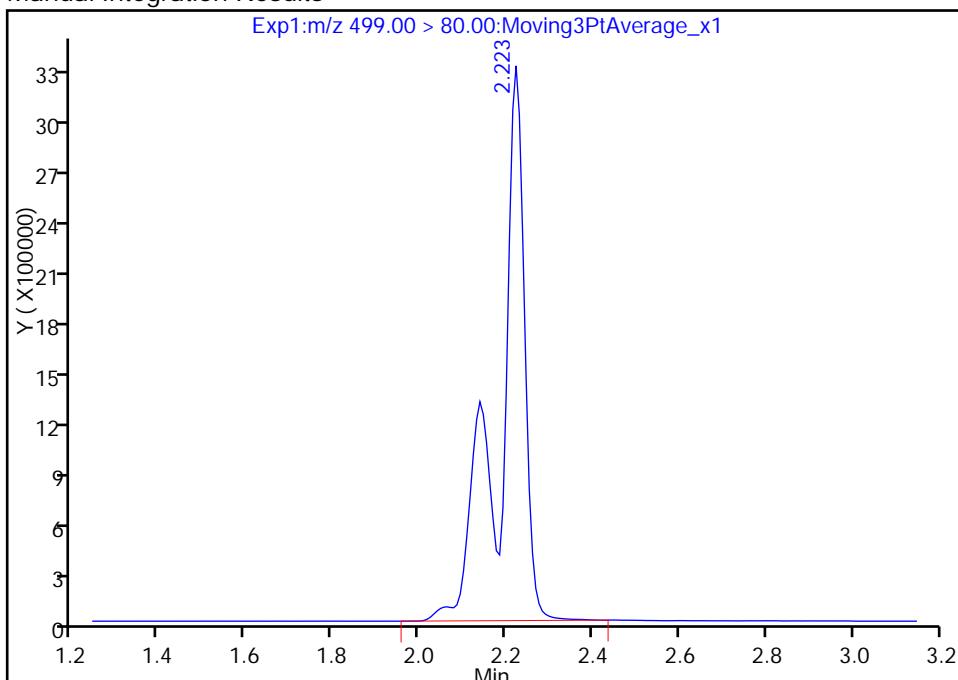
Not Detected  
 Expected RT: 2.14

## 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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2710579	10.1		6365	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.783	1.787	-0.004	1.000	16980909	43.0		2291	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.783	1.788	-0.005	1.000	3366172	14.0		430	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.973	1.979	-0.006		2486274	10.0		5087	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.215	2.220	-0.005		6724206	28.7		7121	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.223	2.229	-0.006	1.000	4708932	27.8		956	
<b>\$ 10 13C2 PFDA</b>									
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:**

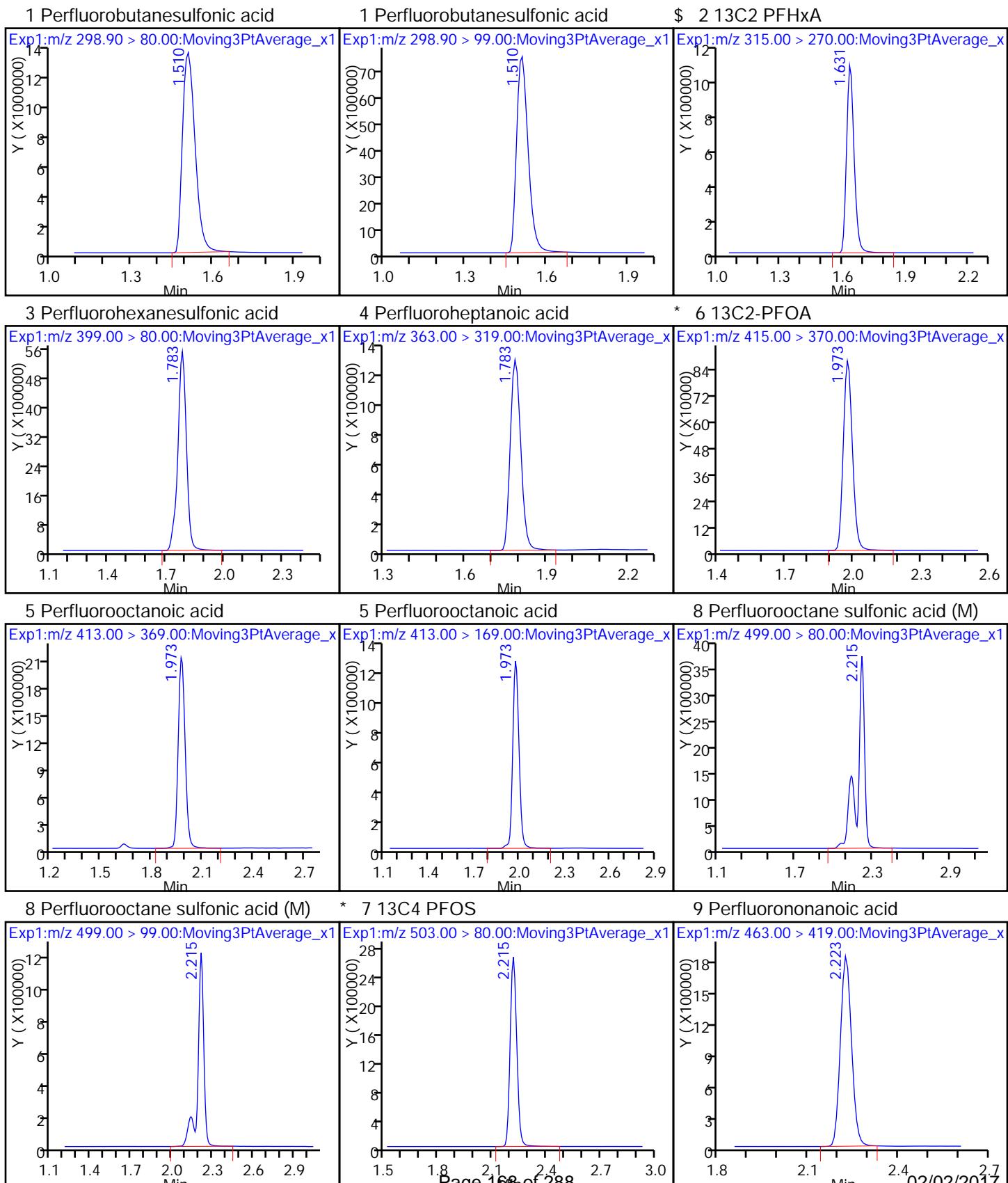
LC537-L5\_00020

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

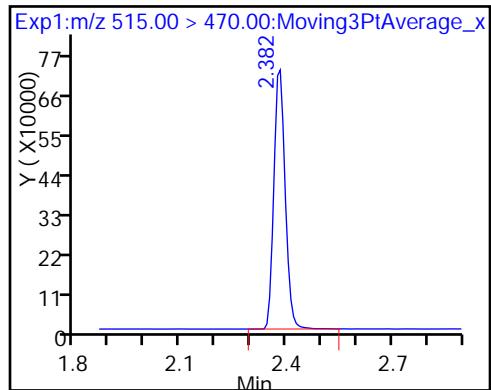


Report Date: 30-Jan-2017 11:47:45

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_008.d

\$ 10 13C2 PFDA



## 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

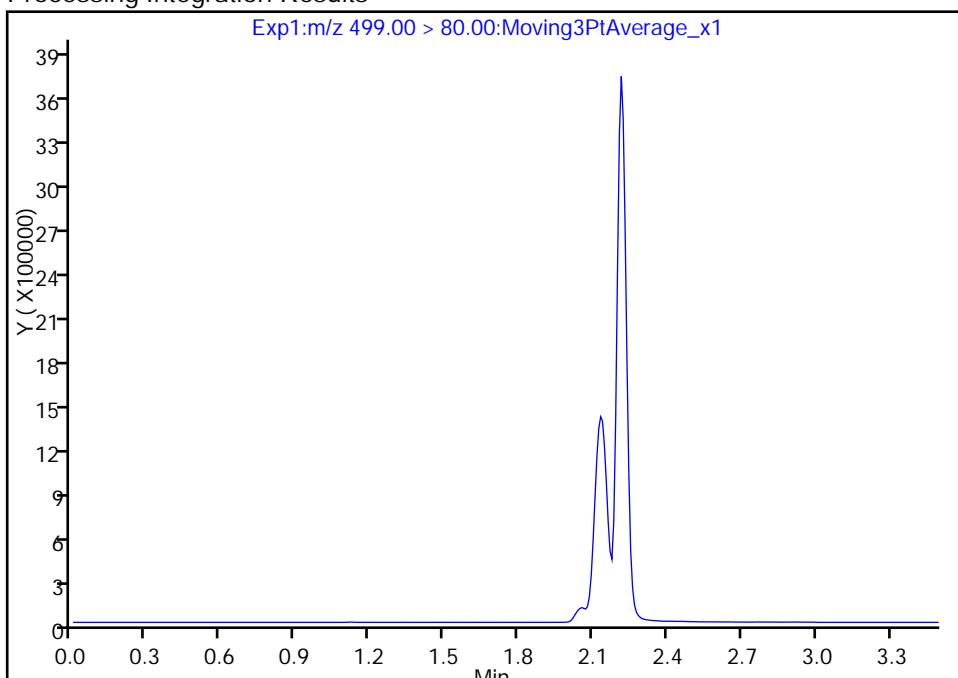
**8 Perfluoroctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

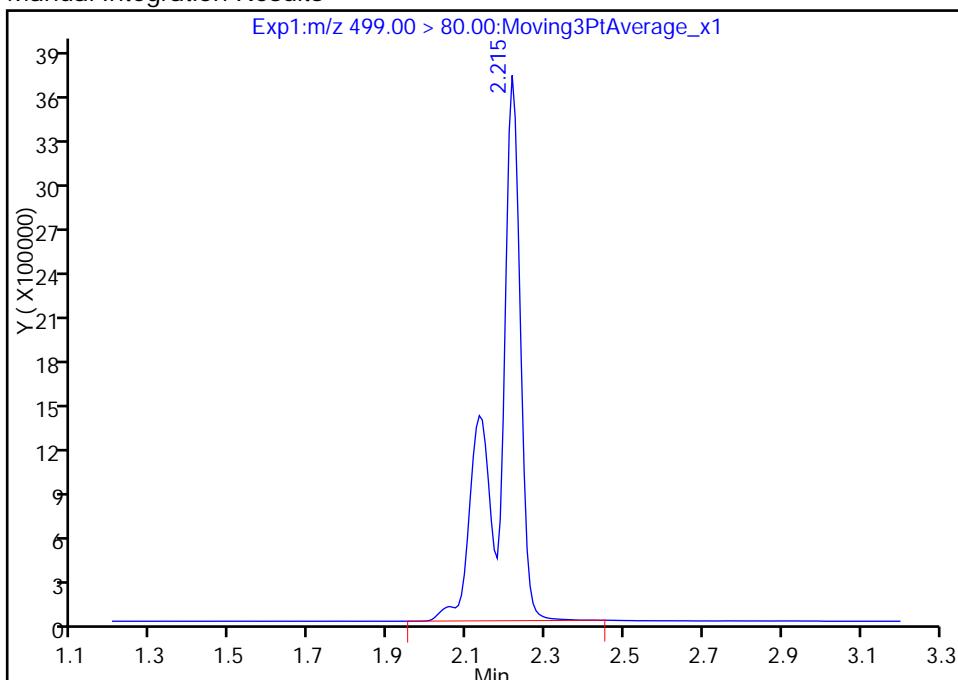
Not Detected

Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results



Reviewer: chandrasenash, 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

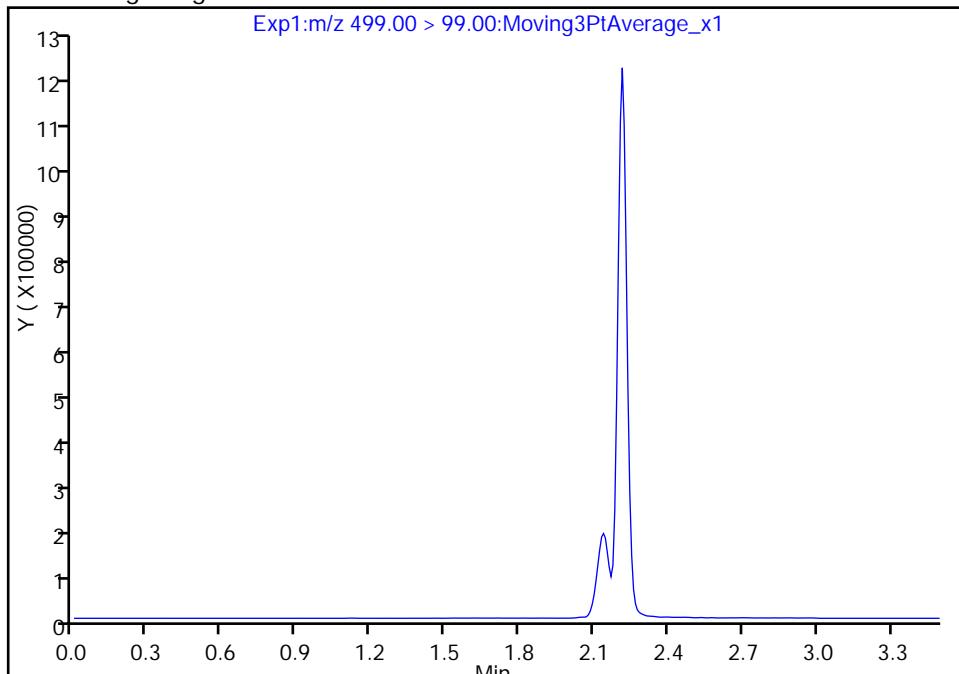
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

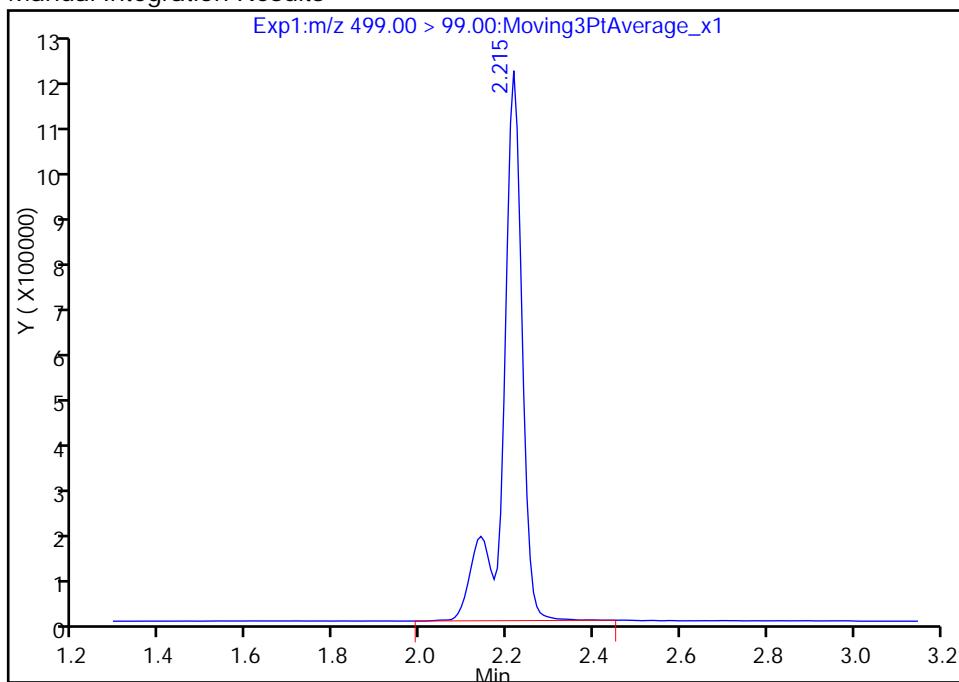
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 3738939  
 Amount: 57.865170  
 Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:11:18

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\_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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	2652857	10.3		6185	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.783	1.787	-0.004	1.000	22216101	58.4		2524	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.783	1.788	-0.005	1.000	4381381	19.1		512	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.980	1.979	0.001		2384986	10.0		5263	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.215	2.220	-0.005		6475201	28.7		7455	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.231	2.229	0.002	1.000	6784989	41.8		1253	
<b>\$ 10 13C2 PFDA</b>									
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

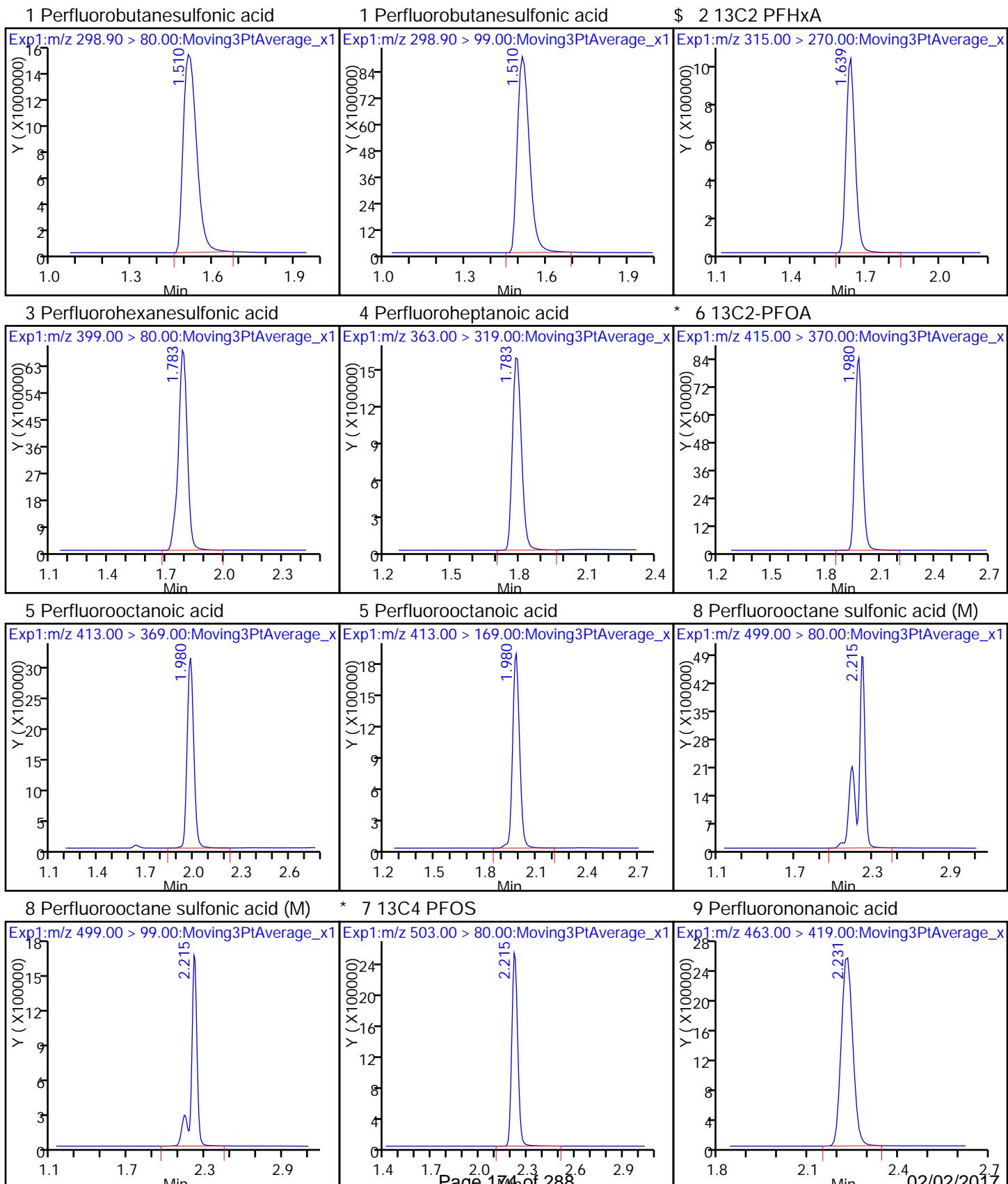
Units: mL

Report Date: 30-Jan-2017 11:47:46

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## 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

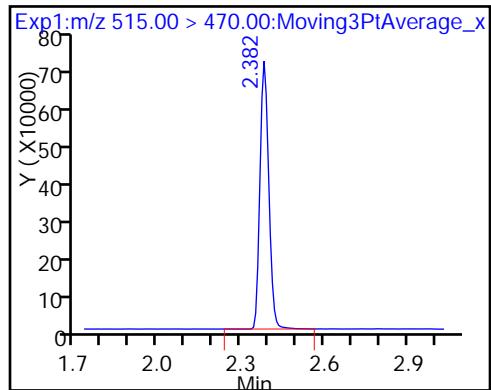


Report Date: 30-Jan-2017 11:47:46

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_009.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

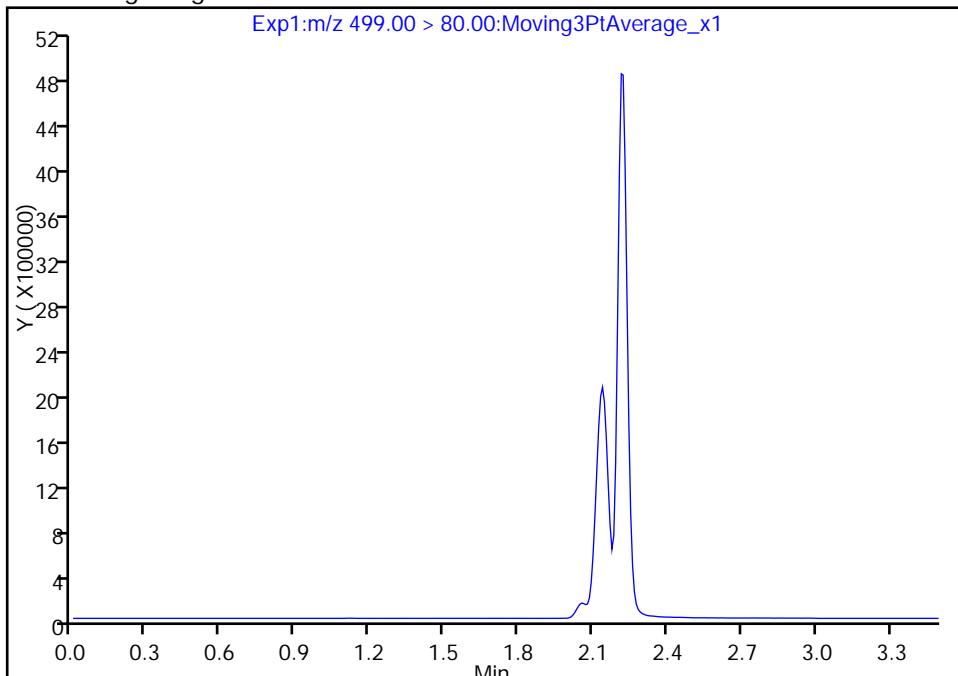
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_009.d  
 Injection Date: 26-Jan-2017 11:25:03 Instrument ID: A8\_N  
 Lims ID: IC L6  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 6 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

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

Signal: 1

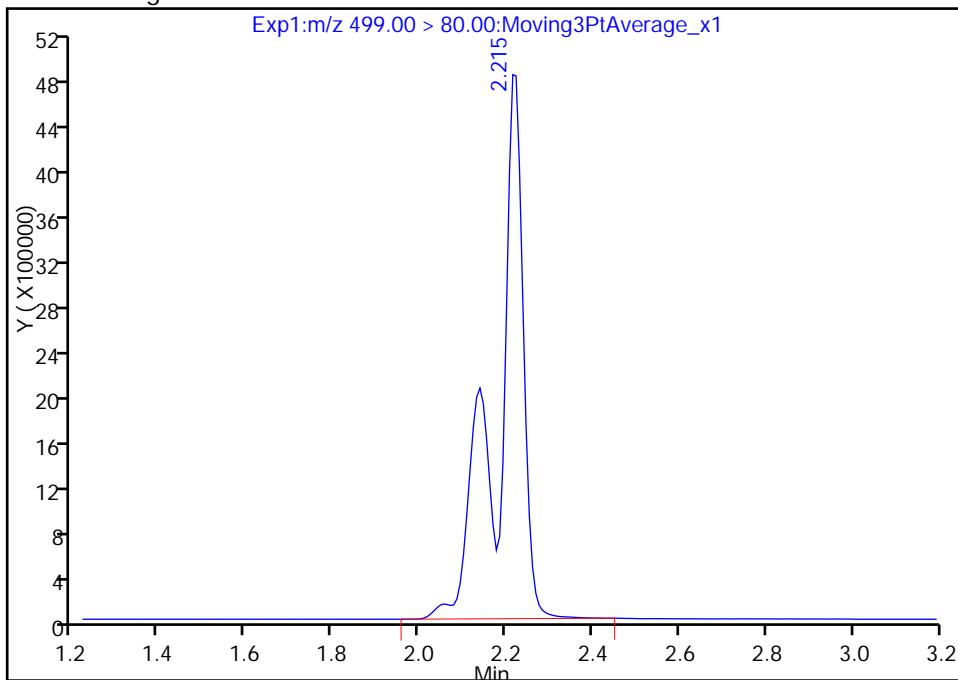
Not Detected  
 Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 20461190  
 Amount: 81.175847  
 Amount Units: ng/ml



Reviewer: chandrasenash, 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

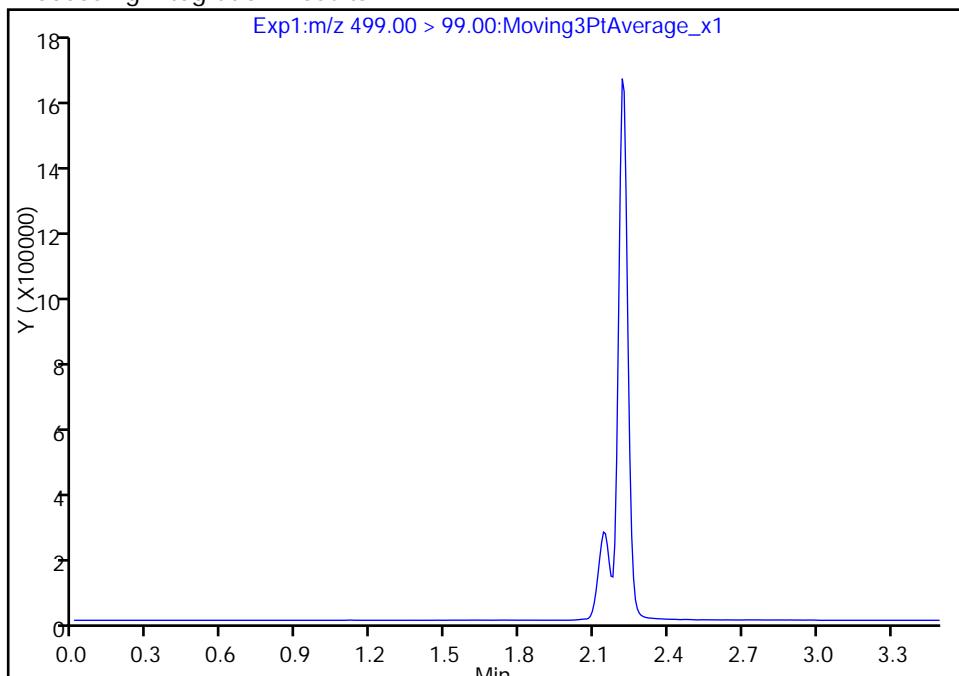
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

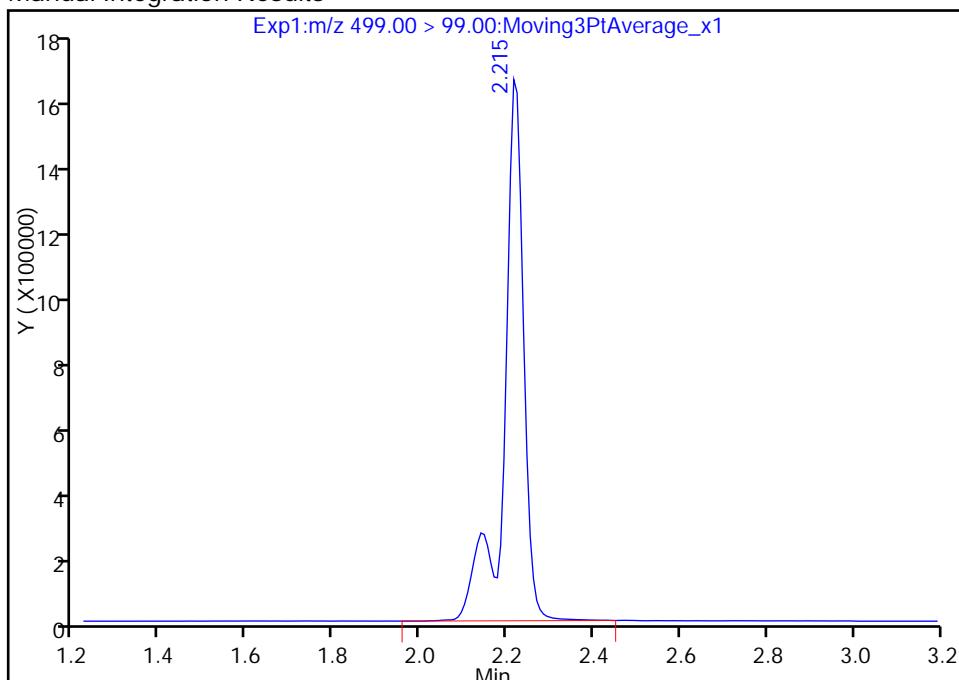
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 5166933  
 Amount: 81.175847  
 Amount Units: ng/ml



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.: 320-25352-1  
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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	2615322	9.72		6771	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.783	1.787	-0.004	1.000	3162827	7.98		664	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.791	1.788	0.003	1.000	626193	2.61		83.3	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.980	1.979	0.001		2492054	10.0		5184	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.215	2.220	-0.005		6749200	28.7		8408	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.231	2.229	0.002	1.000	938665	5.53		233	
<b>\$ 10 13C2 PFDA</b>									
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

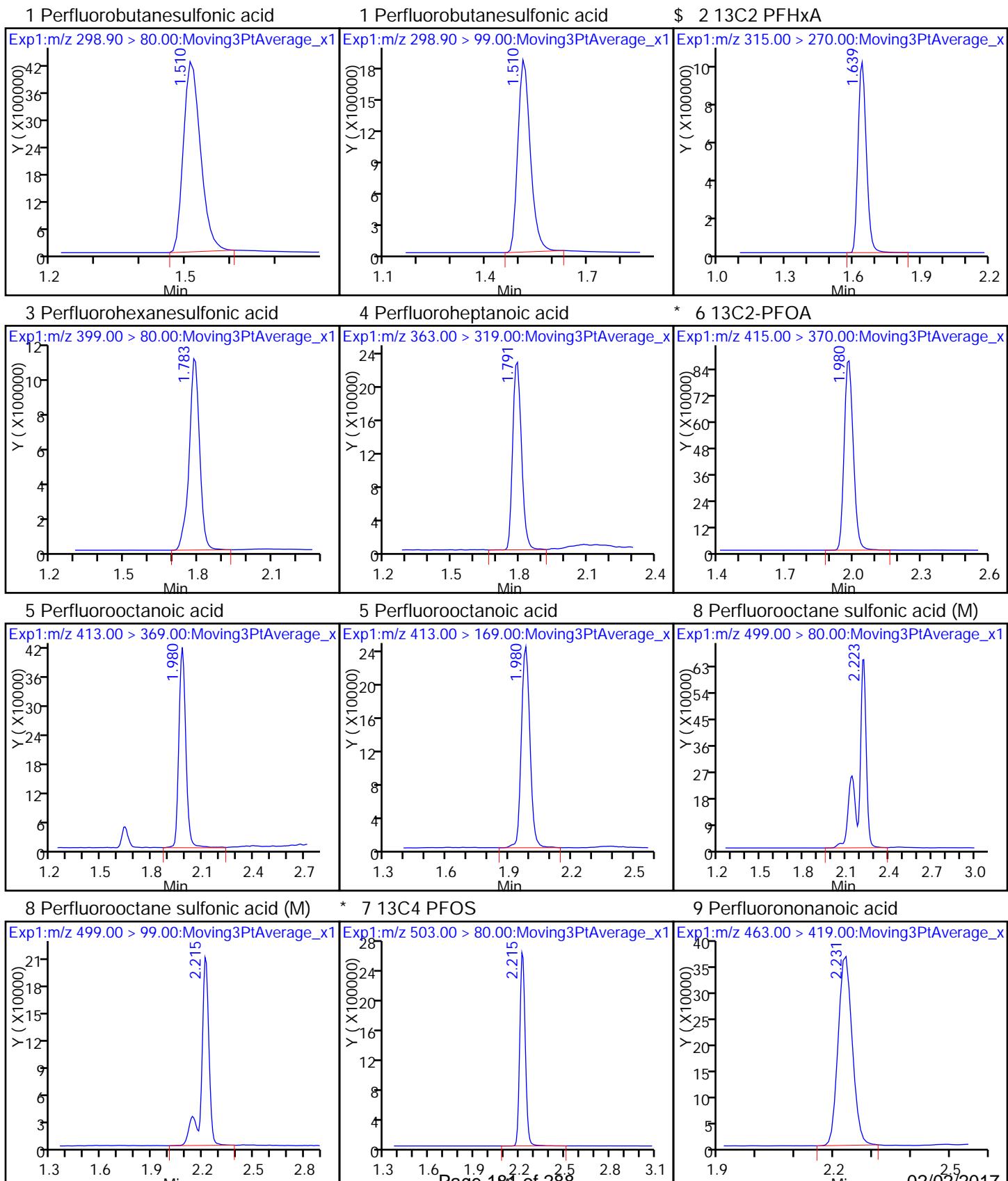
Units: mL

Report Date: 30-Jan-2017 11:49:21

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## 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

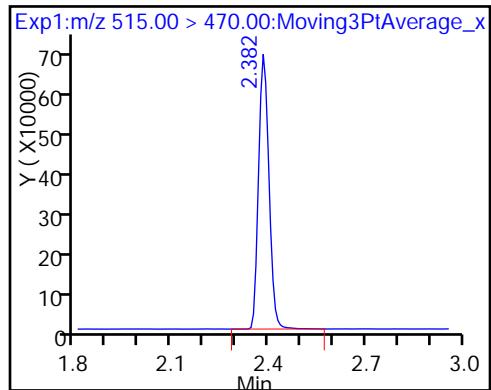


Report Date: 30-Jan-2017 11:49:21

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_011.d

\$ 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

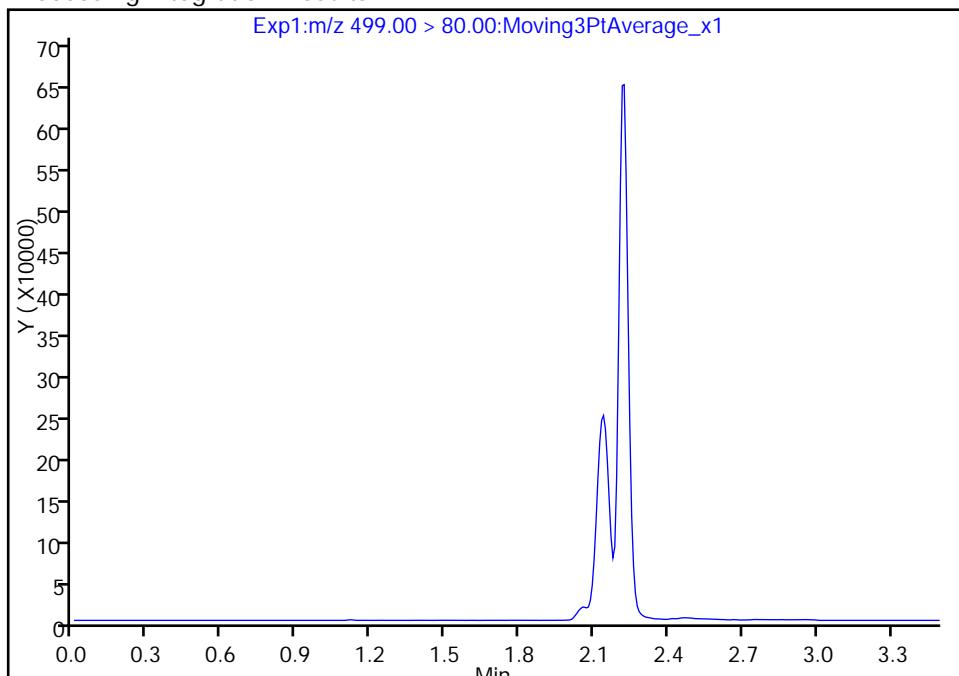
## 8 Perfluoroctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

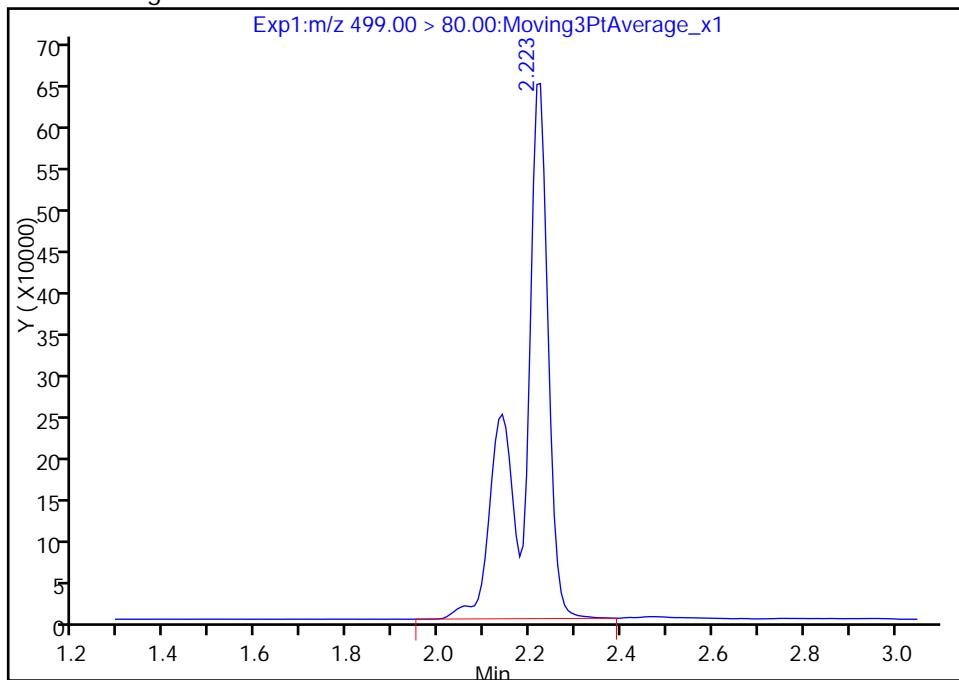
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 2653811  
 Amount: 10.101058  
 Amount Units: ng/ml



Reviewer: chandrasenash, 26-Jan-2017 12:15:17

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\_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

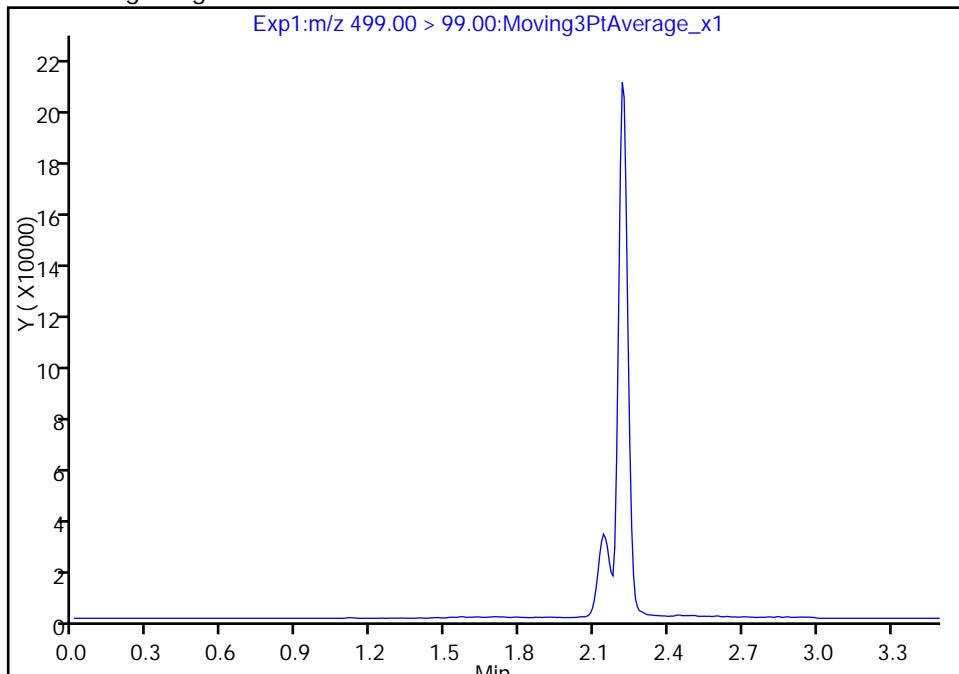
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

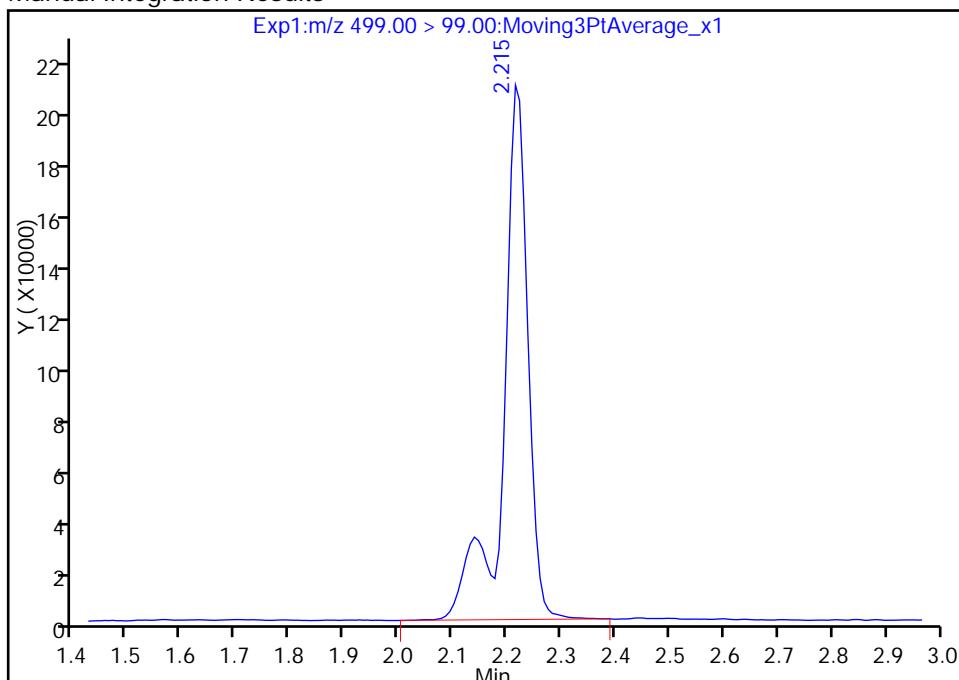
Expected RT: 2.14

## 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.: 320-25352-1  
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
<b>1 Perfluorobutanesulfonic acid</b>									
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	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2683454	10.9		6152	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.783	1.787	-0.004	1.000	7879031	21.4		1437	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.783	1.788	-0.005	1.000	2549950	11.6		335	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.973	1.979	-0.006		2273215	10.0		4649	
<b>5 Perfluorooctanoic acid</b>									
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	
<b>8 Perfluorooctane sulfonic acid</b>									
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
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.215	2.220	-0.005		6260544	28.7		6453	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.223	2.229	-0.006	1.000	3478258	22.5		767	
<b>\$ 10 13C2 PFDA</b>									
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

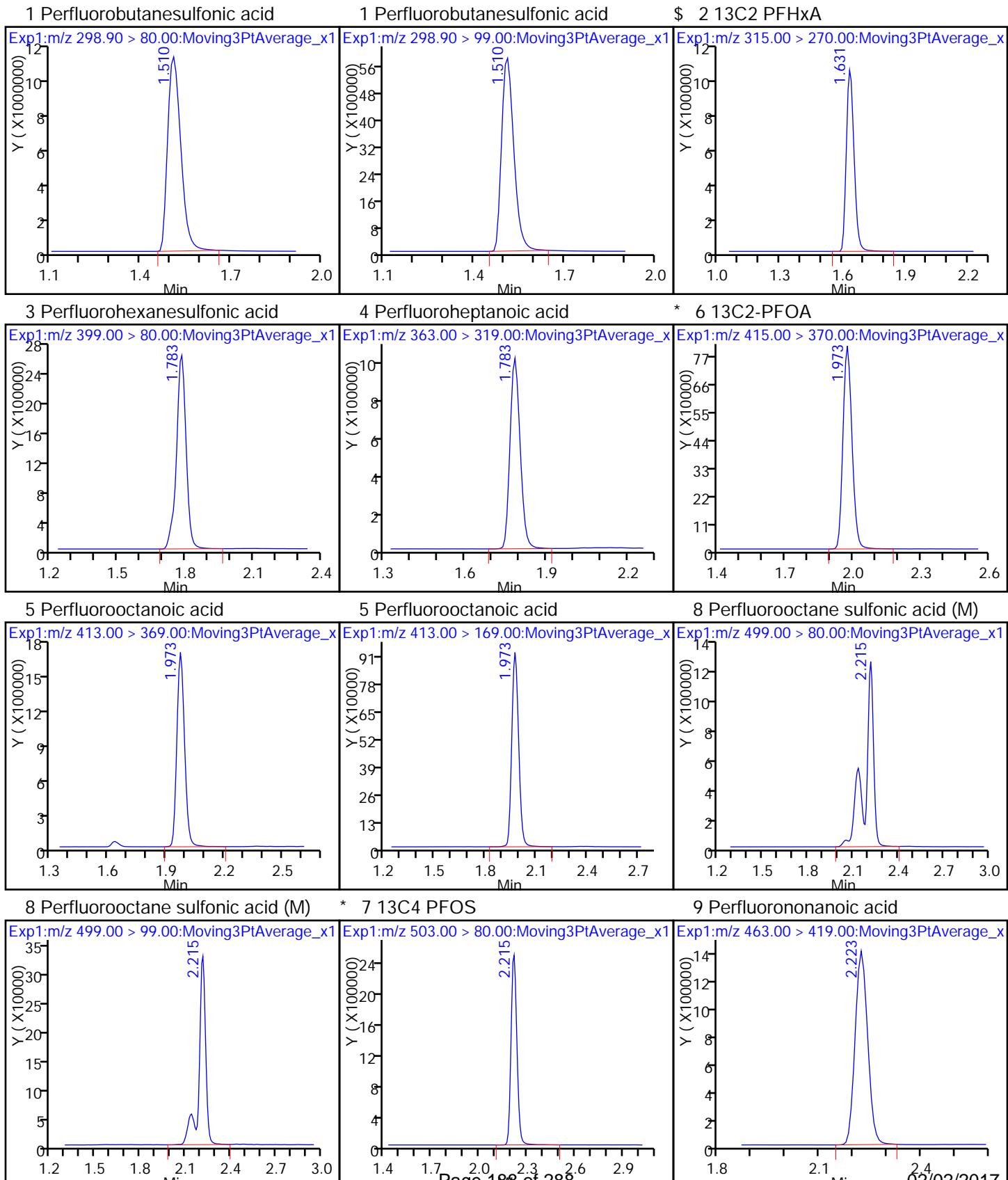
Units: mL

Report Date: 30-Jan-2017 11:49:24

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## 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

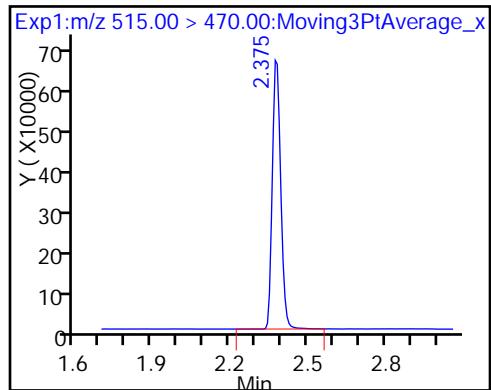


Report Date: 30-Jan-2017 11:49:24

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_013.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

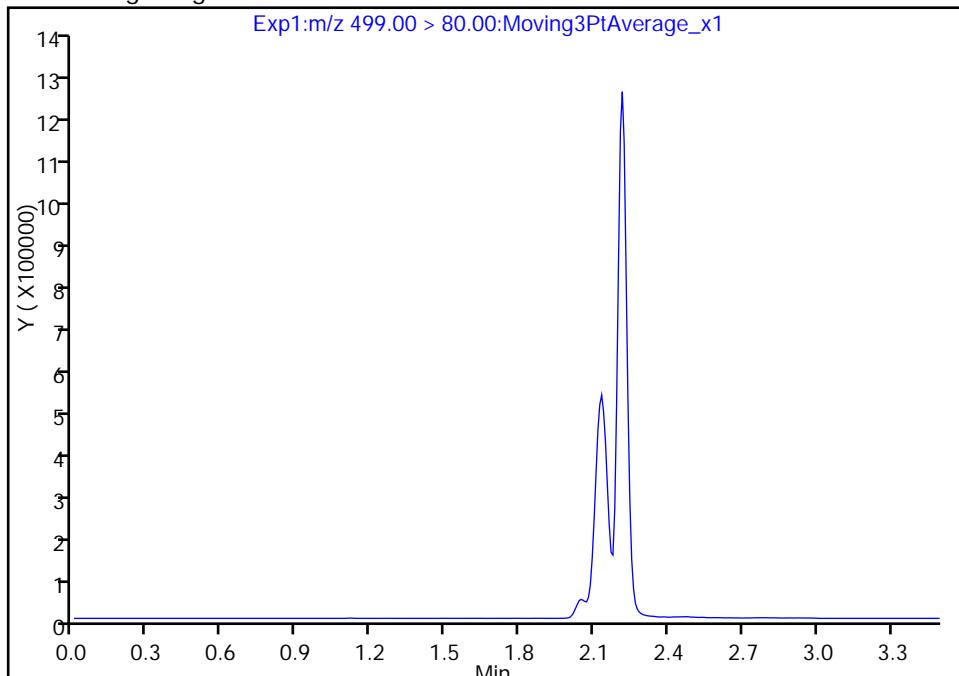
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170126-39222.b\\2017.01.26\_537\_CURVE\_013.d  
 Injection Date: 26-Jan-2017 11:42:36 Instrument ID: A8\_N  
 Lims ID: ICV  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 7 Worklist Smp#: 13  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

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

Signal: 1

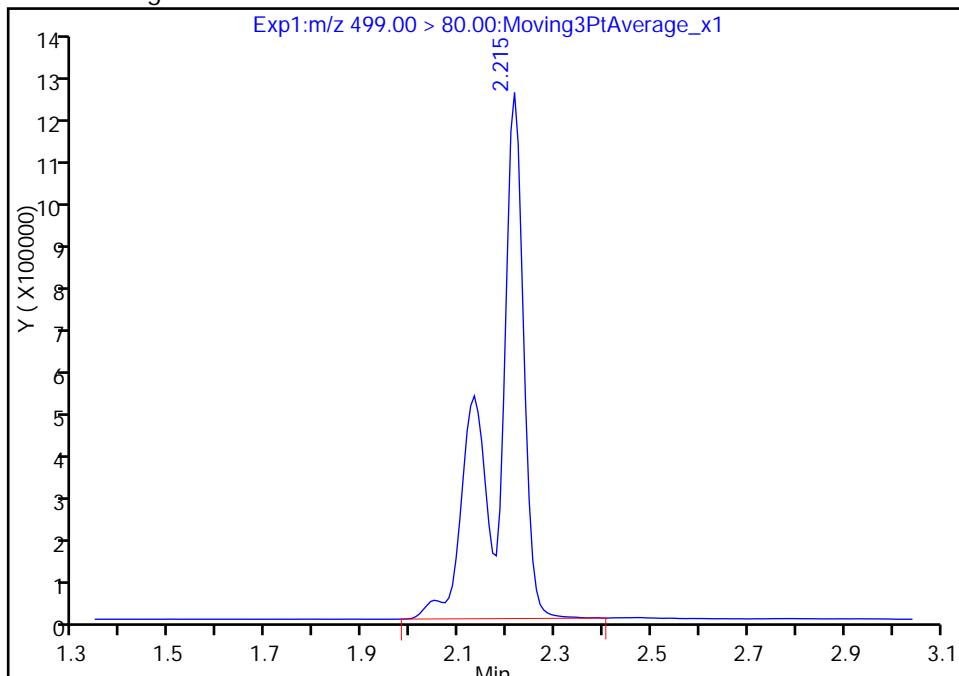
Not Detected  
 Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 5233022  
 Amount: 21.472850  
 Amount Units: ng/ml



Reviewer: chandrasenash, 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

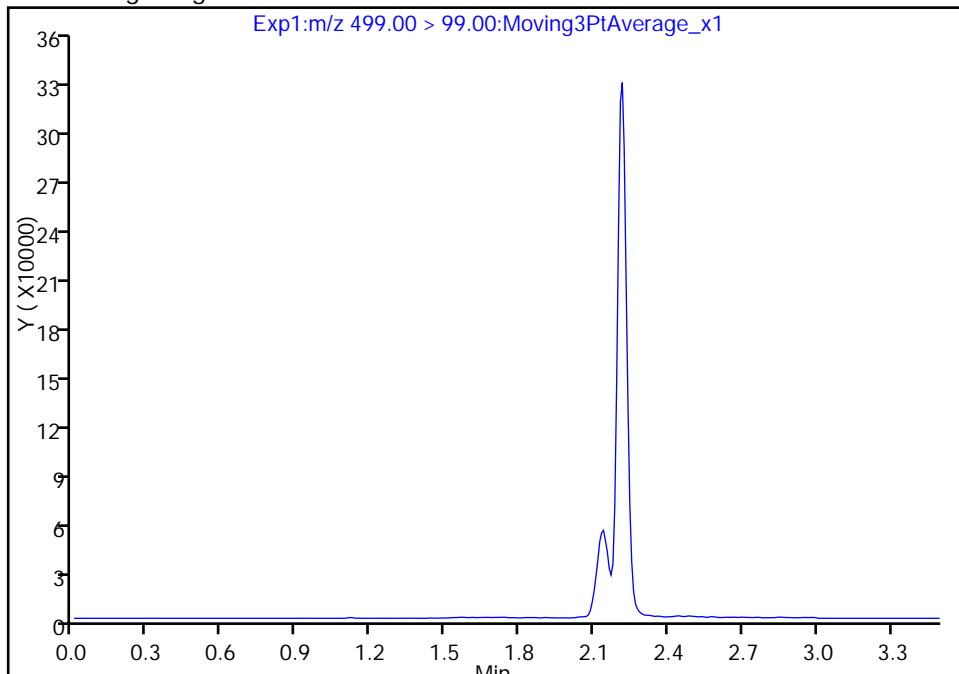
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

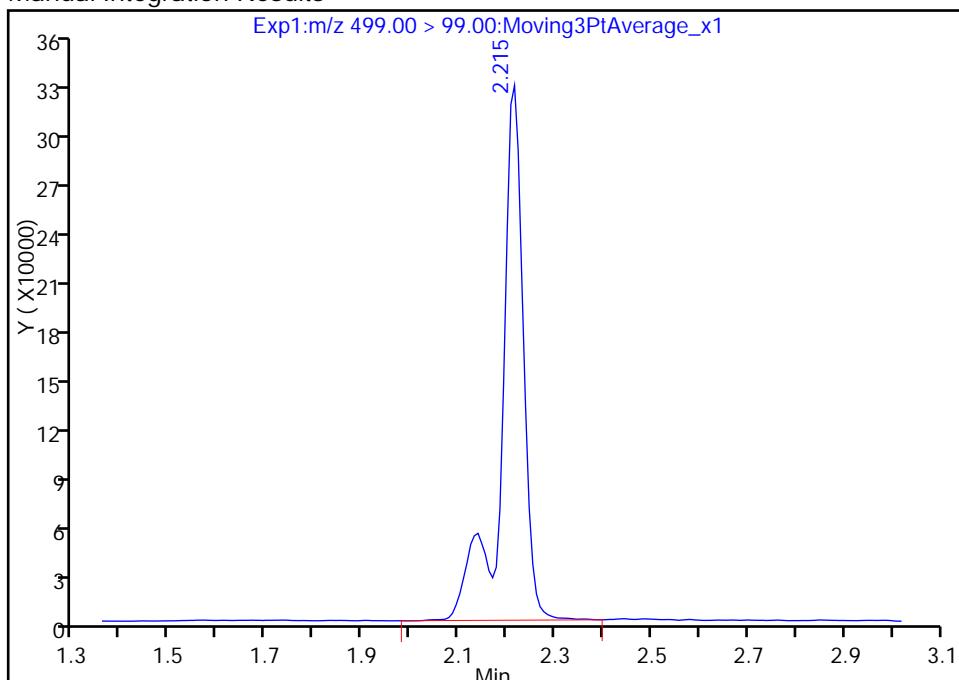
Expected RT: 2.14

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 1038329  
 Amount: 21.472850  
 Amount Units: ng/ml



Reviewer: chandrasenas, 26-Jan-2017 12:16:45

Audit Action: Manually Integrated

Audit Reason: Assign Peak

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148472/4 Calibration Date: 01/31/2017 17:23  
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: 2017.01.31A\_537\_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		2.043		25.8	22.9	12.9	50.0
Perfluorohexanesulfonic acid	Ave	1.684	1.705		7.81	7.72	1.2	50.0
Perfluoroheptanoic acid	Ave	0.9643	1.024		2.68	2.52	6.2	50.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	1.006		5.42	4.98	8.8	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.112		10.2	10.2	-0.4	50.0
Perfluorononanoic acid	Ave	0.6813	0.7658		5.94	5.29	12.4	50.0
13C2 PFHxA	Ave	1.079	1.086		10.1	10.0	0.6	30.0
13C2 PFDA	Ave	0.6456	0.6721		10.4	10.0	4.1	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_004.d  
 Lims ID: CCV L2  
 Client ID:  
 Sample Type: CCVL  
 Inject. Date: 31-Jan-2017 17:23:25 ALS Bottle#: 2 Worklist Smp#: 4  
 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\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 11:06:04 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: XAWRK010

First Level Reviewer: chandrasenas Date: 01-Feb-2017 09:46:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.510	1.510	0.0	1.000	10872171	25.8		854	
298.90 > 99.00	1.510	1.510	0.0	1.000	4637215		2.34(0.00-0.00)	947	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2587509	10.1		6001	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	3058019	7.81		802	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.798	1.788	0.010	1.000	616313	2.68		68.1	
* 6 13C2-PFOA									
415.00 > 370.00	1.995	1.979	0.016		2383498	10.0		5998	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.995	1.980	0.015	1.000	1193932	5.42		89.2	
413.00 > 169.00	1.995	1.980	0.015	1.000	698973		1.71(0.00-0.00)	779	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.162	2.215	-0.053	1.000	2642479	10.2		428	
499.00 > 99.00	2.170	2.215	-0.045	1.004	621794		4.25(0.00-0.00)	142	
* 7 13C4 PFOS									
503.00 > 80.00	2.238	2.220	0.018		6668385	28.7		9792	
9 Perfluorononanoic acid									
463.00 > 419.00	2.253	2.229	0.024	1.000	965355	5.94		202	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1601978	10.4		1837	

Report Date: 01-Feb-2017 11:06:05

Chrom Revision: 2.2 10-Jan-2017 11:26:10

**Reagents:**

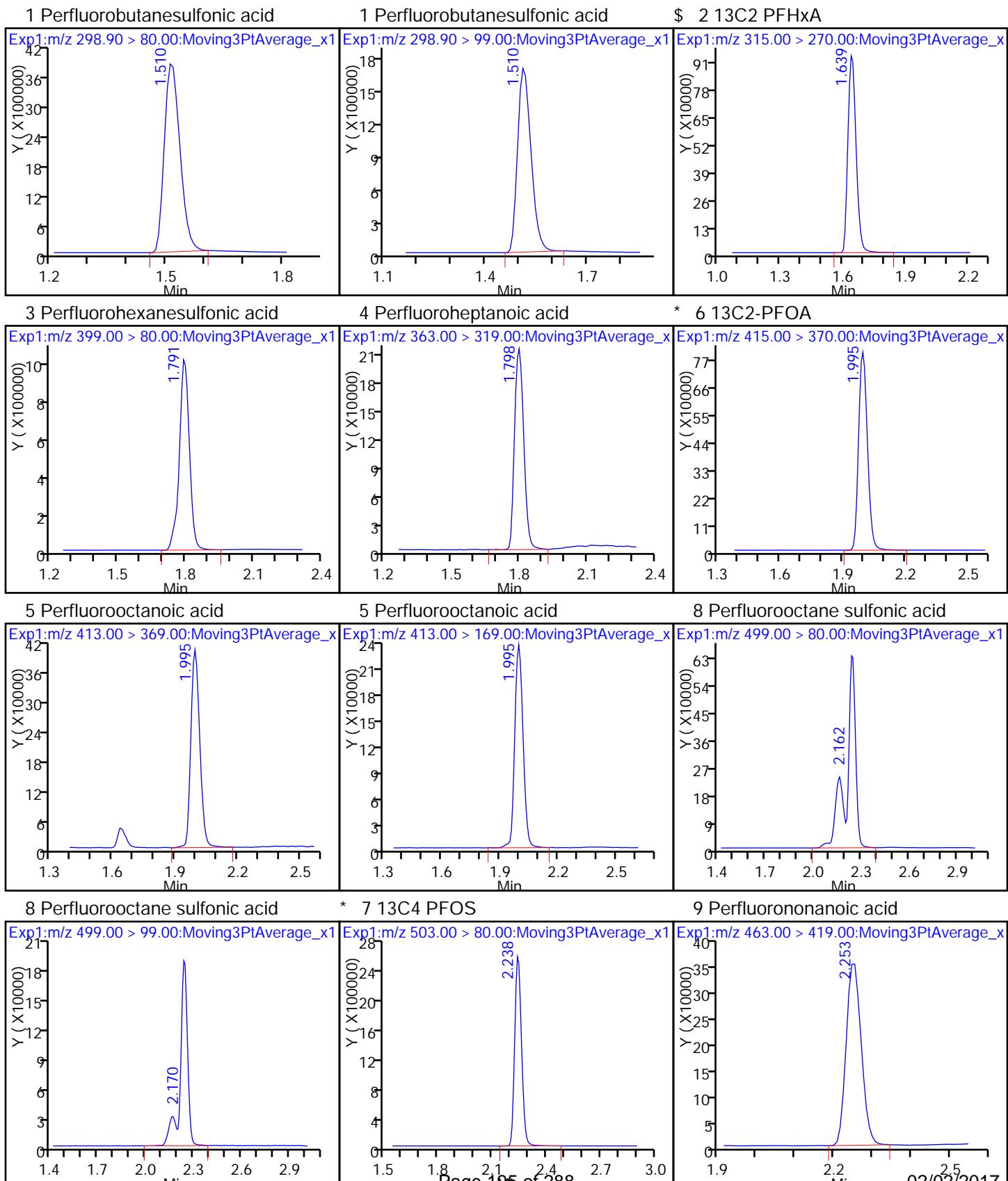
LC537-L2\_00016

Amount Added: 1.00

Units: mL

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_004.d  
 Injection Date: 31-Jan-2017 17:23:25 Instrument ID: A8\_N  
 Lims ID: CCV L2  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 2 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

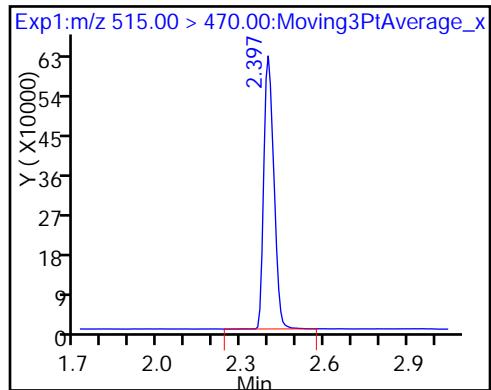


Report Date: 01-Feb-2017 11:06:05

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_004.d

\$ 10 13C2 PFDA



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148472/5 Calibration Date: 01/31/2017 17:27  
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: 2017.01.31A\_537\_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.355		126	135	-6.6	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9316		14.3	14.9	-3.4	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.600		43.1	45.4	-5.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.9077		28.7	29.3	-1.8	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.090		58.7	60.1	-2.3	30.0
Perfluorononanoic acid	Ave	0.6813	0.6790		31.0	31.1	-0.3	30.0
13C2 PFHxA	Ave	1.079	1.102		10.2	10.0	2.1	30.0
13C2 PFDA	Ave	0.6456	0.7200		11.2	10.0	11.5	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_005.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 31-Jan-2017 17:27:49 ALS Bottle#: 5 Worklist Smp#: 5  
 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\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:54:59 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: XAWRK010

First Level Reviewer: chandrasenas Date: 01-Feb-2017 09:45:50

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	42426470	125.7		2055	
298.90 > 99.00	1.510	1.510	0.0	1.000	21717663		1.95(0.00-0.00)	2596	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2650753	10.2		7058	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.791	1.787	0.004	1.000	16884989	43.1		2989	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.791	1.788	0.003	1.000	3327408	14.3		375	
* 6 13C2-PFOA									
415.00 > 370.00	1.988	1.979	0.009		2405110	10.0		6136	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.995	1.980	0.015	1.000	6391898	28.7		419	
413.00 > 169.00	1.995	1.980	0.015	1.000	3693536		1.73(0.00-0.00)	2752	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.162	2.215	-0.053	1.000	15235795	58.7		1436	
499.00 > 99.00	2.208	2.215	-0.007	1.021	3640054		4.19(0.00-0.00)	591	
* 7 13C4 PFOS									
503.00 > 80.00	2.238	2.220	0.018		6668803	28.7		10553	
9 Perfluorononanoic acid									
463.00 > 419.00	2.246	2.229	0.017	1.000	5080851	31.0		969	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1731655	11.2		2190	

Report Date: 01-Feb-2017 10:54:59

Chrom Revision: 2.2 10-Jan-2017 11:26:10

**Reagents:**

LC537-L5\_00020

Amount Added: 1.00

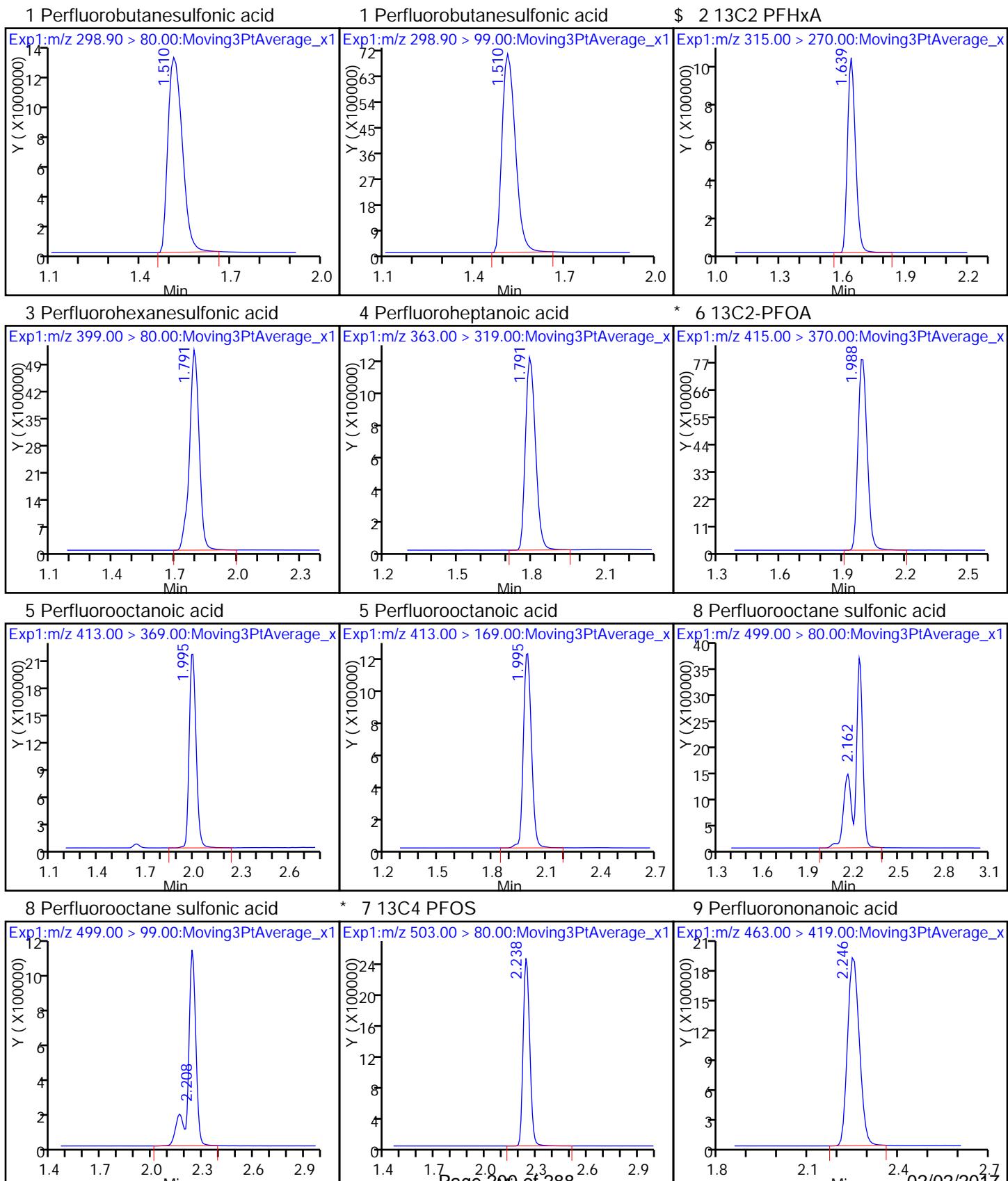
Units: mL

Report Date: 01-Feb-2017 10:54:59

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_005.d  
 Injection Date: 31-Jan-2017 17:27:49 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 5 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

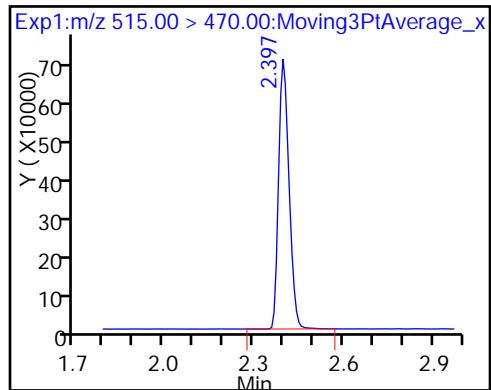


Report Date: 01-Feb-2017 10:54:59

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_005.d

\$ 10 13C2 PFDA



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148472/17 Calibration Date: 01/31/2017 18:20  
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: 2017.01.31A\_537\_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.866		48.7	45.1	8.0	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9634		4.97	4.97	-0.1	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.684		15.2	15.2	0.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8787		9.32	9.81	-5.0	30.0
Perfluorononanoic acid	Ave	0.6813	0.6758		10.3	10.4	-0.8	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.102		19.9	20.1	-1.3	30.0
13C2 PFHxA	Ave	1.079	1.063		9.85	10.0	-1.5	30.0
13C2 PFDA	Ave	0.6456	0.6662		10.3	10.0	3.2	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148473/17 Calibration Date: 01/31/2017 18:20  
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: 2017.01.31A\_537\_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.866		48.7	45.1	8.0	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9634		4.97	4.97	-0.1	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.684		15.2	15.2	0.0	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8787		9.32	9.81	-5.0	30.0
Perfluorononanoic acid	Ave	0.6813	0.6758		10.3	10.4	-0.8	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.102		19.9	20.1	-1.3	30.0
13C2 PFHxA	Ave	1.079	1.063		9.85	10.0	-1.5	30.0
13C2 PFDA	Ave	0.6456	0.6662		10.3	10.0	3.2	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_017.d  
 Lims ID: CCV L3  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 31-Jan-2017 18:20:40 ALS Bottle#: 3 Worklist Smp#: 17  
 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\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:09 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:34:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.502	1.510	-0.008	1.000	19726548	48.7		1259	
298.90 > 99.00	1.502	1.510	-0.008	1.000	8956702		2.20(0.00-0.00)	1519	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2670623	9.85		5854	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	6003066	15.2		1357	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	1204439	4.97		132	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2513223	10.0		4905	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	2165921	9.32		144	
413.00 > 169.00	1.980	1.980	0.0	1.000	1232184		1.76(0.00-0.00)	1174	
8 Perfluorooctane sulfonic acid								M	
499.00 > 80.00	2.231	2.215	0.016	1.000	5199028	19.9		1616	M
499.00 > 99.00	2.223	2.215	0.008	0.997	1191883		4.36(0.00-0.00)	1271	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6723009	28.7		6818	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	1770122	10.3		357	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1674301	10.3		1931	

## 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\20170131-39369.b\2017.01.31A\_537\_017.d  
 Lims ID: CCV L3  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 31-Jan-2017 18:20:40 ALS Bottle#: 3 Worklist Smp#: 17  
 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\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:09 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:34:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.502	1.510	-0.008	1.000	19726548	48.7		1259	
298.90 > 99.00	1.502	1.510	-0.008	1.000	8956702		2.20(0.00-0.00)	1519	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2670623	9.85		5854	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	6003066	15.2		1357	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	1204439	4.97		132	
* 6 13C2-PFOA									
415.00 > 370.00	1.980	1.979	0.001		2513223	10.0		4905	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.980	1.980	0.0	1.000	2165921	9.32		144	
413.00 > 169.00	1.980	1.980	0.0	1.000	1232184		1.76(0.00-0.00)	1174	
8 Perfluorooctane sulfonic acid								M	
499.00 > 80.00	2.231	2.215	0.016	1.000	5199028	19.9		1616	M
499.00 > 99.00	2.223	2.215	0.008	0.997	1191883		4.36(0.00-0.00)	1271	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6723009	28.7		6818	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	1770122	10.3		357	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.390	2.384	0.006	1.000	1674301	10.3		1931	

## 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\\20170131-39369.b\\2017.01.31A\_537\_017.d

Injection Date: 31-Jan-2017 18:20:40

Instrument ID: A8\_N

Lims ID: CCV L3

Client ID:

Operator ID: A8-PC\\A8

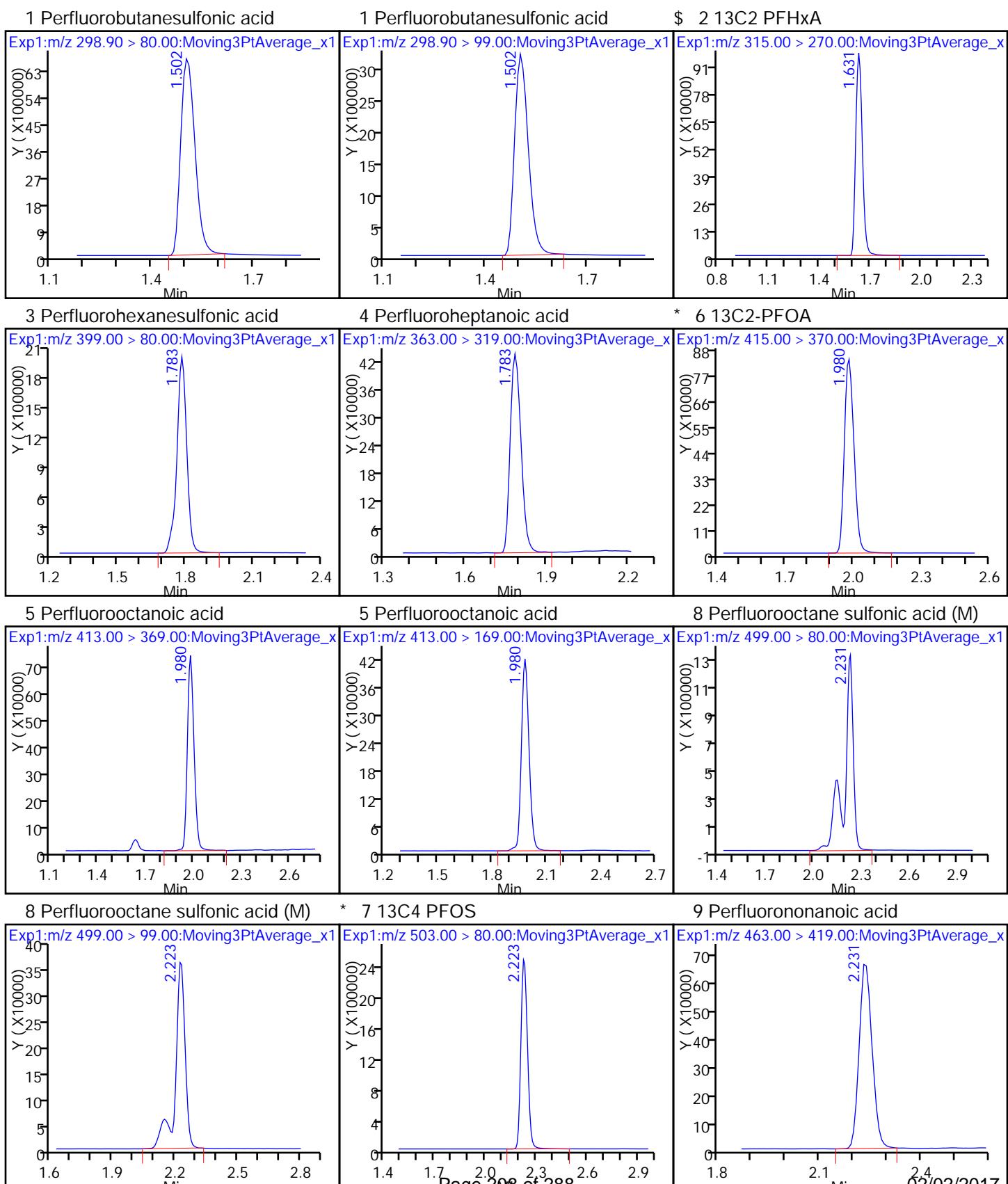
ALS Bottle#: 3 Worklist Smp#: 17

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 537\_A8\_N

Limit Group: LC 537 ICAL

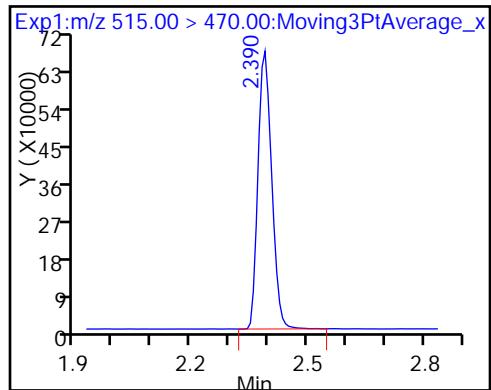


Report Date: 01-Feb-2017 10:55:09

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d

Injection Date: 31-Jan-2017 18:20:40

Instrument ID: A8\_N

Lims ID: CCV L3

Client ID:

Operator ID: A8-PC\\A8

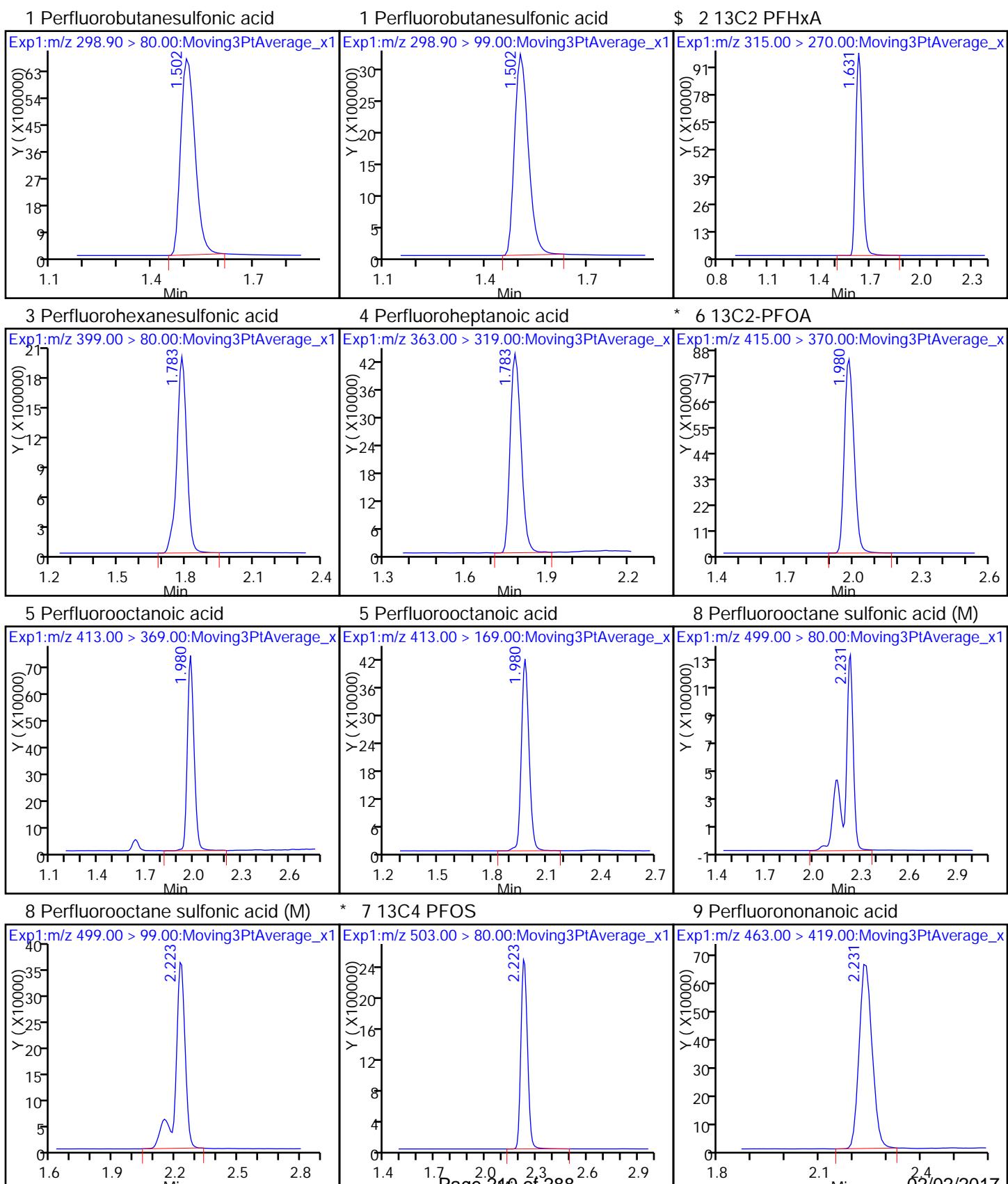
ALS Bottle#: 3 Worklist Smp#: 17

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 537\_A8\_N

Limit Group: LC 537 ICAL

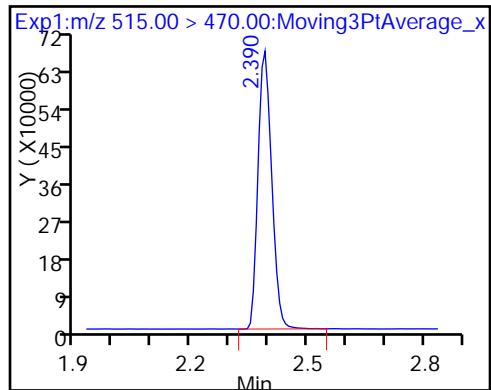


Report Date: 01-Feb-2017 10:55:09

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d  
 Injection Date: 31-Jan-2017 18:20:40 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 3 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

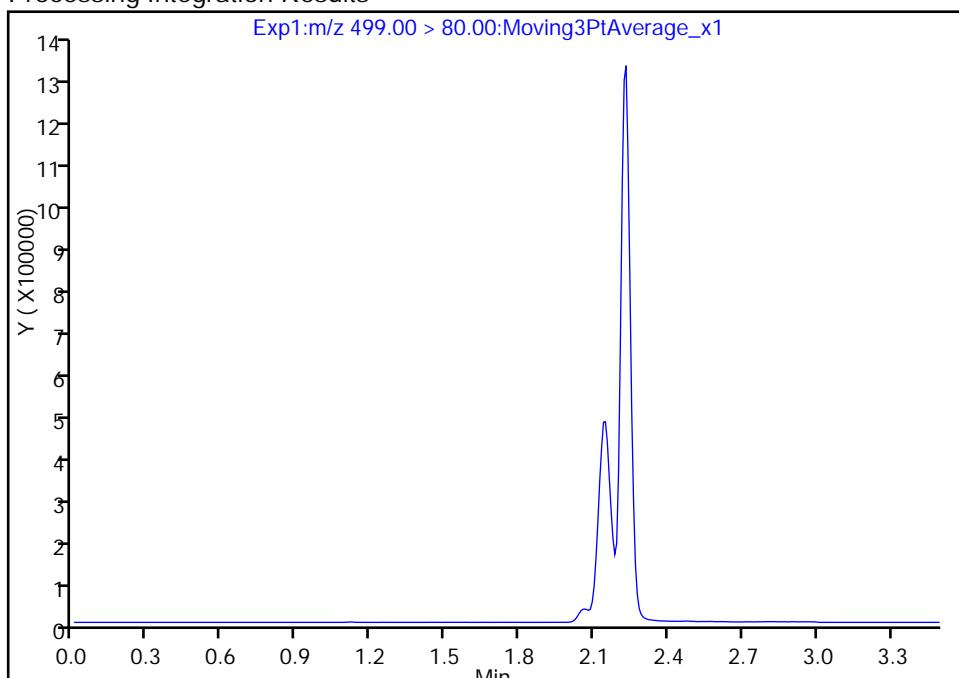
### 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

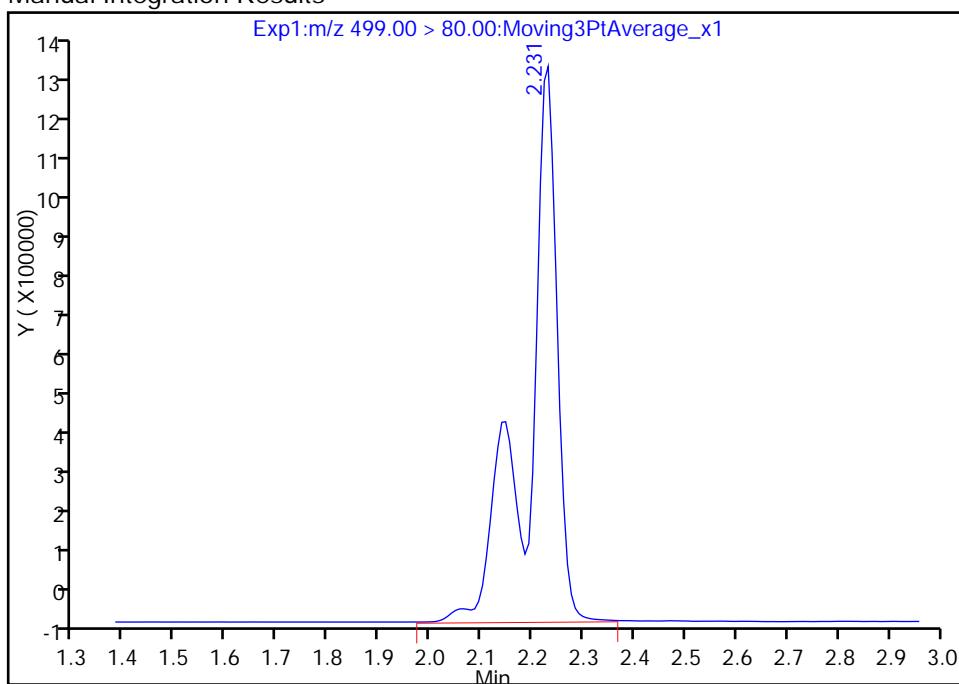
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 5199028  
 Amount: 19.865873  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:34:00

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d  
 Injection Date: 31-Jan-2017 18:20:40 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

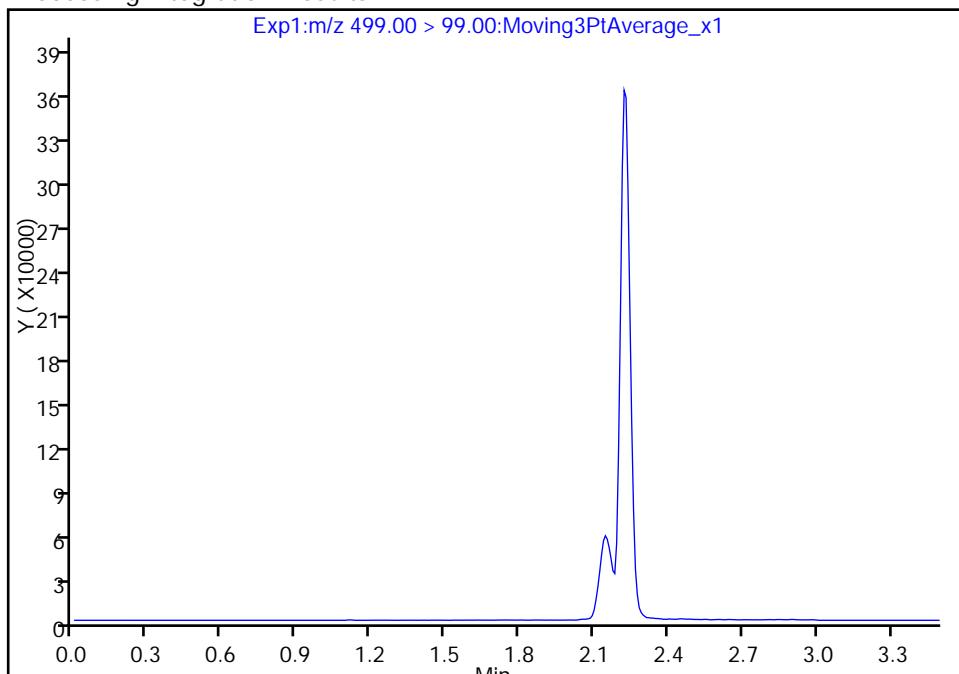
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

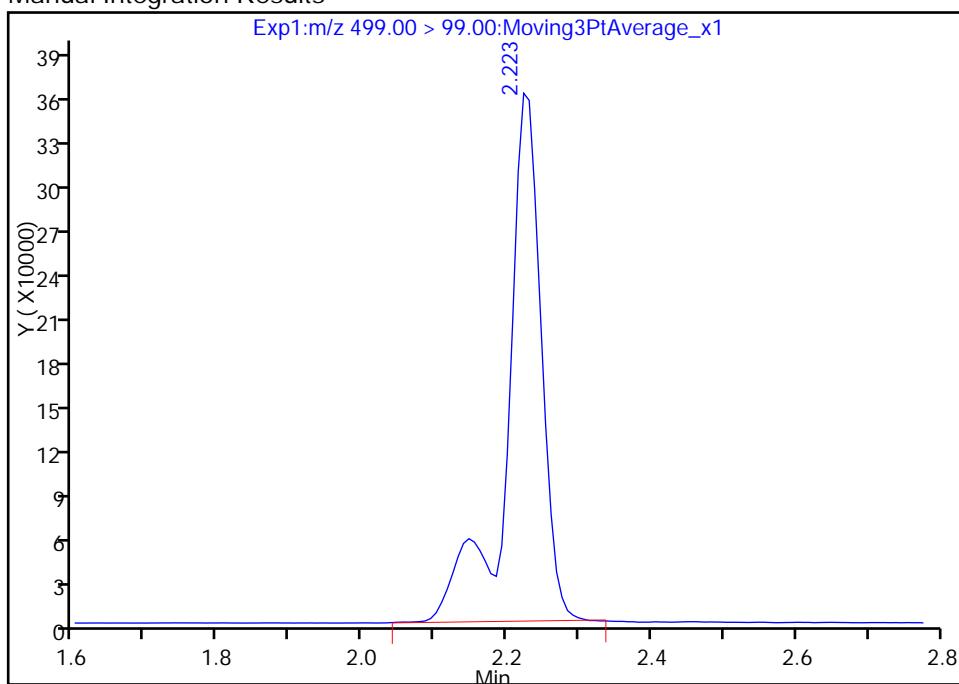
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 1191883  
 Amount: 19.865873  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:34:00

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d  
 Injection Date: 31-Jan-2017 18:20:40 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

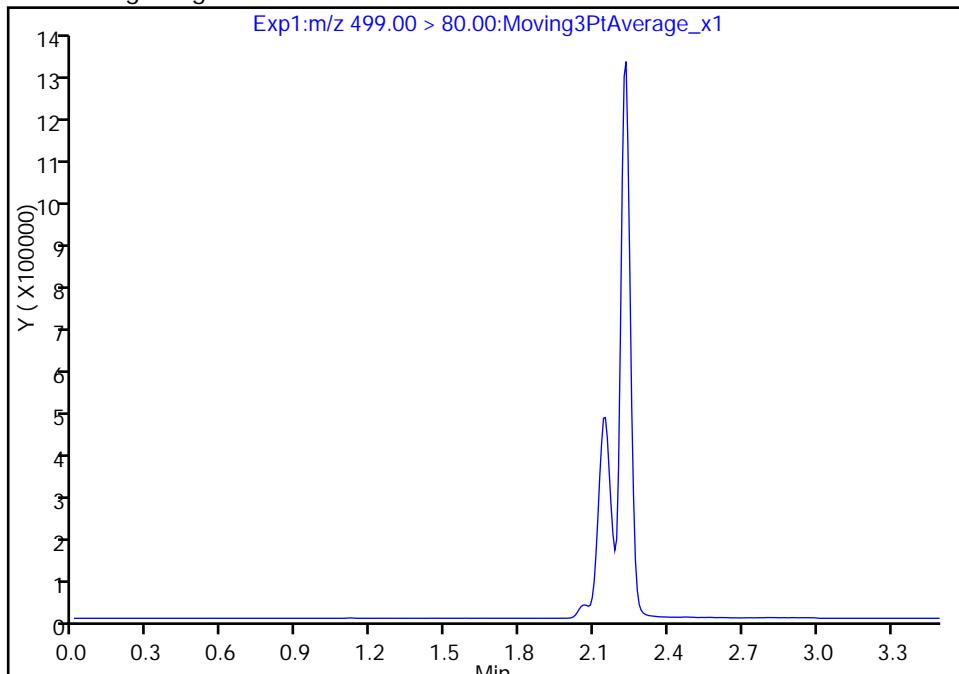
**8 Perfluorooctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

Not Detected

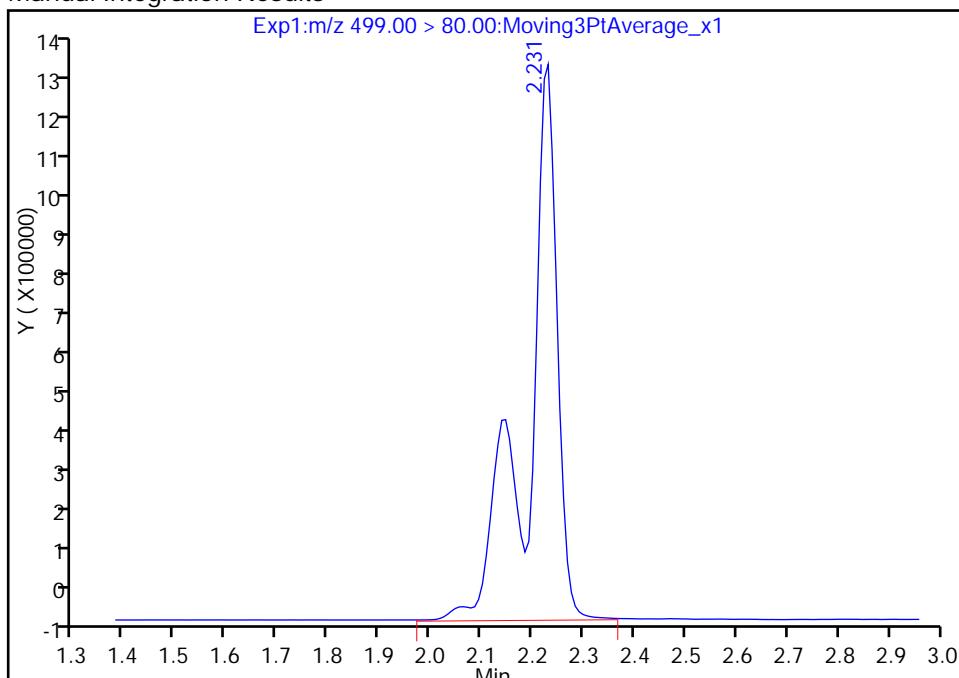
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 5199028  
 Amount: 19.865873  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:34:00

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d  
 Injection Date: 31-Jan-2017 18:20:40 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 3 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

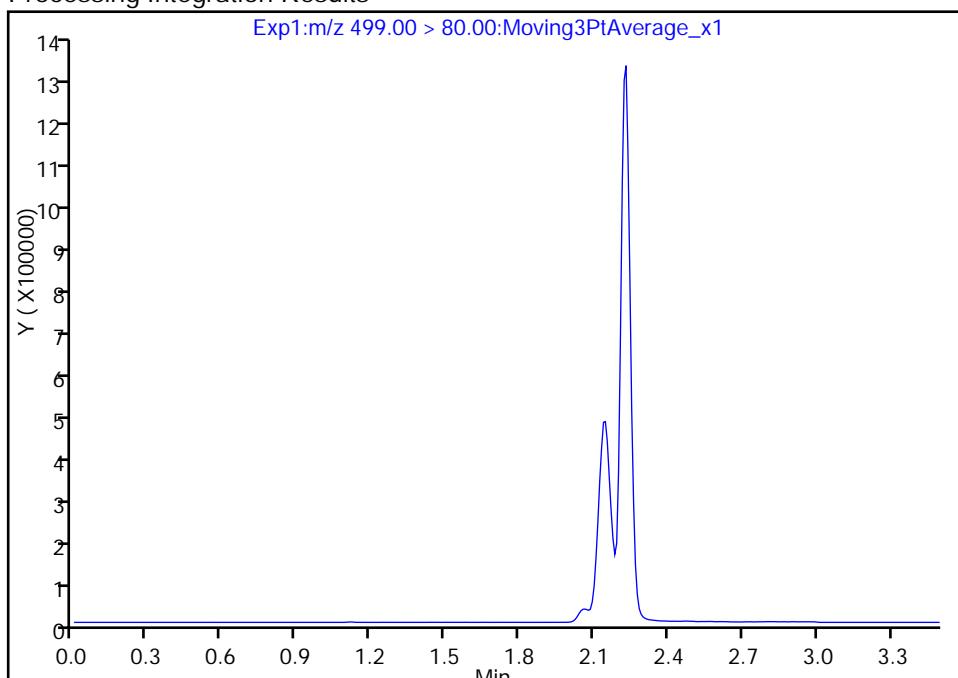
### 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

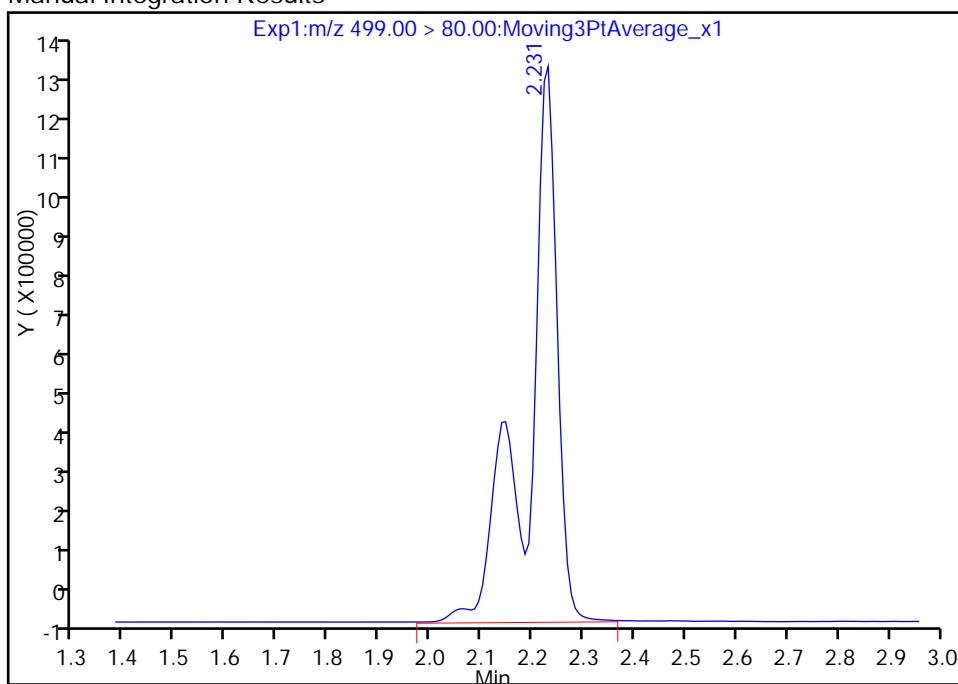
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 5199028  
 Amount: 19.865873  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:34:00

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d  
 Injection Date: 31-Jan-2017 18:20:40 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

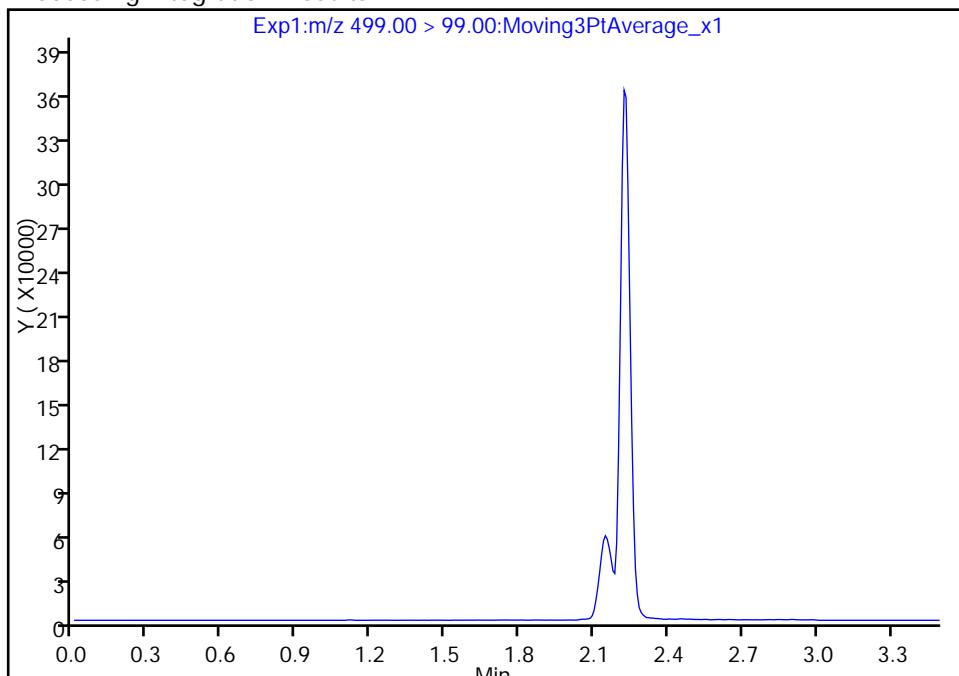
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

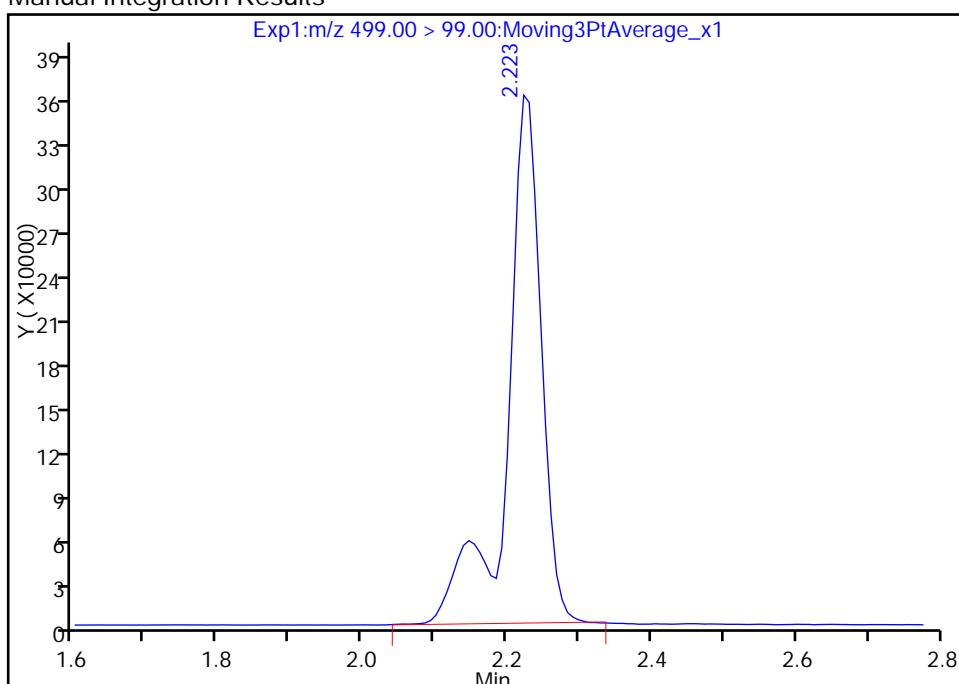
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 1191883  
 Amount: 19.865873  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:34:00

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

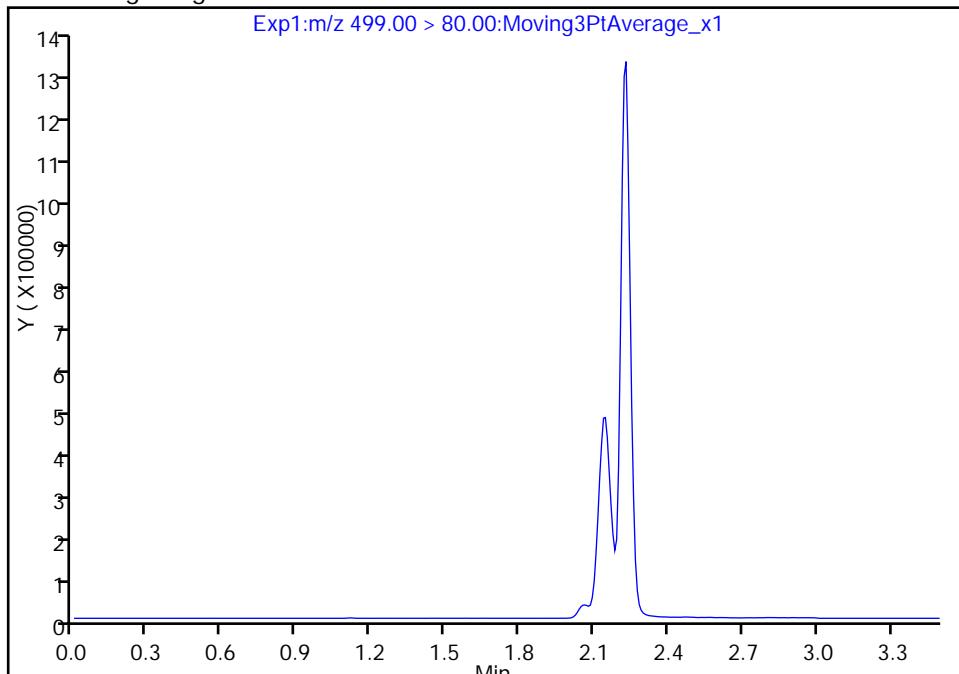
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_017.d  
 Injection Date: 31-Jan-2017 18:20:40 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

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

Signal: 1

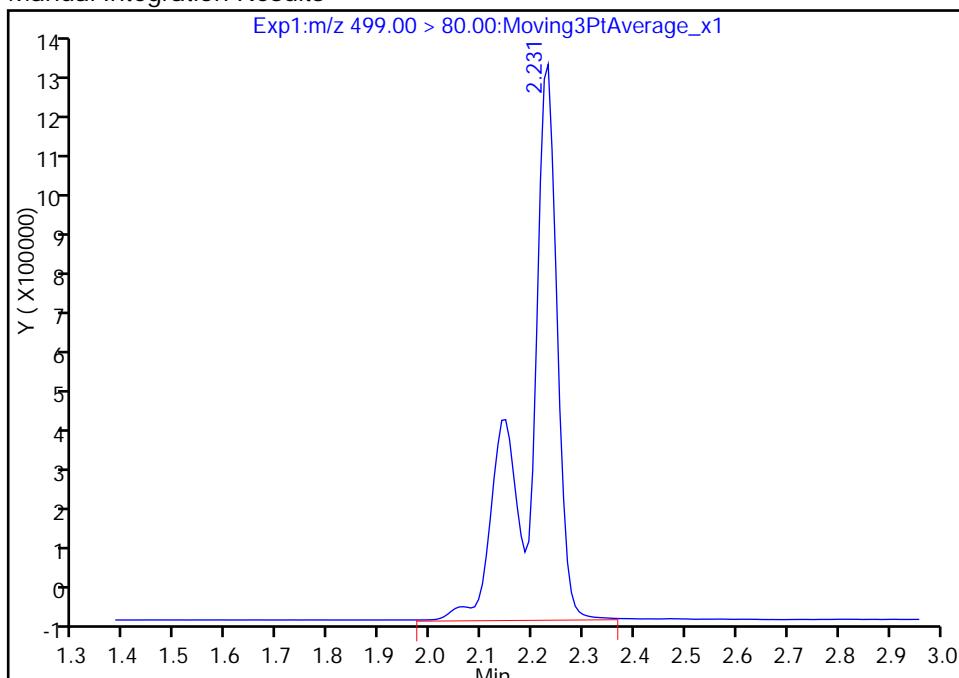
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 5199028  
 Amount: 19.865873  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:34:00

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148473/29 Calibration Date: 01/31/2017 19:13  
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: 2017.01.31A\_537\_029.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.366		127	135	-5.5	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9014		13.9	14.9	-6.5	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.589		42.8	45.4	-5.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8509		26.9	29.3	-8.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.119		60.2	60.1	0.2	30.0
Perfluorononanoic acid	Ave	0.6813	0.6403		29.2	31.1	-6.0	30.0
13C2 PFHxA	Ave	1.079	1.051		9.74	10.0	-2.6	30.0
13C2 PFDA	Ave	0.6456	0.7103		11.0	10.0	10.0	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148474/29 Calibration Date: 01/31/2017 19:13  
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: 2017.01.31A\_537\_029.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.366		127	135	-5.5	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9014		13.9	14.9	-6.5	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.589		42.8	45.4	-5.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8509		26.9	29.3	-8.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.119		60.2	60.1	0.2	30.0
Perfluorononanoic acid	Ave	0.6813	0.6403		29.2	31.1	-6.0	30.0
13C2 PFHxA	Ave	1.079	1.051		9.74	10.0	-2.6	30.0
13C2 PFDA	Ave	0.6456	0.7103		11.0	10.0	10.0	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_029.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 31-Jan-2017 19:13:28      ALS Bottle#: 5      Worklist Smp#: 29  
 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\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:36      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: XAWRK010

First Level Reviewer: barnettj      Date: 01-Feb-2017 10:39:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.502	1.510	-0.008	1.000	42230823	127.2		1637	
298.90 > 99.00	1.502	1.510	-0.008	1.000	21931802		1.93(0.00-0.00)	2354	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2660830	9.74		5728	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	16559349	42.8		2574	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	3387549	13.9		376	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2530721	10.0		4767	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.973	1.980	-0.007	1.000	6304463	26.9		410	
413.00 > 169.00	1.973	1.980	-0.007	1.000	3793870		1.66(0.00-0.00)	2703	
8 Perfluorooctane sulfonic acid								M	
499.00 > 80.00	2.215	2.215	0.0	1.000	15441183	60.2		2743	M
499.00 > 99.00	2.215	2.215	0.0	1.000	3731782		4.14(0.00-0.00)	2570	M
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6584918	28.7		8006	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	5041752	29.2		914	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1797578	11.0		2389	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L5\_00020

Amount Added: 1.00

Units: mL

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_029.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 31-Jan-2017 19:13:28      ALS Bottle#: 5      Worklist Smp#: 29  
 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\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:36      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: XAWRK010

First Level Reviewer: barnettj      Date: 01-Feb-2017 10:39:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.502	1.510	-0.008	1.000	42230823	127.2		1637	
298.90 > 99.00	1.502	1.510	-0.008	1.000	21931802		1.93(0.00-0.00)	2354	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2660830	9.74		5728	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	16559349	42.8		2574	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	3387549	13.9		376	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2530721	10.0		4767	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.973	1.980	-0.007	1.000	6304463	26.9		410	
413.00 > 169.00	1.973	1.980	-0.007	1.000	3793870		1.66(0.00-0.00)	2703	
8 Perfluorooctane sulfonic acid								M	
499.00 > 80.00	2.215	2.215	0.0	1.000	15441183	60.2		2743	M
499.00 > 99.00	2.215	2.215	0.0	1.000	3731782		4.14(0.00-0.00)	2570	M
* 7 13C4 PFOS									
503.00 > 80.00	2.215	2.220	-0.005		6584918	28.7		8006	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	5041752	29.2		914	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1797578	11.0		2389	

**QC Flag Legend**

Review Flags

M - Manually Integrated

**Reagents:**

LC537-L5\_00020

Amount Added: 1.00

Units: mL

Report Date: 01-Feb-2017 10:55:37

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d

Injection Date: 31-Jan-2017 19:13:28

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\\A8

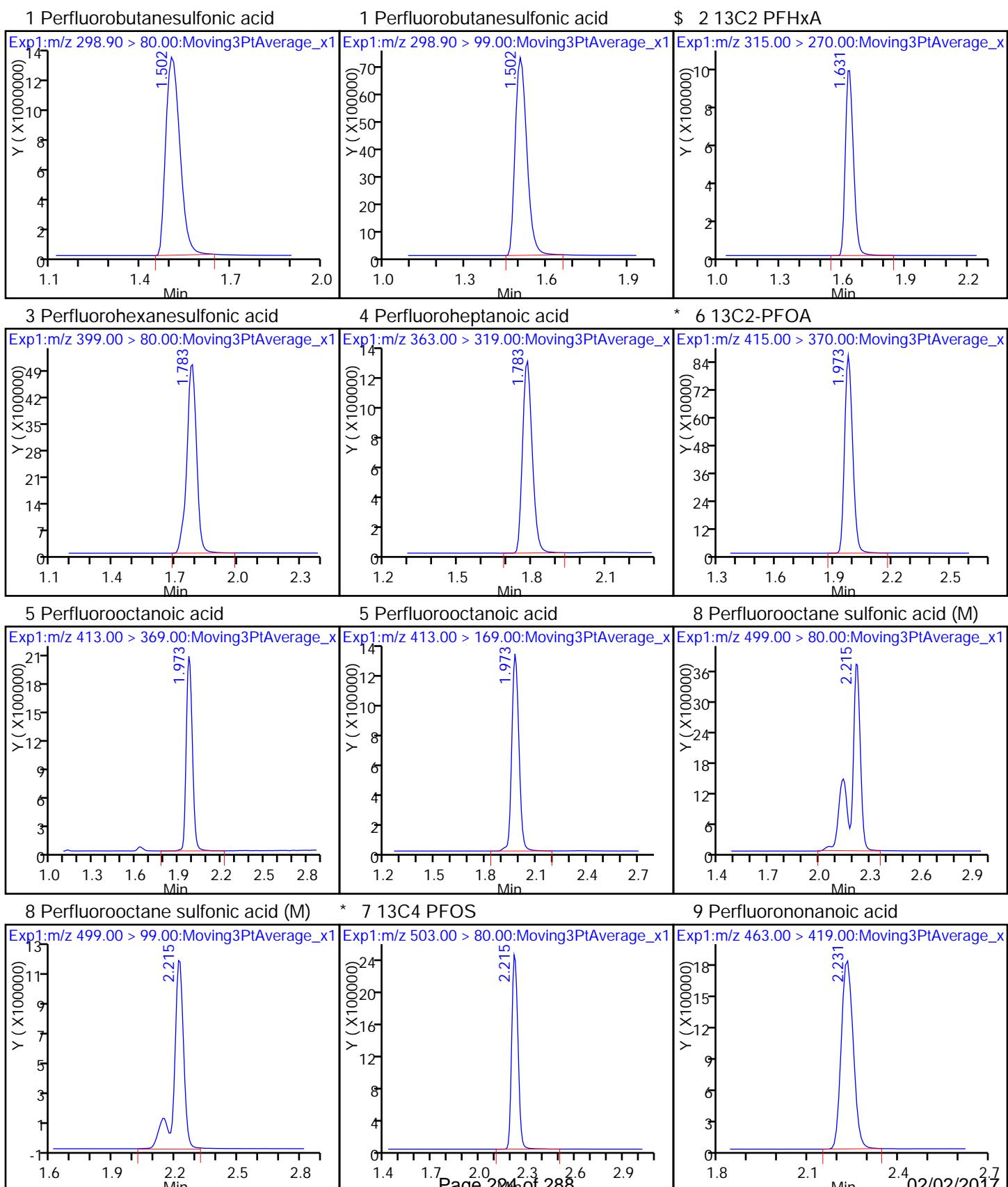
ALS Bottle#: 5 Worklist Smp#: 29

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 537\_A8\_N

Limit Group: LC 537 ICAL

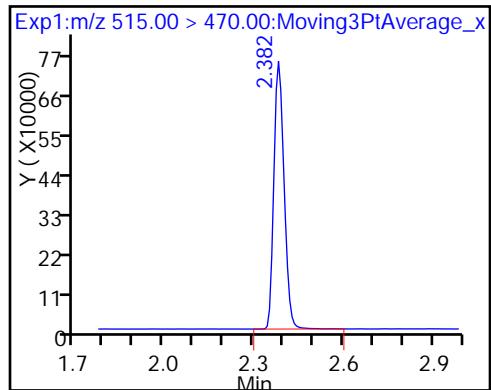


Report Date: 01-Feb-2017 10:55:37

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d

Injection Date: 31-Jan-2017 19:13:28

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\\A8

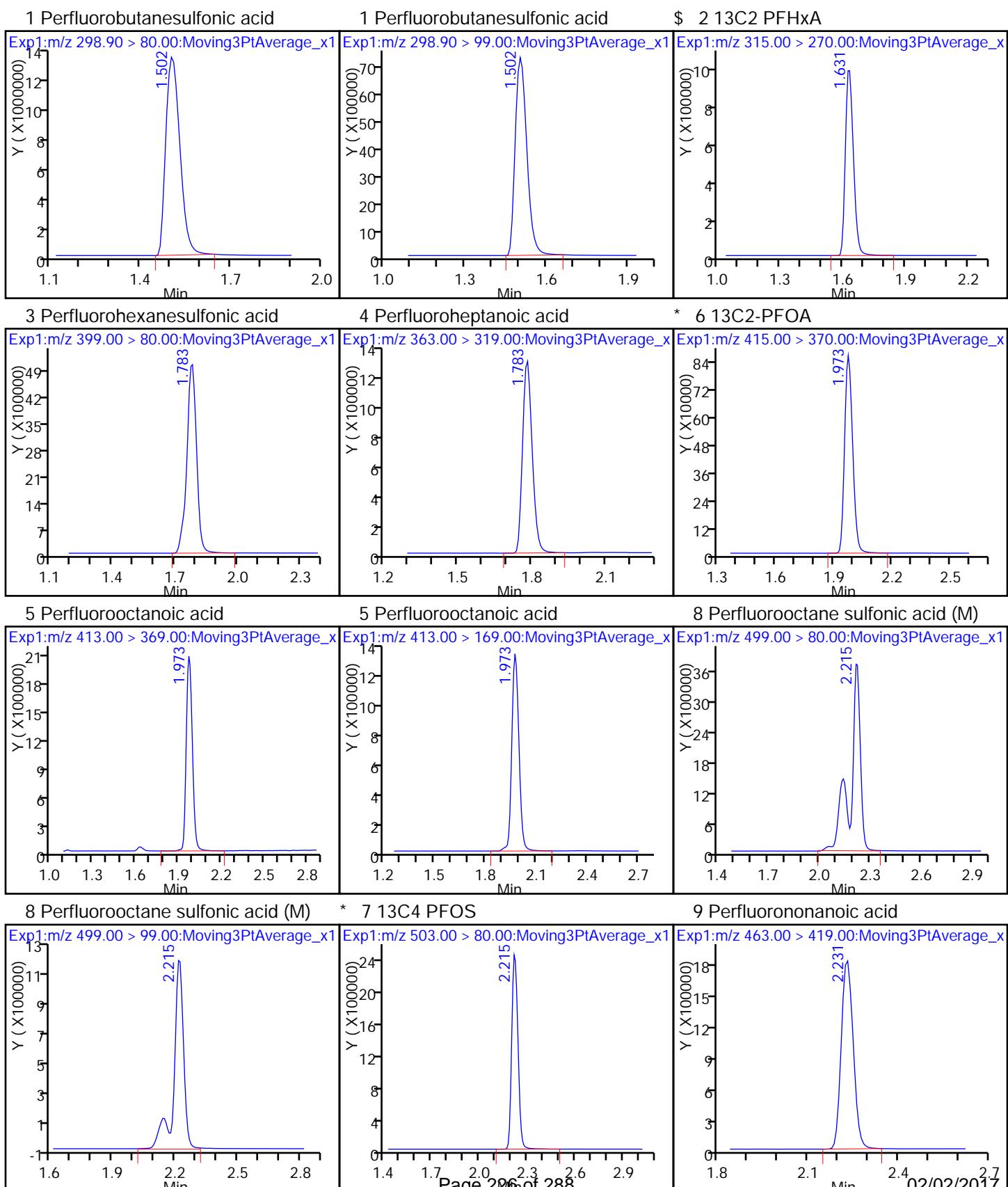
ALS Bottle#: 5 Worklist Smp#: 29

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 537\_A8\_N

Limit Group: LC 537 ICAL

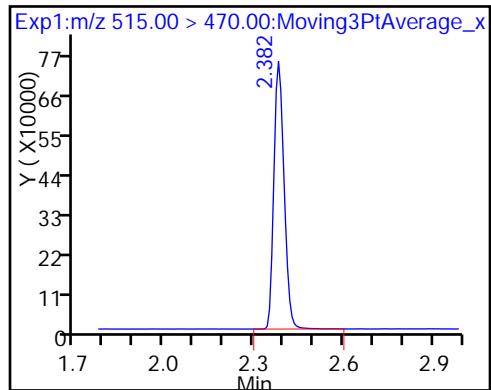


Report Date: 01-Feb-2017 10:55:36

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

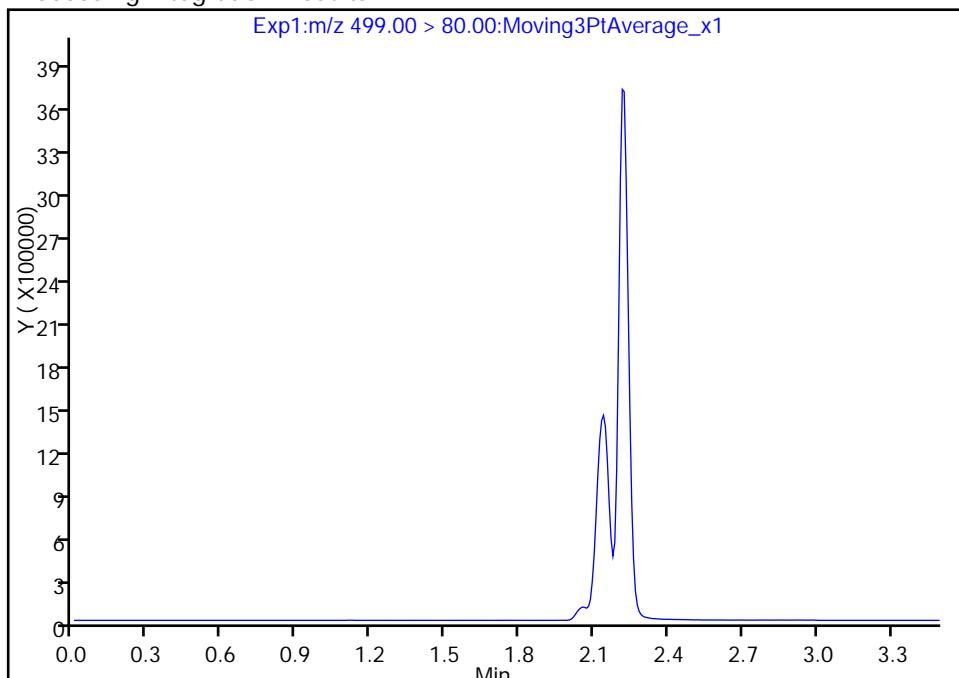
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d  
 Injection Date: 31-Jan-2017 19:13:28 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 5 Worklist Smp#: 29  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

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

Signal: 1

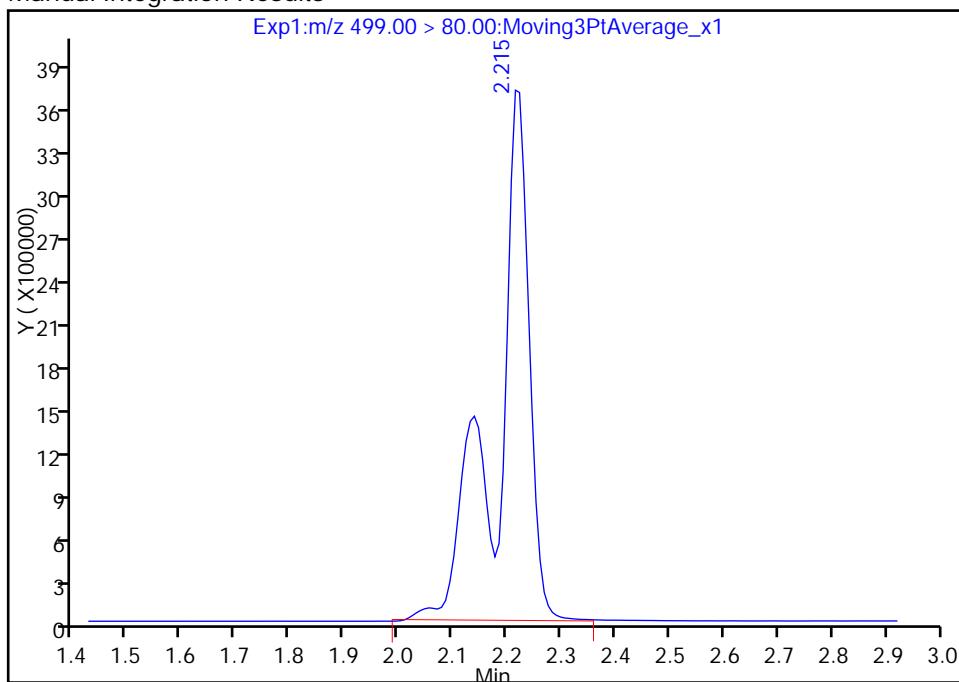
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 15441183  
 Amount: 60.239227  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:58

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d  
 Injection Date: 31-Jan-2017 19:13:28 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 29  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

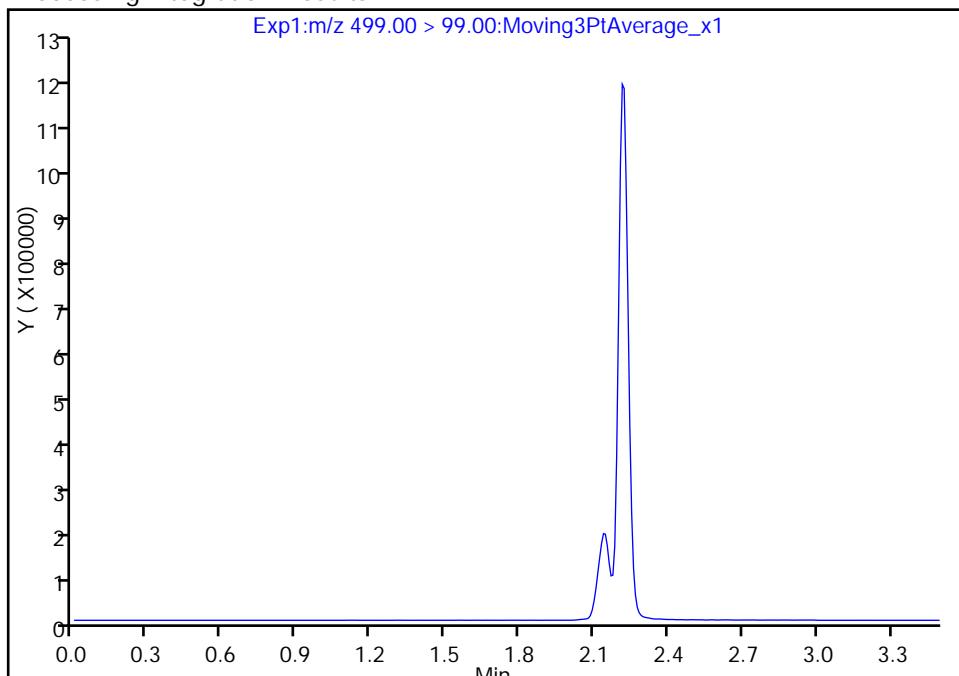
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

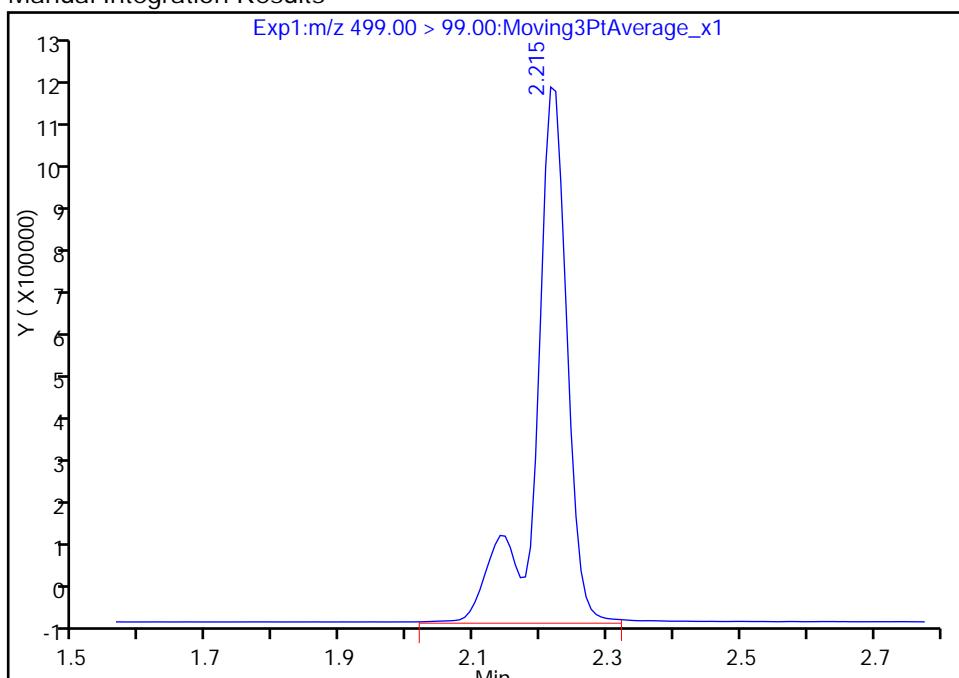
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 3731782  
 Amount: 60.239227  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:58

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d  
 Injection Date: 31-Jan-2017 19:13:28 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 29  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

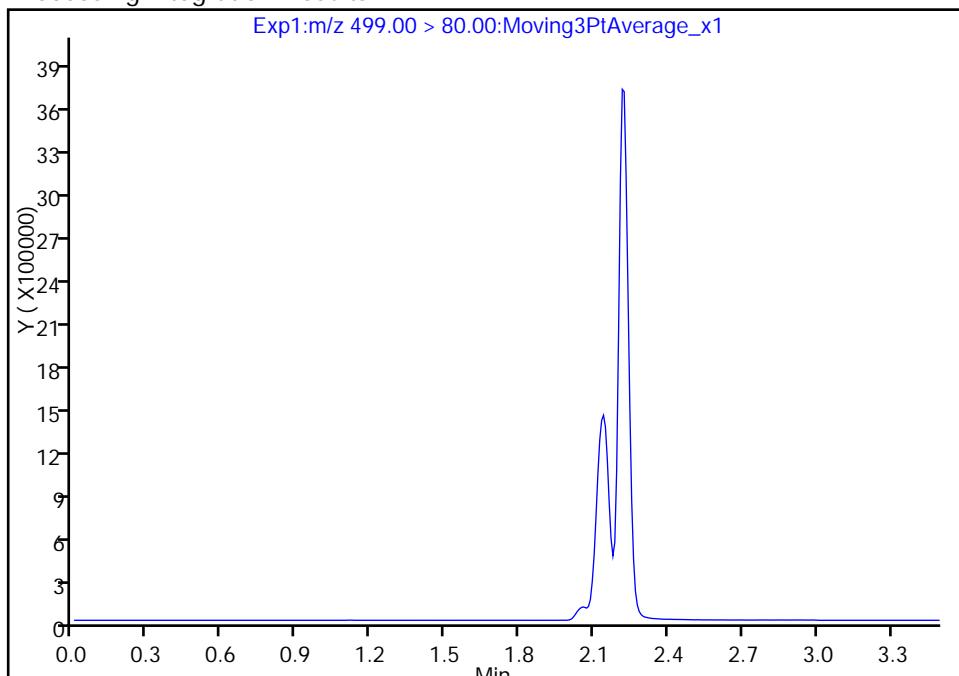
**8 Perfluorooctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

Not Detected

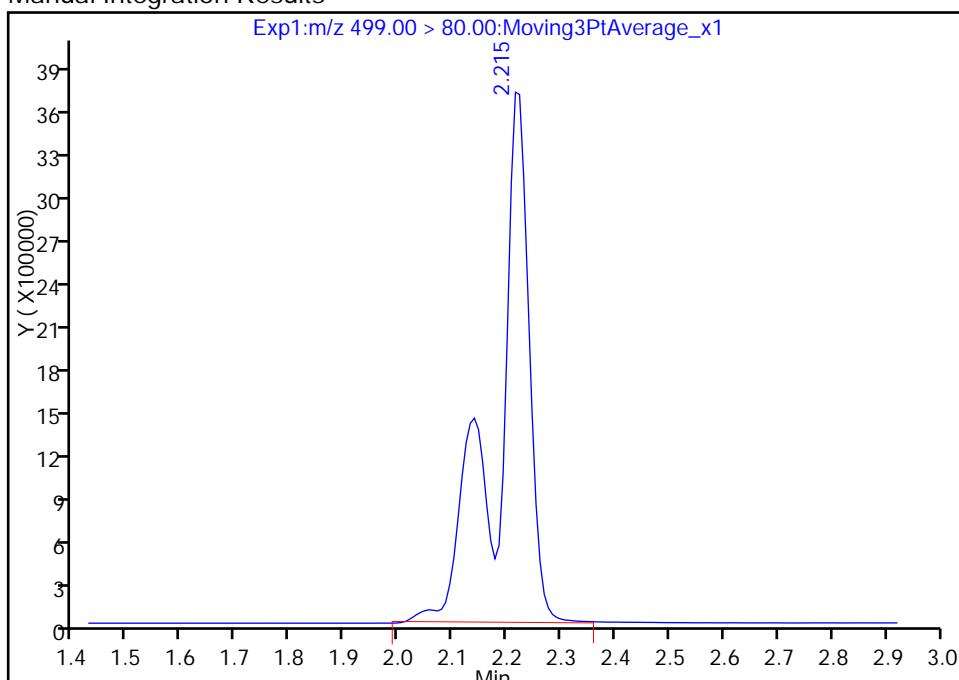
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 15441183  
 Amount: 60.239227  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:58

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d  
 Injection Date: 31-Jan-2017 19:13:28 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 5 Worklist Smp#: 29  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

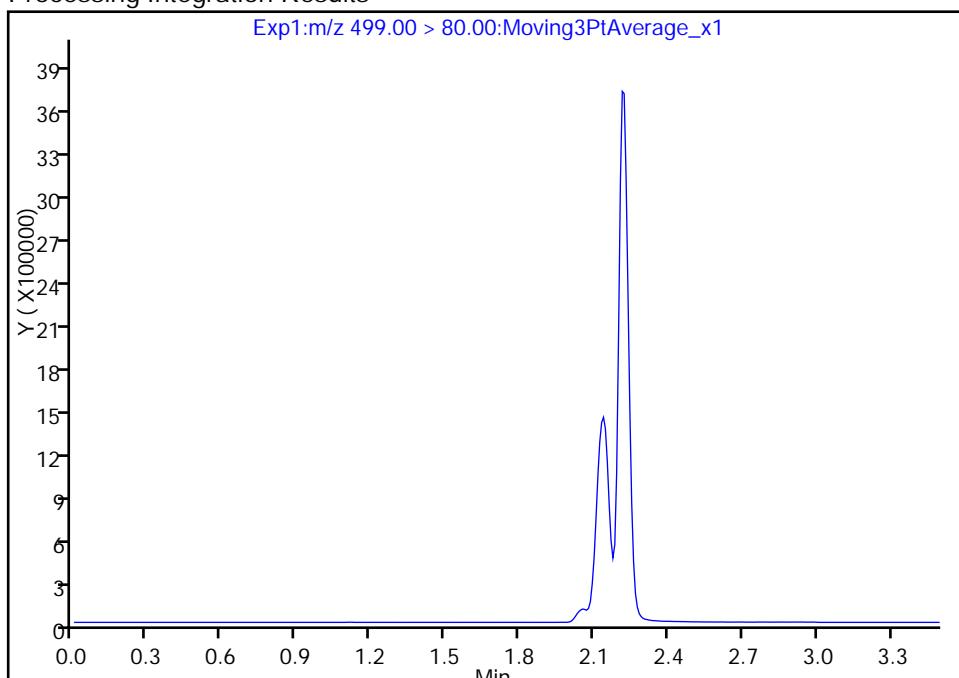
### 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

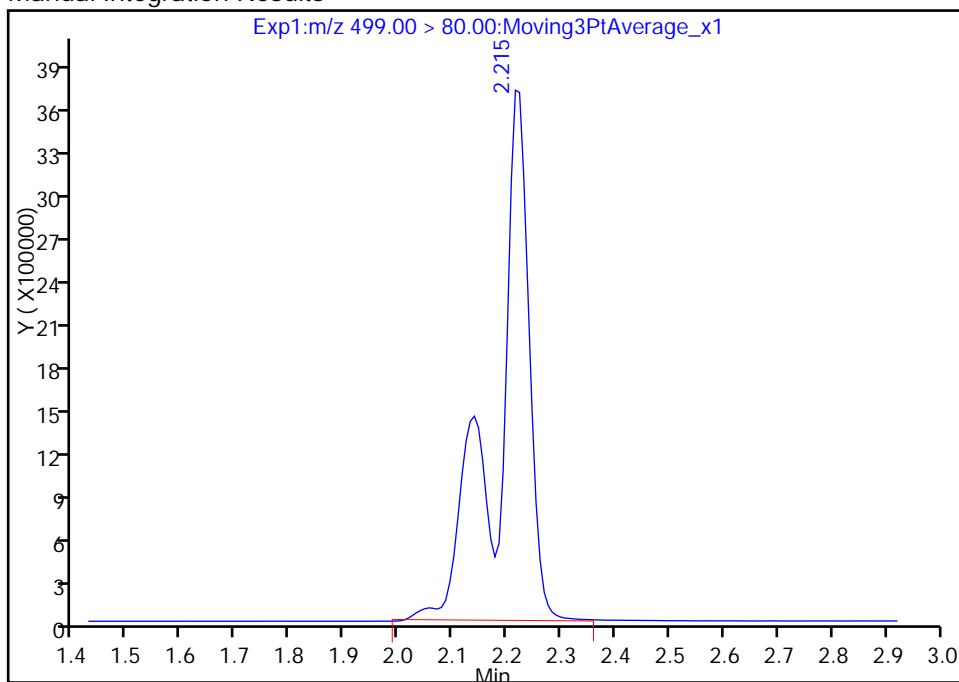
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 15441183  
 Amount: 60.239227  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:58

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

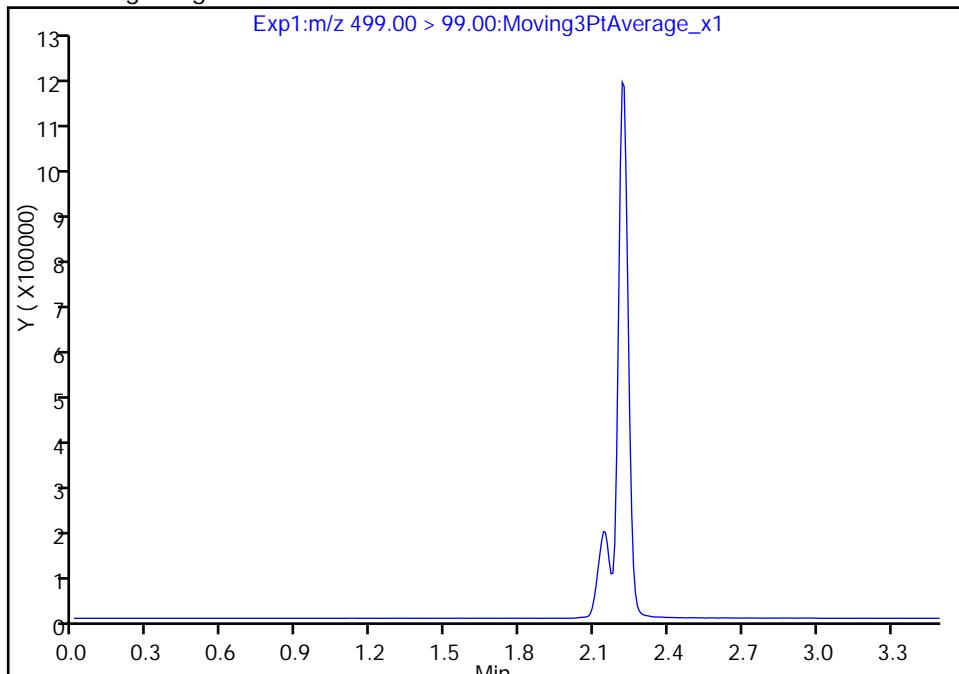
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d  
 Injection Date: 31-Jan-2017 19:13:28 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 29  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

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

Signal: 2

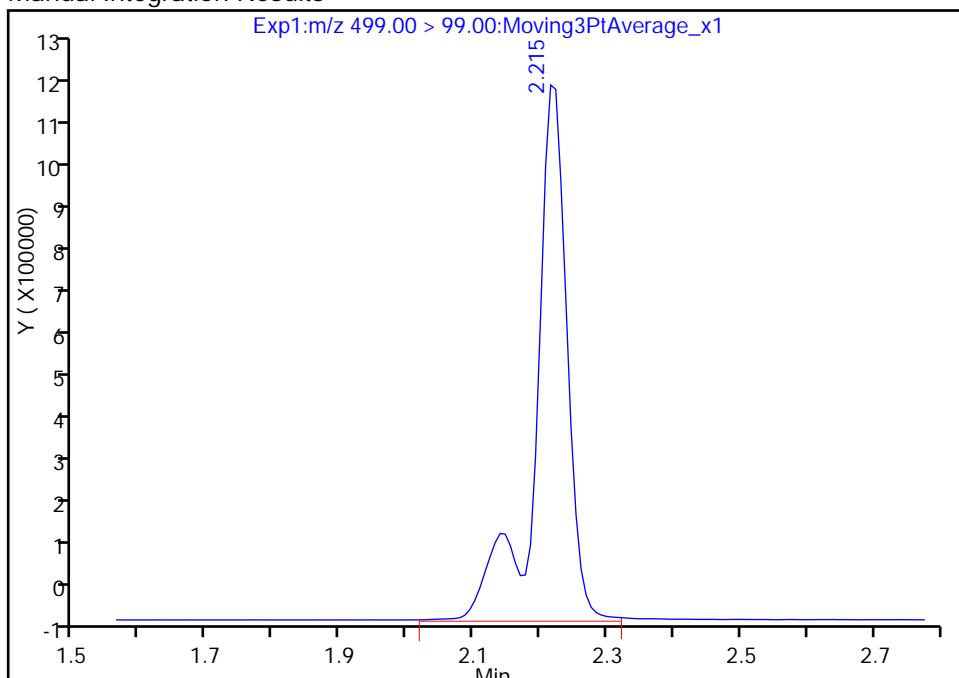
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 3731782  
 Amount: 60.239227  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:58

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_029.d  
 Injection Date: 31-Jan-2017 19:13:28 Instrument ID: A8\_N  
 Lims ID: CCV L5  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 5 Worklist Smp#: 29  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

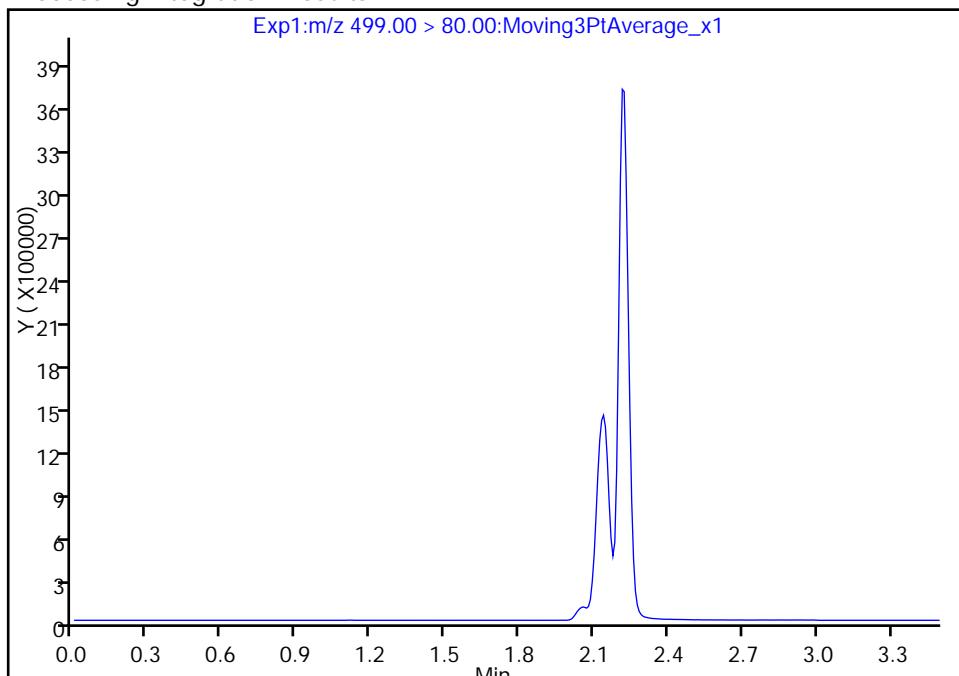
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

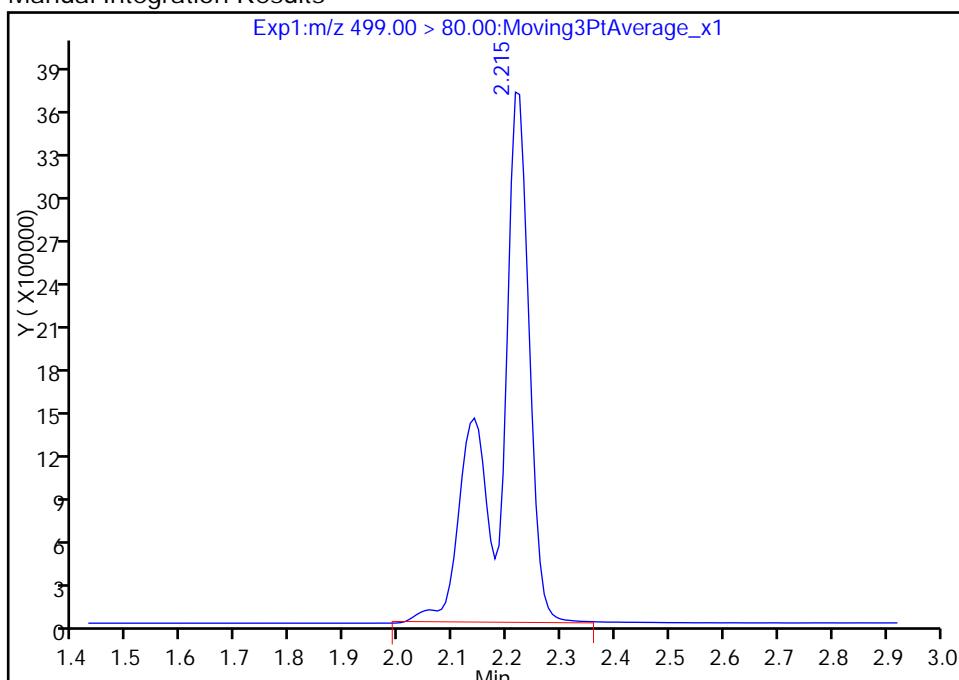
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 15441183  
 Amount: 60.239227  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:39:58

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.: \_\_\_\_\_  
Lab Sample ID: CCV 320-148474/36 Calibration Date: 01/31/2017 19:44  
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: 2017.01.31A\_537\_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	QuaF		1.877		49.0	45.1	8.7	30.0
Perfluoroheptanoic acid	Ave	0.9643	0.9722		5.02	4.97	0.8	30.0
Perfluorohexanesulfonic acid	Ave	1.684	1.707		15.4	15.2	1.4	30.0
Perfluorooctanoic acid (PFOA)	Ave	0.9247	0.8789		9.32	9.81	-5.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.116	1.128		20.3	20.1	1.0	30.0
Perfluorononanoic acid	Ave	0.6813	0.6724		10.3	10.4	-1.3	30.0
13C2 PFHxA	Ave	1.079	1.054		9.77	10.0	-2.3	30.0
13C2 PFDA	Ave	0.6456	0.6927		10.7	10.0	7.3	30.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_036.d  
 Lims ID: CCV L3  
 Client ID:  
 Sample Type: CCVIS  
 Inject. Date: 31-Jan-2017 19:44:17 ALS Bottle#: 3 Worklist Smp#: 36  
 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\\20170131-39369.b\\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:56 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:54:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
<b>1 Perfluorobutanesulfonic acid</b>									
298.90 > 80.00	1.502	1.510	-0.008	1.000	19667357	49.0		1313	
298.90 > 99.00	1.502	1.510	-0.008	1.000	9010833		2.18(0.00-0.00)	1503	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2734057	9.77		6337	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.783	1.787	-0.004	1.000	6027941	15.4		1328	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.783	1.788	-0.005	1.000	1254475	5.02		152	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.973	1.979	-0.006		2593892	10.0		4992	
<b>5 Perfluorooctanoic acid</b>									
413.00 > 369.00	1.973	1.980	-0.007	1.000	2236077	9.32		156	
413.00 > 169.00	1.973	1.980	-0.007	1.000	1279325		1.75(0.00-0.00)	1251	
<b>8 Perfluorooctane sulfonic acid</b>									
499.00 > 80.00	2.215	2.215	0.0	1.000	5275649	20.3		1579	M
499.00 > 99.00	2.215	2.215	0.0	1.000	1239881		4.25(0.00-0.00)	1514	M
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.215	2.220	-0.005		6661663	28.7		5554	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.223	2.229	-0.006	1.000	1817848	10.3		370	
<b>\$ 10 13C2 PFDA</b>									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1796743	10.7		2255	

## QC Flag Legend

Review Flags

M - Manually Integrated

## Reagents:

LC537-L3\_00019

Amount Added: 1.00

Units: mL

Report Date: 01-Feb-2017 10:55:57

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_036.d

Injection Date: 31-Jan-2017 19:44:17

Instrument ID: A8\_N

Lims ID: CCV L3

Client ID:

Operator ID: A8-PC\\A8

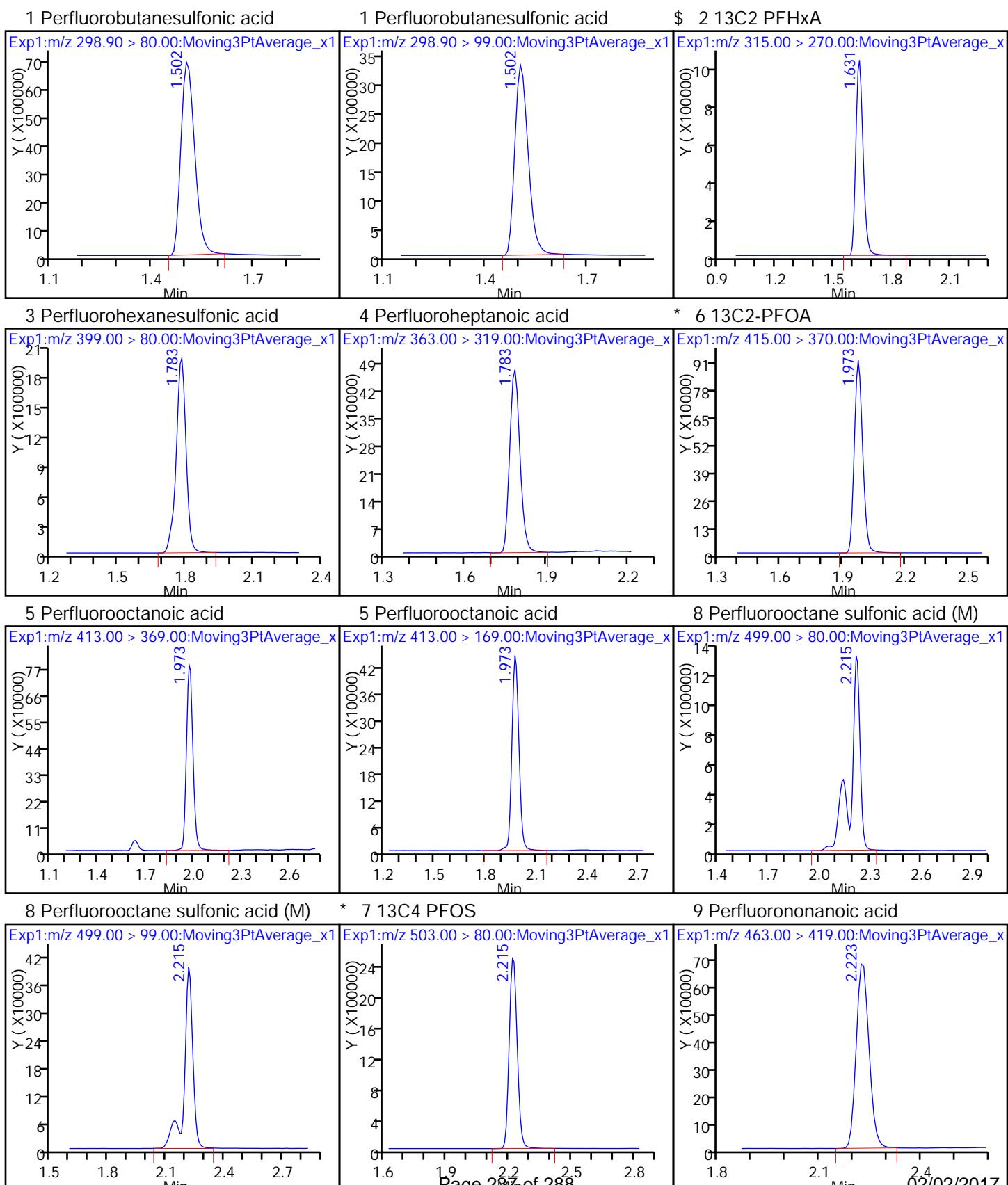
ALS Bottle#: 3 Worklist Smp#: 36

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 537\_A8\_N

Limit Group: LC 537 ICAL

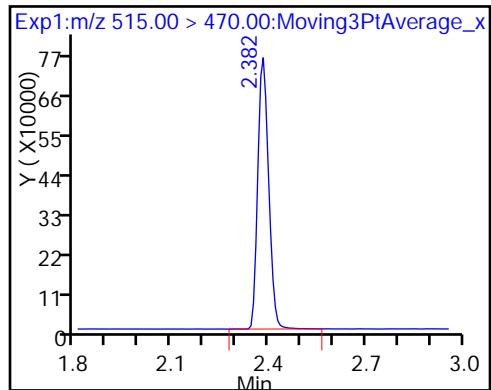


Report Date: 01-Feb-2017 10:55:57

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_036.d

\$ 10 13C2 PFDA



## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_036.d  
 Injection Date: 31-Jan-2017 19:44:17 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 3 Worklist Smp#: 36  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

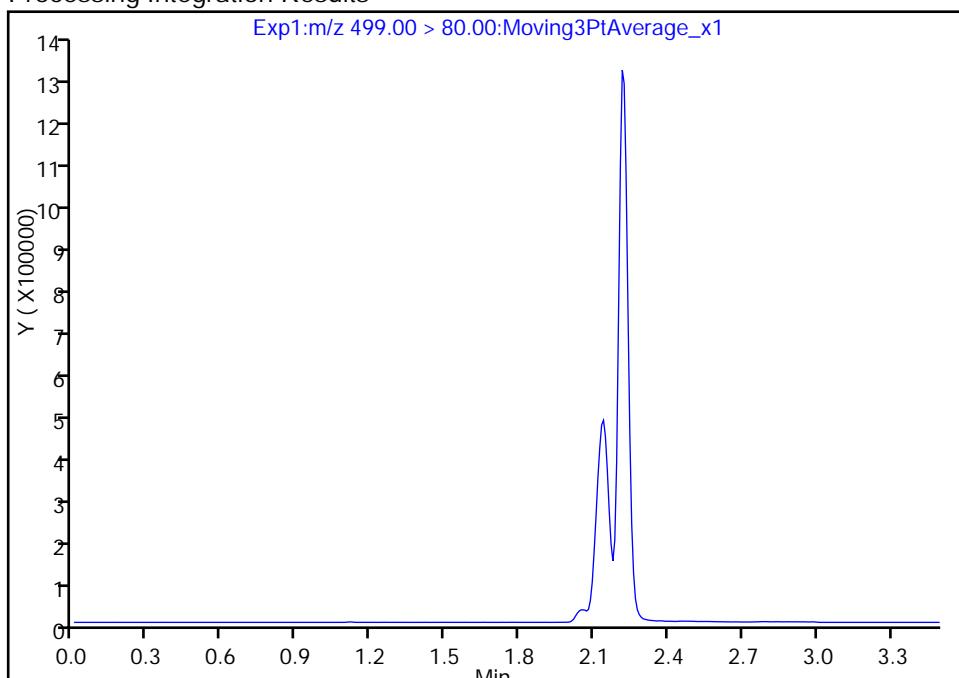
### 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

Not Detected

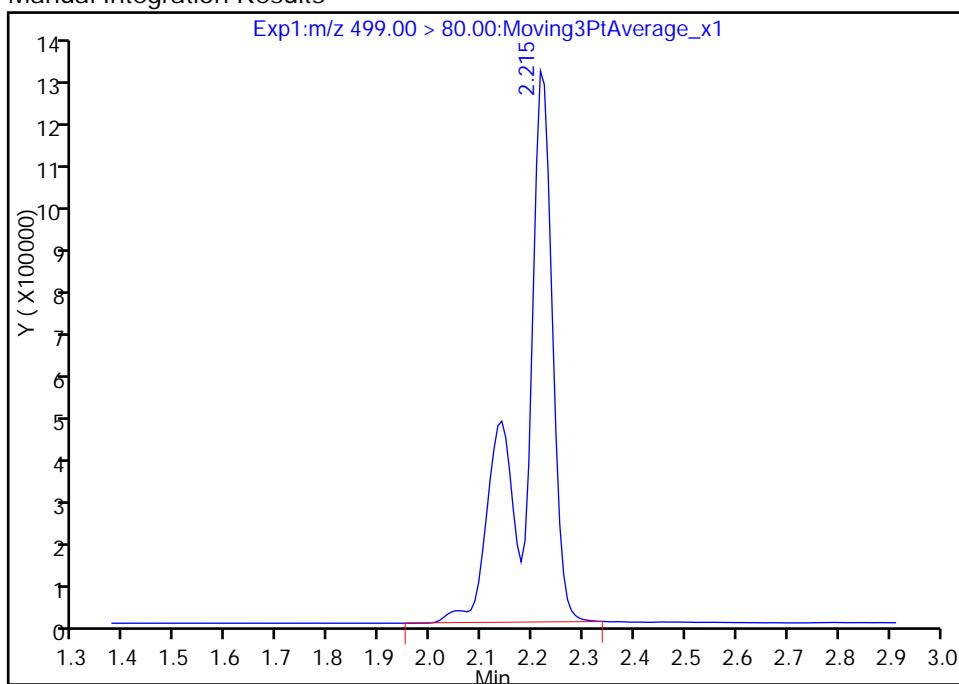
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 5275649  
 Amount: 20.344285  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:54:57

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_036.d  
 Injection Date: 31-Jan-2017 19:44:17 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 36  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

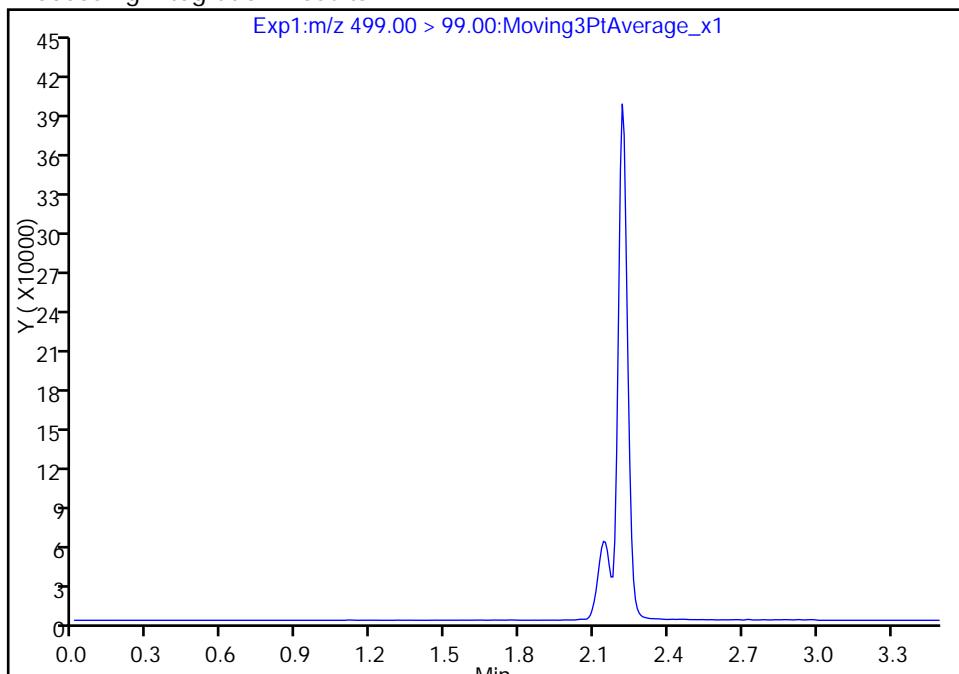
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

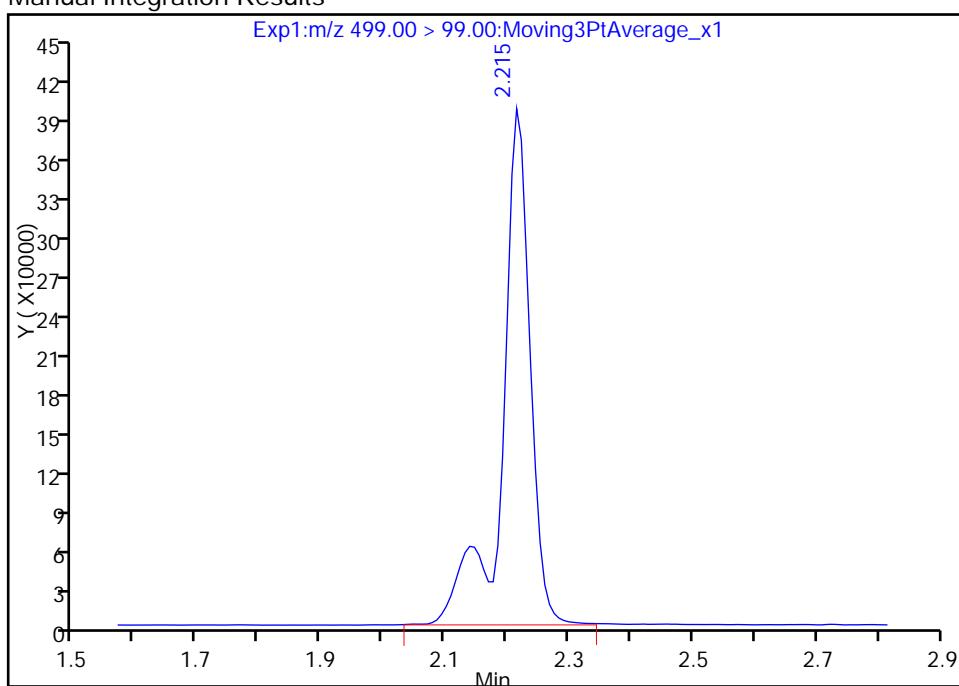
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 1239881  
 Amount: 20.344285  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:54:57

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_036.d  
 Injection Date: 31-Jan-2017 19:44:17 Instrument ID: A8\_N  
 Lims ID: CCV L3  
 Client ID:  
 Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 36  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

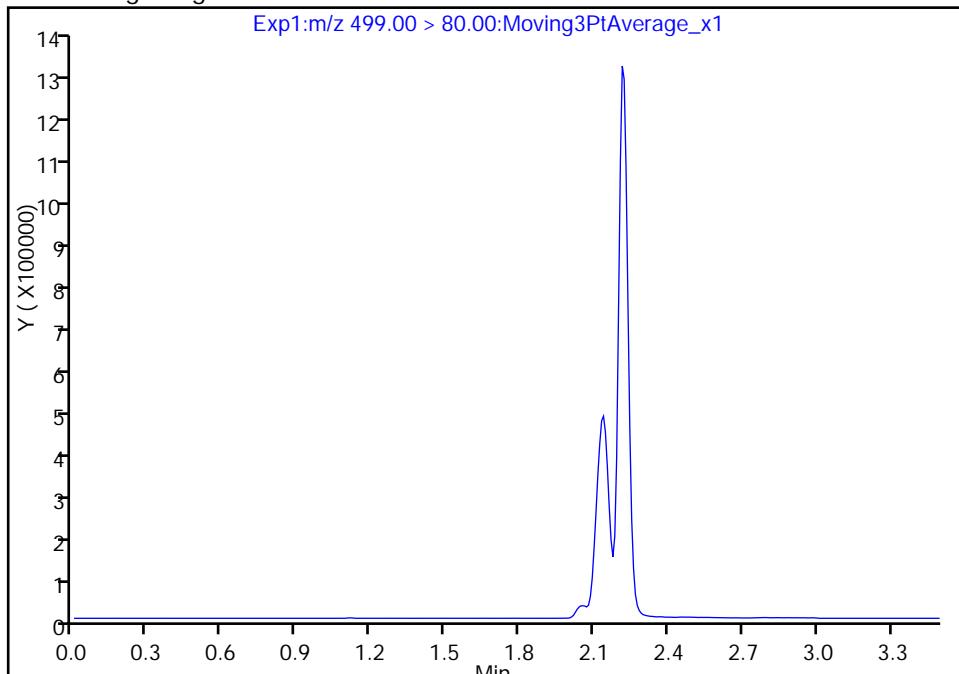
**8 Perfluorooctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

Not Detected

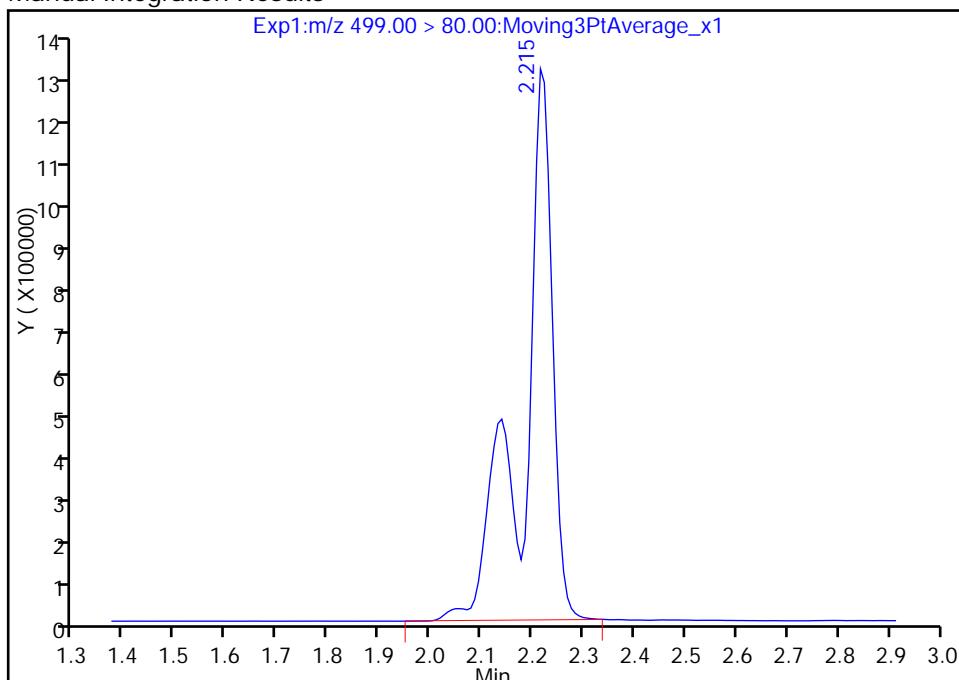
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 5275649  
 Amount: 20.344285  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:54:57

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 320-148300/1-A  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_008.d  
 Analysis Method: 537 Date Collected: \_\_\_\_\_  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 250 (mL) Date Analyzed: 01/31/2017 17:41  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 148472 Units: ug/L

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

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	105		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_008.d  
 Lims ID: MB 320-148300/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 31-Jan-2017 17:41:01 ALS Bottle#: 2 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-148300/1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:54:59 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:29:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
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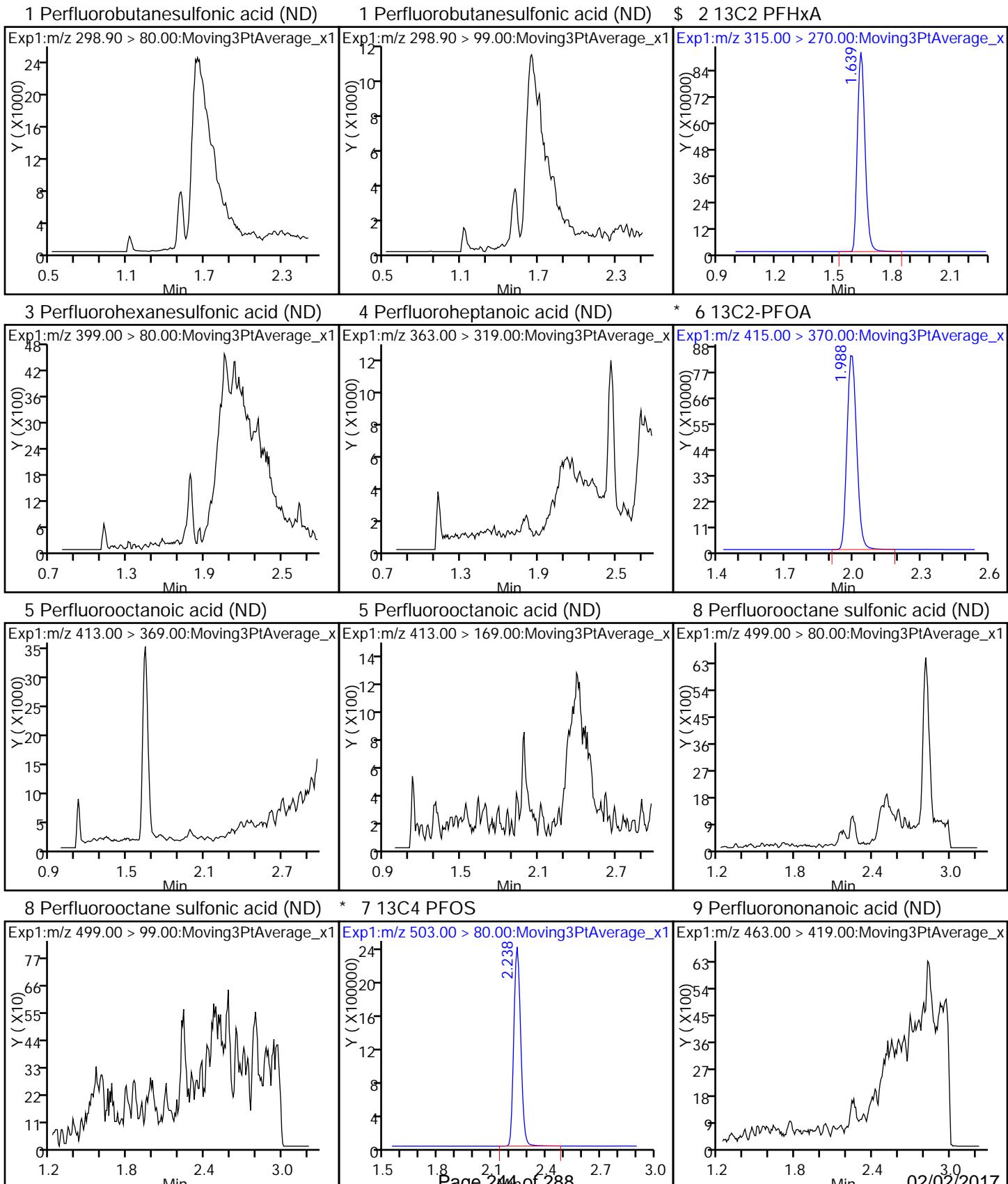
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.639	1.638	0.001	1.000	2562802	9.39			4831
* 6 13C2-PFOA									
415.00 > 370.00	1.988	1.979	0.009		2530107	10.0			4860
* 7 13C4 PFOS									
503.00 > 80.00	2.238	2.220	0.018		6516236	28.7			7218
\$ 10 13C2 PFDA									
515.00 > 470.00	2.397	2.384	0.013	1.000	1721367	10.5			2170

Report Date: 01-Feb-2017 10:55:02

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_008.d  
 Injection Date: 31-Jan-2017 17:41:01 Instrument ID: A8\_N  
 Lims ID: MB 320-148300/1-A  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 2 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

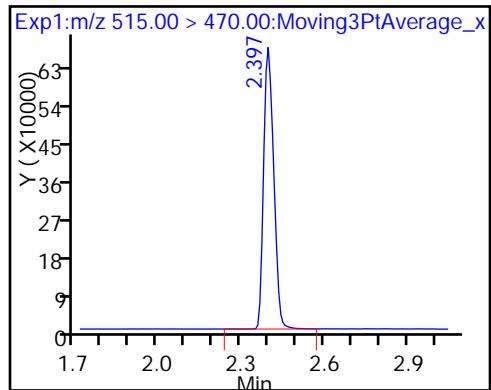


Report Date: 01-Feb-2017 10:55:02

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_008.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_008.d  
 Lims ID: MB 320-148300/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 31-Jan-2017 17:41:01 ALS Bottle#: 2 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-148300/1-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:54:59 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:29:55

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.39	93.86
\$ 10 13C2 PFDA	10.0	10.5	105.38

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 320-148300/2-A  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_009.d  
 Analysis Method: 537 Date Collected: \_\_\_\_\_  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 250 (mL) Date Analyzed: 01/31/2017 17:45  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 148472 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.293		0.060	0.048	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.141		0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.606		0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	109		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_009.d  
 Lims ID: LCS 320-148300/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 31-Jan-2017 17:45:24 ALS Bottle#: 3 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-148300/2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:54:59 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:30:19

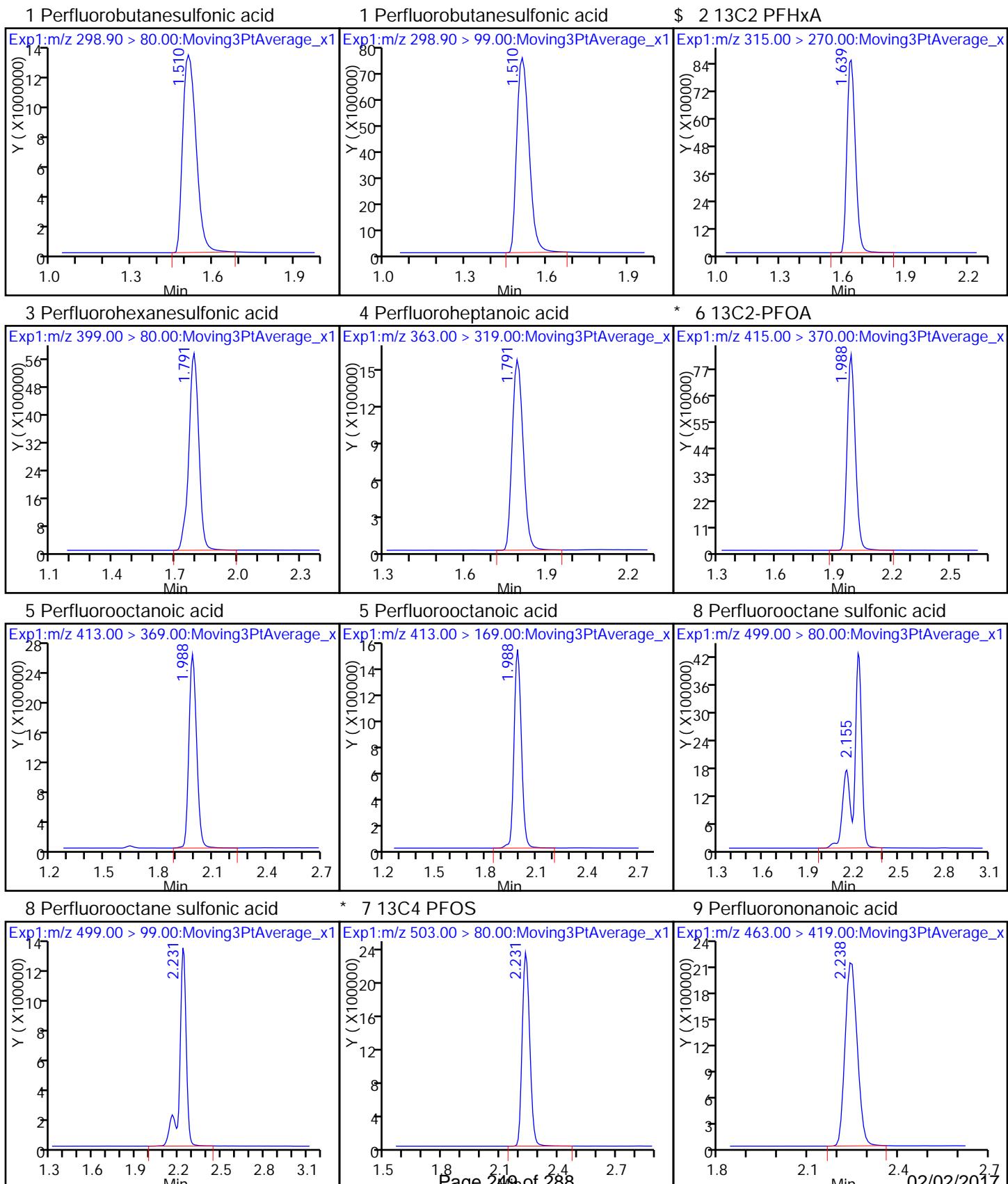
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
<b>1 Perfluorobutanesulfonic acid</b>									
298.90 > 80.00	1.510	1.510	0.0	1.000	45995991	151.5		2006	
298.90 > 99.00	1.510	1.510	0.0	1.000	24055696		1.91(0.00-0.00)	2384	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	2433925	9.30		4571	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.791	1.787	0.004	1.000	19394200	51.6		2738	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.791	1.788	0.003	1.000	4488838	19.2		493	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.988	1.979	0.009		2425127	10.0		5338	
<b>5 Perfluorooctanoic acid</b>									
413.00 > 369.00	1.988	1.980	0.008	1.000	7902146	35.2		551	
413.00 > 169.00	1.988	1.980	0.008	1.000	4504274		1.75(0.00-0.00)	2897	
<b>8 Perfluorooctane sulfonic acid</b>									
499.00 > 80.00	2.155	2.215	-0.060	1.000	18291541	73.3		1212	
499.00 > 99.00	2.231	2.215	0.016	1.035	4376923		4.18(0.00-0.00)	3191	
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.231	2.220	0.011		6406861	28.7		6844	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.238	2.229	0.009	1.000	6049912	36.6		947	
<b>\$ 10 13C2 PFDA</b>									
515.00 > 470.00	2.390	2.384	0.006	1.000	1702141	10.9		2246	

Report Date: 01-Feb-2017 10:55:03

Chrom Revision: 2.2 10-Jan-2017 11:26:10

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_009.d  
 Injection Date: 31-Jan-2017 17:45:24 Instrument ID: A8\_N  
 Lims ID: LCS 320-148300/2-A  
 Client ID:  
 Operator ID: A8-PC\\A8 ALS Bottle#: 3 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

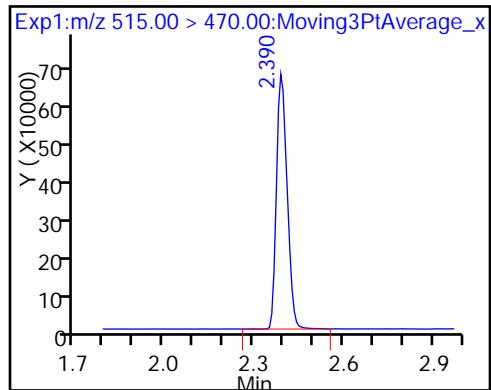


Report Date: 01-Feb-2017 10:55:03

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_009.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_009.d  
 Lims ID: LCS 320-148300/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 31-Jan-2017 17:45:24 ALS Bottle#: 3 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-148300/2-a  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:54:59 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:30:19

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.30	93.00
\$ 10 13C2 PFDA	10.0	10.9	108.72

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.:  
Client Sample ID: WI -CV-1RW70-0117 MS Lab Sample ID: 320-25352-5 MS  
Matrix: Water Lab File ID: 2017.01.31A\_537\_031.d  
Analysis Method: 537 Date Collected: 01/27/2017 09:03  
Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
Sample wt/vol: 247 (mL) Date Analyzed: 01/31/2017 19:22  
Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
% Moisture:  
Analysis Batch No.: 148474 GPC Cleanup: (Y/N) N  
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0285	J M	0.061	0.049	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.0153	J	0.030	0.024	0.0095
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.0765	J	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	99		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_031.d  
 Lims ID: 320-25352-A-5-B MS  
 Client ID: WI -CV-1RW70-0117  
 Sample Type: MS  
 Inject. Date: 31-Jan-2017 19:22:17 ALS Bottle#: 21 Worklist Smp#: 31  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-5-b ms  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:41:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
<b>1 Perfluorobutanesulfonic acid</b>									
298.90 > 80.00	1.510	1.510	0.0	1.000	7931870	18.9		677	
298.90 > 99.00	1.510	1.510	0.0	1.000	3261300	2.43(0.00-0.00)		637	
<b>\$ 2 13C2 PFHxA</b>									
315.00 > 270.00	1.639	1.638	0.001	1.000	2621662	9.36		5349	
<b>3 Perfluorohexanesulfonic acid</b>									
399.00 > 80.00	1.791	1.787	0.004	1.000	2236583	5.81		493	
<b>4 Perfluoroheptanoic acid</b>									
363.00 > 319.00	1.791	1.788	0.003	1.000	516287	2.06		43.5	
<b>* 6 13C2-PFOA</b>									
415.00 > 370.00	1.980	1.979	0.001		2594579	10.0		4850	
<b>5 Perfluorooctanoic acid</b>									
413.00 > 369.00	1.980	1.980	0.0	1.000	909503	3.79		60.8	
413.00 > 169.00	1.980	1.980	0.0	1.000	537040	1.69(0.00-0.00)		565	
<b>8 Perfluorooctane sulfonic acid</b>									
499.00 > 80.00	2.231	2.215	0.016	1.000	1795904	7.03		648	M
499.00 > 99.00	2.223	2.215	0.008	0.997	432768	4.15(0.00-0.00)		436	M
<b>* 7 13C4 PFOS</b>									
503.00 > 80.00	2.223	2.220	0.003		6560082	28.7		5224	
<b>9 Perfluorononanoic acid</b>									
463.00 > 419.00	2.231	2.229	0.002	1.000	593793	3.36		98.7	
<b>\$ 10 13C2 PFDA</b>									
515.00 > 470.00	2.390	2.384	0.006	1.000	1666544	9.95		2232	

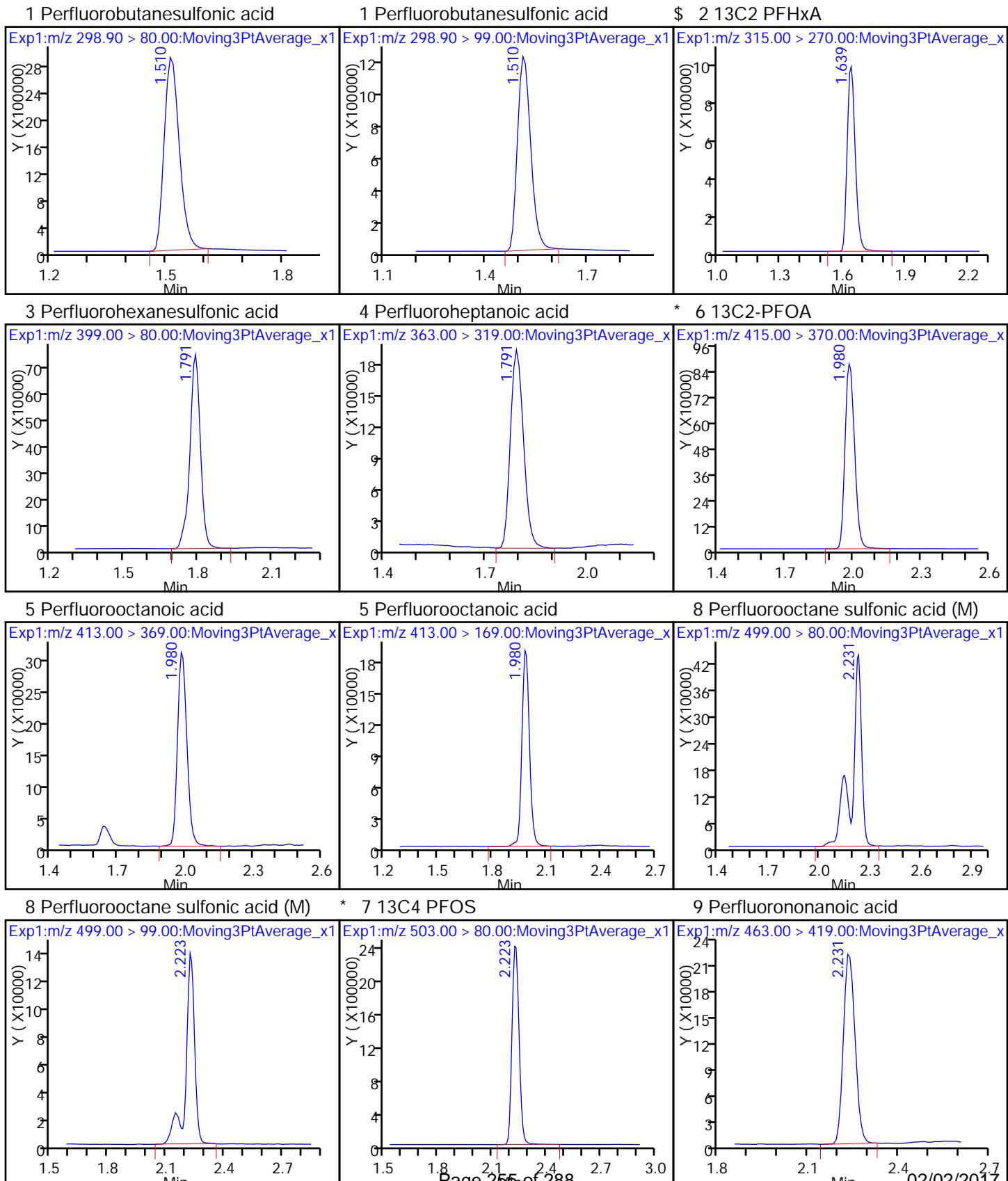
## QC Flag Legend

Review Flags

M - Manually Integrated

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_031.d  
 Injection Date: 31-Jan-2017 19:22:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-B MS  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 21 Worklist Smp#: 31  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL

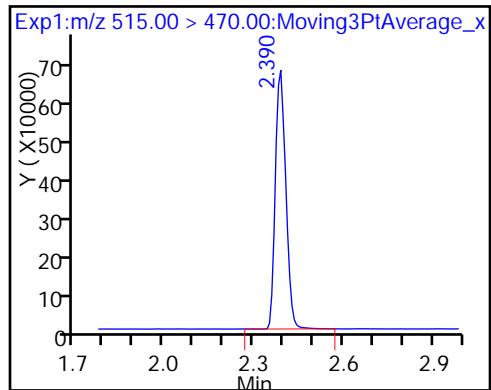


Report Date: 01-Feb-2017 10:55:45

Chrom Revision: 2.2 10-Jan-2017 11:26:10

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_031.d

\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_031.d  
 Lims ID: 320-25352-A-5-B MS  
 Client ID: WI -CV-1RW70-0117  
 Sample Type: MS  
 Inject. Date: 31-Jan-2017 19:22:17 ALS Bottle#: 21 Worklist Smp#: 31  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-5-b ms  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:41:31

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.36	93.63
\$ 10 13C2 PFDA	10.0	9.95	99.49

## TestAmerica Sacramento

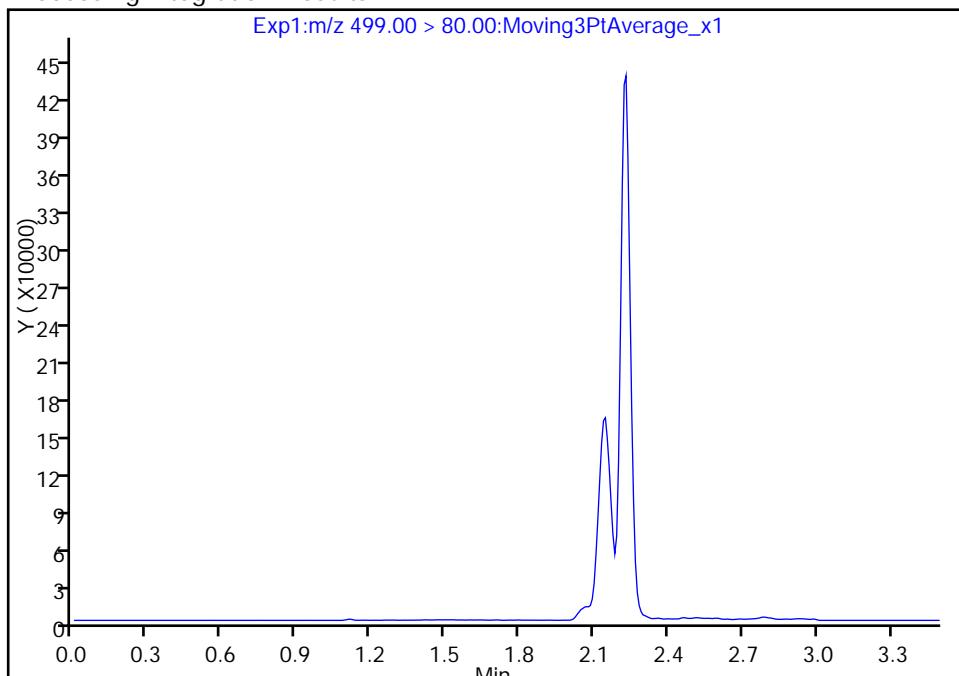
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_031.d  
 Injection Date: 31-Jan-2017 19:22:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-B MS  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 21 Worklist Smp#: 31  
 Injection Vol: 2.0 ul 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

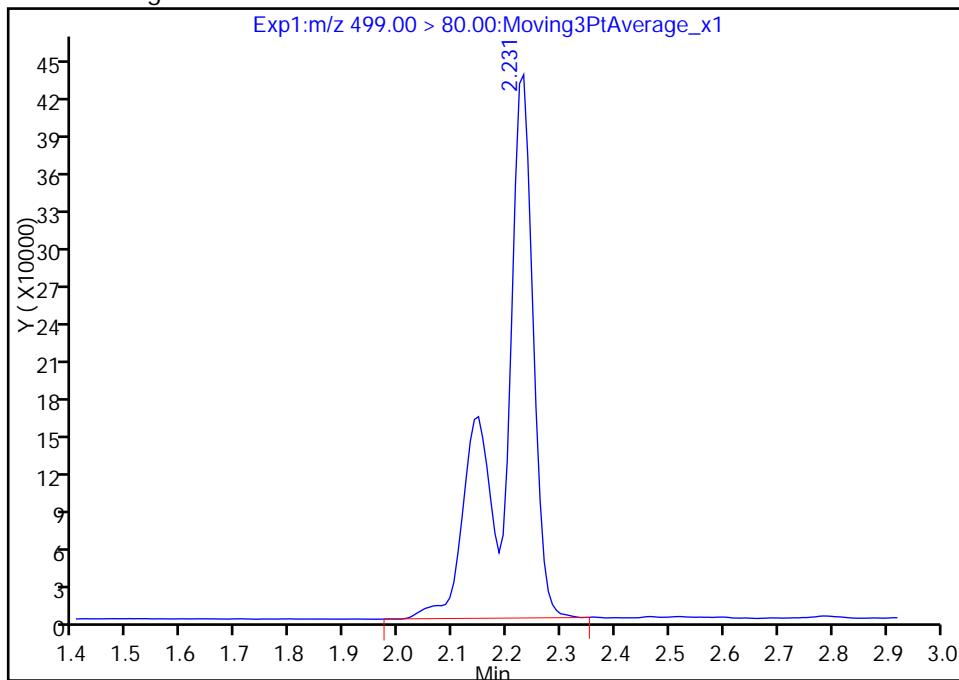
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 1795904  
 Amount: 7.032715  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:41:31

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_031.d  
 Injection Date: 31-Jan-2017 19:22:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-B MS  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 21 Worklist Smp#: 31  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

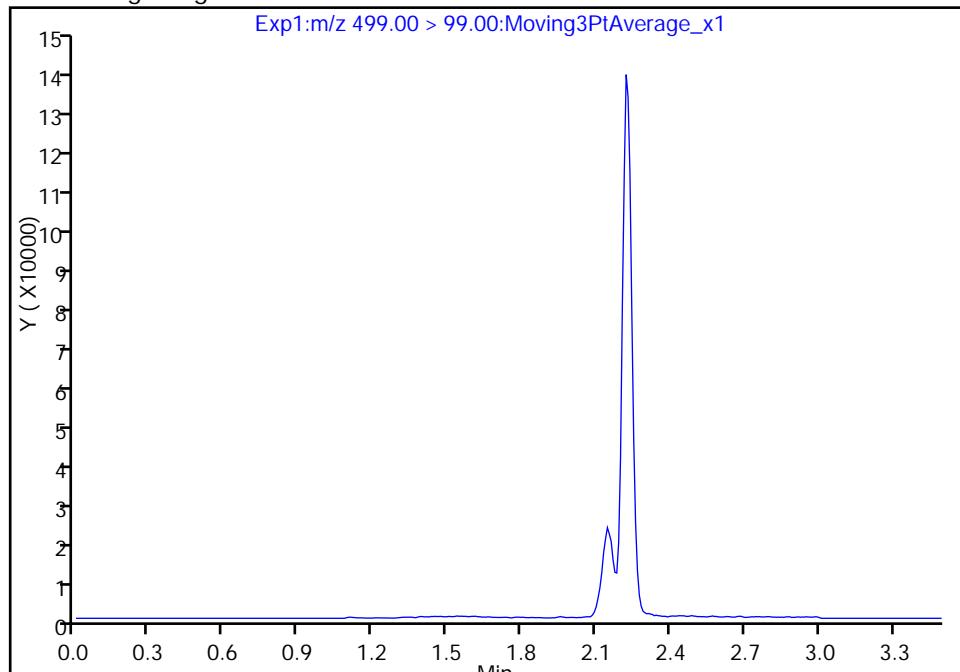
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

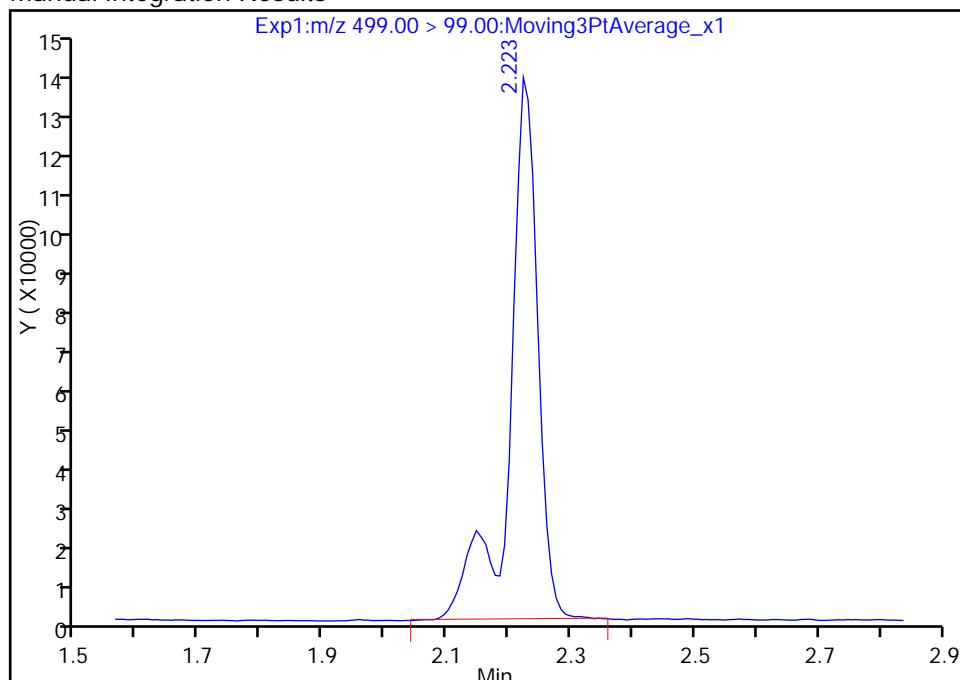
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 432768  
 Amount: 7.032715  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:41:31

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_031.d  
 Injection Date: 31-Jan-2017 19:22:17 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-B MS  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 21 Worklist Smp#: 31  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

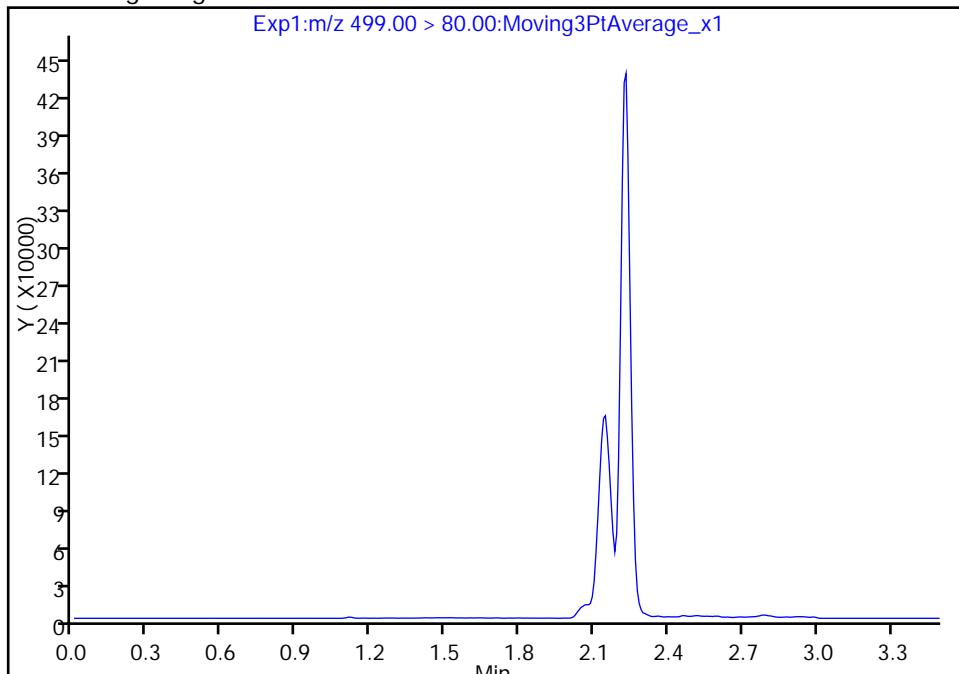
**8 Perfluorooctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

Not Detected

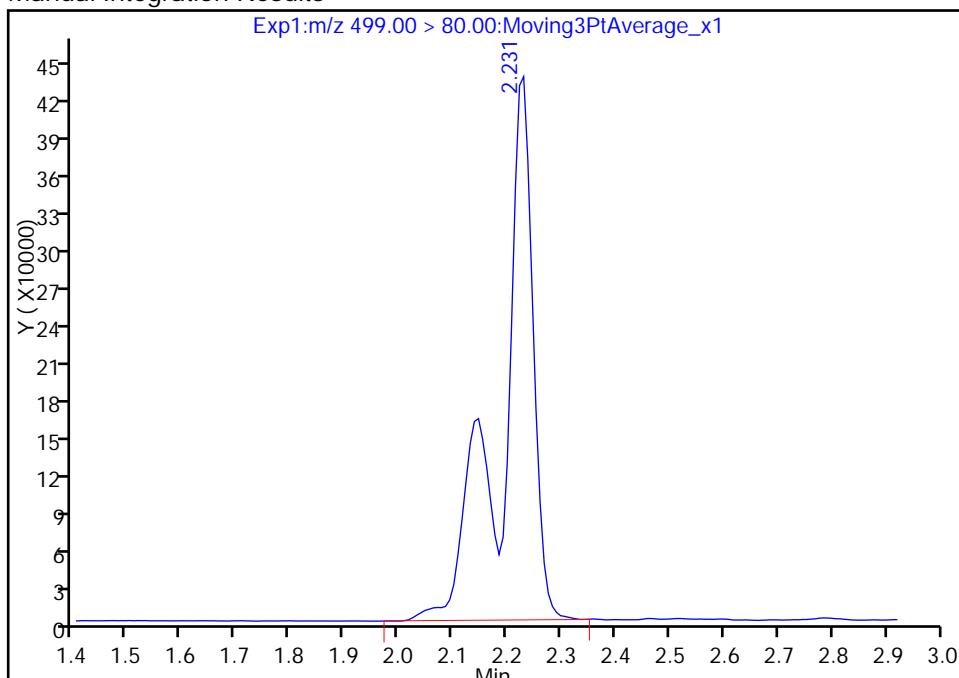
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.23  
 Area: 1795904  
 Amount: 7.032715  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:41:31

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
SDG No.:  
Client Sample ID: WI -CV-1RW70-0117 MSD Lab Sample ID: 320-25352-5 MSD  
Matrix: Water Lab File ID: 2017.01.31A\_537\_032.d  
Analysis Method: 537 Date Collected: 01/27/2017 09:03  
Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
Sample wt/vol: 250.1 (mL) Date Analyzed: 01/31/2017 19:26  
Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
% Moisture:  
Analysis Batch No.: 148474 GPC Cleanup: (Y/N) N  
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0294	J M	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.0159	J	0.030	0.024	0.0094
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.0785	J	0.14	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	104		70-130

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_032.d  
 Lims ID: 320-25352-A-5-C MSD  
 Client ID: WI -CV-1RW70-0117  
 Sample Type: MSD  
 Inject. Date: 31-Jan-2017 19:26:41 ALS Bottle#: 22 Worklist Smp#: 32  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-5-c msd  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:42:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	---------------	-----	-------

1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.502	1.510	-0.008	1.000	8319150	19.6		712	
298.90 > 99.00	1.502	1.510	-0.008	1.000	3440813		2.42(0.00-0.00)	701	
\$ 2 13C2 PFHxA									
315.00 > 270.00	1.631	1.638	-0.007	1.000	2723175	9.54		5395	
3 Perfluorohexanesulfonic acid									
399.00 > 80.00	1.783	1.787	-0.004	1.000	2323810	5.97		515	
4 Perfluoroheptanoic acid									
363.00 > 319.00	1.783	1.788	-0.005	1.000	546255	2.14		47.7	
* 6 13C2-PFOA									
415.00 > 370.00	1.973	1.979	-0.006		2645221	10.0		5749	
5 Perfluorooctanoic acid									
413.00 > 369.00	1.973	1.980	-0.007	1.000	970991	3.97		66.2	
413.00 > 169.00	1.980	1.980	0.0	1.004	571493		1.70(0.00-0.00)	596	
8 Perfluorooctane sulfonic acid									
499.00 > 80.00	2.223	2.215	0.008	1.000	1900775	7.37		602	M
499.00 > 99.00	2.223	2.215	0.008	1.000	466839		4.07(0.00-0.00)	416	M
* 7 13C4 PFOS									
503.00 > 80.00	2.223	2.220	0.003		6629871	28.7		6057	
9 Perfluorononanoic acid									
463.00 > 419.00	2.231	2.229	0.002	1.000	658822	3.66		113	
\$ 10 13C2 PFDA									
515.00 > 470.00	2.382	2.384	-0.002	1.000	1780338	10.4		2591	

## QC Flag Legend

Review Flags

M - Manually Integrated

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_032.d

Injection Date: 31-Jan-2017 19:26:41

Instrument ID: A8\_N

Lims ID: 320-25352-A-5-C MSD

Client ID: WI -CV-1RW70-0117

Operator ID: A8-PC\\A8

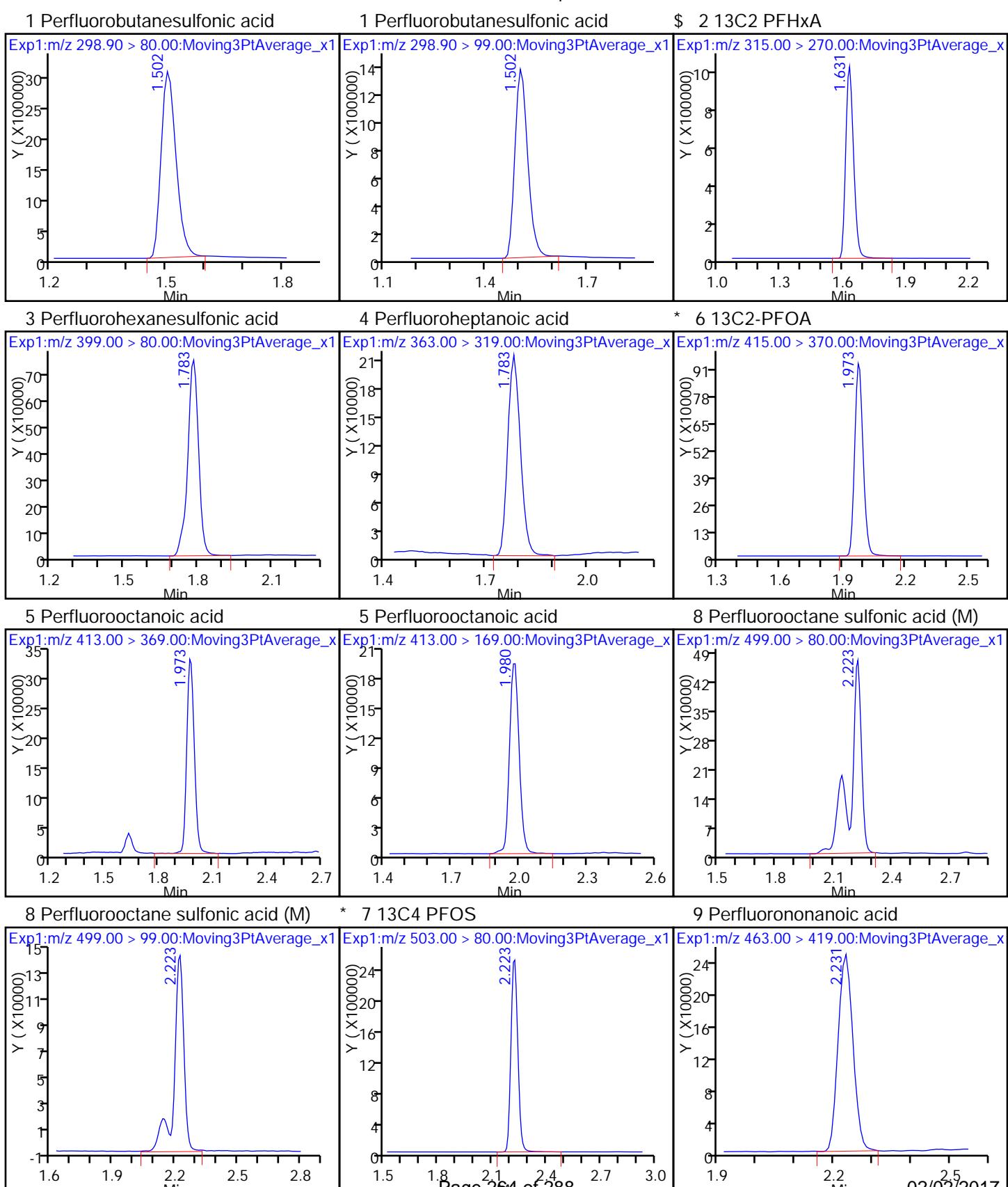
ALS Bottle#: 22 Worklist Smp#: 32

Injection Vol: 2.0 ul

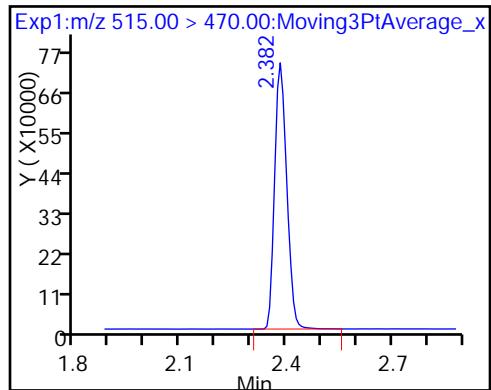
Dil. Factor: 1.0000

Method: 537\_A8\_N

Limit Group: LC 537 ICAL



\$ 10 13C2 PFDA



TestAmerica Sacramento  
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\2017.01.31A\_537\_032.d  
 Lims ID: 320-25352-A-5-C MSD  
 Client ID: WI -CV-1RW70-0117  
 Sample Type: MSD  
 Inject. Date: 31-Jan-2017 19:26:41 ALS Bottle#: 22 Worklist Smp#: 32  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-25352-a-5-c msd  
 Misc. Info.: Plate: 1 Rack: 2  
 Operator ID: A8-PC\A8 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170131-39369.b\537\_A8\_N.m  
 Limit Group: LC 537 ICAL  
 Last Update: 01-Feb-2017 10:55:43 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: XAWRK010

First Level Reviewer: barnettj Date: 01-Feb-2017 10:42:27

Compound	Amount Added	Amount Recovered	% Rec.
\$ 2 13C2 PFHxA	10.0	9.54	95.39
\$ 10 13C2 PFDA	10.0	10.4	104.25

## TestAmerica Sacramento

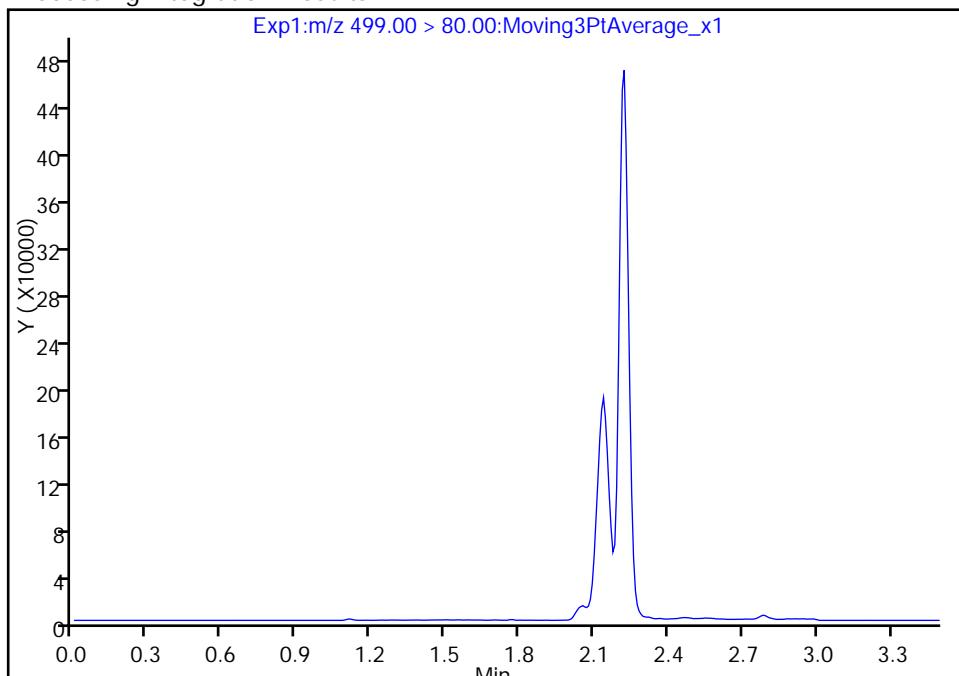
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_032.d  
 Injection Date: 31-Jan-2017 19:26:41 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-C MSD  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\\A8 ALS Bottle#: 22 Worklist Smp#: 32  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

**8 Perfluoroctane sulfonic acid, CAS: 1763-23-1**

Signal: 1

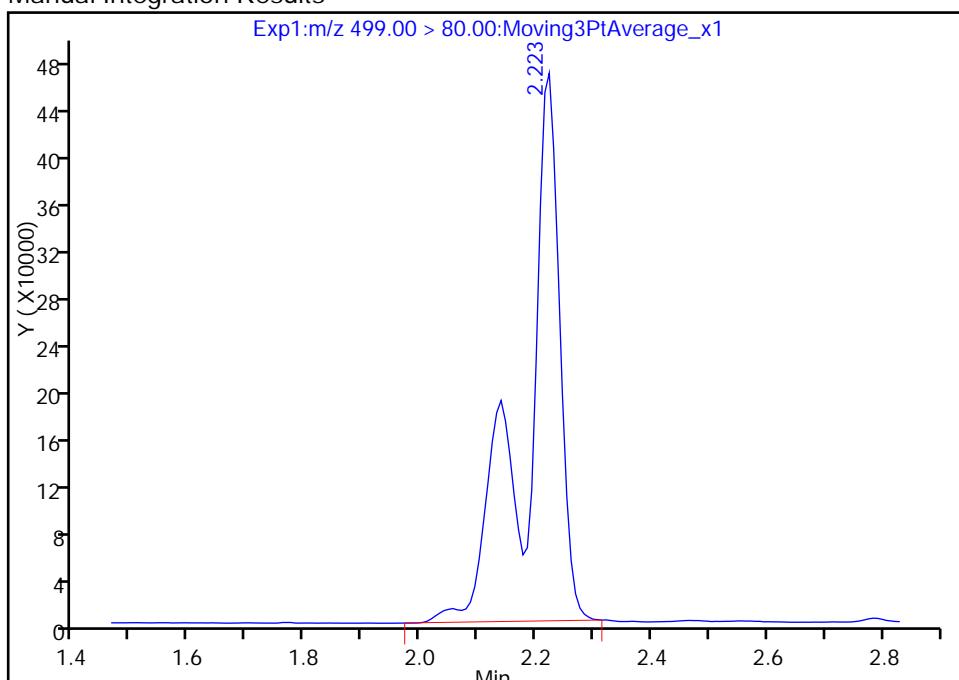
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 1900775  
 Amount: 7.365035  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:42:27

Audit Action: Assigned Compound ID

Audit Reason: Isomers

## TestAmerica Sacramento

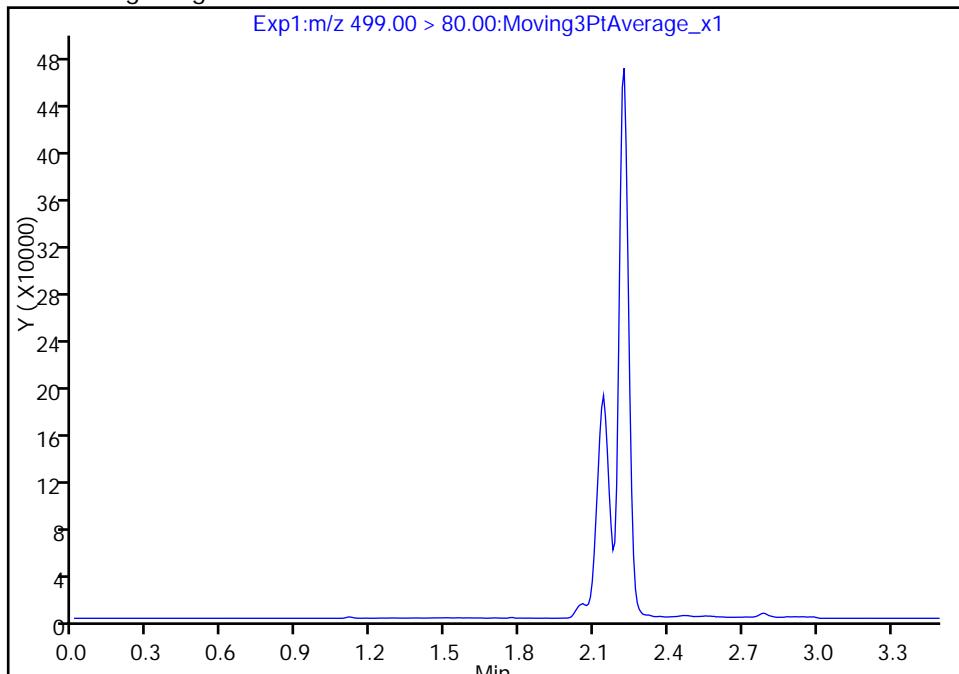
Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_032.d  
 Injection Date: 31-Jan-2017 19:26:41 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-C MSD  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 22 Worklist Smp#: 32  
 Injection Vol: 2.0 ul 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

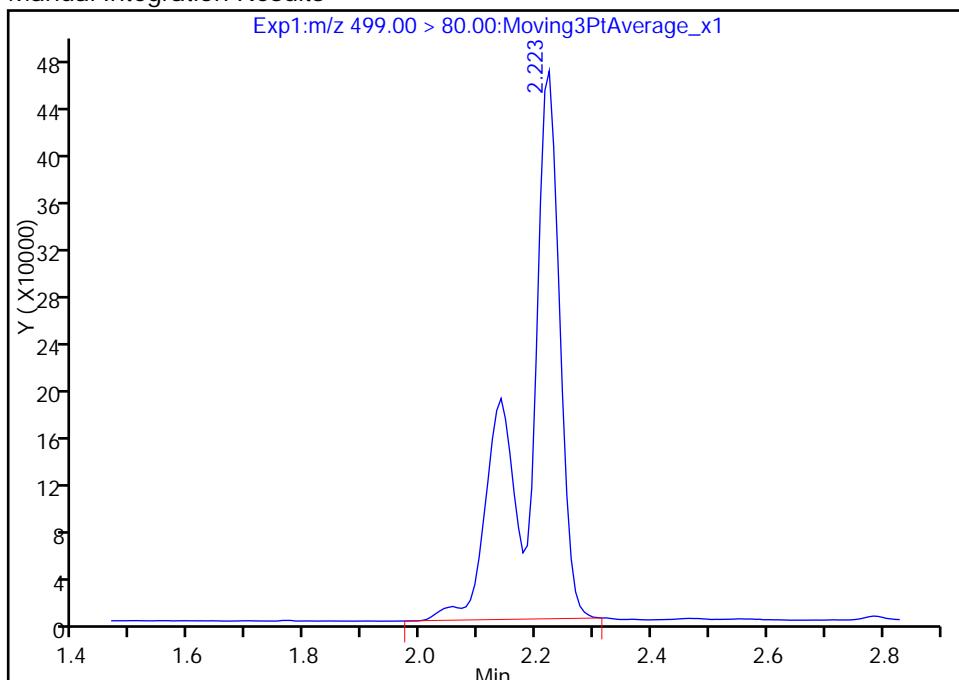
Not Detected  
 Expected RT: 2.22

## Processing Integration Results



RT: 2.22  
 Area: 1900775  
 Amount: 7.365035  
 Amount Units: ng/ml

## Manual Integration Results



Reviewer: barnettj, 01-Feb-2017 10:42:27

Audit Action: Manually Integrated

Audit Reason: Isomers

## TestAmerica Sacramento

Data File: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b\\2017.01.31A\_537\_032.d  
 Injection Date: 31-Jan-2017 19:26:41 Instrument ID: A8\_N  
 Lims ID: 320-25352-A-5-C MSD  
 Client ID: WI -CV-1RW70-0117  
 Operator ID: A8-PC\A8 ALS Bottle#: 22 Worklist Smp#: 32  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: 537\_A8\_N Limit Group: LC 537 ICAL  
 Column: Detector EXP1

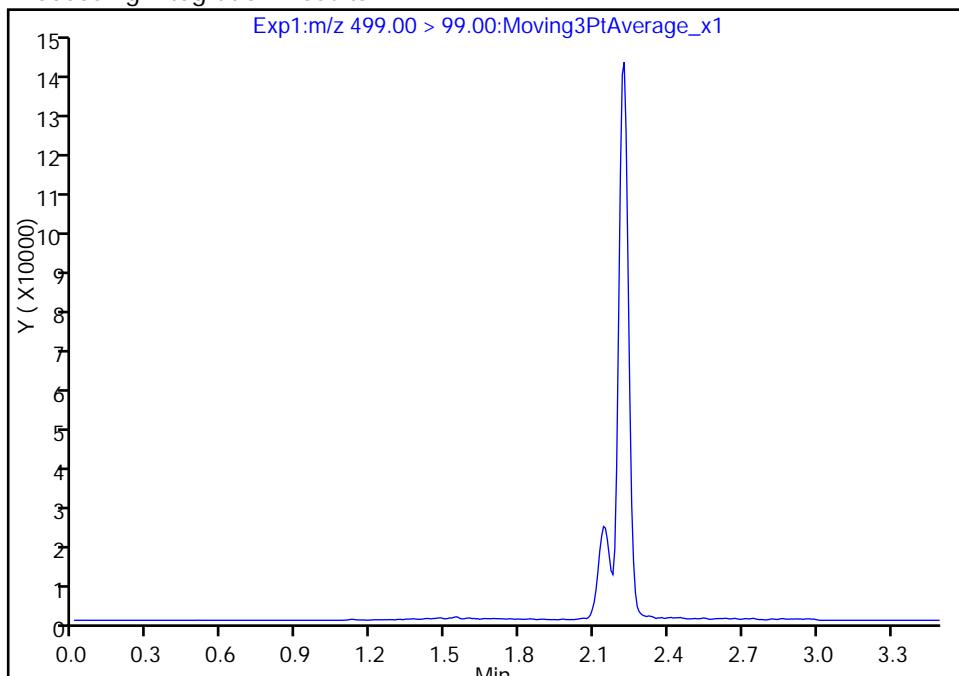
## 8 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

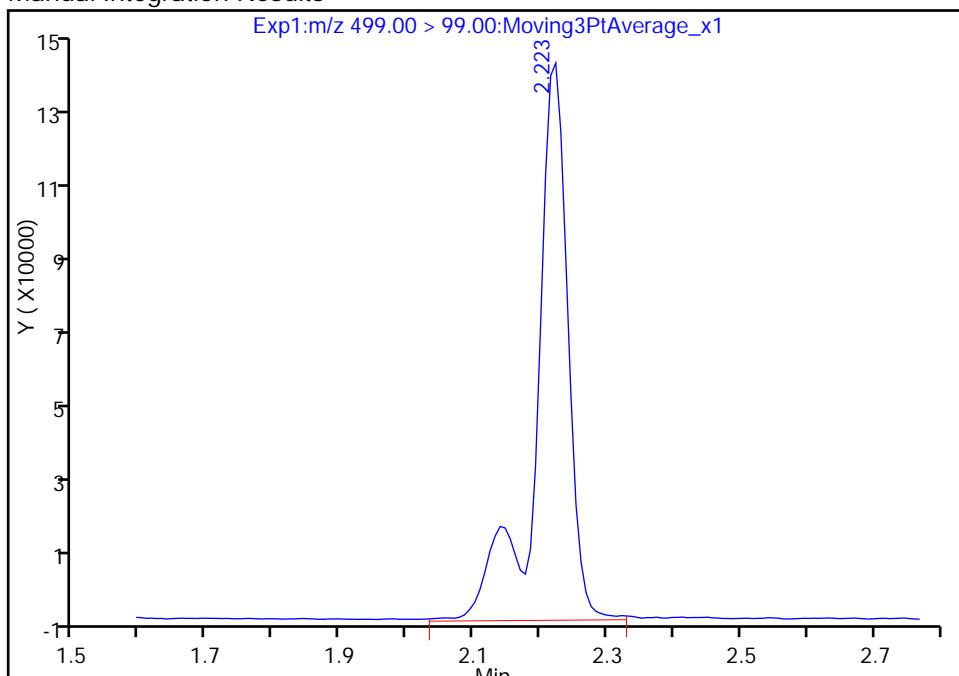
Expected RT: 2.22

## Processing Integration Results



## Manual Integration Results

RT: 2.22  
 Area: 466839  
 Amount: 7.365035  
 Amount Units: ng/ml



Reviewer: barnettj, 01-Feb-2017 10:42:27

Audit Action: Manually Integrated

Audit Reason: Isomers

## LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-25352-1

SDG No.:

Instrument ID: A8\_NStart Date: 01/26/2017 11:03Analysis Batch Number: 147939End 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_.d	Acquity 2.1(mm)
IC 320-147939/5		01/26/2017 11:07	1	2017.01.26_537_.d	Acquity 2.1(mm)
IC 320-147939/6		01/26/2017 11:11	1	2017.01.26_537_.d	Acquity 2.1(mm)
IC 320-147939/7 ICISAV		01/26/2017 11:16	1	2017.01.26_537_.d	Acquity 2.1(mm)
IC 320-147939/8		01/26/2017 11:20	1	2017.01.26_537_.d	Acquity 2.1(mm)
IC 320-147939/9		01/26/2017 11:25	1	2017.01.26_537_.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_.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_.d	Acquity 2.1(mm)
ZZZZZ		01/26/2017 11:46	1		Acquity 2.1(mm)

## LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-25352-1

SDG No.:

Instrument ID: A8\_NStart Date: 01/31/2017 17:23Analysis Batch Number: 148472End Date: 01/31/2017 18:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-148472/4 CCVL		01/31/2017 17:23	1	2017.01.31A_537 004.d	GeminiC18 3x100 3 (mm)
CCV 320-148472/5 CCVIS		01/31/2017 17:27	1	2017.01.31A_537 005.d	GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 17:32	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 17:36	1		GeminiC18 3x100 3 (mm)
MB 320-148300/1-A		01/31/2017 17:41	1	2017.01.31A_537 008.d	GeminiC18 3x100 3 (mm)
LCS 320-148300/2-A		01/31/2017 17:45	1	2017.01.31A_537 009.d	GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 17:49	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 17:54	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 17:58	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:03	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:07	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:11	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:16	1		GeminiC18 3x100 3 (mm)
CCV 320-148472/17 CCVIS		01/31/2017 18:20	1	2017.01.31A_537 017.d	GeminiC18 3x100 3 (mm)

## LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-25352-1

SDG No.:

Instrument ID: A8\_NStart Date: 01/31/2017 18:20Analysis Batch Number: 148473End Date: 01/31/2017 19:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-148473/17 CCVIS		01/31/2017 18:20	1	2017.01.31A_537 017.d	GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:25	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:29	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:33	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:38	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:42	1		GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 18:47	1		GeminiC18 3x100 3 (mm)
320-25352-1		01/31/2017 18:51	1	2017.01.31A_537 024.d	GeminiC18 3x100 3 (mm)
320-25352-2		01/31/2017 18:55	1	2017.01.31A_537 025.d	GeminiC18 3x100 3 (mm)
320-25352-3		01/31/2017 19:00	1	2017.01.31A_537 026.d	GeminiC18 3x100 3 (mm)
320-25352-4		01/31/2017 19:04	1	2017.01.31A_537 027.d	GeminiC18 3x100 3 (mm)
320-25352-5		01/31/2017 19:09	1	2017.01.31A_537 028.d	GeminiC18 3x100 3 (mm)
CCV 320-148473/29 CCVIS		01/31/2017 19:13	1	2017.01.31A_537 029.d	GeminiC18 3x100 3 (mm)

## LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-25352-1

SDG No.:

Instrument ID: A8\_NStart Date: 01/31/2017 19:13Analysis Batch Number: 148474End Date: 01/31/2017 19:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-148474/29 CCVIS		01/31/2017 19:13	1	2017.01.31A_537 029.d	GeminiC18 3x100 3 (mm)
ZZZZZ		01/31/2017 19:17	1		GeminiC18 3x100 3 (mm)
320-25352-5 MS		01/31/2017 19:22	1	2017.01.31A_537 031.d	GeminiC18 3x100 3 (mm)
320-25352-5 MSD		01/31/2017 19:26	1	2017.01.31A_537 032.d	GeminiC18 3x100 3 (mm)
320-25352-6		01/31/2017 19:31	1	2017.01.31A_537 033.d	GeminiC18 3x100 3 (mm)
320-25352-7		01/31/2017 19:35	1	2017.01.31A_537 034.d	GeminiC18 3x100 3 (mm)
320-25352-8		01/31/2017 19:39	1	2017.01.31A_537 035.d	GeminiC18 3x100 3 (mm)
CCV 320-148474/36 CCVIS		01/31/2017 19:44	1	2017.01.31A_537 036.d	GeminiC18 3x100 3 (mm)

## LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

SDG No.:

Batch Number: 148300

Batch Start Date: 01/30/17 14:07

Batch Analyst: Marchenko, Veronika P

Batch Method: 537

Batch End Date: 01/31/17 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-HSP 00014
MB 320-148300/1		537, 537				250 mL	1.0 mL	7 SU	
LCS 320-148300/2		537, 537				250 mL	1.0 mL	7 SU	50 uL
320-25352-A-1	WI -CV-1RW68-0117	537, 537	T	255.89 g	26.67 g	229.2 mL	1.0 mL	7 SU	
320-25352-A-2	WI -CV-1FB68-0117	537, 537	T	279.91 g	25.90 g	254 mL	1.0 mL	7 SU	
320-25352-A-3	WI -CV-1RW69-0117	537, 537	T	270.64 g	27.62 g	243 mL	1.0 mL	7 SU	
320-25352-A-4	WI -CV-1FB69-0117	537, 537	T	281.78 g	26.83 g	255 mL	1.0 mL	7 SU	
320-25352-A-5	WI -CV-1RW70-0117	537, 537	T	265.30 g	27.41 g	237.9 mL	1.0 mL	7 SU	
320-25352-A-5 MS	WI -CV-1RW70-0117	537, 537	T	274.57 g	27.54 g	247 mL	1.0 mL	7 SU	
320-25352-A-5 MSD	WI -CV-1RW70-0117	537, 537	T	277.44 g	27.38 g	250.1 mL	1.0 mL	7 SU	
320-25352-A-6	WI -CV-1FB70-0117	537, 537	T	279.24 g	26.65 g	252.6 mL	1.0 mL	7 SU	
320-25352-A-7	WI -CV-1RW71-0117	537, 537	T	264.52 g	26.29 g	238.2 mL	1.0 mL	7 SU	
320-25352-A-8	WI -CV-1FB71-0117	537, 537	T	278.48 g	26.58 g	251.9 mL	1.0 mL	7 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00030	LC537-LSP 00016	LC537-SU 00029	AnalysisComment		
MB 320-148300/1		537, 537		20 uL		50 uL	chlorine=ND		
LCS 320-148300/2		537, 537		20 uL		50 uL	chlorine=ND		
320-25352-A-1	WI -CV-1RW68-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-2	WI -CV-1FB68-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-3	WI -CV-1RW69-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-4	WI -CV-1FB69-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-5	WI -CV-1RW70-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-5 MS	WI -CV-1RW70-0117	537, 537	T	20 uL	50 uL	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.: 320-25352-1

SDG No.:

Batch Number: 148300

Batch Start Date: 01/30/17 14:07

Batch Analyst: Marchenko, Veronika P

Batch Method: 537

Batch End Date: 01/31/17 12:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-IS 00030	LC537-LSP 00016	LC537-SU 00029	AnalysisComment		
320-25352-A-5 MSD	WI -CV-1RW70-0117	537, 537	T	20 uL	50 uL	50 uL	chlorine=ND		
320-25352-A-6	WI -CV-1FB70-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-7	WI -CV-1RW71-0117	537, 537	T	20 uL		50 uL	chlorine=ND		
320-25352-A-8	WI -CV-1FB71-0117	537, 537	T	20 uL		50 uL	chlorine=ND		

## Batch Notes

Manifold ID	7,10
Methanol ID	827183
Pipette ID	MD05306
Analyst ID - IS Reagent Drop	CCB
Analyst ID - IS Reagent Drop Witness	NSH
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	KMK
Analyst ID - TA Reagent Drop	VPM
Analyst ID - TA Reagent Drop Witness	KMK
SPE Cartridge ID	6341059-03
Trizma ID	SLBR4303V
Reagent Water ID	SR 1-29-17

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.

## Method 537 CCV/Data Review Checklist

A8

Job No: 25351, 25352 Instrument ID & Date: 1-31-17 ICAL Batch: 147939  
 Extraction Batch: 148300 Worklist #: 39369, 39407 TALS Batch: 148472, 148473, 148474,  
148593

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 $\pm 50\%$ of true value Mid and High-range within $\pm 30\%$ of true value	✓			✓
4. Internal Standard areas in control? Areas $\geq 50\%$ 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? _____ Dilutions due to non-targets?	✓			✓
5. All target compounds in MB $< 1/3$ RL ? (Requires NCM if "no.")	✓			✓
6. Are target constituents in LCS/LCSD within method control limits?	✓			✓
7. Internal Standard areas in control for all samples and QC reported? $\pm 50\%$ 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?	✓			✓

 1<sup>st</sup> Level Reviewer / Date: JRB 2-1-17

 2<sup>nd</sup> Level Reviewer / Date: Alvarez 2/2/2017

 NCM # and Comments: 76875

## Method 537 ICAL Checklist

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 $(1/x^2)$ Linear <u>Quadratic</u> (6 points minimum)				✓
4. Meets fit criteria? Intercept $\leq \frac{1}{2}$ RL RSD $\leq 30\%$ for Average $R^2 \geq 0.990$ for Linear $R^2 \geq 0.990$ for Quadratic NOTE: "Force through Zero" must be used and weighted if needed	✓			✓
5. If quadratic fit used the curve does not "bend over".	✓			✓
6. Feed calibration points into the calculated curve. Are points $\leq MRL$ within $\pm 50\%$ of true value? Are points $> MRL$ within $\pm 30\%$ 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) $\pm 30\%$ of true value?	✓			✓
11. Is ICV (2 <sup>nd</sup> source) internal standards $\pm 50\%$ 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: mcwefy 1/27/2017

 NCM # and Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TestAmerica Laboratories**  
**Worklist QC Batch Report**

Worklist Name: 31JAN2017A\_537

Worklist Number: 39369

Instrument Name: A8\_N

Chrom Method: 537\_A8\_N

Data Directory: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170131-39369.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 148472	LC 537 CS ICAL Raw Batch: 148548
# 1 RB	# 1 RB	
# 2 RB	# 2 RB	
# 3 RB	# 3 RB	
# 4 CCV L2	# 4 CCV L2	# 4 CCV L2
# 5 CCV L5	# 5 CCV L5	
# 6 RB	# 6 RB	
# 7 QC 537 SU/IS	# 7 QC 537 SU/IS	
# 8 MB 320-148300/1-A	# 8 MB 320-148300/1-A	
# 9 LCS 320-148300/2-A	# 9 LCS 320-148300/2-A	
#10 320-25351-A-1-A	#10 320-25351-A-1-A	
#11 320-25351-A-2-A	#11 320-25351-A-2-A	
#12 320-25351-A-3-A	#12 320-25351-A-3-A	
#13 320-25351-A-4-A	#13 320-25351-A-4-A	
#14 320-25351-A-5-A	#14 320-25351-A-5-A	
#15 320-25351-A-6-A	#15 320-25351-A-6-A	
#16 320-25351-A-7-A	#16 320-25351-A-7-A	
#17 CCV L3	#17 CCV L3	

QC Batch: 2	LC 537 ICAL Raw Batch: 148473
#17 CCV L3	#17 CCV L3
#18 RB	#18 RB
#19 320-25351-A-8-A	#19 320-25351-A-8-A
#20 320-25351-A-9-A	#20 320-25351-A-9-A
#21 320-25351-A-10-A	#21 320-25351-A-10-A
#22 320-25351-A-11-A	#22 320-25351-A-11-A
#23 320-25351-A-12-A	#23 320-25351-A-12-A
#24 320-25352-A-1-A	#24 320-25352-A-1-A
#25 320-25352-A-2-A	#25 320-25352-A-2-A
#26 320-25352-A-3-A	#26 320-25352-A-3-A
#27 320-25352-A-4-A	#27 320-25352-A-4-A
#28 320-25352-A-5-A	#28 320-25352-A-5-A
#29 CCV L5	#29 CCV L5

QC Batch: 3	LC 537 ICAL Raw Batch: 148474
#29 CCV L5	#29 CCV L5
#30 RB	#30 RB
#31 320-25352-A-5-B MS	#31 320-25352-A-5-B MS
#32 320-25352-A-5-C MSD	#32 320-25352-A-5-C MSD
#33 320-25352-A-6-A	#33 320-25352-A-6-A
#34 320-25352-A-7-A	#34 320-25352-A-7-A
#35 320-25352-A-8-A	#35 320-25352-A-8-A
#36 CCV L3	#36 CCV L3
#37 RB	#37 RB

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 01FEB2017A\_537

Worklist Number: 39407

Instrument Name: A8\_N

Chrom Method: 537\_A8\_N

Data Directory: \\ChromNa\\Sacramento\\ChromData\\A8\_N\\20170201-39407.b

QC Batching: Enabled

Limit Group Batching: Enabled

QC Batch: 1	LC 537 ICAL Raw Batch: 148593	LC 537 CS ICAL Raw Batch: 148594
# 1 RB	# 1 RB	
# 2 RB	# 2 RB	
# 3 RB	# 3 RB	
# 4 CCV L2	# 4 CCV L2	# 4 CCV L2
# 5 CCV L5	# 5 CCV L5	# 5 CCV L5
# 6 RB	# 6 RB	# 6 RB
# 7 320-25221-A-1-A		# 7 320-25221-A-1-A
# 8 320-25351-A-3-A	# 8 320-25351-A-3-A	
# 9 CCV L3	# 9 CCV L3	# 9 CCV L3
#10 RB	#10 RB	

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-148300

Method Code: 320-537\_Prep-320

Batch Open: 1/30/2017 2:07:00PM

Batch End: 1/30/17 12:45

## Extraction of Perfluorinated Alkyl Acids

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs			Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1	Adj2					
1 MB~320-148300/1 N/A	N/A		250 mL	7			N/A	N/A	N/A	chlorine=ND	 M B 3 2 0 - 1 4 8 3 0 0 / 1 - A
			1.0 mL								
2 LCS~320-148300/2 N/A	N/A		250 mL	7			N/A	N/A	N/A	chlorine=ND	 L C S 3 2 0 - 1 4 8 3 0 0 / 2 - A
			1.0 mL								
3 320-25351-A-1 (537_DOD5)	N/A (320-25351-1)	279.44 g	252.6 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 1 - A
		26.86 g	1.0 mL								
4 320-25351-A-2 (537_DOD5)	N/A (320-25351-1)	279.35 g	253.5 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 2 - A
		25.89 g	1.0 mL								
5 320-25351-A-3 (537_DOD5)	N/A (320-25351-1)	270.68 g	242.8 mL	7			2/3/17	5_Days	4	chlorine=ND RT	 3 2 0 - 2 5 3 5 1 - A - 3 - A
		27.84 g	1.0 mL								
6 320-25351-A-4 (537_DOD5)	N/A (320-25351-1)	277.56 g	251.3 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 4 - A
		26.23 g	1.0 mL								
7 320-25351-A-5 (537_DOD5)	N/A (320-25351-1)	271.21 g	242.4 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 5 - A
		28.77 g	1.0 mL								
8 320-25351-A-6 (537_DOD5)	N/A (320-25351-1)	281.66 g	255.2 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 6 - A
		26.51 g	1.0 mL								
9 320-25351-A-7 (537_DOD5)	N/A (320-25351-1)	269.17 g	242.4 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 7 - A
		26.81 g	1.0 mL								
10 320-25351-A-8 (537_DOD5)	N/A (320-25351-1)	273.45 g	246.7 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 8 - A
		26.80 g	1.0 mL								

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-148300

Batch Open: 1/30/2017 2:07:00PM

Method Code: 320-537\_Prep-320

Batch End:

11	320-25351-A-9 (537_DOD5)	N/A (320-25351-1)	273.56 g	245.7 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 9 - A
			27.82 g	1.0 mL								
12	320-25351-A-10 (537_DOD5)	N/A (320-25351-1)	281.13 g	254.6 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 1 0 - A
			26.52 g	1.0 mL								
13	320-25351-A-11 (537_DOD5)	N/A (320-25351-1)	272.88 g	244.6 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 1 1 - A
			28.30 g	1.0 mL								
14	320-25351-A-12 (537_DOD5)	N/A (320-25351-1)	279.17 g	252.8 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 1 - A - 1 2 - A
			26.39 g	1.0 mL								
15	320-25352-A-1 (537_DOD5)	N/A (320-25352-1)	255.89 g	229.2 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 1 - A
			26.67 g	1.0 mL								
16	320-25352-A-2 (537_DOD5)	N/A (320-25352-1)	279.91 g	254 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 2 - A
			25.90 g	1.0 mL								
17	320-25352-A-3 (537_DOD5)	N/A (320-25352-1)	270.64 g	243 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 3 - A
			27.62 g	1.0 mL								
18	320-25352-A-4 (537_DOD5)	N/A (320-25352-1)	281.78 g	255 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 4 - A
			26.83 g	1.0 mL								
19	320-25352-A-5 (537_DOD5)	N/A (320-25352-1)	265.30 g	237.9 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 5 - A
			27.41 g	1.0 mL								
20	320-25352-A-5-MS (537_DOD5)	N/A (320-25352-1)	274.57 g	247 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 5 - B - M S
			27.54 g	1.0 mL								
21	320-25352-A-5~MSD (537_DOD5)	N/A (320-25352-1)	277.44 g	250.1 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 5 - C - M S D
			27.38 g	1.0 mL								
22	320-25352-A-6 (537_DOD5)	N/A (320-25352-1)	279.24 g	252.6 mL	7			2/3/17	5_Days	4	chlorine=ND	 3 2 0 - 2 5 3 5 2 - A - 6 - A
			26.65 g	1.0 mL								

02/02/2017

Printed : 1/30/2017

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-148300

Batch Open: 1/30/2017 2:07:00PM

Method Code: 320-537\_Prep-320

Batch End:

23	320-25352-A-7 (537_DOD5)	N/A (320-25352-1)	264.52 g 26.29 g	238.2 mL 1.0 mL	7			2/3/17	5_Days	4	chlorine=ND	 320-25352-A-7-A
24	320-25352-A-8 (537_DOD5)	N/A (320-25352-1)	278.48 g 26.58 g	251.9 mL 1.0 mL	7			2/3/17	5_Days	4	chlorine=ND	 320-25352-A-8-A

## Batch Notes

Manifold ID 7,10

Trizma ID SLBR4303V

SPE Cartridge ID 6341059-03

Methanol ID 827183

Reagent Water ID SR 1-29-17

Pipette ID MD05306

Analyst ID - TA Reagent Drop VPM

Analyst ID - TA Reagent Drop KMK  
Witness

Analyst ID - SU Reagent Drop VPM

Analyst ID - SU Reagent Drop KMK  
Witness

Analyst ID - IS Reagent Drop NSH

Analyst ID - IS Reagent Drop CCB  
Witness

Batch Comment 827698 IS

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## Comments

02/02/2017

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-148300

Batch Open: 1/30/2017 2:07:00PM

Method Code: 320-537\_Prep-320

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-148300/1	LC537-SU_00029	50 uL	1.0 mL	VPM 1/30/17	KMK 1-30-17
LCS 320-148300/2	LC537-HSP_00014	50 uL	1.0 mL		
LCS 320-148300/2	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-1	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-2	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-3	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-4	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-5	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-6	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-7	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-8	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-9	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-10	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-11	LC537-SU_00029	50 uL	1.0 mL		
320-25351-A-12	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-1	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-2	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-3	LC537-SU_00029	50 uL	1.0 mL		✓

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Marchenko, Veronika P

Batch Number: 320-148300

Batch Open: 1/30/2017 2:07:00PM

Method Code: 320-537\_Prep-320

Batch End:

1-30-17

KMK ~~1-30-17~~ KMK

1-30-17

320-25352-A-4	LC537-SU_00029	50 uL	1.0 mL	VPM 1/30/17	
320-25352-A-5	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-5 MS	LC537-LSP_00016	50 uL	1.0 mL		
320-25352-A-5 MS	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-5 MSD	LC537-LSP_00016	50 uL	1.0 mL		
320-25352-A-5 MSD	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-6	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-7	LC537-SU_00029	50 uL	1.0 mL		
320-25352-A-8	LC537-SU_00029	50 uL	1.0 mL		

## Other Reagents:

Reagent

Amount/Units

Lot#:

Preparation Batch Number(s): 148300

Test: 537 Prep

Earliest Holding Time: 2-8-17

Sample List Tab		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		/	/
Worksheet Tab		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		/	/
Reagents Tab		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		/	/
Batch Information		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: deb

Date: 1-31-17

2<sup>nd</sup> Level Reviewer: VPM

Date: 1/31/17

Comments: \_\_\_\_\_

# **Shipping and Receiving Documents**

West Sacramento, CA 95605  
phone 916.373.5600 fax

Regulatory Program:  DW  NPDES  RCRA  Other:

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Katie Tippin			Site Contact: Eric Epple			Date: 1/27/2017			COC No: 1	
Tiffany Hill Project Chemist 1100 NE Circle Blvd Ste 300 Corvallis, OR 97330 (541) 768-3109 (541) 908-3794 Project Name: CTO-08 Site: OLF Coupeville P O #: 100067106050 - 679580.09.FI.FS	Tel/Fax: (757) 671-6258			Lab Contact: Laura Turpen			Carrier: FedEx			of _____ COCs		
		Analysis Turnaround Time									Sampler:	
		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: 7-Day _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day									For Lab Use Only: Walk-in Client: <input type="checkbox"/> Lab Sampling: <input type="checkbox"/>	
											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 537 (PFOS, PFBS, and PFBs)			
WI-CV-1RW68-0117		1/25/17	0911	G	DW	2	N	N	X			
WI-CV-1FB68-0117		1/25/17	0912	G	DW	2	N	N	X			
WI-CV-1RW69-0117		1/26/17	1129	G	DW	2	N	N	X			
WI-CV-1FB69-0117		1/26/17	1130	G	DW	2	N	N	X			
WI-CV-1RW70-0117		1/27/17	0903	G	DW	2	N	N	X			
WI-CV-1RW70-0117-MS		1/27/17	0903	G	DW	2	N	Y	X			
WI-CV-1RW70-0117-SD		1/27/17	0903	G	DW	2	N	Y	X			
WI-CV-1FB70-0117		1/27/17	0904	G	DW	2	N	N	X			
WI-CV-1RW71-0117		1/27/17	1133	G	DW	2	N	N	X			
WI-CV-1FB71-0117		1/27/17	1134	G	DW	2	N	N	X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Trizma												6
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.												Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown												<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months
Special Instructions/QC Requirements & Comments:												
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temp. (°C): Obs'd: 1.4			Corr'd: 1.1		Therm ID No: 12		
Relinquished by: <i>Eric Epple / E.E.</i> 01/2017		Company: CH2M		Date/Time: 1-27-17/16:00	Received by: <i>Oyv/Hgg</i>		Company: <i>CH2M</i>		Date/Time: 1-28-17 9:15			
Relinquished by:		Company: _____		Date/Time: _____	Received by: _____		Company: _____		Date/Time: _____			
Relinquished by:		Company: _____		Date/Time: _____	Received in Laboratory by: _____		Company: _____		Date/Time: _____			

## Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 320-25352-1

**Login Number: 25352**

**List Source: TestAmerica Sacramento**

**List Number: 1**

**Creator: Edman, Connor M**

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





Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	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
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW68-0117		0.052	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW68-0117		0.026	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW68-0117		0.12	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW68-0117		88	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW68-0117		106	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB68-0117		0.047	UG_L	U M		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB68-0117		0.024	UG_L	U M		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB68-0117		0.11	UG_L	U M		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB68-0117		100	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB68-0117		112	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW69-0117		0.049	UG_L	U M		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW69-0117		0.025	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW69-0117		0.11	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW69-0117		93	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW69-0117		92	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB69-0117		0.047	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB69-0117		0.024	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB69-0117		0.11	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB69-0117		94	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB69-0117		115	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		0.050	UG_L	U M		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		0.025	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		0.12	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		108	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		119	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		70	PCT_REC	J M		PR	TRG		MSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		76	PCT_REC	J		PR	TRG		MSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		84	PCT_REC	J		PR	TRG		MSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		94	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		99	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		74	PCT_REC	J M		PR	TRG		MSP	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		80	PCT_REC	J		PR	TRG		MSP	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		88	PCT_REC	J		PR	TRG		MSP	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		95	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW70-0117		104	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB70-0117		0.048	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB70-0117		0.024	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB70-0117		0.11	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB70-0117		94	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB70-0117		105	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW71-0117		0.050	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW71-0117		0.025	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW71-0117		0.12	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW71-0117		98	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1RW71-0117		107	PCT_REC			PR	SURR		SLSA	130	70	00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB71-0117		0.048	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB71-0117		0.024	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008		WHIDBEY_ISLAND_NAS	WI-CV-1FB71-0117		0.11	UG_L	U		PR	TRG					00000000			
N6247016D9000	0008																		



**DATA VALIDATION SUMMARY REPORT  
WHIDBEY ISLAND, WASHINGTON**

Client: CH2M HILL, Inc., Corvallis, Oregon  
SDG: 320-25352-1  
Laboratory: Test America, Sacramento, California  
Site: Whidbey Island, CTO-0008, Washington  
Date: February 14, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WI-CV-1RW68-0117	320-25352-1	Water
2	WI-CV-1FB68-0117	320-25352-2	Water
3	WI-CV-1RW69-0117	320-25352-3	Water
4	WI-CV-1FB69-0117	320-25352-4	Water
5	WI-CV-1RW70-0117	320-25352-5	Water
5MS	WI-CV-1RW70-0117MS	320-25352-5MS	Water
5MSD	WI-CV-1RW70-0117MSD	320-25352-5MSD	Water
6	WI-CV-1FB70-0117	320-25352-6	Water
7	WI-CV-1RW71-0117	320-25352-7	Water
8	WI-CV-1FB71-0117	320-25352-8	Water

A full data validation was performed on the analytical data for four water samples and four aqueous field blank samples collected on January 25, 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 (DoD 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA “Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review,” August 2014;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

## *Organics*

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

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

## **Data Usability Assessment**

There were no rejections of data.

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

## **Perfluorinated Compounds (PFCs)**

### **Data Completeness, Case Narrative & Custody Documentation**

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

### **Holding Times**

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

### **GC/MS Tuning**

- All criteria were met.

### Initial Calibration

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

### Continuing Calibration

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

### Method Blank

- The method blanks were free of contamination.

### Field QC Blank

- The field blank samples were free of contamination.

### Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

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

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

### Laboratory Control Samples

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

### Internal Standard (IS) Area Performance

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

### Target Compound Identification

- All mass spectra and quantitation criteria were met.

### Compound Quantitation

- All criteria were met.

### Field Duplicate Sample Precision

- Field duplicate samples were not collected.

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

Signed:

Nancy Weaver

Nancy Weaver  
Senior Chemist

Dated: 2/15/17

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



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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

Client Sample ID: WI -CV-1RW68-0117

Lab Sample ID: 320-25352-1

Matrix: Water

Lab File ID: 2017.01.31A\_537\_024.d

Analysis Method: 537

Date Collected: 01/25/2017 09:11

Extraction Method: 537

Date Extracted: 01/30/2017 14:07

Sample wt/vol: 229.2 (mL)

Date Analyzed: 01/31/2017 18:51

Con. Extract Vol.: 1.0 (mL)

Dilution Factor: 1

Injection Volume: 2 (uL)

GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_

GPC Cleanup: (Y/N) N

Analysis Batch No.: 148473

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.052	U	0.065	0.052	0.017
335-67-1	Perfluorooctanoic acid (PFOA)	0.026	U	0.033	0.026	0.010
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.052

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	88		70-130
STL00996	13C2 PFDA	106		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

2

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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

Client Sample ID: WI -CV-1FB68-0117

Lab Sample ID: 320-25352-2

Matrix: Water

Lab File ID: 2017.01.31A\_537\_025.d

Analysis Method: 537

Date Collected: 01/25/2017 09:12

Extraction Method: 537

Date Extracted: 01/30/2017 14:07

Sample wt/vol: 254 (mL)

Date Analyzed: 01/31/2017 18:55

Con. Extract Vol.: 1.0 (mL)

Dilution Factor: 1

Injection Volume: 2 (uL)

GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_

GPC Cleanup: (Y/N) N

Analysis Batch No.: 148473

Units: ug/L

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

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	100		70-130
STL00996	13C2 PFDA	112		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

3

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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

Client Sample ID: WI -CV-1RW69-0117

Lab Sample ID: 320-25352-3

Matrix: Water

Lab File ID: 2017.01.31A\_537\_026.d

Analysis Method: 537

Date Collected: 01/26/2017 11:29

Extraction Method: 537

Date Extracted: 01/30/2017 14:07

Sample wt/vol: 243 (mL)

Date Analyzed: 01/31/2017 19:00

Con. Extract Vol.: 1.0 (mL)

Dilution Factor: 1

Injection Volume: 2 (uL)

GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_

GPC Cleanup: (Y/N) N

Analysis Batch No.: 148473

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.049	U/4	0.062	0.049	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.031	0.025	0.0097
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.049

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	92		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

4

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.:  
 Client Sample ID: WI -CV-1FB69-0117 Lab Sample ID: 320-25352-4  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_027.d  
 Analysis Method: 537 Date Collected: 01/26/2017 11:30  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 255 (mL) Date Analyzed: 01/31/2017 19:04  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture:  GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 148473 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.047	U	0.059	0.047	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.029	0.024	0.0092
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	115		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

5

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1  
 SDG No.:  
 Client Sample ID: WI -CV-1RW70-0117 Lab Sample ID: 320-25352-5  
 Matrix: Water Lab File ID: 2017.01.31A\_537\_028.d  
 Analysis Method: 537 Date Collected: 01/27/2017 09:03  
 Extraction Method: 537 Date Extracted: 01/30/2017 14:07  
 Sample wt/vol: 237.9 (mL) Date Analyzed: 01/31/2017 19:09  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 148473 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.050	U/1	0.063	0.050	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.032	0.025	0.0099
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.050

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	108		70-130
STL00996	13C2 PFDA	119		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

6

Lab Name: TestAmerica Sacramento Job No.: 320-25352-1

SDG No.:

Client Sample ID: WI -CV-1FB70-0117 Lab Sample ID: 320-25352-6

Matrix: Water Lab File ID: 2017.01.31A\_537\_033.d

Analysis Method: 537 Date Collected: 01/27/2017 09:04

Extraction Method: 537 Date Extracted: 01/30/2017 14:07

Sample wt/vol: 252.6 (mL) Date Analyzed: 01/31/2017 19:31

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

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

Analysis Batch No.: 148474 Units: ug/L

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

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	94		70-130
STL00996	13C2 PFDA	105		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

7

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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

Client Sample ID: WI -CV-1RW71-0117

Lab Sample ID: 320-25352-7

Matrix: Water

Lab File ID: 2017.01.31A 537 034.d

Analysis Method: 537

Date Collected: 01/27/2017 11:33

Extraction Method: 537

Date Extracted: 01/30/2017 14:07

Sample wt/vol: 238.2 (mL)

Date Analyzed: 01/31/2017 19:35

Con. Extract Vol.: 1.0 (mL)

Dilution Factor: 1

Injection Volume: 2 (uL)

GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_

GPC Cleanup: (Y/N) N

Analysis Batch No.: 148474

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.050	U	0.063	0.050	0.016
335-67-1	Perfluorooctanoic acid (PFOA)	0.025	U	0.031	0.025	0.0099
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.12	U	0.15	0.12	0.050

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	107		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

8

Lab Name: TestAmerica Sacramento

Job No.: 320-25352-1

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

Client Sample ID: WI -CV-1FB71-0117

Lab Sample ID: 320-25352-8

Matrix: Water

Lab File ID: 2017.01.31A\_537\_035.d

Analysis Method: 537

Date Collected: 01/27/2017 11:34

Extraction Method: 537

Date Extracted: 01/30/2017 14:07

Sample wt/vol: 251.9 (mL)

Date Analyzed: 01/31/2017 19:39

Con. Extract Vol.: 1.0 (mL)

Dilution Factor: 1

Injection Volume: 2 (uL)

GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_

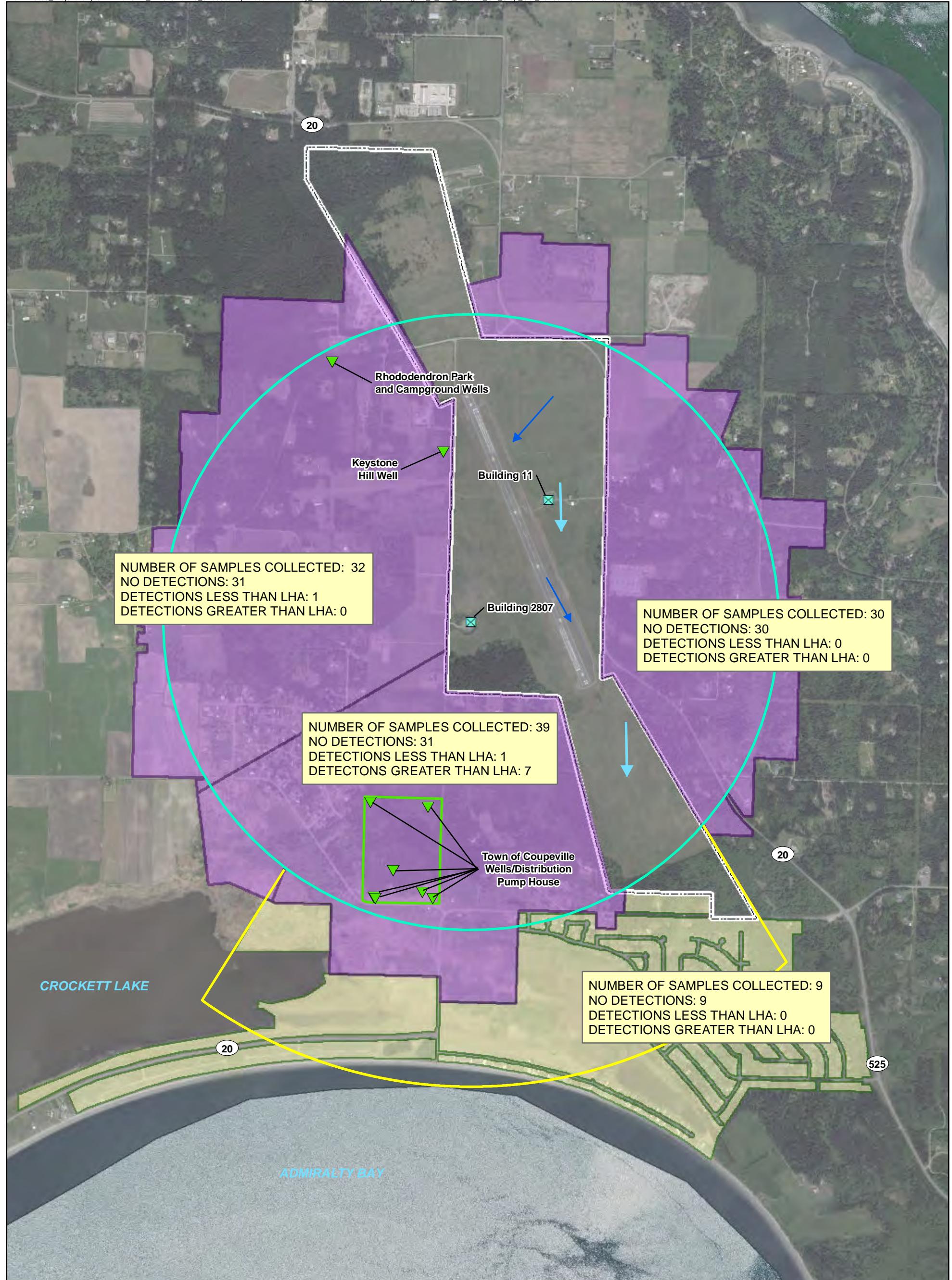
GPC Cleanup: (Y/N) N

Analysis Batch No.: 148474

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.048	U	0.060	0.048	0.015
335-67-1	Perfluorooctanoic acid (PFOA)	0.024	U	0.030	0.024	0.0093
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.11	U	0.14	0.11	0.047

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	97		70-130
STL00996	13C2 PFDA	105		70-130



**Legend**

- Direction of Middle Zone Groundwater Flow
- Direction of Deep Zone Groundwater Flow
- ▼ Municipal Well
- Base Supply Well
- Fort Casey Well Field
- 1-mile zone
- Phase 1 Sampling Area
- Phase 2 Sampling Area
- Half-mile Step-out Downgradient

□ Base Boundary

**Note:**

One parcel outside the Phase 1 and Phase 2 sampling areas was sampled, and PFOA and PFOS were detected less than the LHA. This sample is not included in the sample counts shown on the figure.

N  
0 0.15 0.3 Miles  
1 inch = 0.3 mile  
Imagery Source: Esri

**Figure 2**  
**Results for Drinking Water Well Sampling**  
**Outlying Landing Field Coupeville**  
**Coupeville, Washington**

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