

Groundwater Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG J25962-1

Naval Air Station Meridian Meridian, Mississippi

July 2019



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: 320-25962-1

Client Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Revision: 1

For:

CH2M Hill, Inc. 2411 Dulles Corner Park Suite 500 Herndon, Virginia 20171

Attn: Mr. Michael Zamboni

Jui Kellmann

Authorized for release by: 3/27/2017 4:53:26 PM

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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.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	6
Client Sample Results	7
	9
Isotope Dilution Summary	10
QC Sample Results	11
	14
Lab Chronicle	16
Certification Summary	18
Method Summary	19
Sample Summary	20
	21
Receipt Checklists	22

11

12

14

15

Definitions/Glossary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 320-25962-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

LCMS

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

Glossary

RL RPD

TEF

TEQ

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

TestAmerica Sacramento

Page 3 of 22

3/27/2017

Case Narrative

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Job ID: 320-25962-1

Laboratory: TestAmerica Sacramento

Narrative

Client: CH2M Hill, Inc.

Project: Meridian 10006-7-105420 JM01 Navy Clean

Report Number: 320-25962-1

Revision - March 27, 2017

Revision created to include PFBS in the method 537 Mod analyte list.

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

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

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

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

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

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

RECEIPT

The samples were received on 02/22/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.8 C.

1,4-DIOXANE

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-152172.

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

PFAS

Perfluorooctanesulfonic acid (PFOS) was detected in method blank MB 320-152015/1-A at a level that was above the detection limit (DL) but below the limit of quantitation (LOQ). The value should be considered an estimate, and has been flagged. Refer to the QC report for

TestAmerica Sacramento 3/27/2017

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Case Narrative

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Job ID: 320-25962-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

details.

The following sample was diluted to bring the concentration of target analytes within the calibration range: MEAFF-PWMA-SB01-0001 (320-25962-4). Elevated reporting limits (RLs) are provided.

The Isotope Dilution Analyte (IDA) recovery for 13C2 PFDoA in the following samples is below the method recommended limit: (320-25933-A-1-A) and (320-25933-A-1-B MS). These samples were re-analyzed and the results were confirmed. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 320-152015 and analytical batch 320-152825 were outside control limits for Perfluorotridecanoic Acid (PFTriA) and Perfluorotetradecanoic acid (PFTeA). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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

PERCENT SOLIDS

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, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-MRD-1A01-0217

TestAmerica Job ID: 320-25962-1

Lab Sample ID: 320-25962-1

No Detections.

Client Sample ID: MEAFF-MRD-1A01P-0217 Lab Sample ID: 320-25962-2

No Detections.

Client Sample ID: MEAFF-EB01-022117-SO Lab Sample ID: 320-25962-3

No Detections.

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	27		0.57	0.12	ug/Kg		₩	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	220	E	0.57	0.14	ug/Kg	1	₩	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0	M	0.46	0.12	ug/Kg	1	₩	537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	28	DM	5.7	1.2	ug/Kg	10	₽	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	270	D	5.7	1.4	ug/Kg	10	≎	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	1.6	JDM	4.6	1.2	ug/Kg	10	₩	537 (Modified)	Total/NA

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	5.5	M	0.59	0.12	ug/Kg	1	₩	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	30	M	0.59	0.15	ug/Kg	1	₩	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.95	M	0.47	0.12	ug/Kg	1	₩	537 (Modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Page 6 of 22

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Client Sample Results

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Client Sample ID: MEAFF-MRD-1A01-0217

Lab Sample ID: 320-25962-1

Date Collected: 02/21/17 15:55 **Matrix: Water**

Date Received: 02/22/17 10:00

Method: WS-MS-0011 Analyte	*	IS SIM) Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.48	U	0.95	0.19	ug/L		02/24/17 15:44	03/06/17 16:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	61		42 - 91				02/24/17 15:44	03/06/17 16:12	1

Client Sample ID: MEAFF-MRD-1A01P-0217

Lab Sample ID: 320-25962-2 Date Collected: 02/21/17 15:55 **Matrix: Water**

Date Received: 02/22/17 10:00

Method: WS-MS-0011	- 1,4-Dioxane (GC/N	MS SIM)							
Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.48	U	0.97	0.19	ug/L		02/24/17 15:44	03/06/17 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	63		42 - 91				02/24/17 15:44	03/06/17 16:34	1

Client Sample ID: MEAFF-EB01-022117-SO Lab Sample ID: 320-25962-3

Date Collected: 02/21/17 13:25 Matrix: Water

Date Received: 02/22/17 10:00

Method: 537 (Modified) - Perfl Analyte		Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	0.67	ng/L		02/28/17 16:42	03/02/17 11:12	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	1.1	ng/L		02/28/17 16:42	03/02/17 11:12	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	0.82	ng/L		02/28/17 16:42	03/02/17 11:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	152	Q	25 - 150				02/28/17 16:42	03/02/17 11:12	1
13C4 PFOS	135		25 - 150				02/28/17 16:42	03/02/17 11:12	1
18O2 PFHxS	141		25 - 150				00/00/17 16:40	03/02/17 11:12	1

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Date Collected: 02/21/17 13:35 **Matrix: Solid** Date Received: 02/22/17 10:00 Percent Solids: 86.7

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	27		0.57	0.12	ug/Kg	<u></u>	02/23/17 17:22	03/01/17 19:45	1
Perfluorooctanesulfonic acid (PFOS)	220	E	0.57	0.14	ug/Kg	₩	02/23/17 17:22	03/01/17 19:45	1
Perfluorobutanesulfonic acid (PFBS)	2.0	M	0.46	0.12	ug/Kg	₽	02/23/17 17:22	03/01/17 19:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	111		25 - 150				02/23/17 17:22	03/01/17 19:45	1
13C4 PFOS	55		25 - 150				02/23/17 17:22	03/01/17 19:45	1
1802 PFHxS	95		25 - 150				02/23/17 17:22	03/01/17 19:45	1

Method: 537 (Modified) - Perflu	orinated F	lydrocarbor	ıs - DL						
Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	28	D M	5.7	1.2	ug/Kg	<u> </u>	02/23/17 17:22	03/03/17 09:53	10
Perfluorooctanesulfonic acid	270	D	5.7	1.4	ug/Kg	₩	02/23/17 17:22	03/03/17 09:53	10

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Page 7 of 22

3/27/2017

Client Sample Results

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Analyte	Result	Qualifier	LOQ	DĹ	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	1.6	J D M	4.6	1.2	ug/Kg	<u>₩</u>	02/23/17 17:22	03/03/17 09:53	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	136		25 - 150				02/23/17 17:22	03/03/17 09:53	10
	90		25 - 150				02/23/17 17:22	03/03/17 09:53	10
13C4 PFOS	90		25 - 150				02/25/11 11.22	03/03/11 03.03	10

Client Sample ID: MEAFF-PWMA-SB01-0204

Date Collected: 02/21/17 13:40

Date Received: 02/22/17 10:00

Matrix: Solid
Percent Solids: 85.3

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	5.5	M	0.59	0.12	ug/Kg	<u> </u>	02/23/17 17:22	03/01/17 20:00	1
Perfluorooctanesulfonic acid (PFOS)	30	M	0.59	0.15	ug/Kg	₩	02/23/17 17:22	03/01/17 20:00	1
Perfluorobutanesulfonic acid (PFBS)	0.95	M	0.47	0.12	ug/Kg	₩	02/23/17 17:22	03/01/17 20:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	101	М	25 - 150				02/23/17 17:22	03/01/17 20:00	1
13C4 PFOS	56	М	25 - 150				02/23/17 17:22	03/01/17 20:00	1
1802 PFHxS	95	М	25 - 150				02/23/17 17:22	03/01/17 20:00	1

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Lab Sample ID: 320-25962-5

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Surrogate Summary

Client: CH2M Hill, Inc. Project/Site: Meridian 10006-7-105420 JM01 Navy Clean TestAmerica Job ID: 320-25962-1

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Matrix: Water Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		NBZ	
Lab Sample ID	Client Sample ID	(42-91)	
320-25962-1	MEAFF-MRD-1A01-0217	61	
320-25962-2	MEAFF-MRD-1A01P-0217	63	
LCS 320-152172/2-A	Lab Control Sample	73	
LCSD 320-152172/3-A	Lab Control Sample Dup	61	
MB 320-152172/1-A	Method Blank	63	
Surrogate Legend			
NBZ = Nitrobenzene-d	5		

Isotope Dilution Summary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Solid Prep Type: Total/NA

			Percent Isotope Dilution Recovery (Acceptance Limits)					
		3C4 PFO	3C4 PFOS	3O2 PFHx				
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)				
320-25962-4	MEAFF-PWMA-SB01-0001	111	55	95				
320-25962-4 - DL	MEAFF-PWMA-SB01-0001	136	90	122				
320-25962-5	MEAFF-PWMA-SB01-0204	101 M	56 M	95 M				
LCS 320-152015/2-A	Lab Control Sample	106	91	101				
MB 320-152015/1-A	Method Blank	121	95	113				

Surrogate Legend

13C4 PFOA = 13C4 PFOA 13C4 PFOS = 13C4 PFOS 18O2 PFHxS = 18O2 PFHxS

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		3C4 PFO/	3C4 PFOS	3O2 PFHx				
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)				
320-25962-3	MEAFF-EB01-022117-SO	152 Q	135	141				
LCS 320-152587/2-A	Lab Control Sample	142	133	136				
LCSD 320-152587/3-A	Lab Control Sample Dup	142	135	140				
MB 320-152587/1-A	Method Blank	158 Q	138	145				

Surrogate Legend

13C4 PFOA = 13C4 PFOA 13C4 PFOS = 13C4 PFOS 18O2 PFHxS = 18O2 PFHxS

TestAmerica Sacramento

Page 10 of 22

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Client: CH2M Hill, Inc. TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Lab Sample ID: MB 320-152172/1-A **Matrix: Water**

Analysis Batch: 153398

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

Unit

ug/L

Prep Batch: 152172

Prep Type: Total/NA

Prep Batch: 152172

Analyte Result Qualifier LOQ DL Unit Prepared Analyzed Dil Fac 1.0 02/24/17 15:44 03/06/17 11:24 1,4-Dioxane 0.50 U 0.20 ug/L

MB MB

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Nitrobenzene-d5 63 42 - 91 02/24/17 15:44 03/06/17 11:24

Spike

Added

Limits

42 - 91

Spike

Added

10.0

10.0

LCS LCS

2.90 M

Result Qualifier

Lab Sample ID: LCS 320-152172/2-A

Matrix: Water

Analysis Batch: 153398

Analyte

1,4-Dioxane LCS LCS

Surrogate %Recovery Qualifier Nitrobenzene-d5

Lab Sample ID: LCSD 320-152172/3-A

Matrix: Water

Analysis Batch: 153398

Analyte 1,4-Dioxane

Surrogate Nitrobenzene-d5 %Recovery Qualifier

61

MD MD

D %Rec

29

Client Sample ID: Lab Control Sample

%Rec.

Limits

12 - 52

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 152172

%Rec. **RPD**

LCSD LCSD Result Qualifier Unit %Rec Limits RPD Limit 2.61 M ug/L 26 12 - 52 11

LCSD LCSD

Limits 42 - 91

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-152015/1-A

Matrix: Solid

Analysis Batch: 152825

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152015

	IVID	IVID							
Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.30	U	0.50	0.10	ug/Kg		02/23/17 17:22	03/01/17 18:37	1
Perfluorooctanesulfonic acid (PFOS)	0.178	J	0.50	0.13	ug/Kg		02/23/17 17:22	03/01/17 18:37	1
Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.10	ug/Kg		02/23/17 17:22	03/01/17 18:37	1
	MB	MB							

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	121		25 - 150	02/23/17 17:22	03/01/17 18:37	1
13C4 PFOS	95		25 - 150	02/23/17 17:22	03/01/17 18:37	1
18O2 PFHxS	113		25 - 150	02/23/17 17:22	03/01/17 18:37	1

Lab Sample ID: LCS 320-152015/2-A

Matrix: Solid

Analysis Batch: 153020

Analyte Perfluorooctanoic acid (PFOA)

LCS LCS Spike Added

Result Qualifier 4.09

Unit ug/Kg

%Rec 102 Prep Type: Total/NA **Prep Batch: 152015** %Rec. Limits

Client Sample ID: Lab Control Sample

60 - 140

TestAmerica Sacramento

4.00

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-152015/2-A

Matrix: Solid

Client: CH2M Hill, Inc.

Analysis Batch: 153020

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

Prep Batch: 152015

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorooctanesulfonic acid	3.71	3.96		ug/Kg		107	60 - 140	
(PFOS)								
Perfluorobutanesulfonic acid	3.54	3.95		ug/Kg		112	50 - 150	
(PFBS)								

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFOA	106		25 - 150
13C4 PFOS	91		25 - 150
18O2 PFHxS	101		25 - 150

Client Sample ID: Method Blank

Lab Sample ID: MB 320-152587/1-A **Matrix: Water Prep Type: Total/NA** Analysis Batch: 152836

Prep Batch: 152587

Analysis Batch. 152656	MR	МВ						Prep Batch.	132367
Analyte		Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.0	U M	2.5	0.75	ng/L		02/28/17 16:42	03/02/17 10:35	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		02/28/17 16:42	03/02/17 10:35	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.92	ng/L		02/28/17 16:42	03/02/17 10:35	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
·	·								

13C4 PFOA 158 Q 25 - 150 02/28/17 16:42 03/02/17 10:35 13C4 PFOS 138 25 - 150 02/28/17 16:42 03/02/17 10:35 1802 PFHxS 145 25 - 150 02/28/17 16:42 03/02/17 10:35

Lab Sample ID: LCS 320-152587/2-A

Lab Sample ID: LCSD 320-152587/3-A

Matrix: Water

Analysis Batch: 152836

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 152587

Spike LCS LCS %Rec. Added Result Qualifier D %Rec Limits Unit Perfluorooctanoic acid (PFOA) 40.0 38.6 ng/L 97 60 - 140 Perfluorooctanesulfonic acid 37.1 35.6 ng/L 96 60 - 140 (PFOS) Perfluorobutanesulfonic acid 35.4 39.5 ng/L 112 50 - 150 (PFBS)

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFOA	142		25 - 150
13C4 PFOS	133		25 - 150
18O2 PFHxS	136		25 - 150

Client Sample ID: Lab Control Sample Dup

Matrix: Water Prep Type: Total/NA

Analysis Batch: 152836							Prep Ba	Prep Batch: 15258/		
	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Perfluorooctanoic acid (PFOA)	40.0	38.5		ng/L		96	60 - 140	0	30	
Perfluorooctanesulfonic acid	37.1	35.6	M	ng/L		96	60 - 140	0	30	
(PFOS)										
Perfluorobutanesulfonic acid	35.4	40.3	M	ng/L		114	50 ₋ 150	2	30	
(PFBS)										

TestAmerica Sacramento

Page 12 of 22

3/27/2017

QC Sample Results

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean LCSD LCSD

Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFOA	142		25 - 150
13C4 PFOS	135		25 - 150
18O2 PFHxS	140		25 - 150

TestAmerica Job ID: 320-25962-1

QC Association Summary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

GC/MS Semi VOA

Prep Batch: 152172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-1	MEAFF-MRD-1A01-0217	Total/NA	Water	3510C	
320-25962-2	MEAFF-MRD-1A01P-0217	Total/NA	Water	3510C	
MB 320-152172/1-A	Method Blank	Total/NA	Water	3510C	
LCS 320-152172/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 320-152172/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 153398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-1	MEAFF-MRD-1A01-0217	Total/NA	Water	WS-MS-0011	152172
320-25962-2	MEAFF-MRD-1A01P-0217	Total/NA	Water	WS-MS-0011	152172
MB 320-152172/1-A	Method Blank	Total/NA	Water	WS-MS-0011	152172
LCS 320-152172/2-A	Lab Control Sample	Total/NA	Water	WS-MS-0011	152172
LCSD 320-152172/3-A	Lab Control Sample Dup	Total/NA	Water	WS-MS-0011	152172

LCMS

Prep Batch: 152015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4	MEAFF-PWMA-SB01-0001	Total/NA	Solid	SHAKE	_
320-25962-4 - DL	MEAFF-PWMA-SB01-0001	Total/NA	Solid	SHAKE	
320-25962-5	MEAFF-PWMA-SB01-0204	Total/NA	Solid	SHAKE	
MB 320-152015/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-152015/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Prep Batch: 152587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-3	MEAFF-EB01-022117-SO	Total/NA	Water	3535	<u> </u>
MB 320-152587/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-152587/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-152587/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 152825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4	MEAFF-PWMA-SB01-0001	Total/NA	Solid	537 (Modified)	152015
320-25962-5	MEAFF-PWMA-SB01-0204	Total/NA	Solid	537 (Modified)	152015
MB 320-152015/1-A	Method Blank	Total/NA	Solid	537 (Modified)	152015

Analysis Batch: 152836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-3	MEAFF-EB01-022117-SO	Total/NA	Water	537 (Modified)	152587
MB 320-152587/1-A	Method Blank	Total/NA	Water	537 (Modified)	152587
LCS 320-152587/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	152587
LCSD 320-152587/3-A	Lab Control Sample Dup	Total/NA	Water	537 (Modified)	152587

Analysis Batch: 153020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4 - DL	MEAFF-PWMA-SB01-0001	Total/NA	Solid	537 (Modified)	152015
LCS 320-152015/2-A	Lab Control Sample	Total/NA	Solid	537 (Modified)	152015

TestAmerica Sacramento

Page 14 of 22

9

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3/27/2017

QC Association Summary

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

General Chemistry

Analysis Batch: 152218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4	MEAFF-PWMA-SB01-0001	Total/NA	Solid	D 2216	
320-25962-5	MEAFF-PWMA-SB01-0204	Total/NA	Solid	D 2216	

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TestAmerica Job ID: 320-25962-1

Client: CH2M Hill, Inc. Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-MRD-1A01-0217

Lab Sample ID: 320-25962-1 Date Collected: 02/21/17 15:55 Matrix: Water

Date Received: 02/22/17 10:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1049 mL	1.0 mL	152172	02/24/17 15:44	SR1	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			153398	03/06/17 16:12	MEO	TAL SAC

Lab Sample ID: 320-25962-2 Client Sample ID: MEAFF-MRD-1A01P-0217

Date Collected: 02/21/17 15:55 **Matrix: Water**

Date Received: 02/22/17 10:00

	Batch	Batch	Design	Dil	Initial	Final	Batch	Prepared	Amalust	Lab
Prep Type Total/NA	Type Prep	Method 3510C	Run	Factor	Amount 1035.2 mL	Amount 1.0 mL	Number 152172	or Analyzed 02/24/17 15:44	Analyst SR1	TAL SAC
Total/NA	Analysis	WS-MS-0011		1			153398	03/06/17 16:34	MEO	TAL SAC

Client Sample ID: MEAFF-EB01-022117-SO Lab Sample ID: 320-25962-3

Date Collected: 02/21/17 13:25

Date Received: 02/22/17 10:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			279.3 mL	0.50 mL	152587	02/28/17 16:42	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			152836	03/02/17 11:12	SBC	TAL SAC

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Date Collected: 02/21/17 13:35

Date Received: 02/22/17 10:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			152218	02/25/17 14:01	EP1	TAL SAC

Client Sample ID: MEAFF-PWMA-SB01-0001

Date Collected: 02/21/17 13:35

Date Received: 02/22/17 10:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 g	1.00 mL	152015	02/23/17 17:22	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			152825	03/01/17 19:45	SBC	TAL SAC
Total/NA	Prep	SHAKE	DL		5.05 g	1.00 mL	152015	02/23/17 17:22	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	10			153020	03/03/17 09:53	SBC	TAL SAC

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

Date Collected: 02/21/17 13:40 Date Received: 02/22/17 10:00

_											
	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	D 2216		1			152218	02/25/17 14:01	EP1	TAL SAC	

TestAmerica Sacramento

3/27/2017

Lab Sample ID: 320-25962-4

Page 16 of 22

Matrix: Water

Matrix: Solid

Matrix: Solid

Percent Solids: 86.7

Lab Chronicle

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

 Date Collected: 02/21/17 13:40
 Matrix: Solid

 Date Received: 02/22/17 10:00
 Percent Solids: 85.3

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			4.97 g	1.00 mL	152015	02/23/17 17:22	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			152825	03/01/17 20:00	SBC	TAL SAC

Laboratory References:

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

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Certification Summary

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-29-18
Illinois	NELAP	5	200060	03-17-18
Kansas	NELAP	7	E-10375	10-31-17
L-A-B	DoD ELAP		L2468	01-20-18
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17 *
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-17 *
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-18
Virginia	NELAP	3	460278	03-14-18
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

^{*} Certification renewal pending - certification considered valid.

Method Summary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Method	Method Description	Protocol	Laboratory
WS-MS-0011	1,4-Dioxane (GC/MS SIM)	TAL SOP	TAL SAC
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

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, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-25962-1	MEAFF-MRD-1A01-0217	Water	02/21/17 15:55	02/22/17 10:00
320-25962-2	MEAFF-MRD-1A01P-0217	Water	02/21/17 15:55	02/22/17 10:00
320-25962-3	MEAFF-EB01-022117-SO	Water	02/21/17 13:25	02/22/17 10:00
320-25962-4	MEAFF-PWMA-SB01-0001	Solid	02/21/17 13:35	02/22/17 10:00
320-25962-5	MEAFF-PWMA-SB01-0204	Solid	02/21/17 13:40	02/22/17 10:00

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TestAmerica

Chain of Custody Record

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CH2M Hill 6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600 Atlanta, GA 30328 (678) 530-4060 Phone (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian	Project Manager: bryan burkingstoc Tel/Fax: Analysis Turnaround Time	Burkingstock	Site Confact: Kyan Brown	11/1/	
CH2M Hill 6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600 Atlanta, GA 30328 (678) 530-4060 Phone (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian	Analysis Turna			Date: 4/2/11 +	
6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600 Atlanta, GA 30328 (678) 530-4060 Phone (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian	Analysis Turna		Lab Contact: Jill Kellmann	Carrier: FedEx	l of l cocs
Atlanta, GA 30328 (678) 530-4060 Phone (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian	and the same of th	Time			Sampler & Property T. H.C.C.
(678) 530-4060 Phone (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian P O #: 10006-7-105420	CALENDAR DAYS XWOR	X WORKING DAYS	0)		Use Only:
(770) 604-9183 FAX (770) 604-9183 FAX Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian P O #: 10006-7-105420	1		11		Walk in Client
Project Name: Meridian 10006-7-105420 JM01 Navy Clean Site: NAS Meridian P O #: 10006-7-105420	All in direction from Bellow		N 1.		Tab Sampling
Site: NAS Meridian P O #: 10006-7-105420					in the second se
P O #; 10006-7-105420	2 days		ası		SDS / dol
	1 day				
Sample Identification	Sample Sample (C=Comp. Date Time G=Grab)	# of Matrix Cont.	Filtered Sa		Sample Specific Notes:
MEATE - MED - 1401 - 0217	42117 1555 G	GW 4	××zz		
MEAFF- HRD- 1901P-0217	7	<i>→</i>	×××××××××××××××××××××××××××××××××××××××		Rold dualicate
MEAFF - FPSO1 - 022117	-	一条	×		
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10					
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				320-25962 Chain of Custody	
	,				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	NaOH; 6= Other				
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes Comments Section if the lab is to discose of the sample.	ist any EPA Waste Codes for the	for the sample in the	Sample Disposal (A fee ma	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	ained longer than 1 month)
Non-Hazard Flammable Skin Irritant	Poison B XUnknown	wn	Return to Clent	Dismocal by Lah	Months
ctions/QC Requirements & Co	Should	0	Š		
		5	1118		
Intact: Yes No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	P	Therm ID No: AK
Brown	Company:	Date/Time:	Received by: I Tuyle, T	cuper Company And S	Date/Time, 7 (030
Relinquished by:	Company:	me:	Received by: "	Company	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.11, dated 1/24/2017

Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 320-25962-1

Login Number: 25962 List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

Creator: Nelson, Kym D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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?	True	
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	

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ANALYTICAL REPORT

Job Number: 320-25962-1

Job Description: Meridian 10006-7-105420 JM01 Navy Clean

For: CH2M Hill, Inc. 2411 Dulles Corner Park Suite 500 Herndon, VA 20171

Attention: Mr. Michael Zamboni

Approved for release. Jill Kellmann Manager of Project Management 3/27/2017 4:54 PM

Jill Kellmann, Manager of Project Management 880 Riverside Parkway, West Sacramento, CA, 95605 (916)374-4402 jill.kellmann@testamericainc.com

Jui Kellmann

03/27/2017
Revision: 1

Table of Contents

Co	over Title Page	1
Da	ata Summaries	5
	Definitions	5
	Case Narrative	6
	Detection Summary	8
	Client Sample Results	9
	Default Detection Limits	11
	Surrogate Summary	12
	Isotope Dilution Summary	13
	QC Sample Results	14
	QC Association	17
	Chronicle	19
	Certification Summary	21
	Method Summary	22
	Sample Summary	23
	Manual Integration Summary	24
	Reagent Traceability	33
	COAs	63
Or	ganic Sample Data	308
	GC/MS Semi VOA	308
	Method 8270C SIM	308
	Method 8270C SIM QC Summary	309
	Method 8270C SIM Sample Data	314
	Standards Data	322
	Method 8270C SIM ICAL Data	322
	Method 8270C SIM CCAL Data	352

Table of Contents

Raw QC Data	360
Method 8270C SIM Blank Data	360
Method 8270C SIM LCS/LCSD Data	364
Method 8270C SIM Run Logs	374
Method 8270C SIM Prep Data	376
LCMS	378
Method PFC DOD	378
Method PFC DOD QC Summary	379
Method PFC DOD Sample Data	386
Standards Data	418
Method PFC DOD ICAL Data	418
Method PFC DOD CCAL Data	489
Raw QC Data	591
Method PFC DOD Blank Data	591
Method PFC DOD LCS/LCSD Data	611
Method PFC DOD Run Logs	641
Method PFC DOD Prep Data	645
Inorganic Sample Data	674
General Chemistry Data	674
Gen Chem Cover Page	675
Gen Chem MDL	676
Gen Chem Analysis Run Log	678
Gen Chem Prep Data	679
Gen Chem Raw Data	680
Shipping and Receiving Documents	681
Client Chain of Custody	682

Table of Contents

Sample Receipt Checklist	683
	000

Page 4 of 683 03/27/2017

Definitions/Glossary

Client: CH2M Hill, Inc. TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

LCMS

Qualifier	Qualifier Description
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.
M	Manual integrated compound.
E	Result exceeded calibration range.
D	The reported value is from a dilution.
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)

Client: CH2M Hill, Inc.

Project: Meridian 10006-7-105420 JM01 Navy Clean

Report Number: 320-25962-1

Revision - March 27, 2017

Revision created to include PFBS in the method 537 Mod analyte list.

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

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

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

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

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

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

RECEIPT

The samples were received on 02/22/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.8 C.

1,4-DIOXANE

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-152172.

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

<u>PFAS</u>

Perfluorooctanesulfonic acid (PFOS) was detected in method blank MB 320-152015/1-A at a level that was above the detection limit (DL) but below the limit of quantitation (LOQ). The value should be considered an estimate, and has been flagged. Refer to the QC report for details.

The following sample was diluted to bring the concentration of target analytes within the calibration range: MEAFF-PWMA-SB01-0001 (320-25962-4). Elevated reporting limits (RLs) are provided.

The Isotope Dilution Analyte (IDA) recovery for 13C2 PFDoA in the following samples is below the method recommended limit: (320-25933-A-1-A) and (320-25933-A-1-B MS). These samples were re-analyzed and the results were confirmed. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 320-152015 and analytical batch 320-152825 were outside control limits for Perfluorotridecanoic Acid (PFTriA) and Perfluorotetradecanoic acid (PFTeA). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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

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

Detection Summary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Client Sample ID: MEAFF-MRD-1A01-0217

Lab Sample ID: 320-25962-1

No Detections.

Client Sample ID: MEAFF-MRD-1A01P-0217

Lab Sample ID: 320-25962-2

No Detections.

Client Sample ID: MEAFF-EB01-022117-SO

Lab Sample ID: 320-25962-3

No Detections.

Client Sample ID: MEAFF-PWMA-SB01-0001

Lab Sample ID: 320-25962-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	27		0.57	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	220	E	0.57	0.14	ug/Kg	1	₩	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0	M	0.46	0.12	ug/Kg	1	₩	537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	28	DM	5.7	1.2	ug/Kg	10	₩	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	270	D	5.7	1.4	ug/Kg	10	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) -	1.6	JDM	4.6	1.2	ug/Kg	10	☼	537 (Modified)	Total/NA

Client Sample ID: MEAFF-PWMA-SB01-0204

Lab Sample ID: 320-25962-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	5.5	M	0.59	0.12	ug/Kg		₩	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	30	M	0.59	0.15	ug/Kg	1	₽	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.95	M	0.47	0.12	ug/Kg	1	₽	537 (Modified)	Total/NA

Client Sample Results

Client: CH2M Hill. Inc. TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-MRD-1A01-0217 Lab Sample ID: 320-25962-1

Date Collected: 02/21/17 15:55 **Matrix: Water**

Date Received: 02/22/17 10:00

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM) Result Qualifier Analyte 1.00 **DL** Unit D **Prepared** Analyzed Dil Fac 0.48 U 0.95

1,4-Dioxane 0.19 ug/L 02/24/17 15:44 03/06/17 16:12 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 42 - 91 02/24/17 15:44 03/06/17 16:12 Nitrobenzene-d5 61

Lab Sample ID: 320-25962-2 Client Sample ID: MEAFF-MRD-1A01P-0217

Date Collected: 02/21/17 15:55 **Matrix: Water**

Date Received: 02/22/17 10:00

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM) Analyte Result Qualifier LOQ DL Unit D Analyzed Dil Fac Prepared 0.48 U 0.97 1.4-Dioxane 0.19 ug/L 02/24/17 15:44 03/06/17 16:34 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 02/24/17 15:44 03/06/17 16:34 Nitrobenzene-d5 42 - 91 63

Lab Sample ID: 320-25962-3 Client Sample ID: MEAFF-EB01-022117-SO

Date Collected: 02/21/17 13:25 **Matrix: Water**

Date Received: 02/22/17 10:00

13C4 PFOS

(PFOS)

Method: 537 (Modified) - Perfluorinated Hydrocarbons **Analyte** Result Qualifier LOQ **DL** Unit D **Prepared** Analyzed Dil Fac 1.8 UM 22 02/28/17 16:42 03/02/17 11:12 Perfluorooctanoic acid (PFOA) 0.67 ng/L 2.7 U 02/28/17 16:42 03/02/17 11:12 Perfluorooctanesulfonic acid (PFOS) 3.6 1.1 ng/L 1 Perfluorobutanesulfonic acid (PFBS) 1.8 U 22 0.82 ng/L 02/28/17 16:42 03/02/17 11:12 1 Dil Fac Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed 02/28/17 16:42 03/02/17 11:12 13C4 PFOA 152 Q 25 - 150

1802 PFHxS 25 - 150 Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

25 150

135

141

Date Collected: 02/21/17 13:35 **Matrix: Solid**

Date Received: 02/22/17 10:00 Percent Solids: 86.7 Method: 537 (Modified) - Perfluorinated Hydrocarbons **Analyte** Result Qualifier LOQ **DL** Unit D **Prepared** Analyzed Dil Fac

Perfluorooctanoic acid (PFOA) 27 0.57 0.12 ug/Kg ₩ 02/23/17 17:22 03/01/17 19:45 02/23/17 17:22 03/01/17 19:45 220 E 0.57 0.14 ug/Kg 1 Perfluorooctanesulfonic acid (PFOS) Perfluorobutanesulfonic acid © 02/23/17 17:22 03/01/17 19:45 2.0 M 0.46 0.12 ug/Kg 1 (PFBS) Isotope Dilution Qualifier Limits Prepared Analyzed Dil Fac %Recovery

13C4 PFOA 111 25 - 150 02/23/17 17:22 03/01/17 19:45 1 13C4 PFOS 55 25 - 150 02/23/17 17:22 03/01/17 19:45 1 25 - 150 1802 PFHxS 95 02/23/17 17:22 03/01/17 19:45 1

Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL Result Qualifier I OO DL Unit ח **Prepared** Analyzed Dil Fac ₩ 5.7 Perfluorooctanoic acid (PFOA) 28 D M 1.2 ug/Kg 02/23/17 17:22 03/03/17 09:53 10 Perfluorooctanesulfonic acid 270 D 5.7 1.4 ug/Kg 02/23/17 17:22 03/03/17 09:53 10

TestAmerica Sacramento

03/27/2017

02/28/17 16:42 03/02/17 11:12

02/28/17 16:42 03/02/17 11:12

Client Sample Results

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

 Date Collected: 02/21/17 13:35
 Matrix: Solid

 Date Received: 02/22/17 10:00
 Percent Solids: 86.7

Method: 537 (Modified) - Per	fluorinated H	lydrocarbo	ons - DL (Con	tinued)					
Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	1.6	JDM	4.6	1.2	ug/Kg	<u>∓</u>	02/23/17 17:22	03/03/17 09:53	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Isotope Dilution 13C4 PFOA	%Recovery 136	Qualifier	Limits 25 - 150					Analyzed 03/03/17 09:53	Dil Fac
		Qualifier					02/23/17 17:22		10 10

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

Date Collected: 02/21/17 13:40

Matrix: Solid

Date Received: 02/22/17 10:00

Percent Solids: 85.3

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	5.5	M	0.59	0.12	ug/Kg	☼	02/23/17 17:22	03/01/17 20:00	1
Perfluorooctanesulfonic acid (PFOS)	30	M	0.59	0.15	ug/Kg	₽	02/23/17 17:22	03/01/17 20:00	1
Perfluorobutanesulfonic acid (PFBS)	0.95	M	0.47	0.12	ug/Kg	☼	02/23/17 17:22	03/01/17 20:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	101	М	25 - 150				02/23/17 17:22	03/01/17 20:00	1
13C4 PFOS	56	М	25 - 150				02/23/17 17:22	03/01/17 20:00	1
18O2 PFHxS	95	М	25 - 150				02/23/17 17:22	03/01/17 20:00	1

Default Detection Limits

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Prep: 3510C

Analyte	LOQ	DL	Units	Method
1,4-Dioxane	1.0	0.20	ug/L	WS-MS-0011

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Prep: 3535

Analyte	LOQ	DL	Units	Method	
Perfluorobutanesulfonic acid (PFBS)	2.5	0.92	ng/L	537 (Modified)	
Perfluorooctanesulfonic acid (PFOS)	4.0	1.3	ng/L	537 (Modified)	
Perfluorooctanoic acid (PFOA)	2.5	0.75	ng/L	537 (Modified)	

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Prep: SHAKE

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	0.40	0.10	ug/Kg	537 (Modified)
Perfluorooctanesulfonic acid (PFOS)	0.50	0.13	ug/Kg	537 (Modified)
Perfluorooctanoic acid (PFOA)	0.50	0.10	ug/Kg	537 (Modified)

03/27/2017

Surrogate Summary

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Matrix: Water Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		NBZ	
Lab Sample ID	Client Sample ID	(42-91)	
320-25962-1	MEAFF-MRD-1A01-0217	61	
320-25962-2	MEAFF-MRD-1A01P-0217	63	
LCS 320-152172/2-A	Lab Control Sample	73	
LCSD 320-152172/3-A	Lab Control Sample Dup	61	
MB 320-152172/1-A	Method Blank	63	
Surrogate Legend			
NBZ = Nitrobenzene-d	5		

Isotope Dilution Summary

Client: CH2M Hill, Inc. TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Solid Prep Type: Total/NA

		Percent Isotope Dilution Recovery				
		3C4 PFO	3C4 PFOS	3O2 PFHx		
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)		
320-25962-4	MEAFF-PWMA-SB01-0001	111	55	95		
320-25962-4 - DL	MEAFF-PWMA-SB01-0001	136	90	122		
320-25962-5	MEAFF-PWMA-SB01-0204	101 M	56 M	95 M		
LCS 320-152015/2-A	Lab Control Sample	106	91	101		
MB 320-152015/1-A	Method Blank	121	95	113		
Surrogate Legend						

Surrogate Legend

13C4 PFOA = 13C4 PFOA 13C4 PFOS = 13C4 PFOS 18O2 PFHxS = 18O2 PFHxS

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)				
		3C4 PFO	3C4 PFOS	3O2 PFHx		
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)		
320-25962-3	MEAFF-EB01-022117-SO	152 Q	135	141		
LCS 320-152587/2-A	Lab Control Sample	142	133	136		
LCSD 320-152587/3-A	Lab Control Sample Dup	142	135	140		
MB 320-152587/1-A	Method Blank	158 Q	138	145		

Surrogate Legend

13C4 PFOA = 13C4 PFOA 13C4 PFOS = 13C4 PFOS 1802 PFHxS = 1802 PFHxS

QC Sample Results

Client: CH2M Hill. Inc. TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: WS-MS-0011 - 1,4-Dioxane (GC/MS SIM)

Lab Sample ID: MB 320-152172/1-A **Matrix: Water**

Analysis Batch: 153398

MB MB

Analyte Result Qualifier

0.50 U

I OO 1.0 0.20 ug/L

DL Unit

Prepared 02/24/17 15:44 03/06/17 11:24

Prepared

Analyzed

Prep Type: Total/NA

Prep Batch: 152172

Client Sample ID: Method Blank

Dil Fac

MB MB

Surrogate Nitrobenzene-d5

%Recovery Qualifier I imits 63 42 - 91

Analyzed 02/24/17 15:44 03/06/17 11:24

Dil Fac

Lab Sample ID: LCS 320-152172/2-A

Matrix: Water

1,4-Dioxane

Analysis Batch: 153398

Spike Added

10.0

LCS LCS Result Qualifier 2.90 M

Unit ug/L

%Rec

Limits

29

Client Sample ID: Lab Control Sample Dup

26

Client Sample ID: Lab Control Sample

Prep Batch: 152172

Prep Type: Total/NA

%Rec. 12 - 52

LCS LCS

73

Surrogate

Nitrobenzene-d5

Analyte

Analyte

1,4-Dioxane

1,4-Dioxane

%Recovery Qualifier Limits 42 - 91

Lab Sample ID: LCSD 320-152172/3-A

Matrix: Water

Analysis Batch: 153398

Spike Added

10.0

LCSD LCSD Result Qualifier

2.61 M

Unit ug/L

%Rec

%Rec. Limits

RPD Limit

1

1

1

1

Dil Fac

RPD 12 - 52 11

Prep Type: Total/NA

Prep Batch: 152172

LCSD LCSD

Surrogate Nitrobenzene-d5 %Recovery Qualifier 61

Limits 42 - 91

Method: 537 (Modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-152015/1-A

Matrix: Solid

Analysis Batch: 152825

Client Sample ID: Method Blank

Analyzed

Prep Type: Total/NA Prep Batch: 152015

MB MB

Result Qualifier Perfluorooctanoic acid (PFOA) 0.30 U

Perfluorooctanesulfonic acid (PFOS) 0.178 J Perfluorobutanesulfonic acid (PFBS) 0.30 U MB MB

Isotope Dilution %Recovery Qualifier Limits 13C4 PFOA 121 25 - 150 13C4 PFOS 95 25 - 150 1802 PFHxS 113 25 - 150

Prepared Analyzed 02/23/17 17:22 03/01/17 18:37

Prepared

02/23/17 17:22 03/01/17 18:37 02/23/17 17:22 03/01/17 18:37

Client Sample ID: Lab Control Sample

60 - 140

02/23/17 17:22 03/01/17 18:37

02/23/17 17:22 03/01/17 18:37

02/23/17 17:22 03/01/17 18:37

Lab Sample ID: LCS 320-152015/2-A

Matrix: Solid

Analysis Batch: 153020

Perfluorooctanoic acid (PFOA)

Spike Added 4.00

LCS LCS Result Qualifier 4.09

DL Unit

0.10 ug/Kg

0.13 ug/Kg

0.10 ug/Kg

Unit ug/Kg

D %Rec 102

Prep Batch: 152015 %Rec. Limits

Prep Type: Total/NA

TestAmerica Sacramento

Page 14 of 683

LOQ

0.50

0.50

0.40

03/27/2017

QC Sample Results

Client: CH2M Hill, Inc. TestAmerica Job ID: 320-25962-1

Spike

Added 3.71

3.54

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-152015/2-A

Matrix: Solid

Analysis Batch: 153020

Perfluorooctanesulfonic acid

Perfluorobutanesulfonic acid

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 152015

LCS	LCS				Prep Batch: 152015 %Rec.
Result 3.96	Qualifier	Unit ug/Kg	<u>D</u>	%Rec	Limits
3.50		ug/itg		107	00 - 140

112

ug/Kg

(PFBS)

Analyte

(PFOS)

LCS LCS

Isotope Dilution	%Recovery Qualifie	er Limits
13C4 PFOA	106	25 - 150
13C4 PFOS	91	25 - 150
1802 PFHxS	101	25 - 150

Lab Sample ID: MB 320-152587/1-A Client Sample ID: Method Blank

3.95

Matrix: Water

Analysis Batch: 152836

Prep Type: Total/NA

50 - 150

Prep Batch: 152587

	MB	MB						•	
Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.0	UM	2.5	0.75	ng/L		02/28/17 16:42	03/02/17 10:35	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		02/28/17 16:42	03/02/17 10:35	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.92	ng/L		02/28/17 16:42	03/02/17 10:35	1
	MB	MB							

Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 13C4 PFOA 158 O 25 - 150 02/28/17 16:42 03/02/17 10:35 13C4 PFOS 138 25 - 150 02/28/17 16:42 03/02/17 10:35 1 1802 PFHxS 25 - 150 02/28/17 16:42 03/02/17 10:35 145

Lab Sample ID: LCS 320-152587/2-A

Matrix: Water

Analysis Batch: 152836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 152587

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Perfluorooctanoic acid (PFOA) 40.0 38.6 60 - 140 ng/L 37.1 35.6 60 - 140 ng/L 96 Perfluorooctanesulfonic acid (PFOS) 39.5 35.4 ng/L 50 - 150 Perfluorobutanesulfonic acid 112 (PFBS)

LCS LCS

Isotope Dilution	%Recovery Qualifier	Limits
13C4 PFOA	142	25 - 150
13C4 PFOS	133	25 - 150
1802 PFHxS	136	25 - 150

Lab Sample ID: LCSD 320-152587/3-A

Matrix: Water

Analysis Batch: 152836

Client Sample	ID: Lab	Control	Samp	le [Dup
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Prep Type: Total/NA Prep Batch: 152587

Analysis Daton: 102000							i icp D		J_UU 1
•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	40.0	38.5	-	ng/L		96	60 - 140	0	30
Perfluorooctanesulfonic acid (PFOS)	37.1	35.6	M	ng/L		96	60 - 140	0	30
Perfluorobutanesulfonic acid (PFBS)	35.4	40.3	M	ng/L		114	50 - 150	2	30

TestAmerica Sacramento

Page 15 of 683

QC Sample Results

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

LCSD LCSD

Isotope Dilution	%Recovery	Qualifier	Limits
13C4 PFOA	142		25 - 150
13C4 PFOS	135		25 - 150
18O2 PFHxS	140		25 - 150

TestAmerica Job ID: 320-25962-1

QC Association Summary

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

GC/MS Semi VOA

Prep	Batc	h: 1	521	72
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-1	MEAFF-MRD-1A01-0217	Total/NA	Water	3510C	
320-25962-2	MEAFF-MRD-1A01P-0217	Total/NA	Water	3510C	
MB 320-152172/1-A	Method Blank	Total/NA	Water	3510C	
LCS 320-152172/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 320-152172/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 153398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-1	MEAFF-MRD-1A01-0217	Total/NA	Water	WS-MS-0011	152172
320-25962-2	MEAFF-MRD-1A01P-0217	Total/NA	Water	WS-MS-0011	152172
MB 320-152172/1-A	Method Blank	Total/NA	Water	WS-MS-0011	152172
LCS 320-152172/2-A	Lab Control Sample	Total/NA	Water	WS-MS-0011	152172
LCSD 320-152172/3-A	Lab Control Sample Dup	Total/NA	Water	WS-MS-0011	152172

LCMS

Prep Batch: 152015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4	MEAFF-PWMA-SB01-0001	Total/NA	Solid	SHAKE	
320-25962-4 - DL	MEAFF-PWMA-SB01-0001	Total/NA	Solid	SHAKE	
320-25962-5	MEAFF-PWMA-SB01-0204	Total/NA	Solid	SHAKE	
MB 320-152015/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-152015/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Prep Batch: 152587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-3	MEAFF-EB01-022117-SO	Total/NA	Water	3535	
MB 320-152587/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-152587/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-152587/3-	A Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 152825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4	MEAFF-PWMA-SB01-0001	Total/NA	Solid	537 (Modified)	152015
320-25962-5	MEAFF-PWMA-SB01-0204	Total/NA	Solid	537 (Modified)	152015
MB 320-152015/1-A	Method Blank	Total/NA	Solid	537 (Modified)	152015

Analysis Batch: 152836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-3	MEAFF-EB01-022117-SO	Total/NA	Water	537 (Modified)	152587
MB 320-152587/1-A	Method Blank	Total/NA	Water	537 (Modified)	152587
LCS 320-152587/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	152587
LCSD 320-152587/3-A	Lab Control Sample Dup	Total/NA	Water	537 (Modified)	152587

Analysis Batch: 153020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4 - DL	MEAFF-PWMA-SB01-0001	Total/NA	Solid	537 (Modified)	152015
LCS 320-152015/2-A	Lab Control Sample	Total/NA	Solid	537 (Modified)	152015

QC Association Summary

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

General Chemistry

Analysis Batch: 152218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-25962-4	MEAFF-PWMA-SB01-0001	Total/NA	Solid	D 2216	
320-25962-5	MEAFF-PWMA-SB01-0204	Total/NA	Solid	D 2216	

Lab Chronicle

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-MRD-1A01-0217 Lab Sample ID: 320-25962-1 Date Collected: 02/21/17 15:55

Matrix: Water

TestAmerica Job ID: 320-25962-1

Date Received: 02/22/17 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152172	02/24/17 15:44	SR1	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	153398	03/06/17 16:12	MEO	TAL SAC

Client Sample ID: MEAFF-MRD-1A01P-0217

Lab Sample ID: 320-25962-2 Date Collected: 02/21/17 15:55 **Matrix: Water**

Date Received: 02/22/17 10:00

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			152172	02/24/17 15:44	SR1	TAL SAC
Total/NA	Analysis	WS-MS-0011		1	153398	03/06/17 16:34	MEO	TAL SAC

Client Sample ID: MEAFF-EB01-022117-SO Lab Sample ID: 320-25962-3

Date Collected: 02/21/17 13:25 **Matrix: Water**

Date Received: 02/22/17 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			152587	02/28/17 16:42	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	152836	03/02/17 11:12	SBC	TAL SAC

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Date Collected: 02/21/17 13:35 **Matrix: Solid**

Date Received: 02/22/17 10:00

_	Batch	Batch		Dilution	Batch	Prepared		
	Datcii	Daten		Dilution	Datcii	Frepareu		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216			152218	02/25/17 14:01	EP1	TAL SAC

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Date Collected: 02/21/17 13:35 Matrix: Solid Date Received: 02/22/17 10:00 Percent Solids: 86.7

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152015	02/23/17 17:22	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	152825	03/01/17 19:45	SBC	TAL SAC
Total/NA	Prep	SHAKE	DL		152015	02/23/17 17:22	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	10	153020	03/03/17 09:53	SBC	TAL SAC

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

Date Collected: 02/21/17 13:40 Date Received: 02/22/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	152218	02/25/17 14:01	EP1	TAL SAC

Matrix: Solid

Lab Chronicle

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

Date Collected: 02/21/17 13:40

Date Received: 02/22/17 10:00

Matrix: Solid
Percent Solids: 85.3

Batch Batch Dilution Batch Prepared

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			152015	02/23/17 17:22	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	152825	03/01/17 20:00	SBC	TAL SAC

Laboratory References:

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

Certification Summary

Client: CH2M Hill, Inc. TestAmerica Job ID: 320-25962-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

Laboratory: TestAmerica SacramentoAll certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-29-18
Illinois	NELAP	5	200060	03-17-18
Kansas	NELAP	7	E-10375	10-31-17
L-A-B	DoD ELAP		L2468	01-20-18
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17 *
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-17 *
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-18
Virginia	NELAP	3	460278	03-14-18
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

^{*} Certification renewal pending - certification considered valid.

Method Summary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Method	Method Description	Protocol	Laboratory
WS-MS-0011	1,4-Dioxane (GC/MS SIM)	TAL SOP	TAL SAC
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: CH2M Hill, Inc.

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-25962-1

Lab Sample ID	Client Sample ID	Matrix	Collected Received
320-25962-1	MEAFF-MRD-1A01-0217	Water	02/21/17 15:55 02/22/17 10:00
320-25962-2	MEAFF-MRD-1A01P-0217	Water	02/21/17 15:55 02/22/17 10:00
320-25962-3	MEAFF-EB01-022117-SO	Water	02/21/17 13:25 02/22/17 10:00
320-25962-4	MEAFF-PWMA-SB01-0001	Solid	02/21/17 13:35 02/22/17 10:00
320-25962-5	MEAFF-PWMA-SB01-0204	Solid	02/21/17 13:40 02/22/17 10:00

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: SV1 Analysis Batch Number: 151686

Lab Sample ID: IC 320-151686/1 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
1,4-Dioxane	3.36	Baseline	onishim	02/22/17 14:19
Nitrobenzene-d5	8.06	Peak Tail	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/2 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
1,4-Dioxane	3.36	Poor chromatography	onishim	02/22/17 14:19
Nitrobenzene-d5	8.06	Poor chromatography	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/3 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
1,4-Dioxane	3.36	Baseline	onishim	02/22/17 14:19
Nitrobenzene-d5	8.06	Peak Tail	onishim	02/22/17 14:19

Lab Sample ID: IC 320-151686/4 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTE	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE	
1,4-Dioxane	3.35	Poor chromatography	onishim	02/22/17 14:19	

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento	Job No	320-25962-1			
SDG No.:					
Instrument ID: SV1	Analys	is Batch Number: 151686			
Lab Sample ID: ICIS 320-151686/5	Client	Sample ID:			
Date Analyzed: 02/22/17 11:03	Lab Fi	le ID: 14D0222E.D	GC Colum	nn: HP-5MS	ID: 0.25(mm)
COMPOUND NAME RETENTION MANUAL INTEGRATION					
	TIME	REASON	ANALYST	DATE	
1,4-Dioxane	3.35	Poor chromatography	onishim	02/22/17 14:19	
Lab Sample ID: IC 320-151686/6	Client	Sample ID:			
Date Analyzed: 02/22/17 11:25	Lab Fi	le ID: <u>14D0222F.D</u>	GC Colum	nn: <u>HP-5MS</u>	ID: <u>0.25(mm)</u>
COMPOUND NAME	RETENTION	RETENTION MANUAL INTEGRATION			
	TIME	REASON	ANALYST	DATE	
1,4-Dioxane	3.36	Poor chromatography	onishim	02/22/17 14:19	
Lab Sample ID: <u>IC 320-151686/7</u>	Client	Sample ID:			
Date Analyzed: 02/22/17 11:47	Lab Fi	le ID: <u>14D0222G.D</u>	GC Colum	nn: HP-5MS	ID: 0.25(mm)
COMPOUND NAME	RETENTION	MANUAL	INTEGRATION		
	TIME	REASON	ANALYST	DATE	
1,4-Dioxane	3.36	Poor chromatography	onishim	02/22/17 14:19	
Lab Sample ID: <u>IC 320-151686/8</u>	Client	Sample ID:			
Date Analyzed: 02/22/17 12:09	Lab Fi	le ID: 14D0222H.D	GC Colum	nn: <u>HP-5MS</u>	ID: <u>0.25(mm)</u>
COMPOUND NAME	RETENTION	MANUAL	INTEGRATION		
	TIME	REASON	ANALYST	DATE	
1,4-Dioxane	3.37	Poor chromatography	onishim	02/22/17 14:19	

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: SV1 Analysis Batch Number: 153398

Lab Sample ID: CCV 320-153398/2 Client Sample ID:

COMPOUND NAME RETENTION MANUAL INTEGRATION
TIME REASON ANALYST DATE

1,4-Dioxane 3.35 Peak Tail onishim 03/06/17 11:21

Lab Sample ID: LCS 320-152172/2-A Client Sample ID:

COMPOUND NAME RETENTION MANUAL INTEGRATION
TIME REASON ANALYST DATE

1,4-Dioxane 3.35 Peak Tail onishim 03/06/17 12:15

Lab Sample ID: LCSD 320-152172/3-A Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTE	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE	
1,4-Dioxane	3.35	Peak Tail	onishim	03/06/17 13:09	

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: A8 N Analysis Batch Number: 152681

Lab Sample ID: IC 320-152681/2 Client Sample ID:

Date Analyzed: 03/01/17 11:08 Lab File ID: 2017.03.01CURVE 003.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.51	Isomers	chandrase nas	03/01/17 15:43
Perfluorooctanoic acid (PFOA)	2.86	Incomplete Integration	chandrase nas	03/01/17 15:43
Perfluorooctanesulfonic acid (PFOS)	3.23	Isomers	chandrase nas	03/01/17 15:43

Lab Sample ID: IC 320-152681/4 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.83	Baseline	chandrase nas	03/01/17 15:43
Perfluorooctanesulfonic acid (PFOS)	3.17	Baseline	chandrase nas	03/01/17 15:43

Lab Sample ID: IC 320-152681/5 Client Sample ID:

Date Analyzed: 03/01/17 11:31 Lab File ID: 2017.03.01CURVE 006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.49	Isomers	chandrase nas	03/01/17 15:43

Page 27 of 683 03/27/2017

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: A8_N Analysis Batch Number: 152681

Lab Sample ID: IC 320-152681/6 Client Sample ID:

Date Analyzed: 03/01/17 11:38 Lab File ID: 2017.03.01CURVE 007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorohexanesulfonic acid (PFHxS)	2.48	Isomers	chandrase nas	03/01/17 15:43
13C2 PFUnA	3.87	Incomplete Integration	chandrase	03/01/17 15:43
			nas	

Lab Sample ID: IC 320-152681/7 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorooctanesulfonic acid (PFOS)	3.19	Baseline	chandrase	03/01/17 15:43
M2-8:2FTS	3.52	Incomplete Integration	chandrase	03/01/17 15:43
13C2 PFDoA	4.15	Ingomplete Integration	nas chandrase	03/01/17 15:43
1302 FIDOA	4.15	Incomplete Integration	nas	03/01/1/ 13:43

Page 28 of 683 03/27/2017

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: A8 N Analysis Batch Number: 152825

Lab Sample ID: CCV 320-152825/2 Client Sample ID:

Date Analyzed: 03/01/17 18:30 Lab File ID: 2017.03.01A 002.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
13C4-PFHpA	2.42	Incomplete Integration	chandrase	03/03/17 10:36
			nas	
Perfluorooctanoic acid (PFOA)	2.79	Incomplete Integration	chandrase	03/03/17 10:36
			nas	

Lab Sample ID: 320-25962-4 Client Sample ID: MEAFF-PWMA-SB01-0001

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorobutanesulfonic acid	1.85	Baseline	chandrase	03/27/17 10:46
(PFBS)			nas	

Lab Sample ID: 320-25962-5 Client Sample ID: MEAFF-PWMA-SB01-0204

Date Analyzed: 03/01/17 20:00 Lab File ID: 2017.03.01A_014.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION	MANUAL INT	EGRATION	
	TIME	REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.86	Assign Peak	chandrase nas	03/27/17 10:47
1802 PFHxS	2.46	Assign Peak	chandrase nas	03/27/17 10:47
13C4 PFOA	2.81	Baseline	chandrase nas	03/27/17 10:46
Perfluorooctanoic acid (PFOA)	2.81	Baseline	chandrase nas	03/27/17 10:46
13C4 PFOS	3.17	Baseline	chandrase nas	03/27/17 10:46
Perfluorooctanesulfonic acid (PFOS)	3.17	Baseline	chandrase nas	03/27/17 10:46

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: A8 N Analysis Batch Number: 152836

Lab Sample ID: CCV 320-152836/10 CCVL Client Sample ID:

Date Analyzed: 03/02/17 10:12 Lab File ID: 2017.03.02A 001.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorohexanesulfonic acid	2.48	Isomers	chandrase	03/27/17 09:41
(PFHxS)			nas	
Perfluorooctanesulfonic acid	3.19	Baseline	chandrase	03/27/17 09:41
(PFOS)			nas	
Perfluorododecanoic acid (PFDoA)	4.17	Incomplete Integration	chandrase	03/27/17 09:41
			nas	
Perfluorotetradecanoic acid	4.67	Baseline	chandrase	03/27/17 09:41
(PFTeA)			nas	
Perfluoro-n-hexadecanoic acid	5.09	Baseline	chandrase	03/27/17 09:41
(PFHxDA)			nas	

Lab Sample ID: CCV 320-152836/11 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluoropentanoic acid (PFPeA)	1.82	Baseline		03/02/17 12:33
			nas	
Perfluorohexanoic acid (PFHxA)	2.12	Baseline	chandrase	03/02/17 12:33
			nas	

Lab Sample ID: MB 320-152587/1-A Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.82	Baseline	westendor fc	03/08/17 08:23

537 (Modified)

Page 30 of 683 03/27/2017

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: A8 N Analysis Batch Number: 152836

Lab Sample ID: LCSD 320-152587/3-A Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.86	Baseline		03/02/17 12:34
Perfluorooctanesulfonic acid	3.22	Isomers	nas chandrase	03/02/17 12:34
(PFOS)			nas	

Lab Sample ID: 320-25962-3 Client Sample ID: MEAFF-EB01-022117-SO

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.82	Baseline	westendor fc	03/27/17 09:38

Lab Sample ID: CCV 320-152836/23 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorohexanesulfonic acid	2.48	Isomers	chandrase	03/02/17 12:34
(PFHxS)			nas	

537 (Modified)

Page 31 of 683 03/27/2017

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Instrument ID: A8 N Analysis Batch Number: 153020

Lab Sample ID: 320-25962-4 DL Client Sample ID: MEAFF-PWMA-SB01-0001 DL

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.86	Baseline	chandrase nas	03/27/17 10:05
Perfluorooctanoic acid (PFOA)	2.83	Isomers	chandrase	03/27/17 10:05
			nas	

Lab Sample ID: CCV 320-153020/9 Client Sample ID:

COMPOUND NAME	RETENTION	MANUAL INTEGRATION		
	TIME	REASON	ANALYST	DATE
Perfluorohexanesulfonic acid	2.48	Isomers	chandrase	03/27/17 10:05
(PFHxS)			nas	

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reager	nt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M_00004	1000 uL	d-N-EtFOSA-M	1 ug/mI
_					LCd-NMeFOSA-M_00003	1000 uL	d-N-MeFOSA-M	1 ug/mI
					LCd3-NMeFOSAA_00003		d3-NMeFOSAA	1 ug/mI
					LCd5-NEtFOSAA_00003		d5-NEtFOSAA	1 ug/mI
					LCM2-6:FTS_00003		M2-6:2FTS	0.95 ug/mI
					LCM2-8:2FTS_00003		M2-8:2FTS	0.958 ug/mI
.LCd-NEtFOSA-M_00004	06/10/21		LLINGTON, Lot dNEtFOSA06		(Purchased Reag		d-N-EtFOSA-M	50 ug/mI
.LCd-NMeFOSA-M_00003	06/10/21		LLINGTON, Lot dNMeFOSA06		(Purchased Reag		d-N-MeFOSA-M	50 ug/mI
.LCd3-NMeFOSAA_00003	05/31/21		LLINGTON, Lot d3NMeFOSAA((Purchased Reag		d3-NMeFOSAA	50 ug/mI
.LCd5-NEtFOSAA_00003	08/02/21		LLINGTON, Lot d5NEtFOSAA((Purchased Reag		d5-NEtFOSAA	50 ug/mI
.LCM2-6:FTS_00003	01/08/21	M	ELLINGTON, Lot M262FTS01		(Purchased Reag		M2-6:2FTS	47.5 ug/mI
.LCM2-8:2FTS_00003	01/08/21	M	ELLINGTON, Lot M282FTS01		(Purchased Reag	ent)	M2-8:2FTS	47.9 ug/mI
LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mI
					LCM2PFTeDA 00007	1000 uL	13C2-PFTeDA	1 ug/mI
					LCM4PFHPA 00007	1000 uL	13C4-PFHpA	1 ug/mI
					LCM5PFPEA 00008	1000 uL	13C5-PFPeA	1 ug/mI
					LCM8FOSA 00011	1000 uL	13C8 FOSA	1 ug/mI
					LCMPFBA 00008	1000 uL	13C4 PFBA	1 ug/mI
					LCMPFDA 00011	1000 uL	13C2 PFDA	1 ug/mI
					LCMPFDoA 00008	1000 uL	13C2 PFDoA	1 ug/mI
					LCMPFHxA 00012	1000 uL	13C2 PFHxA	1 ug/mI
					LCMPFHxS 00008	1000 uL	1802 PFHxS	0.946 ug/mI
					LCMPFNA 00008	1000 uL	13C5 PFNA	1 ug/mI
					LCMPFOA 00012	1000 uL	13C4 PFOA	1 ug/ml
					LCMPFOS 00017	1000 uL	13C4 PFOS	0.956 ug/mI
					LCMPFUdA 00009	1000 uL	13C2 PFUnA	1 ug/mI
.LCM2PFHxDA 00008	01/07/21	Wellingt	on Laboratories, Lot M2P	FHxDA1112	(Purchased Reag	ent)	13C2-PFHxDA	50 ug/mI
.LCM2PFTeDA 00007	12/07/20	Wellingt	on Laboratories, Lot M2P	FTeDA1115	(Purchased Reag	ent)	13C2-PFTeDA	50 ug/mI
.LCM4PFHPA 00007	05/27/21	Wellingt	on Laboratories, Lot M4E	PFHpA0516	(Purchased Reag		13C4-PFHpA	50 ug/mI
.LCM5PFPEA 00008	05/22/20		on Laboratories, Lot M5H		(Purchased Reag	ent)	13C5-PFPeA	50 ug/mI
.LCM8FOSA 00011	12/22/17		on Laboratories, Lot M8E		(Purchased Reag	ent)	13C8 FOSA	50 ug/ml
.LCMPFBA 00008	05/24/21	Welling	gton Laboratories, Lot ME	PFBA0516	(Purchased Reag	ent)	13C4 PFBA	50 ug/mI
.LCMPFDA 00011	08/19/20	Welling	gton Laboratories, Lot ME	PFDA0815	(Purchased Reag		13C2 PFDA	50 ug/mI
.LCMPFDoA 00008	04/08/21		ton Laboratories, Lot MP		(Purchased Reag	ent)	13C2 PFDoA	50 ug/mI
.LCMPFHxA 00012	04/08/21		ton Laboratories, Lot MP		(Purchased Reag		13C2 PFHxA	50 ug/mI
.LCMPFHxS_00008	10/23/20	Welling	ton Laboratories, Lot MP	FHxS1015	(Purchased Reag	ent)	1802 PFHxS	47.3 ug/mI
.LCMPFNA_00008	04/13/19	Welling	gton Laboratories, Lot MI	PFNA0414	(Purchased Reag		13C5 PFNA	50 ug/mI
.LCMPFOA 00012	01/22/21	-	gton Laboratories, Lot ME		(Purchased Reag		13C4 PFOA	50 ug/mI
.LCMPFOS_00017	08/03/21		gton Laboratories, Lot ME		(Purchased Reag		13C4 PFOS	47.8 ug/mI
.LCMPFUdA_00009	02/12/21	Welling	ton Laboratories, Lot MP	FUdA0216	(Purchased Reag	ent)	13C2 PFUnA	50 ug/mI
LCPFC FULL-L1 00001	06/14/17	02/16/17	MeOH/H2O, Lot 90285	5 mT.	LCMPFC2SU 00014	250 117.	d-N-EtFOSA-M	50 ng/mI
	00,11,1,	12,10,1,				200 42	d-N-MeFOSA-M	50 ng/mI
							d3-NMeFOSAA	50 ng/mI
							d5-NEtFOSAA	50 ng/mI
							M2-6:2FTS	47.5 ng/mI
							M2-8:2FTS	47.9 ng/mI

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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SDG No.:_____

				Reagent	Parent Reagen	t		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
					LCMPFCSU 00047	250 uL	13C2-PFHxDA	50 ng/mL
					_		13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							1802 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP 00025	25 uL	Sodium	0.474 ng/mL
					_		1H,1H,2H,2H-perfluorooctane	
							sulfonate (6:2)	
							Sodium	0.479 ng/mL
							1H,1H,2H,2H-perfluorooctane	
							sulfonate (8:2)	0.5 / -
							N-ethylperfluoro-1-octanesulfo namide	0.5 ng/mL
							N-ethyl perfluorooctane	0.5 ng/mL
							sulfonamidoacetic acid	0.5 119/1111
							MeFOSA	0.5 ng/mL
							N-methyl perfluorooctane	0.5 ng/mL
							sulfonamidoacetic acid	
					LCPFCSP_00078	25 uL	Perfluorobutyric acid	0.5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.442 ng/mL
							Perfluorodecanoic acid	0.5 ng/mL
							Perfluorododecanoic acid	0.5 ng/mL
							Perfluorodecane Sulfonic acid	0.482 ng/mL
							Perfluoroheptanoic acid	0.5 ng/mL
							Perfluoroheptanesulfonic Acid	0.476 ng/mL
							Perfluorohexanoic acid	0.5 ng/mL
							Perfluorohexadecanoic acid	0.5 ng/mL
							Perfluorohexanesulfonic acid	0.455 ng/mL
							Perfluorononanoic acid	0.5 ng/mL
							Perfluorooctanoic acid (PFOA)	0.5 ng/mL
							Perfluorooctadecanoic acid	0.5 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.464 ng/mL
							Perfluorooctane Sulfonamide	0.5 ng/mL
							Perfluoropentanoic acid	0.5 ng/mL
							Perfluorotetradecanoic acid	0.5 ng/mL
							Perfluorotridecanoic acid	0.5 ng/mL
							Perfluoroundecanoic acid	0.5 ng/mL
.LCMPFC2SU 00014	00/10/17	00/10/17	Methanol, Lot 104453	F0000 F	LCd-NEtFOSA-M 00004	1000 -	d-N-EtFOSA-M	1 ug/mL

ab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reagen	t		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
					LCd-NMeFOSA-M_00003		d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00003		d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00003		d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS 00003	1000 uL	M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS 00003	1000 uL	M2-8:2FTS	0.958 ug/mL
LCd-NEtFOSA-M 00004	06/10/21	WE	LLINGTON, Lot dNEtFOSA061	16M	(Purchased Reage	ent)	d-N-EtFOSA-M	50 ug/mL
LCd-NMeFOSA-M 00003	06/10/21	WE	LLINGTON, Lot dNMeFOSA061	16M	(Purchased Reage	ent)	d-N-MeFOSA-M	50 ug/mL
LCd3-NMeFOSAA 00003	05/31/21	WEI	LINGTON, Lot d3NMeFOSAA0	516	(Purchased Reage		d3-NMeFOSAA	50 ug/mL
LCd5-NEtFOSAA 00003	08/02/21	WEI	LINGTON, Lot d5NEtFOSAA0	716	(Purchased Reage		d5-NEtFOSAA	50 ug/mL
LCM2-6:FTS 00003	01/08/21		ELLINGTON, Lot M262FTS011		(Purchased Reage		M2-6:2FTS	47.5 ug/mL
LCM2-8:2FTS 00003	01/08/21	W	ELLINGTON, Lot M282FTS011		(Purchased Reage		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047			Methanol, Lot Baker	50000 uL			13C2-PFHxDA	1 ug/mL
			144541		LCM2PFTeDA 00007	1000 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00007	1000 uL	13C4-PFHpA	1 ug/mL
					LCM5PFPEA 00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA 00011		13C8 FOSA	1 ug/mL
					LCMPFBA 00008	1000 uT	13C4 PFBA	1 ug/mL
					LCMPFDA 00011	1000 117	13C2 PFDA	1 ug/mL
					LCMPFDoA 00008		13C2 PFDoA	1 ug/mL
					LCMPFHxA 00012		13C2 PFHXA	1 ug/mL
					LCMPFHxS 00008		1802 PFHxS	0.946 ug/mL
					LCMPFNA 00008		13C5 PFNA	1 ug/mL
					LCMPFOA 00012	1000 an	13C4 PFOA	1 ug/mL
					LCMPFOS 00017		13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00009		13C2 PFUnA	1 ug/mL
LCM2PFHxDA 00008	01/07/21	Wellingt	l on Laboratories, Lot M2PI	 FH∿DΔ1112	(Purchased Reage		13C2-PFHxDA	50 ug/mL
LCM2PFTeDA 00007	12/07/20		on Laboratories, Lot M2PI		(Purchased Reage		13C2-PFTeDA	50 ug/mL
LCM4PFHPA 00007	05/27/21	Wellingt	ton Laboratories, Lot M4P	FHn 10516	(Purchased Reage	nt)	13C4-PFHpA	50 ug/mL
LCM5PFPEA 00008	05/22/20		on Laboratories, Lot M5P		(Purchased Reage		13C5-PFPeA	50 ug/mL
LCM8FOSA 00011	12/22/17		on Laboratories, Lot M8F		(Purchased Reage		13C8 FOSA	50 ug/mL
LCMPFBA 00008	05/24/21		gton Laboratories, Lot MP		(Purchased Reage		13C4 PFBA	50 ug/mL
LCMPFDA 00011	08/19/20		gton Laboratories, Lot MP		(Purchased Reage		13C2 PFDA	50 ug/mL
LCMPFDoA 00008	04/08/21		ton Laboratories, Lot MPI		(Purchased Reage		13C2 PFDoA	50 ug/mL
LCMPFHxA 00012	04/08/21		ton Laboratories, Lot MPI		(Purchased Reage		13C2 PFHxA	50 ug/mL
LCMPFHxS 00008	10/23/20		ton Laboratories, Lot MPI		(Purchased Reage		1802 PFHxS	47.3 ug/mL
LCMPFNA 00008	04/13/19		ton Laboratories, Lot MP ston Laboratories, Lot MP		(Purchased Reage		13C5 PFNA	50 ug/mL
LCMPF0A 00008	01/22/21		gton Laboratories, Lot MP		(Purchased Reage		13C4 PFOA	50 ug/mL
LCMPFOA_00012	08/03/21		gton Laboratories, Lot MP		(Purchased Reage		13C4 PFOA 13C4 PFOS	47.8 ug/mL
LCMPFUGA 00009	08/03/21	Melline	ton Laboratories, Lot MP	E11970516	(Purchased Reage		13C4 PFOS 13C2 PFUnA	50 ug/mL
.LCPFC2SP 00025			Methanol, Lot 104453		LCPFC2SP 00020	2000 uL	Sodium	0.0948 ug/mL
.LCFFC2SF_00023	00/20/17	01/30/17	Methanol, Lot 104455	10000 uL	LCFFC2SF_00020	2000 UL	1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.0958 ug/mL
							N-ethylperfluoro-1-octanesulfo namide	0.1 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-	·1

				Reagent	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mI
							MeFOSA	0.1 ug/mI
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mI
LCPFC2SP_00020	06/28/17	12/28/16	Methanol, Lot 104	10000 uL	LC6:2FTS_00002		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/ml
					LC8:2FTS_00002		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/ml
					LCN-EtFOSA-M_00003		N-ethylperfluoro-1-octanesulfo namide	0.5 ug/mI
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mI
					LCN-MeFOSA-M_00002		MeFOSA	0.5 ug/mI
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mI
LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62	FTS0616	(Purchased Rea	gent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/ml
LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82	FTS1015	(Purchased Rea	gent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	47.9 ug/ml
LCN-EtFOSA-M_00003	05/24/21	WE	LLINGTON, Lot NEtF	OSA0516M	(Purchased Rea	gent)	N-ethylperfluoro-1-octanesulfo namide	
LCN-EtFOSAA_00002	01/20/21	WE	LLINGTON, Lot NETF	OSAA0116	(Purchased Rea	gent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mI
LCN-MeFOSA-M 00002	05/24/21	WE	ELLINGTON, Lot NMeF	OSA0714M	(Purchased Rea	gent)	MeFOSA	50 ug/mI
LCN-MeFOSAA_00003	01/20/21		LLINGTON, Lot NMeF		(Purchased Rea		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mI
.LCPFCSP_00078	06/14/17	01/16/17	Methanol, Lot 0902	285 10000 uL	LCPFCSP_00075	2000 uL	Perfluorobutyric acid	0.1 ug/mI
							Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/ml
							Perfluorodecanoic acid	0.1 ug/ml
							Perfluorododecanoic acid	0.1 ug/mI
							Perfluorodecane Sulfonic acid	0.0964 ug/mI
							Perfluoroheptanoic acid	0.1 ug/mI
							Perfluoroheptanesulfonic Acid	0.0952 ug/mI
							Perfluorohexanoic acid	0.1 ug/ml
							Perfluorohexadecanoic acid	0.1 ug/ml
							Perfluorohexanesulfonic acid	0.091 ug/ml
							Perfluorononanoic acid	0.1 ug/ml
							Perfluoroctanoic acid (PFOA)	0.1 ug/mI
							Perfluorooctadecanoic acid Perfluorooctanesulfonic acid	0.1 ug/mI 0.0928 ug/mI
							(PFOS)	
							Perfluorooctane Sulfonamide	0.1 ug/ml
							Perfluoropentanoic acid Perfluorotetradecanoic acid	0.1 ug/ml 0.1 ug/ml

Lab Name: TestAmerica Sacramento Job No.: 320-2	-25962-1
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				Reagent	Parent Reage	ent		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
Reagene 1B	Date	Date	0364	VOLUME	Reagene 1D	nauca	=	
							Perfluorotridecanoic acid	0.1 ug/mL
TODEGOD OOOTE	06/14/17	10/14/16	Mail 1 1 Tal 000005	10000 +	TODEGOD 00074	E000 T	Perfluoroundecanoic acid	0.1 ug/mL
LCPFCSP_00075	06/14/1/	12/14/16	Methanol, Lot 090285	10000 uL	LCPFCSP_00074	5000 uL	Perfluorobutyric acid Perfluorobutanesulfonic acid	0.5 ug/mL
							(PFBS)	0.442 ug/mL
							Perfluorodecanoic acid	0.5 ug/mL
							Perfluorododecanoic acid	0.5 ug/mL
							Perfluorodecane Sulfonic acid	0.482 ug/mL
							Perfluoroheptanoic acid	0.5 ug/mL
							Perfluoroheptanesulfonic Acid	0.476 ug/mL
							Perfluorohexanoic acid	0.5 ug/mL
							Perfluorohexadecanoic acid	0.5 ug/mL
							Perfluorohexanesulfonic acid	0.455 ug/mL
							Perfluorononanoic acid	0.5 ug/mL
							Perfluorooctanoic acid (PFOA)	0.5 ug/mL
							Perfluorooctadecanoic acid	0.5 ug/mL
							Perfluorooctanesulfonic acid	0.464 ug/mL
							(PFOS)	J.
							Perfluorooctane Sulfonamide	0.5 ug/mL
							Perfluoropentanoic acid	0.5 ug/mL
							Perfluorotetradecanoic acid	0.5 ug/mL
							Perfluorotridecanoic acid	0.5 ug/mL
							Perfluoroundecanoic acid	0.5 ug/mL
LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA_00005		Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005	200 uL	Perfluorobutanesulfonic acid	0.884 ug/mL
							(PFBS)	4 / -
					LCPFDA_00005		Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00005		Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00006		Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006		Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00009 LCPFHxA 00005		Perfluoroheptanesulfonic Acid Perfluorohexanoic acid	0.952 ug/mL
					LCPFHxA_00005		Perfluoronexanoic acid	1 ug/mL 1 ug/mL
					LCPFHxS-br 00002		Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00006		Perfluoronexanesurionic acid	1 ug/mL
					LCPFOA 00006		Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00006		Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br 00002		Perfluorooctanesulfonic acid	0.928 ug/mL
					HC1105 D1_00002	200 41	(PFOS)	0.520 ug/III
					LCPFOSA 00008	200 יוט	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00005		Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005		Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005		Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA 00005		Perfluoroundecanoic acid	1 ug/mL
LCPFBA 00005	05/27/21	Wellin	gton Laboratories, Lot P	FBA0516	(Purchased Rea		Perfluorobutyric acid	50 ug/mL
LCPFBS_00005	03/15/21		ton Laboratories, Lot LA		(Purchased Rea		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
LCPFDA 00005	07/02/20	Wellin	gton Laboratories, Lot P	FDA0615	(Purchased Rea	igent)	Perfluorodecanoic acid	50 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

					Reagent	Parent Reage	nt		
Reagent ID	Exp Date	Prep Date	Dilutant Used		Final Volume	Reagent ID	Volume Added	Analyte	Concentration
LCPFDoA 00005	01/30/20	Welling	ton Laboratories,	Lot	PFDoA0115	(Purchased Read	gent)	Perfluorododecanoic acid	50 ug/mL
LCPFDS 00006	05/24/21		ton Laboratories,			(Purchased Read	gent)	Perfluorodecane Sulfonic acid	48.2 ug/mL
LCPFHpA 00006	01/22/21	Welling	ton Laboratories,	Lot	PFHpA0116	(Purchased Read	gent)	Perfluoroheptanoic acid	50 ug/mL
LCPFHpS 00009	11/06/20		ton Laboratories,			(Purchased Read	gent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL
LCPFHxA 00005	12/22/20	Welling	ton Laboratories,	Lot	PFHxA1215	(Purchased Read	gent)	Perfluorohexanoic acid	50 ug/mL
LCPFHxDA 00006	05/25/21		ton Laboratories,			(Purchased Read		Perfluorohexadecanoic acid	50 ug/mL
LCPFHxS-br 00002	07/03/20	Wellingt	on Laboratories, I	ot b	rPFHxSK0615	(Purchased Read	gent)	Perfluorohexanesulfonic acid	45.5 ug/mL
LCPFNA 00006	10/23/20	Wellin	gton Laboratories,	Lot	PFNA1015	(Purchased Read	gent)	Perfluorononanoic acid	50 ug/mL
LCPFOA 00006	11/06/20	Wellin	gton Laboratories,	Lot	PFOA1115	(Purchased Read	gent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
LCPFODA 00006	04/29/21	Welling	ton Laboratories,	Lot	PFODA0416	(Purchased Read	gent)	Perfluorooctadecanoic acid	50 ug/mL
LCPFOS-br_00002	10/14/20	_	on Laboratories,			(Purchased Read	-	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
LCPFOSA 00008	09/02/17	Welling	ton Laboratories,	Lot	FOSA0815I	(Purchased Read		Perfluorooctane Sulfonamide	50 ug/mL
LCPFPeA 00005	01/30/20	Welling	ston Laboratories,	Lot	PFPeA0115	(Purchased Read	gent)	Perfluoropentanoic acid	50 ug/mL
LCPFTeDA 00005	12/09/20	Welling	ton Laboratories,	Lot	PFTeDA1215	(Purchased Read		Perfluorotetradecanoic acid	50 ug/mL
LCPFTrDA_00005	02/12/21		ton Laboratories,			(Purchased Read		Perfluorotridecanoic acid	50 ug/mL
LCPFUdA_00005	08/19/20	Welling	ston Laboratories,	Lot	PFUdA0815	(Purchased Read	gent)	Perfluoroundecanoic acid	50 ug/mL
LCPFC FULL-L2 00001	06/14/17	02/16/17	MeOH/H2O, Lot 090	2.85	5 mT ₁	LCMPFC2SU 00014	2.50 uTi	d-N-EtFOSA-M	50 ng/mL
		,,	,,					d-N-MeFOSA-M	50 ng/mL
								d3-NMeFOSAA	50 ng/mL
								d5-NEtFOSAA	50 ng/mL
								M2-6:2FTS	47.5 ng/mL
								M2-8:2FTS	47.9 ng/mL
						LCMPFCSU 00047	250 uT	13C2-PFHxDA	50 ng/mL
								13C2-PFTeDA	50 ng/mL
								13C4-PFHpA	50 ng/mL
								13C5-PFPeA	50 ng/mL
								13C8 FOSA	50 ng/mL
								13C4 PFBA	50 ng/mL
								13C2 PFDA	50 ng/mL
								13C2 PFDoA	50 ng/mL
								13C2 PFHxA	50 ng/mL
								1802 PFHxS	47.3 ng/mL
								13C5 PFNA	50 ng/mL
								13C4 PFOA	50 ng/mL
								13C4 PFOS	47.8 ng/mL
								13C2 PFUnA	50 ng/mL
						LCPFC2SP 00025	50 uL	Sodium	0.948 ng/mL
						_		1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	
								Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.958 ng/mL
								N-ethylperfluoro-1-octanesulfo namide	1 ng/mL
								N-ethyl perfluorooctane sulfonamidoacetic acid MeFOSA	1 ng/mL 1 ng/mL

Lab I	Name: TestAmerica	Sacramento	Job No.: 320-25962-1

				Reagent	Parent Reager	ıt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
110090110 12							N-methyl perfluorooctane	1 ng/mL
							sulfonamidoacetic acid	
					LCPFCSP_00078	50 uL	Perfluorobutyric acid	1 ng/mL
							Perfluorobutanesulfonic acid	0.884 ng/mL
							(PFBS)	
							Perfluorodecanoic acid	1 ng/mL
							Perfluorododecanoic acid	1 ng/mL
							Perfluorodecane Sulfonic acid	0.964 ng/mL
							Perfluoroheptanoic acid Perfluoroheptanesulfonic Acid	1 ng/mL
							Perfluorohexanoic acid	0.952 ng/mL 1 ng/mL
							Perfluorohexadecanoic acid	1 ng/mL
							Perfluorohexanesulfonic acid	0.91 ng/mL
							Perfluorononanoic acid	1 ng/mL
							Perfluorooctanoic acid (PFOA)	1 ng/mL
							Perfluorooctadecanoic acid	1 ng/mL
							Perfluorooctanesulfonic acid	0.928 ng/mL
							(PFOS)	
							Perfluorooctane Sulfonamide	1 ng/mL
							Perfluoropentanoic acid	1 ng/mL
							Perfluorotetradecanoic acid	1 ng/mL
							Perfluorotridecanoic acid	1 ng/mL
							Perfluoroundecanoic acid	1 ng/mL
.LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M_00004		d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00003		d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00003		d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00003		d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS_00003		M2-6:2FTS	0.95 ug/mL
LCd-NEtFOSA-M 00004	06/10/21	1.11	 LLINGTON, Lot dNEtFOSA06	1.01	LCM2-8:2FTS_00003		M2-8:2FTS	0.958 ug/mL
LCd-NMeFOSA-M 00003	06/10/21		LLINGTON, LOT GNEEFOSAUG		(Purchased Reag	ent)	d-N-EtFOSA-M d-N-MeFOSA-M	50 ug/mL 50 ug/mL
LCd3-NMeFOSAA 00003	05/31/21		LINGTON, Lot d3NMeFOSAA		(Purchased Reag		d3-NMeFOSAA	50 ug/mL
LCd5-NEtFOSAA 00003	08/02/21		LINGTON, Lot d5NEtFOSAA		(Purchased Reag		d5-NEtFOSAA	50 ug/mL
LCM2-6:FTS 00003	01/08/21		ELLINGTON, Lot M262FTS01		(Purchased Reag		M2-6:2FTS	47.5 ug/mL
LCM2-8:2FTS 00003	01/08/21		ELLINGTON, Lot M282FTS01		(Purchased Reag		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047			Methanol, Lot Baker		LCM2PFHxDA_00008		13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00007	1000 117.	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00007		13C4-PFHpA	1 ug/mL
					LCM5PFPEA 00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA 00011		13C8 FOSA	1 ug/mL
					LCMPFBA 00008		13C4 PFBA	1 ug/mL
					LCMPFDA 00011	1000 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00008	1000 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00012		13C2 PFHxA	1 ug/mL
					LCMPFHxS_00008		1802 PFHxS	0.946 ug/mL
					LCMPFNA_00008		13C5 PFNA	1 ug/mL
					LCMPFOA_00012	1000 uL	13C4 PFOA	1 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

				Danasah	Parent Re	eagent		
	E	D	Dilutant	Reagent Final		17		
Reagent ID	Exp Date	Prep Date	Used	Volume	Reagent ID	Volume Added	Analyte	Concentration
					LCMPFOS 00017	1000 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00009		13C2 PFUnA	1 ug/mL
LCM2PFHxDA 00008	01/07/21	Wellingto	on Laboratories, Lot M2P1	FHxDA1112	(Purchased		13C2-PFHxDA	50 ug/mL
LCM2PFTeDA 00007	12/07/20	Wellingto	on Laboratories, Lot M2P	FTeDA1115	(Purchased	Reagent)	13C2-PFTeDA	50 ug/mL
LCM4PFHPA 00007	05/27/21		on Laboratories, Lot M4P		(Purchased	Reagent)	13C4-PFHpA	50 ug/mL
LCM5PFPEA 00008	05/22/20	Wellingt	on Laboratories, Lot M5P	FPeA0515	(Purchased	Reagent)	13C5-PFPeA	50 ug/mL
LCM8FOSA 00011	12/22/17		on Laboratories, Lot M8F		(Purchased	Reagent)	13C8 FOSA	50 ug/mL
LCMPFBA 00008	05/24/21		ton Laboratories, Lot MP		(Purchased		13C4 PFBA	50 ug/mL
LCMPFDA 00011	08/19/20	Welling	ton Laboratories, Lot MP	FDA0815	(Purchased	Reagent)	13C2 PFDA	50 ug/mL
LCMPFDoA 00008	04/08/21	Welling	ton Laboratories, Lot MP	FDoA0416	(Purchased	Reagent)	13C2 PFDoA	50 ug/mL
LCMPFHxA 00012	04/08/21	Welling	ton Laboratories, Lot MP	FHxA0416	(Purchased	Reagent)	13C2 PFHxA	50 ug/mL
LCMPFHxS 00008	10/23/20		ton Laboratories, Lot MP		(Purchased	Reagent)	1802 PFHxS	47.3 ug/mL
LCMPFNA 00008	04/13/19		ton Laboratories, Lot MP	FNA0414	(Purchased		13C5 PFNA	50 ug/mL
LCMPFOA 00012	01/22/21	Welling	ton Laboratories, Lot MP	FOA0116	(Purchased	Reagent)	13C4 PFOA	50 ug/mL
LCMPFOS 00017	08/03/21	Welling	ton Laboratories, Lot MP	FOS0816	(Purchased		13C4 PFOS	47.8 ug/mL
LCMPFUdA 00009	02/12/21	Welling	ton Laboratories, Lot MP	FUdA0216	(Purchased	Reagent)	13C2 PFUnA	50 ug/mL
.LCPFC2SP 00025	06/28/17	01/30/17	Methanol, Lot 104453	10000 uL	LCPFC2SP 00020	2000 uL	Sodium	0.0948 ug/mL
_					_		1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	
							Sodium	0.0958 ug/mL
							1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	
							N-ethylperfluoro-1-octanesulfo namide	
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
							MeFOSA	0.1 ug/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
LCPFC2SP_00020	06/28/17	12/28/16	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL
					LCN-EtFOSA-M_000		N-ethylperfluoro-1-octanesulfo namide	_
					LCN-EtFOSAA_0000		N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M_000		MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_0000		N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
LC6:2FTS_00002	06/25/21	Ţ	WELLINGTON, Lot 62FTS061	6	(Purchased	Reagent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
LC8:2FTS_00002	10/23/20	Ţ	WELLINGTON, Lot 82FTS101	5	(Purchased	Reagent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	47.9 ug/mL
LCN-EtFOSA-M_00003	05/24/21	WE	LLINGTON, Lot NEtFOSA051	. 6М	(Purchased	Reagent)	N-ethylperfluoro-1-octanesulfo namide	50 ug/mL

Lab 1	Name:	TestAmerica	Sacramento	Job No.	.: 320-25962-1

					Reagent	Parent Rea	ıgent		
	Exp	Prep	Di	lutant	Final		Volume		
Reagent ID	Date	Date		Used	Volume	Reagent ID	Added	Analyte	Concentration
LCN-EtFOSAA 00002	01/20/21			Lot NEtFOSAA01		(Purchased R		N-ethyl perfluorooctane	50 ug/mL
LCN-ECFOSAA_00002			FILLINGION,	LOU NEUFOSAAU.	.10	(Pulchased R	eagent)	sulfonamidoacetic acid	JU ug/IIIL
LCN-MeFOSA-M 00002	05/24/21	WE	ELLINGTON,	Lot NMeFOSA071	.4M	(Purchased R	eagent)	MeFOSA	50 ug/mL
LCN-MeFOSAA_00003	01/20/21	WE	ELLINGTON,	Lot NMeFOSAA01	.16	(Purchased R	eagent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCSP_00078	06/14/17	01/16/17	Methanol.	Lot 090285	10000 111	LCPFCSP 00075	2,000 uTi	Perfluorobutyric acid	0.1 ug/mL
		,,	,					Perfluorobutanesulfonic acid	0.0884 ug/mL
								(PFBS)	
								Perfluorodecanoic acid	0.1 ug/mL
								Perfluorododecanoic acid	0.1 ug/mL
								Perfluorodecane Sulfonic acid	0.0964 ug/mL
								Perfluoroheptanoic acid	0.1 ug/mL
								Perfluoroheptanesulfonic Acid	0.0952 ug/mL
								Perfluorohexanoic acid	0.1 ug/mL
								Perfluorohexadecanoic acid	0.1 ug/mL
								Perfluorohexanesulfonic acid	0.091 ug/mL
								Perfluorononanoic acid	0.1 ug/mL
								Perfluorooctanoic acid (PFOA)	0.1 ug/mL
								Perfluorooctadecanoic acid	0.1 ug/mL
								Perfluorooctanesulfonic acid	0.0928 ug/mL
								(PFOS)	
								Perfluorooctane Sulfonamide	0.1 ug/mL
								Perfluoropentanoic acid	0.1 ug/mL
								Perfluorotetradecanoic acid	0.1 ug/mL
								Perfluorotridecanoic acid	0.1 ug/mL
	0.6 /4.4 /4.5	10/11/16			10000		5000 -	Perfluoroundecanoic acid	0.1 ug/mL
LCPFCSP_00075	06/14/1/	12/14/16	Methanol,	Lot 090285	10000 uL	LCPFCSP_00074	5000 uL	Perfluorobutyric acid	0.5 ug/mL
								Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
								Perfluorodecanoic acid	0.5 ug/mL
								Perfluorododecanoic acid	0.5 ug/mL
								Perfluorodecane Sulfonic acid	0.482 ug/mL
								Perfluoroheptanoic acid	0.5 ug/mL
								Perfluoroheptanesulfonic Acid	0.476 ug/mL
								Perfluorohexanoic acid	0.5 ug/mL
								Perfluorohexadecanoic acid	0.5 ug/mL
								Perfluorohexanesulfonic acid	0.455 ug/mL
								Perfluorononanoic acid	0.5 ug/mL
								Perfluorooctanoic acid (PFOA)	0.5 ug/mL
								Perfluorooctadecanoic acid	0.5 ug/mL
								Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
								Perfluorooctane Sulfonamide	0.5 ug/mL
								Perfluoropentanoic acid	0.5 ug/mL
								Perfluorotetradecanoic acid	0.5 ug/mL
								Perfluorotridecanoic acid	0.5 ug/mL
								Perfluoroundecanoic acid	0.5 ug/mL
LCPFCSP 00074	06/14/17	12/14/16	Methanol,	Lot 090285	10000 uL	LCPFBA 00005	200 uL	Perfluorobutyric acid	1 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

				Reagent	Parent Reage	nt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					LCPFBS_00005		Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mI
					LCPFDA_00005		Perfluorodecanoic acid	1 ug/mI
					LCPFDoA_00005		Perfluorododecanoic acid	1 ug/mI
					LCPFDS_00006		Perfluorodecane Sulfonic acid	0.964 ug/mI
					LCPFHpA_00006		Perfluoroheptanoic acid	1 ug/mI
					LCPFHpS_00009		Perfluoroheptanesulfonic Acid	0.952 ug/mI
					LCPFHxA_00005		Perfluorohexanoic acid	1 ug/mI
					LCPFHxDA_00006		Perfluorohexadecanoic acid	1 ug/mI
					LCPFHxS-br_00002		Perfluorohexanesulfonic acid	0.91 ug/mI
					LCPFNA_00006		Perfluorononanoic acid	1 ug/mI
					LCPFOA_00006		Perfluorooctanoic acid (PFOA)	1 ug/mI
					LCPFODA_00006		Perfluorooctadecanoic acid	1 ug/mI
					LCPFOS-br_00002		Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mI
					LCPFOSA_00008		Perfluorooctane Sulfonamide	1 ug/mI
					LCPFPeA_00005		Perfluoropentanoic acid	1 ug/mI
					LCPFTeDA_00005		Perfluorotetradecanoic acid	1 ug/mI
					LCPFTrDA_00005		Perfluorotridecanoic acid	1 ug/mI
					LCPFUdA_00005		Perfluoroundecanoic acid	1 ug/mI
LCPFBA_00005	05/27/21		gton Laboratories, Lot P		(Purchased Read		Perfluorobutyric acid	50 ug/mI
LCPFBS_00005	03/15/21	Welling	ton Laboratories, Lot LE	FBS0316	(Purchased Read	gent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mI
LCPFDA 00005	07/02/20	Welling	gton Laboratories, Lot P	FDA0615	(Purchased Read	gent)	Perfluorodecanoic acid	50 ug/mI
LCPFDoA 00005	01/30/20		ton Laboratories, Lot PE		(Purchased Read	gent)	Perfluorododecanoic acid	50 ug/ml
LCPFDS 00006	05/24/21	Welling	ton Laboratories, Lot LE	FDS0516	(Purchased Read	gent)	Perfluorodecane Sulfonic acid	48.2 ug/ml
LCPFHpA_00006	01/22/21	Welling	ton Laboratories, Lot PE	'HpA0116	(Purchased Read	gent)	Perfluoroheptanoic acid	50 ug/ml
LCPFHpS_00009	11/06/20		ton Laboratories, Lot LP		(Purchased Read		Perfluoroheptanesulfonic Acid	47.6 ug/mI
LCPFHxA_00005	12/22/20	Welling	ton Laboratories, Lot PE	HxA1215	(Purchased Read	gent)	Perfluorohexanoic acid	50 ug/mI
LCPFHxDA_00006	05/25/21		ton Laboratories, Lot PF.		(Purchased Read	gent)	Perfluorohexadecanoic acid	50 ug/mI
LCPFHxS-br_00002	07/03/20	Wellingto	on Laboratories, Lot brP	FHxSK0615	(Purchased Read	gent)	Perfluorohexanesulfonic acid	45.5 ug/ml
LCPFNA_00006	10/23/20	Welling	gton Laboratories, Lot P	FNA1015	(Purchased Read	gent)	Perfluorononanoic acid	50 ug/mI
LCPFOA_00006	11/06/20	Welling	gton Laboratories, Lot P	FOA1115	(Purchased Read		Perfluorooctanoic acid (PFOA)	50 ug/mI
LCPFODA_00006	04/29/21		ton Laboratories, Lot PE		(Purchased Read	gent)	Perfluorooctadecanoic acid	50 ug/mI
LCPFOS-br_00002	10/14/20	Wellingt	on Laboratories, Lot br	FOSK1015	(Purchased Reac	gent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mI
LCPFOSA 00008	09/02/17	Welling	ton Laboratories, Lot FC	SA0815I	(Purchased Read	gent)	Perfluorooctane Sulfonamide	50 ug/mI
LCPFPeA 00005	01/30/20	Welling	ton Laboratories, Lot PE	PeA0115	(Purchased Read	gent)	Perfluoropentanoic acid	50 ug/mI
LCPFTeDA 00005	12/09/20	Welling	ton Laboratories, Lot PF	TeDA1215	(Purchased Read	gent)	Perfluorotetradecanoic acid	50 ug/mI
LCPFTrDA 00005	02/12/21		ton Laboratories, Lot PF		(Purchased Read	gent)	Perfluorotridecanoic acid	50 ug/mI
LCPFUdA 00005	08/19/20	Welling	ton Laboratories, Lot PE	'UdA0815	(Purchased Read	gent)	Perfluoroundecanoic acid	50 ug/mI
LCPFC FULL-L3 00001	06/14/17	02/16/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU 00014	250 uL	d-N-EtFOSA-M	50 ng/mI
	00,11,1,	-2, 10, 1,		J		230 41	d-N-MeFOSA-M	50 ng/mI
							d3-NMeFOSAA	50 ng/mI
							d5-NEtFOSAA	50 ng/mI
							M2-6:2FTS	47.5 ng/mI
							M2-8:2FTS	47.9 ng/mI
					LCMPFCSU 00047		13C2-PFHxDA	50 ng/mI

Lab Na:	ame: Test	America	Sacramento	Job No.:	320-259	962-1		
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				Reagent	Parent Reage:	nt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					-		13C2-PFTeDA	50 ng/mI
							13C4-PFHpA	50 ng/mI
							13C5-PFPeA	50 ng/mI
							13C8 FOSA	50 ng/mI
							13C4 PFBA	50 ng/mI
							13C2 PFDA	50 ng/mI
							13C2 PFDoA	50 ng/mI
							13C2 PFHxA	50 ng/mI
							1802 PFHxS	47.3 ng/mI
							13C5 PFNA	50 ng/mI
							13C4 PFOA	50 ng/mI
							13C4 PFOS	47.8 ng/mI
							13C2 PFUnA	50 ng/mI
					LCPFC2SP_00025	250 uL	1H,1H,2H,2H-perfluorooctane	4.74 ng/mI
							sulfonate (6:2) Sodium	4.79 ng/mI
							1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	
							N-ethylperfluoro-1-octanesulfo namide	5 ng/mI
							N-ethyl perfluorooctane	5 ng/mI
							sulfonamidoacetic acid	
							MeFOSA	5 ng/mI
							N-methyl perfluorooctane	5 ng/mI
					7.0000000000000000000000000000000000000	050 7	sulfonamidoacetic acid	- / -
					LCPFCSP_00078	250 uL	Perfluorobutyric acid Perfluorobutanesulfonic acid	5 ng/mI 4.42 ng/mI
							(PFBS)	- , -
							Perfluorodecanoic acid	5 ng/mI
							Perfluorododecanoic acid	5 ng/mI
							Perfluorodecane Sulfonic acid	4.82 ng/mI
							Perfluoroheptanoic acid	5 ng/mI
							Perfluoroheptanesulfonic Acid	4.76 ng/mI
							Perfluorohexanoic acid	5 ng/mI
							Perfluorohexadecanoic acid	5 ng/mI
							Perfluorohexanesulfonic acid	4.55 ng/mI
							Perfluorononanoic acid	5 ng/mI
							Perfluorooctanoic acid (PFOA)	5 ng/mI
							Perfluorooctadecanoic acid	5 ng/mI
							Perfluorooctanesulfonic acid (PFOS)	4.64 ng/mI
							Perfluorooctane Sulfonamide	5 ng/mI
							Perfluoropentanoic acid	5 ng/mI
							Perfluorotetradecanoic acid	5 ng/mI
							Perfluorotridecanoic acid	5 ng/mI
							Perfluoroundecanoic acid	5 ng/mI
.LCMPFC2SU 00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 117	LCd-NEtFOSA-M 00004	1000 117	d-N-EtFOSA-M	1 ug/mI
. HOPH F CZBO_00014	00/13/1/	02/13/1/	LICCHIGHTOT, HOL TO4400	1 20000 ur	LTCG NECEOSH-M_00004	TOOU UL	A M TOLONA M	1 49/1111

ab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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SDG No.: ____

				Poagont	Parent Reager	nt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					LCd3-NMeFOSAA 00003	1000 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00003	1000 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS 00003	1000 uL	M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS 00003	1000 uL	M2-8:2FTS	0.958 ug/mL
LCd-NEtFOSA-M 00004	06/10/21	WE	LLINGTON, Lot dNEtFOSA06	16M	(Purchased Reag	ent)	d-N-EtFOSA-M	50 ug/mL
LCd-NMeFOSA-M 00003	06/10/21	WE	LLINGTON, Lot dNMeFOSA06	16M	(Purchased Reag	ent)	d-N-MeFOSA-M	50 ug/mI
LCd3-NMeFOSAA 00003	05/31/21	WEI	LINGTON, Lot d3NMeFOSAAC)516	(Purchased Reag	ent)	d3-NMeFOSAA	50 ug/mI
LCd5-NEtFOSAA 00003	08/02/21	WEI	LINGTON, Lot d5NEtFOSAAC	716	(Purchased Reag	ent)	d5-NEtFOSAA	50 ug/mI
LCM2-6:FTS 00003	01/08/21	W	ELLINGTON, Lot M262FTS01	16	(Purchased Reag	ent)	M2-6:2FTS	47.5 ug/mI
LCM2-8:2FTS 00003	01/08/21	W	ELLINGTON, Lot M282FTS01	16	(Purchased Reag	ent)	M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00007	1000 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00007		13C4-PFHpA	1 ug/mL
					LCM5PFPEA 00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA 00011		13C8 FOSA	1 ug/mL
					LCMPFBA 00008		13C4 PFBA	1 ug/mL
					LCMPFDA 00011		13C2 PFDA	1 ug/mL
					LCMPFDoA 00008		13C2 PFDoA	1 ug/mL
					LCMPFHxA 00012		13C2 PFHXA	1 ug/mL
					LCMPFHxS 00008		1802 PFHxS	0.946 ug/mL
					LCMPFNA 00008		13C5 PFNA	1 ug/mL
					LCMPFOA 00012		13C4 PFOA	1 ug/mL
					LCMPFOS 00017		13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00009		13C2 PFUnA	1 ug/mL
LCM2PFHxDA 00008	01/07/21	Wellingt	on Laboratories, Lot M2P	FH×DA1112	(Purchased Reag		13C2-PFHxDA	50 ug/mL
LCM2PFTeDA 00007	12/07/20		on Laboratories, Lot M2P		(Purchased Reag		13C2-PFTeDA	50 ug/mL
LCM4PFHPA 00007	05/27/21		on Laboratories, Lot M4E		(Purchased Reag		13C4-PFHpA	50 ug/mL
LCM5PFPEA 00008	05/22/20		on Laboratories, Lot M5E		(Purchased Reag		13C5-PFPeA	50 ug/mL
LCM8FOSA 00011	12/22/17		on Laboratories, Lot M8E		(Purchased Reag		13C8 FOSA	50 ug/mL
LCMPFBA 00008	05/24/21		ton Laboratories, Lot ME		(Purchased Reag		13C4 PFBA	50 ug/mL
LCMPFDA 00011	08/19/20		ton Laboratories, Lot ME		(Purchased Reag		13C2 PFDA	50 ug/mL
LCMPFDoA 00008	04/08/21		ton Laboratories, Lot MP		(Purchased Reag		13C2 PFDoA	50 ug/mL
LCMPFHxA 00012	04/08/21		ton Laboratories, Lot MP		(Purchased Reag		13C2 PFHxA	50 ug/mL
LCMPFHxS 00008	10/23/20		ton Laboratories, Lot MP		(Purchased Reag		1802 PFHxS	47.3 ug/mL
LCMPFNA 00008	04/13/19		ton Laboratories, Lot ME		(Purchased Reag		13C5 PFNA	50 ug/mL
LCMPFOA 00012	01/22/21		ton Laboratories, Lot ME		(Purchased Reag		13C4 PFOA	50 ug/mL
LCMPFOS 00017	08/03/21		gton Laboratories, Lot ME		(Purchased Reag		13C4 PFOS	47.8 ug/mL
LCMPFUdA 00009	02/12/21		ton Laboratories, Lot MP		(Purchased Reag		13C2 PFUnA	50 ug/mL
.LCPFC2SP 00025	06/28/17		Methanol, Lot 104453	10000 uL	1	2000 uL		0.0948 ug/mL
• = = = = = = = = = = = = = = = = = = =	00,20,1	01/30/1/	licenanoi, for for 100	I TOOOO GE		2000 41	1H,1H,2H,2H-perfluorooctane	0.0310 ag/1112
							sulfonate (6:2)	
							Sodium	0.0958 ug/mL
							1H,1H,2H,2H-perfluorooctane	
							sulfonate (8:2)	
							N-ethylperfluoro-1-octanesulfo	0.1 ug/mL
							namide	
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
				Page 44	of 683			03/27/2017

Lab Na:	ame: Test	America	Sacramento	Job No.:	320-259	962-1		
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				Reagent	Parent Reager	nt		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
							MeFOSA	0.1 ug/mL
							N-methyl perfluorooctane	0.1 ug/mL
							sulfonamidoacetic acid	
LCPFC2SP_00020	06/28/17	12/28/16	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium	0.474 ug/mL
							1H,1H,2H,2H-perfluorooctane	
						100 -	sulfonate (6:2)	0.470 / -
					LC8:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane	0.479 ug/mL
							sulfonate (8:2)	
					LCN-EtFOSA-M 00003	1 0 0 11T.	N-ethylperfluoro-1-octanesulfo	0.5 ug/mL
					TON DELOGIT H_00005		namide	
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane	0.5 ug/mL
							sulfonamidoacetic acid	
					LCN-MeFOSA-M_00002		MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
LC6:2FTS 00002	06/25/21	1	WELLINGTON, Lot 62FTS06	16	(Purchased Reag	ent)	Sodium	47.4 ug/mL
_							1H,1H,2H,2H-perfluorooctane	
							sulfonate (6:2)	
LC8:2FTS_00002	10/23/20	1	WELLINGTON, Lot 82FTS10	15	(Purchased Reag	ent)	Sodium	47.9 ug/mL
							1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	
LCN-EtFOSA-M 00003	05/24/21	WE	ELLINGTON, Lot NETFOSAO	516M	(Purchased Reag	ent)	N-ethylperfluoro-1-octanesulfo	50 ug/mL
			,		,	,	namide	
LCN-EtFOSAA_00002	01/20/21	WE	ELLINGTON, Lot NETFOSAA	0116	(Purchased Reag	ent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
LCN-MeFOSA-M 00002	05/24/21	WE	ELLINGTON, Lot NMeFOSAO	714M	(Purchased Reag	ent)	MeFOSA	50 ug/mL
LCN-MeFOSAA 00003	01/20/21		ELLINGTON, Lot NMeFOSAA		(Purchased Reag	ent)	N-methyl perfluorooctane	50 ug/mL
_					_		sulfonamidoacetic acid	
.LCPFCSP_00078	06/14/17	01/16/17	Methanol, Lot 090285	10000 uL	LCPFCSP_00075	2000 uL	Perfluorobutyric acid	0.1 ug/mL
							Perfluorobutanesulfonic acid	0.0884 ug/mL
							(PFBS)	
							Perfluorodecanoic acid	0.1 ug/mL
							Perfluorododecanoic acid	0.1 ug/mL
							Perfluorodecane Sulfonic acid	0.0964 ug/mL
							Perfluoroheptanoic acid	0.1 ug/mL 0.0952 ug/mL
							Perfluoroheptanesulfonic Acid Perfluorohexanoic acid	0.0952 ug/mL 0.1 ug/mL
							Perfluoronexanoic acid	0.1 ug/mL 0.1 ug/mL
							Perfluoronexadecanoic acid	0.1 ug/mL 0.091 ug/mL
							Perfluorononanoic acid	0.091 ug/mL
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL
							Perfluorooctadecanoic acid	0.1 ug/mL
							Perfluorooctanesulfonic acid	0.0928 ug/mL
							(PFOS)	3.0320 ag/mi
							Perfluorooctane Sulfonamide	0.1 ug/mL
							Perfluoropentanoic acid	0.1 ug/mL
							Perfluorotetradecanoic acid	0.1 ug/mL
							Perfluorotridecanoic acid	0.1 ug/mL
							Perfluoroundecanoic acid	0.1 ug/mL

Lab	Name:	TestAmerica	Sacrament	to Jo	ad N	10.:	320-	25962	-1	

Reagent ID		Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent			
	Exp Date				Reagent ID	Volume Added	Analyte	Concentration
LCPFCSP 00075	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFCSP 00074	5000 uL	Perfluorobutyric acid	0.5 ug/mL
_					_		Perfluorobutanesulfonic acid	0.442 ug/mL
							(PFBS)	
							Perfluorodecanoic acid	0.5 ug/mL
							Perfluorododecanoic acid	0.5 ug/mL
							Perfluorodecane Sulfonic acid	0.482 ug/mL
							Perfluoroheptanoic acid	0.5 ug/mL
							Perfluoroheptanesulfonic Acid	0.476 ug/mL
							Perfluorohexanoic acid Perfluorohexadecanoic acid	0.5 ug/mL
							Perfluoronexadecanoic acid Perfluoronexanesulfonic acid	0.5 ug/mL 0.455 ug/mL
		:					Perfluorononanoic acid	0.435 ug/mL
							Perfluorooctanoic acid (PFOA)	0.5 ug/mL
							Perfluorooctadecanoic acid	0.5 ug/mL
							Perfluorooctanesulfonic acid	0.464 ug/mL
							(PFOS)	0.101 ag/
							Perfluorooctane Sulfonamide	0.5 ug/mL
							Perfluoropentanoic acid	0.5 ug/mL
							Perfluorotetradecanoic acid	0.5 ug/mL
							Perfluorotridecanoic acid	0.5 ug/mL
							Perfluoroundecanoic acid	0.5 ug/mL
LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA_00005		Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005		Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00005		Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00005		Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00006		Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006		Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00009		Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005		Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00006		Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00002		Perfluorohexanesulfonic acid	0.91 ug/mL
I					LCPFNA_00006 LCPFOA_00006		Perfluorononanoic acid Perfluorooctanoic acid (PFOA)	1 ug/mL 1 ug/mL
I					LCPFODA 00006		Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br 00002		Perfluorooctanesulfonic acid	0.928 ug/mL
					LCTFOS DI_00002	200 ul	(PFOS)	0.520 dg/1111
					LCPFOSA 00008	200 บา	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00005		Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005		Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005		Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA 00005		Perfluoroundecanoic acid	1 ug/mL
LCPFBA 00005	05/27/21	Wellin	gton Laboratories, Lot E	FBA0516	(Purchased Rea	agent)	Perfluorobutyric acid	50 ug/mL
LCPFBS_00005	03/15/21		ton Laboratories, Lot L	PFBS0316	(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
LCPFDA 00005	07/02/20	Wellin	gton Laboratories, Lot E	FDA0615	(Purchased Rea	agent)	Perfluorodecanoic acid	50 ug/mL
LCPFDoA 00005	01/30/20	Welling	gton Laboratories, Lot P	FDoA0115	(Purchased Rea	agent)	Perfluorododecanoic acid	50 ug/mL
LCPFDS 00006	05/24/21		ton Laboratories, Lot L		(Purchased Rea	-	Perfluorodecane Sulfonic acid	48.2 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

				Reagent	Parent Reager	nt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
LCPFHpA 00006	01/22/21	Welling	ton Laboratories, L	ot PFHpA0116	(Purchased Read	ent)	Perfluoroheptanoic acid	50 ug/mL
LCPFHpS 00009	11/06/20	Welling	ton Laboratories, Lo	t LPFHpS1115	(Purchased Reag	ent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL
LCPFHxA 00005	12/22/20	Welling	ton Laboratories, L	ot PFHxA1215	(Purchased Read	ent)	Perfluorohexanoic acid	50 ug/mL
LCPFHxDA 00006	05/25/21	Welling	ton Laboratories, Lo	t PFHxDA0516	(Purchased Reag	ent)	Perfluorohexadecanoic acid	50 ug/mL
LCPFHxS-br 00002	07/03/20	Wellingt	on Laboratories, Lot	brPFHxSK0615	(Purchased Reag	ent)	Perfluorohexanesulfonic acid	45.5 ug/mL
LCPFNA 00006	10/23/20	Wellin	gton Laboratories, I	ot PFNA1015	(Purchased Reag	ent)	Perfluorononanoic acid	50 ug/mL
LCPFOA 00006	11/06/20	Wellin	gton Laboratories, I	ot PFOA1115	(Purchased Reag	ent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
LCPFODA 00006	04/29/21	Welling	ton Laboratories, L	ot PFODA0416	(Purchased Reag	ent)	Perfluorooctadecanoic acid	50 ug/mL
LCPFOS-br_00002	10/14/20	Wellingt	on Laboratories, Lo	t brPFOSK1015	(Purchased Reag		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
LCPFOSA 00008	09/02/17	Welling	ton Laboratories, L	ot FOSA0815I	(Purchased Reag	ent)	Perfluorooctane Sulfonamide	50 ug/mL
LCPFPeA 00005	01/30/20	Welling	ton Laboratories, L	ot PFPeA0115	(Purchased Reag		Perfluoropentanoic acid	50 ug/mL
LCPFTeDA 00005	12/09/20	Welling	ton Laboratories, Lo	t PFTeDA1215	(Purchased Reag	ent)	Perfluorotetradecanoic acid	50 ug/mL
LCPFTrDA_00005	02/12/21	Welling	ton Laboratories, Lo	t PFTrDA0216	(Purchased Reag	ent)	Perfluorotridecanoic acid	50 ug/mL
LCPFUdA_00005	08/19/20	Welling	ton Laboratories, L	ot PFUdA0815	(Purchased Reag	ent)	Perfluoroundecanoic acid	50 ug/mL
LCPFC_FULL-L4_00001	06/14/17	02/16/17	MeOH/H2O, Lot 09028	5 5 mL	LCMPFC2SU 00014	250 uL	d-N-EtFOSA-M	50 ng/mL
			,		_		d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU 00047	250 uL	13C2-PFHxDA	50 ng/mL
					_		13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							1802 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP_00026	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	18.96 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane	19.16 ng/mL
							sulfonate (8:2) N-ethylperfluoro-1-octanesulfo namide	20 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	20 ng/mL
							MeFOSA	20 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	20 ng/mL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Decemb	Parent Reagent			
	Exp	Prep	Dilutant	Reagent Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
					LCPFCSP_00074	100 uL	Perfluorobutyric acid	20 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	17.68 ng/mL
							Perfluorodecanoic acid	20 ng/mL
							Perfluorododecanoic acid	20 ng/mL
							Perfluorodecane Sulfonic acid	19.28 ng/mL
							Perfluoroheptanoic acid	20 ng/mL
							Perfluoroheptanesulfonic Acid	19.04 ng/mL
							Perfluorohexanoic acid	20 ng/mL
							Perfluorohexadecanoic acid	20 ng/mL
							Perfluorohexanesulfonic acid	18.2 ng/mL
							Perfluorononanoic acid	20 ng/mL
							Perfluorooctanoic acid (PFOA)	20 ng/mL
							Perfluorooctadecanoic acid Perfluorooctanesulfonic acid	20 ng/mL
							(PFOS)	18.56 ng/mL
							Perfluorooctane Sulfonamide	20 ng/mL
							Perfluoropentanoic acid	20 ng/mL
							Perfluorotetradecanoic acid	20 ng/mL
							Perfluorotridecanoic acid	20 ng/mL
TOMBECOCII 00014	00/12/17	00/10/17	Methanol, Lot 104453	E0000	LCd-NEtFOSA-M 00004	1000	Perfluoroundecanoic acid d-N-EtFOSA-M	20 ng/mL
.LCMPFC2SU_00014	08/13/1/	02/13/17	Methanol, Lot 104453	30000 uL	LCd-NMeFOSA-M_00004		d-N-E-CFOSA-M d-N-Me-FOSA-M	1 ug/mL 1 ug/mL
					LCd3-NMeFOSAA 00003		d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00003		d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS 00003		M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS 00003		M2-8:2FTS	0.958 ug/mL
LCd-NEtFOSA-M 00004	06/10/21	WE	LLINGTON, Lot dNEtFOSA06	1.6M	(Purchased Reage		d-N-EtFOSA-M	50 ug/mL
LCd-NMeFOSA-M 00003	06/10/21		LLINGTON, Lot dNMeFOSA06		(Purchased Reage		d-N-MeFOSA-M	50 ug/mL
LCd3-NMeFOSAA 00003	05/31/21		LINGTON, Lot d3NMeFOSAA0		(Purchased Reage		d3-NMeFOSAA	50 ug/mL
LCd5-NEtFOSAA 00003	08/02/21	WEI	LINGTON, Lot d5NEtFOSAA0	716	(Purchased Reage	ent)	d5-NEtFOSAA	50 ug/mL
LCM2-6:FTS_00003	01/08/21	W	ELLINGTON, Lot M262FTS01:	16	(Purchased Reage		M2-6:2FTS	47.5 ug/mL
LCM2-8:2FTS_00003	01/08/21		ELLINGTON, Lot M282FTS01		(Purchased Reage		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00007		13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00007	1000 uL	13C4-PFHpA	1 ug/mL
					LCM5PFPEA_00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA_00011		13C8 FOSA	1 ug/mL
					LCMPFBA_00008		13C4 PFBA	1 ug/mL
					LCMPFDA_00011		13C2 PFDA	1 ug/mL
					LCMPFDoA_00008		13C2 PFDoA	1 ug/mL
					LCMPFHxA_00012		13C2 PFHxA	1 ug/mL
					LCMPFHxS_00008		1802 PFHxS	0.946 ug/mL
					LCMPFNA_00008		13C5 PFNA	1 ug/mL
					LCMPFOA_00012 LCMPFOS 00017		13C4 PFOA 13C4 PFOS	1 ug/mL 0.956 ug/mL
					LCMPFOS_00017		13C4 PFOS 13C2 PFUnA	1 ug/mL
					HOMEFOUR_00009	1000 uL	TUCZ EFUIIA	I ug/IIIL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
LCM2PFHxDA 00008	01/07/21	Wellingt	 on Laboratories, Lot N	M2DFH→D∆1112	(Purchased Read	(ent)	13C2-PFHxDA	50 ug/mL
LCM2PFTeDA 00007	12/07/20		on Laboratories, Lot N		(Purchased Read		13C2-PFTeDA	50 ug/mL
LCM2FF1eDA_00007	05/27/21		on Laboratories, Lot i		(Purchased Read		13C4-PFHpA	50 ug/mL
LCM5PFPEA 00007	05/22/20		on Laboratories, Lot		(Purchased Reag	(ent)	13C5-PFPeA	50 ug/mi
LCM8FOSA 00011	12/22/17		on Laboratories, Lot		(Purchased Read		13C8 FOSA	50 ug/mL
LCMPFBA 00008	05/24/21		ston Laboratories, Lot		(Purchased Read		13C4 PFBA	50 ug/mL
LCMPFDA 00011	08/19/20	Welling	gton Laboratories, Lot gton Laboratories, Lot	MPFBAUSIO	(Purchased Read	jent)	13C4 PFBA	
LCMPFDOA 00008					(Purchased Read		13C2 PFDA	50 ug/mI
	04/08/21		ton Laboratories, Lot		`	,		50 ug/mI
LCMPFHxA_00012	04/08/21		ton Laboratories, Lot		(Purchased Read		13C2 PFHxA	50 ug/mL
LCMPFHxS_00008	10/23/20		ton Laboratories, Lot		(Purchased Read		1802 PFHxS	47.3 ug/mL
LCMPFNA_00008	04/13/19		ton Laboratories, Lot		(Purchased Read		13C5 PFNA	50 ug/mL
LCMPFOA_00012	01/22/21		ton Laboratories, Lot		(Purchased Read	,	13C4 PFOA	50 ug/mL
LCMPFOS_00017	08/03/21		ton Laboratories, Lot		(Purchased Read		13C4 PFOS	47.8 ug/mL
LCMPFUdA_00009	02/12/21	Welling	ton Laboratories, Lot	MPFUdA0216	(Purchased Read		13C2 PFUnA	50 ug/mL
.LCPFC2SP_00026	07/30/17	01/30/17	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL
					LCN-EtFOSA-M_00003		N-ethylperfluoro-1-octanesulfo namide	_
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M 00002		MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS((Purchased Reag		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
LC8:2FTS_00002	10/23/20	,	WELLINGTON, Lot 82FTS	1015	(Purchased Read	gent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	47.9 ug/mL
LCN-EtFOSA-M_00003	05/24/21 WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide			
LCN-EtFOSAA_00002	01/20/21	WE	ELLINGTON, Lot NETFOSA	A0116	(Purchased Reag	gent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
LCN-MeFOSA-M_00002	05/24/21	WE	LLINGTON, Lot NMeFOSA	.0714M	(Purchased Read	rent)	MeFOSA	50 ug/mL
LCN-MeFOSAA_00003	01/20/21	WE	LLINGTON, Lot NMeFOSA	A0116	(Purchased Read	gent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCSP_00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uL	LCPFBA_00005		Perfluorobutyric acid	1 ug/mL
					LCPFBS_00005		Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00005		Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00005		Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00006		Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005		Perfluorohexanoic acid	1 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

					Parent Reag	ent		
				Reagent	rarene neag			
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
					LCPFHxDA 00006	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00006		Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid	0.928 ug/mL
							(PFOS)	
					LCPFOSA_00008		Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00005		Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005		Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA_00005		Perfluorotridecanoic acid	1 ug/mL
LCPFBA 00005	05 /07 /01	57.77.	Land Tabanahan'an Taba	ED 7 O E 1 C	LCPFUdA_00005		Perfluoroundecanoic acid	1 ug/mL
LCPFBS 00005	05/27/21		gton Laboratories, Lot P ton Laboratories, Lot LE		(Purchased Rea (Purchased Rea		Perfluorobutyric acid Perfluorobutanesulfonic acid	50 ug/mL 44.2 ug/mL
_		_	,				(PFBS)	
LCPFDA_00005	07/02/20		gton Laboratories, Lot P		(Purchased Rea		Perfluorodecanoic acid	50 ug/mL
LCPFDoA_00005	01/30/20		ton Laboratories, Lot PI		(Purchased Rea		Perfluorododecanoic acid	50 ug/mL
LCPFDS_00006	05/24/21		ton Laboratories, Lot LE		(Purchased Rea		Perfluorodecane Sulfonic acid	48.2 ug/mL
LCPFHpA_00006	01/22/21		ston Laboratories, Lot PE		(Purchased Rea		Perfluoroheptanoic acid	50 ug/mL
LCPFHpS_00009	11/06/20		ton Laboratories, Lot LP		(Purchased Rea		Perfluoroheptanesulfonic Acid Perfluorohexanoic acid	47.6 ug/mL 50 ug/mL
LCPFHXA_00005	05/25/21		ton Laboratories, Lot PF ton Laboratories, Lot PF		(Purchased Rea (Purchased Rea		Perfluoronexanoic acid	50 ug/mL
LCPFHxS-br 00002			on Laboratories, Lot brP		(Purchased Rea		Perfluorohexanesulfonic acid	45.5 ug/mL
LCPFNA 00006	10/23/20		gton Laboratories, Lot P		(Purchased Rea		Perfluorononanoic acid	50 ug/mL
LCPFOA 00006	11/06/20		gton Laboratories, Lot P		(Purchased Rea		Perfluorooctanoic acid (PFOA)	50 ug/mL
LCPFODA 00006	04/29/21		gton Laboratories, Lot PE		(Purchased Rea		Perfluorooctadecanoic acid	50 ug/mL
LCPFOS-br 00002	10/14/20	Wellingt	on Laboratories, Lot br	PFOSK1015	(Purchased Rea		Perfluorooctanesulfonic acid	46.4 ug/mL
	,,				(2 3.2 3.3 3.3 3.3	-9	(PFOS)	
LCPFOSA_00008	09/02/17		ston Laboratories, Lot FC		(Purchased Rea	igent)	Perfluorooctane Sulfonamide	50 ug/mL
LCPFPeA_00005	01/30/20	Welling	ston Laboratories, Lot PE	PeA0115	(Purchased Rea	igent)	Perfluoropentanoic acid	50 ug/mL
LCPFTeDA_00005	12/09/20		ton Laboratories, Lot PF		(Purchased Rea	-	Perfluorotetradecanoic acid	50 ug/mL
LCPFTrDA_00005	02/12/21		ton Laboratories, Lot PF		(Purchased Rea		Perfluorotridecanoic acid	50 ug/mL
LCPFUdA_00005	08/19/20	_	ton Laboratories, Lot PI	FUdA0815	(Purchased Rea	igent)	Perfluoroundecanoic acid	50 ug/mL
LCPFC FULL-L5 00001	06/14/17	02/16/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU 00014	250 uL	d-N-EtFOSA-M	50 ng/mL
					_		d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU_00047	250 uL	13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA 13C2 PFDoA	50 ng/mL
							13C2 PFDOA 13C2 PFHXA	50 ng/mL 50 ng/mL
			I	1	I	1	TOCS REUXA	JU IIG/ML

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reagen	t		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
							1802 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP 00026	500 uL		47.4 ng/mL
						300 41	1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 lig/liii
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	47.9 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	
							N-ethyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
							MeFOSA	50 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
					LCPFCSP 00074	250 u.T.	Perfluorobutyric acid	50 ng/mL
					Ecresi_00074	230 41	Perfluorobutanesulfonic acid (PFBS)	44.2 ng/mL
							Perfluorodecanoic acid	50 ng/mL
							Perfluorododecanoic acid	50 ng/mL
							Perfluorodecane Sulfonic acid	48.2 ng/mL
							Perfluoroheptanoic acid	50 ng/mL
							Perfluoroheptanesulfonic Acid	47.6 ng/mL
							Perfluorohexanoic acid	50 ng/mL
							Perfluorohexadecanoic acid	50 ng/mL
							Perfluorohexanesulfonic acid	45.5 ng/mL
							Perfluorononanoic acid	50 ng/mL
							Perfluorooctanoic acid (PFOA)	50 ng/mL
							Perfluorooctadecanoic acid	50 ng/mL
							Perfluorooctanesulfonic acid	46.4 ng/mL
							(PFOS)	
							Perfluorooctane Sulfonamide	50 ng/mL
							Perfluoropentanoic acid	50 ng/mL
							Perfluorotetradecanoic acid	50 ng/mL
							Perfluorotridecanoic acid	50 ng/mL
							Perfluoroundecanoic acid	50 ng/mL
.LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M_00004		d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00003		d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00003		d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00003		d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS_00003		M2-6:2FTS	0.95 ug/mL
				1	LCM2-8:2FTS_00003		M2-8:2FTS	0.958 ug/mL
LCd-NEtFOSA-M_00004	06/10/21		LLINGTON, Lot dNEtFOSA06		(Purchased Reage		d-N-EtFOSA-M	50 ug/mL
LCd-NMeFOSA-M_00003	06/10/21		LLINGTON, Lot dNMeFOSA06		(Purchased Reage		d-N-MeFOSA-M	50 ug/mL
LCd3-NMeFOSAA_00003	05/31/21		LINGTON, Lot d3NMeFOSAA((Purchased Reage		d3-NMeFOSAA	50 ug/mL
LCd5-NEtFOSAA 00003	08/02/21	WEI	LINGTON, Lot d5NEtFOSAA(716	(Purchased Reage	ent)	d5-NEtFOSAA	50 ug/mL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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					Parent Reage	ent		
	_	_		Reagent				
	Exp	Prep	Dilutant	Final		Volume	_	
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
LCM2-6:FTS_00003	01/08/21		ELLINGTON, Lot M262FTS01		(Purchased Read		M2-6:2FTS	47.5 ug/mL
LCM2-8:2FTS_00003	01/08/21		ELLINGTON, Lot M282FTS01		(Purchased Read		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008		13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00007		13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00007		13C4-PFHpA	1 ug/mL
					LCM5PFPEA_00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA 00011	1000 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00008		13C4 PFBA	1 ug/mL
					LCMPFDA 00011	1000 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00008	1000 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00012	1000 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00008	1000 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA 00008		13C5 PFNA	1 ug/mL
					LCMPFOA 00012		13C4 PFOA	1 ug/mL
					LCMPFOS 00017		13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00009		13C2 PFUnA	1 ug/mL
LCM2PFHxDA 00008	01/07/21	Wellingt	on Laboratories, Lot M2F	PFH×DA1112	(Purchased Read		13C2-PFHxDA	50 ug/mL
LCM2PFTeDA 00007			on Laboratories, Lot M2F		(Purchased Read		13C2-PFTeDA	50 ug/mL
LCM4PFHPA 00007	05/27/21		con Laboratories, Lot M4		(Purchased Read		13C4-PFHpA	50 ug/mL
LCM5PFPEA 00008	05/22/20		ton Laboratories, Lot M5		(Purchased Read		13C5-PFPeA	50 ug/mL
LCM8FOSA 00011	12/22/17	Wellingt	ton Laboratories, Lot M8	FOSA1215T	(Purchased Read		13C8 FOSA	50 ug/mL
LCMPFBA 00008	05/24/21		gton Laboratories, Lot M		(Purchased Read		13C4 PFBA	50 ug/mL
LCMPFDA 00011	08/19/20		gton Laboratories, Lot M		(Purchased Read		13C2 PFDA	50 ug/mL
LCMPFDoA 00008	04/08/21		ton Laboratories, Lot M		(Purchased Read		13C2 PFDoA	50 ug/mL
LCMPFHxA 00012	04/08/21	Welling	ton Laboratories, Lot MI	PFH×A0416	(Purchased Read		13C2 PFHxA	50 ug/mL
LCMPFHxS 00008	10/23/20		ton Laboratories, Lot MI		(Purchased Read		1802 PFHxS	47.3 ug/mL
LCMPFNA 00008	04/13/19		ton Laboratories, Lot M		(Purchased Read		13C5 PFNA	50 ug/mL
LCMPFOA 00012	01/22/21		gton Laboratories, Lot M		(Purchased Read		13C4 PFOA	50 ug/mL
LCMPFOS 00017	08/03/21		gton Laboratories, Lot M		(Purchased Read		13C4 PFOS	47.8 ug/mL
LCMPFUdA 00009	02/12/21		ton Laboratories, Lot M		(Purchased Read		13C2 PFUnA	50 ug/mL
.LCPFC2SP 00026			Methanol, Lot 104453		LC6:2FTS 00002	100 uL		0.474 ug/mL
. Herrezbi_00020	07/30/17	01/30/1/	nechanor, noc 104405	10000 41	100.2115_00002	100 41	1H,1H,2H,2H-perfluorooctane	0.4/4 dg/mb
							sulfonate (6:2)	
					LC8:2FTS 00002	100 mT.	Sodium	0.479 ug/mL
							1H,1H,2H,2H-perfluorooctane	
							sulfonate (8:2)	
					LCN-EtFOSA-M_00003	100 uL	N-ethylperfluoro-1-octanesulfo namide	0.5 ug/mL
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M 00002	100 mT.	MeFOSA	0.5 ug/mL
					LCN-MeFOSAA 00003	100 ull	N-methyl perfluorooctane	0.5 ug/mL
						100 41	sulfonamidoacetic acid	0.0 49/1111
LC6:2FTS 00002	06/25/21		WELLINGTON, Lot 62FTS061	16	(Purchased Read	gent)	Sodium	47.4 ug/mL
<u> </u>			,		,	- '	1H,1H,2H,2H-perfluorooctane	
							sulfonate (6:2)	

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reag	ent		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
LC8:2FTS 00002	10/23/20	Ţ	WELLINGTON, Lot 82FTS101	5	(Purchased Rea	agent)	Sodium	47.9 ug/mL
_							1H,1H,2H,2H-perfluorooctane	
							sulfonate (8:2)	
LCN-EtFOSA-M_00003	05/24/21	WE	LLINGTON, Lot NEtFOSA051	L 6M	(Purchased Rea	igent)	N-ethylperfluoro-1-octanesulfo	50 ug/mL
	01/00/01				(5)		namide	50 / 5
LCN-EtFOSAA_00002	01/20/21	WE	LLINGTON, Lot NEtFOSAA01	116	(Purchased Rea	igent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
LCN-MeFOSA-M 00002	05/24/21	WE	LLINGTON, Lot NMeFOSA071	I AM	(Purchased Rea	vaon+)	MeFOSA	50 ug/mL
LCN-MeFOSAA 00003	01/20/21		LLINGTON, Lot NMerOSA07		(Purchased Rea		N-methyl perfluorooctane	50 ug/mL
LCN-Merosaa_00005	01/20/21	WE	LLINGION, LOC NMEROSAAU	110	(Fulchased Rea	igenc)	sulfonamidoacetic acid	JU ug/IIIL
.LCPFCSP 00074	06/14/17	12/14/16	Methanol, Lot 090285	10000 uT	LCPFBA 00005	2.00 11T	Perfluorobutyric acid	1 ug/mL
	00, = 1, = 1	,,	,		LCPFBS 00005		Perfluorobutanesulfonic acid	0.884 ug/mL
							(PFBS)	
					LCPFDA 00005	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00005	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00006	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00009	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00006		Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00002	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00006	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00006	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00006		Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00002	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00008	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00005	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005		Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA 00005	200 uL	Perfluoroundecanoic acid	1 ug/mL
LCPFBA 00005	05/27/21	Welling	gton Laboratories, Lot P	FBA0516	(Purchased Rea	agent)	Perfluorobutyric acid	50 ug/mL
LCPFBS_00005	03/15/21	Welling	ton Laboratories, Lot L	PFBS0316	(Purchased Rea	igent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
LCPFDA 00005	07/02/20	Welling	gton Laboratories, Lot P	FDA0615	(Purchased Rea	agent)	Perfluorodecanoic acid	50 ug/mL
LCPFDoA 00005	01/30/20		ton Laboratories, Lot PE		(Purchased Rea		Perfluorododecanoic acid	50 ug/mL
LCPFDS 00006	05/24/21	Welling	ton Laboratories, Lot LE	PFDS0516	(Purchased Rea	agent)	Perfluorodecane Sulfonic acid	48.2 ug/mL
LCPFHpA 00006	01/22/21	Welling	ton Laboratories, Lot PE	THpA0116	(Purchased Rea		Perfluoroheptanoic acid	50 ug/mL
LCPFHpS 00009	11/06/20	Welling	ton Laboratories, Lot LP	FHpS1115	(Purchased Rea	agent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL
LCPFHxA 00005	12/22/20	Welling	ton Laboratories, Lot PE	HxA1215	(Purchased Rea	agent)	Perfluorohexanoic acid	50 ug/mL
LCPFHxDA 00006	05/25/21		ton Laboratories, Lot PF		(Purchased Rea		Perfluorohexadecanoic acid	50 ug/mL
LCPFHxS-br 00002	07/03/20	Wellingto	on Laboratories, Lot brP	FHxSK0615	(Purchased Rea	agent)	Perfluorohexanesulfonic acid	45.5 ug/mL
LCPFNA 00006	10/23/20	Wellin	gton Laboratories, Lot P	FNA1015	(Purchased Rea		Perfluorononanoic acid	50 ug/mL
LCPFOA_00006	11/06/20	Wellin	gton Laboratories, Lot P	FOA1115	(Purchased Rea	igent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
LCPFODA 00006	04/29/21	Welling	ton Laboratories, Lot PE	FODA0416	(Purchased Rea	agent)	Perfluorooctadecanoic acid	50 ug/mL
LCPFOS-br_00002	10/14/20	Wellingt	on Laboratories, Lot br	PFOSK1015	(Purchased Rea	igent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
LCPFOSA 00008	09/02/17	Welling	ton Laboratories, Lot FC	DSA0815I	(Purchased Rea	igent)	Perfluorooctane Sulfonamide	50 ug/mL
LCPFPeA 00005	01/30/20		ton Laboratories, Lot PE		(Purchased Rea		Perfluoropentanoic acid	50 ug/mL

Lab Name:	TestAmerica Sa	cramento	Job No.: 3	20-25962-1
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Reagent ID LCPFTeDA 00005 LCPFTrDA 00005 LCPFUdA 00005 LCPFC_FULL-L6_00002	Exp Date 12/09/20 02/12/21 08/19/20 06/14/17	Welling Welling	Dilutant Used ton Laboratories, Lot ton Laboratories, Lot gton Laboratories, Lot MeOH/H2O, Lot 090285	PFTrDA0216 PFUdA0815	Reagent ID (Purchased Rea (Purchased Rea (Purchased Rea	gent)	Analyte Perfluorotetradecanoic acid Perfluorotridecanoic acid Perfluoroundecanoic acid	Concentration 50 ug/ml
LCPFTrDA 00005 LCPFUdA 00005	02/12/21 08/19/20	Welling Welling	ton Laboratories, Lot ton Laboratories, Lot	PFTrDA0216 PFUdA0815	(Purchased Rea (Purchased Rea	gent)	Perfluorotridecanoic acid	
LCPFTrDA_00005 LCPFUdA_00005	02/12/21 08/19/20	Welling Welling	ton Laboratories, Lot ton Laboratories, Lot	PFTrDA0216 PFUdA0815	(Purchased Rea (Purchased Rea	gent)	Perfluorotridecanoic acid	50 ug/mI
_	08/19/20	Welling	ston Laboratories, Lot	PFUdA0815		gent)	Perfluoroundecanoic acid	
LCPFC_FULL-L6_00002	06/14/17	02/24/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU 00014		Telliuoloundecanoic acid	50 ug/mI
20110_1022 20_00002	0 0, 2 1, 2 1	02,21,1.	200 030200			250 u.T.	d-N-EtFOSA-M	50 ng/m
					_		d-N-MeFOSA-M	50 ng/m
							d3-NMeFOSAA	50 ng/m
							d5-NEtFOSAA	50 ng/m
							M2-6:2FTS	47.5 ng/m
							M2-8:2FTS	47.9 ng/m
					LCMPFCSU 00047	250 uT	13C2-PFHxDA	50 ng/m
							13C2-PFTeDA	50 ng/m
							13C4-PFHpA	50 ng/m
							13C5-PFPeA	50 ng/m
							13C8 FOSA	50 ng/m
							13C4 PFBA	50 ng/m
							13C2 PFDA	50 ng/m
							13C2 PFDoA	50 ng/m
							13C2 PFHxA	50 ng/m
							1802 PFHxS	47.3 ng/m
							13C5 PFNA	50 ng/m
							13C4 PFOA	50 ng/m
							13C4 PFOS	47.8 ng/m
							13C2 PFUnA	50 ng/m
					LCPFC2SP 00027	1000 uL		189.6 ng/m
					_		1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	191.6 ng/m
							N-ethylperfluoro-1-octanesulfo namide	
							N-ethyl perfluorooctane sulfonamidoacetic acid	200 ng/m
							MeFOSA	200 ng/m
							N-methyl perfluorooctane sulfonamidoacetic acid	200 ng/m
					LCPFCSP_00080	2000 uL	Perfluorobutyric acid	200 ng/m
							Perfluorobutanesulfonic acid (PFBS)	176.8 ng/m
							Perfluorodecanoic acid	200 ng/m
							Perfluorododecanoic acid	200 ng/m
							Perfluorodecane Sulfonic acid	192.8 ng/m
							Perfluoroheptanoic acid	200 ng/m
							Perfluoroheptanesulfonic Acid	190.4 ng/m
							Perfluorohexanoic acid	200 ng/m
							Perfluorohexadecanoic acid	200 ng/m
						1	Perfluorohexanesulfonic acid	182 ng/m

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reager	ıt		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	- Analyte	Concentration
							Perfluorooctanoic acid (PFOA)	200 ng/mL
							Perfluorooctadecanoic acid	200 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	185.6 ng/mL
							Perfluorooctane Sulfonamide	200 ng/mL
							Perfluoropentanoic acid	200 ng/mL
							Perfluorotetradecanoic acid	200 ng/mL
							Perfluorotridecanoic acid	200 ng/mL
							Perfluoroundecanoic acid	200 ng/mL
.LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M_00004		d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00003		d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00003		d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00003		d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS_00003		M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS_00003		M2-8:2FTS	0.958 ug/mL
LCd-NEtFOSA-M_00004	06/10/21		LLINGTON, Lot dNEtFOSA06		(Purchased Reag		d-N-EtFOSA-M	50 ug/mL
LCd-NMeFOSA-M_00003	06/10/21		LLINGTON, Lot dNMeFOSA06		(Purchased Reag		d-N-MeFOSA-M	50 ug/mL
LCd3-NMeFOSAA_00003	05/31/21		LLINGTON, Lot d3NMeFOSAA((Purchased Reag		d3-NMeFOSAA	50 ug/mL
LCd5-NEtFOSAA 00003	08/02/21		LINGTON, Lot d5NEtFOSAA((Purchased Reag		d5-NEtFOSAA	50 ug/mL
LCM2-6:FTS_00003	01/08/21		ELLINGTON, Lot M262FTS01		(Purchased Reag		M2-6:2FTS	47.5 ug/mL
LCM2-8:2FTS_00003	01/08/21		ELLINGTON, Lot M282FTS01		(Purchased Reag		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008		13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00007		13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00007	1000 uL	13C4-PFHpA	1 ug/mL
					LCM5PFPEA_00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA_00011		13C8 FOSA	1 ug/mL
					LCMPFBA_00008		13C4 PFBA	1 ug/mL
					LCMPFDA_00011		13C2 PFDA	1 ug/mL
					LCMPFDoA_00008		13C2 PFDoA	1 ug/mL
					LCMPFHxA_00012		13C2 PFHxA	1 ug/mL
					LCMPFHxS_00008		1802 PFHxS	0.946 ug/mL
					LCMPFNA_00008		13C5 PFNA	1 ug/mL
					LCMPFOA_00012		13C4 PFOA	1 ug/mL
					LCMPFOS_00017		13C4 PFOS	0.956 ug/mL
					LCMPFUdA_00009		13C2 PFUnA	1 ug/mL
LCM2PFHxDA_00008			on Laboratories, Lot M2P		(Purchased Reag		13C2-PFHxDA	50 ug/mL
LCM2PFTeDA_00007	12/07/20		on Laboratories, Lot M2P		(Purchased Reag		13C2-PFTeDA	50 ug/mL
LCM4PFHPA_00007	05/27/21		on Laboratories, Lot M41		(Purchased Reag		13C4-PFHpA	50 ug/mL
LCM5PFPEA_00008	05/22/20		on Laboratories, Lot M51		(Purchased Reag		13C5-PFPeA	50 ug/mL
LCM8FOSA_00011	12/22/17		on Laboratories, Lot M81		(Purchased Reag		13C8 FOSA	50 ug/mL
LCMPFBA_00008	05/24/21		gton Laboratories, Lot MI		(Purchased Reag		13C4 PFBA	50 ug/mL
LCMPFDA_00011	08/19/20		gton Laboratories, Lot MI		(Purchased Reag		13C2 PFDA	50 ug/mL
LCMPFDoA_00008	04/08/21		ton Laboratories, Lot MP		(Purchased Reag		13C2 PFDoA	50 ug/mL
LCMPFHxA_00012	04/08/21		ton Laboratories, Lot MP		(Purchased Reag		13C2 PFHxA	50 ug/mL
LCMPFHxS_00008	10/23/20		ton Laboratories, Lot MP		(Purchased Reag		1802 PFHxS	47.3 ug/mL
LCMPFNA_00008	04/13/19		gton Laboratories, Lot ME		(Purchased Reag		13C5 PFNA	50 ug/mL
LCMPFOA 00012	01/22/21	Welling	gton Laboratories, Lot MI	PFOA0116	(Purchased Reag	ent)	13C4 PFOA	50 ug/mL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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					Reagent	Parent Reager	nt		
Reagent ID	Exp Date	Prep Date		ıtant sed	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
LCMPFOS 00017	08/03/21	Welling	ton Laborato	ries, Lot MI	PFOS0816	(Purchased Reag	ent)	13C4 PFOS	47.8 ug/mL
LCMPFUdA 00009	02/12/21		ton Laborato			(Purchased Reag		13C2 PFUnA	50 ug/mL
.LCPFC2SP_00027		02/24/17	Methanol, L	ot 104453	10000 uL			Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
						LC8:2FTS_00002		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.958 ug/mL
						LCN-EtFOSA-M_00003		N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
						LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
						LCN-MeFOSA-M_00002		MeFOSA	1 ug/mL
						LCN-MeFOSAA_00003		N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
LC6:2FTS_00002	06/25/21	V	WELLINGTON,	Lot 62FTS061	6	(Purchased Reag	ent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
LC8:2FTS_00002	10/23/20	Ū	WELLINGTON,	Lot 82FTS101	5	(Purchased Reag	ent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	47.9 ug/mL
LCN-EtFOSA-M_00003	05/24/21		LLINGTON, Lo	t NEtFOSA051	L 6M	(Purchased Reag	ent)	N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
LCN-EtFOSAA_00002	01/20/21	WE	LLINGTON, Lo	t NEtFOSAA01	116	(Purchased Reag	ent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
LCN-MeFOSA-M 00002	05/24/21	WE	LLINGTON, Lo	t NMeFOSA071	L4M	(Purchased Reag	ent)	MeFOSA	50 ug/mL
LCN-MeFOSAA_00003	01/20/21		LLINGTON, Lo			(Purchased Reag	•	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCSP_00080	08/01/17	02/01/17	Methanol, Lo	ot 090285	10000 uL	LCPFBA_00005 LCPFBS_00005	100 uL	Perfluorobutyric acid Perfluorobutanesulfonic acid (PFBS)	0.5 ug/mL 0.442 ug/mL
						LCPFDA_00005		Perfluorodecanoic acid	0.5 ug/mL
						LCPFDoA_00005		Perfluorododecanoic acid	0.5 ug/mL
						LCPFDS_00006	100 uL	Perfluorodecane Sulfonic acid	0.482 ug/mL
						LCPFHpA_00006	100 uL	Perfluoroheptanoic acid	0.5 ug/mL
						LCPFHpS_00009		Perfluoroheptanesulfonic Acid	0.476 ug/mL
						LCPFHxA_00005		Perfluorohexanoic acid	0.5 ug/mL
						LCPFHxDA_00006		Perfluorohexadecanoic acid Perfluorohexanesulfonic acid	0.5 ug/mL
						LCPFHxS-br_00002 LCPFNA 00006	100 uL	Perfluoronexanesulionic acid Perfluorononanoic acid	0.455 ug/mL 0.5 ug/mL
						LCPFNA_00006		Perfluorononanoic acid (PFOA)	0.5 ug/mL 0.5 ug/mL
						LCPFODA 00006		Perfluorooctadecanoic acid	0.5 ug/mL
						LCPFOS-br_00002		Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
						LCPFOSA 00008	100 uL	Perfluorooctane Sulfonamide	0.5 ug/mL
						LCPFPeA 00005		Perfluoropentanoic acid	0.5 ug/mL
						LCPFTeDA 00005	100 uL	Perfluorotetradecanoic acid	0.5 ug/mL
						LCPFTrDA_00005		Perfluorotridecanoic acid	0.5 ug/mL
						LCPFUdA 00005	100 uL	Perfluoroundecanoic acid	0.5 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

				Reagent	Parent Reager	nt		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
LCPFBA_00005	05/27/21	Welling	gton Laboratories, Lot	PFBA0516	(Purchased Reag		Perfluorobutyric acid	50 ug/mL
LCPFBS_00005	03/15/21	_	ton Laboratories, Lot		(Purchased Reag	ent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
LCPFDA_00005	07/02/20		gton Laboratories, Lot		(Purchased Reag		Perfluorodecanoic acid	50 ug/mL
LCPFDoA_00005	01/30/20		ton Laboratories, Lot		(Purchased Reag		Perfluorododecanoic acid	50 ug/mL
LCPFDS_00006	05/24/21		ton Laboratories, Lot		(Purchased Reag		Perfluorodecane Sulfonic acid	48.2 ug/mL
LCPFHpA_00006	01/22/21		ton Laboratories, Lot		(Purchased Reag		Perfluoroheptanoic acid	50 ug/mL
LCPFHpS_00009	11/06/20		ton Laboratories, Lot		(Purchased Reag		Perfluoroheptanesulfonic Acid	47.6 ug/mL
LCPFHxA_00005	12/22/20		ton Laboratories, Lot		(Purchased Reag		Perfluorohexanoic acid	50 ug/mL
LCPFHxDA 00006	05/25/21		ton Laboratories, Lot		(Purchased Reag		Perfluorohexadecanoic acid	50 ug/mL
LCPFHxS-br_00002	07/03/20		on Laboratories, Lot b		(Purchased Reag		Perfluorohexanesulfonic acid	45.5 ug/mL
LCPFNA_00006	10/23/20		gton Laboratories, Lot		(Purchased Reag		Perfluorononanoic acid	50 ug/mL
LCPFOA 00006	11/06/20		gton Laboratories, Lot		(Purchased Reag		Perfluorooctanoic acid (PFOA)	50 ug/mL
LCPFODA 00006	04/29/21		ton Laboratories, Lot		(Purchased Reag		Perfluorooctadecanoic acid	50 ug/mL
LCPFOS-br_00002	10/14/20	_	on Laboratories, Lot b		(Purchased Reag		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
LCPFOSA_00008	09/02/17		ton Laboratories, Lot		(Purchased Reag		Perfluorooctane Sulfonamide	50 ug/mL
LCPFPeA_00005	01/30/20		ton Laboratories, Lot		(Purchased Reag		Perfluoropentanoic acid	50 ug/mL
LCPFTeDA_00005	12/09/20		ton Laboratories, Lot		(Purchased Reag		Perfluorotetradecanoic acid	50 ug/mL
LCPFTrDA_00005	02/12/21		ton Laboratories, Lot		(Purchased Reag		Perfluorotridecanoic acid	50 ug/mL
LCPFUdA_00005	08/19/20		ton Laboratories, Lot		(Purchased Reag	•	Perfluoroundecanoic acid	50 ug/mL
LCPFC2SP_00017	03/02/17	09/02/16	Methanol, Lot 104453	10000 uL	LC6:2FTS_00002	100 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ug/mL
					LC8:2FTS_00002		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	0.479 ug/mL
					LCN-EtFOSA-M_00003		N-ethylperfluoro-1-octanesulfo namide	
					LCN-EtFOSAA_00002	100 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
					LCN-MeFOSA-M_00002		MeFOSA	0.5 ug/mL
					LCN-MeFOSAA_00003	100 uL	N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ug/mL
.LC6:2FTS_00002	06/25/21	ī	WELLINGTON, Lot 62FTS0	616	(Purchased Reag		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
.LC8:2FTS_00002	10/23/20	Ţ	WELLINGTON, Lot 82FTS1	015	(Purchased Reag	ent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)	47.9 ug/mL
.LCN-EtFOSA-M_00003	05/24/21	WE	LLINGTON, Lot NEtFOSAC)516M	(Purchased Reag	ent)	N-ethylperfluoro-1-octanesulfo	50 ug/mL
.LCN-EtFOSAA_00002	01/20/21	WE	LLINGTON, Lot NETFOSA	0116	(Purchased Reag	ent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCN-MeFOSA-M 00002	05/24/21	WE	LLINGTON, Lot NMeFOSA	714M	(Purchased Reag	ent)	MeFOSA	50 ug/mL
.LCN-MeFOSAA_00003	01/20/21	WE	LLINGTON, Lot NMeFOSAA	.0116	(Purchased Reag	ent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
LCPFCIC FULL 00001	06/01/17	02/16/17	MeOH/H2O, Lot 09285	5 mT.	LCMPFC2SU 00014	250 นา.	d-N-EtFOSA-M	50 ng/mL
			, , , , , , , , , , , , , , , , , , , ,				d-N-MeFOSA-M	50 ng/mL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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				Reagent	Parent Reagen	t		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU 00047	250 uL	13C2-PFHxDA	50 ng/mL
					' - ' - ' - ' - ' - ' - ' - ' - ' - '		13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							1802 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFACMXB_00007	125 uL	Perfluorooctanesulfonic acid	47.75 ng/mL
					_		(PFOS)	3.
							Perfluorooctanoic acid (PFOA)	50 ng/mL
.LCMPFC2SU 00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M 00004	1000 uL	d-N-EtFOSA-M	1 ug/mL
_					LCd-NMeFOSA-M 00003	1000 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00003	1000 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00003	1000 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS 00003	1000 uL	M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS_00003		M2-8:2FTS	0.958 ug/mL
LCd-NEtFOSA-M_00004	06/10/21		LLINGTON, Lot dNEtFOSA06		(Purchased Reage		d-N-EtFOSA-M	50 ug/mL
LCd-NMeFOSA-M_00003	06/10/21		LLINGTON, Lot dNMeFOSA06		(Purchased Reage		d-N-MeFOSA-M	50 ug/mL
LCd3-NMeFOSAA_00003	05/31/21		LINGTON, Lot d3NMeFOSAAC		(Purchased Reage	<u> </u>	d3-NMeFOSAA	50 ug/mL
LCd5-NEtFOSAA_00003	08/02/21		LINGTON, Lot d5NEtFOSAAC		(Purchased Reage		d5-NEtFOSAA	50 ug/mL
LCM2-6:FTS_00003	01/08/21		ELLINGTON, Lot M262FTS01		(Purchased Reage		M2-6:2FTS	47.5 ug/mL
LCM2-8:2FTS_00003	01/08/21		ELLINGTON, Lot M282FTS01		(Purchased Reage		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00047	06/14/17	12/14/16	Methanol, Lot Baker 144541	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00007	1000 uT	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00007		13C4-PFHpA	1 ug/mL
					LCM5PFPEA 00008		13C5-PFPeA	1 ug/mL
					LCM8FOSA 00011		13C8 FOSA	1 ug/mL
					LCMPFBA 00008	1000 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00011	1000 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00008		13C2 PFDoA	1 ug/mL
					LCMPFHxA_00012	1000 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00008	1000 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA_00008	1000 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00012		13C4 PFOA	1 ug/mL
					LCMPFOS_00017		13C4 PFOS	0.956 ug/mL
					LCMPFUdA_00009	1000 uL	13C2 PFUnA	1 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

			Reagent	Parent Reage:	nt		
	Exp Prep	Dilutant	Final		Volume		
Reagent ID	Date Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
LCM2PFHxDA 00008	01/07/21 Wellingt	on Laboratories, Lot M2	2PFHxDA1112	(Purchased Read	gent)	13C2-PFHxDA	50 ug/mL
LCM2PFTeDA 00007	12/07/20 Wellingt	on Laboratories, Lot M2	2PFTeDA1115	(Purchased Read	gent)	13C2-PFTeDA	50 ug/mL
LCM4PFHPA 00007	05/27/21 Wellingt	on Laboratories, Lot M	4PFHpA0516	(Purchased Read	gent)	13C4-PFHpA	50 ug/mL
LCM5PFPEA 00008		on Laboratories, Lot M		(Purchased Read	gent)	13C5-PFPeA	50 ug/mL
LCM8FOSA 00011		on Laboratories, Lot M	8FOSA1215I	(Purchased Read	gent)	13C8 FOSA	50 ug/mL
LCMPFBA 00008	05/24/21 Welling	ton Laboratories, Lot	MPFBA0516	(Purchased Read	gent)	13C4 PFBA	50 ug/mL
LCMPFDA 00011	08/19/20 Welling	ton Laboratories, Lot	MPFDA0815	(Purchased Read	gent)	13C2 PFDA	50 ug/mL
LCMPFDoA_00008	04/08/21 Welling	ton Laboratories, Lot M	MPFDoA0416	(Purchased Read	gent)	13C2 PFDoA	50 ug/mL
LCMPFHxA_00012	04/08/21 Welling	ton Laboratories, Lot N	MPFHxA0416	(Purchased Read	gent)	13C2 PFHxA	50 ug/mL
LCMPFHxS_00008		ton Laboratories, Lot N		(Purchased Read		1802 PFHxS	47.3 ug/mL
LCMPFNA_00008		ton Laboratories, Lot		(Purchased Read	gent)	13C5 PFNA	50 ug/mL
LCMPFOA_00012		ton Laboratories, Lot		(Purchased Read		13C4 PFOA	50 ug/mL
LCMPFOS_00017		ton Laboratories, Lot		(Purchased Read	gent)	13C4 PFOS	47.8 ug/mL
LCMPFUdA_00009		ton Laboratories, Lot M		(Purchased Read		13C2 PFUnA	50 ug/mL
.LCPFACMXB_00007	11/06/20 Wellingt	on Laboratories, Lot P	FACMXB1115	(Purchased Reag	gent)	Perfluorooctanesulfonic acid (PFOS)	1.91 ug/mL
						Perfluorooctanoic acid (PFOA)	2 ug/mL
LCPFCSP_00080	08/01/17 02/01/17	Methanol, Lot 090285	10000 uL	LCPFBA 00005	100 uL	Perfluorobutyric acid	0.5 ug/mL
		,		LCPFBS 00005		Perfluorobutane Sulfonate	0.442 ug/mL
						Perfluorobutanesulfonic acid	0.442 ug/mL
						(PFBS)	
				LCPFDA 00005	100 uL	Perfluorodecanoic acid	0.5 ug/mL
				LCPFDoA 00005	100 uL	Perfluorododecanoic acid	0.5 ug/mL
				LCPFDS 00006	100 uL	Perfluorodecane Sulfonate	0.482 ug/mL
				_		Perfluorodecane Sulfonic acid	0.482 ug/mL
				LCPFHpA 00006	100 uL	Perfluoroheptanoic acid	0.5 ug/mL
				LCPFHpS 00009		Perfluoroheptane Sulfonate	0.476 ug/mL
				_		Perfluoroheptanesulfonic Acid	0.476 ug/mL
				LCPFHxA 00005	100 uL	Perfluorohexanoic acid	0.5 ug/mL
				LCPFHxDA 00006	100 uL	Perfluorohexadecanoic acid	0.5 ug/mL
				LCPFHxS-br 00002	100 uL	Perfluorohexane Sulfonate	0.455 ug/mL
				_		Perfluorohexanesulfonic acid	0.455 ug/mL
				LCPFNA 00006	100 uL	Perfluorononanoic acid	0.5 ug/mL
				LCPFOA 00006	100 uL	Perfluorooctanoic acid (PFOA)	0.5 ug/mL
				LCPFODA 00006	100 uL	Perfluorooctadecanoic acid	0.5 ug/mL
				LCPFOS-br 00002	100 uL	Perfluorooctanesulfonic acid	0.464 ug/mL
				_		(PFOS)	
				LCPFOSA_00008		Perfluorooctane Sulfonamide	0.5 ug/mL
				LCPFPeA_00005		Perfluoropentanoic acid	0.5 ug/mL
				LCPFTeDA_00005		Perfluorotetradecanoic acid	0.5 ug/mL
				LCPFTrDA_00005		Perfluorotridecanoic acid	0.5 ug/mL
				LCPFUdA_00005		Perfluoroundecanoic acid	0.5 ug/mL
.LCPFBA_00005		gton Laboratories, Lot		(Purchased Read		Perfluorobutyric acid	50 ug/mL
.LCPFBS_00005	03/15/21 Welling	ton Laboratories, Lot	LPFBS0316	(Purchased Reag	gent)	Perfluorobutane Sulfonate	44.2 ug/mL
						Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
.LCPFDA 00005	07/02/20 Wellin	gton Laboratories, Lot	PFDA0615	(Purchased Read	gent)	Perfluorodecanoic acid	50 ug/mL
.LCPFDoA 00005		ton Laboratories, Lot		(Purchased Read		Perfluorododecanoic acid	50 ug/mL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
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					Parent Reage	ent		
		D	D'1 1 1	Reagent		77-7		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
.LCPFDS_00006	05/24/21	Welling	ton Laboratories, Lot L	PFDS0516	(Purchased Rea	igent)	Perfluorodecane Sulfonate	48.2 ug/mL
							Perfluorodecane Sulfonic acid	48.2 ug/mL
.LCPFHpA_00006	01/22/21	Welling	gton Laboratories, Lot Pl	FHpA0116	(Purchased Rea		Perfluoroheptanoic acid	50 ug/mL
.LCPFHpS_00009	11/06/20	Welling	ton Laboratories, Lot LP	PFHpS1115	(Purchased Rea	agent)	Perfluoroheptane Sulfonate	47.6 ug/mL
							Perfluoroheptanesulfonic Acid	47.6 ug/mL
.LCPFHxA_00005	12/22/20		gton Laboratories, Lot Pl		(Purchased Rea		Perfluorohexanoic acid	50 ug/mL
.LCPFHxDA_00006	05/25/21	Welling	ton Laboratories, Lot PF	THxDA0516	(Purchased Rea		Perfluorohexadecanoic acid	50 ug/mL
.LCPFHxS-br_00002	07/03/20	Wellingt	on Laboratories, Lot brP	PFHxSK0615	(Purchased Rea	agent)	Perfluorohexane Sulfonate	45.5 ug/mL
	10/00/00						Perfluorohexanesulfonic acid	45.5 ug/mL
.LCPFNA_00006	10/23/20		gton Laboratories, Lot P		(Purchased Rea	-	Perfluorononanoic acid	50 ug/mL
.LCPFOA_00006	11/06/20		gton Laboratories, Lot P		(Purchased Rea	-	Perfluorooctanoic acid (PFOA)	50 ug/mL
.LCPFODA 00006	04/29/21 10/14/20	Welling	gton Laboratories, Lot Pl ton Laboratories, Lot br	FODAU416	(Purchased Rea		Perfluorooctadecanoic acid	50 ug/mL 46.4 ug/mL
.LCPFOS-br_00002	10/14/20	wellingt	ion Laboratories, Lot bri	PFOSKIUI5	(Purchased Rea	igent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
.LCPFOSA 00008	09/02/17	Welling	gton Laboratories, Lot F0	OGN0815T	(Purchased Rea	rent)	Perfluorooctane Sulfonamide	50 ug/mL
.LCPFPeA 00005	01/30/20		gton Laboratories, Lot Pl		(Purchased Rea		Perfluoropentanoic acid	50 ug/mL
.LCPFTeDA 00005	12/09/20		ton Laboratories, Lot PF		(Purchased Rea		Perfluorotetradecanoic acid	50 ug/mL
.LCPFTrDA 00005	02/12/21	1	ton Laboratories, Lot PF		(Purchased Rea		Perfluorotridecanoic acid	50 ug/mL
.LCPFUdA 00005	08/19/20		gton Laboratories, Lot Pl		(Purchased Rea		Perfluoroundecanoic acid	50 ug/mL
					MS8270IS 00016			10 ug/mL
MS14DICV_00004 .MS8270IS 00016	01/12/18	02/21/1/	MeCl2, Lot 0000152943	I ML	(Purchased Rea		1,4-Dichlorobenzene-d4 1,4-Dichlorobenzene-d4	
MS14DICV_00004		00/01/17	Restek, Lot A0120796 MeCl2, Lot 0000152943	1 nT	MS14DIC 00008		1,4-Dichioropenzene-d4	2000 ug/mL 10 ug/mL
MS14D1CV_00004	01/12/10	02/21/1/	MeC12, Lot 0000132943	1 1111	MS14DIC_00000	100 uL	Nitrobenzene-d5	10 ug/mL
.MS14DIC_00008	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mT	MS14DIC 00007	500 117	1,4-Dioxane	100 ug/mL
:MS14D1C_00000	02/21/10	02/21/1/	Meciz, Lot 0000132343	10 1111	MS8270SU 00100		Nitrobenzene-d5	100 ug/mL
MS14DIC 00007	02/21/18		Restek, Lot A0124653		(Purchased Rea		1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Rea		Nitrobenzene-d5	5000 ug/mL
_			MeCl2, Lot 0000152943	1 1 7			1,4-Dioxane	
MS14DL1_00011	01/12/18	02/21/1/	MeC12, Lot 0000152943	1 mL	MS14DTA_00024	5 uL		0.5 ug/mL
					MS8270IS 00016	E	Nitrobenzene-d5 1,4-Dichlorobenzene-d4	0.5 ug/mL
.MS14DTA 00024	02/21/10	02/21/17	MeCl2, Lot 0000152943	10 mT	MS14DTA 00023		1,4-Dichioropenzene-d4	10 ug/mL 100 ug/mL
.MS14D1A_00024	02/21/10	02/21/1/	MeC12, Lot 0000132943	10 1111	MS8270SU 00100		Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Rea		1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Rea		Nitrobenzene-d5	5000 ug/mL
.MS8270IS 00016	01/12/18		Restek, Lot A0120796		(Purchased Rea		1,4-Dichlorobenzene-d4	2000 ug/mL
_				1 1 -				
MS14DL2_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	10 uL	1,4-Dioxane	1 ug/mL
					100007070		Nitrobenzene-d5	1 ug/mL
ма14рша 00024	00/01/10	00/01/17	MeCl2, Lot 0000152943	10	MS8270IS_00016 MS14DTA 00023		1,4-Dichlorobenzene-d4 1,4-Dioxane	10 ug/mL 100 ug/mL
.MS14DTA_00024	02/21/18	02/21/1/	MeC12, Lot 0000152943	10 mL				
MS14DTA 00023	02/21/18		Restek, Lot A0121319		MS8270SU_00100 (Purchased Rea		Nitrobenzene-d5	100 ug/mL 2000 ug/mL
MS14DTA_00023	02/21/18		Restek, Lot A0121319 Restek, Lot A0103960		(Purchased Rea		Nitrobenzene-d5	5000 ug/mL
.MS8270IS 00016	02/21/18		Restek, Lot A0103960 Restek, Lot A0120796		(Purchased Rea		1,4-Dichlorobenzene-d4	2000 ug/mL
_			·					
MS14DL3_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA_00024	20 uL	1,4-Dioxane	2 ug/mL
					10007070		Nitrobenzene-d5	2 ug/mL
MO14DER 00004	00/01/10	00/01/15	M-010 T-1 0000150010	10 -	MS8270IS_00016		1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA_00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	l 10 mL	MS14DTA_00023	500 uL	1,4-Dioxane	100 ug/mL

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
----------------------------------	----------------------

				Reagent	Parent Read	gent		
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					MS8270SU 00100	200 uL	Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Re		1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Re	agent)	Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Re		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL4_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA 00024	50 uL	1,4-Dioxane	5 ug/mL
_					_		Nitrobenzene-d5	5 ug/mL
					MS8270IS 00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA 00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA 00023	500 uL	1,4-Dioxane	100 ug/mL
_					MS8270SU 00100	200 uL	Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Re	agent)	1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Re		Nitrobenzene-d5	5000 ug/mL
.MS8270IS_00016	01/12/18		Restek, Lot A0120796		(Purchased Re	agent)	1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL5_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mL	MS14DTA 00024	100 uL	1,4-Dioxane	10 ug/mL
_					_		Nitrobenzene-d5	10 ug/mL
					MS8270IS 00016	5 uL	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA 00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mL	MS14DTA 00023		1,4-Dioxane	100 ug/mL
-					MS8270SU 00100		Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Re	agent)	1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Re		Nitrobenzene-d5	5000 ug/mL
.MS8270IS 00016	01/12/18		Restek, Lot A0120796		(Purchased Re	agent)	1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL6_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mT.	MS14DTA 00024	200 111.	1,4-Dioxane	20 ug/mL
	01,12,10	02,21,1,	110012, 200 0000102310		11011211_00021	200 42	Nitrobenzene-d5	20 ug/mL
					MS8270IS 00016	5 uTi	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA 00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mT.	MS14DTA 00023	500 uTi	1,4-Dioxane	100 ug/mL
	,,	,,			MS8270SU 00100		Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Re		1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Re		Nitrobenzene-d5	5000 ug/mL
.MS8270IS 00016	01/12/18		Restek, Lot A0120796		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL7_00010	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mT.	MS14DTA 00024	500 117.	1,4-Dioxane	50 ug/mL
MS14D17_00010	01/12/10	02/21/1/	110012, 100 0000132313	1 1112	110111111111111111111111111111111111111	300 41	Nitrobenzene-d5	50 ug/mL
					MS8270IS 00016	5 117.	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA 00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mT.	MS14DTA 00023		1,4-Dioxane	100 ug/mL
	, , , , , , , , , , , , ,	,	,		MS8270SU 00100	200 uL	Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319		(Purchased Re	agent)	1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Re		Nitrobenzene-d5	5000 ug/mL
.MS8270IS 00016	01/12/18		Restek, Lot A0120796		(Purchased Re		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DL8_00005	01/12/18	02/21/17	MeCl2, Lot 0000152943	1 mT.	MS14DTA 00024	1000 117.	1,4-Dioxane	100 ug/mL
11011220_00000	01,12,10	02,21,1,	110012, 200 0000102310		11011211_00021	1000 42	Nitrobenzene-d5	100 ug/mL
					MS8270IS 00016	5 uTi	1,4-Dichlorobenzene-d4	10 ug/mL
.MS14DTA 00024	02/21/18	02/21/17	MeCl2, Lot 0000152943	10 mT.	MS14DTA 00023		1,4-Dioxane	100 ug/mL
=	' ' '	, , ,	,		MS8270SU 00100		Nitrobenzene-d5	100 ug/mL
MS14DTA 00023	02/21/18		Restek, Lot A0121319	1	(Purchased Re		1,4-Dioxane	2000 ug/mL
MS8270SU 00100	02/21/18		Restek, Lot A0103960		(Purchased Re		Nitrobenzene-d5	5000 ug/mL
.MS8270IS 00016	01/12/18		Restek, Lot A0120796		(Purchased Re		1,4-Dichlorobenzene-d4	2000 ug/mL
MS14DSP_00030	06/20/17	12/20/16	Methanol, Lot 0000152413	100 mL	MS14DTA_00022	1 mL	1,4-Dioxane	20 ug/mL

Lab Name:	TestAmerica Sacramento	Job No.: 320-25962-1	
CDC No.			
SDG No.:			

				Reagent	Parent Rea	gent		
	Exp	Prep	Dilutant	Final		Volume		
Reagent ID	Date	Date	Used	Volume	Reagent ID	Added	Analyte	Concentration
.MS14DTA_00022	09/30/18		SUPELCO, Lot LC16305V		(Purchased Re	eagent)	1,4-Dioxane	2000 ug/mL
MS14DSU_00003	03/21/17	10/31/16	Methanol, Lot 00000142776	200 mL	MS8270SU_00094	20 mL	2,4,6-Tribromophenol	10 ug/mL
							2-Fluorobiphenyl (Surr)	10 ug/mL
							2-Fluorophenol	10 ug/mL
							Nitrobenzene-d5	10 ug/mL
							Phenol-d5	10 ug/mL
							Terphenyl-d14	10 ug/mL
.MS8270SU_00094	03/21/17		Restek, Lot A0117528		(Purchased Re	eagent)	2,4,6-Tribromophenol	100 ug/mL
							2-Fluorobiphenyl (Surr)	100 ug/mL
							2-Fluorophenol	100 ug/mL
							Nitrobenzene-d5	100 ug/mL
							Phenol-d5	100 ug/mL
							Terphenyl-d14	100 ug/mL
MS8270IS 00016	01/12/18		Restek, Lot A0120796	<u> </u>	(Purchased Re	eagent)	1,4-Dichlorobenzene-d4	2000 ug/mL

Reagent

LC6:2FTS_00002

R: 8/23/16 SEC



ID: LC6:2FTS_00002 Exp: 06/25/21 Prpd: SBC 6:2FTS



CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

6:2FTS

LOT NUMBER:

62FTS0616

COMPOUND:

Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

C_aH₄F₁₃SO₃Na

MOLECULAR WEIGHT:

450.15

CONCENTRATION:

 $50.0 \pm 2.5 \,\mu g/ml$

(Na salt) SOLVENT(S): Methanol

47.4 ± 2.4 µg/ml

(6:2FTS anion)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

06/25/2016

EXPIRY DATE: (mm/dd/yyyy)

06/25/2021

RECOMMENDED STORAGE:

Refrigerate ampoule

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 06/29/2016

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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UNCERTAINTY:

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

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

 $X_1, X_2,...X_n$ on which it depends is:

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

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:

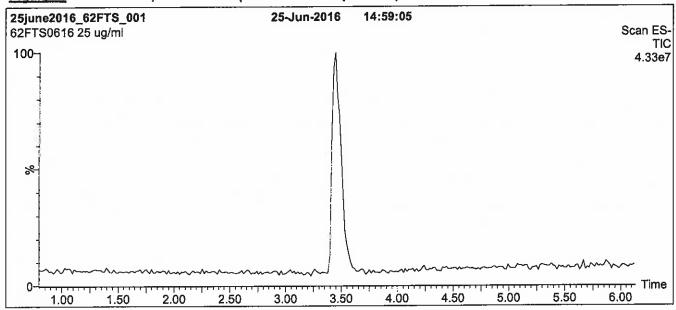
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

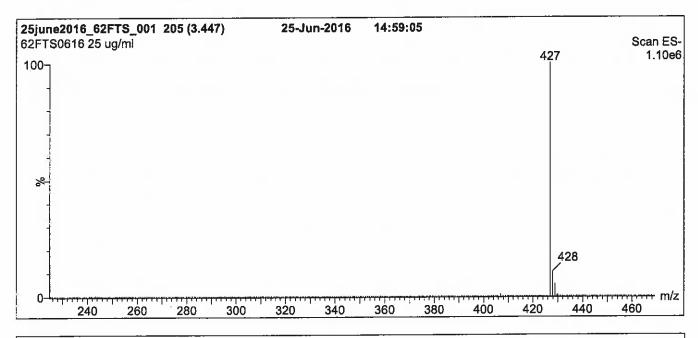


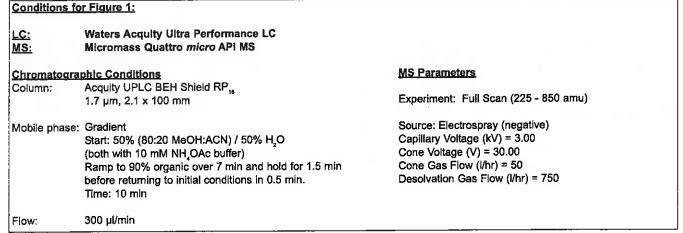


For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

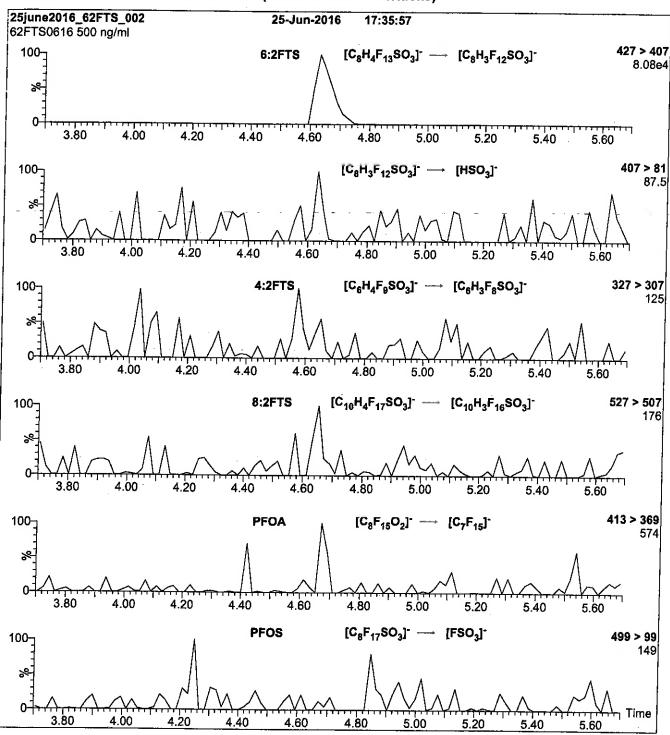


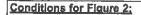






6:2FTS; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection:

Flow:

Direct loop Injection

10 µl (500 ng/ml 6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH₄OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3 Collision Energy (eV) = 25

Reagent

LC8:2FTS_00002

R: 8/23/16 880





CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

8:2FTS

LOT NUMBER:

82FTS1015

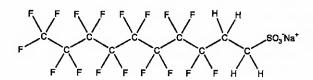
COMPOUND:

Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

C₁₀H₄F₁₇SO₃Na

MOLECULAR WEIGHT;

550.16

CONCENTRATION:

 $50.0 \pm 2.5 \,\mu \text{g/ml}$ $47.9 \pm 2.4 \,\mu \text{g/ml}$

(Na salt) **SOLVENT(S)**:

(8:2FTS anion)

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/23/2015

EXPIRY DATE: (mm/dd/yyyy)

10/23/2020

RECOMMENDED STORAGE:

Refrigerate ampoule

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date:

10/27/2015

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

INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

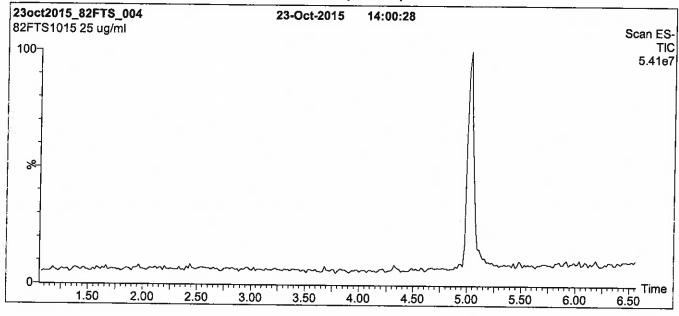
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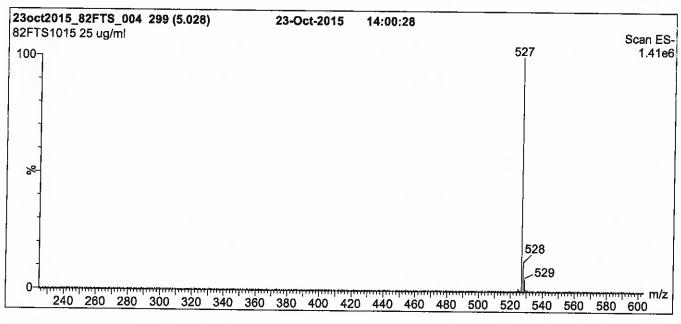


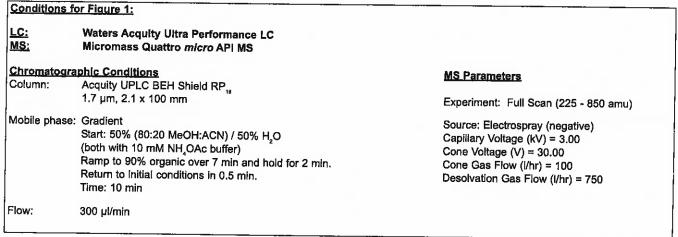


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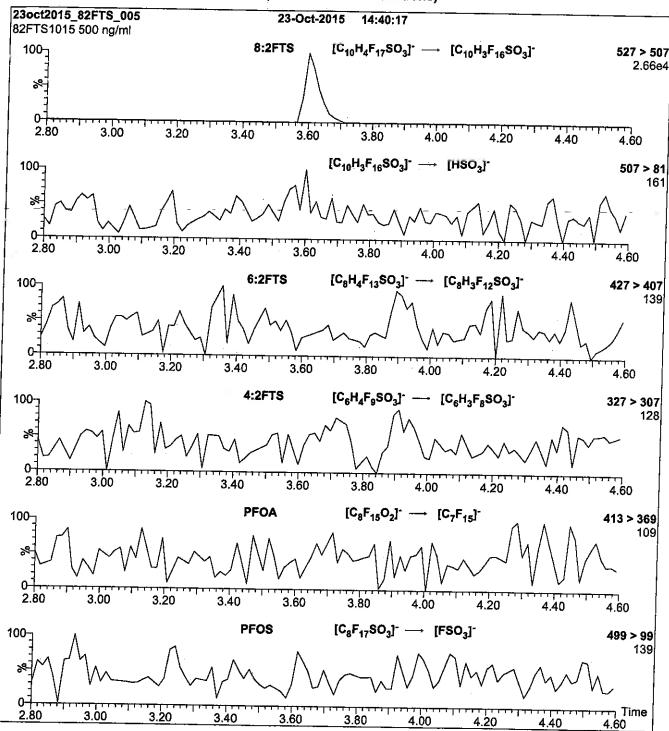
Figure 1: 8:2FTS; LC/MS Data (TIC and Mass Spectrum)

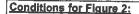






8:2FTS; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection:

Flow:

Direct loop injection

10 µl (500 ng/ml 8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O (both with 10 mM NH₄OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3 Collision Energy (eV) = 30

Reagent

LCd-NMeFOSA-M_00003

R: 9/9/16 SBC



Exp: 06/10/21 Prod: SBC



VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

d-N-MeFOSA-M

LOT NUMBER:

dNMeFOSA0616M

COMPOUND:

N-methyl-d,-perfluoro-1-octanesulfonamide

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

C₀D₃HF₁,NO₂S

CONCENTRATION:

 $50 \pm 2.5 \,\mu g/ml$

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

06/10/2016

EXPIRY DATE: (mm/dd/yyyy)

06/10/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

516.19

SOLVENT(S):

Methanoi

ISOTOPIC PURITY:

≥98% ²H₃

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.

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Certified By:

Date: 06/16/2016

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QUALITY MANAGEMENT:

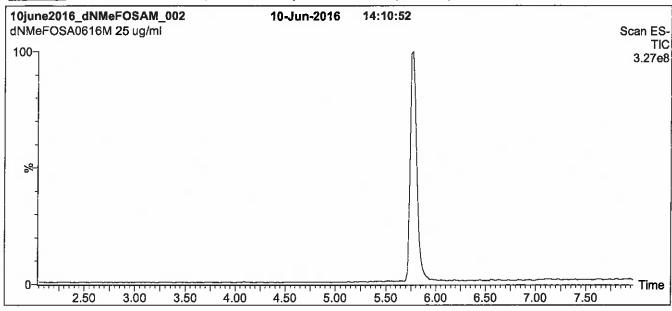
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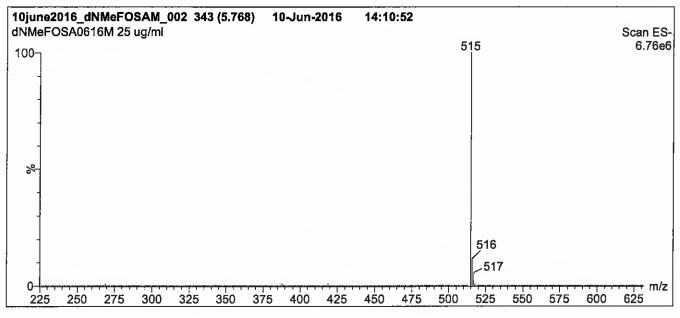


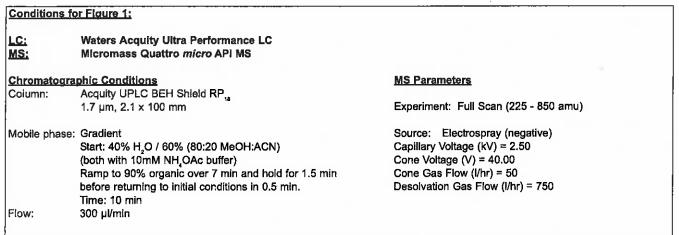


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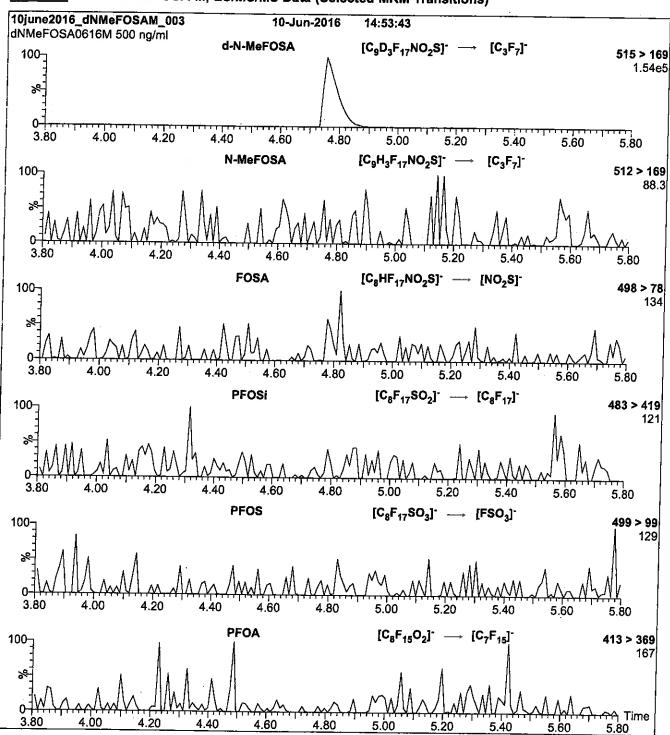
Figure 1: d-N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)

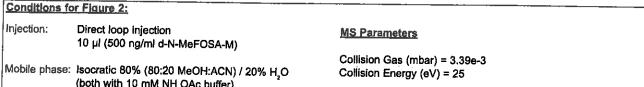






d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





(both with 10 mM NH,OAc buffer)

Flow: 300 µl/min

Reagent

LCd3-NMeFOSAA_00003



Exp: 05/31/21 Prpd: SBC d3-N-MeFOSAA



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

d3-N-MeFOSAA

LOT NUMBER:

d3NMeFOSAA0516

COMPOUND:

N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:

<u>CAS #:</u>

Not available

MOLECULAR FORMULA:

C,D,H,F,,NO,S

MOLECULAR WEIGHT:

ISOTOPIC PURITY:

574.23

CONCENTRATION:

CHEMICAL PURITY:

 $50 \pm 2.5 \,\mu g/ml$

SOLVENT(S):

Methanol

≥98% ²H_a

Water (<1%)

LAST TESTED: (mm/dd/yyyy)

>98%

05/31/2016

EXPIRY DATE: (mm/dd/yyyy)

05/31/2021

RECOMMENDED STORAGE:

Refrigerate ampoule

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 the conversion of the acetic acid moiety to the methyl ester.

Contains ~ 1% of branched isomer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 06/01/2016

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

 $X_1, X_2,...X_n$ on which it depends is:

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

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

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

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

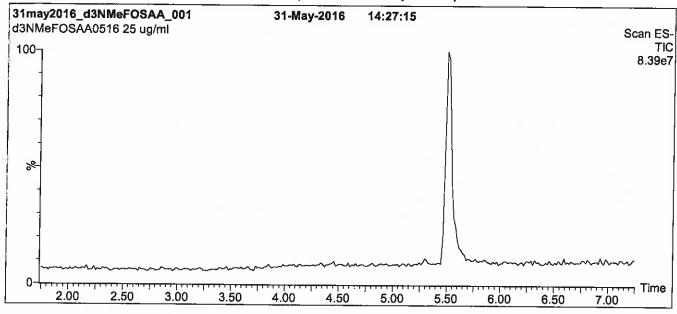
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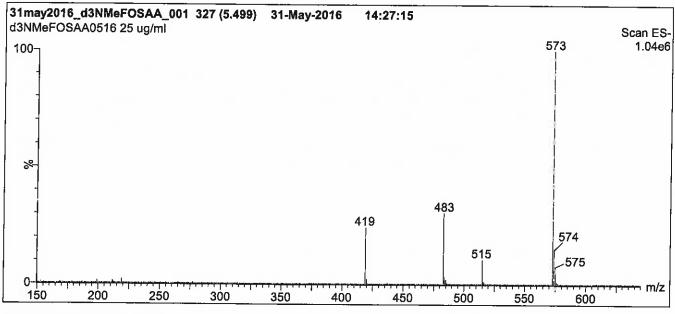




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Figure 1: d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)





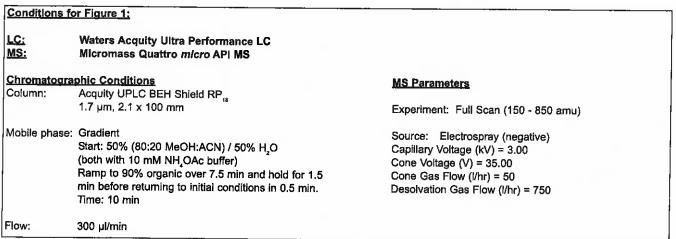
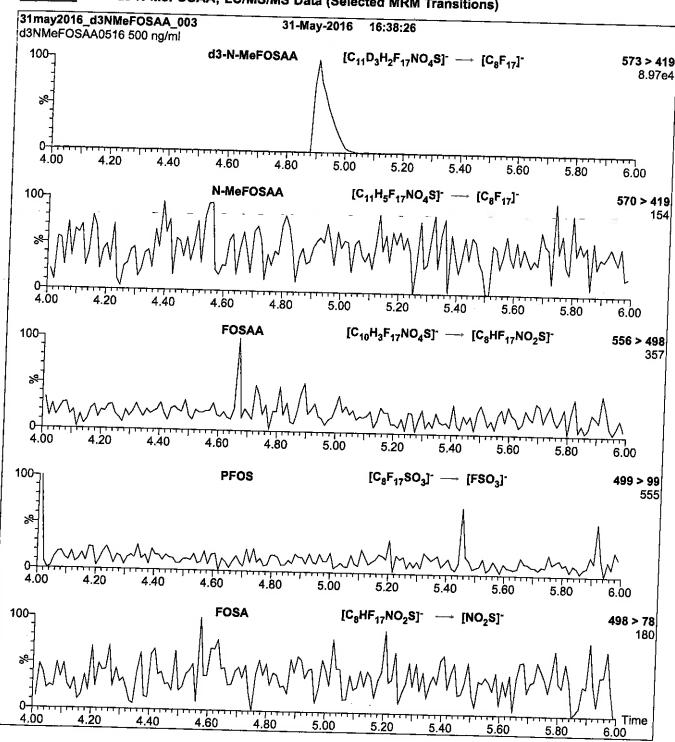
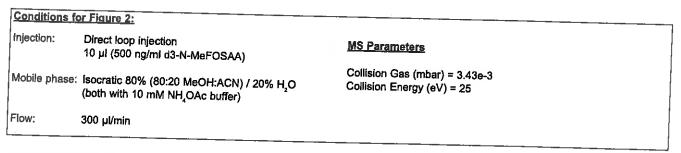


Figure 2: d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)





Reagent

LCd5-NEtFOSAA_00003



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

d5-N-EtFOSAA

LOT NUMBER:

d5NEtFOSAA0716

COMPOUND:

N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

C,D,H,F,,NO,S

MOLECULAR WEIGHT:

590.26

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/m!$

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

Water (<1%) ≥98% ²H₄

LAST TESTED: (mm/dd/yyyy)

08/02/2016

EXPIRY DATE: (mm/dd/yyyy)

08/02/2021

RECOMMENDED STORAGE:

Refrigerate ampoule

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 the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 08/09/2016

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

INTENDED USE:

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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:

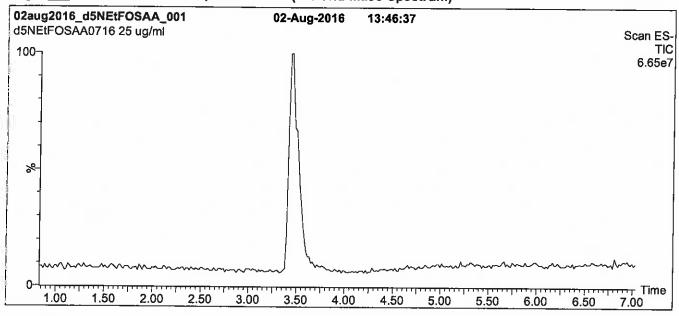
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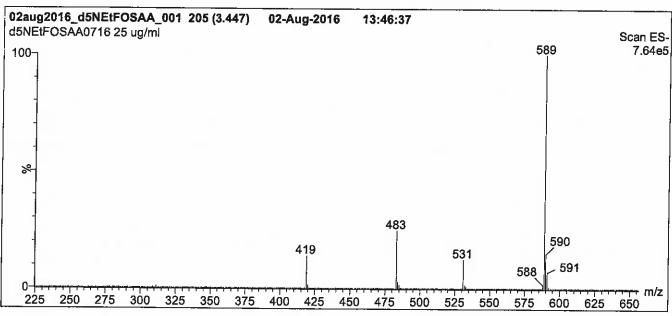




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Figure 1: d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)





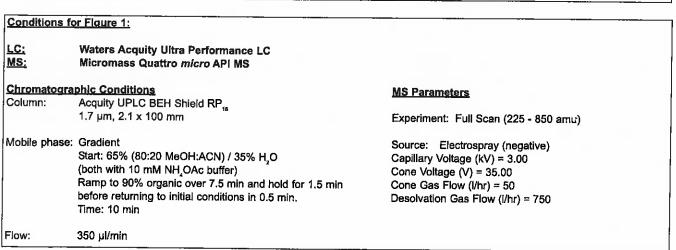
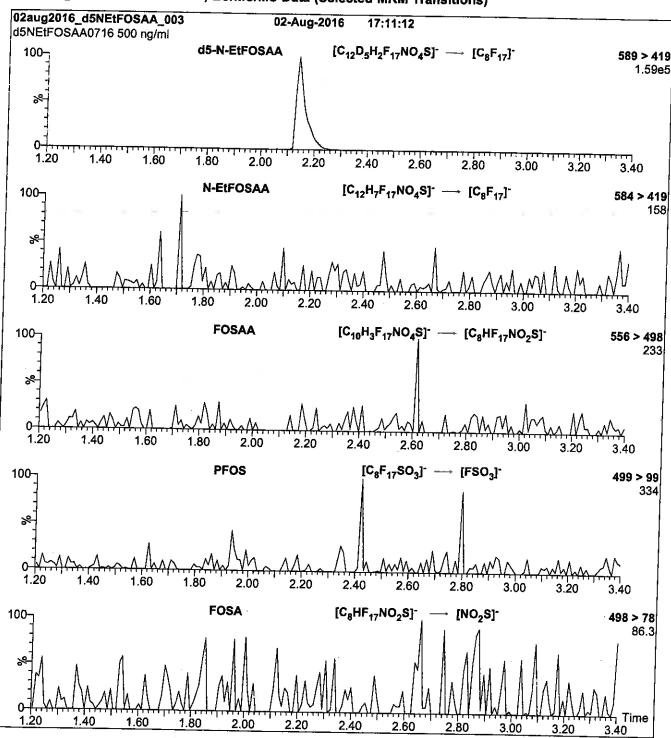


Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)





injection:

Direct loop injection

10 μl (500 ng/ml d5-N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH OAc buffer)

MS Parameters

Collision Gas (mbar) = 3.43e-3 Collision Energy (eV) = 25

Flow:

300 µl/min

LCM2-6:FTS_00003

VELLINGTON A B O R A T O R I E S

CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

M2-6:2FTS

LOT NUMBER:

M262FTS0116

COMPOUND:

Sodium 1H,1H,2H,2H-perfluoro-[1,2-13C,]octane sulfonate

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₂¹²C₆H₂F₁₃SO₃Na

MOLECULAR WEIGHT:

452.13

CONCENTRATION:

50.0 ± 2.5 µg/ml (Na salt) 47.5 ± 2.4 µg/ml

SOLVENT(\$):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% 13C

LAST TESTED: (mm/dd/yyyy)

(1,2-13C₂)

01/08/2016

EXPIRY DATE: (mm/dd/yyyy)

01/08/2021

RECOMMENDED STORAGE;

Refrigerate ampoule

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.

The native 6:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

(M2-6:2FTS anion)

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 01/11/2016

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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HAZARDS:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

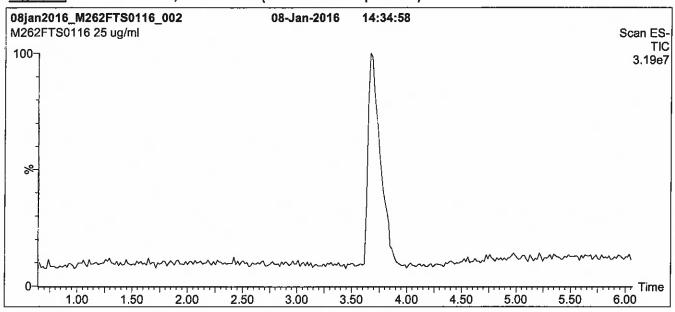
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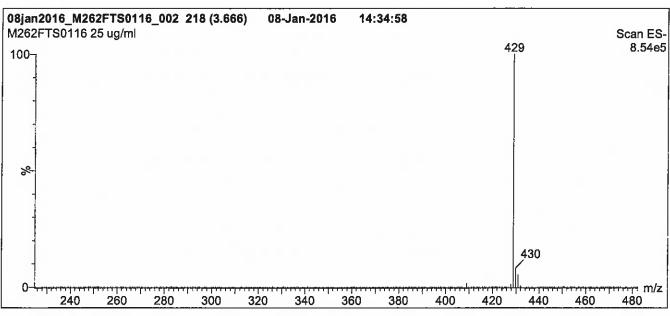


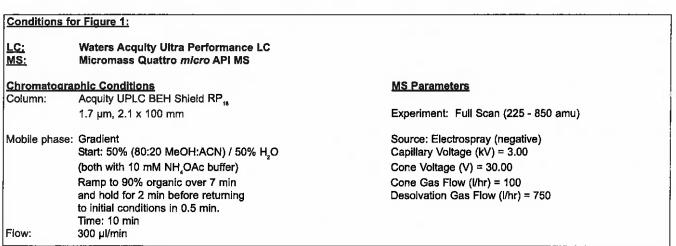


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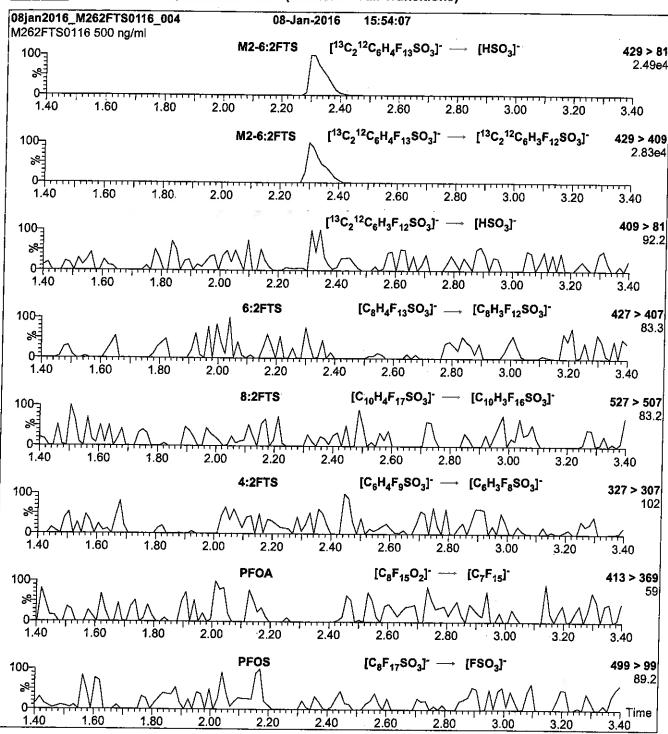
Figure 1: M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)







M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection:

Direct loop injection

10 µl (500 ng/ml M2-6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH OAc buffer)

MS Parameters

Collision Gas (mbar) = 3.28e-3 Collision Energy (eV) = 25

Flow:

300 µl/min

LCM2PFHxDA_00008

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

M2PFHxDA

LOT NUMBER:

M2PFHxDA1112

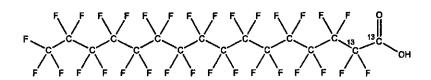
COMPOUND:

Perfluoro-n-[1,2-13C₂]hexadecanoic acid

STRUCTURE:

CAS#:

Not available



MOLECULAR FORMULA:

¹³C₂¹²C₁₄HF₃₁O₂

MOLECULAR WEIGHT:

816.11

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

Water (<1%) ≥99% 13C (1,2-13C,)

LAST TESTED: (mm/dd/yyyy)

01/07/2016

EXPIRY DATE: (mm/dd/yyyy)

01/07/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains ~ 0.3% of native perfluoro-n-hexadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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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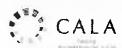
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QUALITY MANAGEMENT:

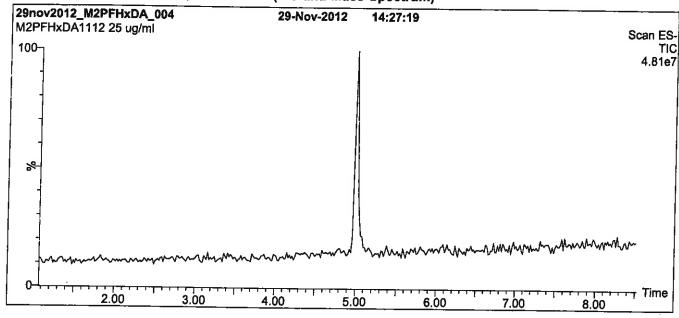
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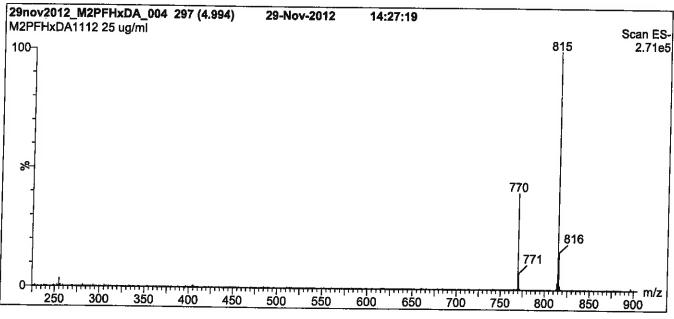




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Figure 1: M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)





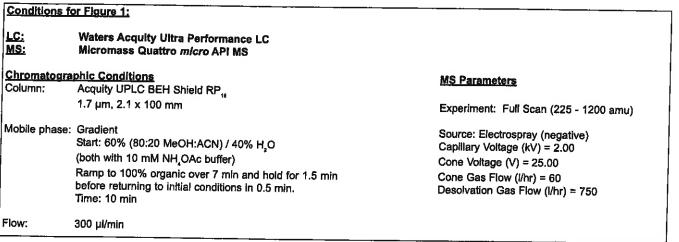
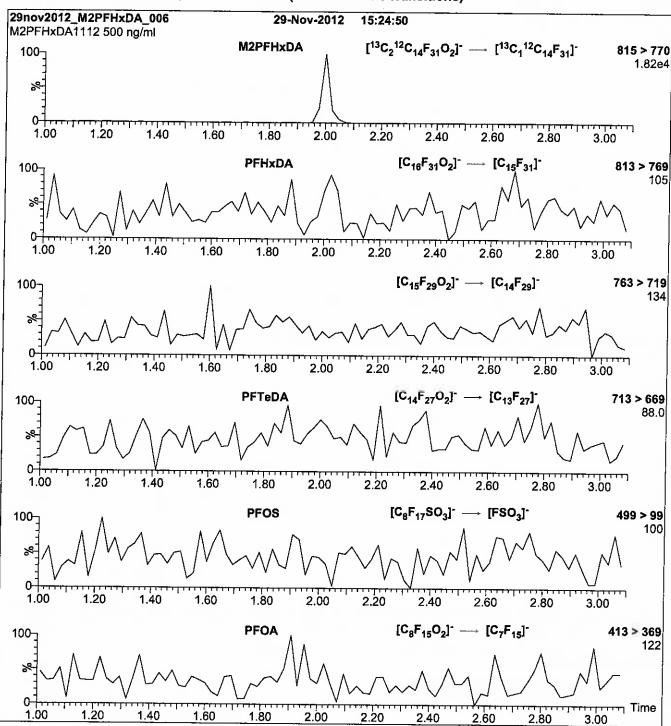
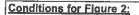


Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Flow:

Direct loop injection

10 μl (500 ng/ml M2PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_aO

(both with 10 mM NH₂OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3 Collision Energy (eV) = 15

Form#:27, Issued 2004-11-10 Revision#:3, Revised 2C15-03-24

LCM2PFTeDA_00007



CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: **COMPOUND:**

M2PFTeDA

Perfluoro-n-[1,2-13C,]tetradecanoic acid

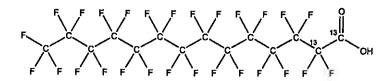
LOT NUMBER:

M2PFTeDA1115

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

¹³C, ¹²C, HF, O,

 $50 \pm 2.5 \, \mu g/ml$

MOLECULAR WEIGHT:

716.10

CONCENTRATION:

SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

>99% ¹³C (1,2-13C_a)

LAST TESTED: (mm/dd/yyyy)

12/07/2015

EXPIRY DATE: (mm/dd/yyyy)

12/07/2020

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

12/08/2015

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

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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 $x_1, x_2,...x_n$ on which it depends is:

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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

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:

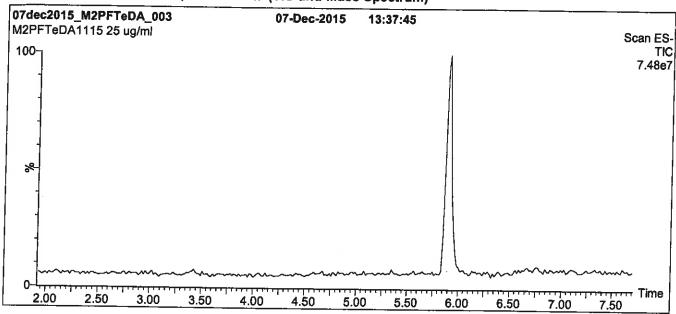
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

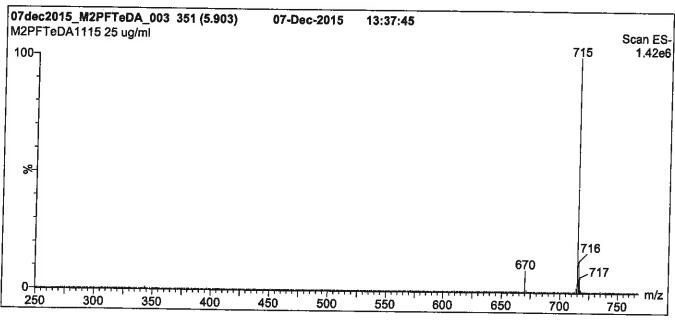




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Figure 1: M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)





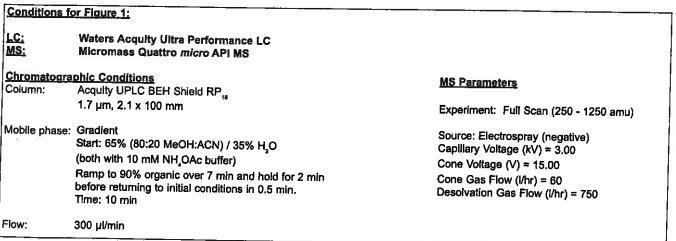
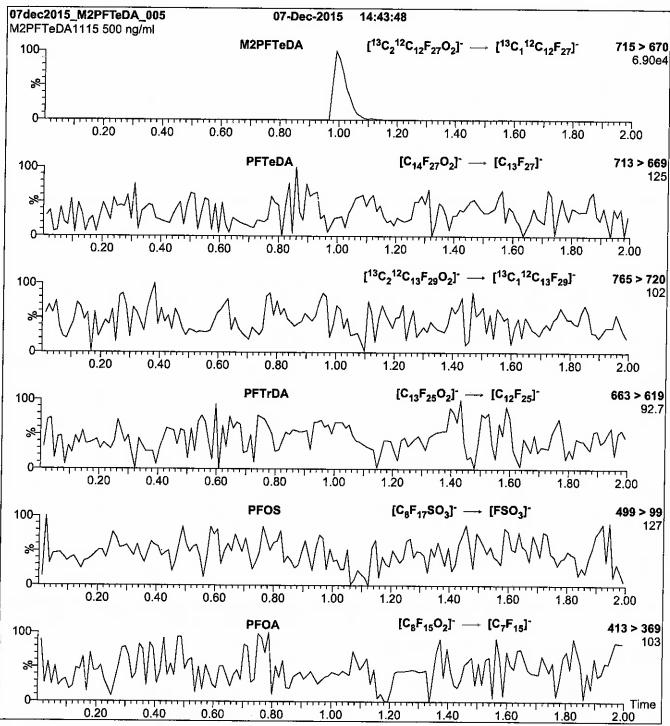


Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 μl (500 ng/ml M2PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H,O

(both with 10 mM NH,OAc buffer)

Flow:

300 µl/mln

MS Parameters

Collision Gas (mbar) = 3.28e-3 Collision Energy (eV) = 14

LCM4PFHPA_00007

P: 8BC 0/22/16



in: LCM4PFHPA 00007 Exp: 05/27/21 Prpd: SBC 13C4-Perfluoroheptanoic a



VELLINGTON ABORATORJES

CERTIFICATE OF ANALYSIS

DOCUMENTATION

PRODUCT CODE:

M4PFHpA

LOT NUMBER:

M4PFHpA0516

COMPOUND:

Perfluoro-n-[1,2,3,4-13C]heptanoic acid

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

13C, 12C, HF, O,

368.03

CONCENTRATION:

50 ± 2.5 µg/ml

MOLECULAR WEIGHT: SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

Water (<1%) **ISOTOPIC PURITY:**

≥99%13C

 $(1,2,3,4^{-13}C_{\lambda})$

LAST TESTED: (mm/dd/yyyy)

05/27/2016

EXPIRY DATE: (mm/dd/yyyy)

05/27/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

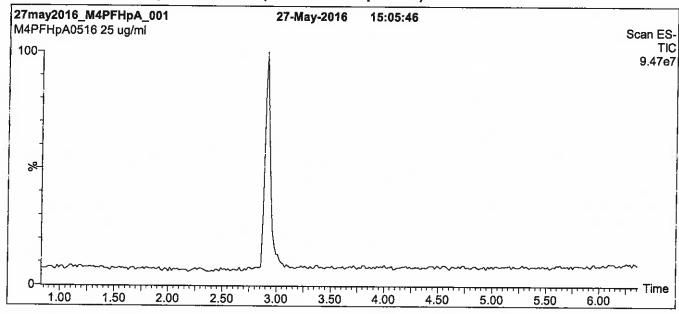
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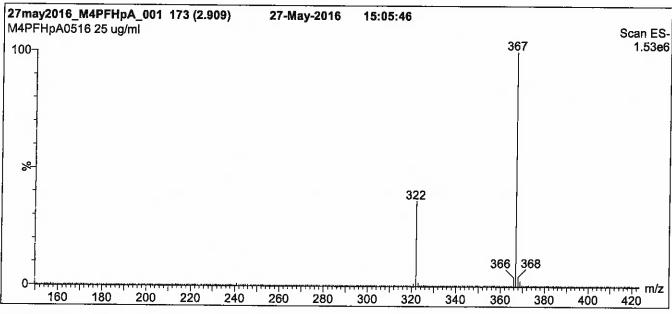




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Figure 1: M4PFHpA; LC/MS Data (TIC and Mass Spectrum)





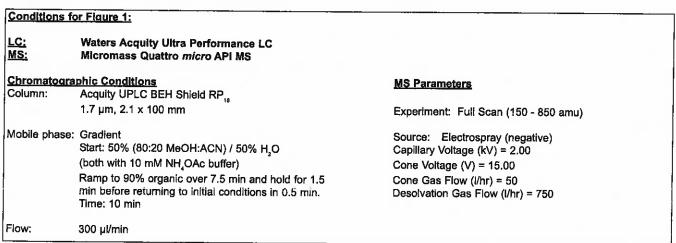
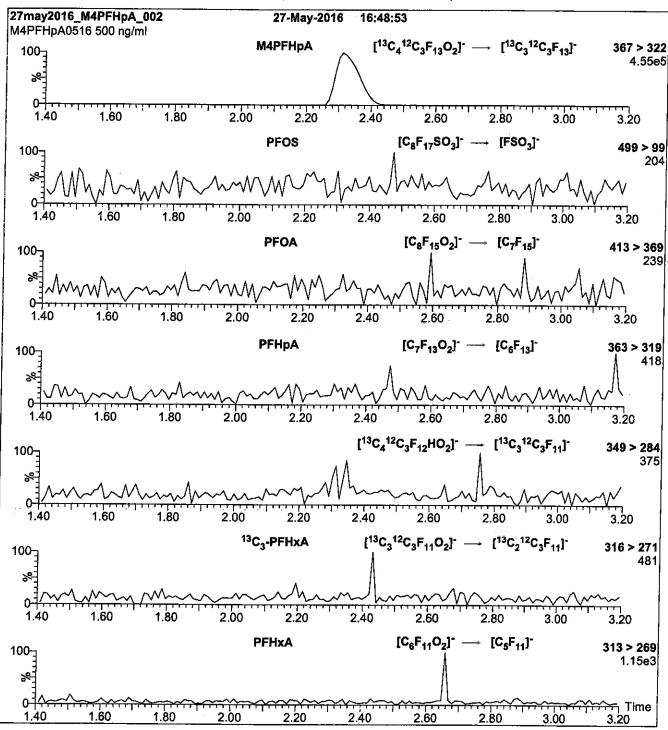
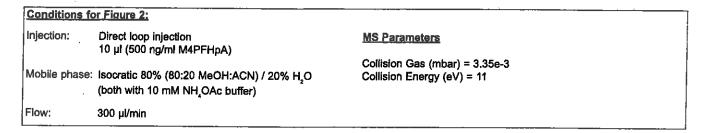


Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)





LCM5PFPEA_00008



ID: LCM5PFPEA_00008 Exp: 05/22/20 Prpd: SBC 13C5-Perfluoropentanoic a



CERTIFICATE OF ANALYSIS

DOCUMENTATION

PRODUCT CODE:

M5PFPeA

LOT NUMBER:

M5PFPeA0515

COMPOUND:

Perfluoro-n-[13C] pentanoic acid

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₅HF₉O₂

MOLECULAR WEIGHT:

269.01

CONCENTRATION:

 $50 \pm 2.5 \,\mu g/ml$

SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

LAST TESTED: (mm/dd/yyyy)

05/22/2015

≥99% 13C

 $(^{13}C_{c})$

EXPIRY DATE: (mm/dd/yyyy)

05/22/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains < 0.1% of perfluoro-n-pentanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: <u>05/25/2015</u>

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HAZARDS:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

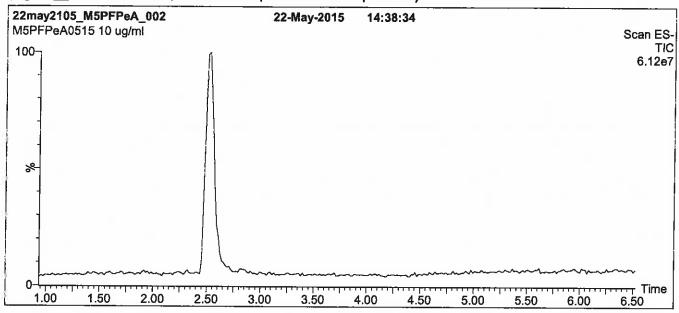
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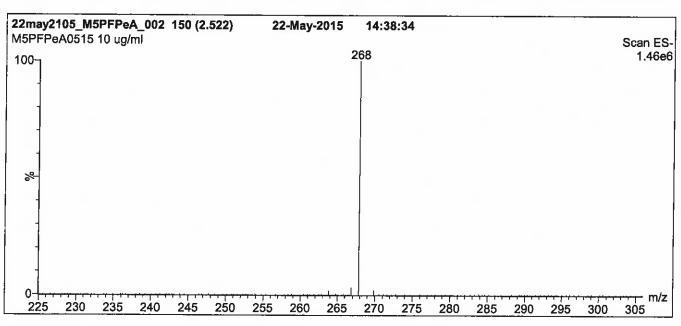




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Figure 1: M5PFPeA; LC/MS Data (TIC and Mass Spectrum)





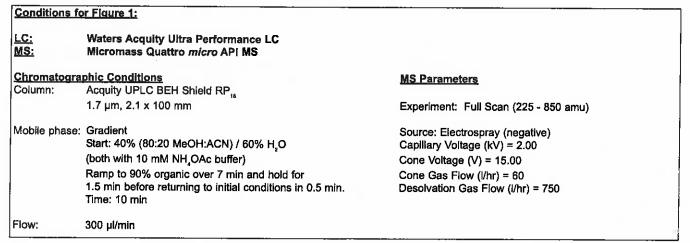
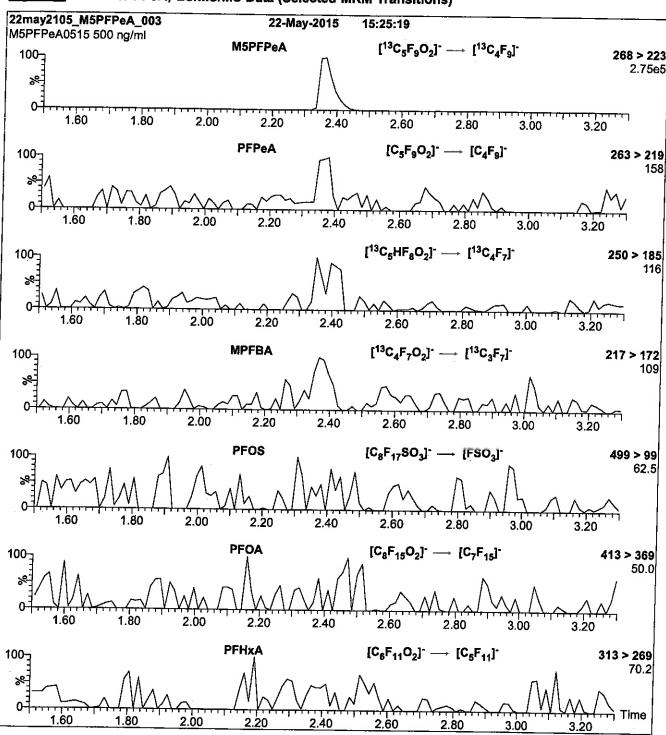
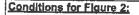


Figure 2: M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 µl (500 ng/ml M5PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

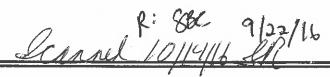
(both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3 Collision Energy (eV) = 9

LCM8FOSA_00011





ID: LCM8FOSA_00011 Exp: 12/22/17 Prod: SBC 13C8-Perfluorooctanesulfo



CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

M8FOSA-I

LOT NUMBER:

M8FOSA1215I

COMPOUND:

Perfluoro-1-[13C_]octanesulfonamide

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₈H₂F₁₂NO₂S

CONCENTRATION:

50 ± 2.5 μg/ml

CHEMICAL PURITY:

>98%

LAST TESTED: (mrr/dd/yyyy)

12/22/2015

EXPIRY DATE: (mm/dd/yyyy)

12/22/2017

RECOMMENDED STORAGE:

Refrigerate ampoule

MOLECULAR WEIGHT:

SOLVENT(S):

507.09 Isopropanol

ISOTOPIC PURITY:

≥99% ¹³C

(13C_a)

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 01/14/2016

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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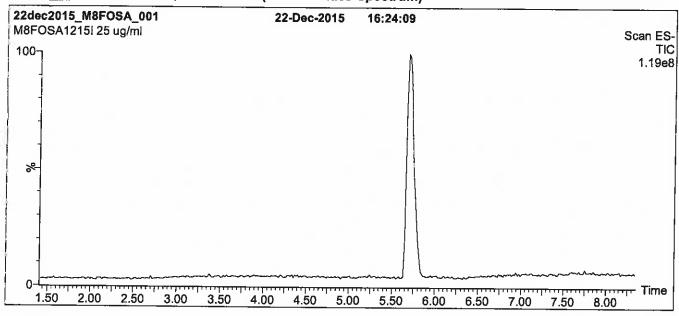
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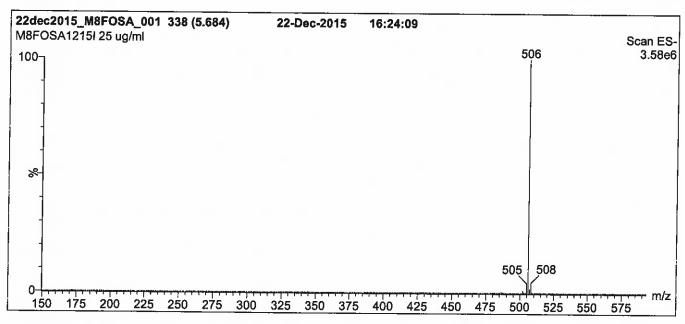




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Figure 1: M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)





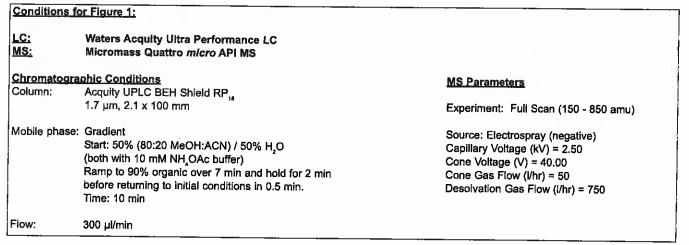
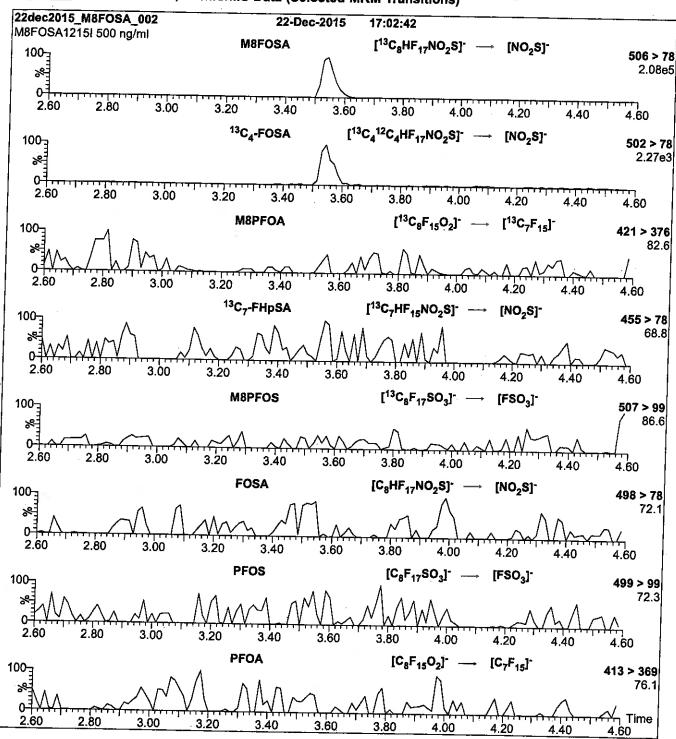
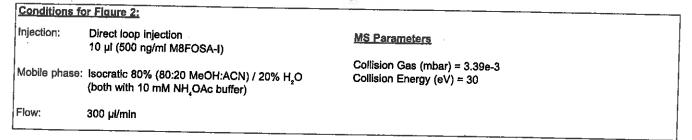


Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)





LCMPFBA_00008

R: 8BC 9/22/16



ID: LCMPFBA 00008





CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanner 10/14/16

PRODUCT CODE:

MPFBA

LOT NUMBER:

MPFBA0516

COMPOUND:

Perfluoro-n-[1,2,3,4-13C] butanoic acid

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₄HF₇O₂

MOLECULAR WEIGHT:

218.01

CONCENTRATION:

50 ± 2.5 µg/ml

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

Water (<1%) ≥99%¹³C

LAST TESTED: (mm/dd/yyyy)

ISOTOPIC PURITY:

(1,2,3,4-13C₄)

EXPIRY DATE: (m:rv/dd/yyyy)

05/24/2016 05/24/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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

UNCERTAINTY:

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The combined relative standard uncertainty, $u_{c}(y)$, of a value y and the uncertainty of the independent parameters

 $X_1, X_2, ..., X_n$ on which it depends is:

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

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

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

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

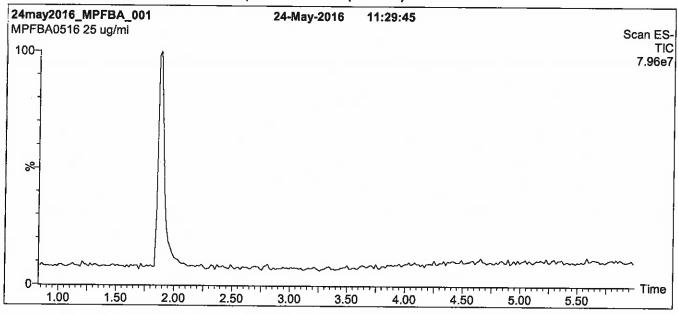
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

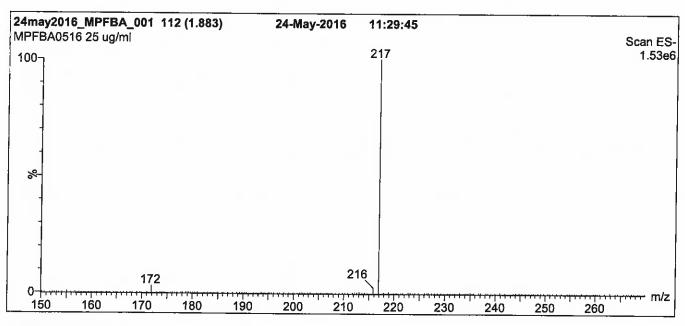




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Figure 1: MPFBA; LC/MS Data (TIC and Mass Spectrum)





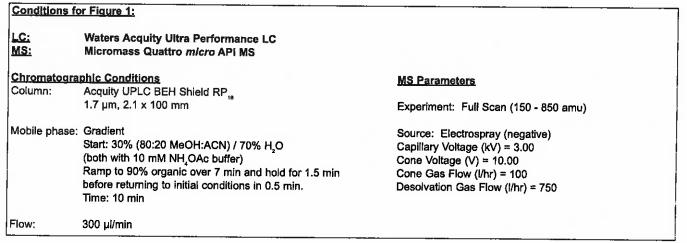
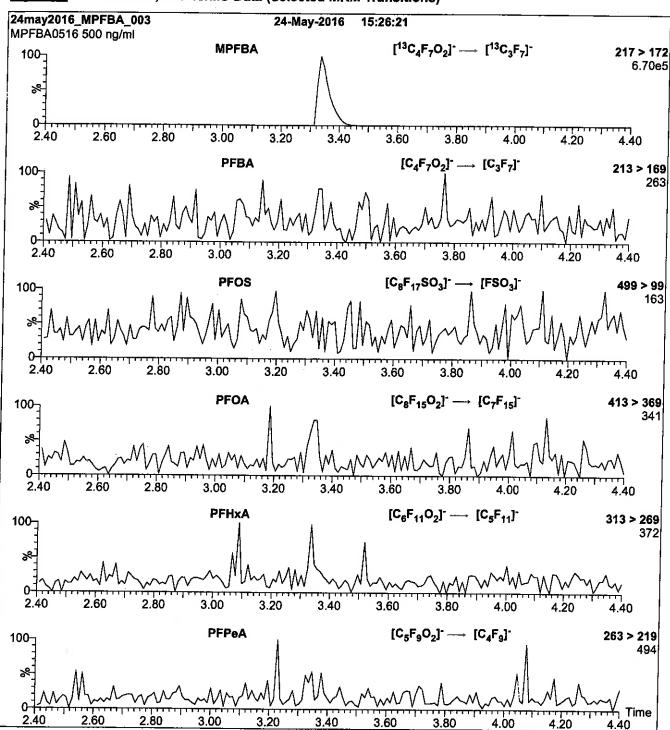
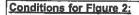


Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop Injection

10 μl (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH,OAc buffer)

Flow: 300 µI/min

MS Parameters

Collision Gas (mbar) = 3.50e-3 Collision Energy (eV) = 10

LCMPFDA_00011



CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

MPFDA

LOT NUMBER:

MPFDA0815

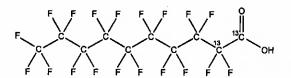
COMPOUND:

Perfluoro-n-[1,2-13C] decanoic acid

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

¹³C₂¹²C₈HF₁₉O₂

CONCENTRATION:

CHEMICAL PURITY:

50 ± 2.5 µg/ml

MOLECULAR WEIGHT:

516.07

Methanol

ISOTOPIC PURITY:

SOLVENT(S):

Water (<1%) ≥99% 13C

 $(1,2^{-13}C_3)$

08/19/2015

>98%

LAST TESTED: (mm/dd/yyyy) 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 13C,-PFNA.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

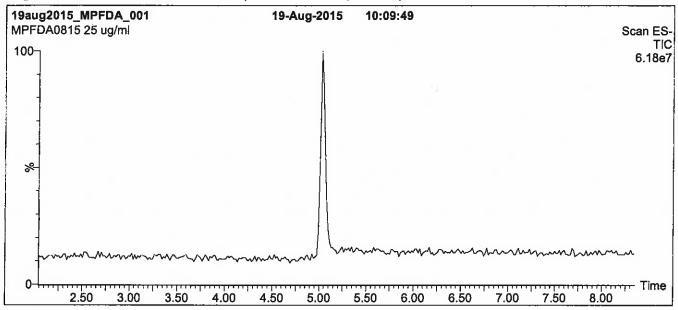
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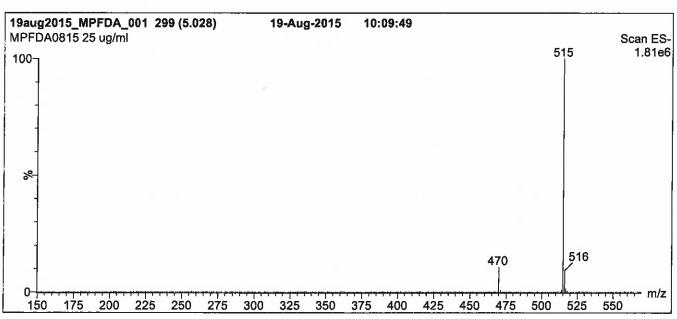


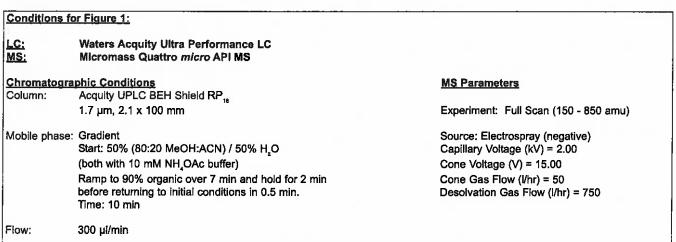


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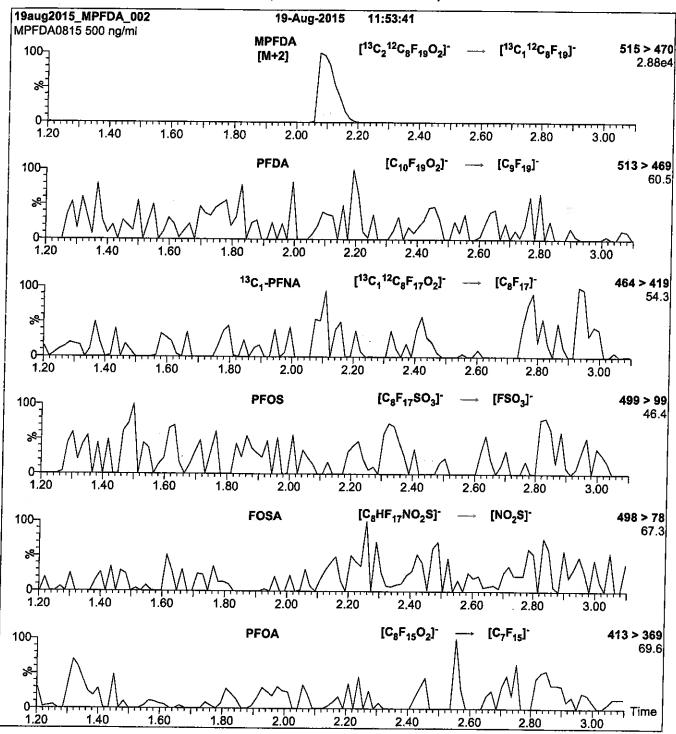
Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)

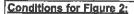






MPFDA; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection: Direct loop injection

10 μl (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH_OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3,35e-3 Collision Energy (eV) = 13

LCMPFDoA_00008

VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFDoA

LOT NUMBER:

MPFDoA0416

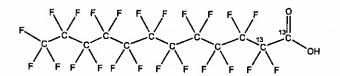
COMPOUND:

Perfluoro-n-[1,2-13C] dodecanoic acid

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

13C, 12C,0HF,3O,

CONCENTRATION:

CHEMICAL PURITY:

MOLECULAR WEIGHT:

616.08

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol

ISOTOPIC PURITY:

Water (<1%) ≥99% 13C $(1,2^{-13}C_{2})$

>98% 04/08/2016

LAST TESTED: (mm/dd/yyyy)

EXPIRY DATE: (mm/dd/yyyy)

04/08/2021

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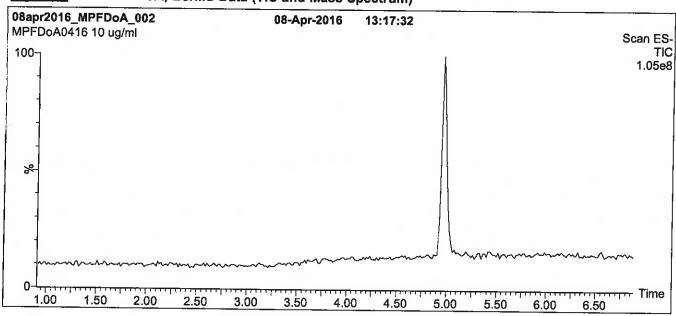
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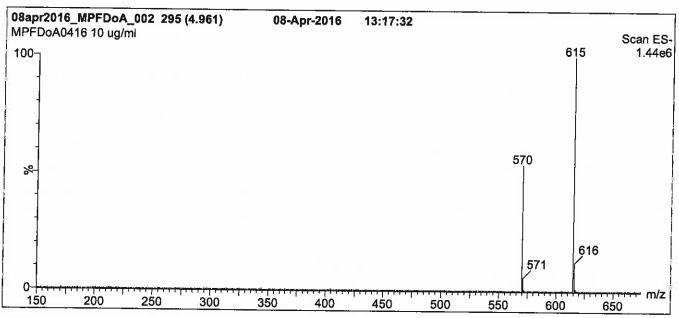


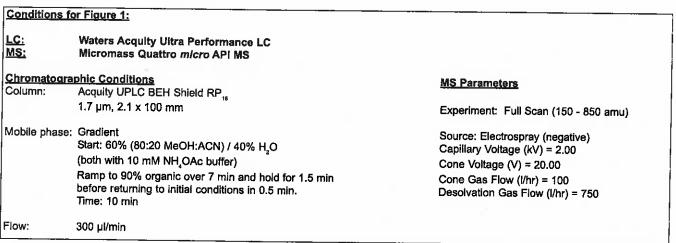


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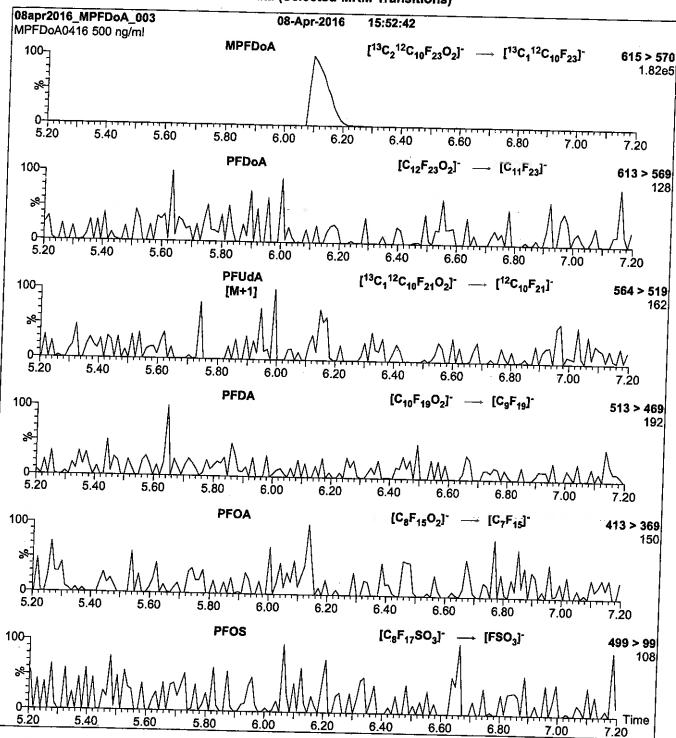
Figure 1: MPFDoA; LC/MS Data (TIC and Mass Spectrum)

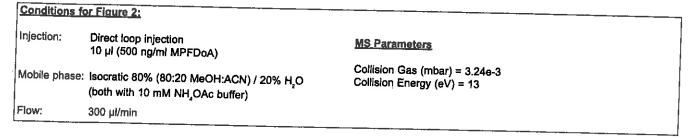






<u>Figure 2:</u> MPFDoA; LC/MS/MS Data (Selected MRM Transitions)





LCMPFHxA_00012





ID: LCMPFHxA_00012 Exp: 04/08/21 Prpd: SBC





CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFHxA

LOT NUMBER:

MPFHxA0416

COMPOUND:

Perfluoro-n-[1,2-13C₂]hexanoic acid

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₂¹²C₄HF₄O₂

MOLECULAR WEIGHT:

316.04

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99%¹³C (1,2-13C₂)

LAST TESTED: (mm/dd/yyyy)

04/08/2016

EXPIRY DATE: (mm/dd/yyyy)

04/08/2021

RECOMMENDED STORAGE:

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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.

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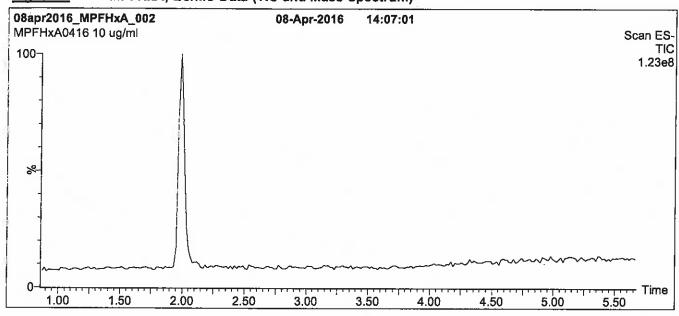
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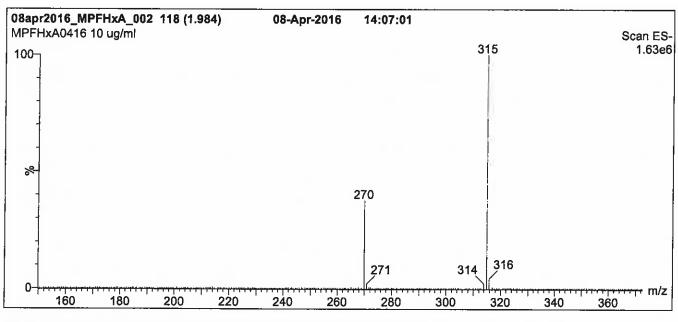




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Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)





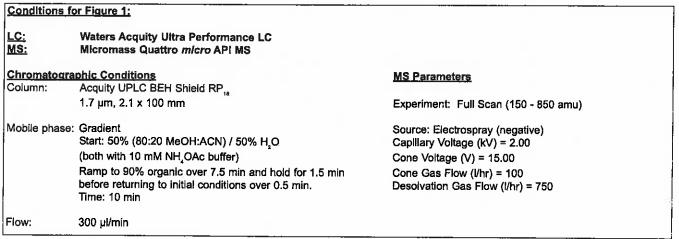
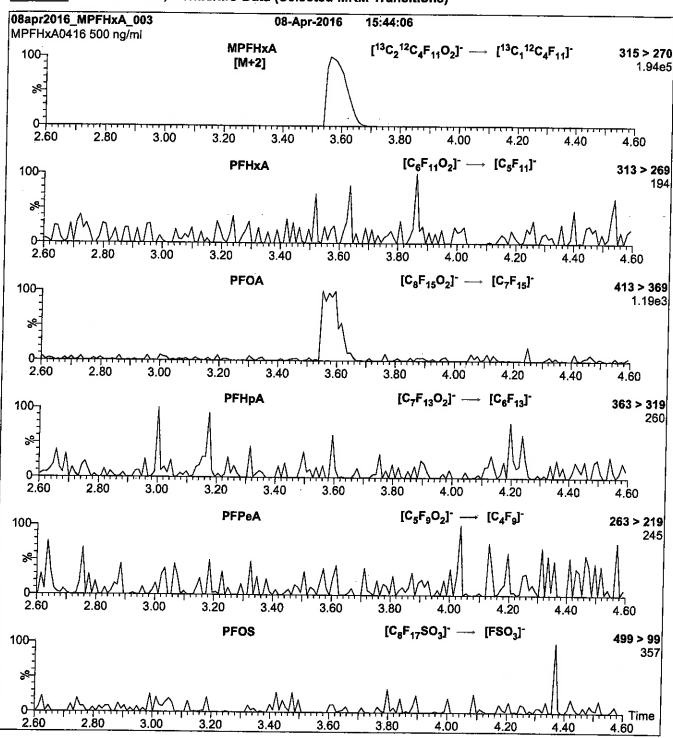
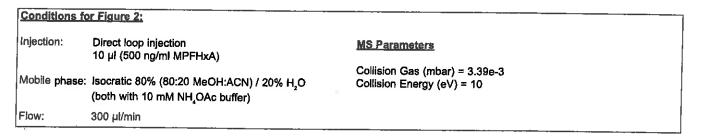


Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)





LCMPFHxS_00008

f: 8BC 9/22/16



ID: LCMPFHxS_00008 Exp: 10/23/20 Prpd: SBC 18O2-Perfluorohexanesulfo



VELLINGTC ABORATORI

CERTIFICATE OF ANALYSIS

DOCUMENTATION

PRODUCT CODE:

MPFHxS

LOT NUMBER:

MPFHxS1015

COMPOUND:

Sodium perfluoro-1-hexane[18O2]sulfonate

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

C₆F₁₃S¹⁸O₂¹⁶ONa

MOLECULAR WEIGHT:

426.10

CONCENTRATION:

 $50.0 \pm 2.5 \mu g/ml$ (Na salt)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

>94% (18O₃)

LAST TESTED: (mm/dd/yyyy)

10/23/2015

EXPIRY DATE: (mm/dd/yyyy)

10/23/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

 $47.3 \pm 2.4 \mu g/ml$ (MPFHxS anion)

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.

The response factor for MPFHxS (C₈F₁₃S¹⁸O₂) has been observed to be up to 10% lower than for PFHxS (C_sF₁₃S¹⁶O₃) when both compounds are injected together. This difference may vary between instruments.

Due to the isotopic purity of the starting material ($^{18}O_2 > 94\%$), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 10/28/2015

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

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UNCERTAINTY:

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

The combined relative standard uncertainty, $u_{\perp}(y)$, of a value y and the uncertainty of the independent parameters

 $x_i, x_2,...x_n$ on which it depends is:

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

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

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

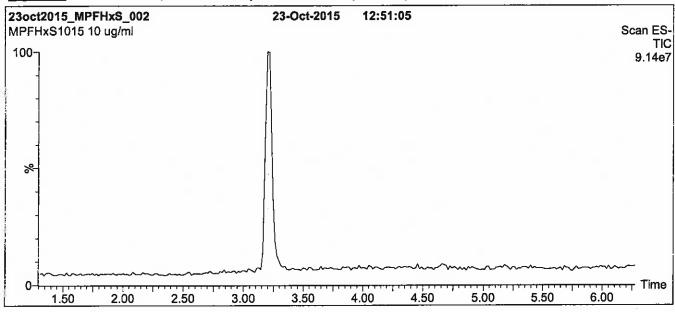
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

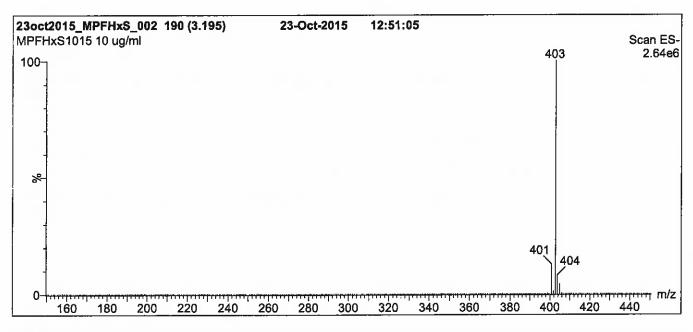




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Figure 1: MPFHxS; LC/MS Data (TIC and Mass Spectrum)





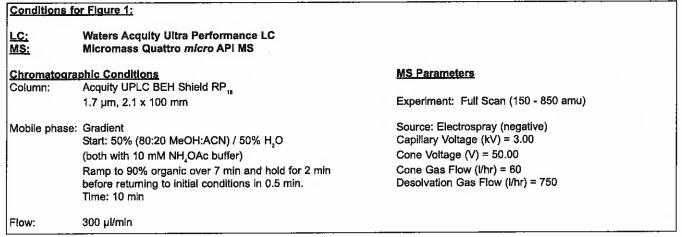
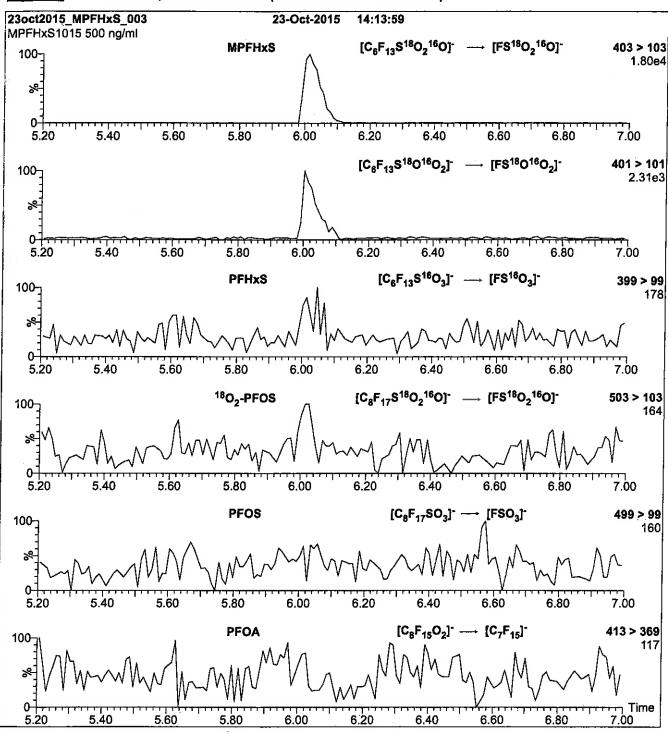
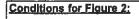


Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 µl (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_O

(both with 10 mM NH,OAc buffer)

MS Parameters

Collision Gas (mbar) = 3.35e-3 Collision Energy (eV) = 30

Flow:

300 µl/min

LCMPFNA_00008



ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFNA

LOT NUMBER:

MPFNA0414

COMPOUND:

Perfluoro-n-[1,2,3,4,5-13C_s]nonanoic acid

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₅¹²C₄HF₁₇O₇

MOLECULAR WEIGHT:

469.04

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanoi

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

Water (<1%) >99%13C

 $(1,2,3,4,5^{-13}C_{5})$

LAST TESTED: (mm/dd/yyyy)

04/13/2014

EXPIRY DATE: (mm/dd/yyyy)

04/13/2019

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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

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

HAZARDS:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

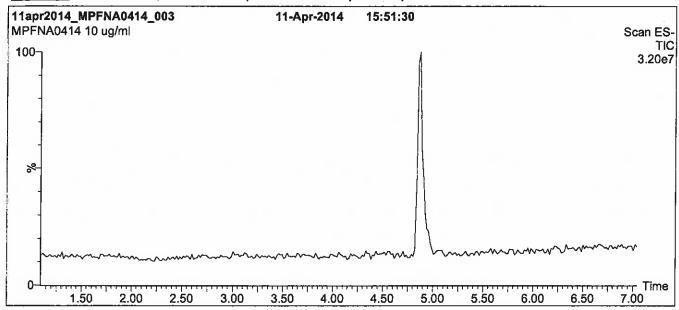
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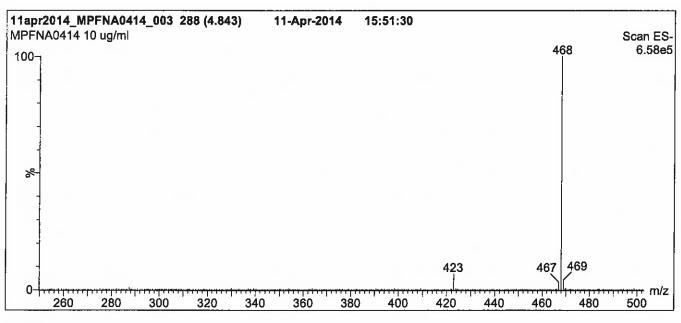




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Figure 1: MPFNA; LC/MS Data (TIC and Mass Spectrum)





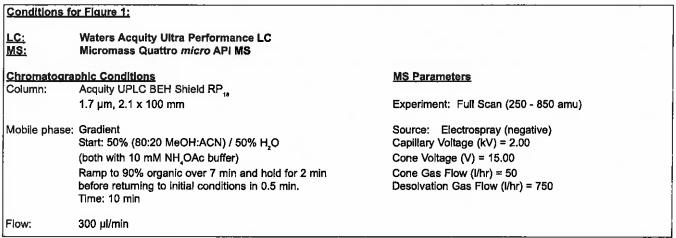
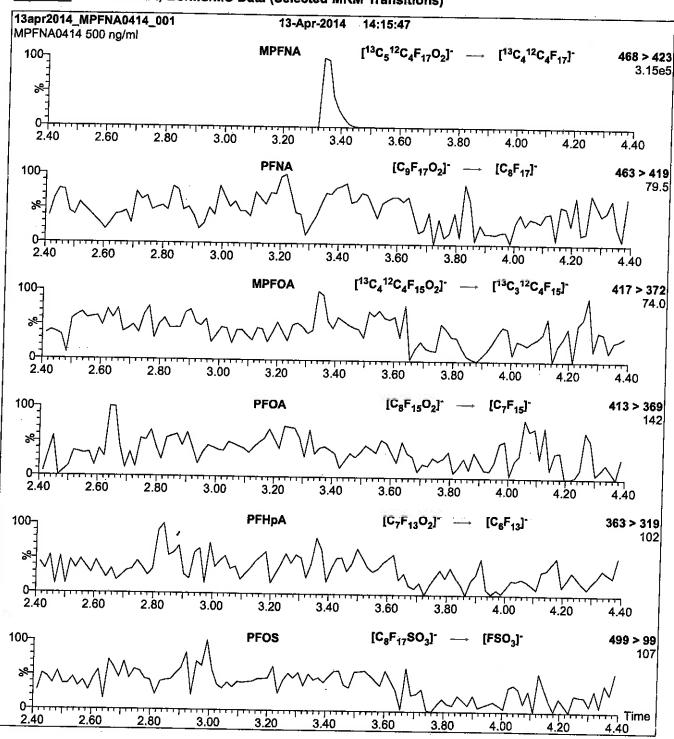
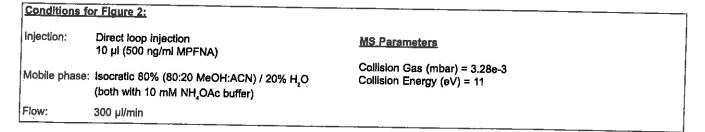


Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)





LCMPFOA_00012



ID: LCMPFOA_00012 Exp: 01/22/21 Prpd: SBC 13C4-Perfluorooctanoic ac



CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFOA

LOT NUMBER:

MPFOA0116

COMPOUND:

Perfluoro-n-[1,2,3,4-13C] octanoic acid

CAS #:

Not available

STRUCTURE:

MOLECULAR FORMULA:

¹³C₄¹²C₄HF₁₅O₂

CONCENTRATION:

50 ± 2.5 µg/mi

MOLECULAR WEIGHT:

418.04

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

Water (<1%) ≥99% ¹³C

 $(1,2,3,4^{-13}C_{\lambda})$

LAST TESTED: (mm/dd/yyyy)

01/22/2016

EXPIRY DATE: (mm/dd/yyyy)

01/22/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains ~ 0.1% of native perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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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HAZARDS:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

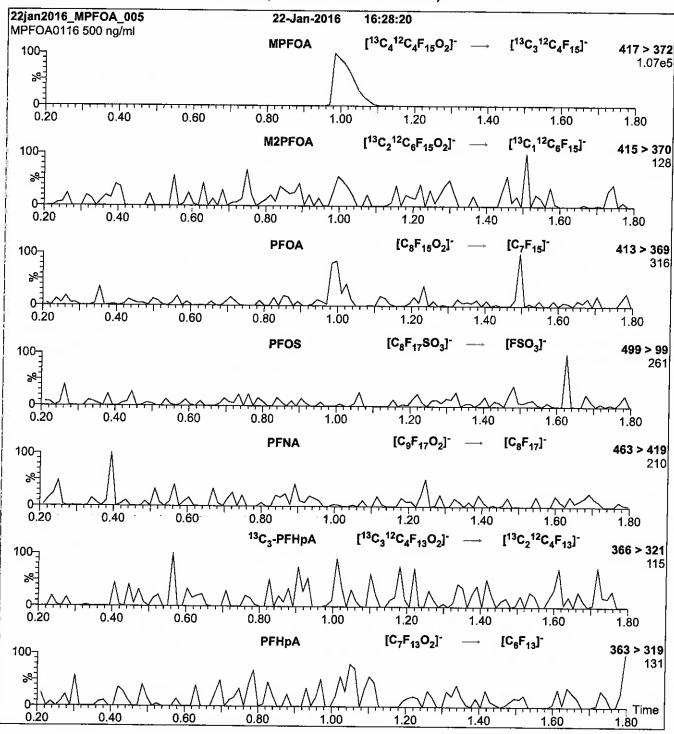
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Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)



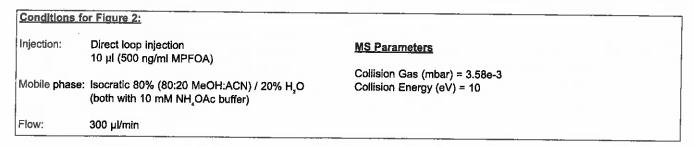
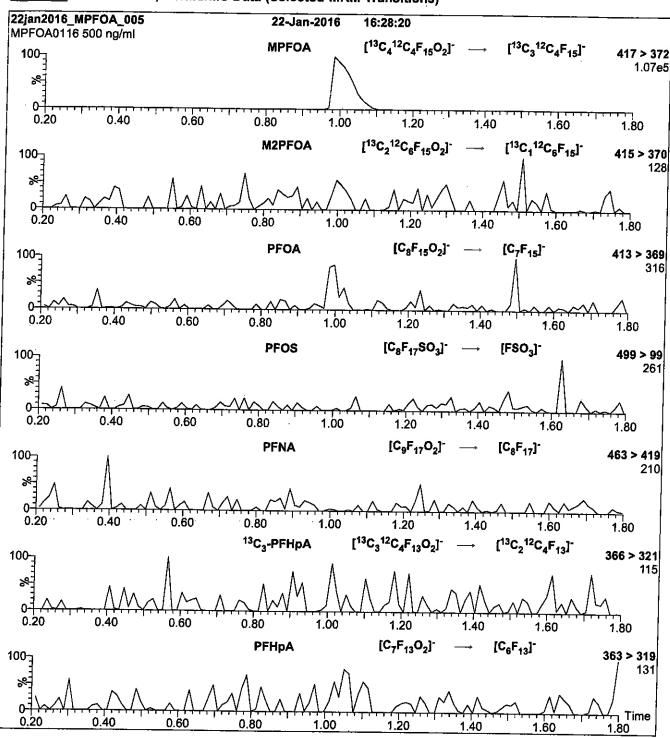
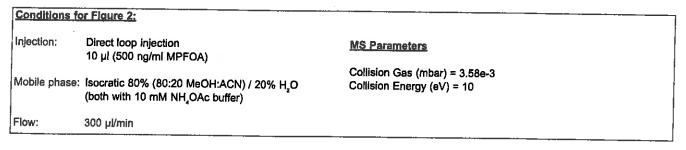


Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)





LCMPFOS_00017

R: 9/9/16 8BC





VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

MPFOS

LOT NUMBER:

MPFOS0816

COMPOUND:

Sodium perfluoro-1-[1,2,3,4-13C] octanesulfonate

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

¹³C₄¹²C₄F₁₇SO₃Na

MOLECULAR WEIGHT:

526.08

CONCENTRATION:

 $50.0 \pm 2.5 \,\mu\text{g/ml}$ (Na salt)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% 13C

LAST TESTED: (mm/dd/yyyy)

08/03/2016

(1,2,3,4-13C₄)

EXPIRY DATE: (mm/dd/yyyy)

08/03/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

 $47.8 \pm 2.4 \mu g/ml$ (MPFOS anion)

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-[1,2,3-13C]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 08/05/2016

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HAZARDS:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

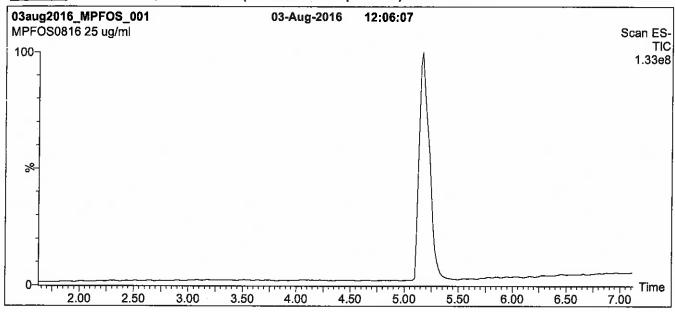
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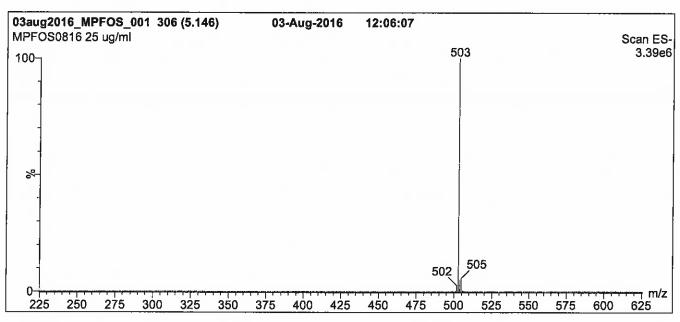




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Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)





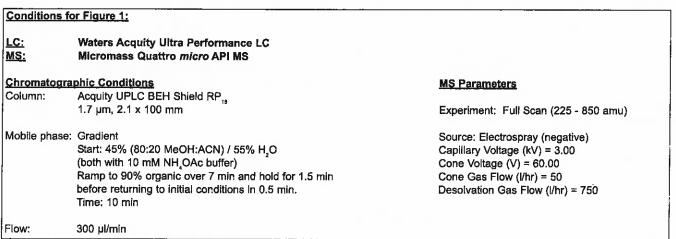
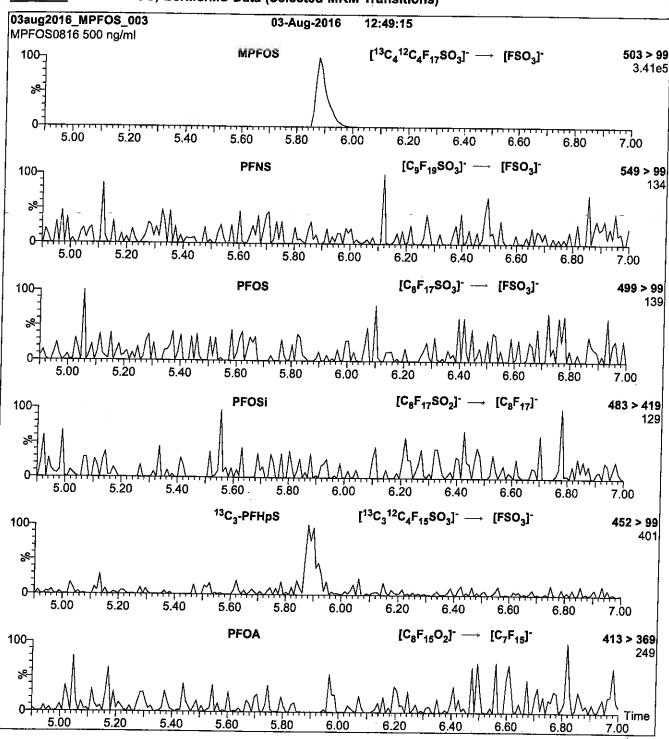
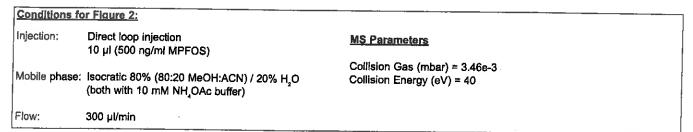


Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)





LCMPFUdA_00009

CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SR

PRODUCT CODE:

MPFUdA

LOT NUMBER:

MPFUdA0216

COMPOUND:

Perfluoro-n-[1,2-13C,]undecanoic acid

STRUCTURE:

CAS#:

Not available

MOLECULAR FORMULA:

¹³C₂¹²C₉HF₂₁O₂

MOLECULAR WEIGHT:

566.08

CONCENTRATION:

50 ± 2.5 μg/ml

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

LAST TESTED: (mm/dd/yyyy)

>98%

ISOTOPIC PURITY:

≥99% ¹³C (1,2-¹³C₂)

EXPIRY DATE: (mm/dd/yyyy)

02/12/2016

02/12/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Presence of 1-¹³C₁-PFUdA (~1%; see Figure 2), 2-¹³C₁-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ¹³C-precursor.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified Bv:

B.G. Chittim

Date:

02/24/2016

(mm/dd/yy

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HAZARDS;

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x1, x2,...x, on which it depends is:

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

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

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

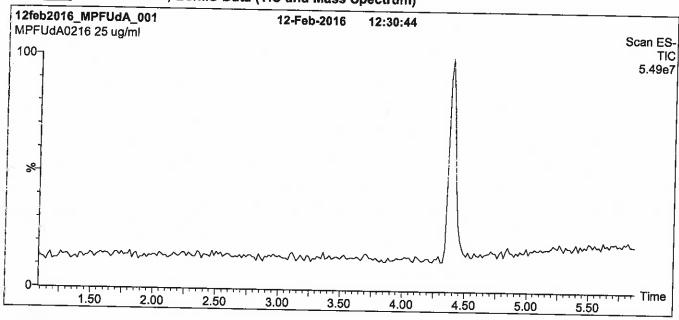
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

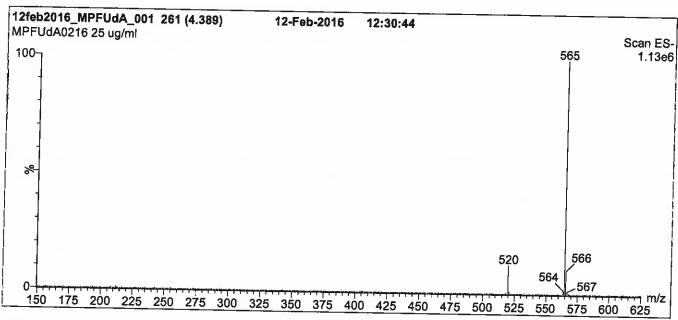




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Figure 1: MPFUdA; LC/MS Data (TIC and Mass Spectrum)





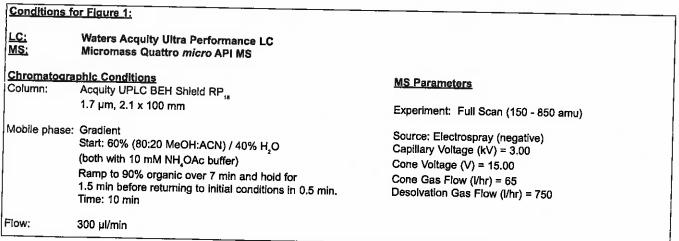
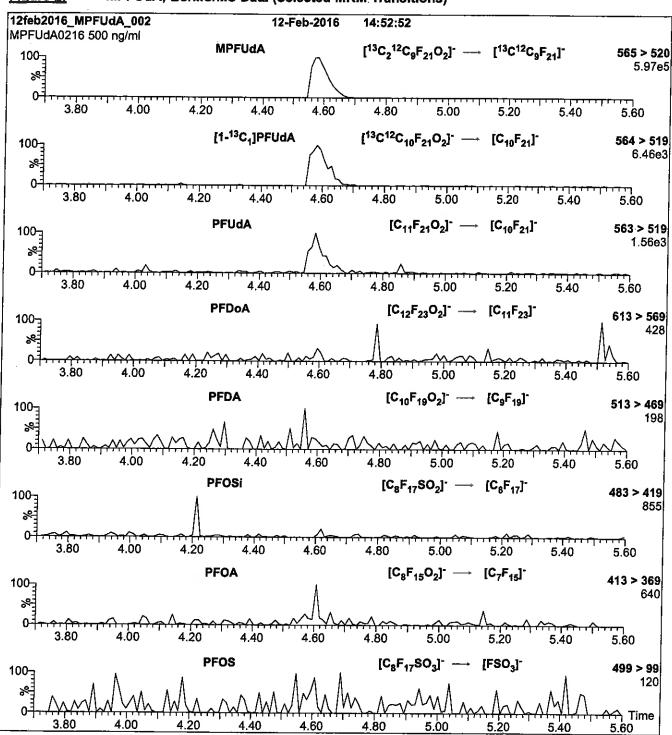
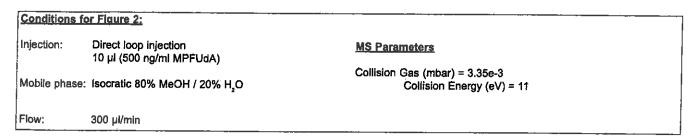


Figure 2: MPFUdA; LC/MS/MS Data (Selected MRM Transitions)





LCN-EtFOSA-M_00003

VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

LOT NUMBER:

NEtFOSA0516M

COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

CAS #:

4151-50-2

STRUCTURE:

MOLECULAR FORMULA:

 $C_{10}H_8F_{17}NO_2S$

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/24/2016

EXPIRY DATE: (mm/dd/yyyy)

05/24/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT:

527.20

SOLVENT(S):

Methanol

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

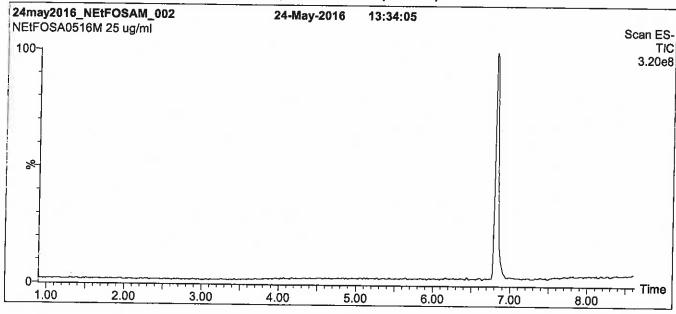
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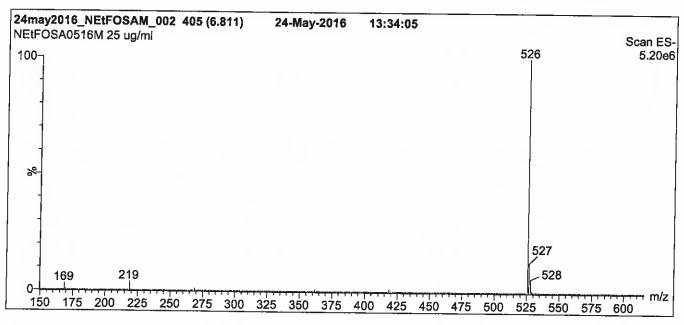




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Figure 1: N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)





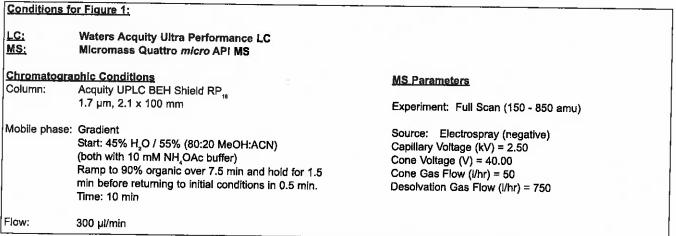
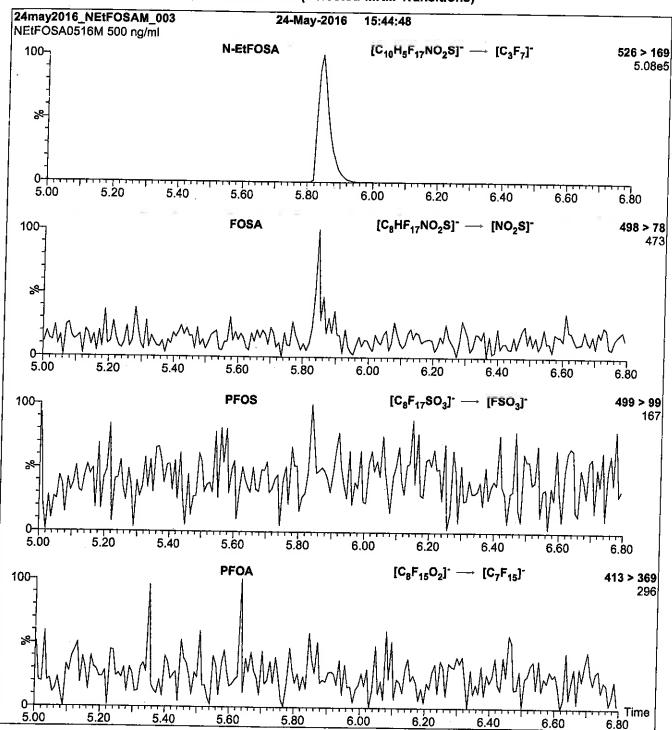
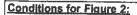


Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop Injection

10 μl (500 ng/ml N-EtFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.54e-3 Collision Energy (eV) = 30

LCN-EtFOSAA_00002





CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSAA

LOT NUMBER:

NEtFOSAA0116

COMPOUND:

N-ethylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:

ÇAS #:

2991-50-6

MOLECULAR FORMULA:

C₁₂H₈F₁₇NO₄S

MOLECULAR WEIGHT:

585.23

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/20/2016

EXPIRY DATE: (mm/dd/yyyy)

01/20/2021

RECOMMENDED STORAGE:

Refrigerate ampoule

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 the conversion of the acetic acid molety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date:

1/2 1/20 10

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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HAZARDS;

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

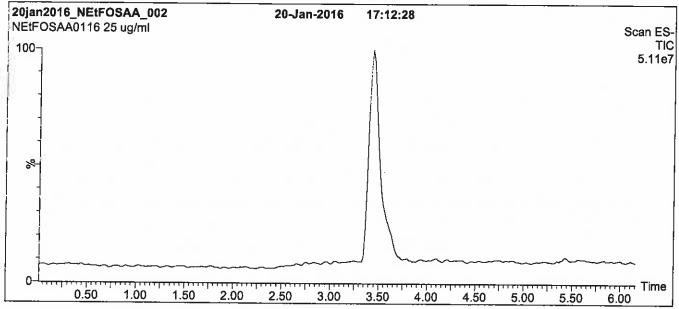
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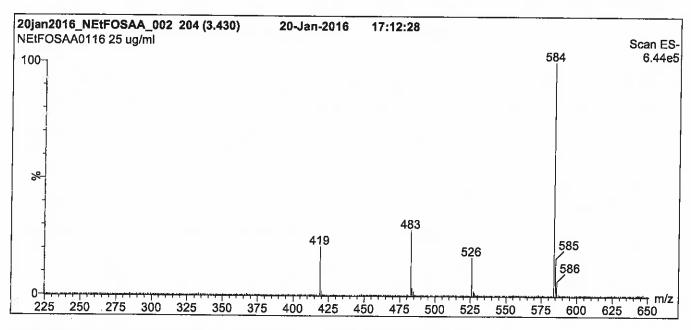




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Figure 1: N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)





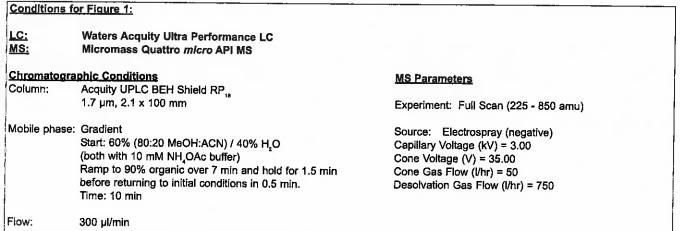
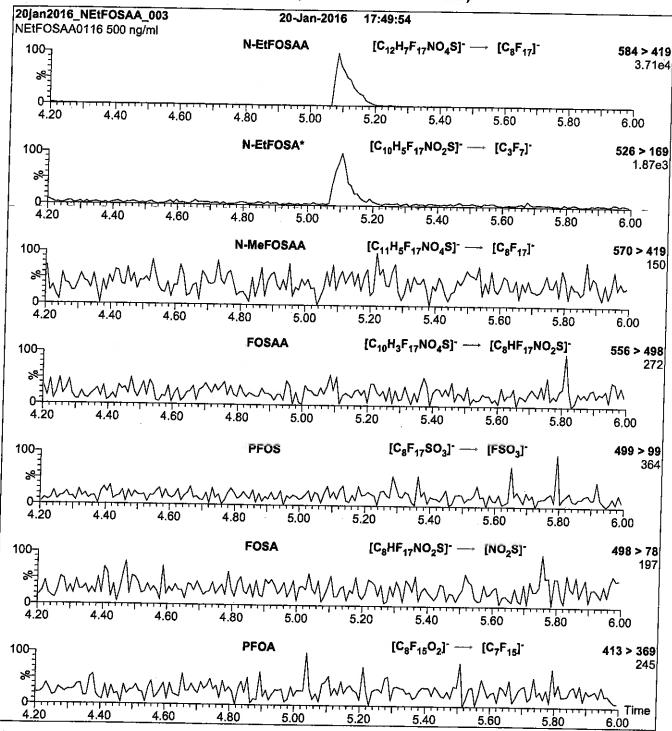
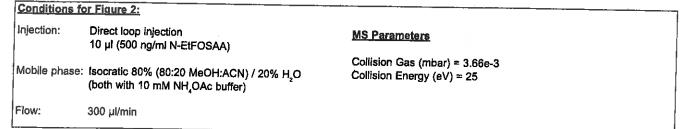


Figure 2: N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)



Note: N-EtFOSA is formed by fragmentation of N-EtFOSAA.



LCN-MeFOSA-M_00002



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSA-M

LOT NUMBER:

MOLECULAR WEIGHT:

SOLVENT(S):

NMeFOSA0516M

513.17

Methanol

COMPOUND:

N-methylperfluoro-1-octanesulfonamide

CAS #:

31506-32-8

STRUCTURE:

MOLECULAR FORMULA:

C₉H₄F₁₇NO₂S

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/24/2016

EXPIRY DATE: (mm/dd/yyyy)

05/24/2021

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 05/26/2016

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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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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:

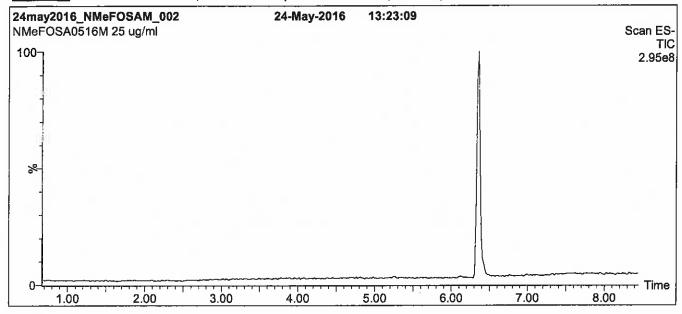
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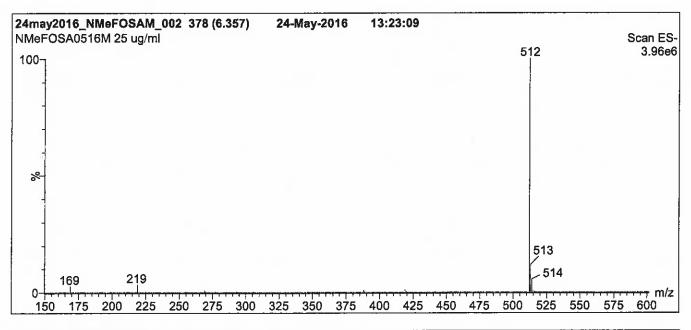




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Figure 1: N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)





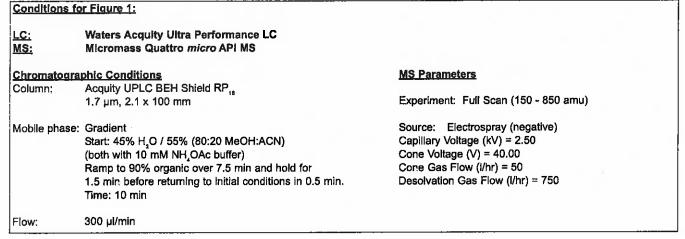
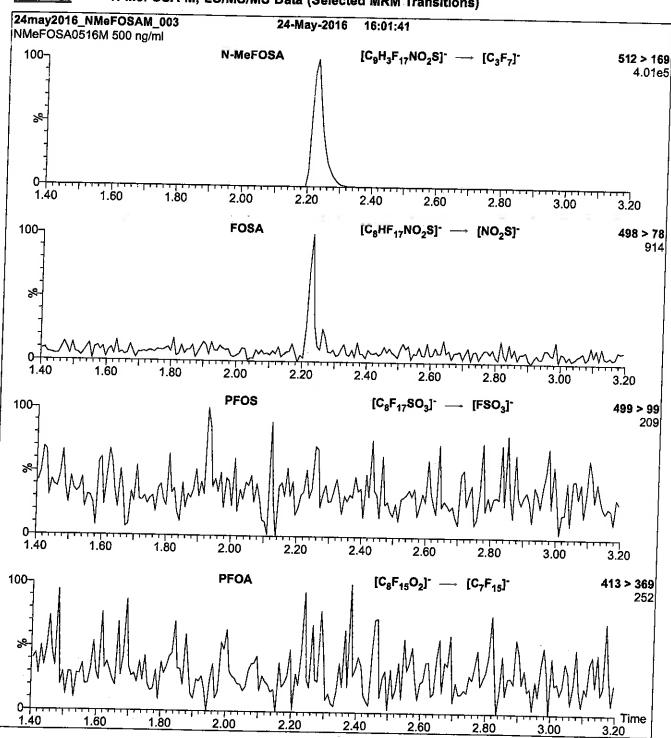
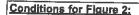


Figure 2: N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Flow:

Direct loop injection

10 μl (500 ng/ml N-MeFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H,O

(both with 10 mM NH,OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.54e-3 Collision Energy (eV) = 30

LCN-MeFOSAA_00003



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSAA

LOT NUMBER:

NMeFOSAA0116

COMPOUND:

N-methylperfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:

CAS #:

2355-31-9

MOLECULAR FORMULA:

C₁₁H₆F₁₇NO₄S

MOLECULAR WEIGHT:

571.21

50 ± 2.5 µg/ml SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

CONCENTRATION:

>98%

LAST TESTED: (mm/bd/yyyy)

01/20/2016

EXPIRY DATE: (mm/dd/yyyy)

01/20/2021

RECOMMENDED STORAGE:

Refrigerate ampoule

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 the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 01/21/2016

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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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

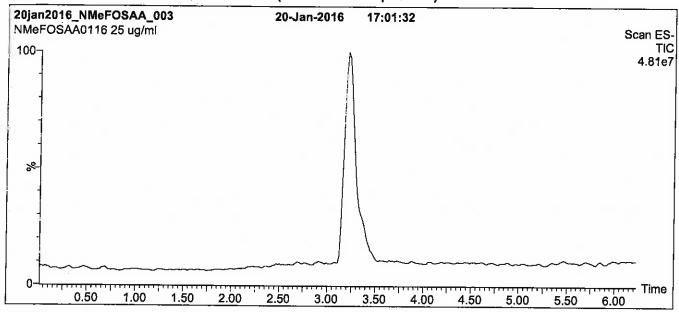
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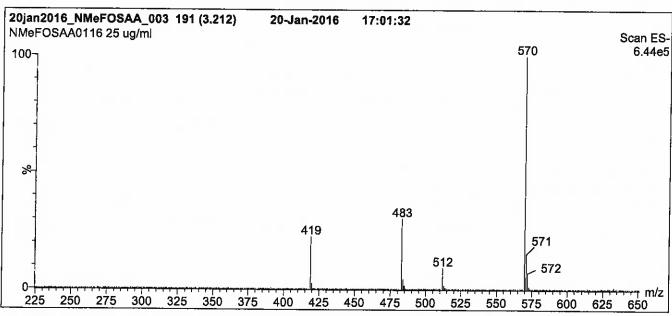


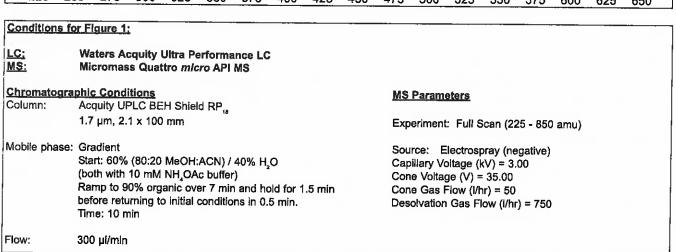


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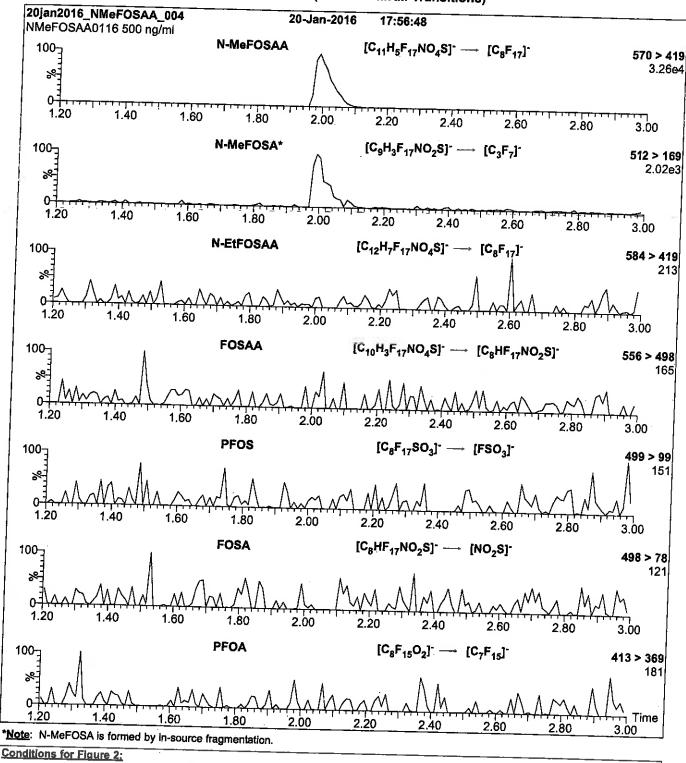
Figure 1: N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)







N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection:

Direct loop injection

10 µl (500 ng/ml N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H.O.

(both with 10 mM NH OAc buffer)

Collision Gas (mbar) = 3.66e-3 Collision Energy (eV) = 25

MS Parameters

Flow:

300 µi/min

LCPFACMXB_00007



CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXB

Solution/Mixture of Native
Perfluoroalkylcarboxylic Acids and
Native Perfluoroalkylsulfonates

PRODUCT CODE:

PFAC-MXB

LOT NUMBER:

PFACMXB1115

SOLVENT(S):

Methanol / Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

11/04/2015

LAST TESTED: (mm/dd/yyyy)

11/06/2015

EXPIRY DATE: (mm/dd/yyyy)

11/06/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXB is a solution/mixture of thirteen native perfluoroalkylcarboxylic acids (C_4 - C_{14} , C_{16} , and C_{18}) and four native perfluoroalkylsulfonates (C_4 , C_8 , C_8 and C_{10}). The full name, abbreviation and concentration for each of the components are given in Table A.

The individual perfluoroalkylcarboxylic acids and perfluoroalkylsulfonates all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture

Figure 1: LC/MS Data (SIR)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)
Figure 3: 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 acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, u(y), of a value y and the uncertainty of the independent parameters

$$x_{ij} x_{ij} ... x_{ij}$$
 on which it depends is:

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

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (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:

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Table A: PFAC-MXB; Components and Concentrations (ng/ml, ± 5% in Methanol / Water (<1%))

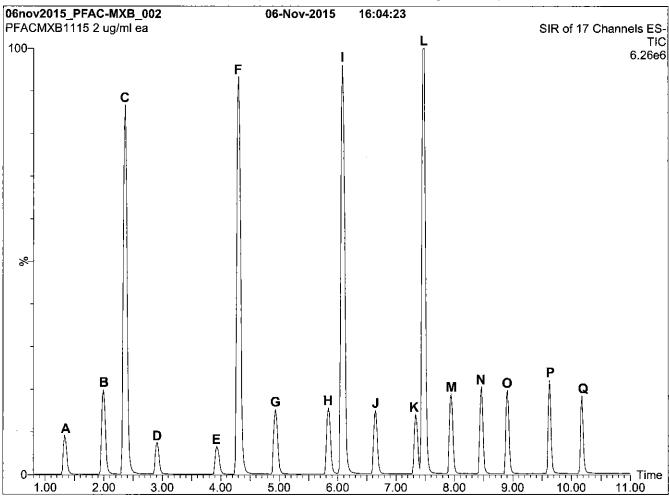
Name	Abbreviation	Concentration (ng/ml)		Peak Assignment In Figure 1
Perfluoro-n-butanoic acid	PFBA	2000		Α
Perfluoro-n-pentanoic acid	PFPeA	2000		В
Perfluoro-n-hexanoic acid	PFHxA	2000		D
Perfluoro-n-heptanoic acid	PFHpA	2000		E
Perfluoro-n-octanoic acid	PFOA	2000		G
Perfluoro-n-nonanoic acid	PFNA	2000		Н
Perfluoro-n-decanoic acid	PFDA	2000		J
Perfluoro-n-undecanoic acid	PFUdA	2000		K
Perfluoro-n-dodecanoic acid	PFDoA	2000		М
Perfluoro-n-tridecanoic acid	PFTrDA	2000		N
Perfluoro-n-tetradecanoic acid	PFTeDA	2000		0
Perfluoro-n-hexadecanoic acid	PFHxDA	2000		Р
Perfluoro-n-octadecanoic acid	PFODA	2000		Q
Name	Abbreviation	Concentration (ng/ml)		Peak
		as the salt	as the anion	Assignment in Figure 1
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	С
Sodium perfluoro-1-hexanesulfonate	L-PFHxS	2000	1890	F
Sodium perfluoro-1-octanesulfonate	L-PFOS	2000	1910	- 1
Sodium perfluoro-1-decanesulfonate	L-PFDS	2000	1930	L

Certified By:

P.C. Chiltim

Date: 11/11/2015

Figure 1: PFAC-MXB; LC/MS Data (Total Ion Current Chromatogram; SIR)



Conditions for Figure 1:

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

Chromatographic Conditions

Column:

Acquity UPLC BEH Shield RP,16

1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 55% H₂O / 45% (80:20 MeOH:ACN)

(both with 10 mM NH, OAc buffer)

Ramp to 95% organic over 10 min and hold for 1 min

before returning to initial conditions in 0.5 min.

Time: 12 min

Flow:

300 µl/min

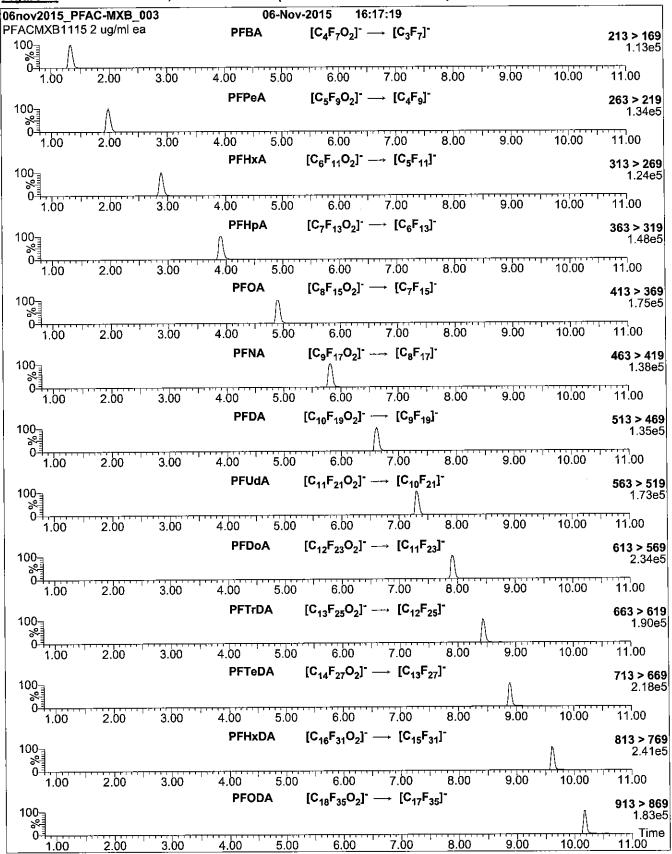
MS Parameters

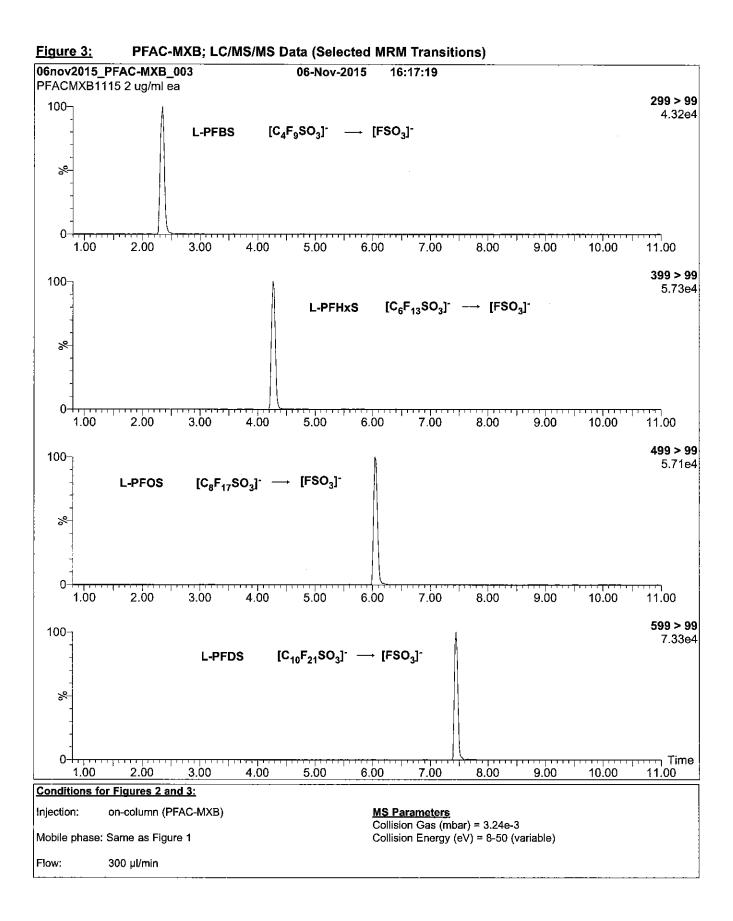
Experiment: SIR of 17 Channels

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = variable (10-70)
Cone Gas Flow (l/hr) = 50

Desolvation Gas Flow (I/hr) = 750

Figure 2: PFAC-MXB; LC/MS/MS Data (Selected MRM Transitions)





LCPFBA_00005

P:8BC 9/13/16







CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFBA

LOT NUMBER:

PFBA0516

COMPOUND:

Perfluoro-n-butanoic acid

STRUCTURE:

CAS #:

375-22-4

MOLECULAR FORMULA:

C₄HF₂O₂

MOLECULAR WEIGHT:

214.04

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/27/2016

EXPIRY DATE: (mm/dd/yyyy)

05/27/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 05/31/2016

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, $u_{o}(y)$, of a value y and the uncertainty of the independent parameters

 $X_1, X_2, ... X_n$ on which it depends is:

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

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (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 explry 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

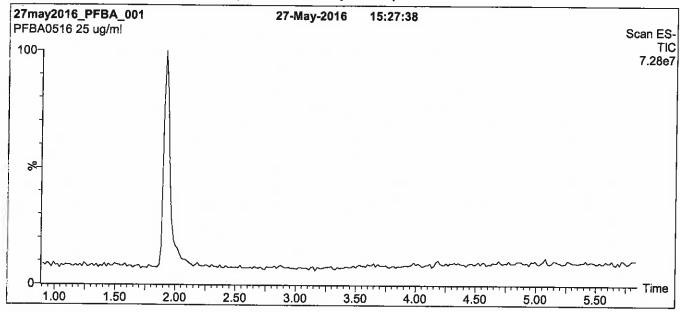
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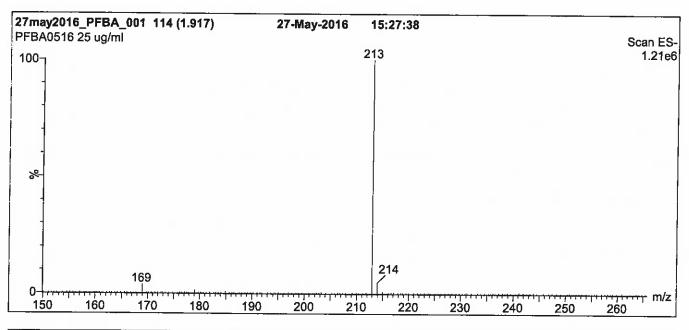


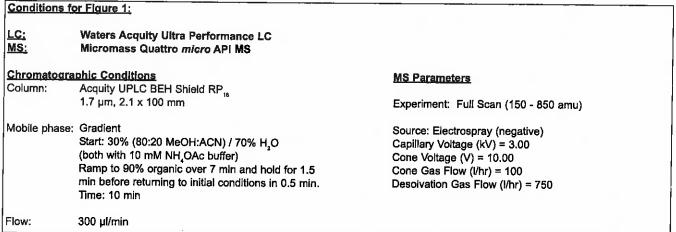


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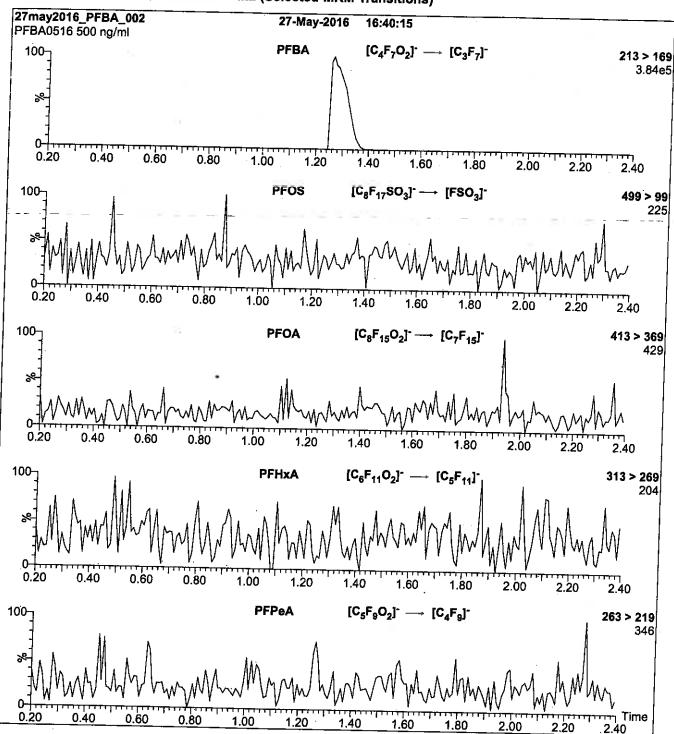
Figure 1: PFBA; LC/MS Data (TIC and Mass Spectrum)

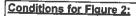






PFBA; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Direct loop injection

10 µl (500 ng/ml PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O (both with 10 mM NH₄OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3 Collision Energy (eV) = 10

LCPFBS_00005

R: 9/9/16 8BC





VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

M2-8:2FTS

LOT NUMBER:

M282FTS0116

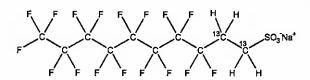
COMPOUND:

Sodium 1H,1H,2H,2H-perfluoro-[1,2-13C]decane sulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

¹³C₂¹²C₈H₄F₁₇SO₃Na

MOLECULAR WEIGHT:

552.15

CONCENTRATION:

 $50.0 \pm 2.5 \,\mu g/ml$

SOLVENT(S):

Methanol

47.9 ± 2.4 µg/ml

(M2-8:2FTS anion)

(Na salt)

CHEMICAL PURITY:

>98%

ISOTOPIC PURITY:

≥99% ¹³C

LAST TESTED: (mm/dd/yyyy)

01/08/2016

(1,2-13C_n)

EXPIRY DATE: (mm/dd/yyyy)

01/08/2021

RECOMMENDED STORAGE:

Refrigerate ampoule

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.

The native 8:2FTS contains 4.22% of 34S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 01/18/2016

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

 $x_1, x_2, ... x_n$ on which it depends is:

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

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

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:

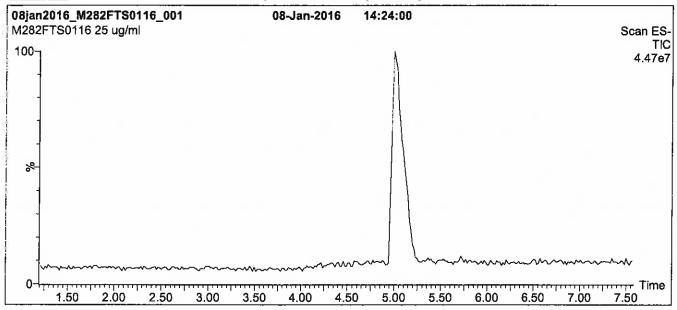
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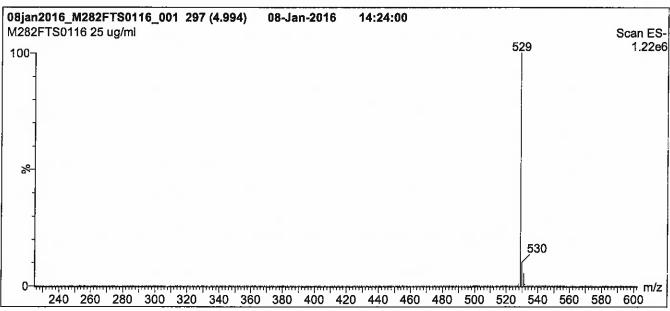




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Figure 1: M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)





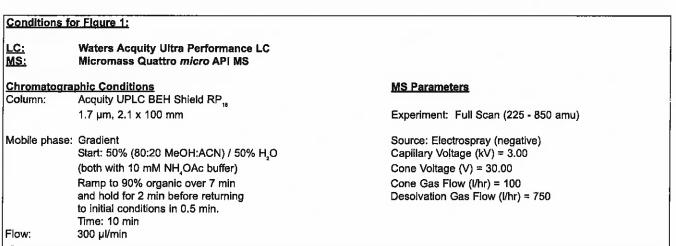
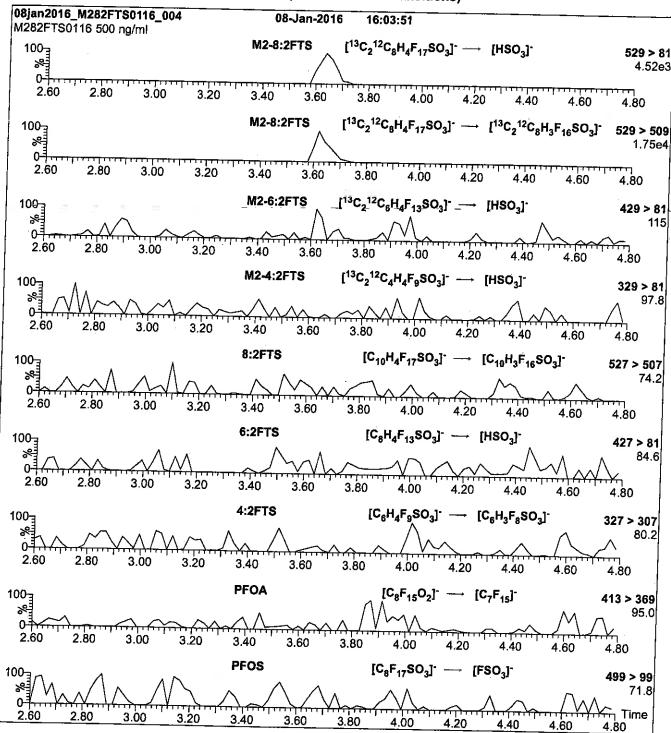
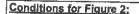


Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)





Direct loop injection

10 μl (500 ng/ml M2-8:2FTS)

MS Parameters

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

Collision Gas (mbar) = 3.20e-3 Collision Energy (eV) = 30

(both with 10 mM NH₂OAc buffer)

Flow:

300 µl/min



ID: LCPFBS_00005 Exp: 03/15/21 Prpd: SBC PF-1-butanesulfonate K sa



ID: LCPFBS_00006 Exp: 03/15/21 Prpd: SBC PF-1-butanesulfonate K sa



VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFBS

LOT NUMBER:

MOLECULAR WEIGHT:

SOLVENT(S):

LPFBS0316

COMPOUND:

Potassium perfluoro-1-butanesulfonate

CAS #:

29420-49-3

338.19

Methanol

STRUCTURE:

MOLECULAR FORMULA:

C₄F₆SO₅K

50.0 ± 2.5 μg/ml (K salt)

 $44.2 \pm 2.2 \mu g/ml$ (PFBS anion)

CHEMICAL PURITY:

CONCENTRATION:

>98%

LAST TESTED: (mm/dd/yyyy)

03/15/2016

EXPIRY DATE: (mm/dd/yyyy)

03/15/2021

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 03/21/2016

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

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

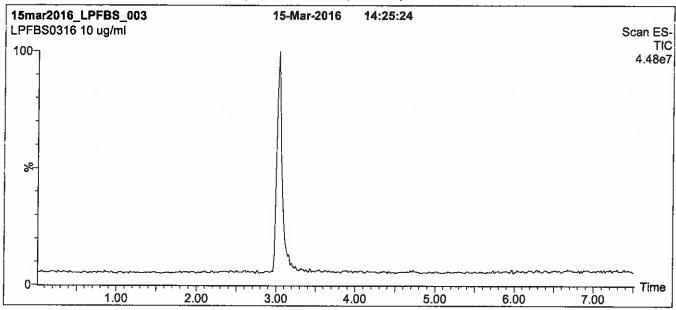
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

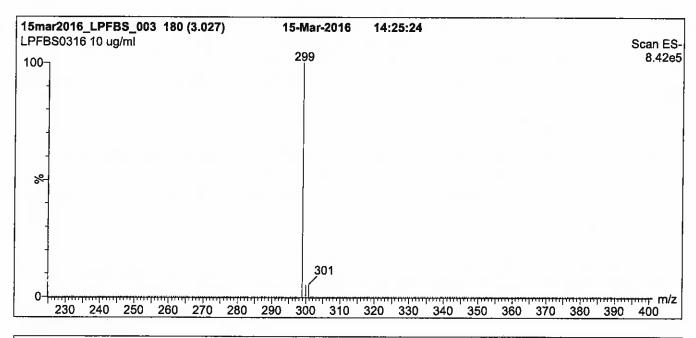


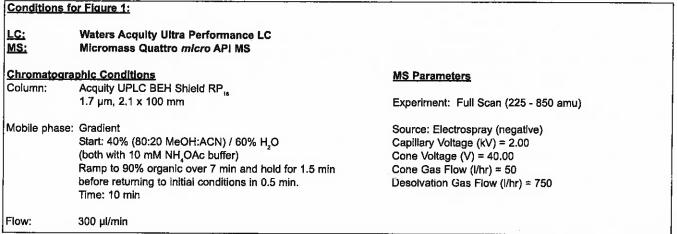


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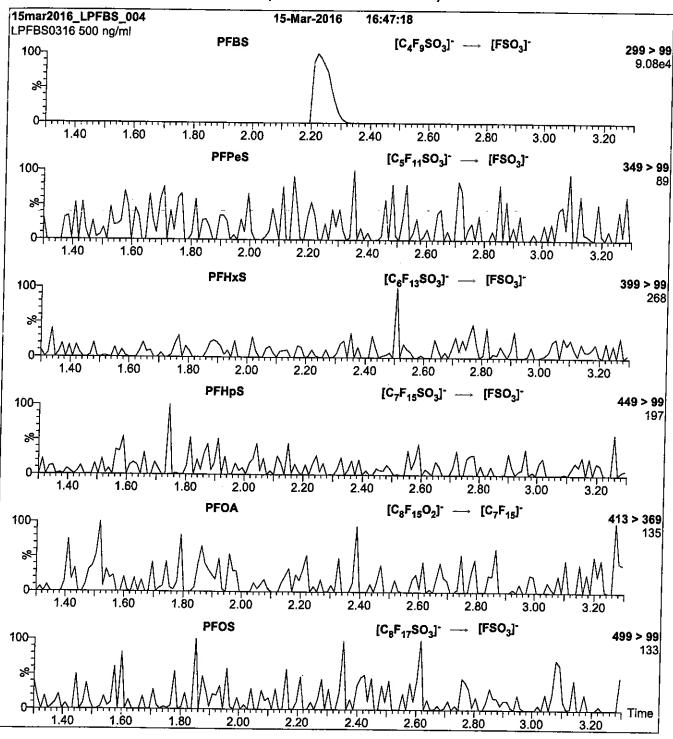
Figure 1: L-PFBS; LC/MS Data (TIC and Mass Spectrum)







L-PFBS; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Flow:

Direct loop injection

10 μl (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H,O

(both with 10 mM NH₂OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3 Collision Energy (eV) = 25

LCPFDA 00005



CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFDA

Perfluoro-n-decanoic acid

LOT NUMBER:

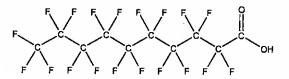
PFDA0615

STRUCTURE:

COMPOUND:

CAS #:

335-76-2



MOLECULAR FORMULA:

CONCENTRATION:

C,0HF,9O2

50 ± 2.5 μg/ml

MOLECULAR WEIGHT:

SOLVENT(S):

514.08

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/ckl/yyyy)

07/02/2015

EXPIRY DATE: (mm/dd/yyyy)

07/02/2020

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 ~ 0.6% PFNA and ~ 0.3% PFOA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date:

07/24/2015

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

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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 $X_1, X_2, ... X_n$ on which it depends is:

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

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

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

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

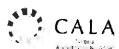
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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

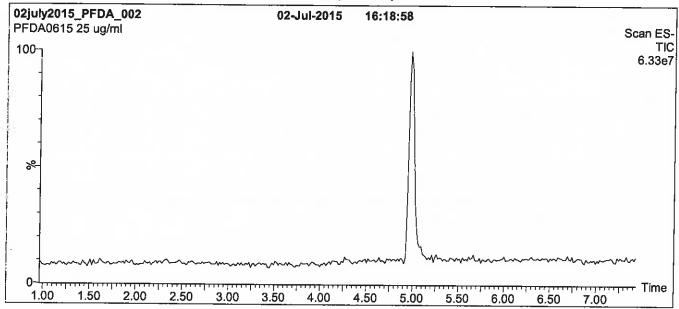
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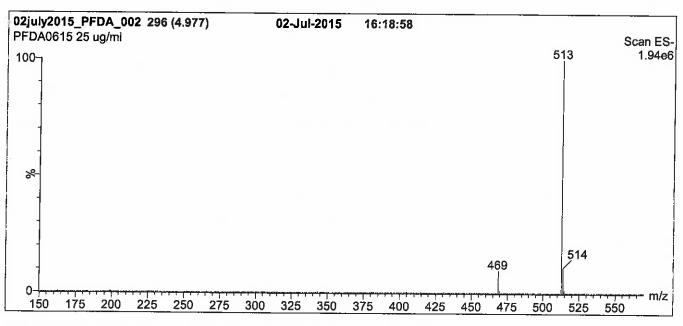




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Figure 1: PFDA; LC/MS Data (TIC and Mass Spectrum)





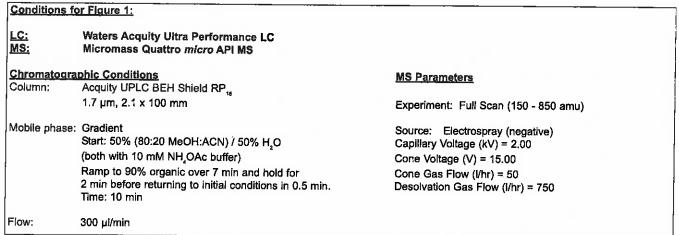
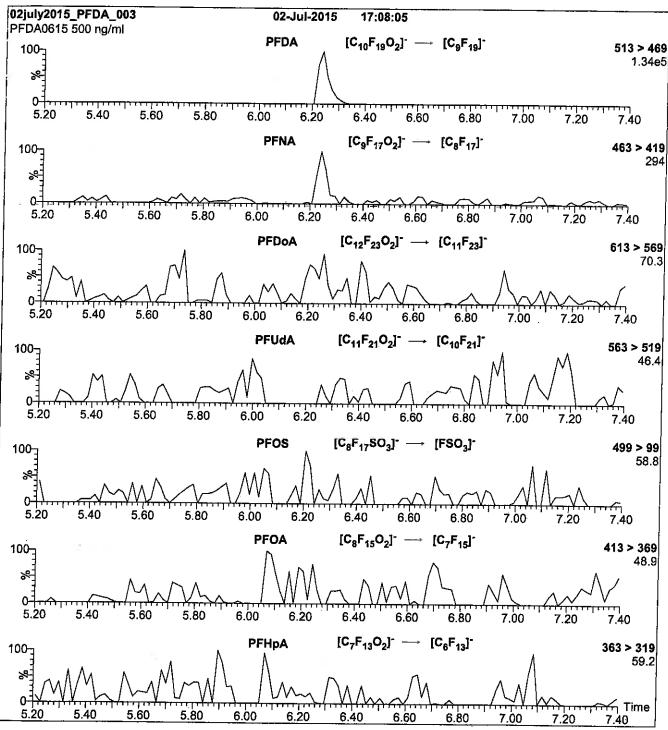


Figure 2: PFDA; LC/MS/MS Data (Selected MRM Transitions)





Direct loop injection

10 µl (500 ng/ml PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH₂OAc buffer)

Flow:

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.62e-3 Collision Energy (eV) = 13

LCPFDoA_00005

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFDoA

LOT NUMBER:

PFDoA0115

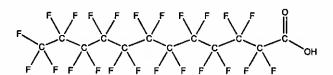
COMPOUND:

Perfluoro-n-dodecanoic acid

STRUCTURE:

CAS #:

307-55-1



MOLECULAR FORMULA:

C,HF,O,

MOLECULAR WEIGHT:

614.10

CONCENTRATION:

50 ± 2.5 µg/ml

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/30/2015

EXPIRY DATE: (mm/dd/yyyy)

01/30/2020

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B C Chittim

Date: _

<u>.03/25/2015</u>

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

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SYNTHESIS / CHARACTERIZATION:

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 $x_i, x_j,...x_n$ on which it depends is:

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

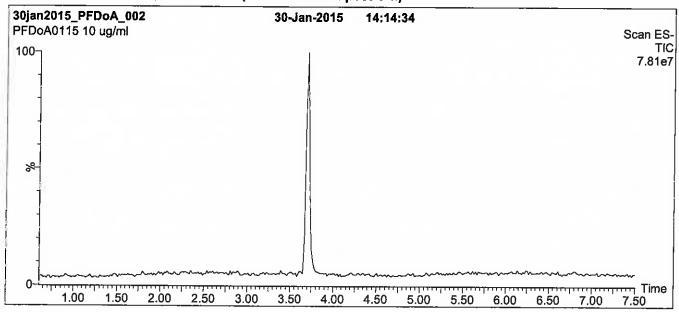
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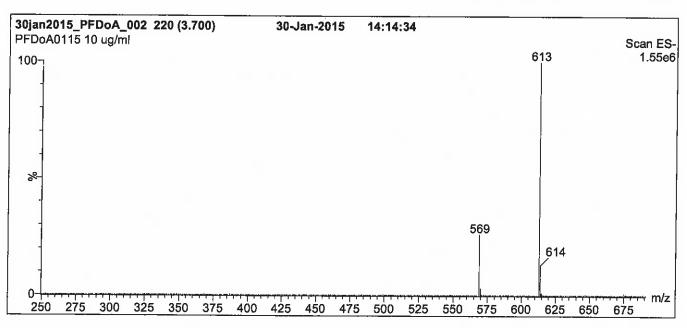




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Figure 1: PFDoA; LC/MS Data (TIC and Mass Spectrum)





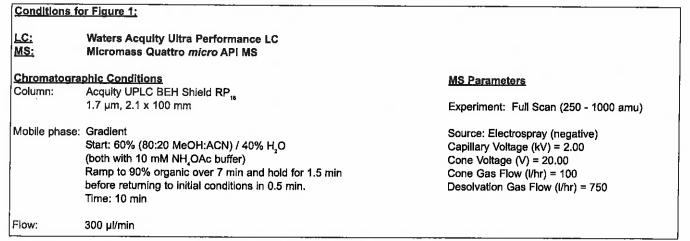
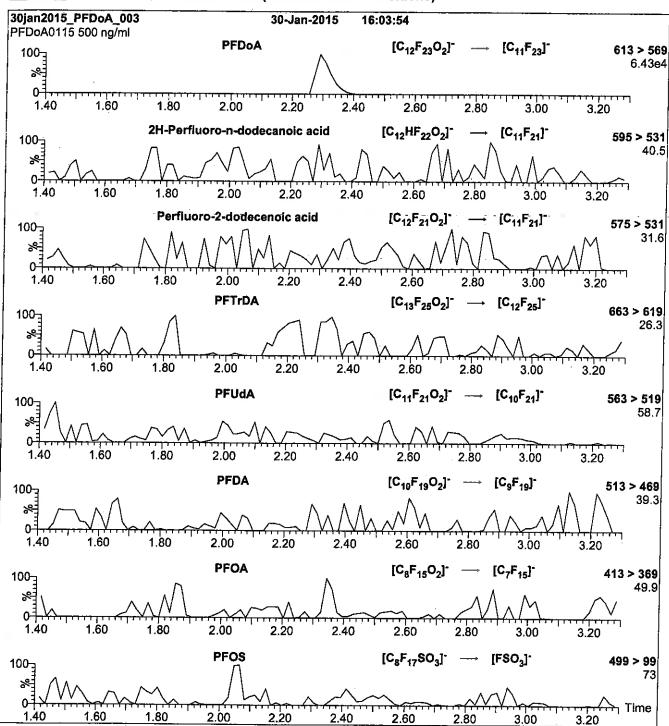
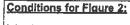


Figure 2: PFDoA; LC/MS/MS Data (Selected MRM Transitions)





Direct loop injection

10 μl (500 ng/ml PFDoA)

MS Parameters

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

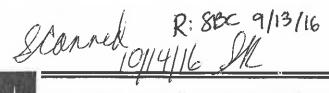
(both with 10 mM NH₂OAc buffer)

Collision Gas (mbar) = 3.28e-3 Collision Energy (eV) = 13

Flow:

300 µl/min

LCPFHpA_00006





ID: LCPFHpA_00006
Exp: 01/22/21 Prod: SBC
PF-n-heptanoic acid





CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFHpA

LOT NUMBER:

PFHpA0116

COMPOUND:

Perfluoro-n-heptanoic acid

STRUCTURE:

CAS #:

375-85-9

F F F F F F

MOLECULAR FORMULA:

C,HF,O,

CONCENTRATION:

50 ± 2.5 µg/ml

MOLECULAR WEIGHT:

SOLVENT(S):

364.06 Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

01/22/2016

EXPIRY DATE: (mm/dd/yyyy)

01/22/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chiltim

Date:

02/02/2016

(mm/dd/yyyy)

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HOMOGENEITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

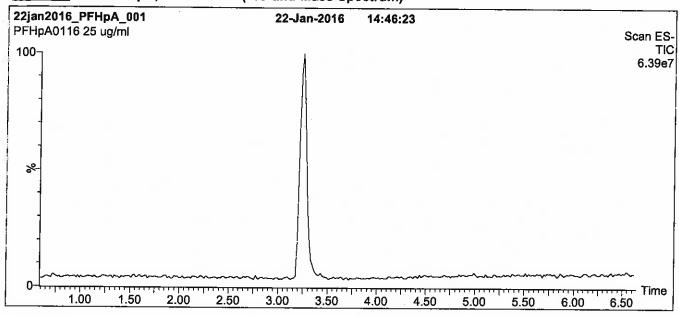
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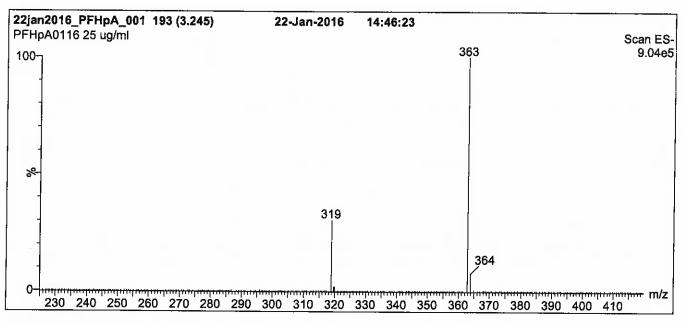




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Figure 1: PFHpA; LC/MS Data (TIC and Mass Spectrum)





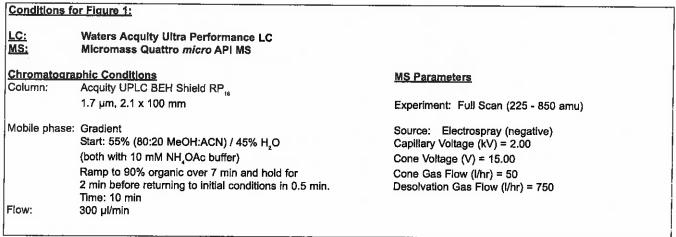
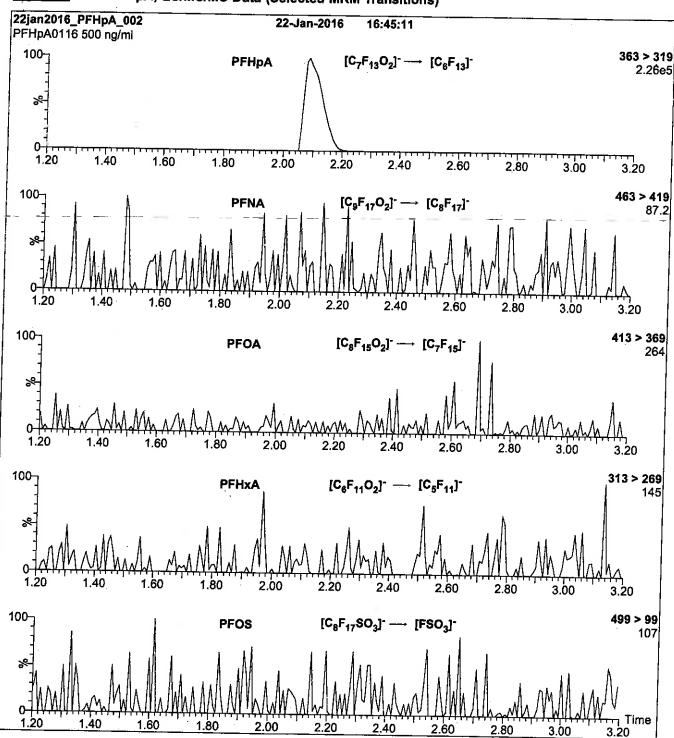
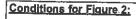


Figure 2: PFHpA; LC/MS/MS Data (Selected MRM Transitions)





Direct loop injection

10 μl (500 ng/ml PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH₄OAc buffer)

MS Parameters

Collision Gas (mbar) = 3.50e-3 Collision Energy (eV) = 11

Flow:

300 µl/min

LCPFHpS_00009

Scarred R: 8BC 9/13/16







CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFHpS

LOT NUMBER:

LPFHpS1115

COMPOUND:

Sodium perfluoro-1-heptanesulfonate

STRUCTURE:

CAS #:

Not available

MOLECULAR FORMULA:

C₇F₁₅SO₃Na

MOLECULAR WEIGHT:

472.10

CONCENTRATION:

 $50.0 \pm 2.5 \,\mu g/ml$ (Na salt)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (m:n/dd/yyyy)

11/06/2015

EXPIRY DATE: (mm/dd/yyyy)

11/06/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

47.6 ± 2.4 µg/ml (PFHpS anion)

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 ~ 0.1% of L-PFHxS ($C_6F_{13}SO_3Na$) and ~ 0.2% of L-PFOS ($C_8F_{17}SO_3Na$).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.C. Chiftim

Date:

11/09/2015

(mm/ad/yyyy)

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QUALITY MANAGEMENT:

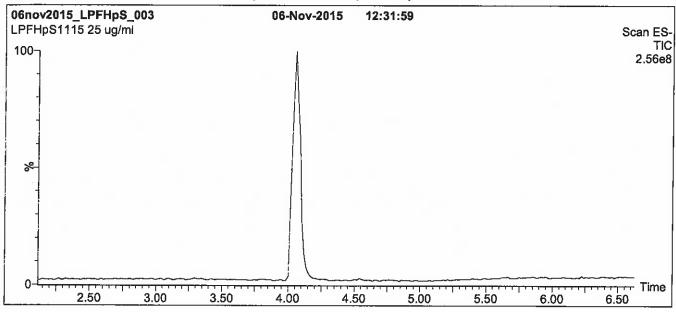
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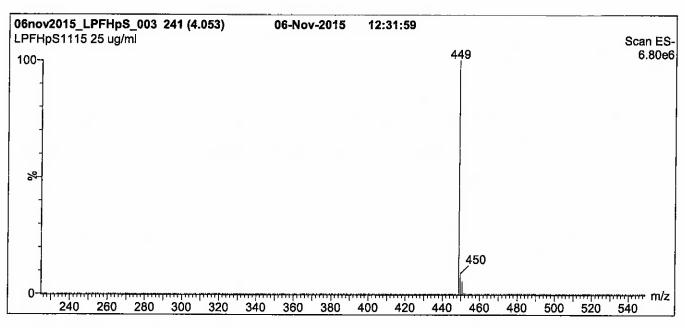




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Figure 1: L-PFHpS; LC/MS Data (TIC and Mass Spectrum)





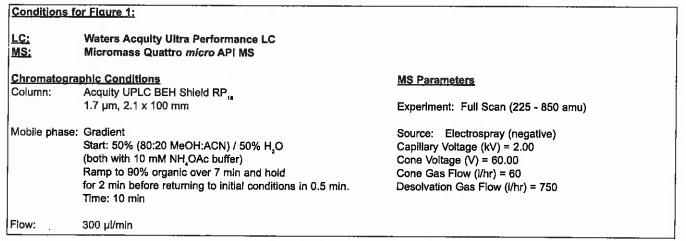
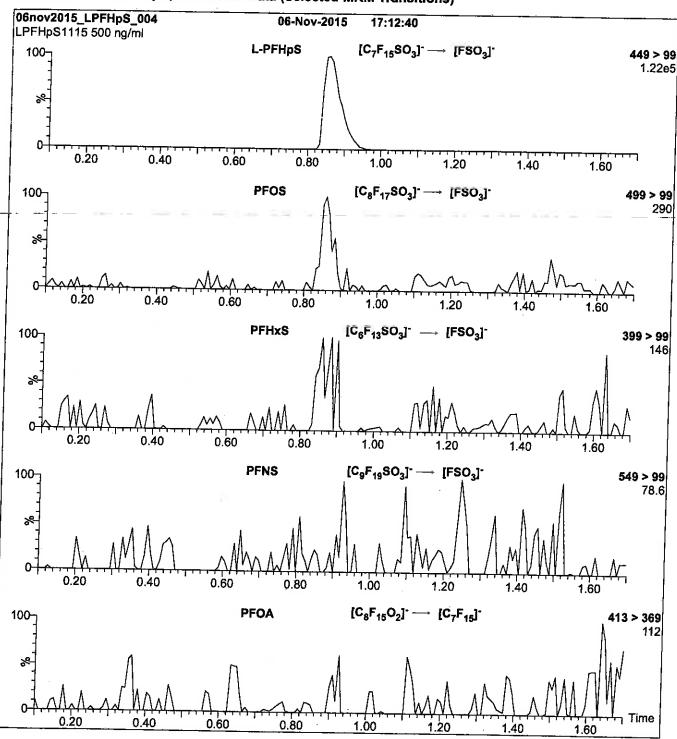
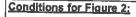


Figure 2: L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)





Flow:

Direct loop injection

10 μl (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O (both with 10 mM NH₂OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3 Collision Energy (eV) = 35

LCPFHxA_00005

R: 8Be 9/13/16



iD: LCPFHxA_00005 Exp: 12/22/20 Prpd; SBC PF-n-hexanoic acid



ID: LCPFHxA_00006 Exp: 12/22/20 Prpd: SBC PF-n-hexanoic acid



CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFHxA

LOT NUMBER:

PFHxA1215

COMPOUND:

Perfluoro-n-hexanoic acid

STRUCTURE:

CAS #:

307-24-4

MOLECULAR FORMULA:

C,HF,O,

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

MOLECULAR WEIGHT:

SOLVENT(S):

314.05

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyr)

12/22/2015

EXPIRY DATE: (mm/dd/yyyy)

12/22/2020

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 ~ 0.2% of Perfluoro-n-pentanoic acid (PFPeA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 12/23/2015

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

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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UNCERTAINTY:

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

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

 $X_1, X_2, ... X_n$ on which it depends is:

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

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (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:

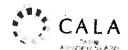
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified explry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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:

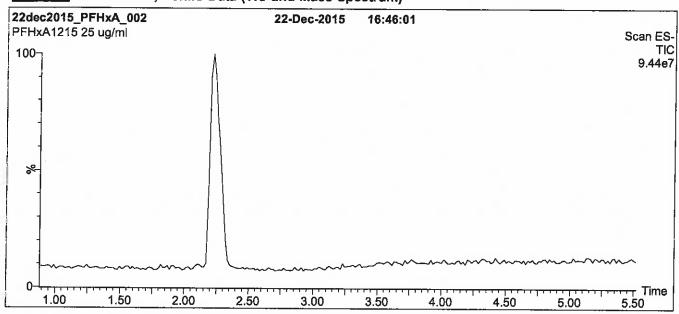
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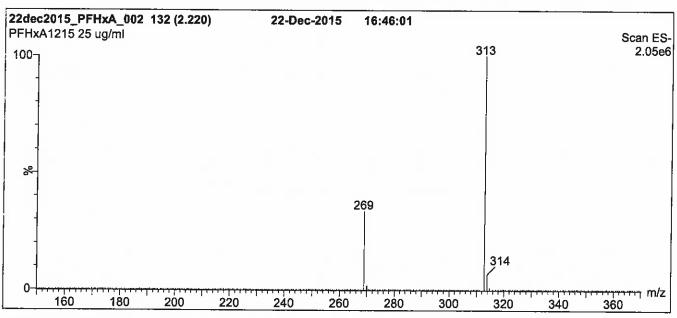




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Figure 1: PFHxA; LC/MS Data (TIC and Mass Spectrum)





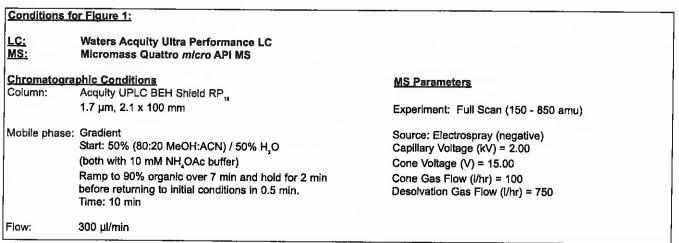
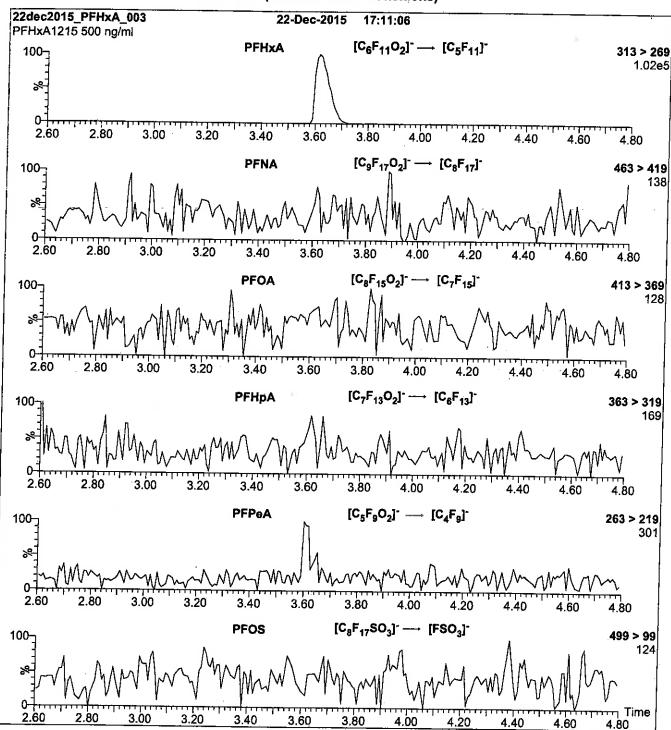
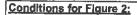


Figure 2: PFHxA; LC/MS/MS Data (Selected MRM Transitions)





Direct loop injection

10 μl (500 ng/ml PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH,OAc buffer)

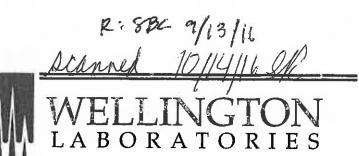
Flow:

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3 Collision Energy (eV) = 10

LCPFHxDA_00006



ID: LCPFHxDA_00006 Exp: 05/25/21 Prpd: SBC PFHxDA stock 50ug/mL

ID: LCPFHxDA_00007 Exp: 05/25/21 Prpd: SBC PFHxOA stock 50ug/ml.

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFHxDA

LOT NUMBER:

PFHxDA0516

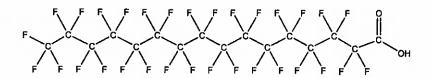
COMPOUND:

Perfluoro-n-hexadecanoic acid

STRUCTURE:

CAS #:

67905-19-5



MOLECULAR FORMULA:

C,HF,O,

50 ± 2.5 µg/mi

MOLECULAR WEIGHT:

814.13

SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

CONCENTRATION:

>98%

LAST TESTED: (mm/dd/yyyy)

05/25/2016

EXPIRY DATE: (mm/dd/yyyy)

05/25/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains ~ 0.4% of PFODA.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 05/27/2016

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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HAZARDS:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

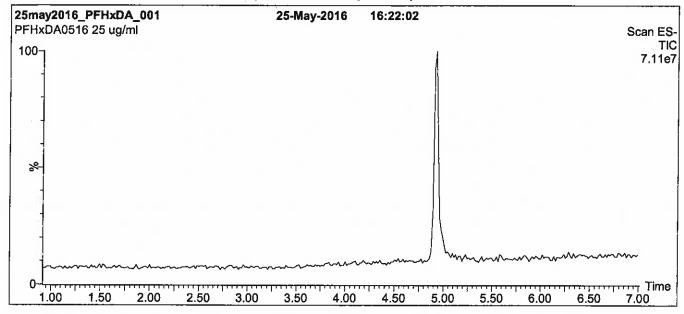
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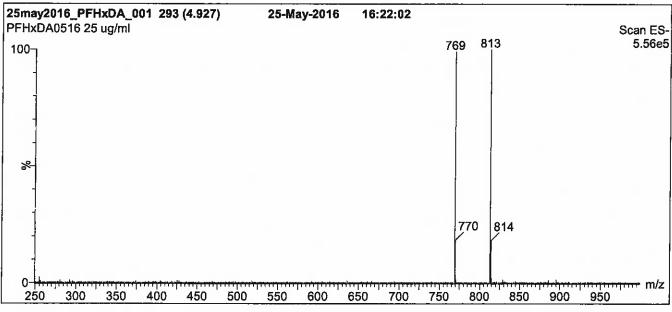




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Figure 1: PFHxDA; LC/MS Data (TIC and Mass Spectrum)





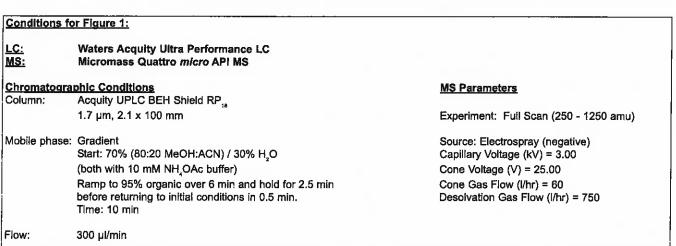
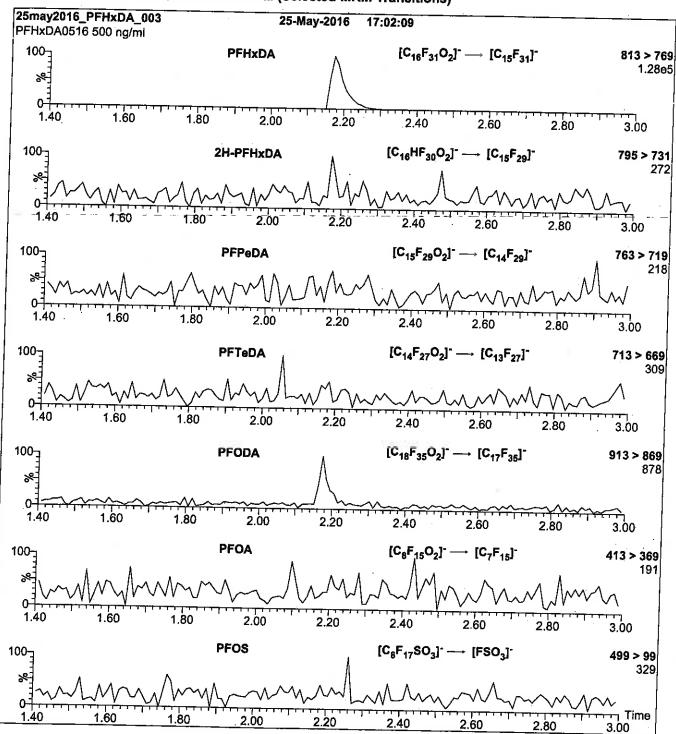
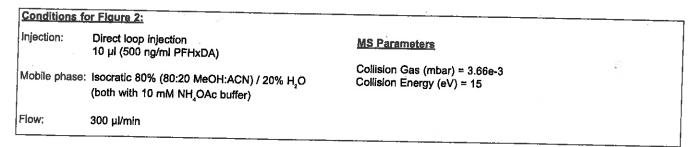


Figure 2: PFHxDA; LC/MS/MS Data (Selected MRM Transitions)





LCPFHxS-br_00002



ID: LCPFHxS-br_00002 Exp: 07/03/20 Prpd: SBC Potassium Perfluorchexane



ID: LCPFHx5-br 00003 Exp: 07/03/20 Prod: SBC Potassium Perfluorohexane



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFHxSK

Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:

br-PFHxSK

LOT NUMBER:

brPFHxSK0615

CONCENTRATION:

 $50.0 \pm 2.5 \,\mu\text{g/ml}$ (total potassium salt)

45.5 ± 2.3 μg/ml (total PFHxS anion)

SOLVENT(S):

Methanol

DATE PREPARED: (mm/dd/yyyy)

06/29/2015

LAST TESTED: (mrv/dd/yyyy)

07/03/2015

EXPIRY DATE: (mm/dd/yyyy)

07/03/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorohexanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by 19F-NMR

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

Figure 2: LC/MS Data

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.

CAS#: 3871-99-6 (for linear isomer; potassium salt).

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LIMITED WARRANTY:

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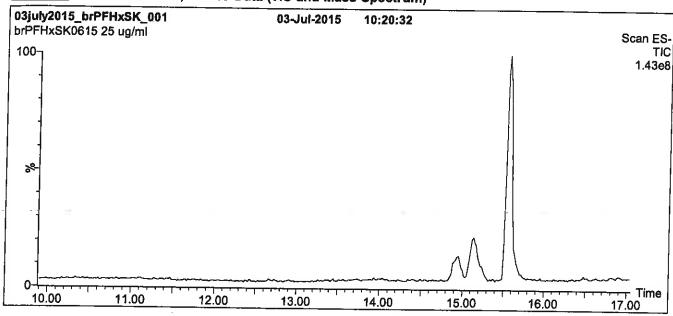
Table A: br-PFHxSK; Isomeric Components and Percent Composition (by 19F-NMR)*

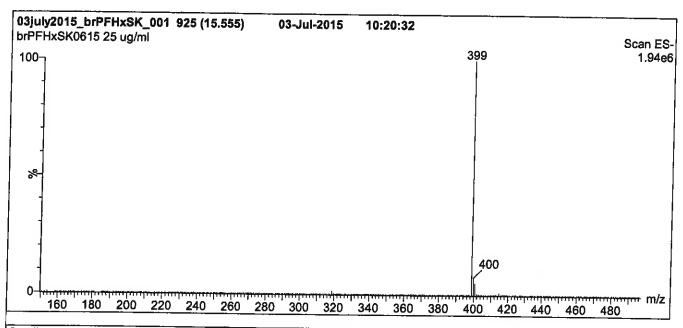
Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-hexanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ -K+	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ -K+ CF ₃	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ -K ⁺ CF ₃	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ -K+ CF ₃	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ -K+ CF ₃	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	CF ₃ CF ₃ CCF ₂ CF ₂ SO ₃ -K ⁺ CF ₃	0.2
7	Other Unidentified Isomers		0.5

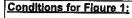
Percent of total perfluorohexanesulfonate isomers only.
 Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By: Date: 07/15/2015 (mm/dd/yyyy)

Figure 1: br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)







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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP14

1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 20% (80:20 MeOH:ACN) / 80% H₂O (both with 10 mM NH₄OAc buffer) Ramp to 50% organic over 14 min. Ramp to 90% organic over 3 min and hold for 1.5 min before returning to initial conditions in 0.5 min.

Time: 20 min

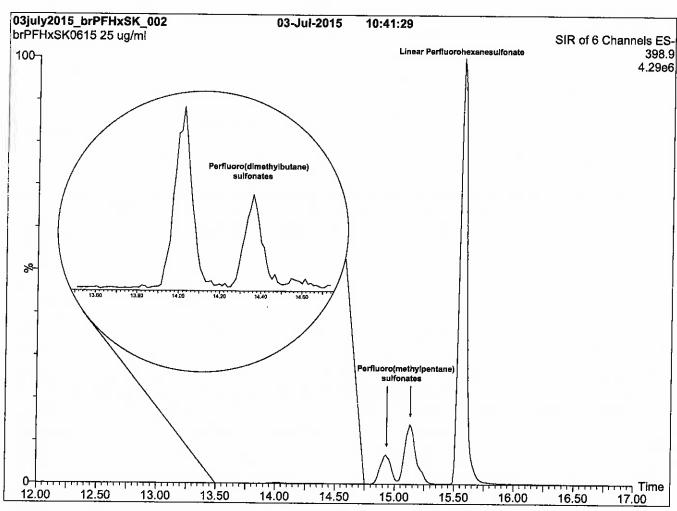
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

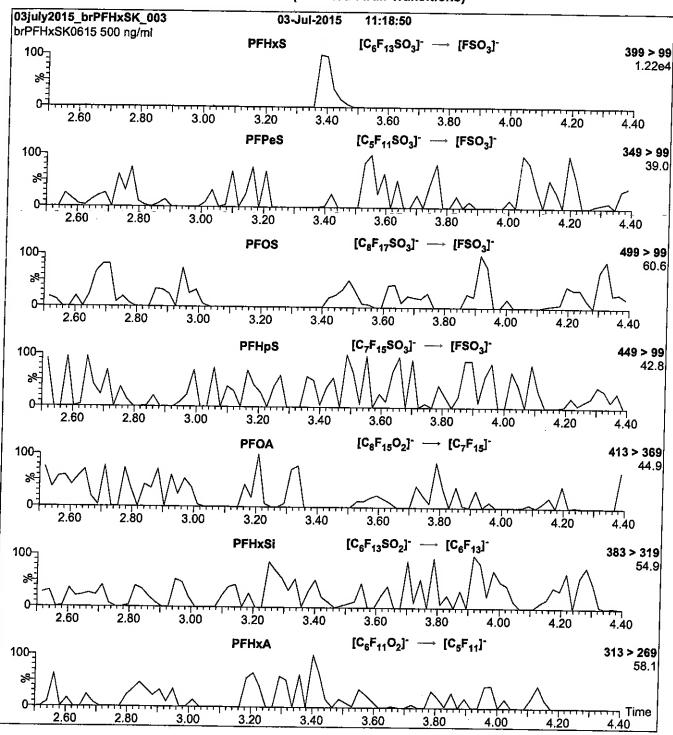
Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

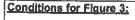
Figure 2: br-PFHxSK; LC/MS Data



Conditions for Figure 2: Waters Acquity Ultra Performance LC MS: Micromass Quattro micro API MS Chromatographic Conditions **MS Parameters** Column: Acquity UPLC BEH Shield RP, 1.7 µm, 2.1 x 100 mm Experiment: SIR (6 channels) Mobile phase: Gradient Source: Electrospray (negative) Start: 20% (80:20 MeOH:ACN) / 80% H,O Capillary Voltage (kV) = 3.00 (both with 10 mM NH OAc buffer) Cone Voltage (V) = 50.00 Ramp to 50% organic over 14 min. Ramp to Cone Gas Flow (I/hr) = 60 90% organic over 3 min and hold for 1.5 min Desolvation Gas Flow (I/hr) = 750 before returning to initial conditions in 0.5 min. Time: 20 min Flow: 300 µl/min

Figure 3: br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Flow:

Direct loop injection

10 µl (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

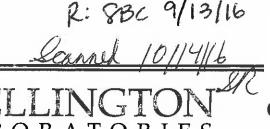
(both with 10 mM NH,OAc buffer)

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.54e-3 Collision Energy (eV) = 30

LCPFNA_00006





ID: LCPFNA_00006 Exp: 10/23/20 Prpd: SBC PF-n-nonanoic acid



ID: LCPFNA_00007 Exp: 10/23/20 Prpti: SBC PF-n-nonanoic acid

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFNA

LOT NUMBER:

PFNA1015

COMPOUND:

Perfluoro-n-nonanoic acid

CAS #:

375-95-1

STRUCTURE:

MOLECULAR FORMULA:

C,HF,O,

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

MOLECULAR WEIGHT:

SOLVENT(\$):

464.08 Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

10/23/2015

EXPIRY DATE: (mm/dd/yyyy)

10/23/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains ~ 0.1% of perfluoro-n-octanoic acid (PFOA) and < 0.1% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date:

10/30/2015

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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UNCERTAINTY:

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

The combined relative standard uncertainty, $u_i(y)$, of a value y and the uncertainty of the independent parameters

 $x_1, x_2, ... x_n$ on which it depends is:

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

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

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

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

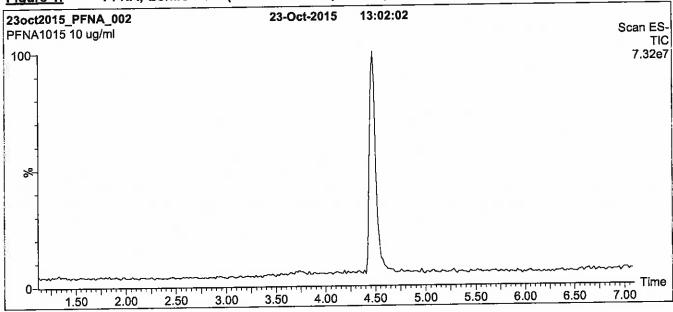
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

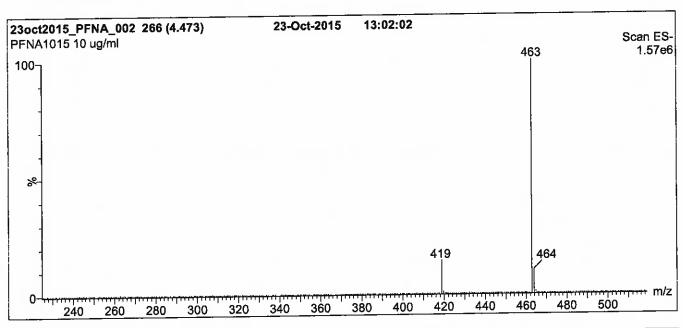


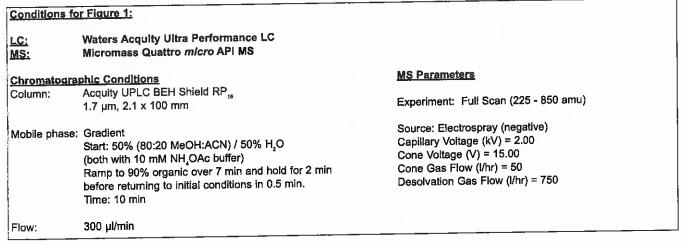


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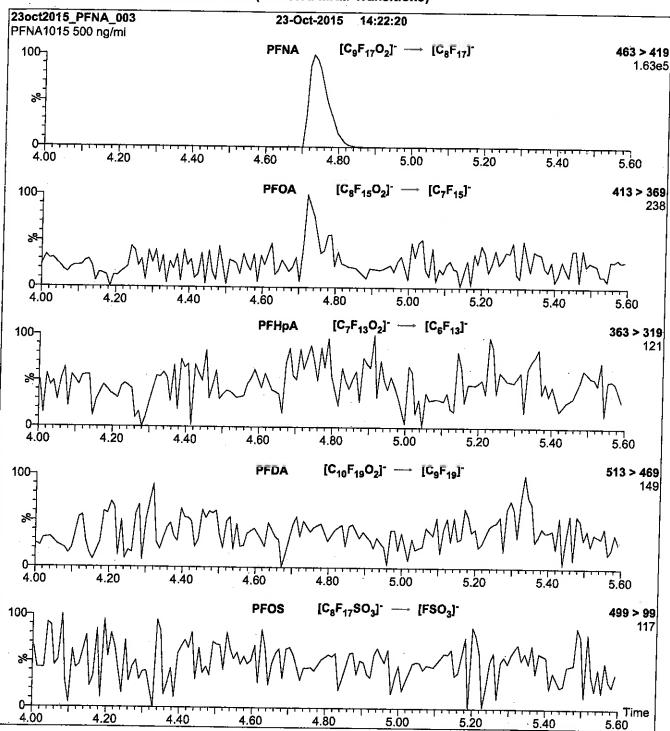


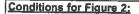






PFNA; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection:

Direct loop injection

10 µl (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H,O

(both with 10 mM NH OAc buffer)

Flow:

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3

Collision Energy (eV) = 11

LCPFOA_00006





CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFOA

LOT NUMBER:

PFOA1115

COMPOUND:

Perfluoro-n-octanoic acid

STRUCTURE:

CAS #:

335-67-1

MOLECULAR FORMULA:

C,HF,O,

50 ± 2.5 µg/ml

MOLECULAR WEIGHT:

SOLVENT(S):

414.07 Methanol

Water (<1%)

CHEMICAL PURITY:

CONCENTRATION:

>98%

LAST TESTED: (mm/dd/yyyy)

11/06/2015 11/06/2020

EXPIRY DATE: (mm/dd/yyyy)

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.

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Certified By:

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 $x_1, x_2,...x_n$ on which it depends is:

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

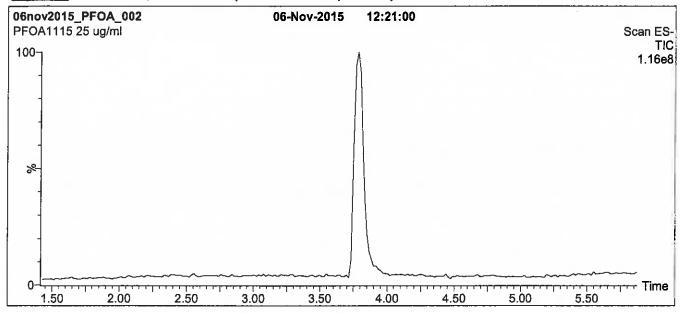
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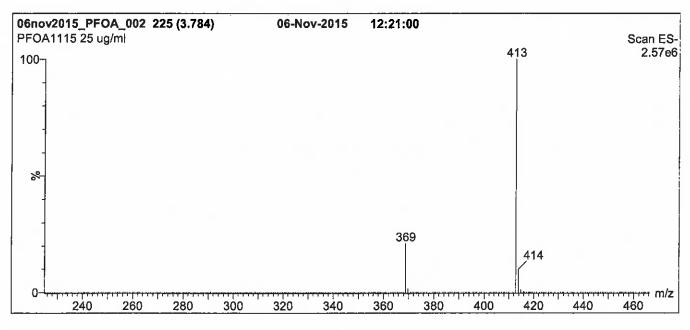




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Figure 1: PFOA; LC/MS Data (TIC and Mass Spectrum)





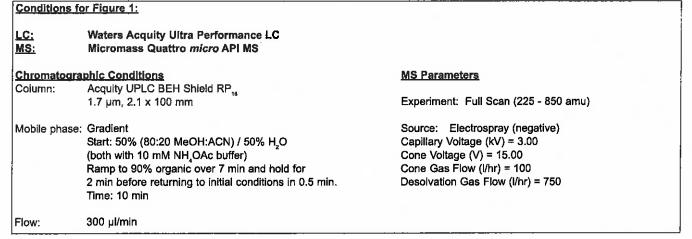
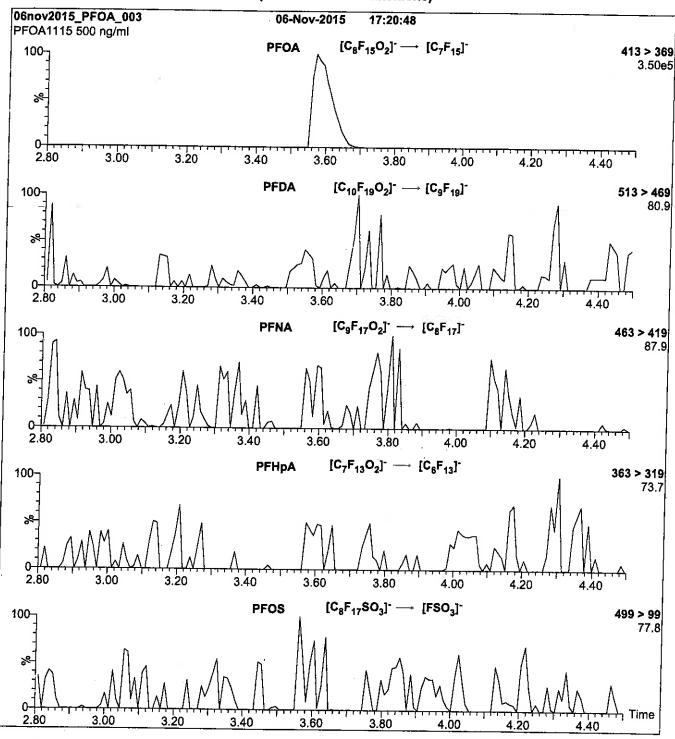


Figure 2: PFOA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 μl (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH,OAc buffer)

Flow:

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3 Collision Energy (eV) = 10

LCPFODA_00006





CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0416

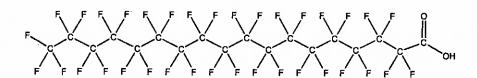
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈HF₃₅O₂

50 ± 2.5 µg/ml

MOLECULAR WEIGHT:

914.14

SOLVENT(S):

Methanoi Water (<1%)

CHEMICAL PURITY:

CONCENTRATION:

>98%

LAST TESTED: (mm/dd/yyyy)

04/29/2016

EXPIRY DATE: (mm/dd/yyyy)

04/29/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date:

05/20/2016

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:

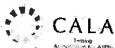
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

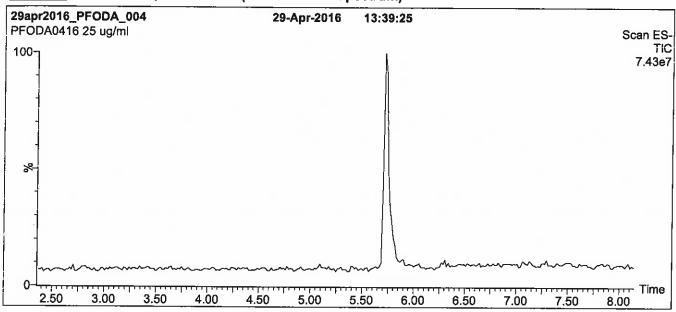
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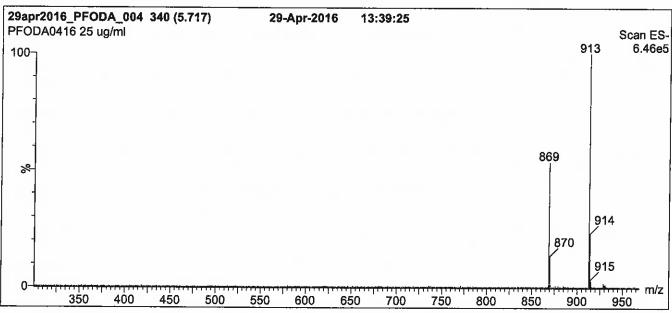




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Figure 1: PFODA; LC/MS Data (TIC and Mass Spectrum)





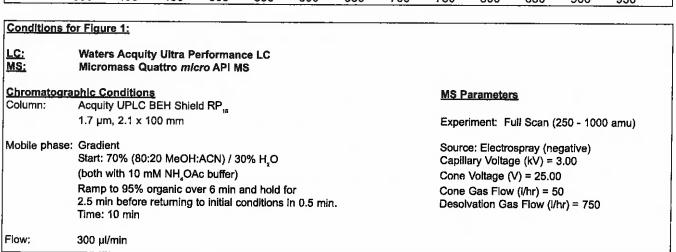
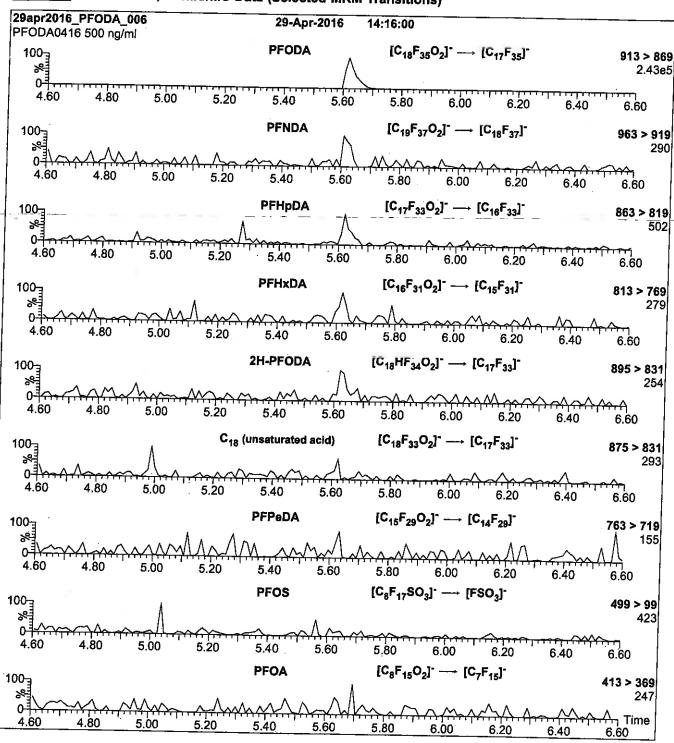
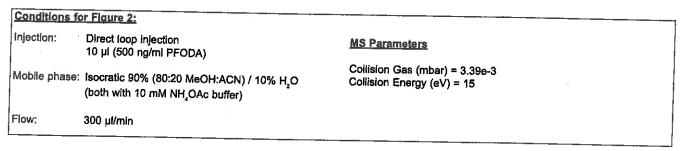
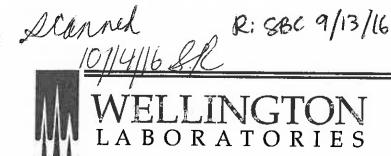


Figure 2: PFODA; LC/MS/MS Data (Selected MRM Transitions)





LCPFOS-br_00002



ID: LCPFOS-br 00002 Exp: 10/14/20 Prpd: SBC Potassium Perfluorooctane ID: LCPFOS-br_00003 Exp: 10/14/20 Prpd: SBC
Potassium Perfluorooctane

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and **Branched Isomers**

PRODUCT CODE:

br-PFOSK

LOT NUMBER:

brPFOSK1015

CONCENTRATION:

50 ± 2.5 μg/ml (total potassium salt)

46.4 ± 2.3 µg/ml (total PFOS anion)

SOLVENT(S):

Methanol

DATE PREPARED: (mm/dd/vvv)

10/13/2015

LAST TESTED: (mm/dd/yyyy)

10/14/2015

EXPIRY DATE: (mm/dd/yyyy)

10/14/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by 19F-NMR

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

Figure 2: LC/MS Data (SIR)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

See page 2 for further details.

A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.

CAS#: 2795-39-3 (for linear isomer; potassium salt).

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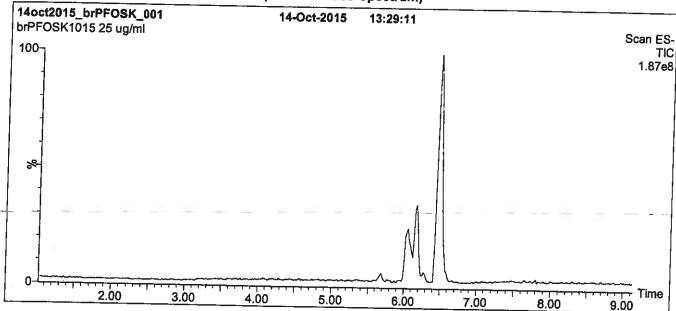
<u>Table A:</u> br-PFOSK; Isomeric Components and Percent Composition (by ¹⁶F-NMR)*

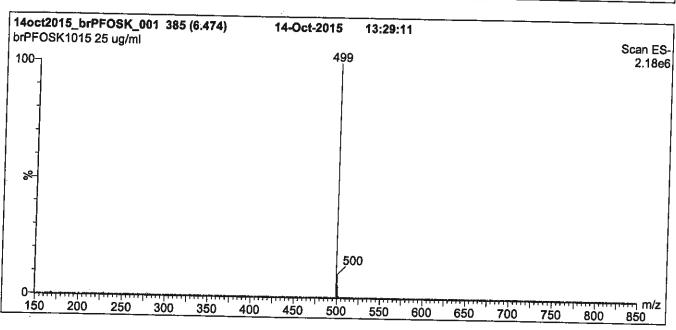
Isomer	Name	Structure	Percent Composition by ¹⁹ F-NMR
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ SO ₃ K*	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₃	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CFCF ₂ SO ₃ K ⁴ CF ₃	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁴ CF ₃	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CFCF ₂ CF ₂ CF ₂ CF ₂ SO ₃ K* CF ₃	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ -CCF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ -C-CF ₂ CF ₂ CF ₂ SO ₃ K ⁺ CF ₃	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ —CF—CF—CF ₂ CF ₂ CF ₂ SO ₃ K [↑] CF ₃ CF ₃	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ —CF—CF—CF ₂ CF ₂ SO ₃ K [†] CF ₃ CF ₃	0.07

Percent of total perfluorooctanesulfonate isomers only. Isomers are labelled in Figure 2.
 Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: Date: 10/15/2015







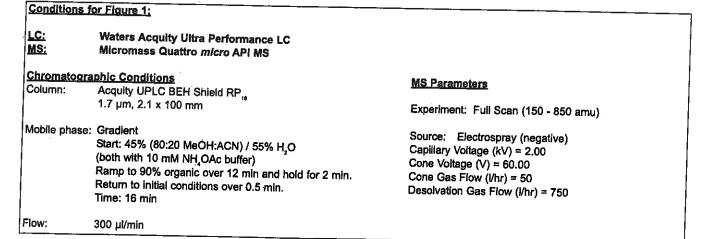
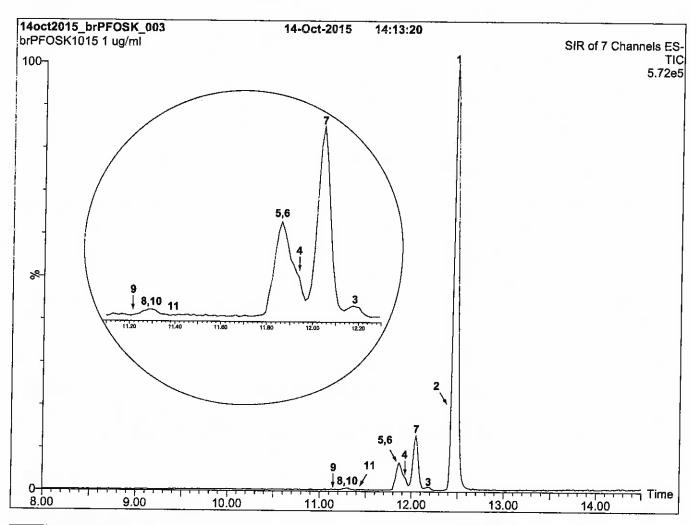


Figure 2: br-PFOSK; LC/MS Data (SIR)



Conditions for Figure 2:

LC: Waters Acquity Ultra Performance LC

MS: Micromass Quattro micro API MS

Chromatographic Conditions:

Column:

Acquity UPLC BEH Shield RP, (1.7 µm, 2.1 x 100 mm)

Injection:

1.0 µg/ml of br-PFOSK

Mobile Phase:

Gradient

45% (80:20 MeOH:ACN) / 55% $\rm{H_2O}$ (both with 10 mM NH₄OAc buffer)

Ramp to 90% organic over 15 min and hold for 3 min.

Return to initial conditions over 1 min.

Time: 20 min

Flow:

300 µl/min

MS Conditions:

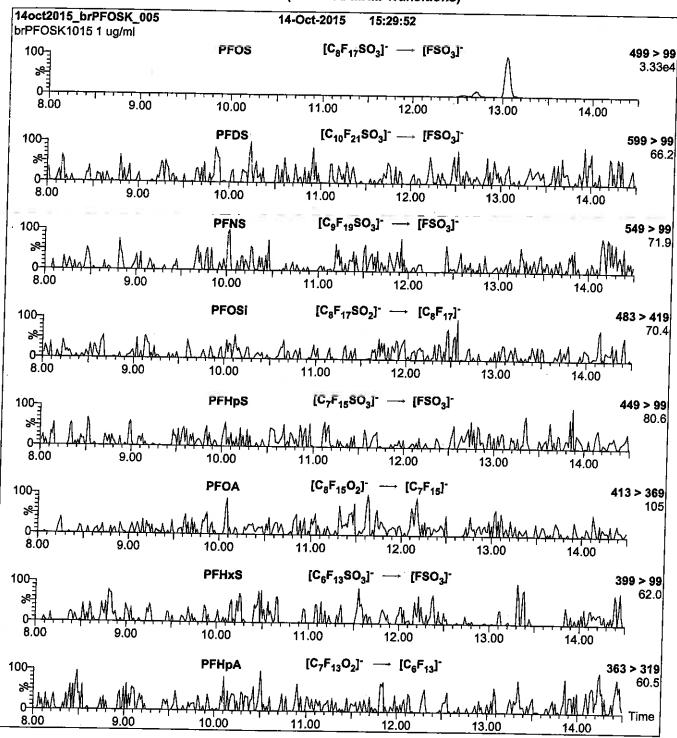
SIR (ES.)

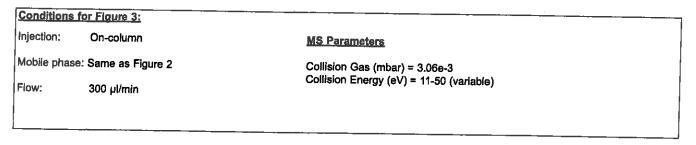
Source = 110 °C

Desolvation = 325 °C

Cone Voltage = 60V

Figure 3: br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)





LCPFOSA_00008

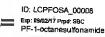
Money

R: 8BC 9/13/16

ID: LCPFOSA_00009

Exp: 09/02/17 Prpd: SBC PF-1-octanesulfonamide

ID: LCPFOSA_00008





CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

FOSA-I

LOT NUMBER:

MOLECULAR WEIGHT:

SOLVENT(S):

FOSA08151

COMPOUND:

Perfluoro-1-octanesulfonamide

CAS #:

754-91-6

499.14

isopropanol

STRUCTURE:

MOLECULAR FORMULA:

C,H,F,,NO,S

CONCENTRATION:

50 ± 2.5 µg/ml

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/02/2015

EXPIRY DATE: (mm/dd/yyyy)

09/02/2017

RECOMMENDED STORAGE:

Refrigerate ampoule

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 09/11/2015

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

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

 $X_1, X_2, ... X_n$ on which it depends is:

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

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (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:

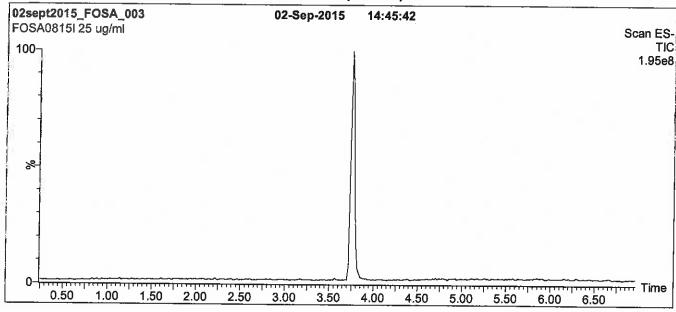
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

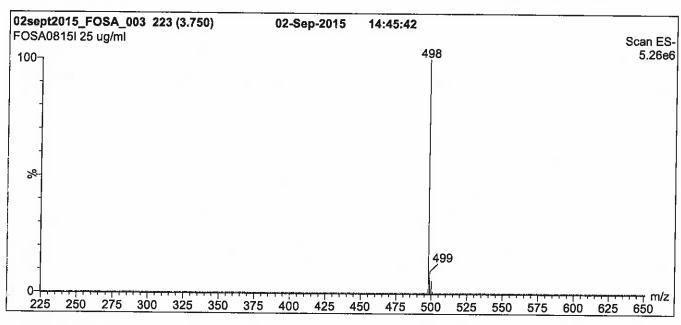


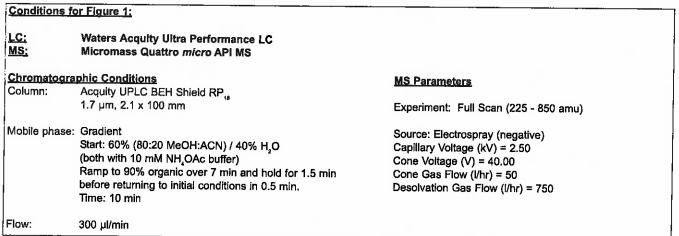


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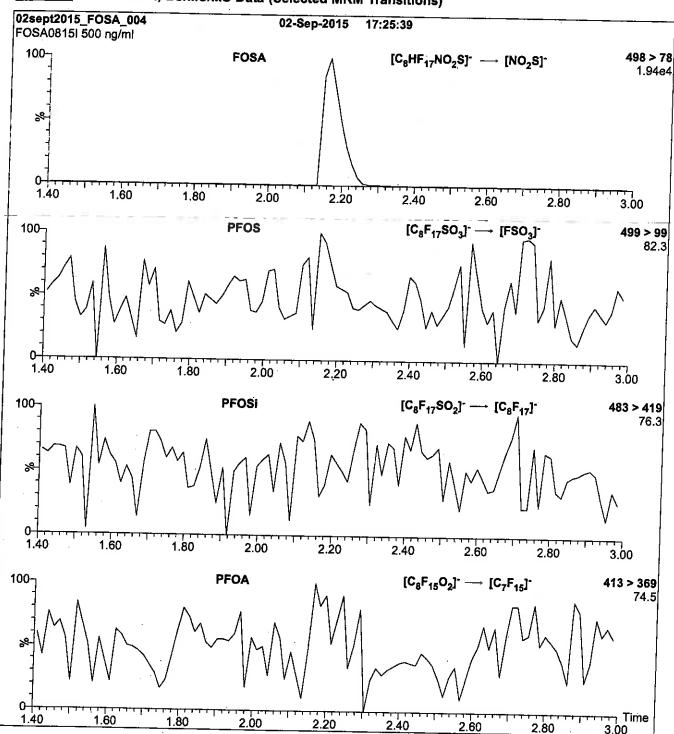
Figure 1: FOSA-I; LC/MS Data (TIC and Mass Spectrum)

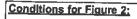






FOSA-I; LC/MS/MS Data (Selected MRM Transitions) Figure 2:





Injection:

Direct loop injection

10 µl (500 ng/ml FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H,O

(both with 10 mM NH,OAc buffer)

Flow:

300 µl/min

MS Parameters

Collision Gas (mbar) = 3.54e-3 Collision Energy (eV) = 30

LCPFPeA_00005



ID: LCPFPeA_00005 Exp: 01/30/20 Prpd: CBW PF-n-pentanoic acid



VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

PFPeA

LOT NUMBER:

PFPeA0115

COMPOUND:

Perfluoro-n-pentanoic acid

CAS #:

2706-90-3

STRUCTURE:

MOLECULAR FORMULA:

C₅HF₉O₂

MOLECULAR WEIGHT:

264.05

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol Water (<1%)

CHEMICAL PURITY:

CONCENTRATION:

>98%

LAST TESTED: (mm/dd/yyyy)

01/30/2015

EXPIRY DATE: (mm/dd/yyyy)

01/30/2020

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 ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of C₅H₂F₅O₃ (hydrido - derivative) as measured by 19F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 03/26/2015

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

INTENDED USE:

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HOMOGENEITY:

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

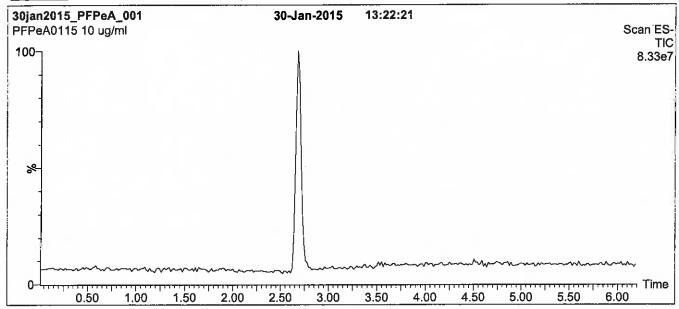
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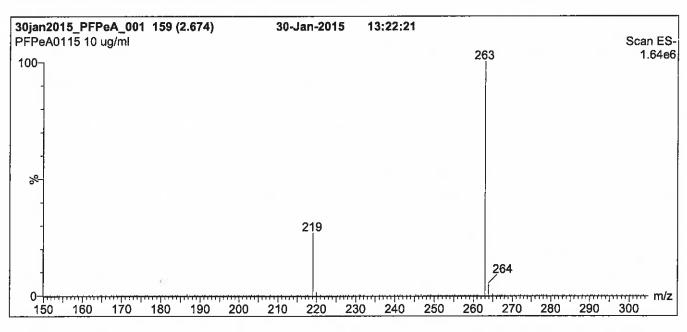




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Figure 1: PFPeA; LC/MS Data (TIC and Mass Spectrum)





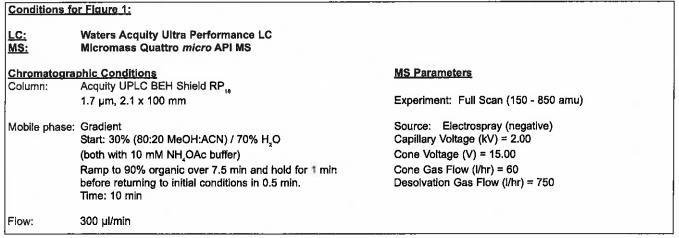
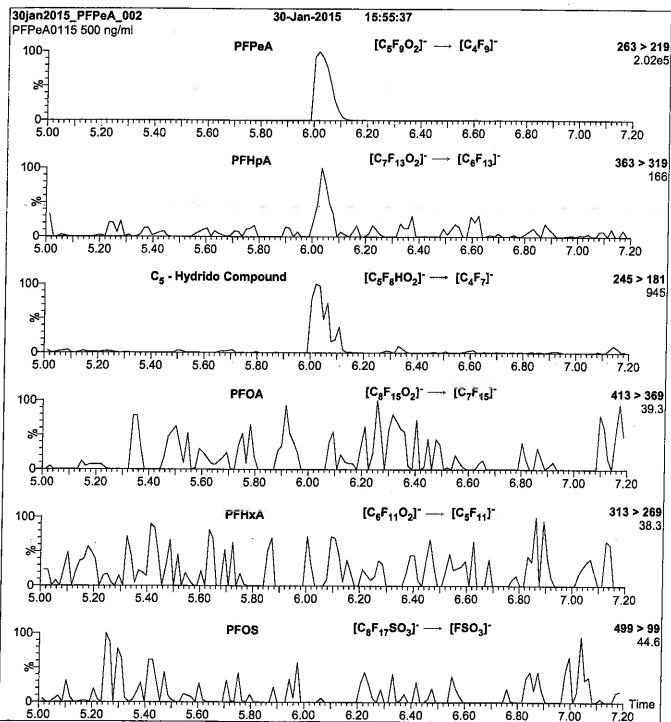
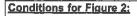


Figure 2: PFPeA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 µl (500 ng/ml PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_O

(both with 10 mM NH,OAc buffer)

MS Parameters

Collision Gas (mbar) = 3.35e-3 Collision Energy (eV) = 9

Flow:

300 μl/min

LCPFTeDA_00005



ID: LCPFTeDA_00005 Exp: 12/09/20 Prpd: \$8C PF-n-tetradecanoic acid



ID: LCPFTeDA_00006 Exp: 12/09/20 Prpd: SBC PF-n-tetradecanoic acid



VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFTeDA

LOT NUMBER:

PFTeDA1215

COMPOUND:

Perfluoro-n-tetradecanoic acid

CAS #:

376-06-7

STRUCTURE:

MOLECULAR FORMULA:

C, HF, O,

MOLECULAR WEIGHT:

714.11

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/09/2015

EXPIRY DATE: (mm/dd/yyyy)

12/09/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains $\sim 0.2\%$ of PFDoA (C₁₅HF₂₈O₂) and $\sim 0.2\%$ of PFPeDA (C₁₅HF₂₈O₂).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

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

INTENDED USE:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

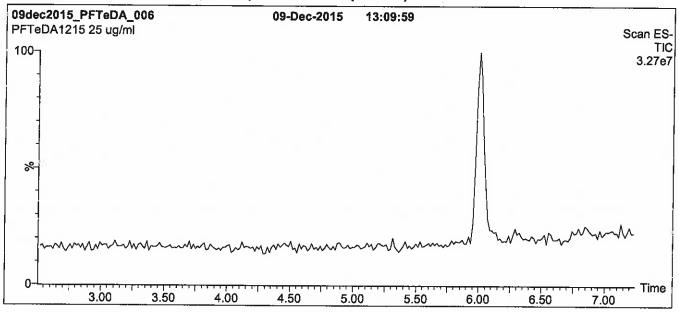
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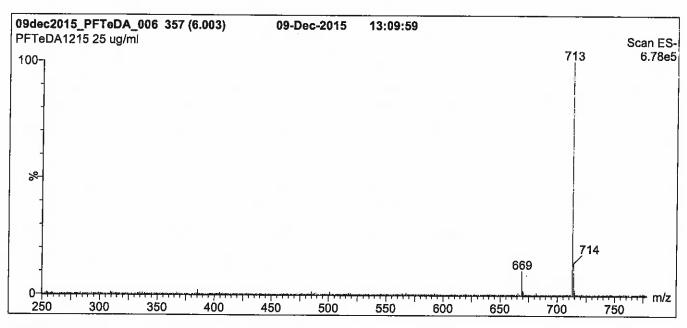




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Figure 1: PFTeDA; LC/MS Data (TIC and Mass Spectrum)





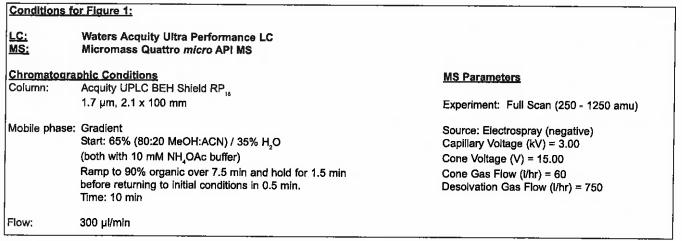
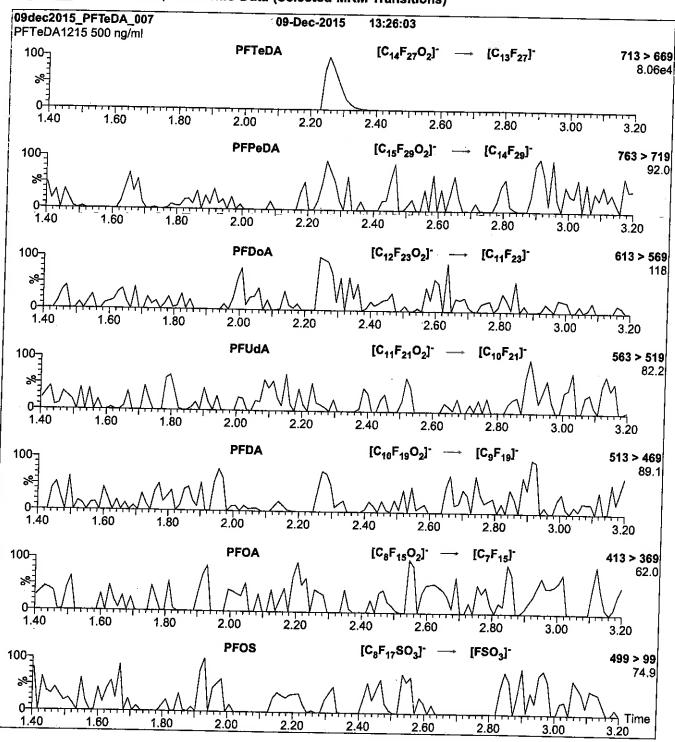
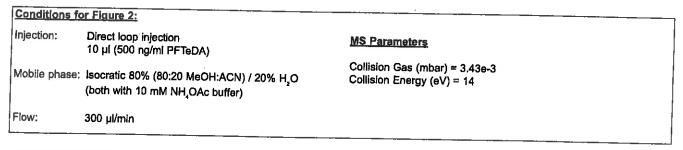


Figure 2: PFTeDA; LC/MS/MS Data (Selected MRM Transitions)





LCPFTrDA_00005



Exp: 02/12/21 Prpd: SBC PF-n-tridecanoic acid



PF-n-tridecanoic acid



VELLINGTON ABORATORIES

CERTIFICATE OF ANALYSIS **DOCUMENTATION**

PRODUCT CODE:

PFTrDA

LOT NUMBER:

PFTrDA0216

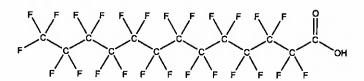
COMPOUND:

STRUCTURE:

Perfluoro-n-tridecanoic acid

CAS #:

72629-94-8



MOLECULAR FORMULA:

CONCENTRATION:

C13HF25O2

 $50 \pm 2.5 \, \mu g/ml$

MOLECULAR WEIGHT:

SOLVENT(S):

664.11

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/ddi/yyyy)

02/12/2016

EXPIRY DATE: (mm/dd/yyyy)

02/12/2021

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

Contains ~ 0.1% of PFUdA ($C_{11}HF_{21}O_2$), ~ 0.4% of PFDoA ($C_{12}HF_{23}O_2$), and ~ 0.1% of PFTeDA (C₁₄HF₂₇O₂).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: <u>02/16/2016</u>

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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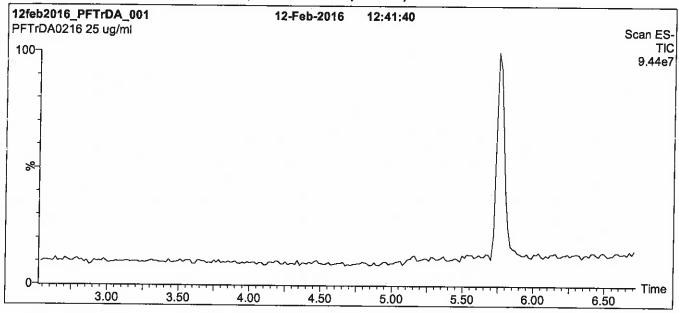
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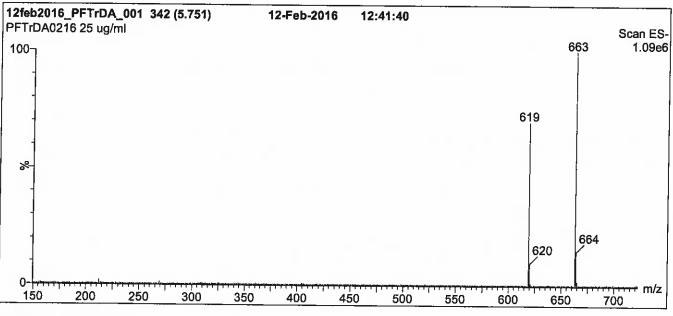




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Figure 1: PFTrDA; LC/MS Data (TIC and Mass Spectrum)





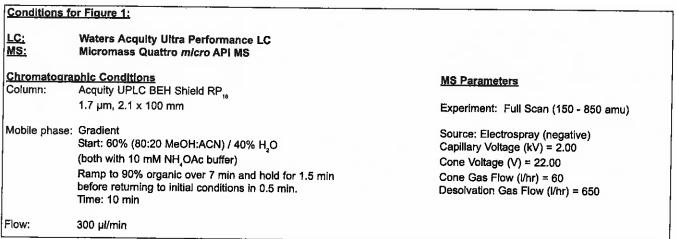
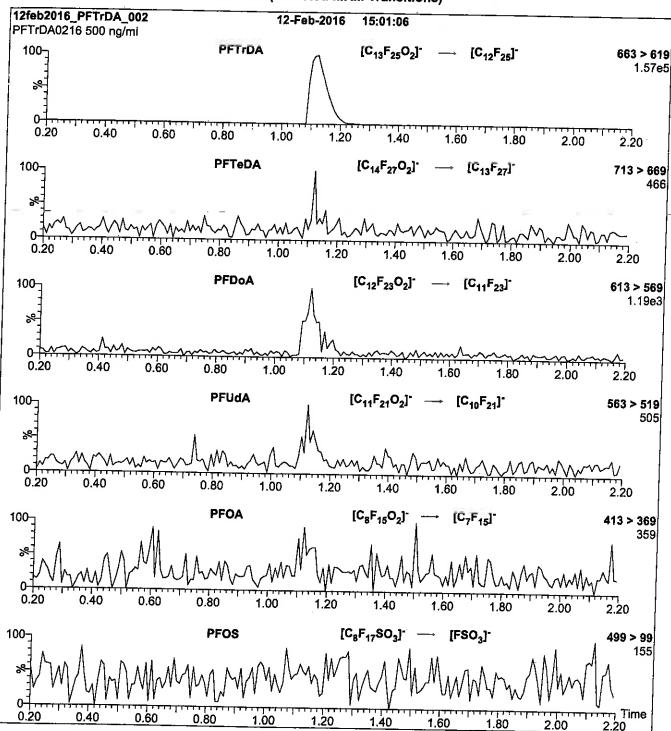
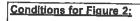


Figure 2: PFTrDA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 μl (500 ng/ml PFTrDA)

Mobile phase: Isocratic 80% MeOH / 20% H₂O

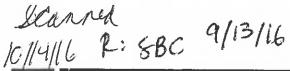
Flow:

-300 μl/mln

MS Parameters

Collision Gas (mbar) = 3.35e-3 Collision Energy (eV) = 15

LCPFUdA_00005





ID: LCPFUdA_00005

Exp: 08/19/20 Prpd: SBC

PE-ri-undecanoic acid



ID: LCPFUdA_00006
Exp: 08/19/20 Prpd: SBC
PF-n-undecanoic acid



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFUdA

LOT NUMBER:

PFUdA0815

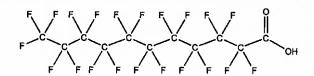
COMPOUND:

Perfluoro-n-undecanoic acid

STRUCTURE:

CAS #:

2058-94-8



MOLECULAR FORMULA:

C, HF, O,

MOLECULAR WEIGHT:

564.09

CONCENTRATION:

 $50 \pm 2.5 \, \mu g/ml$

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/19/2015

EXPIRY DATE: (mm/dd/yyyy)

08/19/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

See page 2 for further details.

Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim

Date:

<u> 08/21/2015</u>

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, $u_{c}(y)$, of a value y and the uncertainty of the independent parameters

 $x_1, x_2, ... x_n$ on which it depends is:

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

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

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (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:

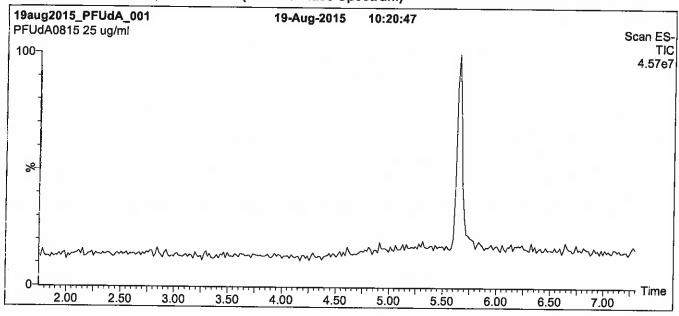
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

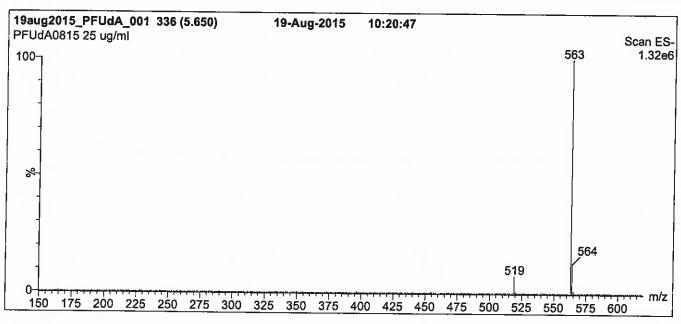




For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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





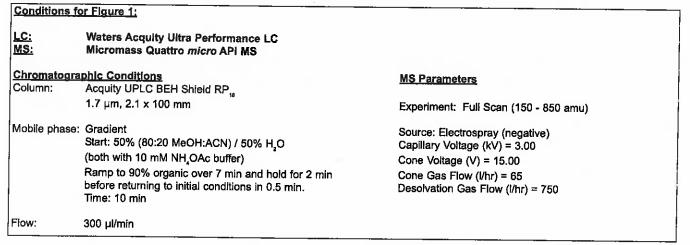
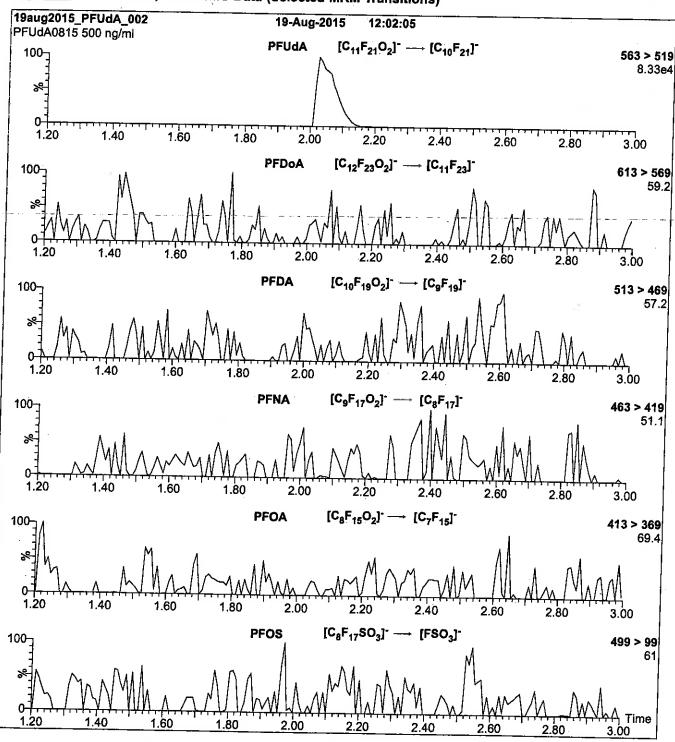
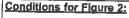


Figure 2: PFUdA; LC/MS/MS Data (Selected MRM Transitions)





Injection:

Direct loop injection

10 µl (500 ng/ml PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H₂O

(both with 10 mM NH,OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3 Collision Energy (eV) = 11

MS14DIC_00007



CERTIFIED REFERENCE MATERIAL

erence Material Producer Certificate #322201

110 Benner Circle Bellefonte, PA 16823-8812

Tel: (800)356-1688 Fax: (814)353-1309

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Certificate of Analysis





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31853 Lot No.: A0124653							
Description :	1,4-dioxane						
	1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul						
Container Size	2 mL	Pkg Amt:	> 1 mL				
Expiration Date:	February 28, 2022	Storage:	0°C or colder				

CERTIFIED VALUES

Elution	Compound		Grav. Conc.		Expanded Uncertainty			
Order			(weight/volume)		(95% C.L.; K=2)			
1	1,4-Dioz CAS # Purity	kane 123-91-1 99%	(Lot SHBG6312V)	1,984.0 μg/mL	+/- +/- +/-	11.7844 42.5460 43.7790	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Methylene Chloride (MEOH FREE) Solvent:

> CAS# 75-09-2 99% Purity

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

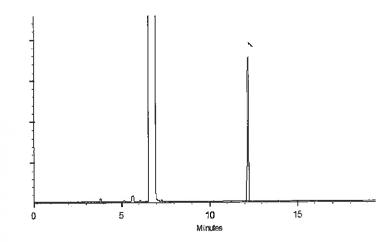
Inj. Temp:

200°C

Det. Temp:

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Date Mixed:

02-Feb-2017

Balance: 1128360905

Date Passed:

06-Feb-2017

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

MS14DTA_00022





Certificate of Analysis

Description: 1,4-Dioxane, 1x1ml, methanol, 2000ug/ml

Catalog Number: CRM48367 Lot Number: LC16305V

Expiration: September 2018

Storage: Room Temperature

Instructions for Use:
This sample is ready to use.
No additional sample preparation is necessary.

	CAS	Certified	Uncertainty		
Analyte	Number	Conc. ug/mL	ug/mL	k	
1 4-Dioxane	123-91-1	2000	+/- 58.2	2 00	









Notes:

- Certified value based on a prepared to value and analytically verified by RTC with associated uncertainties from the preparation and analytical procedures.
- Expanded Uncertainty Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies.
- k: Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set.
 Confidence interval = 95%
- Traceability: The standard was manufactured under an ISO/IEC certified quality system. The balance used to
 weight raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST.
 All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SMRs were
 available or other certified reference material as specified by each analyte.
- Homogeneity: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled
 using a random stratified sampling protocol. The results of chemical analysis were then compared using a oneway analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See instructions for minimum
 sub-sample size.

Certification Date: 9/25/2015

Form: CRM48367

Duane Funk
QC Manager





Page 2 of 2



MS14DTA_00023



CERTIFIED REFERENCE MATERIAL



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Certificate of Analysis





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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. :	31853	A0121319		
Description:	1,4-dioxane	4-dioxane		
	1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul	npul		
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	August 31, 2021	Storage:	0°C or colder	

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Ų,	Expanded Uncertainty (95% C.L.; K=2)			
1	1,4-Diox CAS # Purity	xane 123-91-1 99%	(Lot SHBG1461V)	2,001.0	μg/mL	+/- +/- +/-	11.7430 42.8714 44.1160	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methyle CAS # Purity	ene Chloride (MEOF 75-09-2 99%	I FREE)						

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

inj. Temp:

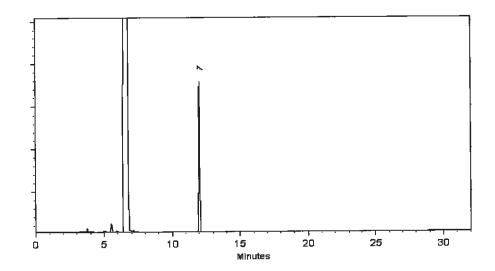
200°C

Det. Temp:

250°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dawn Brownson - Mix Technician

Date Mixed:

31-Aug-2016

Balance: 1128360905

Jennifer 2 Pollino Jennifer L. Pollino - QC Analyst

Date Passed:

02-Sep-2016

Manufactured under Restek's ISO 9001:2008 **Registered Quality System** Certificate #FM 80397

MS8270IS_00016



CERTIFIED REFERENCE MATERIAL



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Handling:

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. :	567684	Lot No.: <u>A0120796</u>				
Description :	8270 Internal Standard					
	8270 Internal Standard 2,00	0μg/mL, Methylene Chlor	ide, 5mL/ampul			
Container Size :	5 mL	Pkg Amt:	> 5 mL			
Expiration Date :	August 31, 2021	Storage:	10°C or colder			

Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dichlorobenzene-d4 CAS # 3855-82-1 Purity 99%	(Lot PR-18488)	2,008.2 μg/mL	+/- +/- +/-	11.675 8 90.4505 100.3660	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 CAS # 1146-65-2 Purity 99%	(Lot M-1452)	2,004.0 μg/mL	+/- +/- +/-	11.6514 90.2614 100.1561	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 CAS # 15067-26-2 Purity 99%	(Lot PR-25444)	2,007.7 μg/mL	+/- +/- +/-	11.6729 90.4280 100.3410	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 CAS # 1517-22-2 Purity 99%	(Lot PR-23065)	2,011.4 μ g/m L	+/- +/- +/-	11.6945 90.5947 100.5260	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 CAS # 1719-03-5 Purity 98%	(Lot PR-26678)	2,018.8 μ g/m L	+/- +/- +/-	11.7375 90.9280 100.8958	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 CAS # 1520-96-3 Purity 99%	(Lot PR-24113)	2,002.6 μ g/m L	+/- +/- +/-	11.6433 90.1983 100.0862	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene Chloride

CAS # 75-09-2

Purity 9

99%

Column:

30m x 0.25mm x 0.25μm Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

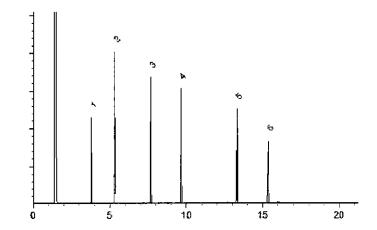
Temp. Program: 75°C (hold 1 mln.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp:

330°C 1 emp:

Det. Type:



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dawn Brownson - Mix Technician

Date Mixed:

03-Aug-2016

Balance: 1128353505

Date Passed:

05-Aug-2016

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

MS8270SU_00094



CERTIFIED REFERENCE MATERIAL



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Certificate of Analysis





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Sonicate prior to use.

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. :	5/0814	Lot No.:	A0117528	
Description :	8270 Surrogate Standard RTS	with Indicator		
	8270 Surrogate Standard RTS Methanol/Methylene Chloride (with Indicator 100 µg/m 95:5), 100 ml/bottle	ıl,	
Container Size :	100 mL	Pkg Amt:	> 100 mL	
Expiration Date :	February 28, 2019	Storage:	10°C or colder	
Handling:	Sonicate prior to use	-		

CERTIFIED VALUES

			0 L IX	TITED VALUES
Elution Order		Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Fluorophenol CAS # 367-12-4 Purity 99%	(Lot STBC5591V)	100.5 µg/mL	+/- 0.5843 μg/mL Gravimetric +/- 2.9326 μg/mL Unstressed +/- 3.5586 μg/mL Stressed
2	PhenoI-d5 CAS # 4165-62-2 Purity 99%	(Lot X479P8)	100.2 µg/mL	+/- 0.5827 μg/mL Gravimetric +/- 2.9250 μg/mL Unstressed +/- 3.5494 μg/mL Stressed
3	Nitrobenzene-d5 CAS # 4165-60-0 Purity 99%	(Lot PR-24042)	100.0 µg/mL	+/- 0.5814 μg/mL Gravimetric +/- 2.9183 μg/mL Unstressed +/- 3.5413 μg/mL Stressed
4	2-Fluorobiphenyl CAS # 321-60-8 Purity 99%	(Lot S26B003)	100.0 µg/mL	+/- 0.5815 μg/mL Gravimetric +/- 2.9186 μg/mL Unstressed +/- 3.5416 μg/mL Stressed
5	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99%	(Lot 29699MJV)	100.6 μg/mL	+/- 0.5846 μg/mL Gravimetric +/- 2.9344 μg/mL Unstressed +/- 3.5608 μg/mL Stressed
6	p-Terphenyl-d14 CAS # 1718-51-0 Purity 99%	(Lot PR-21037)	100.0 μg/mL	+/- 0.5814 μg/mL Gravimetric +/- 2.9183 μg/mL Unstressed +/- 3.5413 μg/mL Stressed

Solvent:

Methanol/Methylene Chloride (95:5)

CAS#

67-56-1/75-09-2

Purity

ity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:

30m x 0.25mm x 0.25μm Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C @ 9.6°C/min. (hold 0.86 min.)

Inj. Temp:

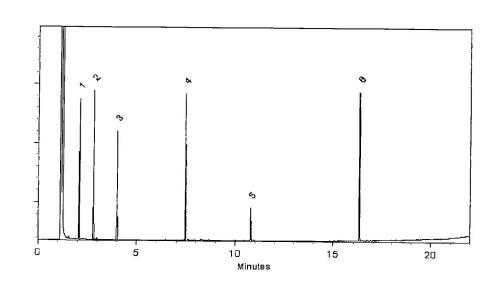
250°C

Det. Temp: 340°C

340 C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brown Esola

Date Mixed:

23-Feb-2016

Balance: B442140311

Amanda Miller - QC Analyst

Date Passed:

26-Feb-2016

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts.
 A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty
value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and
shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = \ k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time
 intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was
 stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at
 www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at nonstandard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping
 conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard
 conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions		
25°C Nominai (Room Temperature)	< 60°C	≥ 60°C up to 7 days		
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days		
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days		

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along
 with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume
 ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes
 complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item.
 Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MS8270SU_00100



CERTIFIED REFERENCE MATERIAL



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Certificate of Analysis





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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

567685

Lot No.: A0103960

Description:

8270 Surrogate Standard

8270 Surrogate Standard 5,000 ug/ml, Methylene Chloride, 5 ml/ampul

Revo 1/22/16

Container Size :

5 ml.

Pkg Amt:

> 5 mL

Expiration Date:

June 30, 2019

Storage:

10°C or colder

Handling:

Sonicate prior to use.

CERTIFIED VALUES

Elutio Orde		npound	Grav. Conc. (weight/volume)	Expanded (95% C.L.:	Uncertainty K=2)	
1	2-Fluorophenol CAS # 367-12-4 Purity 99%	(Lot STBC5591V)	5,006.1 μg/mL	+/- 29.1044 +/- 124.7363 +/- 156.8636	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Phenol-d5 CAS # 4165-62-2 Purity 99%	(Lot X479P6)	5,002.5 μg/mL	+/- 29.0834 +/- 124.6466 +/- 156.7508	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Nitrobenzene-d5 CAS # 4165-60-0 Purity 99%	(Lot PR-20474)	5,003.7 μg/mL	+/- 29.0901 +/- 124.6753 +/- 156.7868	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2-Fluorobipbenyl CAS# 321-60-8 Purity 99%	(Lot B19Z016)	5,002.4 μg/mL	+/- 29.0826 +/- 124.6429 ÷/- 156.7461	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
5	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99%	(Lot 29699MJV)	5,024.2 μg/mL	+/- 29.2093 +/- 125.1861 +/- 157.4292	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	p-Terphenyl-d14 CAS # 1718-51-0 Purity 99%	(Lot PR-20577)	5,010.4 μg/mL	+/- 29.1291 +/- 124.8422 +/- 156.9968	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

Solvent:

Methylene Chloride

CAS#

75-09-2

Purity

99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:

30m x 0.25mm x 0.25μm Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C @ 10°C/min. (hold 10 min.)

Inj. Temp:

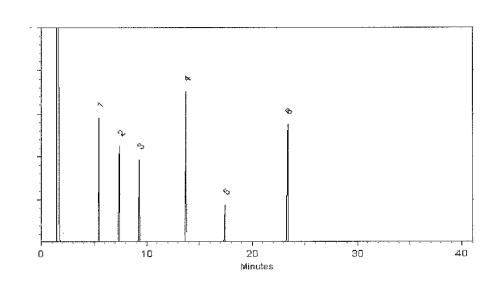
250°C

Det. Temp:

330 C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Reperca Januar

Date Mixed:

11-Jun-2014

Balance: 1128360905

Jennifer L. Pollino - QC Analyst

Date Passed:

23-Jun-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Method 8270C SIM

Semivolatile Organic Compounds (GC/MS SIM) by Method 8270C (SIM)

FORM II GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name:	TestAmerica	Sacramento	Job No.:	320-25962-1
ana M-				

Level: Low

GC Column (1): HP-5MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	NBZ	#
MEAFF-MRD-1A01-021 7	320-25962-1	61	
MEAFF-MRD-1A01P-02 17	320-25962-2	63	
	MB 320-152172/1-A	63	
	LCS 320-152172/2-A	73	
	LCSD 320-152172/3-A	61	

 $\frac{QC \text{ LIMITS}}{42-91}$

NBZ = Nitrobenzene-d5

 $\ensuremath{\text{\#}}$ Column to be used to flag recovery values

FORM II WS-MS-0011

FORM III GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacra	mento	Job No.: 320-25962-1					
SDG No.:							
Matrix: Water	Level: Low	Lab Fil	e ID: <u>S030602.</u> D				
Lab ID: LCS 320-152172/2-A		Client	ID:				
	SPIKE		LCS	LCS	QC		
	ADDED		CONCENTRATION	용	LIMITS	#	
COMPOUND	(ug/L)		(ug/L)	REC	REC		
1,4-Dioxane		10.0	2.90	29	12-52	М	

 $[\]mbox{\#}$ Column to be used to flag recovery and RPD values FORM III WS-MS-0011

FORM III GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento		Job No.: 320-25962-1						
SDG No.:	:							
Matrix:	Water	Level: Low	Lab File I	D: <u>S0</u>	30603	.D		
Lab ID:	LCSD 320-152172/3	-A	Client ID:					
	COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% . RPD	QC L:	IMITS REC	- #

2.61

26

11

20

12-52

10.0

1,4-Dioxane

 $[\]mbox{\#}$ Column to be used to flag recovery and RPD values FORM III WS-MS-0011

Lab Name: TestAmerica Sacramento	Job No.: <u>320-25962-1</u>
SDG No.:	
Lab File ID: S030601.D	Lab Sample ID: MB 320-152172/1-A
Matrix: Water	Date Extracted: 02/24/2017 15:44
Instrument ID: SV1	Date Analyzed: 03/06/2017 11:24
Level: (Low/Med) Low	

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

		LAB	
CLIENT SAMPLE ID	LAB SAMPLE ID	FILE ID	DATE ANALYZED
	LCS 320-152172/2-A	S030602.D	03/06/2017 11:46
	LCSD 320-152172/3-A	S030603.D	03/06/2017 12:08
MEAFF-MRD-1A01-0217	320-25962-1	S030614.D	03/06/2017 16:12
MEAFF-MRD-1A01P-0217	320-25962-2	S030615.D	03/06/2017 16:34

FORM VIII GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1	
SDG No.:		
Sample No.: ICIS 320-151686/5	Date Analyzed: 02/22/2017 11:03	
Instrument ID: SV1	GC Column: HP-5MS ID: 0.25(mm)	

Lab File ID (Standard): $\underline{14D0222E.D}$ Heated Purge: (Y/N) \underline{N}

Calibration ID: 28577

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION M	ID-POINT	786305	7.20				
UPPER LIMIT		1572610	7.70				
LOWER LIMIT		393153	6.70				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-151686/9		879747	7.20				
CCV 320-153398/2		703077	7.20				
MB 320-152172/1-A		732550	7.20				
LCS 320-152172/2-A		735352	7.20				
LCSD 320-152172/3-A		633054	7.20				
320-25962-1	MEAFF-MRD-1A01-0217	645375	7.20				
320-25962-2	MEAFF-MRD-1A01P-0217	651413	7.20				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area RT Limit = \pm 0.5 minutes of internal standard RT

 $\ensuremath{\text{\#}}$ Column used to flag values outside QC limits

FORM VIII WS-MS-0011

FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-MRD-1A01-0217 Lab Sample ID: 320-25962-1

Matrix: Water Lab File ID: S030614.D

Analysis Method: WS-MS-0011 Date Collected: 02/21/2017 15:55

Extract. Method: 3510C Date Extracted: 02/24/2017 15:44

Sample wt/vol: 1049(mL) Date Analyzed: 03/06/2017 16:12

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: $\underline{1(uL)}$ Level: $\underline{(low/med)}$ Low

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

Analysis Batch No.: 153398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.95	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	61		42-91

Report Date: 06-Mar-2017 16:36:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04

> TestAmerica Sacramento **Target Compound Quantitation Report**

\ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030614.D Data File:

Lims ID: 320-25962-A-1-A

Client ID: MEAFF-MRD-1A01-0217

Sample Type: Client

Inject. Date: 06-Mar-2017 16:12:30 ALS Bottle#: 14 Worklist Smp#: 16

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-1-a Misc. Info.: 320-0040510-016

Operator ID: Instrument ID: SV1

\\ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m Method:

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 16:36:07 Calib Date: 22-Feb-2017 12:09:30

Integrator: **RTE** ID Type: RT Order ID Quant Method: Internal Standard Quant By: Initial Calibration \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D Last ICal File:

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 16:36:14

	RT	Exp RT	Dlt RT			OnCol Amt			
Sig	(min.)	(min.)	(min.)	Q	Response	ug/ml	Ratio Range	Ratio	Flags

1 1,4	1-Dioxane	!						
58		3.346				ND		
88		3.346						
* 21,	4-Dichlord	benzene-	d4					
152	7.197	7.197	0.000	100	645375	10.0	80-	120
150	7.197	7.197	0.000		999300		135-	175
115	7.197	7.197	0.000		362846		36.9-	76.9
\$ 3 N	itrobenzer	ne-d5						

3.07 80- 120 100 82 8.059 8.060 -0.001 98 239530 126981 33.6- 73.6 53.0 128 8.059 8.060 -0.00154 8.051 8.060 -0.009 137682 37.4- 77.4 57.5

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

100

155

56.2

Report Date: 06-Mar-2017 16:36:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030614.D

Injection Date: 06-Mar-2017 16:12:30 Instrument ID: SV1

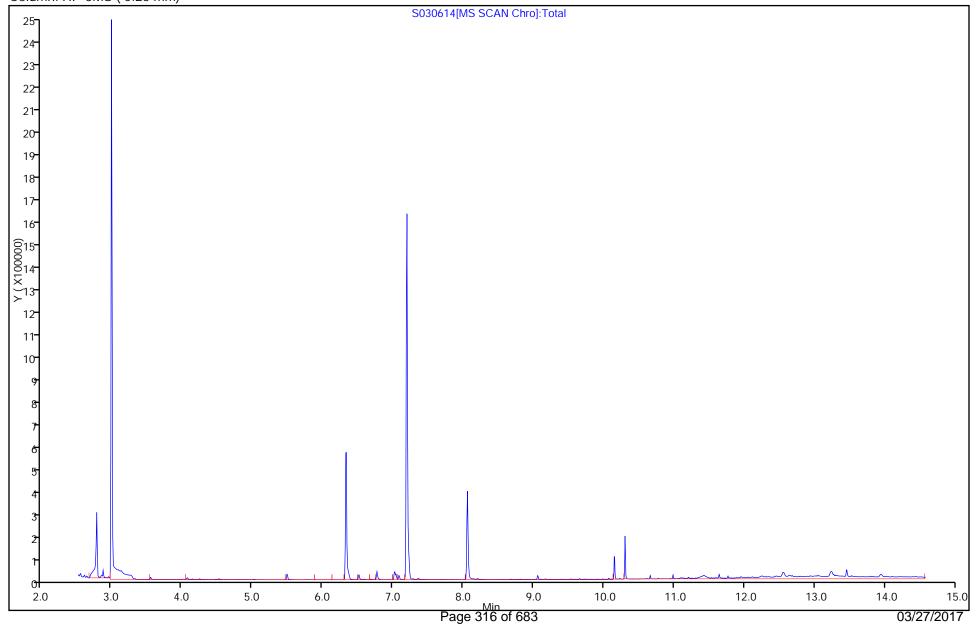
Lims ID: 320-25962-A-1-A Lab Sample ID: 320-25962-1 Worklist Smp#: 16

Client ID: MEAFF-MRD-1A01-0217

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 14

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Operator ID:

Report Date: 06-Mar-2017 16:36:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Recovery Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030614.D

Lims ID: 320-25962-A-1-A

Client ID: MEAFF-MRD-1A01-0217

Sample Type: Client

Inject. Date: 06-Mar-2017 16:12:30 ALS Bottle#: 14 Worklist Smp#: 16

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-1-a Misc. Info.: 320-0040510-016

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 16:36:07 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 16:36:14

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.07	61.46

FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-MRD-1A01P-0217 Lab Sample ID: 320-25962-2

Matrix: Water Lab File ID: S030615.D

Analysis Method: WS-MS-0011 Date Collected: 02/21/2017 15:55

Extract. Method: 3510C Date Extracted: 02/24/2017 15:44

Sample wt/vol: 1035.2(mL) Date Analyzed: 03/06/2017 16:34

Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1

Injection Volume: $\underline{1(uL)}$ Level: $\underline{(low/med)}$ Low

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

Analysis Batch No.: 153398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.97	0.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	63		42-91

Report Date: 06-Mar-2017 16:52:03 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030615.D

Lims ID: 320-25962-A-2-A

Client ID: MEAFF-MRD-1A01P-0217

Sample Type: Client

Inject. Date: 06-Mar-2017 16:34:30 ALS Bottle#: 15 Worklist Smp#: 17

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-2-a Misc. Info.: 320-0040510-017

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 17:49:24 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 16:52:03

	RT	Exp RT	Dlt RT			OnCol Amt			
Sig	(min.)	(min.)	(min.)	Q	Response	ug/ml	Ratio Range	Ratio	Flags

1 1,4	1-Dioxane	:						
58		3.346			1	ND		
88		3.346						
* 21,4	4-Dichloro	benzene-	-d4					
152	7.197	7.197	0.000	100	651413	10.0	80- 120	100
150	7.197	7.197	0.000		1011225		135- 175	155
115	7.197	7.197	0.000		366944		36.9- 76.9	56.3
\$ 3 Ni	itrobenzei	ne-d5						
82	8.059	8.060	-0.001	98	248872	3.16	80- 120	100
128	8.059	8.060	-0.001		130489		33.6- 73.6	52.4

Reagents:

8.059

8.060

-0.001

54

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

37.4- 77.4

57.2

142313

Report Date: 06-Mar-2017 16:52:03 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030615.D

Injection Date: 06-Mar-2017 16:34:30 Instrument ID: SV1

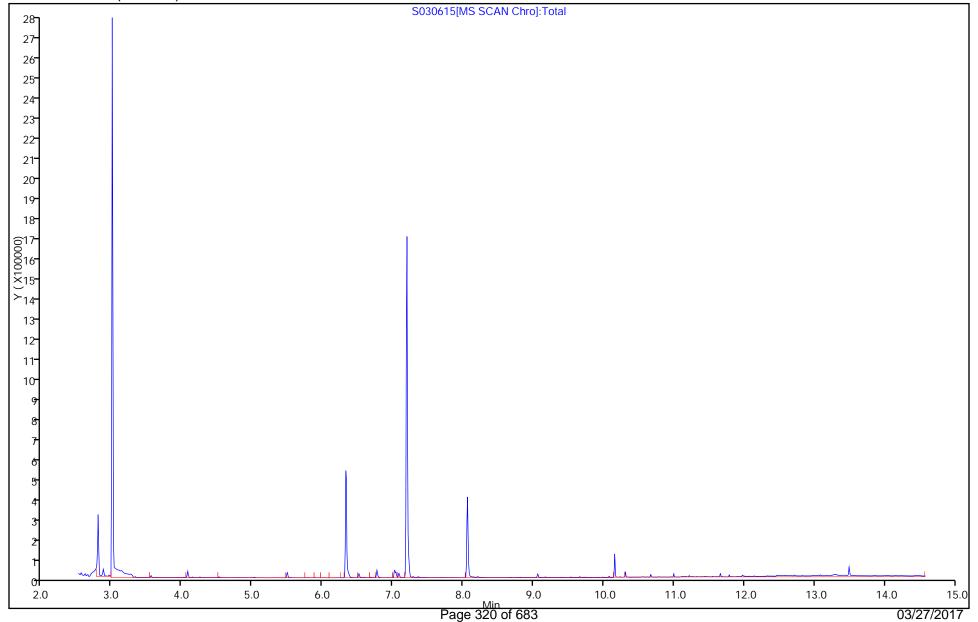
Lims ID: 320-25962-A-2-A Lab Sample ID: 320-25962-2 Worklist Smp#: 17

Client ID: MEAFF-MRD-1A01P-0217

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 15

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Operator ID:

Report Date: 06-Mar-2017 16:52:03 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Recovery Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030615.D

Lims ID: 320-25962-A-2-A

Client ID: MEAFF-MRD-1A01P-0217

Sample Type: Client

Inject. Date: 06-Mar-2017 16:34:30 ALS Bottle#: 15 Worklist Smp#: 17

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-2-a Misc. Info.: 320-0040510-017

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 17:49:24 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 16:52:03

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.16	63.27

FORM VI

GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA CURVE EVALUATION

 Lab Name: TestAmerica Sacramento
 Job No.: 320-25962-1
 Analy Batch No.: 151686

 SDG No.:
 Instrument ID: SV1
 GC Column: HP-5MS ID: 0.25 (mm)
 Heated Purge: (Y/N) N

 Calibration Start Date: 02/22/2017 09:35
 Calibration End Date: 02/22/2017 12:09
 Calibration ID: 28577

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-151686/1	14D0222A.D
Level 2	IC 320-151686/2	14D0222B.D
Level 3	IC 320-151686/3	14D0222C.D
Level 4	IC 320-151686/4	14D0222D.D
Level 5	ICIS 320-151686/5	14D0222E.D
Level 6	IC 320-151686/6	14D0222F.D
Level 7	IC 320-151686/7	14D0222G.D
Level 8	IC 320-151686/8	14D0222H.D

ANALYTE		RRF CURVE					#	MIN RRF	%RSD	#	MAX	R^2		MIN R^2			
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	TYPE	В	M1	M2					%RSD	OR COD		OR COD
1,4-Dioxane	0.4455			0 4401	0.3728	7110		0.4012				8.4		15.0		_	
1,4 Dioxane	0.3906		0.3515		0.5720	Ave		0.4012				0.4		13.0			
Nitrobenzene-d5	1.2661 1.2121			1.3085	1.1565	Ave		1.2077				8.2		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI

GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 Analy Batch No.: 151686

SDG No.:

Heated Purge: (Y/N) N Instrument ID: SV1 GC Column: HP-5MS ID: 0.25 (mm)

Calibration Start Date: 02/22/2017 09:35 Calibration End Date: 02/22/2017 12:09 Calibration ID: 28577

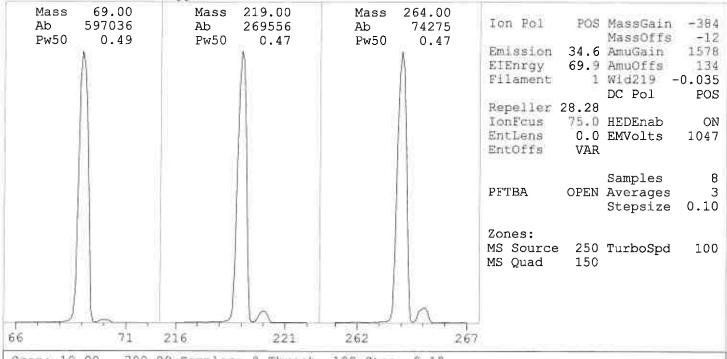
Calibration Files:

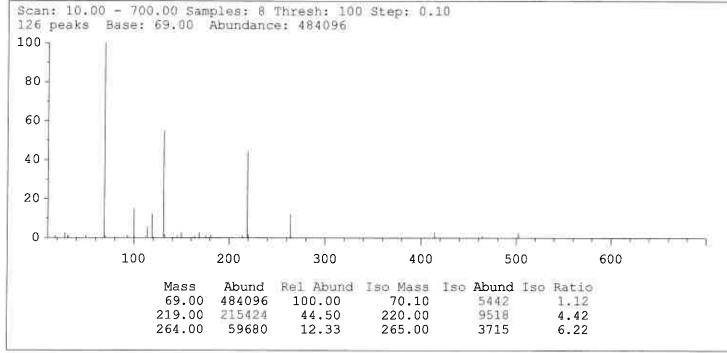
LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-151686/1	14D0222A.D
Level 2	IC 320-151686/2	14D0222B.D
Level 3	IC 320-151686/3	14D0222C.D
Level 4	IC 320-151686/4	14D0222D.D
Level 5	ICIS 320-151686/5	14D0222E.D
Level 6	IC 320-151686/6	14D0222F.D
Level 7	IC 320-151686/7	14D0222G.D
Level 8	IC 320-151686/8	14D0222H.D

ANALYTE	IS	CURVE		RESPONSE				CONCENTRATION (UG/ML)				
	REF	TYPE	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,4-Dioxane	DCBd 4	Ave	15367 570238	28517 1391248	59554 2749219	150814	293131	0.500	1.00	2.00	5.00	10.0
Nitrobenzene-d5	DCBd 4	Ave	43667 1769342	80062 4451578	173471 8721763	448379	909372	0.500 20.0	1.00 50.0	2.00 100	5.00	10.0

Curve Type Legend:
Ave = Average ISTD

Wed Feb 22 09:33:16 2017 Instrument: SV1 C:\MSDCHEM\1\5973\dftppsim.u





Air/Water Check: H20~0.93% N2~2.53% O2~0.67% CO2~0.07% N2/H20~272.84%

Column Flow: Front: 1.4 Back: 0 ml/min. Interface Temp: 250

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 264; EM Gain 158740

Repeller Maximum 35 volts using ion 219;

MassGain Values @Samples: -384@3 -384@2 -384@1 -384@0 -384@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	134.0	134.0	134.0	134.0	134.0	134.0	134.0
Entrance Lens Offset:	14.6	12.0	13.3	12.5	13.8	12.8	12.8
<pre>Target Abund(%):</pre>	1.0	100.0	~ ~			2.0	
Actual Tune Abund(%):	1.0	100.0	55.0	44.5	3.0	2.4	
			_				

Report Date: 22-Feb-2017 14:19:27 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D

Lims ID: IC CS-1

Client ID:

Sample Type: IC Calib Level: 1

Inject. Date: 22-Feb-2017 09:35:30 ALS Bottle#: 1 Worklist Smp#: 1

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-1 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:26 Calib Date: 22-Feb-2017 12:09:30

Integrator: RTE ID Type: RT Order ID

Quant Method: Internal Standard Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 10:04:37

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
1 1,	4-Dioxan	е									М
58 88	3.355 3.355	3.354 3.354	0.001 0.001	78	15367 19805	0.5000	0.5552	80- 120 92- 132	100 129	13377	M
* 21	,4-Dichlor	obenzene	-d4								
152	7.197	7.197	0.000	99	689814	10.0	10.0	80- 120	100		
150	7.197	7.197	0.000		1067566			136- 176	155		
115	7.197	7.197	0.000		393942			37.1- 77.1	57.1		
\$ 3 N	litrobenze	ene-d5									M
82	8.059	8.059	0.000	100	43667	0.5000	0.5242	80- 120	100		M
128	8.059	8.059	0.000		20703			29.8- 69.8	47.4		
54	8.059	8.059	0.000		25267			38.3- 78.3	57.9		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL1_00011 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:27 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D

Injection Date: 22-Feb-2017 09:35:30 Instrument ID: SV1 Operator ID:

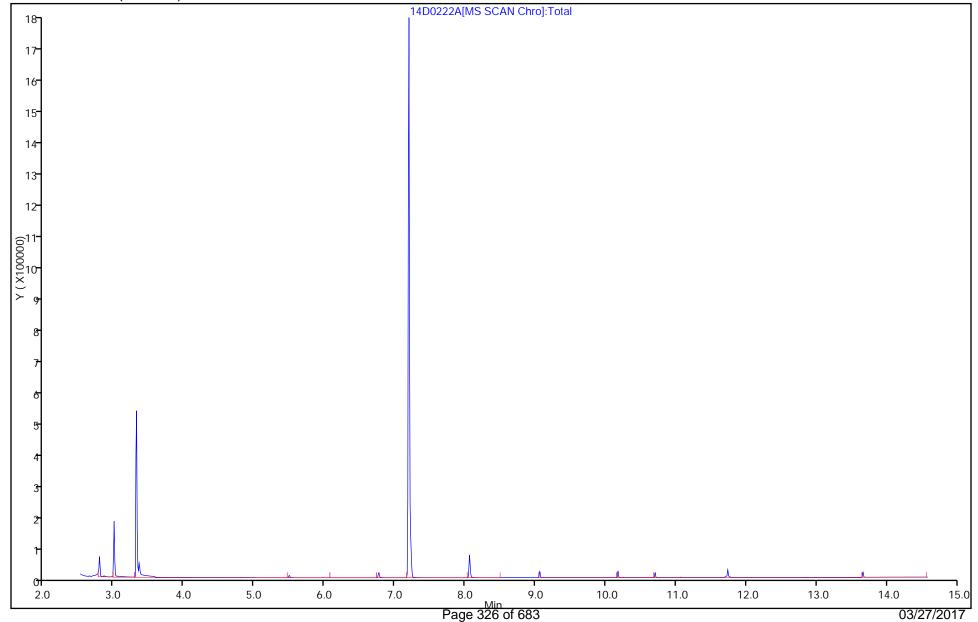
Lims ID: IC CS-1 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 1

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



1

Report Date: 22-Feb-2017 14:19:27 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D

Injection Date: 22-Feb-2017 09:35:30 Instrument ID: SV1

Lims ID: IC CS-1

Client ID:

Operator ID: ALS Bottle#: 1 Worklist Smp#: 1

Injection Vol: 1.0 ul Dil. Factor: 1.0000

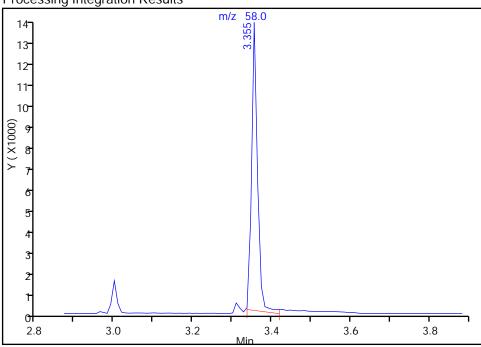
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

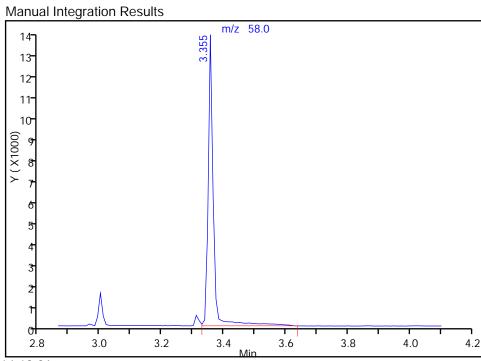
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.36 Area: 13722 Amount: 0.500000 Amount Units: ug/ml **Processing Integration Results**



RT: 3.36
Area: 15367
Amount: 0.555238
Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:26

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 327 of 683

Report Date: 22-Feb-2017 14:19:27 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222A.D

Injection Date: 22-Feb-2017 09:35:30 Instrument ID: SV1

Lims ID: IC CS-1

Client ID:

Operator ID: ALS Bottle#: 1 Worklist Smp#: 1

Injection Vol: 1.0 ul Dil. Factor: 1.0000

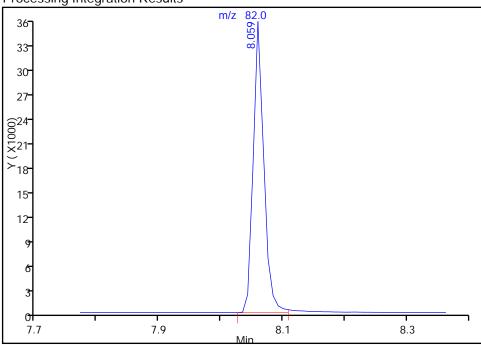
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

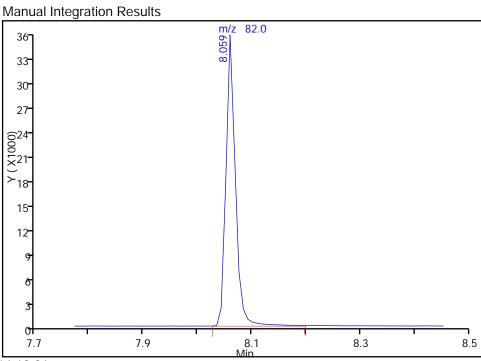
\$ 3 Nitrobenzene-d5, CAS: 4165-60-0

Signal: 1

RT: 8.06 Area: 42828 Amount: 0.500000 Amount Units: ug/ml **Processing Integration Results**



RT: 8.06
Area: 43667
Amount: 0.524163
Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:26

Audit Action: Manually Integrated

Audit Reason: Peak Tail

Page 328 of 683

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D

Lims ID: IC CS-2

Client ID:

Sample Type: IC Calib Level: 2

Inject. Date: 22-Feb-2017 09:56:30 ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-2 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:27 Calib Date: 22-Feb-2017 12:09:30

Integrator: RTE ID Type: RT Order ID

Quant Method: Internal Standard Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 10:17:50

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1	4 Dia									N 4
1 1,	,4-Dioxan	е								M
58	3.355	3.354	0.001	97	28517	1.00	0.9844	80- 120	100	M
88	3.364	3.354	0.010		33413			92- 132	117	
* 21	,4-Dichlor	obenzene	-d4							
152	7.197	7.197	0.000	100	721993	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1123841			136- 176	156	
115	7.197	7.197	0.000		416847			37.1- 77.1	57.7	
\$ 3 N	Nitrobenze	ene-d5								M
82	8.060	8.059	0.001	99	80062	1.00	0.9182	80- 120	100	M
128	8.060	8.059	0.001		38136			29.8- 69.8	47.6	
54	8.060	8.059	0.001		46077			38.3- 78.3	57.6	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL2_00010 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D

Injection Date: 22-Feb-2017 09:56:30 Instrument ID: SV1

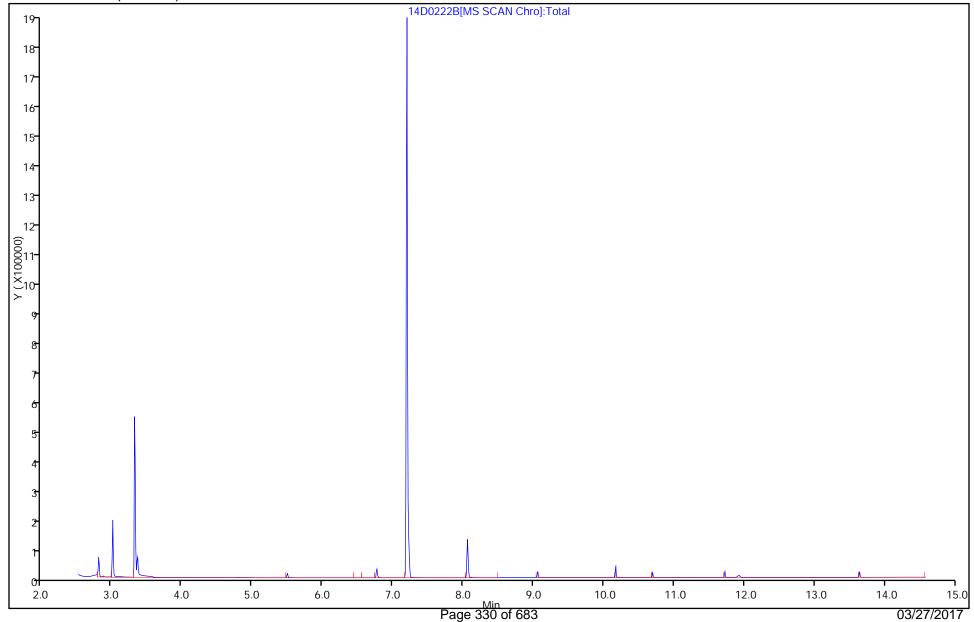
Operator ID: Lims ID: IC CS-2 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 2

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



2

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D

Injection Date: 22-Feb-2017 09:56:30 Instrument ID: SV1

Lims ID: IC CS-2

Client ID:

Operator ID: ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul Dil. Factor: 1.0000

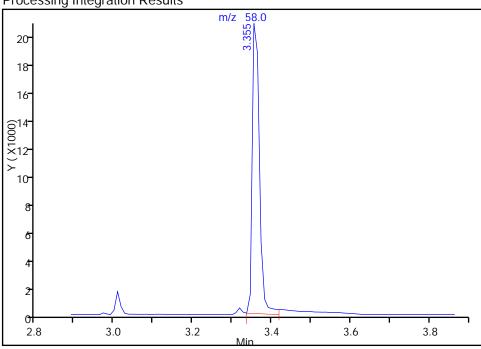
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

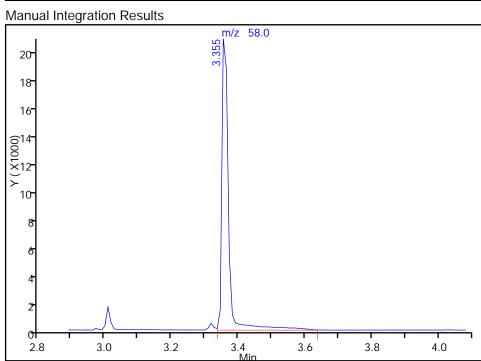
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.35 Area: 25950 Amount: 0.893015 Amount Units: ug/ml **Processing Integration Results**



RT: 3.35
Area: 28517
Amount: 0.984448
Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:27

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 331 of 683

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222B.D

Injection Date: 22-Feb-2017 09:56:30 Instrument ID: SV1

Lims ID: IC CS-2

Client ID:

Operator ID: ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul Dil. Factor: 1.0000

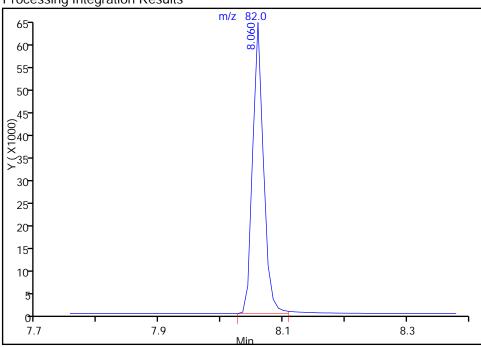
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

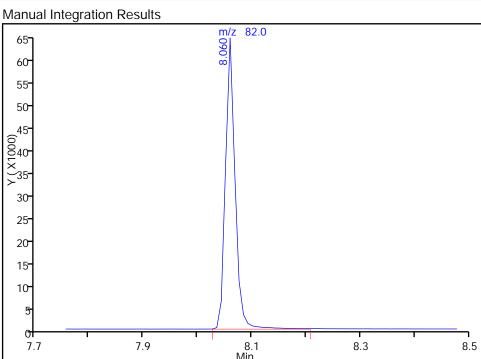
\$ 3 Nitrobenzene-d5, CAS: 4165-60-0

Signal: 1

RT: 8.06 Area: 78635 Amount: 0.924884 Amount Units: ug/ml **Processing Integration Results**



RT: 8.06 Area: 80062 Amount: 0.918203 Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:27

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 332 of 683

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D

Lims ID: IC CS-3

Client ID:

Sample Type: IC Calib Level: 3

Inject. Date: 22-Feb-2017 10:19:30 ALS Bottle#: 3 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-3 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:28 Calib Date: 22-Feb-2017 12:09:30

Integrator: RTE ID Type: RT Order ID

Quant Method: Internal Standard Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 10:46:45

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1	,4-Dioxan	Δ								М
			0.002	0.7	F0FF4	2.00	1.00	00 100	100	
58	3.357	3.354	0.003	97	59554	2.00	1.92	80- 120		M
88	3.366	3.354	0.012		69299			92- 132	116	
* 21	,4-Dichlor	obenzene	-d4							
152	7.197	7.197	0.000	100	771483	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1199044			136- 176	155	
115	7.197	7.197	0.000		444192			37.1- 77.1	57.6	
\$ 3 N	Nitrobenze	ene-d5								M
82	8.060	8.059	0.001	97	173471	2.00	1.86	80- 120	100	M
128	8.060	8.059	0.001		83892			29.8- 69.8	48.4	
54	8.060	8.059	0.001		99669			38.3- 78.3	57.5	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL3_00010 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D

Injection Date: 22-Feb-2017 10:19:30 Instrument ID: SV1 Operator ID:

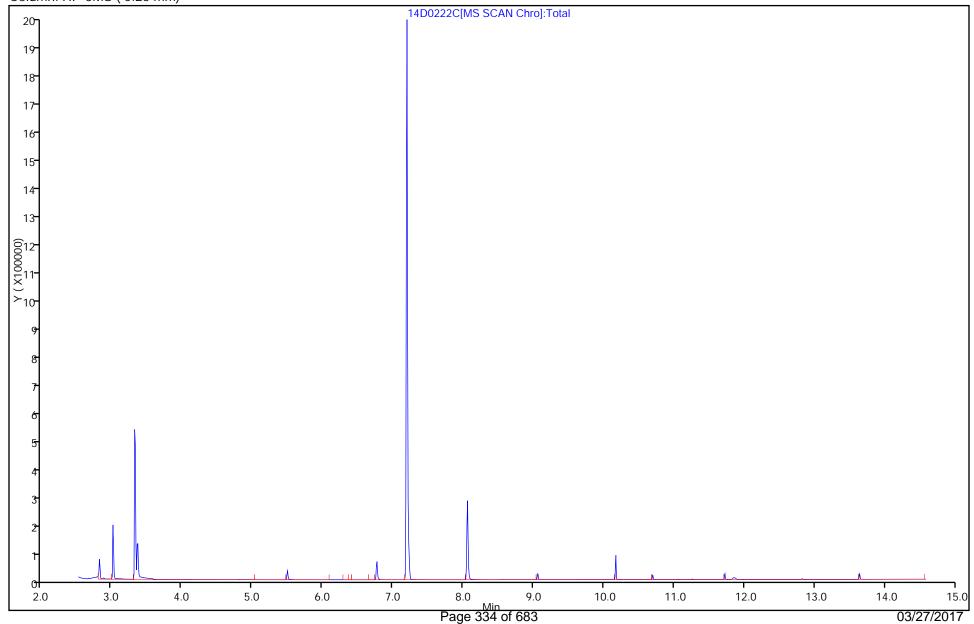
Lims ID: IC CS-3 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 3

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



3

Report Date: 22-Feb-2017 14:19:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D

Injection Date: 22-Feb-2017 10:19:30 Instrument ID: SV1

Lims ID: IC CS-3

Client ID:

Operator ID: ALS Bottle#: 3 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

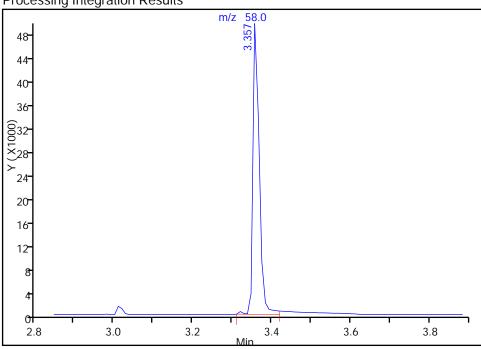
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

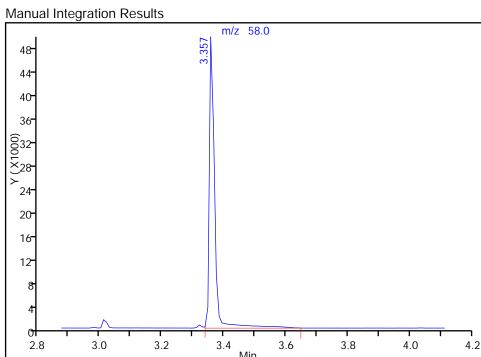
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.36 Area: 55647 Amount: 1.801497 Amount Units: ug/ml **Processing Integration Results**



RT: 3.36
Area: 59554
Amount: 1.924007
Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:28

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 335 of 683

Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report Report Date: 22-Feb-2017 14:19:28

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222C.D

Injection Date: 22-Feb-2017 10:19:30 Instrument ID: SV1

Lims ID: IC CS-3

Client ID:

Operator ID: ALS Bottle#: 3 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

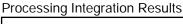
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

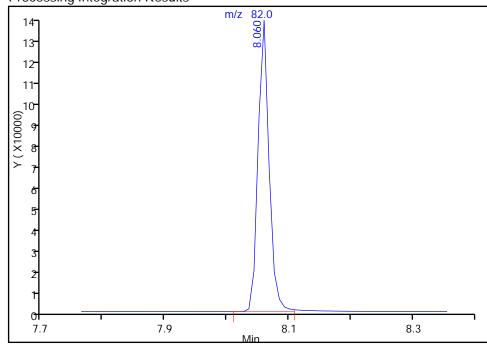
Column: HP-5MS (0.25 mm) Detector MS SCAN

3 Nitrobenzene-d5, CAS: 4165-60-0

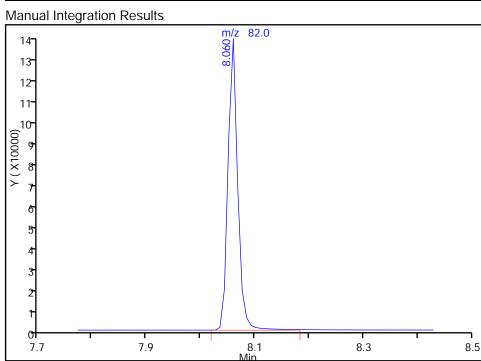
Signal: 1

RT: 8.06 Area: 171502 Amount: 1.912842 Amount Units: ug/ml





RT: 8.06 Area: 173471 1.861855 Amount: Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:28

Audit Action: Manually Integrated

Audit Reason: Peak Tail

Page 336 of 683

Report Date: 22-Feb-2017 14:19:29 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222D.D

Lims ID: IC CS-4

Client ID:

Sample Type: IC Calib Level: 4

Inject. Date: 22-Feb-2017 10:41:30 ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-4 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:29 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 11:21:20

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1	,4-Dioxan	Δ								М
			0.000	07	150014	Г 00	F 40	00 100	100	
58	3.345	3.354	-0.009	96	150814	5.00	5.48	80- 120		M
88	3.354	3.354	0.000		168162			92- 132	112	
* 21	,4-Dichlor	obenzene	-d4							
152	7.197	7.197	0.000	100	685347	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1065860			136- 176	156	
115	7.197	7.197	0.000		391582			37.1- 77.1	57.1	
\$ 3 N	Nitrobenze	ene-d5								
82	8.060	8.059	0.001	97	448379	5.00	5.42	80- 120	100	
128	8.060	8.059	0.001		223263			29.8- 69.8	49.8	
54	8.051	8.059	-0.008		261235			38.3- 78.3	58.3	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL4_00010 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:29 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222D.D

Injection Date: 22-Feb-2017 10:41:30 Instrument ID: SV1

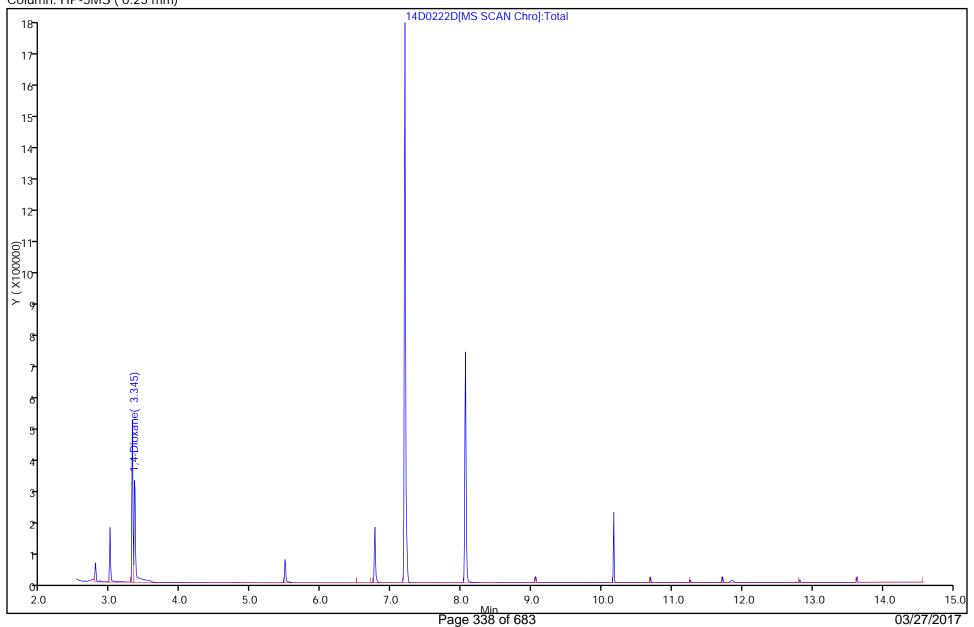
Operator ID: Lims ID: IC CS-4 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 4

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 22-Feb-2017 14:19:29 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222D.D

Injection Date: 22-Feb-2017 10:41:30 Instrument ID: SV1

Lims ID: IC CS-4

Client ID:

Operator ID: ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

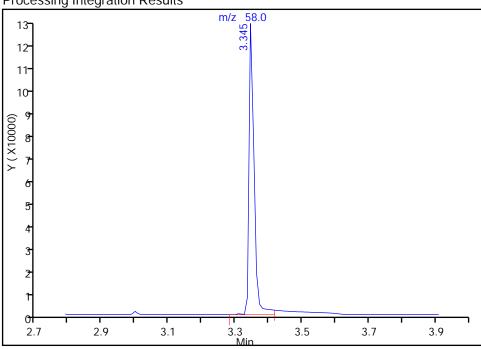
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

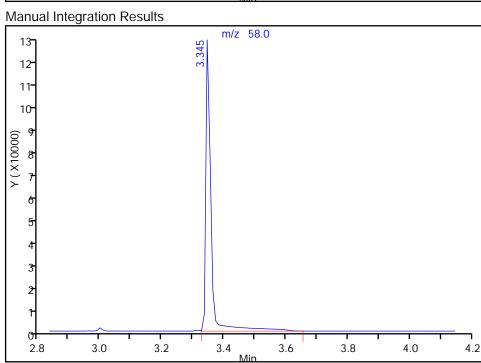
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.35 Area: 137931 Amount: 4.941853 Amount Units: ug/ml **Processing Integration Results**



RT: 3.35
Area: 150814
Amount: 5.484704
Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:29

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 339 of 683

Report Date: 22-Feb-2017 14:19:30 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222E.D

Lims ID: ICIS CS-5

Client ID:

Sample Type: ICIS Calib Level: 5

Inject. Date: 22-Feb-2017 11:03:30 ALS Bottle#: 5 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: ICIS CS-5 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:30 Calib Date: 22-Feb-2017 12:09:30

Integrator: RTE ID Type: RT Order ID

Quant Method: Internal Standard Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 11:21:43

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
1 1,	,4-Dioxan	е									M
58	3.354	3.354	0.000	81	293131	10.0	9.29	80- 120	100	145920	M
88	3.354	3.354	0.000		351365			92- 132	120		
* 21	,4-Dichlor	obenzene	-d4								
152	7.197	7.197	0.000	100	786305	10.0	10.0	80- 120	100		
150	7.197	7.197	0.000		1219926			136- 176	155		
115	7.197	7.197	0.000		448437			37.1- 77.1	57.0		
\$ 3 N	Nitrobenze	ene-d5									
82	8.059	8.059	0.000	99	909372	10.0	9.58	80- 120	100		
128	8.059	8.059	0.000		466333			29.8- 69.8	51.3		
54	8.051	8.059	-0.008		534392			38.3- 78.3	58.8		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL5_00010 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:30 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222E.D

Injection Date: 22-Feb-2017 11:03:30 Instrument ID: SV1

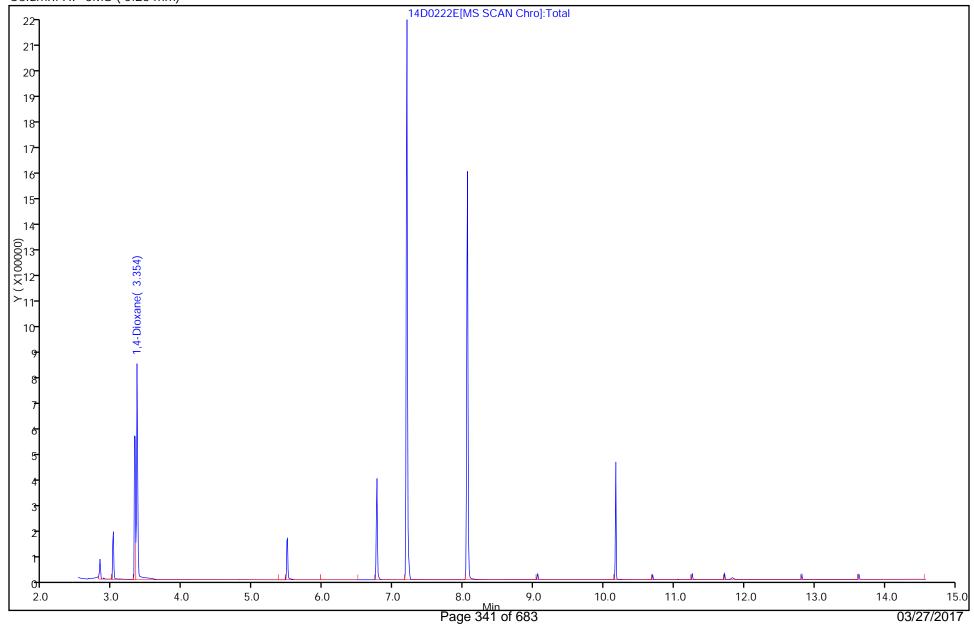
Operator ID: Lims ID: ICIS CS-5 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 5

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 22-Feb-2017 14:19:30 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222E.D

Injection Date: 22-Feb-2017 11:03:30 Instrument ID: SV1

Lims ID: ICIS CS-5

Client ID:

Operator ID: ALS Bottle#: 5 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

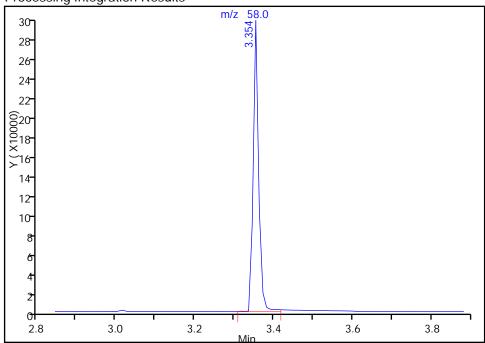
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

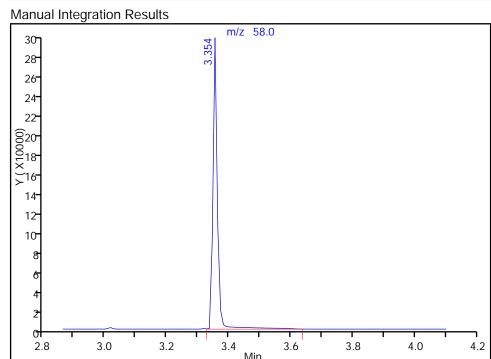
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.35 Area: 280244 Amount: 8.808838 Amount Units: ug/ml **Processing Integration Results**



RT: 3.35
Area: 293131
Amount: 9.291648
Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:30

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 342 of 683

Report Date: 22-Feb-2017 14:19:31 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222F.D

Lims ID: IC CS-6

Client ID:

Sample Type: IC Calib Level: 6

Inject. Date: 22-Feb-2017 11:25:30 ALS Bottle#: 6 Worklist Smp#: 6

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-6 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:31 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 11:46:54

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1, 58	,4-Dioxan 3.355	e 3.354	0.001	100	570238	20.0	19.5	80- 120	100	M M
88	3.364	3.354	0.010		655548			92- 132	115	
* 21	,4-Dichlor	obenzene	-d4							
152	7.197	7.197	0.000	100	729888	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1138534			136- 176	156	
115	7.197	7.197	0.000		417127			37.1- 77.1	57.1	
\$ 3 N	Nitrobenze	ene-d5								
82	8.059	8.059	0.000	96	1769342	20.0	20.1	80- 120	100	
128	8.068	8.059	0.009		911496			29.8- 69.8	51.5	
54	8.059	8.059	0.000		1041598			38.3- 78.3	58.9	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL6_00010 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:31 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222F.D

Injection Date: 22-Feb-2017 11:25:30 Instrument ID: SV1 Operator ID:

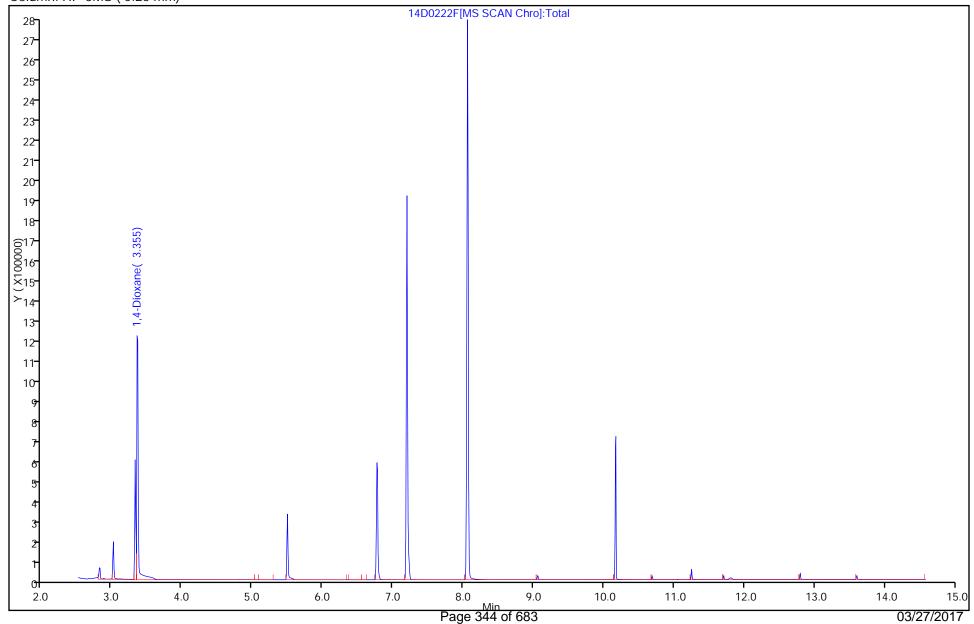
Lims ID: IC CS-6 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 6

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report Report Date: 22-Feb-2017 14:19:31

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222F.D

Injection Date: 22-Feb-2017 11:25:30 Instrument ID: SV1

Lims ID: IC CS-6

Client ID:

Operator ID: ALS Bottle#: Worklist Smp#: 6 6

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

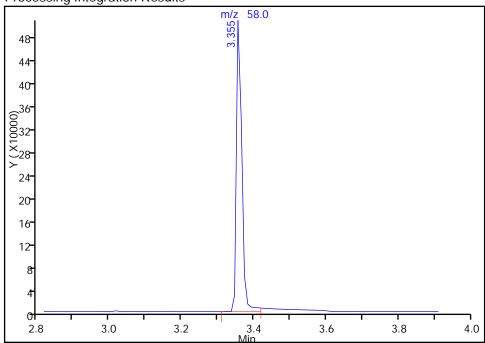
Column: HP-5MS (0.25 mm) Detector MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

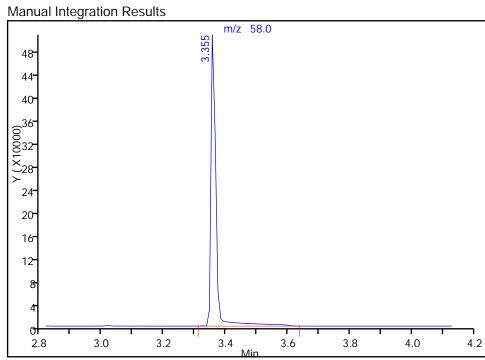
Signal: 1

RT: 3.36 Area: 530709 Amount: 18.155454 Amount Units: ug/ml

Processing Integration Results



RT: 3.36 Area: 570238 19.472510 Amount: Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:30

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 345 of 683

Report Date: 22-Feb-2017 14:19:32 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222G.D

Lims ID: IC CS-7

Client ID:

Sample Type: IC Calib Level: 7

Inject. Date: 22-Feb-2017 11:47:30 ALS Bottle#: 7 Worklist Smp#: 7

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-7 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:31 Calib Date: 22-Feb-2017 12:09:30

Integrator: RTE ID Type: RT Order ID

Quant Method: Internal Standard Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 12:18:18

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,	,4-Dioxan	Э								M
58	3.355	3.354	0.001	90	1391248	50.0	53.4	80- 120	100	M
88	3.364	3.354	0.010		1577040			92- 132	113	
* 21	,4-Dichlor	obenzene	-d4							
152	7.198	7.197	0.001	100	649782	10.0	10.0	80- 120	100	
150	7.198	7.197	0.001		1006292			136- 176	155	
115	7.198	7.197	0.001		370252			37.1- 77.1	57.0	
\$ 3 N	Nitrobenze	ne-d5								
82	8.068	8.059	0.009	97	4451578	50.0	56.7	80- 120	100	
128	8.068	8.059	0.009		2303805			29.8- 69.8	51.8	
54	8.068	8.059	0.009		2601883			38.3- 78.3	58.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL7_00010 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:32 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222G.D

Injection Date: 22-Feb-2017 11:47:30 Instrument ID: SV1

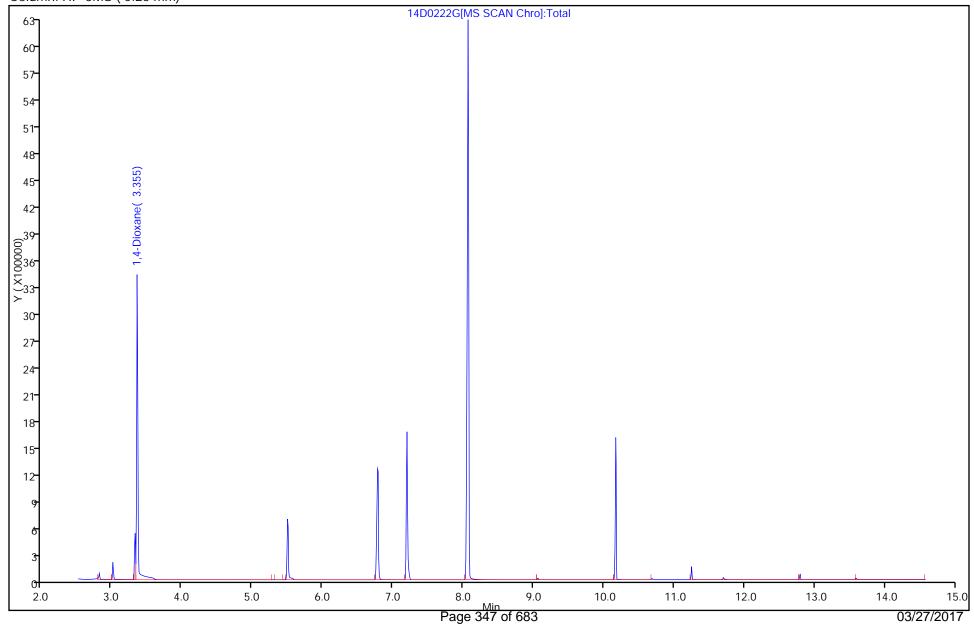
Operator ID: Lims ID: IC CS-7 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 7

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 22-Feb-2017 14:19:32 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222G.D

Injection Date: 22-Feb-2017 11:47:30 Instrument ID: SV1

Lims ID: IC CS-7

Client ID:

Operator ID: ALS Bottle#: 7 Worklist Smp#: 7

Injection Vol: 1.0 ul Dil. Factor: 1.0000

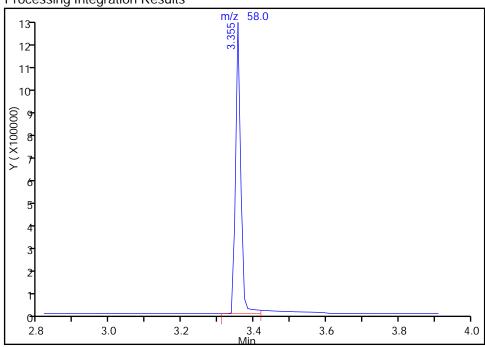
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

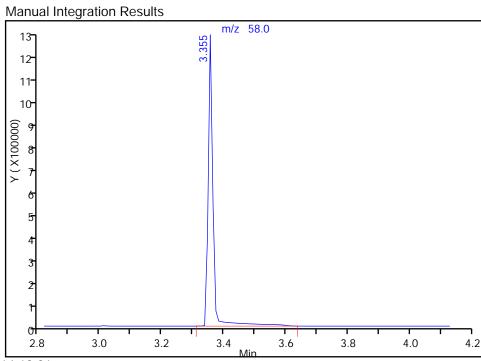
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.36 Area: 1295874 Amount: 49.348837 Amount Units: ug/ml **Processing Integration Results**



RT: 3.36 Area: 1391248 Amount: 53.365292 Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:31

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 348 of 683

Report Date: 22-Feb-2017 14:19:33 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Lims ID: IC CS-8

Client ID:

Sample Type: IC Calib Level: 8

Inject. Date: 22-Feb-2017 12:09:30 ALS Bottle#: 8 Worklist Smp#: 8

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: IC CS-8 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:32 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

First Level Reviewer: onishim Date: 22-Feb-2017 12:42:13

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1	,4-Dioxan	0								М
58	3.365	3.354	0.011	73	2749219	100.0	87.6	80- 120	100	M
88	3.365	3.354	0.011		3047664			92- 132	111	
* 21	,4-Dichlor	obenzene	-d4							
152	7.198	7.197	0.001	99	782185	10.0	10.0	80- 120	100	
150	7.198	7.197	0.001		1219969			136- 176	156	
115	7.198	7.197	0.001		445630			37.1- 77.1	57.0	
\$ 3 N	Nitrobenze	ene-d5								
82	8.085	8.059	0.026	98	8721763	100.0	92.3	80- 120	100	
128	8.085	8.059	0.026		4541021			29.8- 69.8	52.1	
54	8.077	8.059	0.018		5217430			38.3- 78.3	59.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL8_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:19:33 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Injection Date: 22-Feb-2017 12:09:30 Instrument ID: SV1

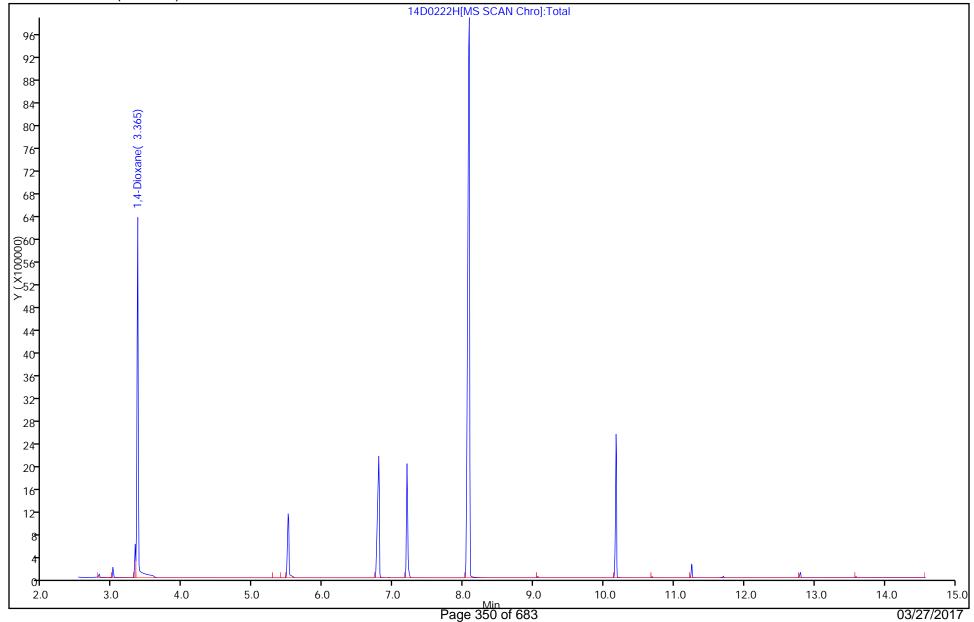
Operator ID: Lims ID: IC CS-8 Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 8

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 22-Feb-2017 14:19:33 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Injection Date: 22-Feb-2017 12:09:30 Instrument ID: SV1

Lims ID: IC CS-8

Client ID:

Operator ID: ALS Bottle#: 8 Worklist Smp#: 8

Injection Vol: 1.0 ul Dil. Factor: 1.0000

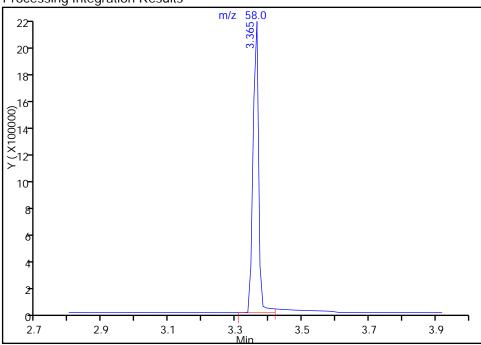
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

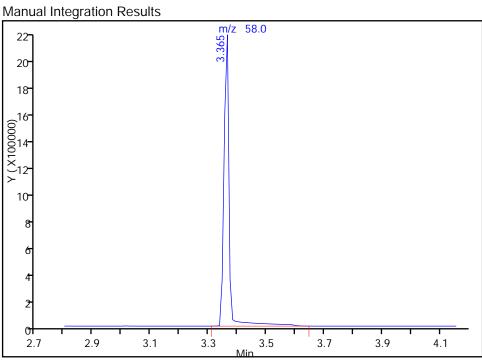
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.36 Area: 2566879 Amount: 82.391732 Amount Units: ug/ml **Processing Integration Results**



RT: 3.36 Area: 2749219 Amount: 87.603583 Amount Units: ug/ml



Reviewer: onishim, 22-Feb-2017 14:19:32

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Page 351 of 683

FORM VII GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>ICV 320-151686/9</u> Calibration Date: <u>02/22/2017 12:31</u>

Instrument ID: SV1 Calib Start Date: 02/22/2017 09:35

GC Column: <u>HP-5MS</u> ID: <u>0.25(mm)</u> Calib End Date: <u>02/22/2017 12:09</u>

Lab File ID: 14D0222.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.4012	0.3365		8.39	10.0	-16.1	30.0
Nitrobenzene-d5	Ave	1.208	1.092		9.04	10.0	-9.6	

Report Date: 22-Feb-2017 14:22:06 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222.D

Lims ID: ICV

Client ID:

Sample Type: ICV

Inject. Date: 22-Feb-2017 12:31:30 ALS Bottle#: 9 Worklist Smp#: 9

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: ICV 14D

Operator ID: Instrument ID: SV1

Sublist:

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 22-Feb-2017 14:19:32 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK015

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
1 1	,4-Dioxan	0									
-											
58	3.371	3.354	0.017	62	295999	10.0	8.39	80- 120	100	1939	
88	3.371	3.354	0.017		362512			92- 132	122		
* 21	,4-Dichlor	obenzene	-d4								
152	7.198	7.197	0.001	100	879747	10.0	10.0	80- 120	100		
150	7.198	7.197	0.001		1372333			136- 176	156		
115	7.198	7.197	0.001		505357			37.1- 77.1	57.4		
\$ 3 N	Nitrobenze	ene-d5									
82	8.060	8.059	0.001	99	960674	10.0	9.04	80- 120	100		
128	8.060	8.059	0.001		494326			29.8- 69.8	51.5		
54	8.052	8.059	-0.007		562315			38.3- 78.3	58.5		
Rea	aents:										

Reagents:

MS14DICV_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Feb-2017 14:22:06 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222.D

Injection Date: 22-Feb-2017 12:31:30 Instrument ID: SV1 Operator ID:

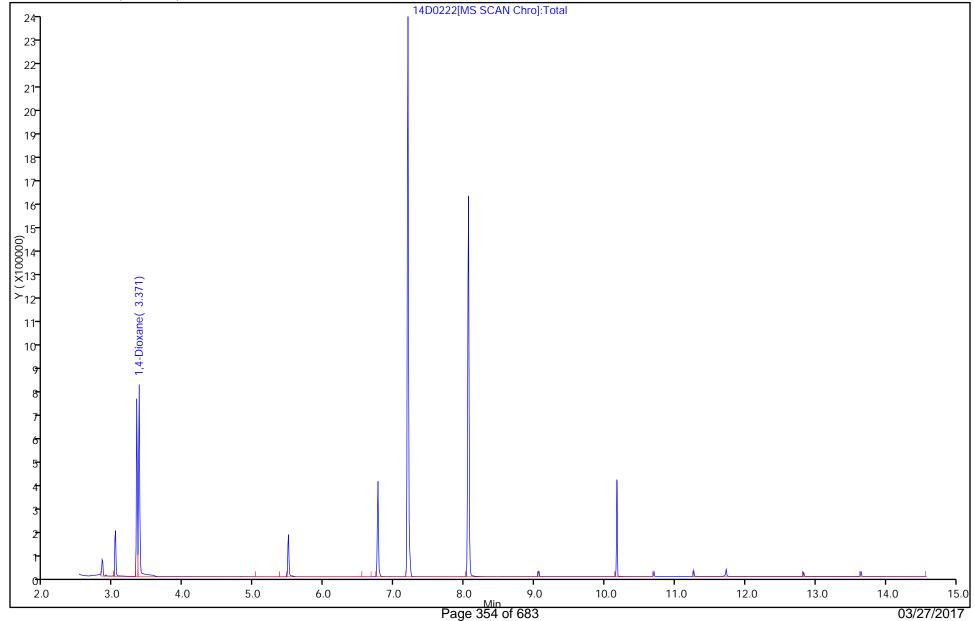
Lims ID: ICV Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 9

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



FORM VII GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-153398/2</u> Calibration Date: <u>03/06/2017 10:55</u>

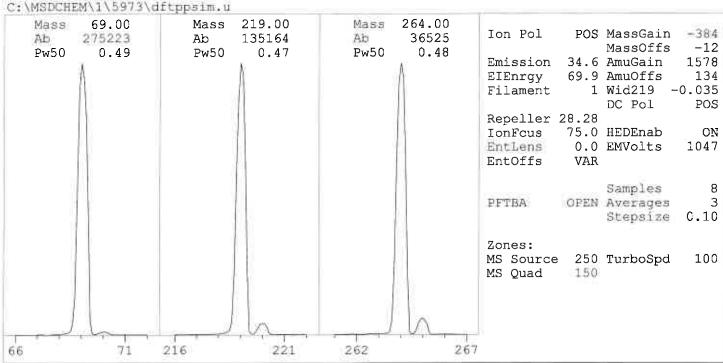
Instrument ID: SV1 Calib Start Date: 02/22/2017 09:35

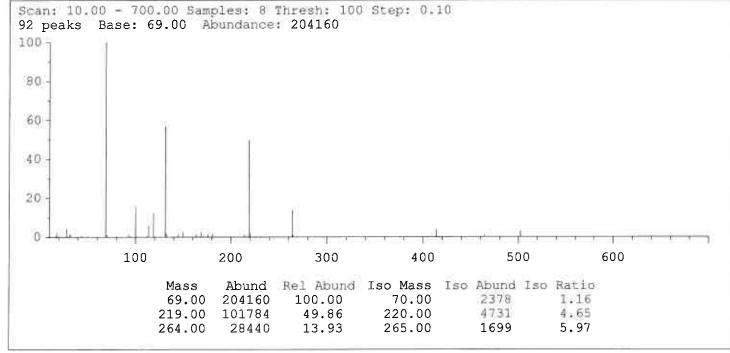
GC Column: <u>HP-5MS</u> ID: <u>0.25(mm)</u> Calib End Date: <u>02/22/2017</u> 12:09

Lab File ID: 14D0306.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.4012	0.3740		9.32	10.0	-6.8	30.0
Nitrobenzene-d5	Ave	1.208	1.205		9.98	10.0	-0.2	30.0

Mon Mar 06 10:19:50 2017 Instrument: SVI





Air/Water Check: H20~2.11% N2~3.90% O2~1.17% CO2~0.77% N2/H20~185.24%

Column Flow: Front: 1.4 Back: 0 ml/min. Interface Temp: 250

Ramp Criteria:

Ion Focus Maximum 90 volts using ion 264; EM Gain 90130

Repeller Maximum 35 volts using ion 219;

MassGain Values @Samples: -384@3 -384@2 -384@1 -384@0 -384@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	134.0	134.0	134.0	134.0	134.0	134.0	134.0
Entrance Lens Offset:	14.6	12.0	13.3	12.5	13.8	12.8	12.8
Target Abund(%):	1.0	100.0	55.0	45.0	3.0	2.0	
Actual Tune Abund(%):	0.9	100.0	56.7	49.9	3.7	2.9	
			Page 3	56 of 683			

Report Date: 06-Mar-2017 11:21:38 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\14D0306.D

Lims ID: CCV

Client ID:

Sample Type: CCV

Inject. Date: 06-Mar-2017 10:55:30 ALS Bottle#: 96 Worklist Smp#: 2

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: CCV 14D

Operator ID: Instrument ID: SV1

Sublist: chrom-1,4-Dloxane*sub8

Method: \\ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 11:21:38 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 11:21:38

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	S/N	Flags
1 1,	4-Dioxan	e									М
58	3.346	3.346	0.000	68	262972	10.0	9.32	80- 120	100	60496	M
88	3.355	3.346	0.009		301608			95- 135	115		
* 21	,4-Dichlor	obenzene	-d4								
152	7.197	7.197	0.000	100	703077	10.0	10.0	80- 120	100		
150	7.197	7.197	0.000		1092614			135- 175	155		
115	7.189	7.197	-0.008		399733			36.9- 76.9	56.9		
\$ 3 N	litrobenze	ene-d5									
82	8.060	8.060	0.000	100	847331	10.0	9.98	80- 120	100		
128	8.060	8.060	0.000		453767			33.6- 73.6	53.6		
54	8.052	8.060	-0.008		486515			37.4- 77.4	57.4		

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS14DL5_00010 Amount Added: 1.00 Units: mL

Report Date: 06-Mar-2017 11:21:38 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\14D0306.D

Injection Date: 06-Mar-2017 10:55:30 Instrument ID: SV1

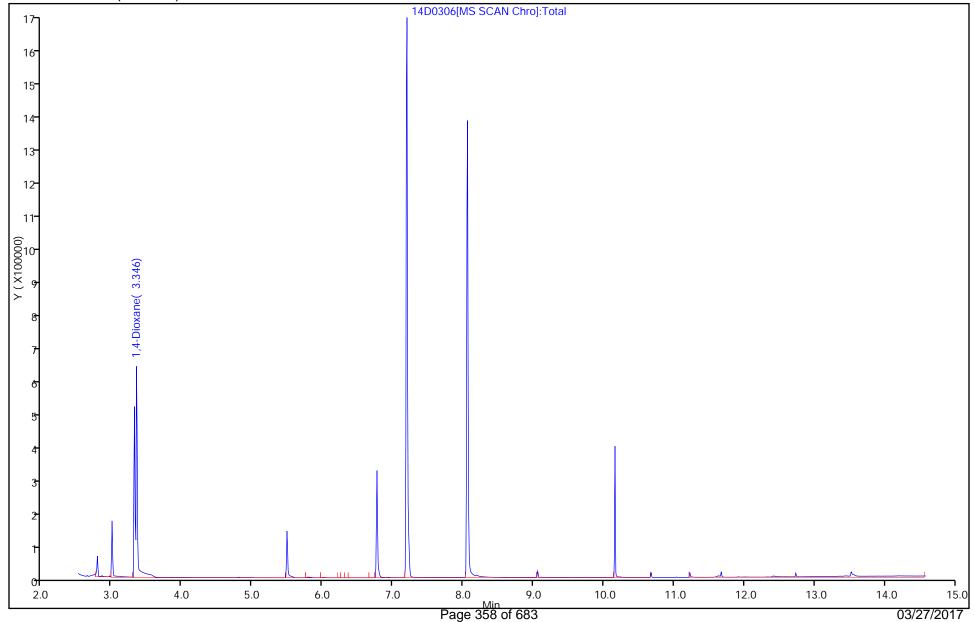
Lims ID: CCV Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 96

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Operator ID:

Report Date: 06-Mar-2017 11:21:38 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\14D0306.D

Injection Date: 06-Mar-2017 10:55:30 Instrument ID: SV1

Lims ID: CCV

Client ID:

Operator ID: ALS Bottle#: 96 Worklist Smp#: 2

Injection Vol: 1.0 ul Dil. Factor: 1.0000

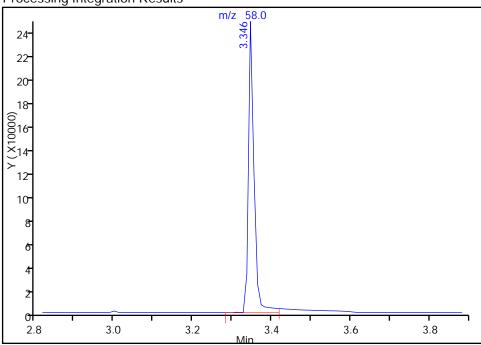
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

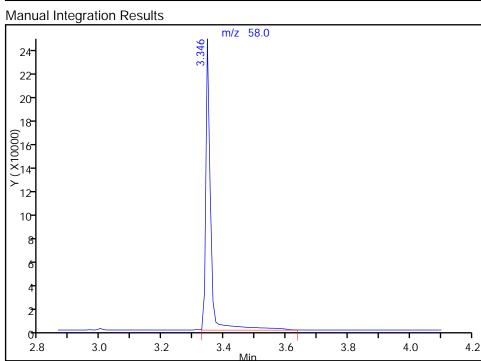
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.35 Area: 240446 Amount: 8.523867 Amount Units: ug/ml **Processing Integration Results**



RT: 3.35
Area: 262972
Amount: 9.322419
Amount Units: ug/ml



Reviewer: onishim, 06-Mar-2017 11:21:06

Audit Action: Manually Integrated

Audit Reason: Peak Tail

Page 359 of 683

FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Tes	stAmerica Sacramento	Job No	.: 320-	25962-1						
SDG No.:										
Client Sample	e ID:	Lab Sa	mple ID	: MB 320-1	52172/1 - 2	1				
Matrix: Water		Lab Fi	le ID:	S030601.D						
Analysis Meth	nod: WS-MS-0011	Date C	Date Collected:							
Extract. Meth	nod: 3510C	Date E	Date Extracted: 02/24/2017 15:44							
Sample wt/vol	: 1000 (mL)	Date A	Date Analyzed: 03/06/2017 11:24							
Con. Extract	Vol.: 1.0 (mL)	Diluti	Dilution Factor: 1							
Injection Vol	ume: 1(uL)	Level:	Level: (low/med) Low							
% Moisture: _		GPC Cl	eanup:(Y/N) <u>N</u>						
Analysis Bato	ch No.: 153398	Units:	ug/L							
CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL				
123-91-1	1,4-Dioxane	0.50	U	1.0	0.50	0.20				
CAS NO.	SURROG	SATE		%REC	Q	LIMITS				

63

42-91

4165-60-0

Nitrobenzene-d5

Report Date: 06-Mar-2017 11:42:38 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030601.D

Lims ID: MB 320-152172/1-A

Client ID:

Sample Type: MB

Inject. Date: 06-Mar-2017 11:24:30 ALS Bottle#: 1 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: mb 320-152172/1-a

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 11:42:21 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 11:42:38

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1,	4-Dioxan	e								
58		3.346					ND			
88		3.346								
* 21	,4-Dichlor	obenzene	-d4							
152	7.197	7.197	0.000	100	732550	10.0	10.0	80- 120	100	
150	7.197	7.197	0.000		1135427			135- 175	155	
115	7.189	7.197	-0.008		415403			36.9- 76.9	56.7	
\$ 3 N	litrobenze	ene-d5								
82	8.060	8.060	0.000	100	280005	5.00	3.17	80- 120	100	
128	8.060	8.060	0.000		147620			33.6- 73.6	52.7	
54	8.052	8.060	-0.008		154628			37.4- 77.4	55.2	
Doo	aonto									

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

Report Date: 06-Mar-2017 11:42:39 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030601.D

Injection Date: 06-Mar-2017 11:24:30 Instrument ID: SV1 Operator ID:

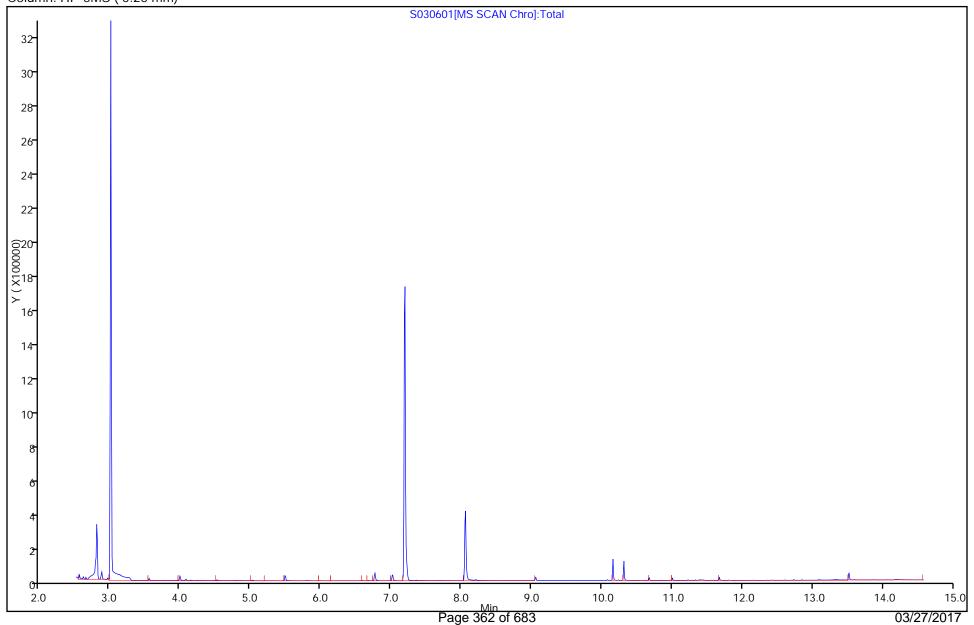
Lims ID: MB 320-152172/1-A Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 1

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 06-Mar-2017 11:42:39 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Recovery Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030601.D

Lims ID: MB 320-152172/1-A

Client ID:

Sample Type: MB

Inject. Date: 06-Mar-2017 11:24:30 ALS Bottle#: 1 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: mb 320-152172/1-a

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 11:42:21 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 11:42:38

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 Nitrobenzene-d5	5.00	3.17	63.30

FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Tes	stAmerica Sacramento	Job No	Job No.: 320-25962-1							
SDG No.:										
Client Sample	e ID:	Lab Sa	Lab Sample ID: LCS 320-152172/2-A							
Matrix: Water	2	Lab Fi	le ID:	S030602.D						
Analysis Meth	nod: WS-MS-0011	Date C	collecte	d:						
Extract. Meth	nod: <u>3510C</u>	Date E	Extracte	d: 02/24/2	017 15:4	4				
Sample wt/vol	1000 (mL)	Date A	Date Analyzed: 03/06/2017 11:46							
Con. Extract	Vol.: 1.0 (mL)	Diluti	Dilution Factor: 1							
Injection Vol	_ume: 1(uL)	Level:	Level: (low/med) Low							
% Moisture: _		GPC Cl	GPC Cleanup: (Y/N) N							
Analysis Bato	ch No.: 153398	Units:	Units: ug/L							
CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL				
123-91-1	1,4-Dioxane	2.90	M	1.0	0.50	0.20				
CAS NO	SURRO	GATE		%REC		LIMITS				

4165-60-0

Nitrobenzene-d5

42-91

Report Date: 06-Mar-2017 12:15:34 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030602.D

Lims ID: LCS 320-152172/2-A

Client ID:

Sample Type: LCS

Inject. Date: 06-Mar-2017 11:46:30 ALS Bottle#: 2 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: lcs 320-152172/2-a

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 12:15:34 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 12:15:34

Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1, 58 88	4-Dioxan 3.354 3.354	e 3.346 3.346	0.008	73	85505 98174	10.0	2.90	80- 120 95- 135	100 115	M M
* 2 1 152 150 115	,4-Dichlor 7.197 7.197 7.197	obenzene 7.197 7.197 7.197	0.000 0.000 0.000	100	735352 1135204 413831	10.0	10.0	80- 120 135- 175 36.9- 76.9	100 154 56.3	
\$ 3 N 82 128 54	litrobenze 8.059 8.059 8.051	ene-d5 8.060 8.060 8.060	-0.001 -0.001 -0.009	98	323348 156430 182998	5.00	3.64	80- 120 33.6- 73.6 37.4- 77.4	100 48.4 56.6	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

Report Date: 06-Mar-2017 12:15:35 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030602.D

Injection Date: 06-Mar-2017 11:46:30 Instrument ID: SV1 Operator ID:

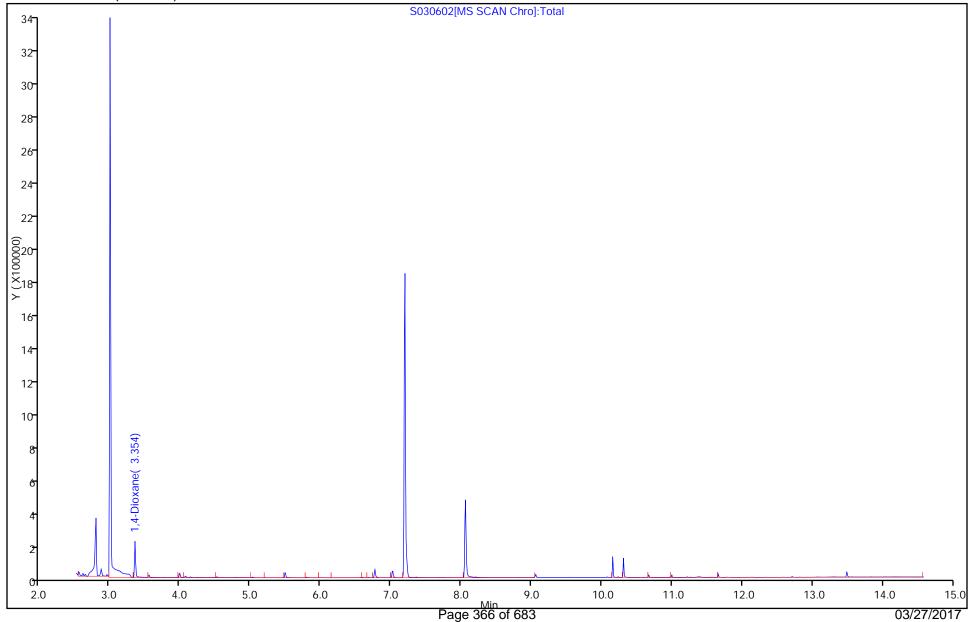
Lims ID: LCS 320-152172/2-A Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 2

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 06-Mar-2017 12:15:35 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Recovery Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030602.D

Lims ID: LCS 320-152172/2-A

Client ID:

Sample Type: LCS

Inject. Date: 06-Mar-2017 11:46:30 ALS Bottle#: 2 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: lcs 320-152172/2-a

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 12:15:34 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 12:15:34

Compound	Amount Added	Amount Recovered	% Rec.	
\$ 3 Nitrobenzene-d5	5.00	3.64	72.82	

Report Date: 06-Mar-2017 12:15:35 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030602.D

Injection Date: 06-Mar-2017 11:46:30 Instrument ID: SV1

Lims ID: LCS 320-152172/2-A

Client ID:

Operator ID: ALS Bottle#: 2 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

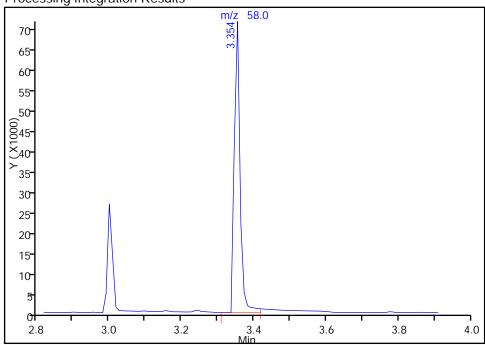
Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm) Detector MS SCAN

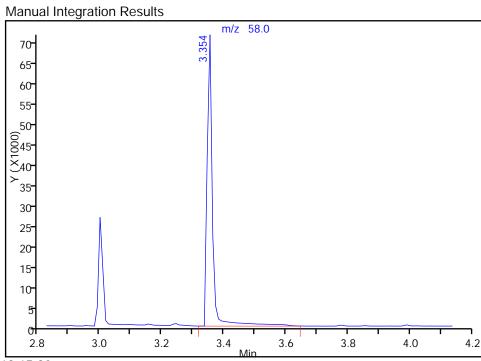
1 1,4-Dioxane, CAS: 123-91-1

Signal: 1

RT: 3.35 Area: 79339 Amount: 2.689140 Amount Units: ug/ml **Processing Integration Results**



RT: 3.35
Area: 85505
Amount: 2.898133
Amount Units: ug/ml



Reviewer: onishim, 06-Mar-2017 12:15:30

Audit Action: Manually Integrated

Audit Reason: Peak Tail

Page 368 of 683

FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Tes	tAmerica Sacramento	Job No	Job No.: 320-25962-1						
SDG No.:									
Client Sample	iD:	Lab Sa	mple ID	: LCSD 320	-152172/3	3-A			
Matrix: Water		Lab Fi	le ID:	S030603.D					
Analysis Meth	od: WS-MS-0011	Date C	ollecte	d:					
Extract. Meth	od: 3510C	Date E	xtracte	d: 02/24/2	017 15:4	14			
Sample wt/vol	: 1000 (mL)	Date A	Date Analyzed: 03/06/2017 12:08						
Con. Extract	Vol.: 1.0 (mL)	Diluti	Dilution Factor: 1						
Injection Vol	ume: 1(uL)	Level:	Level: (low/med) Low						
% Moisture: _		GPC Cl	GPC Cleanup:(Y/N) N						
Analysis Bato	th No.: 153398	Units:	Units: ug/L						
CAS NO.	COMPOUND NAME	RESULT	Q LOQ LOD		LOD	DL			
123-91-1	1,4-Dioxane	2.61	М	1.0	0.50	0.20			
CAS NO.	SURROG	ATE		%REC	Q	LIMITS			

4165-60-0

Nitrobenzene-d5

61

42-91

Report Date: 06-Mar-2017 13:09:42 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030603.D

Lims ID: LCSD 320-152172/3-A

Client ID:

Sample Type: LCSD

Inject. Date: 06-Mar-2017 12:08:30 ALS Bottle#: 3 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: lcsd 320-152172/3-a

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 13:09:41 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer; onishim Date: 06-Mar-2017 13:09:41

Sig	RT (min.)	Exp RT (min.)	DIt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Ratio Range	Ratio	Flags
1 1, 58 88	,4-Dioxan 3.347 3.356	e 3.346 3.346	0.001 0.010	97	66257 75198	10.0	2.61	80- 120 95- 135	100 113	M M
* 21	,4-Dichlor	obenzene	-d4	100		40.0	40.0			
152 150	7.197 7.197	7.197 7.197	0.000	100	633054 980713	10.0	10.0	80- 120 135- 175	100 155	
115 \$ 3 N	7.197 Nitrobenze	7.197 ene-d5	0.000		353270			36.9- 76.9	55.8	
82 128 54	8.060 8.060 8.060	8.060 8.060 8.060	0.000 0.000 0.000	96	232924 121512 134153	5.00	3.05	80- 120 33.6- 73.6 37.4- 77.4	100 52.2 57.6	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS8270IS_00016 Amount Added: 5.00 Units: uL Run Reagent

Report Date: 06-Mar-2017 13:09:42 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030603.D

06-Mar-2017 12:08:30 Injection Date: Instrument ID: SV1

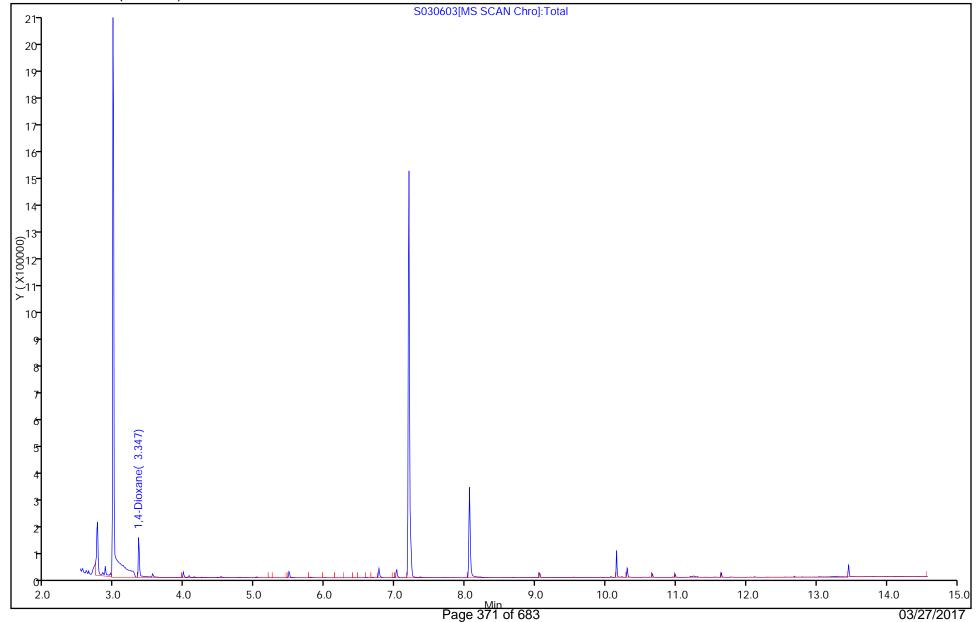
Operator ID: Lims ID: LCSD 320-152172/3-A Worklist Smp#:

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 3

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

Column: HP-5MS (0.25 mm)



Report Date: 06-Mar-2017 13:09:42 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento

Recovery Report

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030603.D

Lims ID: LCSD 320-152172/3-A

Client ID:

Sample Type: LCSD

Inject. Date: 06-Mar-2017 12:08:30 ALS Bottle#: 3 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Sample Info: lcsd 320-152172/3-a

Operator ID: Instrument ID: SV1

Method: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\1,4-Dloxane.m

Limit Group: MSS - 8270SIM 14DX - ICAL

Last Update: 06-Mar-2017 13:09:41 Calib Date: 22-Feb-2017 12:09:30

Integrator:RTEID Type:RT Order IDQuant Method:Internal StandardQuant By:Initial CalibrationLast ICal File:\\ChromNA\Sacramento\ChromData\SV1\20170222-40122.b\14D0222H.D

Column 1: HP-5MS (0.25 mm) Det: MS SCAN

Process Host: XAWRK027

First Level Reviewer: onishim Date: 06-Mar-2017 13:09:41

Compound	Amount Added	Amount Recovered	% Rec.	
\$ 3 Nitrobenzene-d5	5.00	3.05	60.93	

Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report Report Date: 06-Mar-2017 13:09:42

TestAmerica Sacramento

Data File: \ChromNA\Sacramento\ChromData\SV1\20170306-40510.b\S030603.D

Injection Date: 06-Mar-2017 12:08:30 Instrument ID: SV1

Lims ID: LCSD 320-152172/3-A

Client ID:

Operator ID: ALS Bottle#: 3 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 1,4-Dloxane Limit Group: MSS - 8270SIM 14DX - ICAL

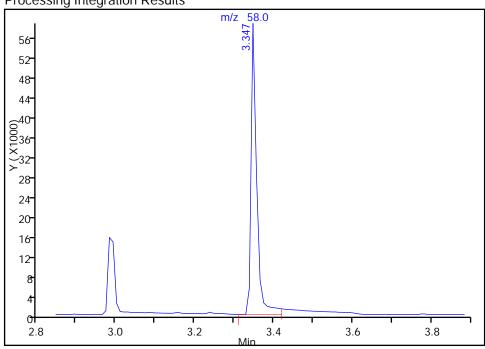
Column: HP-5MS (0.25 mm) Detector MS SCAN

1 1,4-Dioxane, CAS: 123-91-1

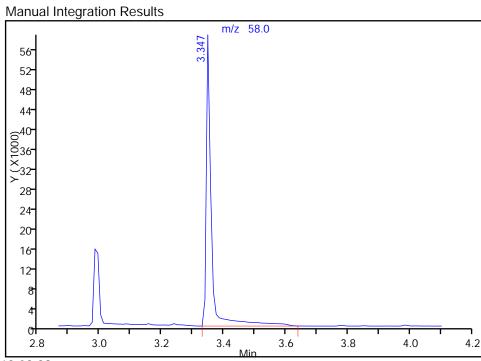
Signal: 1

RT: 3.35 Area: 58749 Amount: 2.313033 Amount Units: ug/ml

Processing Integration Results



RT: 3.35 Area: 66257 2.608633 Amount: Amount Units: ug/ml



Reviewer: onishim, 06-Mar-2017 13:09:38

Audit Action: Manually Integrated

Audit Reason: Peak Tail

Page 373 of 683

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:	
Instrument ID: SV1	Start Date: 02/22/2017 09:35
Analysis Batch Number: 151686	End Date: 02/22/2017 12:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
			11101011		
IC 320-151686/1		02/22/2017 09:35	1	14D0222A.D	HP-5MS 0.25(mm)
IC 320-151686/2		02/22/2017 09:56	1	14D0222B.D	HP-5MS 0.25(mm)
IC 320-151686/3		02/22/2017 10:19	1	14D0222C.D	HP-5MS 0.25(mm)
IC 320-151686/4		02/22/2017 10:41	1	14D0222D.D	HP-5MS 0.25(mm)
ICIS 320-151686/5		02/22/2017 11:03	1	14D0222E.D	HP-5MS 0.25(mm)
IC 320-151686/6		02/22/2017 11:25	1	14D0222F.D	HP-5MS 0.25(mm)
IC 320-151686/7		02/22/2017 11:47	1	14D0222G.D	HP-5MS 0.25(mm)
IC 320-151686/8		02/22/2017 12:09	1	14D0222H.D	HP-5MS 0.25(mm)
ICV 320-151686/9		02/22/2017 12:31	1	14D0222.D	HP-5MS 0.25(mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name:	TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:		
Instrument	: ID: SV1	Start Date: 03/06/2017 10:55

Analysis Batch Number: 153398 End Date: 03/07/2017 00:17

LAB SAMPLE ID CLIENT SANPLE ID DATE ANALYZED DIUTION LAB FILE ID COLUMN 12			_		ı	
MB 320-152172/1-A 03/06/2017 11:24 1 \$030601.D HP-5MS 0.25 (mm)	LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED		LAB FILE ID	COLUMN ID
MB 320-152172/1-A 03/06/2017 11:24 1 \$030601.D HP-5MS 0.25 (mm)	CCV 320_153309/2		03/06/2017 10.55	1 1	1400306 0	UD_5MC 0 25 (mm)
LCS 320-152172/2-A	·					· · ·
LCSD 320-152172/3-A	·					` '
22222	·					` '
2222	·				3030003.D	` '
22222						· ·
Number N						· ·
22222						· ·
ZZZZZ						· · ·
						· ·
22222						` '
22222						` '
2222						` '
320-25962-1						· ·
320-25962-2					2020614 5	· ·
CCV 320-153398/18 03/06/2017 16:56 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 17:18 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 17:40 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 18:02 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 18:24 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:08 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:08 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:08 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:31 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:53 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:15 1						· ·
22222					S030615.D	· ·
22222 03/06/2017 17:40 1 HP-5MS 0.25 (mm)	·					· ·
Name						` '
						· · ·
ZZZZZ 03/06/2017 18:46 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:08 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:31 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 19:53 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:15 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:37 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:59 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:21 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:43 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm)						` ′
Name						· · ·
Description						· · ·
Description						· · ·
ZZZZZZ 03/06/2017 20:15 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:37 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:59 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:21 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:43 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)						i i
ZZZZZ 03/06/2017 20:37 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 20:59 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:21 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:43 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)				1		· · ·
ZZZZZ 03/06/2017 20:59 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:21 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:43 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)						` ′
ZZZZZ 03/06/2017 21:21 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 21:43 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:35 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 20:37	1		HP-5MS 0.25(mm)
ZZZZZ 03/06/2017 21:43 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 20:59	1		HP-5MS 0.25(mm)
ZZZZZ 03/06/2017 22:05 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 21:21	1		HP-5MS 0.25(mm)
ZZZZZ 03/06/2017 22:27 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 21:43	1		HP-5MS 0.25 (mm)
ZZZZZ 03/06/2017 22:49 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 22:05	1		HP-5MS 0.25 (mm)
ZZZZZ 03/06/2017 23:11 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 22:27	1		HP-5MS 0.25 (mm)
ZZZZZ 03/06/2017 23:33 1 HP-5MS 0.25 (mm) ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 22:49	1		HP-5MS 0.25 (mm)
ZZZZZ 03/06/2017 23:55 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 23:11	1		HP-5MS 0.25(mm)
	ZZZZZ		03/06/2017 23:33	1		HP-5MS 0.25(mm)
ZZZZZ 03/07/2017 00:17 1 HP-5MS 0.25 (mm)	ZZZZZ		03/06/2017 23:55	1		HP-5MS 0.25(mm)
	ZZZZZ		03/07/2017 00:17	1		HP-5MS 0.25 (mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Batch Number: 152172 Batch Start Date: 02/24/17 15:44 Batch Analyst: Rafieefar, Sina

Batch Method: 3510C Batch End Date: 03/04/17 19:32

Lab Sample ID	Client Sample ID	Method Chain	Basis	ReceivedpH	GrossWeight	TareWeight	InitialAmount	FinalAmount	MS14DSP 00030
MB 320-152172/1		3510C, WS-MS-0011		8 SU			1000 mL	1.0 mL	
LCS 320-152172/2		3510C, WS-MS-0011		8 SU			1000 mL	1.0 mL	500 uL
LCSD 320-152172/3		3510C, WS-MS-0011		8 SU			1000 mL	1.0 mL	500 uL
320-25962-A-1	MEAFF-MRD-1A01-0 217	3510C, WS-MS-0011	Т	7 SU	1556.1 g	507.15 g	1049 mL	1.0 mL	
320-25962-A-2	MEAFF-MRD-1A01P- 0217	3510C, WS-MS-0011	Т	7 SU	1554.9 g	519.71 g	1035.2 mL	1.0 mL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	MS14DSU 00003			
MB 320-152172/1		3510C, WS-MS-0011		0.5 mL			
LCS 320-152172/2		3510C, WS-MS-0011		0.5 mL			
LCSD 320-152172/3		3510C, WS-MS-0011		0.5 mL			
320-25962-A-1	MEAFF-MRD-1A01-0 217	3510C, WS-MS-0011	T	0.5 mL			
320-25962-A-2	MEAFF-MRD-1A01P- 0217	3510C, WS-MS-0011	Т	0.5 mL			

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.

WS-MS-0011 Page 1 of 2

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Batch Number: 152172 Batch Start Date: 02/24/17 15:44 Batch Analyst: Rafieefar, Sina

Batch Method: 3510C Batch End Date: 03/04/17 19:32

	Batch Notes
Balance ID	QA-036
Analyst ID - Concentration	KD: RD 3.4.17
Na2SO4 ID	SS_00345; 00346
Oven, Bath or Block Temperature 1	70-75 C
Pipette ID	K35057E
Prep Solvent ID	0000154525
Prep Solvent Name	DCM
Prep Solvent Volume Used	180 mL
Person's name who did the prep	SR/AAR 02/24/2017
Analyst ID - Reagent Drop Witness	AAR 2/24/17
Analyst ID - Reagent Drop	SR 2/24/17
Sufficient volume for MS/MSD?	NO
Vial ID	16293128; FV 1 mL RD 3.4.17
Water Bath ID	BT_019; 021

Basis	Basis Description
Т	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.

WS-MS-0011 Page 2 of 2

Method PFC DOD

Perfluronated Hydrocarbons (LC/MS) by Method PFC_DOD

FORM II LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-25	362	-	- [1
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SDG No.:

Matrix: Solid Level: Low

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

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
MEAFF-PWMA-SB01-00	320-25962-4	95	111	55
MEAFF-PWMA-SB01-00 01 DL	320-25962-4 DL	122	136	90
MEAFF-PWMA-SB01-02	320-25962-5	95 M	101 M	56 M
	MB 320-152015/1-A	113	121	95
	LCS 320-152015/2-A	101	106	91

 $\begin{array}{c} \text{QC LIMITS} \\ \text{PFHxS} = 1802 \text{ PFHxS} & 25-150 \\ \text{PFOA} = 13\text{C4 PFOA} & 25-150 \\ \text{PFOS} = 13\text{C4 PFOS} & 25-150 \\ \end{array}$

 $\ensuremath{\text{\#}}$ Column to be used to flag recovery values

FORM II 537 (Modified)

FORM II LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-2596	2-	_	-		1	_
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SDG No.:

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
MEAFF-EB01-022117- SO	320-25962-3	141	152 Q	135
	MB 320-152587/1-A	145	158 Q	138
	LCS 320-152587/2-A	136	142	133
	LCSD 320-152587/3-A	140	142	135

PFHxS = 1802 PFHxS PFOA = 13C4 PFOA PFOS = 13C4 PFOS QC LIMITS 25-150 25-150 25-150

FORM III LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name	e: TestAmerica Sacr	amento	Job No.: 320	-25962-1
SDG No.	:			
Matrix:	Solid	Level: Low	Lab File ID:	2017.03.03A_006.d
Lab ID:	LCS 320-152015/2-A	1	Client ID:	

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	4.00	4.09	102	60-140	
Perfluorooctanesulfonic acid (PFOS)	3.71	3.96	107	60-140	
13C4 PFOA	10.0	10.6	106	25-150	
13C4 PFOS	9.56	8.68	91	25-150	
Perfluorobutanesulfonic acid (PFBS)	3.54	3.95	112	50-150	
1802 PFHxS	9.46	9.59	101	25-150	

[#] Column to be used to flag recovery and RPD values FORM III 537 (Modified)

FORM III LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name	e: TestAmerica Sacr	amento	Job No.: 320)-25962-1
SDG No.	:			
Matrix:	Water	Level: Low	Lab File ID:	2017.03.02A_005.d
Lab ID:	LCS 320-152587/2-A		Client ID:	

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	40.0	38.6	97	60-140	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.6	96	60-140	
13C4 PFOA	100	142	142	25-150	
13C4 PFOS	95.6	127	133	25-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	39.5	112	50-150	
1802 PFHxS	94.6	129	136	25-150	

[#] Column to be used to flag recovery and RPD values FORM III 537 (Modified)

FORM III LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name	e: TestAmerica Sac	camento	Job No.: 320	-25962-1
SDG No.:	:			
Matrix:	Water	Level: Low	Lab File ID:	2017.03.02A_006.d
Lab ID:	LCSD 320-152587/3-	-A	Client ID:	

	SPIKE ADDED	LCSD CONCENTRATION	LCSD	0/0	QC L	IMITS	#
COMPOSIND					DDD	DEC	π
COMPOUND	(ng/L)	(ng/L)	REC	RPD	RPD	REC	
Perfluorooctanoic acid (PFOA)	40.0	38.5	96	0	30	60-140	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.6	96	0	30	60-140	М
13C4 PFOA	100	142	142			25-150	
13C4 PFOS	95.6	129	135			25-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	40.3	114	2	30	50-150	М
1802 PFHxS	94.6	132	140			25-150	

[#] Column to be used to flag recovery and RPD values FORM III 537 (Modified)

FORM IV LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:	
Lab File ID: 2017.03.01A_003.d	Lab Sample ID: MB 320-152015/1-A
Matrix: Solid	Date Extracted: 02/23/2017 17:22
Instrument ID: A8_N	Date Analyzed: 03/01/2017 18:37
Level: (Low/Med) Low	

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

		LAB	
CLIENT SAMPLE ID	LAB SAMPLE ID	FILE ID	DATE ANALYZED
MEAFF-PWMA-SB01-0001	320-25962-4	2017.03.01A	03/01/2017 19:45
		012.d	
MEAFF-PWMA-SB01-0204	320-25962-5	2017.03.01A	03/01/2017 20:00
		014.d	
	LCS 320-152015/2-A	2017.03.03A	03/03/2017 09:37
		006.d	
MEAFF-PWMA-SB01-0001 DL	320-25962-4 DL	2017.03.03A	03/03/2017 09:53
		008.d	

FORM IV LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:	
Lab File ID: 2017.03.02A_004.d	Lab Sample ID: MB 320-152587/1-A
Matrix: Water	Date Extracted: 02/28/2017 16:42
Instrument ID: A8_N	Date Analyzed: 03/02/2017 10:35
Level:(Low/Med) Low	

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

		LAB	
CLIENT SAMPLE ID	LAB SAMPLE ID	FILE ID	DATE ANALYZED
	LCS 320-152587/2-A	2017.03.02A	03/02/2017 10:42
		005.d	
	LCSD 320-152587/3-A	2017.03.02A 006.d	03/02/2017 10:50
MEAFF-EB01-022117-S0	320-25962-3	2017.03.02A _009.d	03/02/2017 11:12

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-EB01-022117-SO Lab Sample ID: 320-25962-3

Matrix: Water Lab File ID: 2017.03.02A_009.d

Analysis Method: 537 (Modified) Date Collected: 02/21/2017 13:25

Extraction Method: 3535 Date Extracted: 02/28/2017 16:42

Sample wt/vol: 279.3(mL) Date Analyzed: 03/02/2017 11:12

Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

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

Analysis Batch No.: 152836 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	152	Q	25-150
STL00991	13C4 PFOS	135		25-150
STL00994	1802 PFHxS	141		25-150

Report Date: 27-Mar-2017 09:39:03 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_009.d

Lims ID: 320-25962-A-3-A

Client ID: MEAFF-EB01-022117-SO

Sample Type: Client

Inject. Date: 02-Mar-2017 11:12:49 ALS Bottle#: 6 Worklist Smp#: 18

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-3-a Misc. Info.: Plate: 1 Rack: 5

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 09:39:03 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1 : Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 27-Mar-2017 09:38:49

i ii st Level Newel: chandrasenas						Date.		.7 Mai 2017 07.50.	T /				
Sigi	nal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags		
D 11 180			2.483	-0.007		19426601	66.8		141	483360			
D 14 130			2.403	-0.007		19420001	00.0		141	403300			
417.00 >				-0.008		15544173	75.8		152	565368			
15 Peri	Iuorooci	tanoic ac	cia								M		
413.00 >	369.00	2.819	2.834	-0.015	1.000	33557	0.1057			233	M		
413.00 >	169.00	2.834	2.834	0.0	1.006	17258		1.94(0.90-1.10)		758	M		
D 18 130		_											
503.00 >	80.00	3.193	3.202	-0.009		15629147	64.7		135	486927			

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2017 09:39:03 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento

Data File:

Injection Date: 02-Mar-2017 11:12:49 Instrument ID: A8_N

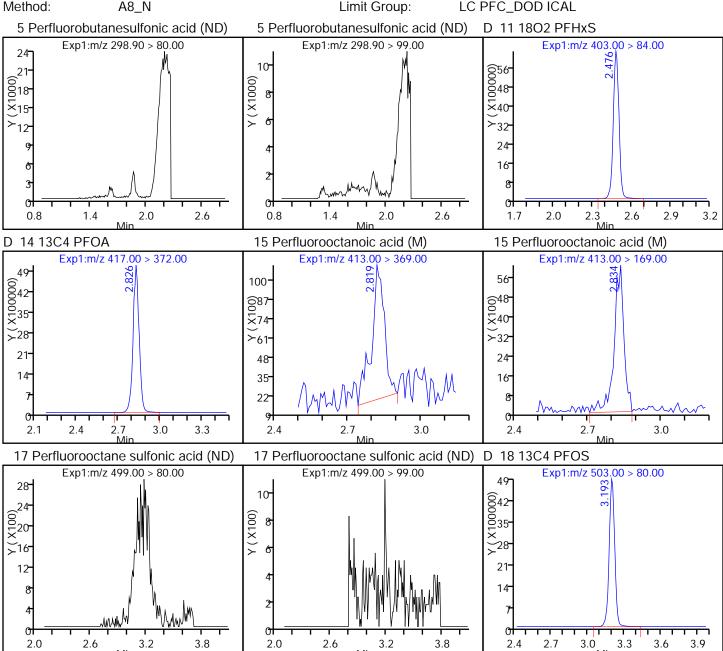
Lims ID: 320-25962-A-3-A Lab Sample ID: 320-25962-3

Client ID: MEAFF-EB01-022117-SO

Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 18

Injection Vol: Dil. Factor: 1.0000 2.0 ul

Method: LC PFC_DOD ICAL $A8_N$ Limit Group:



Report Date: 27-Mar-2017 09:39:03 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_009.d

Injection Date: 02-Mar-2017 11:12:49 Instrument ID: A8_N

Lims ID: 320-25962-A-3-A Lab Sample ID: 320-25962-3

Client ID: MEAFF-EB01-022117-SO

Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 18

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

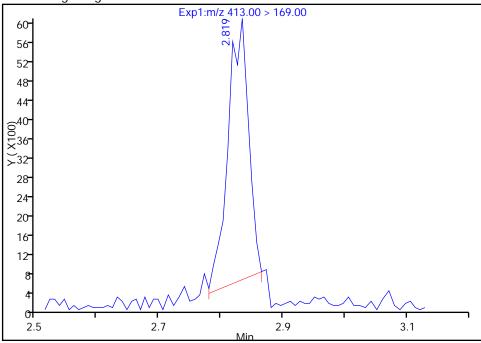
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

RT: 2.82
Area: 12639
Amount: 0.170860
Amount Units: ng/ml

Processing Integration Results

Manual Integration Results



RT: 2.83
Area: 17258
Amount: 0.105653
Amount Units: ng/ml

Exp1:m/z 413.00 > 169.00

56

52

48

44

(40

(00)

36

) 32

28

24

20

16

12

8

4

Reviewer: chandrasenas, 27-Mar-2017 09:38:57

2.4

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

2.8

3.0

Page 389 of 683

2.6

3.2

Report Date: 27-Mar-2017 09:39:03 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_009.d

Injection Date: 02-Mar-2017 11:12:49 Instrument ID: A8_N

Lims ID: 320-25962-A-3-A Lab Sample ID: 320-25962-3

Client ID: MEAFF-EB01-022117-SO

Operator ID: A8-PC\A8 ALS Bottle#: 6 Worklist Smp#: 18

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

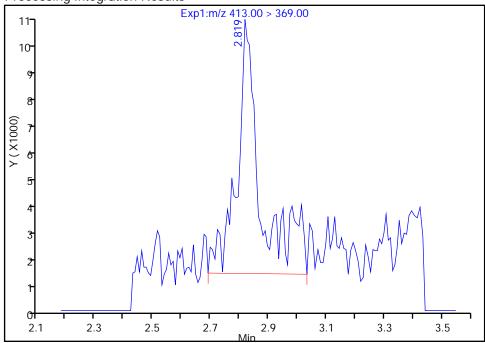
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

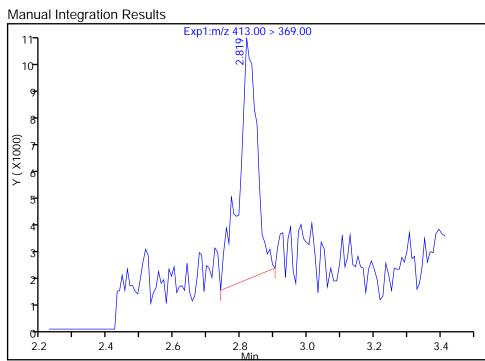
Signal: 1

RT: 2.82
Area: 54268
Amount: 0.170860
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 33557
Amount: 0.105653
Amount Units: ng/ml



Reviewer: westendorfc, 27-Mar-2017 09:38:57

Audit Action: Manually Integrated

Audit Reason: Baseline Page 390 of 683

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-PWMA-SB01-0001 Lab Sample ID: 320-25962-4

Matrix: Solid Lab File ID: 2017.03.01A_012.d

Analysis Method: 537 (Modified) Date Collected: 02/21/2017 13:35

Extraction Method: SHAKE Date Extracted: 02/23/2017 17:22

Sample wt/vol: 5.05(g) Date Analyzed: 03/01/2017 19:45

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 13.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 152825 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	27		0.57	0.34	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	220	E	0.57	0.34	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	М	0.46	0.34	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	111		25-150
STL00991	13C4 PFOS	55		25-150
STL00994	1802 PFHxS	95		25-150

Report Date: 27-Mar-2017 10:46:23 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Lims ID: 320-25962-A-4-A

Client ID: MEAFF-PWMA-SB01-0001

Sample Type: Client

Inject. Date: 01-Mar-2017 19:45:09 ALS Bottle#: 34 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-4-a Misc. Info.: Plate: 1 Rack: 3

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:46:21 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 02-Mar-2017 11:57:36

	Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
	5 Perfluorobuta	anesulfo	nic acid								М
	298.90 > 80.00	1.853	1.842	0.011	1.000	3433347	8.64				
	298.90 > 99.00	1.843	1.842	0.001	0.995	1375930		2.50(0.00-0.00)			M
	D 11 1802 PFH:	xS									
	403.00 > 84.00	2.448	2.446	0.002		13119483	45.1		95.3	409324	0
	D 14 13C4 PFO	A									
	417.00 > 372.00	2.798	2.781	0.017		11404479	55.6		111	53547	
	15 Perfluorooct	anoic ac	id								
	413.00 > 369.00	2.798	2.789	0.009	1.000	27600971	118.4			333236	
	413.00 > 169.00	2.768	2.789	-0.021	0.989	18204621		1.52(0.90-1.10)		106037	
	17 Perfluorooct	ane sulf	onic acio	t							E
	499.00 > 80.00	3.056	3.044	0.012	1.000	127288452	980.5			180622	E
	499.00 > 99.00	3.163	3.044	0.119	1.035	38031970		3.35(0.90-1.10)		968871	
	D 18 13C4 PFO	S									
	503.00 > 80.00	3.163	3.154	0.009		6309611	26.1		54.6	578390	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2017 10:46:23 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_012.d

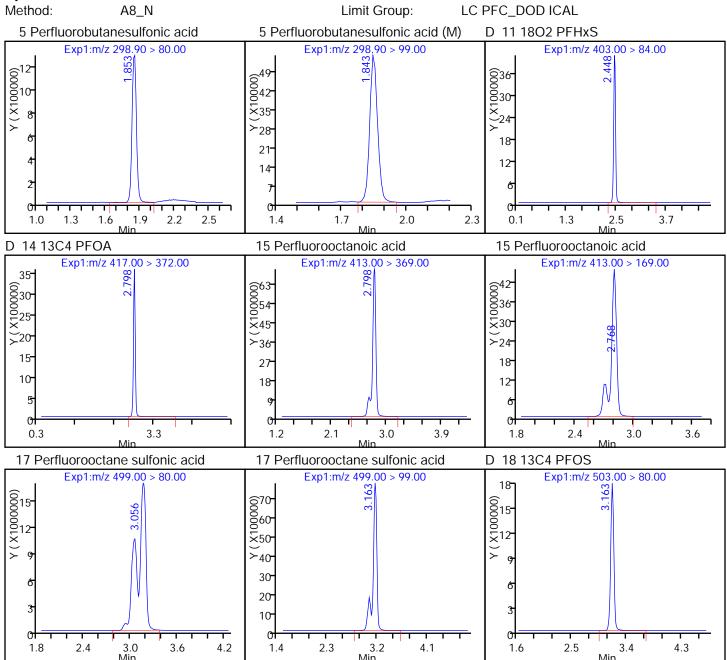
Injection Date: 01-Mar-2017 19:45:09 Instrument ID: A8_N

Lims ID: 320-25962-A-4-A Lab Sample ID: 320-25962-4

Client ID: MEAFF-PWMA-SB01-0001

Operator ID: A8-PC\A8 ALS Bottle#: 34 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000



Report Date: 27-Mar-2017 10:46:23 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_012.d

Injection Date: 01-Mar-2017 19:45:09 Instrument ID: $A8_N$

320-25962-A-4-A Lims ID: Lab Sample ID: 320-25962-4

Client ID: MEAFF-PWMA-SB01-0001

A8-PC\A8 ALS Bottle#: Operator ID: 34 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

LC PFC_DOD ICAL Method: A8_N Limit Group:

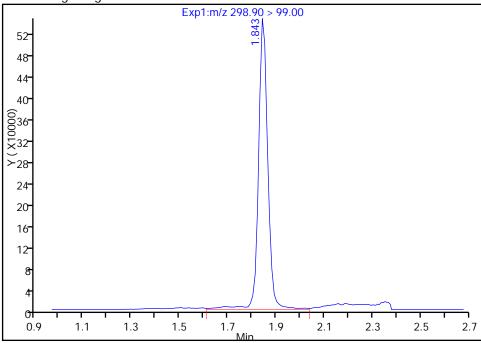
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

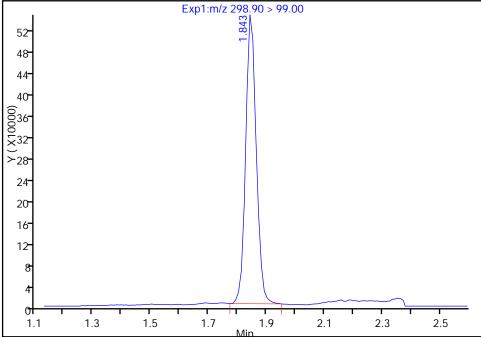
RT: 1.84 Area: 1482806 Amount: 8.641032 Amount Units: ng/ml

Processing Integration Results



RT: 1.84 Area: 1375930 Amount: 8.641032 Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 10:46:05

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 394 of 683

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-PWMA-SB01-0001 DL Lab Sample ID: 320-25962-4 DL

Matrix: Solid Lab File ID: 2017.03.03A_008.d

Analysis Method: 537 (Modified) Date Collected: 02/21/2017 13:35

Extraction Method: SHAKE Date Extracted: 02/23/2017 17:22

Sample wt/vol: 5.05(g) Date Analyzed: 03/03/2017 09:53

Con. Extract Vol.: 1.00 (mL) Dilution Factor: 10

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 13.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 153020 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	28	D M	5.7	3.4	1.2
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	270	D	5.7	3.4	1.4
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	JDM	4.6	3.4	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	136		25-150
STL00991	13C4 PFOS	90		25-150
STL00994	1802 PFHxS	122		25-150

Report Date: 27-Mar-2017 10:05:37 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Lims ID: 320-25962-A-4-A

Client ID: MEAFF-PWMA-SB01-0001

Sample Type: Client

Inject. Date: 03-Mar-2017 09:53:01 ALS Bottle#: 3 Worklist Smp#: 8

Injection Vol: 2.0 ul Dil. Factor: 10.0000

Sample Info: 320-25962-a-4-a 10X

Misc. Info.: Plate: 1 Rack: 5

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:05:12 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 03-Mar-2017 10:12:23

That Edvar Haviorian Gridinardsonids						Date.		0 War 2017 10:12:2		N N N 2.2 141375	
	Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
	5 Perfluorobuta	anesulfo	nic acid								M
	298.90 > 80.00	1.861	1.863	-0.002	1.000	346390	0.6817				M
	298.90 > 99.00	1.861	1.863	-0.002	1.000	139062		2.49(0.00-0.00)			M
	D 11 18O2 PFH	xS									
	403.00 > 84.00	2.479	2.492	-0.013		1677682	5.77		12.2	141375	
	D 14 13C4 PFO	A									
	417.00 > 372.00	2.830	2.850	-0.020		1391780	6.79		13.6	94090	
	15 Perfluorooct	anoic ac	id								M
	413.00 > 369.00	2.830	2.850	-0.020	1.000	3532944	12.4			32623	M
	413.00 > 169.00	2.822	2.850	-0.028	0.997	2244241		1.57(0.90-1.10)		72928	M
	17 Perfluorooct	ane sulf	onic acid	t							
	499.00 > 80.00	3.084	3.106	-0.022	1.000	25733476	120.4			189163	
	499.00 > 99.00	3.205	3.106	0.099	1.039	6301949		4.08(0.90-1.10)		6832	
	D 18 13C4 PFO	S									
	503.00 > 80.00	3.205	3.228	-0.023		1038648	4.30		9.0	56982	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2017 10:05:38 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_008.d

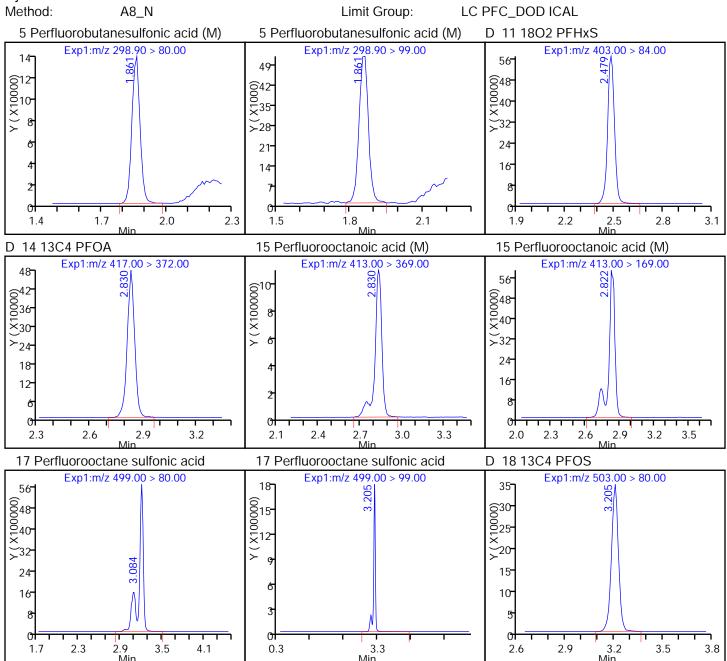
Injection Date: 03-Mar-2017 09:53:01 Instrument ID: A8_N

Lims ID: 320-25962-A-4-A Lab Sample ID: 320-25962-4

Client ID: MEAFF-PWMA-SB01-0001

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 8

Injection Vol: 2.0 ul Dil. Factor: 10.0000



Report Date: 27-Mar-2017 10:05:38 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_008.d

Injection Date: 03-Mar-2017 09:53:01 Instrument ID: A8_N

Lims ID: 320-25962-A-4-A Lab Sample ID: 320-25962-4

Client ID: MEAFF-PWMA-SB01-0001

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 8

Injection Vol: 2.0 ul Dil. Factor: 10.0000

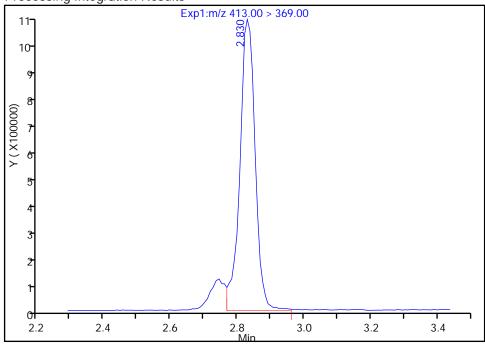
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

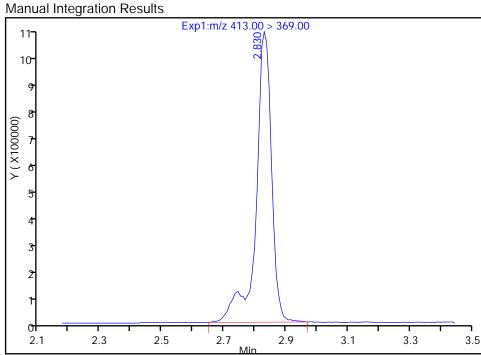
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

RT: 2.83 Area: 3239854 Amount: 11.392502 Amount Units: ng/ml **Processing Integration Results**



RT: 2.83
Area: 3532944
Amount: 12.423113
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:05:37

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 398 of 683

Report Date: 27-Mar-2017 10:05:38 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\\2017.03.03A_008.d

Injection Date: 03-Mar-2017 09:53:01 Instrument ID: A8_N

Lims ID: 320-25962-A-4-A Lab Sample ID: 320-25962-4

Client ID: MEAFF-PWMA-SB01-0001

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 8

Injection Vol: 2.0 ul Dil. Factor: 10.0000

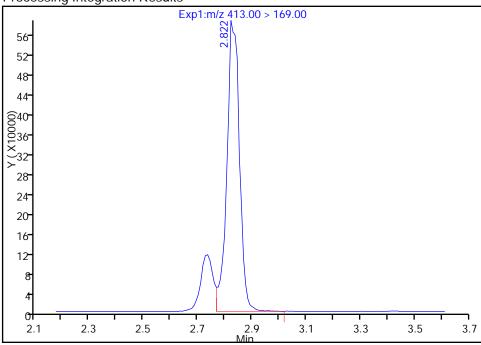
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

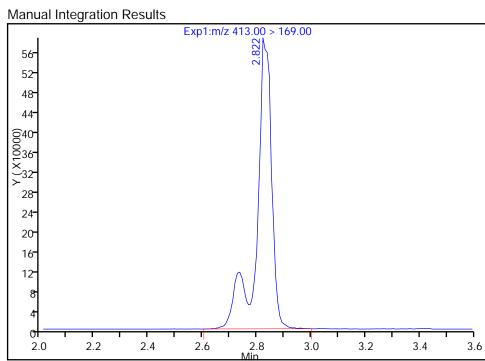
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

RT: 2.82 Area: 1883631 Amount: 11.392502 Amount Units: ng/ml **Processing Integration Results**



RT: 2.82
Area: 2244241
Amount: 12.423113
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:05:37

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 399 of 683 03/27/2017

Report Date: 27-Mar-2017 10:05:38 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_008.d

Injection Date: 03-Mar-2017 09:53:01 Instrument ID: A8_N

Lims ID: 320-25962-A-4-A Lab Sample ID: 320-25962-4

Client ID: MEAFF-PWMA-SB01-0001

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 8

Injection Vol: 2.0 ul Dil. Factor: 10.0000

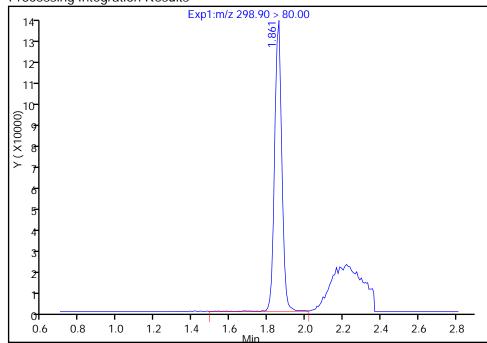
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

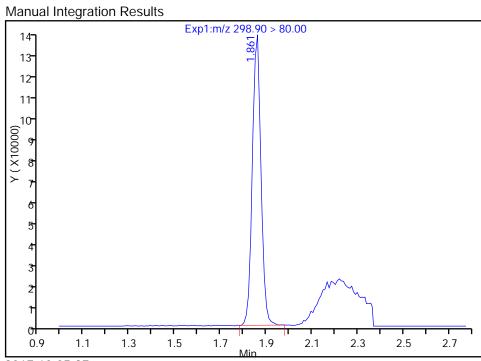
5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

RT: 1.86 Area: 354631 Amount: 0.697962 Amount Units: ng/ml **Processing Integration Results**



RT: 1.86
Area: 346390
Amount: 0.681742
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:05:37

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 400 of 683

Report Date: 27-Mar-2017 10:05:38 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_008.d Data File:

Injection Date: 03-Mar-2017 09:53:01 Instrument ID: $A8_N$ Lims ID: 320-25962-A-4-A Lab Sample ID: 320-25962-4

MEAFF-PWMA-SB01-0001 Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 8

Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: LC PFC_DOD ICAL A8 N Limit Group:

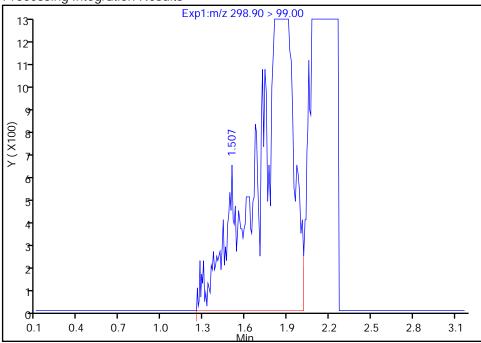
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

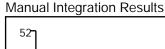
Signal: 2

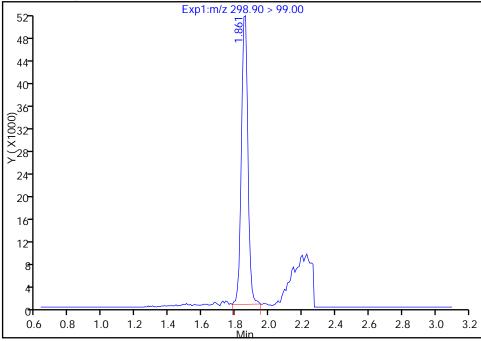
RT: 1.51 Area: 158226 Amount: 0.697962 Amount Units: ng/ml

Processing Integration Results



RT: 1.86 139062 Area: Amount: 0.681742 Amount Units: ng/ml





Reviewer: chandrasenas, 27-Mar-2017 10:05:37

Audit Action: Manually Integrated

Audit Reason: Baseline Page 401 of 683

03/27/2017

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-PWMA-SB01-0204 Lab Sample ID: 320-25962-5

Matrix: Solid Lab File ID: 2017.03.01A_014.d

Analysis Method: 537 (Modified) Date Collected: 02/21/2017 13:40

Extraction Method: SHAKE Date Extracted: 02/23/2017 17:22

Sample wt/vol: 4.97(g) Date Analyzed: 03/01/2017 20:00

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 14.7 GPC Cleanup: (Y/N) N

Analysis Batch No.: 152825 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	5.5	М	0.59	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	30	М	0.59	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.95	М	0.47	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	101	M	25-150
STL00991	13C4 PFOS	56	М	25-150
STL00994	1802 PFHxS	95	М	25-150

Report Date: 27-Mar-2017 10:47:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Lims ID: 320-25962-A-5-A

Client ID: MEAFF-PWMA-SB01-0204

Sample Type: Client

Inject. Date: 01-Mar-2017 20:00:07 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: 320-25962-a-5-a Misc. Info.: Plate: 1 Rack: 3

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:47:39 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 02-Mar-2017 11:59:44

							=			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobuta	anesulfo	nic acid								М
298.90 > 80.00	1.863	1.843	0.019	1.000	1596752	4.02				M
298.90 > 99.00	1.853	1.843	0.010	0.995	629507		2.54(0.00-0.00)			M
D 11 18O2 PFH	xS									M
403.00 > 84.00	2.460	2.453	0.007		13105479	45.1		95.2	630139	M
D 14 13C4 PFO	A									M
417.00 > 372.00	2.810	2.795	0.015		10347854	50.5		101	362362	M
15 Perfluorooct	anoic ac	id								M
413.00 > 369.00	2.810	2.803	0.007	1.000	4923243	23.3			43483	M
413.00 > 169.00	2.802	2.803	-0.001	0.997	3302845		1.49(0.90-1.10)		76697	M
17 Perfluorooct	ane sulfo	onic acid	I							M
499.00 > 80.00	3.168	3.160	0.008	1.000	16734295	125.3			423876	M
499.00 > 99.00	3.176	3.160	0.016	1.002	3964078		4.22(0.90-1.10)		101946	M
D 18 13C4 PFO	S									M
503.00 > 80.00	3.168	3.160	0.008		6493324	26.9		56.2	295762	M

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2017 10:47:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

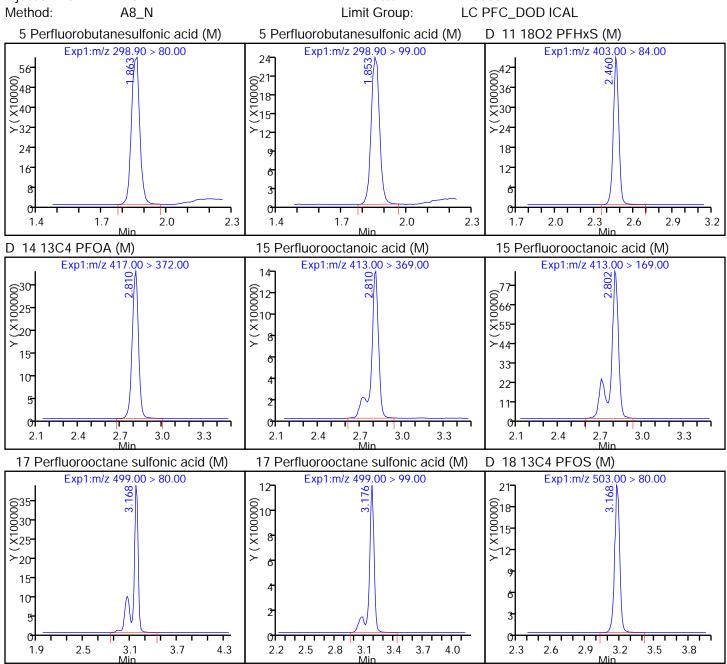
Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000



Report Date: 27-Mar-2017 10:47:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

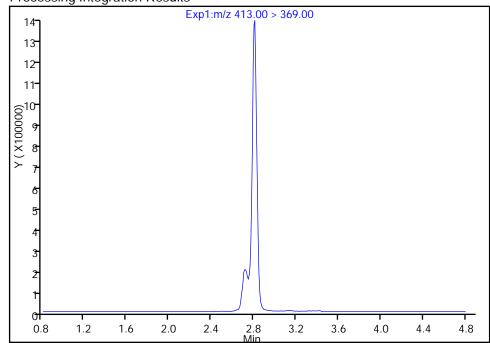
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

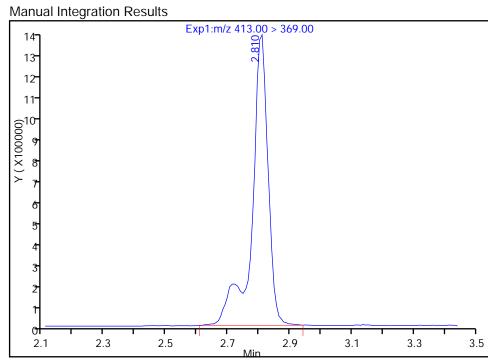
Not Detected

Expected RT: 2.80

Processing Integration Results



RT: 2.81
Area: 4923243
Amount: 23.284411
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Assigned Compound ID

Audit Reason:

Page 405 of 683 03/27/2017

Report Date: 27-Mar-2017 10:47:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

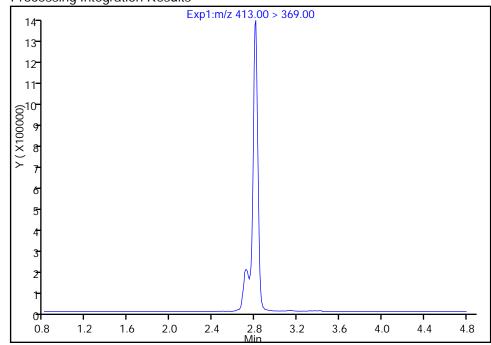
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

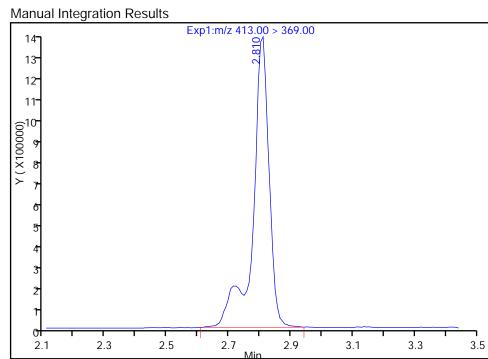
Signal: 1

Not Detected Expected RT: 2.80

Processing Integration Results



RT: 2.81 Area: 4923243 Amount: 23.284411 Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 406 of 683

Report Date: 27-Mar-2017 10:47:40 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d Data File:

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: $A8_N$

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

MEAFF-PWMA-SB01-0204 Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: LC PFC_DOD ICAL A8 N Limit Group:

Column: Detector EXP1

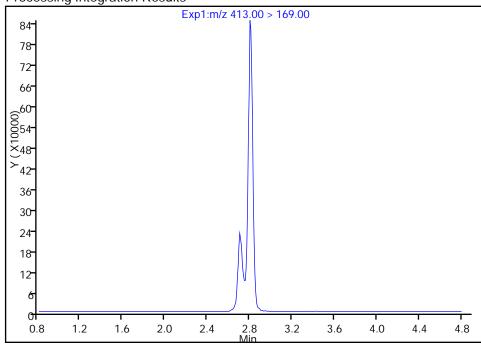
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

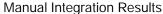
Not Detected

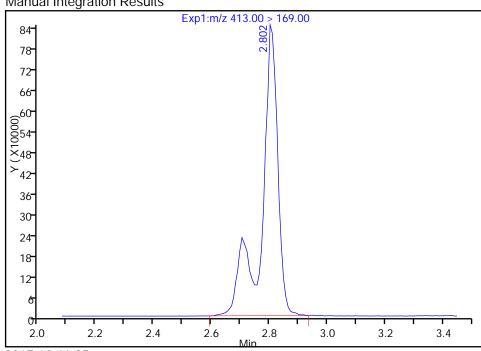
Expected RT: 2.80

Processing Integration Results



RT: 2.80 3302845 Area: Amount: 23.284411 Amount Units: ng/ml





Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 407 of 683

Report Date: 27-Mar-2017 10:47:40 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

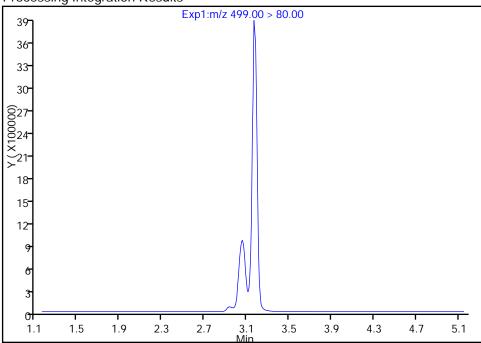
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

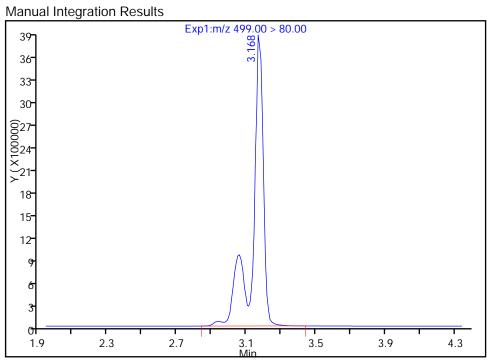
Not Detected

Expected RT: 3.16

Processing Integration Results



RT: 3.17
Area: 16734295
Amount: 125.2569
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Assigned Compound ID

Audit Reason:

Page 408 of 683

Report Date: 27-Mar-2017 10:47:40 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

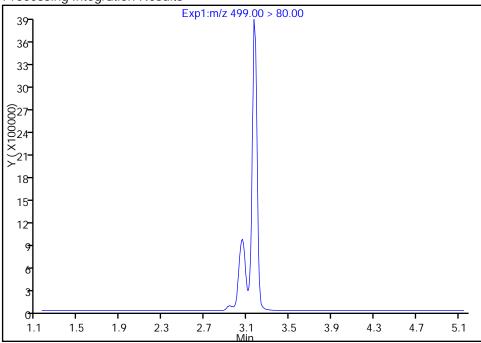
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

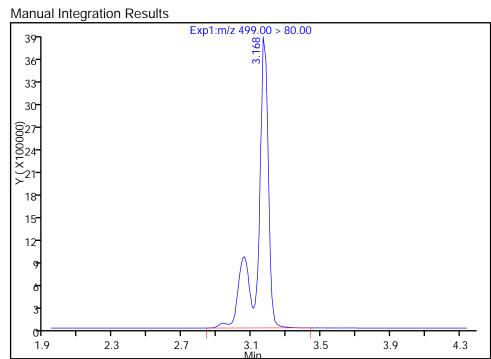
Not Detected

Expected RT: 3.16

Processing Integration Results



RT: 3.17
Area: 16734295
Amount: 125.2569
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Manually Integrated

Audit Reason: Baseline Page 409 of 683

TestAmerica Sacramento

\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d Data File:

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: $A8_N$

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

MEAFF-PWMA-SB01-0204 Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: LC PFC_DOD ICAL A8_N Limit Group:

Column: Detector EXP1

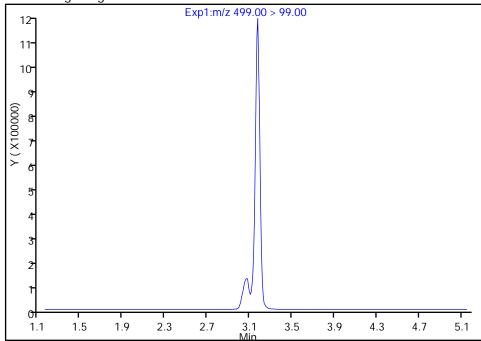
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

Not Detected

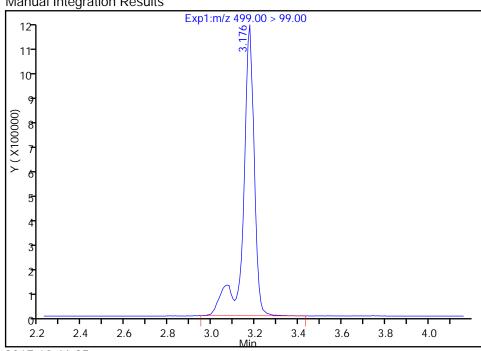
Expected RT: 3.16





RT: 3.18 3964078 Area: Amount: 125.2569 Amount Units: ng/ml





Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 410 of 683 03/27/2017

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

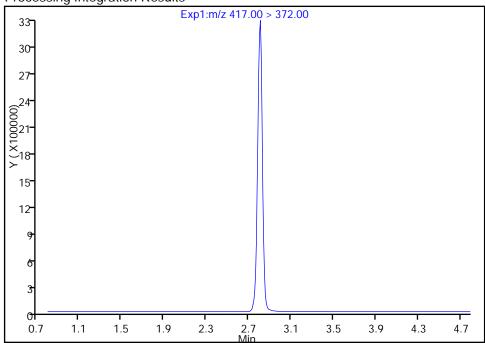
D 14 13C4 PFOA, CAS: STL00990

Signal: 1

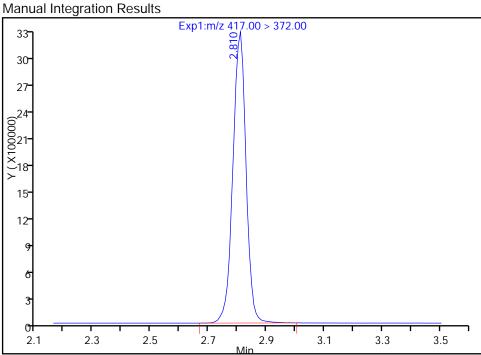
Not Detected

Expected RT: 2.80

Processing Integration Results



RT: 2.81 Area: 10347854 Amount: 50.488911 Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Assigned Compound ID

Audit Reason:

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

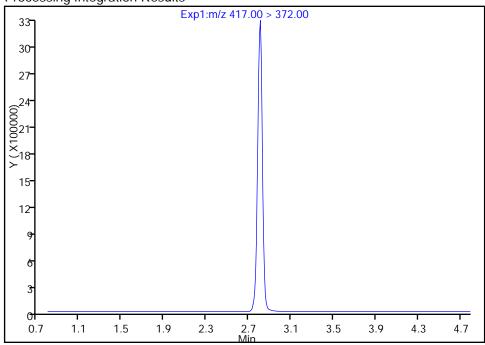
D 14 13C4 PFOA, CAS: STL00990

Signal: 1

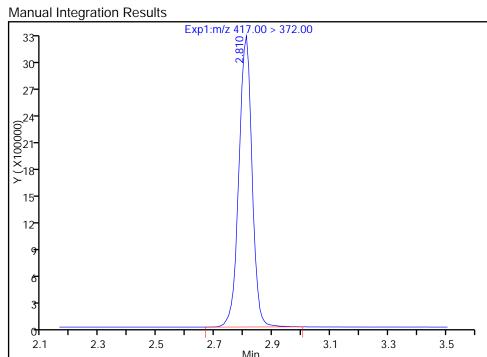
Not Detected

Expected RT: 2.80

Processing Integration Results



RT: 2.81
Area: 10347854
Amount: 50.488911
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 412 of 683 03/27/2017

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

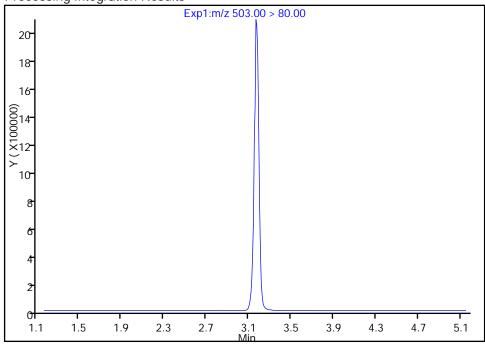
D 18 13C4 PFOS, CAS: STL00991

Signal: 1

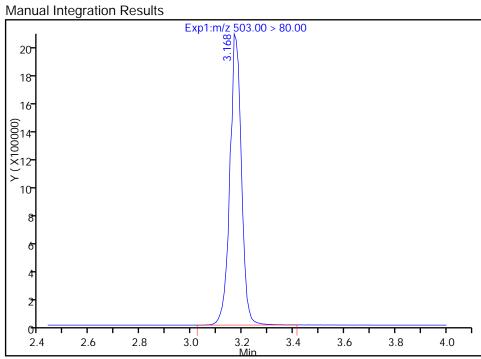
Not Detected

Expected RT: 3.16

Processing Integration Results



RT: 3.17
Area: 6493324
Amount: 26.872223
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Assigned Compound ID

Audit Reason:

Page 413 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

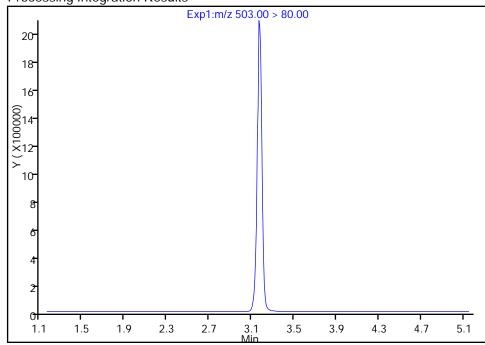
D 18 13C4 PFOS, CAS: STL00991

Signal: 1

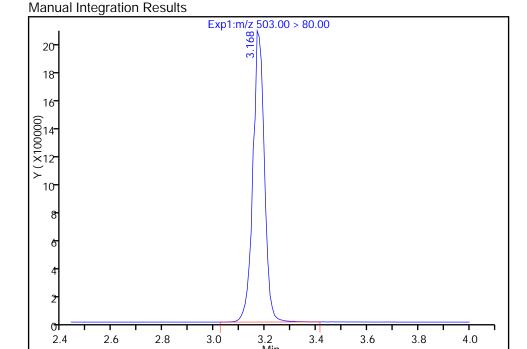
Not Detected

Expected RT: 3.16

Processing Integration Results



RT: 3.17
Area: 6493324
Amount: 26.872223
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:46:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 414 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

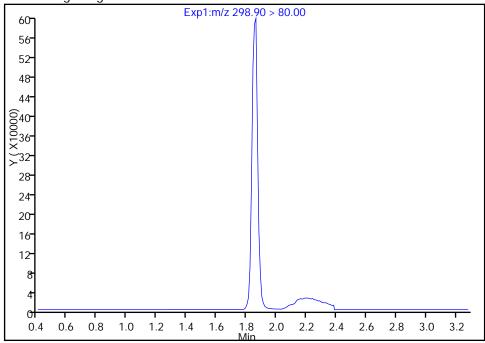
5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

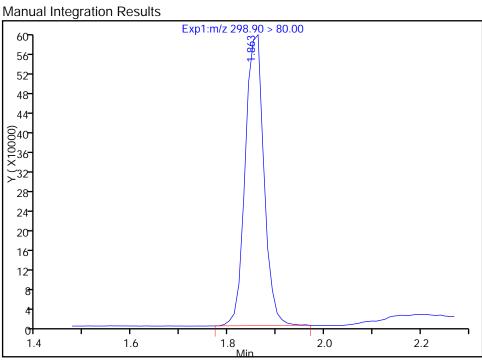
Not Detected

Expected RT: 1.84

Processing Integration Results



RT: 1.86 Area: 1596752 Amount: 4.022993 Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:47:22

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Page 415 of 683

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

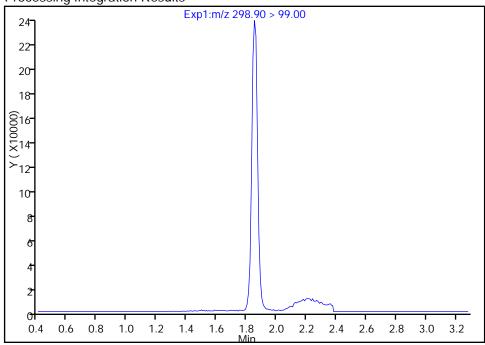
5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

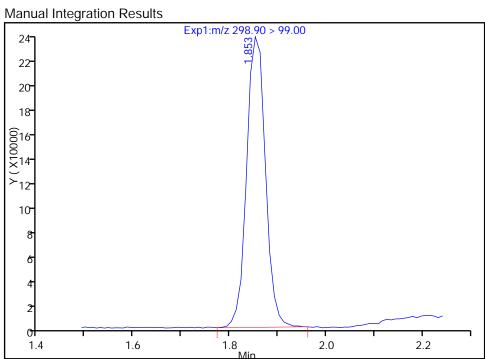
Not Detected

Expected RT: 1.84

Processing Integration Results



RT: 1.85
Area: 629507
Amount: 4.022993
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:47:30

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Page 416 of 683 03/27/2017

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_014.d

Injection Date: 01-Mar-2017 20:00:07 Instrument ID: A8_N

Lims ID: 320-25962-A-5-A Lab Sample ID: 320-25962-5

Client ID: MEAFF-PWMA-SB01-0204

Operator ID: A8-PC\A8 ALS Bottle#: 35 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

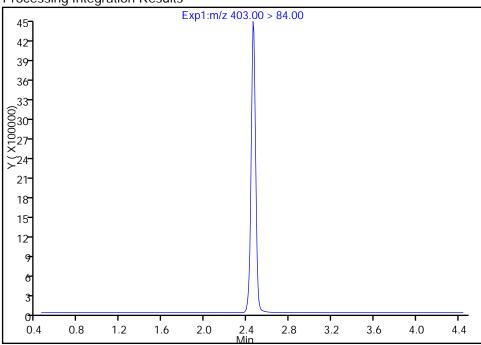
D 11 1802 PFHxS, CAS: STL00994

Signal: 1

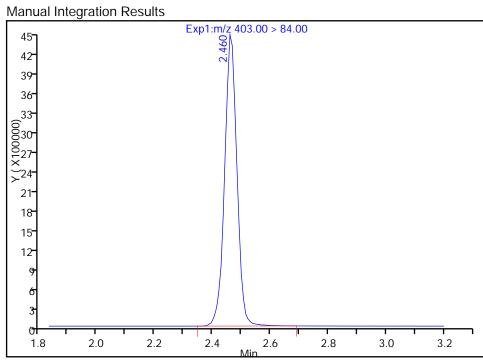
Not Detected

Expected RT: 2.45

Processing Integration Results



RT: 2.46 Area: 13105479 Amount: 45.051611 Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:47:16

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Page 417 of 683

LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento

SDG No.:

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3 (mm)

Calibration Start Date: 03/01/2017 11:08

Calibration End Date: 03/01/2017 11:46

Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-152681/2	2017.03.01CURVE 003.d
Level 2	IC 320-152681/3	2017.03.01CURVE 004.d
Level 3	IC 320-152681/4	2017.03.01CURVE 005.d
Level 4	IC 320-152681/5	2017.03.01CURVE 006.d
Level 5	IC 320-152681/6	2017.03.01CURVE 007.d
Level 6	IC 320-152681/7	2017.03.01CURVE_008.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.563	1.562	1.555	1.562	1.554	1.554	1.308 - 1.808	1.558
Perfluoropentanoic acid (PFPeA)	1.843	1.842	1.833	1.841	1.831	1.822	1.585 - 2.085	1.835
Perfluorobutanesulfonic acid (PFBS)	1.883	1.872	1.873	1.871	1.871	1.861	1.692 - 2.052	1.872
Perfluorohexanoic acid (PFHxA)	2.139	2.145	2.129	2.134	2.127	2.122	1.883 - 2.383	2.133
Perfluoroheptanoic acid (PFHpA)	2.491	2.484	2.471	2.471	2.466	2.461	2.224 - 2.724	2.474
Perfluorohexanesulfonic acid (PFHxS)	+++++	2.500	2.456	2.487	2.481	2.478	2.235 - 2.735	2.480
6:2FTS	2.833	2.818	2.798	2.806	2.793	2.797	2.557 - 3.057	2.808
Perfluorooctanoic acid (PFOA)	+++++	2.841	2.829	2.837	2.824	2.820	2.585 - 3.085	2.830
Perfluoroheptanesulfonic Acid (PFHpS)	2.856	2.857	2.845	2.837	2.831	2.828	2.592 - 3.092	2.842
Perfluorooctanesulfonic acid (PFOS)	3.227	3.105	3.171	3.093	3.087	3.186	2.895 - 3.395	3.145
Perfluorononanoic acid (PFNA)	3.218	3.209	3.205	3.205	3.191	3.186	2.952 - 3.452	3.202
8:2FTS	3.569	3.561	3.539	3.539	3.543	3.523	3.296 - 3.796	3.546
Perfluorodecanoic acid (PFDA)	3.578	3.569	3.556	3.556	3.552	3.548	3.310 - 3.810	3.560
Perfluorooctane Sulfonamide (FOSA)	3.569	3.561	3.556	3.565	3.560	3.557	3.311 - 3.811	3.561
N-methyl perfluorooctane sulfonamidoacetic	3.723	3.723	3.707	3.717	3.702	3.707	3.463 - 3.963	3.713
acid (NMeFOSAA)								
Perfluorodecanesulfonic acid (PFDS)	3.886	3.876	3.861	3.862	3.859	3.853	3.616 - 4.116	3.866
Perfluoroundecanoic acid (PFUnA)	3.894	3.885	3.878	3.879	3.867	3.862	3.628 - 4.128	3.878
N-ethyl perfluorooctane sulfonamidoacetic	3.903	3.885	3.878	3.888	3.876	3.871	3.633 - 4.133	3.884
acid (NEtFOSAA)								
MeFOSA	4.055	4.064	4.056	4.059	4.058	4.051	3.807 - 4.307	4.057
Perfluorododecanoic acid (PFDoA)	4.176	4.175	4.161	4.165	4.157	4.138	3.912 - 4.412	4.162
N-EtFOSA-M	4.247	4.246	4.237	4.249	4.241	4.236	3.992 - 4.492	4.243
Perfluorotridecanoic Acid (PFTriA)	4.447	4.430	4.421	4.418	4.418	4.407	4.174 - 4.674	4.424
Perfluorotetradecanoic acid (PFTeA)	4.679	4.667	4.655	4.652	4.651	4.635	4.407 - 4.907	4.657
Perfluoro-n-hexadecanoic acid (PFHxDA)	+++++	5.070	5.057	5.057	5.049	5.046	4.809 - 5.309	5.056
Perfluoro-n-octadecanoic acid (PFODA)	5.428	5.414	5.398	5.398	5.383	5.375	5.149 - 5.649	5.399
13C4 PFBA	1.563	1.554	1.555	1.554	1.546	1.546	1.303 - 1.803	1.553
13C5-PFPeA	1.843	1.842	1.833	1.832	1.821	1.822	1.582 - 2.082	1.832
13C2 PFHxA	2.147	2.136	2.138	2.134	2.127	2.122	1.884 - 2.384	2.134
13C4-PFHpA	2.491	2.484	2.471	2.479	2.466	2.461	2.225 - 2.725	2.475
1802 PFHxS	2.498	2.500	2.487	2.487	2.481	2.478	2.239 - 2.739	2.489
M2-6:2FTS	2.817	2.810	2.806	2.814	2.793	2.789	2.555 - 3.055	2.805
13C4 PFOA	2.848	2.849	2.829	2.837	2.824	2.820	2.585 - 3.085	2.835
13C4 PFOS	3.218	3.218	3.196	3.205	3.199	3.186	2.954 - 3.454	3.204

LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento

SDG No.:

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3(mm)

Calibration Start Date: 03/01/2017 11:08

Calibration End Date: 03/01/2017 11:46

Calibration ID: 28659

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6		RT WINDOW	AVG RT
13C5 PFNA	3.218	3.218	3.205	3.214	3.199	3.195		2.958 - 3.458	3.208
M2-8:2FTS	3.569	3.553	3.548	3.539	3.535	3.523		3.295 - 3.795	3.545
13C8 FOSA	3.561	3.561	3.556	3.565	3.560	3.548		3.309 - 3.809	3.559
13C2 PFDA	3.569	3.569	3.556	3.565	3.552	3.548		3.310 - 3.810	3.560
d3-NMeFOSAA	3.723	3.723	3.707	3.707	3.702	3.696		3.460 - 3.960	3.710
d5-NEtFOSAA	3.894	3.885	3.869	3.870	3.867	3.862		3.625 - 4.125	3.875
13C2 PFUnA	3.894	3.885	3.869	3.879	3.867	3.862		3.626 - 4.126	3.876
d-N-MeFOSA-M	4.055	4.055	4.047	4.050	4.048	4.042		3.800 - 4.300	4.050
13C2 PFDoA	4.176	4.175	4.161	4.165	4.157	4.152		3.914 - 4.414	4.164
d-N-EtFOSA-M	4.238	4.237	4.228	4.240	4.241	4.227		3.985 - 4.485	4.235
13C2-PFTeDA	4.679	4.667	4.655	4.652	4.641	4.635		4.405 - 4.905	4.655
13C2-PFHxDA	5.077	5.070	5.057	5.057	5.049	5.035		4.807 - 5.307	5.058

LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA CURVE EVALUATION

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1	Analy Batch No.: 152681
SDG No.:		
Instrument ID: A8_N	GC Column: GeminiC18 3 ID: 3 (mm)	Heated Purge: (Y/N) N
Calibration Start Date: 03/01/2017 11:08	Calibration End Date: 03/01/2017 11:46	Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:	
Level 1	IC 320-152681/2	2017.03.01CURVE 003.d	
Level 2	IC 320-152681/3	2017.03.01CURVE 004.d	
Level 3	IC 320-152681/4	2017.03.01CURVE 005.d	
Level 4	IC 320-152681/5	2017.03.01CURVE 006.d	
Level 5	IC 320-152681/6	2017.03.01CURVE 007.d	
Level 6	IC 320-152681/7	2017.03.01CURVE 008.d	

ANALYTE		CF	יק		CURVE		COEFFICIENT	#	MIN CF	%RSD	# MA		#	MIN R^2
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3	LVL 4	TYPE	В	M1	M2			%RS	D OR COL		OR COD
13C4 PFBA	295570	282103	289131	342453	Ave		292241.860			10.7	50	0		
	298823	245371												
13C5-PFPeA	243840	230536	230743	272822	Ave		232192.393			12.0	50	0		
	228800	186413												
13C2 PFHxA	216513	203387	205221	244884	Ave		210883.903			9.9	50	0		
	214399	180899												
13C4-PFHpA	196625	194053	196340	218699	Ave		192959.403			11.1	50	0		
	198881	153158												
1802 PFHxS	303886	286708	287749	336370	Ave		290899.232			11.2	50	0		
	295000	235682												
M2-6:2FTS	77170	74128	76996	86146	Ave		77177.6947			6.3	50	0		
	76852	71775												
13C4 PFOA	218643	211258	209474	236176	Ave		204953.003			13.6	50	0		
	200396	153770												
13C4 PFOS	248546	230373	237852	275881	Ave		241637.026			9.2	50	0		
	248262	208908												
13C5 PFNA	187340	181023	176430	203992	Ave		177866.177			11.9	50	0		
	178740	139672												
M2-8:2FTS	96352	94980	95104	101739	Ave		92601.9868			9.3	50	0		
	91038	76400												
13C8 FOSA	389836	361792	377175	397768	Ave		366917.947			9.1	50	0		
	371174	303762												
13C2 PFDA	175335	171862	173776	193236	Ave		166704.327			13.8	50	0		
	161485	124531												
d3-NMeFOSAA	80206	79979	85034	95399	Ave		85185.7867			6.9	50	0		
	88198	82300												
d5-NEtFOSAA	85322	81954	86013	90318	Ave		81371.4600			12.0	50	0		
	82165	62458												
13C2 PFUnA	144662	134819	134602	146921	Ave		130805.323			14.3	50	0		
	128397	95431												

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA CURVE EVALUATION

Lab Name: TestAmerica Sacramento

SDG No.:

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3 (mm)

Calibration Start Date: 03/01/2017 11:08

Calibration End Date: 03/01/2017 11:46

Calibration ID: 28659

ANALYTE		CE	?		CURVE		COEFFICIENT		#	MIN CF	%RSD	#	MAX	R^2	#	MIN R^2
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3	LVL 4	TYPE	В	M1	M2					%RSD	OR COD		OR COD
d-N-MeFOSA-M	86833 90989	81090 88671	88728	91589	Ave		87983.4500				4.3		50.0			
13C2 PFDoA	134509 123176		126789	132125	Ave		123944.073				8.1		50.0			
d-N-EtFOSA-M	83930 87690		85474	87472	Ave		85248.5033				4.4		50.0			
13C2-PFTeDA	274175 265148	246188 227078	269935	272468	Ave		259165.203				7.2		50.0			
13C2-PFHxDA	131614 132135	114843 117588	127568	126617	Ave		125060.687				5.8		50.0			

FORM VI LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA

CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 Analy Batch No.: 152681

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

ANALYTE			RRF			CURVE		COEFFICIE	INT	#	MIN RRF	%RSD	#	MAX	R^2	#	MIN R^2
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	TYPE	В	M1	M2					%RSD	OR COD		OR COD
Perfluorobutanoic acid (PFBA)	0.8141	0.8385	0.8902	0.8682	0.9030	AveID		0.8473				5.9		35.0			
Perfluoropentanoic acid (PFPeA)	1.0168 0.8556	1.0140	1.0095	0.9684	1.0070	AveID		0.9785				6.4		35.0			
Perfluorobutanesulfonic acid (PFBS)	1.4512 1.1477	1.4372	1.5643	1.5194	1.4753	AveID		1.4325				10.3		50.0			
Perfluorohexanoic acid (PFHxA)	0.8937 0.8394	0.9003	0.9420	0.8558	0.9058	AveID		0.8895				4.1		35.0			
Perfluoroheptanoic acid (PFHpA)	1.0535 0.9266	0.9536	0.9588	0.9499				0.9673				4.5		35.0			
Perfluorohexanesulfonic acid (PFHxS)	+++++ 0.9823	1.1299	1.0303	0.9734	1.0264	AveID		1.0284				6.0		35.0			
6:2FTS	1.1310 0.8276	1.0222	0.9530	0.9038	0.8939	L2ID	0.1204	0.8859							0.9980		0.9900
Perfluorooctanoic acid (PFOA)	+++++ 0.9671	1.0714	1.0527	0.9847	1.0323	AveID		1.0217				4.3		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	0.9372 0.9122	1.0436	1.1203	1.0793	1.0932	AveID		1.0310				8.4		50.0			
Perfluorooctanesulfonic acid (PFOS)	0.9378 1.0254	0.9696	0.9901	0.9549	1.0231	AveID		0.9835				3.7		35.0			
Perfluorononanoic acid (PFNA)	0.8479 0.9328	0.8440	0.9730	0.8905	0.9356	AveID		0.9040				5.8		35.0			
8:2FTS	1.0958	0.9785	0.9767	0.9909	0.9344	L2ID	0.0783	0.9239							0.9960		0.9900
Perfluorodecanoic acid (PFDA)	0.8578 0.9743	0.8868	0.9034	0.8481	0.9635	AveID		0.9057				5.8		35.0			
Perfluorooctane Sulfonamide (FOSA)	0.8943 0.7850	0.9384	0.9267	0.9035	0.9430	AveID		0.8985				6.5		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.0472	0.9816	0.9980	0.8887	0.9213	AveID		0.9711				5.9		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.5889 0.6126	0.5647	0.6260	0.5646	0.6173	AveID		0.5957				4.5		50.0			
Perfluoroundecanoic acid (PFUnA)	1.1887 0.9783	1.0233	1.0049	0.8914	0.9951	AveID		1.0136				9.6		35.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.9144 0.9531	0.9405	0.8966	0.8892	0.8680	AveID		0.9103				3.5		35.0			
MeFOSA	1.0035 0.9709	0.9265	0.9122	0.9123	0.8877	AveID		0.9355				4.6		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA CURVE EVALUATION

Lab Name: TestAmerica Sacramento

SDG No.:

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3 (mm)

Calibration Start Date: 03/01/2017 11:08

Calibration End Date: 03/01/2017 11:46

Calibration ID: 28659

ANALYTE			RRF			CURVE		COEFFICI	ENT	#	MIN RRF	%RSD	#	MAX	R^2	 MIN R^2
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	TYPE	В	M1	M2					%RSD	OR COD	OR COD
Perfluorododecanoic acid (PFDoA)	0.8688	0.9386	0.9128	0.8906	0.9644	AveID		0.9145				3.7		35.0		
N-EtFOSA-M	1.0272 0.9831	1.0085	0.9951	0.9583	0.9298	AveID		0.9837				3.6		35.0		
Perfluorotridecanoic Acid (PFTriA)	0.8807 0.8636	0.8542	0.8873	0.8354	0.9194	AveID		0.8734				3.3		50.0		
Perfluorotetradecanoic acid (PFTeA)	1.9494 1.8544	1.9776	2.0893	1.8773	2.0509	AveID		1.9665				4.7		50.0		
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 0.9462	1.4217	1.0035	0.7837	0.9248	L1ID	0.3491	0.9270							0.9970	0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.6950 0.8378	0.6764	0.7116	0.6387	0.7456	AveID		0.7175				9.6		50.0		

LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento

SDG No.:

Instrument ID: A8_N

Calibration Start Date: 03/01/2017 11:08

Job No.: 320-25962-1

Analy Batch No.: 152681

Below No.: 152681

Analy Batch No.: 152681

Analy Batch No.: 152681

Below No.: 152681

Calibration ID: 28659

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-152681/2	2017.03.01CURVE 003.d
Level 2	IC 320-152681/3	2017.03.01CURVE 004.d
Level 3	IC 320-152681/4	2017.03.01CURVE 005.d
Level 4	IC 320-152681/5	2017.03.01CURVE 006.d
Level 5	IC 320-152681/6	2017.03.01CURVE 007.d
Level 6	IC 320-152681/7	2017.03.01CURVE_008.d

ANALYTE	CURVE			RESPONSE				CONCEN	ITRATION (N	IG/ML)	
	TYPE	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
13C4 PFBA	Ave	14778495 12268568	14105138	14456536	17122661	14941160	50.0 50.0	50.0	50.0	50.0	50.0
13C5-PFPeA	Ave	12192014 9320645	11526786	11537165	13641103	11440005	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFHxA	Ave	10825655 9044966	10169363	10261028	12244217	10719942	50.0 50.0	50.0	50.0	50.0	50.0
13C4-PFHpA	Ave	9831264 7657909	9702633	9817002	10934944	9944069	50.0 50.0	50.0	50.0	50.0	50.0
1802 PFHxS	Ave	14373798 11147782	13561303	13610529	15910284	13953506	47.3 47.3	47.3	47.3	47.3	47.3
M2-6:2FTS	Ave	3665572 3409307	3521088	3657293	4091935	3650448	47.5 47.5	47.5	47.5	47.5	47.5
13C4 PFOA	Ave	10932126 7688496	10562914	10473721	11808824	10019820	50.0 50.0	50.0	50.0	50.0	50.0
13C4 PFOS	Ave	11880498 9985826	11011810	11369327	13187105	11866933	47.8 47.8	47.8	47.8	47.8	47.8
13C5 PFNA	Ave	9367003 6983620	9051156	8821496	10199601	8936977	50.0 50.0	50.0	50.0	50.0	50.0
M2-8:2FTS	Ave	4615245 3659550	4549526	4555474	4873285	4360731	47.9 47.9	47.9	47.9	47.9	47.9
13C8 FOSA	Ave	19491823 15188110	18089578	18858766	19888389	18558718	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFDA	Ave	8766735 6226569	8593124	8688810	9661817	8074243	50.0 50.0	50.0	50.0	50.0	50.0
d3-NMeFOSAA	Ave	4010288 4115011	3998931	4251681	4769931	4409894	50.0 50.0	50.0	50.0	50.0	50.0
d5-NEtFOSAA	Ave	4266080 3122900	4097675	4300641	4515915	4108227	50.0 50.0	50.0	50.0	50.0	50.0
13C2 PFUnA	Ave	7233118 4771549	6740958	6730080	7346047	6419845	50.0 50.0	50.0	50.0	50.0	50.0
d-N-MeFOSA-M	Ave	4341649 4433562	4054503	4436424	4579449	4549448	50.0 50.0	50.0	50.0	50.0	50.0

LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento

SDG No.:

Instrument ID: A8_N

Calibration Start Date: 03/01/2017 11:08

GO No.: 320-25962-1

Analy Batch No.: 152681

Analy Batch No.: 152681

Heated Purge: (Y/N) N

Calibration End Date: 03/01/2017 11:46

Calibration ID: 28659

	ANALYTE	CURVE	CURVE RESPONSE						CONCENTRATION (NG/ML)						
		TYPE	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5			
13C2 PFDoA		Ave	6725474 5320903	6032319	6339474	6606261	6158791	50.0 50.0	50.0	50.0	50.0	50.0			
d-N-EtFOSA-M		Ave	4196476 4425922	3920378	4273681	4373613	4384481	50.0 50.0	50.0	50.0	50.0	50.0			
13C2-PFTeDA		Ave	13708730 11353892	12309406	13496732	13623388	13257413	50.0 50.0	50.0	50.0	50.0	50.0			
13C2-PFHxDA		Ave	6580685 5879424	5742128	6378393	6330845	6606731	50.0 50.0	50.0	50.0	50.0	50.0			

Curve Type Legend:

Ave = Average

LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento

Job No.: 320-25962-1

SDG No.: Analy Batch No.: 152681

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:	
Level 1	IC 320-152681/2	2017.03.01CURVE 003.d	
Level 2	IC 320-152681/3	2017.03.01CURVE 004.d	
Level 3	IC 320-152681/4	2017.03.01CURVE 005.d	
Level 4	IC 320-152681/5	2017.03.01CURVE 006.d	
Level 5	IC 320-152681/6	2017.03.01CURVE 007.d	
Level 6	IC 320-152681/7	2017.03.01CURVE 008.d	

ANALYTE	IS	CURVE			RESPONSE				CONCEN	NTRATION (N	IG/ML)	
	REF	TYPE	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	120309 37767596	236552	1286888	5946494	13491384	0.500 200	1.00	5.00	20.0	50.0
Perfluoropentanoic acid (PFPeA)		AveID	123967 31900088	233761	1164625	5283919	11520213	0.500 200	1.00	5.00	20.0	50.0
Perfluorobutanesulfonic acid (PFBS)		AveID	194922 47824719	364249	1989498	9035699	19236596	0.442 177	0.884	4.42	17.7	44.2
Perfluorohexanoic acid (PFHxA)		AveID	96748 30367858	183108	966638	4191655	9710439	0.500 200	1.00	5.00	20.0	50.0
Perfluoroheptanoic acid (PFHpA)		AveID	103569 28382869	185040	941301	4154809	9559143	0.500 200	1.00	5.00	20.0	50.0
Perfluorohexanesulfonic acid (PFHxS)		AveID	+++++ 42133990	294799	1348890	5958886	13776740	+++++ 182	0.910	4.55	18.2	45.5
6:2FTS		L2ID	41369 11262289	71833	347809	1476276	3256270	0.474 190	0.948	4.74	19.0	47.4
Perfluorooctanoic acid (PFOA)		AveID	+++++ 29743583	226350	1102619	4651144	10343315	+++++ 200	1.00	5.00	20.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	110873 36282267	228885	1268398	5669268	12919018	0.476 190	0.952	4.76	19.0	47.6
Perfluorooctanesulfonic acid (PFOS)		AveID	108156 39756569	207277	1092724	4889351	11786011	0.464 186	0.928	4.64	18.6	46.4
Perfluorononanoic acid (PFNA)		AveID	79419 26057481	152789	858327	3633207	8361339	0.500 200	1.00	5.00	20.0	50.0
8:2FTS		L2ID	50574 12220206	89032	444929	1931499	4074481	0.479 192	0.958	4.79	19.2	47.9
Perfluorodecanoic acid (PFDA)		AveID	75200 24265114	152408	784974	3277760	7779706	0.500 200	1.00	5.00	20.0	50.0
Perfluorooctane Sulfonamide (FOSA)		AveID	174325 47690261	339522	1747629	7187955	17500489	0.500 200	1.00	5.00	20.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	41996 16290792	78506	424299	1695690	4062831	0.500 200	1.00	5.00	20.0	50.0
Perfluorodecanesulfonic acid (PFDS)		AveID	70554 24675284	125403	717648	3002868	7386234	0.482 193	0.964	4.82	19.3	48.2

LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 Analy Batch No.: 152681

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

ANALYTE	IS	CURVE			RESPONSE			CONCENTRATION (NG/ML)					
	REF	TYPE -	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	
Perfluoroundecanoic acid (PFUnA)		AveID	85977 18672321	137967	676308	2619295	6388091	0.500	1.00	5.00	20.0	50.0	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	39009 11906031	77078	385576	1606146	3565748	0.500 200	1.00	5.00	20.0	50.0	
MeFOSA		AveID	43568 17219029	75129	404698	1671133	4038740	0.500 200	1.00	5.00	20.0	50.0	
Perfluorododecanoic acid (PFDoA)		AveID	58428 19408225	113238	578671	2353395	5939325	0.500 200	1.00	5.00	20.0	50.0	
N-EtFOSA-M		AveID	43107 17404238	79073	425282	1676481	4076562	0.500 200	1.00	5.00	20.0	50.0	
Perfluorotridecanoic Acid (PFTriA)		AveID	59233 18379771	103052	562473	2207561	5662375	0.500 200	1.00	5.00	20.0	50.0	
Perfluorotetradecanoic acid (PFTeA)		AveID	131104 39468467	238596	1324493	4960846	12631200	0.500 200	1.00	5.00	20.0	50.0	
Perfluoro-n-hexadecanoic acid (PFHxDA)		L1ID	+++++ 20137749	171523	636153	2071027	5695645	+++++ 200	1.00	5.00	20.0	50.0	
Perfluoro-n-octadecanoic acid (PFODA)		AveID	46744 17831844	81601	451116	1687895	4591929	0.500 200	1.00	5.00	20.0	50.0	

Curve Type Legend:

AveID = Average isotope dilution

L1ID = Linear 1/conc IsoDil

L2ID = Linear 1/conc^2 IsoDil

Report Date: 01-Mar-2017 15:43:05 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

Lims ID: IC L1 Full

Client ID:

Sample Type: IC Calib Level: 1

Inject. Date: 01-Mar-2017 11:08:52 ALS Bottle#: 28 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: L1-FULL

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub15

Method: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:05 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:00:05

First Level Revie	wer: cha	ndrasen	as		Date:	()1-Mar-2017 12:00:0	15				
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags		
D 113C4 PFBA	\											
217.00 > 172.00		1.553	0.010		14778495	50.6		101	654817			
2 Perfluorobut	,											
212.90 > 169.00		1.558	0.005	1.000	120309	0.4804		96.1	1068			
D 3 13C5-PFPe		4 000	0.044		10100011	F0 F		405	505740			
267.90 > 223.00		1.832	0.011		12192014	52.5		105	525740			
4 Perfluoroper 262.90 > 219.00		cia 1.835	0.008	1.000	123967	0.5195		104	1065			
5 Perfluorobuta			0.000	1.000	123707	0.5175		104	1003			
298.90 > 80.00		1.872	0.011	1.000	194922	0.4478		101				
298.90 > 99.00	1.883	1.872	0.011	1.000	77860		2.50(0.00-0.00)	101				
6 Perfluorohex	anoic ac	cid										
313.00 > 269.00	2.139	2.133	0.006	1.000	96748	0.5024		100	3614			
D 7 13C2 PFHx												
315.00 > 270.00		2.134	0.013		10825655	51.3		103	238427			
10 Perfluorohe ₁ 363.00 > 319.00	•	acid 2.474	0.017	1.000	103569	0.5446		109	891			
D 9 13C4-PFHp		2.474	0.017	1.000	103369	0.3440		109	091			
367.00 > 322.00		2.475	0.016		9831264	50.9		102	345749			
8 Perfluorohex										М		
399.00 > 80.00		2.485	0.021	1.000	182218	0.5830		128		M		
D 11 1802 PFH	xS											
403.00 > 84.00	2.498	2.489	0.009		14373798	49.4		104	411887			
D 12 M2-6:2FTS												
429.00 > 409.00		2.805	0.012		3665572	47.5		100.0				
13 Sodium 1H,		-			44070	0.4400		00.0				
427.00 > 407.00	2.833	2.807	0.026	1.000	41369	0.4692		99.0				
					Page 428 of (683			03/27	7/2017		

Page 428 of 683

03/27/2017

Report Date: 01-Mar-2017 15:43:05 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

2444	,,,,,,,	1	1		2 4(4 ; 101;20 :	7000. 1000				
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooct	tanoic ac	cid								М
413.00 > 369.00		2.835	0.021	1.000	120388	0.5389		108	1162	
413.00 > 169.00	2.848	2.835	0.013	0.997	71985		1.67(0.90-1.10)	108	2853	M
D 14 13C4 PFO		0.005	0.010		10000107	F0.0		407	00/005	
417.00 > 372.00		2.835	0.013		10932126	53.3		107	336385	
16 Perfluorohej 449.00 > 80.00	•		a 0.014	1.000	110873	0.4327		90.9		
17 Perfluorooct				1.000	110073	0.4327		70.7		M
499.00 > 80.00		3.145	0.082	1.000	108156	0.4425		95.4	8683	M
499.00 > 99.00	3.218	3.145	0.073	0.997	27348		3.95(0.90-1.10)	95.4	2308	
20 Perfluoronoi										
463.00 > 419.00		3.202	0.016	1.000	79419	0.4690		93.8	1607	
D 18 13C4 PFO		2.204	0.014		11000100	40.0		100	225475	
503.00 > 80.00		3.204	0.014		11880498	49.2		103	335475	
D 19 13C5 PFN/ 468.00 > 423.00		3.208	0.010		9367003	52.7		105	245715	
D 26 M2-8:2FTS		3.200	0.010		7507005	02.7		100	243713	
529.00 > 509.00		3.545	0.024		4615245	49.8		104		
25 Sodium 1H,	1H,2H,2	H-perfluc	orooctan	е						
527.00 > 507.00		3.546		1.000	50574	0.4834		101		
D 21 13C8 FOS	A									
506.00 > 78.00	3.561	3.559	0.002		19491823	53.1		106	285934	
24 Perfluorodeo			0.010	4 000	75000	0.4707		0.4.7	0/10	
513.00 > 469.00		3.560	0.018	1.000	75200	0.4736		94.7	2610	
D 23 13C2 PFD/ 515.00 > 470.00		3.560	0.009		8766735	52.6		105	186190	
22 Perfluorooct					6700733	52.0		105	100190	
498.00 > 78.00		3.561	0.008	1.000	174325	0.4977		99.5	18811	
D 27 d3-NMeFO		0.00.	0.000		.,,,,,,	0		77.0		
573.00 > 419.00		3.710	0.013		4010288	47.1		94.2		
28 N-methyl pe	rfluoroo	ctane sul	lfonami							
570.00 > 419.00	3.723	3.713	0.010	1.000	41996	0.5392		108		
29 Perfluorode			d							
599.00 > 80.00		3.866	0.020	1.000	70554	0.4765		98.9		
D 32 d5-NEtFOS		0.075	0.010		10//000	50 4		405		
589.00 > 419.00		3.875	0.019		4266080	52.4		105		
D 30 13C2 PFUr 565.00 > 520.00		2 074	0.010		7222110	55.3		111	181410	
31 Perfluoround		3.876	0.018		7233118	55.5		111	101410	
563.00 > 519.00		3.878	0.016	1.000	85977	0.5863		117	2231	
33 N-ethyl perfl				1.000	33777	0.0000			220.	
584.00 > 419.00		3.883	0.020	1.002	39009	0.5023		100		
D 34 d-N-MeFO										
515.00 > 169.00		4.050	0.005		4341649	49.3		98.7		
35 MeFOSA										
512.00 > 169.00	4.055	4.057	-0.002	1.000	43568	0.5363		107		
37 Perfluorodo										
613.00 > 569.00	4.176	4.162	0.014	1.000	Page 429 of (683 ^{0.4750}		95.0	473/27	7/2017

Report Date: 01-Mar-2017 15:43:05 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File:

Data File.	1101110	iiii va ioa	Clamen	0101110111	Data / 10_111201	70301 4033	0.0/2017.03.01001	VL_000	. u	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDc	ρΑ									
615.00 > 570.00	4.176	4.164	0.012		6725474	54.3		109	175924	
D 38 d-N-EtFOS										
531.00 > 169.00	4.238	4.235	0.003		4196476	49.2		98.5		
39 N-ethylperflu										
526.00 > 169.00	4.247	4.242	0.005	1.000	43107	0.5221		104		
41 Perfluorotrid										
663.00 > 619.00	4.447	4.424	0.023	1.000	59233	0.5042		101	1171	
D 43 13C2-PFTe										
715.00 > 670.00	4.679	4.655	0.024		13708730	52.9		106	527093	
42 Perfluorotetr				4 000	101101	0.4057		00.4	070	
712.50 > 668.90		4.657	0.022	1.000	131104	0.4956	(00(0 00 0 00)	99.1	372	
713.00 > 169.00		4.657	0.013	0.998	21850		6.00(0.00-0.00)	99.1	7867	
D 44 13C2-PFH> 815.00 > 770.00		5.057	0.020		6580685	52.6		105	118608	
			0.020		0300003	32.0		103	110000	
45 Perfluorohex 813.00 > 769.00		5.059	0.018	1.000	146592	0.7991		160	190	
			0.010	1.000	140372	0.7771		100	170	
46 Perfluorooct 913.00 > 869.00		5.399	0.029	1.000	46744	0.4843		96.9	91.5	
713.00 > 004.00	5.420	5.577	0.027	1.000	40744	0.4043		70.7	71.5	

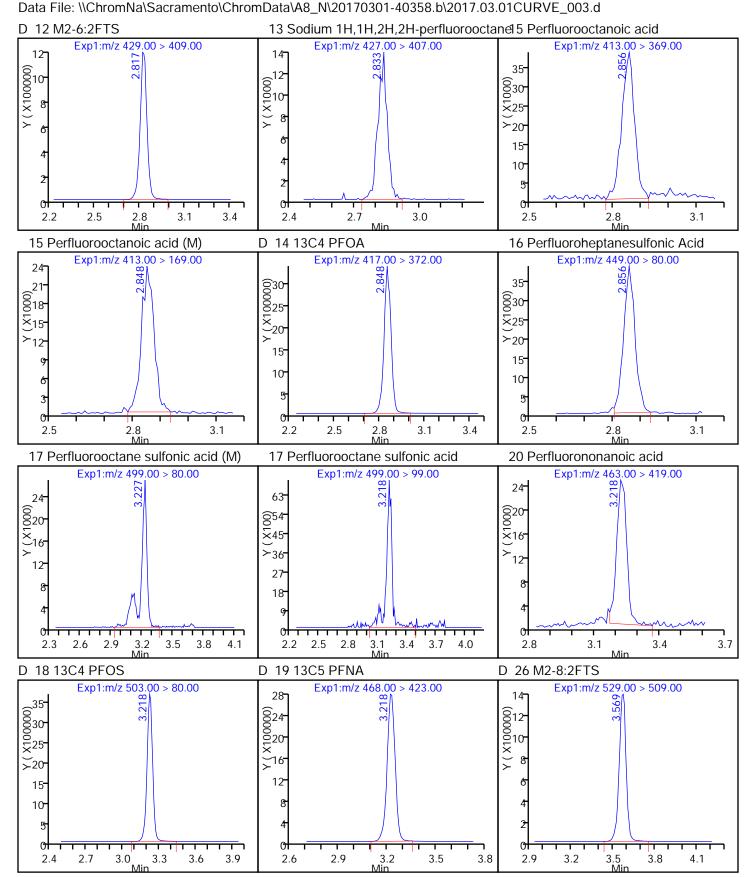
QC Flag Legend Review Flags

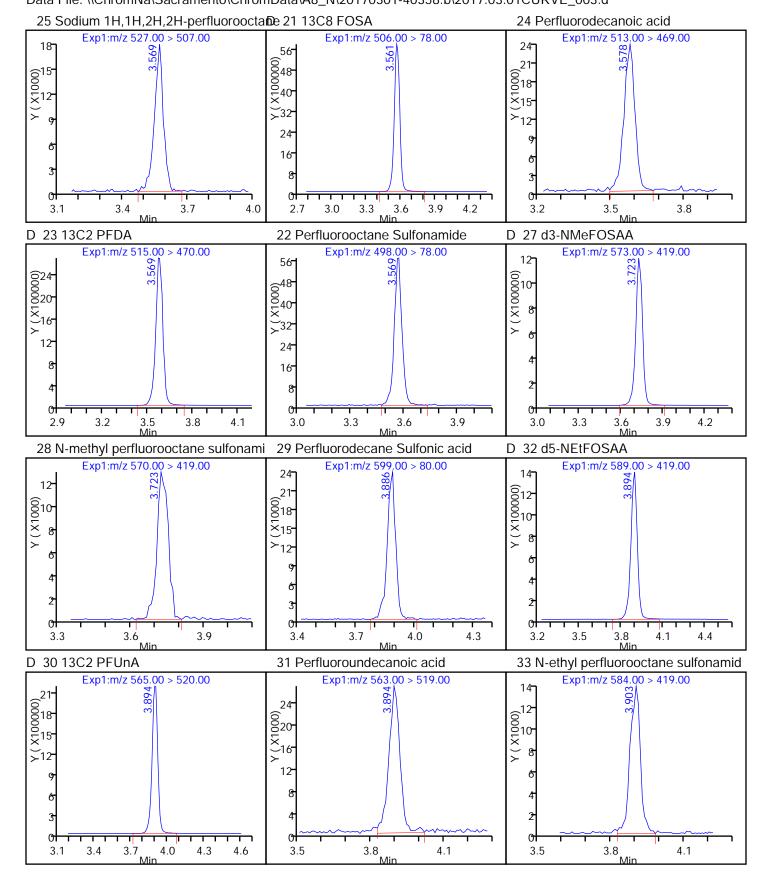
M - Manually Integrated

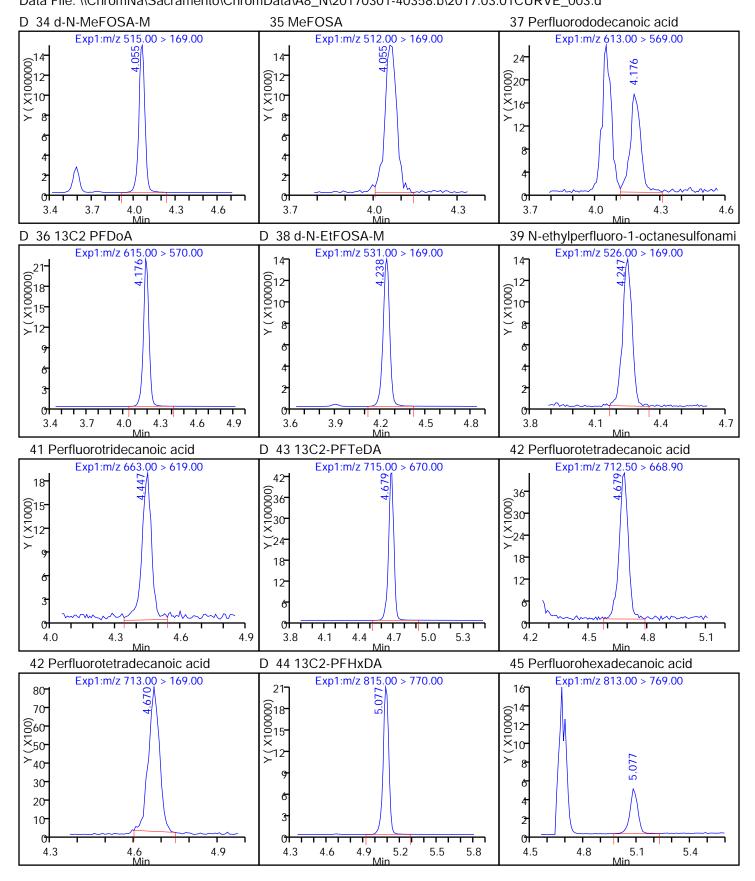
Reagents:

LCPFC_FULL-L1_00001 Amount Added: 1.00 Units: mL

Report Date: 01-Mar-2017 15:43:05 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d Data File: 01-Mar-2017 11:08:52 **Injection Date:** Instrument ID: A8_N Lims ID: IC L1 Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 42 (000036 X30 (00000 30 30 36-00030-1× 24-18 18 18 12 12 12 1.2 1.8 1.7 1.2 1.5 1.8 2.1 1.4 2.0 2.1 2.4 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 72 45 28 63 ©24- ×20-×₄₅ -16 36 21 27 15 18 1.7 2.0 2.3 1.7 1.8 2.1 2.0 2.3 1.4 1.5 1.4 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 363.00 > 319.00 35 30 30 <u>8</u>30 6 25**-**©25) 25-× >20- $\stackrel{\cdot}{\succeq}_{20}$ 15- 15 15 10 10 10 2.0 2.3 1.8 2.4 2.7 2.4 2.7 1.7 2 1 2.1 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid (M) D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 32 49 642 0036 ×30 ©28-0024-0042 0035 ∑₂₈ ≻₁₆-**≻**24 21 18 12 14 12 0 0 2.2 Page 481n of 683 2.8 2.1 2.4 2.7 3.0 1.9 3.1 1.8 2.1 2.4 ^{2.7}03/27/201 1.8

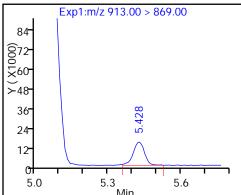






Report Date: 01-Mar-2017 15:43:06 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

46 Perfluorooctadecanoic acid



Report Date: 01-Mar-2017 15:43:06 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

Injection Date: 01-Mar-2017 11:08:52 Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

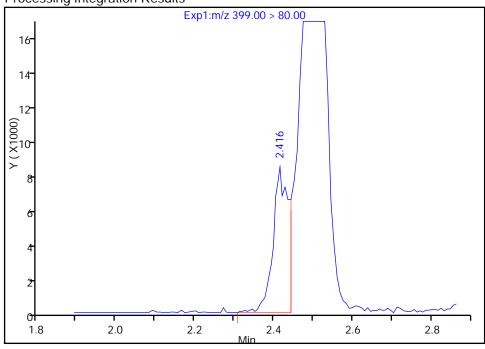
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

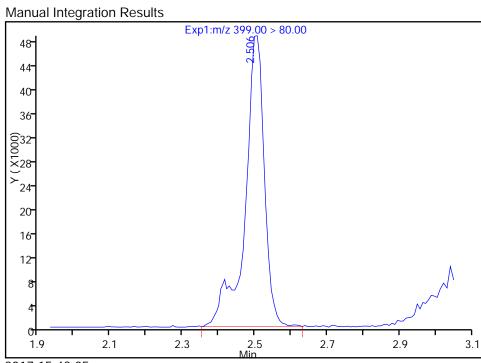
Signal: 1

RT: 2.42
Area: 21187
Amount: 0.082505
Amount Units: ng/ml

Processing Integration Results



RT: 2.51 Area: 182218 Amount: 0.583043 Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:05

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 436 of 683

Report Date: 01-Mar-2017 15:43:06 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

Injection Date: 01-Mar-2017 11:08:52 Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

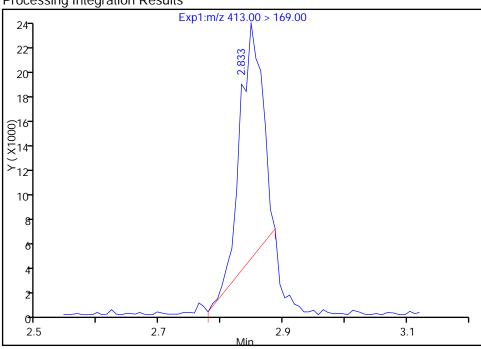
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

RT: 2.83
Area: 46440
Amount: 0.535520
Amount Units: ng/ml

Processing Integration Results

Manual Integration Results



RT: 2.85
Area: 71985
Amount: 0.538943
Amount Units: ng/ml

24 22 20 18 (016 (000 1x 14 > 12 10 8 6 4 2

Reviewer: chandrasenas, 01-Mar-2017 15:43:05

2.5

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

2.9

Page 437 of 683

2.7

3.1

Report Date: 01-Mar-2017 15:43:06 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_003.d

Injection Date: 01-Mar-2017 11:08:52 Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 28 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

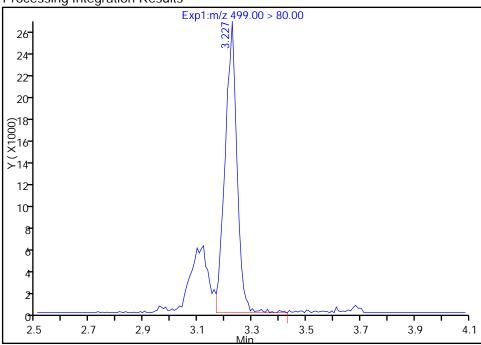
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

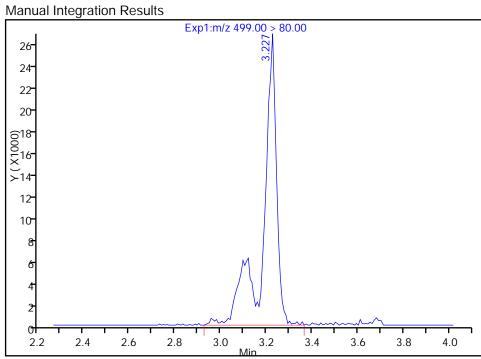
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

RT: 3.23 Area: 79141 Amount: 0.356104 Amount Units: ng/ml **Processing Integration Results**



RT: 3.23 Area: 108156 Amount: 0.442463 Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:05

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 438 of 683

Report Date: 01-Mar-2017 15:43:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_004.d

Lims ID: IC L2 Full

Client ID:

Sample Type: IC Calib Level: 2

Inject. Date: 01-Mar-2017 11:16:22 ALS Bottle#: 29 Worklist Smp#: 3

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: L2-FULL

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub15

Method: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:08 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

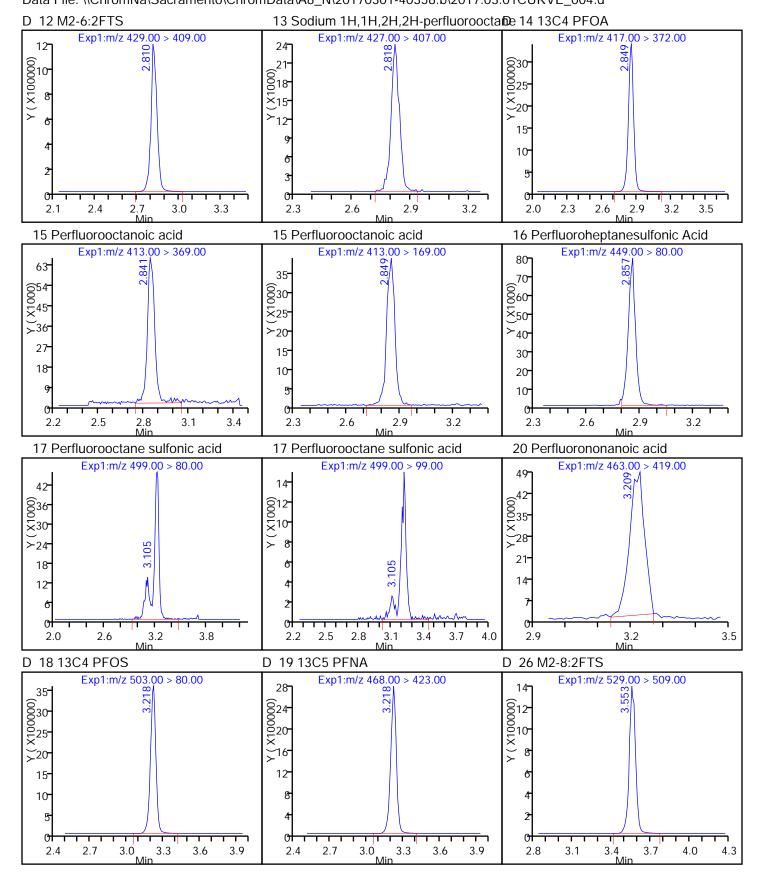
First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:00:43

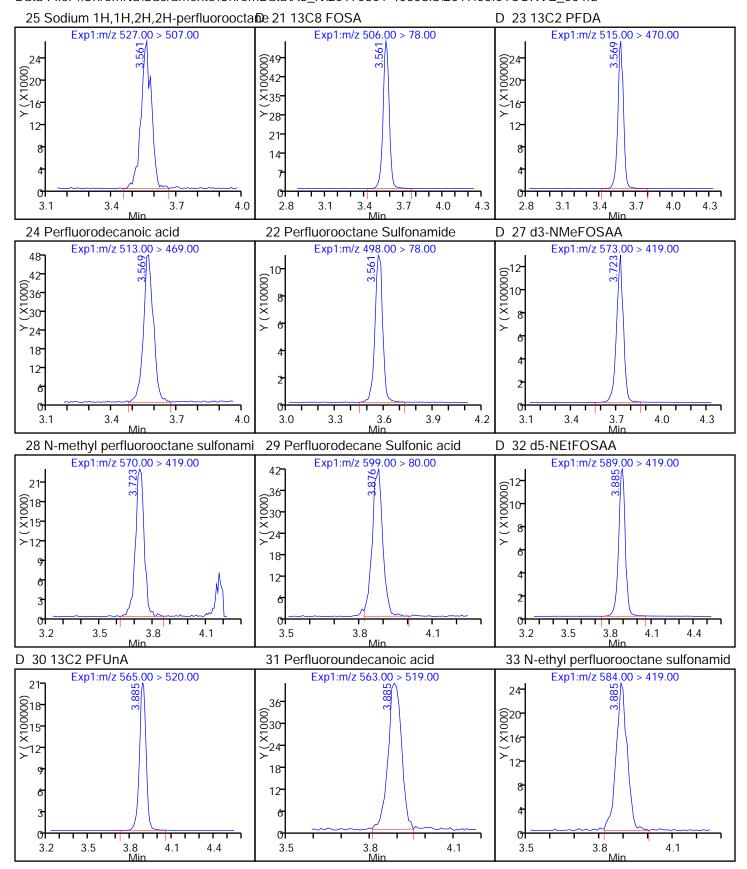
FIRST Level Review	wer: cna	indrasen	ias		Date:	C)1-Mar-2017 12:00:4	.3		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA										
217.00 > 172.00		1.553	0.001		14105138	48.3		96.5	750485	
2 Perfluorobuty 212.90 > 169.00		1.558	0.004	1.000	236552	0.9897		99.0	2199	
D 3 13C5-PFPe										
267.90 > 223.00		1.832	0.010		11526786	49.6		99.3	662915	
4 Perfluoropen 262.90 > 219.00			0.007	1.000	233761	1.04		104	2126	
5 Perfluorobuta				4 000	0/4040	0.0040		400		
298.90 > 80.00 298.90 > 99.00		1.872 1.872	0.0 0.009	1.000 1.005	364249 152095	0.8869	2.39(0.00-0.00)	100 100		
6 Perfluorohexa							,			
313.00 > 269.00		2.133	0.012	1.000	183108	1.01		101	6537	
D 7 13C2 PFHx/ 315.00 > 270.00		2.134	0.002		10169363	48.2		96.4	286031	
10 Perfluoroher			0.002		10107303	40.2		70.4	200031	
363.00 > 319.00		2.474	0.010	1.000	185040	0.9858		98.6	1690	
D 9 13C4-PFHp		0.475	0.000		0700/00	50.0		404	40/00/	
367.00 > 322.00 8 Perfluorohexa		2.475	0.009		9702633	50.3		101	436206	
399.00 > 80.00		2.485	0.015	1.000	294799	1.00		110		
D 11 18O2 PFHx										
403.00 > 84.00		2.489	0.011		13561303	46.6		98.6	442791	
D 12 M2-6:2FTS 429.00 > 409.00		2.805	0.005		3521088	45.6		96.0		
13 Sodium 1H,1				е						
427.00 > 407.00	2.818	2.807	0.011	1.000	71833	0.9579		101		
					Page 430 of	683			03/27	/2017

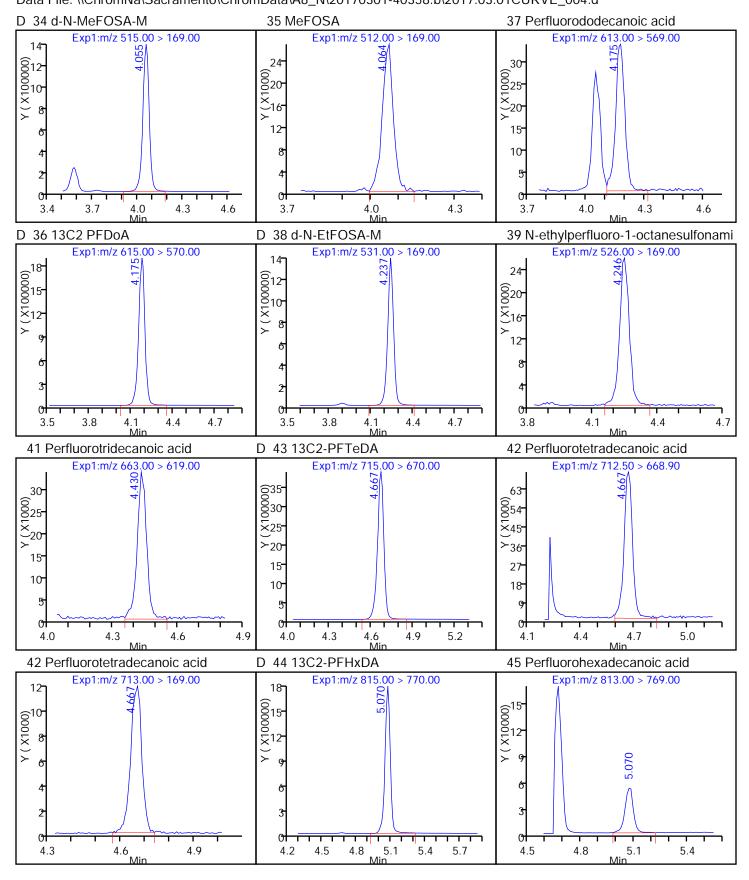
								,		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFO		2 225	0.014		105/0014	F4 F		100	4407/0	
417.00 > 372.00			0.014		10562914	51.5		103	412762	
15 Perfluorooct 413.00 > 369.00		2.835	0.006	1.000	226350	1.05		105	2696	
413.00 > 169.00		2.835	0.014	1.003	125043	1.00	1.81(0.90-1.10)	105	5452	
16 Perfluorohe	ptanesul	fonic Ac	id							
449.00 > 80.00	2.857	2.842	0.015	1.000	228885	0.9637		101		
17 Perfluorooct				1 000	007077	0.0440		00.4	005/	
499.00 > 80.00 499.00 > 99.00		3.145 3.145	-0.040	1.000 1.000	207277 49944	0.9149	4.15(0.90-1.10)	98.6 98.6	3256 444	
20 Perfluoronoi			-0.040	1.000	47744		4.13(0.70-1.10)	70.0	444	
463.00 > 419.00		3.202	0.007	1.000	152789	0.9337		93.4	2607	
D 18 13C4 PFO	S									
503.00 > 80.00	3.218	3.204	0.014		11011810	45.6		95.3	389996	
D 19 13C5 PFN										
468.00 > 423.00	3.218	3.208	0.010		9051156	50.9		102	347551	
D 26 M2-8:2FTS		0 = 4 =			45.40507	40.4		400		
529.00 > 509.00		3.545	0.008		4549526	49.1		103		
25 Sodium 1H, 527.00 > 507.00		H-perflu 3.546		e 1.002	89032	0.9299		97.1		
D 21 13C8 FOS		3.340	0.013	1.002	07032	0.7277		77.1		
506.00 > 78.00		3.559	0.002		18089578	49.3		98.6	237400	
D 23 13C2 PFD										
515.00 > 470.00		3.560	0.009		8593124	51.5		103	177955	
24 Perfluorodeo	canoic a	cid								
513.00 > 469.00	3.569	3.560	0.009	1.000	152408	0.9792		97.9	5902	
22 Perfluorooct				1 000	000500			404	000//	
498.00 > 78.00		3.561	0.0	1.000	339522	1.04		104	20364	
D 27 d3-NMeFO 573.00 > 419.00		2 710	0.012		3998931	46.9		93.9		
28 N-methyl pe					3770731	40.7		73.7		
570.00 > 419.00				1.000	78506	1.01		101		
29 Perfluorode					, 5555					
599.00 > 80.00		3.866		1.000	125403	0.9138		94.8		
D 32 d5-NEtFOS	SAA									
589.00 > 419.00	3.885	3.875	0.010		4097675	50.4		101		
D 30 13C2 PFUr										
565.00 > 520.00		3.876	0.009		6740958	51.5		103	252062	
31 Perfluoround			0.007	1 000	1270/7	1.01		101	244	
563.00 > 519.00		3.878	0.007	1.000	137967	1.01		101	3114	
33 N-ethyl perfl 584.00 > 419.00		ane sulfo 3.883	0.002	1.000	77078	1.03		103		
D 34 d-N-MeFO		5.005	0.002	1.000	,,,,,,	1.03		103		
515.00 > 169.00		4.050	0.005		4054503	46.1		92.2		
35 MeFOSA	-				- · · - 			_		
512.00 > 169.00	4.064	4.057	0.007	1.000	75129	0.99		99.0		
37 Perfluorodo	decanoio	c acid								
613.00 > 569.00	4.175	4.162	0.013	1.000	Page 440 of 6	883 ^{1.03}		103	1051 _{/27}	7/2017

Data File:	\\Cnr	JiiiNa\5a	icrameni	.o\Cnrom	Dala\A8_IN\201	70301-4035	8.D\2017.03.01CUF	(VE_UU4	.a	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	οΑ									
615.00 > 570.00	4.175	4.164	0.011		6032319	48.7		97.3	172379	
D 38 d-N-EtFOS	SA-M									
531.00 > 169.00	4.237	4.235	0.002		3920378	46.0		92.0		
39 N-ethylperflu	uoro-1-o	ctanesul	fonami							
526.00 > 169.00	4.246	4.242	0.004	1.000	79073	1.03		103		
41 Perfluorotrio										
663.00 > 619.00		4.424	0.006	1.000	103052	0.9780		97.8	2577	
D 43 13C2-PFT6		4 (55	0.010		10000101	47.5		05.0	000500	
715.00 > 670.00		4.655	0.012		12309406	47.5		95.0	383508	
42 Perfluorotet			0.010	1 000	220507	1.01		101	1077	
712.50 > 668.90 713.00 > 169.00		4.657 4.657	0.010 0.010	1.000 1.000	238596 36141	1.01	6.60(0.00-0.00)	101 101	1077 11217	
D 44 13C2-PFH		4.037	0.010	1.000	30141		0.00(0.00-0.00)	101	11217	
815.00 > 770.00		5.057	0.013		5742128	45.9		91.8	84169	
45 Perfluorohe			0.0.0		07.12.20	.0.7		,	0	
813.00 > 769.00			0.011	1.000	171523	1.16		116	217	
46 Perfluorooct										
913.00 > 869.00			0.015	1.000	81601	0.9426		94.3	179	
Reagents:										
LCPFC_FULL-L2	2_00001		А	mount A	dded: 1.00	Units	:: mL			

Report Date: 01-Mar-2017 15:43:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_004.d Data File: **Injection Date:** 01-Mar-2017 11:16:22 Instrument ID: A8_N Lims ID: IC L2 Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 3 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 (000036 X30 70 635 630 <u>6</u>60 ×50 $\stackrel{\smile}{\times}_{25}$ ≻₄₀-18 30 15 20 10 10 2.0 1.7 1.5 1.8 1.1 1.4 1.7 1.4 2.0 1.2 2.1 2.4 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 Exp1:m/z 262.90 > 219.0056 80 648 001 40 × 669 69 ×58 <u></u> 32 ≻₄₇ 24 36 16 25 2.1 1.9 1.7 2.0 1.3 1.6 2.2 2.3 1.8 1.4 1.5 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 363.00 > 319.0035 56 56- 048 ×40 0648- ×40• <u>8</u>25- $\stackrel{\cdot}{\simeq}_{20}$ >32 15- 24 24 10 16 16 1.9 2.2 2.5 1.8 2.7 2.3 2.6 2 1 2.4 2.0 2.9 1.6 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 (42⁻ (0036⁻ (30⁻ 628 0024 70 860 ∑20 ×50 ≻16- ≻40-18 30 12 12 20 10 0 0 02.1 2.4 2.7 3.0 1.5 3.3 2.1 2.4 2.7 1.8 2.1 Page 4400 of 683 1.8

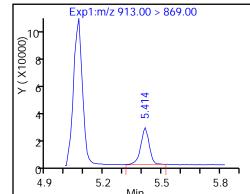






Report Date: 01-Mar-2017 15:43:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_004.d

46 Perfluorooctadecanoic acid



Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Lims ID: IC L3 Full

Client ID:

Sample Type: IC Calib Level: 3

Inject. Date: 01-Mar-2017 11:23:51 ALS Bottle#: 30 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: L3-FULL

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub15

Method: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:10 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:01:48

FIRST Level Revie	ewer: cna	indraser	ıas		Date:	C)1-Mar-2017 12:01:4	:8		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA										
217.00 > 172.00		1.553	0.002		14456536	49.5		98.9	922551	
2 Perfluorobut 212.90 > 169.00	,		-0.003	1.000	1286888	5.25		105	14254	
D 3 13C5-PFP6	eΑ									
267.90 > 223.00		1.832	0.001		11537165	49.7		99.4	809835	
4 Perfluoroper 262.90 > 219.00		cid 1.835	-0.002	1.000	1164625	5.16		103	11285	
5 Perfluorobut				1.000	1104023	3.10		103	11200	
298.90 > 80.00		1.872	0.001	1.000	1989498	4.83		109		
298.90 > 99.00	1.873	1.872	0.001	1.000	781702		2.55(0.00-0.00)	109		
6 Perfluorohex				1 000	044400	5 00		101	10500	
313.00 > 269.00		2.133	-0.004	1.000	966638	5.30		106	49503	
D 7 13C2 PFHx 315.00 > 270.00		2.134	0.004		10261028	48.7		97.3	342136	
10 Perfluorohe			0.00.		.020.020			,,,,	0.2.00	
363.00 > 319.00	•	2.474	-0.003	1.000	941301	4.96		99.1	8016	
D 913C4-PFH										
367.00 > 322.00		2.475	-0.004		9817002	50.9		102	288379	
8 Perfluorohex 399.00 > 80.00			l -0.029	1.000	1348890	4.56		100		
D 11 1802 PFH		2.403	-0.027	1.000	1340070	4.50		100		
403.00 > 84.00		2.489	-0.002		13610529	46.8		98.9	351937	
D 12 M2-6:2FTS										
429.00 > 409.00		2.805	0.001		3657293	47.4		99.8		
13 Sodium 1H,		•			2.47000	4.07		105		
427.00 > 407.00	1 2.798	2.807	-0.009	1.000	347809	4.96		105	/	
					Dago 117 of 1	253			03/27	'/2∩17

Page 447 of 683

03/27/2017

Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooct	anoic ac	id								M
413.00 > 369.00	2.829	2.835	-0.006	1.000	1102619	5.15		103	10643	M
413.00 > 169.00	2.829	2.835	-0.006	1.000	620161		1.78(0.90-1.10)	103	22054	M
D 14 13C4 PFO										
417.00 > 372.00					10473721	51.1		102	311740	
16 Perfluorohe				1 000	12/0200	Г 17		100		
449.00 > 80.00		2.842	0.003	1.000	1268398	5.17		109		N //
17 Perfluorooct 499.00 > 80.00		onic acio 3.145	น 0.026	1.000	1092724	4.67		101	18758	M
499.00 > 99.00		3.145	0.051	1.008	254615	4.07	4.29(0.90-1.10)	101	16421	М
20 Perfluoronoi	nanoic a	cid					,			
463.00 > 419.00		3.202	0.003	1.000	858327	5.38		108	23748	
D 18 13C4 PFO	S									
503.00 > 80.00	3.196	3.204	-0.008		11369327	47.1		98.4	321748	
D 19 13C5 PFN										
468.00 > 423.00	3.205	3.208	-0.003		8821496	49.6		99.2	242559	
D 26 M2-8:2FTS										
529.00 > 509.00	3.548	3.545	0.003		4555474	49.2		103		
25 Sodium 1H,		•								
527.00 > 507.00		3.546	-0.007	0.998	444929	4.98		104		
D 21 13C8 FOS		2.550	0.000		100507//	F1 4		100	274007	
506.00 > 78.00			-0.003		18858766	51.4		103	371997	
24 Perfluorodeo 513.00 > 469.00			-0.004	1.000	784974	4.99		99.8	29400	
		3.300	-0.004	1.000	704974	4.77		99.0	29400	
D 23 13C2 PFD/ 515.00 > 470.00		3.560	-0 004		8688810	52.1		104	216415	
22 Perfluorooct					0000010	02.1		101	210110	
498.00 > 78.00				1.000	1747629	5.16		103	92835	
D 27 d3-NMeFO										
573.00 > 419.00		3.710	-0.003		4251681	49.9		99.8		
28 N-methyl pe										
570.00 > 419.00				1.000	424299	5.14		103		
29 Perfluorodeo	cane Sul	fonic ac	id							
599.00 > 80.00	3.861	3.866	-0.005	1.000	717648	5.07		105		
D 32 d5-NEtFOS	SAA									
589.00 > 419.00	3.869	3.875	-0.006		4300641	52.9		106		
D 30 13C2 PFUr	nΑ									
565.00 > 520.00	3.869	3.876	-0.007		6730080	51.5		103	147236	
31 Perfluoround										
563.00 > 519.00		3.878		1.000	676308	4.96		99.1	20230	
33 N-ethyl perfl										
584.00 > 419.00		3.883	-0.005	1.002	385576	4.92		98.5		
D 34 d-N-MeFO		4.050	0.000		4407404	FO 4		101		
515.00 > 169.00	4.04/	4.050	-0.003		4436424	50.4		101		
35 MeFOSA	4.057	4.057	0.001	1 000	40.47.00	4.00		07.5		
512.00 > 169.00		4.057	-0.001	1.000	404698	4.88		97.5		
37 Perfluorodo			0.001	1 000	E70471	4.00		00.0	4705	
613.00 > 569.00	4.101	4.162	-U.UU I	1.000	Page 448 of 68	3 4.99		99.8	4705/27	7/2017

Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Data File.	NOTIFE	Jiliva	acrament		Dala (AO_IN (20 I	70301-4033	6.b/2017.03.01CUR	VE_005	.u	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	οA									
615.00 > 570.00	4.161	4.164	-0.003		6339474	51.1		102	145230	
D 38 d-N-EtFOS										
531.00 > 169.00	4.228	4.235	-0.007		4273681	50.1		100		
39 N-ethylperflu										
526.00 > 169.00			-0.005	1.000	425282	5.06		101		
41 Perfluorotrid			0.000	1 000	F/0470	F 00		100	11000	
663.00 > 619.00		4.424	-0.003	1.000	562473	5.08		102	11889	
D 43 13C2-PFT6 715.00 > 670.00		4.655	0.0		13496732	52.1		104	332789	
42 Perfluoroteti			0.0		13470732	JZ. I		104	332707	
712.50 > 668.90		4.657	-0.002	1.000	1324493	5.31		106	11007	
713.00 > 169.00		4.657	-0.012	0.998	177791	0.01	7.45(0.00-0.00)	106	28707	
D 44 13C2-PFH	xDA						,			
815.00 > 770.00	5.057	5.057	0.0		6378393	51.0		102	93636	
45 Perfluorohex	xadecan	oic acid								
813.00 > 769.00	5.057	5.059	-0.002	1.000	636153	5.04		101	676	
46 Perfluorooct	adecano	oic acid								
913.00 > 869.00	5.398	5.399	-0.001	1.000	451116	4.96		99.2	634	
	_									

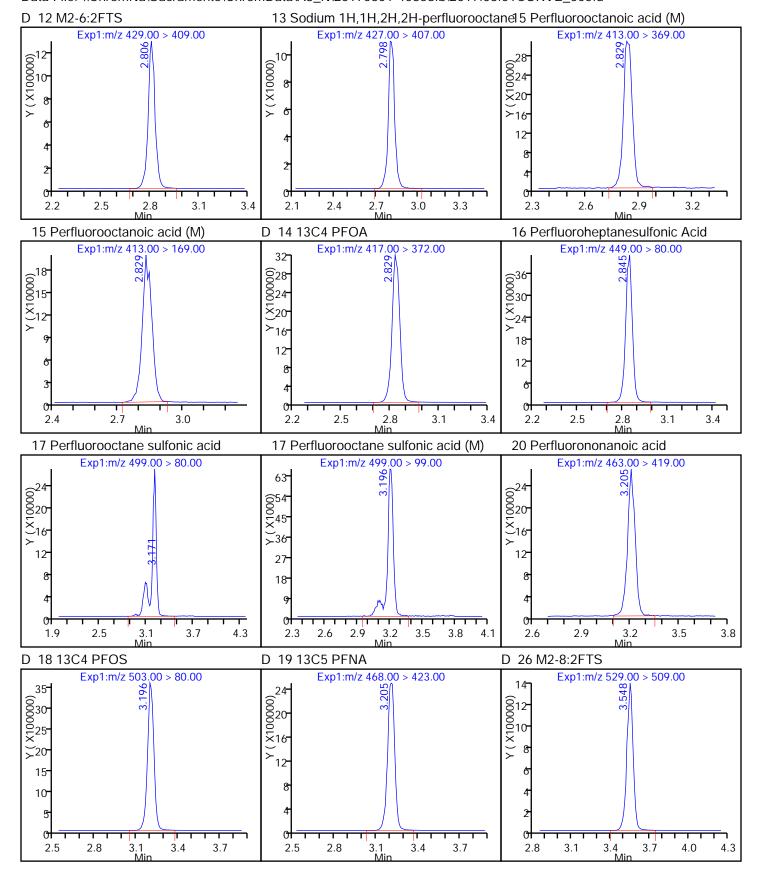
QC Flag Legend Review Flags

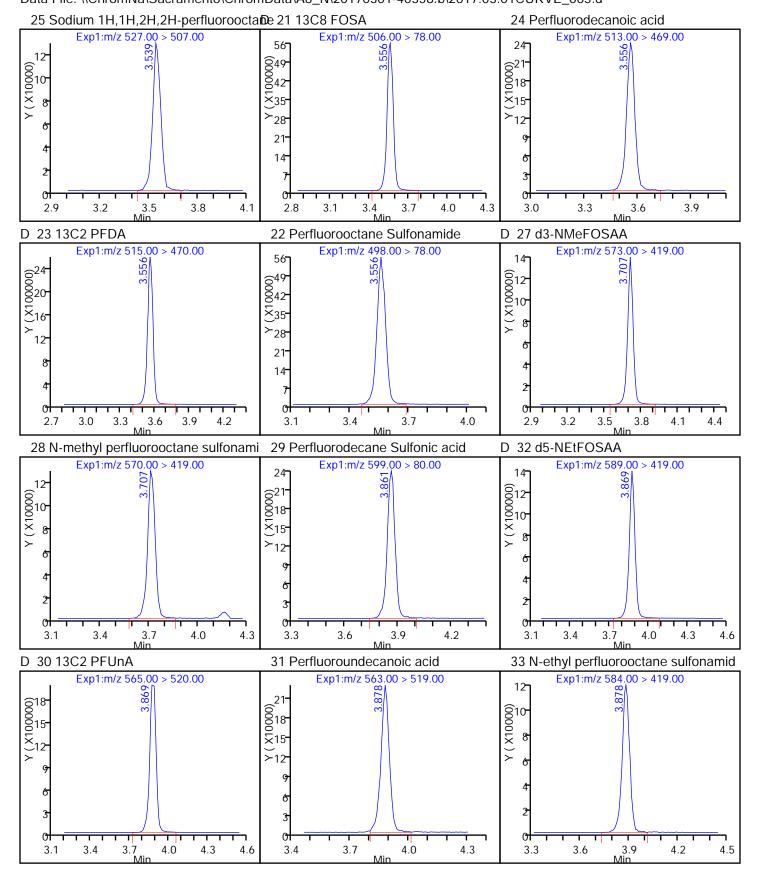
M - Manually Integrated

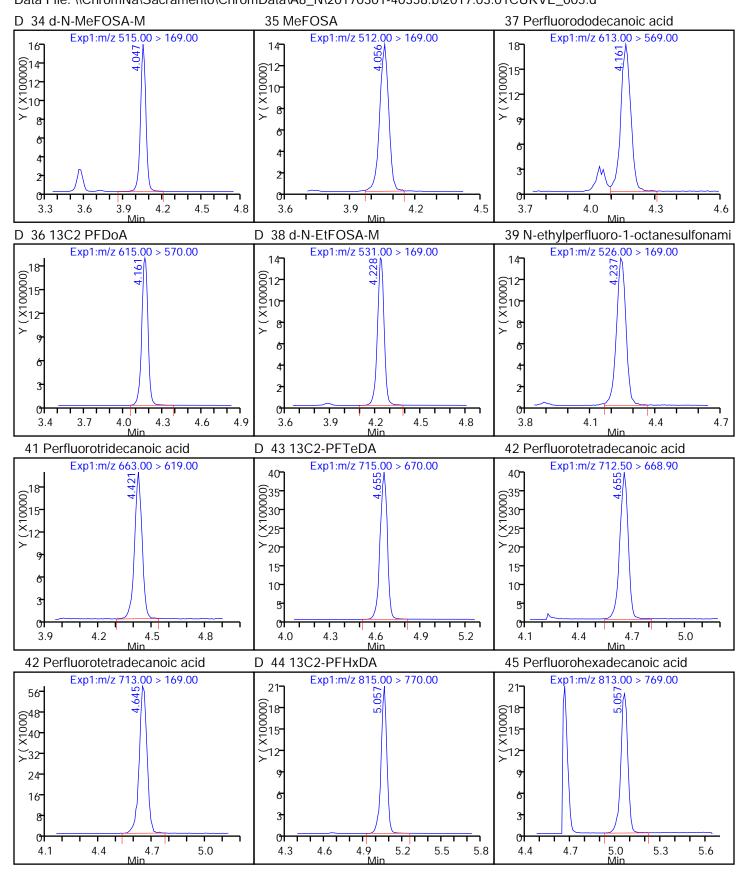
Reagents:

LCPFC_FULL-L3_00001 Amount Added: 1.00 Units: mL

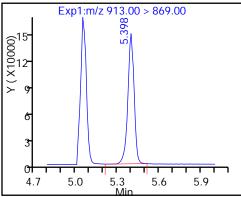
Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento Data File: **Injection Date:** 01-Mar-2017 11:23:51 Instrument ID: A8_N Lims ID: IC L3 Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 42 042 0036 ©36 0 0 30 × 30 ×30 <u></u> ∠24 ≻₂₄-18 18 18 12 12 2.0 1.9 1.9 1.1 1.4 1.7 1.0 1.3 1.6 1.3 1.6 2.2 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 Exp1:m/z 262.90 > 219.0028 70 (C) 30-0024 200 ×20 ≻40- ∑16 18 30 20 10 1.9 1.9 1.9 2.2 2.2 2.5 2.2 1.3 1.6 1.3 1.6 1.3 1.6 2.5 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 363.00 > 319.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 35 35- 28-0024-×20-**630** 0025-× >20-<u>8</u>25- \sum_{20} 15 15- 12 10 10 1.8 2.1 2.4 2.0 1.9 2.2 2.5 2.7 1.7 2.3 2.6 2.8 1.5 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 399.00 > 80.00 Exp1:m/z 403,00 > 84.00 32 35- 42 028 024 X 200030 30-30-<u>§30</u> <u>25</u>-≻₁₆-15 18 10 12 0 0 2.0 2.3 2.6 2.9 3.2 1.9 2.2 2.5 2.8 Page 450h of 683 3.1 1.9 2.2 2.5 1.7 1.6







46 Perfluorooctadecanoic acid



Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Injection Date: 01-Mar-2017 11:23:51 Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

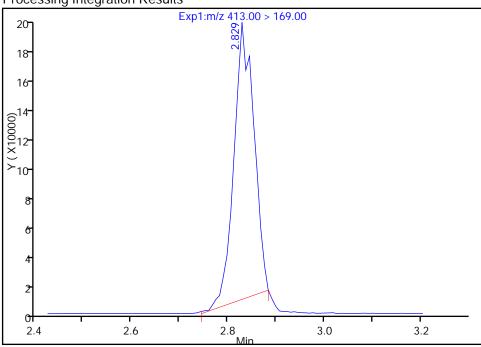
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

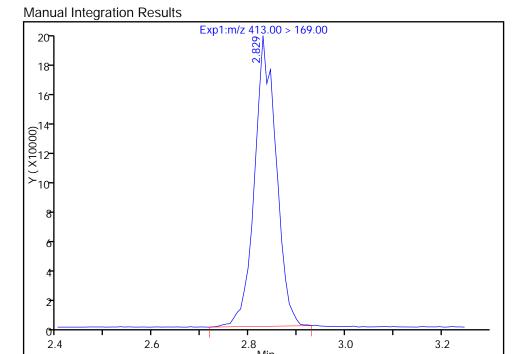
Signal: 2

RT: 2.83
Area: 545337
Amount: 5.278222
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 620161
Amount: 5.152153
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:10

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 455 of 683

Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Injection Date: 01-Mar-2017 11:23:51 Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

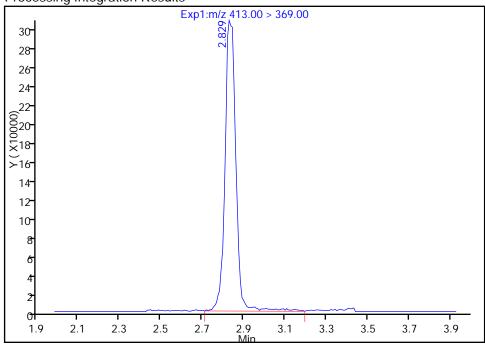
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

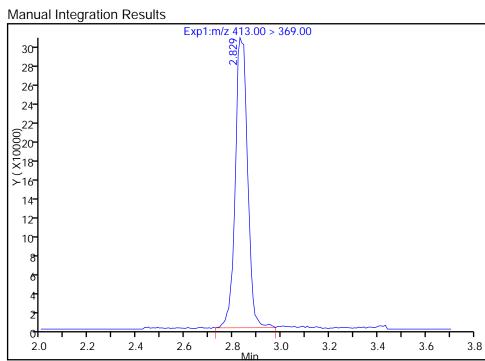
Signal: 1

RT: 2.83
Area: 1136820
Amount: 5.278222
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 1102619
Amount: 5.152153
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:10

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 456 of 683

Report Date: 01-Mar-2017 15:43:11 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_005.d

Injection Date: 01-Mar-2017 11:23:51 Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 30 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

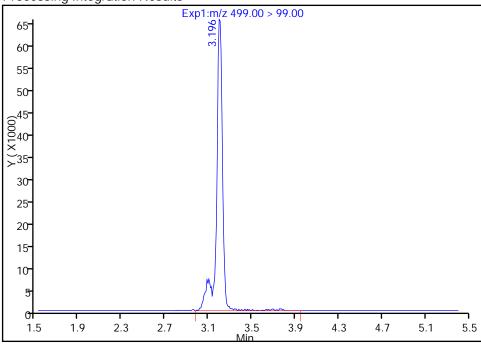
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

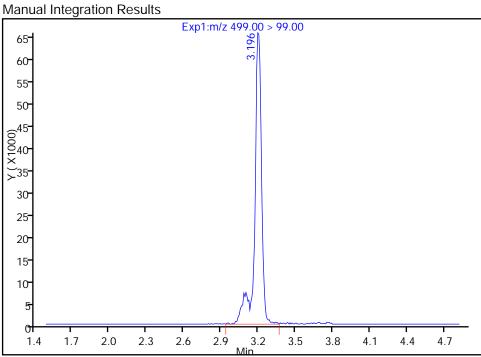
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

RT: 3.20 Area: 258504 Amount: 4.907745 Amount Units: ng/ml **Processing Integration Results**



RT: 3.20
Area: 254615
Amount: 4.671293
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:10

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 457 of 683

Report Date: 01-Mar-2017 15:43:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_006.d

Lims ID: IC L4 Full

Client ID:

Sample Type: IC Calib Level: 4

Inject. Date: 01-Mar-2017 11:31:20 ALS Bottle#: 31 Worklist Smp#: 5

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: L4-FULL

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub15

Method: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:13 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 11:58:53

FIRST Level Revie	ewer: cna	ındraser	ıas		Date:	C	01-Mar-2017 11:58:5)3		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA										
217.00 > 172.00		1.553	0.001		17122661	58.6		117	107427	2
2 Perfluorobut 212.90 > 169.00	,	1.558	0.004	1.000	5946494	20.5		102	65761	
D 3 13C5-PFPe	eΑ									
267.90 > 223.00	1.832	1.832	0.0		13641103	58.7		117	917353	
4 Perfluoroper										
262.90 > 219.00		1.835	0.006	1.000	5283919	19.8		99.0	51812	
5 Perfluorobut				1 000	0035700	10.0		107		
298.90 > 80.00 298.90 > 99.00		1.872 1.872	-0.001 -0.001	1.000 1.000	9035699 3688779	18.8	2.45(0.00-0.00)	106 106		
6 Perfluorohex			0.001	1.000	0000777		2.10(0.00 0.00)	100		
313.00 > 269.00		2.133	0.001	1.000	4191655	19.2		96.2	152557	
D 7 13C2 PFHx	κA									
315.00 > 270.00	2.134	2.134	0.0		12244217	58.1		116	400533	
10 Perfluorohe	•									
363.00 > 319.00		2.474	-0.003	1.000	4154809	19.6		98.2	36084	
D 9 13C4-PFHp		0.475	0.004		10024044	56.7		110	204442	
367.00 > 322.00		2.475	0.004		10934944	56.7		113	304443	N 4
8 Perfluorohex 399.00 > 80.00		2.485	ı 0.002	1.000	5958886	17.2		94.6		M M
D 11 1802 PFH		2.100	0.002	1.000	0700000	17.2		71.0		
403.00 > 84.00		2.489	-0.002		15910284	54.7		116	422002	
D 12 M2-6:2FTS	5									
429.00 > 409.00	2.814	2.805	0.009		4091935	53.0		112		
13 Sodium 1H,		•								
427.00 > 407.00	2.806	2.807	-0.001	1.000	1476276	19.2		101		
					Page 458 of (683			03/27	7/2017

Page 458 of 683

03/27/2017

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFO. 417.00 > 372.00		2.835	0.002		11808824	57.6		115	419758	
15 Perfluorooct 413.00 > 369.00	2.837	2.835	0.002	1.000	4651144	19.3		96.4	85963	
413.00 > 169.00		2.835	0.002	1.000	2647754		1.76(0.90-1.10)	96.4	107757	
16 Perfluorohe 449.00 > 80.00	2.837	2.842	-0.005	1.000	5669268	19.9		105		
17 Perfluorooct 499.00 > 80.00 499.00 > 99.00	3.093 3.163	3.145 3.145	-0.052 0.018	1.000 1.023	4889351 1125132	18.0	4.35(0.90-1.10)	97.1 97.1	37486 16340	
20 Perfluorono 463.00 > 419.00	3.205	cia 3.202	0.003	1.000	3633207	19.7		98.5	58134	
D 18 13C4 PFO	3.205	3.204	0.001		13187105	54.6		114	308342	
D 19 13C5 PFN, 468.00 > 423.00	3.214	3.208	0.006		10199601	57.3		115	340360	
D 26 M2-8:2FTS 529.00 > 509.00		3.545	-0.006		4873285	52.6		110		
25 Sodium 1H, 527.00 > 507.00		•			1931499	20.5		107		
D 21 13C8 FOS. 506.00 > 78.00		3.559	0.006		19888389	54.2		108	344996	
D 23 13C2 PFD 515.00 > 470.00		3.560	0.005		9661817	58.0		116	234911	
24 Perfluorode 513.00 > 469.00			-0.004	1.000	3277760	18.7		93.6	124974	
22 Perfluorooct 498.00 > 78.00		onamide 3.561	e 0.004	1.000	7187955	20.1		101	199090	
D 27 d3-NMeFO 573.00 > 419.00		3.710	-0.003		4769931	56.0		112		
28 N-methyl pe 570.00 > 419.00				1.003	1695690	18.3		91.5		
29 Perfluorode 599.00 > 80.00		fonic ac		1.000	3002868	18.3		94.8		
D 32 d5-NEtFOS 589.00 > 419.00	SAA	3.875	-0.005		4515915	55.5		111		
D 30 13C2 PFU	nA								177174	
565.00 > 520.00 31 Perfluoround	decanoio		0.003	1 000	7346047	56.2		112	177174	
563.00 > 519.00 33 N-ethyl perfl			0.001 namid	1.000	2619295	17.6		87.9	88246	
584.00 > 419.00 D 34 d-N-MeFO		3.883	0.005	1.004	1606146	19.5		97.7		
515.00 > 169.00 35 MeFOSA		4.050	0.0		4579449	52.0		104		
512.00 > 169.00		4.057	0.002	1.000	1671133	19.5		97.5		
37 Perfluorodo 613.00 > 569.00			0.003	1.000	Page 459 of 68	3 ^{19.5}		97.4	²⁹ 7327	/2017

Report Date: 01-Mar-2017 15:43:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File:

Data File.	WOTH	Jiliva	acramen	OCHION	Data (A0_11/201	70301-4033	0.012017.03.01001	. V L_000.	.u	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	οΑ									
615.00 > 570.00	4.165	4.164	0.001		6606261	53.3		107	130372	
D 38 d-N-EtFOS										
531.00 > 169.00	4.240	4.235	0.005		4373613	51.3		103		
39 N-ethylperflu										
526.00 > 169.00	4.249	4.242	0.007	1.000	1676481	19.5		97.4		
41 Perfluorotrio										
663.00 > 619.00	4.418	4.424	-0.006	1.000	2207561	19.1		95.6	38950	
D 43 13C2-PFT		4 / 55	0.000		40/00000	FO /		405	000770	
715.00 > 670.00			-0.003		13623388	52.6		105	303779	
42 Perfluorotet			0.005	1 000	40/004/	10.1		05.5	201/0	
712.50 > 668.90 713.00 > 169.00		4.657 4.657	-0.005 -0.005	1.000 1.000	4960846 658342	19.1	7.54(0.00-0.00)	95.5 95.5	38169 69558	
D 44 13C2-PFH		4.037	-0.003	1.000	030342		7.54(0.00-0.00)	75.5	07550	
815.00 > 770.00		5.057	0.0		6330845	50.6		101	91907	
45 Perfluorohe			0.0		00000.0	00.0			, , , , ,	
813.00 > 769.00			-0.002	1.000	2071027	16.5		82.7	2327	
46 Perfluorooct										
913.00 > 869.00		5.399	-0.001	1.000	1687895	17.8		89.0	2245	

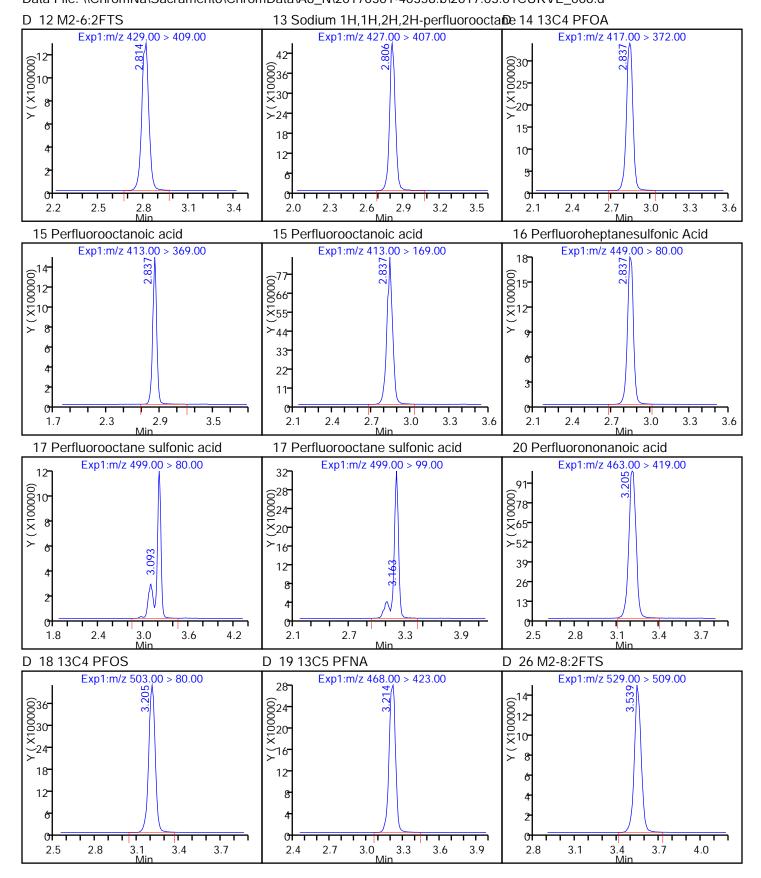
QC Flag Legend Review Flags

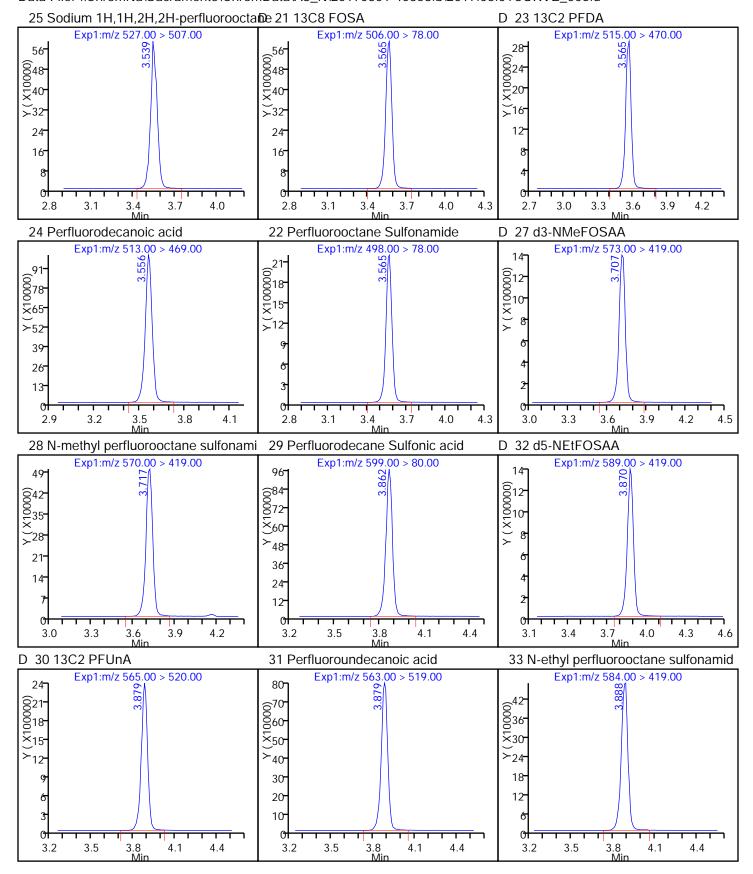
M - Manually Integrated

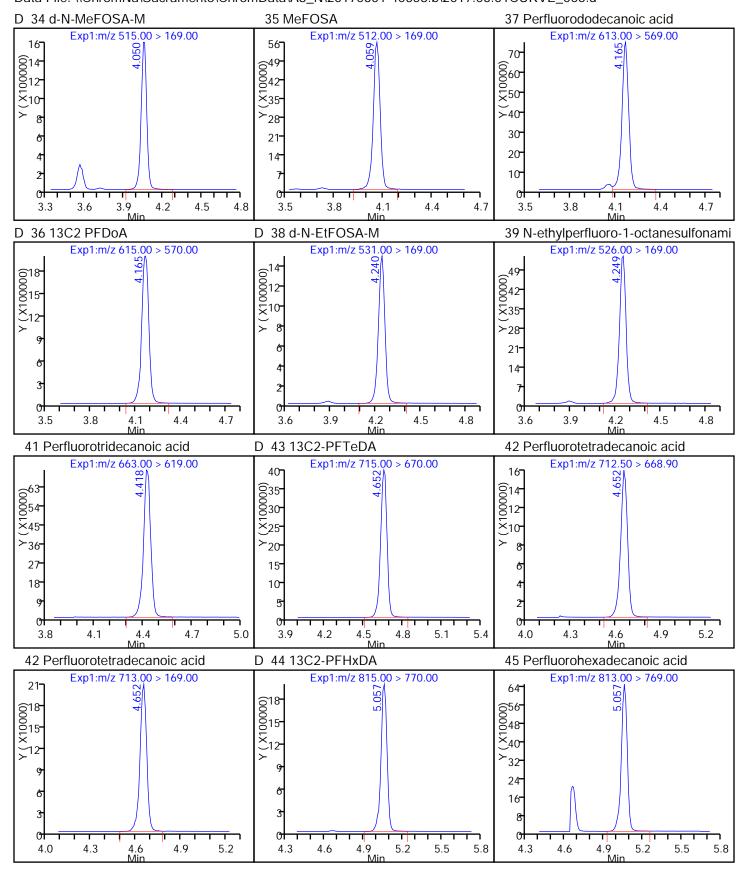
Reagents:

LCPFC_FULL-L4_00001 Amount Added: 1.00 Units: mL

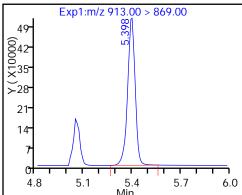
Report Date: 01-Mar-2017 15:43:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_006.d Data File: **Injection Date:** 01-Mar-2017 11:31:20 Instrument ID: A8_N Lims ID: IC L4 Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 5 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 (042 00036 X30 ∑35 ≻28 21 18 12 1.5 1.8 1.8 2.0 0.9 2.1 0.9 1.4 1.7 2.3 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 (X100000) (X1200000) 871 030 0025 15 10 1.9 1.5 2.1 2.4 2.2 2.5 1.2 1.5 1.8 1.2 1.8 1.3 1.6 2.1 2.4 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 363.00 > 319.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 14 14 (X100000) X (X100000) X (X100000) X (000012-X), 8 036 030 18 12 1.7 2.0 2.3 2.9 1.9 2.2 1.8 2.7 3.0 2.6 1.3 1.6 2.5 2.8 2.1 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid (M) D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 399.00 > 80.00 Exp1:m/z 403.00 > 84.00 16- 49 0014 00012 030 0025 00042 0005 00042 ×₂₀ _28 21 10 0 0 0 2.1 2.4 2.7 3.0 1.5 3.3 2.1 2.4 1.8 1.8 2.1 Page 46/1h of 683







46 Perfluorooctadecanoic acid



Report Date: 01-Mar-2017 15:43:14 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_006.d

Injection Date: 01-Mar-2017 11:31:20 Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 5

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

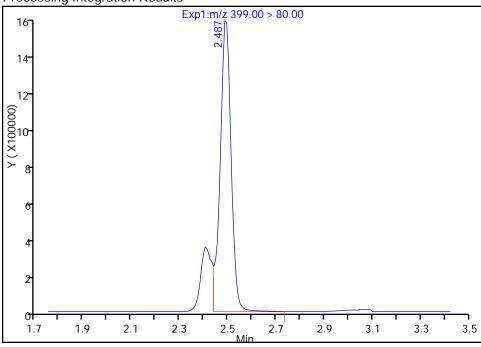
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

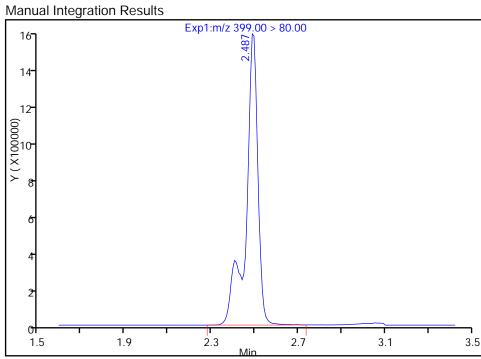
Signal: 1

RT: 2.49
Area: 4875110
Amount: 17.771425
Amount Units: ng/ml

Processing Integration Results



RT: 2.49
Area: 5958886
Amount: 17.225343
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:13

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 466 of 683

Report Date: 01-Mar-2017 15:43:16 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d

Lims ID: IC L5 Full

Client ID:

Sample Type: IC Calib Level: 5

Inject. Date: 01-Mar-2017 11:38:49 ALS Bottle#: 32 Worklist Smp#: 6

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: L5-FULL

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub15

Method: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:16 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:02:47

First Level Revie	wer: cha	ındraser	nas		Date:	0	1-Mar-2017 12:02:4	.7		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA										
217.00 > 172.00		1.553	-0.007		14941160	51.1		102	667479	
2 Perfluorobut	yric acid									
212.90 > 169.00	1.554	1.558	-0.004	1.000	13491384	53.3		107	127406	
D 3 13C5-PFPe										
267.90 > 223.00		1.832	-0.011		11440005	49.3		98.5	626699	
4 Perfluoroper			0.004	1 000	11500010	F4 F		100	100007	
262.90 > 219.00		1.835	-0.004	1.000	11520213	51.5		103	120087	
5 Perfluorobuta 298.90 > 80.00		nic acid 1.872	-0.001	1.000	19236596	45.5		103		
298.90 > 99.00		1.872	-0.001	1.000	8170789	45.5	2.35(0.00-0.00)	103		
6 Perfluorohex										
313.00 > 269.00			-0.006	1.000	9710439	50.9		102	233505	
D 7 13C2 PFHx	A									
315.00 > 270.00	2.127	2.134	-0.007		10719942	50.8		102	387004	
10 Perfluorohe	•	acid								
363.00 > 319.00	2.466	2.474	-0.008	1.000	9559143	49.7		99.4	84389	
D 9 13C4-PFHp										
367.00 > 322.00		2.475	-0.009		9944069	51.5		103	332028	
8 Perfluorohex				1 000	1077/740	45.4		00.0		M
399.00 > 80.00		2.485	-0.004	1.000	13776740	45.4		99.8		M
D 11 1802 PFH: 403.00 > 84.00		2.489	-0.008		13953506	48.0		101	272613	
D 12 M2-6:2FTS		2.409	-0.006		13933300	40.0		101	2/2013	
429.00 > 409.00		2 805	-0.012		3650448	47.3		99.6		
13 Sodium 1H,				e	3000110	17.0		, ,		
427.00 > 407.00		•	-0.014	1.000	3256270	47.7		101		
					Page 467 of 6				03/27	7/2017

Page 467 of 683

03/27/2017

Report Date: 01-Mar-2017 15:43:16 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d

Data File.	WOTH	iiii va ioc	·	.0101110111	Data (AO_N\ZOT7	0301-40330	0.012017.03.01001	VL_007	·u	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooct	anoic ac	id								
413.00 > 369.00		2.835	-0.011	1.000	10343315	50.5		101	113108	
413.00 > 169.00	2.824	2.835	-0.011	1.000	6136507		1.69(0.90-1.10)	101	139975	
D 14 13C4 PFO	A									
417.00 > 372.00	2.824	2.835	-0.011		10019820	48.9		97.8	414712	
16 Perfluorohe										
449.00 > 80.00	2.831	2.842	-0.011	1.000	12919018	50.5		106		
17 Perfluorooct										
499.00 > 80.00		3.145		1.000	11786011	48.3		104	66281	
499.00 > 99.00		3.145	0.054	1.037	2666087		4.42(0.90-1.10)	104	7715	
20 Perfluoronoi			0.011	4 000	00/4000	F4 7		400	4/4044	
463.00 > 419.00		3.202	-0.011	1.000	8361339	51.7		103	164244	
D 18 13C4 PFO			0.005		44077000	40.4		400	107100	
503.00 > 80.00		3.204	-0.005		11866933	49.1		103	197438	
D 19 13C5 PFN/		2 200	0.000		000/077	F0.0		100	0/07//	
468.00 > 423.00		3.208	-0.009		8936977	50.2		100	263744	
D 26 M2-8:2FTS		0.545	0.010		40/0704	47.4		00.0		
529.00 > 509.00		3.545			4360731	47.1		98.3		
25 Sodium 1H,		•			4074401	40.4		101		
527.00 > 507.00		3.546	-0.003	1.002	4074481	48.4		101		
D 21 13C8 FOS		2.550	0.001		10550710	FO /		101	247024	
506.00 > 78.00		3.559	0.001		18558718	50.6		101	247034	
24 Perfluorode			0.000	1 000	777070/	F2 2		10/	1/05/0	
513.00 > 469.00		3.560	-0.008	1.000	7779706	53.2		106	168568	
D 23 13C2 PFD/		2.5/0	0.000		0074242	40.4		0/ 0	107202	
515.00 > 470.00		3.560			8074243	48.4		96.9	187283	
22 Perfluorooct				1 000	17500400	F2 F		105	422057	
498.00 > 78.00		3.561	-0.001	1.000	17500489	52.5		105	422956	
D 27 d3-NMeFO		0.740	0.000		4.400004	E4.0		404		
573.00 > 419.00					4409894	51.8		104		
28 N-methyl pe				1 000	10/0001			24.0		
570.00 > 419.00				1.000	4062831	47.4		94.9		
29 Perfluorode				4 000	700/004	40.0		404		
599.00 > 80.00		3.866	-0.007	1.000	7386234	49.9		104		
D 32 d5-NEtFOS		0.075			4400007	50.5		404		
589.00 > 419.00		3.875	-0.008		4108227	50.5		101		
D 30 13C2 PFUr										M
565.00 > 520.00		3.876	-0.009		6419845	49.1		98.2	215302	M
31 Perfluoround										
563.00 > 519.00		3.878		1.000	6388091	49.1		98.2	145481	
33 N-ethyl perfl										
584.00 > 419.00	3.876	3.883	-0.007	1.002	3565748	47.7		95.3		
D 34 d-N-MeFO										
515.00 > 169.00	4.048	4.050	-0.002		4549448	51.7		103		
35 MeFOSA										
512.00 > 169.00	4.058	4.057	0.001	1.000	4038740	47.4		94.9		
37 Perfluorodo										
613.00 > 569.00	4.157	4.162	-0.005	1.000	Page 468 of 68	33 ^{52.7}		105	9363/27	//2017
					-					

Report Date: 01-Mar-2017 15:43:16 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File:

Data File.	\\CIIIC	illiva	icrament	io (Crironi	Data Ao_N 201	10301-4033	0.5/2017.03.01001	VL_007	.u	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	οA									
615.00 > 570.00	4.157	4.164	-0.007		6158791	49.7		99.4	157158	
D 38 d-N-EtFOS										
531.00 > 169.00	4.241	4.235	0.006		4384481	51.4		103		
39 N-ethylperflu										
526.00 > 169.00			-0.001	1.000	4076562	47.3		94.5		
41 Perfluorotrio			0.007	1 000	F//007F	F0 /		105	444450	
663.00 > 619.00		4.424	-0.006	1.000	5662375	52.6		105	111159	
D 43 13C2-PFTe 715.00 > 670.00		4.655	0.014		13257413	51.2		102	430727	
			-0.014		13237413	31.2		102	430727	
42 Perfluoroteti 712.50 > 668.90		4.657	-0.006	1.000	12631200	52.1		104	118223	
713.00 > 169.00		4.657		1.000	1664503	JZ. 1	7.59(0.00-0.00)	104	123601	
D 44 13C2-PFH	xDA						,			
815.00 > 770.00	5.049	5.057	-0.008		6606731	52.8		106	93567	
45 Perfluorohe	xadecan	oic acid								
813.00 > 769.00	5.049	5.059	-0.010	1.000	5695645	49.5		99.0	5357	
46 Perfluorooct	tadecand	oic acid								
913.00 > 869.00	5.383	5.399	-0.016	1.000	4591929	52.0		104	6139	

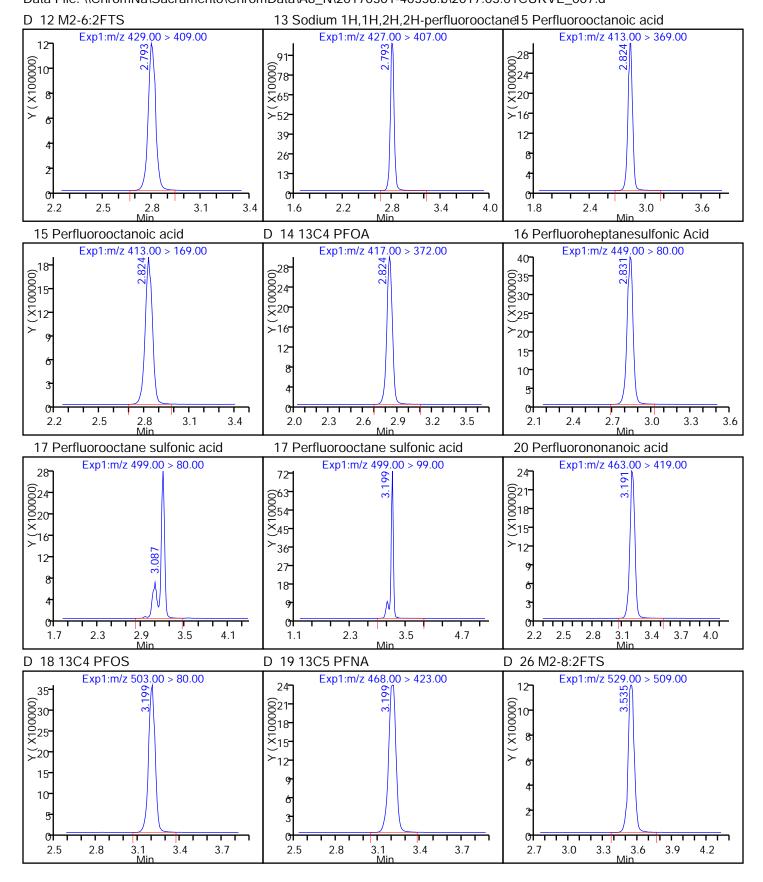
QC Flag Legend Review Flags

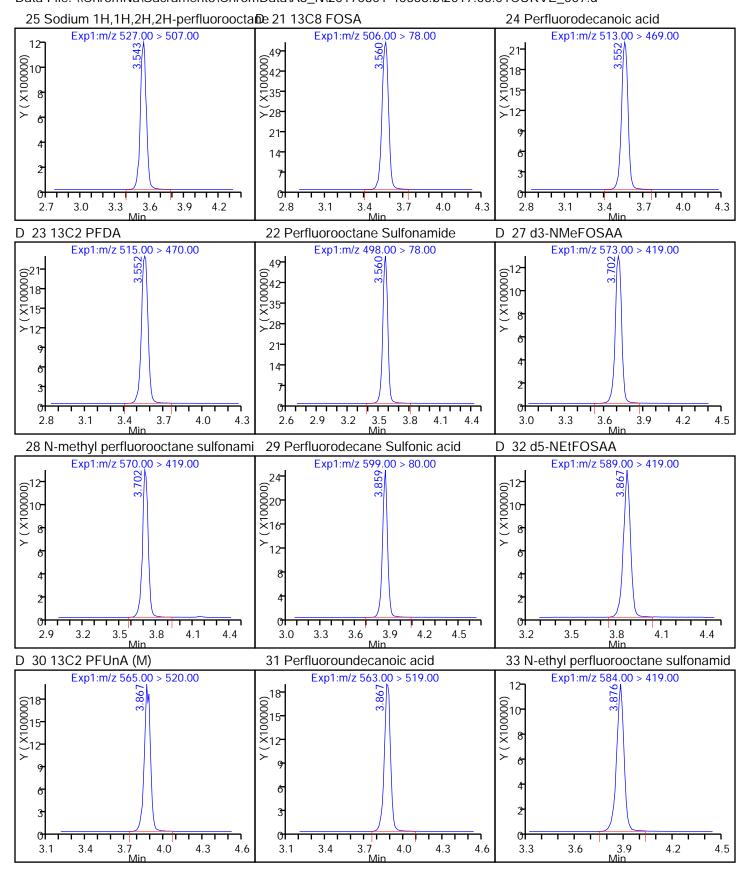
M - Manually Integrated

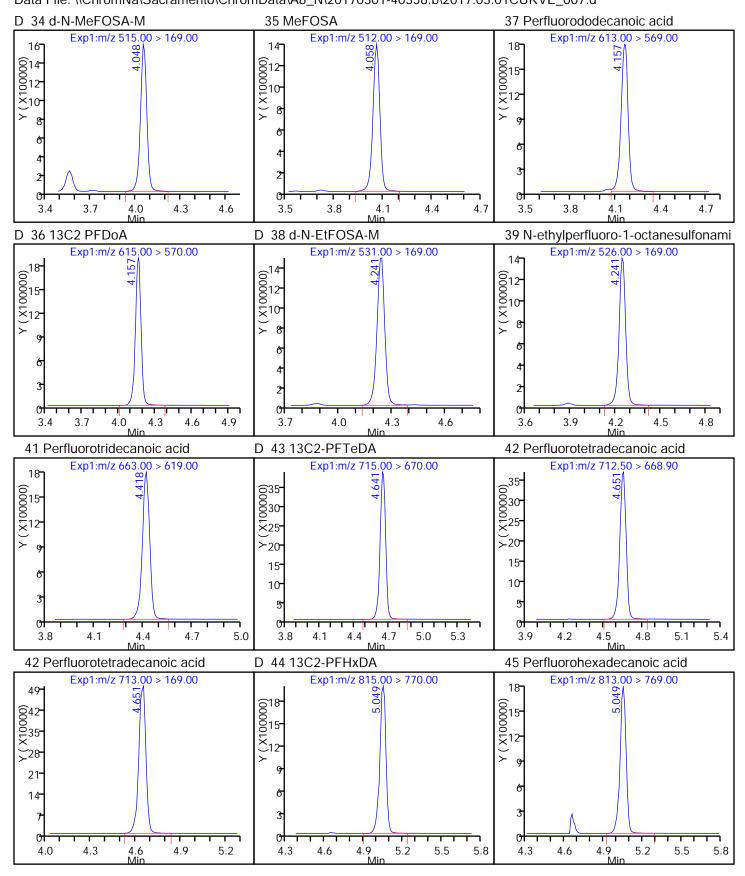
Reagents:

LCPFC_FULL-L5_00001 Amount Added: 1.00 Units: mL

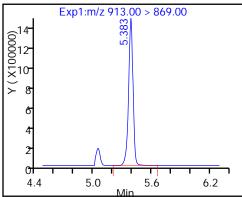
Report Date: 01-Mar-2017 15:43:16 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d Data File: **Injection Date:** 01-Mar-2017 11:38:49 Instrument ID: A8_N Lims ID: IC L5 Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 042 0036 836- × 30-×30 ≻₂₄-≻20 18 15 18 12 10 12 1.7 2.0 1.9 1.0 1.3 1.6 1.3 1.6 1.9 2.2 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 Exp1:m/z 262.90 > 219.0028-00024-20-(35-00030-63⁶³ 0054 ×25 -45 >16**≻**36 ≻20 27 15 18 10 1.5 2.1 2.4 2.1 2.4 1.9 1.8 1.2 1.5 1.8 1.3 1.6 2.2 1.2 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 363.00 > 319.00 Exp1:m/z 315.00 > 270.00 35 628 0024 ×20 628 0024 ×20 <u>8</u>25- $\stackrel{\cdot}{>}_{20}$ 15- 12 12 10 1.9 2.2 1.8 2.1 2.7 2.0 1.6 2.5 2.8 2.4 1.4 2.6 3.2 1.3 1.5 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid (M) D 11 1802 PFHxS Exp1:m/z 399,00 > 80.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 35- 60036 0036 30 28 0024 0024 ×20 <u>0</u>25 _20 ∑24- 15 18 12 10 12 0 0 2.1 2.4 2.7 3.0 3.2 2.0 2.3 2.6 1.8 1.7 1.7







46 Perfluorooctadecanoic acid



Report Date: 01-Mar-2017 15:43:16 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d

Injection Date: 01-Mar-2017 11:38:49 Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 6

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

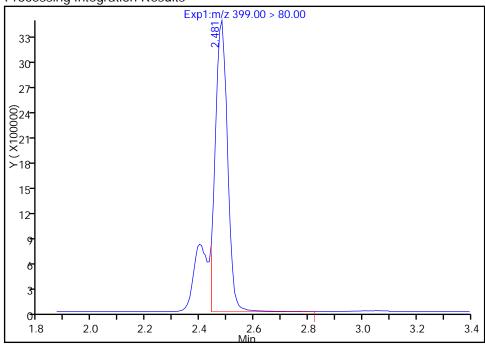
RT: 2.48
Area: 10754320
Amount: 35.081839
Amount Units: ng/ml

Processing Integration Results

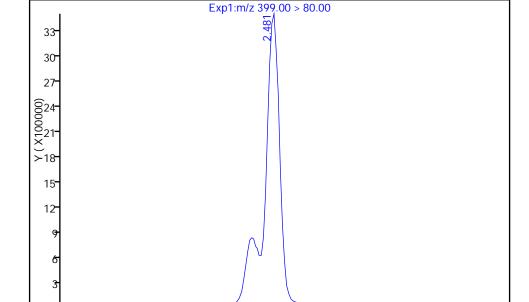
Manual Integration Results

1.9

1.7



RT: 2.48
Area: 13776740
Amount: 45.409199
Amount Units: ng/ml



2.5

2.7

2.9

3.1

Reviewer: chandrasenas, 01-Mar-2017 15:43:15

Audit Action: Manually Integrated

Audit Reason: Isomers

2.3

Page 475 of 683

2.1

Report Date: 01-Mar-2017 15:43:16 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_007.d

Injection Date: 01-Mar-2017 11:38:49 Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 6

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

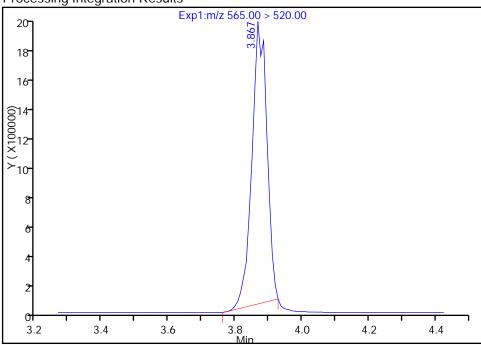
Column: Detector EXP1

D 30 13C2 PFUnA, CAS: STL00997

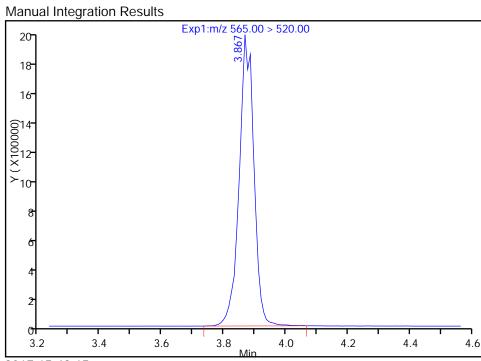
Signal: 1

RT: 3.87
Area: 5863845
Amount: 45.473087
Amount Units: ng/ml

Processing Integration Results



RT: 3.87
Area: 6419845
Amount: 49.079386
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:15

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 476 of 683

Report Date: 01-Mar-2017 15:43:19 Chrom Revision: 2.2 03-Feb-2017 15:35:04

> TestAmerica Sacramento **Target Compound Quantitation Report**

\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d Data File:

Lims ID: IC L6 Full

Client ID:

Sample Type: IC Calib Level: 6

Inject. Date: 01-Mar-2017 11:46:18 ALS Bottle#: 33 Worklist Smp#: 7

Injection Vol: Dil. Factor: 1.0000 2.0 ul

Sample Info: L6-FULL

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub15

Method:

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:18 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: **Initial Calibration**

Last ICal File: \ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 12:04:21

First Level Revie	ewer. Cria	iliulasei	ias		Date.		71-1VIAI-2017 12.04.2			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFB										
217.00 > 172.00			-0.007		12268568	42.0		84.0	717990	
2 Perfluorobu 212.90 > 169.00	,		-0.004	1.000	37767596	181.7		90.8	312656	
D 3 13C5-PFP										
267.90 > 223.00		1.832	-0.010		9320645	40.1		80.3	792870	
4 Perfluorope 262.90 > 219.00		cid 1.835	-0.013	1.000	31900088	174.9		87.4	249960	
5 Perfluorobu			-0.013	1.000	31700000	174.7		07.4	247700	
298.90 > 80.00			-0.011	1.000	47824719	141.7		80.1		
298.90 > 99.00			-0.011	1.000	24392241		1.96(0.00-0.00)	80.1		
6 Perfluorohe 313.00 > 269.00		2.133	-0.011	1.000	30367858	188.7		94.4	703737	
D 7 13C2 PFH:		2.100	0.011	1.000	00007000	100.7		7 1. 1	700707	
315.00 > 270.00	2.122	2.134	-0.012		9044966	42.9		85.8	272049	
10 Perfluorohe	•		0.040	1 000	00000040	101 (05.0	005///	
363.00 > 319.00		2.474	-0.013	1.000	28382869	191.6		95.8	225664	
D 9 13C4-PFH 367.00 > 322.00	•	2.475	-0.014		7657909	39.7		79.4	207490	
8 Perfluorohe	xanesulfo	onic acid								
399.00 > 80.00		2.485	-0.007	1.000	42133990	173.8		95.5		
D 11 18O2 PFF 403.00 > 84.00		2 490	-0.011		11147782	38.3		81.0	329095	
D 12 M2-6:2FT		2.409	-0.011		11147702	30.3		01.0	329093	
429.00 > 409.00		2.805	-0.016		3409307	44.2		93.0		
13 Sodium 1H		•								
427.00 > 407.00	2.797	2.807	-0.010	1.000	11262289	177.0		93.3		
					Page 477 of	683			03/27	//2017

Page 4// of 683

Report Date: 01-Mar-2017 15:43:19 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d

2444 :	,,,,,,,,,				2 4 14 2 10 _ 1 1,20 1		-		-	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFO		2.025	0.015		7/0040/	27.5		75.0	100100	
417.00 > 372.00		2.835	-0.015		7688496	37.5		75.0	192123	
15 Perfluorooct 413.00 > 369.00		2.835	-0.015	1.000	29743583	189.3		94.7	342015	
413.00 > 169.00		2.835		0.997	18781119		1.58(0.90-1.10)	94.7	380819	
16 Perfluorohe										
449.00 > 80.00		2.842		1.000	36282267	168.5		88.5		
17 Perfluorooct 499.00 > 80.00		onic acic 3.145	d 0.041	1.000	39756569	193.5		104	230631	M
499.00 > 99.00		3.145	0.041	1.000	9596909	193.3	4.14(0.90-1.10)	104	294050	
20 Perfluoronoi							,			
463.00 > 419.00	3.186	3.202	-0.016	1.000	26057481	206.4		103	338058	
D 18 13C4 PFO										
503.00 > 80.00		3.204	-0.018		9985826	41.3		86.5	102426	
D 19 13C5 PFN/ 468.00 > 423.00		3.208	-0 013		6983620	39.3		78.5	207659	
D 26 M2-8:2FTS		3.200	-0.013		0703020	37.3		70.5	207037	M
529.00 > 509.00		3.545	-0.022		3659550	39.5		82.5		M
25 Sodium 1H,	1H,2H,2	H-perflu	orooctan	е						
527.00 > 507.00	3.523	3.546	-0.023	1.000	12220206	173.0		90.3		
D 21 13C8 FOS		0.550	0.044		45400440	44.4		00.0	004000	
506.00 > 78.00		3.559	-0.011		15188110	41.4		82.8	281288	
D 23 13C2 PFD/ 515.00 > 470.00		3.560	-0.012		6226569	37.4		74.7	124238	
24 Perfluorode			0.0.2		0220007	07.1		,	121200	
513.00 > 469.00		3.560	-0.012	1.000	24265114	215.2		108	364832	
22 Perfluorooct	ane Sulf	onamide	9							
498.00 > 78.00	3.557	3.561	-0.004	1.000	47690261	174.7		87.4	485165	
D 27 d3-NMeFO	·	2.740	0.014		4445044	40.0		0//		
573.00 > 419.00					4115011	48.3		96.6		
28 N-methyl pe 570.00 > 419.00				1.003	16290792	203.8		102		
29 Perfluorode				1.000	10270772	200.0		102		
599.00 > 80.00		3.866		1.000	24675284	198.3		103		
D 32 d5-NEtFOS	SAA									
589.00 > 419.00		3.875	-0.013		3122900	38.4		76.8		
D 30 13C2 PFUr		2.07/	0.014		4771540	27.5		72.0	1//1/0	
565.00 > 520.00		3.876	-0.014		4771549	36.5		73.0	166160	
31 Perfluoround 563.00 > 519.00			-0.016	1.000	18672321	193.0		96.5	304259	
33 N-ethyl perfl					.007_0	. , 6.6		70.0	00.207	
584.00 > 419.00		3.883		1.002	11906031	209.4		105		
D 34 d-N-MeFO	SA-M									
515.00 > 169.00	4.042	4.050	-0.008		4433562	50.4		101		
35 MeFOSA	4.054	4.055	0.667	1 000	47040000	007 (46.		
512.00 > 169.00		4.057	-0.006	1.000	17219029	207.6		104		
37 Perfluorodoo 613.00 > 569.00			-0.024	1.000	_19//08225	100 <i>/</i> l		99.7	320/127	
013.00 / 307.00	7.130	4.102	-0.024	1.000	19408225 Page 478 of 6	883 177.4		77.1	329427	7/2017

Report Date: 01-Mar-2017 15:43:19 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File:

Data File.	WOTH	militarse	acrament	0101110111	Data / 10_111201	70301 4033	0.012017.00.01001	VL_000	. u	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	оА									М
615.00 > 570.00	4.152	4.164	-0.012		5320903	42.9		85.9	133785	M
D 38 d-N-EtFOS										
531.00 > 169.00	4.227	4.235	-0.008		4425922	51.9		104		
39 N-ethylperflu										
526.00 > 169.00	4.236	4.242	-0.006	1.000	17404238	199.9		99.9		
41 Perfluorotric										
663.00 > 619.00	4.407	4.424	-0.017	1.000	18379771	197.7		98.9	284610	
D 43 13C2-PFT										
715.00 > 670.00	4.635	4.655	-0.020		11353892	43.8		87.6	278458	
42 Perfluorotet										
712.50 > 668.90		4.657	-0.022	1.000	39468467	188.6	(50/0 00 0 00)	94.3	283243	
713.00 > 169.00		4.657	-0.022	1.000	6001611		6.58(0.00-0.00)	94.3	215597	
D 44 13C2-PFH:		F 057	0.000		5070404	47.0		04.0	04005	
815.00 > 770.00		5.057	-0.022		5879424	47.0		94.0	81025	
45 Perfluorohe			0.010	1 000	00107740	202.0		100	00050	
813.00 > 769.00		5.059	-0.013	1.000	20137749	203.8		102	23053	
46 Perfluorooct			0.004	1 000	17001011	000 5		447	00405	
913.00 > 869.00	5.3/5	5.399	-0.024	1.000	17831844	233.5		117	22435	

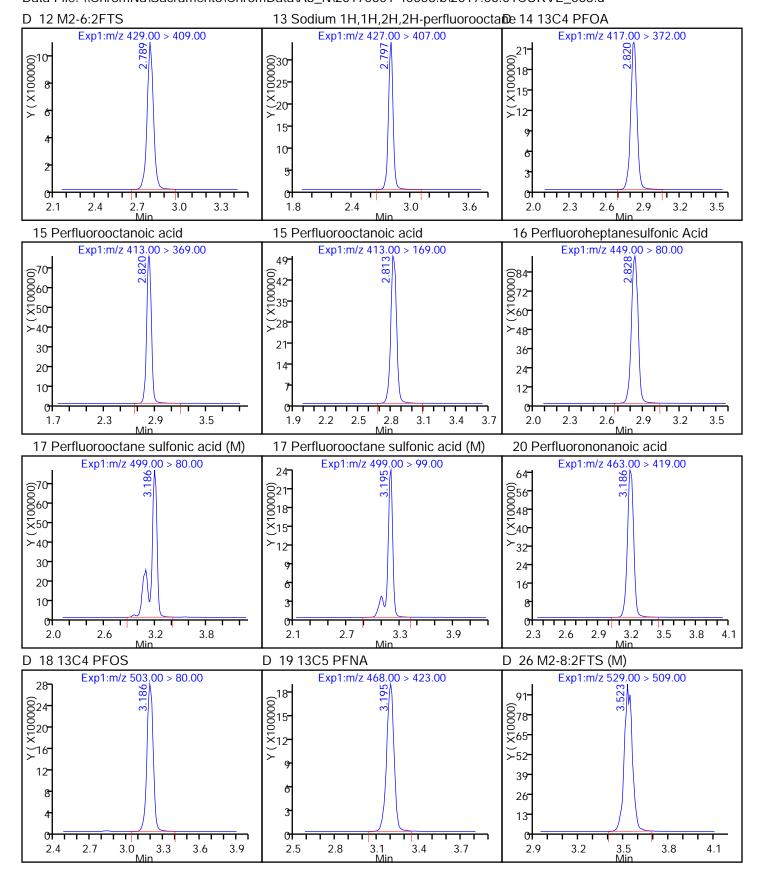
QC Flag Legend Review Flags

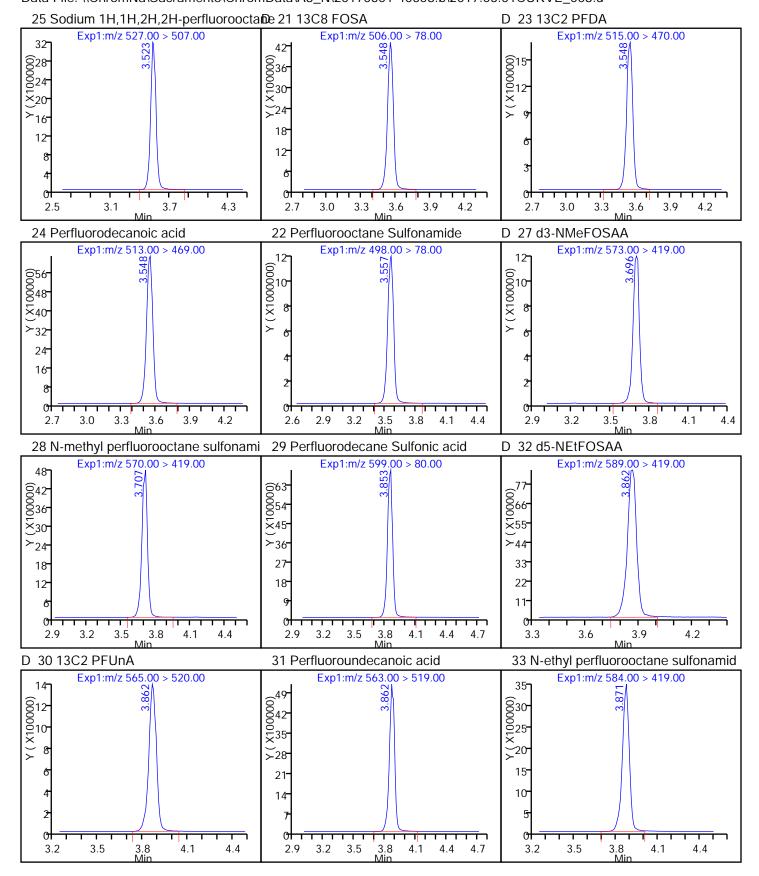
M - Manually Integrated

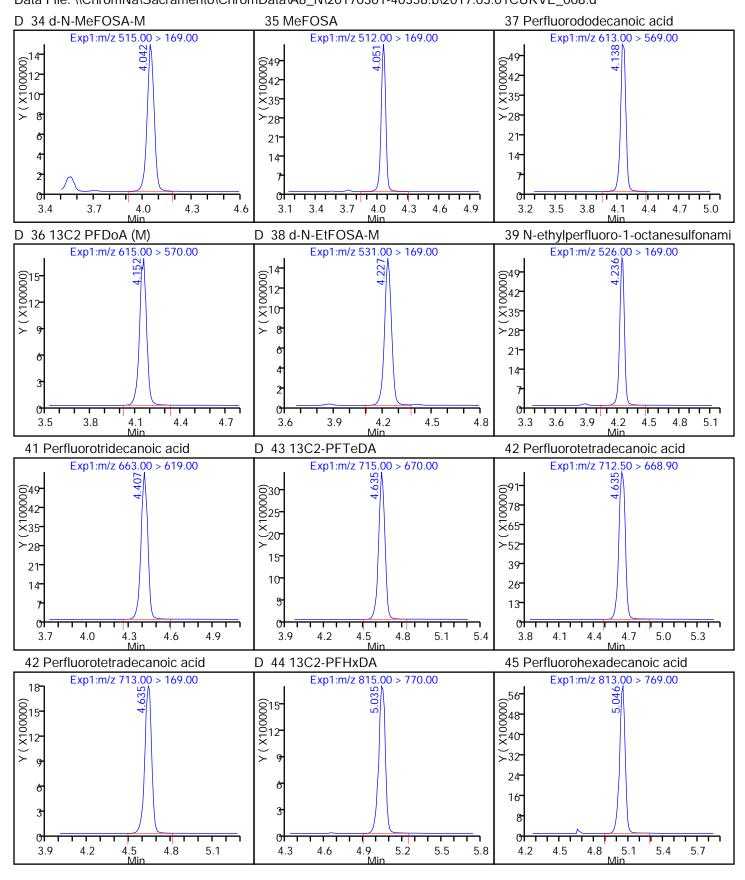
Reagents:

LCPFC_FULL-L6_00002 Amount Added: 1.00 Units: mL

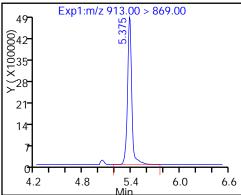
Report Date: 01-Mar-2017 15:43:19 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento Data File: **Injection Date:** 01-Mar-2017 11:46:18 Instrument ID: A8_N Lims ID: IC L6 Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 96 35 546 000001 25-884ĕ24[:] Š72 ×60 ×20 ≻₄₈-15 36 12 10 24 12 1.9 0.9 1.0 1.3 1.6 0.3 1.5 2.1 2.7 1.1 2.0 2.3 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 96 (X) X (X) (0000000) X (X) X ()70 ()60 ()60 084 072 ×60 ×50 ≻₄₈ ≻₄₀ 30 36 20 24 12 10 1.9 2.2 2.5 2.0 2.3 2.0 1.3 1.6 1.1 1.4 1.7 1.4 1.7 2.3 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 363.00 > 319.00 28 (670 (60 (60 60066 ×55 824- <u>8</u>20-∑₁₆-∑50 ≻40 12 30 33 22 20 10 2.1 2.4 1.9 2.2 1.9 2.5 1.8 2.7 1.6 2.5 2.8 3.1 1.5 1.3 1.3 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 399,00 > 80.00 Exp1:m/z 403.00 > 84.00 88 (21-000018-15-630 00 025 077- ×55-≻₄₄-15 33 10 22 0 0 2.1 2.4 2.7 3.0 1.9 Page 48@hof 683 3.7 2.0 2.3 2.6 1.8 1.3 1.7







46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d

Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

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

Signal: 2

RT: 3.19
Area: 9641533
Amount: 146.9287
Amount Units: ng/ml

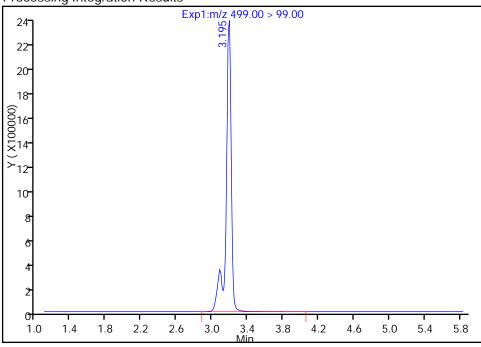
Processing Integration Results

Manual Integration Results

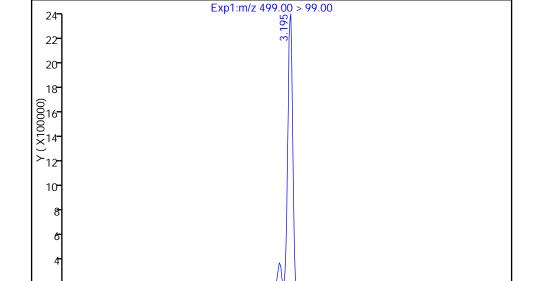
1.4

1.0

1.8



RT: 3.19
Area: 9596909
Amount: 193.5024
Amount Units: ng/ml



3.0

3.4

Reviewer: chandrasenas, 01-Mar-2017 15:43:18

Audit Action: Manually Integrated

Audit Reason: Baseline

2.6

Page 485 of 683

2.2

5.0

4.6

4.2

3.8

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d

Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

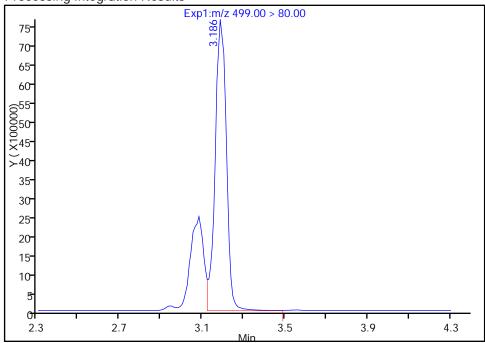
Column: Detector EXP1

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

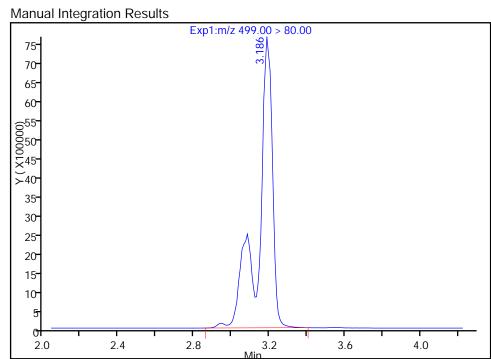
Signal: 1

RT: 3.19
Area: 28733218
Amount: 146.9287
Amount Units: ng/ml

Processing Integration Results



RT: 3.19 Area: 39756569 Amount: 193.5024 Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:18

Audit Action: Manually Integrated

Audit Reason: Baseline Page 486 of 683

03/27/2017

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d

Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7

Injection Vol: 2.0 ul Dil. Factor: 1.0000

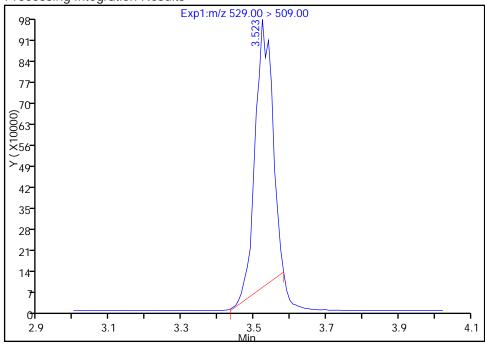
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

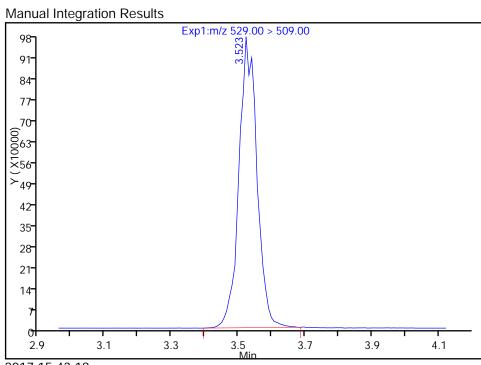
D 26 M2-8:2FTS, CAS: STL02280

Signal: 1

RT: 3.52 Area: 2972144 Amount: 32.946881 Amount Units: ng/ml **Processing Integration Results**



RT: 3.52
Area: 3659550
Amount: 39.519130
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:18

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 487 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_008.d

Injection Date: 01-Mar-2017 11:46:18 Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 33 Worklist Smp#: 7

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

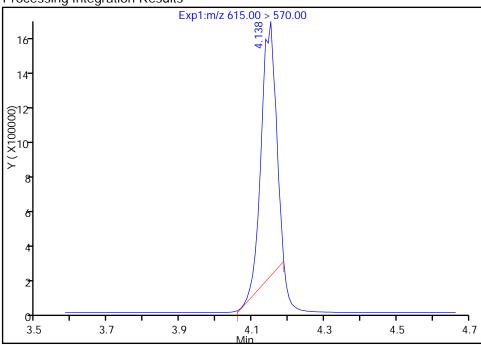
Column: Detector EXP1

D 36 13C2 PFDoA, CAS: STL00998

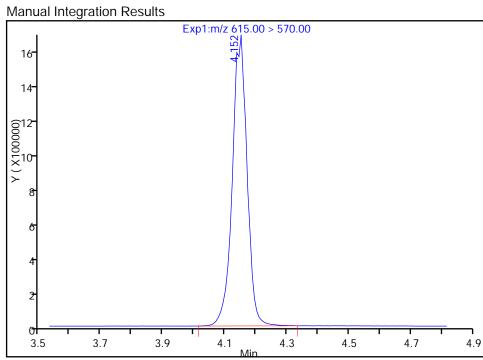
Signal: 1

RT: 4.14
Area: 3992056
Amount: 33.402250
Amount Units: ng/ml

Processing Integration Results



RT: 4.15
Area: 5320903
Amount: 42.929870
Amount Units: ng/ml



Reviewer: chandrasenas, 01-Mar-2017 15:43:18

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 488 of 683

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>ICV 320-152681/13</u> Calibration Date: <u>03/01/2017 12:31</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01CURVE_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8473	0.9133		53.9	50.0	7.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.035		52.9	50.0	5.7	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.526		47.1	44.3	6.5	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9703		54.5	50.0	9.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	1.045		54.0	50.0	8.0	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.022		47.0	47.3	-0.6	25.0
6:2FTS	L2ID		0.9688		51.7	47.4	9.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.089		50.3	47.6	5.6	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.032		50.5	50.0	1.0	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	1.016		56.2	50.0	12.4	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9166		44.5	47.8	-6.8	25.0
8:2FTS	L2ID		0.9785		50.6	47.9	5.7	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9538		52.7	50.0	5.3	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9140		50.9	50.0	1.7	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	1.014		52.2	50.0	4.4	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6364		51.6	48.3	6.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9789		48.3	50.0	-3.4	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.998		54.8	50.0	9.7	25.0
MeFOSA	AveID	0.9355	0.9755		52.1	50.0	4.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9493		51.9	50.0	3.8	25.0
N-EtFOSA-M	AveID	0.9837	1.027		52.2	50.0	4.4	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9439		54.0	50.0	8.1	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	2.200		55.9	50.0	11.9	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9762		52.3	50.0	4.6	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.8478		59.1	50.0	18.2	25.0
13C4 PFBA	Ave	292242	262151		44.9	50.0	-10.3	50.0
13C5-PFPeA	Ave	232192	201954		43.5	50.0	-13.0	50.0
13C2 PFHxA	Ave	210884	190101		45.1	50.0	-9.9	50.0
13C4-PFHpA	Ave	192959	172560		44.7	50.0	-10.6	50.0
1802 PFHxS	Ave	290899	261134		42.5	47.3	-10.2	50.0
M2-6:2FTS	Ave	77178	67962		41.8	47.5	-11.9	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>ICV 320-152681/13</u> Calibration Date: <u>03/01/2017 12:31</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01CURVE_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	183068		44.7	50.0	-10.7	50.0
13C4 PFOS	Ave	241637	218953		43.3	47.8	-9.4	50.0
13C5 PFNA	Ave	177866	156812		44.1	50.0	-11.8	50.0
M2-8:2FTS	Ave	92602	84040		43.5	47.9	-9.2	50.0
13C2 PFDA	Ave	166704	144616		43.4	50.0	-13.3	50.0
13C8 FOSA	Ave	366918	337473		46.0	50.0	-8.0	50.0
d3-NMeFOSAA	Ave	85186	77141		45.3	50.0	-9.4	50.0
d5-NEtFOSAA	Ave	81371	71203		43.8	50.0	-12.5	50.0
13C2 PFUnA	Ave	130805	114237		43.7	50.0	-12.7	50.0
d-N-MeFOSA-M	Ave	87983	80006		45.5	50.0	-9.1	50.0
13C2 PFDoA	Ave	123944	108741		43.9	50.0	-12.3	50.0
d-N-EtFOSA-M	Ave	85249	76986		45.2	50.0	-9.7	50.0
13C2-PFTeDA	Ave	259165	236701		45.7	50.0	-8.7	50.0
13C2-PFHxDA	Ave	125061	112974		45.2	50.0	-9.7	50.0

Report Date: 01-Mar-2017 15:43:03 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_014.d

Lims ID: ICV Full

Client ID:

Sample Type: ICV

Inject. Date: 01-Mar-2017 12:31:14 ALS Bottle#: 36 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\20170301-40358.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 01-Mar-2017 15:43:02 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK012

First Level Reviewer: chandrasenas Date: 01-Mar-2017 14:14:09

First Level Revie	eviewer: chandrasenas Date:				ate: 01-Mar-2017 14:14:09					
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA	١									
217.00 > 172.00		1.553	0.002		13107554	44.9		89.7	571827	
2 Perfluorobuty 212.90 > 169.00	,		-0.003	1.000	11971584	53.9			121786	
D 3 13C5-PFPe		1.550	-0.003	1.000	117/1304	33.7			121700	
267.90 > 223.00		1.832	0.001		10097715	43.5		87.0	496223	
4 Perfluoroper										
262.90 > 219.00		1.835		1.000	10448730	52.9			87028	
5 Perfluorobuta 298.90 > 80.00		nic acid 1.872	0.001	1.000	17632155	47.1				
298.90 > 99.00		1.872	0.001	1.000	7534911	77.1	2.34(0.00-0.00)			
6 Perfluorohex	anoic ac	cid								
313.00 > 269.00		2.133	-0.002	1.000	9222580	54.5			268407	
D 7 13C2 PFHx 315.00 > 270.00		2.134	-0.003		9505049	45.1		90.1	530814	
10 Perfluorohe			-0.003		7303047	43.1		70.1	330014	
363.00 > 319.00	•	2.474	-0.002	1.000	9017371	54.0			66655	
D 9 13C4-PFHp										
367.00 > 322.00		2.475	-0.003		8627993	44.7		89.4	271737	
8 Perfluorohex 399.00 > 80.00		onic acid 2.485	0.002	1.000	12611730	47.0				
D 11 1802 PFH:		2.100	0.002	1.000	12011700	17.0				
403.00 > 84.00		2.489	-0.002		12351647	42.5		89.8	385748	
D 12 M2-6:2FTS										
429.00 > 409.00		2.805	0.001	_	3228217	41.8		88.1		
13 Sodium 1H, 427.00 > 407.00		H-perflu 2.807	orooctan 0.007	e 1.000	3120919	51.7				
		,	2.22,		Page 491 of (03/27	//2017

Page 491 of 683

03/27/2017

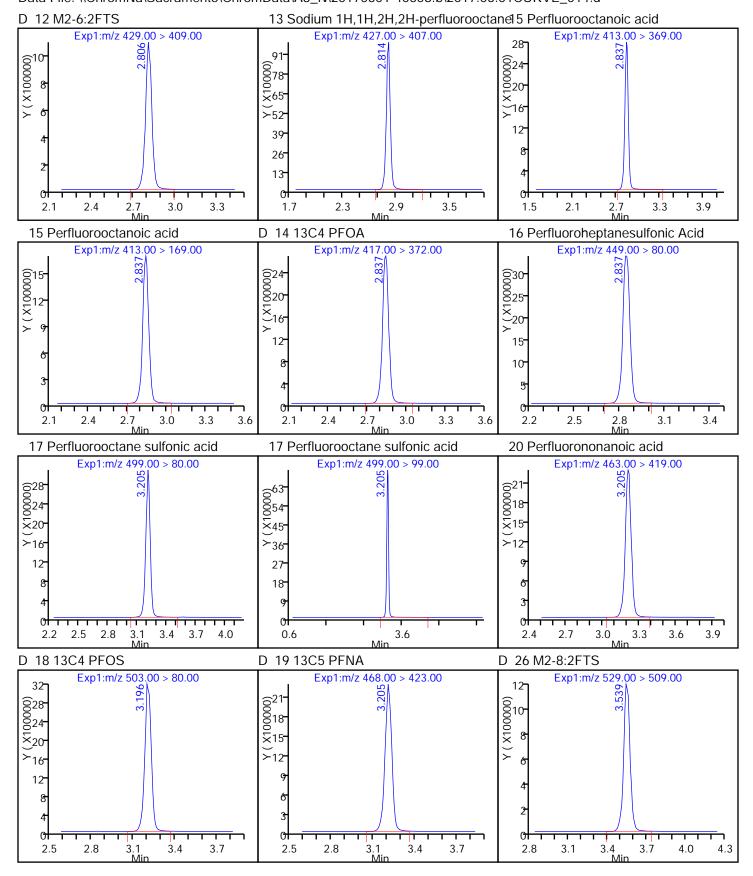
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooct	tanoic ac	id								
413.00 > 369.00		2.835	0.002	1.000	9449558	50.5	1 (0/0 == / :=)		213564	
413.00 > 169.00		2.835	0.002	1.000	5623231		1.68(0.90-1.10)		140434	
D 14 13C4 PFO 417.00 > 372.00		2.835	0.002		9153420	44.7		89.3	333609	
16 Perfluorohe										
449.00 > 80.00	2.837	2.842	-0.005	1.000	11351727	50.3				
17 Perfluorooct				1 000	0502012	44.5			224224	
499.00 > 80.00 499.00 > 99.00		3.145 3.145	0.060 0.060	1.000 1.000	9582813 2425871	44.5	3.95(0.90-1.10)		334324 705291	
20 Perfluorono					_,,		,			
463.00 > 419.00	3.205	3.202	0.003	1.000	7968593	56.2			153203	
D 18 13C4 PFO					101/5007	40.0		00.4	407574	
503.00 > 80.00		3.204	-0.008		10465937	43.3		90.6	197571	
D 19 13C5 PFN/ 468.00 > 423.00		3.208	-0.003		7840582	44.1		88.2	207818	
D 26 M2-8:2FTS										
529.00 > 509.00	3.539	3.545	-0.006		4025496	43.5		90.8		
25 Sodium 1H,		•			0000700	F0 /				
527.00 > 507.00		3.546	-0.007	1.000	3938788	50.6				
D 21 13C8 FOSA 506.00 > 78.00		3.559	0.014		16873653	46.0		92.0	313140	
24 Perfluorode										
513.00 > 469.00	3.556	3.560	-0.004	1.000	6896912	52.7			187300	
D 23 13C2 PFD/		0.5/0	0.004		700000	40.4		0/0	475077	
515.00 > 470.00		3.560			7230800	43.4		86.8	175077	
22 Perfluorooct 498.00 > 78.00			e 0.012	1.000	15422698	50.9			322048	
D 27 d3-NMeFO										
573.00 > 419.00	3.706	3.710	-0.004		3857056	45.3		90.6		
28 N-methyl pe										
570.00 > 419.00				1.000	3910569	52.2				
29 Perfluorodeo 599.00 > 80.00		ionic aci 3.866		1.000	6723491	51.6				
D 32 d5-NEtFOS		0.000	0.00		0,20.,.	00				
589.00 > 419.00	3.871	3.875	-0.004		3560139	43.8		87.5		
D 30 13C2 PFU										
565.00 > 520.00		3.876	0.004		5711825	43.7		87.3	216355	
31 Perfluorouno 563.00 > 519.00		acid 3.878	-0 007	1.000	5591035	48.3			127404	
33 N-ethyl perfl				1.000	3371033	40.5			127404	
584.00 > 419.00		3.883		1.002	3554390	54.8				
D 34 d-N-MeFO										
515.00 > 169.00	4.062	4.050	0.012		4000304	45.5		90.9		
35 MeFOSA	4.070	4 OE 7	0.012	1 000	2002002	EO 1				
512.00 > 169.00 37 Perfluorodo		4.057	0.013	1.000	3902092	52.1				
613.00 > 569.00			-0.007	1.000	Page 492 of 68	51.9			9563727	/2047
					Page 492 of 68	3			03727	/201/

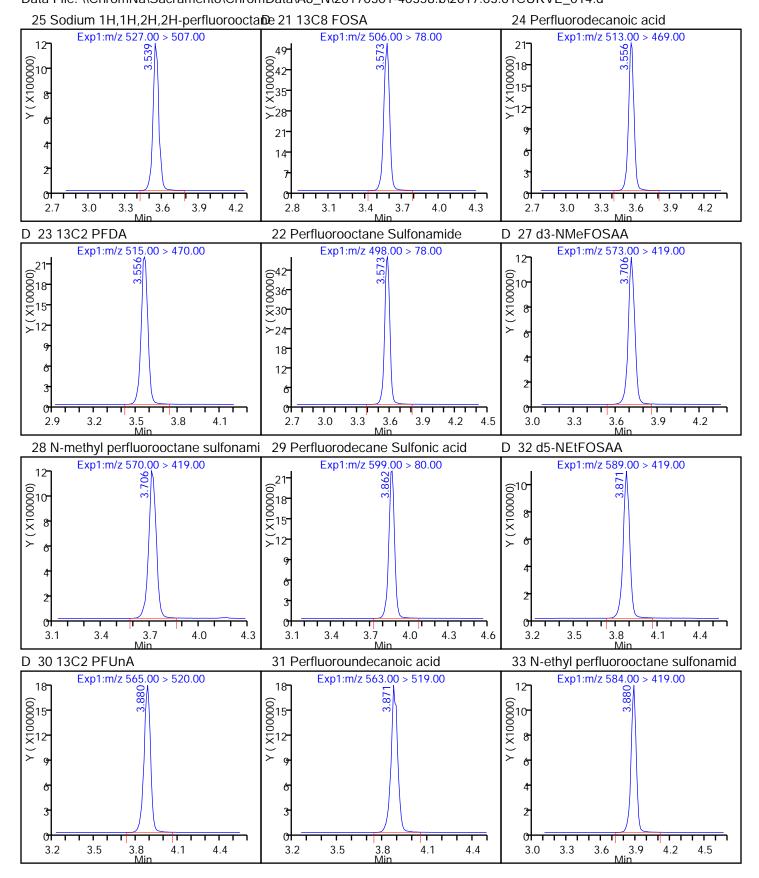
Report Date: 01-Mar-2017 15:43:03
Data File: \ChromNa\Sacra Chrom Revision: 2.2 03-Feb-2017 15:35:04

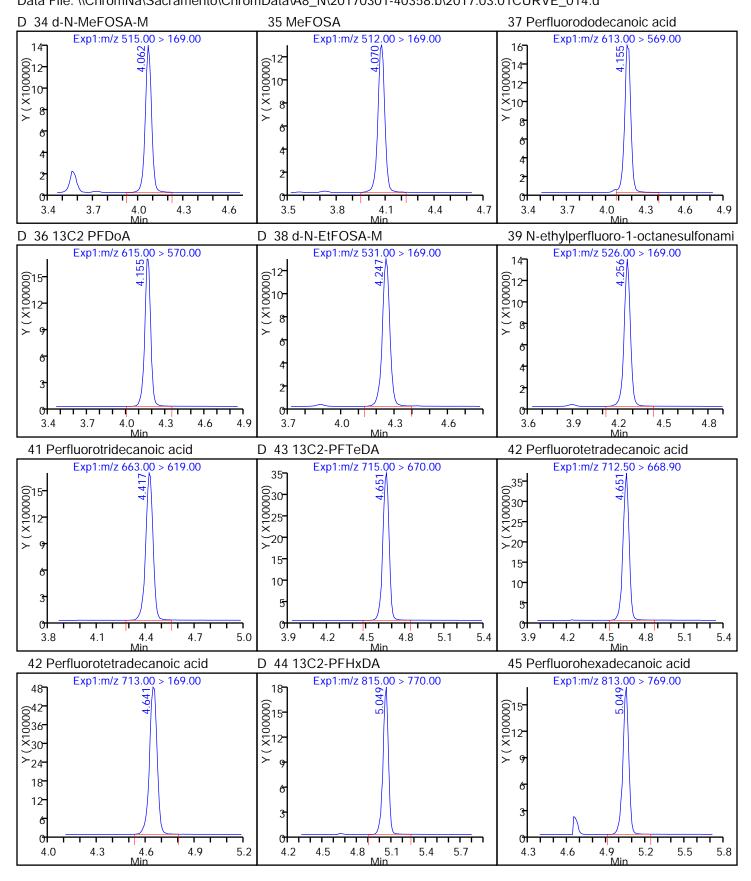
\\ChromNa\\Sacramento\ChromData\\A8 N\20170301-40358.b\\2017.03.01CURVE 014.d

Data File:											
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
D 36 13C2 PFD	ρA										
615.00 > 570.00		4.164	-0.009		5437061	43.9		87.7	128920		
D 38 d-N-EtFOS	A-M										
531.00 > 169.00	4.247	4.235	0.012		3849308	45.2		90.3			
39 N-ethylperflu	uoro-1-o	ctanesul	fonami								
526.00 > 169.00	4.256	4.242	0.014	1.000	3953838	52.2					
41 Perfluorotrid											
663.00 > 619.00	4.417	4.424	-0.007	1.000	5131863	54.0			76799		
D 43 13C2-PFT											
715.00 > 670.00		4.655	-0.004		11835060	45.7		91.3	267097		
42 Perfluoroteti											
712.50 > 668.90		4.657	-0.006	1.000	11961738	55.9	7 (0(0 00 0 00)		110355		
713.00 > 169.00		4.657	-0.016	0.998	1569975		7.62(0.00-0.00)		118035		
D 44 13C2-PFH		E 0E7	0.000		E 4 4 0 4 0 4	4E O		00.3	01254		
815.00 > 770.00		5.057	-0.008		5648694	45.2		90.3	81356		
45 Perfluorohex 813.00 > 769.00			0.010	1.000	5307447	52.3			5849		
			-0.010	1.000	3307447	32.3			3049		
46 Perfluorooct 913.00 > 869.00			0.015	1.000	4609565	59.1			5082		
	5.364	5.577	-0.013	1.000	4007000	37.1			3062		
Reagents: LCPFCIC_FULL_	00001		٨	mount Λ	dded: 1.00	Units	· ml				
LOFFOIG_FULL_	_00001		A	iiiiOuiii A	uu c u. 1.00	UIIIIS	. 1111				

Report Date: 01-Mar-2017 15:43:03 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_014.d Data File: **Injection Date:** 01-Mar-2017 12:31:14 Instrument ID: A8_N Lims ID: ICV Full Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 36 Worklist Smp#: 13 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 35 35- 0030-30-25-036 030 ∑20⁻ 18 15 15- 10 10 1.9 2.0 1.0 1.3 1.6 1.9 1.0 1.3 1.6 1.4 1.7 2.3 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 64 28 0056**-**×40 ∑16' 32 15 24 10 16 1.5 1.8 2.1 2.4 1.5 2.1 2.4 1.5 1.8 1.2 1.8 1.2 2.1 2.4 1.2 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 363.00 > 319.00 Exp1:m/z 315.00 > 270.00 32 131 28 (30⁻ (000025 <u>28</u> 00024- 20-824**-**×20 ∑16⁻ ≻₁₆-15 12 2.0 2.3 2.9 1.9 2.2 1.9 2.2 2.5 1.7 2.6 1.6 2.5 2.8 2.8 3.1 1.3 1.6 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 28 (000001×) 16 635- 635<u>-</u> ×25 ×25 ≻20 ≻20 12 15- 15 10 10 0 0 2.0 2.3 2.6 2.9 3.2 Page 494h of 683 3.2 2.1 2.4 1.7 1.4 1.8 2.7

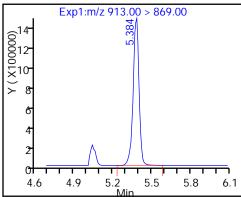






Report Date: 01-Mar-2017 15:43:03 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_014.d

46 Perfluorooctadecanoic acid



FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152825/2 Calibration Date: 03/01/2017 18:30

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01A_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.9019		53.2	50.0	6.4	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.021		52.2	50.0	4.4	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.437		44.4	44.2	0.3	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9052		50.9	50.0	1.8	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.997		51.5	50.0	3.0	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.021		45.2	45.5	-0.7	25.0
6:2FTS	L2ID		0.8839		47.2	47.4	-0.5	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.997		48.8	50.0	-2.4	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.107		51.1	47.6	7.3	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.027		48.5	46.4	4.5	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9616		53.2	50.0	6.4	25.0
8:2FTS	L2ID		0.9401		48.7	47.9	1.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9723		53.7	50.0	7.4	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9268		51.6	50.0	3.1	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9417		48.5	50.0	-3.0	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6428		52.0	48.2	7.9	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8499		46.7	50.0	-6.6	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9670		47.7	50.0	-4.6	25.0
MeFOSA	AveID	0.9355	0.9040		48.3	50.0	-3.4	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9465		51.7	50.0	3.5	25.0
N-EtFOSA-M	AveID	0.9837	0.9425		47.9	50.0	-4.2	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8572		49.1	50.0	-1.9	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.882		47.8	50.0	-4.3	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8963		48.0	50.0	-4.1	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.8110		56.5	50.0	13.0	25.0
13C4 PFBA	Ave	292242	305833		52.3	50.0	4.7	50.0
13C5-PFPeA	Ave	232192	233513		50.3	50.0	0.6	50.0
13C2 PFHxA	Ave	210884	232333		55.1	50.0	10.2	50.0
13C4-PFHpA	Ave	192959	200675		52.0	50.0	4.0	50.0
1802 PFHxS	Ave	290899	297910		48.4	47.3	2.4	50.0
M2-6:2FTS	Ave	77178	77773		47.9	47.5	0.8	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-152825/2</u> Calibration Date: <u>03/01/2017 18:30</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01A_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	205765		50.2	50.0	0.4	50.0
13C4 PFOS	Ave	241637	242782		48.0	47.8	0.5	50.0
13C5 PFNA	Ave	177866	178092		50.1	50.0	0.1	50.0
M2-8:2FTS	Ave	92602	90152		46.6	47.9	-2.6	50.0
13C2 PFDA	Ave	166704	168337		50.5	50.0	1.0	50.0
13C8 FOSA	Ave	366918	388296		52.9	50.0	5.8	50.0
d3-NMeFOSAA	Ave	85186	87945		51.6	50.0	3.2	50.0
13C2 PFUnA	Ave	130805	129221		49.4	50.0	-1.2	50.0
d5-NEtFOSAA	Ave	81371	82759		50.9	50.0	1.7	50.0
d-N-MeFOSA-M	Ave	87983	91639		52.1	50.0	4.2	50.0
13C2 PFDoA	Ave	123944	128228		51.7	50.0	3.5	50.0
d-N-EtFOSA-M	Ave	85249	89210		52.3	50.0	4.6	50.0
13C2-PFTeDA	Ave	259165	247478		47.7	50.0	-4.5	50.0
13C2-PFHxDA	Ave	125061	132882		53.1	50.0	6.3	50.0

Report Date: 03-Mar-2017 10:36:40 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_002.d

Lims ID: CCV L5

Client ID:

Sample Type: CCV

Inject. Date: 01-Mar-2017 18:30:08 ALS Bottle#: 32 Worklist Smp#: 2

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-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 03-Mar-2017 10:36:39 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK033

First Level Reviewer: chandrasenas Date: 03-Mar-2017 10:36:39

1 113	IL LOVOI INOVIO	WCI. CIIG	inarasci	143		Date. 05 Mai 2017 10.30.37					
	Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D	1 13C4 PFBA	1									
217	7.00 > 172.00	1.531	1.531	0.0		15291644	52.3		105	790307	
	Perfluorobut	•			1 000	10701075	50.0		101	44405	
	2.90 > 169.00		1.539	0.0	1.000	13791275	53.2		106	111105	
	3 13C5-PFPe 7.90 > 223.00		1.802	0.0		11675664	50.3		101	804737	
	Perfluoropen			0.0		11073004	30.3		101	004737	
	2.90 > 219.00		1.812	0.0	1.000	11923860	52.2		104	113730	
5	Perfluorobuta	anesulfo	nic acid								
	3.90 > 80.00		1.842	0.0	1.000	18927243	44.4		100		
	3.90 > 99.00		1.842	0.009	1.005	8236953		2.30(0.00-0.00)			
	Perfluorohex 3.00 > 269.00		id 2.099	0.0	1.000	10515574	50.9		102	280991	
	7 13C2 PFHx		2.099	0.0	1.000	10515574	50.9		102	200991	
	5.00 > 270.00		2.099	0.0		11616638	55.1		110	471963	
) Perfluorohe										
	3.00 > 319.00		2.423	0.0	1.000	9999598	51.5		103	83003	
	9 13C4-PFHp										М
	7.00 > 322.00		2.423			10033733	52.0		104	301893	M
	Perfluorohex				1 000	1204/110	45.0		00.0		
	9.00 > 80.00		2.446	0.0	1.000	13846110	45.2		99.3		
	I1 18O2 PFH: 3.00 > 84.00		2.446	0.0		14091161	48.4		102	391275	
	3.00 > 04.00 3 Sodium 1H,				e	14071101	40.4		102	371273	
	7.00 > 407.00		2.759		1.000	3258333	47.2		99.5		
D 1	12 M2-6:2FTS	5									
429	9.00 > 409.00	2.759	2.759	0.0		3694195	47.9		101		
						Page 501 of	683			03/27	//2017

Page 501 of 683

Report Date: 03-Mar-2017 10:36:40 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File:				o\Chrom[1.b\2017.03.01A_00			
Signal	RT	EXP RT	DLT RT	REL RT		Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFO	A									
417.00 > 372.00	2.781	2.781	0.0		10288248	50.2		100	252930	
15 Perfluorooct										М
413.00 > 369.00		2.789		1.000	10257380	48.8	1 (1 (0 0 0 1 1 0)	97.6	141185	
413.00 > 169.00		2.789	0.008	1.003	6259833		1.64(0.90-1.10)		126675	M
16 Perfluorohe 449.00 > 80.00		tonic Ac 2.797		1.000	12787774	51.1		107		
17 Perfluorooct				1.000	12/0///4	31.1		107		
499.00 > 80.00		3.044		1.000	11572104	48.5		104	61689	
499.00 > 99.00		3.044	0.110	1.036	2640253		4.38(0.90-1.10)		180817	
D 18 13C4 PFO	S									
503.00 > 80.00	3.154	3.154	0.0		11604982	48.0		100	217618	
D 19 13C5 PFN										
468.00 > 423.00	3.154	3.154	0.0		8904578	50.1		100	271244	
20 Perfluorono										
463.00 > 419.00		3.162	0.0	1.000	8562217	53.2		106	145661	
D 26 M2-8:2FTS		0.400			4040000			07.4		
529.00 > 509.00		3.492			4318288	46.6		97.4		
25 Sodium 1H,		•			4050742	40.7		100		
527.00 > 507.00			0.0	1.000	4059743	48.7		102		
24 Perfluorode 513.00 > 469.00		3.501	0.0	1.000	8183461	53.7		107	283809	
		3.501	0.0	1.000	0103401	55.7		107	203009	
D 23 13C2 PFD, 515.00 > 470.00		3.501	0.0		8416874	50.5		101	173484	
D 21 13C8 FOS		3.301	0.0		0410074	50.5		101	175464	
506.00 > 78.00		3.534	0.0		19414800	52.9		106	359640	
22 Perfluorooct										
498.00 > 78.00		3.543		1.000	17992644	51.6		103	420984	
D 27 d3-NMeFO										
573.00 > 419.00		3.653	0.0		4397246	51.6		103		
28 N-methyl pe	rfluorood	tane su	lfonami							
570.00 > 419.00	3.662	3.662	0.0	1.003	4140719	48.5		97.0		
29 Perfluorode	cane Sul	fonic ac	id							
599.00 > 80.00	3.802	3.802	0.0	1.000	7521866	52.0		108		
D 32 d5-NEtFOS	SAA									
589.00 > 419.00		3.819	0.0		4137949	50.9		102		
D 30 13C2 PFU										
565.00 > 520.00		3.819			6461041	49.4		98.8	245271	
33 N-ethyl perfl				1 000	0547704					
584.00 > 419.00		3.828	0.0	1.002	3516621	46.7		93.4		
31 Perfluoroun			0.0	1 000	(0.4007.)	47.7		05.4	445004	
563.00 > 519.00		3.828	0.0	1.000	6248076	47.7		95.4	115901	
D 34 d-N-MeFO		1 0 1 1	0.0		4E01024	EO 1		104		
515.00 > 169.00	4.U4 I	4.041	0.0		4581934	52.1		104		
35 MeFOSA 512.00 > 169.00	4 O41	4.041	0.0	1.000	4142123	48.3		96.6		
			0.0	1.000	7172123	40.5		70.0		
37 Perfluorodo 613.00 > 569.00		4.105	0.0	1.000	_6068148	51 7		103	149292	
515.55 > 507.00	1.100	1.100	0.0	1.500	Page 502 of 683	01.7		.00	' '03/27	/2017

Report Date: 03-Mar-2017 10:36:40 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File:

Data File.	WOTH	militarse	acrament	.0101110111	Data / 10_111201	70302 1037	1.012017.03.0171_00	72.u		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	οΑ									
615.00 > 570.00	4.105	4.105	0.0		6411396	51.7		103	146318	
D 38 d-N-EtFOS										
531.00 > 169.00	4.219	4.219	0.0		4460493	52.3		105		
39 N-ethylperflu										
526.00 > 169.00	4.228	4.228	0.0	1.000	4204120	47.9		95.8		
41 Perfluorotric										
663.00 > 619.00	4.362	4.362	0.0	1.000	5496057	49.1		98.1	101961	
42 Perfluorotet										
712.50 > 668.90			0.0	1.000	12065374	47.8	7.05(0.00.0.00)	95.7	159386	
713.00 > 169.00		4.585	0.0	1.000	1665181		7.25(0.00-0.00)		185137	
D 43 13C2-PFT		4 504	0.0		10070001	47.7		0F F	450400	
715.00 > 670.00		4.591	0.0		12373891	47.7		95.5	450488	
D 44 13C2-PFH:		4.077	0.0		((4 4 0 0 2	F2 1		10/	10/70/	
815.00 > 770.00		4.977	0.0		6644092	53.1		106	186726	
45 Perfluorohe			0.0	1 000	F74/4/2	40.0		05.0	/7100	
813.00 > 769.00			0.0	1.000	5746463	48.0		95.9	67182	
46 Perfluorooct			0.0	1 000	F1004F0	F/ F		440	0.4.4.0	
913.00 > 869.00	5.306	5.306	0.0	1.000	5199459	56.5		113	24410	

QC Flag Legend Review Flags

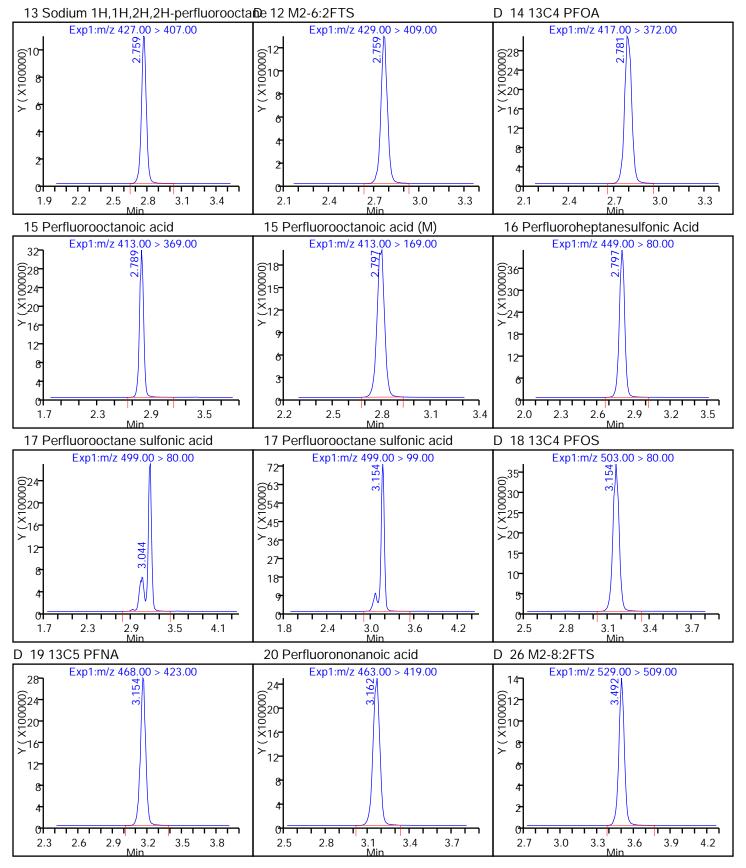
M - Manually Integrated

Reagents:

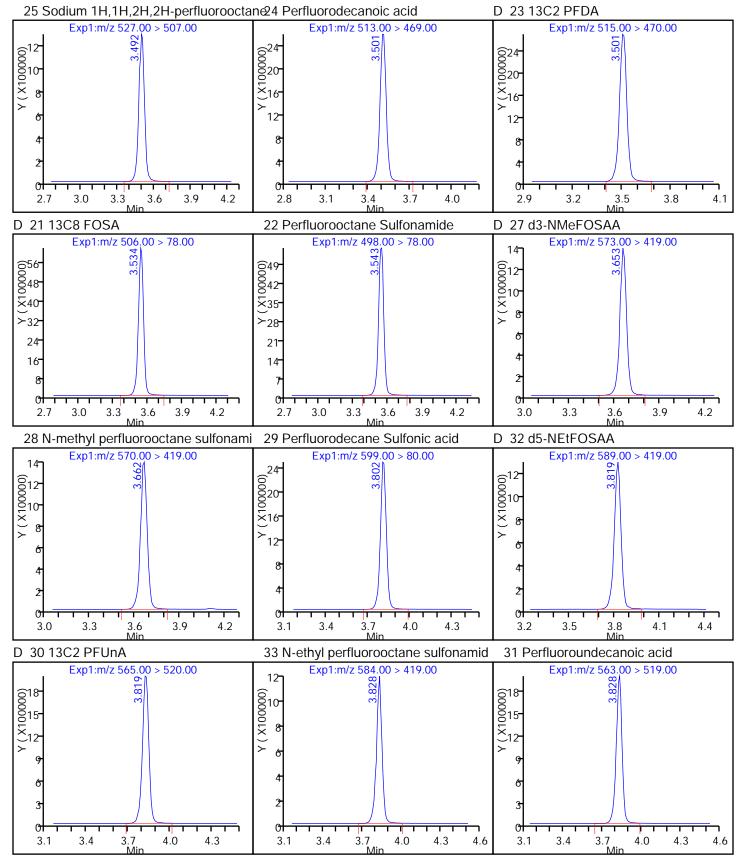
LCPFC_FULL-L5_00001 Amount Added: 1.00 Units: mL

Report Date: 03-Mar-2017 10:36:40 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_002.d Data File: **Injection Date:** 01-Mar-2017 18:30:08 Instrument ID: A8_N Lims ID: CCV L5 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 2 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 48 (42⁻ (0036⁻ (30⁻ 042 036 $\stackrel{\textstyle \smile}{\succeq}_{24}$ ∑30 -24 18 18 18 12 12 1.7 1.0 1.9 1.1 1.4 2.0 1.3 1.6 1.2 1.5 1.8 2.1 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 Exp1:m/z 262.90 > 219.0032 42 63⁶³ 0054 (X) 30-30-30-©28-0024--45 ×20 **≻**36 18 27 12 12 18 2.4 1.5 1.8 2.1 2.4 1.5 2.1 1.5 1.2 1.8 1.2 1.8 2.1 2.4 1.2 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 363.00 > 319.00 Exp1:m/z 315.00 > 270.00 660 00030 30-25-628 0024 ×20 030 025 >20 15 15 12 10 10 2.0 1.9 2.2 1.9 2.2 2.5 1.7 2.3 2.6 1.6 2.5 2.8 2.8 3.1 1.3 1.6 D 9 13C4-PFHpA (M) 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 35 628 0024 000001 X ∑20 ^{_20} ≻16- 15- 18 12 10 12 0 0 0 1.8 2.1 2.4 2.7 3.0 1.2 3.0 2.0 2.3 2.6 1.7

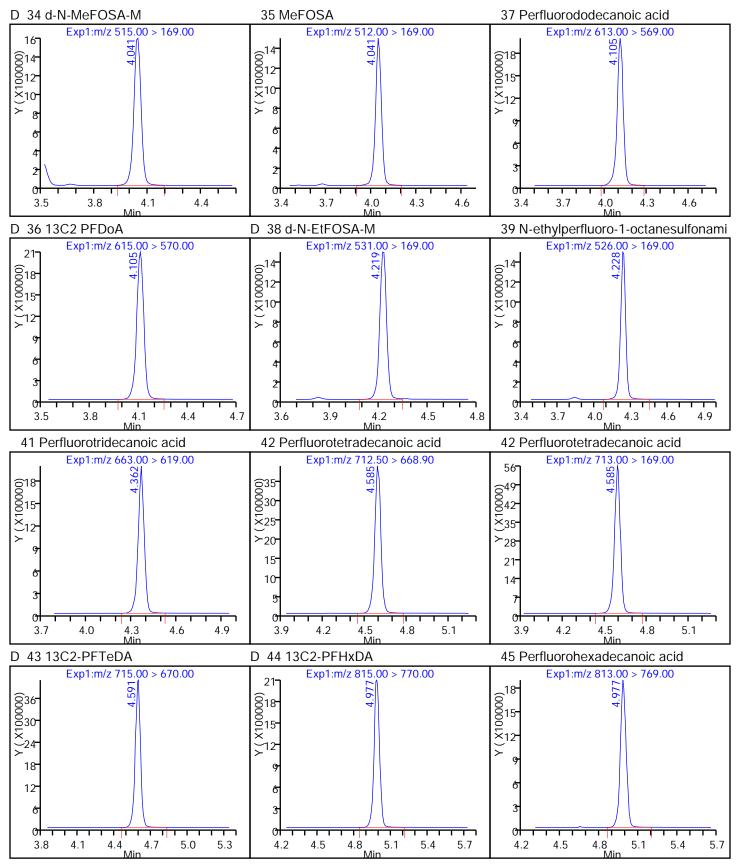
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_002.d



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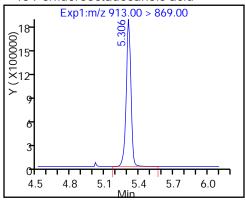
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Report Date: 03-Mar-2017 10:36:40 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_002.d

46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_002.d

Injection Date: 01-Mar-2017 18:30:08 Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

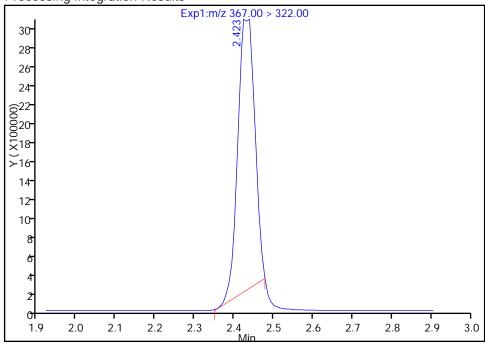
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

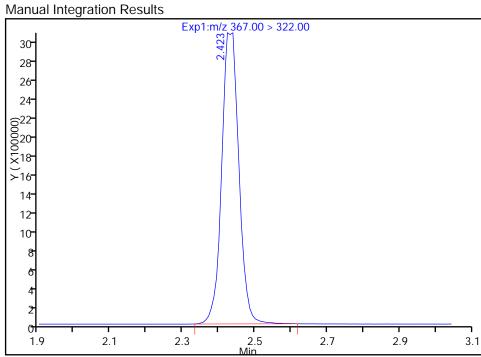
D 9 13C4-PFHpA, CAS: STL01892

Signal: 1

RT: 2.42 Area: 8464923 Amount: 43.868932 Amount Units: ng/ml **Processing Integration Results**



RT: 2.42
Area: 10033733
Amount: 51.999192
Amount Units: ng/ml



Reviewer: chandrasenas, 03-Mar-2017 10:36:22

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 509 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_002.d

Injection Date: 01-Mar-2017 18:30:08 Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

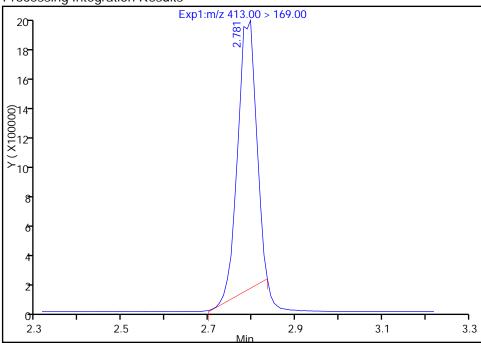
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

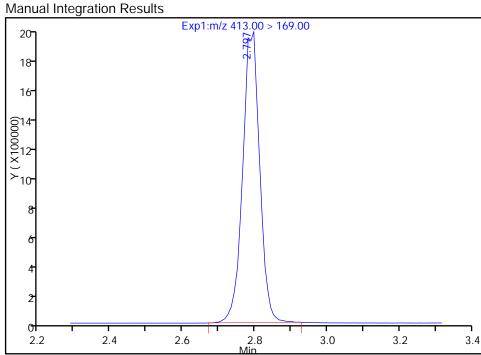
Signal: 2

RT: 2.78
Area: 5243931
Amount: 48.793200
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 6259833
Amount: 48.793200
Amount Units: ng/ml



Reviewer: chandrasenas, 03-Mar-2017 10:36:31

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 510 of 683

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152825/13 Calibration Date: 03/01/2017 19:52

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01A_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8801		20.8	20.0	3.9	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.053		21.5	20.0	7.6	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.445		17.8	17.7	0.9	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8318		18.7	20.0	-6.5	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9730		20.1	20.0	0.6	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9789		17.3	18.2	-4.8	25.0
6:2FTS	L2ID		0.9394		20.0	19.0	5.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.052		19.4	19.0	2.1	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9592		18.8	20.0	-6.1	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9479		17.9	18.6	-3.6	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9114		20.2	20.0	0.8	25.0
8:2FTS	L2ID		0.9810		20.3	19.2	5.7	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8826		19.5	20.0	-2.5	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.8943		19.9	20.0	-0.5	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9230		19.0	20.0	-5.0	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5567		18.0	19.3	-6.5	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8923		19.6	20.0	-2.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9231		18.2	20.0	-8.9	25.0
MeFOSA	AveID	0.9355	0.9241		19.8	20.0	-1.2	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9024		19.7	20.0	-1.3	25.0
N-EtFOSA-M	AveID	0.9837	0.9637		19.6	20.0	-2.0	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8241		18.9	20.0	-5.6	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.805		18.4	20.0	-8.2	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8488		17.9	20.0	-10.3	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6973		19.4	20.0	-2.8	25.0
13C4 PFBA	Ave	292242	327357		56.0	50.0	12.0	50.0
13C5-PFPeA	Ave	232192	251752		54.2	50.0	8.4	50.0
13C2 PFHxA	Ave	210884	246453		58.4	50.0	16.9	50.0
13C4-PFHpA	Ave	192959	220396		57.1	50.0	14.2	50.0
1802 PFHxS	Ave	290899	321570		52.3	47.3	10.5	50.0
	Ave	77178	82864		51.0	47.5	7.4	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152825/13 Calibration Date: 03/01/2017 19:52

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01A_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	226776		55.3	50.0	10.6	50.0
13C4 PFOS	Ave	241637	270290		53.5	47.8	11.9	50.0
13C5 PFNA	Ave	177866	198108		55.7	50.0	11.4	50.0
M2-8:2FTS	Ave	92602	104749		54.2	47.9	13.1	50.0
13C2 PFDA	Ave	166704	184661		55.4	50.0	10.8	50.0
13C8 FOSA	Ave	366918	380009		51.8	50.0	3.6	50.0
d3-NMeFOSAA	Ave	85186	91057		53.4	50.0	6.9	50.0
13C2 PFUnA	Ave	130805	147897		56.5	50.0	13.1	50.0
d5-NEtFOSAA	Ave	81371	87716		53.9	50.0	7.8	50.0
d-N-MeFOSA-M	Ave	87983	89817		51.0	50.0	2.1	50.0
13C2 PFDoA	Ave	123944	134775		54.4	50.0	8.7	50.0
d-N-EtFOSA-M	Ave	85249	88338		51.8	50.0	3.6	50.0
13C2-PFTeDA	Ave	259165	268656		51.8	50.0	3.7	50.0
13C2-PFH×DA	Ave	125061	135101		54.0	50.0	8.0	50.0

Report Date: 02-Mar-2017 11:58:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_013.d

Lims ID: CCV L4

Client ID:

Sample Type: CCV

Inject. Date: 01-Mar-2017 19:52:38 ALS Bottle#: 31 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: CCV L4

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 02-Mar-2017 11:58:56 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK026

First Level Reviewer: chandrasenas Date: 02-Mar-2017 11:58:27

First Level Reviewer: chandrasenas					Date:	02-Mar-2017 11:58:27				
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA	\									
217.00 > 172.00		1.531	0.0		16367861	56.0		112	262564	2
2 Perfluorobut	•									
212.90 > 169.00	1.531	1.531	0.0	1.000	5762327	20.8		104	71050	
D 3 13C5-PFPe		4 000			10507/05	5.4.0		100	454040	•
267.90 > 223.00		1.803	0.0		12587605	54.2		108	451368	2
4 Perfluoroper 262.90 > 219.00		1.803	0.0	1.000	5299626	21.5		108	0.0	
5 Perfluorobut				1.000	3277020	21.5		100	0.0	
298.90 > 80.00		1.843	0.0	1.000	8217309	17.8		101		
298.90 > 99.00	1.843	1.843	0.0	1.000	3338050		2.46(0.00-0.00)			
6 Perfluorohex	kanoic ac	cid								
313.00 > 269.00	2.104	2.104	0.0	1.000	4099956	18.7		93.5	340413	
D 7 13C2 PFHx										
315.00 > 270.00		2.104	0.0		12322654	58.4		117	49634	
10 Perfluorohe 363.00 > 319.00	•	acid 2.438	0.0	1.000	4288952	20.1		101	0.0	
D 9 13C4-PFHp		2.430	0.0	1.000	4200932	20.1		101	0.0	
367.00 > 322.00		2.438	0.0		11019791	57.1		114	44777	
8 Perfluorohex										
399.00 > 80.00		2.453		1.000	5729249	17.3		95.2		
D 11 1802 PFH:	xS									
403.00 > 84.00	2.453	2.453	0.0		15210268	52.3		111	77901	
13 Sodium 1H,		•								
427.00 > 407.00		2.765	0.0	1.000	1475869	20.0		105		
D 12 M2-6:2FTS		27/5	0.0		202/04/	F1 0		107		
429.00 > 409.00	2.765	2.765	0.0		3936046	51.0		107		
					Page 513 of (683			03/27	7/2017

Page 513 of 683

03/27/2017

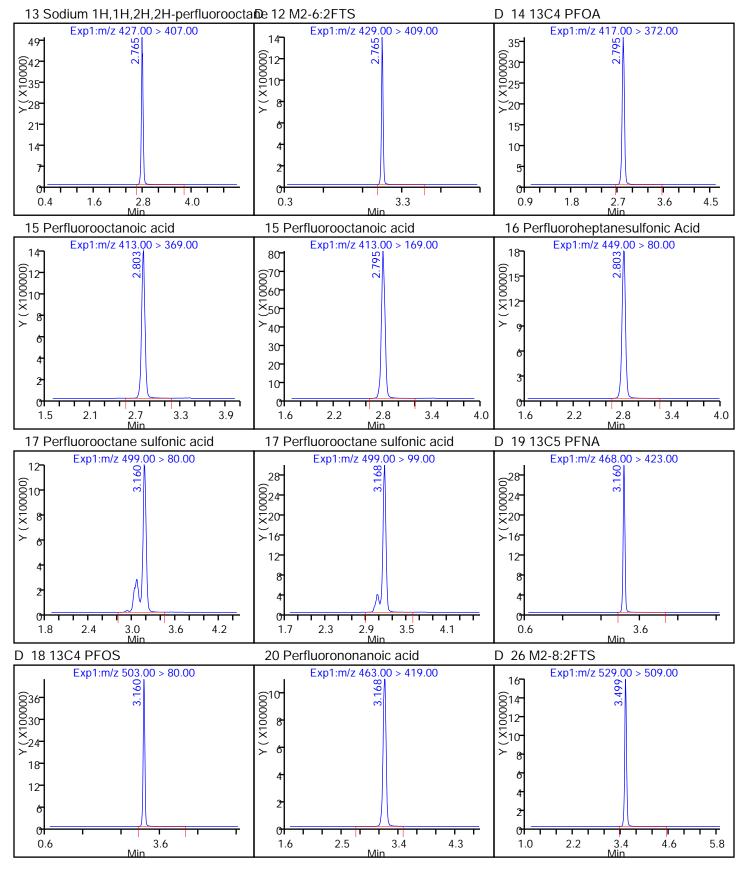
Report Date: 02-Mar-2017 11:58:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File:				o\ChromI			1.b\2017.03.01A_01			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFO	Α									
417.00 > 372.00		2.795	0.0		11338796	55.3		111	38553	
15 Perfluorooct	tanoic ac	id								
413.00 > 369.00	2.803	2.803	0.0	1.000	4350403	18.8		93.9	83918	
413.00 > 169.00	2.795	2.803	-0.008	0.997	2542444		1.71(0.90-1.10)		133928	
16 Perfluorohe	-									
449.00 > 80.00		2.803		1.000	5414797	19.4		102		
17 Perfluorooct										
499.00 > 80.00		3.160		1.000	4755396	17.9	4 40(0 00 1 10)	96.4	163215	
499.00 > 99.00		3.160	0.008	1.002	1081657		4.40(0.90-1.10)		98639	
D 19 13C5 PFNA 468.00 > 423.00		3.160	0.0		9905396	55.7		111	2900337	7
		3.100	0.0		7705570	55.7		111	2900337	•
D 18 13C4 PFO: 503.00 > 80.00		3.160	0.0		12919857	53.5		112	809925	
			0.0		12919057	55.5		112	009923	
20 Perfluorono 463.00 > 419.00		3.168	0.0	1.000	3611284	20.2		101	146472	
		3.100	0.0	1.000	3011204	20.2		101	140472	
D 26 M2-8:2FTS 529.00 > 509.00		3.499	0.0		5017455	54.2		113		
				•	3017433	34.2		113		
25 Sodium 1H, 527.00 > 507.00		•		e 1.002	1968835	20.3		106		
24 Perfluorode			0.0	1.002	1700033	20.5		100		
513.00 > 469.00		3.516	0.0	1.000	3259630	19.5		97.5	256259	
D 23 13C2 PFD		3.310	0.0	1.000	3237030	17.5		77.5	230237	
515.00 > 470.00		3.516	0.0		9233050	55.4		111	988652	
D 21 13C8 FOS		3.310	0.0		7233030	55.4			700032	
506.00 > 78.00		3.533	0.0		19000473	51.8		104	5839150)
22 Perfluorooct					17000473	31.0		104	3037130	,
498.00 > 78.00		3.541		1.000	6797066	19.9		99.5	2112732)
D 27 d3-NMeFO		3.541	0.0	1.000	0777000	17.7		77.5	2112702	-
573.00 > 419.00		3.670	0.0		4552857	53.4		107		
28 N-methyl pe					1002007	00.1		107		
570.00 > 419.00		3.680		1.003	1680869	19.0		95.0		
29 Perfluorode								70.0		
599.00 > 80.00		3.818		1.000	2901025	18.0		93.5		
D 32 d5-NEtFOS										
589.00 > 419.00		3.835	0.0		4385784	53.9		108		
D 30 13C2 PFUi										
565.00 > 520.00		3.835	0.0		7394853	56.5		113	2304945	5
33 N-ethyl perf										
584.00 > 419.00		3.835		1.000	1565291	19.6		98.0		
31 Perfluoroun	decanoio	acid								
563.00 > 519.00		3.835	0.0	1.000	2730419	18.2		91.1	291761	
D 34 d-N-MeFO										
515.00 > 169.00		4.031	0.0		4490825	51.0		102		
35 MeFOSA										
512.00 > 169.00	4.040	4.040	0.0	1.000	1659923	19.8		98.8		
37 Perfluorodo										
613.00 > 569.00		4.124	0.0	1.000	Page 514 of 683	19.7		98.7	133943.	/2047
					raye 514 01 083	1			03/27	/201/

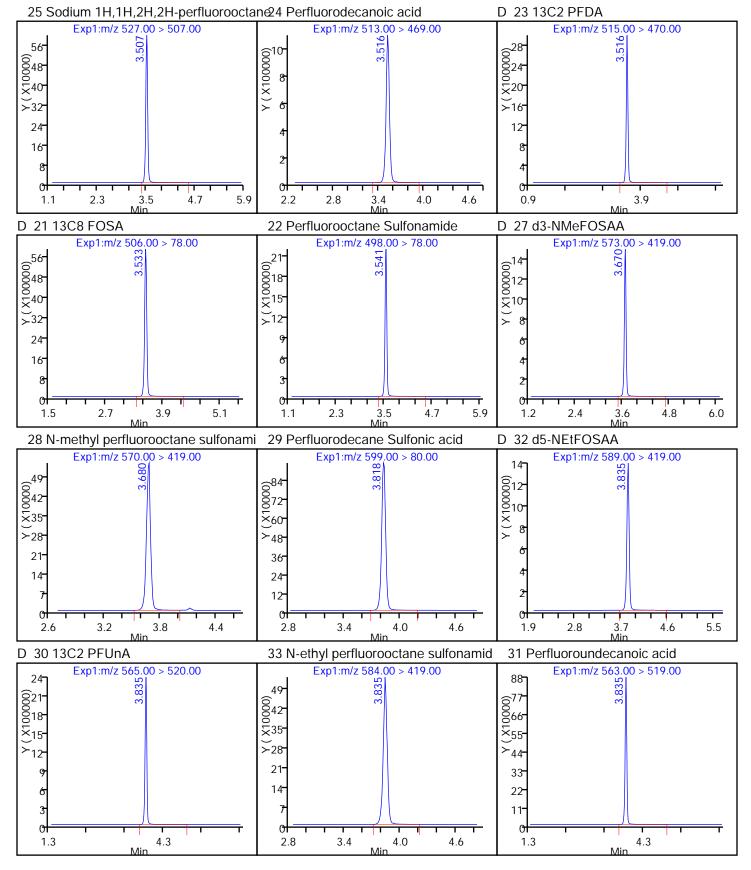
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Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDo	Α									
615.00 > 570.00	4.124	4.124	0.0		6738746	54.4		109	0.0	
D 38 d-N-EtFOSA										
531.00 > 169.00		4.216			4416876	51.8		104		
39 N-ethylperflu										
526.00 > 169.00		4.225	0.0	1.000	1702596	19.6		98.0		
41 Perfluorotride			0.0	1 000	2224242	10.0		04.4	74000	
663.00 > 619.00		4.378	0.0	1.000	2221340	18.9		94.4	71092	
42 Perfluorotetra			0.0	1 000	4044241	18.4		01.0	200240	
712.50 > 668.90 713.00 > 169.00		4.603 4.603	0.0	1.000 1.000	4864341 667481	18.4	7.29(0.00-0.00)	91.8	309249 110215	
D 43 13C2-PFTe		1.000	0.0	1.000	007 101		7.27(0.00 0.00)		110210	
715.00 > 670.00		4.603	0.0		13432792	51.8		104	76917	
D 44 13C2-PFHx										
815.00 > 770.00		4.998	0.0		6755032	54.0		108	372647	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.005	5.005	0.0	1.000	2287995	17.9		89.7	26840	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.329	0.0	1.000	1879656	19.4		97.2	3296	
Reagents:										
LCPFC_FULL-L4_00001			Д	mount A	dded: 1.00	Units	: mL			

Report Date: 02-Mar-2017 11:58:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_013.d Data File: **Injection Date:** 01-Mar-2017 19:52:38 Instrument ID: A8_N Lims ID: CCV L4 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 13 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 (0000015 X12 531 (042 000036 X30 ≻28 21 18 12 1.2 2.4 1.2 1.2 0.0 3.6 0.0 2.4 3.6 0.0 2.4 3.6 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 32 14 18-(000001X), 803 843 (000001) X (X1000000) 8 ©28**-**×20 1.2 2.4 4.8 1.0 1.9 2.2 2.5 8.0 1.4 2.0 0.0 3.6 1.3 1.6 2.6 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 363.00 > 319.00 14 14 (X100000) X (X100000) X (X100000) 0036 0030 (000012 (000010 8 18 12 1.9 2.5 1.2 2.4 1.3 2.5 1.3 3.1 0.0 3.6 4.8 0.1 3.7 0.7 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367,00 > 322.00 Exp1:m/z 403.00 > 84.00 16- 49 00012 00012 030 0025 00042 0005 35 ×₂₀ 21 10 14 0 0 0 0.0 3.0 1.4 Page 5M6n of 683 3.2 0.0 3.0 03/27/2017 Min Min

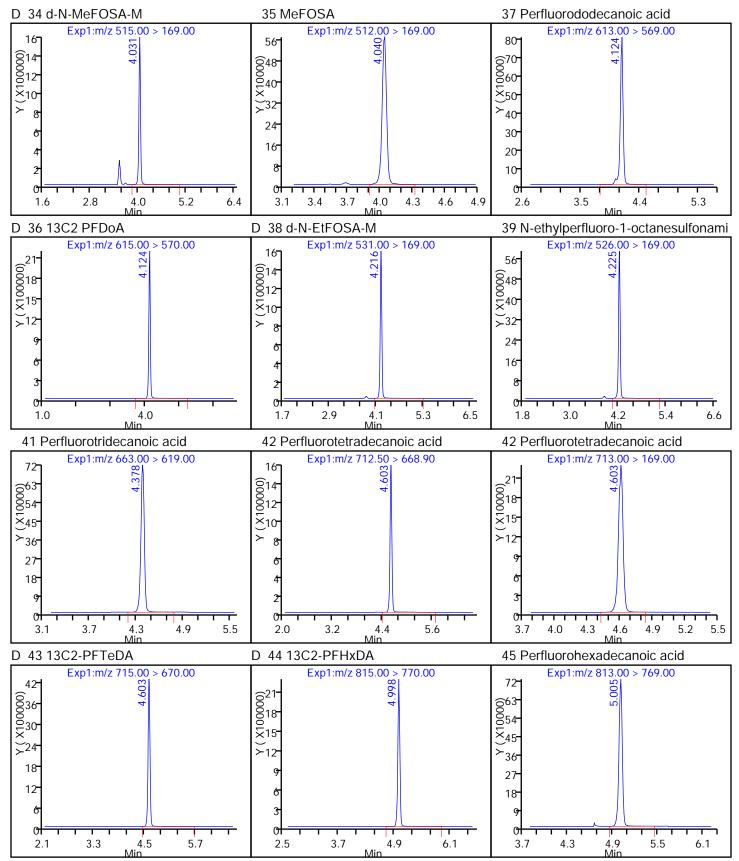
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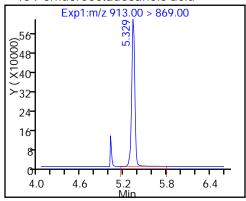
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Report Date: 02-Mar-2017 11:58:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_013.d

46 Perfluorooctadecanoic acid



FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152825/15 Calibration Date: 03/01/2017 20:07

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01A_015.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.9072		53.5	50.0	7.1	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.021		52.1	50.0	4.3	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.479		45.6	44.2	3.2	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9249		52.0	50.0	4.0	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.995		51.4	50.0	2.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.022		45.2	45.5	-0.6	25.0
6:2FTS	L2ID		0.9042		48.2	47.4	1.8	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.080		49.9	47.6	4.8	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.033		50.6	50.0	1.2	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.003		47.3	46.4	2.0	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9672		53.5	50.0	7.0	25.0
8:2FTS	L2ID		0.9281		48.0	47.9	0.3	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9288		51.3	50.0	2.6	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9427		52.5	50.0	4.9	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9458		48.7	50.0	-2.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6208		50.2	48.2	4.2	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8698		47.8	50.0	-4.4	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9445		46.6	50.0	-6.8	25.0
MeFOSA	AveID	0.9355	0.8880		47.5	50.0	-5.1	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9337		51.0	50.0	2.1	25.0
N-EtFOSA-M	AveID	0.9837	0.9239		47.0	50.0	-6.1	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9094		52.1	50.0	4.1	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	2.033		51.7	50.0	3.4	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9815		52.6	50.0	5.1	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.8053		56.1	50.0	12.2	25.0
13C4 PFBA	Ave	292242	296266		50.7	50.0	1.4	50.0
13C5-PFPeA	Ave	232192	233516		50.3	50.0	0.6	50.0
13C2 PFHxA	Ave	210884	217021		51.5	50.0	2.9	50.0
13C4-PFHpA	Ave	192959	200425		51.9	50.0	3.9	50.0
1802 PFHxS	Ave	290899	289262		47.0	47.3	-0.6	50.0
M2-6:2FTS	Ave	77178	76416		47.0	47.5	-1.0	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-152825/15</u> Calibration Date: <u>03/01/2017 20:07</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.01A_015.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	200587		48.9	50.0	-2.1	50.0
13C4 PFOS	Ave	241637	246851		48.8	47.8	2.2	50.0
13C5 PFNA	Ave	177866	178040		50.0	50.0	0.1	50.0
M2-8:2FTS	Ave	92602	91774		47.5	47.9	-0.9	50.0
13C2 PFDA	Ave	166704	169071		50.7	50.0	1.4	50.0
13C8 FOSA	Ave	366918	361250		49.2	50.0	-1.5	50.0
d3-NMeFOSAA	Ave	85186	86680		50.9	50.0	1.8	50.0
d5-NEtFOSAA	Ave	81371	81385		50.0	50.0	0.0	50.0
13C2 PFUnA	Ave	130805	133752		51.1	50.0	2.3	50.0
d-N-MeFOSA-M	Ave	87983	90859		51.6	50.0	3.3	50.0
13C2 PFDoA	Ave	123944	128992		52.0	50.0	4.1	50.0
d-N-EtFOSA-M	Ave	85249	88534		51.9	50.0	3.9	50.0
13C2-PFTeDA	Ave	259165	271375		52.4	50.0	4.7	50.0
13C2-PFHxDA	Ave	125061	145427		58.1	50.0	16.3	50.0

Report Date: 27-Mar-2017 10:47:55 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_015.d

Lims ID: CCV L5

Client ID:

Sample Type: CCV

Inject. Date: 01-Mar-2017 20:07:36 ALS Bottle#: 32 Worklist Smp#: 15

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-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:47:53 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 02-Mar-2017 12:00:57

First Level Revie	wer: cha	ındraser	nas		Date:	0	2-Mar-2017 12:00:5	57		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA										
217.00 > 172.00		1.531	0.0		14813319	50.7		101	232523	0
2 Perfluorobuty	yric acid									
212.90 > 169.00	1.531	1.531	0.0	1.000	13438968	53.5		107	143152	
D 3 13C5-PFPe										
267.90 > 223.00		1.813	0.0		11675783	50.3		101	413963	6
4 Perfluoropen			0.0	1 000	11015040	FO 4		104	0.0	
262.90 > 219.00		1.813		1.000	11915949	52.1		104	0.0	
5 Perfluorobuta 298.90 > 80.00		nic acid 1.853	0.0	1.000	18910023	45.6		103		
298.90 > 99.00		1.853	-0.010	0.995	8008219	45.0	2.36(0.00-0.00)	103		
6 Perfluorohex			0.0.0	0.770	00002.7		2.00(0.00 0.00)			
313.00 > 269.00		2.106	0.0	1.000	10035545	52.0		104	0.0	
D 7 13C2 PFHx	:A									
315.00 > 270.00	2.106	2.106	0.0		10851049	51.5		103	363672	3
10 Perfluorohe	ptanoic a	acid								
363.00 > 319.00	2.439	2.439	0.0	1.000	9971245	51.4		103	0.0	
D 9 13C4-PFHp										
367.00 > 322.00		2.439			10021259	51.9		104	152587	8
8 Perfluorohex				1 000	10450010	45.0		00.4		
399.00 > 80.00		2.455	0.0	1.000	13450312	45.2		99.4		
D 11 1802 PFH: 403.00 > 84.00		2.455	0.0		13682092	47.0		99.4	76709	
				•	13002092	47.0		99.4	70709	
13 Sodium 1H, 427.00 > 407.00		п-репіи 2.778		e 1.000	3275130	48.2		102		
D 12 M2-6:2FTS		2.770	5.5	1.000	3273130	10.2		102		
429.00 > 409.00		2.778	0.0		3629749	47.0		99.0		
					Page 523 of 6	683			03/27	7/2017

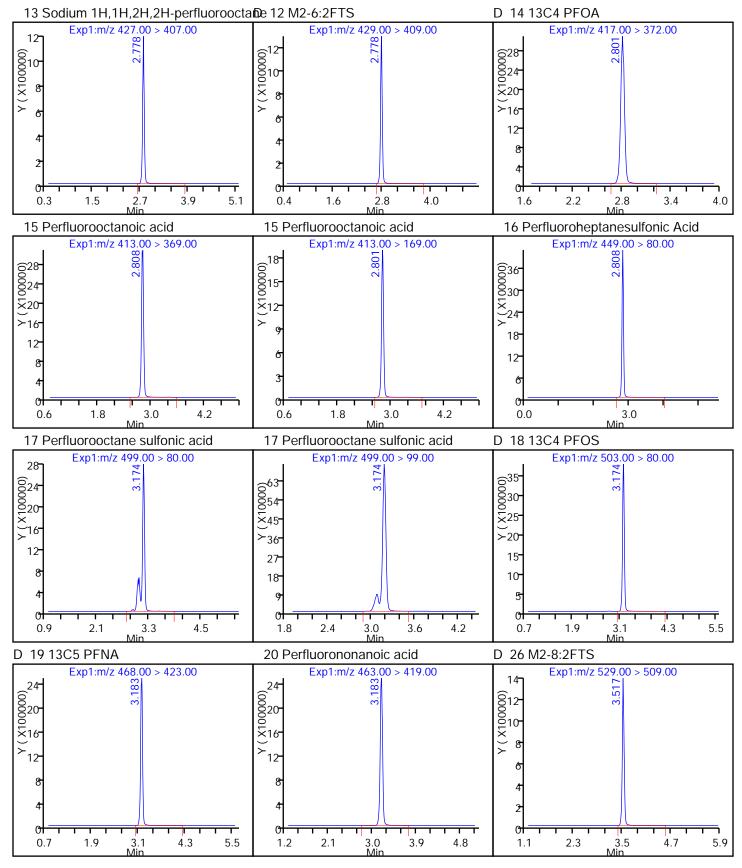
Report Date: 27-Mar-2017 10:47:55 Chrom Revision: 2.2 13-Mar-2017 15:50:30

	Data File:				o\ChromI			1.b\2017.03.01A_01			
	Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
С) 14 13C4 PFO	Α									
2	117.00 > 372.00	2.801	2.801	0.0		10029337	48.9		97.9	760729	
	15 Perfluorooc				4 000	100/5104	50 /		404	10011	,
	113.00 > 369.00		2.808		1.000	10365184	50.6	1 72(0 00 1 10)	101	100116	
2	113.00 > 169.00			-0.007	0.997	6007892		1.73(0.90-1.10)		1803917	/
_	16 Perfluorohe 149.00 > 80.00	•	2.808		1.000	12695285	49.9		105		
	17 Perfluorooc				1.000	12070200	17.7		.00		
2	199.00 > 80.00		3.174		1.000	11487351	47.3		102	54160	
2	199.00 > 99.00	3.174	3.174	0.0	1.000	2593396		4.43(0.90-1.10)		177475	
	18 13C4 PFO										
Ę	503.00 > 80.00	3.174	3.174	0.0		11799466	48.8		102	530675	
	19 13C5 PFN										
Z	168.00 > 423.00		3.183	0.0		8901985	50.0		100	2482123	3
	20 Perfluorono			0.0	1 000	0/10200	F0 F		107	044404	_
	163.00 > 419.00		3.183	0.0	1.000	8610300	53.5		107	244124	0
) 26 M2-8:2FTS 529.00 > 509.00		3.517	0.0		4395979	47.5		99.1		
					0	4373777	47.5		99.1		
F	,25 Sodium 1H 527.00 > 507.00		•		e 1.000	4080027	48.0		100		
	24 Perfluorode			0.0	1.000	4000027	40.0		100		
Ę	513.00 > 469.00		3.534	0.0	1.000	7851741	51.3		103	816218	
	23 13C2 PFD										
	515.00 > 470.00		3.534	0.0		8453566	50.7		101	440045	
С	21 13C8 FOS	Α									
Ę	506.00 > 78.00	3.550	3.550	0.0		18062502	49.2		98.5	177021	7
	22 Perfluorooc	tane Sulf	onamid	е							
2	198.00 > 78.00	3.550	3.550	0.0	1.000	17027201	52.5		105	2605904	4
	27 d3-NMeFC										
Ę	573.00 > 419.00		3.681			4334002	50.9		102		
_	28 N-methyl pe				1 000	4000040	40.7		07.4		
5	570.00 > 419.00		3.690		1.003	4098919	48.7		97.4		
-	29 Perfluorode 599.00 > 80.00		Itonic ac 3.836		1.000	7385934	50.2		104		
			3.030	0.0	1.000	7303934	30.2		104		
) 32 d5-NEtFO 589.00 > 419.00		3.844	0.0		4069260	50.0		100		
	30 13C2 PFU		0.011	0.0		1007200	00.0		100		
	565.00 > 520.00		3.853	0.0		6687581	51.1		102	213056	1
	33 N-ethyl perf										
Ę	584.00 > 419.00			0.0	1.002	3539483	47.8		95.6		
	31 Perfluoroun	decanoio	acid								
Ę	563.00 > 519.00	3.853	3.853	0.0	1.000	6316213	46.6		93.2	986858	
С	34 d-N-MeFO	SA-M									
Ę	515.00 > 169.00	4.050	4.050	0.0		4542931	51.6		103		
	35 MeFOSA										
Ę	512.00 > 169.00	4.050	4.050	0.0	1.000	4034267	47.5		94.9		
	37 Perfluorodo										
6	513.00 > 569.00	4.134	4.134	0.0	1.000	Page 524 of 683	51.0		102	0 ₀ 3/27	/2017

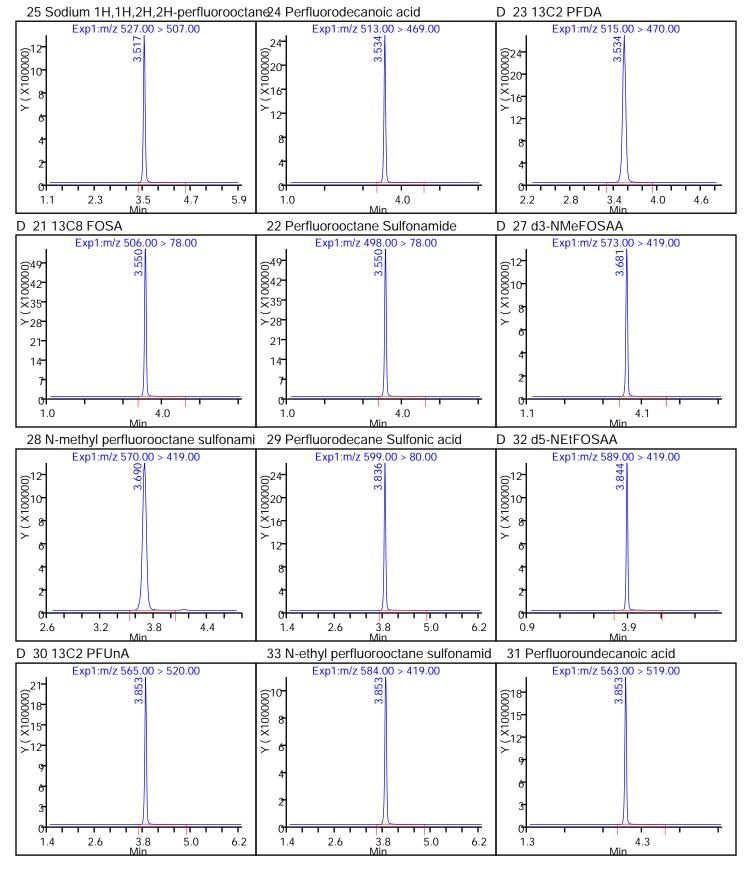
Data File. (ICIIIOITINA/Sacramento/CIIIOITIData/Ao_N/2017/0302-40371.b/2017/03.01A_013.u										
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	ρΑ									
615.00 > 570.00	4.134	4.134	0.0		6449591	52.0		104	0.0	
D 38 d-N-EtFOS										
531.00 > 169.00		4.230			4426698	51.9		104		
39 N-ethylperflu				4 000	4000//5	47.0		00.0		
526.00 > 169.00			0.0	1.000	4089665	47.0		93.9		
41 Perfluorotrid 663.00 > 619.00		acid 4.391	0.0	1.000	5865313	52.1		104	372527	
			0.0	1.000	3003313	32.1		104	3/232/	
42 Perfluorotetr 712.50 > 668.90		4.620	0.0	1.000	13110684	51.7		103	551795	
713.00 > 169.00		4.620	0.0	1.000	1714075	01.7	7.65(0.00-0.00)	100	551532	
D 43 13C2-PFTe	eDA						, ,			
715.00 > 670.00		4.626	0.0		13568728	52.4		105	78350	
D 44 13C2-PFH	κDA									
815.00 > 770.00	5.018	5.018	0.0		7271368	58.1		116	171179	
45 Perfluorohex	kadecan	oic acid								
813.00 > 769.00	5.018	5.018	0.0	1.000	6330366	52.6		105	10485	
46 Perfluorooct										
913.00 > 869.00	5.347	5.347	0.0	1.000	5193814	56.1		112	6049	
Reagents:			_							
LCPFC_FULL-L5	_00001		А	mount A	dded: 1.00	Units	: mL			

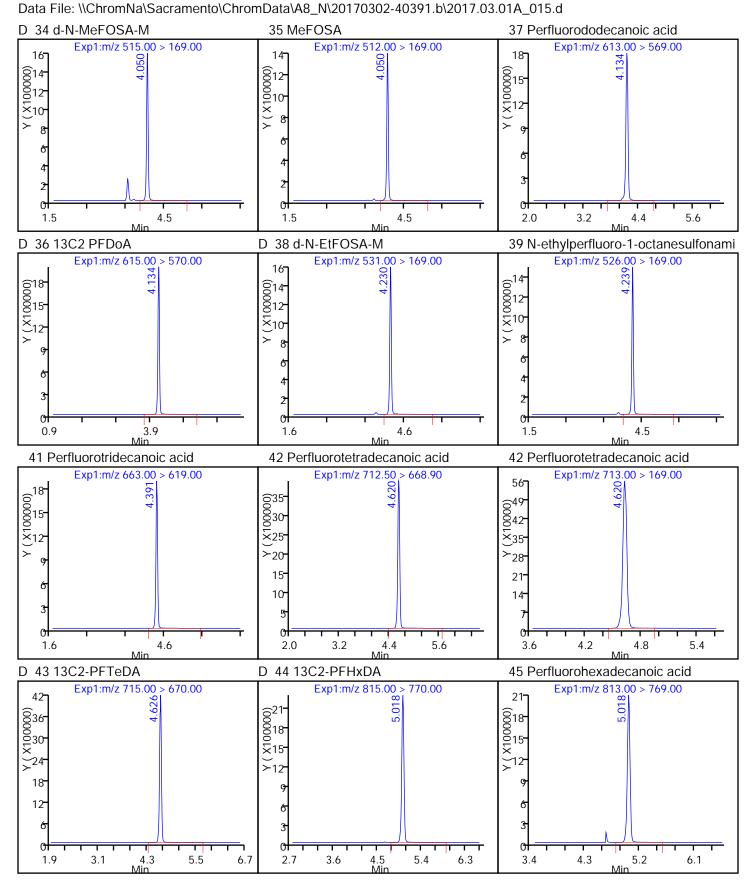
Report Date: 27-Mar-2017 10:47:55 Chrom Revision: 2.2 13-Mar-2017 15:50:30 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_015.d Data File: 01-Mar-2017 20:07:36 **Injection Date:** Instrument ID: A8_N Lims ID: CCV L5 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 15 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 042 0036 836- 830 × × 30-×30 <u></u> ∠24 ≻₂₄-18 18 18 12 12 12 1.2 1.2 0.0 2.4 3.6 0.0 2.4 3.6 0.0 1.2 2.4 3.6 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 42 63-00054-45-00024 000024 ×20 000001 <u>~</u>36- >1618 18 1.2 2.4 2.0 2.0 3.6 1.7 2.3 1.4 0.0 1.4 8.0 2.6 1.1 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 363.00 > 319.00 32 (30⁻ (000025 ©28**-**0024**-**×20 ×20 ≻₁₆-15 15 12 10 10 3.0 1.2 1.8 2.4 3.0 0.1 1.3 2.5 3.7 0.0 0.6 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 399.00 > 80.00 Exp1:m/z 403.00 > 84.00 35 42 628 0024 000001 X () 30-30-30-∑20 <u></u>20− ≻16- 15- 18 12 10 12 0 0 $^{\circ}$ 1.7 2.3 2.9 3.5 1.3 1.9 Page 526 of 683 0.0 3.0 1.1 3.1 03/27/201 Min

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_015.d



Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_015.d

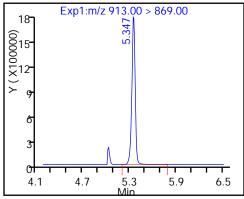




Report Date: 27-Mar-2017 10:47:55 Chrom Revision: 2.2 13-Mar-2017 15:50:30

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_015.d

46 Perfluorooctadecanoic acid



FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152836/10 Calibration Date: 03/02/2017 10:12

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.02A_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8709		1.03	1.00	2.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.178		1.20	1.00	20.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.589		0.981	0.884	10.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8907		1.00	1.00	0.1	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9531		0.985	1.00	-1.5	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.129		0.999	0.910	9.8	50.0
6:2FTS	L2ID		1.187		1.13	0.948	19.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.103		1.02	0.952	7.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.103		1.08	1.00	8.0	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9285		1.03	1.00	2.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9269		0.875	0.928	-5.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.8939		0.995	1.00	-0.5	50.0
8:2FTS	L2ID		0.998		0.950	0.958	-0.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8869		0.979	1.00	-2.1	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9220		0.949	1.00	-5.1	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5874		0.951	0.964	-1.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	1.066		1.05	1.00	5.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.9205		1.01	1.00	1.1	50.0
MeFOSA	AveID	0.9355	0.9537		1.02	1.00	1.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8711		0.953	1.00	-4.7	50.0
N-EtFOSA-M	AveID	0.9837	0.9767		0.993	1.00	-0.7	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9423		1.08	1.00	7.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	2.049		1.04	1.00	4.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.637		1.39	1.00	38.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.8767		1.22	1.00	22.2	50.0
13C4 PFBA	Ave	292242	303085		51.9	50.0	3.7	50.0
13C5-PFPeA	Ave	232192	243710		52.5	50.0	5.0	50.0
13C2 PFHxA	Ave	210884	225943		53.6	50.0	7.1	50.0
13C4-PFHpA	Ave	192959	211066		54.7	50.0	9.4	50.0
1802 PFHxS	Ave	290899	283155		46.0	47.3	-2.7	50.0
M2-6:2FTS	Ave	77178	84371		51.9	47.5	9.3	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-152836/10</u> Calibration Date: <u>03/02/2017 10:12</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.02A_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	204611		49.9	50.0	-0.2	50.0
13C4 PFOS	Ave	241637	228603		45.2	47.8	-5.4	50.0
13C5 PFNA	Ave	177866	159686		44.9	50.0	-10.2	50.0
13C8 FOSA	Ave	366918	366512		49.9	50.0	-0.1	50.0
M2-8:2FTS	Ave	92602	87201		45.1	47.9	-5.8	50.0
13C2 PFDA	Ave	166704	148326		44.5	50.0	-11.0	50.0
d3-NMeFOSAA	Ave	85186	50414		29.6	50.0	-40.8	50.0
d5-NEtFOSAA	Ave	81371	50925		31.3	50.0	-37.4	50.0
13C2 PFUnA	Ave	130805	116606		44.6	50.0	-10.9	50.0
d-N-MeFOSA-M	Ave	87983	82263		46.7	50.0	-6.5	50.0
13C2 PFDoA	Ave	123944	110773		44.7	50.0	-10.6	50.0
d-N-EtFOSA-M	Ave	85249	81641		47.9	50.0	-4.2	50.0
13C2-PFTeDA	Ave	259165	236024		45.5	50.0	-8.9	50.0
13C2-PFHxDA	Ave	125061	122244		48.9	50.0	-2.3	50.0

Report Date: 27-Mar-2017 09:41:26 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Lims ID: CCV L2

Client ID:

Sample Type: CCVL

Inject. Date: 02-Mar-2017 10:12:44 ALS Bottle#: 29 Worklist Smp#: 10

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-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 09:41:25 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 27-Mar-2017 09:41:25

FIRST Level Reviewe	er: cnai	narasen	ias		Date:		77-Mar-2017 09:41:2	1-2017 09:41:25			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
2 Perfluorobutyri	ic acid										
212.90 > 169.00 1	.538	1.546	-0.008	1.000	263963	1.03		103	1678		
D 113C4 PFBA	L F 0.1	1 54/	0.015		15154074	F1 0		104	000070		
217.00 > 172.00 1 D 3 13C5-PFPeA		1.546	-0.015		15154274	51.9		104	992373		
267.90 > 223.00 1		1.821	-0.009		12185493	52.5		105	627629		
4 Perfluoropenta	noic ac	cid									
262.90 > 219.00 1	.822	1.821	0.001	1.000	287091	1.20		120	2499		
5 Perfluorobutan											
298.90 > 80.00 1 298.90 > 99.00 1		1.861 1.861	-0.010 -0.010	1.000 1.000	397788 161991	0.9807	2.46(0.00-0.00)	111			
D 7 13C2 PFHxA	.031	1.001	-0.010	1.000	101771		2.40(0.00-0.00)				
315.00 > 270.00 2	2.115	2.122	-0.007		11297146	53.6		107	351347		
6 Perfluorohexar	noic ac	id									
313.00 > 269.00 2	2.115	2.131	-0.016	1.000	201243	1.00		100	6875		
10 Perfluorohepta			0.017	1 000	004474	0.0050		00.5	0/50		
363.00 > 319.00 2		2.471	-0.017	1.000	201161	0.9853		98.5	2650		
D 9 13C4-PFHpA 367.00 > 322.00 2		2.471	-0.017		10553294	54.7		109	407982		
8 Perfluorohexar										M	
399.00 > 80.00 2	2.478	2.407	0.071	1.000	290855	1.00		110		М	
D 11 1802 PFHxS											
403.00 > 84.00 2		2.487			13393249	46.0		97.3	386661		
13 Sodium 1H,1F		•			04040	1 12		120			
427.00 > 407.00 2 D 12 M2-6:2FTS	2.804	2.81Z	-0.008	1.000	94949	1.13		120			
429.00 > 409.00 2	2.789	2.812	-0.023		4007645	51.9		109			
					Page 533 of (03/27	7/2017	

Page 533 of 683

03/27/2017

Report Date: 27-Mar-2017 09:41:26 Chrom Revision: 2.2 13-Mar-2017 15:50:30

Data File:				to\Chrom			13-Mar-2017 15:50 3.b\2017.03.02A_00			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFC 417.00 > 372.00		2.836	-0.008		10230536	49.9		99.8	343374	
15 Perfluorood 413.00 > 369.00 413.00 > 169.00	2.828	2.844 2.844		1.000 1.000	225716 127154	1.08	1.78(0.90-1.10)	108	2239 6016	
16 Perfluorohe 449.00 > 80.00	•			1.000	240122	1.02		107		
17 Perfluorood 499.00 > 80.00 499.00 > 99.00	3.193	onic acid 3.099 3.099	0.094 0.094	1.000 1.000	196625 44821	0.8746	4.39(0.90-1.10)	94.2		M M M
D 18 13C4 PFC 503.00 > 80.00		3.220	-0.027		10927227	45.2		94.6	427675	
D 19 13C5 PFN 468.00 > 423.00		3.220	-0.027		7984281	44.9		89.8	228284	
20 Perfluorono 463.00 > 419.00			-0.027	1.000	148263	1.03		103	3241	
D 21 13C8 FOS 506.00 > 78.00		3.547	-0.018		18325592	49.9		99.9	283918	
22 Perfluorood 498.00 > 78.00				1.000	327613	0.99		99.5	27115	
25 Sodium 1H 527.00 > 507.00		•		e 1.000	83379	0.9502		99.2		
D 26 M2-8:2FT5 529.00 > 509.00		3.572	-0.026		4176937	45.1		94.2		
D 23 13C2 PFD 515.00 > 470.00		3.581	-0.018		7416278	44.5		89.0	253454	
24 Perfluorode 513.00 > 469.00			-0.027	1.000	131555	0.9793		97.9	4848	
D 27 d3-NMeF0 573.00 > 419.00		3.727	-0.022		2520676	29.6		59.2		
28 N-methyl pe 570.00 > 419.00				1.003	46481	0.9494		94.9		
29 Perfluorode 599.00 > 80.00			id -0.029	1.000	129457	0.9507		98.6		
D 32 d5-NEtFO 589.00 > 419.00	SAA	3.896			2546257	31.3		62.6		
33 N-ethyl peri 584.00 > 419.00	fluoroocta		onamid	1.004	46877	1.01		101		
31 Perfluorour 563.00 > 519.00	ndecanoi	c acid		1.000	124292	1.05		105	2797	
D 30 13C2 PFU 565.00 > 520.00	lnA		-0.027	1.000	5830278	44.6		89.1	168776	
D 34 d-N-MeFC 515.00 > 169.00	SA-M	4.041	-0.029		4113167	46.7		93.5	100770	
35 MeFOSA				1 000						
512.00 > 169.00 37 Perfluorodo	decanoi	c acid	-0.022	1.000	78452	1.02		102		M
613.00 > 569.00	4.165	4.194	-0.029	1.000	96492 Page 534 of (683 ^{0.9525}		95.3	973/27	/2017

Report Date: 27-Mar-2017 09:41:26 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Data File:

Data File.	1101110	militars	acramen	.0101110111	Data / 10_111201	70302 4037	3.b12017.03.0271_00	71.u		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	οA									
615.00 > 570.00	4.165	4.187	-0.022		5538643	44.7		89.4	110918	
D 38 d-N-EtFOS										
531.00 > 169.00	4.199	4.222	-0.023		4082033	47.9		95.8		
39 N-ethylperflu										
526.00 > 169.00	4.213	4.230	-0.017	1.000	79734	0.99		99.3		
41 Perfluorotrio										
663.00 > 619.00		4.461	-0.032	1.000	104381	1.08		108	3378	
D 43 13C2-PFT					11001101	45.5		04.4	0//745	
715.00 > 670.00			-0.023		11801191	45.5		91.1	366715	
42 Perfluorotet			0.000	1 000	22/222	1.04		104	1407	M
712.50 > 668.90 713.00 > 169.00		4.695 4.695	-0.023 -0.023	1.000 1.000	226988 37053	1.04	6.13(0.00-0.00)	104	1407 5899	M
D 44 13C2-PFH		4.075	-0.023	1.000	37033		0.13(0.00-0.00)		3077	
815.00 > 770.00		5.103	-0 009		6112206	48.9		97.7	168460	
45 Perfluorohe			0.007		0112200	10.7		77.7	100100	M
813.00 > 769.00		5.114	-0.020	1.000	181303	1.39		139	529	M
46 Perfluorooct			3.323		.0.000	1.07		.0,	02,	•••
913.00 > 869.00		5.469	-0.023	1.000	97111	1.22		122	400	

QC Flag Legend Review Flags

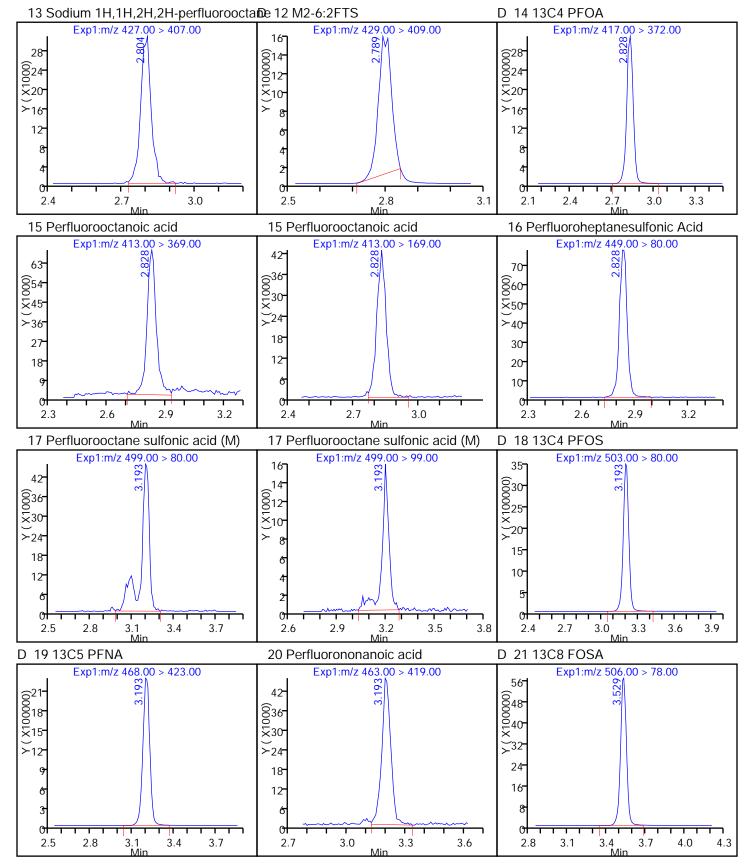
M - Manually Integrated

Reagents:

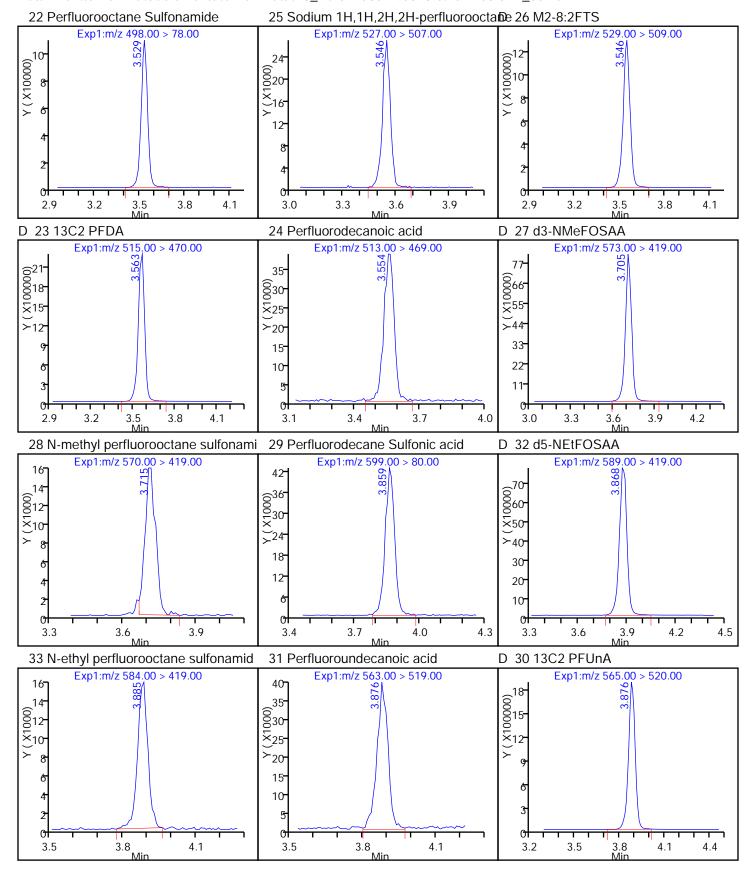
LCPFC_FULL-L2_00001 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2017 09:41:27 Chrom Revision: 2.2 13-Mar-2017 15:50:30 TestAmerica Sacramento Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d **Injection Date:** 02-Mar-2017 10:12:44 Instrument ID: A8_N Lims ID: CCV L2 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ 2 Perfluorobutyric acid D 113C4 PFBA D 313C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 49 X 30 30-30-77- 266-8 235 Σ_{55} ²⁸ 21 18 33 14 12 22 1.7 0.9 1.8 1.5 1.8 1.4 2.0 1.2 1.5 2.1 2.4 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 56 14 84 (000012 X) × 8 6048- 0048-0040-872 ×60 <u></u>32 ≻48 24 36 16 24 12 2.0 1.7 1.7 1.3 1.6 1.9 2.2 2.0 2.3 1.4 D 7 13C2 PFHxA 6 Perfluorohexanoic acid 10 Perfluoroheptanoic acid Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 363.00 > 319.00 63 635 635 630 63 054 00 ×45 ©54**-**×25 ×45 **≻**20 -36 ≻36- 27 15 27 18 10 18 2.0 2.3 1.9 2.2 2.5 2.3 1.7 2.6 2.0 2.6 2.9 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid (M) D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 403.00 > 84.00 Exp1:m/z 367.00 > 322.00 88 42 (30 00 00 25 X 200030 30-6 866-×20 ×55 \succ_{44} 15 18 33 12 22 0 0 2.0 2.3 2.6 2.9 3.2 1.9 Page 586 of 683 2.8 2.0 2.3 2.6 1.7 1.7

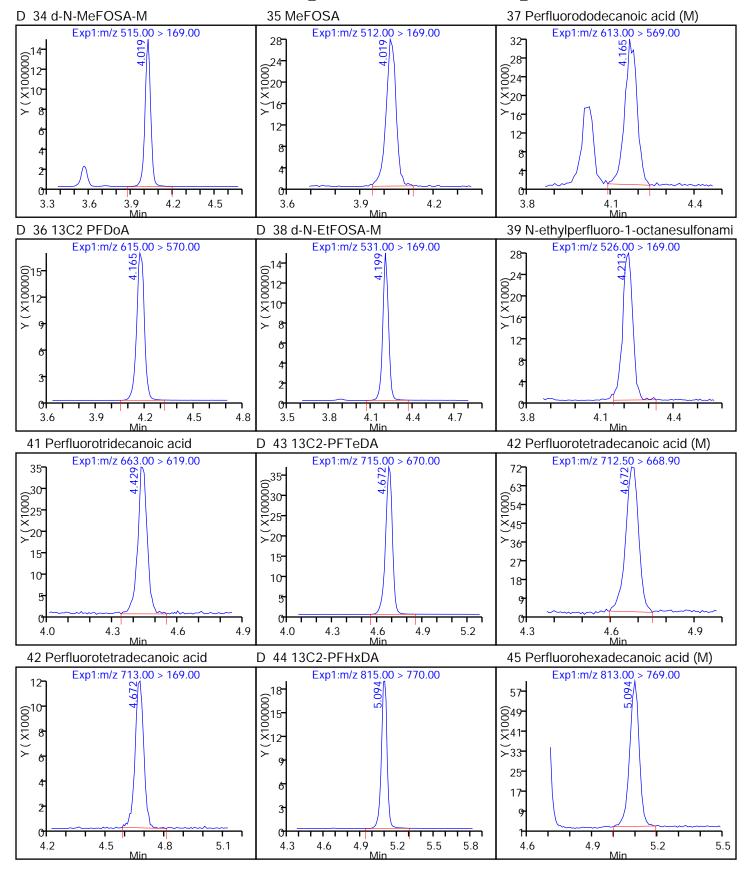
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d



Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d



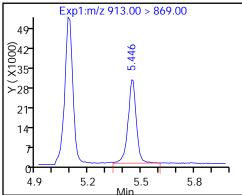
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d



Report Date: 27-Mar-2017 09:41:27 Chrom Revision: 2.2 13-Mar-2017 15:50:30

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Injection Date: 02-Mar-2017 10:12:44 Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

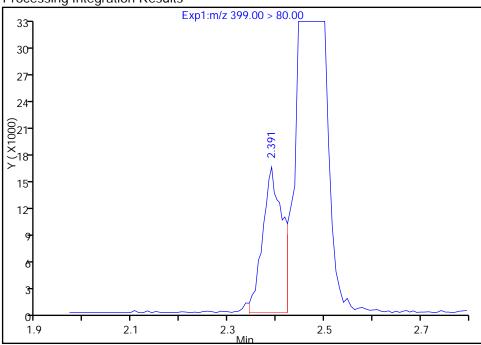
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

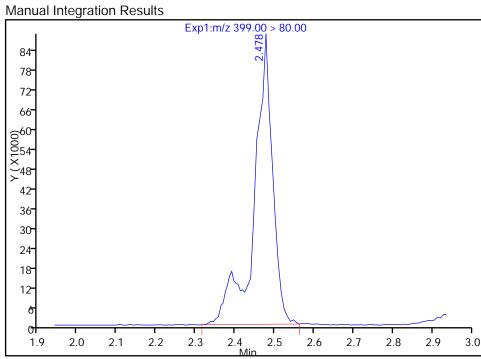
8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

RT: 2.39 Area: 45593 Amount: 0.156564 Amount Units: ng/ml **Processing Integration Results**



RT: 2.48
Area: 290855
Amount: 0.998783
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 09:41:17

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 541 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Injection Date: 02-Mar-2017 10:12:44 Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

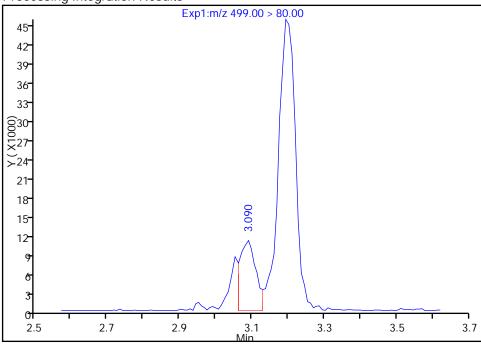
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

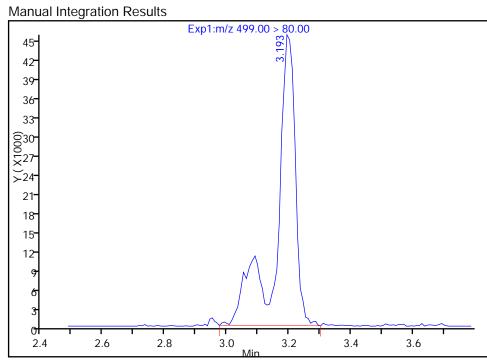
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

RT: 3.09 Area: 31935 Amount: 0.142042 Amount Units: ng/ml **Processing Integration Results**



RT: 3.19
Area: 196625
Amount: 0.874561
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 09:41:17

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 542 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Injection Date: 02-Mar-2017 10:12:44 Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

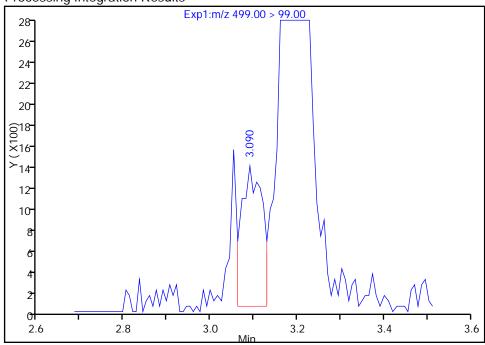
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

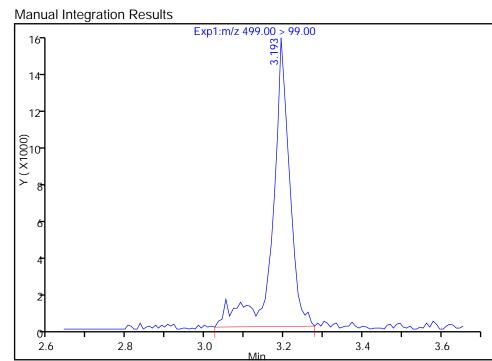
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

RT: 3.09 Area: 4213 Amount: 0.142042 Amount Units: ng/ml **Processing Integration Results**



RT: 3.19
Area: 44821
Amount: 0.874561
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 09:41:17

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 543 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Injection Date: 02-Mar-2017 10:12:44 Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

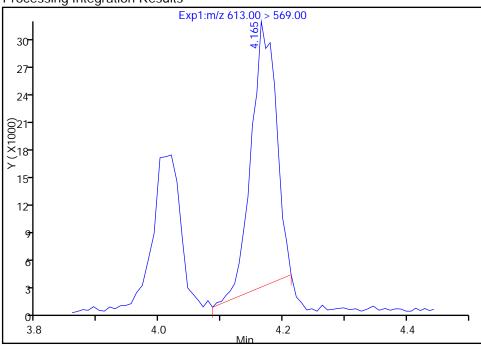
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

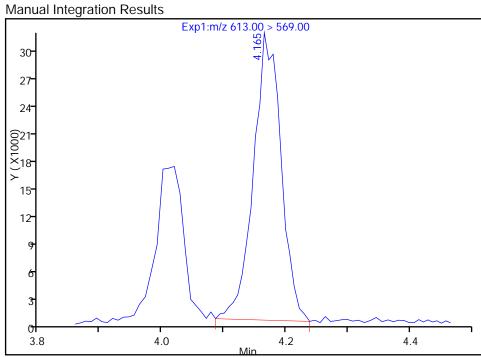
37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

RT: 4.16 Area: 80091 Amount: 0.790618 Amount Units: ng/ml **Processing Integration Results**



RT: 4.16
Area: 96492
Amount: 0.952520
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 09:41:17

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 544 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Injection Date: 02-Mar-2017 10:12:44 Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

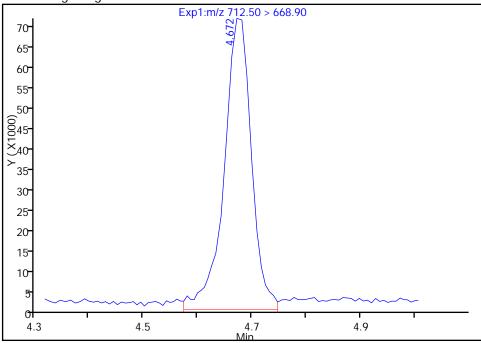
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

42 Perfluorotetradecanoic acid, CAS: 376-06-7

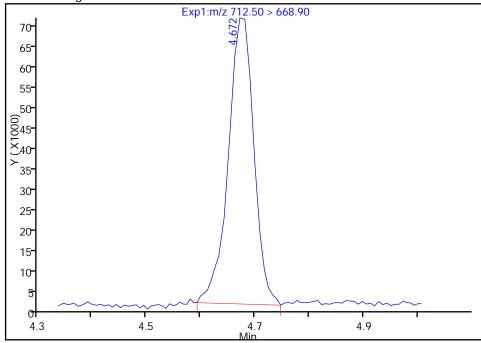
Signal: 1

RT: 4.67 Area: 249999 Amount: 1.147659 Amount Units: ng/ml **Processing Integration Results**



RT: 4.67
Area: 226988
Amount: 1.042024
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 27-Mar-2017 09:41:17

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 545 of 683

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_001.d

Injection Date: 02-Mar-2017 10:12:44 Instrument ID: A8_N

Lims ID: CCV L2

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 29 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

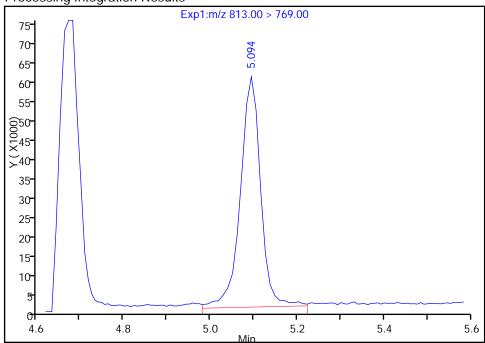
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

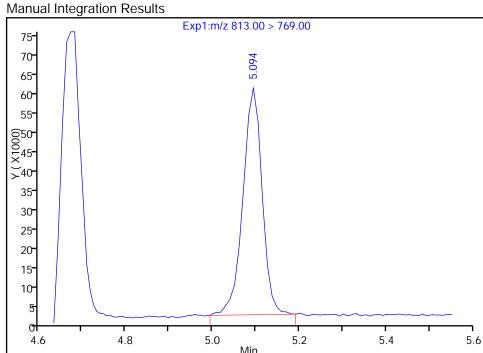
45 Perfluorohexadecanoic acid, CAS: 67905-19-5

Signal: 1

RT: 5.09 Area: 195255 Amount: 1.524963 Amount Units: ng/ml **Processing Integration Results**



RT: 5.09
Area: 181303
Amount: 1.389087
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 09:41:17

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 546 of 683

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152836/11 Calibration Date: 03/02/2017 10:20

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.02A_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8626		20.4	20.0	1.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	0.9396		19.2	20.0	-4.0	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.525		18.8	17.7	6.5	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8472		19.0	20.0	-4.8	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9487		19.6	20.0	-1.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9941		17.6	18.2	-3.3	25.0
6:2FTS	L2ID		0.9091		19.3	19.0	1.9	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.067		19.7	19.0	3.5	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9682		19.0	20.0	-5.2	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9385		17.7	18.6	-4.6	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.8879		19.6	20.0	-1.8	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9235		20.6	20.0	2.8	25.0
8:2FTS	L2ID		0.9667		20.0	19.2	4.2	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.8933		19.7	20.0	-1.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9421		19.4	20.0	-3.0	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.5855		19.0	19.3	-1.7	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8693		19.1	20.0	-4.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9348		18.4	20.0	-7.8	25.0
MeFOSA	AveID	0.9355	0.9236		19.7	20.0	-1.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8671		19.0	20.0	-5.2	25.0
N-EtFOSA-M	AveID	0.9837	0.9734		19.8	20.0	-1.0	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8785		20.1	20.0	0.6	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.955		19.9	20.0	-0.6	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.014		21.5	20.0	7.5	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.8394		23.4	20.0	17.0	25.0
13C4 PFBA	Ave	292242	325440		55.7	50.0	11.4	50.0
13C5-PFPeA	Ave	232192	259316		55.8	50.0	11.7	50.0
13C2 PFHxA	Ave	210884	249729		59.2	50.0	18.4	50.0
13C4-PFHpA	Ave	192959	214011		55.5	50.0	10.9	50.0
1802 PFHxS	Ave	290899	320358		52.1	47.3	10.1	50.0
M2-6:2FTS	Ave	77178	107670		66.3	47.5	39.5	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-152836/11</u> Calibration Date: <u>03/02/2017 10:20</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.02A_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	215902		52.7	50.0	5.3	50.0
13C4 PFOS	Ave	241637	257979		51.0	47.8	6.8	50.0
13C5 PFNA	Ave	177866	174212		49.0	50.0	-2.1	50.0
13C8 FOSA	Ave	366918	388757		53.0	50.0	6.0	50.0
M2-8:2FTS	Ave	92602	87636		45.3	47.9	-5.4	50.0
13C2 PFDA	Ave	166704	152943		45.9	50.0	-8.3	50.0
d3-NMeFOSAA	Ave	85186	56323		33.1	50.0	-33.9	50.0
d5-NEtFOSAA	Ave	81371	56185		34.5	50.0	-31.0	50.0
13C2 PFUnA	Ave	130805	117449		44.9	50.0	-10.2	50.0
d-N-MeFOSA-M	Ave	87983	94130		53.5	50.0	7.0	50.0
13C2 PFDoA	Ave	123944	118248		47.7	50.0	-4.6	50.0
d-N-EtFOSA-M	Ave	85249	93582		54.9	50.0	9.8	50.0
13C2-PFTeDA	Ave	259165	255708		49.3	50.0	-1.3	50.0
13C2-PFHxDA	Ave	125061	135532		54.2	50.0	8.4	50.0

Report Date: 02-Mar-2017 12:33:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d

Lims ID: CCV L4

Client ID:

Sample Type: CCV

Inject. Date: 02-Mar-2017 10:20:15 ALS Bottle#: 31 Worklist Smp#: 11

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: CCV L4

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 02-Mar-2017 12:33:56 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK026

First Level Reviewer: chandrasenas Date: 02-Mar-2017 12:19:20

First Level Reviewer: chandrasenas					Date:	C	20			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	•	1.538	0.0	1.000	5614608	20.4		102	52029	
D 113C4 PFBA										
217.00 > 172.00	1.538	1.538	0.0		16272016	55.7		111	256023	0
D 3 13C5-PFPeA										
267.90 > 223.00		1.821	0.0		12965778	55.8		112	448265	2
4 Perfluoropen				1 000	4070000	100		0.4.0	5 4000	M
262.90 > 219.00		1.821	0.0	1.000	4873282	19.2		96.0	51203	M
5 Perfluorobuta 298.90 > 80.00	anesulfo 1.861	nic acid 1.861	0.0	1.000	8637275	18.8		106		
298.90 > 99.00 298.90 > 99.00		1.861	0.0	1.000	3676549	10.0	2.35(0.00-0.00)	100		
D 7 13C2 PFHx		1.001	0.0	1.000	0070017		2.00(0.00 0.00)			
315.00 > 270.00		2.122	0.0		12486437	59.2		118	50611	
6 Perfluorohex	anoic ac	cid								M
313.00 > 269.00	2.122	2.122	0.0	1.000	4231273	19.0		95.2	139120	M
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.483	2.483	0.0	1.000	5796134	17.6		96.7		
D 913C4-PFHp										
367.00 > 322.00		2.468	0.0		10700569	55.5		111	41087	
10 Perfluoroheptanoic acid							40/00			
363.00 > 319.00		2.460	0.0	1.000	4060788	19.6		98.1	42603	
D 11 1802 PFH: 403.00 > 84.00		2.483	0.0		15152935	52.1		110	107291	
13 Sodium 1H,				0	10102930	52.1		110	107291	
427.00 > 407.00		2.803		1.000	1855846	19.3		102		
D 12 M2-6:2FTS			3.0		.0000.10	17.0		.02		
429.00 > 409.00		2.803	0.0		5114334	66.3		140		
Page 549 of 683								03/27	7/2017	

Page 549 of 683

03/27/2017

Report Date: 02-Mar-2017 12:33:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04 \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d Data File: **EXP** DLT REL **Amount** Signal **RT** RT **RT** Response Ratio(Limits) %Rec S/N Flags RT ng/ml D 14 13C4 PFOA 417.00 > 372.00 2.834 2.834 0.0 10795091 52.7 105 48013 15 Perfluorooctanoic acid 19.0 413.00 > 369.00 2.834 94.8 81633 2.834 0.0 1.000 4180551 413.00 > 169.00 2.826 2.834 -0.008 0.997 2393662 1.75(0.90-1.10) 140384 16 Perfluoroheptanesulfonic Acid 449.00 > 80.00 2.834 2.834 1.000 5242228 19.7 104 0.0 17 Perfluorooctane sulfonic acid 499.00 > 80.00 3.089 3.089 1.000 4493469 17.7 95.4 50831 3.089 4.33(0.90-1.10) 499.00 > 99.00 3.202 0.113 1.037 1038493 5446 D 18 13C4 PFOS 503.00 > 80.00 3.202 3.202 0.0 12331379 51.0 107 483502 D 19 13C5 PFNA 468.00 > 423.00 3.202 3.202 0.0 8710616 49.0 97.9 2554425 20 Perfluorononanoic acid 463.00 > 419.00 3.210 3.210 0.0 1.000 3093545 19.6 98.2 224177 D 21 13C8 FOSA 506.00 > 78.00 3.528 3.528 0.0 19437825 53.0 106 5825133 22 Perfluorooctane Sulfonamide 498.00 > 78.00 3.536 3.536 0.0 1.000 7180030 20.6 103 2322938 25 Sodium 1H,1H,2H,2H-perfluorooctane 527.00 > 507.00 3.545 1623166 20.0 3.545 0.998 104 D 26 M2-8:2FTS 529.00 > 509.00 3.553 3.553 0.0 4197741 45.3 94.6 D 23 13C2 PFDA 515.00 > 470.00 3.561 3.561 0.0 7647149 45.9 91.7 758082 24 Perfluorodecanoic acid 513.00 > 469.00 3.561 1.000 19.7 98.6 296115 3.561 0.0 2732358 D 27 d3-NMeFOSAA 573.00 > 419.00 3.714 3.714 0.0 2816150 33.1 66.1 28 N-methyl perfluorooctane sulfonami 570.00 > 419.00 3.714 3.714 0.0 1.000 1061205 19.4 97.0 29 Perfluorodecane Sulfonic acid 599.00 > 80.00 3.867 3.867 0.0 1.000 2912097 19.0 98.3 D 32 d5-NEtFOSAA 69.0 589.00 > 419.00 3.875 3.875 0.0 2809234 34.5 33 N-ethyl perfluorooctane sulfonamid 584.00 > 419.00 3.875 19.1 3.875 0.0 1.000 976797 95.5 31 Perfluoroundecanoic acid 563.00 > 519.00 3.884 3.884 0.0 1.000 2195714 18.4 92.2 673255 D 30 13C2 PFUnA 565.00 > 520.00 3.884 3.884 0.0 5872434 44.9 89.8 1799010 D 34 d-N-MeFOSA-M 515.00 > 169.00 4.027 107 4.027 0.0 4706484 53.5

19.7

98.7

95.4

6168497/2017

35 MeFOSA

D 36 13C2 PFDoA

512.00 > 169.00 4.027

615.00 > 570.00 4.172

4.027 0.0

4.172 0.0

1.000

1738794

Page 550 of 683 47.7

Report Date: 02-Mar-2017 12:33:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File:

	Data Tile: 11011101111ValSacramento/OrifornibataVio_1Vi20170302 40373.bt2017.03.0211_002.d										
	Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid											
	613.00 > 569.00	4.172	4.172	0.0	1.000	2050744	19.0		94.8	41630	
D 38 d-N-EtFOSA-M											
	531.00 > 169.00	4.205	4.205	0.0		4679104	54.9		110		
	39 N-ethylperfluoro-1-octanesulfonami										
	526.00 > 169.00	4.213	4.213	0.0	1.000	1821773	19.8		99.0		
41 Perfluorotridecanoic acid											
	663.00 > 619.00		4.436	0.0	1.000	2077528	20.1		101	222516	
	D 43 13C2-PFT6					10705101	40.0		00.7		•
			4.672	0.0		12785404	49.3		98.7	395500	2
42 Perfluorotetradecanoic acid											
	712.50 > 668.90 713.00 > 169.00		4.681 4.681	0.0 -0.009	1.000 0.998	4623654 630382	19.9	7.33(0.00-0.00)	99.4	30443 199387	
	D 44 13C2-PFH		4.001	-0.007	0.770	030302		7.33(0.00-0.00)		177307	
	815.00 > 770.00		5.093	0.0		6776585	54.2		108	268593	
	45 Perfluorohe			0.0		0770000	01.2		100	200070	
	813.00 > 769.00		5.093	0.0	1.000	2397154	21.5		107	4946	
46 Perfluorooctadecanoic acid											
	913.00 > 869.00		5.446	0.0	1.000	1985155	23.4		117	6409	

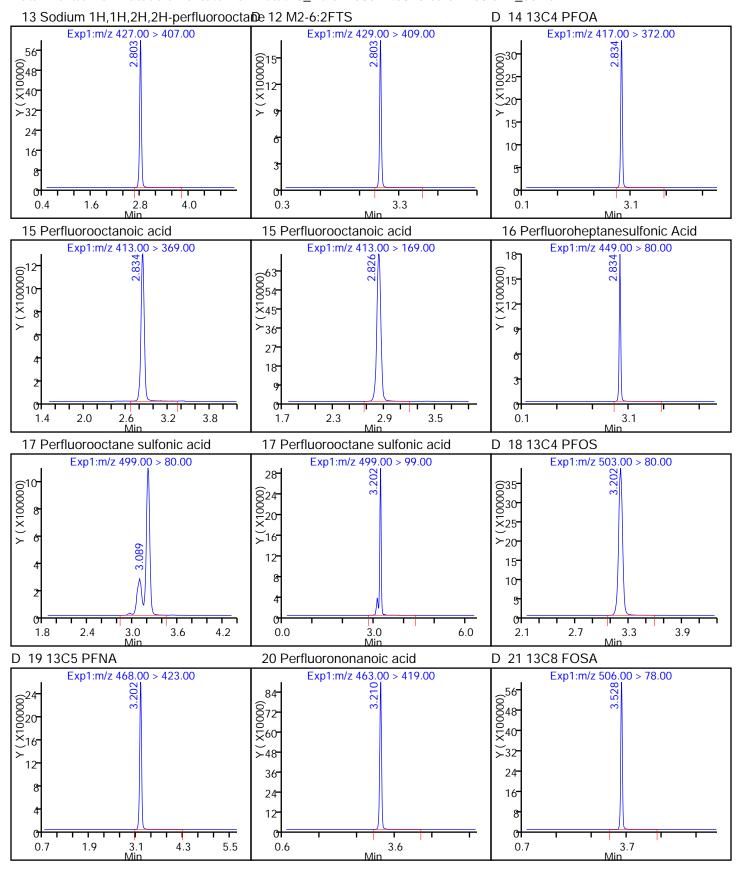
QC Flag Legend Review Flags

M - Manually Integrated

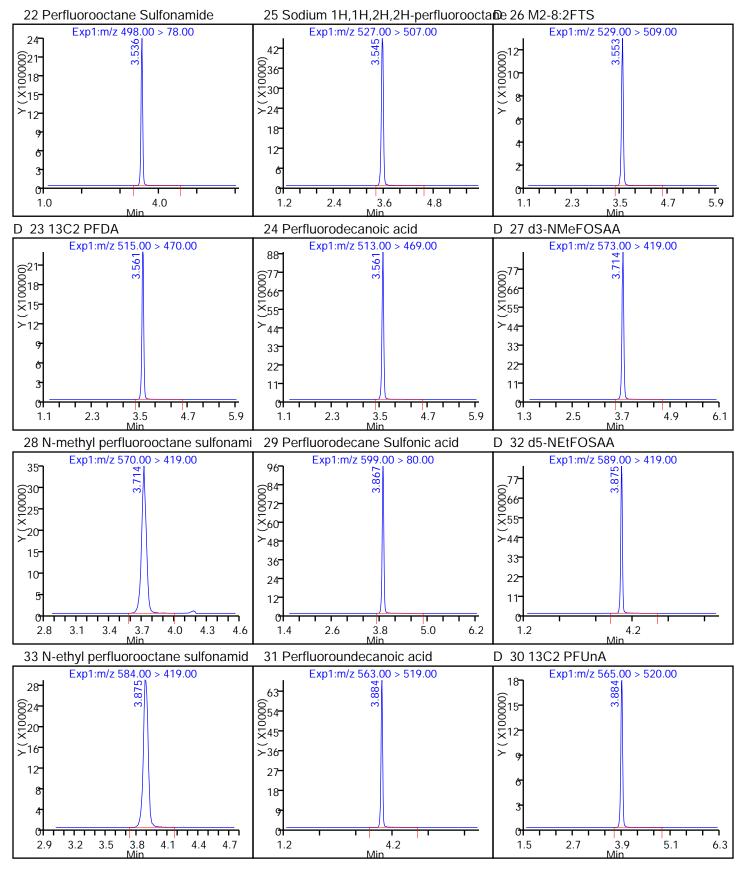
Reagents:

LCPFC_FULL-L4_00001 Amount Added: 1.00 Units: mL

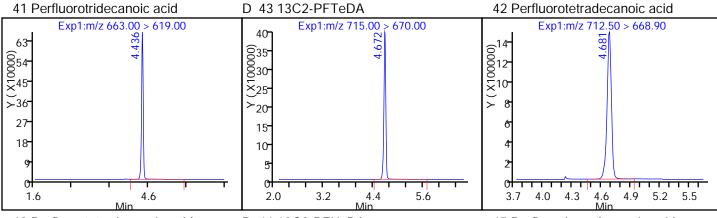
Report Date: 02-Mar-2017 12:33:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento Data File: **Injection Date:** 02-Mar-2017 10:20:15 Instrument ID: A8_N Lims ID: CCV L4 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 11 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 18 15 \tau \(\frac{1}{2}\) (000042-1) 35-<u></u>28- 21 18 14 1.2 2.4 0.9 0.9 1.8 2.7 0.0 3.6 0.0 1.8 2.7 0.0 3.6 4 Perfluoropentanoic acid (M) 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262,90 > 219.00 Exp1:m/z 298.90 > 99.00 Exp1:m/z 298.90 > 80.00 18 32 14 (0000015⁻12⁻2 × 9 (000001) X (X1000000) 8 ©28**-**×20 ≻₁₆-12 2.2 2.0 0.9 2.7 1.6 1.9 1.4 1.8 1.3 1.7 2.3 0.0 3.6 D 7 13C2 PFHxA 6 Perfluorohexanoic acid (M) 8 Perfluorohexanesulfonic acid Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 399.00 > 80.00 14 16 0014- <u>8</u>36 830 ×10 18 12 1.2 2.4 3.6 4.8 1.8 2.1 2.4 2.7 0.5 1.4 2.3 3.2 0.0 1.5 4.1 D 9 13C4-PFHpA 10 Perfluoroheptanoic acid D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 363.00 > 319.00 Exp1:m/z 403.00 > 84.00 14 48 (30° 00025 (0000010 X) 042 036 \sum_{20} ≥30 ≻₂₄· 15 18 10 12 0 0 0 0.0 3.0 1.3 1.9 Page 550h of 683 0.0 3.0 3.1 03/27/201 Min Min

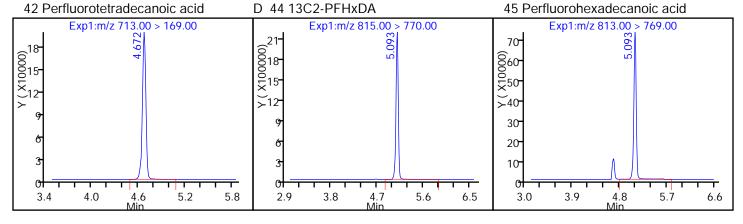


Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d



Report Date: 02-Mar-2017 12:33:56 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d D 34 d-N-MeFOSA-M 35 MeFOSA D 36 13C2 PFDoA Exp1:m/z 515.00 > 169.00 Exp1:m/z 512.00 > 169.00 Exp1:m/z 615.00 > 570.00 (0000015⁻ X12 56 000048 X40 -32 24 16 4.1 2.8 3.4 4.0 4.6 5.2 1.7 2.9 5.3 2.5 3.4 4.3 5.2 37 Perfluorododecanoic acid D 38 d-N-EtFOSA-M 39 N-ethylperfluoro-1-octanesulfonami Exp1:m/z 613.00 > 569.00 Exp1:m/z 531.00 > 169.00 Exp1:m/z 526.00 > 169.00 16- 56 63 0014- 0012-0048 ×40 00054 X45 ∑₁₀ <u></u>32− -36 24 27 18 16 \mathbf{o} 4.2 4.3 5.2 3.0 3.4 4.6 5.4 Min 41 Perfluorotridecanoic acid D 43 13C2-PFTeDA 42 Perfluorotetradecanoic acid Exp1:m/z 663.00 > 619.00 Exp1:m/z 715.00 > 670.00 Exp1:m/z 712.50 > 668.90 40

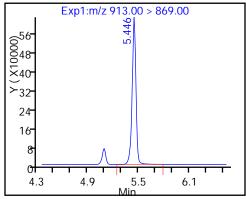




Report Date: 02-Mar-2017 12:33:57 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d

46 Perfluorooctadecanoic acid



Report Date: 02-Mar-2017 12:33:57 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d

Injection Date: 02-Mar-2017 10:20:15 Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 11

Injection Vol: 2.0 ul Dil. Factor: 1.0000

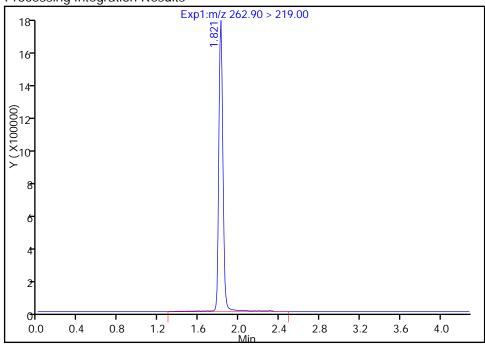
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

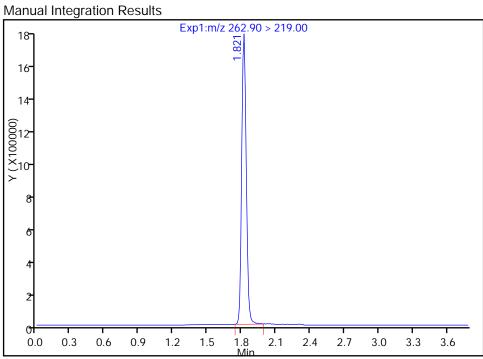
4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

RT: 1.82 Area: 5152486 Amount: 20.305253 Amount Units: ng/ml **Processing Integration Results**



RT: 1.82 Area: 4873282 Amount: 19.204948 Amount Units: ng/ml



Reviewer: chandrasenas, 02-Mar-2017 12:33:55

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 557 of 683

Report Date: 02-Mar-2017 12:33:57 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_002.d

Injection Date: 02-Mar-2017 10:20:15 Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: 11

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

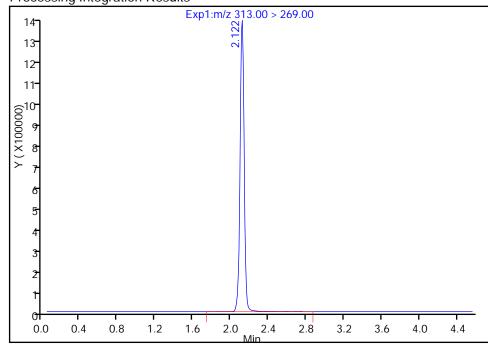
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

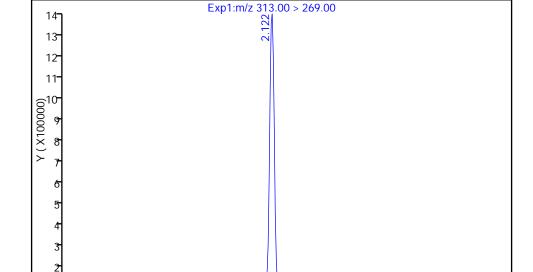
Signal: 1

RT: 2.12 Area: 4287198 Amount: 19.299849 Amount Units: ng/ml **Processing Integration Results**

Manual Integration Results



RT: 2.12 Area: 4231273 Amount: 19.048089 Amount Units: ng/ml



2.7

3.0

3.3

3.6

Reviewer: chandrasenas, 02-Mar-2017 12:33:55

Audit Action: Manually Integrated

Audit Reason: Baseline

1.8

2.1

2.4

Page 558 of 683

1.5

1.2

0.9

0.6

0.3

3.9

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-152836/23 Calibration Date: 03/02/2017 11:50

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.02A_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8988		53.0	50.0	6.1	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.008		51.5	50.0	3.0	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.483		45.7	44.2	3.5	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9279		52.2	50.0	4.3	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9584		49.5	50.0	-0.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.043		46.2	45.5	1.5	25.0
6:2FTS	L2ID		0.8881		47.4	47.4	-0.0	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	1.018		49.8	50.0	-0.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.120		51.7	47.6	8.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.022		48.2	46.4	3.9	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9647		53.4	50.0	6.7	25.0
8:2FTS	L2ID		0.9133		47.3	47.9	-1.3	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9175		51.1	50.0	2.1	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9264		51.1	50.0	2.3	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9312		47.9	50.0	-4.1	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6342		51.3	48.2	6.5	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8727		47.9	50.0	-4.1	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9523		47.0	50.0	-6.1	25.0
MeFOSA	AveID	0.9355	0.9017		48.2	50.0	-3.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9418		51.5	50.0	3.0	25.0
N-EtFOSA-M	AveID	0.9837	0.9242		47.0	50.0	-6.0	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9283		53.1	50.0	6.3	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.921		48.8	50.0	-2.3	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.007		54.0	50.0	7.9	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.9567		66.7	50.0	33.3*	25.0
13C4 PFBA	Ave	292242	339102		58.0	50.0	16.0	50.0
13C5-PFPeA	Ave	232192	263905		56.8	50.0	13.7	50.0
13C2 PFHxA	Ave	210884	258586		61.3	50.0	22.6	50.0
13C4-PFHpA	Ave	192959	223271		57.9	50.0	15.7	50.0
1802 PFHxS	Ave	290899	344494		56.0	47.3	18.4	50.0
M2-6:2FTS	Ave	77178	113159		69.6	47.5	46.6	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-152836/23</u> Calibration Date: <u>03/02/2017 11:50</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.02A_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	220988		53.9	50.0	7.8	50.0
13C4 PFOS	Ave	241637	275791		54.6	47.8	14.1	50.0
13C5 PFNA	Ave	177866	176927		49.7	50.0	-0.5	50.0
13C8 FOSA	Ave	366918	403987		55.1	50.0	10.1	50.0
M2-8:2FTS	Ave	92602	91276		47.2	47.9	-1.4	50.0
13C2 PFDA	Ave	166704	156017		46.8	50.0	-6.4	50.0
d3-NMeFOSAA	Ave	85186	67930		39.9	50.0	-20.3	50.0
d5-NEtFOSAA	Ave	81371	61574		37.8	50.0	-24.3	50.0
13C2 PFUnA	Ave	130805	126813		48.5	50.0	-3.1	50.0
d-N-MeFOSA-M	Ave	87983	105294		59.8	50.0	19.7	50.0
13C2 PFDoA	Ave	123944	121654		49.1	50.0	-1.8	50.0
d-N-EtFOSA-M	Ave	85249	102620		60.2	50.0	20.4	50.0
13C2-PFTeDA	Ave	259165	246402		47.5	50.0	-4.9	50.0
13C2-PFHxDA	Ave	125061	140417		56.1	50.0	12.3	50.0

Report Date: 02-Mar-2017 12:34:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_014.d

Lims ID: CCV L5

Client ID:

Sample Type: CCV

Inject. Date: 02-Mar-2017 11:50:19 ALS Bottle#: 32 Worklist Smp#: 23

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-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 02-Mar-2017 12:34:28 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK026

First Level Reviewer: chandrasenas Date: 02-Mar-2017 12:33:35

First Level Revie	wer: cha	<u>indraser</u>	nas		Date:	0	2-Mar-2017 12:33:3	35		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobut	vric acid									
212.90 > 169.00	•	1.538	0.0	1.000	15238716	53.0		106	99621	
D 113C4 PFBA										
217.00 > 172.00		1.538	0.0		16955081	58.0		116	846923	
D 3 13C5-PFPe	eΑ									
267.90 > 223.00	1.821	1.821	0.0		13195267	56.8		114	112062	1
4 Perfluoroper	ntanoic a	cid								
262.90 > 219.00	1.821	1.821	0.0	1.000	13299835	51.5		103	111363	
5 Perfluorobut	anesulfo	nic acid								
	1.861	1.861	0.0	1.000	22574779	45.7		103		
298.90 > 99.00		1.861	0.0	1.000	9933704		2.27(0.00-0.00)			
D 7 13C2 PFHx										
315.00 > 270.00		2.118	0.0		12929323	61.3		123	411353	
6 Perfluorohex				1 000	1100/100	50.0		101	000001	
313.00 > 269.00		2.118	0.0	1.000	11996493	52.2		104	328901	
D 47 13C3-PFB		0.040	0.0		201	NO				
301.90 > 83.00		2.243	0.0		291	NC				
10 Perfluorohe	•		0.0	1 000	10/005/7	40 F		00.1	1100/0	
363.00 > 319.00		2.464	0.0	1.000	10699567	49.5		99.1	110260	
D 9 13C4-PFHp 367.00 > 322.00		2.456	0.0		11163533	57.9		116	310079	
					11103533	57.9		110	310079	
8 Perfluorohex 399.00 > 80.00		onic acid 2.479		1.000	16354110	46.2		101		M
		2.479	0.0	1.000	10354110	40.2		101		M
D 11 18O2 PFH 403.00 > 84.00		2.479	0.0		16294547	56.0		118	469192	
				_	10274347	50.0		110	407172	
13 Sodium 1H, 427.00 > 407.00		н-репи 2.798		e 1.000	4763457	47.4		100.0		
427.00 > 407.00	2.170	2.170	0.0	1.000				100.0		
					Page 561 of 6	683			03/27	7/2017

Page 561 of 683

03/27/2017

Report Date: 02-l				o\Chrom			03-Feb-2017 15:35 3.b\2017.03.02A_0			
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS 429.00 > 409.00	2.798	2.798	0.0		5375056	69.6		147		
D 14 13C4 PFO 417.00 > 372.00	2.829	2.829	0.0		11049404	53.9		108	459222	
15 Perfluorooct 413.00 > 369.00 413.00 > 169.00	2.829	2.829 2.829	0.0	1.000 0.997	11252138 6789329	49.8	1.66(0.90-1.10)	99.7	140155 151233	
16 Perfluorohej 449.00 > 80.00	2.837	2.837	0.0	1.000	14703223	51.7		109		
17 Perfluorooct 499.00 > 80.00 499.00 > 99.00 D 18 13C4 PFO	3.084 3.100	onic acionic 3.084 3.084		1.000 1.005	13082408 2947909	48.2	4.44(0.90-1.10)	104	70511 14308	
503.00 > 80.00 D 19 13C5 PFN/	3.205	3.205	0.0		13182792	54.6		114	223761	
468.00 > 423.00	3.205	3.205	0.0		8846363	49.7		99.5	364742	
20 Perfluoronoi 463.00 > 419.00	3.205	3.205	0.0	1.000	8534255	53.4		107	191378	
D 21 13C8 FOSA 506.00 > 78.00	3.542	3.542			20199361	55.1		110	339236	
22 Perfluorooct 498.00 > 78.00	3.542	3.542	0.0	1.000	18532034	51.1		102	378589	
25 Sodium 1H, 527.00 > 507.00		•		e 0.998	3992906	47.3		98.7		
D 26 M2-8:2FTS 529.00 > 509.00	3.551	3.551	0.0		4372128	47.2		98.6		
D 23 13C2 PFDA 515.00 > 470.00		3.559	0.0		7800859	46.8		93.6	226146	
24 Perfluorodeo 513.00 > 469.00		cid 3.568	0.0	1.000	7226381	51.1		102	179443	
D 27 d3-NMeFO 573.00 > 419.00		3.711	0.0		3396490	39.9		79.7		
28 N-methyl pe 570.00 > 419.00		ctane su 3.711		1.000	3162783	47.9		95.9		
29 Perfluorodeo 599.00 > 80.00		lfonic ac 3.857		1.000	8430308	51.3		106		
D 32 d5-NEtFOS 589.00 > 419.00		3.874	0.0		3078695	37.8		75.7		
33 N-ethyl perfl 584.00 > 419.00		ane sulfo 3.883		1.002	2686679	47.9		95.9		
31 Perfluoround 563.00 > 519.00	decanoio			1.000	6038014	47.0		93.9	110913	
D 30 13C2 PFUr	nΑ			1.000						
565.00 > 520.00 D 34 d-N-MeFO3 515.00 > 169.00	SA-M	3.8834.032	0.0		6340659 5264701	48.5 59.8		96.9 120	167301	

Page 562 of 683 48.2

96.4

03/27/2017

1.000

35 MeFOSA

512.00 > 169.00 4.042 4.042 0.0

Report Date: 02-Mar-2017 12:34:28 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_014.d

Data File.	NCIIIC	JIIINa\3	acrament	.0101110111	Dala (Ao_IN (20 I	170302-4039	3.b\2017.03.02A_0	14.U		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFD	AC									
615.00 > 570.00	4.166	4.166	0.0		6082691	49.1		98.2	156811	
37 Perfluorodo										
613.00 > 569.00		4.166	0.0	1.000	5728563	51.5		103	64950	
D 38 d-N-EtFOS		4.005	0.0		F420004	40.0		100		
531.00 > 169.00		4.225			5130981	60.2		120		
39 N-ethylperflu 526.00 > 169.00		ctanesu 4.225		1.000	4741808	47.0		94.0		
41 Perfluorotrio			0.0	1.000	4741000	47.0		74.0		
663.00 > 619.00		4.440	0.0	1.000	5646419	53.1		106	142853	
D 43 13C2-PFT	eDA									
715.00 > 670.00		4.667	0.0		12320105	47.5		95.1	335589	
42 Perfluoroteti	radecan	oic acid								
712.50 > 668.90		4.667	0.0	1.000	11682096	48.8		97.7	66737	
713.00 > 169.00		4.667	-0.010	0.998	1628059		7.18(0.00-0.00)		161246	
D 44 13C2-PFH:		F 070	0.0		7020022	F/ 1		110	117101	
815.00 > 770.00		5.078	0.0		7020832	56.1		112	117131	
45 Perfluorohe: 813.00 > 769.00			0.0	1.000	6126365	54.0		108	7145	
46 Perfluorooct			0.0	1.000	0120303	34.0		100	7175	
913.00 > 869.00		5.421	0.0	1.000	5819534	66.7		133	10171	

QC Flag Legend Processing Flags

NC - Not Calibrated

Review Flags

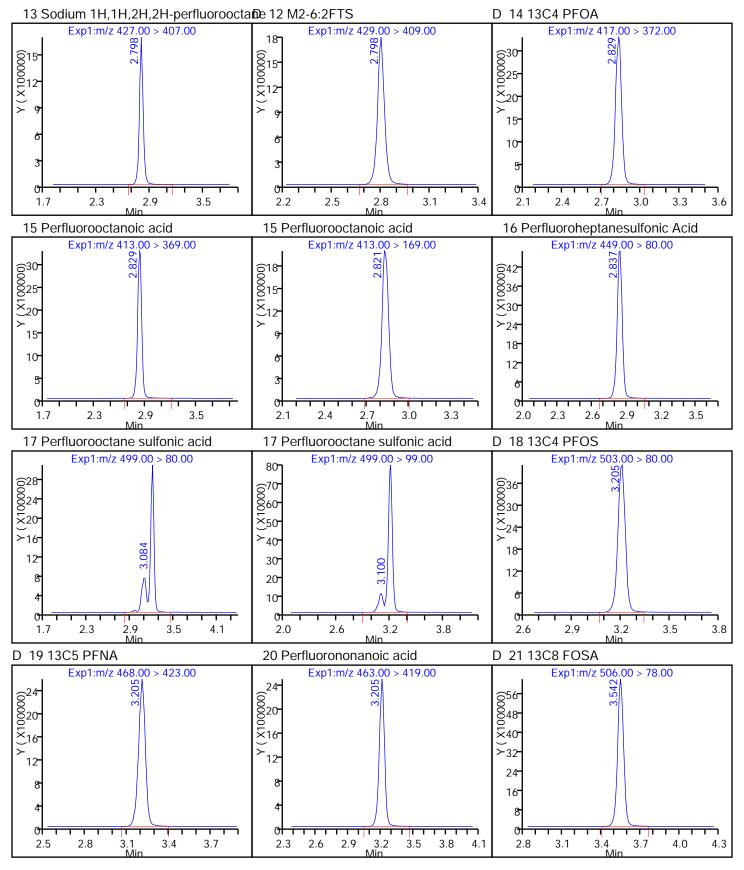
M - Manually Integrated

Reagents:

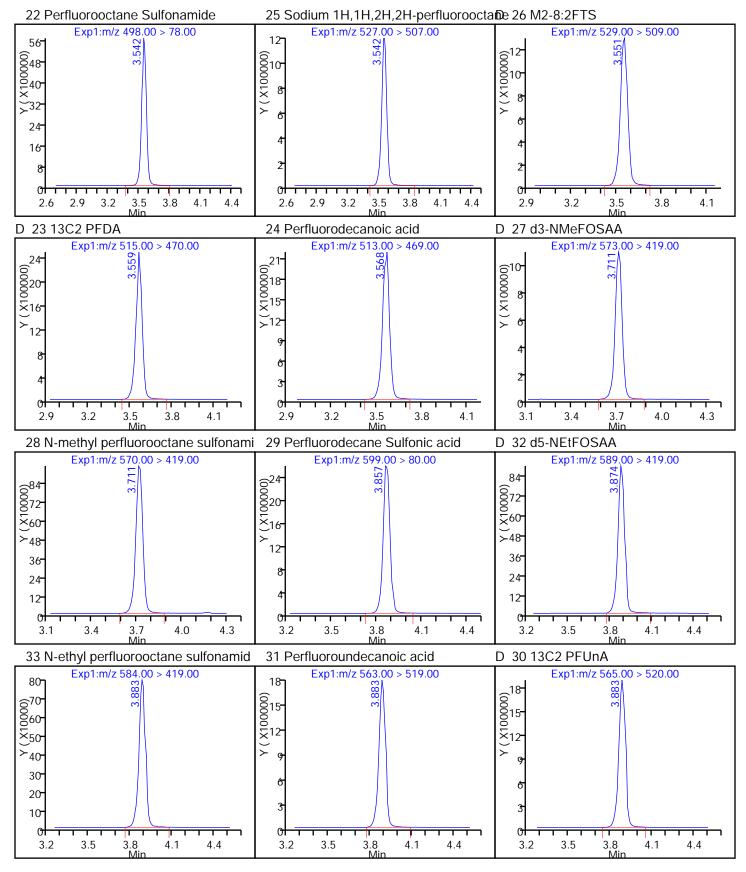
LCPFC_FULL-L5_00001 Amount Added: 1.00 Units: mL

Report Date: 02-Mar-2017 12:34:29 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_014.d Injection Date: 02-Mar-2017 11:50:19 Instrument ID: A8_N Lims ID: CCV L5 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 23 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ 2 Perfluorobutyric acid D 113C4 PFBA D 3 13C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 49 642 00036 ∑30 ∑28- 21 18 18 14 0.9 0.9 1.2 1.5 1.8 2.1 1.2 1.5 1.8 1.3 1.6 1.9 2.2 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 35- 35-30-35-35-(0000 36-30-670 6060 ∑50 ≻24 **≻**40 15 18 30 10 20 10 2.1 1.8 2.4 1.5 2.4 2.1 1.2 1.5 1.2 1.8 2.1 1.2 1.5 1.8 2.4 D 7 13C2 PFHxA 6 Perfluorohexanoic acid 10 Perfluoroheptanoic acid Exp1:m/z 363.00 > 319.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 40 42 ©30 0 0 25 035- 836 <u>§</u>30 ∑₂₄- $\stackrel{\cdot}{\succeq}_{20}$ ×25-≻₂₀-15 18 15 10 12 10 2.0 1.9 2.2 1.9 2.5 1.7 2.3 2.6 1.6 2.5 2.8 2.2 2.8 3.1 1.4 1.3 1.6 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid (M) D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367.Q0 > 322.00 Exp1:m/z 403,00 > 84.0035- 456 42 (000042 (00005) (00042 (00042) (00042) (00042) X100000 30-<u>@</u>30 <u>6</u>25 ∑₂₀ <u>~</u>24 -28 15 18 21 10 12 14 00 1.9 2.2 2.5 2.8 3.1 2.0 2.3 2.6 Page 56% of 683 3.2 2.1 2.4 1.8 2.7 1.6

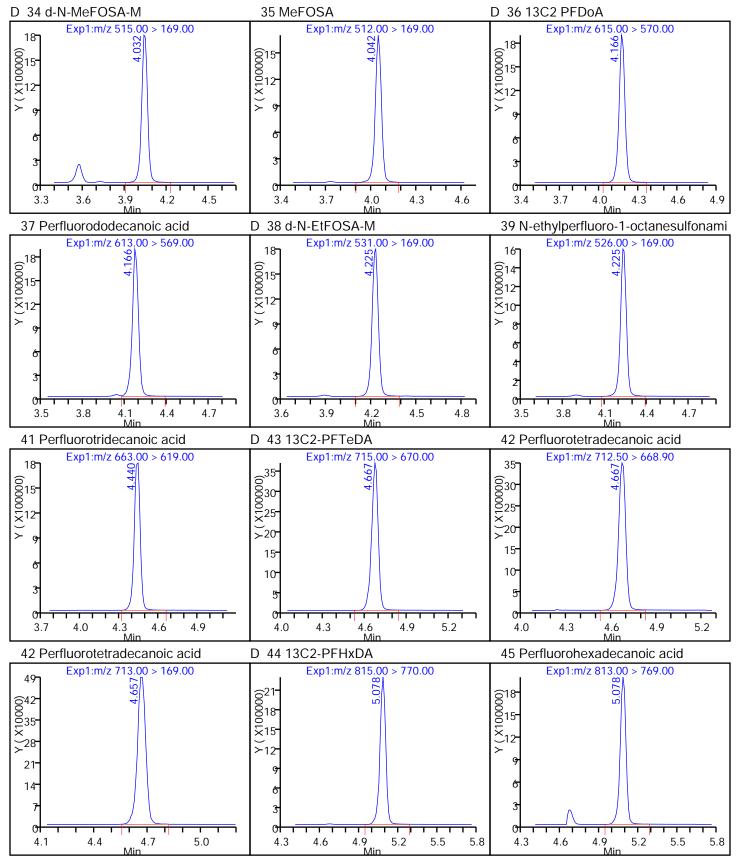
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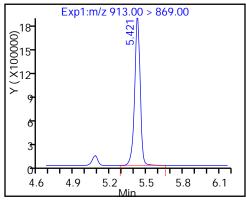
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Report Date: 02-Mar-2017 12:34:29 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_014.d

46 Perfluorooctadecanoic acid



Report Date: 02-Mar-2017 12:34:29 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_014.d

Injection Date: 02-Mar-2017 11:50:19 Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 23

Injection Vol: 2.0 ul Dil. Factor: 1.0000

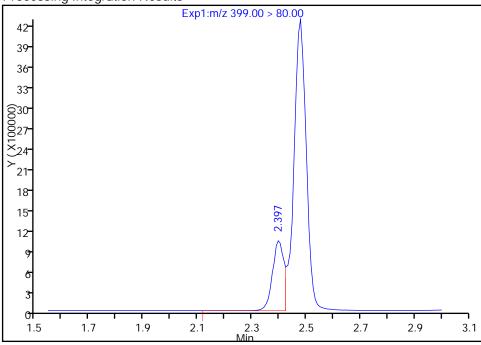
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

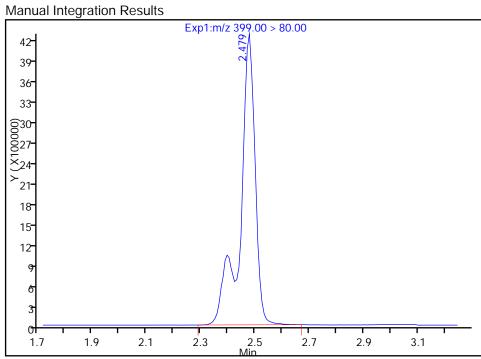
8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

RT: 2.40 Area: 2959842 Amount: 8.354240 Amount Units: ng/ml **Processing Integration Results**



RT: 2.48
Area: 16354110
Amount: 46.159952
Amount Units: ng/ml



Reviewer: chandrasenas, 02-Mar-2017 12:34:27

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 569 of 683

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-153020/4 Calibration Date: 03/03/2017 09:22

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.03A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8473	0.8577		20.2	20.0	1.2	25.0
(PFBA) Perfluoropentanoic acid	AveID	0.9785	0.9653		19.7	20.0	-1.4	25.0
(PFPeA)								
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.500		18.5	17.7	4.7	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.8771		19.7	20.0	-1.4	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9421		19.5	20.0	-2.6	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	0.9878		17.5	18.2	-4.0	25.0
6:2FTS	L2ID		0.9157		19.5	19.0	2.6	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.078		19.9	19.0	4.5	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.9435		18.5	20.0	-7.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	0.9518		18.0	18.6	-3.2	25.0
Perfluorononanoic acid	AveID	0.9040	0.9024		20.0	20.0	-0.2	25.0
(PFNA) Perfluorooctane Sulfonamide	AveID	0.8985	0.9291		20.7	20.0	3.4	25.0
(FOSA) 8:2FTS	L2ID		0.9598		19.8	19.2	3.4	25.0
Perfluorodecanoic acid	AveID	0.9057	0.8727		19.3	20.0	-3.6	25.0
(PFDA) N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9223		19.0	20.0	-5.0	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6068		19.6	19.3	1.9	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8760		19.2	20.0	-3.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.8823		17.4	20.0	-13.0	25.0
MeFOSA	AveID	0.9355	0.9141		19.5	20.0	-2.3	25.0
N-EtFOSA-M	AveID	0.9837	0.9780		19.9	20.0	-0.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.8731		19.1	20.0	-4.5	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.8214		18.8	20.0	-6.0	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.709		17.4	20.0	-13.1	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.7955		16.8	20.0	-16.1	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.7658		21.3	20.0	6.7	25.0
13C4 PFBA	Ave	292242	325898		55.8	50.0	11.5	50.0
13C5-PFPeA	Ave	232192	255368		55.0	50.0	10.0	50.0
13C2 PFHxA	Ave	210884	227520		53.9	50.0	7.9	50.0
13C4-PFHpA	Ave	192959	206066		53.4	50.0	6.8	50.0
1802 PFHxS	Ave	290899	314366		51.1	47.3	8.1	50.0
M2-6:2FTS	Ave	77178	82506		50.8	47.5	6.9	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-153020/4 Calibration Date: 03/03/2017 09:22

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.03A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	224507		54.8	50.0	9.5	50.0
13C4 PFOS	Ave	241637	255045		50.5	47.8	5.5	50.0
13C5 PFNA	Ave	177866	192378		54.1	50.0	8.2	50.0
13C8 FOSA	Ave	366918	399329		54.4	50.0	8.8	50.0
M2-8:2FTS	Ave	92602	95658		49.5	47.9	3.3	50.0
13C2 PFDA	Ave	166704	186660		56.0	50.0	12.0	50.0
d3-NMeFOSAA	Ave	85186	88306		51.8	50.0	3.7	50.0
d5-NEtFOSAA	Ave	81371	90768		55.8	50.0	11.5	50.0
13C2 PFUnA	Ave	130805	141270		54.0	50.0	8.0	50.0
d-N-MeFOSA-M	Ave	87983	94174		53.5	50.0	7.0	50.0
d-N-EtFOSA-M	Ave	85249	88457		51.9	50.0	3.8	50.0
13C2 PFDoA	Ave	123944	134098		54.1	50.0	8.2	50.0
13C2-PFTeDA	Ave	259165	264401		51.0	50.0	2.0	50.0
13C2-PFHxDA	Ave	125061	133297		53.3	50.0	6.6	50.0

Report Date: 27-Mar-2017 10:05:43 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_004.d

Lims ID: CCV L4

Client ID:

Sample Type: CCV

Inject. Date: 03-Mar-2017 09:22:57 ALS Bottle#: 31 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: CCV L4

Misc. Info.: Plate: 1 Rack: 1

Operator ID: A8-PC\A8 Instrument ID: A8_N

Sublist: chrom-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:05:43 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 03-Mar-2017 09:42:14

First Level Revie	wer: cna	indraser	ıas		Date:	C)3-Mar-2017 09:42:1	4		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA	4									
217.00 > 172.00	1.539	1.539	0.0		16294891	55.8		112	636635	
2 Perfluorobut 212.90 > 169.00	,	1.547	0.0	1.000	5590647	20.2		101	2/025	
D 3 13C5-PFP6		1.547	0.0	1.000	55 9 004 <i>1</i>	20.2		101	26825	
267.90 > 223.00		1.823	0.0		12768396	55.0		110	109120)
4 Perfluoroper	ntanoic a	cid								
262.90 > 219.00	1.823	1.823	0.0	1.000	4930038	19.7		98.6	49332	
5 Perfluorobut				1 000	022/05/	10 F		105		
298.90 > 80.00 298.90 > 99.00	1.863 1.863	1.863 1.863	0.0	1.000 1.000	8336054 3367351	18.5	2.48(0.00-0.00)	105		
D 7 13C2 PFHx							(,			
315.00 > 270.00	2.135	2.135	0.0		11376023	53.9		108	538791	
6 Perfluorohex										
313.00 > 269.00		2.135	0.0	1.000	3991250	19.7		98.6	232543	
D 9 13C4-PFH _p 367.00 > 322.00		2.476	0.0		10303301	53.4		107	420688	
10 Perfluorohe										
363.00 > 319.00	2.476	2.476	0.0	1.000	3882625	19.5		97.4	47359	
D 11 1802 PFH		0.400			4.40.40.400			100	201122	
403.00 > 84.00		2.492			14869492	51.1		108	326683	
8 Perfluorohex 399.00 > 80.00		onic acid 2.492		1.000	5651345	17.5		96.0		
D 12 M2-6:2FTS		_,,,_	0.0		000.0.0	.,,,		, 0.0		
429.00 > 409.00	2.819	2.819	0.0		3919026	50.8		107		
13 Sodium 1H,										
427.00 > 407.00	2.819	2.819	0.0	1.000	1432499	19.5		103		
					Dago 572 of 6	383			03/27	7/2017

Page 572 of 683

03/27/2017

Report Date: 27-Mar-2017 10:05:43 Chrom Revision: 2.2 13-Mar-2017 15:50:30

\\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_004.d Data File: **EXP** DLT REL **Amount** Signal **RT** RT **RT** Response Ratio(Limits) %Rec S/N Flags RT ng/ml D 14 13C4 PFOA 417.00 > 372.00 2.850 2.850 0.0 11225342 54.8 417952 110 15 Perfluorooctanoic acid 413.00 > 369.00 2.850 2.850 0.0 1.000 4236625 18.5 92.4 47867 413.00 > 169.00 2.850 2.850 0.0 1.000 2468177 1.72(0.90-1.10) 109307 16 Perfluoroheptanesulfonic Acid 449.00 > 80.00 2.850 2.850 0.0 1.000 5232384 19.9 105 17 Perfluorooctane sulfonic acid 499.00 > 80.00 3.106 3.106 1.000 4505300 18.0 96.8 45398 499.00 > 99.00 3.228 3.106 4.35(0.90-1.10) 293849 0.122 1.039 1035389 D 18 13C4 PFOS 503.00 > 80.00 3.228 3.228 0.0 12191155 50.5 106 294973 D 19 13C5 PFNA 306026 468.00 > 423.00 3.228 3.228 0.0 9618889 54.1 108 20 Perfluorononanoic acid 463.00 > 419.00 3.228 3.228 1.000 3471852 20.0 99.8 62233 0.0 D 21 13C8 FOSA 506.00 > 78.00 3.536 3.536 0.0 19966460 54.4 109 429201 22 Perfluorooctane Sulfonamide 498.00 > 78.00 3.536 3.536 0.0 1.000 7420266 20.7 103 185417 25 Sodium 1H,1H,2H,2H-perfluorooctane 527.00 > 507.00 3.578 1.000 19.8 3.578 1759111 103 D 26 M2-8:2FTS 529.00 > 509.00 3.578 3.578 0.0 4582021 49.5 103 D 23 13C2 PFDA 515.00 > 470.00 3.586 3.586 0.0 9333013 56.0 112 175517 24 Perfluorodecanoic acid 513.00 > 469.00 3.586 1.000 19.3 115940 3.586 0.0 3258058 96.4 D 27 d3-NMeFOSAA 573.00 > 419.00 3.745 3.745 0.0 4415291 51.8 104 28 N-methyl perfluorooctane sulfonami 570.00 > 419.00 3.754 3.754 0.0 1.003 1628937 19.0 95.0 29 Perfluorodecane Sulfonic acid 599.00 > 80.00 3.895 3.895 1.000 2983745 19.6 102 D 32 d5-NEtFOSAA 589.00 > 419.00 3.904 55.8 3.904 0.0 4538380 112 31 Perfluoroundecanoic acid 563.00 > 519.00 3.912 3.912 0.0 1.000 2492771 17.4 87.0 58852 33 N-ethyl perfluorooctane sulfonamid 584.00 > 419.00 3.912 3.912 0.0 1.002 1590161 19.2 96.2 D 30 13C2 PFUnA 565.00 > 520.00 3.921 3.921 0.0 7063475 54.0 108 165131 D 34 d-N-MeFOSA-M 515.00 > 169.00 4.012 53.5 107 4.012 0.0 4708700 35 MeFOSA 19.5 97.7 512.00 > 169.00 4.021 4.021 0.0 1.000 1721685 D 36 13C2 PFDoA

Page 573 of 683 54.1

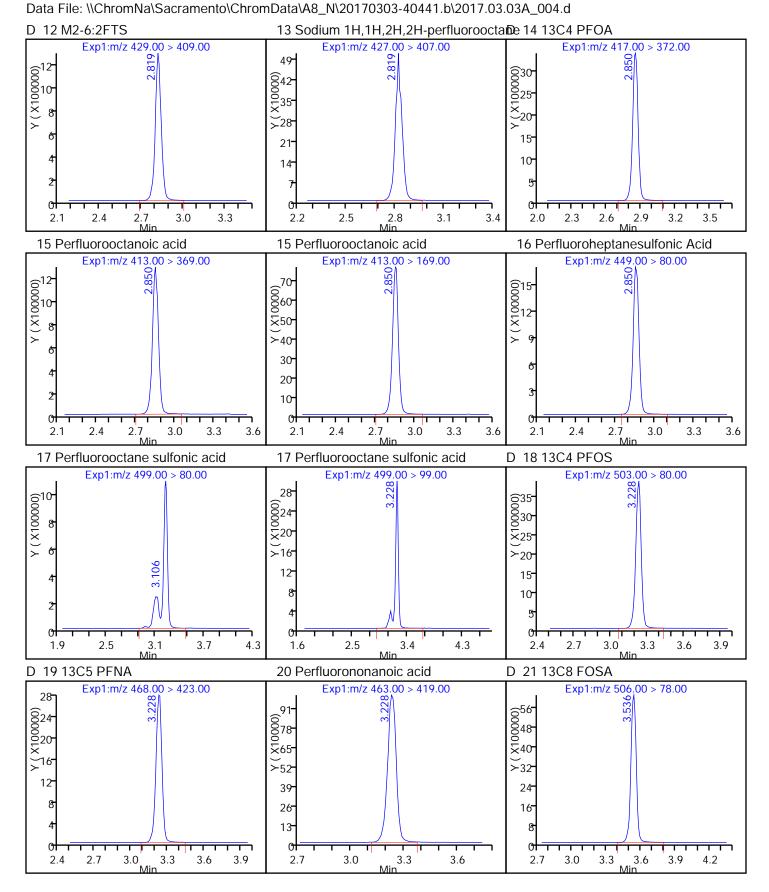
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615.00 > 570.00 4.209

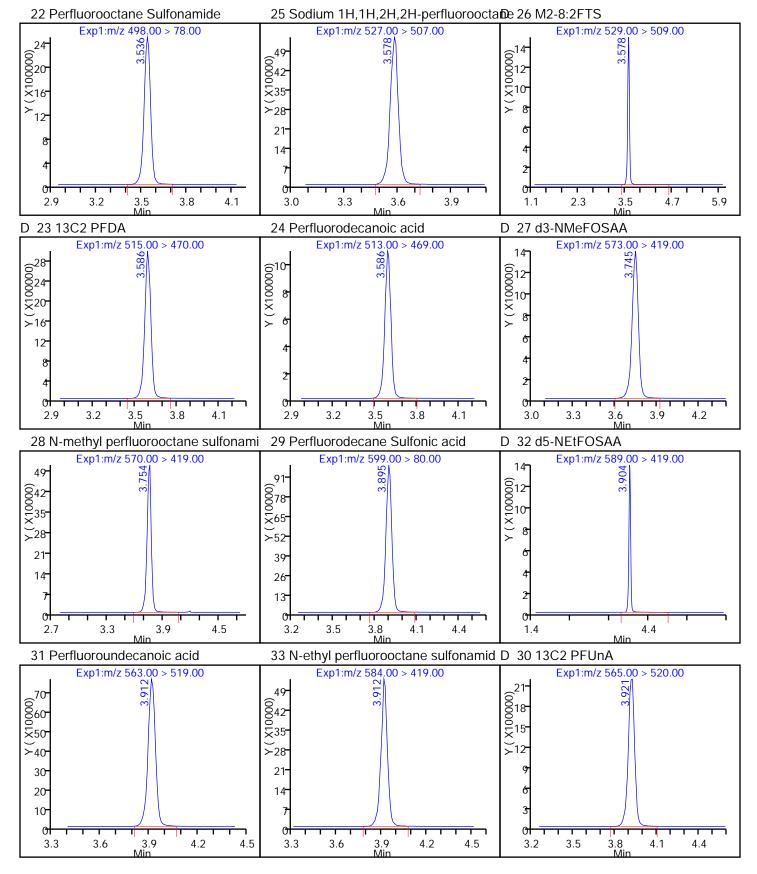
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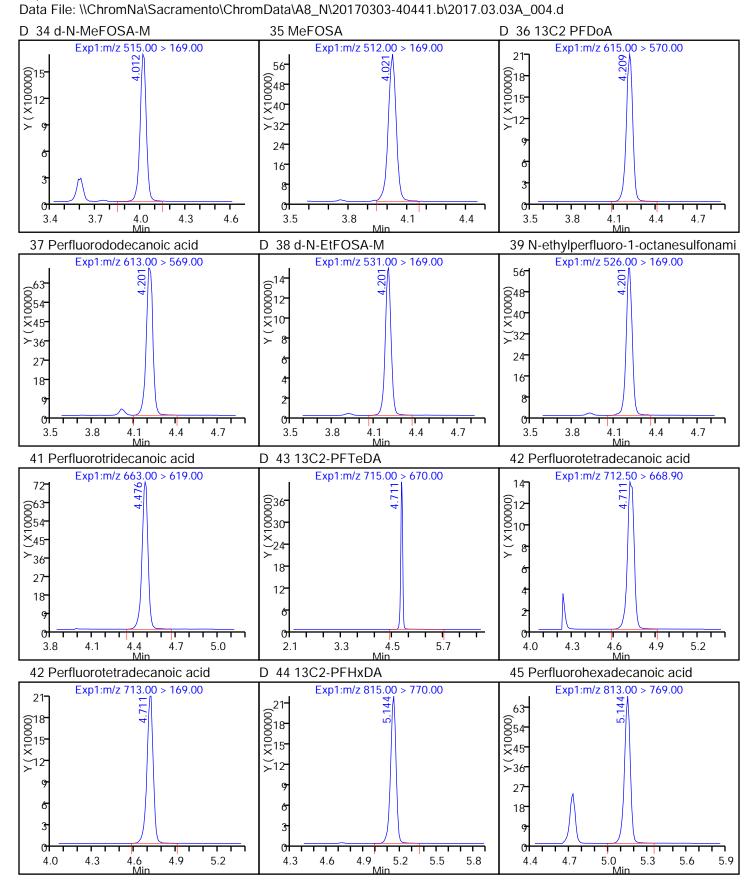
Data File.	ata File. //CII/OHIVA/Saciamento/CII/OHIData/Ao_N/2017/0303-40441.b/2017.03.03A_004.d									
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodoo	decanoio	c acid								
613.00 > 569.00	4.201	4.201	0.0	1.000	2341476	19.1		95.5	14800	
D 38 d-N-EtFOS	A-M									
531.00 > 169.00	4.201	4.201	0.0		4422856	51.9		104		
39 N-ethylperflu										
526.00 > 169.00		4.201	0.0	1.000	1730246	19.9		99.4		
41 Perfluorotrid			0.0	4 000	0000004	40.0		040	45000	
663.00 > 619.00		4.476	0.0	1.000	2202904	18.8		94.0	45088	
D 43 13C2-PFT6		4.711	0.0		12220040	E1 0		100	201042	4
715.00 > 670.00			0.0		13220040	51.0		102	201942	4
42 Perfluorotetr 712.50 > 668.90		4.711	0.0	1.000	4582925	17.4		86.9	2933	
713.00 > 169.00		4.711	0.0	1.000	650903	17.4	7.04(0.00-0.00)	00.7	68021	
D 44 13C2-PFH)							,			
815.00 > 770.00		5.144	0.0		6664867	53.3		107	100048	
45 Perfluorohex	xadecan	oic acid								
813.00 > 769.00	5.144	5.144	0.0	1.000	2133356	16.8		83.9	2130	
46 Perfluorooct	adecan	oic acid								
913.00 > 869.00	5.518	5.518	0.0	1.000	2053722	21.3		107	2538	
Reagents:										
LCPFC_FULL-L4	1_00001		Α	mount A	dded: 1.00	Units	: mL			

Report Date: 27-Mar-2017 10:05:44 Chrom Revision: 2.2 13-Mar-2017 15:50:30 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_004.d Data File: **Injection Date:** 03-Mar-2017 09:22:57 Instrument ID: A8_N Lims ID: CCV L4 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 31 Worklist Smp#: Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 18 00042 35 (0015 X) X) X 30 30-30-21 18 12 1.2 1.5 1.8 1.9 1.8 2.1 1.0 1.3 1.6 1.2 1.5 2.1 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 18 32 (12° (200000) (10° (12° (12°) (0000015⁻12⁻2 × 9 ©28**-**×20 ≻₁₆-12 1.7 Mir 2.0 2.0 2.0 2.3 1.4 2.3 1.7 1.4 1.7 1.1 1.4 2.3 1.1 D 7 13C2 PFHxA 6 Perfluorohexanoic acid D 9 13C4-PFHpA Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 367.00 > 322.00 14 (35-00030-X25-030 025 $\stackrel{\cdot}{\succeq}_{20}$ ⁻20 15 15 10 10 1.9 2.2 2.5 0.9 1.5 2.1 Min 2.7 3.3 2.0 2.3 2.6 2.9 1.6 2.8 1.7 3.2 10 Perfluoroheptanoic acid 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 363.00 > 319.00 Exp1:m/z 399.00 > 80.00 Exp1:m/z 403.00 > 84.00 16 (X100000) (X100000) 8 642 00036 0014 00012 X10 ∑30-**≻24** 18 12 0 0 0 2.2 1.9 2.5 2.8 3.0 1.2 1.8 2.4 1.8 2.1 Page 51//5nof 683



Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_004.d

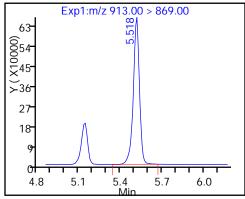




Report Date: 27-Mar-2017 10:05:44 Chrom Revision: 2.2 13-Mar-2017 15:50:30

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_004.d

46 Perfluorooctadecanoic acid



FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: CCV 320-153020/9 Calibration Date: 03/03/2017 10:00

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.03A_009.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8473	0.8971		52.9	50.0	5.9	25.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9785	1.006		51.4	50.0	2.8	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.433	1.479		45.6	44.2	3.2	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8895	0.9081		51.0	50.0	2.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9673	0.9717		50.2	50.0	0.5	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.028	1.049		46.4	45.5	2.0	25.0
6:2FTS	L2ID		0.8824		47.1	47.4	-0.7	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.022	0.998		48.8	50.0	-2.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.031	1.096		50.6	47.6	6.3	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9835	1.010		47.7	46.4	2.7	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9040	0.9545		52.8	50.0	5.6	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.8985	0.9290		51.7	50.0	3.4	25.0
8:2FTS	L2ID		0.9201		47.6	47.9	-0.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9057	0.9492		52.4	50.0	4.8	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9711	0.9285		47.8	50.0	-4.4	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5957	0.6381		51.6	48.2	7.1	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9103	0.8577		47.1	50.0	-5.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.014	0.9870		48.7	50.0	-2.6	25.0
MeFOSA	AveID	0.9355	0.9080		48.5	50.0	-2.9	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9145	0.9196		50.3	50.0	0.6	25.0
N-EtFOSA-M	AveID	0.9837	0.9415		47.9	50.0	-4.3	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8734	0.9034		51.7	50.0	3.4	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.966	1.836		46.7	50.0	-6.6	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9628		51.6	50.0	3.1	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7175	0.6843		47.7	50.0	-4.6	25.0
13C4 PFBA	Ave	292242	334153		57.2	50.0	14.3	50.0
13C5-PFPeA	Ave	232192	252574		54.4	50.0	8.8	50.0
13C2 PFHxA	Ave	210884	234974		55.7	50.0	11.4	50.0
13C4-PFHpA	Ave	192959	212838		55.2	50.0	10.3	50.0
1802 PFHxS	Ave	290899	314086		51.1	47.3	8.0	50.0
M2-6:2FTS	Ave	77178	82674		50.9	47.5	7.1	50.0

FORM VII LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Lab Sample ID: <u>CCV 320-153020/9</u> Calibration Date: <u>03/03/2017 10:00</u>

Instrument ID: A8_N Calib Start Date: 03/01/2017 11:08

GC Column: GeminiC18 3×100 ID: 3.00 (mm) Calib End Date: 03/01/2017 11:46

Lab File ID: 2017.03.03A_009.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	204953	217563		53.1	50.0	6.2	50.0
13C4 PFOS	Ave	241637	268234		53.1	47.8	11.0	50.0
13C5 PFNA	Ave	177866	185773		52.2	50.0	4.4	50.0
13C8 FOSA	Ave	366918	407291		55.5	50.0	11.0	50.0
M2-8:2FTS	Ave	92602	90188		46.7	47.9	-2.6	50.0
13C2 PFDA	Ave	166704	176887		53.1	50.0	6.1	50.0
d3-NMeFOSAA	Ave	85186	92495		54.3	50.0	8.6	50.0
d5-NEtFOSAA	Ave	81371	89341		54.9	50.0	9.8	50.0
13C2 PFUnA	Ave	130805	136205		52.1	50.0	4.1	50.0
d-N-MeFOSA-M	Ave	87983	96274		54.7	50.0	9.4	50.0
13C2 PFDoA	Ave	123944	134705		54.3	50.0	8.7	50.0
d-N-EtFOSA-M	Ave	85249	91226		53.5	50.0	7.0	50.0
13C2-PFTeDA	Ave	259165	271896		52.5	50.0	4.9	50.0
13C2-PFHxDA	Ave	125061	146486		58.6	50.0	17.1	50.0

Report Date: 27-Mar-2017 10:05:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d

Lims ID: CCV L5

Client ID:

Sample Type: CCV

Inject. Date: 03-Mar-2017 10:00:31 ALS Bottle#: 32 Worklist Smp#: 9

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-A8_N*sub14

Method: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:05:38 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 03-Mar-2017 10:15:52

FIRST Level Revie	wer: cna	ındraser	ıas		Date:	C	03-Mar-2017 10:15:5	J17 10:15:52		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA	١									
217.00 > 172.00		1.539	0.0		16707649	57.2		114	644238	
2 Perfluorobut	,									
212.90 > 169.00		1.539	0.0	1.000	14989120	52.9		106	70389	
D 3 13C5-PFP6		1 000	0.0		12/20/02	E 4 . 4		100	/25022	
267.90 > 223.00		1.823	0.0		12628683	54.4		109	635022	
4 Perfluoroper 262.90 > 219.00		1.823	0.0	1.000	12704773	51.4		103	112227	
5 Perfluorobut				1.000	12701770	01.1		100	112227	
	1.863	1.863	0.0	1.000	20531744	45.6		103		
298.90 > 99.00	1.863	1.863	0.0	1.000	8914114		2.30(0.00-0.00)			
D 7 13C2 PFHx										
315.00 > 270.00		2.119	0.0		11748698	55.7		111	446049	
6 Perfluorohex			0.0	1 000	10//0527	F1 0		100	20/42/	
313.00 > 269.00		2.128	0.0	1.000	10668527	51.0		102	286436	
D 9 13C4-PFHp 367.00 > 322.00		2.464	0.0		10641918	55.2		110	487581	
10 Perfluorohe			0.0		10011710	00.2		110	107001	
363.00 > 319.00	•	2.464	0.0	1.000	10340390	50.2		100	116847	
D 11 1802 PFH	xS									
403.00 > 84.00	2.480	2.480	0.0		14856249	51.1		108	528041	
8 Perfluorohex	canesulfo	onic acid	I							М
399.00 > 80.00	2.480	2.480	0.0	1.000	14984106	46.4		102		M
D 12 M2-6:2FTS										
429.00 > 409.00		2.807			3926998	50.9		107		
13 Sodium 1H,		-			2457020	47.1		00.2		
427.00 > 407.00	2.807	2.807	0.0	1.000	3457938	47.1		99.3		
					Dago 582 of (253			03/27	'/2∩17

Page 582 of 683

03/27/2017

Report Date: 27-N Data File:			Chrom Revision: 2.2 13-Mar-2017 15:50:30 o\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d							
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA 417.00 > 372.00	2.830		0.0		10878151	53.1		106	289993	
15 Perfluorooct: 413.00 > 369.00 413.00 > 169.00	2.830	2.830	0.0 0.0	1.000 1.000	10857092 6542056	48.8	1.66(0.90-1.10)	97.7	106005 324513	
16 Perfluorohep 449.00 > 80.00		fonic Ac 2.838		1.000	13989420	50.6		106		
	3.093	3.093	0.0	1.000	12573450	47.7		103	70870	
499.00 > 99.00 D 18 13C4 PFOS	5	3.093		1.000	2835983	F0.4	4.43(0.90-1.10)	444	13657	
503.00 > 80.00 D 19 13C5 PFNA	4	3.206			12821590	53.1		111	192615	
468.00 > 423.00 20 Perfluoronor	nanoic a	3.214 cid	0.0		9288651	52.2		104	270640	
463.00 > 419.00 D 21 13C8 FOSA		3.214	0.0	1.000	8865617	52.8		106	156573	
506.00 > 78.00 22 Perfluoroocta	3.527	3.527 onamide			20364538	55.5		111	441702	
498.00 > 78.00	3.536	3.536	0.0	1.000	18917564	51.7		103	456713	
25 Sodium 1H,1 527.00 > 507.00	3.553	3.553		1.000	3974940	47.6		99.4		
D 26 M2-8:2FTS 529.00 > 509.00	3.553	3.553	0.0		4319986	46.7		97.4		
D 23 13C2 PFDA 515.00 > 470.00		3.569	0.0		8844351	53.1		106	245259	
24 Perfluorodeo 513.00 > 469.00			0.0	1.000	8395012	52.4		105	189111	
D 27 d3-NMeFO 573.00 > 419.00		3.725	0.0		4624753	54.3		109		
	28 N-methyl perfluorooctane sulfonami 570.00 > 419.00 3.725 3.725 0.0				4294236	47.8		95.6		
29 Perfluorodeo 599.00 > 80.00	ane Sul	fonic ac 3.878		1.000	8249754	51.6		107		
D 32 d5-NEtFOS 589.00 > 419.00	AA	3.887		1.000	4467038	54.9		110		
31 Perfluoround	decanoic	acid		1 000						
563.00 > 519.00 33 N-ethyl perflu		3.895 ine sulfo		1.000	6721841	48.7		97.4	203837	
584.00 > 419.00 D 30 13C2 PFUn		3.895	0.0	1.002	3831483	47.1		94.2		
565.00 > 520.00 D 34 d-N-MeFOS		3.895	0.0		6810244	52.1		104	240147	
515.00 > 169.00 35 MeFOSA		4.022	0.0		4813722	54.7		109		
512.00 > 169.00		4.022	0.0	1.000	4370849	48.5		97.1		
37 Perfluorodoc 613.00 > 569.00			0.0	1.000	Page 583 of 683	50.3		101	4671627	/2017

Report Date: 27-Mar-2017 10:05:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Data File: \\ChromNa\Sacramento\ChromData\A8 N\20170303-40441.b\2017.03.03A 009.d

Data File: //CII/OHIVA/Saciamento/CII/OHIData/A8_/N/2017/03/03-40441.0/2017/03/03A_009/d										
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.211	4.211	0.0	1.000	4294446	47.9		95.7		
D 38 d-N-EtFOS	A-M									
531.00 > 169.00	4.202	4.202	0.0		4561298	53.5		107		
D 36 13C2 PFD										
615.00 > 570.00		4.181	0.0		6735249	54.3		109	215881	
41 Perfluorotrio			0.0	4 000	(004504	E4 7		400	4 4004 4	
663.00 > 619.00		4.448	0.0	1.000	6084594	51.7		103	140214	
D 43 13C2-PFT6		4 4 0 4	0.0		12504705	E2		10E	110444	
715.00 > 670.00		4.684	0.0		13594795	52.5		105	412666	
42 Perfluoroteti 712.50 > 668.90		4.684	0.0	1.000	12368125	46.7		93.4	42501	
713.00 > 169.00		4.684	0.0	1.000	1789045	40.7	6.91(0.00-0.00)	75.4	181457	
D 44 13C2-PFH							(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
815.00 > 770.00		5.102	0.0		7324314	58.6		117	116120	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.102	5.102	0.0	1.000	6484396	51.6		103	6380	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.470	5.470	0.0	1.000	4608829	47.7		95.4	4830	
00 511										

QC Flag Legend Review Flags

M - Manually Integrated

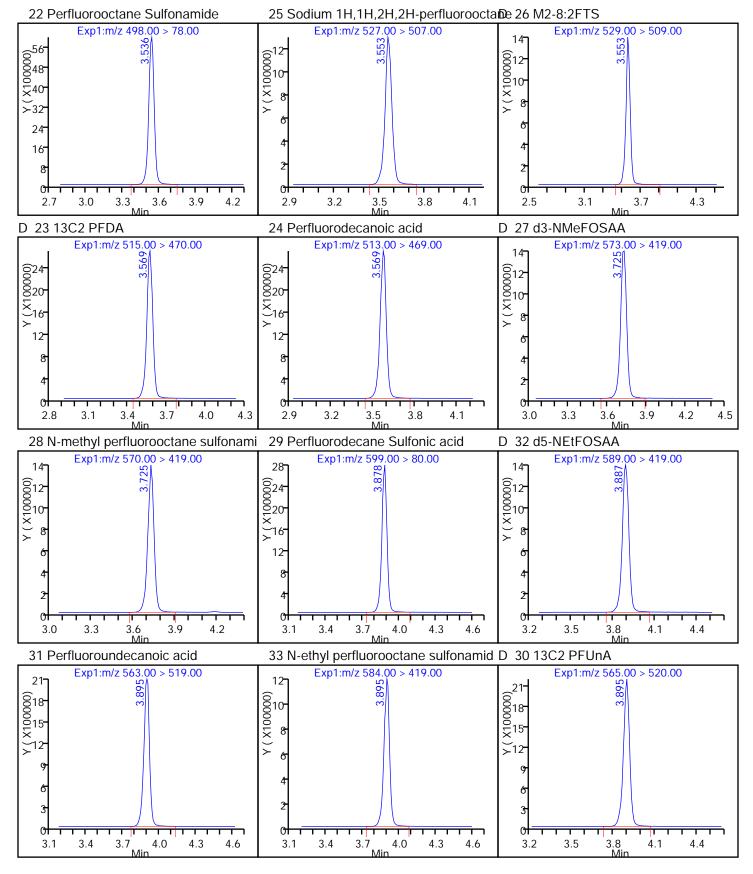
Reagents:

LCPFC_FULL-L5_00001 Amount Added: 1.00 Units: mL

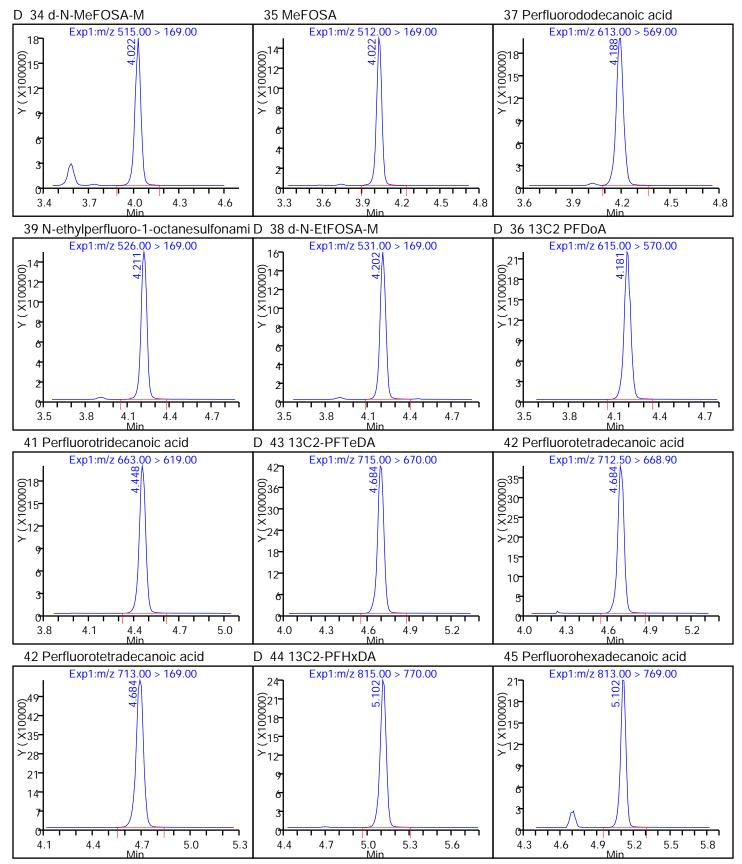
Report Date: 27-Mar-2017 10:05:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30 TestAmerica Sacramento Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d 03-Mar-2017 10:00:31 **Injection Date:** Instrument ID: A8_N Lims ID: CCV L5 Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 9 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 (000001 (000001 (000001 (000001) 642 636 \times 30 _28 **≻**24 21 18 18 12 1.2 1.5 1.9 1.8 2.1 1.0 1.3 1.6 2.0 2.3 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 298.90 > 80.00Exp1:m/z 298.90 > 99.00 Exp1:m/z 262.90 > 219.0072 42 630 60 60 625 063- ×₂₀ ×45 ≻₃₆-15 18 27 10 12 18 2.0 1.8 2.1 2.4 1.1 2.3 1.2 1.5 1.4 1.7 1.2 1.5 1.8 2.1 2.4 9 13C4-PFHpA 7 13C2 PFHxA 6 Perfluorohexanoic acid D D Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00Exp1:m/z 367.00 > 322.00 35 35 <u>8</u>36 ©30-025-830 <u>8</u>25-\<u>\.</u> $\stackrel{\cdot}{\succeq}_{20}$ 18 15- 15- 12 10 10 1.9 2.2 2.5 1.9 2.2 2.0 2.3 2.6 2.9 3.2 1.6 2.8 1.6 2.5 2.8 1.7 1.3 1.3 10 Perfluoroheptanoic acid D 11 1802 PFHxS 8 Perfluorohexanesulfonic acid (M) Exp1:m/z 399.00 > 80.00 Exp1:m/z 363.00 > 319.00 Exp1:m/z 403,00 > 84.00 32 48 ©28-0024-635 630 30 042 0036 ×25 <u>≻</u>20 ×30 ≻₁₆-≻20 ≻₂₄· 15 12 18 10 12 0 0 2.1 2.4 2.7 3.0 3.2 1.8 2.1 2.4 1.8 1.5 2.7

13 Sodium 1H,1H,2H,2H-perfluorooctabe 14 13C4 PFOA Exp1:m/z 429.00 > 409.00 Exp1:m/z 427.00 > 407.00 Exp1:m/z 417.00 > 372.00 (X) X (X) (X) X (X (012 X) X 8 <u>28</u> 16 2.1 2.4 2.7 3.0 3.3 2.2 2.5 2.8 3.1 3.4 2.1 2.4 2.7 3.0 3.3 16 Perfluoroheptanesulfonic Acid 15 Perfluorooctanoic acid 15 Perfluorooctanoic acid Exp1:m/z 413.00 > 369.00 Exp1:m/z 413.00 > 169.00 Exp1:m/z 449.00 > 80.00 630 000 0025 (018 000 15 (00036 30-24 18 10 12 2.8 2.5 3.0 2.3 2.9 3.2 3.1 3.4 2.4 3.6 2.6 17 Perfluorooctane sulfonic acid 17 Perfluorooctane sulfonic acid D 18 13C4 PFOS Exp1:m/z 499.00 > 80.00 Exp1:m/z 499.00 > 99.00 Exp1:m/z 503.00 > 80.00 80 00024-20-0030-035-670 660 ×25 ×50-∑16⁻ ≻₄₀ ≻20 12 15 30 3.093 10 20 2.4 3.0 3.6 4.2 2.7 3.3 3.9 2.8 3.1 3.4 1.8 2.5 3.7 2.1 4.0 D 19 13C5 PFNA D 21 13C8 FOSA 20 Perfluorononanoic acid Exp1:m/z 468.00 > 423.00 Exp1:m/z 463.00 > 419.00 Exp1:m/z 506.00 > 78.00 28 (24⁻ 00020 (0024-0000120-X)16-(56⁻ 00048 ∑₁₆-×40 12 24 16 2.5 2.8 3.1 3.4 3.7 4.0 2.6 2.9 3.5 3.8 2.9 3.2 3.5 3.8 4.1 4.4

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d



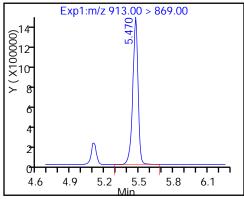
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d



Report Date: 27-Mar-2017 10:05:39 Chrom Revision: 2.2 13-Mar-2017 15:50:30

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d

46 Perfluorooctadecanoic acid



Report Date: 27-Mar-2017 10:05:40 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_009.d

Injection Date: 03-Mar-2017 10:00:31 Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 32 Worklist Smp#: 9

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

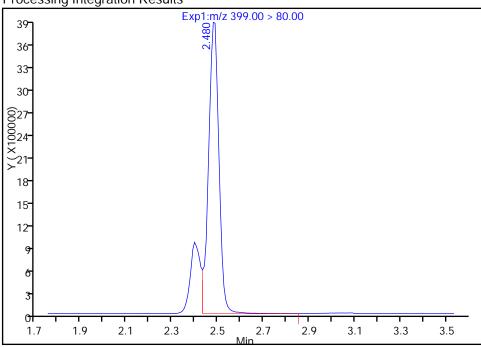
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

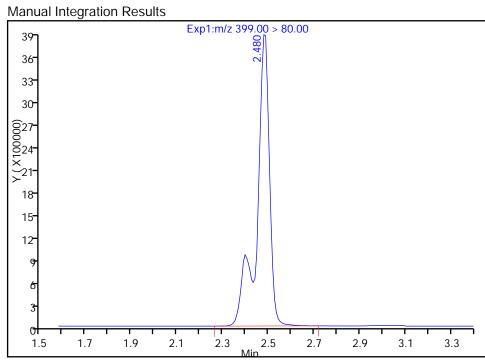
Signal: 1

RT: 2.48
Area: 12130753
Amount: 37.554269
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 14984106
Amount: 46.387652
Amount Units: ng/ml



Reviewer: chandrasenas, 27-Mar-2017 10:05:38

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 590 of 683

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 SDG No.: Lab Sample ID: MB 320-152015/1-A Client Sample ID: Matrix: Solid Lab File ID: 2017.03.01A_003.d Analysis Method: 537 (Modified) Date Collected: Date Extracted: 02/23/2017 17:22 Extraction Method: SHAKE Sample wt/vol: 5.00(g) Date Analyzed: 03/01/2017 18:37 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup:(Y/N) N Analysis Batch No.: 152825 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.30	U	0.50	0.30	0.10
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.178	J	0.50	0.30	0.13
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.30	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	121		25-150
STL00991	13C4 PFOS	95		25-150
STL00994	1802 PFHxS	113		25-150

Report Date: 03-Mar-2017 10:40:58 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_003.d

Lims ID: MB 320-152015/1-A

Client ID:

Sample Type: MB

Inject. Date: 01-Mar-2017 18:37:38 ALS Bottle#: 25 Worklist Smp#: 3

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: mb 320-152015/1-a Misc. Info.: Plate: 1 Rack: 3

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 03-Mar-2017 10:40:57 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK033

First Level Reviewer: chandrasenas Date: 02-Mar-2017 11:38:23

First Level Revie	wer: cha	ndrasen	nas		Date:	C)2-Mar-2017 11:38:2	23		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 113C4 PFBA										
217.00 > 172.00		1.531	0.0		16865600	57.7		115	109095	9
2 Perfluorobut	yric acid									
212.90 > 169.00		1.539	0.001	1.000	91240	0.3193			659	
D 3 13C5-PFPe	eΑ									
267.90 > 223.00	1.802	1.802	0.0		12987337	55.9		112	775582	
4 Perfluoroper										
262.90 > 219.00	1.802	1.812	-0.010	1.000	22490	0.0885			178	
5 Perfluorobut	anesulfo	nic acid								
298.90 > 80.00		1.842		1.000	8569	0.0182				
298.90 > 99.00			-0.020	0.989	4037		2.12(0.00-0.00)			
6 Perfluorohex			0.007	1 000	45444	0.0747			0.45	
313.00 > 269.00		2.099	0.006	1.000	15411	0.0746			265	
D 7 13C2 PFHx 315.00 > 270.00		2.099	-0.003		11610894	55.1		110	319354	
			-0.003		11010894	33. I		110	319354	
10 Perfluorohe 363.00 > 319.00		acid 2.423	0.024	1.000	22884	0.0924			145	
		2.423	0.024	1.000	22004	0.0724			143	
D 9 13C4-PFHp 367.00 > 322.00		2.423	0.016		12803192	66.4		133	474131	
8 Perfluorohex					12000172	00.1		100	1, 1101	
399.00 > 80.00		2.446	0.001	1.000	59565	0.1758				
D 11 1802 PFH:										
403.00 > 84.00		2.446	0.001		15582722	53.6		113	574300	
13 Sodium 1H,	1H.2H.2	H-perflu	orooctan	е						
427.00 > 407.00		2.759	0.008	1.000	194180	2.33				
D 12 M2-6:2FTS	5									
429.00 > 409.00		2.759	0.008		4220974	54.7		115		
D 14 13C4 PFO	Α									
417.00 > 372.00	2.797	2.781	0.016		් අදුල් මෙම මුමු ම් 1 of 68	83 60.6		121	39 ტჭ გე	7/2017
					Ü					

Data File:	\\Chr	omNa\S	acramen	to\Chrom	Data\A8_N\201	70302-4039	1.b\2017.03.01A_00)3.d		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooc	tanoic ac	-id							•	
413.00 > 369.00		2.789	0.0	1.000	78314	0.3083			946	
413.00 > 169.00		2.789	0.008	1.003	43661	0.0000	1.79(0.90-1.10)		1663	
16 Perfluorohe	ptanesul	lfonic Ac	id				,			
449.00 > 80.00	•		-0.015	1.000	2191	0.009248				
17 Perfluorooc	tane sulf	onic aci	d							
499.00 > 80.00		3.044	0.110	1.000	200767	0.8883			8635	
499.00 > 99.00	3.154	3.044	0.110	1.000	54441		3.69(0.90-1.10)		2903	
D 18 13C4 PFO	S									
503.00 > 80.00	3.154	3.154	0.0		10984637	45.5		95.1	399395	
D 19 13C5 PFN	A									
468.00 > 423.00		3.154	0.0		9766410	54.9		110	368305	
20 Perfluorono	nanoic a	cid								
463.00 > 419.00			-0.008	1.000	6072	0.0344			97.4	
D 26 M2-8:2FTS	S									
529.00 > 509.00		3.492	0.009		4157952	44.9		93.7		
24 Perfluorode	canoic a	cid								
513.00 > 469.00		3.501	0.0	1.000	6016	0.0388			236	
D 23 13C2 PFD										М
515.00 > 470.00		3.501	0.017		8551945	51.3		103	163346	
D 21 13C8 FOS										
506.00 > 78.00		3.534	0.0		7230245	19.7		39.4	207953	
22 Perfluorooc					7200210	17.7		07.1	207700	
498.00 > 78.00		3.543		1.000	94380	0.7264			6585	
D 27 d3-NMeFC		0.040	0.0	1.000	74300	0.7204			0000	
573.00 > 419.00		3.653	0.009		2287957	26.9		53.7		
					2201731	20.7		33.7		
28 N-methyl pe 570.00 > 419.00				1.003	6683	0.1504				
				1.003	0003	0.1304				
29 Perfluorode				1 000	2012	0.0147				
599.00 > 80.00		3.802	0.009	1.000	2012	0.0147				
D 32 d5-NEtFO		0.010			0011//0	07.0				
589.00 > 419.00		3.819	0.009		2211662	27.2		54.4		
D 30 13C2 PFU										
565.00 > 520.00	3.828	3.819	0.009		5425398	41.5		83.0	222758	
33 N-ethyl perf										
584.00 > 419.00	3.837	3.828	0.009	1.002	8467	0.2103				
31 Perfluoroun	decanoi	c acid								
563.00 > 519.00	3.828	3.828	0.0	1.000	19673	0.1789			507	
D 34 d-N-MeFO	SA-M									
515.00 > 169.00	4.032	4.041	-0.009		79061	0.8986		1.8		
35 MeFOSA										
512.00 > 169.00	4.032	4.041	-0.009	1.000	2192	1.48				
37 Perfluorodo	decanoio	c acid								
613.00 > 569.00		4.105	-0.004	1.000	5004	0.0847			158	
D 36 13C2 PFD	οA									
615.00 > 570.00		4.105	0.011		3228413	26.0		52.1	101458	
D 38 d-N-EtFOS										
531.00 > 169.00		4.219	0.003		Page 593 of 6	0.6668		1.3	00/0	7/0047
					Page 593 of 6	003			03/2	7/2017

Report Date: 03-Mar-2017 10:40:58 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File:

Bata 1 Hot	1101110	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Data is to_ITIES I	70002 1007				
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 N-ethylperflu	uoro-1-o	ctanesul	fonami							
526.00 > 169.00	4.239	4.228	0.011	1.000	2068	1.85				
41 Perfluorotric	lecanoic	acid								
663.00 > 619.00	4.357	4.362	-0.005	1.000	8178	0.1450			93.2	
42 Perfluorotet	radecan	oic acid								
712.50 > 668.90	4.596	4.585	0.011	1.000	13785	0.1086			95.1	
713.00 > 169.00	4.596	4.585	0.011	1.000	2763		4.99(0.00-0.00)		1428	
D 43 13C2-PFT	eDA									
715.00 > 670.00	4.596	4.591	0.005		3372806	13.0		26.0	163310	
D 44 13C2-PFH	xDA									
815.00 > 770.00	4.993	4.977	0.016		1212701	9.70		19.4	94898	
45 Perfluorohe	xadecan	oic acid								
813.00 > 769.00	4.987	4.977	0.010	1.000	26028	0.0583			504	
46 Perfluorooct	tadecand	oic acid								M
913.00 > 869.00	5.316	5.306	0.010	1.000	13870	0.2994			173	M

QC Flag Legend Review Flags

M - Manually Integrated

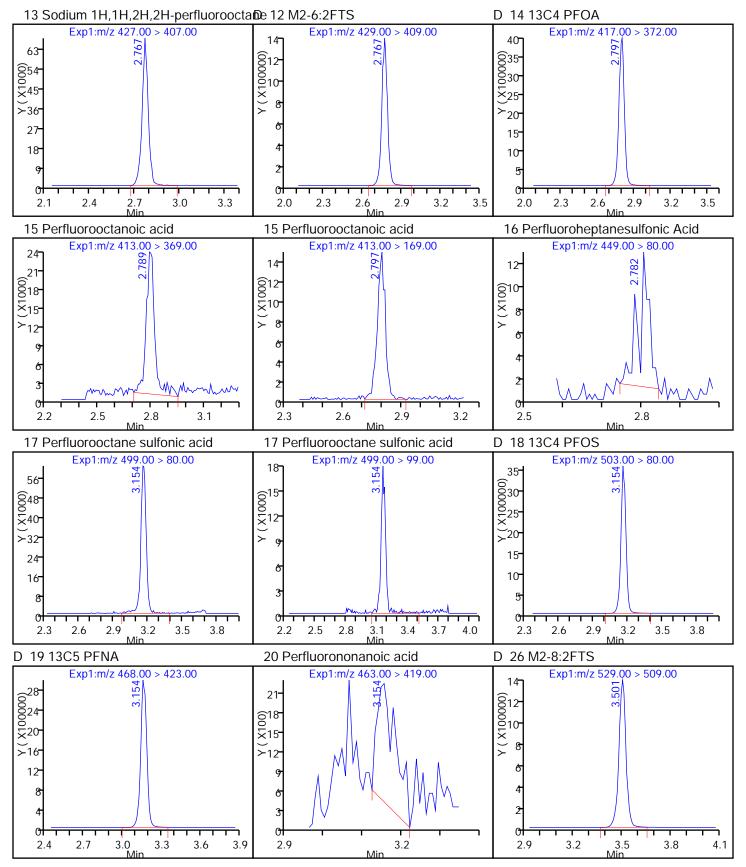
Report Date: 03-Mar-2017 10:40:58 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_003.d Data File: **Injection Date:** 01-Mar-2017 18:37:38 Instrument ID: A8_N Lims ID: MB 320-152015/1-A Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 25 Worklist Smp#: 3 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 35 049 0042 042 0036 ©25 , \S_{20} ×35 ≻₂₈-15 21 18 10 12 1.0 1.9 1.8 1.9 1.3 1.6 1.2 1.5 1.3 1.6 2.5 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 118 15- 16- 0013 × × ≻10 **3**07 ×96-≻₈₅-63 52 1.9 2.1 1.8 2.1 1.8 1.5 1.5 1.6 6 Perfluorohexanoic acid D 7 13C2 PFHxA 10 Perfluoroheptanoic acid Exp1:m/z 313.00 > 269.00 Exp1:m/z 315.00 > 270.00 Exp1:m/z 363.00 > 319.00 43 635 630 830 65 ³⁷√ 231 <u>9</u>56 ×25 ×47 **≻**25 ≻38 19 15 29 13 10 20 2.0 2.0 2.4 1.7 2.3 2.6 2.1 1.7 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 399.00 > 80.00 Exp1:m/z 403.00 > 84.00 18 (000001X) × 24 18 21 12 14 0 2.0 2.3 2.6 2.9 3.2 2.9 3.2 2.0 2.3 2.6

1.7

1.7

1.7

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_003.d



Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_003.d 25 Sodium 1H,1H,2H,2H-perfluorooctane2(NPP)rfluorodecanoic acid D 23 13C2 PFDA (M) Exp1:m/z 527.00 > 507.00 Exp1:m/z 513.00 > 469.00 Exp1:m/z 515.00 > 470.00 28 24 (0024 00001 ×)16 ¹ē⁷² ∑₁₆-×60 **≻**48 36 24 4.2 2.9 3.8 2.4 3.0 3.6 3.2 3.5 3.8 3.2 3.5 4.1 D 21 13C8 FOSA 22 Perfluorooctane Sulfonamide D 27 d3-NMeFOSAA Exp1:m/z 506.00 > 78.00 Exp1:m/z 498.00 > 78.00 Exp1:m/z 573.00 > 419.00 (21-000018-1215-30 \S_{20} ×45 ≻₃₆-15- 27 10 18 3.0 3.3 3.6 3.9 3.4 3.7 3.2 3.5 3.8 3.1 4.1 4.4 28 N-methyl perfluorooctane sulfonami 29 Perfluorodecane Sulfonic acid D 32 d5-NEtFOSAA Exp1:m/z 570.00 > 419.00 Exp1:m/z 599.00 > 80.00 Exp1:m/z 589.00 > 419.00 21 84 (0054 ×45 <u>@</u>72 (2) 18 (2) 15 (3) 15 ×60 ≻₄₈-**≻**36• 27 36- 24 18 12 0 3.5 3.3 3.9 3.8 3.2 3.8 3.6 3.5 4.1 4.4 D 30 13C2 PFUnA 33 N-ethyl perfluorooctane sulfonamid 31 Perfluoroundecanoic acid Exp1:m/z 565.00 > 520.00 Exp1:m/z 584.00 > 419.00Exp1:m/z 563.00 > 519.00 18 28 56- (0000015⁻ 12⁻ 29 00 20 × >16 24 12 16

3.8

4.1

3.4

3.7

3.0

3.3

3.6

3.9

4.2

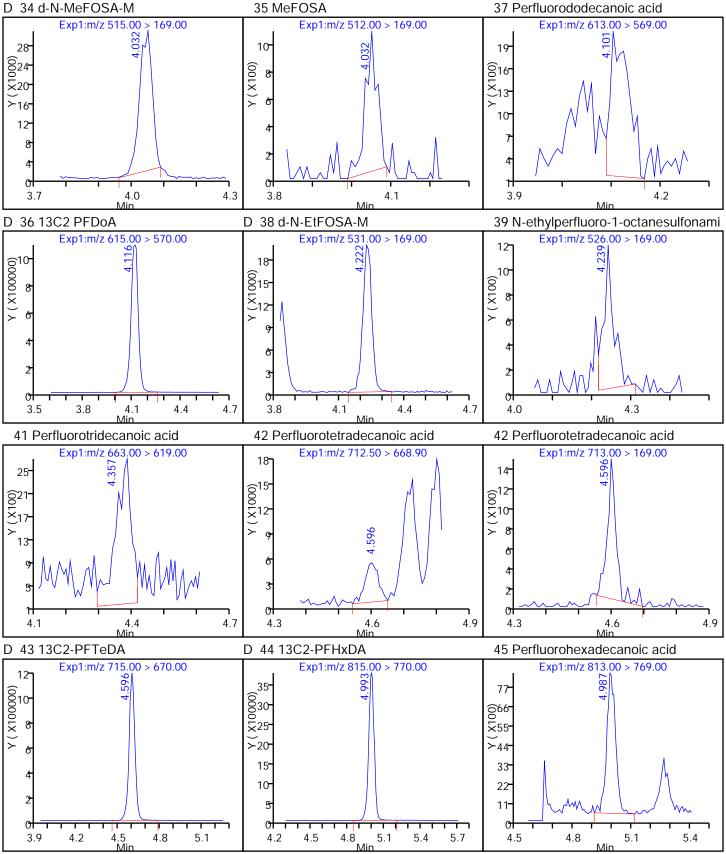
4.5

3.5

4.3

4.0

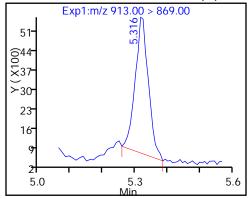
Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_003.d



Report Date: 03-Mar-2017 10:40:58 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b\2017.03.01A_003.d

46 Perfluorooctadecanoic acid (M)



FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 SDG No.: Client Sample ID: _____ Lab Sample ID: MB 320-152587/1-A Matrix: Water Lab File ID: 2017.03.02A_004.d Analysis Method: 537 (Modified) Date Collected: Extraction Method: 3535 Date Extracted: 02/28/2017 16:42 Sample wt/vol: 250.00(mL) Date Analyzed: 03/02/2017 10:35 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup:(Y/N) N Analysis Batch No.: 152836 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.0	U M	2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	158	Q	25-150
STL00991	13C4 PFOS	138		25-150
STL00994	1802 PFHxS	145		25-150

Report Date: 08-Mar-2017 08:24:41 Chrom Revision: 2.2 05-Mar-2017 11:38:00

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d

Lims ID: MB 320-152587/1-A

Client ID:

Sample Type: MB

Inject. Date: 02-Mar-2017 10:35:15 ALS Bottle#: 1 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: mb 320-152587/1-a Misc. Info.: Plate: 1 Rack: 5

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 08-Mar-2017 08:24:39 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK022

First Level Reviewer: chandrasenas Date: 02-Mar-2017 12:20:47

I list Level ite	nowon. one	ariarasci	ius		Date.		72 Mai 2017 12:20:1	,		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorob	utyric acid									
212.90 > 169.	00 1.569	1.538	0.031	1.000	77701	0.2168			388	
D 113C4 PF										
217.00 > 172.		1.538	0.0		21149082	72.4		145	835413	
D 3 13C5-PF										
267.90 > 223.		1.821	0.0		18356897	79.1		158	694336	
4 Perfluorop 262.90 > 219.		icid 1.821	0.0	1.000	30613	0.0852			262	
				1.000	30013	0.0852			202	
5 Perfluorob 298.90 > 80.0		1.861	0.0	1.000	9759	0.0161				
298.90 > 99.0		1.861	-0.010	0.995	3893	0.0101	2.51(0.00-0.00)			
D 7 13C2 PF	HxA						,			
315.00 > 270.	00 2.118	2.122	-0.004		16382273	77.7		155	385952	
6 Perfluoroh	exanoic a	cid								
313.00 > 269.	00 2.118	2.122	-0.004	1.000	19342	0.0664			282	
8 Perfluoroh										
399.00 > 80.0	0 2.476	2.483	-0.007	1.000	70774	0.1627				
D 9 13C4-PF	•									
367.00 > 322.		2.468	-0.007		16226877	84.1		168	491607	
D 11 18O2 PF		2 402	0.007		20004422	/ 0.0		1.45	/ 22204	
403.00 > 84.0			-0.007		20004423	68.8		145	622204	
13 Sodium 1 427.00 > 407.		:н-репіи 2.803		e 1.000	6740	-0.0816				
D 12 M2-6:2F		2.003	-0.007	1.000	0740	-0.0010				
429.00 > 409.		2.803	-0.015		6657626	86.3		182		
D 14 13C4 PF										
417.00 > 372.		2.834	-0.008		16226858	79.2		158	561166	

Data File:	\\Chr	omNa\Sa	acrament	to\Chrom	Data\A8_N\201	70302-4039	3.b\2017.03.02A_00)4.d		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooct	tanoic ac	cid								М
413.00 > 369.00		2.834	-0.016	1.000	31167	0.0940			197	M
413.00 > 169.00	2.834	2.834	0.0	1.006	18054		1.73(0.90-1.10)		749	M
17 Perfluorooct	tane sulf	onic acid	d							
499.00 > 80.00		3.089	0.103	1.000	11900	0.0362			955	
499.00 > 99.00	3.210	3.089	0.121	1.005	6667		1.78(0.90-1.10)		207	
D 18 13C4 PFO										
503.00 > 80.00	3.192	3.202	-0.010		15992605	66.2		138	538384	
D 19 13C5 PFN										
468.00 > 423.00		3.202	-0.001		11921385	67.0		134	395671	
D 21 13C8 FOS		0.500	0.004		1/705/00	45.5		04.4	001001	
506.00 > 78.00			0.001		16705430	45.5		91.1	291304	
22 Perfluorooct				1 000	(0404	0.0015			2072	
498.00 > 78.00		3.536	-0.007	1.000	60494	0.2015			3973	
D 26 M2-8:2FTS		2 552	0.017		//12102	71 /		140		
529.00 > 509.00		3.553	-0.016		6613182	71.4		149		
D 23 13C2 PFD, 515.00 > 470.00		2 5 4 1	-0.007		10948888	65.7		131	243284	
			-0.007		10940000	03.7		131	243204	
24 Perfluorode 513.00 > 469.00			0.007	1.000	7332	0.0370			210	
		3.301	-0.007	1.000	7332	0.0370			210	
D 27 d3-NMeFO 573.00 > 419.00		3.714	-0 000		3829394	45.0		89.9		
28 N-methyl pe					3027374	43.0		07.7		
570.00 > 419.00			-0.009	1.000	1202	0.0162				
D 32 d5-NEtFOS		0.711	0.007	1.000	.202	0.0102				
589.00 > 419.00		3.875	-0.007		3674072	45.2		90.3		
31 Perfluoroun										
563.00 > 519.00			-0.007	1.000	22140	0.1280			539	
D 30 13C2 PFUi										
565.00 > 520.00		3.884	-0.007		8531315	65.2		130	202553	
D 34 d-N-MeFO	SA-M									
515.00 > 169.00		4.027	-0.016		8387	0.0953		0.2		
D 36 13C2 PFD	οΑ									
615.00 > 570.00		4.172	-0.014		7689303	62.0		124	177606	
D 38 d-N-EtFOS	A-M									
531.00 > 169.00	4.194	4.205	-0.011		7985	0.0937		0.2		
41 Perfluorotrio	lecanoic	acid								
663.00 > 619.00	4.418	4.436	-0.018	1.000	763	0.005680			28.4	
D 43 13C2-PFT	eDA									
715.00 > 670.00	4.661	4.672	-0.011		20433684	78.8		158	588115	
42 Perfluoroteti	radecan	oic acid								
712.50 > 668.90		4.681	-0.002	1.000	71601	0.2368			325	
713.00 > 169.00	4.652	4.681	-0.029	0.994	10234		7.00(0.00-0.00)		1944	
D 44 13C2-PFH	xDA									
815.00 > 770.00	5.079	5.093	-0.014		7949525	63.6		127	202911	
45 Perfluorohe	xadecan	oic acid								
813.00 > 769.00	5.079	5.093	-0.014	1.000	117593	0.4483			292	

Report Date: 08-Mar-2017 08:24:41 Chrom Revision: 2.2 05-Mar-2017 11:38:00 Data File:

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

46 Perfluorooctadecanoic acid

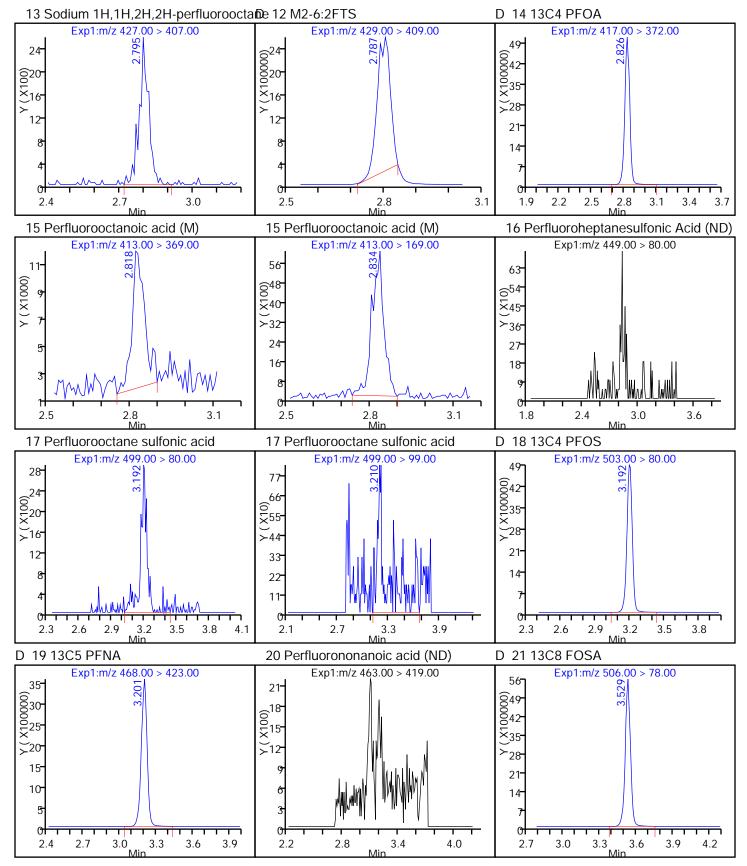
12.2 913.00 > 869.00 5.421 5.446 -0.025 1.000 5710 0.0517

QC Flag Legend Review Flags

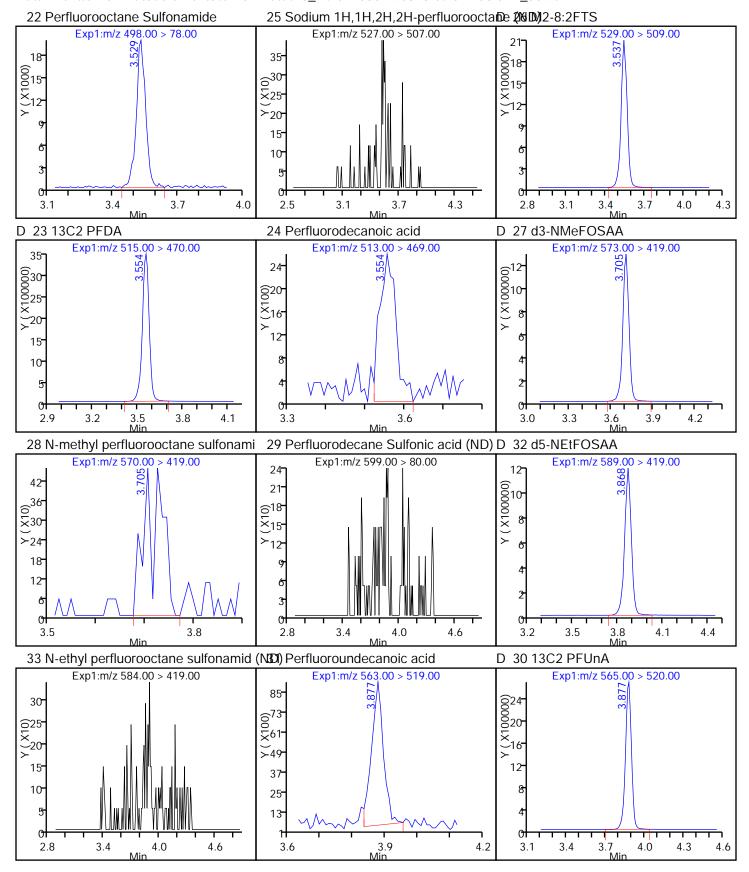
M - Manually Integrated

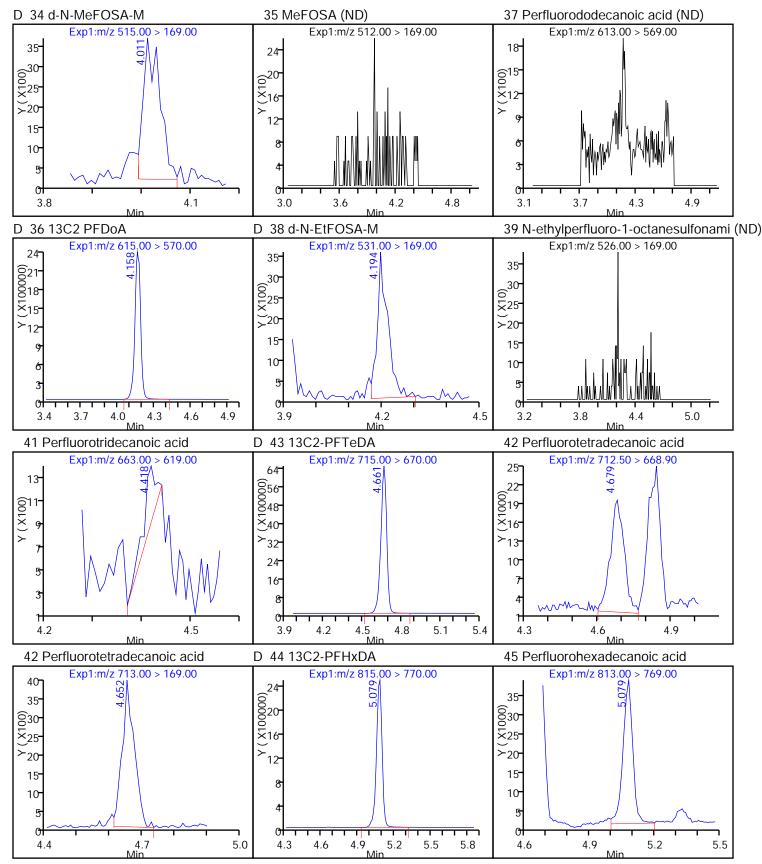
Report Date: 08-Mar-2017 08:24:41 Chrom Revision: 2.2 05-Mar-2017 11:38:00 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d Data File: **Injection Date:** 02-Mar-2017 10:35:15 Instrument ID: A8_N Lims ID: MB 320-152587/1-A Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 13 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: A8_N Limit Group: LC PFC_DOD ICAL D 113C4 PFBA 2 Perfluorobutyric acid D 313C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 056 0648 6 20 20 ∑36- 27 18 16 1.8 1.0 1.9 2.2 1.2 1.5 0.7 1.3 1.6 1.4 1.7 2.0 2.3 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 21-14 00012 X >100 2.1 1.8 2.1 2.1 1.5 1.8 1.5 1.5 D 7 13C2 PFHxA 6 Perfluorohexanoic acid 8 Perfluorohexanesulfonic acid Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 399.00 > 80.00 52 0049 00042 (245-(2)38-(31-(31-©20 ×16 ×35 ≻₂₈-24 21 17 1.8 2.1 2.4 2.7 1.9 2.2 2.5 2.8 1.5 2.0 1.7 D 9 13C4-PFHpA 10 Perfluoroheptanoic acid (ND) D 11 1802 PFHxS Exp1:m/z 363.00 > 319.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 91 049 0042 056 0648 <u>@</u>78 ×65- ×35 ×40 **≻**52 ≻32 21 39 24 26 13 0 0 2.1 2.4 2.7 3.0 Page 604h of 683 3.2 2.0 2.3 2.6 1.8 1.4 1.7

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d



Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d

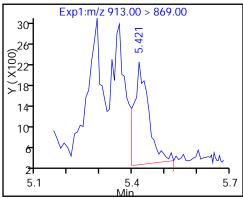




Report Date: 08-Mar-2017 08:24:41 Chrom Revision: 2.2 05-Mar-2017 11:38:00

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d

46 Perfluorooctadecanoic acid



Report Date: 08-Mar-2017 08:24:41 Chrom Revision: 2.2 05-Mar-2017 11:38:00 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d

Injection Date: 02-Mar-2017 10:35:15 Instrument ID: A8_N

Lims ID: MB 320-152587/1-A

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

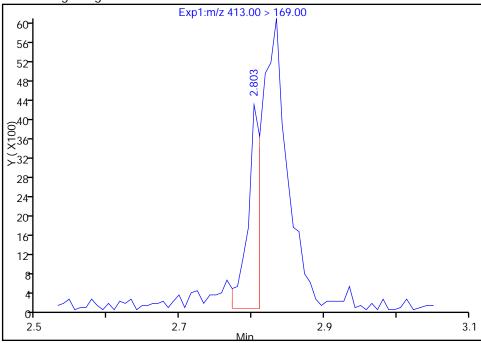
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

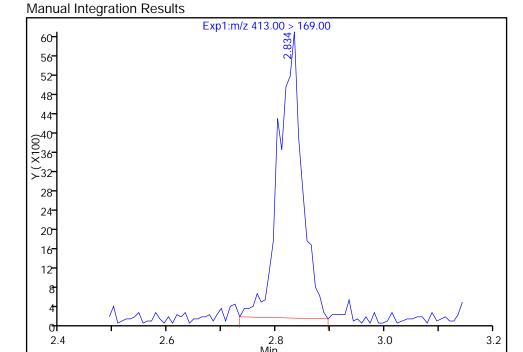
Signal: 2

RT: 2.80
Area: 4378
Amount: 0.159296
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 18054
Amount: 0.093999
Amount Units: ng/ml



Reviewer: chandrasenas, 08-Mar-2017 08:23:13

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Page 609 of 683

Report Date: 08-Mar-2017 08:24:41 Chrom Revision: 2.2 05-Mar-2017 11:38:00 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_004.d

Injection Date: 02-Mar-2017 10:35:15 Instrument ID: A8_N

Lims ID: MB 320-152587/1-A

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 1 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

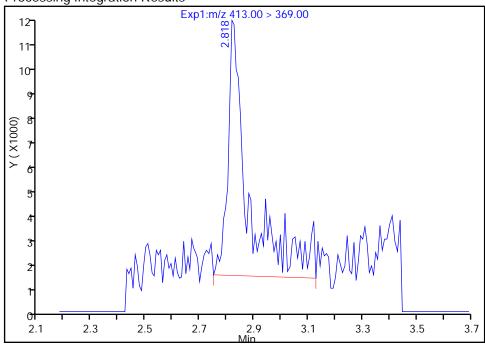
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

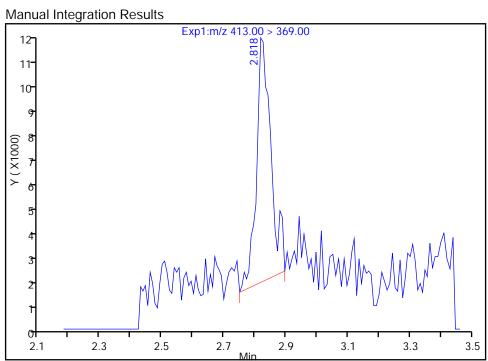
15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

RT: 2.82 Area: 52817 Amount: 0.159296 Amount Units: ng/ml **Processing Integration Results**



RT: 2.82
Area: 31167
Amount: 0.093999
Amount Units: ng/ml



Reviewer: westendorfc, 08-Mar-2017 08:23:46

Audit Action: Manually Integrated

Audit Reason: Baseline Page 610 of 683

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 SDG No.: Client Sample ID: Lab Sample ID: LCS 320-152015/2-A Lab File ID: 2017.03.03A 006.d Matrix: Solid Date Collected: Analysis Method: 537 (Modified) Date Extracted: 02/23/2017 17:22 Extraction Method: SHAKE Sample wt/vol: 5.00(g) Date Analyzed: 03/03/2017 09:37 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup:(Y/N) N Analysis Batch No.: 153020 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.09		0.50	0.30	0.10
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.96		0.50	0.30	0.13
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.95		0.40	0.30	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	106		25-150
STL00991	13C4 PFOS	91		25-150
STL00994	1802 PFHxS	101		25-150

Report Date: 27-Mar-2017 10:05:35 Chrom Revision: 2.2 13-Mar-2017 15:50:30

> TestAmerica Sacramento **Target Compound Quantitation Report**

\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_006.d Data File:

Lims ID: LCS 320-152015/2-A

Client ID:

LCS Sample Type:

Inject. Date: 03-Mar-2017 09:37:58 ALS Bottle#: 1 Worklist Smp#: 6

Injection Vol: Dil. Factor: 2.0 ul 1.0000

Sample Info: lcs 320-152015/2-a Misc. Info.: Plate: 1 Rack: 5

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method:

Limit Group: LC PFC_DOD ICAL

Last Update: 27-Mar-2017 10:05:12 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: **Isotopic Dilution** Quant By: **Initial Calibration**

Last ICal File: \\ChromNA\\Sacramento\\ChromData\\A8_N\\20170301-40358.b\\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK006

00 M--- 0017 10 11 00

First Level Reviewer: ch	nandraser	nas		Date:	C	3-Mar-2017 10:11:2	8		
Signal RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA 217.00 > 172.00 1.539	1.539	0.0		15501449	53.0		106	571898	
2 Perfluorobutyric aci 212.90 > 169.00 1.539		-0.008	1.000	5831715	22.2		111	28714	
D 3 13C5-PFPeA 267.90 > 223.00 1.823 4 Perfluoropentanoic		0.0		12176524	52.4		105	824432	
262.90 > 219.00 1.823		0.0	1.000	4983931	20.9		105	50127	
5 Perfluorobutanesuli 298.90 > 80.00 1.862 298.90 > 99.00 1.862	1.863	-0.001 -0.001	1.000 1.000	8335333 3441524	19.7	2.42(0.00-0.00)	112		
D 7 13C2 PFHxA 315.00 > 270.00 2.126 6 Perfluorohexanoic a		-0.009		10683543	50.7		101	349448	
313.00 > 269.00 2.126		-0.009	1.000	4005174	21.1		105	236301	
D 9 13C4-PFHpA 367.00 > 322.00 2.471	2.476	-0.005		10679916	55.3		111	331542	
10 Perfluoroheptanoio 363.00 > 319.00 2.471		-0.005	1.000	3999543	19.4		96.8	42229	
D 11 1802 PFHxS 403.00 > 84.00 2.487 8 Perfluorohexanesul		-0.005		13943956	47.9		101	518131	M
399.00 > 80.00 2.479		-0.013	1.000	5513360	18.2		99.9		M
D 12 M2-6:2FTS 429.00 > 409.00 2.806	2.819	-0.013		4209674	54.5		115		
13 Sodium 1H,1H,2H, 427.00 > 407.00 2.806	•		e 1.000	1589800	20.1		106		
D 14 13C4 PFOA 417.00 > 372.00 2.829	2.850	-0.021		ମ ୟିଷ୍ଟି 6 421of 683	s 52.8		106	39 7572 7	7/2017

Data File:	\\Chr	omNa\S	acramen	to\Chrom	Data\A8_N\201	70303-4044	1.b\2017.03.03A_0	06.d		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooc 413.00 > 369.00 413.00 > 169.00	2.837	2.850 2.850	-0.013 -0.013	1.000 1.000	4517821 2573659	20.4	1.76(0.90-1.10)	102	39027 77369	
16 Perfluorohe 449.00 > 80.00	2.845	2.850	-0.005	1.000	5119735	22.6		119		
17 Perfluorooc 499.00 > 80.00 499.00 > 99.00	3.101 3.213		d -0.005 0.107	1.000 1.036	4268757 983717	19.8	4.34(0.90-1.10)	107	45601 142333	
D 18 13C4 PFO 503.00 > 80.00	3.213	3.228	-0.015		10481941	43.4		90.8	279240	
D 19 13C5 PFN. 468.00 > 423.00	3.213		-0.015		8719675	49.0		98.0	289200	
20 Perfluorono 463.00 > 419.00	3.213		-0.015	1.000	3169644	20.1		101	48248	
D 21 13C8 FOS 506.00 > 78.00		3.536	-0.005		6511045	17.7		35.5	179086	
22 Perfluorooc 498.00 > 78.00			e -0.005	1.000	2426576	20.7		104	133745	
25 Sodium 1H, 527.00 > 507.00		•			1404420	20.2		105		M M
D 26 M2-8:2FTS 529.00 > 509.00		3.578	-0.014		3589911	38.8		80.9		
D 23 13C2 PFD. 515.00 > 470.00		3.586	-0.013		7628094	45.8		91.5	148067	
24 Perfluorode 513.00 > 469.00		cid 3.586	-0.013	1.000	2830544	20.5		102	77223	
D 27 d3-NMeFC 573.00 > 419.00	SAA		-0.018		2034147	23.9		47.8		
28 N-methyl pe 570.00 > 419.00	erfluoroo	ctane su	ılfonami	1.000	828746	21.0		105		
29 Perfluorode 599.00 > 80.00	cane Su	lfonic ac		1.000	1511320	11.6		60.0		
D 32 d5-NEtFOS	SAA			1.000						
589.00 > 419.00 31 Perfluoroun	decanoi	c acid	-0.016		2007535	24.7		49.3		
563.00 > 519.00 33 N-ethyl perf			-0.007 onamid	1.000	1767051	18.8		93.8	52274	
584.00 > 419.00 D 30 13C2 PFU		3.912	-0.007	1.004	734372	20.1		100		
565.00 > 520.00 D 34 d-N-MeFO		3.921	-0.016		4645749	35.5		71.0	209079	
515.00 > 169.00 35 MeFOSA		4.012	0.001		64156	0.7292		1.5		
512.00 > 169.00		4.021	0.001	1.000	23869	19.9		99.4		
37 Perfluorodo 613.00 > 569.00	4.196	4.201	-0.005	1.000	1059068	19.4		97.1	35650	
39 N-ethylperfl 526.00 > 169.00			lfonami 0.008	1.000	Page 613 of (683 ^{20.4}		102	03/27	7/2017

Report Date: 27-Mar-2017 10:05:35 Chrom Revision: 2.2 13-Mar-2017 15:50:30 Data File:

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
J						9	(2000)			3
D 38 d-N-EtFOS 531.00 > 169.00		4.201	0.001		37498	0.4399		0.9		
D 36 13C2 PFD	οA									
615.00 > 570.00	4.196	4.209	-0.013		2980394	24.0		48.1	122115	
41 Perfluorotrid										
663.00 > 619.00		4.476	-0.021	1.000	586171	11.3		56.3	13300	
D 43 13C2-PFT6		1711	0.014		2204022	10.7		25.4	E 400E1	
715.00 > 670.00 42 Perfluoroteti			-0.014		3286923	12.7		25.4	548051	
712.50 > 668.90		4.711	-0.006	1.000	1210980	10.3		51.7	3582	
713.00 > 169.00	4.697	4.711	-0.014	0.998	166937		7.25(0.00-0.00)		55884	
D 44 13C2-PFH	xDA									
815.00 > 770.00	5.123	5.144	-0.021		963367	7.70		15.4	54426	
45 Perfluorohe			0.001	1 000	220/10	F / 4		20.0	2222	
813.00 > 769.00			-0.021	1.000	330610	5.61		28.0	2202	
46 Perfluorooct 913.00 > 869.00			-0.020	1.000	214650	5.02		25.1	1380	
713.00 / 007.00	5.770	3.310	0.020	1.000	217000	5.02		20.1	1300	

QC Flag Legend Review Flags

M - Manually Integrated

Report Date: 27-Mar-2017 10:05:35 Chrom Revision: 2.2 13-Mar-2017 15:50:30 TestAmerica Sacramento \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_006.d Data File: **Injection Date:** 03-Mar-2017 09:37:58 Instrument ID: A8_N Lims ID: LCS 320-152015/2-A Client ID: Operator ID: A8-PC\A8 ALS Bottle#: Worklist Smp#: Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ D 113C4 PFBA 2 Perfluorobutyric acid D 3 13C5-PFPeA Exp1:m/z 217.00 > 172.00 Exp1:m/z 212.90 > 169.00 Exp1:m/z 267.90 > 223.00 (000001 (000001 (000001 (000001) _28 18 21 1.2 1.5 1.8 1.9 1.3 1.9 2.1 1.0 1.3 1.6 1.6 2.5 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 18 14 (0000015⁻12⁻2 × 9 628 624 (0012 X) × 8 ×20 ≻16⁻ 12 1.5 1.8 2.1 2.4 1.2 1.5 1.8 2.1 2.4 1.5 2.1 1.2 1.2 1.8 2.4 7 13C2 PFHxA 6 Perfluorohexanoic acid D 9 13C4-PFHpA Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 367.00 > 322.00 35- (0000012 (X) ©30 0 0 25 830 <u>8</u>25 ∑₂₀ $\stackrel{\cdot}{\succeq}_{20}$ 15 15 10 10 2.0 1.2 1.8 2.4 3.0 2.7 1.7 2.3 2.6 0.6 2.1 3.0 10 Perfluoroheptanoic acid D 11 1802 PFHxS 8 Perfluorohexanesulfonic acid (M) Exp1:m/z 363.00 > 319.00 Exp1:m/z 403.00 > 84.00 Exp1:m/z 399.00 > 80.00 16 (012 X) 642 636 0014 0012 ×30 **≻**24 18 12 0 0 1.9 2.2 2.5 2.8 3.1 1.9 2.2 2.5 1.6

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_006.d D 12 M2-6:2FTS 13 Sodium 1H,1H,2H,2H-perfluoroocta De 14 13C4 PFOA Exp1:m/z 429.00 > 409.00 Exp1:m/z 427.00 > 407.00 Exp1:m/z 417.00 > 372.00 49 (012 X) X 8 ©28-0024-0042 ×35 ⁻28⁻ 16 21 14 2.7 3.0 3.0 2.1 2.4 3.3 2.1 2.4 2.7 3.0 3.3 2.1 2.4 2.7 3.3 16 Perfluoroheptanesulfonic Acid 15 Perfluorooctanoic acid 15 Perfluorooctanoic acid Exp1:m/z 413.00 > 369.00 Exp1:m/z 413.00 > 169.00 Exp1:m/z 449.00 > 80.00 (0000012 (X) X) X (0000012 × 9 (77- ×55- ≻₄₄-33 22 11 2.9 2.8 2.6 3.2 2.5 3.4 2.5 2.8 3.1 3.1 3.4 17 Perfluorooctane sulfonic acid 17 Perfluorooctane sulfonic acid D 18 13C4 PFOS Exp1:m/z 499.00 > 80.00 Exp1:m/z 499.00 > 99.00 Exp1:m/z 503.00 > 80.00 28 (X100000) ©24-0020-×20-∑16- 15- 12 10 3.7 1.9 2.5 3.1 1.9 2.5 3.7 4.3 2.7 3.0 3.3 3.9 4.3 3.1 2.4 3.6 D 19 13C5 PFNA D 21 13C8 FOSA 20 Perfluorononanoic acid Exp1:m/z 463.00 > 419.00 Exp1:m/z 468.00 > 423.00 Exp1:m/z 506.00 > 78.00 Y (X100000) 0024 000020 ×)16 (00018-15-12-

3.3

3.6

2.9

3.2

2.5

2.8

3.1 Mir 3.4

3.7

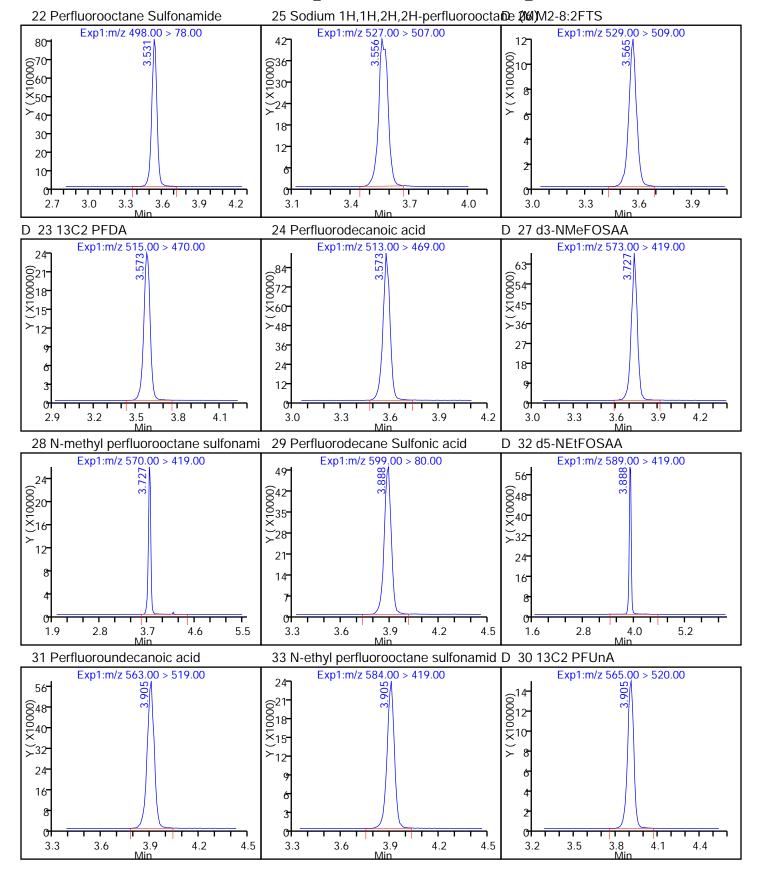
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3.0

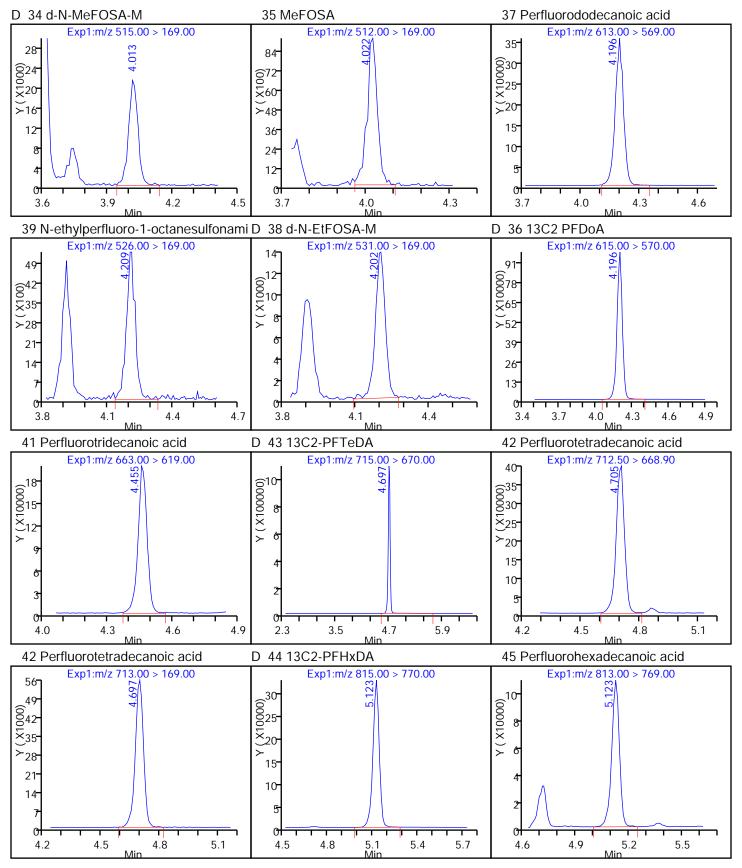
4.1

3.8

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_006.d



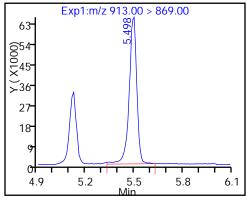
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_006.d



Report Date: 27-Mar-2017 10:05:35 Chrom Revision: 2.2 13-Mar-2017 15:50:30

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b\2017.03.03A_006.d

46 Perfluorooctadecanoic acid



FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 SDG No.: Client Sample ID: _____ Lab Sample ID: <u>LCS 320-152587/2-A</u> Lab File ID: 2017.03.02A 005.d Matrix: Water Analysis Method: 537 (Modified) Date Collected: Extraction Method: 3535 Date Extracted: 02/28/2017 16:42 Sample wt/vol: 250.00(mL) Date Analyzed: 03/02/2017 10:42 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup:(Y/N) N Analysis Batch No.: 152836 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	38.6		2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.6		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	39.5		2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	142		25-150
STL00991	13C4 PFOS	133		25-150
STL00994	1802 PFHxS	136		25-150

Report Date: 02-Mar-2017 12:34:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_005.d

Lims ID: LCS 320-152587/2-A

Client ID:

Sample Type: LCS

Inject. Date: 02-Mar-2017 10:42:45 ALS Bottle#: 2 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: lcs 320-152587/2-a Misc. Info.: Plate: 1 Rack: 5

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 02-Mar-2017 12:33:56 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK026

First Level Reviewer: chandrasenas Date: 02-Mar-2017 12:21:39

First Level Reviewer: chandrasenas					Date:	0	2-Mar-2017 12:21:3	9		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobut	vric acid									
212.90 > 169.00	•	1.538	0.008	1.000	7422717	21.6		108	74277	
D 113C4 PFBA										
217.00 > 172.00		1.538	0.0		20256629	69.3		139	306190	5
D 3 13C5-PFPe										
267.90 > 223.00		1.821	0.0		16326601	70.3		141	274241	7
4 Perfluoroper		cid								
262.90 > 219.00		1.821	0.0	1.000	6568984	20.6		103	109845	
5 Perfluorobut	anesulfo	nic acid								
298.90 > 80.00		1.861	0.0	1.000	11195126	19.7		112		
298.90 > 99.00	1.861	1.861	0.0	1.000	4705494		2.38(0.00-0.00)			
D 713C2 PFHx	:A									
315.00 > 270.00	2.125	2.122	0.003		15305179	72.6		145	58955	
6 Perfluorohex	canoic ac	id								
313.00 > 269.00	2.125	2.122	0.003	1.000	5303058	19.5		97.4	584514	
10 Perfluorohe	ptanoic a	ncid								
363.00 > 319.00	2.467	2.460	0.007	1.000	5549686	20.1		100	576972	
D 9 13C4-PFHp	Α									
367.00 > 322.00	2.467	2.468	-0.001		14305507	74.1		148	929705	
8 Perfluorohex	anesulfo	nic acid								
399.00 > 80.00	2.490	2.483	0.007	1.000	7214762	17.7		97.4		
D 11 1802 PFH:	xS									
403.00 > 84.00	2.482	2.483	-0.001		18723376	64.4		136	103780	
13 Sodium 1H,	1H,2H,2	H-perflu	orooctan	е						
427.00 > 407.00	2.801	2.803	-0.001	1.000	2833149	20.0		105		
D 12 M2-6:2FTS	5									
429.00 > 409.00	2.809	2.803	0.007		7554273	97.9		206		
D 14 13C4 PFO	A									
417.00 > 372.00	2.832	2.834	-0.002		Page 6218 of 68:	3 70.9		142	45 5 9527	1 2017
					Č					

Data File:	\\Chrc	mNa\Sa	mNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_005.d								
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
15 Perfluorooct	tanoic ac	id			•						
413.00 > 369.00 413.00 > 169.00	2.832	2.834 2.834	-0.002 0.006	1.000 1.003	5735939 3300335	19.3	1.74(0.90-1.10)	96.6	71230 103364	6	
16 Perfluorohe 449.00 > 80.00	-	fonic Ac 2.834	id 0.006	1.000	6811488	20.6		108			
17 Perfluorooct	tane sulf	onic acid	d								
499.00 > 80.00 499.00 > 99.00		3.089 3.089	0.007 0.078	1.000 1.023	5613125 1280272	17.8	4.38(0.90-1.10)	96.0	48938 10752		
D 18 13C4 PFOS 503.00 > 80.00		3.202	0.007		15317374	63.4		133	157211	8	
D 19 13C5 PFN	A										
468.00 > 423.00 20 Perfluorono		3.202	0.007		10608060	59.6		119	297222	0	
463.00 > 419.00	3.209		-0.001	1.000	3835053	20.0		100.0	148780		
D 21 13C8 FOSA 506.00 > 78.00		3.528	0.016		12094528	33.0		65.9	376518	1	
22 Perfluorooct 498.00 > 78.00		onamido 3.536		1.000	4266923	19.6		98.2	137627	9	
25 Sodium 1H,				e							
527.00 > 507.00	3.553	-	0.008	1.000	2207100	19.5		102			
D 26 M2-8:2FTS 529.00 > 509.00		3.553	0.0		5835376	63.0		132			
D 23 13C2 PFD/	A										
515.00 > 470.00 24 Perfluorodeo		3.561	0.0		10092537	60.5		121	760047		
513.00 > 469.00	3.570	3.561	0.009	1.000	3716128	20.3		102	114768	9	
D 27 d3-NMeFO 573.00 > 419.00		3.714	0.0		3064781	36.0		72.0			
28 N-methyl pe 570.00 > 419.00			lfonami 0.010	1.003	1226397	20.6		103			
29 Perfluorode											
599.00 > 80.00	3.868	3.867	0.001	1.000	3570465	18.7		97.0			
D 32 d5-NEtFOS 589.00 > 419.00		3.875	0.010		2892886	35.6		71.1			
33 N-ethyl perfl 584.00 > 419.00		ane sulfo 3.875	onamid 0.010	1.000	1047607	19.9		99.5			
31 Perfluoround	decanoio	acid									
563.00 > 519.00	3.894	3.884	0.010	1.000	2658216	17.5		87.5	1816		
D 30 13C2 PFUr 565.00 > 520.00		3.884	0.001		7497114	57.3		115	222616	0	
D 36 13C2 PFD6 615.00 > 570.00		4.172	0.004		6936444	56.0		112	209679	5	
37 Perfluorodo 613.00 > 569.00		acid 4.172	0.004	1.000	2394762	18.9		94.4	125511		
41 Perfluorotrid 663.00 > 619.00		acid 4.436	0.005	1.000	2524943	20.8		104	116139		
D 43 13C2-PFTe											
715.00 > 670.00		4.672	0.007		17132293 Page 6223 of 683	66.1		132	4466927	7/2017	

Report Date: 02-Mar-2017 12:34:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File:

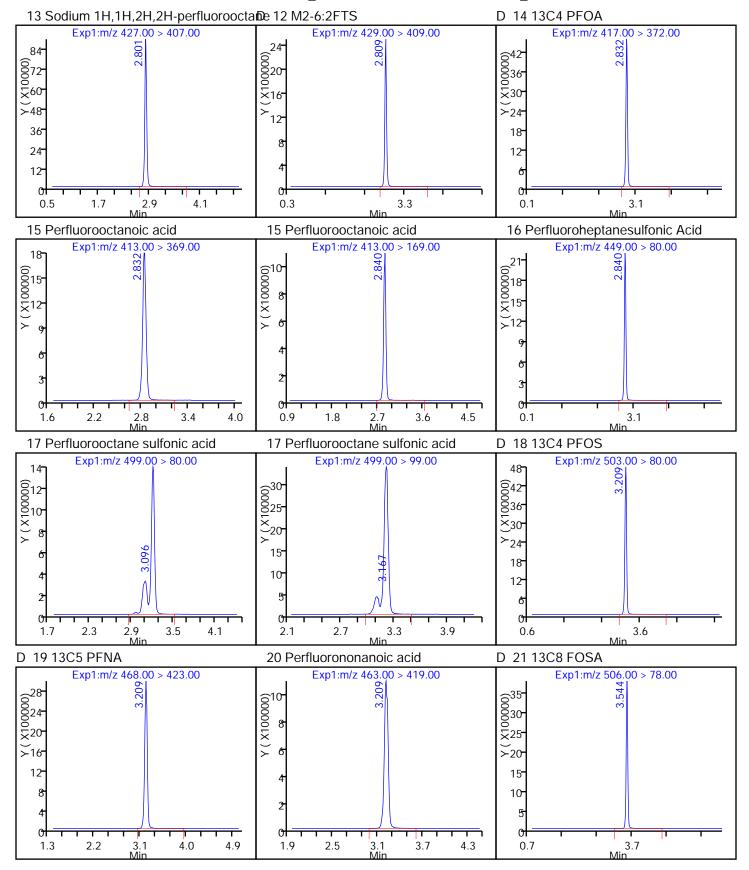
	Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
-	42 Perfluoroteti 12.50 > 668.90 13.00 > 169.00	4.679	oic acid 4.681 4.681	-0.002 -0.011	1.000 0.998	5879704 840079	21.6	7.00(0.00-0.00)	108	23442 275195	M M
_	44 13C2-PFH 315.00 > 770.00		5.093	-0.003		6451688	51.6		103	325410	
	45 Perfluorohe 13.00 > 769.00		oic acid 5.093	-0.003	1.000	2187102	16.6		83.2	5599	M M
9	46 Perfluorooct 13.00 > 869.00		oic acid 5.446	-0.002	1.000	1968218	19.8		98.9	4023	

QC Flag Legend Review Flags

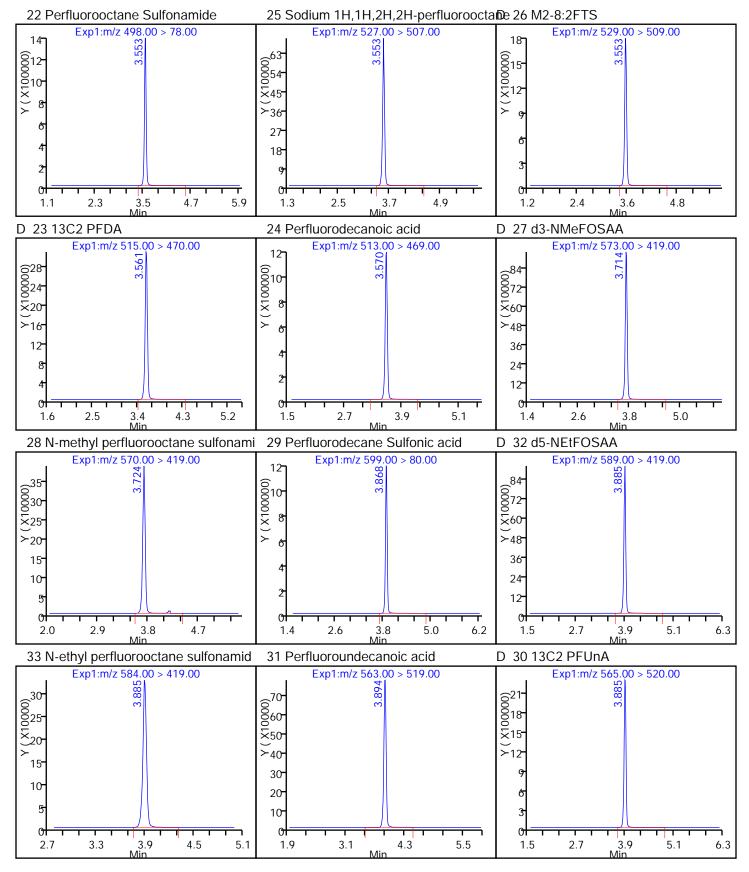
M - Manually Integrated

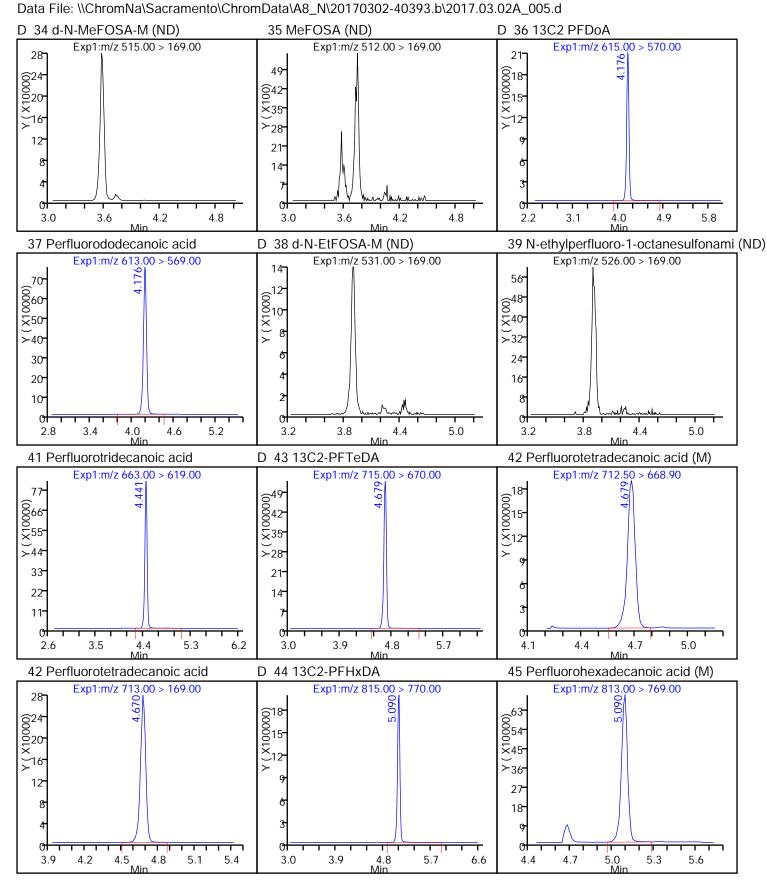
Report Date: 02-Mar-2017 12:34:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento Data File: **Injection Date:** 02-Mar-2017 10:42:45 Instrument ID: A8_N Lims ID: LCS 320-152587/2-A Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 2 Worklist Smp#: 14 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ 2 Perfluorobutyric acid D 113C4 PFBA D 3 13C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 (056 000 48 049 0042 ©21- ∑₁₅-×40 **≻**32 ≻28 24 21 16 14 1.2 2.4 1.2 3.6 0.0 2.4 3.6 1.0 2.2 2.8 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid 4 Perfluoropentanoic acid Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 24 40 18-(0000015-12-821 ©21- 035- ∑₁₅-×25 ≻₂₀ 15 10 1.2 2.0 2.4 3.6 1.4 1.2 1.5 1.8 2.1 2.4 0.0 1.7 2.3 D 7 13C2 PFHxA 6 Perfluorohexanoic acid 10 Perfluoroheptanoic acid Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 363.00 > 319.00 18 18 49 (X100000) (X100000) 00015 12 12 <u>8</u>42 ∑35<u>-</u> × × × 2.0 2.9 3.8 1.1 2.0 2.9 3.8 8.0 1.7 1.1 0.2 2.6 3.5 0.2 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 399.00 > 80.00 Exp1:m/z 367.00 > 322.00 Exp1:m/z 403.00 > 84.00 56-(000001X (000015-X)12-042 0036 ×30 24 18 16- 0 0 0 1.9 2.5 3.1 1.3 1.9 Page 624h of 683 3.7 0.0 3.0 1.3 03/27/201 Min

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_005.d



Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_005.d

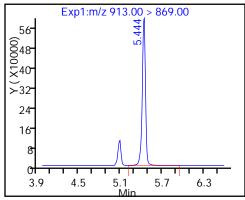




Report Date: 02-Mar-2017 12:34:08 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_005.d

46 Perfluorooctadecanoic acid



FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 SDG No.: Lab Sample ID: LCSD 320-152587/3-A Client Sample ID: Matrix: Water Lab File ID: 2017.03.02A_006.d Analysis Method: 537 (Modified) Date Collected: Extraction Method: 3535 Date Extracted: 02/28/2017 16:42 Sample wt/vol: 250.00(mL) Date Analyzed: 03/02/2017 10:50 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm) % Moisture: GPC Cleanup:(Y/N) N Analysis Batch No.: 152836 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	38.5		2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.6	М	4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	40.3	М	2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	142		25-150
STL00991	13C4 PFOS	135		25-150
STL00994	1802 PFHxS	140		25-150

Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d

Lims ID: LCSD 320-152587/3-A

Client ID:

Sample Type: LCSD

Inject. Date: 02-Mar-2017 10:50:15 ALS Bottle#: 3 Worklist Smp#: 15

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Sample Info: lcsd 320-152587/3-a Misc. Info.: Plate: 1 Rack: 5

Operator ID: A8-PC\A8 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\A8_N.m

Limit Group: LC PFC_DOD ICAL

Last Update: 02-Mar-2017 12:33:56 Calib Date: 01-Mar-2017 11:53:47

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20170301-40358.b\2017.03.01CURVE_009.d

Column 1: Det: EXP1

Process Host: XAWRK026

First Level Reviewer: chandrasenas Date: 02-Mar-2017 12:25:50

First Level Revie	wer: cha	ndrasen	as		Date:	C)2-Mar-2017 12:25:5	0		
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobut 212.90 > 169.00	•	1.538	0.007	1.000	7482816	21.3		106	77287	
D 113C4 PFBA 217.00 > 172.00	1.537	1.538	-0.001		20752007	71.0		142	216759	7
D 3 13C5-PFP6 267.90 > 223.00		1.821	0.0		17664261	76.1		152	287203	2
4 Perfluoroper 262.90 > 219.00	1.821	1.821	0.0	1.000	6999956	20.2		101	89737	
	1.860	1.861	-0.001	1.000	11762366	20.2	2 42/0 00 0 00)	114		M
D 7 13C2 PFHx		1.861	-0.001	1.000	4842032		2.43(0.00-0.00)			M
315.00 > 270.00 6 Perfluorohex		2.122 tid	0.003		15474823	73.4		147	517320	0
313.00 > 269.00	2.125	2.122	0.003	1.000	5494585	20.0		99.8	294520	M
10 Perfluorohe 363.00 > 319.00	2.467	2.460	0.007	1.000	5376080	18.9		94.4	72086	M
D 9 13C4-PFHp 367.00 > 322.00		2.468	-0.001		14724421	76.3		153	475459	3
8 Perfluorohex 399.00 > 80.00		nic acid 2.483		1.000	7275075	17.4		95.5		
D 11 18O2 PFH 403.00 > 84.00		2.483	-0.001		19260630	66.2		140	100161	
13 Sodium 1H, 427.00 > 407.00		H-perflud 2.803	orooctan 0.007	e 1.000	2766592	20.1		106		
D 12 M2-6:2FTS 429.00 > 409.00		2.803	0.007		7345938	95.2		200		
D 14 13C4 PFO. 417.00 > 372.00	A	2.834	-0.002		P144568354of 68			142	74 83 527	7/2017
117.00 > 372.00	2.002	2.004	0.002		୮'ୟାଧିକ ବ୍ୟବ୍ୟ । ୧୪	J / 1.1		172	' ¬⊌&⊬∠ <i>1</i>	72017

Data File:	\\Chr	omNa\Sa	acrament	to\Chrom	Data\A8_N\201	70302-4039	3.b\2017.03.02A_00)6.d	_	
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooct	tannic ac	rid.								
413.00 > 369.00		2.834	0.014	1.000	5734446	19.3		96.3	266049	
413.00 > 169.00		2.834	-0.002	0.995	3315175		1.73(0.90-1.10)		105121	
16 Perfluorohe	ntanesul	fonic Ac	id				,			
449.00 > 80.00	-	2.834	0.014	1.000	6684766	19.9		105		
17 Perfluorooct	tane sulf	onic acid	d							М
499.00 > 80.00		3.089	0.129	1.000	5699041	17.8		95.9	217329	
499.00 > 99.00		3.089	0.129	1.000	1292504		4.41(0.90-1.10)		344960	
D 18 13C4 PFO							,			
503.00 > 80.00		3.202	0.007		15561883	64.4		135	114353	5
D 19 13C5 PFN/										
468.00 > 423.00		3.202	0.016		10943767	61.5		123	307976	3
20 Perfluorono			0.010		10710707	01.0		.20	007770	
463.00 > 419.00		3.210	0.008	1.000	3870558	19.6		97.8	356383	
		3.210	0.000	1.000	3070330	17.0		77.0	330303	
D 21 13C8 FOS		2 5 2 0	0.025		11754700	22.0		411	044003	
506.00 > 78.00		3.528	0.025		11756789	32.0		64.1	946803	
22 Perfluorooct				4 000	0001051	10.0		0.4.5	(45704	
498.00 > 78.00		3.536		1.000	3991951	18.9		94.5	615781	
25 Sodium 1H,		-								
527.00 > 507.00	3.561	3.545	0.016	1.000	2294566	20.5		107		
D 26 M2-8:2FTS	5									
529.00 > 509.00	3.561	3.553	0.008		5789371	62.5		131		
D 23 13C2 PFD/	A									
515.00 > 470.00	3.570	3.561	0.009		10224483	61.3		123	785026	
24 Perfluorode	canoic a	cid								
513.00 > 469.00	3.578	3.561	0.017	1.000	3697032	20.0		99.8	544597	
D 27 d3-NMeFO	SAA									
573.00 > 419.00		3.714	0.011		3631549	42.6		85.3		
28 N-methyl pe	rfluoroo	ctane su	lfonami							
570.00 > 419.00			0.021	1.003	1449910	20.6		103		
29 Perfluorode						20.0				
599.00 > 80.00		3.867	0.010	1.000	3564363	18.4		95.3		
		3.007	0.010	1.000	3304303	10.4		73.3		
D 32 d5-NEtFOS 589.00 > 419.00		3.875	0.019		3353783	41.2		82.4		
					3333763	41.2		02.4		
33 N-ethyl perfl				1 000	100/000	00.1		100		
584.00 > 419.00		3.875	0.019	1.000	1226023	20.1		100		
31 Perfluoround										
563.00 > 519.00	3.894	3.884	0.010	1.000	2747762	17.0		84.8	142157	
D 30 13C2 PFU	nA									
565.00 > 520.00	3.894	3.884	0.010		7994079	61.1		122	234568	0
D 34 d-N-MeFO	SA-M									
515.00 > 169.00	4.057	4.027	0.030		7857	0.0893		0.2		
D 36 13C2 PFD	οΑ									
615.00 > 570.00		4.172	0.013		7639914	61.6		123	0.0	
37 Perfluorodo										
613.00 > 569.00		4.172	0.020	1.000	2583508	18.5		92.4	402040	
D 38 d-N-EtFOS									5 10	
531.00 > 169.00		4.205	0.234		_ 4744	0 0556		0.1		
301.30 / 107.00	107	200	5.254		Page 631 of 6	583		J. 1	03/27	7/2017

Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File:

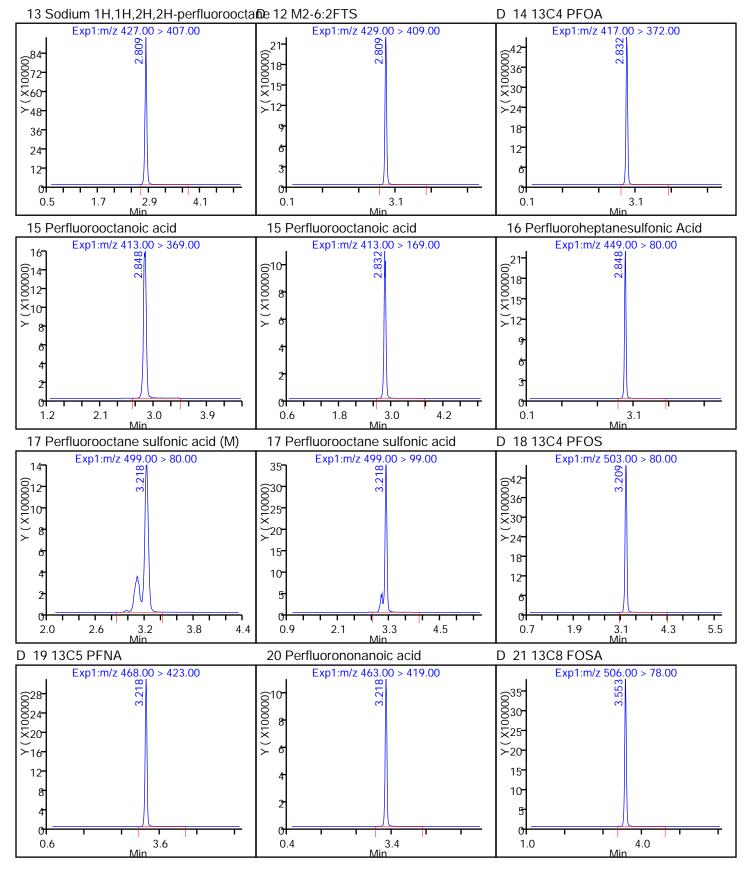
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorot 663.00 > 619.0		acid 4.436	0.018	1.000	2662270	19.9		99.7	165763	
D 43 13C2-PF 715.00 > 670.0		4.672	0.015		18132069	70.0		140	535300	7
42 Perfluorot 712.50 > 668.9		oic acid 4.681	0.006	1.000	6352596	21.1		106	15810	
713.00 > 169.0 D 44 13C2-PF		4.681	-0.003	0.998	919793		6.91(0.00-0.00)		7151	
815.00 > 770.0	00 5.090	5.093	-0.003		7890344	63.1		126	353494	
45 Perfluoroh 813.00 > 769.0	00 5.090	5.093	-0.003	1.000	2601555	18.0		90.0	5857	M M
46 Perfluoroo 913.00 > 869.0		oic acid 5.446	-0.010	1.000	2648380	24.2		121	4575	M M

QC Flag Legend Review Flags

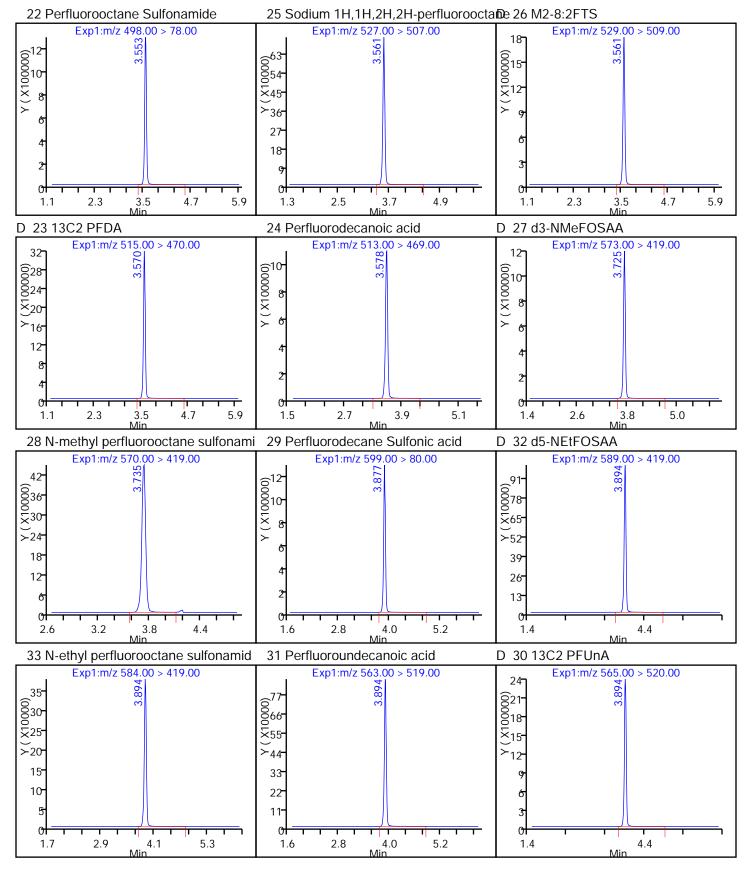
M - Manually Integrated

Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04 TestAmerica Sacramento Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d **Injection Date:** 02-Mar-2017 10:50:15 Instrument ID: A8_N Lims ID: LCSD 320-152587/3-A Client ID: Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 15 Injection Vol: 2.0 ul Dil. Factor: 1.0000 Method: Limit Group: LC PFC_DOD ICAL $A8_N$ 2 Perfluorobutyric acid D 113C4 PFBA D 3 13C5-PFPeA Exp1:m/z 212.90 > 169.00 Exp1:m/z 217.00 > 172.00 Exp1:m/z 267.90 > 223.00 63 (000001X) 45 56 537 ©21- 00048-100001 100001 ∑₁₅-∑36**-**∑32 27 24 18 16 1.2 2.4 0.9 2.7 1.2 3.6 0.0 1.8 0.0 2.4 3.6 4 Perfluoropentanoic acid 5 Perfluorobutanesulfonic acid 5 Perfluorobutanesulfonic acid (M) Exp1:m/z 262.90 > 219.00 Exp1:m/z 298.90 > 80.00 Exp1:m/z 298.90 > 99.00 24 42 82, (518-000015-X)12-(00001 ×16 (0000 30-30-18 12 1.7 1.2 2.4 3.6 1.5 2.1 2.4 2.0 2.3 0.0 1.8 1.4 D 7 13C2 PFHxA 6 Perfluorohexanoic acid 10 Perfluoroheptanoic acid (M) Exp1:m/z 315.00 > 270.00 Exp1:m/z 313.00 > 269.00 Exp1:m/z 363.00 > 319.00 18 18 (000042 (000001×35 (X100000) (X100000) 00015 X 12 <u>></u>28 21 1.2 2.4 1.4 2.3 3.2 2.1 2.7 3.0 0.0 3.6 0.5 1.8 D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid D 11 1802 PFHxS Exp1:m/z 367.00 > 322.00 Exp1:m/z 399.00 > 80.00 Exp1:m/z 403.00 > 84.00 48 482 (18-0000015-(56⁻ 0048⁻ 042 036 ×40 ≥30 **≻**32 \succ_{24} 24 18 16 0 0 0 0.0 3.0 3.5 0.0 3.0 1.1 1.7 Page 686hof 683 03/27/201 Min Min

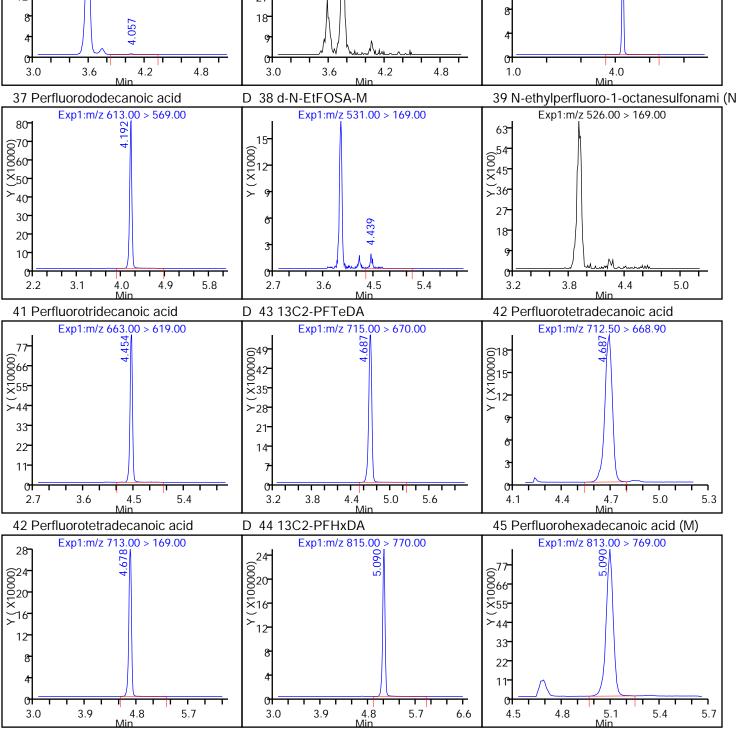
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d



Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d



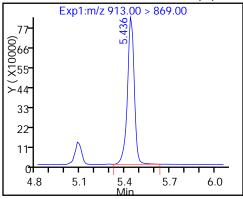
Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d D 34 d-N-MeFOSA-M 35 MeFOSA (ND) D 36 13C2 PFDoA Exp1:m/z 515.00 > 169.00 Exp1:m/z 512.00 > 169.00 Exp1:m/z 615.00 > 570.00 24 (000001 X16 28 63 0024 × 20 × 16 60 ×45 ∑36- 12 12 27 18 4.057 4.8 3.0 3.6 4.2 4.8 3.0 3.6 4.2 1.0 4.0 37 Perfluorododecanoic acid D 38 d-N-EtFOSA-M 39 N-ethylperfluoro-1-octanesulfonami (ND) Exp1:m/z 613.00 > 569.00 Exp1:m/z 531.00 > 169.00 Exp1:m/z 526.00 > 169.00 80 63 670 660 15- (00012-X) > 9 654- 845- Σ_{50} >36 >₄₀ 27 30 18 20 10 4.9 5.8 4.5 3.8 5.0 3.1 3.6 5.4 4.4 41 Perfluorotridecanoic acid D 43 13C2-PFTeDA 42 Perfluorotetradecanoic acid Exp1:m/z 663.00 > 619.00 Exp1:m/z 715.00 > 670.00 Exp1:m/z 712.50 > 668.90 77



Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d

46 Perfluorooctadecanoic acid (M)



Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d

Injection Date: 02-Mar-2017 10:50:15 Instrument ID: A8_N

Lims ID: LCSD 320-152587/3-A

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 15

Injection Vol: 2.0 ul Dil. Factor: 1.0000

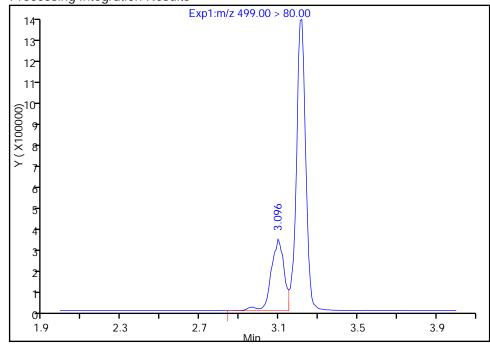
Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

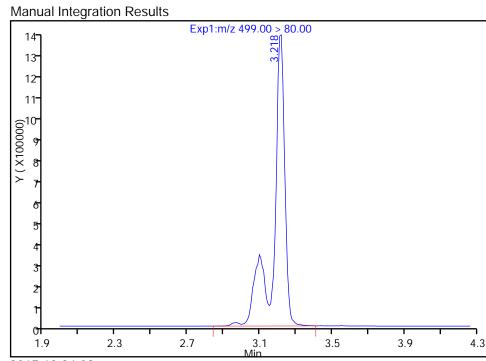
17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

RT: 3.10 Area: 1451227 Amount: 4.532466 Amount Units: ng/ml **Processing Integration Results**



RT: 3.22
Area: 5699041
Amount: 17.799221
Amount Units: ng/ml



Reviewer: chandrasenas, 02-Mar-2017 12:34:09

Audit Action: Manually Integrated

Audit Reason: Isomers

Page 638 of 683

Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d

Injection Date: 02-Mar-2017 10:50:15 Instrument ID: A8_N

Lims ID: LCSD 320-152587/3-A

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 15

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

Column: Detector EXP1

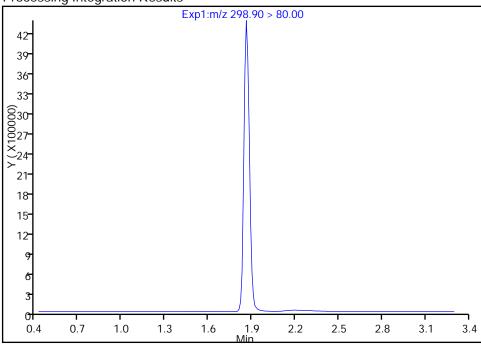
5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

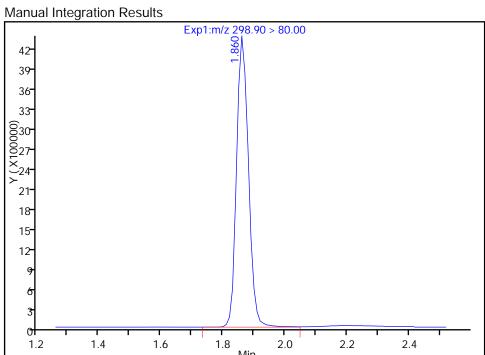
Not Detected

Expected RT: 1.86

Processing Integration Results



RT: 1.86
Area: 11762366
Amount: 20.164565
Amount Units: ng/ml



Reviewer: chandrasenas, 02-Mar-2017 12:34:09

Audit Action: Assigned Compound ID

Audit Reason: Baseline

Page 639 of 683

Report Date: 02-Mar-2017 12:34:10 Chrom Revision: 2.2 03-Feb-2017 15:35:04 Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b\2017.03.02A_006.d

Injection Date: 02-Mar-2017 10:50:15 Instrument ID: A8_N

Lims ID: LCSD 320-152587/3-A

Client ID:

Operator ID: A8-PC\A8 ALS Bottle#: 3 Worklist Smp#: 15

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC_DOD ICAL

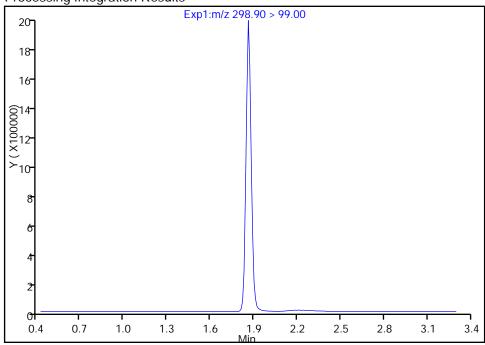
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

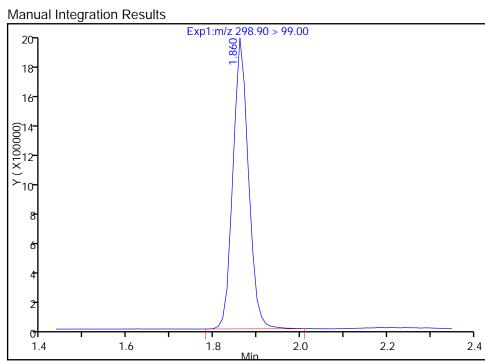
Signal: 2

Not Detected Expected RT: 1.86

Processing Integration Results



RT: 1.86
Area: 4842032
Amount: 20.164565
Amount Units: ng/ml



Reviewer: chandrasenas, 02-Mar-2017 12:34:09

Audit Action: Manually Integrated

Audit Reason: Baseline

Page 640 of 683

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:	
Instrument ID: A8_N	Start Date: 03/01/2017 11:08
Analysis Batch Number: 152681	End Date: 03/01/2017 12:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION	LAB FILE ID	COLUMN ID
			FACTOR		
IC 320-152681/2		03/01/2017 11:08	1	2017.03.01CURVE 003.d	GeminiC18 3x100 3(mm)
IC 320-152681/3		03/01/2017 11:16	1	2017.03.01CURVE 004.d	GeminiC18 3x100 3(mm)
IC 320-152681/4		03/01/2017 11:23	1	2017.03.01CURVE 005.d	GeminiC18 3x100 3(mm)
IC 320-152681/5		03/01/2017 11:31	1	2017.03.01CURVE 006.d	GeminiC18 3x100 3(mm)
IC 320-152681/6		03/01/2017 11:38	1	2017.03.01CURVE 007.d	GeminiC18 3x100 3(mm)
IC 320-152681/7		03/01/2017 11:46	1	2017.03.01CURVE 008.d	GeminiC18 3x100 3(mm)
ICB 320-152681/12		03/01/2017 12:23	1		GeminiC18 3x100 3(mm)
ICV 320-152681/13		03/01/2017 12:31	1	2017.03.01CURVE 014.d	GeminiC18 3x100 3 (mm)

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:	
Instrument ID: A8_N	Start Date: 03/01/2017 18:30
Analysis Batch Number: 152825	End Date: 03/01/2017 20:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION	LAB FILE ID	COLUMN ID
			FACTOR		
CCV 320-152825/2		03/01/2017 18:30	1	2017.03.01A_002 .d	GeminiC18 3x100 3(mm)
MB 320-152015/1-A		03/01/2017 18:37	1	2017.03.01A_003	GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 18:45	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 18:52	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 19:00	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 19:07	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 19:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 19:22	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 19:30	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/01/2017 19:37	1		GeminiC18 3x100 3(mm)
320-25962-4		03/01/2017 19:45	1	2017.03.01A_012 .d	GeminiC18 3x100 3(mm)
CCV 320-152825/13		03/01/2017 19:52	1	2017.03.01A_013 .d	GeminiC18 3x100 3(mm)
320-25962-5		03/01/2017 20:00	1	2017.03.01A_014 .d	GeminiC18 3x100 3(mm)
CCV 320-152825/15		03/01/2017 20:07	1	2017.03.01A_015 .d	GeminiC18 3x100 3(mm)

Lab Name:	TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:		
Instrument	ID: A8 N	Start Date: 03/02/2017 10:12

Analysis Batch Number: 152836 End Date: 03/02/2017 12:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION	LAB FILE ID	COLUMN ID
			FACTOR		
CCV 320-152836/10 CCVL		03/02/2017 10:12	1	2017.03.02A_001	GeminiC18 3x100 3(mm)
CCV 320-152836/11		03/02/2017 10:20	1	2017.03.02A_002 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 10:27	1		GeminiC18 3x100 3(mm)
MB 320-152587/1-A		03/02/2017 10:35	1	2017.03.02A_004 .d	GeminiC18 3x100 3(mm)
LCS 320-152587/2-A		03/02/2017 10:42	1	2017.03.02A_005 .d	GeminiC18 3x100 3(mm)
LCSD 320-152587/3-A		03/02/2017 10:50	1	2017.03.02A_006 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 10:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 11:05	1		GeminiC18 3x100 3(mm)
320-25962-3		03/02/2017 11:12	1	2017.03.02A_009 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 11:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 11:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 11:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/02/2017 11:42	1		GeminiC18 3x100 3(mm)
CCV 320-152836/23		03/02/2017 11:50	1	2017.03.02A_014 .d	GeminiC18 3x100 3 (mm)
ZZZZZ		03/02/2017 11:57	1		GeminiC18 3x100 3(mm)
CCV 320-152836/25		03/02/2017 12:05	1		GeminiC18 3x100 3(mm)

Lab Name: TestAmerica Sacramento	Job No.: 320-25962-1
SDG No.:	
Instrument ID: A8_N	Start Date: 03/03/2017 09:07
Analysis Batch Number: 153020	End Date: 03/03/2017 10:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
		02/02/2017 00 07	1		G' 'G10 2 100 2 ()
ZZZZZ		03/03/2017 09:07	1		GeminiC18 3x100 3(mm)
CCV 320-153020/3 CCVL		03/03/2017 09:15	1		GeminiC18 3x100 3(mm)
CCV 320-153020/4		03/03/2017 09:22	1	2017.03.03A_004 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/03/2017 09:30	1		GeminiC18 3x100 3(mm)
LCS 320-152015/2-A		03/03/2017 09:37	1	2017.03.03A_006 .d	GeminiC18 3x100 3(mm)
ZZZZZ		03/03/2017 09:45	50		GeminiC18 3x100 3(mm)
320-25962-4 DL		03/03/2017 09:53	10	2017.03.03A_008 .d	GeminiC18 3x100 3 (mm)
CCV 320-153020/9		03/03/2017 10:00	1	2017.03.03A_009 .d	GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Batch Number: 152015 Batch Start Date: 02/23/17 17:22 Batch Analyst: Reed, Jonathan E

Batch Method: SHAKE Batch End Date: 02/27/17 17:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC2SU 00014	LCMPFCSU 00047	LCPFC2SP 00017	LCPFCSP 00080
MB 320-152015/1		SHAKE, 537 (Modified)		5.00 g	1.00 mL	50 uL	50 uL		
LCS 320-152015/2		SHAKE, 537 (Modified)		5.00 g	1.00 mL	50 uL	50 uL	40 uL	40 uL
320-25962-A-4	MEAFF-PWMA-SB01- 0001	SHAKE, 537 (Modified)	T	5.05 g	1.00 mL		50 uL		
320-25962-A-5	MEAFF-PWMA-SB01- 0204	SHAKE, 537 (Modified)	T	4.97 g	1.00 mL		50 uL		

Batch	Notes
Acetic Acid ID	429065
Balance ID	QA-070
Batch Comment	PIPETTE: MD05306
Hexane ID	0000130361
Manifold ID	5,6
Methanol ID	851504
Methanolic Potassium Hydroxide ID	826650
Millipore Water Dispense Date	2/23/17
Sodium Hydroxide ID	0.1% NaOH/H2O: 819948
Ammonium Hydroxide/MeOH ID	847209
Analyst ID - Reagent Drop Witness	KMK
Blank Sand Lot #	156690
SPE Cartridge ID	016836329B
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
Т	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.

537 (Modified) Page 1 of 1

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Batch Number: 152587 Batch Start Date: 02/28/17 16:42 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/01/17 13:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC2SU 00014	LCMPFCSU 00047
MB 320-152587/1		3535, 537				250.00 mL	0.50 mL	25 uL	25 uL
LCS		(Modified) 3535, 537				250.00 mL	0.50 mL	25 uL	25 uL
320-152587/2		(Modified)				230.00 MH	0.30 MH	23 45	25 41
LCSD 320-152587/3		3535, 537 (Modified)				250.00 mL	0.50 mL	25 uL	25 uL
320-25962-A-3	MEAFF-EB01-02211	3535 , 537	Т	305.66 g	26.40 g	279.3 mL	0.50 mL		25 uL
	7-SO	(Modified)							

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFC2SP 00017	LCPFCSP 00080		
MB 320-152587/1		3535, 537					
		(Modified)					
LCS		3535 , 537		20 uL	20 uL		
320-152587/2		(Modified)					
LCSD		3535 , 537		20 uL	20 uL		
320-152587/3		(Modified)					
320-25962-A-3	MEAFF-EB01-02211	3535 , 537	Т				
	7-S0	(Modified)					

Ва	tch Notes
Balance ID	QA-070
H2O ID	2/28/17
Hexane ID	0000130361
Manifold ID	2, 5
Methanol ID	851503
Sodium Hydroxide ID	0.1N NaOH/H2O: 858158
Pipette ID	MD05306
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	VPM
Solvent Lot #	847209
Solvent Name	0.3% NH4OH/MeOH
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	002836112A

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.

537 (Modified) Page 1 of 2

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Batch Number: 152587 Batch Start Date: 02/28/17 16:42 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/01/17 13:40

Basis	Basis Description
Т	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.

537 (Modified) Page 2 of 2



West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 25933: 25962: 26103	Work List ID(s):	40391;	4044	<u> </u>
Extraction Batch: 152015; 152587	Analysis Batch(es):	152825	15302	
Delivery Rank	Due Date: 2/27/	17; 3/3/17	2/28/	17; 2/26/1
A. Calibration/Instrument Run QC		1 st Level	2 nd Level	N/A
	2681	1,/20101	/	19/74
2. ICAL, CCV Frequency & Criteria met.		1		
RF _{average} criteria appropriate for the method.		 '/		
Linear Regression criteria appropriate if required	(r > 0.995)	+ -		
 Quadratic fit criteria appropriate if required (r² ≥ 0 		 		
For Linear Regression and Quadratic fit – Does the control of		-	_	
½ the reporting limit as described in CA-Q-S-005	s y-mieroept support	/	ا ہے ا	i
All curve points show calculated concentrations.	· · · · · · · · · · · · · · · · · · ·		 	
Peaks correctly ID'd by data system.		V	-//-	-
Tune check frequency & criteria met and Tune check r	opert etteched	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
B QA/QC	eport attached.			
Are all QC samples properly linked in TALS?			/	
Method blank, LCS/LCSD and MS/SD frequencies met	<u> </u>	 	V	
LCS/LCSD and MB data are within control limits. If not		V	/_	——
Are MS/MSD recoveries and RPD within control limits?		V		
Holding Times were met for prep and analytical.		V	/ -	 -
IS/Surrogate recoveries meet criteria or properly noted		+		——
C Sample Analysis	·	- V		
Was correct analysis performed and were project instru	untions followed?			
Was correct analysis periormed and were project institute. If required, are compounds within RT windows?	actions followed?	 	// 	
3. If required, are positive hits confirmed and >40% RPD	floorand?	- V	_ /	
Manual Integrations reviewed and appropriate.	nagged?	+-/		<u> </u>
Nandal integrations reviewed and appropriate. All analytes correctly reported. (Primary, secondary, actions are secondary).	oontoble status	- V		
Correct reporting limits used. (based on client request,	ceptable status)	V		
dilutions)	prep factors, and	V	/	ĺ
D. Documentation				
1. Are all non-conformances documented/attached? NCM	Λ#	V		
2. Do results make sense (e.g. dilutions, etc.)?		V		
3. Have all flags been reviewed for appropriateness?		V	1	
4. For level 3 and 4 reports, have forms and raw data bee	en reviewed?		.()	
5. Was QC Checker run for this job?		V	7/	
*Upon completion of this checklist, the reviewer must scan 1st Level (Analyst):	and attach the checkl	list to the TAL	S job.	
2 nd Level Reviewer:	Date:3	18/2017		
NCMS: 79769; 79770; 79775;	79771;796	42		

Report Date: 03-Mar-2017 10:17:52

Chrom Revision: 2.2 03-Feb-2017 15:35:02

Page: 1

TestAmerica Laboratories Worklist QC Batch Report

Worklist Name:

03MAR2017A_PFC

Worklist Number:

40441

Instrument Name: A8_N Data Directory:

Chrom Method: \\ChromNa\Sacramento\ChromData\A8_N\20170303-40441.b

A8_N

QC Batching:

Disabled

Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL	LC PFC ICAL	LC PFAS ICAL	LC PFC_PREC ICAL
	Raw Batch: 153020	Raw Batch 153021	Raw Batch 153022	Raw Batch 153023
#1 RB	# 1 RB	#1 RB	#1 RB	# 1 RB
# 2 RB	# 2 RB	#2 RB	#2 RB	# 2 RB
# 3 CCV L2	# 3 CCV L2	#3 CCV L2	#3 CCV L2	# 3 CCV L2
	# 4 CCV L4	#4 CCV L4	#4 CCV L4	# 4 CCV L4
1			# 5 RB	# 5 RB
# 6 LCS 320-152015/2-A	# 6 LCS 320-152015/2-A	as Tiled's non	- 4	
	# 7 320-26103-A-7-A	PL, Dilution 79=	7-1	
# 8 320-25962-A-4-A	# 8 320-25962-A-4 - A			1
# 9 CCV L5	# 9 CCV L5	# 9 CCV L5	# 9 CCV L5	#9 CCV L5

1CV 152681 Tune 79642

Report Date: 02-Mar-2017 12:01:22

Chrom Revision: 2.2 03-Feb-2017 15:35:02

Page: 1

TestAmerica Laboratories Worklist QC Batch Report

Worklist Name:

01MAR2017A_PFC

Worklist Number:

40391

Instrument Name: A8_N Data Directory:

Chrom Method: A8_N

QC Batching:

\\ChromNa\Sacramento\ChromData\A8_N\20170302-40391.b

Disabled

Limit Group Batching: Enabled

CC Potob 1	LO DEO DODIONI	100000	T	
QC Batch 1	LC PFC_DOD ICAL	LC PFC ICAL	LC PFAS ICAL	LC PFC_PREC ICAL
	Raw Batch. 152825	Raw Batch: 152826	Raw Batch: 152827	Raw Batch: 152828
# 1 RB	#1 RB	#1 RB	#1 RB	# 1 RB
#2 CCV L5	# ₂ 2°CCV L5		# 2 CCV L5	# 2 CCV L5
# 3 MB 320-152015/1-/	A # 3 MB 320-152015/1-A			2 331 23
# 4 LCS 320-152015/2-	-A # 4 LCS 320-152015/2-A	- AD 153071)		
# 5 320-25933-A-1-A	# 5 320-25933-A-1-A	1 10 133020		İ
# 6 320-25933-A-1-B M	1S # 6 320-25933-A-1-B MS			•
# 7 320-25933-A-1-C	# 7 320-25933-A-1-C	110/May 1 200		
MSD	MSD	MS/MSD + RPD		1
# 8 320-25933-A-2 - A	# 8 320-25933-A-2-A	NCM 79770		
# 9 320-25933-A-4-A	# 9 320-25933-A-4-A	1.66		
#10 320-25933-A-5-A	#10 320-25933-A-5-A			
#11 320-25933-A-7-A	#11 320-25933-A-7-A			
#12 320-25962-A-4-A	Muse and a	#13 CCV L4	#13 CCV L4	#13 CCV L4
#13 CCV L4	#13 CCV L4		7 10 001 E-1	10 00 v L4
#14 320-25962-A-5-A	1	#15 CCV L5	#15 CCV L5	#15 CCV L5
#15 CCV L5	#15 CCV L5			710 004 23

1CV 152681 10x low 79775

E flag New 79769

Thre 79642

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-Shake_Bath_14D-320

Batch Number: 320-152015

#8 2/28/17 3/1/17 Batch Open: 2/23/2017 5:22:00PM Batch End: 2-27-17 (7:/0 p.m)

Shake Extraction with Ultrasonic Bath Extraction

_			7 	lake Extra	iction wi	th Ultrasor	ic Bat	Shake Extraction with Ultrasonic Bath Extraction	Der 3/6
	Input Sample Lab ID (Analytical Method)	SDG (Job#)	Initial Amount	Final Amount	Due Date	Analytical TAT	DIv Rank	Comments	Output Sample Lab ID
-	Mb~320-152015/1 N/A	N/A	5.00 g	1.00 mL	N/A	N/A	Ϋ́	RI	
7	LCS~320-152015/2 N/A	N/A	5.00 g	1.00 mL	N/A	N/A	₹ Ž		1 2 4 1 5 2 4 1 5 7 1 - 7
ю	320-25933-A-1 (PFC_IDA_DOD5)	M3010.0019.0017.0 (328-25993-1)	4.97 g	1.00 mL	2127/17	8_Days	4		15 2 % - 15
4	320-25933-A-1~MS (PFC_IDA_DOD5)	M3010.0019.0017.0 (326-25993-1)	4.99 g	1.00 mL	2/27/17	8_Days	4		3 2 4 - 2 5 9 3 - A
Page	32	M3010.0019.0017.0 (328-25935-1)	5.00 g	1.00 mL	2/27/17	8_Days	4		
e 651		M3010.0019.0017.0 (32 8-259 35-1)	4.97 g	1.00 mL	2/27/17	8_Days	4		
of 68	9	M3010.0019.0017.0 (328-25995-1)	5.05 g	1.00 mL	2/27/17	8_Days	4		3 2 8 3 2 8 3 2 8 3 4 8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
8		M3010.0019.0017.0 (32巻-25993-1)	4.99 g	1.00 mL	2/27/17	8_Days	4		
65	320-25933-A-7 (PFC_IDA_DOD5)	M3010.0019.0017.0 (32 6-2 5338-1)	5.05 g	1.00 mL	2/27/17	8_Days	4	K	3 2 0 - 2 5 9 3 - A - 5 - A
5	320-25962-A-4 (PFC_IDA_DOD5)	N/A (320-25962-1)	5.05 g	1.00 mL	2/26/17	23_Days	1	10x Pros/	4 - 4 - 6 6 6 6 - 4 - 4 - 6 6 6 6 6 - 4 - 6 6 6 6
=	320-23962-A-5 (PFC_IDA_DOD5)	N/A (320-25962-1)	4.97 g	1.00 mL	2/26/17	23_Days	4	>	

Page 1 of 5

TestAmerica Sacramento

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152015

Method Code: 320-Shake_Bath_14D-320

Analyst: Reed, Jonathan E

Batch Open: 2/23/2017 5:22:00PM

Batch End:

Balance ID QA-070 Blank Sand Lot # 15690 Filter ID NA Millipore Water Dispense Date 2/23/17 Analyst ID - Reagent Drop Witness	SPE Cartridge ID 016836329B SPE Cartridge Type WAX 150mg Hexane ID 000130361 Methanolic Potassium Hydroxide ID 82650 Manifold ID 7, C Interference check solution ID NA Acetic Acid ID 429065 Batch Comment PIPETTE: MD05306
---	---

Page 2 of 5

TestAmerica Sacramento

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152015

Method Code: 320-Shake_Bath_14D-320

Analyst: Reed, Jonathan E

Batch Open: 2/23/2017 5:22:00PM

Batch End:

Comments									
		Method Comments: include add on spikes	Method Comments: DOD site, Screen-caution						
	;	Method Comments:							
	320-25933-A-1	320-25933-A-1~MS	320-25933-A-1~MSD	320-25933-A-2	320-25933-A-4	320-25933-A-5	320-25933-A-7	320-25962-A-4	320-25962-A-5

Method Comments: DOD site, Screen-caution

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-Shake_Bath_14D-320

Batch Number: 320-152015

Batch Open: 2/23/2017 5:22:00PM

Batch End:

Reagent Additions Worksheet

Witness	1-50-0 NW/	- 6 4 7																
By	Manney	Mary 11.23/1																7
Final Amount	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	0 1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL	1.00 mL
Amount Added	50 pmC UV	20 ul	50 pmL	20 ul venign	40 uL	40 uL	50 mC	50 ul	50 mC	50 ul.	40 uL	40 uL	50 mK	50 ut 00	40 uL	40 uL	50 ML	50 uL
Reagent Code	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFC2SU_00014	LCMPFCSU_00047	LCPFC2SP_00017	LCPFCSP_00080	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFC2SU_00014	LCMPFCSU_00047	LCPFC2SP_00017	LCPFCSP_00080	LCMPFC2SU_00014	LCMPFCSU_00047	LCPFC2SP_00017	LCPFCSP_00080	LCMPFC2SU_00014	LCMPFCSU_00047
Lab ID	MB 320-152015/1	MB 320-152015/1	LCS 320-152015/2	LCS 320-152015/2	LCS 320-152015/2	LCS 320-152015/2	320-25933-A-1	320-25933-A-1	320-25933-A-1 MS	320-25933-A-1 MS	320-25933-A-1 MS	320-25933-A-1 MS	320-25933-A-1 MSD	320-25933-A-1 MSD	320-25933-A-1 MSD	320-25933-A-1 MSD	320-25933-A-2	320-25933-A-2
L					i	Pa	l ge 65	54 of	683		!				[_ 03/27/

Printed: 2/23/2017

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152015

Method Code: 320-Shake

Analyst: Reed, Jonathan E

Batch Open: 2/23/2017 5:22:00PM

	_								
nd:	1-13-17 Many	1000							7
Batch End:	Imas 2bola	there was							
AL MARKE	1.00 mL	1.00 mL	50 mt JV 1.00 mL	50 uL 1.00 mL	1.00 mL		1.00 mL	1.00 mL	
المرابع	50 mt	50 uL	50 mt 27	50 ul	50 par	50 uL	50 uL	50 uL	
D-320	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFCSU_00047	LCMPFCSU_00047	
stnod Code: 320-Shake_Bath_14D-320	320-25933-A-4	320-25933-A-4	320-25933-A-5	320-25933-A-5	320-25933-A-7	320-25933-A-7	320-25962-A-4	320-25962-A-5	

	Lot#:			
Other Reagents:	Amount/Units			
	Reagent			

Page 5 of 5



Sacramento Preparation Data Review Checklist

	Preparation Batch Number(s): 157 0/5 Test:	(5)	
	Earliest Holding Time: 3/93//7		
á		1 st Level	2 nd Level
	Sample List Tab	Reviewer	
	Samples identified to the correct method	1000	140MEME!
	All necessary NCMs filed (including holding time)	M	1/2
	Method/sample/login/QAS checked and correct		177
		1 st Level	2 nd Level
	Worksheet Tab	Reviewer	Reviewer
	All samples properly preserved	M	///
	Weights in anticipated range and not targeted	1/	1//
	All additional test requirements performed, documented, and uploaded to TALS		
	(c.g. mai amount, initial amount, turbidity, and Cl Check)	1	
	The pH is transcribed correctly in TALS	MA	14
ł	All additional information transcribed into TALS is correct and raw data is attached	1 "	
1	Comments are transcribed correctly in TALS	V	
ı	TALO	V	
1	m of a ma	1st Level	2 nd Level
ŀ	All necessary reagents not expired and entered into TALS	Reviewer	Reviewer
t	All spike amounts correct and added to		//
┢	All spike amounts correct and added to necessary samples and QC	2	
ı		1 st Level	2 nd Level
H	Date and time accurate and entered into TALS correctly		Reviewer
b	All necessary thatch informations are not IALS correctly		
Ľ	All necessary 'batch information' complete and entered into TALS correctly	7	
1	Level Reviewer: Date:	197/17	
2 ⁿ	d Level Periowers	2/22/1	
	omments: Date:	0107/1	/
- 1		- t	
_			

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

48 3/1/17

Batch Open: 2/28/2017 4:42:00PM Batch End: 多/ / (つ (る) し

Solid-Phase Extraction (SPE)

			-									1		1		1		1				
Output Sample Lab ID					1111 CS 326 - 152587 2 - A	77.55	M.L.C.S.D. 3.2.6 15.2.5.8 7 3.4 M.M.		3 2 8 - 2 5 9 3 3 - A 3 - A		3 2 6 - 7 5 9 3 3 A - 6 - A				1111 3 2 8 - 2 6 8 1 1 - A - 1 8 - A 14		MI 3 2 8 - 2 6 8 1 1 - A - 2 8 - A I		3 2 0 - 2 6 0 1 1 - A - 2 1 - A		3 2 6 1 6 3 - A - 7 - A	
Comments																				500	\ \ \	
DIV Jaco	¥ ×	_		∀ Z		N/A		4		4		4		4		4		4		4		
Analytical	S N			V/N		N/A		8_Days		8_Days		23_Days		23_Days		23_Days		23_Days		23_Days		-
Due Date	Ø/Z			Y/N		N/A		3/3/17		3/3/17		2/26/17		2/27/17		2/27/17		2/27/17		2/28/17		_
Adi2								ţ											•			
PHs Adi1																						_
Revd	_																					_
InitAmnt	250.00 mL	0.50 mL	000	Zau.uu mL	0.50 mL	250.00 mL	0.50 mL	264.5 mL	0.50 mL	280.9 mL	0.50 mL	279.3 mL	0.50 mL	284.5 mL	0.50 mL	277.1 mL	0.50 mL	291.7 mL	0.50 mL	295.1 mL	0.50 mL	
GrossWt InitAmnt TareWt FinAmnt								291.92 g	27.40 g	308.01 g	27.15 g	305.66 g	26.40 g	811.87 g	27.36 g	305.37 g	28.25 g	319.52 g	27.83 g	321.56 g	26.42 g	_
SDG (Job#)	N/A		N/A			Y/N		M3010.0019.0017.0 (32 6 -25933-1)		M3010.0019.0017.0 (32 5-2 59 9 3-1)		N/A (320-25962-1)		N/A (320-26011-1)		N/A (320-26011-1)		N/A (320-26011-1)		N/A (320-26103-1)		74
Input Sample Lab ID (Analytical Method)	MB~320-152587/1		LCS~320-152587/2	N/A	000	LCSD~320-152587/3 N/A		320-25933-A-3 (PFC_IDA_DOD5)		320-25933-A-6 (PFC_IDA_DOD5)	000000	320-25962-A-3 (PFC_IDA_DOD5)		320-26011-A-10 (PFC_IDA_DOD5)		320-26011-A-20 (PFC_IDA_DOD5)		320-26011-A-21 (PFC_IDA_DOD5)		320-26103-A-7 (PFC_IDA_DOD5)		Printed · 2/28/2017
	_		^	<u> </u>		ო	- þ	age (557	र्जू 68	33	ဖ				œ		o		6	03/27/2	017

Printed: 2/28/2017

(To Accompany Samples to Instruments)

Batch Open: 2/28/2017 4:42:00PM	Batch End:	4	
		23_Days	
nE		2/28/17	
Analyst: Reed, Jonathan E			•
alyst: Ree			
An		293.4 mL	0.50 mL
		320.69 g 293.4 mL	27.25 g 0.50 mL
2587	5_PFC-320	N/A (320-26103-1)	
Batch Number: 320-152587	Method Code: 320-3535_PFC-320	320-26103-A-12 (PFC_IDA_DOD5)	
	_		

Printed: 2/28/2017

Page 2 of 6

Batch Number: 320-152587

(To Accompany Samples to Instruments)

Method Code; 320-3535_PFC-320 Batch Number: 320-152587

Analyst: Reed, Jonathan E

Batch Open: 2/28/2017 4:42:00PM Batch End:

Batch Notes	2, 5	851503	0000130361	Sodium Hydroxide ID 0.1N NaOH/H2O: 858158	NA	NA	WAX 500mg	002836112A	QA-070	1)02(17	71/28/11	MD05306	Solvent Name 0.3% NH4OH/MeOH	847209	JER	JER	LBJ.	YA.	NA	NA	NA	NA
	Manifold ID 2, 5	Methanol ID 851503	Hexane ID (Sodium Hydroxide ID (First Start time NA	First End time NA	SPE Cartridge Type WAX 500mg	Solid Phase Extraction Disk ID 002836112A	Balance ID C	420 II 02H	ַ װְּ	Pipette ID N	Solvent Name(Solvent Lot # 847209	Analyst ID - Reagent Drop JER	Analyst ID - SU Reagent Drop JER	Analyst ID - SU Reagent Drop Witness -		Acid ID NA	Reagent ID NA	Reagent Lot Number NA	SOP Number NA

Page 659 of 683

TestAmerica Sacramento

TestAmerica Sacramento

Page 4 of 6

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 2/28/2017 4:42:00PM Batch End:

Batch Comment NA

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

Comments								
	add-ons needed	add-ons needed	DOD site, Screen-caution					
	Method Comments:	Method Comments:	Method Comments;	Method Comments:				
	Σ							7

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

than E

Batch End:

Batch Open: 2/28/2017 4:42:00PM

Reagent Additions Worksheet

—			-														
CII XCIE MAN	110010																
in John														;			>
0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL
25 uL	25 uL	25 uL	25 uL	20 uL	20 uL	25 uL	25 uL	20 uL	20 uL	25 uL	25 uL	25 uL	25 uL	25 uL	25 uL	25 uL	25 uL
LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFC2SU_00014	LCMPFCSU_00047	LCPFC2SP_00017	CPFCSP_00080	LCMPFC2SU_00014	LCMPFCSU_00047	LCPFC2SP_00017	CPFCSP_00080	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFC2SU_00014	LCMPFCSU_00047	LCMPFCSU_00047	LCMPFCSU_00047	LCMPFCSU_00047	LCMPFCSU_00047
MB 320-152587/1	MB 320-152587/1	LCS 320-152587/2	LCS 320-152587/2	LCS 320-152587/2	LCS 320-152587/2	LCSD 320-152587/3	LCSD 320-152587/3	LCSD 320-152587/3	LCSD 320-152587/3	320-25933-A-3	320-25933-A-3	320-25933-A-6	320-25933-A-6	320-25962-A-3	320-26011-A-10	320-26011-A-20	320-26011-A-21
	LCMPFC2SU_00014 25 uL 0.50 mL //// ////	LCMPFC2SU_00014 25 uL 0.50 mL M Jth, VPM LCMPFCSU_00047 25 uL 0.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL M Zhhh, Vp/ LCMPFCSU_00047 25 uL 0.50 mL 1 LCMPFC2SU_00014 25 uL 0.50 mL 1	LCMPFC2SU_00014 25 uL 0.50 mL M Zhhh VM LCMPFCSU_00047 25 uL 0.50 mL 0.50 mL 1 LCMPFC2SU_00014 25 uL 0.50 mL 1 LCMPFCSU_00047 25 uL 0.50 mL 1	LCMPFC2SU_00014 25 uL 0.50 mL M Zf.Pf. VM LCMPFCSU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFCSU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL M QLFFF VM LCMPFCSU_00047 25 uL 0.50 mL 0.50 m	LCMPFC2SU_00014 25 uL 0.50 mL M ZAPA, VM LCMPFCSU_00047 25 uL 0.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL M Zf.Pf. WM LCMPFCSU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC2SU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCPFC3P_00047 20 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC2SU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL	LCMPFCZSU_00014 25 uL 0.50 mL M U.A.P.P. W LCMPFCSU_00047 25 uL 0.50 mL 0.50	LCMPFC2SU_00014 25 uL 0.50 mL MM ALPH WM LCMPFCSU_00047 25 uL 0.50 mL 0.50 m	LCMPFC2SU_00014 25 uL 0.50 mL MM MM	LCMPFC2SU_00014 25 uL 0.50 mL M. O.50 mL LCMPFCSU_00047 25 uL 0.50 mL A.50 mL LCMPFC2SU_00014 25 uL 0.50 mL A.50 mL LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCPFC2SP_00017 20 uL 0.50 mL A.50 mL LCMPFC2SU_00014 25 uL 0.50 mL A.50 mL LCMPFC2SU_00017 25 uL 0.50 mL A.50 mL LCPFC2SP_00017 20 uL 0.50 mL A.50 mL LCPFC2SP_00017 20 uL 0.50 mL A.50 mL LCMPFC2SU_00014 25 uL 0.50 mL A.50 mL LCMPFC2SU_00017 25 uL 0.50 mL A.50 mL LCMPFC2SU_00017 25 uL 0.50 mL A.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL MAPA, WM LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCMPFC2SU_00014 25 uL 0.50 mL A.50 mL LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCPFC2SP_00047 25 uL 0.50 mL A.50 mL LCPFC3P_00047 25 uL 0.50 mL A.50 mL LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCPFC3P_00080 20 uL 0.50 mL A.50 mL LCPFC3P_00080 20 uL 0.50 mL A.50 mL LCMPFC3SU_00047 25 uL 0.50 mL A.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL MM_Aff, WM LCMPFCSSU_00047 25 uL 0.50 mL 0.50 mL LCMPFC2SU_00014 25 uL 0.50 mL 0.50 mL LCMPFC2SU_00047 25 uL 0.50 mL 0.50 mL LCMPFC2SP_00007 20 uL 0.50 mL 0.50 mL LCMPFC2SU_00014 25 uL 0.50 mL 0.50 mL LCMPFC2SP_00007 20 uL 0.50 mL 0.50 mL LCMPFC2SU_00017 25 uL 0.50 mL 0.50 mL LCMPFC2SU_00047 25 uL 0.50 mL 0.50 mL LCMPFC2SU_00047 25 uL 0.50 mL 0.50 mL LCMPFC2SU_00047 25 uL 0.50 mL 0.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL MAPP, VM LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCMPFC2SU_00047 25 uL 0.50 mL A.50 mL LCMPFC3P_00047 20 uL 0.50 mL A.50 mL LCMPFC3P_00047 25 uL 0.50 mL A.50 mL LCMPFC3P_00047 25 uL 0.50 mL A.50 mL LCMPFC3P_00047 25 uL 0.50 mL A.50 mL LCMPFC3U_00047 25 uL 0.50 mL A.50 mL LCMPFC3U_00047 25 uL 0.50 mL A.50 mL LCMPFCSU_00047 25 uL 0.50 mL A.50 mL LCMPFCSU_00047 25 uL 0.50 mL A.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL	LCMPFC2SU_00014 25 uL 0.50 mL MM APA+ WM LCMPFC3SU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC3SU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC3P_00047 20 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC3P_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC3P_00080 20 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC3P_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFC3SU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFCSU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL LCMPFCSU_00047 25 uL 0.50 mL 0.50 mL 0.50 mL 0.50 mL

Printed: 2/28/2017

Page 5 of 6

TestAmerica Sacramento

TestAmerica Sacramento

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

onathan E

Batch Open: 2/28/2017 4:42:00PM Batch End:

(1)88 18 Mars 4/8/10/10/10/10/10/10/10/10/10/10/10/10/10/			Lot#:				
0.50 mL	0.50 mL	Other Reagents:	Amount/Units			10 10 10 10 10 10 10 10 10 10 10 10 10 1	
25 uL	25 uL	Other	Amo				
LCMPFCSU_00047	LCMPFCSU_00047				15 15 15 15		
320-26103-A-7	320-26103-A-12		Reagent				

Page 662 of 683



Sacramento Preparation Data Review Checklist

11)

Preparation Batch Number(s): 350-152507 Test: PFC-3	535	(4)
Earliest Holding Time: 3/03/17		
	4 Bt 1	and .
Sample List Tab	1 st Level Reviewe	n- I
Samples identified to the correct method	1	Reviewer
All necessary NCMs filed (including holding time) Method/sample/login/QAS checked and correct	-JA	1 1 1
Method/sample/login/QAS checked and correct	1 70/1	1 1
	1 st Level	2 nd Level
Worksheet Tab All samples properly preserved	Reviewer	Reviewer
Weights in anticipated range and not targeted	NA	TA
All additional test requirements performed, documented, and uploaded to TALS		
i someony (e.g. iniai amount, initial amount, turbidity, and Cl Check)		
The pH is transcribed correctly in TALS	NA	AN
All additional information transcribed into TALS is correct and row data in	104	I IV
attacijed		
Comments are transcribed correctly in TALS	. /	
	1 st Level	2 nd Level
All necessary reagents not expired as a second reagents Tab	Reviewer	Reviewer
All necessary reagents not expired and entered into TALS All spike amounts correct and added to		
All spike amounts correct and added to necessary samples and QC		
Batch Information	1 st Level	2 nd Level
Date and time accurate and entered into TALS correctly	Reviewer	Reviewer
All necessary 'batch information' complete and entered into TALS correctly		
Tomplete and entered into TALS correctly		
St Level Boyleven a C		
Level Reviewer: Date:	17	
t Level Reviewer: Date: Date:	3/1/17	
comments:	4-1	



Test America - Sacramento

Sample Dilution Record

Method ID_PFC-IDA-DOD5	Job# 26103; 25962
Analyst (Print Name) Syhanz Changragene	Analyst Initials SBC
Date 3/3/17	

Sample#	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
26103-7 25962-4	500	30	1500	50 x
25962-4	1000	40	400	/0×

Comments:	



West Sacramento

HPLC/LCMS Data Review Checklist

26103		_		
Job Number(s): 25933-25962-26011	Work List ID(s):	40393		
Extraction Batch: 152587	Analysis Batch(es):_		6	
Delivery Rank 4	Due Date: 3/3/17;	2/26/17;	2/27/17;	2/28/17
A Calibration/Instrument Run QC		1 st Level	2 nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 15.	2681			
2. ICAL, CCV Frequency & Criteria met.			/	
RF _{average} criteria appropriate for the method.		/		
 Linear Regression criteria appropriate if required 	(r > 0.995).	1/		
 Quadratic fit criteria appropriate if required (r² ≥ 0 				V
For Linear Regression and Quadratic fit – Does to				
1/2 the reporting limit as described in CA-Q-S-005		V		
All curve points show calculated concentrations.	·			
Peaks correctly ID'd by data system.				
5. Tune check frequency & criteria met and Tune check r	eport attached			
B. QA/QC	oport attacriou.			
Are all QC samples properly linked in TALS?			./	
Method blank, LCS/LCSD and MS/SD frequencies me	 	N		
3. LCS/LCSD and MB data are within control limits. If no		<i>N</i>		
Are MS/MSD recoveries and RPD within control limits:		1		
Holding Times were met for prep and analytical.		1		
IS/Surrogate recoveries meet criteria or properly noted				
C. Sample Analysis				
Was correct analysis performed and were project instru	ictions followed?	1		
If required, are compounds within RT windows?	dollorio foliottoa:	V		
3. If required, are positive hits confirmed and >40% RPD	flagged?			
Manual Integrations reviewed and appropriate.	naggoa :			
All analytes correctly reported. (Primary, secondary, actions of the secondary of the	centable status)	~	-// 	
6. Correct reporting limits used. (based on client request				
dilutions)	, prop taotoro, aria		/	- 1
D Documentation				
1. Are all non-conformances documented/attached? NCI	Л#	V		-
2. Do results make sense (e.g. dilutions, etc.)?				
3. Have all flags been reviewed for appropriateness?		1/	1	-
4. For level 3 and 4 reports, have forms and raw data be	en reviewed?		-/_	
5. Was QC Checker run for this job?				
	t u t a T T			
*Upon completion of this checklist, the reviewer must scan 1st Level (Analyst): 2nd Level Reviewer: NCMs: 79639; 79640; 79642	Date: 3/2	/17	S JOb.	

TestAmerica Laboratories Worklist QC Batch Report

Worklist Name:

02MAR2017A_PFC

Worklist Number:

40393

Instrument Name: A8_N Data Directory:

Chrom Method: A8_N \\ChromNa\Sacramento\ChromData\A8_N\20170302-40393.b

QC Batching:

Disabled

Limit Group Batching: Enabled

QC Batch, 1	LC PFC_DOD ICAL	LC PFC ICAL	LC PFAS ICAL	LC PFC_PREC ICAL
	Raw Batch: 152836	Raw Batch, 152837	Raw Batch: 152838	Raw Batch: 152839
# 1 RB	#1 RB	# 1 RB	# 1 RB	#1 RB
#2 RB	# 2 RB	# 2 RB	# 2 RB	# 2 RB
#3 RB	# 3 RB	#3 RB	#3 RB	#3 RB
#4 RB	#4 RB	#4 RB	#4 RB	#4 RB
# 5 CCV L5	# 5 CCV L5	# 5 CCV L5	# 5 CCV L5	# 5 CCV L5
# 6 QC RING & PUCK			#6 QC RING & PUCK	1
# 7 QC MORTAR &		#7 QC MORTAR &	#7 QC MORTAR &	1
PESTLES			PESTLES	
#8 QC SIEVES	# 9 CCV L4			#9 CCV L4
# 9 CCV L4 #10 CCV L2	#10 CCV L2		# 9 CCV L4	#10 CCV L2
#10 CCV L2	#11 CCV L4			#11 CCV L4
#11 CCV L4	#12 RB		#11 CCV L4	#12 RB
	#13 MB 320-152587/1-A	#12 RB	#12 RB	
#13 MB 320-152587/1-A				
	320-152587/2-A	CC. NCM 796	8.0	
		Eflag NCM 796: 1DA high 7964	1	1
#15 LCSD	320-152587/3-A	In the bigh zack		
320-152587/3-A	#16 320-25933-A-3-A	104 mgk 7467		
#16 320-25933-A-3-A				1
#17 320-25933-A-6-A				
	#19 320-26011-A-10-A			
#19 320-26011-A-10-A				l
	#21 320-26011-A-21-A	#00 00VI 5		#23 CCV L5
		#23 CCV L5	#23 CCV L5	
	#23 CCV L5	#0E COVI 4		#25 CCV L4
#24 320-26103-A-12-A	#24 320-26103-A-12-A	#25 GGV L4	#25 CCV L4	
#25 CCV L4	#25 CCV L4			
#20 00 V L4				

10V 152681 Tune Nam 79642

JU DI

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

Jonathan E

48 3/2/1子

Batch Open: 2/28/2017 4:42:00PM Batch End: 3/1/(コーパる: 4)

Solid-Phase Extraction (SPE)

	Output Sample Lab ID								3 2 6 1 2 5 9 3 3 1 A 3 4 A														
	Comments																				X		
	Div Rank	Ϋ́N		A/N		N/A		4	-	4		4	•	4		4		4		4	_		•
	Analytical TAT	N/A		N/A		N/A		8_Days		8_Days		23_Days		23_Days		23_Days		23_Days		23_Days			•
	Due Date	N/A		N/A		N/A		3/3/17		3/3/17		2/26/17		2/27/17		2/27/17		2/27/17		2/28/17			
	Adj2				·				_	_													
	rns d Adj1						-			_								_	_	_			
-	nt Rcvd	긭		긭		긭		-7	<u> </u>		T		T.,		Τ.		Τ.		Τ.		1 :		
lnik A m	FinAmnt	250.00 mL	0.50 mL	250.00 mL	0.50 mL	250.00 mL	0.50 mL	264.5 mL	0.50 mL	280.9 mL	0.50 mL	279.3 mL	0.50 mL	284.5 mL	0.50 mL	277.1 mL	0.50 mL	291.7 mL	0.50 mL	295.1 mL	0.50 mL		
GroceWit InitAment	TareWt							291.92 g	27.40 g	308.01 g	27.15 g	305.66 g	26.40 g	311.87 g	27.36 g	305.37 g	28.25 g	319.52 g	27.83 g	321.56 g	26.42 g		
SDG	(# qop)	NA		NA		Y.Y		M3010.U019.0017.0 (32 6 -2 3 98-1)		M3010.0019.0017.0 (32 6-239%- 1)		N/A (320-25962-1)		N/A (320-26011-1)		N/A (320-26011-1)		N/A (320-26011-1)		N/A (320-26103-1)			17
Input Sample Lab ID	(Analytical Method)	MB~320-152587/1 N/A	47.000	LCS~320-152587/2 N/A	750 250 4707.03	LCSD~320-152587/3	320 25029 A 2	(PFC_IDA_DOD5)	900 05000 4 8	(PFC_IDA_DOD5)	-	320-25962-A-3 (PFC_IDA_DODS)	000	320-26011-A-10 (PFC_IDA_DOD5)		320-26011-A-20 (PFC_IDA_DOD5)	77000000	320-26011-A-21 (PFC_IDA_DOD5)		320-26103-A-7 (PFC_IDA_DOD5)			Printed · 2/28/2017
		-		7		က	− † ?	age 6	67	of 68 40	3 1	ဖ		_		∞	L	6	1	₽ ——()3/27	/2 01	7

Printed: 2/28/2017

TestAmerica Sacramento

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments) Analyst: Reed, Jonathan E

Batch Open: 2/28/2017 4:42:00PM

Batch End:

Batch End:			
ļ	4		_
	23_Days		
	2/28/17		
		. <u> </u>	-
}	- ·		
	293.4 mL	0.50 mL	
	320.69 g	27.25 g	
N/A	(320-26103-1)		
320-26103-A-12	(PFC_IDA_DOD5)		

Page 2 of 6

-

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

Batch Open: 2/28/2017 4:42:00PM

Batch End:

Medium Hyor First Solve	Batch Notes	Manifold ID 2, 5	Methanol ID 851503	Hexane ID 0000130361	Iroxide ID 0.1N NaOH/H2O; 858158		First End time NA	dge Type WAX 500mg	Solid Phase Extraction Disk ID 002836112A	Balance ID QA-070	H2O ID 2/28/17	Pipette ID MD05306	Solvent Name 0.3% NH4OH/MeOH	Solvent Lot # 847209	lent Drop JER	lent Drop JER	ant Drop VP \	Acid Name NA	Acid ID NA	Reagent ID NA	Number NA	SOP Number NA	
Solid Phase Solid Phase Solid Phase Analyst ID - S - Analyst ID -		Ma	Met	¥	Sodium Hydroxide ID	First S	First E	SPE (Solver	Solve	Analyst ID - Reagent Drop JER	Analyst ID - SU Reagent Drop JER	Analyst ID - SU Reagent Drop Witness	Acir		Rea	Reagent Lot Number NA		

Page 669 of 683

Printed: 2/28/2017

TestAmerica Sacramento

TestAmerica Sacramento

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

onathan E

Batch Open: 2/28/2017 4:42:00PM Batch End:

Batch Comment NA

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Method Code: 320-3535_PFC-320

Batch Number: 320-152587

Batch Open: 2/28/2017 4:42:00PM

Batch End:

Reagent Additions Worksheet

Final Amount By	Mil	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 ml	0.50 ml	0.50 ml	0.50 mL	0.50 mL	0.50 mL	0.50 ml	0.50 ml	0.50 mL	
Reagent Code Amount Added	LCMPFC2SU_00014 25 uL	LCMPFCSU_00047 25 uL	LCMPFC2SU_00014 25 uL	LCMPFCSU_00047 25 uL	LCPFC2SP_00017 20 uL	LCPFCSP_00080 20 uL	4	-	LCPFC2SP_00017 20 uL	-	4			LCMPFCSU_00047 25 uL	LCMPFCSU_00047 25 uL	LCMPFCSU_00047 25 uL	LCMPFCSU_00047 25 uL		
Lab ID	MB 320-152587/1	MB 320-152587/1	LCS 320-152587/2	LCS 320-152587/2	LCS 320-152587/2	LCS 320-152587/2	LCSD 320-152587/3	CCSD 320-152587/3	LCSD 320-152587/3	LCSD 320-152587/3	320-25933-A-3	320-25933-A-3	320-25933-A-6	320-25933-A-6	320-25962-A-3	320-26011-A-10	320-26011-A-20	320-26011-A-21	27/201

Printed: 2/28/2017

TestAmerica Sacramento

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-152587

Analyst: Reed, Jonathan E

Batch Open: 2/28/2017 4:42:00PM

Batch Open: 2/28/2017 4:42:00PM Batch End:	01/26 12 man 12/2/2011	1100 0 00111	7		#10	-170-1				
<u>.</u>	0.50 mL	0.50 mL		Other Reagents:	Amount/Units					
	25 uL	25 uL		Other	Amo					
	LCMPFCSU_00047	LCMPFCSU_00047		55 55 55						
Method Code: 320-3535_PFC-320	320-26103-A-7	320-26103-A-12			Reagent					
2		_	_					Page	672 c	of 683



Sacramento Preparation Data Review Checklist

Sample Liet Tak	1 st Leve	2 nd Level	13
Sample List Tab Samples identified to the correct method	Reviewe	r Reviewer	3
All necessary NCMs filed (including holding time)	M	h W	-
All necessary NCMs filed (including holding time) Method/sample/login/QAS checked and correct	-10/	AH	
	+	1	
Worksheet Tab	1 ^{at} Level	,	
All samples properly preserved	Reviewer	Reviewer	
Weights in anticipated range and not targeted	NA	11/2	
All additional test requirements performed documented and and all the second second and and additional test requirements performed documented and and additional test requirements performed documented and additional test requirements are a second and a second and additional test requirements are a	 	-	
		1/	
The pH is transcribed correctly in TALS	1/1	100	
All additional information transcribed into TALS is correct and raw data is	10/4	In	
Comments are transcribed correctly in TALS			
Tallouribed correctly in TALS			
Descriptor M.	1 st Level	2 nd Level	
Reagents Tab All necessary reagents not expired and entered into TALS	Reviewer	Reviewer	
Il spike amounts correct and added to necessary samples and QC			
and QC			
Poteh Information	1 st Level	2 nd Level	
ate and time accurate and entered into TALS correctly	Reviewer	Reviewer	
I necessary 'batch information' complete and entered into TALS correctly			
Level Reviewer: Date: Date:	•		
Level Reviewer: Date:	7		
Level Reviewer: Date:	11/17		
nments:	/ 		

GENERAL CHEMISTRY

COVER PAGE GENERAL CHEMISTRY

Lab Name:	: TestAmerica Sacramento	Job Number: 320-25962-1	
SDG No.:			
Project:	Meridian 10006-7-105420 JM01 Nav	vy Clean	
	Client Sample ID	Lab Sample ID	
	MEAFF-PWMA-SB01-0001	320-25962-4	
	MEAFF-PWMA-SB01-0204	320-25962-5	

Comments:

9-IN DETECTION LIMITS GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-25962-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 LOQ Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	LOQ (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN CALIBRATION BLANK DETECTION LIMITS GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento

SDG Number:

Matrix: Solid

Method: D 2216

Matrix: D 2216

Job Number: 320-25962-1

Instrument ID: NOEQUIP

XRL Date: 01/01/2012 08:19

Analyte	Wavelength/ Mass	XRL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

13-IN ANALYSIS RUN LOG GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1		
---	--	--

SDG No.:

Instrument ID: NOEQUIP Analysis Method: D 2216

Start Date: 02/25/2017 14:01 End Date: 02/25/2017 14:01

		Т								Aı	na.	lyt	es					
Lab Sample Id	D/F	У р e	Time	% S o 1	M o i s t													
ZZZZZZ			14:01				T											\top
ZZZZZZ			14:01				T											
ZZZZZZ			14:01															
ZZZZZZ			14:01															
ZZZZZZ			14:01															
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ZZZZZZ			14:01															
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ZZZZZZ			14:01															
ZZZZZZ			14:01				T									\neg		
ZZZZZZ			14:01													\neg		
ZZZZZZ			14:01															
320-25962-4	1	Т	14:01	Х	Х											\neg		
320-25962-5	1	Т	14:01	Х	Х													土

Prep Types:

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Batch Number: 152218 Batch Start Date: 02/25/17 14:01 Batch Analyst: Popova, Esfir 1

Batch Method: D 2216 Batch End Date: 02/27/17 11:31

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry	
320-25962-A-4	MEAFF-PWMA-SB01- 0001	D 2216	Т	19	1.01 g	12.08 g	10.61 g	
320-25962-A-5	MEAFF-PWMA-SB01- 0204	D 2216	Т	20	1.01 g	13.25 g	11.45 g	

Batch Notes					
Balance ID	QA-068 No Unit				
Date and Time Samples in Desiccator	02/27/17 @ 9:40				
Date and Time Samples out of Desiccator	02/27/17 @ 11:31				
Date samples were placed in the oven	02-25-17				
Oven Temp In	118 Degrees C				
Time samples were place in the oven	14:40				
Date samples were removed from oven	02/27/17				
Oven Temp Out	115 Degrees C				
Time Samples were removed from oven	9:40				
Oven ID	Soil Prep #2				
Thermometer ID	151969607				

Basis	Basis Description
Т	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.

D 2216 Page 1 of 1



Sacramento Preparation Data Review Checklist

THE LEADER IN ENVIRONMENTAL TESTING 152217, 152210 Preparation Batch Number(s): 1522 \\ 1522\\ 1522\\ 1522\\ 1522\\

Earliest Holding Time: N/A			
320-25933,-26011,-25828,-25927,-25933,-25961,-25828,	-25871,	- 25872, -	25873
Sample List Tab	1 st Level Reviewer	2 nd Level Reviewer	-25881
Samples identified to the correct method		V	-2588
All necessary NCMs filed (including holding time)	/	4	-2589
Method/sample/login/QAS checked and correct	/	U	-259
Worksheet Tab	1 st Level Reviewer	2 nd Level Reviewer	- 2603 - 2596
All samples properly preserved	NA	H-14	-25926
Weights in anticipated range and not targeted		1	Lota
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	-MAY	12717	
The pH is transcribed correctly in TALS	NA	HIA	
All additional information transcribed into TALS is correct and raw data is attached	NA	H1A	
Comments are transcribed correctly in TALS	NA	HIA	
Reagents Tab All necessary reagents not expired and entered into TALS	1 st Level Reviewer	2 nd Level Reviewer	
All spike amounts correct and added to necessary samples and QC	MA	414	
7 to spine amounts correct and added to necessary samples and QC	AH	HIA	
Detak Information	1 st Level	2 nd Level	
Batch Information	Reviewer	Reviewer	
Date and time accurate and entered into TALS correctly	1	_ V	
All necessary 'batch information' complete and entered into TALS correctly			

1 st Level Reviewer: _	MY	_ Date:	2/27/17	
2 nd Level Reviewer: _	CFR	Date:	2/27/17	
Comments:		_		
				_

Shipping and Receiving Documents

Chain of Custody Record

THE LEADER IN ESVIRONMENTAL TESTING

TestAmerica

TestAmerica Sacramento

880 Riverside Parkway

J. McCann TestAmerica Laboratories, Inc. blank 5000 Sample Specific Notes: duplicate COCs lour prient Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Brou For Lab Use Only Date/Time/17 Jo Therm ID No.: ab Sampling: Walk-in Client: Job / SDG No. Months Sampler: Y Date/Time: Field Date/Time COC No: 320-25962 Chain of Custody Archive for 9.8 Company Corr'd: Company: Company Carrier: FedEx Trayle. Tumper Date: Cooler Temp. (°C): Obs'd: Received in Laboratory by Lab Contact: Jill Kellmann Site Contact: Ryan Brown Return to Client 2 21 He IBOD LWD. Received by MFECO PFC × RCRA 8540 X 41/6 Perform MS / MSD (Y / N) 7,2 Z 2 Filtered Sample (Y / N) Z 2 NPDES # of Cont. Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the 30 > Date/Time: Date/Time XWORKING DAYS Project Manager: Bryan Burkingstock Matrix 35 8 Analysis Turnaround Time Regulatory Program: DW should Type (C=Comp, G=Grab) CALENDAR DAYS

YOU
TAT if different from Below Sample 2 weeks 1 week 2 days 1 day 1340 1335 1555 375 Sample Time Custody Seal No. Zamboni - address Preservation Used; 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Company: 421/17 Company: Company Sample Tel/Fax: Date BALEAFE - PWHA-SBOI-0001

BALEAFE-PWHA-SBOI-0204

BALEAFE-PWHA-SBOI-0204

BALEAFE-PWHA-SBOI-0204

BALEAFE-PWHA-SBOI-0204 6600 Peachtree Dunwoody Rd., 400 Embassy Row, Suite 600 Project Name: Meridian 10006-7-105420 JM01 Navy Clean Skin Irritant Special Instructions/QC Requirements & Comments: Comments Section if the lab is to dispose of the sample - 1401P-0217 F120 No Sample Identification EDDI - 02211 Phone Client Contact West Sacramento, CA 95605-1500 phone 916.373.5600 fax 303.467.7248 Yes -MRD-IADI Possible Hazard Identification: Brown MRD Custody Seals Intact: P O #: 10006-7-105420 Site: NAS Meridian Atlanta, GA 30328 Signaturished by: MEAFF-HEAFF-(678) 530-4060 770) 604-9183 Non-Hazard MEAT CH2M Hill

Form No. CA-C-WI-002, Rev. 4.11, dated 1/24/2017

Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 320-25962-1

Login Number: 25962 List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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?	True	
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	

B	TEIDAN, NAS. MEAFT-MISC-1403-0217 NI TEIDAN, LAS. SEAFT-MISC-1403-0217 NI TEIDAN, LAS. SEAFT-MISC-1403-0217 NI TEIDAN, NAS. MEAFT-MISC-1403-0217 NI TEIDAN, NAS. MEAFT-MISC-1403-0217 NI TEIDAN, NAS. MEAFT-MISC-1403-0217-30 NI TEIDAN, NAS. MEAFT-MISC-02217-30 NI	RM_Code Analysis_Group Analysis_Group KS SVCIA 2270_SM KS SVCIA 527_MOD	SVOA TAMER Test Assertica NONE	E NA SW3510C E NA SW3510C E NA SW3510C E NA SW3510C	000 REG W 4 000 REG W 4 000 REG W 4	02/21/2017 15:55 02/22/2017 02/21/2017 15:55 02/22/2017	20	170224 15:64:00 170224 15:64:00	20170306 16:12: 20170306 16:12:	sis_Time Lab_Sample_D Ollution Run_Number Percent_Moisture Pr 00 120-3590-1 1 1 100 120-3590-1 1 1	1,4-Dioxane	123-91-1 0.48	Original_Anabyte_Value Result_Units Lab_Qualifier Validator_Qualifier GC_Column 0.48 U.G_L U. U. U. PR	TRG			00000000	5.0 0.19	0.48 0.95 1	SDG Analysis_Batch
1600000 1600000 16000000 1600000 1600000 1600000 1600000 1600000 16000000 16000000 16000000 16000000 16000000 16000000 160000000 160000000000	RIDAN_NAS MEAFF-EROI-022117-SO NI RIDAN_NAS MEAFF-EROI-022117-SO NI RIDAN_NAS MEAFF-EROI-022117-SO NI RIDAN_NAS MEAFF-EROI-022117-SO NI RIDAN_NAS MEAFF-EROI-022117-SO NI	NS SVOA \$37_MOD				02/21/2017 15:55 02/22/2017	20	170224 15:44:00 170224 15:44:00	20170306 16:34:	00 220-2592-2 1 1	1,4-Dioxane Nitrohensene-05	4165-60-0 61 123-91-1 0.48 6	61 PCT_REC PR 0.48 UG_L U U PR 61 PCT_REC PR	SURR TRG SURP	52.5A 50.5A	91 42	0000000	5.0 0.19	0.48 0.97 1	320-25962-1 320-153398 320-25962-1 320-153398
\$500000 AMOI MATE \$100000 AMOI AMOI AMOI AMOI AMOI AMOI AMOI AMOI	RIDIAN_NAS MEAFF-EB01-022117-SO NO	NS SVOA \$37_MOD NS SVOA \$37_MOD NS SVOA \$37_MOD	ORG TAMER Text America NONE	IE NA SW2525	000 REG W 6 000 REG W 6 000 REG W 6 000 REG W 6	02/21/2017 13:25 02/22/2017 02/21/2017 13:25 02/22/2017 02/21/2017 13:25 02/22/2017 02/21/2017 13:25 02/22/2017	20 20 20 20 20	170228 16:42:00 170228 16:42:00 170228 16:42:00 170228 16:42:00	20170302 11:12: 20170302 11:12: 20170302 11:12: 20170302 11:12:	.000 220.2562-3 1 1 1	Perfluonoctanoic acid (PFOA) Perfluonoctane Sulfonate (PFOS) 11C4 PFOA 13C4 PFOS	135-67-1 0.0018 1763-23-1 0.0027 1304 PFOA 152 1304 PFOS 135	0.0028 UC_L UM UM PR 0.0027 UC_L U U PR 352 PCT_SEC Q Q PR 135 PCT_SEC PR	TRG TRG SURR SURR	9.5A 9.5A	150 S 150 S	0000000 0000000 0000000 0000000	\$.0 71 \$.0 0.0 \$.0 \$.0	04 0.0018 0.0022 1 001 0.0027 0.0036 1 2 04 0.0018 0.0022 1	320.25962-1 320.152836 320.25962-1 320.152836 320.25962-1 320.152836 320.25962-1 320.152836 320.25962-1 320.152836
MOSCOCO MAGE MASS MASS MAGE	TRIDIAN NAS MEAFF-EB01-022117-50 NI TRIDIAN NAS MEAFF-PWMA-5801-0001 NI TRIDIAN NAS MEAFF-PWMA-5801-0001 NI	NS 5VOA 537_MOD NS 5VOA 537_MOD NS 5VOA 537_MOD NS 5VOA 537_MOD	ORG TAMER Test America MONE	IE NA SW3535 IE NA SW3535 IE DRY METHOD IE DRY METHOD	000 REG W 4 000 REG W 4 000 REG S 4 000 REG S 4	02/21/2017 13:25 02/22/2017 02/21/2017 13:25 02/22/2017 02/21/2017 13:35 02/22/2017 02/21/2017 13:35 02/22/2017	20 20 20 20	170228 16-82-00 170228 16-82-00 170228 17-22-00 170223 17-22-00	20170302 11:12: 20170302 11:12: 20170301 19:45: 20170301 19:45:	000 120-35962-3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Perfluorobutamesulfonic acid (PFRS) 1802 PFRSS Perfluorooctamoic acid (PFDA) Perfluorooctamo Sulfonate (PFDS)	175-73-5 0.0018 1802 PFINS 141 135-67-1 27 1763-23-1 220	0.0008 UG_E U U PR 141 FCT_SEC PR 27 UG_RG PR 220 UG_RG E E F PR	TRG SUBR TRG TRG	9.54	150	0000000 0000000 0000000 0000000	5.0 SE 5.0 0.12 5.0 0.14	04 0.0018 0.0022 1 2 0.34 0.57 1 0.34 0.57 2	320-25962-1 320-152836 120-25962-1 320-152836 120-25962-1 320-152825 120-25962-1 320-152825
SE00000 IMD1	RIDIAN, NAS MEAFF-PWMA-5802-0001 NI RIDIAN, NAS MEAFF-PWMA-5802-0001 NI RIDIAN, NAS MEAFF-PWMA-5802-0001 NI RIDIAN, NAS MEAFF-PWMA-5802-0001 NI	NS 9/QA 527_MOD NS 9/QA 537_MOD NS 9/QA 527_MOD NS 9/QA 527_MOD	DRG	E DRY METHOD E DRY METHOD E DRY METHOD E DRY METHOD	000 85G 5 4 000 85G 5 4 85G 5 4 000 85G 5 4	12/21/2017 12:25 02/22/2017 12/21/2017 12:25 02/22/2017 12/21/2017 12:25 02/22/2017 12/21/2017 12:25 02/22/2017	20	170223 17-22-00 170223 17-22-00 170223 17-22-00	20170301 19:45: 20170301 19:45: 20170301 19:45: 20170301 19:45:	00 120-25962-4 1 1 13.3 00 120-25962-4 1 1 13.3 00 120-25962-4 1 1 13.3 00 120-25962-4 1 1 13.3	13C4 PFOA 13C4 PFOS Perfluorobutanesoffonic acid (PFRS) 1803 PGUYS	1304 PFOA 111 1304 PFOS 55 175-73-5 2.0	111 PCT_REC 98 55 PCT_REC 98 22.0 UG_REG M M 98 65 CCT_REC 80	SURR SURR TRG	25A 25A	150 25 150 25	0000000 0000000 0000000 0000000	5.0 5.0 5.0 5.0	0.34 0.57 3 0.34 0.57 3 0.34 0.57 3 0.34 0.46 3	320-25962-1 320-152825 320-25962-1 320-152825 320-25962-1 320-152825 320-25962-1 320-152825
	REDIAN_NAS MEAFF-PWMA-5801-0001 NI REDIAN_NAS MEAFF-PWMA-5801-0001 NI REDIAN_NAS MEAFF-PWMA-5801-0001 NI	NS 5VOA 537_MOD NS 5VOA 537_MOD NS 5VOA 537_MOD	ORG TAMER Test America NONE	E DRY METHOD E DRY METHOD E DRY METHOD E DRY METHOD	011 PEG 5 4 011 PEG 5 4 011 PEG 5 4	02/21/2017 13:35 02/22/2017 02/21/2017 13:35 02/22/2017 02/21/2017 13:35 02/22/2017	20	170223 17:22:00 170223 17:22:00 170223 17:22:00	20170303 39:53: 20170303 39:53: 20170303 39:53:	000 120-2592-4 10 2 13.3 000 120-2592-4 10 2 13.3 000 120-2592-4 10 2 13.3	Perfluoroccanoic acid (PFOA) Perfluoroccane Sulfonate (PFOS) 33C4 PFOA 33C4 PFOA	135-67-1 28 1763-23-1 270 1369-70A 136	28 UG_NG DM DM 98 270 UG_NG D D 98 270 FC_SEC 98	TRG TRG SURR	2.5A	150 8	0000000 0000000 0000000	\$0 12 \$0 14 \$0	24 5.7 2 24 5.7 2 24 5.7 2 24 4.6 2	320-25962-1 320-153020 320-25962-1 320-153020 320-25962-1 320-153020
29000 IM01 MERID 209000 IM01 MERI 409000 IM01 MERI	FRIDIAN, NAS MEAFF-PWIMA-SB00-0000 NI FRIDIAN, NAS MEAFF-PWIMA-SB00-0000 NI FRIDIAN, NAS MEAFF-PWIMA-SB00-0204 NI	NS 5VOA 537,MOD NS 5VOA 537,MOD NS 5VOA 537,MOD	ORG TAMER Test America NONE ORG TAMER Test America NONE ORG TAMER Test America NONE	E DRY METHOD E DRY METHOD E DRY METHOD	011 88G 5 4 011 88G 5 4 000 88G 5 4	12/21/2017 13:35 10/22/2017 12/21/2017 13:35 10/22/2017 12/21/2017 13:40 10/22/2017	20	170223 17-22-00 170223 17-22-00 170223 17-22-00	20170303 99:53: 20170303 99:53: 20170303 99:53: 20170301 20:00:	00 220-25962-4 50 2 13.3 00 220-25962-4 50 2 13.3 00 220-25962-5 1 14.7	Perfluonobutanesulfonic acid (PFBS) 1802 PFIES Perfluonoctanoic acid (PFOA)	175-73-5 1.6 1802 PFINS 122 135-67-1 5.5	1.6 UG_NG DM DM PR 122 PCT_REC M M M PR 5.5 UG_NG M M M PR	TRG SURR TRG	9.5A	150 25	0000000 0000000 0000000	\$0 12 \$0 \$0	1.4 4.6 1 2 0.35 0.59 1	120-25962-1 120-153020 120-25962-1 120-153020 120-25962-1 120-153020
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MERIO	ISBOAN, NAS MEAFF-PWMA-S001-0204 NI ISBOAN, NAS MEAFF-PWMA-S001-0204 NI ISBOAN, NAS MEAFF-PWMA-S001-0204 NI ISBOAN, NAS LCS 320-132015/2-A NI ISBOAN, NAS LCS 320-132015/2-A NI ISBOAN, NAS LCS 320-132015/2-A NI	NS 5VOA 517, MOD NS 5VOA 517, MOD NS 5VOA 517, MOD NS 5VOA 517, MOD	ORG TAMER Test America MONE	100 100	000 85G 5 4 000 85 5 4 000 85 5 4 000 85 5 4	02/21/0917 13:40 02/22/2017 02/23/2017 17:22 02/23/2017 02/23/0917 17:22 02/23/2017 02/23/2017 17:22 02/23/2017	20 20 30 20	170223 17:22:00 170223 17:22:00 170223 17:22:00 170223 17:22:00	20170301 20:00: 20170303 29:37: 20170303 29:37: 20170303 29:37:	000 120-2590-5 1 1 34.7 000 1CS 320-15205/2-A 1 1 000 1CS 320-15205/2-A 1 1 000 1CS 320-15205/2-A 1 1	IIIO2 PFKKS Perfluorocctanoic acid (PFOA) Perfluorocctanoic Suffonate (PFOS) 13C4 PFOA	1802 PFRKS 85 135-67-1 102 1769-23-1 107 1301 PFOA 106	95 PCT_88C M M PR 102 PCT_88C 98 107 PCT_88C 98 106 PCT_88C 98	SURR TRG TRG SURR	SSA ISA ISA SSA	150 25 140 60 140 60 150 25	0000000 0000000 0000000	\$0 0.10 \$0 0.11 \$0 0.13	0.30 0.50 1 0.30 0.50 1 1	220-25962-1 320-152825 320-25962-1 320-153020 320-25962-1 320-153020 320-25962-1 320-153020
09000 IM01 MERO J09000 IM01 MERO MERO MERO MERO MERO MERO MERO MERO	STEAMAR, NAS. CS. 120 1515017/2-A	NS 5VOA 537_MOD NS 5VOA 537_MOD NS 5VOA 537_MOD NS 5VOA 537_MOD	ORG TAMER Test America MONE ONG TAMER Test America MONE ONG TAMER Test America MONE ONG TAMER TEST America	E WET METHOD E WET METHOD E WIT METHOD E WE SWASSIOC	000 45 5 4 000 65 5 4 000 65 5 4	12/23/2017 17:22 02/23/2017 12/23/2017 17:22 02/23/2017 12/23/2017 17:22 02/23/2017 12/23/2017 17:22 02/23/2017 12/24/2017 15:44 02/24/2017	20 20 20 20	170223 17-22-00 170223 17-22-00 170223 17-22-00 170224 15-84-00	20170303 99:37: 20170303 99:37: 20170303 99:37: 20170306 11:46:	000 LCS 120-152015/2-A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13C4 PFOS Perfluorobutanesulfonic acid (PFSS) 1802 PFNSS 1.4-Sixone	13C4 FFGS 91 175-73-5 112 1802 PFHS 101 123-91-1 29	91 PCT. REC 99. 112 PCT. REC 99. 100 PCT_REC 99. 100 PCT_REC 99. 29 FCT. REC M 99. 29 PCT. REC 99.	SURR TRG SURR TRG	SSA ISA SSA ISA	150 25 150 50 150 25 152 12	0000000 0000000 0000000 0000000	\$0 0.10 \$0 \$0 0.20	0.30 0.40 3 0.50 1.0 3	320-25962-1 320-153020 320-25962-1 320-153020 320-25962-1 320-153030
D9000 IM01 MERID D9000 IM01 MERI 4D9000 IM01 MERI 4D9000 IM01 MERI	SRIDIAN_NAS LCS 320-152172/2-A NI SRIDIAN_NAS LCS 320-152587/2-A NI SRIDIAN_NAS LCS 320-152587/2-A NI SRIDIAN_NAS LCS 320-152587/2-A NI SRIDIAN_NAS LCS 320-152587/2-A	NS 9VOA 4270_SIM NS 9VOA 537_MOD NS 9VOA 537_MOD NS 9VOA 537_MOD	DRG	E NA SW3510C E NA SW3535 E NA SW3535 E NA SW3535	000 IS W 4 000 IS W 4 000 IS W 4	12/24/2017 15:44 02/24/2017 12/28/2017 16:42 02/28/2017 12/28/2017 16:42 02/28/2017 12/28/2017 16:42 02/28/2017	20	170224 15:84:00 170228 16:42:00 170228 16:42:00	20170306 11:46: 20170302 10:42: 20170302 10:42: 20170302 10:43:	000 LCS 320-152172/2-A I I I 000 LCS 320-152587/2-A I I 000 LCS 320-152587/2-A I I 000 LCS 320-152587/2-A I I	Nitrobenzene-DS Perfluorooctamoic acid (PFOA) Perfluorooctamo Sulfonate (PFOS) 13C4 (PFOA)	4165-60-0 73 135-67-1 97 1763-23-1 96	73 FCT_REC 90. 97 FCT_REC 90. 98 FCT_REC 90. 98 66 FCT_REC 90. 142 FCT_REC 90. 133 FCT_REC 90. 134 FCT_REC 90. 135 FCT_REC 90. 136 FCT_REC 90. 137 FCT_REC 90. 138 FCT_REC 90.	SURR TRG TRG SURP	SSA ISA ISA	91 42 140 60 140 60	0000000 0000000 0000000	\$0 \$0 \$0 \$0 13	20 25 3 10 40 3 20 25 3	320-25962-1 320-153398 320-25962-1 320-152836 320-25962-1 320-152836 320-25962-1 320-152836
D9000 IM01 MERC ED9000 IM01 MERC AD9000 IM01 MERC	SRDAN, NAS LCS 220-152587/2-A NO SRDAN, NAS LCS 220-152587/2-A NO SRDAN, NAS LCS 220-152587/2-A NO	NS 500A 537,MOD NS 500A 537,MOD NS 500A 537,MOD	DRG DAMER Test America NONE DRG DAMER Test America NONE	E NA SW3535 E NA SW3535 E NA SW3535	000 85 W 4 000 85 W 4 000 85 W 4	02/28/2017 16:42 02/28/2017 02/28/2017 16:42 02/28/2017 02/28/2017 16:42 02/28/2017	20	170228 16:42:00 170228 16:42:00 170228 16:42:00	20170302 10:42: 20170302 10:42: 20170302 10:42:	000 LCS 320-152897/2-A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11C4 PPOS Perfluorobutanesulfonic acid (PFBS) 1802 PPIKS	13C4 PFOS 133 275-73-5 112 1802 PFHOS 136	113 FCT_SEC 98 112 FCT_SEC 98 116 FCT_SEC 98	SURR TRG SURR	SSA SSA SSA	150 S 150 S0 150 S	0000000 0000000 0000000	5.0 5.0 5.0	20 25 3	320-25962-1 320-152836 320-25962-1 320-152836 320-25962-1 320-152836
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1609000 IM01 MERIO 1609000 IM01 MERIO	IRDIAN_NAS ICSD 320-152587/3-A NI IRDIAN_NAS ICSD 320-152587/3-A NI	NS 5VOA 517, MOD NS 5VOA 517, MOD NS 5VOA 517, MOD NS 5VOA 517, MOD	ORG TAMER Test America NONE	E NA SW2525 E NA SW3525 E NA SW3525 E NA SW3525	000 85D W 4 000 85D W 4 000 85D W 4 000 85D W 4	02/28/2017 16:42 02/28/2017 02/28/2017 16:42 02/28/2017 02/28/2017 16:42 02/28/2017 02/28/2017 16:42 02/28/2017	20 20 30 20	170228 16:42:00 170228 16:42:00 170228 16:42:00 170228 16:42:00	20170302 10:50: 20170302 10:50: 20170302 10:50: 20170302 10:50:	100 LCSD 230-LS2587/3-A 1 1 1 1 1 1 1 1 1	11C4 PFOA 11C4 PFOS Perfluorobistanesuffonic acid (PFRS) 1802 PFHKS	13C4 PFOA 142 13C4 PFOS 135 275-73-5 134 1802 PFHOS 140	142 PCT_REC PR 125 PCT_REC PR 114 PCT_REC M M PR 140 PCT_REC M PR PR	SURR SURR TRG SURR	9.5A 9.5A (SP 9.5A	150 S 150 S 150 S0 150 S	0000000 0000000 0000000 0000000	\$.0 \$.0 \$.0 \$.0	2.0 2.5 1 2.0 4.0 2 2.0 2.5 3 2.0 2.5 3	220-25962-1 120-152836 320-25962-1 120-152836 320-25962-1 120-152836 320-25962-1 120-152836
15050000 (M01) MERID 15050000 (M01) MERID 15050000 (M01) MERID	ERICHAN, NAS MB 320-152015/1-A NI FEDONA, NAS MB 320-152015/1-A NI	NS 9/OA 527_MOD NS 9/OA 527_MOD NS 9/OA 527_MOD NS 9/OA 527_MOD	ORG TAMER Test America NONE	TIM	000 L01 S 4 000 L01 S 4 000 L01 S 4	12/23/2017 17:22 02/23/2017 12/23/2017 17:22 02/23/2017 12/23/2017 17:22 02/23/2017 12/23/2017 17:22 02/23/2017	20	170223 17-22-00 170223 17-22-00 170223 17-22-00	20170301 18:37: 20170301 18:37: 20170301 18:37: 20170301 18:37:	000 MB 220 152015/1-A I I I 000 MB 220 152015/1-A I I I 000 MB 220-152015/1-A I I 000 MB 220-152015/1-A I I 000 MB 220-152015/1-A I I	Perfluorooctanoic acid (PFOA) Perfluorooctane Suffonate (PFOS) 13C4 PFOS 13C4 PFOS	135-67-1 0.30 1763-23-1 0.178 1364 PFOA 121 1364 RFOS 05	0.30 UG_KG U U 98 0.178 UG_KG J J 98 121 PCT_BC 98 95 CT_BC 90	TRG TRG SURR	SMSA	150 25	0000000 0000000 0000000 0000000	5.0 0.10 5.0 0.11 5.0	0.30 0.50 1 0.30 0.50 1	320-25962-1 320-152825 320-25962-1 320-152825 320-25962-1 320-152825 320-25962-1 320-152825
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MGC/93000000 MGC	NOME SPY METHOD 500 HEG 4 503/4/03178-9-0 503/7/5/037 NOME SPY METHOD 501 HEG 5 4 503/4/03178-9-0 503/7/5/037 NOME SPY METHOD 501 HEG 5 4 503/4/03179-9-0 503/7/5/037 NOME SPY METHOD 501 HEG 5 4 503/4/03171-9-0 503/7/5/037 NOME SPY METHOD 501 HEG 5 4 503/4/03171-1-0 503/7/5/037 NOME SPY METHOD 501 HEG 5 4 503/4/0317-1-1-0 503/7/5/037	DENTRON 170-00 DENTRON 174-200 DENTRON 1 1,17	Principal Prin		1.0 8.13 8.15 8.60 135-3445 135-3445 135-3445 1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
\$\(\begin{array}{cccccccccccccccccccccccccccccccccccc	MATHOD M	DESTROY 1940 207911 1940 308404 1 1.7	Perfluorobutanesulfonic acid (PFBS) 175-73-5 0.36 0.36 UG_KG UM UM		5.0 230-3405-1 230-154033 1.0 230-3405-1 230-154033 5.0 8.12 8.36 8.48 230-3405-1 230-54503 5.0 230-3405-1 230-54603
	MATERIA MATE	2017/002 1744/00 2017/011 1757/00 120-2016/6 1 27.7 2017/002 1757/011 1757/01 120-2016/6 1 27.7 2017/012 1757/01 1757/01 120-2016/6 1 27.7 2017/012 1754/00 2017/012 1754/00 2017/012 1754/01 2017/012 1754/01 2017/012 1754/01 2017/012 1754/01 2017/012 1754/01 2017/012 1754/01 2017/012 1754/01 2017/012 1754/01 2017/012 2	Perfluencectaine Sulfonate (PDOS) 1263-22-1 0.40 0.40 U.G. KG IM IM 13C4 PDOA 13C4 PDOA 13C4 PDOA 13C PDOA 13C4 PDOA	100 100	10 10 10 10 10 10 10 10
NEATHORSEONO IMOS MERIONA, NAS MELAT-SOUN-5002-0001 NONS DVDA 527, MOD SRIG TAMER Feel America NOATHORSEONO IMOS MERIONA, NAS MELAT-SOUN-5002-0001 NONS DVDA 527, MOD SRIG TAMER Feel America NOATHORSEONO, NAS MELAT-SOUN-5002-0001 NONS DVDA 527, MOD SRIG TAMER TARABETES	MONE DIV METHOD 300 815 5 4 302/40297 31:55 302/50297 5 4 502/40297 31:55 302/50297 5 302/50297 5 302/50297 5 302/50297 5 302/50297 5 302/50	DELTYONGO 1704-00 DELTYSHI D7-57-00 DD-5405-0 1 D6.7	Perfluoroscianoic acid (PFOA) 335-67-1 38 38 UG_RG M M	PR TRG 00000000 00000000 00000000 000 000000	5.0 2.13 2.38 3.51 230-24005-1 230-24003 5.0 130-24006-1 230-24006-1 230-24003 1.0 2.12 2.35 3.58 230-24005-1 230-24003 1.0 3.15 2.35 3.58 220-24005-1 220-24403
MEDIFORMSON MICH MEDIFORM, NAS MEAFS-SNOTS 0001 NONS DIQA S17, MOD DRG TAMER Test America MCATS0000000 MCD MCATS0000000 MCD MCATS0000000 MCD MCATS0000000 MCD MCATS0000000 MCD MCATS00000000 MCD MCATS00000000 MCD MCATS000000000000000000000000000000000000	NORE DRY METHOD 500 8EG 5 4 02/4/2017 11:35 02/25/2017 NORE DRY METHOD 500 8EG 5 4 02/4/2017 11:35 02/25/2017	00170002 179400 2017011 1870500 100-100-100 1 1.29 00170302 179400 2017011 1870500 2017019-10 1 1 1.39 00170302 179400 2017011 1870500 200-1005-10 1 1 1.39	116,9950	SR SLER SLA 150 25 80000000 PR SLER SLA 250 25 80000000 PR TRC 80000000 80000000 80000000	5.0 120-26105-1 220-26403 1.0 120-26105-1 220-26403 5.0 0.12 0.25 0.46 120-26105-1 120-26403
\$\text{\texittt{\texit{\texit{\texit{\texit{\texint}\text{\text{\texit{\text{\texit{\texit{\texit{\texi}\tex	MATERIA MATE	201000	RECORDS RECO	PM TMG 00000000 1	16 102 NAMES 102 NAMES 102 NAMES 102 NAMES 103 NAMES
NELEOSECORO ANDE MERCOAN NAS MEAST-SECRE-0221-0001 NONS SHOA 517 MOD SRG SAMER THE America NELEOSECORO (MOS MOS MERCOAN NAS MEAST-SECRE-0221-0001 NONS SHOA 517 MOD SRG SAMER THE America	NOME DRY METHOD 2L1 MEG 5 4 2024/2017 L135 02/202017 NOME DRY METHOD 2L1 MEG 5 4 2024/2017 L135 02/202017	10070002	Performinatement/froit setd (PRIS) 127-73-5 1.8 1.8 10,5 85 0 10 1802 PRISS 81 81 97 CT, REC	PH TING 00000000 000000000 1	1.0 1.2 1.5 4.6

Phase Installation,	GCBM, Code Analysis, Group Analysis, Brethod FRC Code Lub, Code Lab, Name Leachars, Method NGNS (NGA 517 MGO ONG TAMEN Text Annotics NGME NGNS (NGA 517 MGO ONG TAMEN Text Annotics NGME NGNS (NGA 510 MGO SNG TAMEN TAMEN NGME		Bezolnet Jean-hale Date Jean-hale Dat	rcont, Lipid Chem, Name Analyte , D Analyte , Value Original , F Perfluoroscianoic acid (PFOA) 335 GF-1 8.3 8.3 Perfluoroscianoic Salfonate (PFOS) 1783-23-1 8.3 8.3	Analyte Volue Breach Divits Iab Qualifier Validator Qualifier SC Column, Type Analysis, Result, Type Result, Narrotive U.S. 455 M. Mr. Mr. Ph. 1155 U.S. 455 M. Mr. Narrotive	QC Control Limit, Code QC_Accuracy Lipper NC_Accuracy Lower Control Limit, Date QC_Nerrotive MDL Detection Code Code Code Code Code Code Code Code	5.0 0.15 0.35 0.59
MERIDIAN, NAS MEAFF-SWON 5803-0204 B MERIDIAN, NAS MEAFF-SWON 5803-0204 B MERIDIAN, NAS MEAFF-SWON 5803-0204 B	NONS 5VGA 527,MOD 0RG TAMER Test America NONE NONS 5VGA 527,MOD 0RG TAMER Test America NONE NONS 5VGA 527,MOD 0RG TAMER Test America NONE			126.6 PFOA 108	PK. JM.K. PR CURR PK. JM.K. PK. PK. PK. PK. PK. PK. PK.	mm ISM DS 00000000 SUSA SD SS 00000000	5.0 5.0 6.12 6.35 6.47
MERICIAN, NAS MEAFF-ORWINGS 0217 P MERICIAN, NAS MEAFF-ORWINGS 0217 P MERICIAN, NAS MEAFF-ORWINGS 0217 P	NONE SUCA 1270 SM SVOA DAMER The America NONE NONE NONE SUCA 1270 SM SVOA DAMER The America NONE NONE SUCA 1270 SM SVOA DAMER The America NONE NONE SVOA 1270 SM SVOA DAMER The America NONE NONE SVOA 127 MOD SVOA SV	MA SWISSIGC SOO REG W 4 SIZZAZGOST 13:00 W NA SWISSIGC SOO REG W 4 SIZZAZGOST 13:00 W NA SWISSIGC SOO REG W 4 SIZZAZGOST 13:00 W NA SWISSIGC SOO REG W 4 SIZZAZGOST 13:00 W		13-0-2 remote 223-91-1 14 14 14 14 14 15 12 12 12 12 12 12 12 14 14 15 12 12 12 12 12 12 12 12 12 12 12 12 12	PEL_MAN PR PR PR UG_L M	2.5A 91 42 0000000 0.0000000000000000000000000000	5.0 0.19 0.48 0.97 5.0 7E-04 0.0018 0.0022 5.0 7E-04 0.0018 0.0022 5.0 0.001 0.0027 0.0036
MERIDAN_NAS MEAFF-00MW03-0217 b MERIDAN_NAS MEAFF-00MW03-0217 b MERIDAN_NAS MEAFF-00MW03-0217 b MERIDAN_NAS MEAFF-00MW03-0217 b	NONS SVDA S37_MOD ORG EAMER Test America NONE NONS SVDA S37_MOD ORG TAMER Test America NONE NONS SVDA S37_MOD ORG TAMER Test America NONE NONS SVDA S37_MOD ORG TAMER Test America NONE	WA SWISSS 500 REG W 4 32/24/2017 11:30 0 WA SWISSS 500 REG W 4 32/24/2017 11:30 1 WA SWISSS 500 REG W 4 32/24/2017 11:30 0	2017 2017002 14:24:00 2017006 22:49:00 120:2016-12 1 1 1 20:2017007 2017007 2017002 14:24:00 2017006 22:49:00 120:2016-12 1 1 1 20:2017002 14:24:00 20:2017006 22:49:00 120:2016-12 1 1 1 20:2017002 14:24:00 20:2017006 22:49:00 120:2017007 120:2017007 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Ferfluonoctare Salfonate (PFOS) 1263-23-1 0.0027 12C4 PFOA 12C4 PFOA 68 68 12C4 PFOA 12C4 PFOS 1211	0.0027 UC 1 UM UM PR TRG PCT_RCC PR SUBR PCT_RCC PR SUBR	52.5A 150 25 0000000 52.5A 150 25 0000000 52.5A 150 25 0000000	5.0 0.001 0.0027 0.0036 5.0 5.0 5.0 8E-04 0.0028 0.0022
MERIDAN, NAS MEAFF-GRANGO 0217 P MERIDAN, NAS MEAFF-GRANGO 0217 P	NONS DVGA \$27,400 DRG TAMER Test America NONE NONS SVGA \$27,400 DRG TAMER Test America NONE TAMER Test America NONE	NA 5W3535 000 REG W 4 02/24/2007 11:30 0 NA 5W3535 000 REG W 4 02/24/2007 11:30 0	2017 2017002 1404 00 2017006 20.4600 20.2606-12 1 1 2017006 20.4600 20.2606-12 1 1 2017007	Perfluorobutanesulfonic acid (PES) 375-73-5 0.0055 1802 PFINS 1802 PFINS 1802 PFINS 141 141	0.0055 U.G. L MM MM PR TRIG PCT_RCC PR SUBR	9.5A 150 25 0000000	5.0 85-04 0.0018 0.0022 5.0 0.19 0.48 0.96
MERICIAN NAS MEAFF-COMMOS Q217 P	2005 2005	907 - 207 -		Nirrobeasser-05 4105-00 76 78 Perflavosocianois acid (PFOA) 135-07-1 0.11	001 001 000 000 000 000 000 000 000 000	91 42 00000000 00000000 00000000	5.0 7E-04 0.0018 0.002
MERICIAN NAS MEAFF-OBMWOG-0217 B MERICIAN NAS MEAFF-OBMWOG-0217 B	NONE SVOA 537_MOD ORG TAMER Test America NONE NONE SVOA 537_MOD ORG TAMER Test America NONE NONE NONE TAMER Test America NONE	MA SW3535 000 8EG W 4 02/24/201711:5 0		12C4 PFGS 12C6 PFGS 120	No.	2.5A 150 25 0000000 2.5A 150 25 0000000	5.0 7E-04 0.0008 0.002 5.0 0.001 0.0028 0.003 5.0 0.001 0.0028 0.003 5.0 5.0 5E-04 0.0018 0.002
MERIDAN, NAS MEAFF-ORWING-0217 P MERIDAN, NAS MEAFF-ORWING-0217 P MERIDAN, NAS MEAFF-F002-0217 P MERIDAN NAS MEAFF-F002-0217 P	NOMS SVQA \$27,000 \$96.0 TAMARE Test America NOME NOMS \$100A \$17,000 \$96.0 \$100AMR Test America NOME NOMS \$100A \$127,000 \$96.0 \$100AMR Test America NOME NOMS \$100A \$102A \$100A \$100A \$100A \$100A \$100A	NA 5W3515 000 8EG W 4 02/24/20171215 0 NA 0W2535 000 8EG W 4 12/24/20171215 0 NA 5W3510C 000 8EG W 4 12/24/2017000 0 NA 5W3510C 000 8EG W 4 12/24/20170000 0		Perfluorobitanesulfonic acid (PFBS) 375-73-5 0.022 1802 PFIOCS 1802 PFIOCS 128 128 1,4 Oloxane 122-91-1 1.4 1.4	0.002 U.G. M M PR TRG PCT_REC PR SLURR U.G. M M PR TRG	0000000 0000000 9.5A 150 25 0000000 0000000	50 0.10 0.48 0.05
MERIDANI, NAS MEAFF-F002-0217 II MERIDANI, NAS MEAFF-F002-0217 II MERIDANI, NAS MEAFF-F002-0217 II	NORS SVDA 12275_SMA DVDA TAMBER Text America NORE NORS SVDA FARS SVDA FARS Text America NORE NORS SVDA FARS Text America NORE NORS SVDA 132_MOD 206 TAMBER Text America NORE NORS SVDA 132_MOD 206 TAMBER Text America NORE	NA SMYSIGC D00 RSG W 4 12/24/2017 00:00 0 NA SMYSISS 200 RSG W 4 12/24/2017 00:00 0 NA SMYSISS 200 RSG W 4 12/24/2017 00:00 0 NA SMYSISS 200 RSG W 4 12/24/2017 00:00 0		Nizobassee-05 4165-60-0 62 62 Perfluonoctanoic acid (PFOA) 125-67-1 0.13 Perfluonoctane Suffonate (PFOS) 1763-23-1 0.054	NCT_NCC PR	9.5A 91 H2 0000000 00000000 00000000	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$
MERICUAN NAS MEAFF-FD02-0217 8	NONS 29QA \$37_MOD DRG TAMER Test America NONE NONS 29QA \$37_MOD DRG TAMER Test America NONE NONS SUDA \$37_MOD DRG TAMER Test America NONE NONE TAMER Test America NONE NONE TAMER Test America NONE	NA 5W3535 000 85G W 4 52/24/201700:00 0 NA 5W3535 000 85G W 4 02/24/201700:00 0 NA 6W5555 000 85G W 4 02/24/201700:00 0	2017 2017012 14:24:00 2017002 120:270026 20:11:00 120:2405-14 1 1 1 20:2407 2017 2017 20170026 20:11:00 120:2405-14 1 1 1 20:2407 2017002 120:2405-14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13C4 PFOA 13C6 PFOA 155 165 13C4 PFOA 155 165 13C4 PFOS	FCT_REC	SLSA 150 25 00000000 SLSA 150 25 00000000 000000000	5.0 5.0 5.0 86.04 0.0027 0.00
MESSOAN, NAS MARF-F002-0217 MESSOAN, NAS MARF-F002-0217 MESSOAN, NAS MARF-MSD-NG0-0217A	NONE SVGA 317,000 ORG TAMER Test America NONE NONE 970A 317,000 ORG DAMER Test America NONE NONE 970A 317,000 ORG TAMER Test America NONE	NA 5W3535 000 8EG W 4 52/34/201700:00 0 NA 5W3535 000 8EG W 4 02/34/20173530 0 NA 6W555 000 8EG W 4 02/34/20173530 0	2017 2017012 14:24:00 2070026 02:11:00 120:2405-14 1 1 1 20:070026 02:11:00 120:2405-14 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 1 20:070026 02:10:00 120:2405-15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1802 PFIOES 1802 PFIOES 1802 PFIOES 122 122 Perfluoroscitancia acid (PFOA) 335-67-1 0.22 Perfluoroscitancia acid (PFOA) 1282-22-1 0.003	FCT_REC	5.5A 150 25 0000000 00000000 00000000	5.0 7E-04 0.0019 0.00 5.0 0.001 0.0028 0.00
MERICAN, NAS MEAFF-MRD-MCI (2217A)	NONS SVDA \$37_MOD ORG TAMER Test America NONE NONS SVDA \$37_MOD ORG TAMER Test America NONE NONS SVDA \$37_MOD ORG TAMER Test America NONE	NA 5W3535 000 REG W 4 02/24/202715:30 0 NA 5W3535 000 REG W 4 02/24/202715:30 0	2017 2017002 14-24-00 2077006 20.1900 220-2406-15 1 1 2077007 2017007	13C4 FFGA 13C4 FFGA 79 79 13C4 FFGS 13C4 FFGS 115 115	FCT_REC SR SURR	9.5A 150 25 0000000 9.5A 150 25 0000000	5.0 5.0 5.0 96-04 0.0009 0.00
	10015 2004 137_MOD 006 TAMER Test America MONE NONS 2004 537_MOD 006 TAMER Test America MONE NONS 2004 537_MOD 006 TAMER Test America MONE	MA 5W3535 000 85G W 4 52/24/2017-00-09 0	200707 20070000 1-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	Per Indicates annual princip 1277-17-10 1200-17-17-17-17-17-17-17-17-17-17-17-17-17-		9.5A 150 25 00000000 0.0000000	5.0 7E-04 0.0029 0.00 5.0 0.001 0.0029 0.00
MERICIAN, NAS MEAFF-FD3-0217 B MERICIAN, NAS MEAFF-FD3-0217 B MERICIAN, NAS MEAFF-FD3-0217 B	NORS SYDA 327 MOD ORG TAMER Tel America NORE NORS SYDA \$23 MOD ORG TAMER Tel America NORE NORS SYDA \$23 MOD ORG TAMER Tel America NORE NORS SYDA \$23 MOD ORG TAMER Tel America NORE NORS SYDA \$23 MOD ORG TAMER Tel America NORE	PM 59X/535 500 REG W 4 12/24/2017 00:00 E W W W W W W W W W		Perfluorocctane Sulfonate (PFOS) 1763-22-1 0.023 13C4 PFOA 12C4 PFOS 1	0.001UC_1 M M PR TRG PCT_RCC PR SURR PCT_RCC PR SURR	00000000 9.5A 150 25 0000000 9.5A 150 25 0000000	5.0 0.001 0.0029 0.00 5.0 5.0 5.0 5.0 0.0019 0.00
MERIDAN, NAS MAPF-FOSI-0317 MERIDAN, NAS ICE 320-5359007-A MERIDAN, NAS ICE 320-5359007-A	NONS SVOA S17_MOD ORG TAMER Test America NONE NONS SVOA 8270 SMM SVOA TAMER Test America NONE	NA	2017 (2017) (201	PRITIS/DESCRIPTIONS 2023 (PHS) 477-74-9 U.0052 1802 PRIGS 1802 PRIGS 124 124 1,4 Olosane 123-91-1 22 12	0.0005 Us_L M	9.5A 150 25 00000000 LSA 52 12 00000000	5.0 92.0 0.50 1.0
MERICIAN_NAS (CS 320-152910/2-A) MERICIAN_NAS (CS 320-152929/2-A) MERICIAN_NAS (CS 320-152929/2-A)	NORS SOCIA 2275 SM SVOA FAMER THE America NORE NORS SVOA 527 MOD DRG TAMER THE America NORE NORS SVOA 527 MOD DRG TAMER THE America NORE NORS SVOA 527 MOD DRG TAMER THE America NORE NORS SVOA 527 MOD DRG TAMER THE America NORE	NA SW353CC 000 85 W 4 33,022,2027 12-85 0 NA SW353S 000 85 W 4 33,022,2027 12-24 0 NA SW353S 000 85 W 4 33,022,2027 12-24 0		Nizobastares-G5 4165-G0 72 72 73 Perfluonoctanoic acid (PFOA) 125-G7-1 109 100 Perfluonoctanoic Suffonate (PFOS) 1263-22-1 104 104 104	PCT_REC PR SURR PCT_REC PR TREG PCT_REC PR TREG	91.5A 91 42 00000000 LSA 140 60 00000000 LSA 140 60 00000000	5.0 0 220 550 10 5.0 0 220 550 10 5.0 1.3 20 2.5 5.0 1.3 10 40 5.0 0 292 2.0 2.5 5.0 0 2.9 2.0 2.5
MERIDAN, NAS (CS 220-151939)-A 9	NONS SVOA 537_MOD ORG TAMER Test America NONE	NA 5W3535 000 85 W 4 33/02/201714-24 0 NA 5W3535 000 85 W 4 33/02/201714-24 0 NA 5W3535 000 85 W 4 33/02/201714-24 0		13C4 PFGA 13C6 PFGA 140 140 13C PFGA 140 140 13C4 PFGS 13C5 PFGA 13C6 13C6 PFGS 13C6 13C6 13C6 13C6 13C6 13C6 13C6 13C6	PCT_REC 9R SURR PCT_REC 9R SURR PCT_REC 9R SURR	2.5A 150 15 0000000 2.5A 150 25 00000000 15A 150 50 0000000	5.0 5.0 5.0 0.92 2.0 2.5
MERICUAN, NAS LCS 220-1528/29/A 9 MERICUAN, NAS LCS 220-1528/21/A 9 MERICUAN, NAS LCS 220-1528/61/2-A 9 MERICUAN, NAS LCS 220-1528/61/2-A 9 MERICUAN, NAS LCS 220-1528/61/2-A 9	NONE 900A 527,M00 586 TAMER Test America MONE	NA 5W3535 000 65 W 4 33/02/201714:24 0 WIT METHOD 000 65 5 4 33/02/2017199 0 WIT METHOD 000 65 5 4 33/02/20171799 0	72017 20170102 16:24:00 20170000 01:56:00 (CS 320-552024)2-A 1 1 1 7021007 10:10000 11:56:00 (CS 320-552024)2-A 1 1 1 702100 10:10000 11:56:00 (CS 320-55204)2-A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1802 PFIOES 1802 PFIOES 128 128 128 129 Perflaoreactanoic acid (PFOA) 235-67-1 106 106 Perflaoreactanoic acid (PFOA) 1763-22-1 106 106 106 106 106 106 106 106 106 10	PCT_MEC	SLSA 150 25 00000000 15A 240 50 00000000 15A 400 60 00000000	5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0
MERIDIAN_NAS LCS 320-152961/2-A	NONS SUCA \$77,MOD SRG TAMER Test Assetica NONE	WET METHOD 000 85 5 4 03/02/201717:04 0 WET METHOD 000 85 5 4 03/02/201717:04 0	2017 201702 1704.00 20170311 15:5000 15:530-52943/2-A 1 1 2017032 1704.00 20170311 15:5000 15:530-52943/2-A 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	13C4 PFGA 13C4 PFGA 113 113 113 113 114 115 115 116 PFGS 12C4 PFGS	PCT_REC PR SURR PCT_REC PR SURR	2.5A 150 25 00000000 2.5A 150 25 00000000	\$.0 \$.0 \$.0 0.10 0.30 0.40
MREROAN, MAS. DC. 200-15586/17-A MREROAN, MAS. DC. 200-15586/17-A MREROAN, MAS. DC. 200-15586/17-A MREROAN, MAS. DC. 200-15586/17-A MREROAN, MAS. DC. 200-15598/17-A MREROAN, MAS. DC. 200-15598/17-A MREROAN, MAS. DM. 200-15598/17-A MREROAN, MAS. DM. 200-15598/17-A MREROAN, MAS. DM. 200-15598/17-A MREROAN, MAS. DM. 200-15598/17-A	NONE 1920 1927 1920 1927 1920 1927 1920 1927 1920 1927	METHOD 200 85 5 4		1402 PFIGS 100	PCT_SEC	150 150 150 150 150 150 150 150 150 150	5.0 9.20 0.50 1.0
MERIDAN_NAS ICSD 320-152910/1-A P MERIDAN_NAS MR 320-152910/1-A P MERIDAN_NAS MR 320-152910/1-A P	NORS DVDA \$220_SIM \$VDA TAMER Test America NONE NORS 9VDA \$220_SIM 3VDA TAMER Test America NONE NORS 9VDA \$220_SIM 3VDA TAMER Test America NONE NORS 9VDA \$220_SIM 8VDA TAMER Test America NONE	NA 5W3510C 000 850 W 4 03(03/2021 1245 0 NA 5W3510C 000 881 W 4 13(02/2021 1245 0 NA 5W3510C 000 881 W 4 33(02/2021 1245 0	2017 2017/00/2 1245.00 2017/01/4 15.460.00 45.70.103-15.01/01/4 1 1 1 1 1 1 1 1 1	Nirrobeasee-05 4165-60-0 74 78 1,4 Oloxane 123-91-1 0.50 0.50 Nirrobeasee-05 4165-60-0 69 69	PCT_REC	91 42 0000000 00000000 9.5A 91 42 00000000	5.0 0.20 0.50 1.0 5.0
MERICIAN, NAS MR 320-152929/1-A R MERICIAN NAS MR 320-152929/1-A	NORS DVDA \$137_MOD DBG TAMER Text America NONE NORS DVDA \$17_MOD DBG DAMER Text America NONE NORS DVDA \$17_MOD DBG DAMER Text America NONE NORS DVDA \$137_MOD DBG DAMER Text America NONE	NA \$50/\$515 \$000 \$181 \$W \$4 \$33/\$2/2017.84.24 \$0 \$W \$4 \$33/\$2/2017.84.24 \$1 \$0 \$W \$4 \$33/\$2/2017.84.24 \$1 \$0 \$W \$4 \$33/\$2/2017.84.24 \$1 \$1 \$0 \$0 \$1 \$1 \$1 \$1		Perfluorocotanoic acid (PECA) 235-67-1 0.002 Perfluorocotanoic Sulfonate (PECS) 175-23-1 0.002 3126 PECA 1556 PECA 1	0.000 U	0000000 0000000 0000000 0000000	\$0 85-04 0.002 0.002 \$0 0.001 0.003 0.00 \$0 0.001 0.003 0.00
MERICAN_NAS MR 320-152929/1-A MERICAN_NAS MR 320-152929/1-A MERICAN_NAS MR 320-152929/1-A MERICAN_NAS 320-17-20-0-1 A	NORS 1900 197 MODO 1966 1968 1	NA 5W3535 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 53(52)2027 14:24 0 NA 5W355 500 LBI W 4 50(52)2027 14:24 0 NA 5W35 500 LBI W 4 50(52)2027 14:24 0 NA 5W35 500 LBI W	70017 20170302 14.24.00 20170306 31.4600 Ma 23.51532377.4 1 70017 50170302 14.24.00 150170306 151.4600 Ma 23.51532377.4 1 70017 50170302 14.24.00 150170306 151.4600 Ma 23.51532377.4 1 70017 10170302 14.24.00 150170306 151.4600 Ma 23.51532377.4 1	13C4 PFOS 128 128 128 128 128 128 128 128 128 128	SCT_REC	SMSA 150 25 0000000 SMSA 150 25 00000000 00 SMSA 150 25 000000000000 SMSA 150 25 00000000000000000000000000000000	5.0 96-04 0.002 0.002
MERICIAN NAS MR 220-15261/1-A 1	NONE DOGA 337 MOD DOG TAMOR Test America NONE NONE DOGA 337 MOD DOG TAMOR Test America NONE NONE DOGA 337 MOD DOG TAMOR Test America NONE NONE DOGA 337 MOD DOG TAMOR Test America NONE NONE DOGA 337 MOD DOG TAMOR Test America NONE DOGA 337 MOD DOG TAMOR Test America NONE DOGA 337 MOD DOGA DOGA TAMOR Test America NONE DOGA DOGA DOGA TAMOR Test America NONE TEST AMERICA TEST	MIT METHOD 200 (83 5 4 30,022,037,1754 0 MIT METHOD 200 (83 5 5 5 4 30,022,037,1754 0 MIT METHOD 200 (83 5 5 5 5 4 30,022,037,1754 0 MIT METHOD 200 (83 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		SELECTION 186 134 134 134 134 134 134 134 135 137	UG_KG UM UM 90 TBG 10G 10G	100000000 100000000 100000000 100000000	5.0 0.10 0.30 0.50 5.0 0.13 0.30 0.50 5.0 0.13 0.30 0.50 5.0 0.10 0.30 0.40 5.0 0.10 0.30 0.40
MERIDIAN_NAS MB 320-152961/1-A B MERIDIAN_NAS MB 320-152961/1-A B MERIDIAN_NAS MB 320-152961/1-A B	NORS SVGA 327, MOO SNG TAMOR Test America NONE NORS SVGA 327, MOO SNG TAMOR Test America NONE NORS SVGA 327, MOO SNG TAMOR Test America NONE NORS SVGA 327, MOO SNG TAMOR Test America NONE NORS SVGA 327, MOO SNG TAMOR Test America NONE	MET METHOD DOD GES 5 4 23/02/2017 17:04 0 0 0 0 0 1 5 4 23/02/2017 17:04 0 0 0 0 0 0 0 0 0		1355 PGA 132 132 132 132 132 132 132 132 135 PGA 137 PGA 137 PGA 137 PGA 137 PGA	TELEGRAPH TELE	SMSA 150 25 00000000 100000000 100000000 100000000	5.0 5.0 0.10 0.30 0.40
MERIDAN_NAS ME 320-152861/L-A P MERIDAN_NAS MEAFF-WWTP-MW01-0317 P MERIDAN_NAS MEAFF-WWTP-MW01-0317 P	NONS SVOA S37_MOD ORG TAMER Test America NONE NONS SVOA S37_MOD ORG TAMER Test America NONE	PM MATS MA		1802 PFHCS 1802 PFHCS 113 113 113 114 115 11		SMSA 150 25 0000000 10000000 10000000 10000000	5.0 7E-04 0.0019 0.0024 5.0 0.001 0.0029 0.0031 5.0 5.0
MERICAN NAS MEAF-WATP-WWG-0317 P MERICAN NAS MEAF-WATP-WWG-0317 P MERICAN NAS MEAF-WATP-WWG-0317 P	NONS SVDA \$37,MOD ORG TAMER Test America NONE NONS SVDA \$17,MOD ORG TAMER Test America NONE NONS SVDA \$17,MOD ORG TAMER Test America NONE NONS SVDA \$17,MOD ORG TAMER Test America NONE	NA SWISSS 500 BEG W 4 \$3,051,7027.27.40 0 NA SWISSS 500 BEG W 4 \$3,051,7027.27.40 1 NA SWISSS 500 BEG W 4 \$3,051,7027.27.40 10		11/CA PFOA 13/CA PFOA 85 85 85 13/CA PFOA 107 107 107 107 107 107 107 107 107 107	DECT_REC	\$2.5A \$50 \$5 \$0000000 \$2.5A \$50 \$5 \$0000000 \$0000000	50 95.04 0.0019 0.002
MERIDAN, NAS MEAFF-WWTP-WW03-0317 9 MERIDAN, NAS MEAFF-WWTP-WW03-0317 9 MERIDAN, NAS MEAFF-WWTP-WW03-0317 9	NONE 9VGA 527_MOD 986 TAMER Test America NONE	WA SW2535 500 REG W 4 53/01/201712-80 0 WA SW2535 511 REG W 4 53/01/201712-80 WA SW2535 511 REG W 4 53/01/201712-80	72017 2017/0306 16:09:00 2017/0310 27:52:00 23:0-52545-1 1 1 1 72017 2017 2017/0306 16:09:00 2017/0311 17:16:00 23:0-52545-1 1 2 2 72017 2017/0306 16:09:00 10207/0311 17:16:00 23:0-52545-1 5 2 72017/0307 2017/0307 16:09:00 10207/0311 17:16:00 23:0-52545-1 5 2 72017/0307 2017/	1802 PFHXS 1802 PFHXS 1802 PFHXS 110 1	RET_REC	2.5A 150 25 10000000 100000000 100000000	\$0 0.004 0.004 0.01 \$0 0.004 0.004 0.01
MERICAN NAS MEAF-WYD-MWG-G317 II MERICAN NAS MEAF-WYD-MWG-G317 II MERICAN NAS MEAF-WYD-MWG-G317 II	NONE SPAN SEZ MODE SPAN SEZ	MA SW3535 04.1 85G W 4 33,04,2037 3240 0 MA SW3535 04.1 85G W 4 33,04,2037 3240 0 MA SW3535 04.1 85G W 4 33,04,2037 3240 0	7017 5017036 16:90 0 5017011 17:1600 305-3058-1 2 7017 5017036 16:90 0 5017011 17:1600 305-3058-1 2 7017 5017036 16:90 0 5017011 17:1600 205-3058-1 2 7017 5017036 16:90 0 16:7011 17:1600 105-301	13C4 PFGA 13C4 PFGA 81 81 81 13C4 PFGA 81 81 81 13C4 PFGS 98 98 98 98 98 98 98 98 98 98 98 98 98	PCT_REC PR SUBR	9.5A 150 25 0000000 9.5A 150 25 0000000	\$0 \$0
MERICIAN NAS MEAST-WWITP-MW01-0317 F	NONS SVDA \$17,MOD \$06 \$1446ER \$144 America \$100KE \$10KE \$100KE \$	MA 5W3535 511 85G W 4 33593273239 0 M 5W3535 500 85G W 4 33993273240 0		1802 PFHCS	100 100	52.5A 150 25 00000000 00000000 00000000 00000000	5.0 0.004 0.0094 0.001 0
MERICIAN_NAS MEAFF-PWMA-MW03-0317 N MERICIAN_NAS MEAFF-PWMA-MW03-0317 N MERICIAN_NAS MEAFF-PWMA-MW03-0317 N	NORS SVDA \$37,MOD CRG TAMER Test America NONE NORS SVDA \$37,MOD ORG TAMER Test America NONE NORS SVDA \$37,MOD ORG TAMER Test America NONE NORS SVDA \$37,MOD ORG TAMER Test America NONE	MA 5W3535 000 66G W 4 33(01,70171400 0 MA 5W3555 000 46G W 4 33(01,70171400 0 MA 5W3555 000 MA 5W3555 000 46G W 4 33(01,70171400 0 MA 5W3555 000 MA 5W355 000 MA 5W35 000 MA 5W355 000 MA 5W355 000 MA 5W355 000 MA 5W355 000 MA 5W35 000 M		158-23-1 1.3		\$15A \$150 \$25 \$00000000 \$15A \$150 \$25 \$00000000	5.0 5.0
MERICIAN NAS MEAST-PWMA-MW01-0317 II MERICIAN NAS MEAST-PWMA-MW01-0317 II MERICIAN NAS MEAST-PWMA-MW01-0317 II	NONE DVDA 337 MOD DRG TAMARR Test America MONE NONE DVDA 327 MOD DBG DAMER Test America MONE NONE DVDA 327 MOD DBG DAMER Test America MONE NONE DVDA 327 MOD DBG DAMER Test America MONE NONE DVDA 327 MOD DBG DAMER Test America MONE NONE DVDA 327 MOD DBG DAMER Test America MONE	PM 5947535 200 86G W 4 33,012/20171400 0 MA 594535 300 86G W 4 33,012/20171400 0 MA 594535 351 86G W 4 33,012/20171400 0	78017 700.7000 16:00 501.7010 52:00 505.7011 51:00 505.7011 51:00 505.7011 51:00	Perflamostaneaufonic acid (PRIS) 175-72-5 0.65 1802 PFHSS 1802 PFHSS 46 46 Perflamostancic acid (PFOA) 126-67-1 4.4	0.651UC, L ME ME PR TRG PCT_RCC PR SUBR 4.4UG_L DME DME PR TRG	00000000 550 00000000 150	5.0 8E-04 0.0018 0.0021 5.0 0.007 0.018 0.021
MERICIAN NAS MEAFF-PWMA-MW01-0117 II MERICIAN NAS MEAFF-PWMA-MW01-0117 II MERICIAN NAS MEAFF-PWMA-MW01-0117 II	NORS SUCA \$32,MOD ORG TAMER Test America NONE NORS SUCA \$32,MOD ORG TAMER Test America NONE NORS SUCA \$32,MOD ORG DAMER Test America NONE	NA		Ferfixorocctaine Sulfonate (PFOS) 1263-23-1 1.6 13C4 PFOA 13C4 PFOA 13 13C4 PFOS 13C4 PFOS 13C4 PFOS 13	1.4 UG_1 DM DM PR TRG PCT_RCC PR SURR PCT_RCC PR SURR	2.5A 150 25 0000000 2.5A 150 25 0000000	5.0 0.012 0.028 0.031 5.0 5.0
MERICIAN, NAS MEAFF-PWMA-MW01-0317 N MERICIAN, NAS MEAFF-PWMA-MW01-0317 N	NONS SVDA \$37,MOD ORG TAMER Text America MONE NONS SVDA \$32,MOD ORG TAMER Text America NONE OWE TAMER Text America NONE	NA SW2515 OLI 8EG W 4 03/01/2017 14:00 D NA SW2525 OLI 8EG W 4 03/01/2017 14:00 D	2017 20170106 16:99:00 20170113 17:21:00 120 16:61-2 10 2 2017017 20170106 16:99:00 20170113 17:21:00 120 16:61-2 10 2 2017017 20170106 16:99:00 20170113 17:21:00 20 36:461-2 10 2 2017017 20170106 16:99:00 20170113 17:21:00 20 36:461-2 10 2	Perfluonobutaness/flonic acid (PPBS) 175-73-5 0.82 1802 PFHKS 1802 PFHKS 97 97	0.83 UG_L 0 0 0 98 TNG FT FRC 98 SUBS	2.5A 150 25 00000000	5.0 0.007 0.014 0.022 0.034 0.025 0.015 0.007 0.014 0.022 0.034 0.025 0.035 0.
MERICIAN NAS MEAFF-PWMA-MW01-0317 P MERICIAN_NAS MEAFF-PWMA-MW01-0317 P	100 100	NA SW3535 9L2 8EG W 4 33(9L20714-00 0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		Perfluoroccane Sulfonate (PFOS) 1793-23-1 1.5 13C4 PFOA 13C6 PFOA 108 108	1.5 UG L DM DM PR TRG FCT_REC PR SURR	00000000 00000000 0.5A 150 15 00000000	5.0 0.029 0.009 0.09 5.0
MERIDAN NAS MEAFF-PWMA-MW01-0117 9 MERIDAN NAS MEAFF-PWMA-MW01-0117 9 MERIDAN NAS MEAFF-PWMA-MW01-0117 9	NONE 90A 137,MOD 00G TAMER Ref. America NONE NONE 90A 137,MOD 00G TAMER Tet America NONE	9A 3W355 9L2 856 W 6 33(912)207.1430 U 9A 5W355 9L2 85G W 6 33(912)207.1430 U 9A 5W355 3L2 85G W 6 33(912)207.1430 U	2017 2017/0005 16/97/00 2017/0014 15/13/00 2017/0014 25/13/00	114.4 PPUS 112 112 112 112 112 112 112 112 113 114 115 115 115 115 115 115 115 115 115	PC_1886 PR \$3088	2.5A 150 25 00000000 1 1 1 1 1 1 1	5.0 0.021 0.044 0.051 5.0
MERIDAAN, NAS MEAFF-UNKNOWN22-MW01-0317 N MERIDAAN, NAS MEAFF-UNKNOWN22-MW01-0317 N MERIDAAN, NAS MEAFF-UNKNOWN22-MW01-0317 N	NONS SVDA \$37_MOD ORG TAMER Test America NONE NONS SVDA \$37_MOD ORG TAMER Test America NONE	NA SW3535 000 REG W 4 33,03,20273535 0 NA SW3535 000 REG W 4 33,03,20273535 0 NA SW3535 000 REG W 4 33,03,20273535 0		Perfluonoctanois acid (PFCA) 335-67-1 0.009 Perfluonoctano Sulfonate (PFCA) 1762-23-1 0.002 32C4 PFCA 32C4 PFCA 87 87	0.009 UG L MM M PR TRG 0.000 UG L MM M PR TRG FCT,RGC PR SURR	00000000 00000000 9.5A 150 25 00000000	5.0 7E-04 0.0009 0.002 5.0 0.001 0.0028 0.003 5.0
MERICIAN NAS MEAFF-UNENDWINZZ-MW01-0317 N MERICIAN NAS MEAFF-UNENDWINZZ-MW01-0317 N MERICIAN NAS MEAFF-UNENDWINZZ-MW01-0317 N	NONS SVDA \$377_MOD ORG EAMER Feet America NONE NONS SVDA \$377_MOD ORG TAMER Text America NONE NONS SVDA \$377_MOD ORG TAMER Text America NONE	NA 5W3535 000 REG W 4 33/01/20171505 0 NA 5W3535 000 REG W 4 33/01/20171505 0 NA 5W3535 000 REG W 4 33/01/20171505 0		12C4 PFOS 12C4 PFOS 118 118	PET_REC PR SURR	2.5A 150 15 00000000 000000000 2.5A 150 25 00000000	5.0 5.0 5.0 5.0 5.0 9E-04 0.0019 0.0021
MERIDIAN_NAS MEAFF-FD04-030117 II MERIDIAN_NAS MEAFF-FD04-030117 II MERIDIAN_NAS MEAFF-FD04-030117 II	NONS SVQA \$37_MOD ORG TAMER Text America NONE	NA 5W3535 000 8EG W 4 53/01/201700.00 0 NA 5W3535 000 8EG W 4 33/01/201700.00 0 NA 5W3535 000 8EG W 4 33/01/201700.00 0	72017 20173036 16:90:00 20170310 22:15:00 120:24261-4 1 1 1 72017 20170310 16:90:00 20170310 22:15:00 120:24261-4 1 1 1 720170310 16:90:00 120:24261-4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Perfluorocctanoic acid (PFOA) 335-67-1 0.0081 Perfluorocctane Sulfonate (PFOS) 1793-22-1 0.0082 312G PFOA 12G PFOA 12G PFOA 12	0.0001 UG_L M M M PR TRG 0.0002 UG_L MM M PR TRG 0.0002 UG_L MM M PR TRG 0.0002 UG_L MM M PR TRG	0000000 0000000 0000000 0.54	5.0 7E-04 0.0018 0.002 5.0 0.001 0.0028 0.003 5.0
MERIDIAN_NAS MEAFF-FD04-030117 b MERIDIAN NAS MEAFF-FD04-030117 b MERIDIAN NAS MEAFF-FD04-030117 b	NONS SVDA \$37_MOD DRG TAMER Text America MONE NONS SVDA \$37_MOD DRG TAMER Text America MONE NONS SVDA \$37_MOD DRG TAMER Text America MONE MONE TAMER Text America MONE TAMER TAM	NA 5W3535 000 8EG W 4 53/93/20700:00 0 NA 5W3535 000 8EG W 4 53/93/20700:00 0 NA 5W3555 000 8EG W 4 53/93/20700:00 0	2017 20170306 16:09:00 20170310 22:15:00 220-16261-4 1 1 1 1 1 1 1 1 1	13C4 PFOS 134 134 134 134 134 134 134 135 135 135 135 135 135 135 135 135 135	PCT_REC	9.5A 150 25 0000000 00000000 9.5A 150 150 00000000	5.0 7E-04 0.0008 0.002 5.0 0.001 0.0028 0.003 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0
MERICAN, NAS LCS 220-153501/2-A 9 MERICAN, NAS LCS 220-153501/2-A 9	NONS SVOA \$32,MOD ORG TAMER Test America NONE NONS SVOA \$32,MOD ORG TAMER Test America NONE	MA SW3535 000 85 W 4 03/05/2017 629 0 WA 0W2535 000 85 W 4 03/05/2017 629 0	2017 2017/2006 16/29/200 2017/2016 22/27/200 155/29/27/2 1 1 2017/2016 16/29/200 2017/2016 22/27/200 155/29/27/2 1 1 2017/2016 16/29/200 2017/2016 22/27/200 155/29/27/2 1 1	250.4 FFFIX. 250.	FCT_REC M M M R TRG	LSA 140 40 00000000 LSA 140 40 000000000 LSA	50 0.75 2.0 2.5 50 1.3 1.0 4.0 5.0 5.0
MERIDAN, NAS. MEAPF-FORK-030117 MERIDAN, NAS. ICE 200-51502/2-A MERIDAN, NAS. ICE 200-51502/2-A MERIDAN, NAS. ICE 200-51502/3-A	NORS SVDA 537_MOD CRG TAMER Test America NORE NORS SVDA 537_MOD ORG TAMER Test America NORE NORS SVDA 537_MOD ORG TAMER Test America NORE	MA SW3535 200 85 W 4 \$23,06(202716:29 0 0 M 5 W 4 \$23,06(202716:29 0 M 5		13C4 PFCA 146	PET	100 10000000 150 10000000 150 10000000 150 100000000 150 150 150 150 150 150 150 150 150 150	5.0 0.92 2.0 2.5
MERIDAN, NAS LISD 220-153501/2-A 1 MERIDAN, NAS LISD 220-153501/3-A 1 MERIDAN, NAS LISD 220-153501/3-A 1	NORS SVCA \$32,MOD ORG TAMER Text America NONE NORS SVCA \$32,MOD ORG TAMER Text America NONE NORS SVCA \$32,MOD ORG TAMER Text America NONE	NA		1802 PFIKES 1802 PFIKES 137 137 137 147	FCT_REC	\$2.5A 150 25 00000000 LSP 140 50 10000000 LSP 140 60 00 00000000	5.0 5.0 5.0 5.0 1.3 1.0 4.0
MERICAN, NAS (CCO 220-151901/7-A)	100 100	NA 5W/555 000 850 W 4 33/05/20711629 0 NA 5W/555 000 850 W 4 33/05/20711629 0 NA 5W/555 000 850 W 4 33/05/20711629 0		12C4 PFOA 12C4 PFOA 140 140 140 12C4 PFOA 140 12C4 PFOA 12C4 PFOS	CT_DEC PR DUB	9.1A 150 25 0000000 9.1A 150 25 0000000 9.1A 150 150 0000000	5.0 0.75 2.0 2.5 5.0 1.2 1.0 4.0 5.0 1.2 1.0 4.0 5.0 5.0 5.0 2.2 2.0 2.5 5.0 5.0 5.0 2.2 2.0 2.5
MERIDAN, NAS 10:50 20-51500/2-A MERIDAN, NAS 10:50 20-51500/2-A MERIDAN, NAS MIR 200-51500/2-A MERIDAN NAS MIR 200-51500/2-A M	NORS YULA 137, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORS YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 537, MIDD 206 20ARE Test America NORE NORE YULA 237, MIDD 206 20ARE 237, MIDD NORE YULA 237, MIDD 238, MIDD 238, MIDD NORE YULA 238, MIDD 238, MIDD 238, MIDD NORE YULA 238, MIDD 238, MIDD 238, MIDD 238, MIDD NORE YULA 238, MIDD 238, MID	MA 5W3535 500 650 W 4 535652073 629 0 MA 5W3535 500 681 W 4 535652073 629 0 MA 5W3535 500 681 W 4 535652073 629 0	7017 0017005 16:00 0 1007001 12:00 0 2027001 10:00 0	1802 PFICES 128 128 128 128 129 PFICES 128 128 128 128 128 128 128 128 128 128	PCT_SSC	(SP 150 50 00000000 125A 150 25 00000000 125A 150 25 00000000 125A 150 25 00000000 125A 150 00000000 125A 150 00000000 125A 150 00000000 125A 150 000000000 125A 150 000000000 125A 150 000000000 125A 150 000000000000000000000000000000000	5.0 BE-04 0.002 0.0021
MERIDAN, NAS MB 220-353501/1-A 9 MERIDAN, NAS MB 220-353501/1-A 9 MERIDAN, NAS MB 220-353501/1-A 9	NONS SVDA 537,MOD DRG TAMER Test America NONE NONS SVDA 537,MOD DRG TAMER Test America NONE	PM SW3535 D00 LB1 W 4 23,054,7037 16:19 D W SW3535 D00 LB1 W 4 23,054,7037 16:19 D W SW3535 D00 LB1 W 4 23,054,7037 16:19 D W SW3535 D00 LB1 W 4 23,054,7037 16:19 D W W W W W W W W W		1762-32-1 0.003	NAME POR TREE	00000000	5.0 SE-04 0.002 0.0025 5.0 0.001 0.003 0.004 5.0 5.0
MERICIAN, NAS MIB 220-153501/1-A B MERICIAN, NAS MIB 320-153501/1-A B MERICIAN, NAS MEAFF-6AMW03-0317	NORS SVDA 512 MOD ORG ZAMER Text America MONE NORS SVDA 527 MOD ORG TAMER Text America NONE NORS SVDA 527 MOD SRG TAMER Text America NONE NORS SVDA 4270 MM SVDA TAMER Text America NONE	PM 1AM/5535 000 (83 W 4 33/05/2017 16:09 0 NA SW3535 200 (81 W 4 33/05/2017 16:09 0 NA SW3530C 200 (85 W 4 93/05/2017 12:25 0	2017/2005 16:09:00 2017/2010 22:10:00 Mai 220:1512/01/A 1	rerRacosbataneusfonic acid (PRS) 275-72-5 0.002 1802 PFICES 1802 PFICES 124 124 1,4-Gossane 123-91-1 0.48 0.48	моютик, 1. U U PR TRG	00000000	5.0 56-04 0.002 0.0025 5.0 0.19 0.48 0.95
MERICIAN NAS MEAFF-BANWO3-0317 9 MERICIAN NAS MEAFF-BANWO3-0317 9 MERICIAN NAS MEAFF-BANWO3-0317 9	NONS SVCA \$270_SIM \$VCA TAMER Text America NONE NONS \$VCA \$172_MOD \$06G \$3AMER Text America NONE NONS \$VCA \$172_MOD \$06G \$3AMER Text America NONE	NA 5W3510C 500 8KG W 4 53(52)7017 12:25 0 NA 5W3525 500 8KG W 4 53(52)7017 12:25 0 NA 5W3525 500 8KG W 4 53(52)7017 15:05 1		Nitrobenzene-OS 4555-GO-O 66 66 66 Perfluoroctanoic acid (PFOA) 235-G-1 0.440 Perfluoroctanoic Suffonste (PFOS) 1763-23-1 0-0031	PCT_REC	92.SA 91 42 0000000 00000000 00000000	5.0 7E-04 0.0018 0.0023 5.0 0.001 0.0027 0.0037
MERICAN, NAS MEAFF-GAMWG3-G317 MERICAN, NAS MEAFF-GAMWG3-G317 MERICAN, NAS MEAFF-GAMWG3-G317	NONS SVDA \$27_MOD ORG TAMER Test Assertica NONE NONS SVDA \$27_MOD SRG TAMER Test Assertica NONE NONS SVDA \$27_MOD SRG TAMER Test Assertica NONE NONS SVDA \$27_MOD SRG TAMER Test Assertica NOPP	NA 5W3535 200 86G W 4 33(92/201712:25 0 NA 5W3535 500 86G W 4 33(92/201712:25 0 NA 5W3535 500 86G W 4 33(92/201712:25 0		13C4 PFOA 13C4 PFOA 64 64 64 13C4 PFOS 13C4 PFOS 13C8 PF	FCT_REC	9.5A 150 25 0000000 9.5A 150 25 0000000 00000000	5.0 7E-04 0.0018 0.0023 5.0 0.001 0.0027 0.0037 5.0 0.001 0.0027 0.0037 5.0 8E-04 0.0018 0.0023
MERICIAN NAS MEAST-AAMWC3-0317 II MERICIAN NAS MEAST-AAMWC3-0317 II MERICIAN NAS MEAST-AAMWC3-0317 II	NONS SVGA 537_MOD ORG TAMER Text America NONE	NA 5W3G35 XXX REG W 4 3X3G326073225 0 NA 5W3G35 XXI REG W 4 3X3G326073225 0 NA 5W3G35 XXI REG W 4 3X3G326073225 0	7017 00170305 16:09:00 20:370305 22:22:00 20:54077-1 1 1 70017	1802 PFHKS 1802 PFHKS 25 25 25 25 25 26 27 25 27 27 25	PCT_RSC	9.5A 150 25 0000000 00000000 00000000	\$0 \$0 \$0 \$0 \$0
MEREDAN, NAS MEAFF-GANNOS G317 B MEREDAN, NAS MEAFF-GANNOS G317 B MEREDAN, NAS MEAFF-GANNOS G317 B	NONS SVDA 572,MOD ORG TAMER Text Annelica NONE	MA SW3535 SLI REG W 4 33032/201712-25 (0 M SW3		13C4 FFGA 13C4 FFGS 131 131 13C4 FFGS 13C4 FFGS 131 131	PCT_SEC PR SUBR PCT_SEC PR SUBR	\$1.5A 150 25 00000000 \$1.5A 150 25 00000000 \$1.5A 150 25 00000000	5.0 0.000 0.0002 0.011 5.0 0.000 0.004 0.018 5.0 0.006 0.004 0.018 5.0 0.004 0.0002 0.001
MERICIAN, NAS MEAFF-GAMWO3-0317 II MERICIAN, NAS MEAFF-GAMWO3-0317 II MERICIAN, NAS MEAFF-MRD-0630-0317	NORS SUDA \$127 MIDD SDRG TAMER Text America MORE NORS SUDA \$27, MIDD SDG TAMER Text America MORE NORS SUDA \$270, SIM SVOA SMARR Text America NORE	PM 15W7535 35.1 REG W 4 33/92/2017 27:25 0 WA 5W1535 5L1 REG W 4 33/92/2017 27:25 0 WA 5W753DC 500 REG W 4 33/92/2017 20:00	78017 70070006 164900 16470011 12-1800 200-34277-1 1 2	Perflamobataneauflonic acid (PRES) 235-72-5 0.054 IBO2 PFHCS IBO2 PFHCS 132 132 1,4-Olexane 1224-91-1 0.76 0.76	USE	00000000	5.0 0.19 0.48 0.97
MERICIAN NAS MEAFF-MRD-0630-0317 IX MERICIAN NAS MEAFF-MRD-0630-0317 IX MERICIAN NAS MEAFF-MRD-0630-0317 IX	NONS SVOA \$270_SM SVOA TAMER Test America NONE NONS SVOA \$377_MOD ORG TAMER Test America NONE	NA SW3510C 300 BEG W 4 \$33,03,7007 \$10.40 0 NA SW3535 300 BEG W 4 \$33,03,7007 \$10.40 0 NA SW3535 300 BEG W 4 \$33,03,7007 \$10.40 0 NA SW3535 300 BEG W 4 \$33,03,7007 \$10.40 10		Nitrobensene-05 4165-60-0 72 72 72 72 72 72 72 7	PET_REC PR SUBR	SLSA 91 42 40000000 00000000 00000000	5.0 7E-04 0.0019 0.0024
MERICIAN, NAS MEAFF-MRD-0630-0317 II MERICIAN, NAS MEAFF-MRD-0630-0317 II MERICIAN NAS MEAFF-MRD-0630-0317	NONS SVDA \$37,MGO ORG TAMER Text America NONE NONS SVDA \$17,MGO ORG TAMER Text America NONE NONS SVDA \$17,MGO ORG TAMER Text America NONE	WA SW3535 500 REG W 4 53(52/2017 10:40 0 0 W 4 53(52/2017 10:40 0 0 W 4 53(52/2017 10:40 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2017 20170106 16:99:00 20170109 22:00:00 20:04775-2 1 1 20:047010 20:05	13C4 PFGA 13C4 PFGA 94 94 14. 13C4 PFG 13C4 PFG 13C4 PFG 13C5 PFG	RCT REC PR SURR RCT REC PR SURR RCT REC PR SURR RCT REC	2.5A 150 25 0000000 2.5A 150 25 0000000 0.0000000	1.0
MERICIAN NAS MEAFF-MAD-0630-0317 III MERICIAN NAS MEAFF-MANNOS 0317 III MERICIAN NAS MEAFE-AAMINOS 0317 III	NONS	NA 5W35155 000 85G W 4 5359279073 70-99 0 NA 5W3510C 500 85G W 4 5359279073 71-99 0 NA 5W3510C 000 85G W 4 5359279073 71-90 0	20027 00170000 40.000 00270000 40.00000 00270000 00270000 00270000 0027000 0027000 0027000 0027000 0027000 0027000 0027000 0027000 0027000 0027000 0027000 0027000 00270000 00270000 00270000 00270000 00270000 00270000 00270000 00270000 00270000 00270000 002700000 002700000	######################################	TO TO TO TO TO TO TO TO	9.5A 150 25 0000000 9.5A 150 25 0000000 9.000000 9.5A 91 42 0000000	5.0 5.0 5.0 5.0 5.0
MERICAN, NAS MEAST-GAMWOI 0217 II MERICAN, NAS MEAST-GAMWOI 0217 II	NONS DVDA 537 MOD SNG DAMER Text America NONE NONS DVDA 537 MOD SNG DAMER Text America NONE NONS DVDA 537 MOD SNG DAMER Text America NONE NO	MA SW3G35 500 85G W 4 33(92)2017 32:00 0 MA SW3G35 500 85G W 4 33(92)2017 32:00 0 MA SW3G35 500 85G W 4 33(92)2017 32:00 0	7017 0017006 16.9900 20170011 17.4600 202707-1 1 1 1 1 1 1 1 1 1	Perfluorocctanoic acid (PEOA) 1315-G7-1 0.021 Perfluorocctanoic acid (PEOA) 1315-G7-1 0.0021 Perfluorocctano Suffonate (PEOS) 1762-23-1 0.0068 13C4 SEOA.	0.0017 U.C. L MA M 901 TRG 0.0008 U.C. L MA M 901 TRG	0000000 0000000	5.0 7E-04 0.0018 0.0023 5.0 0.001 0.0028 0.0027
MERCHAN, NAS MEAFF-GAMWOLGS17 9 MERCHAN, NAS MEAFF-GAMWOLGS17 9 MERCHAN, NAS MEAFF-GAMWOLGS17 9	1005 100A 127_MOD 100E 100ASE Test America MONE	MA SWISSS DOS 88G W 4 33(92)(937312:00 0 NA SWISSS DOS 88G W 4 33(92)(937312:0		13C4 PFCA 26 26 26 12C4 PFCA 26 26 26 12C4 PFCA 27 27 27 27 27 27 27 27 27 27 27 27 27	PER_STANDA PER SUURR	55.5A 150 25 00000000 100000000 100000000 100000000	5.0 5.0 BE-04 0.0018 0.0023
MERIDIAN_NAS MEAFF-GAMWOI 0217 II MERIDIAN_NAS MEAFF-GCMWOI 0217 II MERIDIAN_NAS MEAFF-GCMWOI 0217 II	NONE DATA	PM JAWASIG AND BEG W 4 33(92)/2017 12:00 (0 NA SWISSIG X00)		1802 FFRSS 1800 FFRSS 128 128 128 1,4 Glorane 123 9.1 0.48 0.48 0.48 0.48 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.7	FCT.RCC PR SURR OG L U PR TEG FCT.RCC PR SURR	\$150 25 0000000 150	5.0 0.19 0.48 0.95
Column C	NONS SVCA \$37_MOD DRG TAMER Test America NONE NONS SVCA \$37_MOD DRG TAMER Test America NONE NONE SVCA \$37_MOD DRG TAMER Test America NONE NONE Test America NONE	NA SWISSE 500 BEG W 4 33(92)/201735-30 0 NA SWISSE 500 BEG W 4 33(92)/201735-30 0 NA SWISSE 500 BEG W 4 33(92)/201735-30 0	2017 2017 2017 2017 2017 2017 2017 2017	Perfhanosochanois acid (PEGA) 135-G7-1 0.12 Perfhanosochanois Sulfonatie (PEGS) 1953-23-1 0.044 13C4 PEGA 15 15C4 PEGA 1		0000000	5.0 75-04 0.0018 0.0021 5.0 0.0018 0.0027 0.0028 5.0 0.0018 0.0027 0.0028 5.0 5.0 55-04 0.0028 0.0027
MERIDAN, NAS MEAFF-ROMNOL-0317 9 MERIDAN, NAS MEAFF-ROMNOL-0317 9 MERIDAN NAS MEAFC-ROMNOL-0317	NONS SVQA S37_MOD ORG EAMER Text America NONE NONS SVQA S37_MOD ORG TAMER Text America NONE NONS SVQA S37_MOD ORG TAMER Text America NONE NONS SVQA S37_MOD ORG TAMER Text America NONE	NA 00/05/55 200 16/G W 4 53/03/5/31711-320 10 NA 00/05/55 300 16/G W 4 53/03/5/31711-320 10 NA 00/05/55 300 16/G W 4 53/03/5/3171-320 10 NA 00/05/55 300 16/G W 4 53/03/5/3171-320 10 NA 00/05/55 300 16/G W 4 53/03/5/2171-320 10	2017 201706 16490 201705 251705 251707	Perfluorobutanesulfonic acid (PFBS) 175-73-5 0.0015	Control Cont	2.5A 150 25 00000000 2.5A 150 25 00000000 2.5A 150 25 00000000	5.0 5.0 8E-04 0.0018 0.0027
MERIDIAN_NAS MEAFF-6CMW03-0317 B MERIDIAN_NAS MEAFF-6CMW03-0317 B	NONS 5VGA 1270,58M 5VGA 7AMER THE ASSESS NONS 5VGA 1270,58M 5VGA 7AMER THE ASSESS NONS 5VGA 1270,58M 5VGA 7AMER THE ASSESS NONS 5VGA 127, MOD 100,500	MA SWISSIGC 500 REG W 4 SUSSIGNATISSIGN DAY SWISSIGC 500 REG W 4 SUSSIGNATISSIGN DAY SWISSIGC 500 REG W 4 SUSSIGNATISSIGN DAY SWISSIGC 500 REG W 5 SUSSIGNATISSIGN DAY SWISSIGC 500 REG W 5 SUSSIGNATISSIGN DAY SWISSIGN SWISSIGN DAY SWISSIGN DAY SWISSIGN DAY SWISSIGN DAY SWISSIGN	2017 20170108 08:4:00 2017014 22:2000 20:4:27-5 1 1 20170108 08:4:00 2017014 22:2000 20:4:27-5 1 1	1802 FFROS SIGN FFROS 125 125 125 125 125 125 125 125 125 125	UG_L	1	5.0 0.20 0.49 0.98 5.0 75.04 0.0004 0.0023
MERICAN, NAS MIAFF-4CWW93-0317 P MERICAN, NAS MEAFF-4CWW93-0317 P MERICAN, NAS MEAFF-4CWW93-0317 P	NORS SVDA 537_MOD CRG TAMER Text America NORE NORS SVDA 537_MOD ORG SAMER Text America NORE NORS SVDA 537_MOD ORG SAMER Text America NORE	NA SM/3025 D00 REG W 4 33,02,7007 31:5:00 NA SM/3035 D00 REG W 4 33,02,7207 31:5:00 NA SM/3035 D00 REG W 4 33,02,7007 31:5:00	2017 2017/03/06 16:19:00 2017/03/1 00:00/00 220-2677-5 1 1 2017/03/06 16:19:00 2017/03/1 00:00/00 220-26273-5 1 1	Perfluoroctanoic acid (PEOA) 315-67-1 0.044 Perfluoroctano Sulfonate (PEOS) 1761-23-1 0.0082 13C4 PEOA 75 75 75	MANAGEMENT MAN	00000000 000000000 51.5A 150 25 0000000	5.0 7E-04 0.0018 0.0023 5.0 0.001 0.0028 0.0033 5.0 0.001 0.0028 0.0033
MERICIAN, NAS MEAFF-6CWW03-0317 P MERICIAN, NAS MEAFF-6CWW03-0317 P	NORS SVDA 127 MOD ORG TAMER Test America NONE NORS SVDA 527 MOD ORG TAMER Test America NONE NORS SVDA 527 MOD ORG SAMER Test America NONE	NA SMYSSS 000 REG W 4 33(92)7027 35:50 0 NA SMYSSS X00 REG W 4 33(92)7027 35:50 0 NA SMYSSS X00 REG W 4 33(92)7027 35:50 0		11C4 PFOS 11C4 PFOS 11B 11B		000000	5.0 96-04 0.0018 0.0023
MERIDIAN, NAS MEAFF-FDS-0317 III MERIDIAN, NAS MEAFF-FDS-0317 III MERIDIAN, NAS MEAFF-FDS-7317	NONS SVOA 8270_SIM SVOA TAMER Test-America NONE	MA		1,4 Giovane 123-91-1 0.48 0.48 Nitrobenzere-OS 4165-60-0 63 63		2.5A 91 42 0000000 00000000 0.5A 91 42 00000000	5.0 0.19 0.48 0.96 5.0 7E-04 0.0018 0.0023
MERIDAN NAS MEAF-FDS-0317 II	NONS DVDA 537 MOD SNG DAMER Text America NONE NONS DVDA 537 MOD SNG DAMER Text America NONE NONS DVDA 537 MOD SNG DAMER Text America NONE NO	MA SW3G35 500 86G W 4 33(92)27070000 0 MA SW3G35 500 86G W 4 33(92)27070000 0	2017 20170106 16:99:00 2017011 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:34277-6 1 1 20:0700 120:3427-6 1 1	Perfluorescenseic and PFOAI 225-67-1 0.34 Perfluorescenseic (APPOAI 225-67-1 0.34 Perfluorescenseic (APPOAI 225-67-1 0.04) ISCA PFOAI 25-67-67-67-67-67-67-67-67-67-67-67-67-67-	PL_SEC. PR.	9.5A 150 25 0000000 9.5A 150 25 0000000	5.0 7E-04 0.0018 0.0023 5.0 0.001 0.0027 0.0036 5.0 5.0
MERICAN NAS MEAF-F005-0317 9 MERICAN NAS MEAF-F005-0317 9 MERICAN NAS MEAF-F005-0317 9	1005 100A 127_MOD 100E 100ASE Test America MONE	MA SW3535 000 88G W 4 33(92)(931700:00 0 MA SW3535 000 0 MA SW355 000 0 MA SW355 000 0 MA SW355 000 0 MA S		12C4 PFGS 116 116 116 116 116 117	TEL_(TANK)	9.5A 150 25 00000000 9.5A 150 25 00000000 9.5A 150 25 00000000 15A 160 160 000000000 15A 160 160 00000000 15A 160 160 0000000 15A 160 160 00000000 15A 160 160 00000000 15A 160 160 00000000 15A 160 160 0000000 15A 160 160 0000000 15A 160 160 0000000 15A 160 160 0000000 15A 160 00000000 15A 160 00000000 15A 160 0000000 15A 160 00000000 15A 160 0000000 15A 160 000000 15A 160 0000000 15A 160 000000 15A 160 000000 15A 160 000000 15A 160 000000 15A 160 00000 15A	\$.0 SE-04 0.0018 0.0023
MERCHAN AND MARY GOOGLESS (1997) MERCHA	10	NA 5M2525 200 65 W 4 33,062,7017.6:09 0 NA 5M2525 200 85 W 4 33,062,7017.6:09 0 NA 5W2525 200 85 W 4 33,062,7017.6:09 0		MAJZ 9910A 120		154 140 60 00000000 154 40 60 000000000 215 150 25 00000000	5.0 0.75 2.0 2.5 5.0 1.3 1.0 4.0 5.0
MERICIAN, NAS ICS 220-153501/2-A MERICIAN, NAS ICS 220-153501/2-A MERICIAN, NAS ICS 220-153501/2-A	NONS SVDA \$27_MOD ORG TAMER Test Assertica NONE NONS SVDA \$27_MOD SRG TAMER Test Assertica NONE NONS SVDA \$27_MOD SRG TAMER Test Assertica NONE	NA 5W3535 200 65 W 4 33(64/201716:09 0 NA 5W3535 500 65 W 4 33(64/201716:09 0 NA 5W3535 500 65 W 4 33(64/201716:09 0		125.479706 125.47906 125.47906 125.47906 125.47906 125.47906 125.47906 125.47906 125.47906	FCT_REC	SA 150 50 0000000	5.0 5.0 5.0 5.0 5.0 5.0
MERICAN NAS LCS 220-153806/2-A 9 MERICAN NAS LCS 220-153806/2-A 9 MERICAN NAS LCS 220-153806/2-A 9	NORS 190A 1275 SIND 1904 1904 1904 1905 19	MA 5W3510C 500 65 W 4 33(5)(2)(2)(7)(6)(4) 0 MA 5W3510C 500 65 W 4 33(5)(2)(2)(7)(6)(4) 0 MA 5W3510C 500 65 W 4 33(5)(2)(2)(7)(6)(4) 0	2017 20170308 0841.00 20170314 21.06.00 LCS 320-153806/2-A 1 1 20170317 20170308 0841.00 20170314 21.06.00 LCS 320-153806/2-A 1 1 1	1,4-Oloxane 123-91-1 32 32 Nitrobersene-OS 4165-GO-0 75 75	FCT_SEC M M M PR TRSC FCT_REC PR SURR	15A 52 12 0000000 S.SA 81 42 0000000	5.0 0.20 0.50 1.0 5.0
MERIDAN, NAS LCSD 120-151501/3-A B MERIDAN, NAS LCSD 120-151501/3-A B MERIDAN, NAS LCSD 120-151501/3-A B	NOME SPAN DAT, MANU DATE Test America NOME		\$11.000.05 \$10.0	Perflusoscitancia caté (PEOA) 135-67-1 99 99 Perflusoscitanei Sulfonate (PFOS) 1953-23-1 106 106 106 1124-9FOA 140 140 140	PR TRG PCT_REC M M PR TRG PCT_REC DR SUBR	140 NO 10000000 150	\$10
MERIDIAN, NAS LCSD 320-153501/3-A MERIDIAN, NAS LCSD 320-153501/3-A MERIDIAN, NAS LCSD 320-153501/3-A	NORS SVDA 127 MOD ORG TAMER Test America NONE NORS SVDA 527 MOD ORG TAMER Test America NONE NORS SVDA 527 MOD ORG SAMER Test America NONE	NA SMX555 000 ESD W 4 33/96/2017 16:09 0 NA SMX555 X00 ESD W 4 33/96/2017 16:09 0 NA SMX535 X00 ESD W 4 33/96/2017 16:09 0	2017 0017006 16:59-00 20170310 22:45:00 15:50-20-15:5001/A-1 1	126.0 PHOS 126.0 PHOS 127.0 PHOS 127		UP 140 00 00000000 UP 140 00 00000000 UP 140 00 00000000 UP 140 00 00000000 UP 140 00 0000000 UP 140 00000000 UP 140 0000000 UP 140 0000000 UP 140 0000000 UP 140 00000000 UP 140 000000000 UP 140 00000000 UP 140 000000000 UP 140 00000000 UP 140 00000000 UP 140 00000000 UP 140 00000000 UP 140 000000000 UP 140 0000000000 UP 140 000000000 UP 140 0000000000000 UP 140 0000000000000000000000000000000000	5.0 5.0 5.0 5.0 5.0
MERIDIAN NAS (CSD 320-153806/3-A 5 MERIDIAN NAS (CSD 320-153806/3-A 5 MERIDIAN NAS MB 320-153601/1-A	NONS 2VOA 8270-5MM SVOA TAMER Ted America NONE NONS 2VOA 8270-5MM SVOA TAMER Ted America NONE NONS 2VOA 527-MOD 2065 TAMER Ted America NONE NONS 2VOA 527-MOD 2065 TAMER Ted America NONE	NA SW3510C XXX 850 W 4 S3/08/2017 08:41 0 NA SW3510C XXX 850 W 4 S3/08/2017 08:42 0 NA SW3515 XXX 90 B5D W 4 S3/08/2017 08:42 0 NA SW3515 XXX 90 B5D W 4 S3/08/2017 08:42 0		1,4 Olosane 122-01-1 31 31 31 31 31 31 31 31 31 31 31 31 31		9.5A 91 42 0000000	5.0 0.20 0.50 1.0 5.0 gr.ns 0.000 0.000
MERIDIAN_NAS MB 220-153501/1-A B MERIDIAN_NAS MB 220-153501/1-A B MERIDIAN_NAS MB 220-153501/1-A B	NORS 190A 127 MOD 1906 1906 1906 1907	NA 995510C 300 600 9V 4 334,042,021 70841 9V 4 34,042,021 70841 9V 4 34,042,021 70841 9V 4 34,042,021 71842 9V 71842 718	2017 5017000 1027000 50270000 5027000 5027000 5027000 5027000 5027000 5027000	Perfluorocctane Sulfonate (PFOS) 1763-23-1 0.003	0.003 UC_L UM UM PR TRG PCT_SEC PR SUBR	10000000 100000000 150	5.0
METIGORA NAS COD 200 1280 52800/TAA METIGORA NAS COD 200 1280 52800/TAA METIGORA, NAS COD 200 1280 52800/TAA METIGORA, NAS COD 200 12800/TAA METIGORA, NAS NAS 200 12800/TAA	NONE SVGA \$127_MOD ORG SAMER Test America NONE NONE SVGA \$127_MOD ORG TAMER Test America NONE NONE SVGA \$127_MOD ORG TAMER Test America NONE NONE SVGA \$127_MOD ORG TAMER Test America NONE	NA SWISSIS SSD LB1 W 4 \$20,06/2021 Ec.99 D NA SWISSIS SSD LB1 W 4 \$30,06/2021 Ec.99 D NA SWISSIS DXXX LB1 W 4 \$30,06/2021 Ec.99 D NA SWISSIS DXXX LB1 W 4 \$30,06/2021 Ec.99 D	20217	12C4 PFOS 12C4 PFOS 116		25 0000000 0 000000 0 0 000000 0 0 0 0 0	5.0 96-04 0.002 0.002 5.0
MERICIAN NAS MR 220-153806/1-A 9 MERICIAN NAS MR 220-153806/1-A 9 MERICIAN NAS MEAFF-40MW01-0317	NONS SVGA 422%_SIM SVGA TAMER Text America NONE NONS SVGA 422%_SIM SVGA 23AMER Text America NONE NONS SVGA 527_MOD CRG TAMER Text America NONE	NA 5W3510C 200 (82 W 4 33/08/2017 08:41 0 NA 5W3510C 200 (83 W 4 33/08/2017 08:41 0 NA 5W3535 500 85G W 4 33/08/2017 08:41 0	7017 2017000 0841.00 2017014 204100 489.20 12380(7.4 1 1 2017014 204100 489.20 12380(7.4 1 1 2017017 2017 2017 2017 2017000 104100 2017014 204100 489.20 12380(7.4 1 1 2017017 2017 2017017 20	1,4 Oloxane 123-91-1 0.50 0.50 Nordomizere-OS 4155-GO-0 69 69 69 Perfusionacizania (MFCAN) 123-GT-1 n. 231	U.G., L	93.5A 93 42 0000000 (0000000)	5.0 5.0 5.0 5.0 7E-04 0.002 0.002
MERIDANA, MAI, MAI DE DESIGNATA AND MAI DESIGNATA AND MAI DESIGNATION AND MAI DESIGNAT	NONS SVOA \$17,MOO \$06 \$34468 \$184 Anerica \$100K \$100K	MA 5W3535 500 85G W 4 33353731000 0 MA 5W3535 500 85G W 4 33353721000 0	2017/0017 2017/0009 10:15:00 2017/0112 02:43:00 20:202424-1 1 1 2 20:202424-1 1 1 2 20:202424-1 1 1 2 20:202424-1 1 1 2 20:202424-1 2 20:20242	Permanoscensos acis (PKAN) 435-6-1 U.22 Perhanoscensos acis (PKAN) 176-52 176-7-1 U.22 Perhanoscensos Aufonate (PFCG) 176-7-2-1 U.22 12C4 (PFCA) 17C4 (PFCA) 17 U.7 12C4 (PFCA) 17C4 (PFCA) 1	CONTROL CONT	0,00,000000 0,0000000 0,0000000 0,000000	5.0 75-04 0.002 0.002 5.0 0.001 0.0020 0.002 5.0 0.001 0.0020 0.002 5.0 5.0 56-04 0.002 0.002
MERIDAN, NAS MEAFF-40MW01-0317 9 MERIDAN, NAS MEAFF-40MW01-0317 9 MERIDAN, NAS MEAFF-40MW01-0317 9	NONE	MA		Perfluorobutanesulfonic acid (PFRS) 375-73-5 0.011	O.0.11 U.G. 1 PR TRG PR SUBR	2.5A 150 25 0000000	5.0 9E-04 0.002 0.002 5.0
MERIDAN_NAS MEAFF-40MW03-0317 II MERIDAN_NAS MEAFF-40MW03-0317 II MERIDAN_NAS MEAFF-40MW03-0317 II	NORS SUCA \$32,MOD ORG TAMER Text America NONE NORS SUCA \$32,MOD ORG TAMER Text America NONE NORS SUCA \$32,MOD ORG DAMER Text America NONE	PW 34M2515 000 86G W 4 33/03/2017 10:59 0 NA SW1515 000 86G W 4 33/03/2017 10:50 0 NA SW1515 000 86G W 4 33/03/2017 10:50 0	78077 20170809 10:15:00 20170812 18:4:100 1303-04784-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1802 PFIGES 1802 PFIGES 91 91	0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165 0.011/0.1. 98 1165	0000000 0000000 0000000 5.5A 150 25 0000000	5.0 7E-04 0.0029 0.0024 5.0 0.002 0.0029 0.0028 5.0 5.0
MERICIAN NAS MEAFF-60MW03-0317 B MERICIAN NAS MEAFF-60MW03-0317 B	NONS SVDA \$37, MOD ORG EAMER Test America NONE NONS \$VDA \$37, MOD ORG \$AMER Test America NONE NONS \$VDA \$37, MOD ORG \$AMER Test America NONE NONS \$VDA \$37, MOD ORG \$AMER Test America NONE	NA 5W3535 500 8EG W 4 53/03/2017 10:50 0 NA 5W3535 500 8EG W 4 53/03/2017 10:50 0 NA 5W3535 500 8EG W 4 53/03/2017 10:50 0	2007 2007 2007 2007 2007 2007 2007 2007	Perfluorobutanesulfonic acid (PFRS) 275-73-5 0.025 1902 SGLYS 1902 SGLYS 1902 SGLYS 10	0.015 UG_L M M PR TRG	2.5A 150 25 0000000 00000000 2.5A 150 25 00000000	5.0 96-04 0.0019 0.0024
MERICAN, NAS MEAFF-(OMNOS-0317) MERICAN, NAS MEAFF-(OMNOS-0317) MERICAN, NAS MEAFF-(OMNOS-0317) MERICAN, NAS MEAFF-(OMNOS-0317)	SHEET SHEE	MA 5W3535 04.1 RSG W 4 339332673 1059 0 NA 5W3535 54.1 RSG W 4 339332673 1059 0 NA 5W3535 54.1 RSG W 4 339332673 1059 0		Section	MECT_REC NR LUARR	545 05 5 05000 1 0 00000 1 0 00000 1 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0 0 00000 1 0	5.0 0.007 0.009 0.00 5.0 0.012 0.029 0.038 5.0 5.0
MEDICIAN NAS HAPAPP ADARBASS DOLT	AND AND AND LOSS OF THE ADDRESS NO.	NA SWISSS DLI REG W 4 DAVIS-2017-10-50 D	2017 20170309 10:15:00 20170315 20:16:00 120:36134-2 10 2 2017 20170309 10:15:00 30170315 20:16:00 220:36134-2 10 2	13C4 PFGA 13C4 PFGA 13C4 PFGA 13C4 PFGA 13C4 PFGA 13C4 PFGA 13C6 P	PC DURK PCT RC 98 SURR		5.0 5.0 5.0 0.009 0.019 0.024
MERIDAN, NAS MEAFF-(DMWG)-0317 B MERIDAN, NAS MEAFF-(DMWG)-0317 B MERIDAN, NAS MEAFF-(DMWG)-0317 B	NONS SVOA S37_MOD DNG TAMER NETATIONS NONE NONS SVOA S37_MOD DNG TAMER Test America NONE NONE SVOA S37_MOD DNG TAMER Test America NONE	NA 5W3535 041 REG W 4 33/03/2017 10:50 0	(2017 011/0009 10113330 2019/015 011/0100 140-1414-2 10 2	PETROLOGICAL SERVICES AND PETROL SERVICES AND SERVICES AN	CONTROL SAME SAME SAME SAME SAME SAME SAME SAME	0000000	
MERSON NAS. (MERF CAMPOS 2017)	100 100	MA 080525 54.1 MSG W 4 0304725721050 5 M MA 080525 5 M M M M M M M M M M M M M M M M M		Per Part P	CT EC	5.54	5.0

Contract_ID			over DateTime_Collected Date_Received Leachate_Date Leachate_Time Extraction 33/43/2007 13:05 03/04/2017 00/100/2017 00/100/2017 34/33/2007 13:05 03/04/2017 00/100/2017 00/100/2017	on_Date Extraction_Time Analysis_Date An 09 10:25:00 20170312 04: 09 10:35:00 20170312 04:	nalysis Time Lab Sample ID Oblation Run Number Percent Mointure Percent 105:50 200-1203-121-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	t_Upid	Analyte_ID	Lab Qualifier Validator Qualifier SC, Column, Type Analysis, Result, Type Result 90 SUIR 100 SUIR	Namative QC_Control_Limit_Code QC_Accuracy_Upper QC_Accuracy_Lower Control_Limit_Code QC_Narrative 12.54 150 15 150	
NE247058000000 IM01 MERICAN, NAS MEAFF-68MW02-0317-MS NO NE2470380000000 IM01 MERICAN, NAS MEAFF-68MW02-0317-MS NO NE247038000000 IM01 MERICAN, NAS MEAFF-68MW02-0317-MS NO MERICAN, NAS MEAFF-68MW02-0317-50 NO	ONS SVOA 527_MOD ORG TAMER Test America N ONS SVOA 522_MOD ORG TAMER Test America N ONS SVOA 522_MOD ORG TAMER Test America N ONS SVOA 522_MOD ORG TAMER Test America N	ONE NA SW2535 300 MAS W 4 ONE NA SW2535 300 MS W 4 ONE NA SW2535 300 MS W 4 ONE NA SW2535 300 MS W 4	\$3,93,2017 13:05 \$0,90,2017 2017030 \$3,93,2017 13:05 \$0,90,2017 2017030 \$3,93,2017 13:05 \$0,90,2017 2017030 \$3,93,2017 13:05 \$0,90,2017 2017030	09 10:15:00 20170312 04: 09 10:15:00 20170312 04: 09 10:15:00 20170312 04:	E05:00 120:26124-3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Perfluonobutanesulfonic acid (PFRS) 1802 PFHKS Perfluonocitanoic acid (PFOA)	175-73-5 117 117 PCT_REC 1802 PFIOS 100 100 PCT_REC 135-67-1 109 109 PCT_REC	PR TRG PR SUBR PR TRG	MSA 150 50 00000000 2.5A 150 25 00000000 MSP 140 60 00000000	1
MATERIAN	005 005 105A 123,M00 2056 24445 Technorics 1 0050 0050 1050 March 2014 0050 March 2014 005	ONE NA SW2515 000 MSD W 4: ONE NA SW2515 000 MSD W 4: ONE NA SW2515 000 MSD W 4:	13,03,2027 13:05 02,04,2017 2517002 33,03,2027 13:05 03,04,2017 2517002 33,03,2027 13:05 03,04,2017 2517002	09 10:15:00 20170312 04: 09 10:15:00 20170312 04: 09 10:15:00 20170312 04:	E1100 120-5424-1 1 1 E1200 120-5424-1 1 E E1100 120-5424-2 1 E E1100 120-54234-2 1 E E1100 120-54234-2 1 E E	Perfluorocctane Sulfonate (PFOS) 13C4 PFOA 13C4 PFOS	1763-22-1 115 115 PCT_REC 13C4 PFQA 49 49 PCT_REC 13C4 PFQS 90 90 PCT_REC	M M PR TRG PR SUBR PR SUBR	MSP 14G 50 0000000 9.54 150 25 0000000 9.54 150 25 0000000	5.0 1.2 2.8 1.7 120-35124-1 120-154520 5.0 120-35124-1 120-154520 5.0 120-35124-1 120-154520
WISHTORDOXOD (INDL) MERICAN, NAS MEAFT-RIMWIGS-0317-5D NO WISHTORDOXOD (INDL) MESICAN, NAS MEAFT-RIMWIGS-0317-5D NO WISHTORDOXODO (INDL) MERICAN, NAS MEAFT-RIMWIGS-0317 NO	ONS 9/OA 527_MOD ORG TAMER Test America N ONS 9/OA 527_MOD ORG TAMER Test America N ONS 9/OA 527_MOD ORG TAMER Test America N	ONE NA SW2525 000 MSD W 4: ONE NA SW2525 000 MSD W 4: ONE NA SW2525 000 REG W 4:	\$3,937,2027 13:05 \$02,047,2017 2017300 \$3,937,2027 13:05 \$02,047,2017 2017302 \$3,937,2027 13:15 \$02,047,2017 2017302	09 10:15:00 20170312 04: 09 10:15:00 20170312 04: 09 10:15:00 20170312 04:	1:13:00 120-3:124-0 1 1 1 1 1 1 1 1 1	Perfluonobutanesulfonic acid (PFBS) 1802 PFHKS Perfluonocctanoic acid (PFOA)	175-73-5 125 125 PCT_REC 1802 PF105 66 PCT_REC 1802 PF105 66 PCT_REC 183-67-1 0.0009 0.0009 UG_3	PR TRG	MSP 150 50 0000000 2.5A 150 25 0000000 00000000	5.0 0.85 1.9 2.3 (20-54224-1) (20-545230 1.0 1 220-34224-1) (20-545230 5.0 76-04 0.0009 (0.022) (20-34224-1) (20-545230
ME247004000000 IMD01	ONS DVDA 537_MOD DRG TAMER Test America N ONS DVDA 537_MOD DRG TAMER Test America N ONS DVDA 537_MOD DRG TAMER Test America N	ONE NA SWISSS 000 BSC W 6.	33/03/2027 15:15 50/04/2017 2017000 33/03/2027 15:15 50/04/2017 2017010 33/03/2027 15:15 50/04/2017 2017010	09 10:15:00 20170312 04: 09 10:15:00 20170312 04: 09 10:15:00 20170312 04:	120:00 220:36124-4 1 1 1 120:00 220:36124-4 1 1 1 120:00 120:36124-4 1 1 1 1 1 120:00 120:36124-4 1 1 1	Perfluonocctane Sulfonate (PFOS) 13C4 PFOA 13C4 PFOS	1763-23-1 0.0028 0.0028 U.G. 1264 PFGA 37 27 PCT_REC 1264 PFGS 89 89 PCT_REC	U PR TRG PR SUBR PR SUBR	0000000 1554	5.0 0.002 (0.002) (0.002) (20.
NESATOREOSCOO INDEL MERICAN, NAS MEAST-GRANGS-0317 NO NESATOREOSCOO INDEL MEDI MERICAN, NAS MEAST-GRANGS-0317 NO MERICAN, NAS MEAST-GROW-0317 NO MERICAN, NAS MEAST-GROW-0317 NO MERICAN, NAS MEAST-GROW-0317 NO	ONS SVCA 537_MOD ORG TAMER Text America N ONS SVCA 537_MOD ORG TAMER Text America N ONS SVCA 537_MOD ORG TAMER Text America N ONS SVCA 532_SMA SVCA TAMER Text America N ONS SVCA 532_SMA SVCA TAMER Text America N ONS SVCA 532_SMA SVCA SVCA SVCA SVCA SVCA	ONE NA 5W3535 000 BBG W 6 ONE NA 5W3535 000 BBG W 6 ONE NA 5W3510C 000 BBG W 6	33/33/2027 15:15 50/66/2017 2017030 33/33/2027 15:15 50/66/2017 2017030 33/33/2027 14:00 50/64/2017 2017030	09 10:55:00 20170312 04: 09 10:55:00 20170312 04: 08 08:41:00 20170315 00:	120:00 120:36124-4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Perfluorobutanesulfonic acid (PFRS) 1802 PFICS 1,4 Oloxane	175-73-5 0.0043 0.0043 U.G.L 1802 97105 97 97 9CT, REC 123-91-1 0.57 0.57 U.G.L	PR TRG PR SUBR U U PR TRG	16.5A 150 25 0000000 00000000 000000000	5.0 20-58124-1 20-58120-2 51-55-55-55-55-55-55-55-55-55-55-55-55-5
#8247090000000 IND1	ONS SVDA \$37_MOD ORG TAMER Test America N	ONE NA SWESSES DOS REG W 4 ONE NA SWESSES DOS REG W 4 ONE NA SWESSES DOS REG W 4	\$3(94),2017 1400 \$20(94),2017 \$21(14), \$2(54),2017 14:00 \$2(54),2017 \$20170,00 \$2(54),2017 14:00 \$2(54),2017 \$21(14),00 \$2(54),2017 14:00 \$2(54),2017 \$21(14),00 \$2(54),2017 14:00 \$2(54),2017 \$2(54),00 \$2(54),2017 14:00 \$2(54),00 \$2(54),2017 14:00 \$2(54),00	08 08:41:00 20170315 00: 09 10:15:00 20170312 04: 09 10:15:00 20170312 04:	70000 (20-5620-5) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Perfluorocctanoic acid (PFOA) Perfluorocctano Suffonate (PFOS)	135-67-1 0.0019 0.0019 UG L 1763-23-1 0.0028 0.0028 UG L	U U PR TRG	2534 91 42 0000000 10000000 10000000 10000000	C
N247/0500000 (MR01 MS010000, NR) NBADDOQ, NR) NBADQ, NR) NBADQ, NR) NBADQ, NR) NR) NBADQ, NR) NR) NBADQ, NR) NR) NBADQ, NR) NBADQ, NR) NBADQ, NR) NR) NBADQ, NR) NBADQ, NR) NBADQ, NR) NR) NBADQ, NR) NBADQ, NR) NR) NBADQ, NR)	ONS SUOA 137 MOD ONE TAMER Feat America N ONS SUOA 137 MOD SNE TAMER Test America N ONS SUOA 137 MOD SNE TAMER Test America N ONS SUOA 137 MOD SNE TAMER Test America N ONS SUOA 137 MOD SNE TAMER Test America N	ONE NA SWESS 000 SEC W 4 ONE NA SWESS 000 SEC W 4 ONE NA SWESS 000 SEC W 4	\$3(94),2017 \$4500 \$20(94),2017 \$21,7012	09 10:15:00 20:70:12 04: 09 10:15:00 20:70:12 04: 09 10:15:00 20:70:12 04:	1200 (2004) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13C4 PFOX 13C4 PFOS Perfluorobutanesulfonic acid (PFBS)	13CFFOX 90 90 9C PCT_REC 13CFFOX 90 90 90 DCT_REC 175-72-5 0.0019 0.0019 UG_L	98 SURR 98 SUR U U 98 TRS	25.54 155 25 0000000 25.54 155 25 0000000 15.54 150 25 0000000	5.0 (20-55545) (20-55540 5.0 (20-55540) (20-55520 5.0 (5-64 0.000) (0.0024 (20-56224-1 (20-55520
NG24703609000 IM01 MERICIAN, NAS MEAFF-EID-GW-0317 NO NG24703609000 IM01 MERICIAN, NAS MEAFF-EID-GW-0317 NO	ONS 9VOA 8270_SIM SVOA TAMER Test America M ONS 9VOA 8270_SIM SVOA TAMER Test America M ONS 9VOA 8270_SIM SVOA TAMER Test America M ONS 9VOA 8270_SIM SVOA TAMER Test America M	ONE NA SWISSIC 000 REG W 4 ONE NA SWISSIC 000 REG W 4 ONE NA SWISSIC 000 REG W 4	23/03/2017 15:35 03/04/2017 2017030 23/03/2017 15:35 03/04/2017 2017030 23/03/2017 15:35 03/04/2017 2017030	08 08:41:00 20170315 00: 08 08:41:00 20170315 00: 09 10:15:00 20170313 04:	227500 220-26324-6 i i i i i i i i i i i i i i i i i i i	1,4-Dissane Nirobessee-CG Perflycosocrapping and (SCDA)	123-91-1 0.54 0.54 U.G.L 4555-60-0 74 74 PCT.REC 135-67-1 0.00024 0.00024 0.00024	U U PR TRG PR SURR	2.5A 21 42 0000000 0000000	
N247/0500000 (M01 M051 M550000, NA M530000, NA M5300000, NA M53000000, NA M53000000, NA M53000000, NA M530000000, NA M5300000000, NA M53000000000000000000000000000000000000	UNIS 2000 005 000 006 TAMER Test America N ONS 500A 527,MOD 006 TAMER TEST SECTION OF TEST	ONE NA SW2535 DOD BEG W 6 ONE NA SW2535 DOD BEG W 6 ONE NA SW2535 DOD BEG W 6	2010/02/27 15:25 03/64/2017 2017000 2010/02/27 15:25 03/64/2017 2017000 2010/02/27 15:25 03/64/2017 2017000 2010/02/27 15:25 03/64/2017 2017000	09 10:15:00 20170312 04: 09 10:15:00 20170312 04: 09 10:15:00 20170312 04:	125.00 120.0124-6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Perfluoroctane Sulfonate (PFOS) 13C4 PFOA 13C4 SEOS	1763-23-1 0.0029 0.0029 UG_L 1264 PGA 101 101 PCT_REC 1364 PGA 90 90 PCT_REC	U U PR TRG PR SURR PR SURR	12.5A 150 25 0000000 12.5A 150 25 0000000 15.5A 150 25 0000000	5.0 0.003 0.0023 0.0024 0.0004 1200-05140 0.0005 1500-05140 0.0005
NEXTORAGONO MOD MISSIONA AND MESTIONA AND MEAST-ERDE GW-0217 NO NEXTORAGONO MOD MESTIONA MASS MESSAT ERDE GW-0217 NO NEXTORAGONO MOD MESTIONA MASS MESSAT ERDE GW-0217 NO NEXTORAGONO MOD MESTIONA AND M	ONS SVOA 537_MOD ORG TAMER Test America N ONS SVOA 537_MOD ORG TAMER Test America N ONS SVOA 527_MOD ORG TAMER Test America N ONS SVOA 2AMER Test America N	ONE NA SW2535 000 REG W 4. ONE NA SW2535 000 REG W 4. ONE NA SW2535 000 REG W 4. ONE NA SW2530C 000 45 W 4.	\$3,03,2017 15:25 03,04/2017 2017030 \$3,03,2017 15:25 03,04/2017 2017030 \$3,03,2017 05:41 03,06/2017 2017030	09 10:15:00 20170312 04: 09 10:15:00 20170312 04: 08 08:41:00 20170314 21:	E35.00 220.26324-6 1 1 135.00 220.26324-6 1 1 106.00 (15.320.53305/2-A 1 1	Perfluorobutanesulfonic acid (PF95) 1902 PFHS 1,4 Oloxane	175-73-5 0.0019 0.0019 UG_L 1802 PFIOS 95 95 95 PCT, REC 123-91-1 32 12 PCT, REC	U U PR TRG PR SUBR M PR TRG	52.5A 150 25 0000000 15.5A 52 12 0000000	5.0 96-04 0.0009 0.0024 230 26224-1 220-154520 5.0 120-26224-1 220-154520 5.0 0.20 0.50 1.0 120-26224-1 220-15425
MESPENSECONOD (IND1) MESPERAN_NAS (CS 320-55800/2-A NO MESPENSECONOD (IND1) MESPERAN_NAS (CS 320-55800/2-A NO MESPERAN_NAS (CS 320-55800/2-A NO MESPERAN_NAS (CS 320-55800/2-A NO	Delta Delt	ONE NA SWISSIC 000 65 W 4 ONE NA SWISSIS 000 65 W 4 ONE NA SWISSIS 000 65 W 4 ONE NA SWISSIS 000 65 W 6	\$2,08,2017.08.41 02,08,2017 017000 \$2,09,2017.08.41 02,08,2017 017000 \$2,09,2017.10.15 02,09,2017 2017000 \$2,093,2017.10.15 02,09,2017 2017000	08 08:41:00 20170314 21: 09 10:15:00 20170312 03: 09 10:15:00 20170312 03:	1:06:00 (CS 320-55805(7-A 1 1 1 1 1:05:00 (CS 320-55075(7-A 1 1 1 1 1:05:00 (CS 320-55075(7-A 1 1 1 1 1 1:05:00 (CS 320-55075(7-A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Nitrobenzene-DS Perfluorocctanoic acid (PFOA) Perfluorocctane Suffonate (PFOS)	4165-60-0 75 75 PCT_REC 125-67-1 113 113 PCT_REC 1763-23-1 113 113 PCT_REC	98 SURR 98 TRG M M 98 TRG	\$1.5A 91 42 00000000 1.5A 1.40 50 00000000 1.5A 1.40 60 00000000	1
NE247006000000 [MIND] MERIDAN, NAS ICS 220-1540016/2-A NO NE24700600000 [MIND] MERIDAN, NAS ICS 220-1540016/2-A NO NE247006000000 [MIND] MERIDAN, NAS ICS 220-1540016/2-A NO	ONS 9/OA 527_MOD ORG TAMER Test America N ONS 9/OA 527_MOD ORG TAMER Test America N ONS 9/OA 527_MOD ORG TAMER Test America N	ONE NA SW2525 000 85 W 40 ONE NA SW2525 000	\$3,097,2027 10:15 \$02,097,2017 20173001 \$3,097,2027 10:15 \$02,097,2017 2017302 \$3,097,2027 10:15 \$02,097,2027 20173020	09 10:15:00 20170312 03: 09 10:15:00 20170312 03: 09 10:15:00 20170312 03:	125:00 LCS 320-554076/2-A 1 1 1 1: 125:00 LCS 320-554076/2-A 1 1 1: 125:00 LCS 320-554076/2-A 1 1 1	13C4 PFOA 13C4 PFOS Perfluonobutanesulfonic acid (PFRS)	13C4 FFGA 100 100 FCT, REC 12C4 FFGA 100 100 FCT, REC 12C4 FFGS 91 91 FCT, REC 175-75-5 12G 12G 12G FCT, REC 18C0 FFGGS 85 85 FCT, REC 18C0 FFGGS 12G	PR SUBR	15.5A	5.0 120-58124-1 120-58530 5.0 120-581220 5.0 3.92 2.0 2.5 120-58124-1 120-58630
NE247036000000 [M01] MERICAN, NAS. ICS 220-154076/2-A NO NE24703600000 [M01] MERICAN, NAS. ICSD 220-152806/3-A NO NE247036000000 [M01] MERICAN, NAS. ICSD 220-152806/3-A NO	ORG 900A 123, MOO 00G 50ME Text America N 00G 900A 123, MOO 00G 50ME Text America N 00G 900A 125, MOO 10G 50ME Text America N 00G 900A 125, MO 100A 125, MO 100A 100A 100A 100A 100A 100A 100A 100	ONE NA SW3535 000 85 W 4- ONE NA SW3510C 000 85D W 4- ONE NA SW3510C 000 85D W 4- ONE NA SW3510C 000 85D W 4-	\$3,09/2027 10:15 \$02/69/2027 2017030 \$33,08/2027 08:41 \$03/69/2027 2017030 \$3,08/2027 08:41 \$03/69/2027 2017030	09 10:15:00 20170312 03: 08 08:41:00 20170314 21: 08 08:41:00 20170314 21:	125:00 (C5 320-154076/7-A 1 1 125:00 (C50 320-15300(3-A 1 1 125:00 (C50 320-15300(3-A 1 1	18O2 PFHKS 1,4-Dioxane Nitrobessene-OS	1802 PFHOS 95 95 PCT, REC 123-91-1 11 11 PCT, REC 4165-60 71 71 PT PCT, REC	PR SUBR M PR TIRG PR SUBR M PR TIRG M PR SUBR M PR SUBR M PR M M PR M M PR M	25.54 150 25 0000000 15P 52 12 12 0000000 25.54 91 42 0000000	5.0 120-36204-1 120-555430 5.0 0.20 0.50 1.0 120-36224-1 120-55475 5.0 120-3624-1 120-56475
\$10,000,000 (85) \$10,00	ONS 9/OA 8270_SIM 5VOA TAMER Test America N ONS 9/OA 8270_SIM 5VOA TAMER Test America N ONS 9/OA 527_MOD ORG TAMER Test America N	ONE NA SWISSIGE DOD LBS W 4- ONE NA SWISSIGE DOD LBS W 4- ONE NA SWISSIGE DOD LBS W 4- ONE NA SWISSIS DOD LBS W 4-	\$3,98,700.7 08.41 03,09,701.7 20.170.0 \$3,98,700.7 08.41 03,708,701.7 20.170.0 \$3,99,700.7 10.15 03,709,701.7 20.170.0	08 08:41:00 20170314 20: 08 08:41:00 20170314 20: 09 10:15:00 20170312 03:	2-43:00 MB 320-153806/1-A 1 1 2-43:00 MB 320-153806/1-A 1 1 2:25:00 MB 320-150706/1-A 1 1	1,4-Dioxane Nitrobenzene-DS Perfluorocctanoic acid (PFDA)	123-91-1 0.50 0.50 UG_1 405-60-0 09 09 PCT_REC 125-67-1 0.002 0.002 UG_1	U PR TRG PR SURR UM PR TRG	0000000 2.5A 91 42 0000000 0000000	10
	ONS SYCIA \$37,MOD ORG TAMER Test America N ONS SYCIA \$37,MOD ORG TAMER Test America N ONS SYCIA \$37,MOD ORG TAMER Test America N ONS SYCIA \$37,MOD ORG TAMER Test America N	ONE NA 5W3535 DOD LB1 W 6 ONE NA 5W3535 DOD LB1 W 6 ONE NA 5W3535 DOD LB1 W 4 ONE NA 5W3535 DOD LB1 W 4	33/99/2017 10:5 50/99/2017 2017030 33/99/2017 10:15 50/99/2017 2017030 33/99/2017 10:15 50/99/2017 2017030	09 10:15:00 20:70312 03: 09 10:15:00 20:70312 03: 09 10:15:00 20:70312 03:	125:00 MB 320-154076/1-A 1 1 125:00 MB 320-154076/1-A 1 1 125:00 MB 320-154076/1-A 1 1	Perfluoroscitane Sulfonate (PFOS) 13C4 PFOA 13C4 PFOS	1763-23-1 0.003 0.003 U.C. 1 13C4 PPGA 105 105 PCT, REC 13C4 PPGS 88 88 PCT, REC	U PR TRG PR SUBR PR SUBR	00000000 1500 25 00000000 1500 25 00000000 1500 25 00000000 1500	5.0 0.001 0.001 0.004 (300-34204-1) 320-545430 5.0 320-34214-1 320-54530 5.0 320-34224-1 320-54520
MS217096000000 IMR01	UNIS SYLDA SEZ-BRIDU UNIU ENNIKE TREE-ARRECE IN ONS SYLDA SEZ-BRIDO ORG TAMBE Test Armetica IN ONS VICA SEZ-BRIDO ORG TAMBE TEST ARMETICA ONS VICA SEZ-BRIDO ORG TAMBE TO SEZ-BRIDO ORGANICATICAL	ONE NA SWESSES DOD LESS W 4 ONE NA SWESSES DOD LESS W 4 NATT SWESSES DOD LESS W 4	\$2,000,2017.0255 \$20,000,2017 \$20,170,000 \$20,000,2017.0255 \$20,000,2017 \$20,170,000 \$20,000,2017.11:05 \$20,006,2017 \$20,170,000 \$20,000,000,000,000 \$20,000,000,000,000 \$20,000,000,000,000 \$20,000,000,000 \$20,000,000,000 \$20,000,000,000 \$20,000,000 \$20,000,000 \$20,000,000 \$20,000,000 \$20,000,000 \$20,000,000 \$20,000 \$	09 10:15:00 20:70312 03: 09 10:15:00 20:70312 03: 14 11:99:00 20:70314 11:	7.283.0 (No. 200-154074)1-A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1802 PFHSS Dichlorodifluoromethane (Freon-12)	1902 PRIOS 95 95 PCT, REC 75-71-8 1.0 1.0 UG L	U U PR ING PR SURR U U TRG	9A/SA 150 25 0000000	5.0 94-94 0000 00025 320-5424-1 320-55420 5.0 320-5423-1 320-54520 4.2 2.34 1.0 2.0 54380 WG20342 4.2 2.34 1.0 2.0 54380 WG20342
NE247036000000 IM01 MERIDAN NAS MESON-E01-0217A NO NE24703600000 IM01 MERIDAN NAS MESON-E01-0217A NO	UNE VOA ESSOC VOA EKS EXTANDRA ANALYTICAL ONE VOA ESSOC VOA EKS EXTANDRA ANALYTICAL ONE VOA ESSOC VOA EKS EXTANDRA ANALYTICAL	WIT 1995030 000 8EG W 4 WIT 1995030 000 8EG W 4 WIT 1995030 000 8EG W 4	\$20,00,007,1155 \$20,007,007,007 \$20,007 \$20,007 \$20,00	14 11:99:00 20170314 11: 14 11:99:00 20170314 11: 14 11:99:00 20170314 11:	3930 353804 1 16900 353804 1 16900 353804 1 16900 553804 1	Viryl Chloride Bromomethane	75-01-4 1.0 1.0 UG L 75-01-9 1.0 1.0 UG L	U U TRG		4.2 0.26 1.0 2.0 St0888 WG202442 4.2 0.25 1.0 2.0 St0889 WG202442 4.2 2.49 1.0 2.0 St0889 WG202442
MESAPOSEO0000 IMD1	1500 1500	WIT SW600 000 EEG W 4 WIT SW600 000 EEG W 4 WIT SW600 000 EEG W 4	201002000 12.000 000000000 0000000000 0000000000	14 11-99-00 20170314 11: 14 11-99-00 20170314 11: 14 11-99-00 20170314 11:	10900 S16604 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Trichloroffupromethane (Freon-11) 1,1-Oichloroethene Codes (Freine)	75-69-4 1.0 1.0 UG_L 75-59-4 0.59 0.59 UG_L	U U TRG		4.2 0.24 1.0 2.0 51.080 WG30342 4.2 0.25 0.50 1.0 51.080 WG30342 4.2 0.35 0.50 1.0 51.080 WG30342
MESON MESO	1507 1508 1509	WIT SW5500 DOD BEG W 6	20/00/2017 11:05 02/06/2017 2017031 20/00/2017 11:05 02/06/2017 2017031 20/00/2017 11:05 02/06/2017 2017031	14 11:99:00 20170314 11: 14 11:99:00 20170314 11: 14 11:99:00 20170314 11:	101900 931604 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,1,2-Trichloro-1,2,2-trifluoroethane [Freor-113] Methylene chloride Anatona	75-13-1 0.50 0.50 UG_1 75-13-1 0.50 0.50 UG_1 75-09-2 2.5 2.5 UG_1	U U TRG		4.2 0.31 0.50 1.0 0.50600 WGG00342 4.2 0.31 0.50 1.0 0.50600 WGG00342 4.2 1.1 2.5 0.0 0.50600 WGG00342 4.2 1.2 0.5 0.0 0.50600 WGG00342
December	ONE 90A 2300C 90A 9X5 EATAHON ANALTICA. ONE 90A 2300C 90A 9X5 EATAHON ANALTICA. ONE 90A 2300C 90A 9X5 EATAHON ANALTICA. ONE 90A 3300C 90A 9X5 EATAHON ANALTICA.	MUT \$W5030 500 FEG W 4 MUT \$W5030 500 FEG W 4 MUT \$W5030 500 FEG W 4	33/03/2017 11:05 03/06/2017 3017031 33/03/2017 11:05 03/06/2017 3017031 33/03/2017 11:05 03/06/2017 3017031	14 11:09:00 20170314 11: 14 11:09:00 20170314 11: 14 11:09:00 20170314 11:	14900 5x1660-4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	trans-1,2-Dichlonoethene Methyl-tert-butyl ether (MTBE) 1,3-Dichlonoethane	156-60-5 0.50 0.50 UG_L 1534-04-4 0.50 0.50 UG_L 1534-04-3 0.50 0.50 UG_L	U U TRSC U U TRSC U U U U TRSC U U U U U U U U U U U U U U U U U U U		4.2 5.25 5.50 1.0 \$51880 WC20342 4.2 5.36 5.50 1.0 \$51880 WC20342 4.2 5.31 5.50 1.0 \$51880 WC20342 4.2 5.21 1.50 1.0 \$51880 WC20342
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HESTROSEGODO AMOS MATE MESTICANA, NAS MESTICA EGO - 2017A NO 05 HESTROSEGODO AMOS MATE MESTICANA, NAS MESTICANA DE 2017A NO 05 HESTROSEGODO AMOS MATE MESTICANA, NAS MESTICANA DE 2017A NO 05 HESTROSEGODO AMOS MATE MESTICANA, NAS MESTICANA DE 2017A NO 05 HESTROSEGODO AMOS MESTICANA, NAS MESTICANA DE 2017A NO 05 HESTROSEGODO AMOS MESTICANA DE 2017A NO 05 HESTROSEGODO AM	ONE VOA EAST DESTRUCTION EAST DESTRUCTION ONE VOA EAST DESTRUCTION EAST DESTRUCTION ONE VOA EAST DESTRUCTION ADMINISTRATION	WET	33,03,2017 11.05 03,66,2017 0317031- 33,03,2027 11.05 03,66,2017 3017031- 33,03,2027 11.05 03,66,2017 3017031- 33,03,2027 11.05 03,66,2017 3017031-	14 11:09:00 20170314 11: 14 11:09:00 20170314 11: 14 11:09:00 20170314 11:	14900 SK1680-4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Servane 1,2-Oichloroethane Trichloroethane	71-43-2 0.50 0.50 UG_L 107-06-2 0.50 0.50 UG_L 79-01-6 0.50 0.50 UG_L	U U TRG U U TRG U U TRG		4.2 0.26 0.50 1.0 \$45660 WG205242 4.2 0.20 0.50 1.0 \$45660 WG205242 4.2 0.28 0.50 1.0 \$45660 WG205242 4.2 0.28 0.50 1.0 \$45660 WG205242
MSS17096000000 IMRO1	ONE VOA \$15.00	WETT \$W\$5030 NOO REG W 4 WETT \$\$W\$5030 NOO REG W 4 WETT \$W\$5030 NOO REG W 4	\$3,03,2017 11.05 \$0,06,2017 \$017031 \$017031 \$03,03,2017 \$10.0017 \$	14 11:09:00 20170314 11: 14 11:09:00 20170314 11: 14 11:09:00 20170314 11:	149:00 33:160-4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,2-Oichloropropane Fromodichloromethane cis-1,3-Oichloropropene	78-87-5 0.50 0.50 UG_L 75-27-4 0.50 0.50 UG_L 10061-01-5 0.50 0.50 UG_L	U U TRG U U TRG U U TRG		4.2 5.25 8.50 1.0 943689 WG201842 4.2 5.33 8.50 1.0 943689 WG201842 4.2 5.10 5.50 1.0 943689 WG201842
NEAT-PROJECTION AND MACE MERITARY NAS MESSAGE 1621-6277A NO NEAT-PROJECTION AND MACE MERITARY NAS MESSAGE 1621-6277A NO NEAT-PROJECTION AND MACE MESSAGE 1621-6277A NO	ONE NOA 1250C NOA KAS KATANDIN ANALYTICAL	NATT \$105000 000 86G W 6 NATT \$105000 000 86G W 6 NATT \$105000 000 86G W 6	\$3,03,205711.05 03,66,2017 3017031 \$3,03,205711.05 03,66,2017 3017031 \$3,03,205711.05 03,66,2017 5017031	14 11:09:00 20170314 11: 14 11:09:00 20170314 11: 14 11:09:00 20170314 11:	14900 SISB0-4 1 1 1 14900 SISB0-4 1 1 14900 SISB0-4 1 1	Toluene 4-Methyl-2-gentanone trans-1,3-Olchloropropene	10061-01-5 0.50 0.50 UG_L 108-08-3 0.50 0.50 UG_L 108-10-1 2.5 2.5 UG_L 10061-02-6 0.50 0.50 UG_L	U TRG U TRG U U TRG U U TRG		4.2 5.27 5.50 1.0 \$25680 WG202342
N6247016D9000 JM01 MERIDIAN_NAS MESOR-EB01-0217A NO	ONE YOA 1250C YOA EAS EATAHERIN AMALTECAL ONE YOA 2550C YOA EAS EATAHERIN AMALTECAL ONE YOA 1250C YOA EAS EATAHERIN AMALTECAL ONE YOA 1250C YOA EAS EATAHERIN AMALTECAL	WETT \$545000 \$000 REG W 4 WETT \$345000 \$000 REG W 4 WETT \$345000 \$000 REG W 4	33,03,202.71.05 03,66,2017 0317031 52,03,201.71.05 03,66,2017 3017031 53,03,200.71.05 03,66,2017 3017031	14 11:49:00 20170314 11: 14 11:49:00 20170314 11: 14 11:49:00 20170314 11:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,1,2-Trichloroethane Tetrachloroethene Olbromochloromethane	79-00-5 0.50 0.50 UG_L 127-18-4 0.50 0.50 UG_L 124-48-1 0.50 0.50 UG_L	U U TRG U U TRG U TRG		4.2 9.33 9.50 1.0 \$51680 MC202142
NESTROSCOCOO (MICH MESICAN), NAS MESSE (ED-2017A NO DE SERVICIO (ED-201	UNIS 190A 1830C NOS ISA (ATAMENIN AMALTECAL ONE 10A 1820C NOS ISA (AS EATAMENIN AMALTECAL ONE 10A 1830C NOS ISA (AS EATAMENIN AMALTECAL ONE 10A 1830C NOS ISA (AS EATAMENIN AMALTECAL NOS (AS EATA	WET \$505000 000 REG W 6	Hayd,20271.05 03/66/2017 017031 2303/20171.05 03/66/2017 107031 33/03/20171.105 03/66/2017 2017031	10 11-09:00 20170314 11: 14 11-09:00 20170314 11: 14 11-09:00 20170314 11:	DEPOID STARGE-4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,2 Obromoethane 2-Hexanone Chlorobersane	108-46-4 0.50 0.50 UG_L 591-78-6 2.5 2.5 UG_L 108-00-7 0.50 0.50 UG_L	UL TRG UU U U U U U U U U U U U U U U U U U		4.2 0.22 0.50 1.0 90.080 90.000142
NG24705609000 JM01 MERICIAN_NAS MESOB-ER01-0217A NO NG24705609000 JM01 MERICIAN_NAS MESOB-ER01-0217A NO	FLIA	100 100	1017031 1303/2057 11.05 0.1062/2017 1017031 1303/2057 11.05 0.1062/2017 1017031 1303/2057 11.05 0.1062/2017 1017031 1303/2057 11.05 0.1062/2017 1017031	11/09/30 20170214 11: 14 11/9/30 20170314 11: 14 11/9/30 20170314 11:	DATEGO-6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Styrene Styrene Bromoform	0.50 0.50 0.51 0.51 0.52	U 1865 U U 1765 U U 1765		H_L
MICHARD MIRCE MI	1	1	33(3)(20)7 11.95 03(6)(2017 3017031- 33(3)(20)7 11.95 03(6)(2017 3017031- 33(3)(20)7 11.95 03(6)(2017 3017031- 33(3)(20)7 11.95 03(6)(2017 3017031-	16 11:99:00 20170314 11: 14 11:99:00 20170314 11: 14 11:99:00 20170314 11:	#A 4900*** I I I 1 1 1 1 1 1 1 1	1,1,2,2-Tetrachicroethane 1,3-Oichlorobenzene 1,4-Oichlorobenzene	13-9-5 0.50 0.50 UG_L 141-73-1 0.50 0.50 UG_L 141-73-1 0.50 0.50 UG_L	- P TRS 1 TR		
MEST/00060000 Motil	MA		30,102,007 11.05 03,062,017 30.17031 33,03,007 11.05 03,062,017 30.17031 33,03,007 11.05 03,062,0017 30.17031	14 11/82/00 2017/0314 11: 14 11/82/00 2017/0314 11: 14 11/82/00 2017/0314 11:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,2-Okthorobenzene 1,2-Okthorobenzene 1,2-Okthorobenzene 1,2-Okthorobenzene	95-50-1 0.50 0.50 UC_L 95-12-8 1.0 1.0 UC_L 100-12-1 0.50 0.50	- 1996 0 0 1955 0 1955 0 1956		*** **** **** **** **** **** **** **** ****
NE2H7016D9000 IM01 MERIDIAN_NAS MESOB-EB01-0217A NO	1000		3017031- 3013027 11:05 02/06/2017 3017031- 33/03/2017 11:05 03/06/2017 3017031- 33/03/2017 11:05 03/06/2017 3017031-	14 11:92:00 20170314 11: 14 11:92:00 20170314 11: 14 11:92:00 20170314 11:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Methyl acetate Methyl acetate Methylopiohexane Fromochlopy-methyne	79-20-9 0.75 0.75 UG_L 108-87-2 0.50 0.50 UG_L 14-97-5 0.50 0.50 UG_L	U U 1965 U U 1965 U U 1965		## #250 120 Stores ##250122 4.2 5.53 5.75 1.0 Stores ##250122 4.2 9.30 5.50 1.0 Stores ##250122 4.2 9.30 5.50 1.0 Stores ##250122 4.2 9.31 5.50 1.0 Stores ##250122
NEXT-0705050000 IAMOI MESICAN, RAS MESIDE-2001-0217A NO NEXT-070500000 IAMOI MESICAN, RAS MESIDE-2001-0217A NO NEXT-070500000 IAMOI MESICAN, RAS MESIDE-2001-0217A NO NEXT-0705000000 IAMOI MESICAN, RAS MESIDE-2001-0217A NO NEXT-07050000000000000000000000000000000000	UNE VOA E350C VOA EAS EATANGEN ANALYTICAL ONE VOA E350C VOA EAS EATANGEN ANALYTICAL	WIT SW5030 000 8EG W 6 WIT SW5030 000 8EG W 6 WIT SW5030 000 8EG W 6	24/04/2017 11:05 04/04/2017 01:01:01:01 24/04/2017 10:05 04/04/2017 01:01:01:01 24/04/2017 11:05 04/04/2017 01:01:01 24/04/2017 11:05 04/04/2017 01:01:01	14 11:49:00 20170314 11: 14 11:49:00 20170314 11: 14 11:49:00 20170314 11:	1:49:00 SK1680-4 1 1 1	D Xylene th- and p Xylene	195-17-6 0.50 0.50 0.50 0.61 195-17-6 0.50 0.50 0.61 INSPIRED 1.0 1.0 0.61	U U ING U U TRG		4.2 0.24 0.50 1.0 0.0000 WG201442 4.2 0.25 0.50 1.0 0.0000 WG201442 4.2 0.59 1.0 2.0 0.0000 WG201442 4.2 0.59 1.0 2.0 0.0000 WG201442
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NE24705600000 IM01 MERICAN_NAS MESOR-FO04-0217A NO NE24705600000 IM01 MERICAN_NAS MESOR-FO04-0217A NO NE24705600000 IM01 MERICAN_NAS MESOR-FO04-0217A NO MERICANDO00000 IM01 MERICAN NAS MESOR-FO04-0217A NO	ONE VOA E260C ICIA KAS KATANDIN ANALYTICAL ONE VOA E260C ICIA KAS KATANDIN ANALYTICAL ONE VOA E260C ICIA KAS KATANDIN ANALYTICAL	58Y 5W5035 NAD 86G 5 6 08Y 5W5035 NAD 86G 5 6 08Y 5W5035 000 86G 5 6	\$3,03,2027 60:00 \$2,06,2017 \$2017031 \$3,03,0027 60:00 \$23,06,2017 \$2017031 \$20,0027 60:00 \$23,06,2017 \$2017031	17 15:47:00 20170317 15: 17 15:47:00 20170317 15: 10 15:45:00 20170310 15:	E1750 SEED-28A I 2 34.445 11750 SEED-28A I 2 34.445 11750 SEED-28A I 2 34.445 14550 SEED-28 I 1 34.445	Dichlorodifluoromethane (Freon-12) Chloromethane Chloromethane	75-71-8 6.0 6.0 UG_NG 74-87-3 6.0 6.0 UG_NG 74-87-3 7.5 7.5 UG_NG	U U TRG		4.2 1.1 1.0 12. SK1680 MG201529 4.2 1.7 6.0 12. SK1680 MG201529 4.2 1.1 7.5 15. SK1680 MG20121
NEXPOSECRODO (MINO) MERCIANA, NAS MESCRI ECON 6217A IN OR NEXPOSECRODO (MINO) MERCIANA, NAS DECEMBERON 6217A IN OR MERCIANA, NAS DECEMBERON 6217A IN OR MERCIANA, NAS DECEMBERON 6217A IN OR MERCIANA, NAS MESCRI ECON 6217A IN OR NEXPOSECRODO (MINO) MERCIANA, NAS MESCRI ECON 6217A IN OR NEXPOSECRODO (MINO) MESCRI ECON NEXPOSECRODO (MINO) M	ONE VOA 2500C VOA EAS ATAHORIA ANALYTICAL ONE VOA EASC VO	SRY SW5035 000 EEG 5 4 DRY SW5035 NAD BEG 5 4 DRY SW5035 000 BEG 5 4	\$2,037,037,000.00 \$2,067,2017 \$317031 \$3,037,037,000 \$52,067,2017 \$317031 \$3,037,037,700.00 \$43,067,2017 \$317031 \$3,037,037,700.00 \$43,067,2017 \$20,7031	10 15:45:00 20170310 15: 17 15:17:00 20170317 15: 10 15:45:00 20170310 15:	04500 \$3160-2 1 1 34.445 12700 \$8160-28A 1 2 34.445 10500 \$3160-2 1 1 34.445	Viryl chloride Viryl chloride Eromomethane	75-01-4 7.5 7.5 UG_NG 25-01-4 6.0 6.0 UG_NG 24-83-9 7.5 7.5 UG_NG	U U TRG U U TRG U U TRG		2
NESAT006000000 (M001 MERICAN, NAS MESOR-FOOR-0217A NO NESAT006000000 (M001 MERICAN, NAS MESOR-FOOR-0217A NO NESAT006000000 (M001 MERICAN, NAS MESOR-FOOR-0217A NO MESOR-FOOR-0217A NO	ONE VOA ESSOC VOA EKS EATAHOSK ANALYTICAL ONE VOA ESSOC VOA EKS KATAHOSK ANALYTICAL ONE VOA ESSOC VOA EKS EATAHOSK ANALYTICAL	DRY SW5035 BAO BEC 5 6	33/03/2027 00:00 53/06/2017 2017031 53/03/2017 00:00 53/06/2017 2017031 53/03/2017 00:00 53/06/2017 2017031	17 15:17:00 20170317 15: 17 15:17:00 20170317 15: 10 15:45:00 20170310 15:	127500 SICERO-SRA 1 2 34.445 127700 SICERO-SRA 1 2 34.445 14500 SICERO-SRA 1 1 1 14.445	Bromomethane Chlorcethane Chlorcethane	74-83-9 6.0 6.0 UG_KG 75-00-3 6.0 6.0 UG_KG 75-00-3 7.5 7.5 UG_KG	U TRG U U TRG U U TRG		4.2 1.3 5.0 12. S51580 WG205289 4.2 1.6 4.0 12 S51580 WG205289 4.2 2.0 7.5 15. S51580 WG20122
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NEGATIOSOCIOCO JAMOS MESSONA, RAS MESSONA, RAS AMESSONA, R	1004 1005 1004 1005 1004 1005 1004 1005	100 100	\$40,00,000 000 0000000000000000000000000	10 1545:00 20170310 15: 17 15:17:00 20170317 15: 17 15:17:00 20170317 15: 10 15:45:00 20170317 15:	100000 BASBED-28 1 1 H-045 117000 BASBED-28A 1 2 14.45 117000 BASBED-28A 1 2 14.45 117000 BASBED-28A 1 2 14.45	1,1,2-Trichloro-1,2,2-trifluoroethane [Feon-113] 1,1,2-Trichloro-1,2,2-trifluoroethane [Feon-113] Methylene chloride Methylene chloride	76-13-1 3.8 3.8 UG_KG 76-13-1 3.0 3.0 UG_KG 75-03-2 15 15 UG_KG	U U TRG U U TRG		1
NEST-90460000 (MM) METERAN NEST-9046000 (MM) METERAN NES METER-904-0177A NES METER-904	ONE VOA E260C VOA EAS EATAHOIN ANALYTICAL ONE VOA E260C VOA EAS EATAHOIN ANALYTICAL ONE VOA EASOC VOA EAS EATAHOIN ANALYTICAL	ORY SW5035 DAD REG 5 6 ORY SW5035 D00 REG 5 6 ORY SW5035 D00 REG 5 6 ORY SW5035 D00 REG 5 6	\$2,03,2017 60:00 \$2,06(2017 2017031) \$2,03,2017 60:00 \$23,06(2017 2017031) \$2,03,2017 60:00 \$23,06(2017 2017031) \$2,03,03,03,03,04(2017 2017031) \$2,03,03,03,03,04(2017 2017031)	10 15:45:00 20170310 15: 17 15:17:00 20170317 15: 10 15:45:00 20170310 15: 17 15:17:00 20170317 15:	E1700 SCI60-28A I 2 34.445 E4500 SCI60-2 I I 34.445 E4700 SCI60-29A I 2 34.445	Acetone Acetone trans. 1.2.0ichlonosthene	75-09-2 19 19 UG-XG 67-64-1 22 23 UG-XG 67-64-1 70 UG-XG 15-64-0-5 1.0 10 UG-XG	TRG TRG TRG		4.2 6.1 15. 20. \$13680 WG205299 4.2 7.6 29. 38. \$15680 WG20529 4.2 196. 3.0 6.0 \$15680 WG205239
NE24701609000 IM01 MERIDIAN_NAS MESOS-FD08-0217A NO	ONE VOA E260C VOA EAS EATAHOIN ANALYTICAL ONE VOA E260C VOA EAS EATAHOIN ANALYTICAL ONE VOA EASOC VOA EAS EATAHOIN ANALYTICAL	ORY SW5035 000 85G 5 6 ORY SW5035 000 85G 5 6 ORY SW5035 000 85G 5 6	\$3,03,2017 60:00 \$3,06/2017 \$2017031 \$3,03,2017 60:00 \$3,06/2017 \$2017031 \$3,03,2017 60:00 \$3,06/2017 \$2017031	17 15:47:00 20170317 15: 10 15:45:00 20170310 15: 10 15:45:00 20170310 15: 17 15:47:00 20170317 15:	045.00 SCI60-2 I I 34.445 045.00 SCI60-2 I I 34.445 045.00 SCI60-204 I I 34.445	trans-1,2 Olchloroethene Methyl-tert-butyl ether (MTBE) Methyl-tert-butyl ether (MTBE)	155-60-5 1.0 3.0 UG_KG 155-60-5 1.8 3.8 UG_KG 1554-00-4 3.8 3.8 UG_KG 1554-00-4 3.0 3.0 UG_KG	U U TRG		4.2 1.1 1.8 7.5 SCIGRO WG20123 4.2 1.6 1.8 7.5 SGIGRO WG20123 4.2 1.3 1.0 4.0 SGIGRO WG20123 4.2 1.3 1.0 4.0 SGIGRO WG20123
MISSARGERORDO IMPO	ONE VDA E260C VDA EAS EATAHDIN ANALYTICAL ONE VDA E260C VDA EAS EATAHDIN ANALYTICAL ONE VDA EAS EATAHDIN ANALYTICAL	58Y 5W5035 BAD 86G 5 8 58Y 5W5035 000 86G 5 6 58Y 5W5035 000 86G 5 6	\$3,03,2027 60:00 \$2,06,2017 \$2017031 \$3,03,0027 60:00 \$23,06,2017 \$2017031 \$20,0027 60:00 \$23,06,2017 \$2017031	17 15:17:00 20170317 15: 10 15:45:00 20170310 15: 10 15:45:00 20170310 15:	E1750 SEED-28A I 2 34.445 04500 SEED-2 I 1 34.445 04500 SEED-2 I 1 34.445	1,1-Oichloroethane 1,1-Oichloroethane cis-1,2-Oichloroethene	75-34-3 11 11 UG_NG 75-34-3 10 10 UG_NG 156-59-2 3.8 3.8 UG_NG	TRG TRG TRG		4.2 2.0 1.0 6.0 SK1680 MG201239 4.2 2.6 1.8 7.5 SK1680 MG201231 4.2 1.4 1.8 7.5 SK1680 MG201231
96247396000000 (M01) MERDAN_NAS MESOR-FOOR-0217A NO 9624739600000 (M01) MMS10AN_NAS MESOR-FOOR-0217A NO 9624739600000 (M01) MESORAN_NAS MESOR-FOOR-0217A NO 9624739600000 (M01) MESORAN_NAS MESOR-FOOR-0217A NO	ONE VOA 2500C VOA EAS ATAHORIA ANALYTICAL ONE VOA EASC VO	SRY SW5035 AA0 EEG 5 4 0RY SW5035 000 REG 5 4 0RY SW5035 AA0 REG 5 4	\$2,037,037,000.00 \$2,067,2017 \$31703,101 \$3,037,037,000 \$52,067,2017 \$31703,101 \$3,037,037,037,000 \$42,067,2017 \$31703,101 \$3,037,037,000,00 \$42,067,2017 \$31703,1	17 15:17:00 20170317 15: 10 15:45:00 20170310 15: 17 15:17:00 20170317 15:	1:17:00 \$32,680-28A 1 2 34,445 1:45:00 \$81,680-2 1 1 34,445 1:17:00 \$31,680-28A 1 2 34,445	cis-1,2 Oichloroethene Obloroform Obloroform	156-59-2 1.0 1.0 UG NG 67-66-3 1.8 1.8 UG NG 67-66-3 1.0 1.0 UG NG	U U TRG U U TRG U U TRG		4.2 1.1 1.0 4.0 93480 MC200329 4.2 0.52 1.8 7.5 93480 MC200121 4.2 0.42 1.0 6.0 93490 MC200122
NE247080000000 [MIND1 MERIDAN, NAS MESSIR-FOOR-0217A NO NE247080000000 [MIND1 MESIDAN_NAS MESSIR-FOOR-0217A NO NE247080000000 [MIND1 MESIDAN, NAS MESSIR-FOOR-0217A NO	ONE VOA ESSOC VOA EAS EATAHORIN ANNLYTICAL ONE VOA ESSOC VOA EAS EATAHORIN ANNLYTICAL ONE VOA EAS EATAHORIN ANNLYTICAL	DRY SW5035 BAO BEG 5 4	\$3,93,2057 00:00 \$03,66,7017 \$017031 \$3,93,2057 00:00 \$03,66,7017 \$017031 \$3,93,2057 00:00 \$03,66,7017 \$017031	17 15:17:00 20170317 15: 10 15:45:00 20170310 15: 17 15:17:00 20170317 15:	1:17:00 SIGMO-38A 1 2 34.445 0:45:00 SIGMO-2 1 1 34.445 1:17:00 SIGMO-38A 1 2 34.445	Carbon tetrachloride Carbon tetrachloride 1,1,1-Trichloroethane	\$6-23-5 1.0 1.0 UG_NG \$6-23-5 1.8 1.8 UG_NG 71-65-6 1.0 1.0 UG_NG	U U TRG U TRG U U TRG U U TRG TRG		4.2 1.6 1.0 6.0 \$41680 WG200239 4.2 2.0 1.8 7.5 \$4060 WG200221 4.2 0.50 3.0 6.0 \$41680 WG200239
NESAT006000000 (M001 MERICAN, NAS MESOR-FOOR-0217A NO NESAT006000000 (M001 MERICAN, NAS MESOR-FOOR-0217A NO NESAT006000000 (M001 MERICAN, NAS MESOR-FOOR-0217A NO MESOR-FOOR-0217A NO	ONE VOA ESSOC VOA EKS EATAHOSK ANALYTICAL ONE VOA ESSOC VOA EKS KATAHOSK ANALYTICAL ONE VOA ESSOC VOA EKS EATAHOSK ANALYTICAL	DRY	33/03/2027 00:00 53/06/2017 2017031 53/03/2017 00:00 53/06/2017 2017031 53/03/2017 00:00 53/06/2017 2017031	10 15:45:00 20170310 15: 17 15:17:00 20170317 15: 10 15:45:00 20170310 15:	CHS.00 SICIBIO-2 1 1 34.445 12/700 SICIBIO-28A 1 2 34.445 1-15:00 SICIBIO-2 1 1 34.445	1,1,1-Trichloroethane 2-Butanone 2-Butanone	71:55-6 3.8 3.8 0.6_KG 78:93-3 15 15 0.6_KG 78:93-3 19 19 0.6_KG	U TRG U U TRG U U TRG		4.2 0.63 1.8 7.5 541600 WG20121 4.2 7.1 15 0. 94360 WG20122 4.2 8.8 39 18 541600 WG20122
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NI24703659000 IM01 MESIGAN, NAS MESIGEO0-0217A NO NI24703659000 IM01 MESIGAN, NAS MESIGEO-0217A NO NI24703659000 IM01 MESIGAN, NAS MESIGE-00-0217A NO	UNIS 1530 (YOA EAS EATAHON ANALYTICAL ONE YOA EAS EATAHON ANALYTICAL ONE YOA EASOC YOA NA EAS EATAHON ANALYTICAL ONE YOA EASOC YOA NAS EATAHON ANALYTICAL ONE YOA EASOC YOA	DBW \$500055 BAO REG 5 6 1000	May 14,047 00:00 03,062,2017 2017031 33,031,031 00:00 03,062,2017 307031 33,032,0017 00:00 03,062,2017 3017031	17 15:17:00 20170317 15: 17 15:17:00 20170317 15: 10 15:45:00 20170310 15:	CLYAND STATEGO-DAN 1 2 34.445 11700 STATEGO-DAN 1 2 34.445 12500 STATEGO-D 1 1 34.445	Cyclohexane 1,2-Oichloroethane 1,3-Oichloroethane	100-06-7 120 120 UG_NG 107-06-2 3.0 3.0 UG_NG 107-06-2 3.8 3.8 UG_NG	110.6 U 110.6 U 110.6		
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MESTPOSICO0000 MICE]	ONE VIDA \$250C VIDA \$60.5 \$67.74 (EM.)	DRY \$W5035 MAD REG 5 4	03/03/2017 00:00 03/06/2017 2017031	17 15:17:00 20170317 15:	121700 121800-28A 2 14.445 12.700 12.81800-28A 3 2 14.445 12.81800-28A 3 4 14.445 12.81800-28A 3 4 14.445 12.81800-28A 3 2 34.445 14.445 12.81800-28A 3 2 34.445 12.81800-28A 3 2 34.445 12.81800-28A 3 2 34.445 3	1,4-Oichlorobenzene 1,4-Oichlorobenzene 1,2-Oichlorobenzene	106-46-7 1.2 1.2 UG_NG 106-46-7 1.0 1.0 UG_NG 15-50-1 1.0 1.0 UG_NG	1 1 1965 1 1 1 1965 0 0 1965		4.2 3.53 1.0 4.0 \$43680 WC205559 4.2 3.66 1.8 7.5 \$45680 WC205559 4.2 5.94 1.0 6.0 \$55680 WC205121 4.2 5.94 1.0 6.0 \$55680 WC205129
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TRIAN PRODUCTION (MIND) MESSIGNAN ALS MESSIGN CON-0217A (C) C) AND	ONE YOA 1500C COA AS GATANION AMALTICAL ONE YOA 1500C COA AS GATANION AMALTICAL CONE YOA 1500C COA AS GATANION AMALTICAL CONE YOA 1500C COA AS ATANION AMALTICAL	50Y \$505035 AA0 REG 5 6 6 50Y \$505035 AA0 REG 5 6 6 50Y \$505035 AA0 REG 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Hay-3/2017 00:00 03/66/2017 017031 33/33/2017 00:00 03/66/2017 017031 33/33/2017 00:00 03/66/2017 3017031	17 15-17-00 20170317 15: 10 15-85-00 20170310 15: 17 15-17-00 20170317 15:	12700 SEEGO 2004 E 2 M-445 64500 SEEGO 2 E E M-445 12700 SEEGO 2004 E 2 M-445	Toluene-OS Toluene-OS 1,2-Oichloroethane-d4	2017-26-5 95.2 95.2 PCT 2017-26-5 91.7 91.7 PCT 1706-07-0 81.5 81.5 PCT	SURK	ACA 115 MS 20003100 15.54 155 MS 20003100 15.54 200 20003100 15.54 200 20003100	4.2 9 9 \$61,990 MC2052539 4.2 0 9 9 \$61,990 MC2002529 4.2 0 9 9 \$61,990 MC2002529 4.2 9 9 9 \$61,990 MC2002539
9434705600000 (MADS) MESTEAM, NAS MESTEAM, NAS MESTEA FOOK 0217A NO NAS PROPRIO (MADS) MESTEAM, NAS MESTEAM, NAS PORTO (MAS) NAS PORTO (MAS) MESTEAM, NAS MESTEAM, NAS PORTO (MADS) NAS MESTEAM, NAS MES	ONE VOA EAS EXTANDRA ADMITTICAL ONE VOA EAG EATANDRA ADMITTICAL	100 100	Hary-MARIA F 900000 ENERGE 20217 20170314 33,931,70317 90000 03,906,72017 30170314 33,931,7017 90000 03,066,72017 20170314 33,931,7017 90000 03,066,72017 20170314	17 15:17:00 20:10:10:1 15:10:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:15:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:10:1 15:10:1	15.1160-2 1 1 36.445 0.6500 \$31660-2 1 1 1 36.445 1.1700 \$31600-29A 1 2 36.445 1.0500 \$31600-29A 1 2 36.445	Dibromofluoromethane	2898*30*7 200. 200. PC1	SURR	m3A 148 TS 20093101 54A 130 64 20093101 55A 130 64 20093101	6.4 9 9 9 \$51,580 \$67,092121
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NG37050200000 AND1	ONE 190A 1350C 190A 195 EATAHON AMALTECAL	DRY SW0035 DAG REG 5 4	30,03,20170625 03,062,2017 3017031 30,03,20170625 03,062,2017 3017031 30,03,20170625 03,062,2017 3017031 31303,20170625 03,062,2017 3017031	17 14-29-00 20170317 14: 10 15-08-00 20170310 15: 17 14-29-00 20170310 15: 10 15-08-00 20170310 15: 17 14-29-00 20170310 15: 17 14-29-00 20170310 15: 10 15-08-00 20170310 15:	1 2 35.472 10000 S1460-1 1 1 34.771 12500 S1460-10A 1 2 34.771 10000 S1460-10A 1 1 2 34.771	Chloromethane Vinyl chloride Vinyl chloride Einomomethane	7847-3 7.5 7.5 0.6 kG 7501-4 6.5 6.5 0.6 kG 7501-4 7.5 7.5 0.6 kG 7443-9 6.5 6.5 0.6 kG 7443-9 7.5 7.5 0.6 kG 7500-3 6.5 6.5 0.6 kG	0 0 1992 0 0 1965 0 0 1965 0 0 1965		4.2 1.1 6.5 12. SC1500 PWL025497 4.2 1.1 6.5 12. SC1500 PWL025497 4.2 1.3 7.5 15. SC1500 PWL025539 4.2 1.4 6.5 19. SC1500 PWL025539 4.2 1.4 6.5 19. SC1500 PWL025539
NEXT ADDRESSANCE NEXT N	UNI 100A 1300C 100A 100 100 100 100 100 100 100 100 10	DET \$1000005 DAD REG 5 4	03/03/2017 09:25 03/06/2017 00:7033 03/03/2017 09:25 03/06/2017 00:7033 03/03/2017 09:25 03/06/2017 00:7030 03/03/2017 09:25 03/06/2017	10 15:08:00 20170317 14: 17 14:29:00 20170317 14: 10 15:08:00 20170310 15: 17 14:29:00 20170317 14:	19900 STIGGO DRA 1 2 34.771 10000 STIGGO DRA 1 1 3 44.771 100000 STIGGO 1 1 1 34.771			U U 1965 U U 1965 U U 1965		4.2 1.6 7.5 15. SC1580 WC205259 4.2 1.7 8.5 13. SC1580 WC205259 4.2 2.0 7.5 15. SC1580 WC2052519
MEST/050500000 MR01	DME	2007 2000	\$3,03,2017.09:25 03,66(2017 0017031 \$3,03,0317.09:25 03,66(2017 0017031 \$3,03,2037.09:25 03,06(2017 0017031) \$3,03,2037.09:25 03,06(2017 0017031)	17 14-39-00 20170317 14: 10 15-08-00 20170310 15: 10 15-08-00 20170310 15:	E2900 BX1680-1RA 1 2 M-271 C0000 BX1680-1 1 1 M-271 C0000 BX1680-1 1 1 M-271	Trichlorofluoromethane (Feeor-11) Trichlorofluoromethane (Feeor-11) 1,1-Oichloroethene	75-69-4 7.5 7.5 UG_NG 75-69-4 6.5 6.5 UG_NG 75-25-4 1.2 1.2 UG_NG	U U 1965 U U 1965 U U 1965		4.2 1.4 7.5 15. \$45600 MC200559 4.2 1.2 8.5 13. \$4560 MC200529 4.2 1.2 1.3 15. \$4560 MC200121 4.2 1.2 1.3 1.5 \$4560 MC200121
\$12 - \$10,000 \$10,000 \$10 \$10,000 \$10,	100 100	Der 0.00035 0.00 0.00 5 6 4	30(3)(2)(7)(2)(3)(3)(3)(3)(3)(3)(3)(3)(3)(3)(3)(3)(3)	107 14:39:00 20170317 14: 177 14:39:00 20170317 14: 100 15:08:00 20170310 15: 17 14:39:00 20170317 14: 101 15:08:00 20170317 14: 17 14:39:00 20170317 14:	1,000 1,00	1,1-Oscida openina 1,1-Oscida openina 1,1-Oscida openina Carbon disulfide Carbon disulfide 1,1,2-Sicidico-1,2-trifluoroethane (Freor-11) 1,2-Sicidico-1,2-trifluoroethane (Freor-11)	\$\frac{1}{2}\text{0.05} \\ \frac{1}{2}\text{0.05} \\ \frac{1}\text{0.05} \\ \frac{1}{2}\text{0.05} \\ \frac{1}\text{0.05} \\ \frac{1}\text{0.05} \\ \frac{1}\text{0.05} \\ \	U TRG		C
MERCHAN NAS MESCAN SAS NO.	ONE VOA \$250C VOA KAS KATAHON ANALYTICAL	DRY SW5025 RAD REG 5 4	33/03/2017 09:25 03/06/2017 2017031	17 14:39:00 20170317 14:	E39:00 SK1680-18A 1 2 34.271	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	26-13-1 3.8 3.8 UG_RG	U U TRG		42 1.4 1.8 7.5 S1580 WG201539

Gentral_D	Hotol DEC Code Lab Code Lab Code Lab Code Lab Code	def One Securities Searchine Securities	13.271 Methylene charde 15-09-2 16 16 10, 6G U U 116.5	MOX Detection_Libral QSM_Version St. LOO LOO SOC Analysis_Batch Validator_Name 4.2 5.0 15. 12. 5.1
MAX-7956600000 JANO1	IGA	\$ 0,062/2017 02/2017 14:29:00 12/2017 14:29:00 12/2017 14:29:00 12/2017 14:29:00 12/2017 14:29:00 12/2017 14:29:00 12/2017 15:00	Section Sect	1
March Marc	Col.	0000/2017 0000	1	4.2 1.4 2.2 1.5 K1880 WGG01121 4.2 1.4 2.2 1.5 K1880 WGG01121 4.2 1.2 1.5 K1880 WGG01121 4.2 1.6 1.8 7.5 K1880 WGG01121 4.2 1.6 1.8 7.5 K1880 WGG01121
MARTINGEORODO JANO MARTINGAN, MAS MESSA 422-0708A MONE MON MON 200	VOA	5 00/66/2017 00173317 14:29:00 20173317 14:29:00 20173317 14:29:00 20173317 14:29:00 20173317 14:29:00 20173310 15:06:00	2.0 0.1 Oktober 0.0 0.1 0.	4.2 1.4 1.8 7.5 \$4180 WC201539 4.2 1.2 1.2 1.5 \$4180 WC201539 4.2 1.2 1.2 1.5 \$4180 WC201521 4.2 1.52 1.8 7.5 \$4180 WC201523 4.2 1.56 1.2 1.5 \$4180 WC201523 4.2 1.66 1.2 1.5 \$4180 WC201523
MEAT-0705000000	OSA	\$ 0,046/2017 0175010 150800 2070101 550800 951805 1 5 - 0,046/2017 0175010 150800 207011 562800 951805 1 5 - 0,046/2017 0175010 150800 2070101 562800 951805 1 5 - 0,046/2017 0175010 150800 2070101 562800 951805 1 5	271	42 17 12 65 KHABO WGD0121 42 10 18 75 KHABO WGD0121 42 655 12 85 KHABO WGD0121
NELTONIAGONO JAMES MEDICAN, NAS. MEDICAN JAMES MEDICAN JAM	VOA	5 00/66/2017 D0173317 14-29-00 20170317 14-29-00	2.15 C. A. Managaran C.	1
NEXT VEX. NEXT VEX. NEXT VEX.	FOA	5 0064/2017 0073017 14-99:00 10070017 44-99:00 151860-004 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10	42 1.4 1.8 7.5 KHASO WG20539 42 1.8 1.2 6.5 KHASO WG20539 42 1.1 1.8 7.5 KHASO WG20539
CALT-TOLOGODE CALT	COL		1	4.2 1.5 2.8 2.5 K1880 WG00122 4.2 1.5 2.8 2.5 K1880 WG00122 4.2 0.77 2.2 6.5 K1880 WG00122 4.2 0.88 3.8 2.5 K1880 WG00122 4.2 0.88 3.8 2.5 K1880 WG00122
	IGA BAS BATANDRI AMETTICAL SINY WINDES MAO REG 5 6 33/03 1 1 1 1 1 1 1 1 1	5 0)(6/2017 20170317 14:39.00 10170317 14:39.00 120170317 14:39.00 120170317 14:39.00 120170317 14:39.00 120170317 14:39.00 120170310 120170310 120170310 120170310 120170310 120170317 14:39.00 120170317	1	6.2 2.1 1.8 7.5 X1580 WC230539 6.2 1.8 1.2 6.5 X1580 WC230539 6.2 1.8 1.2 6.5 X1580 WC230539 6.2 1.8 7.5 X1580 WC230539
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MEAT-0705000000	OSA	\$ 0,064/2017 0175010 150800 2077010 556800 95180-1 E C	571 Section 1744 1 1 2 2 2 2 2 2 2 2	42 1.6 12 6.5 KHASO WGD0121 42 1.1 1.2 6.5 KHASO WGD0121 42 1.3 1.8 7.5 KHASO WGD0121 42 1.3 1.8 7.5 KHASO WGD0129
NEST/201600000 IM01 MERIDAN NAS MESOSSO/2016A NONE VOA 1250C	VOA	5 00/04/2017 D0173310 15:08:00 P0179310 15:08:00 P30/04/2017 D0173310 15:08:00 P30/04/2017 D0173317 D0173317 D0173317 D0173317 D0173317 D0173310 15:08:00 P30/04/2017 D0173310 15:08:00 P30/04/2017 D0173310 15:08:00 P30/04/2017 D0173310 P30/04/2017 D0173310 P30/04/2017 D0173310 P30/04/2017 D0173317 D017331	2.00 1.00	4.2 1.3 1.2 8.5 9x1680 WC201121 4.2 1.4 1.8 7.5 9x1680 WC201121 4.2 1.3 1.2 6.5 9x1680 WC201121 4.2 1.5 1.8 7.5 9x1680 WC201121 4.2 1.5 1.8 7.5 9x1680 WC201121
#44-700200000 MRS METEROR MAS MEDICAN NAS MEDICADEZONIAN NORME NOR	FOA	5 0,042/2017 00.073310 15.08.00 100.70310 15.08.00 181.08.01 1 0.042/2017 00.07317 00.073217 16.79.00 10.07317 16.79.00	150 150	42 1.6 1.2 4.5 KHARD WGZD1121 42 1.8 1.8 7.5 KHARD WGZD1121 42 7.2 18 38 KHARD WGZD1139 42 7.2 18 38 KHARD WGZD1139
NEST/20000000 MMOI MERINAN NAS MESONASZOCIONA NONE NOA 1250C	NUM 1/05	5 00/6/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3317 017/3310 15/08/20 16/08/2017 017/3317 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310 15/08/20 16/08/2017 017/3310	410	6.2 0.76 1.8 7.5 87.680 W6.070123 6.2 0.76 1.8 7.5 87.680 W6.070123 6.2 0.66 1.2 6.5 87.680 W6.070123 6.2 0.66 1.2 6.5 87.680 W6.070123 6.2 0.84 1.2 6.5 87.680 W6.070123
\$44-700,000,000 AMRS MERICAN SAS MEDICAN S	IGA BAS BATANDRI AMETTICAL SPIY WINDSS MAO REG S 6 33/03 1 1 1 1 1 1 1 1 1	5 0)(6/2017 20170317 14:39.00 10170317 14:39.00 120170317 14:39.00 120170317 14:39.00 120170317 14:39.00 120170317 14:39.00 12017031 14:39.00 12017031 15:39.00 12017031 14:39.00 12017031 14:39.00 120170317 14:39.00 1201703		6.2 0.98 1.8 7.5 X1580 WG205239 6.2 1.7 8.8 20. X1580 WG205239 6.2 1.7 8.8 20. X1580 WG205239 6.2 1.2 1.2 X1580 WG205239
	Col.	000002017 00170310 150800 10170317 153800 10170317 153800 10170317 153800 10170317 153800 10170317 153800 10170317 153800 10170317 153800 10170317 153800	1	4.2 1.2 6.5 13. 84380 WG20123 4.2 1.2 6.5 13. 84380 WG20123 4.2 1.7 1.2 6.5 84380 WG20123 4.2 1.0 1.8 7.5 84380 WG20123
Company Comp	FOA	5 0006/2017 5070010 50.00.00 2073030 50.000 30140-1 1 1 1 1 1 1 1 1 1		1
NG24708609000 IM01 MERICIAN_NAS MESOB-9220-0708A NONE VOA \$250C NG24705609000 IM01 MERICIAN_NAS MESOB-9220-0708A NONE VOA \$250C	100A		14.171	4.2 1.2 1.2 1.5 \$1.000 WC_001212 4.2 1.4 1.2 1.5 \$1.000 WC_001212 4.2 1.4 1.8 1.5 \$1.000 WC_001212 4.2 1.1 1.2 1.5 \$1.000 WC_001212 4.2 1.2 1.2 1.2 1.5 \$1.000 WC_001212 4.2 1.2 1.2 1.5 \$1.000 WC_001212 4.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1
NATA PROSESSOR (ME) (METERAL AND METERAL A	MAA MAG	\$ \$10,000,0017 \$10,000,000,0017 \$10,000,0017		4.2 1.3 18 7.5 SKARD MC20559 4.2 181 12 15 SKARD MC20559 4.2 181 12 15 SKARD MC205121 4.2 193 18 7.5 SKARD MC20559 4.2 193 18 7.5 SKARD MC20559 4.2 193 18 17 SKARD MC20559 4.2 193 18 SKARD MC20559
### 1457-05000000 AMP	Description		14.71	4.2 0.66 3.8 7.5 0.1000 WC.001213 4.2 1.0 3.8 7.5 0.1000 WC.001259 4.2 1.0 3.2 4.5 0.1000 WC.001213 4.2 1.3 1.8 7.5 0.1000 WC.001213 4.2 1.3 1.8 7.5 0.1000 WC.001259
MERCONSON AND ME	MAX	\$ 0,000,00017	A371	4.2 2.2 8.7 5 MXHMD MCZ051539 4.2 2.0 1.2 5.5 MXHMD MCZ051539 4.2 1.0 1.2 5.5 MXHMD MCZ051131 4.2 1.0 1.2 6.5 MXHMD MCZ051131
MAINTAINSCHOOL DASS	100 100	0.064/2017 0.010310 16.00 0 0010300 16.00 0 0 010300 16.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		4.2 10.9 (2.2 6.5 (1.400) (1.4
NG2R705050000 IM01 MERICHAN_NAS MESOB-5820-0708A NONE VOA 1250C NG2R705050000 IM01 MERICHAN_NAS MESOB-5820-0708A NONE VOA 1250C	MOA MAS	\$ 0366/2017 037/3018 150.000 027/2018 15.0000 031486-3 1 1 1 1 1 1 1 1 1		4.2 1.2 1.2 1.5 MISSES MC2201211 4.2 1.5 1.0 1.5 MISSES MC2201211 4.2 1.5 1.0 1.5 MISSES MC220121 4.2 1.5 1.5 MISSES MC220121 4.2 1.5 1.5 MISSES MC2201210 4.2 1.5 1.5 MISSES MC2201210 4.2 1.5 1.5 MISSES MC2201210 4.2 1.5
NELTRIJEGODOD JANGS METEROAN, NAS METEROAN, NAS METEROAN	Part			4.2 1.4 1.5 \$\times \$\
MEATINECONO ANT MEDIAN, NO MEDIAN, NO MEDIAN NE MEDIAN N	DA BGS	\$ 0046/2017 \$007017 \$2500 \$007017 \$4500 \$007017 \$4500 \$2600 \$1400 \$1		1.2 0 0 KEARD KEZDEZES 1.2 0 0 KEARD KEZDEZES 1.2 0 0 0 KEARD KEZDEZES 1.2 0 0 0 KEZDEZES
MESTICADE/ORDOX IMPO MESTICADA N.S. MESTICADO AND CONTROL CO	POINT POINT MATERIAN PARKET LINE POINT SWINDES MAD 1856 5 4	PRINCES PRIN		4.2 9 9 5 \$1,000 WC20559 4.2 9 0 9 \$1,000 WC20559 4.2 9 0 9 \$1,000 WC205121 4.2 12 6.5 13. \$1,000 WC20559 4.2 12 6.5 13. \$1,000 WC20559 4.2 12 6.5 13. \$1,000 WC205121
\$23,000,000,000 (MC) \$25,000 (M	VGA DGG ANTANGAN ADMITTION 289 100025 300 45 5 4 20002 1	0.006/2017 0.070316 0.27036 0.270317 0.270316 0.27037 0.270317 0.270316 0.27031 0.270317 0.270316 0.27031 0.270316 0.27031 0.270317 0.270316 0.270316 0.270316 0.270317 0.270316 0.270316 0.270317 0.270317 0.270316 0.270317 0.270317 0.270316 0.270317 0	Ali	4.2 1.8 4.5 13 K1885 MC281211 4.2 1.1 4.5 13 K1885 MC281211 4.2 1.4 4.5 13 K1885 MC2812121 4.2 1.4 5.5 13 K1885 MC2812121
NESTATOSCOCOCO (MODI MESSONA), NAS MESSONADA MAS NONE VOA 12000 (MODI MESSONADA MAS ME	VOL	5 00/66/2017 00173310 19-28:00 29:073310 19-28:00 96:073127 1 5 00/66/2017 00173310 19-28:00 19:073310 19-28:00 96:071217 1 5 00/66/2017 00173310 19-28:00 19:073310 19:28:00 96:071217 1 5 00/66/2017 00173310 19:28:00 19:073310 19:28:00 96:071217 1	Part	42 17 6.5 13. SSSBB WG20123 42 12 6.5 13. SSSBB WG20123 42 12 12 6.5 SSSBB WG20123 42 10 12 6.5 SSSBB WG20123 42 10 12 6.5 SSSBB WG201231
MESTADEGORDO IANDS	VOA	\$ 0,064/2017 0979310 192800 2079310 192800 WG201121-7 1 5 004/2017 20770310 192800 20770310 192800 WG201121-7 1 5 04/64/2017 20770310 192800 20770310 192800 WG201121-7 1 1 04/64/2017 20770310 192800 192800 WG201121-7 1 1	5 11	42 12 22 55 SESSO MCCOS122 42 55 16 12 SESSO MCCOS122 42 66 16 12 SESSO MCCOS123 42 66 16 12 SESSO MCCOS123
\$15,000,500,000,000,000	POS	5 00(64/2017 D0173310 19-28:00 20173310 19-28:00 96:001217-7 1 5 00(64/2017 D0173310 19-28:00 19-28:00 96:001217-7 1	A	42 850 12 85 90380 WGD0123 42 14 12 65 90380 WGD0123 42 12 12 85 90380 WGD0123 42 12 12 85 90380 WGD0123 42 12 12 85 90380 WGD0123
NEZETORECONO (MOS) MEZECAN, NAS MESOS 622 2708A MS NOVE YOA 8200C MEZETORECONO (MOS) MOS MEZECAN, NAS MESOS 622 2708A MS NOVE YOA 8200C NEZETORECONO (MOS) MS MEZECAN, NAS MESOS 622 2708A MS NOVE YOA 8200C	NGA	\$ 0,004/2017 0,170310 1928.00 26176316 1928.00 WG201121-7 1 0,004/2017 0,0076310 1928.00 1928.00 1928.00 WG201121-7 1 0,004/2017 0,004/2017 0,005/2017 0,0	1	1
HEATPHISCORDON (MART) MARTINANA NAS NESSAS (1221-07324-MAS NORE OA 1250C HEATPHISCORDON (MART) MARTINANA NAS NESSAS (1222-07324-MAS NORE OA 1250C	FOAX DAS	\$ 00,6620017 001070310 10.2800 0070310 10.2800 W501011.7 1 1 0 00620017 101070310 10.2800 0070310 10.2800 W501011.7 1 1 0 00620017 101070310 10.2800 0070310 10.2800 W501011.7 1 1 0 00620017 101070310 10.2800 0070310 10.2800 0070310 10.2800 W501011.7 1 1 0 00620017 101070310 10.2800 0070310 10.2800 0070310 10.2800 W501011.7 1 1 0 00620017 101070310 10.28000 W501011.7 1 1 0 00620017 101070310 10.28000 W501011.7 1 1 0 00620017 1 0 0070310 10.28000 W501011.7 1 1 0 00620017 1 0 0070310 10.28000 W501011.7 1 1 0 00620017 1 0 0070310 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAM	4.2 1.7 16. 12. (SCRBD WG201121 4.2 1.2 3.2 6.5 (SCRBD WG201121 4.2 1.8 1.2 6.5 (SCRBD WG201121 4.2 1.8 1.2 6.5 (SCRBD WG201121 4.2 1.3 1.2 6.5 (SCRBD WG201121)
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SECTION SECTION SECTION AND SECTION	NONE VOA \$200C VOA V	US	\$ 4 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	0075020	1,2 Octhorobesserie 541-72-1 13.8 13.8 13.4 14.0 Octhorobesserie 505-66-7 14.0 54.0 13.0 Octhorobesserie 505-66-7 14.0 54.0 12.0 Octhorobesserie 505-61 14.2 54.2 12.0 Octhorobesserie 505-61 14.2 54.2 12.3 Octhorobesserie 505-61 14.2 54.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5	06,46 MG	5.6A 2.55 100 200001261	42 588 25 10 93880 WG50131 42 52 55 15 10 93880 WG50131 43 55 15 10 93880 WG50131 42 57 57 57 50 93880 WG50131 42 57 57 57 50 93880 WG50131 42 57 57 57 57 50 93880 WG50131 42 57 57 57 57 58 93880 WG50131
NEZ-0705050000 IMR01 MESTOLAN, NAS NEZ-02124-CS NEZ-021224-CS NEZ-070500000 IMR01 MESTOLAN, NAS NEZ-021224-CS NEZ-070500000 IMR01 MESTOLAN, NAS NEZ-070500000 IMR01 MESTOLAN, NAS NEZ-021224-CS NEZ-02	NONE VOA 8250C VOA	RAS KATAHDIN ANALYTICAL DRY SW5035 000 RS	5 8 93/20/2022 09:44 03/16/2017 5 6 93/20/2027 5 6 93/202	207310 (20.4.0) 207310 (20.4.0) (207310 (20.4.0) (2073111 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (207311 (20.4.0) (20.4.0) (207311 (20.4.0) (20.4.0) (207311 (20.4.0) (20.4.0) (207311 (20.4.0) (20.4.0) (20.4.0) (20.4.0) (207311 (20.4.0) (20.	Private Priv	100 100	LSA 133 72 20091101	4.2 8.4 15. 60 Ministry Monostrial (1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2
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WEST-030600000 MINC1		05	W 6 33/4/2021 2027 09/4/2021 W 4 31/4/2021 2027 09/4/2021 W 4 32/4/2021 2027 09/4/2021 09	0075024 02720	Veryfichloride	00.1 0 0 TRG		1
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HARTONICONO AND MINISTRA NA CONTRA N	NONE VOA 8250C VOA NONE VOA 8250C VOA NONE VOA 8250C VOA	100 100	** ***********************************	2010 14 1027-00 2010 14 20.700 WC00184-2 1 1	Carbon tetrachloride 55-23-5 0.50 0.50	V		4.2 5.20 5.50 1.0 55(58) MC(505)44
### ##################################	NONE YOA \$200C YOA \$	MS	W 4 53(44,051) 5027 50(44,051) W 4 53(44,051) 5027 50(44,051)	DOUGLIA 1027/05 2527/2014 02.27.00 00.2521342 1	1744-2 150 1	UG_1 U		4.2 0.50 0.50 0.10 951888 1052031442
MASCHWISCOMO (MIS) MERICANA NAS (MISCHANA NAS (MISCANA NAS (MISCHANA NAS (MISCHANA NAS (MISCHANA NAS (MISCHANA NAS	NONE	AG	W 4 33/4/2013 1027 03/4/2017	STOTISM 10.7 0.0 STOTISM S2.7 0.0 WOODSEA.2 1	04-1,3 Ockhorpospene 1990;1-01-5 0.59 0.00 104-84 0.59 0.00 104-84 0.59 0.00 104-84 0.59 0.00 104-84 0.59 0.00 104-84 0.59 0.00 104-84 0.59 0.00 104-84 0.59 0.00 104-94 0.00 104-95 0.00	06_1 0 0 0 786 0 0 1 786 0		4.2 5.31 8.50 1.0 M1689 BC251342 4.2 5.31 8.50 1.0 M1689 BC251342 4.2 5.77 8.50 1.0 M1680 BC251342 4.2 1.3 15 1.0 M1680 BC251343 4.2 1.3 15 1.0 M1680 BC251343 4.2 1.3 15 1.0 M1680 BC251342 4.3 1.0 M1681 BC251342 4.3 1.0 M1681 BC251342 4.3 1.0 M1681 BC251342 4.3 1.0 M1681 BC251342
	NONE VOA 1250C YOA NONE VOA 1250C YOA NONE VOA 1250C YOA NONE VOA 1250C YOA	05	W 6 33/4/2031 2027 03/14/2017 W 6 33/4/2031 2027 03/14/2017 W 8 33/4/2031 2027 03/14/2017 W 6 33/4/2031 2027 03/14/2017 W 6 33/4/2031 2027 03/14/2017	2019114 1017-00 2019114 20.7700 MCC0104-2 1	Tetrachicrosthere 127-18-4 0.59 0.50 Okomochlorometare 127-18-1 0.50 0.50 1,3 Okomochlorometare 127-18-1 0.50 0.50 1,3 Okomochlorometare 106-07-4 0.50 0.50 2-14 0.50 0.50 0.50 1,5 Okomochlorometare 108-00-7 0.50 0.50 1,5 Okomochlorometare 1,5 Okomochloro	POSA_2 V		4.2 5.00 5.50 1.0 \$25.00 0 \$25
NE247306G00000 IM01 MERICHAN, NAS WG201342 GLANK NE247306G0000 IM01 MERICHAN, NAS WG201342 GLANK NE247306G0000 IM01 MERICHAN, NAS WG201342 GLANK	NONE YOA DDGC YOA	MATERIAN ANALYTICAL MOTT \$10,000 MAX.	W 4 03/24/00212027 03/24/2012 W 4 03/24/00212027 03/24/2012 W 4 03/24/00212027 03/24/2017 W 4 03/24/00212027 03/24/2017 W 4 03/24/00212027 03/24/2017 W 4 03/24/00212027 03/24/2017	2017/2014 2017/20 2017/2014 2017/20 2017/2014 2017/20 2017/2014	Citylenesee 1004.14 5.0	0 C, L U U TRG 0 C, L U J TRG 0 C, L U U TRG 0 C, L U U TRG		2 22 52 53 12 20 20 20 20 20 20 20
NEXTFORD COLOR NEXT	NONE VOA \$250C VOA NONE VOA \$250C VOA	56	W 6 33/34/2017 30:27 03/34/2017 W 6 33/34/2017 10:37 03/34/2017	2017014 1027:00 2017014 1027:00 WS201AG2 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1,3 Okthorobenzene 241-72-1 0.55 0.55 1,4 Okthorobenzene 504-67 0.55 0.55 0.55 0.55 0.55 0.55 0.55 0.5	UC_1 U U U INC UNC UNC UNC UNC UNC UNC UNC UNC UNC U		4.2 12.6 5.00 1.0 50360 M0203141 4.2 12.8 5.00 1.0 50360 M0203141

tract_ID DO_CTO_Number Phas 14701609000 IM01	hase Installation_ID Sample_Name DH2M, MERICAN_NAS WG201342-0LANK NONE	M_Code Analysis_Group Analytical_Method ii: VOA 8260C	d PRC Code Lab_Code Lab_Name VCA KAS KATAHDIN ANALYTICAL	eachate_Method Sample_Basis Extractice_Method Result_Type Lab_QC_Type Sample_MNT SW5030 XX0 &&K W	ie Medium QC_Level DateTime_Collected Date_Received Leachate_Date Lead 4 33/34/2017 10:27 03/14/2017		Analysis Time Lab Sample ID Oblusion Run Number Percent Mole 10:27:00 WG201342-2 i i	re Percent_Lipid Chem_Name 1,3-Dichlorobenzene	Inalyte_ID Analyte_Value Original_Analyte_ IS-SO-1 0.50 0.50	dalue Result, Units Lab Qualifier Validator_Qualifier GC_Column_Type Analysis_Result_Type UG_L U U U TIS	Part	QC_Narrative MDL Detection_Limit QSM_Version DL LOB L 6.2 0.15 0.50 1	LOQ SDG Analysi 1.0 SK1680 WG20
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H7016D9000 IM01	MERIDIAN NAS WIGADIAE SIGNIK NONE MERIDIAN NAS WIGADIAE SIGNIK NONE	10 VOA \$250C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WILL DWOOD 300 BLK W WIT SW5030 500 BLK W	4 03/14/2017 00.27 03/14/2017 4 03/14/2017 10.27 03/14/2017 4 03/14/2017 07.22	20170314 10:37:00 20170314 20170314 10:37:00 20170314 20170314 10:37:00 20170314	10.37.00 WG201342-2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Metny acesse Methylociohexane Sommor Monor	0.75 0.50 0.50 0.50	UG 1 U U TRG		42 9.53 9.75 1 42 9.30 9.50 1	1.0 SK1680 WG201
97016D9000 JM01	MERSON, NAS MUSTING LONG STATE	45 VOA 8260C 45 VOA 8260C	VOA BAS BATAHDIN ANALYTICAL VOA BAS BATAHDIN ANALYTICAL	WET \$45030 000 BLK W WET \$45030 000 BLK W	4 03/14/2017 10:37 03/14/2017 4 03/14/2017 10:37 03/14/2017	20170314 10:37:00 20170314 20170314 10:37:00 20170314	10:37:00 WG201342-2 1 1 1 10:37:00 WG201342-2 1 1	linomochloromethane o-Xylene	9497-5 0.50 0.50 IS-47-6 0.50 0.50	UG_L U U TRG		42 525 550 1 42 525 550 1	1.0 SK1680 WG201 1.0 SK1680 WG201
H7016D9000 JM01	MERIDIAN_NAS WG201342-BLANK NONE MERIDIAN_NAS WG201342-BLANK NONE	15 VOA \$250C 15 VOA \$250C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$46500 000 BLK W WET \$46500 000 BLK W	4 03/14/2017 10:37 03/14/2017 4 03/14/2017 10:37 03/14/2017	20170314 10:37:00 20170314 20170314 10:37:00 20170314	10:37:00 WG201342-2 1 1 1 10:37:00 WG201342-2 1 1	m- and p-Nylene 1,2,3-Trichlorobenzene	nBpXYLENE 1.0 1.0 17-61-6 0.50 0.50	0G_L U U TRG		42 0.59 1.0 2 42 0.27 0.50 1	2.0 SK1680 WG201 1.0 SK1680 WG201
7016D9000 IM01 7016D9000 IM01	MERIDIAN_NAS WG201342-BLANK NONE MERIDIAN_NAS WG201342-BLANK NONE	4E VOA 8260C 4E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET 5W5030 000 BLK W WET 5W5030 000 BLK W	4 03/14/2017 10:37 03/14/2017 4 03/14/2017 10:37 03/14/2017	20170314 10:37:00 20170314 20170314 10:37:00 20170314	10:37:00 WG201342-2 1 1 10:37:00 WG201342-2 1 1	Xylene, total 4-Sromofluorobenzene	1330-20-7 1.5 1.5 160-00-4 93.5 93.5	0G_L U U TRG PCT SURR	S.SA 120 75 20091101	42 025 15 1 42 0 0 0	3.0 SK1680 WG201 0 SK1680 WG201
7016D9000 IMD1 7016D9000 IMD1	MERIDIAN_NAS WG201342-BLANK NONE MERIDIAN_NAS WG201342-BLANK NONE	1E VOA 8260C 1E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	MIT SW5030 000 BLK W MIT SW5030 000 BLK W	4 13/14/2017 10:37 03/14/2017 4 13/14/2017 10:37 03/14/2017	20170314 10:37:00 20170314 20170314 10:37:00 20170314	10:37:00 WG201342-2 1 1 1 10:37:00 WG201342-2 1 1	Toluene-06 1,2-Oichloroethane-d4	1037-26-5 102. 102. 17060-07-0 115. 115.	RCT SUBR	9.5A 120 85 20091101 9.5A 120 70 20091101	42 0 0 0 42 0 0 0	0 \$K1680 WG201
016D9000 JM01 016D9000 JM01	MERIDIAN_NAS WG201342-BLANK NONE MERIDIAN NAS WG201342-LCS NONE	4E VOA \$260C 4E VOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WIT \$4500 000 BLK W WIT \$4500 000 BS W	4 03/14/2017 10:37 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 10:37:00 20170314 20170314 09:21:00 20170314	10:37:00 WG201342-2 1 1 1 99:21:00 WG201342-1 1 1	Dibromofluoromethane Dichlorodifluoromethane (Freon-12)	968-53-7 107. 107. 15-71-8 12.8 12.8	PCT SURR	S.SA 115 85 20091101 LSA 155 30 20091101	42 0 0 0 0 42 024 10 2	0 SK1680 WG201*
115D9000 IM01 115D9000 IM01	MERIDIAN NAS WG201342-LCS NONE MERIDIAN NAS WG201342-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Chloromethane Viryl chloride	9-87-3 38-8 38-8 9-01-4 40-8 40-8	UG_L 196 UG_L 196	ISA 125 40 20091101 ISA 145 50 20091101	42 0.36 1.0 2 42 0.25 1.0 2	2.0 \$K1680 WG201 2.0 \$K1680 WG201
DSD9000 JMD1	MERIDIAN NAS WG201342-LCS NONE MERIDIAN NAS WG201342-LCS NONE	10 VOA 8250C	VOA KAS KATAHON ANALYTICAL	WIT SW5030 300 85 W	4 03/34/2017 09:21 03/34/2017 4 03/34/2017 09:21 03/34/2017	20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1 1	Bromomethane Discretture	1483-9 46.6 46.6 15.00.3 51.1 51.1	UG.L 1995	LSA 145 10 20091301	42 0.49 1.0 2	2.0 SK1680 WG205
16D9000 JM01	MERIDAN, NAS WG201342-LCS NONE MERIDAN, NAS WG201342-LCS NONE MERIDAN, NAS WG201342-LCS NONE	65 VOA 8250C 65 VOA 8250C	VOA KAS KATAHDIN ANALYTICAL	WIT 5W5030 000 85 W	4 03/34/2017 09:21 03/34/2017 4 03/34/2017 09:21 03/34/2017	20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 1	Trichloroffuoromethane (Freon-11)	5-69-4 40.6 40.6 5-35-4 40.8 40.8	UG_L 1RG	ISA 145 50 20091101	42 026 1.0 2	2.0 \$41680 WG201
509000 IM01	MERIDIAN_NAS WG201342-LCS NONE	es VOA 8260C	VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 RS W	4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1	Carbon disuffide	5-15-0 48.4 48.4	UG_L TRG	LSA 160 25 20091101	42 025 050 1	1.0 SK1680 WG201
D9000 IM01	MERIDIAN_NAS WG201342-LCS NONE MERIDIAN_NAS WG201342-LCS NONE	EL NOA E260C	VOA KAS KATAHON ANALYTICAL VOA KAS KATAHON ANALYTICAL	WLT 5W5030 000 85 W	6 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 99:21:00 WG201342-1 1 1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113) Methylene chloride	5-13-1 #59 #59 5-09-2 43.1 43.1	UG_L TRG	LSA LSB 78 20091101 LSA LSB 55 20091101	42 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	5.0 SK1680 WG201
D9000 JM01	MERICIAN_NAS WG201342-LCS NONE MERICIAN_NAS WG201342-LCS NONE	65 VOA 8260C 65 VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET 5W5030 500 E5 W WET 5W5030 500 E5 W	6 03/14/2017 09:21 03/14/2017 6 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20:70314 20170314 09:21:00 20:70314	99:21:00 WG201342-1 1 1 1 99:21:00 WG201342-1 1 1	Acetone trans-1,2-Okhlonoethene	7-64-1 50.7 50.7 55-60-5 43.3 43.3	UG_L TRG	SA 140 40 20091101 SA 140 50 20091101	42 22 25 5 42 025 050 1	5.0 SK1680 WG201 1.0 SK1680 WG201
509000 IM01 509000 IM01	MERIDIAN NAS WG2013424CS NONE MERIDIAN NAS WG2013424CS NONE MERIDIAN NAS WG2013424CS NONE	65 VOA 8260C 65 VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET 5W5030 000 85 W WET 5W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 1 1 1 99:21:00 WG201342-1 1 1	Methyl-tert-butyl ether (MTRE) 1,3-Dichloroethane	634-04-4 89.8 89.8 5-34-2 42.4 43.4	UG_L TRG	LSA 125 65 20091101 LSA 135 70 20091101	42 0.36 0.50 1 42 0.21 0.50 1	1.0 SK1680 WG201
509000 JM01 509000 JM01	MERCAN ALL MER	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	cis-1,2-Oichloroethene Chloroform	156-59-2 40.0 40.0 17-66-3 41.8 41.8	UG_L TRG	LSA 125 70 20091101 LSA 135 65 20091101	42 021 050 1 42 032 050 1	1.0 SK1680 WG201*
99000 JM01	MERIDIAN_NAS WG201342-LCS NONE MERIDIAN NAS WG201342-LCS NONE	4E VOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W	4 03/34/2017 09:21 03/14/2017 4 03/34/2017 09:21 03/34/2017	20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1 1	1,1,1-Trichloroethane	11:55:6 41:4 41:4 18:01:3 17:0 17:0	UG L TRG	LSA 130 65 20091301 154 150 30 20091301	42 020 050 1 42 13 15 5	1.0 SK1680 WG201
9000 IM01	MERICIAN NAS WG201342-LCS NONE	et VOA \$250C	VOA KAS KATAHDIN ANALYTICAL	WET \$195000 000 85 W	4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1	Cyclohexane	10-82-7 64.0 64.0	UG_L TRG	15A 133 71 20091101	62 931 950 1	1.0 \$41680 WG201
9000 IM01	MERIDAN NAS WG20142-LCS NONE	65 VOA 6260C	VOA KAS KATANION ANALYTICAL	WIT 5W5010 000 85 W	4 33/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314	99:2100 WG201342-1 1 1	Became	143-2 41.2 41.2	UG_L 1RG	ISA 120 80 20091101	42 126 150 1	1.0 SK1680 WG201
9000 JM01	MERIDIAN_NAS WG201342-LCS NONE	et NOA \$250C	VOA KAS KATAHDIN ANALYTICAL	WIT 5W5030 000 BS W	4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1	Bernane 1,2-Oichloroethane 7/ichloroethane 7/ichloroethane 1,2-Oichloropopare Bernoethane	9-01-6 44.7 44.7	UG_L TRG	LSA 125 70 20091101	42 028 050 1	1.0 SK1680 WG207
000 JM01	MERIDIAN_NAS WG201342-LCS NONE MERIDIAN_NAS WG201342-LCS NONE	SE VOA B260C SE VOA B260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$46500 000 85 W WET \$46500 000 85 W	4 53/14/2017 09:21 63/14/2017 4 53/14/2017 09:21 63/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 99:21:00 WG201342-1 1 1	1,2-Oichloropropane Bromodichloromethane	947-5 43.7 43.7 5-27-6 44.9 44.9	UG_L TRG	LSA LIS 75 20091301 LSA LIO 75 20091301	42 825 850 E	1.0 SK1680 WG201 1.0 SK1680 WG201
000 JM01 000 JM01	MERIDIAN_NAS WG201342-LCS NONE MERIDIAN_NAS WG201342-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1 1 09:21:00 WG201342-1 1 1	cis-1,3-Dichloropropene Toluene	0061-01-5 48.0 48.0 08-88-3 41.8 41.8	UG_L TRG	LSA 130 70 20091101 LSA 120 75 20091101	42 0.19 0.50 1 42 0.27 0.50 1	1.0 SK1680 WG201 1.0 SK1680 WG201
000 JM01	MERIDIAN_NAS WG201342-LCS NONE MERIDIAN NAS WG201342-LCS NONE	4E NOA \$260C 4E NOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WIT \$4500 000 85 W WIT \$4500 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1 1 09:21:00 WG201342-1 1 1	4-Methyl-2-pentanone trans-1.3-Dichloropropere	08-10-1 41.9 41.9 0061-02-6 45.2 45.2	UG_L TRG	LSA 135 60 20091101 LSA 140 55 20091101	42 13 25 5 42 820 850 1	5.0 \$K1680 WG201*
0000 IM01	MERICIAN NAS WG201342-LCS NONE	et VOA \$250C	VOA KAS KATAHDIN ANALYTICAL	WET \$W\$030 000 BS W	4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1	1,1,2-Trichloroethane	9-00-5 42.5 42.5	UG.L TRG	LSA 125 75 20091101	42 933 950 1	1.0 \$41680 WG201
000 IM01	MERICAN NAS WG2013424CS NONE MERICAN NAS WG2013424CS NONE MERICAN NAS WG2013424CS NONE	et VOA \$2500	VOA KAS KATAHDIN ANALYTICAL	WIT SW5030 000 IS W	4 13/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1	Dibromothioromethane	24-48-1 48-2 48-2	UG_L TRG	LSA 135 60 20091101	42 0.30 0.50 I	1.0 SK1680 WG201
000 IM01	MERICIAN NAS WG201342-LCS NONE MERICIAN NAS WG201342-LCS NONE	EL NOA BISSOC	VOA KAS KATAHDIN ANALYTICAL	WET 5W5030 000 85 W	6 33/34/2017 09:21 03/14/2017 6 33/34/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1	1,2-disconditions 2-Hexanone	91-78-6 16.0 16.0	UG_L TRG	ESA ESO ES 20091101 ESA 130 SS 20091101	62 022 030 1 62 17 25 5	5.0 SK1680 WG201
OOO IMD1	MERICIAN NAS WG201342-LCS NONE	65 VOA \$2600 65 VOA \$2600	VIJA KAS KATAHDIN ANALYTICAL VIDA KAS KATAHDIN ANALYTICAL	WIT SW5030 000 85 W WIT SW5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 1 99:21:00 WG201342-1 1 1	2-Hexanone Chlorobersane Ethylbersane	100-41-4 64.0 64.0	UG_L TRG	LSA 120 80 20091201 LSA 125 75 20091201	42 022 050 1 42 021 050 1	1.0 SK1680 WG201
000 IM01	MERIDIAN NAS WG201342-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 99:21:00 WG201342-1 1 1	Styrene Bromoform	00-42-5 46.2 46.2 5-25-2 47.1 47.1	UG_L TRG UG_L TRG	LSA 135 65 20091301 LSA 130 70 20091301	42 023 050 1 42 021 050 1	1.0 SK1680 WG201 1.0 SK1680 WG201
000 IMD1 000 IMD1	MERICIAN_NAS WG201342-LCS NONE MERICIAN_NAS WG201342-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 99:21:00 WG201342-1 1 1	isopropybenzene 1,1,2,3-Tetrachloroethune	88 42 8 46.9 46.9 9-36-5 41.9 41.9	UG_L TRG	LSA 125 75 20091101 LSA 130 65 20091101	42 023 050 1 42 038 050 1	1.0 SK1680 WG201 1.0 SK1680 WG201
00 IM01 00 IM01	MERICIAN NAS WG201342-LCS NONE MERICIAN NAS WG201342-LCS	4E VOA 8260C 4E VOA 8260F	YOA KAS KATAHON ANALYTICAL YOA KAS KATAHON ANALYTICAL	MET SWEDD 500 85 W MET SWEDD 500 84 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314 20170314 09:21:00 20170314	09:21:00 WG201342-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,3-Olchlorobenzene 1.4-Olchlorobenzene	641-73-1 64.5 64.5 06-66-7 62.8 62.8	UG L 1995	ISA 125 75 20091201	42 9.26 9.50 1 42 8.74 8.00 1	1.0 SK1680 WG201
00 JM01	MERICIAN NAS WG201342-LCS NONE	6E VOA \$250C	VOA KAS KATANDRI ANALYTICAL	WET SW503D 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 500 500 500 500 500 500 500 500 500	09:21:00 WG201342-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,2-Oichlorobessene 1,2-Oktoppe 3-Phicoppesses	550-1 45.0 45.0 6.13.6 35.1 35.1	UG_L TRG	ISA 120 70 2001101	42 515 50 1	1.0 SK1680 WG201
00 JM01	MERICIAN NAS WG201342-LCS NONE	et VOA \$2600	VOA KAS KATAHDIN ANALYTICAL	WIT SW5030 000 85 W	4 03/34/2017 09:21 03/14/2017	20170314 09:21:00 20170314	99:21:00 WG201342-1 1	1,2,4-Trichlorobenzene	2042-1 45.4 45.4	UG_L TRG	ISA 125 65 20091101	42 0.37 0.50 E	1.0 SK1680 WG201
000 IM01	MERICAN NAS INGADIALICS NONE MERICAN NAS INGADIALICS NONE	1260C 15 VOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WEI SWOOD 000 ES W	4 13/14/2017 09:21 03/14/2017 4 13/14/2017 09:21 03/14/2017	20170314 0921:00 20170314 20170314 0921:00 20170314	923100 WG003321 1 1	Methylocitae Methylocohixane	200-07-2 41.1 41.1	UG_L TRG	15A 12 70 20091101 15A 125 73 20091101	42 853 875 1 42 830 850 1	1.0 SK1680 WG201
00 IM01	MERICIAN_NAS WG201342-LCS NONE MERICIAN_NAS WG201342-LCS NONE	65 VOA \$260C	VLIA KAS KATAHDIN ANALYTICAL VDA KAS KATAHDIN ANALYTICAL	WIT \$W5030 000 85 W WIT \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 6 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 99:21:00 WG201342-1 1	Bromochloromethane o-Xylene	997-9 42.5 42.5 15-47-6 44.6 44.6	UG_1 TRG	LSA 130 65 20091301 LSA 220 60 20091301	42 021 050 1 42 025 050 1	1.0 SK1680 WG201 1.0 SK1680 WG201
XXV 1M01 XXX 1M01	MERCAN ALL MESTANDA (1)	45 VOA 8260C 45 VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 1	ts- and p-Xylene 1,2,3-Trichlorobersene	nspx1uNE 88.8 88.8 17-61-6 43.3 43.3	UG_L TRG	LSA 130 75 20091301 LSA 140 SS 20091301	42 059 1.0 2 42 027 050 1	2.0 SK1680 WG201 1.0 SK1680 WG201
000 JM01 000 JM01	MERIDIAN NAS WG201342-LCS NONE MERIDIAN NAS WG201342-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA EAS KATAHDIN ANALYTICAL VOA EAS KATAHDIN ANALYTICAL	WET \$W5030 000 85 W WET \$W5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 99:21:00 WG201342-1 1 1	Kylene, total 4-Eromofiuonobenzene	130-20-7 133. 133. 160-00-4 95.9 95.9	UG_L * TRG PCT SUBR	LSA 116 89 20091101 SLSA 120 75 20091101	42 025 1.5 1 42 0 0	3.0 SK1680 WG205 0 SK1680 WG207
00 JM01 00 JM01	MERICIAN NAS WG201342-LCS NONE MERICIAN NAS WG201342-LCS	4E VOA 8260C 4E VOA 8260C	YOA KAS KATAHDIN ANALYTICAL YOA KAS KATAHDIN ANALYTICAL	WIT SW5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/14/2017 09:21 03/14/2017	20170314 09:21:00 20170314 20170314 09:21:00 20170314	99:21:00 WG201342-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Toluene-06 12-Ochlorgethana-44	1037-26-5 101. 101. 17060-07-0 102. 103	PCT SURR	9.5A 120 85 10091101 9.5A 120 70 10001101	42 0 0 0	0 SK1680 WG201
00 JM01 00 JM01	MERICIAN NAS WG2013424CS NONE MERICIAN NAS WG201539-BIANW	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHON ANALYTICAL VOA KAS KATAHON ANALYTICAL	WIT SW5030 000 85 W	4 03/14/2017 09:21 03/14/2017 4 03/17/2017 11:45 03/17/2017	20170314 09:21:00 20170314 20170317 11:45:00 20170314	09:21:00 WG201342-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dichorofiluoromethane Dichlorodfiluoromethane (Crans. 17)	868-53-7 99.3 99.3 5-71-8 5.0 6.0	PCT SURR	9.5A 115 85 20091101	42 9 9 1	0 SK1680 WG201
00 JM01	MERICIAN_NAS WG201539-GLANK NONE	et VOA \$2500	VOA KAS KATAHDIN ANALYTICAL	56Y 5W5035 000 BLK 5	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11-45:00 WG201539-2 1 1	Disconethane	9487-3 5.0 5.0	UG_RG U U TRG		42 14 50 I	10. SK1680 WG201
000 IM01	MERICIAN NAS WG201539-BLANK NONE MERICIAN NAS WG201539-BLANK NONE	15 VOA \$2500	VOA KAS KATAHDIN ANALYTICAL	560 SW5035 DOO BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1 11:45:00 WG201519-2 1 1	Vinyl chloride Bromomethane	443-9 5.0 5.0	UG_RG U U TRG		42 11 50 1	10. SK1680 WG201
000 IMD1	MERIDIAN, NAS WG201539-BLANK NONE MERIDIAN, NAS WG201539-BLANK NONE	4E VOA 8260C	VOA EAS KATAHDIN ANALYTICAL	287 SW5035 000 BLK 5	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Oxforcethane Trichlorofluoromethane (Freor-11)	5494 5.0 5.0	UG NG U U TNG		42 14 50 1 42 191 50 1	10. SK1680 WG201
00 IM01	MERIDAN, NAS WG201539-BLANK NONE	10 VOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	287 5W5035 000 BLK 5 287 5W5035 000 BLK 5	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1	1,1-unconcrethene Carbon disulfide	5-15-0 2.5 2.5	UG_NG U U TRG		42 8.93 2.5 5 42 6.78 2.5 5	5.0 SK1680 WG201
IO IMD1 IO IMD1	MERIDIAN NAS WG201539-BLANK NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	SWY SW5035 000 BLK S SWY SW5035 000 BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017		11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-112) Methylene chloride	5-13-1 2.5 2.5 5-09-2 12 12	UG_NG U U TRG UG_NG U U TRG		42 0.90 2.5 5 42 7.9 12. 2	5.0 SK1680 WG201 25. SK1680 WG201
io impi	MERIDIAN, NAS WG201529-BLANK NONE MERIDIAN, NAS WG201529-BLANK NONE	4E VOA 8260C 4E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	58Y 5W5035 000 BLK 5 58Y 5W5035 000 BLK 5	4 93/17/2017 11:45 93/17/2017 4 93/17/2017 11:45 93/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	Acetone trans-1,2-Oichloroethene	7-64-1 12 12 56-60-5 2.5 2.5	UG_RG U U TRG		42 5.1 12. 2 42 6.71 2.5 5	25. SK1680 WG200' 5.0 SK1680 WG20'
00 JM01 00 JM01	MERIODA AND SECURITION AND SECURITIES AND SECURITION AND SECURITIES AND SECURITION AND SECURITION AND SECURITION AND SECURITIES AND SECURITION AND SECURITIES AND SECURITION AND SECURITIE	6E 9/DA 8260C 6E 9/DA 8260C	VOA EAS KATAHDEN ANALYTICAL VOA EAS KATAHDEN ANALYTICAL	58Y 5W5035 000 BLK 5 58Y 5W5035 000 BLK	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	Methyl-tert-butyl ether (MTBC) 1,1-Okthoroethane	634-04-4 2.5 2.5 5-34-3 2.5 2.5	UG_RG U U TRG		42 11 25 5 42 17 55 6	5.0 SK1680 WG200 5.0 SK1680 WG200
O JM01 O JM01	MERICIAN NAS WG201539-GLANK NONE MERICIAN NAS WG201539-GLANK	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	56Y 5W5035 000 BLK 5	4 13/17/2017 11:45 03/17/2017 4 33/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 50170317	11:45:00 WG201519-2 1 11:45:00 WG201519-2 1	(is-1,2-Oichloroethene Chloroform	56-59-2 2.5 2.5 7-66-3 2.5 0.5	UG_NG U U TRG		42 99 57 17 17 17 17 17 17 17 17 17 17 17 17 17	5.0 SK1680 WG201 5.0 SK1680 WG201
00 IM01	MERICIAN NAS WG201539-GLANK NONE	SE VOA \$2500	VOA KAS KATAHDIN ANALYTICAL	56Y 5M5035 000 BLK 5	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317 20170317 11:45:00 20170317 20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1	Carbon tetrachloride	6-23-5 2.5 2.5	UG_RG U U TRG		42 13 25 5	5.0 SK1680 WG201
000 IM01	MERICIAN NAS WIGGEST-BLANK NONE MERICIAN NAS WIGGEST-BLANK NONE	12 VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	267 585035 000 BLK 5 267 585035 000 BLK 5	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1	1,1,1-incrioroethane 2-Butanorie	9-93-3 12 12	UG_NG U U TRG		4.2 0.42 2.5 5 4.2 5.9 12. 2	25. SK1680 WG201
AND 1M01	MERICIAN_NAS WG201539-BLANK NONE MERICIAN_NAS WG201539-BLANK NONE	N NOA 8260C 6E NOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK 5 DRY SW5035 000 BLK 5	4 03/17/2017 11:45 03/17/2017 6 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1	Became Cyclohexane	1949-2 2.5 2.5 1042-7 2.5 2.5	UL_NG U U TRG		42 892 25 5 42 14 25 5	5.0 SK1680 WG201* S.0 SK1680 WG201
000 JM01 000 JM01	MERIDIAN_NAS WG201539-BLANK NONE MERIDIAN NAS WG201539-BLANK NONE	6E NOA \$260C 6E NOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S DRY SW5035 000 BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:95:00 20170317 20170317 11:95:00 20170317 20170317 11:95:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	1,2 Okhloroethane Trichloroethene	97-06-2 2.5 2.5 9-01-6 2.5 2.5	UG_KG U U TRG		42 10 25 5 42 059 25 5	5.0 SK1680 WG201* 5.0 SK1680 WG201*
000 JM01	MERICIAN NAS WG201539-BLANK NONE	SE VOA \$250C	VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1	1,2-Oichloropropane	947-5 2.5 2.5	UG.KG U U TRG		42 14 15 5	5.0 SK1680 WG201
000 IM01	MERICIAN_NAS WG201539-BLANK NONE	SE VOA B250C	VOA EAS EATAHON ANALYTICAL	DRY SW5035 000 BLK S	4 03/17/2017 11/45 03/17/2017 4 03/17/2017 11/45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1	cis-1,3-Oichioropropene	0061-01-5 2.5 2.5	UG_RG U U TRG		42 5.72 2.5 5	5.0 SK1680 WG201
9000 JM01	MERIDAN, NAS WIGGISSP-BLANK NONE MERIDAN, NAS WIGGISSP-BLANK NONE	46 VGA 8260C	VOA KAS KATAHOIN ANALYTICAL	DRY SW5035 000 BLK 5	4 03/17/2017 13:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 1	6-Methyl-2-pentanone Tetrachloroethene	08-10-1 12 12	US_NS U U TRG		42 14 25 1 42 19 12 2	25. SK1680 WG201
9000 JM01	MERICIAN, NAS WG201529-BLANK NONE	SE NOA BESSE	VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S	4 13/17/2017 11:45 03/17/2017 4 13/17/2017 11:45 03/17/2017	20170317 11:05:00 20170317 20170317 11:05:00 20170317	11:45:00 WG201539-2 1 1	trans-1,3-Okhlonopropene	27-18-4 25 25 00081-02-6 25 25	UG,KG U U TRG		42 12 25 5 42 0.86 25 5	5.0 SK1680 WG201
0000 IM01	MERCHAN_RAS WILZUSZIF-REANK NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S DRY SW5035 000 BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	1,1,2-Trichloroethane Dibromochloromethane	9-00-5 2.5 2.5 24-48-1 2.5 2.5	UG_NG U U TRG		42 0.97 2.5 5 42 1.0 2.5 5	5.0 SK1680 WG201* 5.0 SK1680 WG201
000 JM01	MERICIAN, NAS WIGZOSSPIRIANK NONE MERICIAN, NAS WIGZOSSPIRIANK NONE MERICIAN NAS WIGZOSSPIRIANK NONE	6E VOA \$250C 6E VOA \$250C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S DRY SW5035 000 BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017		11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1 1:45:00 WG201530-2 1 1	1,2-Obromoethane 2-Hexanone	05-93-4 2.5 2.5 91-79-6 12 12	UG NG U U TRG		42 12 25 5 42 48 12 2	5.0 \$K1680 WG201* 25. \$K1680 WG20*
000 JM01		4E VOA \$260C	VOA KAS KATAHDIN ANALYTICAL	08Y 5W5035 000 BLK 5	4 13/17/2017 11:45 03/17/2017 4 13/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 1	2-Hexanone Chicoberane Ethylennane	08-90-7 2.5 2.5 00-41-4 2.5 2.5	UG NG U U TRG		42 051 25 5 42 155 25 5	5.0 SK1680 WG201*
000 JM01	MERIDIAN_NAS WG201539-BLANK NONE	NE NOA BESOC	VOA KAS KATAHDIN ANALYTICAL	58Y 5W5015 200 BLK 5	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1	Kylene, total	330-20-7 7.5 7.5	UG,KG U U TRG		42 13 75 1	15. SK1680 WG201
00 JM01	MERICIAN_NAS WG201539-BLANK NONE	SE NOA B260C	VOA KAS KATAHDIN ANALYTICAL	SRY SW5035 000 BLK S	4 13/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1	p-Xylene	5-47-6 2.5 2.5	UG_KG U U TRG		42 13 25 5	S.O SK1680 WG200
00 JM01	MERICIAN NAS WG201539-BLANK NONE	SE NOA B260C	VOA KAS KATAHDIN ANALYTICAL	58Y 5W5035 000 BLK 5	4 13/17/2017 11:45 03/17/2017	20170317 11:45:00 20270317 20170317 11:45:00 20270317 20170317 11:45:00 20270317 20170317 11:45:00 20270317 20170317 11:45:00 20270317	11:45:00 WG201519-2 1 1	Bromoform	5-25-2 2.5 2.5	UG_KG U U TRG		42 5.70 2.5 5	5.0 SK1680 WG201
00 JM01	MERIDIAN_NAS WIGZOSSP-BLANK NONE	SE NOA BESSE	VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S	4 13/17/2017 11:45 03/17/2017 4 13/17/2017 11:45 03/17/2017	20170317 11:05:00 20170317 20170317 11:05:00 20170317	11:45:00 WG201539-2 1 1	1,1,2,2-Tetrachloroethane	9345 25 25	UG,KG U U TRG		42 88 25 5 42 88 25 5	5.0 SK1680 WG201
00 JM01 00 JM01	MERIDIAN_NAS WG201539-BLANK NONE MERIDIAN_NAS WG201539-BLANK NONE	SE VOA B260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY \$46505 000 BLK 5 DRY \$46505 000 BLK 5	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	1,3-Oichlorobetzene 1,4-Oichlorobetzene	91-73-1 2.5 2.5 106-46-7 2.5 2.5	UG_RG U U TRG		42 0.62 2.5 5 42 0.66 2.5 5	5.0 SK1680 WG201 5.0 SK1680 WG201
00 JM01 00 JM01	MERIDIAN_NAS WG201539-BLANK NONE MERIDIAN_NAS WG201539-BLANK NONE	6E 9/OA \$250C 6E 9/OA \$250C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY \$45035 000 BLK \$ DRY \$45035 000 BLK \$	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	1,2-Okhlorobenzene 1,2-Obromo-3-chloropropane	5-50-1 2.5 2.5 6-12-8 2.5 2.5	UG_NG U U TRG		42 0.78 2.5 5 42 1.5 2.5 5	5.0 \$K1680 WG201* 5.0 \$K1680 WG201*
00 JM01 00 JM01	MERIODA, ALS SECURISIA DAM MAN MAN MERIODA, ALS MERIODA ALS MERIOD	6E NOA \$260C 6E NOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 BLK S DRY SW5035 000 BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 11:45:00 WG201539-2 1 1	1,3 Oichfordenssene 1,4 Oichfordenssene 1,2 Oichfordenssene 1,2 Oichfordenssene 1,3,0 Oichfordenssene 1,3,4-Frichfordenssene 1,3,4-Frichfordenssene 1,3,5-Frichfordenssene	20-82-1 2.5 2.5 17-61-6 2.5 2.5	UG_KG U U TRG		42 0.79 2.5 5 42 0.76 2.5 5	5.0 SK1680 WG201* 5.0 SK1680 WG201*
00 JM01	MERICIAN NAS WIGOSISSI BLANK NONE MERICIAN NAS WIGOSISSI BLANK NONE	4E 9/0A \$260C	VOA KAS KATAHDIN ANALYTICAL	08Y \$46505 000 BLK \$ 08Y \$46505 000 BLK \$	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201539-2 1 1 1	Bromochloromethane	9497-5 2.5 2.5 9330-0 10 10	UG NG U U TRG		42 091 25 5 42 27 10 5	5.0 \$41680 WG200 5.0 \$41680 WG200
O JM01	MERICIAN NAS WG201539-BLANK NONE	E VOA \$2500	VOA KAS KATAHON ANALYTICAL	SRY SWEDS DOD BLK S	4 03/17/2017 11:45 03/17/2017 4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1	Methylcyclohexane	08-87-2 2.5 2.5 60-00-4 101 100	UG_RG U U TRG	954 120 65	42 896 25 5	5.0 SK1680 WG201
0 IM01	MERICIAN NAS WG201539-BLANK NONE MERICIAN NAS WG201539-BLANK NONE	15 VOA \$2500	VOA KAS KATAHDIN ANALYTICAL	560 SW5035 DOO BLK S	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317 20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1 11:45:00 WG201519-2 1 1	4-Bromofluorobenzene Toluene-OB	1037-26-5 103. 103.	PCT SURF	9.5A 115 85 20091101	42 0 0 0	0 SK1680 WG201
0 (M01	MERICIAN NAS WG201529-GLANK NONE MERICIAN NAS WG201529-GLANK NONE	4E VOA 8260C	VOA EAS KATAHDIN ANALYTICAL	280 SW5035 000 BLK 5	4 03/17/2017 11:45 03/17/2017	20170317 11:45:00 20170317	11:45:00 WG201519-2 1 1	Disconnections of the second o	106 S0	PCT SURF	5.5A 130 64 20091301	42 0 0	0 SK1680 WG201
IMO1	MERIDIAN NAS WG201539-LCS NONE	1260C 1E VOA \$260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	267 DW5035 000 85 5 267 SW5035 000 85 5	6 93/17/2017 09:38 93/17/2017 6 93/17/2017 09:38 93/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1	uicnicroansecrarethane (Freor-12) Chloromethane	92.0 42.6 94.07-3 46.6 46.6	UC.8G TRG	LSA 130 S0 20091301	42 1.92 5.0 1 42 1.4 5.0 1	10. SK1680 WG201
U IM01 0 IM01	MERIDIAN_NAS WG201539-LCS NONE MERIDIAN_NAS WG201539-LCS NONE	65 VOA \$260C 65 VOA \$260C	YUA KAS KATAHDIN ANALYTICAL YOA KAS KATAHDIN ANALYTICAL	26Y 5W5035 000 85 5	6 03/17/2017 09:38 03/17/2017 6 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	00:38:00 WG201539-1 1 1	Viryl chloride Bromomethane	9-01-6 \$1.0 \$1.0 9-83-9 \$3.7 \$3.7	U6_85 TRG U6_85 TRG	LSA 125 60 20091301 LSA 60 10 20091301	42 087 5.0 1 42 1.1 5.0 1	10. SK1680 WG201 10. SK1680 WG201
IMUI IMUI	MERIDIAN_NAS WG201539-LCS NONE MERIDIAN_NAS WG201539-LCS NONE	65 NOA 8260C 65 NOA 8260C	VIJA KAS KATAHDIN ANALYTICAL VIJA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 85 5	6 03/17/2017 09:38 03/17/2017 6 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	MC4830 WG201539-1 1 1 09:38:00 WG201539-1 1	Chlorcethane Trichlorofluoromethane (Freon-11)	5-00-1 55.8 55.8 5-69-4 60.8 60.8	U6_86 TRG	LSA 155 40 20091301 LSA 185 25 20091301	42 13 50 1 42 991 50 1	10. SK1680 WG201 10. SK1680 WG201
0 JM01 0 JM01	MERIDIAN_NAS WG201529-LCS RONE MERIDIAN_NAS WG201529-LCS RONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	Sey SW5035 000 85 5 Sey SW5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 I I I 99:38:00 WG201539-1 I I	1,1-Dichloroethene Carbon disulfide	5-35-4 54.6 54.6 5-15-0 63.2 63.2	UG_NG TRG UG_NG TRG	LSA 125 65 20091101 LSA 160 45 20091101	42 193 25 5 42 678 25 5	5.0 SK1680 WG201' 5.0 SK1680 WG20'
IMD1 IMD1	MERIDIAN NAS WG201529-LCS NONE MERIDIAN NAS WG201529-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA EAS KATAHDIN ANALYTICAL VOA EAS KATAHDIN ANALYTICAL	58Y \$W5035 000 85 5 58Y \$W5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113) Methylene chloride	15-13-1 54.9 54.9 15-09-2 49.5 49.5	UG_RG TRG	LSA 135 67 20091301 LSA 140 85 20091301	42 0.90 2.5 5 42 7.9 12 1	5.0 SK1680 WG200 25. SK1680 WG200
IM01	MERICIAN NAS NIGO1539-LCS NONE	et VOA 8260C	VOA KAS KATAHON ANALYTICAL	56Y 5W5035 5000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1	Acetone Irana 1 2 Dichters	7-64-1 59.4 59.4 156-00.5 58.7 78.7	UG_RG TRG	ISA 160 20 20091201	42 51 12 2 12 12 12 1	25. SK1680 WG201
JM01 JM01	MERIDAR, MAS. MEDISTRACE NOVE	EE VOA B260C	VOA KAS KATAHON ANALYTICAL	26Y SW5035 000 85 5	4 03/17/2017 09-38 03/17/2017 4 03/17/2017 09-38 03/17/2017	20170317 09-38-00 20170317 20170317 09-38-00 20170317	99.38.00 WG201539-1 1 1	Methyl-ter-butyl ether (MTRE)	634-04-4 119. 119. 5.34.3 574 774	UG_RG TRG	ISA 125 81 20091301	42 11 25 5	5.0 SK1680 WG201
IMO1	MERICHAN, NAS INGARESSPICS NONE MERICHAN, NAS INGARESSPICS NONE	12 VOA \$250C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	287 DW5035 000 85 5 287 SW5035 000 85 5	6 33/17/2017 OK-88 03/17/2017 6 33/17/2017 OK-88 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	923800 WG0159-1 1 1	1,1-ucnoroethane cir-1,2-Dichloroethene	55-59-2 \$2.0 \$2.0	196 105.8G 196.9S	13A 25 75 20091101 15A 125 65 20091101	42 1.7 2.5 5 42 0.91 2.5 5	5.0 SK1680 WG201
IMD1	MERIDIAN_NAS WG201520-LCS NONE MERIDIAN_NAS WG201520-LCS NONE MERIDIAN_NAS WG201520-LCS NONE	15 VOA \$260C	YOA KAS KATAHDIN ANALYTICAL YOA KAS KATAHDIN ANALYTICAL	287 5W5035 000 85 5	4 03/17/2017 09:48 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1	Livorceorm Carbon tetrachloride	10-10-10-10-10-10-10-10-10-10-10-10-10-1	UG_NG TRG	13A 125 70 20091201 15A 125 65 20091201	42 835 25 5 42 13 25 5	5.0 SK1680 WG201
IMD1 IMD1	MERIDIAN_NAS WG201529-LCS NONE MERIDIAN_NAS WG201529-LCS NONE	6E VQA 8260C 6E VQA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	Sey SW5035 000 85 5 Sey SW5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	09:38:00 WG201539-1 1 1 09:38:00 WG201539-1 1 1	1,1,1-Trichloroethane 2-Sutanone	1-55-6 57.8 57.8 9-63-1 54.7 54.7	UG_NG TRG UG_NG TRG	LSA 125 70 20091101 LSA 160 20 20091101	42 0.42 2.5 5 42 5.9 12. 2	5.0 SK1680 WG201 25. SK1680 WG201
JM01 JM01	MERICIAN NAS WG201529-LCS NONE MERICIAN NAS WG201529-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA EAS KATAHDEN ANALYTICAL VOA EAS KATAHDEN ANALYTICAL	58Y 5W5035 000 85 5 58Y 5W5035 000 85	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1	Secuena Cyclohesana	11-43-2 54.5 54.5 10-82-7 57.9 57.9	UG_RG TRG	LSA 125 75 20091301 LSA 128 75 30001101	42 0.92 2.5 5 42 1.8 5 5	5.0 SK1680 WG201 5.0 SK1680 WG201
IMD1 IMD1	MERICIAN NAS WGZ01539-LCS NONE MERICIAN NAS WGZ01539-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHON ANALYTICAL VOA KAS KATAHON ANALYTICAL	36Y SW5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	09:38:00 WG201539-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,2-Oichloroethane Trichloroethers	107-06-2 57.2 57.2 19-01-6 58.8 68.8	UG NG TRG	(SA 125 70 20091201 1SA 125 70 20091201	42 10 25 5	5.0 SK1680 WG20 5.0 SK1680 WG20
M01	MERICIAN NAS WG201529-LCS NONE	4E VOA \$2500	VOA KAS KATAHDIN ANALYTICAL	SRY SW5035 000 85 5	4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317	99.38.00 WG201539-1 1 1	1,2-Oichloropropane	947-5 55.7 55.7	UG_RG TRG	ISA 120 70 20091101	42 14 25 5	5.0 SK1680 WG20
MO1	MERIDAN_NAS WG201539-LCS NONE MERIDAN_NAS WG201539-LCS NONE MERIDAN_NAS WG201539-LCS NONE	12 VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	267 1505035 000 85 5 267 505035 000 85 5	6 03/17/2017 UN:48 03/17/2017 6 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1 1	Bromodichloromethane cis-1,3-Oichloropropene	984 58.4 9961-01-5 58.7 58.7	UG_NG TRG	LSA 125 70 20091201 LSA 125 70 20091201	42 0.60 2.5 5 42 0.72 2.5 5	5.0 SK1680 WG201
A01 A01 A01	MERIDIAN_NAS WG201539-LCS NONE MERIDIAN_NAS WG201539-LCS NONE	65 NOA 8260C 65 NOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	DRY SW5035 000 85 5	4 33/17/2017 09:38 30/17/2017 4 33/17/2017 09:38 33/17/2017 4 33/17/2017 09:38 33/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317 20170317 09:38:00 20170317	09:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1 1 09:38:00 WG201530-1 1 1	Toluene 6-Methyl-2-pentanone Tatra-bloomethene	208-00-1 55.7 53.7 208-10-1 56.5 56.5	U6_86 TRG	LSA 125 70 20091301 LSA 145 45 20091301	42 14 25 5 42 59 12 2	5.0 SK1680 WG20 25. SK1680 WG20
M01 M01	MERIDIAN_NAS WG201529-LCS NONE MERIDIAN_NAS WG201529-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	Sey SW5035 000 85 5 Sey SW5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 I I I	Tetrachioroethene trans-1,3-Oichloropropene	27-18-4 55.1 55.1 00061-02-6 63.2 63.2	UG_NG TRG UG_NG TRG	LSA 140 65 20091101 LSA 125 65 20091101	42 12 25 5 42 886 25 5	5.0 SK1680 WG20 5.0 SK1680 WG20
MD1 MD1 MD1	MERICIAN NAS WG201539-LCS NONE MERICIAN NAS WG201539-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA EAS KATAHDEN ANALYTICAL VOA EAS KATAHDEN ANALYTICAL	26Y 5W5035 000 85 5 26Y 5W5035 000 85	4 03/17/0017 06:38 04/17/2017 4 03/17/0017 06:38 04/17/2017 4 13/17/0017 06:38 04/17/2017 4 03/17/0017 06:38 04/17/2017 4 03/17/0017 06:38 04/17/2017	20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1	1,1,2-Trichloroethane Dibromochloromethane	19-00-5 SE.5 SE.5 24-48-1 57:8 57:8	UG_NG TRG	LSA 125 60 2009101 LSA 130 65 2009101	42 097 25 5 42 10 5 6	5.0 SK1680 WG201 5.0 SK1680 WG201
01	NEW AND ASS. NEW	et VOA 82600 et VOA 82600	COL. DEC. AND STREET, AND STRE	56Y 5W5035 5000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	Part	99:38:00 WG201539-1 1 1	Astronic Journal of Marchael Comments The Library Comments A Secretary Comments A Sec	05-93-4 55.7 55.7 201-70-6 54.6 74.4	UG_RG TRG	ISA 125 70 20091201	42 12 25 5	5.0 SK1680 WG20
M01	MERICIAN NAS WG201529-LCS NONE	\$1 VOA \$200C \$1 VOA \$200C	VOA KAS KATAHDIN ANALYTICAL	989 SW5035 000 85 5	4 39477-0017 00-38 09477-0017 4 3947-0017 00-38 09477-0017	20170317 09:38:00 20170317	79.2800 WG00159-1 1 1	Chickenses	08-90-7 S4.8 S4.8	UG_RG TRG	ISA 125 75 20091101	42 63 12 2 42 151 25 5	5.0 SK1580 WG20
IM01 IM01 IM02 IM02	MERIDAN NAS WG201539-LCS NONE MERIDAN NAS WG201539-LCS NONE	10 VOA \$260C	VOA EAS EATAHDEN ANALYTICAL VOA EAS EATAHDEN ANALYTICAL	287 5W5035 000 85 5	4 03/17/2017 09:48 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG301539-1 1 1	strycenane Kylene, total	130-20-7 163. 163.	UG_NG TRG	13A 125 75 20091201 15A 114 81 20091201	42 8.65 2.5 S 42 1.3 7.5 I	15. SK1680 WG20
IM01 IM01 IM01 IM01	MERIDIAN_NAS NIG201539-LCS NONE MERIDIAN_NAS NIG201539-LCS NONE	45 VOA 8260C 45 VOA 8260C	VOA KAS KATAHDIN ANALYTICAL VOA KAS KATAHDIN ANALYTICAL	SWY SW5035 000 85 5 SWY SW5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317		ts- and p-Xylene p-Xylene	napxnuNE 110. 110. IS-47-6 53.9 53.9	UG_RG TRG	LSA 125 80 20091301 LSA 125 75 20091301	42 17 50 1 42 13 25 5	su. SK1680 WG20 S.O SK1680 WG20
IM01 IM01	MERIDIAN NAS WG201529-LCS NONE MERIDIAN NAS WG201529-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA EAS KATAHDIN ANALYTICAL VOA EAS KATAHDIN ANALYTICAL	26Y \$W5035 000 85 5 26Y \$W5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317		Styrene Bromoform	00-42-5 55-4 55-4 15-25-2 59-4 59-4	UG_RG TRG	LSA 125 75 20091101 LSA 125 85 20091101	42 051 25 5 42 070 25 5	5.0 \$K1680 WG20 5.0 \$K1680 WG20
IMDI IMDI	MERICIAN NAS NIGO1539-LCS NONE	et VOA 82600 et VOA 82600	NGA EAG EATAHDEN ANALYTICAL NGA EAG EATAHDEN ANALYTICAL NGA EAG EATAHDEN ANALYTICAL	56Y 5W5035 5000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1 1	liopropybenzere	8828 SS2 SS2 9345 S29 S20	UG_RG TRG	ISA 130 75 20091301	42 892 25 S	5.0 SK1680 WG20
JM01	MERICIAN NAS WG201529-LCS NONE	4E VOA \$250C	VOA EAS KATAHDIN ANALYTICAL	280 SW5035 000 85 5	6 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317	3-1402 WESTERS 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,3-Oichlorobenzene	91-73-1 57.3 57.3	UG NG TRG	SA 125 70 2009101	42 042 25 5	5.0 SK1680 WG2
JM01 JM01	MERICAN_NAS WG201529-LCS NONE MERICAN_NAS WG201529-LCS NONE MERICAN_NAS WG201529-LCS NONE	#E YOA 1250C #E YOA 1250C #E YOA 1250C #E YOA 1250C #E YOA 1250C #E YOA 1250C #E YOA 1250C	VOA EKS EXTANCEN ANNATTICK!	DRY 5W5035 000 RS S	4 04/17/2017 UK-88 03/17/2017 6 03/17/2017 06:38 03/17/2017	0170317 09:38:00 20170317 20170317 09:38:00 20170317	99-38-00 WG201539-1 1 1	1,3-Dichlorobessene	1550-1 SSA SSA	UG_RG TRG	13A 125 70 20091101 15A 120 75 20091101	42 0.44 2.5 5 42 0.78 2.5 5	5.0 SK1680 WG20
IM01 IM01 IM01	MERIDAN_NAS WG201529-LCS NONE MERIDAN_NAS WG201529-LCS NONE MERIDAN_NAS WG201529-LCS NONE MERIDAN_NAS WG201529-LCS NONE	6E VOA 8260C 6E VOA 8260C	VOA EAS EATAHOEN ANALYTICAL VOA EAS EATAHOEN ANALYTICAL	Ser SW5035 000 65 5 Der SW5035 000 65 5 Der SW5035 000 65 5	4 36/1/30/10/6/38 10/1/30/17 4 30/17/30/10/38 10/1/7/30/17 4 30/17/30/10/38 30/17/30/17 4 30/17/30/10/38 30/17/30/17 4 30/17/30/10/38 30/17/30/17 4 30/17/30/10/38 30/17/30/17 4 30/17/30/10/38 30/17/30/17	20170317 09:38:00 20170317 20170317 09:38:00 20170317 20170317 09:38:00 20170317 20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1 1	1,2-Obromo-3-chloropropane 1,2,4-Trichlorobenzene	6-12-8 59.8 59.8 20-82-1 65.6 65.6	UG_RG TRG	LSA 135 40 20091301 LSA 130 65 20091301	42 15 25 5 42 679 25 5	5.0 SK1680 WG20 5.0 SK1680 WG20
IM01	MERICIAN NAS NG201539-LCS NONE MERICIAN NAS NG201534-75	6E VOA 8260C 6E VOA 8260C	VOA KAS KATAHIDIN ANALYTICAL VOA KAS KATAHIDIN ANALYTICAL	98Y \$W5035 000 85 5 98Y \$W5035 000 85 5 98Y \$W5035 000 85 5	4 03/17/2017 09:38 03/17/2017 4 03/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 1 99:38:00 WG201539-1	1,2,3-Trichlorobenzene Bromochloromethere	17-61-6 60.3 60.3 9-97-5 54.8 64.8	UG NG 1995	LSA 125 60 20091201	42 9.76 2.5 5	5.0 SK1680 WG20
JM01 JM01	MERICIAN NAS NIGORISPIACS NONE	EE VOA 8260C	VOA KAS KATAHON ANALYTICAL	36Y \$46035 000 85 5 08Y \$46035 000 85 5 08Y \$46035 000 85 5	4 33/17/2017 09:38 53/17/2017 4 53/17/2017 09:38 53/17/2017 4 53/17/2017 09:38 53/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1	Methyl acetate Methylarida	920.9 \$1.9 \$1.9	UG_RG TRG	ISA 133 72 20091301	42 27 20 5	5.0 SK1680 WG20
1M01 1M01 1M01 1M01	MERICIAN NAS WG201529-LCS NONE	6E VOA 8260C 6E VOA \$260C 6E VOA \$260C 6E VOA \$260C 6E VOA \$260C	INDA IAG RATINGGRANALYTICAL VIGA VIGA IAG RATINGGRANALYTICAL VIGA VIGA IAG RATINGGRANALYTICAL VIGA VI	100 100	6 93/17/2017 09:38 93/17/2017 4 93/17/2017 09:38 93/17/2017 4 93/17/2017 09:38 93/17/2017	20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1	Methylcyclohyazare 4-Eromelhanobenzene Trhuma (M	60-00-4 104. 104.	PCT SUBR	25A 120 85 2009101	42 9 9 9	0 SK1680 WG20
IM01 IM01		4E WDA \$260C	VOA KAS KATAHDIN ANALYTICAL	287 5W5035 000 85 5	4 13/17/2017 09:38 03/17/2017	20170317 09:38:00 20170317 20170317 09:38:00 20170317	99:38:00 WG201539-1 1 1 99:38:00 WG201539-1 1	Toluene-08 1,2-Olchloroethane-d4	7060-07-0 110. 110.	PCT SUBR	94.5A 115 85 20091201 94.5A 134 58 20091201	42 0 0 0 42 0 0 0	0 9K1680 WG20
	MERIDIAN_NAS WG201539-LCS NONE MERIDIAN_NAS MESOB-FD04-0217A NONE	E WOA \$260C E WOHEM 2540G	VOA KAS KATAHDIN ANALYTICAL PCHAR KAS KATAHDIN ANALYTICAL	DRY SW5035 000 85 5 DRY METHOD 000 REG 5	4 1847-0217 0-00 00 1947-0217 1 4 1847-0217 1 4 1847-0217 1 5 18 18 18 18 18 18 18 18 18 18 18 18 18	0.01001 0.0100 0.	00-3800 WCC001504-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Observed Assertimenth ame S Golds S G	1868-53-7 106. 106. 650-105 66. 66.	PCT SURR	9.5A 130 64 20091101	42 0 0 0 42 1 1 1	0 SK1680 WG2 1 SK1680 WG2
JMD1 JMD1		EE WORLD 2540G	PCHAR KAS KATAHDIN ANALYTICAL PCHAR KAS KATAHDIN ANALYTICAL	DRY METHOD 000 REG 5 DRY METHOD 000 LR 5	4 03/03/2017 09:25 03/06/2017 4 03/03/2017 10:45 03/06/2017	20170322 15:01:00 20170323 20170322 15:06:00 20170323	16:57:00 SK1680-1 1 1 34:371 17:00:00 WG201818-3 1 1 134:344	N Solids N Solids	650LIDS 66. 66. 650LIDS 75. 75.	PCT TRG PCT TRG		42 1 1 1 42 1 1 1	1 SK1680 WG20
IM01 IM01 IM01 IM01	MERICIAN_NAS MESOS-5820-0708A NONE MERICIAN_NAS MESOS-5821-0708A-LR NONE	E WORM 2540G											
1 MO1 1 MO1	MERIDAA NAS. NEGOSISPACES NOME	65 VOA 1250C 65 WOREM 2540G 65 WOREM 3540G 65 WOREM 3540G 65 WOREM 3540G 65 WOREM 2540G 65 WOREM 2540G 65 WOREM 2540G 65 WOREM 2540G 66 WOREM 2540G 67 WOREM 2540G	BOMR MAS BATANDER ANALYTICAL CHAR MAS CAS CATANDER MARYTICAL POINT MAS CAS CATANDER MARYTICAL POINT MAS CAS CATANDER MARYTICAL POINT MAS CATANDER MARYTICAL POINT MAS CAS CATANDER MARKETICAL POINT MAS CAS CAS CAS CAS CAS CAS CAS CAS CAS C	DRY METHOD DOD DR S	4 03/03/2017 10:45 03/06/2017 4 03/03/2017 08:00 03/06/2017	20170322 15:03:00 20170323 20170321 12:01:00 20170321	12:14:00 91:180-5 1 1	N Solids N Solids	SSOLIDS 76. 76. SSOLIDS 100 100	PCT TRG		42 1 1 1 1 42 1 1 1	1 SK1680 WG201 1 SK1680 WG201



DATA VALIDATION SUMMARY REPORT NAVAL AIR STATION MERIDIAN, MISSISSIPPI

Client: CH2M HILL, Inc., Virginia Beach, Virginia

SDG: 320-25962-1

Laboratory: Test America Laboratories, West Sacramento, California Site: Naval Air Station Meridian, JM01, Meridian, Mississippi

Date: October 28, 2017

	I	PFCs	
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1†	MEAFF-MRD-1A01-0217	320-25962-1	Water
2†	MEAFF-MRD-1A01P-0217	320-25962-2	Water
3*	MEAFF-EB01-022117-SO	320-25962-3	Water
4*	MEAFF-PWMA-SB01-0001	320-25962-4	Soil
4DL*	MEAFF-PWMA-SB01-0001DL	320-25962-4DL	Soil
5*	MEAFF-PWMA-SB01-0204	320-25962-5	Soil

^{* -} PFCs only † - 1,4-Dioxane only

A full data validation was performed on the analytical data for two water samples, two soil samples, and one aqueous equipment blank sample collected on February 21, 2017 by CH2M HILL at the NAS Meridian site in Mississippi. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)" and the Test America Laboratories (TAL) Standard Operating Procedure for the analysis of 1,4-dioxane by GC/MS-SIM.

Specific method references are as follows:

<u>Analysis</u> <u>Method References</u>

PFCs USEPA Method 537 Modified SVOC-SIM (1,4-Dioxane) TAL SOP WS-MS-0011

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the Draft Sampling and Analysis Plan, Perfluorinated Compounds Site Inspection, Naval Air Station Meridian, Task Order JM01, August 2016, 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," January 2017;
- USEPA Region 4 "Data Validation Standard Operating Procedures for CLP Organic Data using GC/MS and GC/ECD", Rev. 0.0, February 2016;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Holding times and sample preservation
- Liquid/Gas Chromatography/Mass Spectrometry (LC/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)

Holding Times

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

LC/MS Tuning

• All criteria were met.

Initial Calibration

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

Continuing Calibration

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

Method Blank

• The method blanks exhibited the following contamination.

Blank ID	Compound	Conc. ug/kg	Qualifier	Affected Samples
320-152015/1-A	PFOS	0.178	None	All Associated >10X

Field QC Blank

• The field QC sample results are summarized below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
MEAFF-EB01-022117-SO	None - ND	(e)		

Surrogate Spike Recoveries

• All samples exhibited acceptable surrogate %R values except for the following.

Sample ID	Surrogate	%R	Qualifier
3	13C4-PFOA	152%	None - Sample ND

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

• The MS/MSD samples were not analyzed.

Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

• The LCS/LCSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Target Compound Identification

• All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples results were flagged (M) by the laboratory indicating manual integration. These flags were removed by the reviewer.
- EDS Sample ID 4 was flagged (E) by the laboratory for PFOS exceeding the linear range of the instrument. The sample was diluted and reanalyzed and the dilution result for PFOS should be used for reporting purposes.

Field Duplicate Sample Precision

• Field duplicate samples were not collected.

Semivolatile Organic Compounds (1,4-Dioxane)

Holding Times

• All samples were extracted within 7 days for water samples and analyzed within 40 days.

GC/MS Tuning

• All criteria were met.

Initial Calibration

• The initial calibrations exhibited acceptable %RSD and/or correlation coefficients and mean RRF criteria.

Continuing Calibration

• The continuing calibrations exhibited acceptable %D and RRF criteria.

Method Blank

• The method blanks were free of contamination.

Field Blank

• Field QC samples were not collected.

Surrogate Spike Recoveries

All samples exhibited acceptable surrogate recoveries.

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

MS/MSD samples were not analyzed.

Laboratory Control Samples/Laboratory Control Sample Duplicate (LCS/LCSD)

• The LCS samples exhibited acceptable percent recoveries (%R) and RPD values.

Internal Standard (IS) Area Performance

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

Target Compound Identification

• All mass spectra and quantitation criteria were met.

Compound Quantitation

• All criteria were met.

Field Duplicate Sample Precision

• Field duplicate results are summarized below.

Compound	MEAFF-MRD-1A01-0217 ug/L	MEAFF-MRD-1A01P-0217 ug/L	RPD	Qualifier
None	ND	ND		:#

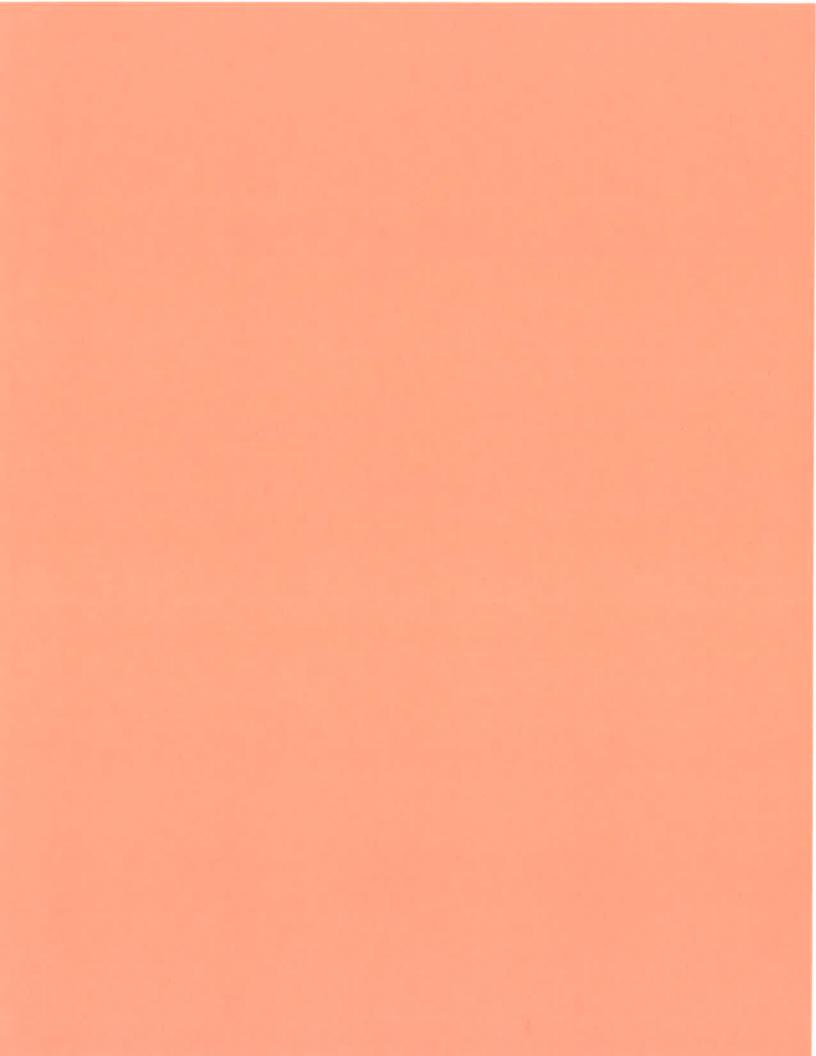
Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:

Mancy Weaver Dated: 11/2/17

Senior Chemist

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



Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-EB01-022117-SO

Matrix: Water

Analysis Method: 537 (Modified)

Extraction Method: 3535

Sample wt/vol: 279.3(mL)

Con. Extract Vol.: 0.50(mL)

Injection Volume: 2(uL)

% Moisture:

Analysis Batch No.: 152836

Lab Sample ID: 320-25962-3

Lab File ID: 2017.03.02A 009.d

Date Collected: 02/21/2017 13:25

Date Extracted: 02/28/2017 16:42

Date Analyzed: 03/02/2017 11:12

Dilution Factor: 1

GC Column: GeminiC18 3x100 ID: 3(mm)

GPC Cleanup: (Y/N) N

Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U / A	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	₹REC	Q	LIMITS
STL00990	13C4 PFOA	152	Ó	25-150
STL00991	13C4 PFOS	135		25-150
STL00994	1802 PFHxS	141		25-150

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-PWMA-SB01-0001

Matrix: Solid

Analysis Method: 537 (Modified)

Extraction Method: SHAKE

Sample wt/vol: 5.05(g)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 2(uL)

% Moisture: 13.3

Analysis Batch No.: 152825

Lab Sample ID: 320-25962-4

Lab File ID: 2017.03.01A 012.d

Date Collected: 02/21/2017 13:35

Date Extracted: 02/23/2017 17:22

Date Analyzed: 03/01/2017 19:45

Dilution Factor: 1

GC Column: GeminiC18 3x100 ID: 3(mm)

GPC Cleanup: (Y/N) N

Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	27		0.57	0.34	0,12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	270 2 20	E	5.7 0.57	3.4 0.34	1,4 0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	Ŋ	0.46	0.34	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	111		25-150
STL00991	13C4 PFOS	55		25-150
STL00994	1802 PFHxS	95		25-150

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

4DL

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-PWMA-SB01-0001 DL

Matrix: Solid

Analysis Method: 537 (Modified)

Extraction Method: SHAKE

Sample wt/vol: 5.05(g)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 2(uL)

% Moisture: 13.3

Analysis Batch No.: 153020

Lab Sample ID: 320-25962-4 DL

Lab File ID: 2017.03.03A 008.d

Dilution Factor: 10

GC Column; GeminiC18 3x100 ID: 3(mm)

GPC Cleanup: (Y/N) N

Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	28	\$ yf	5.7	3.4	1.2
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	(270)	Þ	5.7	3.4	1.4
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	Jø	4.6	3.4	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	136		25-150
STL00991	13C4 PFOS	90		25-150
STL00994	1802 PFHxS	122		25-150

FORM I LCMS ORGANICS ANALYSIS DATA SHEET

Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-PWMA-SB01-0204

Matrix: Solid

Analysis Method: 537 (Modified)

Lab Name: TestAmerica Sacramento

Extraction Method: SHAKE

Sample wt/vol: 4.97(g)

Con. Extract Vol.: 1.00(mL)

Injection Volume: 2(uL)

% Moisture: 14.7

Analysis Batch No.: 152825

Lab Sample ID: 320-25962-5

Lab File ID: 2017.03.01A 014.d

Date Collected: 02/21/2017 13:40

Date Extracted: 02/23/2017 17:22

Date Analyzed: 03/01/2017 20:00

Dilution Factor: 1

GC Column: GeminiC18 3x100 ID: 3(mm)

GPC Cleanup: (Y/N) N

Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid	5.5	/n	0.59	0.35	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	30	¥	0.59	0.35	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.95	M	0.47	0.35	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	101	h	25-150
STL00991	13C4 PFOS	56	THI COLUMN	25-150
STL00994	1802 PFHxS	95	M	25-150



FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-25962-1

SDG No.:

Client Sample ID: MEAFF-MRD-1A01-0217 Lab Sample ID: 320-25962-1

Matrix: Water

Lab File ID: S030614.D Analysis Method: WS-MS-0011 Date Collected: 02/21/2017 15:55

Extract. Method: 3510C

Date Extracted: 02/24/2017 15:44 Sample wt/vol: 1049(mL) Date Analyzed: 03/06/2017 16:12

Con. Extract Vol.: 1.0(mL)

Injection Volume: 1(uL)

% Moisture:

Analysis Batch No.: 153398

Dilution Factor: 1

Level: (low/med) Low

GPC Cleanup: (Y/N) N

Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.95	D.48	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	61		42-91

FORM I GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET



Lab Name: TestAmerica Sacramento Job No.: 320-25962-1 SDG No.:

Client Sample ID: MEAFF-MRD-1A01P-0217 Lab Sample ID: 320-25962-2

Matrix: Water Lab File ID: S030615.D

Analysis Method: WS-MS-0011 Date Collected: 02/21/2017 15:55

Extract. Method: 3510C Date Extracted: 02/24/2017 15:44

Sample wt/vol: 1035.2(mL) Date Analyzed: 03/06/2017 16:34

Injection Volume: 1(uL) Level: (low/med) Low

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

Analysis Batch No.: 153398 Units: ug/L

Con. Extract Vol.: 1.0(mL)

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
123-91-1	1,4-Dioxane	0.48	U	0.97	0.48	0.19

Dilution Factor: 1

CAS NO.	SURROGATE	%REC	Q	LIMITS
4165-60-0	Nitrobenzene-d5	63		42-91