TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-105496-1

Job Description: FAY-2017 Residential Sampling

For:
Chemours Company FC, LLC The
c/o AECOM
Sabre Building, Suite 300
4051 Ogletown Road
Newark, DE 19713

Attention: Michael Aucoin

Approved for release.
Michelle A Johnston
Project Manager II
1/30/2018 8:19 AM

Michelle A Johnston, Project Manager II
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0110
michelle.johnston@testamericainc.com
01/30/2018
Revision: 1

cc: Barbara McGraw
Kelly Rinehimer

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Table of Contents

Cover Title Page 1

Data Summaries 4

- Definitions 4
- Case Narrative 5
- Detection Summary 7
- Client Sample Results 13
- Default Detection Limits 17
- Surrogate Summary 18
- QC Sample Results 19
- QC Association 20
- Chronicle 21
- Certification Summary 23
- Method Summary 24
- Sample Summary 25
- Manual Integration Summary 26
- Reagent Traceability 28
  - COAs 34

Organic Sample Data 60

- LCMS 60
  - 8321A_HFPO_Du 60
    - 8321A_HFPO_Du QC Summary 61
    - 8321A_HFPO_Du Sample Data 67
    - Standards Data 83
      - 8321A_HFPO_Du ICAL Data 83
      - 8321A_HFPO_Du CCAL Data 126
    - Raw QC Data 144

Table of Contents

8321A_HFPO_Du Tune Data 144

8321A_HFPO_Du Blank Data 149

8321A_HFPO_Du LCS/LCSD Data 157

8321A_HFPO_Du Run Logs 174

8321A_HFPO_Du Prep Data 177

Shipping and Receiving Documents 181

Client Chain of Custody 182

Sample Receipt Checklist 183

ED_002011_00000024-00003

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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE
Client: The Chemours Company FC, LLC
Project: FAY-2017 Residential Sampling
Report Number: 280-105496-1

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

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.

For samples requiring analysis at a dilution, the dilution factor has been multiplied by the Method Detection Limit (MDL) for each analyte and evaluated versus the project-specific reporting limit (PSRL). If the obtained value is below the PSRL, then the PSRL is preserved as the reporting limit for the diluted result, otherwise, the obtained value becomes the reporting limit. This is done in order to maintain the PSRL to meet project requirements at the request of the client and to report the lowest possible RL for each analyte.

Revision - 1/30/2018
The client sample IDs and collection dates/times for 8046NC87H-W1-1-011218 (280-105496-3) and FAY-D-FB-011218 (280-105496-4) were mistakenly switched by the laboratory. The client sample IDs and collection dates/times have been corrected in the revised report.

Receipt
The samples were received on 1/15/2018 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C. No anomalies were observed during sample receipt.

Standards
Analytical standards were prepared using the acid form of the compound Perfluoro(2-propoxypropanoic) acid (HFPO-DA).

The surrogate compound, 13C3 HFPO-DA was introduced at the extraction step and was used as an internal standard for quantitation of HFPO-DA. The concentration of the surrogate spike is 0.2ug/L in water samples or 50ug/kg in soil samples.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analyte by TestAmerica Denver's SOP DV-OP-0019, Rev. 8 and analyzed for the target analyte by TestAmerica Denver's SOP DV-LC-0012, Rev. 14, with the exceptions of the items indicated in the DuPont QAS.

For water samples a 250mL aliquot of each sample is extracted using solid phase extraction technique with methanol conditioned Weak Anion Exchange cartridges. Each sample is spiked with the internal standard/surrogate, prior to extraction. After the sample is passed through the cartridge, the analytes are eluted with 2%Formic Acid, 6mLs of HPLC grade MeOH and then with 4mL of 10% ammonium hydroxide in methanol. The final volume is brought to 5mL using reagent water and the extract is analyzed by LC/MS/MS.

The target analyte is separated from other components on a high-performance liquid chromatography (HPLC) C18 column with a mobile phase mixture of water containing 0.1% ammonium acetate and methanol. The mass spectrometer detector is operated in the electrospray (ESI) negative ion mode. The instrument is calibrated at 7 concentration levels (0.2, 0.5, 1.0, 2.0, 5.0, 10 and 20ug/L). The target analyte is detected as the perfluoro(2-propoxypropanoic) acid with the parent ion of 328.8 amu. The daughter ions used for analysis by LC/MS/MS are at 284.8 amu. The ratio of the peak areas to the two ions must be ±20% of the ion ratios in the mid-point ICAL for qualitative identification. Sample results are quantitated using the internal standard dilution.

Tuning and Calibration
The instrument is tuned with a solution of the target analyte such that mass assignments are within ±0.5 amu of the daughter ions. The instrument is calibrated with seven concentration levels from 0.2ug/L to 20ug/L. Linear regression ($y=ax+b$) or quadratic functions ($y=ax+cx2+b$) are used with a correlation coefficient or coefficient of determination ≥0.990.
Following initial calibration (ICAL), an initial calibration blank (ICB) is tested, which consists of methanol spiked with the surrogate. The result for the target analyte must be less than one half the reporting limit (RL) to proceed.

Next an initial calibration verification (ICV) standard is tested. This is a mid-level concentration standard from a different vendor from the ICAL standard. If a different vendor is not available then, a different lot number from the same vendor is used. The ICV must be within 80-120% of the true value.

The quantitation limit verification standard is a standard from the same source as the ICAL tested run at the RL level to determine accuracy near the detection limit. This recovery must be within 70-130%.

Continuing calibration verification (CCV) standards are tested every 10 injections and are from the same source as the ICAL and are at

mid-level concentration. The recovery of the CCVs must be 70-130% or recalibration is necessary.

Method QC Samples
The Method Blank is processed reagent water spiked with internal standard and prepared with each batch of 20 samples of the same matrix. All samples in the batch are processed at the same time and with the same reagents. The method blank must be less than the LOD or associated batch samples must be re-extracted and reanalyzed.

Each batch is prepared with a low- and a mid-level concentration spike Laboratory Control Samples (LCS). The recoveries of these samples must be within 70-130% or associated batch samples must be re-extracted and reanalyzed. If the recovery is biased high and samples are non-detect, results can be reported without re-extraction.

Calculations
Sample Result Calculation

For internal standard quantitation,
HFPO-DA Response = Area of HFPO-DA * 13C3 HFPO-DA concentration / area of 13C3 HFPO-DA

Concentration in waters, ug/L = (Cex Vt)/(Vo)
Where:
Cex = Concentration measured in sample extract from the target analyte response (ng/mL)
Vt = Volume of total extract (mL)
Vo = Volume of water extracted (mL)

2. Percent Recovery Calculation

Spike Recovery = (SSR-SR)/(SA)x100%
Where:
SSR = Spike sample result
SR = Sample result
SA = Spike added

3. Relative Percent Difference Calculation

RPD = (SR - DR)/(1/2(SR+DR))x100
Where:
SR = Sample result
DR = Duplicate result

HFPO-DA Analysis Anomalies
Samples FAY-D-8141RVRRD-W1-1-010918 (280-105496-1), FAY-D-FB-010918 (280-105496-2), FAY-D-FB-011218 (280-105496-3) and 8046NC87H-W1-1-011218 (280-105496-4) were analyzed for Perfluorinated Hydrocarbons in accordance with DV-LC-0012. The samples were prepared on 01/17/2018 and analyzed on 01/22/2018.

Calibration 9 (STD125) has been included in the raw data, but was not used in the Initial Calibration (ICAL).

Reporting limits have been adjusted accordingly for the initial volumes extracted.

The project required MS and Sample Duplicate could not be performed for prep batch 280-401908, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Fluorochemical Characterization of Water Samples
Analytical Results

Chemours Sample Identification	TestAmerica Sample Identification	Collection Date/Time	Date Sample Received by TestAmerica	Analysis Date	HFPO-DA# (ug/L**)
FAY-D-8141RVRRD-W1-1-010918	280-105496-1	1/9/2018 8:58	1/15/2018	1/22/2018	<0.010

HFPO-DA – hexafluoropropylene oxide dimer acid, analyzed by method DV-LC-0012, Revision 14.
< = less than the stated value
** ug/L – micrograms/liter (parts per billion)

DEFINITIONS:
Reporting Limit (RL) for the procedure is approximately 0.010ug/L.

RESULTS ARE CALCULATED ACCORDING TO THE FOLLOWING CRITERIA:
For samples analyzed in duplicate:
If the sample and laboratory duplicate are greater than 5X RL, the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample or laboratory duplicate are less than 5X RL, and the absolute difference is less than RL, the average value is reported. If the absolute difference is greater than the RL, the higher value is reported.

Matrix Spike Recoveries: Acceptable Range: 70%-130%
The project required MS and Sample Duplicate could not be performed for prep batch 280-401908, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

SUBMITTED BY:

Michelle A. Johnston, Project Manager 1/23/2018 Date

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Fluorochemical Characterization of Water Samples
Analytical Results

Chemours Sample Identification	TestAmerica Sample Identification	Collection Date/Time	Date Sample Received by TestAmerica	Analysis Date	HFPO-DA# (ug/L**)
FAY-D-FB-010918	280-105496-2	1/9/2018 10:30	1/15/2018	1/22/2018	<0.010

HFPO-DA – hexafluoropropylene oxide dimer acid, analyzed by method DV-LC-0012, Revision 14.
< = less than the stated value
** ug/L – micrograms/liter (parts per billion)

DEFINITIONS:
Reporting Limit (RL) for the procedure is approximately 0.010ug/L.

RESULTS ARE CALCULATED ACCORDING TO THE FOLLOWING CRITERIA:
For samples analyzed in duplicate:
If the sample and laboratory duplicate are greater than 5X RL, the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample or laboratory duplicate are less than 5X RL, and the absolute difference is less than RL, the average value is reported. If the absolute difference is greater than the RL, the higher value is reported.

Matrix Spike Recoveries: Acceptable Range: 70%-130%
The project required MS and Sample Duplicate could not be performed for prep batch 280-401908, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

SUBMITTED BY:

Michelle A. Johnston, Project Manager — Date 1/23/2018

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Fluorochemical Characterization of Water Samples
Analytical Results

Chemours Sample Identification	TestAmerica Sample Identification	Collection Date/Time	Date Sample Received by TestAmerica	Analysis Date	HFPO-DA# (ug/L**)
FAY-D-FB-011218	280-105496-3	1/12/2018 10:45	1/15/2018	1/22/2018	<0.010

HFPO-DA – hexafluoropropylene oxide dimer acid, analyzed by method DV-LC-0012, Revision 14.
< = less than the stated value
** ug/L – micrograms/liter (parts per billion)

DEFINITIONS:
Reporting Limit (RL) for the procedure is approximately 0.010ug/L.

RESULTS ARE CALCULATED ACCORDING TO THE FOLLOWING CRITERIA:
For samples analyzed in duplicate:
If the sample and laboratory duplicate are greater than 5X RL, the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample or laboratory duplicate are less than 5X RL, and the absolute difference is less than RL, the average value is reported. If the absolute difference is greater than the RL, the higher value is reported.

Matrix Spike Recoveries: Acceptable Range: 70%-130%
The project required MS and Sample Duplicate could not be performed for prep batch 280-401908, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

SUBMITTED BY:

Michelle A. Johnston, Project Manager — Date 1/30/2018

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Fluorochemical Characterization of Water Samples
Analytical Results

Chemours Sample Identification	TestAmerica Sample Identification	Collection Date/Time	Date Sample Received by TestAmerica	Analysis Date	HFPO-DA# (ug/L**)
8046NC87H-W1-1-011218	280-105496-4	1/12/2018 11:28	1/15/2018	1/22/2018	0.22

HFPO-DA – hexafluoropropylene oxide dimer acid, analyzed by method DV-LC-0012, Revision 14.
< = less than the stated value
** ug/L – micrograms/liter (parts per billion)

DEFINITIONS:
Reporting Limit (RL) for the procedure is approximately 0.010ug/L.

RESULTS ARE CALCULATED ACCORDING TO THE FOLLOWING CRITERIA:
For samples analyzed in duplicate:
If the sample and laboratory duplicate are greater than 5X RL, the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample or laboratory duplicate are less than 5X RL, and the absolute difference is less than RL, the average value is reported. If the absolute difference is greater than the RL, the higher value is reported.

Matrix Spike Recoveries: Acceptable Range: 70%-130%
The project required MS and Sample Duplicate could not be performed for prep batch 280-401908, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

SUBMITTED BY:

Michelle A. Johnston, Project Manager 1/30/2018 Date

Executive Summary

Client: Chemours Company FC, LLC The | Job Number: 280-105496-1

8321A : HFPO-DA

Lab Sample ID	Client Sample ID	Analyte	Individual Result (ug/L)	Final Result (ug/L)	RL
280-105496-1	FAY-D-8141RVRRD-W1-1-010918	HFPO-DA	<0.010	<0.010	0.010
280-105496-2	FAY-D-FB-010918	HFPO-DA	<0.010	<0.010	0.010
280-105496-3	FAY-D-FB-011218	HFPO-DA	<0.010	<0.010	0.010
280-105496-4	8046NC87H-W1-1-011218	HFPO-DA	0.22	0.22	0.010

(a) Method 8321A

(b) DUP or REP indicates a laboratory duplicate.

(c) If the sample and laboratory duplicate are both greater than 5X the RL and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher of the sample and laboratory duplicate value is reported. If the sample and/or laboratory duplicate are less than 5X the RL, and the absolute difference between the sample and laboratory duplicate is less than the RL, the average value is reported. If the absolute difference is greater than the RL, the higher of the sample and laboratory duplicate value is reported. If either the sample or the duplicate result is greater than or equal to the RL and the other is less than the RL, then the higher of the two is reported.

(d) Moisture Determined by ASTM D2216.

(e) Reporting Limit (RL) = The concentration equivalent to the low calibration standard.

Detection Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Client Sample ID: FAY-D-8141RVRRD-W1-1-010918 — Lab Sample ID: 280-105496-1

No Detections.

Client Sample ID: FAY-D-FB-010918 — Lab Sample ID: 280-105496-2

No Detections.

Client Sample ID: FAY-D-FB-011218 — Lab Sample ID: 280-105496-3

No Detections.

Client Sample ID: 8046NC87H-W1-1-011218 — Lab Sample ID: 280-105496-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	0.22		0.010		ug/L	1		8321A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Client Sample ID: FAY-D-8141RVRRD-W1-1-010918

Lab Sample ID: 280-105496-1

Date Collected: 01/09/18 08:58
Date Received: 01/15/18 09:15

Matrix: Water

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	<0.010		0.010		ug/L		01/17/18 13:34	01/22/18 12:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*94*		*50 - 200*	*01/17/18 13:34*	*01/22/18 12:33*	*1*

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Client Sample ID: FAY-D-FB-010918

Lab Sample ID: 280-105496-2

Date Collected: 01/09/18 10:30
Date Received: 01/15/18 09:15

Matrix: Water

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	<0.010		0.010		ug/L		01/17/18 13:34	01/22/18 12:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*01/17/18 13:34*	*01/22/18 12:36*	*1*

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Client Sample ID: FAY-D-FB-011218

Lab Sample ID: 280-105496-3

Date Collected: 01/12/18 10:45
Date Received: 01/15/18 09:15

Matrix: Water

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	<0.010		0.010		ug/L		01/17/18 13:34	01/22/18 12:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*01/17/18 13:34*	*01/22/18 12:39*	*1*

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Client Sample ID: 8046NC87H-W1-1-011218

Lab Sample ID: 280-105496-4

Date Collected: 01/12/18 11:28
Date Received: 01/15/18 09:15

Matrix: Water

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	**0.22**		0.010		ug/L		01/17/18 13:34	01/22/18 12:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*50 - 200*	*01/17/18 13:34*	*01/22/18 12:42*	*1*

Default Detection Limits

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Method: 8321A - HFPO-DA

Prep: 3535

Analyte	RL	MDL	Units	Method
HFPO-DA	0.010	0.0051	ug/L	8321A

Surrogate Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Method: 8321A - HFPO-DA

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

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HFPODA (50-200)**						
280-105496-1	FAY-D-8141RVRRD-W1-1-0109	94						
280-105496-2	FAY-D-FB-010918	96						
280-105496-3	FAY-D-FB-011218	96						
280-105496-4	8046NC87H-W1-1-011218	91						
DLCK 280-390728/12	Lab Control Sample	102						
LCS 280-401908/2-A	Lab Control Sample	97						
LCSD 280-401908/3-A	Lab Control Sample Dup	97						
LLCS 280-401908/4-A	Lab Control Sample	96						
MB 280-401908/1-A	Method Blank	91						

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Method: 8321A - HFPO-DA

Lab Sample ID: DLCK 280-390728/12 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 390728

Analyte			Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits		
HFPO-DA			0.250	<0.50		ug/L		78	70 - 130		

Surrogate	*DLCK %Recovery*	*DLCK Qualifier*	*Limits*
13C3 HFPO-DA	*102*		*50 - 200*

Lab Sample ID: MB 280-401908/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 402339 — **Prep Batch: 401908**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	<0.010		0.010		ug/L		01/17/18 13:34	01/22/18 12:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*91*		*50 - 200*	*01/17/18 13:34*	*01/22/18 12:20*	*1*

Lab Sample ID: LCS 280-401908/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 402339 — **Prep Batch: 401908**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
HFPO-DA			0.200	0.192		ug/L		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*97*		*50 - 200*

Lab Sample ID: LCSD 280-401908/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 402339 — **Prep Batch: 401908**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HFPO-DA			0.200	0.190		ug/L		95	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C3 HFPO-DA	*97*		*50 - 200*

Lab Sample ID: LLCS 280-401908/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 402339 — **Prep Batch: 401908**

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits		
HFPO-DA			0.0200	0.0156		ug/L		78	70 - 130		

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*50 - 200*

QC Association Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

LCMS

Analysis Batch: 390728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
DLCK 280-390728/12	Lab Control Sample	Total/NA	Water	8321A	

Prep Batch: 401908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105496-1	FAY-D-8141RVRRD-W1-1-010918	Total/NA	Water	3535	
280-105496-2	FAY-D-FB-010918	Total/NA	Water	3535	
280-105496-3	FAY-D-FB-011218	Total/NA	Water	3535	
280-105496-4	8046NC87H-W1-1-011218	Total/NA	Water	3535	
MB 280-401908/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-401908/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 280-401908/3-A	Lab Control Sample Dup	Total/NA	Water	3535	
LLCS 280-401908/4-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 402339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105496-1	FAY-D-8141RVRRD-W1-1-010918	Total/NA	Water	8321A	401908
280-105496-2	FAY-D-FB-010918	Total/NA	Water	8321A	401908
280-105496-3	FAY-D-FB-011218	Total/NA	Water	8321A	401908
280-105496-4	8046NC87H-W1-1-011218	Total/NA	Water	8321A	401908
MB 280-401908/1-A	Method Blank	Total/NA	Water	8321A	401908
LCS 280-401908/2-A	Lab Control Sample	Total/NA	Water	8321A	401908
LCSD 280-401908/3-A	Lab Control Sample Dup	Total/NA	Water	8321A	401908
LLCS 280-401908/4-A	Lab Control Sample	Total/NA	Water	8321A	401908

Client Sample ID: FAY-D-8141RVRRD-W1-1-010918 — Lab Sample ID: 280-105496-1

Date Collected: 01/09/18 08:58
Date Received: 01/15/18 09:15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.6 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:33	AGCM	TAL DEN

Client Sample ID: FAY-D-FB-010918 — Lab Sample ID: 280-105496-2

Date Collected: 01/09/18 10:30
Date Received: 01/15/18 09:15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:36	AGCM	TAL DEN

Client Sample ID: FAY-D-FB-011218 — Lab Sample ID: 280-105496-3

Date Collected: 01/12/18 10:45
Date Received: 01/15/18 09:15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.5 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:39	AGCM	TAL DEN

Client Sample ID: 8046NC87H-W1-1-011218 — Lab Sample ID: 280-105496-4

Date Collected: 01/12/18 11:28
Date Received: 01/15/18 09:15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.1 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:42	AGCM	TAL DEN

Client Sample ID: Method Blank — Lab Sample ID: MB 280-401908/1-A

Date Collected: N/A
Date Received: N/A
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:20	AGCM	TAL DEN

Client Sample ID: Lab Control Sample — Lab Sample ID: DLCK 280-390728/12

Date Collected: N/A
Date Received: N/A
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8321A		1			390728	10/10/17 10:04	AGCM	TAL DEN

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 280-401908/2-A

Date Collected: N/A
Date Received: N/A
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:23	AGCM	TAL DEN

Client Sample ID: Lab Control Sample Dup — Lab Sample ID: LCSD 280-401908/3-A

Date Collected: N/A
Date Received: N/A
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:26	AGCM	TAL DEN

Client Sample ID: Lab Control Sample — Lab Sample ID: LLCS 280-401908/4-A

Date Collected: N/A
Date Received: N/A
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	401908	01/17/18 13:34	SKM	TAL DEN
Total/NA	Analysis	8321A		1			402339	01/22/18 12:29	AGCM	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Identification Number	Expiration Date
North Carolina (WW/SW)	State Program	4	358	12-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8321A	3535	Water	HFPO-DA

Method Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Method	Method Description	Protocol	Laboratory
8321A	HFPO-DA	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-2017 Residential Sampling

TestAmerica Job ID: 280-105496-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-105496-1	FAY-D-8141RVRRD-W1-1-010918	Water	01/09/18 08:58	01/15/18 09:15
280-105496-2	FAY-D-FB-010918	Water	01/09/18 10:30	01/15/18 09:15
280-105496-3	FAY-D-FB-011218	Water	01/12/18 10:45	01/15/18 09:15
280-105496-4	8046NC87H-W1-1-011218	Water	01/12/18 11:28	01/15/18 09:15

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Instrument ID: LC_LCMS7 Analysis Batch Number: 390728

Lab Sample ID: STD001 280-390728/3 IC Client Sample ID:

Date Analyzed: 10/10/17 09:35 Lab File ID: hfpo717J10026.d GC Column: Synergi Hydro ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	0.89	Baseline	meyera	10/10/17 11:50

8321A

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Instrument ID: LC_LCMS7 Analysis Batch Number: 402339

Lab Sample ID: LLCS 280-401908/4-A Client Sample ID:

Date Analyzed: 01/22/18 12:29 Lab File ID: hfpo718A22049.d GC Column: Synergi Hydro ID:

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	0.96	Baseline	meyera	01/22/18 13:40

8321A

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HFPO I.S._00007	12/12/18	12/12/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00007	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
.13C3 HFPO-DA_00007	08/17/20	Wellington Laboratories, Lot M3HFPOADA0817			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
.HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPODA0717			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-0_00031	10/24/17	10/10/17	PFC_Dill_Solvent, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
HFPO_CAL-1_00030	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	0.5 uL	HFPO-DA	0.25 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-1_00031	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	0.5 uL	HFPO-DA	0.25 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-2_00031	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	1 uL	HFPO-DA	0.5 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-2_00032	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	1 uL	HFPO-DA	0.5 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-3_00030	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	2 uL	HFPO-DA	1 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-3_00031	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	2 uL	HFPO-DA	1 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-4_00030	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HFPO Spike_00003	4 uL	HFPO-DA	2 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-4_00031	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	4 uL	HFPO-DA	2 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-5_00067	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	10 uL	HFPO-DA	5 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-5_00070	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	10 uL	HFPO-DA	5 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HFPO_CAL-5_00078	01/26/18	01/12/18	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	10 uL	HFPO-DA	5 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPODA0717			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-6_00067	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	20 uL	HFPO-DA	10 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-6_00070	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	20 uL	HFPO-DA	10 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-6_00078	01/26/18	01/12/18	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	20 uL	HFPO-DA	10 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPODA0717			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-7_00030	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	50 uL	HFPO-DA	25 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-7_00031	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	50 uL	HFPO-DA	25 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-8_00030	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	100 uL	HFPO-DA	50 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-8_00031	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
					HFPO Spike_00003	100 uL	HFPO-DA	50 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_ICV_00031	09/28/17	09/14/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00003	4 uL	HFPO-DA	2 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_ICV_00032	10/24/17	10/10/17	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00004	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00003	4 uL	HFPO-DA	2 ug/L
.HFPO I.S._00004	08/28/18	08/28/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00004	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00004	08/28/18	Wellington Laboratories, Lot M3HFPOADA0616			(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00003	01/11/18	01/10/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00003	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00003	12/16/18	Wellington Laboratories, Lot HFPODA0213			(Purchased Reagent)		HFPO-DA	50 ug/mL

Reagent

13C3 HFPO-DA_00004

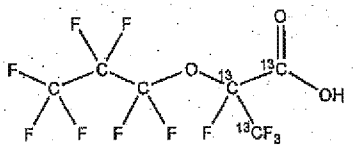
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA0616

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-$^{13}C_3$-propanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3HF_{11}O_3$	**MOLECULAR WEIGHT:**	333.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	06/25/2016		
EXPIRY DATE: (mm/dd/yyyy)	06/25/2019		
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 ~ 1.5% of two constitutional isomers.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 06/29/2016 (mm/dd/yyyy)

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

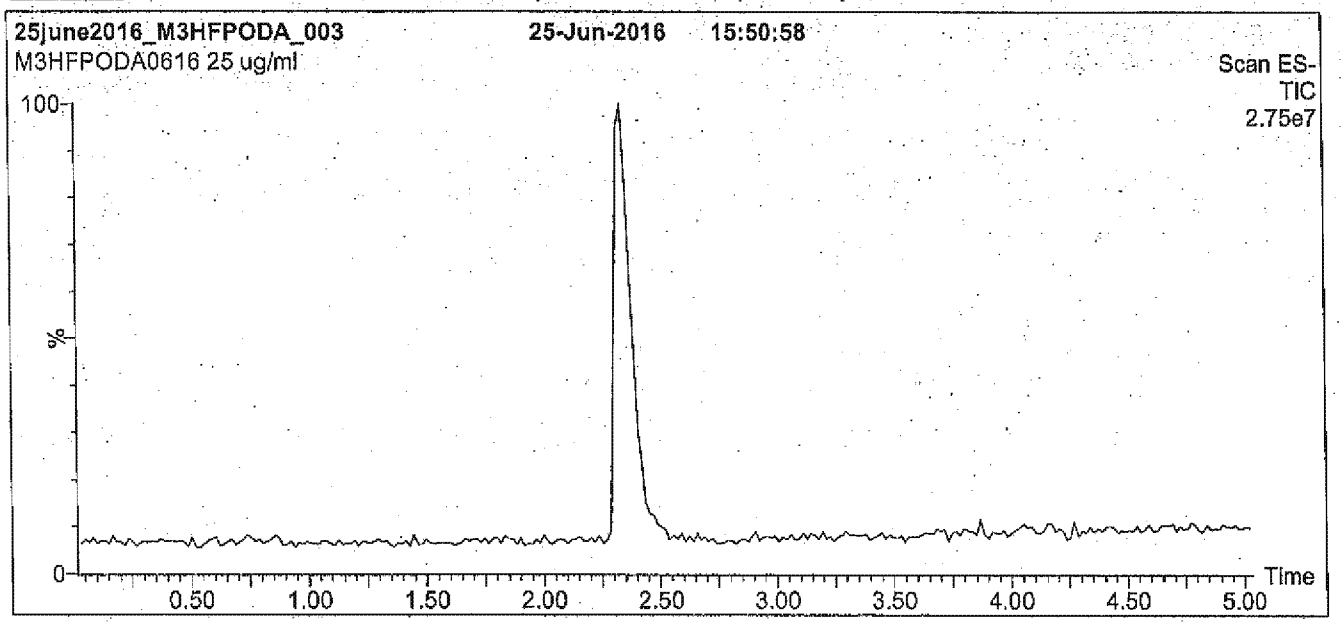
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

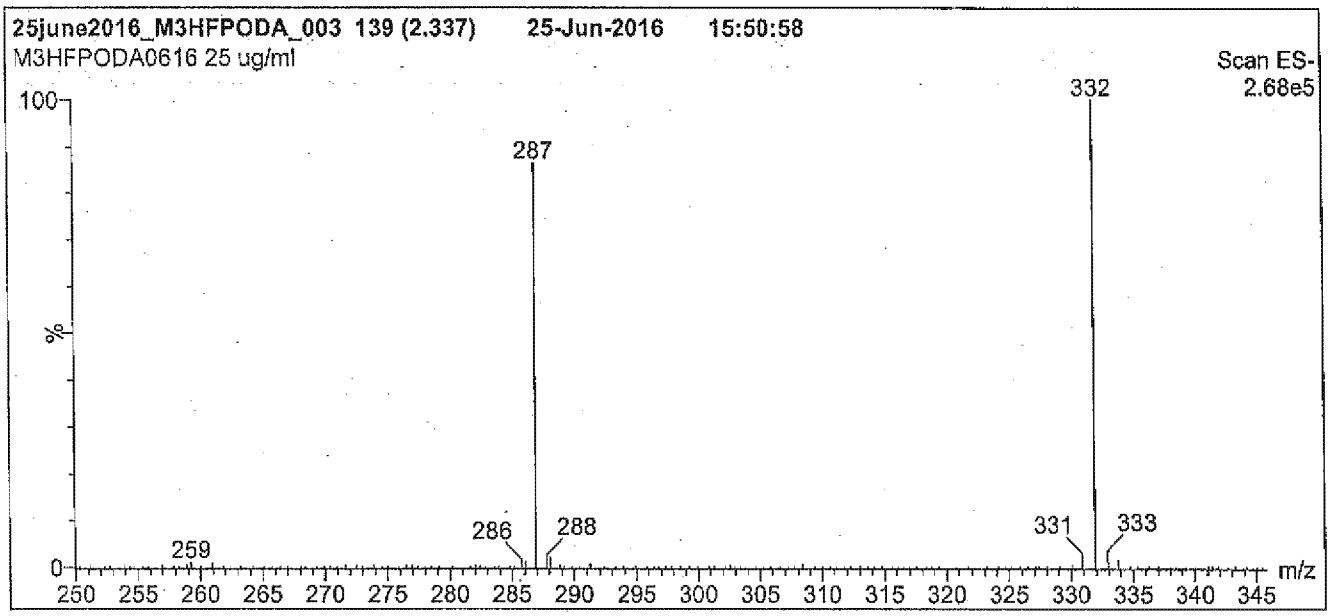
CALA Testing Accreditation No A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

Figure 1: **M3HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

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

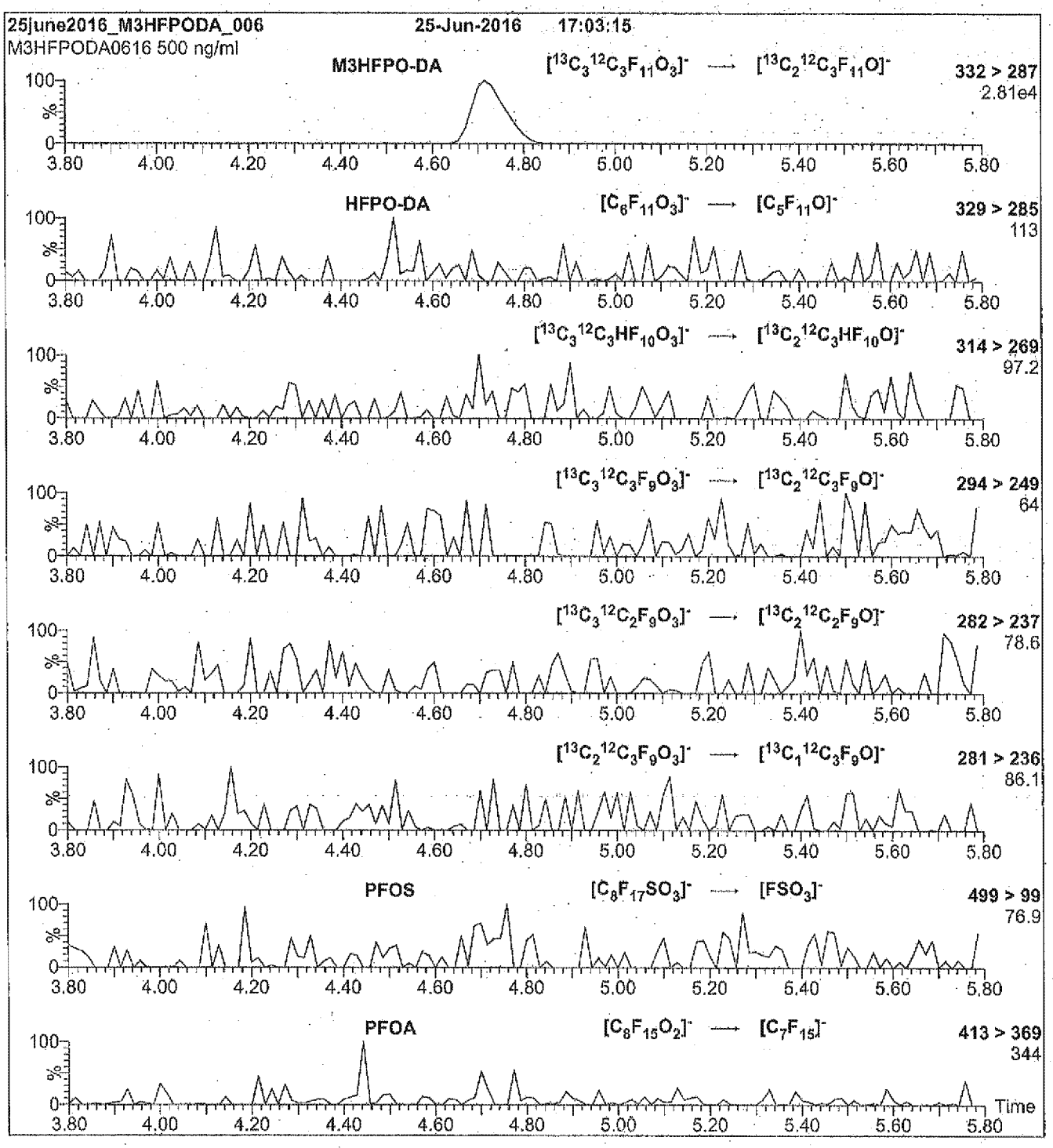
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 9.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3HFPO-DA)

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

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.46e-3
Collision Energy (eV) = 5

Reagent

13C3 HFPO-DA_00007

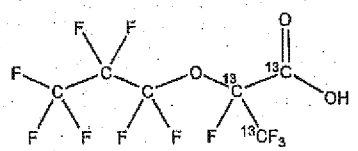
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA0817

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-$^{13}C_3$-propanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3HF_{11}O_3$	**MOLECULAR WEIGHT:**	333.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	08/17/2017		
EXPIRY DATE: (mm/dd/yyyy)	08/17/2020		
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 ~ 1.5% of two constitutional isomers.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/25/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

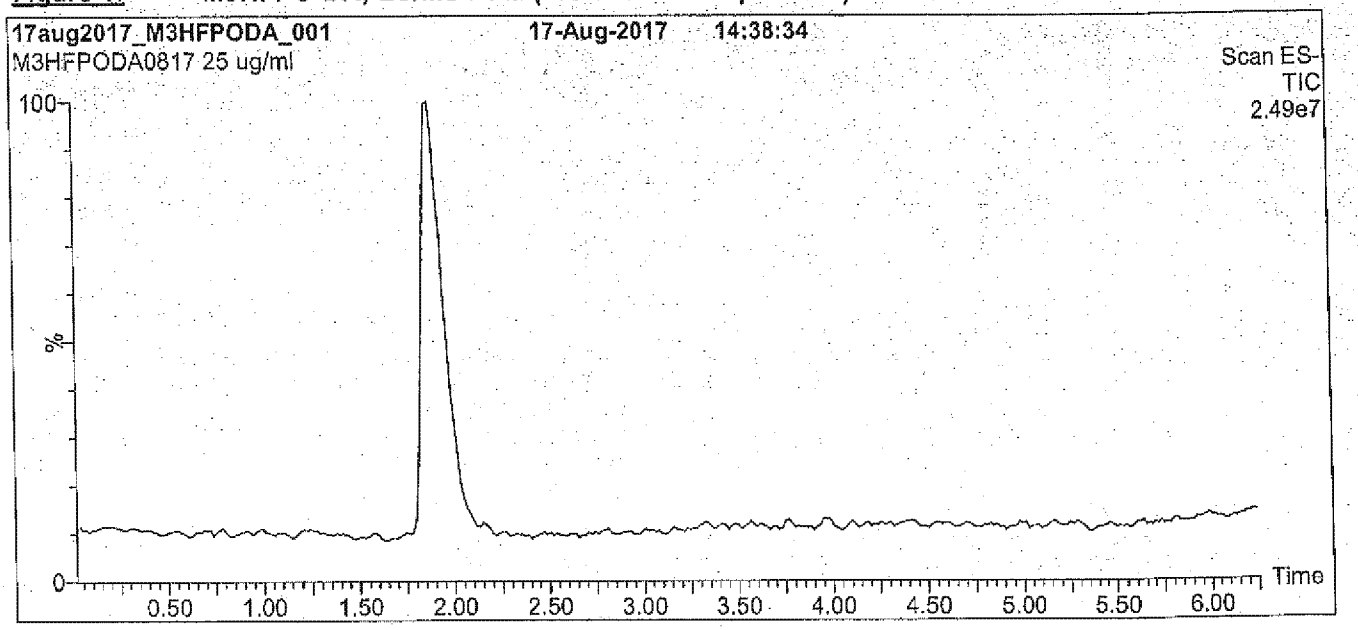
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

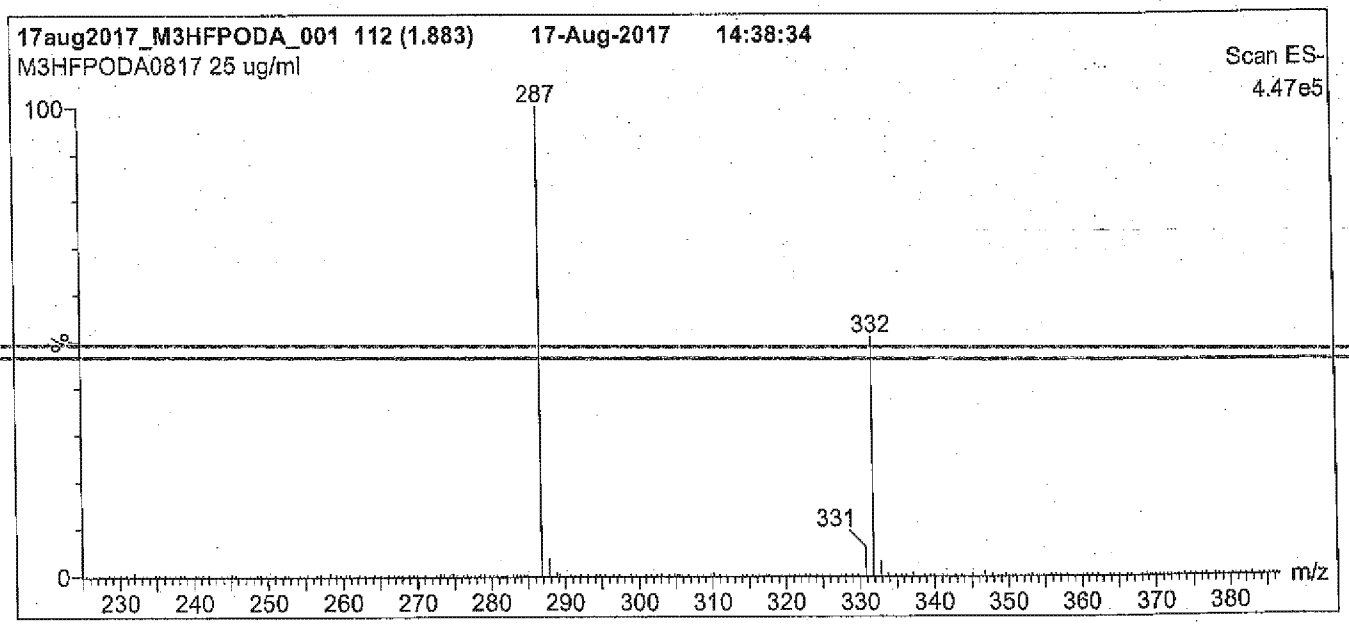
CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

Figure 1: **M3HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 55% MeOH / 45% H_2O with 10 mM NH_4OAc buffer
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.

Time: 10 min

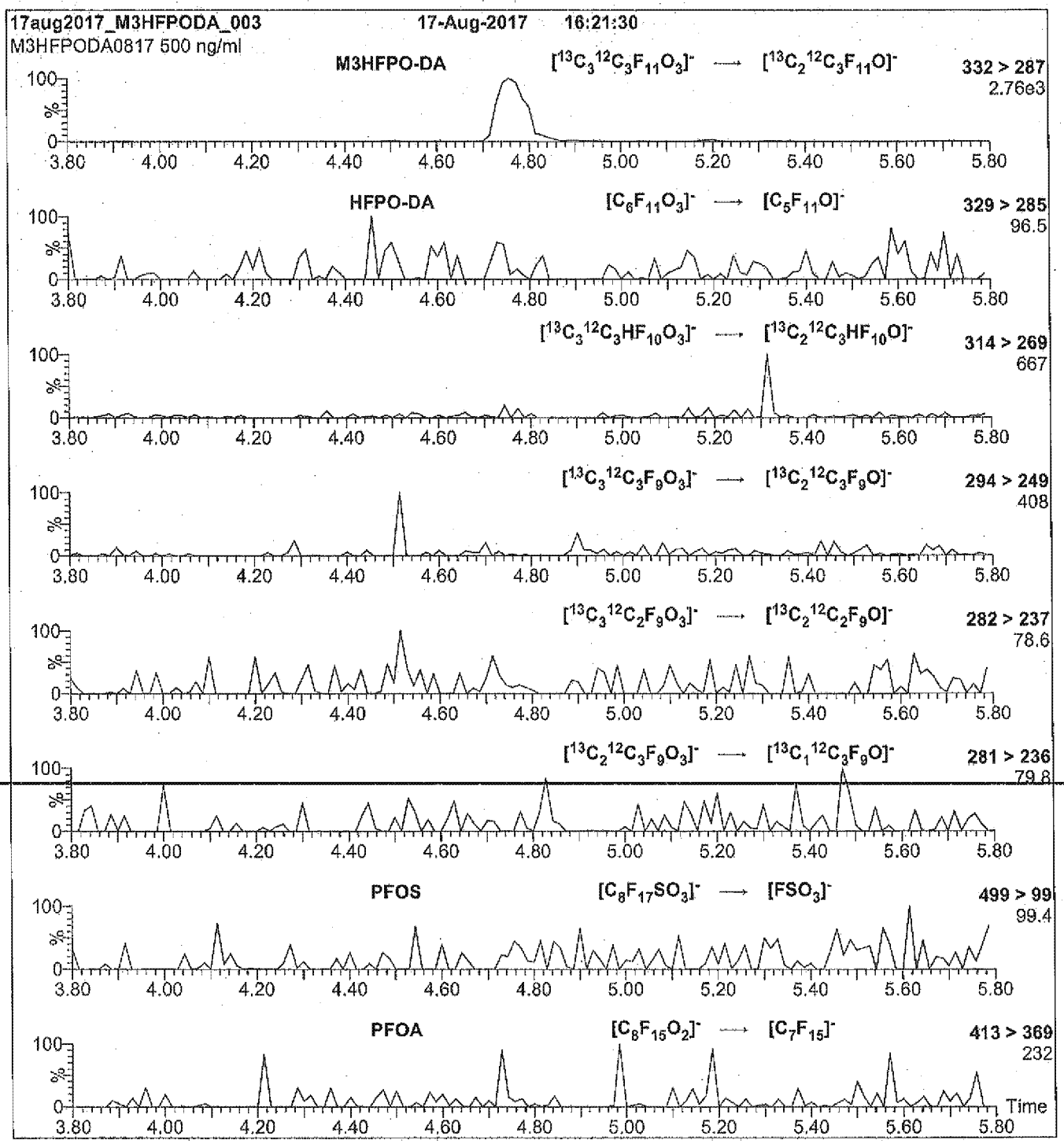
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3HFPO-DA)

Mobile phase: Isocratic 80% MeOH / 20% H_2O with 10 mM NH_4OAc buffer

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 5

Reagent

HFPO I.S._00004

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

HFPO I.S._00004

Reagent ID: HFPO I.S._00004

		Expiration Date:	08/28/2018
Description:	Internal Standard for HFPO 0.5ug/ml	Laboratory:	TestAmerica Denver
No. of Bottles:	1	Prepared By:	Meyer, Andrew GC
Storage Location:	North Analytical	Solvent:	LCMS Grade MeOH
Reagent Volume:	100.000 mL	Solvent Lot:	LCMS_MeOH_00110
Creation Date:	08/28/2017		
Open Date:			
Container(s):	4700620		
Comment:			

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	13C3 HFPO-DA_00004	08/28/2018	50.00000	ug/mL	0.50000	ug/mL
13C3 HFPO-DA (IS)	13C3 HFPO-DA_00004	08/28/2018	50.00000	ug/mL	0.50000	ug/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
13C3 HFPO-DA_00004	13C3 HFPO-DA I.S. for HFPO	ASTD	08/28/18	Wellington Laboratories	M3HFPOADA061	6M3HFPO-DA	1.00000	mL

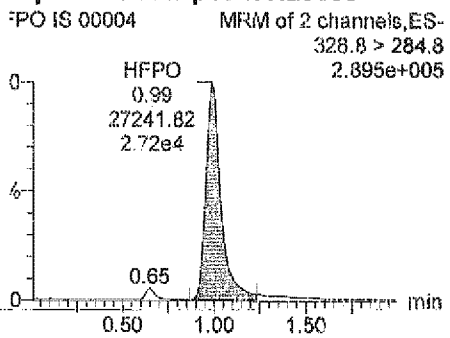
Ok AW 8/29/17

taset: Untitled

st Altered: Tuesday, August 29, 2017 10:47:21 Mountain Daylight Time
nted: Tuesday, August 29, 2017 10:47:53 Mountain Daylight Time

thod: C:\MassLynx\8321.PRO\MethDB\hfpo.mdb 23 Aug 2017 10:19:52
libration: C:\MassLynx\8321.PRO\CurveDB\hfpo17d24.cdb 24 Apr 2017 13:20:17

mple Name: hfpo717H23083

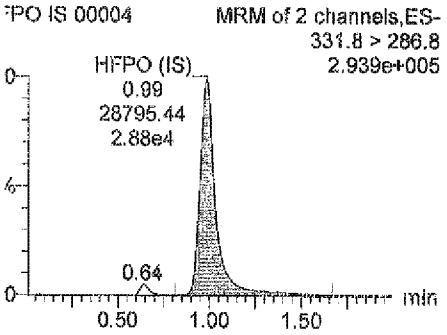


#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primar...	ppb	%Dev
1	hfpo717H23083		10.000	0.99	27241.822	28795.438	0.946	bd	10.0	-0.4

ıtaset: Untitled

st Altered: Tuesday, August 29, 2017 10:47:21 Mountain Daylight Time
nted: Tuesday, August 29, 2017 10:47:53 Mountain Daylight Time

mple Name: hfpo717H23083



#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Primar	ppb	%Dev
1	hfpo717H23083		1.000	0.99	28795.438		28795.438	bb	1.2	23.6

Reagent

HFPO I.S._00007

Preliminary Report

TestAmerica Denver
Internal Standard Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171212-65681.b\hfpo717L12074.d
Lims ID: HFPO IS 00007
Client ID:
Sample Type: CCV
Inject. Date: 12-Dec-2017 15:02:32 ALS Bottle#: 25 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: HFPO IS 00007
Misc. Info.: HFPO17L12
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171212-65681.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 12-Dec-2017 15:48:38 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK024

Averaged ICal Samples:

\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10026.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10027.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10028.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10029.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10030.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10031.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10032.d
\\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Area Recoveries, Detector: F1:MRM

Compound	Average Standard	Lower Limit	Upper Limit	Sample	% Rec
* 2 13C3 HFPO-DA (IS)	731446	365723	1462892	740105	101.18

RT Recoveries

Compound	Average Standard	Lower Limit	Upper Limit	Sample	DLT(min.)	% Diff
* 2 13C3 HFPO-DA (IS)	0.880	0.380	1.380	1.056	-0.176	19.997

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.500 minutes of internal standard RT.
RT LOWER LIMIT = - 0.500 minutes of internal standard RT.

Reagent

HFPO-DA_00003

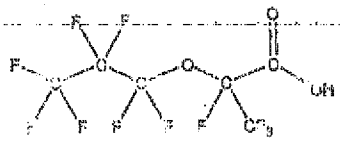
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: HFPO-DA **LOT NUMBER:** HFPODA0213

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

STRUCTURE: **CAS #:** 13252-13-6



MOLECULAR FORMULA: $C_6HF_{11}O_3$ **MOLECULAR WEIGHT:** 330.05

CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 02/05/2014

EXPIRY DATE: (mm/dd/yyyy) Stability studies ongoing

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

RL = 0.025 ppb

MDL < RL

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:** 02/13/2014 (mm/dd/yyyy)

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

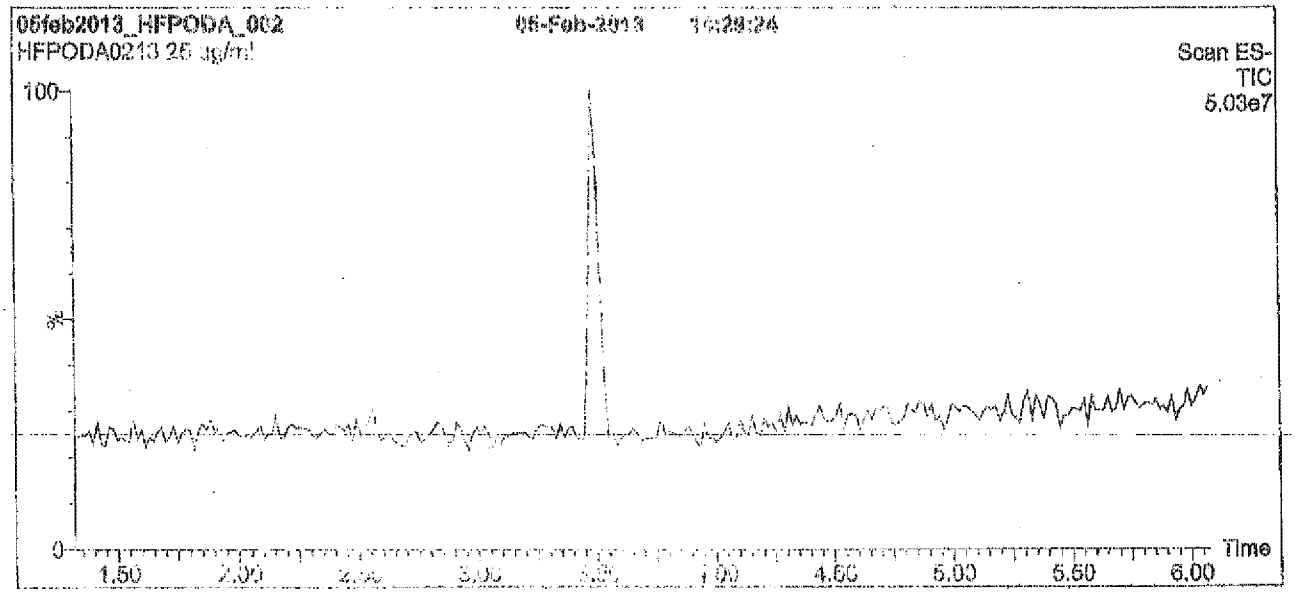
CALA

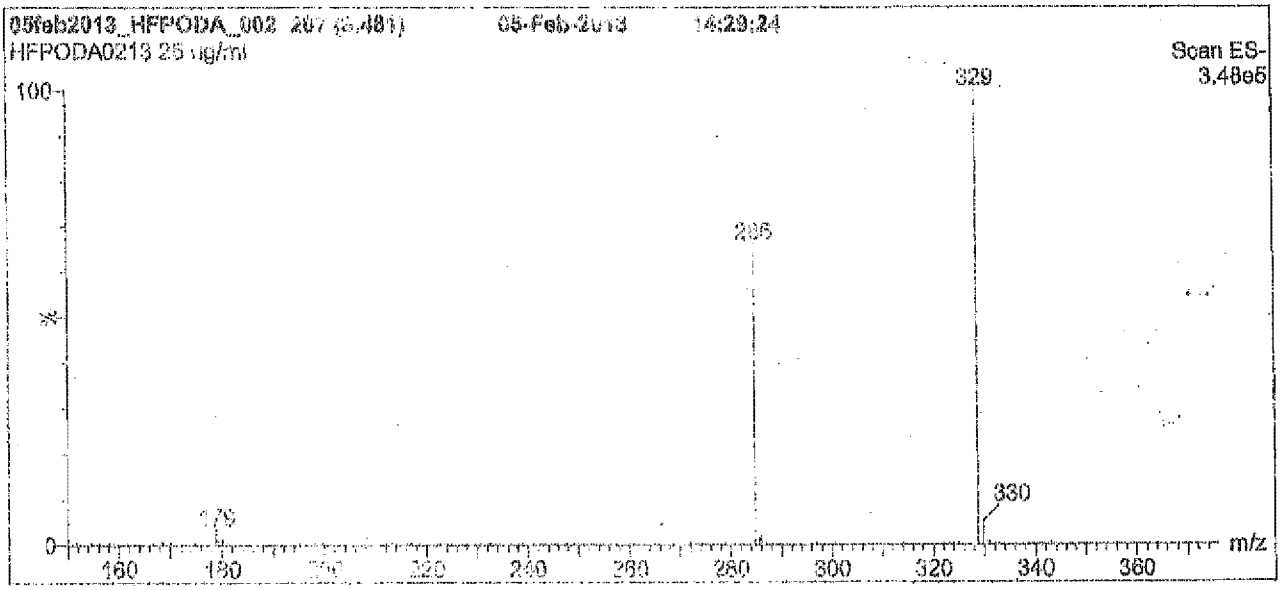
ACLASS

REFERENCE MATERIAL PRODUCER

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

Figure 1: HFPO-DA; LC/MS Data (TIC and Mass Spectrum)





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Kinetex PFP
2.6 µm, 4.6 x 100 mm

Mobile phase: Gradient
Start 40% (80:20 MeOH/ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.5 min.
Time: 11 min

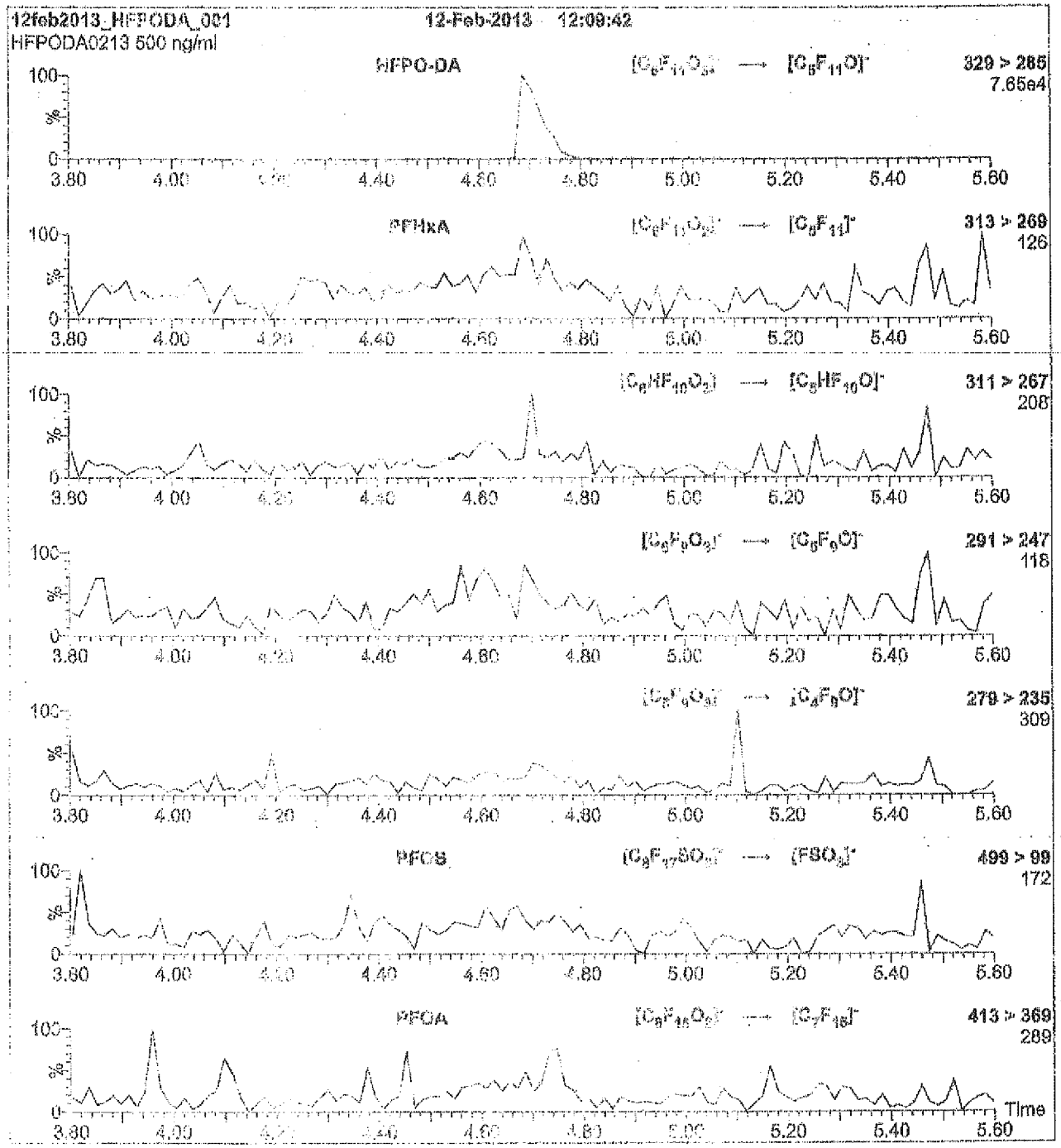
Flow: 800 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 9.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

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



Conditions for Figure 2:

Injection:	Direct loop injection 10 µl (500 ng/ml HFPO-DA)	MS Parameters: Collision Gas (mbar) = 3.87e-3 Collision Energy (eV) = 5
Mobile phase:	Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O (both with 10 mM NH_4OAc buffer)	
Flow:	300 µl/min	

Reagent

HFPO-DA_00004

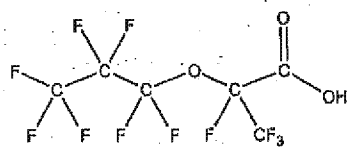
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: HFPO-DA **LOT NUMBER:** HFPODA0717

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

STRUCTURE: **CAS #:** 13252-13-6



MOLECULAR FORMULA:	$C_6HF_{11}O_3$	**MOLECULAR WEIGHT:**	330.05
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	07/13/2017		
EXPIRY DATE: (mm/dd/yyyy)	07/13/2020		
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.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

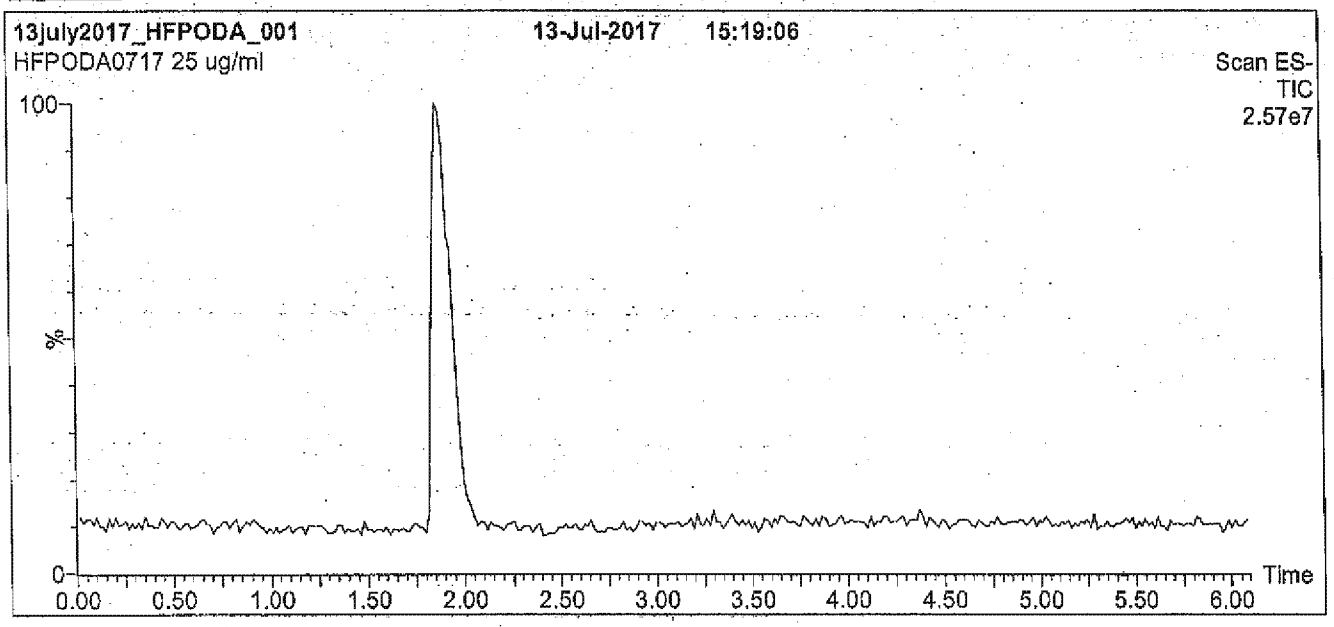
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

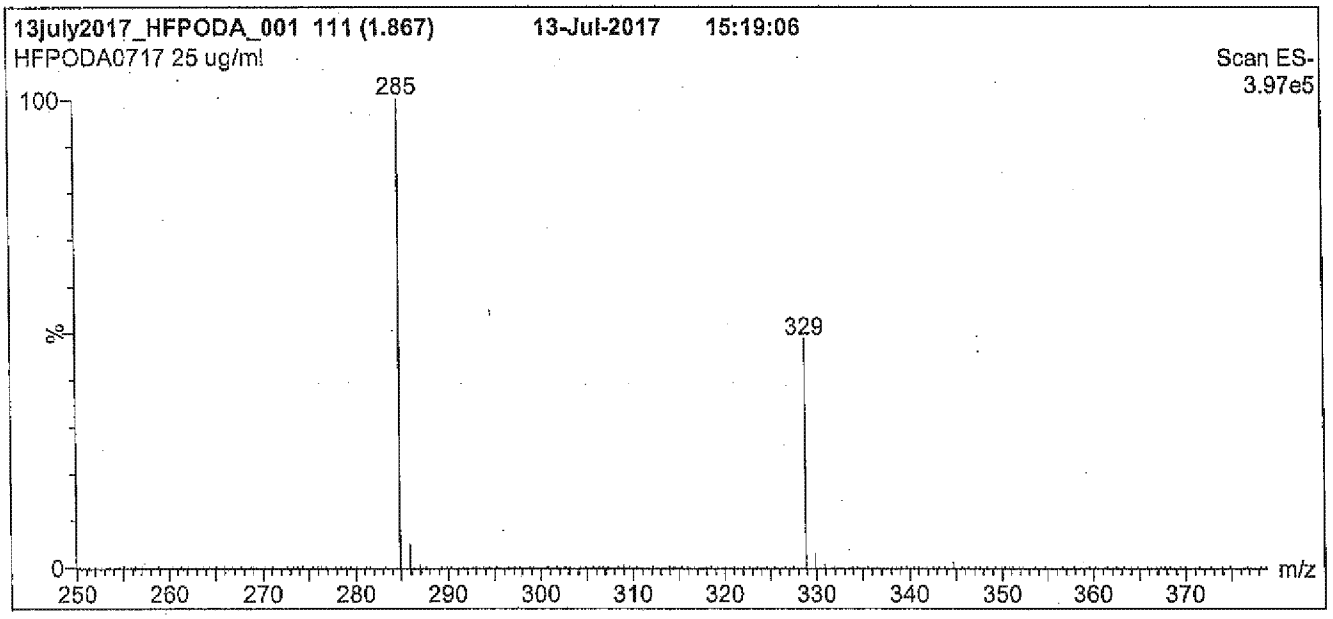
CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

Figure 1: **HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 55% MeOH / 45% H_2O with 10 mM NH_4OAc buffer
Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.

Time: 10 min

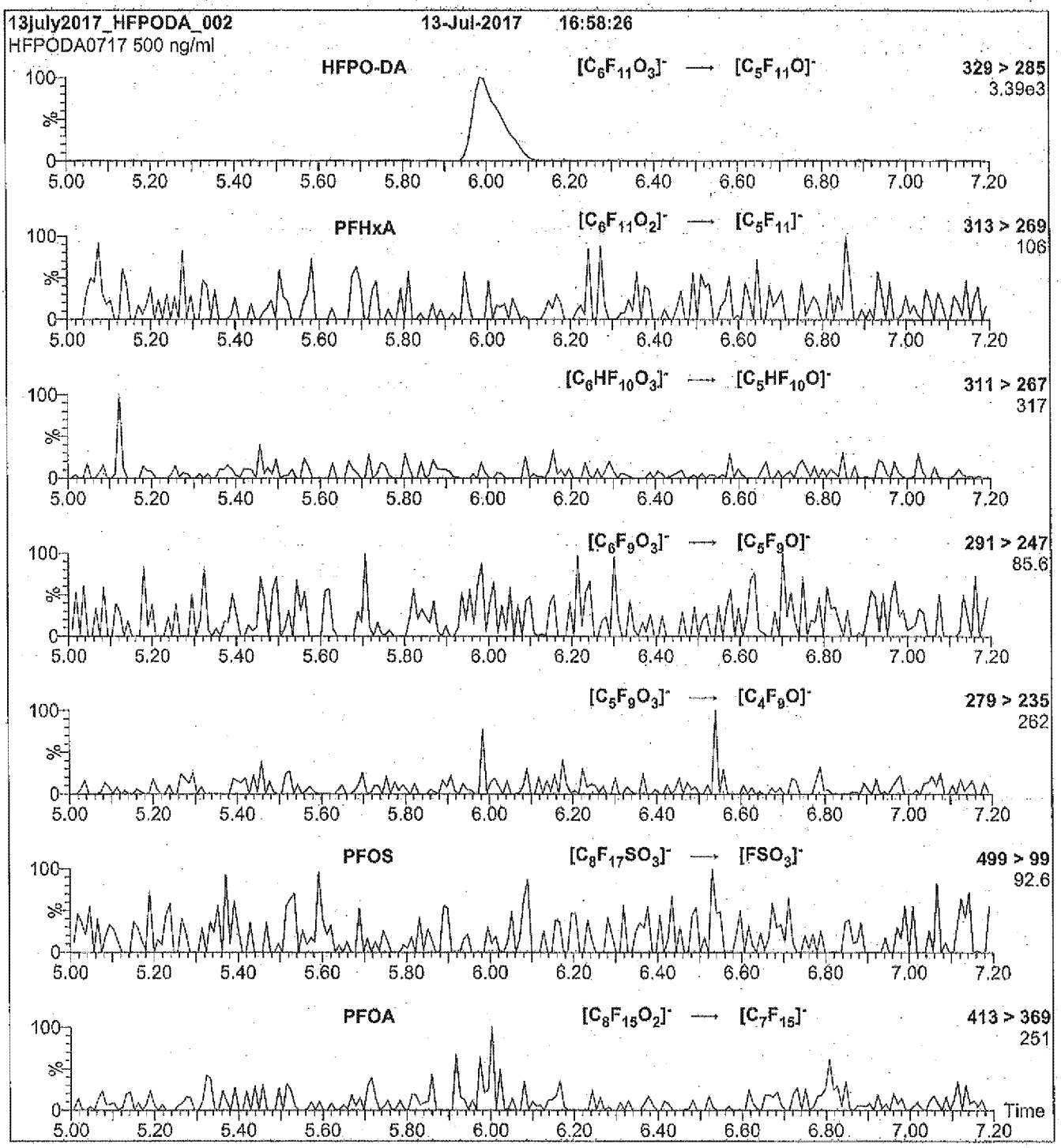
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 700

Figure 2: HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml HFPO-DA)

Mobile phase: Isocratic 80% MeOH / 20% H_2O with 10 mM NH_4OAc buffer

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 5

8321A_HFPO_Du

HFPO-DA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Synergi Hyd ID:

Client Sample ID	Lab Sample ID	HFPODA #
FAY-D-8141RVRRD-W1-1-010918	280-105496-1	94
FAY-D-FB-010918	280-105496-2	96
FAY-D-FB-011218	280-105496-3	96
8046NC87H-W1-1-011218	280-105496-4	91
	MB 280-401908/1-A	91
	LCS 280-401908/2-A	97
	LCSD 280-401908/3-A	97
	LLCS 280-401908/4-A	96
	DLCK 280-390728/12	102

	QC LIMITS
HFPODA = 13C3 HFPO-DA	50-200

Column to be used to flag recovery values

FORM II 8321A

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Matrix: Water Level: Low Lab File ID: hfpo718A22047.d

Lab ID: LCS 280-401908/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
HFPO-DA	0.200	0.192	96	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Matrix: Water Level: Low Lab File ID: hfpo718A22048.d

Lab ID: LCSD 280-401908/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
HFPO-DA	0.200	0.190	95	1	20	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Matrix: Water Level: Low Lab File ID: hfpo718A22049.d

Lab ID: LLCS 280-401908/4-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LLCS CONCENTRATION (ug/L)	LLCS % REC	QC LIMITS REC	#
HFPO-DA	0.0200	0.0156	78	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS DETECTION LIMIT CHECK STANDARD RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Matrix: Water Level: Low Lab File ID: hfpo717J10035.d

Lab ID: DLCK 280-390728/12 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	DLCK CONCENTRATION (ug/L)	DLCK % REC	QC LIMITS REC	#
HFPO-DA	0.250	<0.50	78	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab File ID: hfpo718A22046.d Lab Sample ID: MB 280-401908/1-A

Matrix: Water Date Extracted: 01/17/2018 13:34

Instrument ID: LC_LCMS7 Date Analyzed: 01/22/2018 12:20

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-401908/2-A	hfpo718A22047.d	01/22/2018 12:23
	LCSD 280-401908/3-A	hfpo718A22048.d	01/22/2018 12:26
	LLCS 280-401908/4-A	hfpo718A22049.d	01/22/2018 12:29
FAY-D-8141RVRRD-W1-1-010918	280-105496-1	hfpo718A22050.d	01/22/2018 12:33
FAY-D-FB-010918	280-105496-2	hfpo718A22051.d	01/22/2018 12:36
FAY-D-FB-011218	280-105496-3	hfpo718A22052.d	01/22/2018 12:39
8046NC87H-W1-1-011218	280-105496-4	hfpo718A22053.d	01/22/2018 12:42

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID: FAY-D-8141RVRRD-W1-1-010918
Lab Sample ID: 280-105496-1
Matrix: Water
Lab File ID: hfpo718A22050.d
Analysis Method: 8321A
Date Collected: 01/09/2018 08:58
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 251.6(mL)
Date Analyzed: 01/22/2018 12:33
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.010		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	94		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22050.d
Lims ID: 280-105496-D-1-A
Client ID: FAY-D-8141RVRRD-W1-1-010918
Sample Type: Client
Inject. Date: 22-Jan-2018 12:33:14 ALS Bottle#: 15 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-D-1-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:41

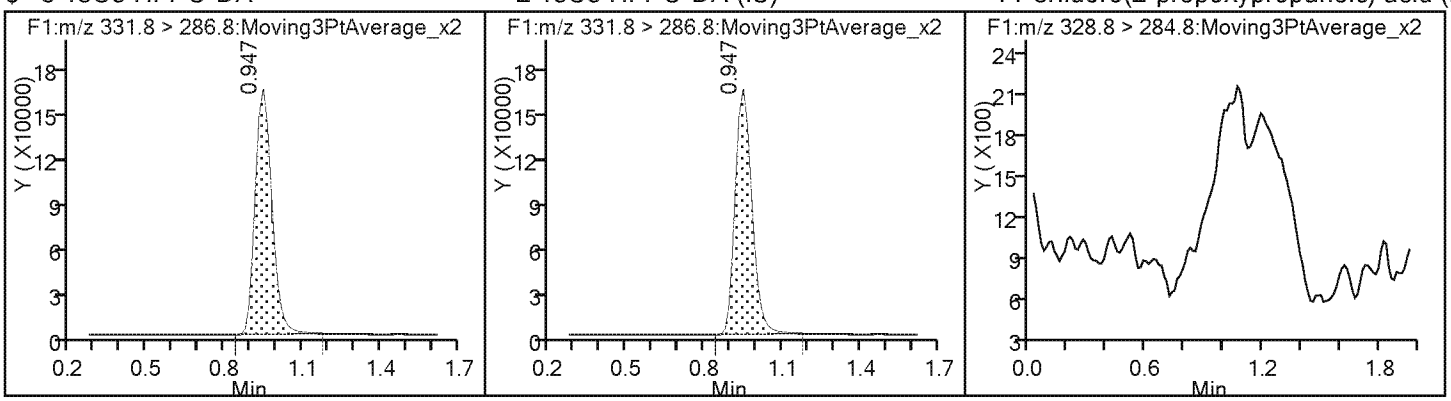
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.947	0.961	-0.014	1.000	689758	9.43	1732	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.947	0.961	-0.014		689758	10.0	1732	

Report Date: 22-Jan-2018 13:40:52 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22050.d				
Injection Date:	22-Jan-2018 12:33:14	Instrument ID:	LC_LCMS7		
Lims ID:	280-105496-D-1-A	Lab Sample ID:	280-105496-1		
Client ID:	FAY-D-8141RVRRD-W1-1-010918				
Operator ID:	JBH	ALS Bottle#:	15	Worklist Smp#:	34
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	HFPO	Limit Group:	LC - 8321A_HFPO_Du		

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22050.d
Lims ID: 280-105496-D-1-A
Client ID: FAY-D-8141RVRRD-W1-1-010918
Sample Type: Client
Inject. Date: 22-Jan-2018 12:33:14 ALS Bottle#: 15 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-D-1-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:41

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.43	94.30

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID: FAY-D-FB-010918
Lab Sample ID: 280-105496-2
Matrix: Water
Lab File ID: hfpo718A22051.d
Analysis Method: 8321A
Date Collected: 01/09/2018 10:30
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 255(mL)
Date Analyzed: 01/22/2018 12:36
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.010		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	96		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22051.d
Lims ID: 280-105496-B-2-A
Client ID: FAY-D-FB-010918
Sample Type: Client
Inject. Date: 22-Jan-2018 12:36:29 ALS Bottle#: 16 Worklist Smp#: 35
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-B-2-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:44

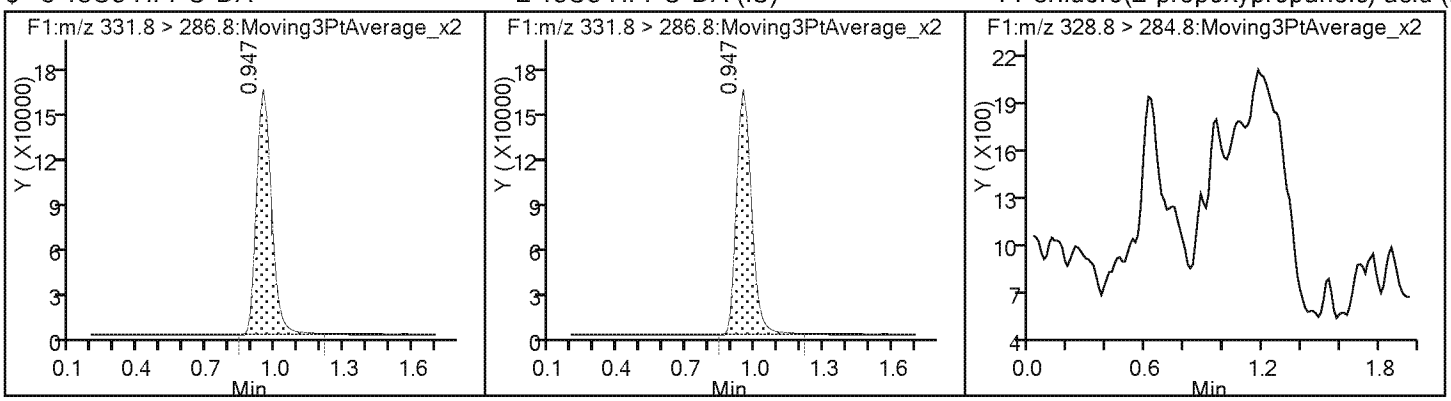
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.947	0.961	-0.014	1.000	699514	9.56	1844	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.947	0.961	-0.014		699514	10.0	1844	

Report Date: 22-Jan-2018 13:40:52 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22051.d				
Injection Date:	22-Jan-2018 12:36:29	Instrument ID:	LC_LCMS7		
Lims ID:	280-105496-B-2-A	Lab Sample ID:	280-105496-2		
Client ID:	FAY-D-FB-010918				
Operator ID:	JBH	ALS Bottle#:	16	Worklist Smp#:	35
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	HFPO	Limit Group:	LC - 8321A_HFPO_Du		

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22051.d
Lims ID: 280-105496-B-2-A
Client ID: FAY-D-FB-010918
Sample Type: Client
Inject. Date: 22-Jan-2018 12:36:29 ALS Bottle#: 16 Worklist Smp#: 35
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-B-2-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:44

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.56	95.63

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID: FAY-D-FB-011218
Lab Sample ID: 280-105496-3
Matrix: Water
Lab File ID: hfpo718A22052.d
Analysis Method: 8321A
Date Collected: 01/12/2018 10:45
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 262.5(mL)
Date Analyzed: 01/22/2018 12:39
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.010		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	96		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22052.d
Lims ID: 280-105496-A-3-A
Client ID: 8046NC87H-W1-1-011218
Sample Type: Client
Inject. Date: 22-Jan-2018 12:39:43 ALS Bottle#: 17 Worklist Smp#: 36
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-A-3-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:47

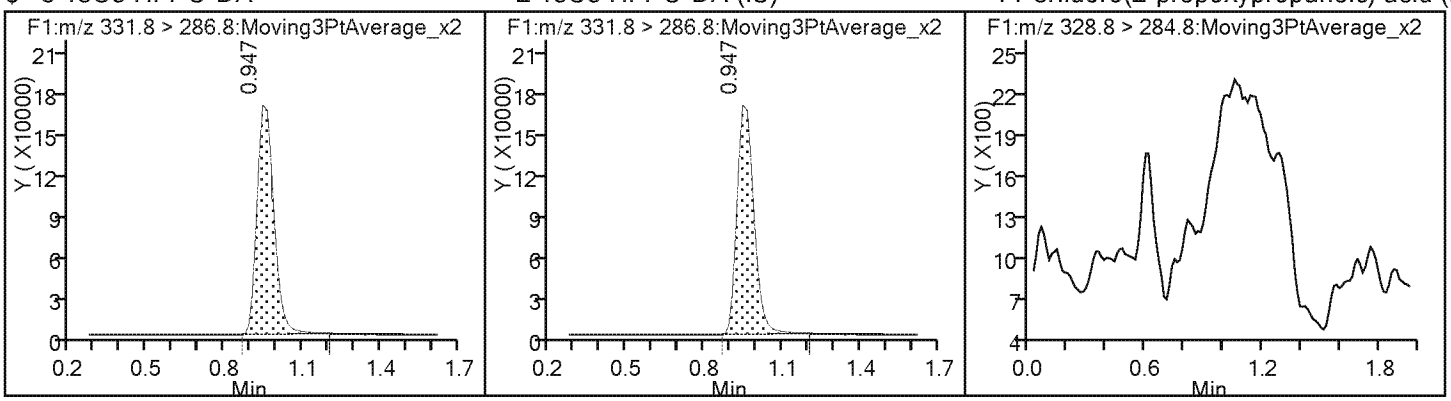
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.947	0.961	-0.014	1.000	700480	9.58	1820	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.947	0.961	-0.014		700480	10.0	1820	

Report Date: 22-Jan-2018 13:40:53 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22052.d				
Injection Date:	22-Jan-2018 12:39:43	Instrument ID:	LC_LCMS7		
Lims ID:	280-105496-A-3-A	Lab Sample ID:	280-105496-3		
Client ID:	8046NC87H-W1-1-011218				
Operator ID:	JBH	ALS Bottle#:	17	Worklist Smp#:	36
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	HFPO	Limit Group:	LC - 8321A_HFPO_Du		

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22052.d
Lims ID: 280-105496-A-3-A
Client ID: 8046NC87H-W1-1-011218
Sample Type: Client
Inject. Date: 22-Jan-2018 12:39:43 ALS Bottle#: 17 Worklist Smp#: 36
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-A-3-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:47

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.58	95.77

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID: 8046NC87H-W1-1-011218
Lab Sample ID: 280-105496-4
Matrix: Water
Lab File ID: hfpo718A22053.d
Analysis Method: 8321A
Date Collected: 01/12/2018 11:28
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 259.1(mL)
Date Analyzed: 01/22/2018 12:42
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.22		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	91		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22053.d
Lims ID: 280-105496-A-4-A
Client ID: FAY-D-FB-011218
Sample Type: Client
Inject. Date: 22-Jan-2018 12:42:58 ALS Bottle#: 18 Worklist Smp#: 37
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-A-4-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:50

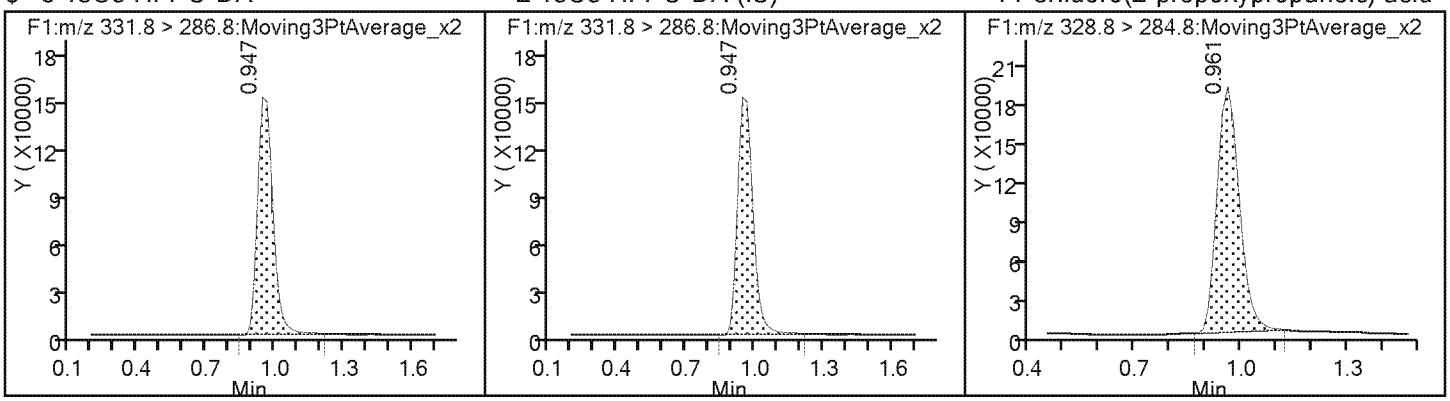
Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.947	0.961	-0.014	1.000	664977	9.09	1738	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.947	0.961	-0.014		664977	10.0	1738	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.961	0.988	-0.027	1.000	795084	11.6	203	

Report Date: 22-Jan-2018 13:40:53 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22053.d				
Injection Date:	22-Jan-2018 12:42:58	Instrument ID:	LC_LCMS7		
Lims ID:	280-105496-A-4-A	Lab Sample ID:	280-105496-4		
Client ID:	FAY-D-FB-011218				
Operator ID:	JBH	ALS Bottle#:	18	Worklist Smp#:	37
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	HFPO	Limit Group:	LC - 8321A_HFPO_Du		

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22053.d
Lims ID: 280-105496-A-4-A
Client ID: FAY-D-FB-011218
Sample Type: Client
Inject. Date: 22-Jan-2018 12:42:58 ALS Bottle#: 18 Worklist Smp#: 37
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 280-105496-A-4-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:50

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.09	90.91

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 387775

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 09/14/2017 14:40 Calibration End Date: 09/14/2017 15:01 Calibration ID: 30321

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-387775/3	hfpo717I14052.d
Level 2	STD002 280-387775/4	hfpo717I14053.d
Level 3	STD003 280-387775/5	hfpo717I14054.d
Level 4	STD004 280-387775/6	hfpo717I14055.d
Level 5	STD005 280-387775/7	hfpo717I14056.d
Level 6	STD006 280-387775/8	hfpo717I14057.d
Level 7	STD007 280-387775/9	hfpo717I14058.d
Level 8	STD008 280-387775/10	hfpo717I14059.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Perfluoro(2-propoxypropanoic) acid	1.002	0.988	0.988	0.988	0.975	0.975	0.988	0.988			0.486 - 1.486	0.987
13C3 HFPO-DA	0.988	0.975	0.975	0.988	0.975	0.975	0.988	0.988			0.481 - 1.481	0.982

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 387775

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 09/14/2017 14:40 Calibration End Date: 09/14/2017 15:01 Calibration ID: 30321

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-387775/3	hfpo717I14052.d
Level 2	STD002 280-387775/4	hfpo717I14053.d
Level 3	STD003 280-387775/5	hfpo717I14054.d
Level 4	STD004 280-387775/6	hfpo717I14055.d
Level 5	STD005 280-387775/7	hfpo717I14056.d
Level 6	STD006 280-387775/8	hfpo717I14057.d
Level 7	STD007 280-387775/9	hfpo717I14058.d
Level 8	STD008 280-387775/10	hfpo717I14059.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
13C3 HFPO-DA	206978 182499	200375 172499	208177 188495	195084 187811	Ave		192739.525				6.4		30.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 387775

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 09/14/2017 14:40 Calibration End Date: 09/14/2017 15:01 Calibration ID: 30321

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Perfluoro(2-propoxypropanoic) acid	1.6312 0.9640	1.1780 0.9353	0.9745 0.8831	0.9868	1.0688	Lin1	0.1732	0.9076							0.9980		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 387775

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 09/14/2017 14:40 Calibration End Date: 09/14/2017 15:01 Calibration ID: 30321

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-387775/3	hfpo717I14052.d
Level 2	STD002 280-387775/4	hfpo717I14053.d
Level 3	STD003 280-387775/5	hfpo717I14054.d
Level 4	STD004 280-387775/6	hfpo717I14055.d
Level 5	STD005 280-387775/7	hfpo717I14056.d
Level 6	STD006 280-387775/8	hfpo717I14057.d
Level 7	STD007 280-387775/9	hfpo717I14058.d
Level 8	STD008 280-387775/10	hfpo717I14059.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
		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
13C3 HFPO-DA	Ave	2069777 1724989	2003748 1884947	2081766 1878107	1950837	1824991	10.0 10.0	10.0 10.0	10.0 10.0	10.0	10.0

Curve Type Legend:
Ave = Average

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 387775

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 09/14/2017 14:40 Calibration End Date: 09/14/2017 15:01 Calibration ID: 30321

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-387775/3	hfpo717I14052.d
Level 2	STD002 280-387775/4	hfpo717I14053.d
Level 3	STD003 280-387775/5	hfpo717I14054.d
Level 4	STD004 280-387775/6	hfpo717I14055.d
Level 5	STD005 280-387775/7	hfpo717I14056.d
Level 6	STD006 280-387775/8	hfpo717I14057.d
Level 7	STD007 280-387775/9	hfpo717I14058.d
Level 8	STD008 280-387775/10	hfpo717I14059.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			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
Perfluoro(2-propoxypropanoic) acid	13CP ODA	Lin1	84406 1662919	118017 4407541	202876 8293101	385009	975278	0.250 10.0	0.500 25.0	1.00 50.0	2.00	5.00

Curve Type Legend:
Lin1 = Linear 1/conc ISTD

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14052.d
Lims ID: std001
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 14-Sep-2017 14:40:03 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L1
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:39 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.988	0.981	0.007	1.000	2069777	10.7	429	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.988	0.981	0.007		2069777	10.0	429	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	1.002	0.986	0.016	1.000	84406	0.2585	49.7	

Reagents:

HFPO_CAL-1_00030 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:39 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14052.d

Injection Date: 14-Sep-2017 14:40:03 Instrument ID: LC_LCMS7

Lims ID: std001

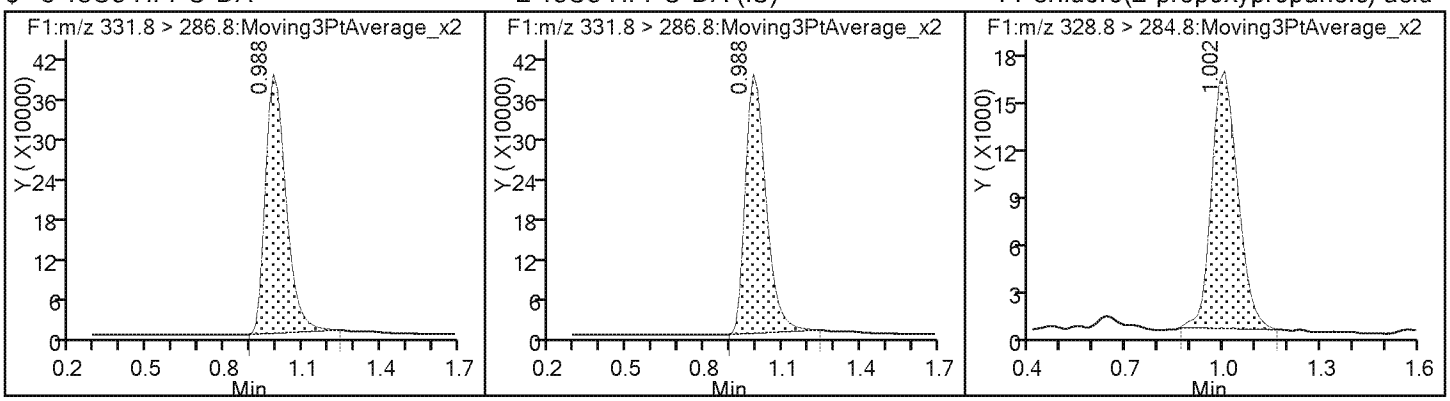
Client ID:

Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 3

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14053.d
Lims ID: std002
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 14-Sep-2017 14:43:06 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L2
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:39 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.975	0.981	-0.006		2003748	10.0	386	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.975	0.981	-0.006	1.000	2003748	10.4	386	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.988	0.986	0.002	1.000	118017	0.4581	56.6	

Reagents:

HFPO_CAL-2_00031 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:40 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14053.d

Injection Date: 14-Sep-2017 14:43:06 Instrument ID: LC_LCMS7

Lims ID: std002

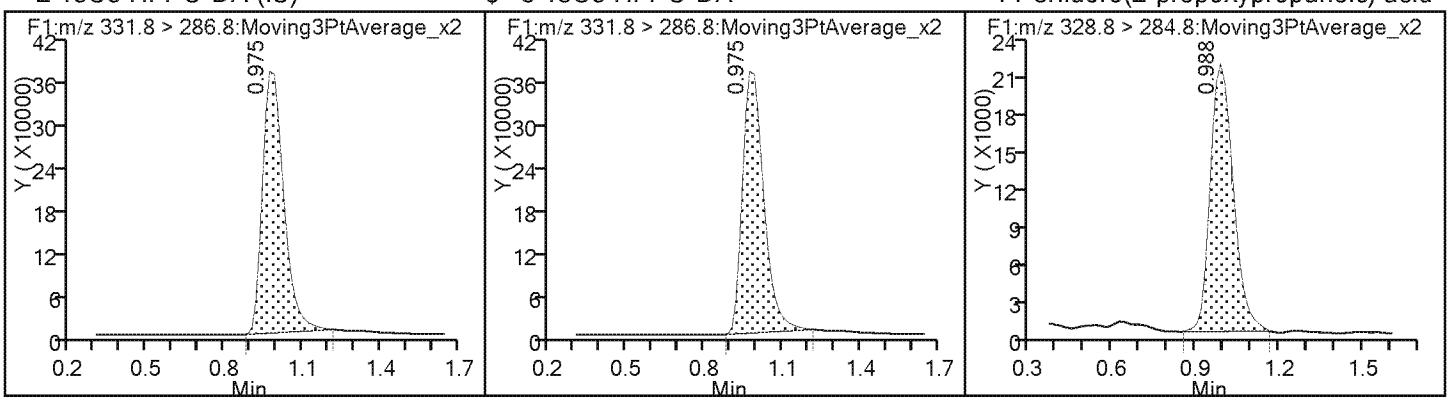
Client ID:

Operator ID: JBH ALS Bottle#: 3 Worklist Smp#: 4

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14054.d
Lims ID: std003
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 14-Sep-2017 14:46:08 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L3
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:40 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.975	0.981	-0.006	1.000	2081766	10.8	403	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.975	0.981	-0.006		2081766	10.0	403	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.988	0.986	0.002	1.000	202876	0.8830	108	

Reagents:

HFPO_CAL-3_00030 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:40 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14054.d

Injection Date: 14-Sep-2017 14:46:08 Instrument ID: LC_LCMS7

Lims ID: std003

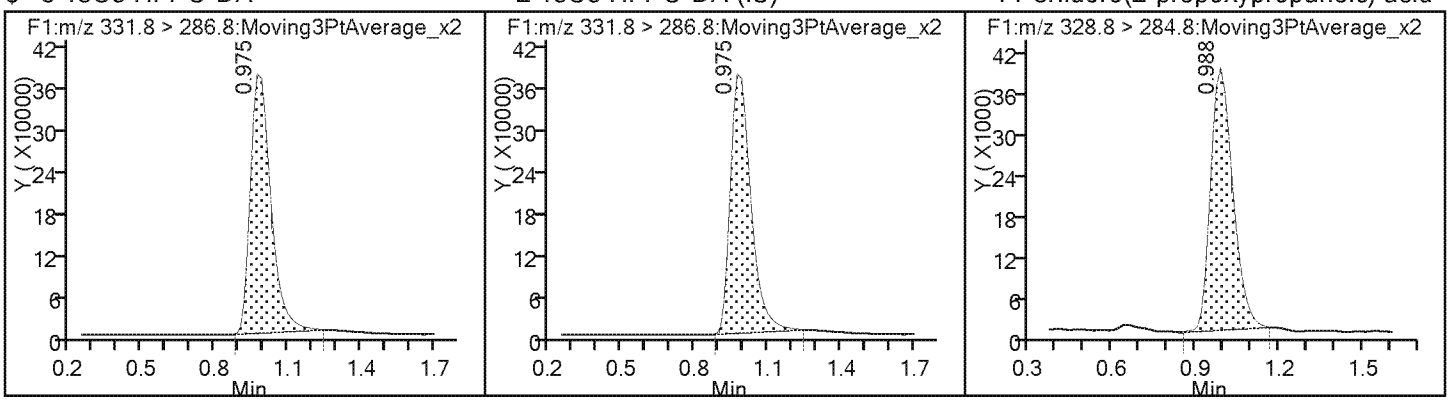
Client ID:

Operator ID: JBH ALS Bottle#: 4 Worklist Smp#: 5

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14055.d
Lims ID: std004
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 14-Sep-2017 14:49:11 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L4
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:40 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.988	0.981	0.007		1950837	10.0	384	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.988	0.981	0.007	1.000	1950837	10.1	384	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.988	0.986	0.002	1.000	385009	1.98	162	

Reagents:

HFPO_CAL-4_00030 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:41 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14055.d

Injection Date: 14-Sep-2017 14:49:11 Instrument ID: LC_LCMS7

Lims ID: std004

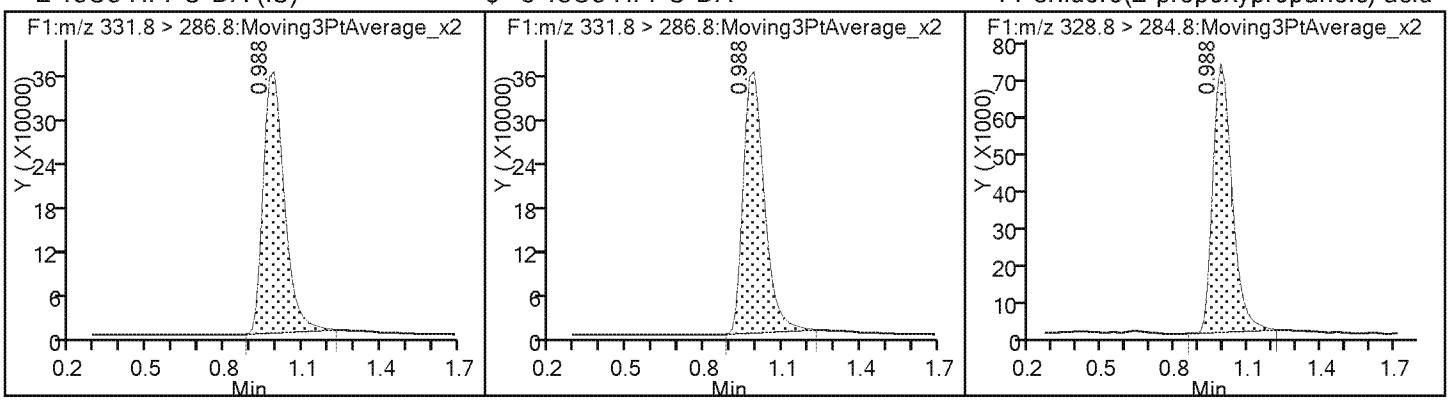
Client ID:

Operator ID: JBH ALS Bottle#: 5 Worklist Smp#: 6

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14056.d
Lims ID: std005
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 14-Sep-2017 14:52:13 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L5
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:41 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.975	0.981	-0.006	1.000	1824991	9.47	371	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.975	0.981	-0.006		1824991	10.0	371	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.975	0.986	-0.011	1.000	975278	5.70	268	

Reagents:

HFPO_CAL-5_00067 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:41 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14056.d

Injection Date: 14-Sep-2017 14:52:13 Instrument ID: LC_LCMS7

Lims ID: std005

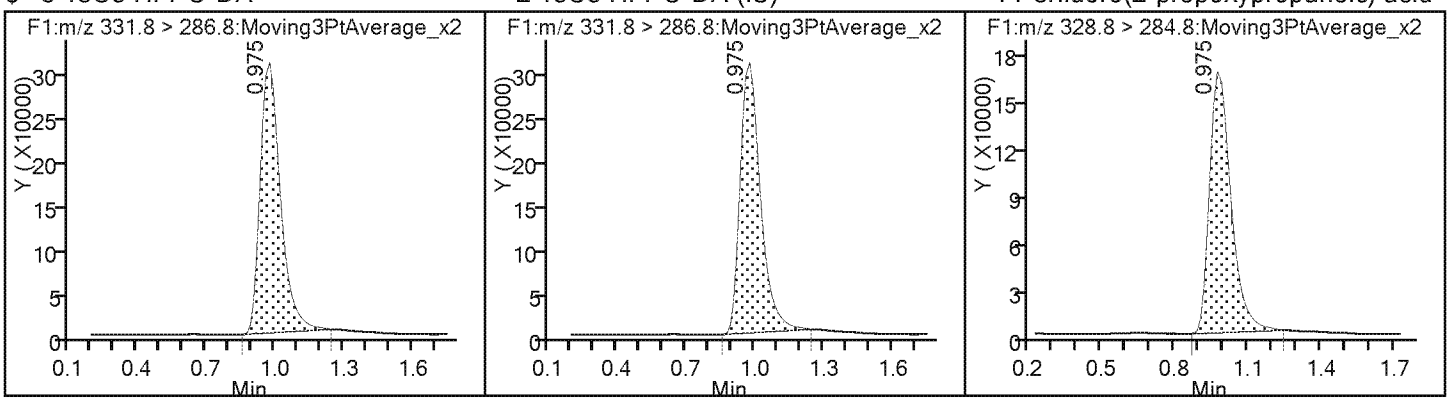
Client ID:

Operator ID: JBH ALS Bottle#: 6 Worklist Smp#: 7

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14057.d
Lims ID: std006
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 14-Sep-2017 14:55:16 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L6
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:41 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.975	0.981	-0.006		1724989	10.0	287	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.975	0.981	-0.006	1.000	1724989	8.95	287	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.975	0.986	-0.011	1.000	1662919	10.4	248	

Reagents:

HFPO_CAL-6_00067 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:42 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14057.d

Injection Date: 14-Sep-2017 14:55:16 Instrument ID: LC_LCMS7

Lims ID: std006

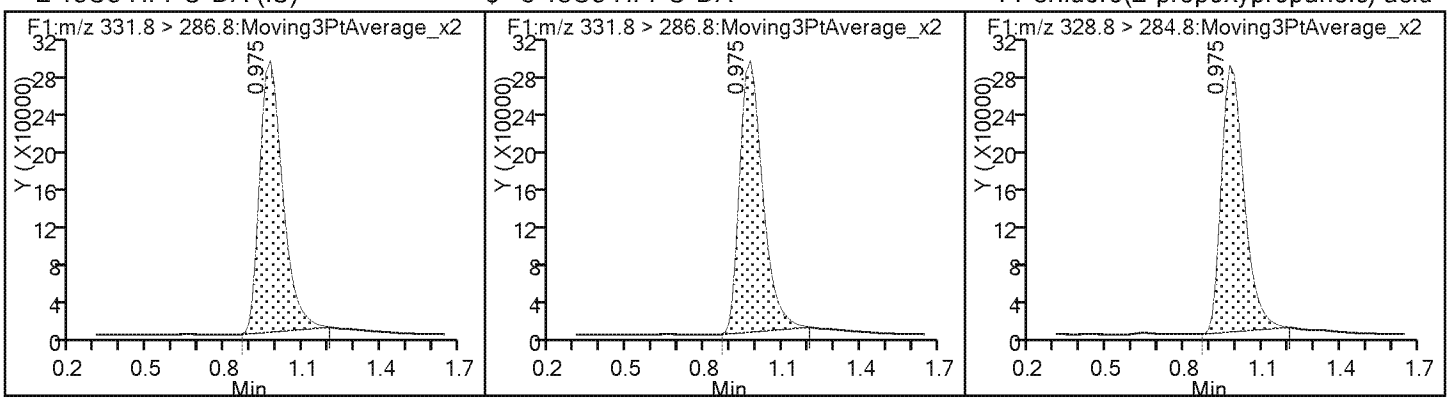
Client ID:

Operator ID: JBH ALS Bottle#: 7 Worklist Smp#: 8

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14058.d
Lims ID: std007
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 14-Sep-2017 14:58:19 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L7
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:42 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.988	0.981	0.007	1.000	1884947	9.78	361	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.988	0.981	0.007		1884947	10.0	361	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.988	0.986	0.002	1.000	4407541	25.6	379	

Reagents:

HFPO_CAL-7_00030 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:42 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14058.d

Injection Date: 14-Sep-2017 14:58:19 Instrument ID: LC_LCMS7

Lims ID: std007

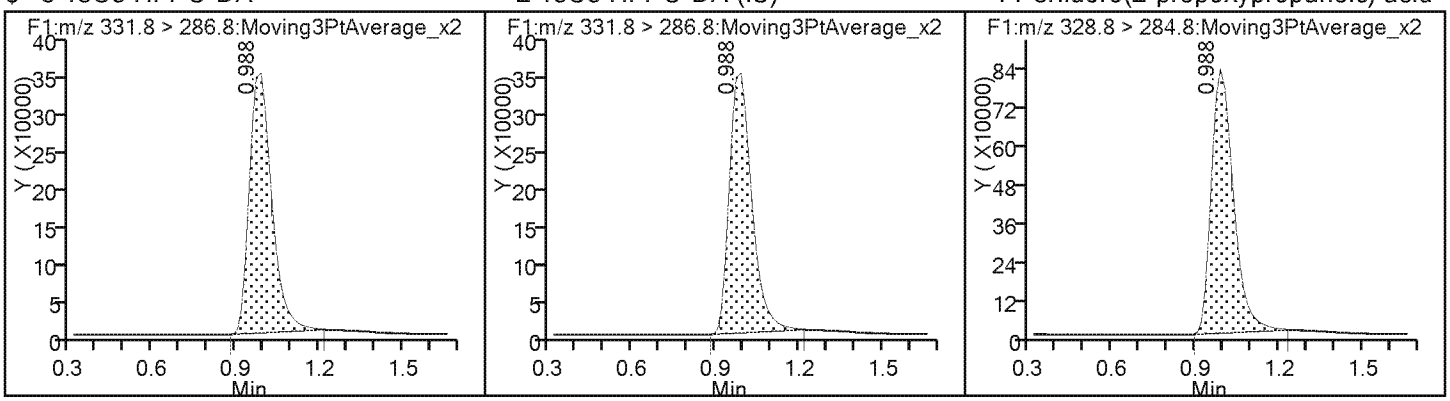
Client ID:

Operator ID: JBH ALS Bottle#: 8 Worklist Smp#: 9

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d
Lims ID: std008
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 14-Sep-2017 15:01:22 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: L8
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:43 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.988	0.981	0.007		1878107	10.0	379	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.988	0.981	0.007	1.000	1878107	9.74	379	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.988	0.986	0.002	1.000	8293101	48.5	359	

Reagents:

HFPO_CAL-8_00030 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:43 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Injection Date: 14-Sep-2017 15:01:22 Instrument ID: LC_LCMS7

Lims ID: std008

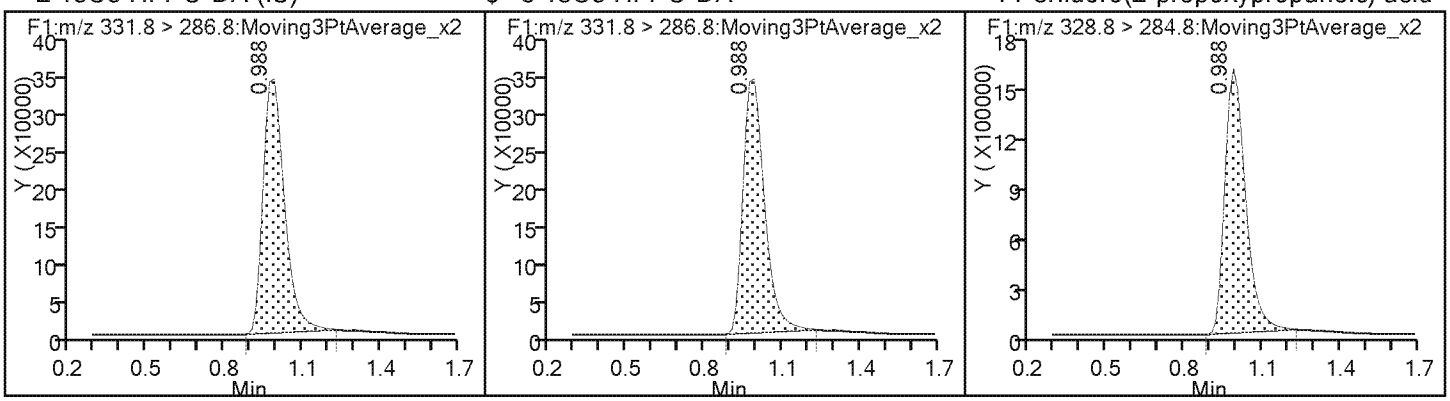
Client ID:

Operator ID: JBH ALS Bottle#: 9 Worklist Smp#: 10

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 390728

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2017 09:35 Calibration End Date: 10/10/2017 09:58 Calibration ID: 30558

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-390728/3	hfpo717J10026.d
Level 2	STD002 280-390728/4	hfpo717J10027.d
Level 3	STD003 280-390728/5	hfpo717J10028.d
Level 4	STD004 280-390728/6	hfpo717J10029.d
Level 5	STD005 280-390728/7	hfpo717J10030.d
Level 6	STD006 280-390728/8	hfpo717J10031.d
Level 7	STD007 280-390728/9	hfpo717J10032.d
Level 8	STD008 280-390728/10	hfpo717J10033.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
HFPO-DA	0.893	0.880	0.880	0.880	0.893	0.880	0.880	0.893			0.385 - 1.385	0.885
13C3 HFPO-DA	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880			0.380 - 1.380	0.880

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 390728

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2017 09:35 Calibration End Date: 10/10/2017 09:58 Calibration ID: 30558

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-390728/3	hfpo717J10026.d
Level 2	STD002 280-390728/4	hfpo717J10027.d
Level 3	STD003 280-390728/5	hfpo717J10028.d
Level 4	STD004 280-390728/6	hfpo717J10029.d
Level 5	STD005 280-390728/7	hfpo717J10030.d
Level 6	STD006 280-390728/8	hfpo717J10031.d
Level 7	STD007 280-390728/9	hfpo717J10032.d
Level 8	STD008 280-390728/10	hfpo717J10033.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
13C3 HFPO-DA	73075 74460	74523 73194	75043 72919	71803 70142	Ave		73144.6750				2.2		30.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 390728

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2017 09:35 Calibration End Date: 10/10/2017 09:58 Calibration ID: 30558

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
HFPO-DA	1.6980 1.0102	1.7128 0.9824	1.1896 1.0419	1.1637	1.0154	Lin1	0.2185	1.0121							0.9980		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 390728

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2017 09:35 Calibration End Date: 10/10/2017 09:58 Calibration ID: 30558

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-390728/3	hfpo717J10026.d
Level 2	STD002 280-390728/4	hfpo717J10027.d
Level 3	STD003 280-390728/5	hfpo717J10028.d
Level 4	STD004 280-390728/6	hfpo717J10029.d
Level 5	STD005 280-390728/7	hfpo717J10030.d
Level 6	STD006 280-390728/8	hfpo717J10031.d
Level 7	STD007 280-390728/9	hfpo717J10032.d
Level 8	STD008 280-390728/10	hfpo717J10033.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
		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
13C3 HFPO-DA	Ave	730749 731935	745227 729188	750427 701420	718028	744600	10.0 10.0	10.0 10.0	10.0 10.0	10.0	10.0

Curve Type Legend:
Ave = Average

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

Lab Name: TestAmerica Denver Job No.: 280-105496-1 Analy Batch No.: 390728

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2017 09:35 Calibration End Date: 10/10/2017 09:58 Calibration ID: 30558

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-390728/3	hfpo717J10026.d
Level 2	STD002 280-390728/4	hfpo717J10027.d
Level 3	STD003 280-390728/5	hfpo717J10028.d
Level 4	STD004 280-390728/6	hfpo717J10029.d
Level 5	STD005 280-390728/7	hfpo717J10030.d
Level 6	STD006 280-390728/8	hfpo717J10031.d
Level 7	STD007 280-390728/9	hfpo717J10032.d
Level 8	STD008 280-390728/10	hfpo717J10033.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			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
HFPO-DA	13CP ODA	Lin1	31020 739399	63823 1790812	89272 3654104	167109	378047	0.250 10.0	0.500 25.0	1.00 50.0	2.00	5.00

Curve Type Legend:
Lin1 = Linear 1/conc ISTD

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10026.d
Lims ID: std001
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-Oct-2017 09:35:28 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L1
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:45 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:50:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	730749	10.0	397	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		730749	10.0	397	
1 Perfluoro(2-propoxypropanoic) acid								M
328.8 > 284.8	0.893	0.885	0.008	1.000	31020	0.2036	14.1	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO_CAL-1_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:45 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10026.d

Injection Date: 10-Oct-2017 09:35:28 Instrument ID: LC_LCMS7

Lims ID: std001

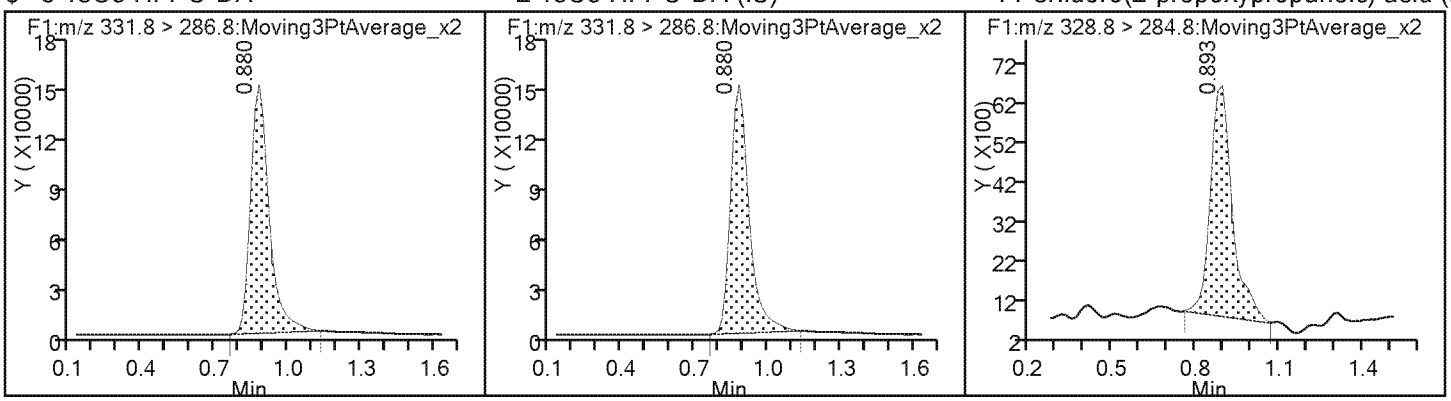
Client ID:

Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 3

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid (M)



Manual Integration/User Assign Peak Report

TestAmerica Denver

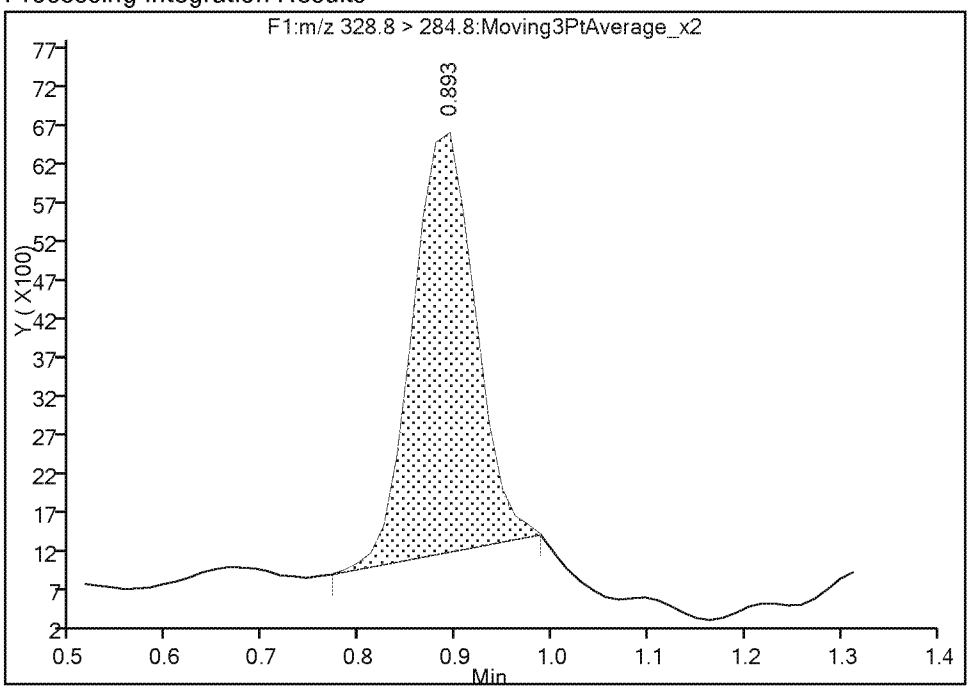
Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10026.d
Injection Date: 10-Oct-2017 09:35:28 Instrument ID: LC_LCMS7
Lims ID: std001
Client ID:
Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du
Column: Detector F1:MRM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

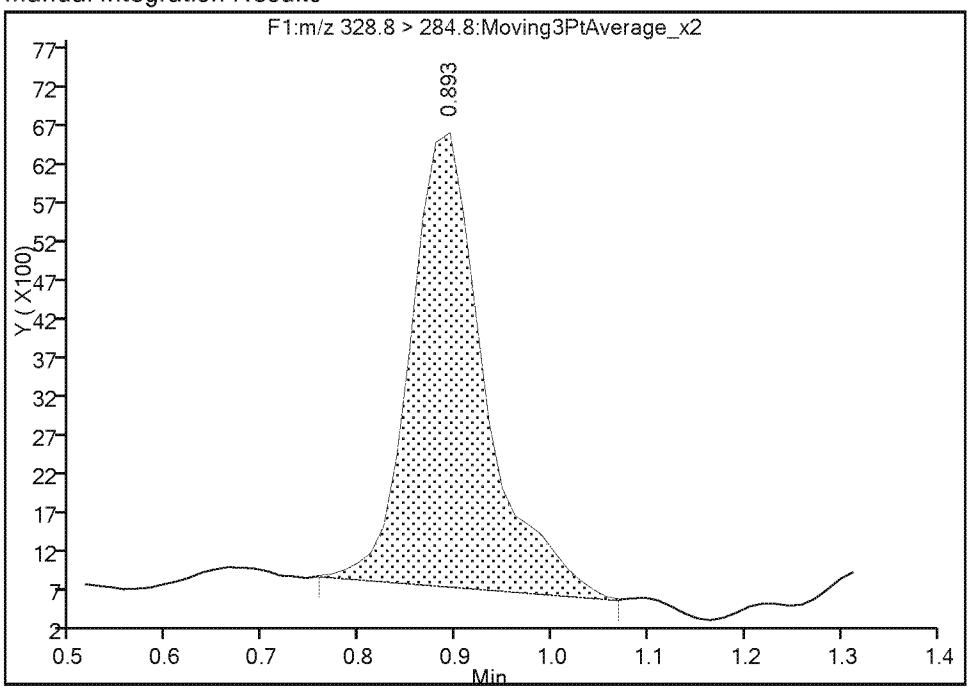
Processing Integration Results

RT: 0.89
Area: 24407
Amount: 0.162386
Amount Units: ug/l



Manual Integration Results

RT: 0.89
Area: 31020
Amount: 0.203553
Amount Units: ug/l



Reviewer: meyera, 10-Oct-2017 11:50:40
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10027.d
Lims ID: std002
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-Oct-2017 09:38:42 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L2
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:46 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:50:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		745227	10.0	452	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	745227	10.2	452	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.880	0.885	-0.005	1.000	63823	0.6303	36.5	

Reagents:

HFPO_CAL-2_00032 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:46 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10027.d

Injection Date: 10-Oct-2017 09:38:42 Instrument ID: LC_LCMS7

Lims ID: std002

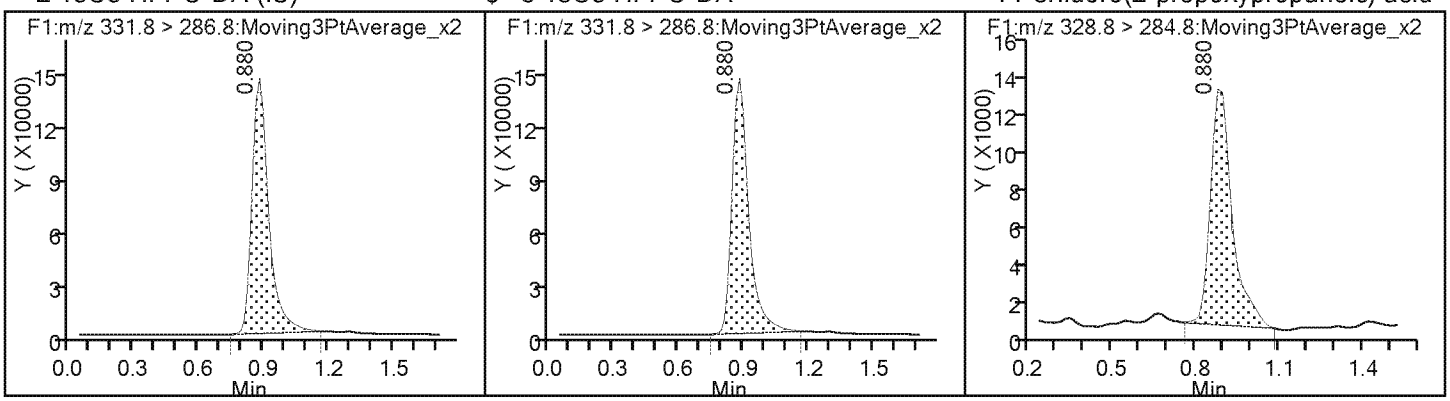
Client ID:

Operator ID: JBH ALS Bottle#: 3 Worklist Smp#: 4

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10028.d
Lims ID: std003
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-Oct-2017 09:41:56 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L3
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:47 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:50:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	750427	10.3	417	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		750427	10.0	417	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.880	0.885	-0.005	1.000	89272	0.9595	50.3	

Reagents:

HFPO_CAL-3_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:47 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10028.d

Injection Date: 10-Oct-2017 09:41:56 Instrument ID: LC_LCMS7

Lims ID: std003

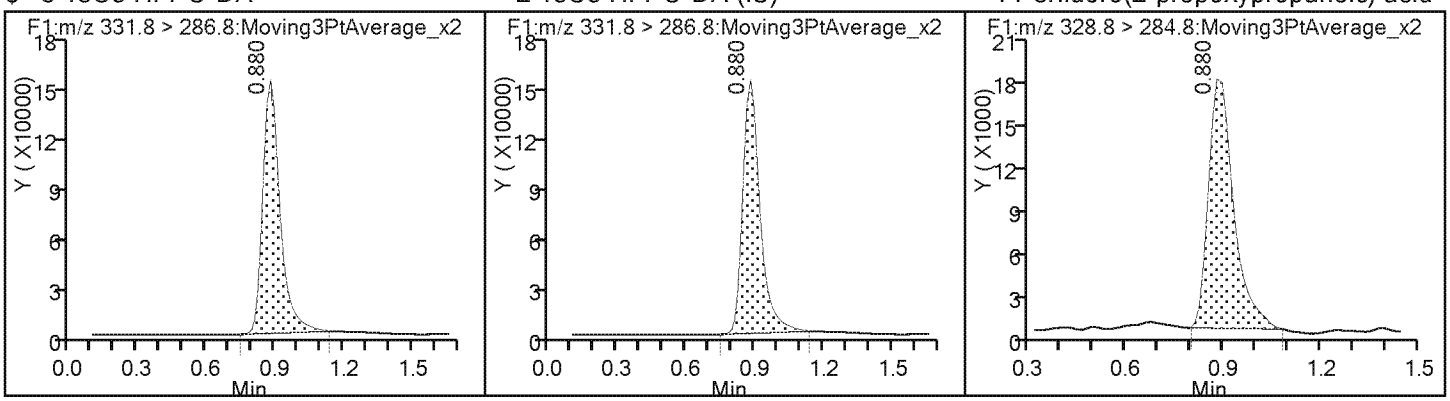
Client ID:

Operator ID: JBH ALS Bottle#: 4 Worklist Smp#: 5

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10029.d
Lims ID: std004
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 10-Oct-2017 09:45:11 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L4
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:47 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:50:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		718028	10.0	438	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	718028	9.82	438	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.880	0.885	-0.005	1.000	167109	2.08	143	

Reagents:

HFPO_CAL-4_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:48 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10029.d

Injection Date: 10-Oct-2017 09:45:11 Instrument ID: LC_LCMS7

Lims ID: std004

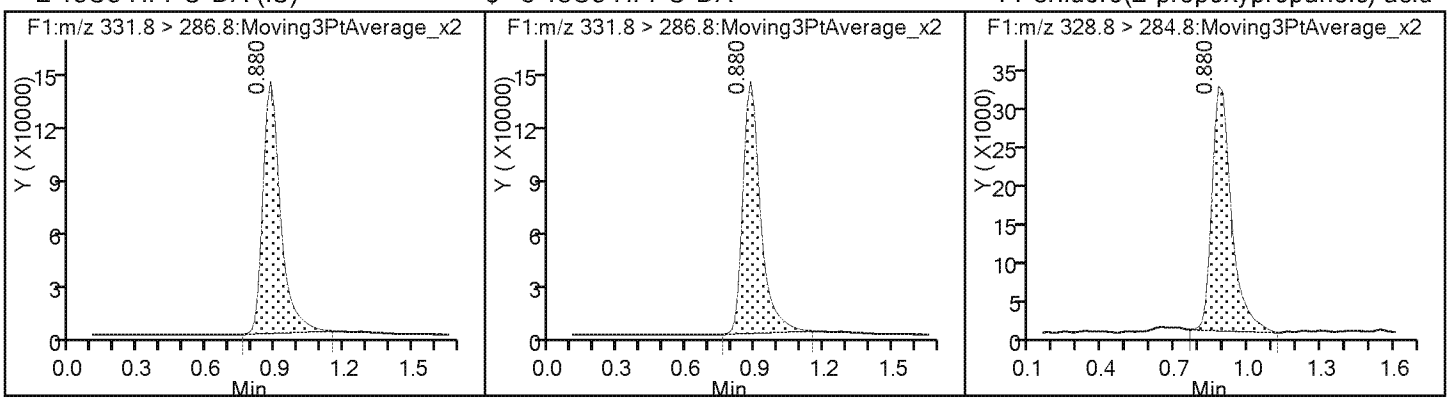
Client ID:

Operator ID: JBH ALS Bottle#: 5 Worklist Smp#: 6

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10030.d
Lims ID: std005
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 10-Oct-2017 09:48:25 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L5
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:48 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:50:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	744600	10.2	433	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		744600	10.0	433	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.893	0.885	0.008	1.000	378047	4.80	223	

Reagents:

HFPO_CAL-5_00070 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:49 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10030.d

Injection Date: 10-Oct-2017 09:48:25 Instrument ID: LC_LCMS7

Lims ID: std005

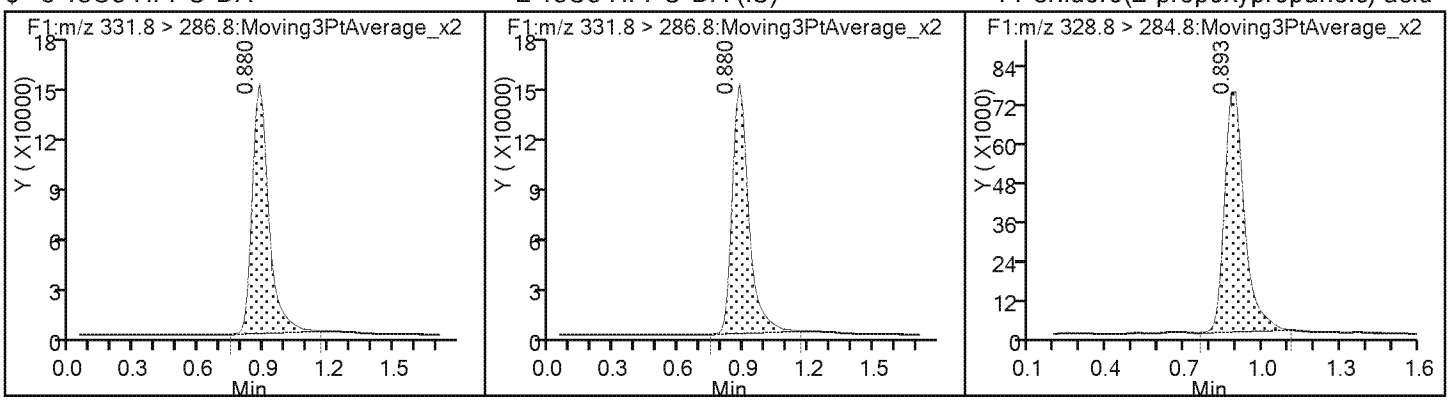
Client ID:

Operator ID: JBH ALS Bottle#: 6 Worklist Smp#: 7

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10031.d
Lims ID: std006
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-Oct-2017 09:51:39 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L6
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		731935	10.0	379	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	731935	10.0	379	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.880	0.885	-0.005	1.000	739399	9.77	298	

Reagents:

HFPO_CAL-6_00070 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:49 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10031.d

Injection Date: 10-Oct-2017 09:51:39 Instrument ID: LC_LCMS7

Lims ID: std006

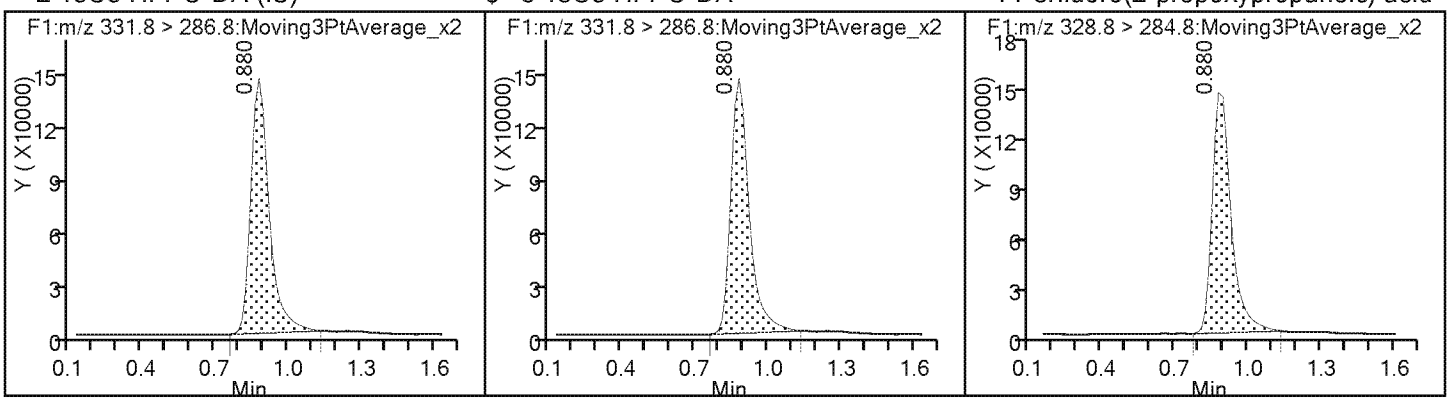
Client ID:

Operator ID: JBH ALS Bottle#: 7 Worklist Smp#: 8

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10032.d
Lims ID: std007
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 10-Oct-2017 09:54:53 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L7
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:50 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	729188	9.97	404	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		729188	10.0	404	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.880	0.885	-0.005	1.000	1790812	24.0	386	

Reagents:

HFPO_CAL-7_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:50 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10032.d

Injection Date: 10-Oct-2017 09:54:53 Instrument ID: LC_LCMS7

Lims ID: std007

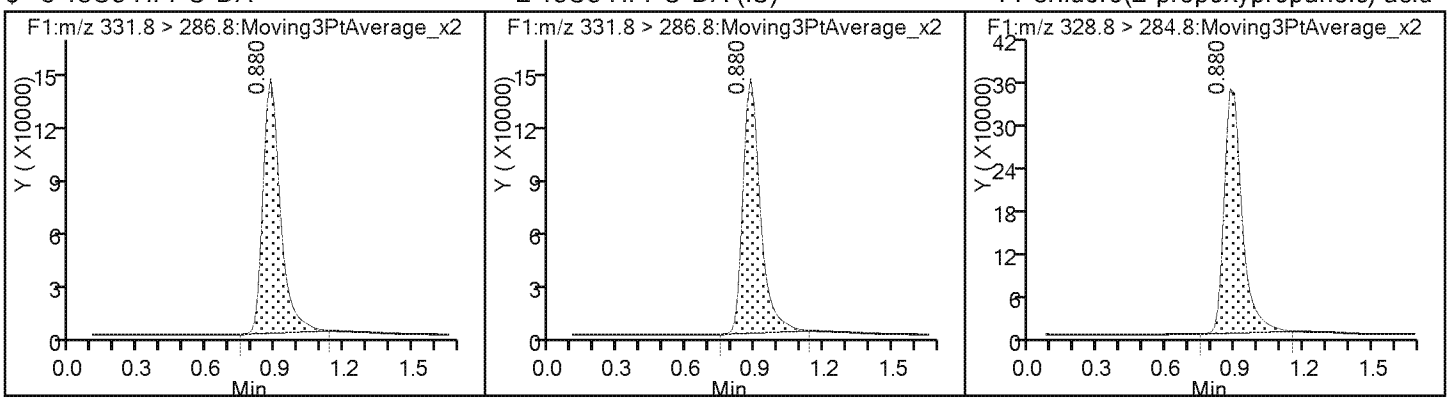
Client ID:

Operator ID: JBH ALS Bottle#: 8 Worklist Smp#: 9

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d
Lims ID: std008
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 10-Oct-2017 09:58:07 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: L8
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:51 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		701420	10.0	373	
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	701420	9.59	373	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.893	0.885	0.008	1.000	3654104	51.3	421	

Reagents:

HFPO_CAL-8_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:51 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Injection Date: 10-Oct-2017 09:58:07 Instrument ID: LC_LCMS7

Lims ID: std008

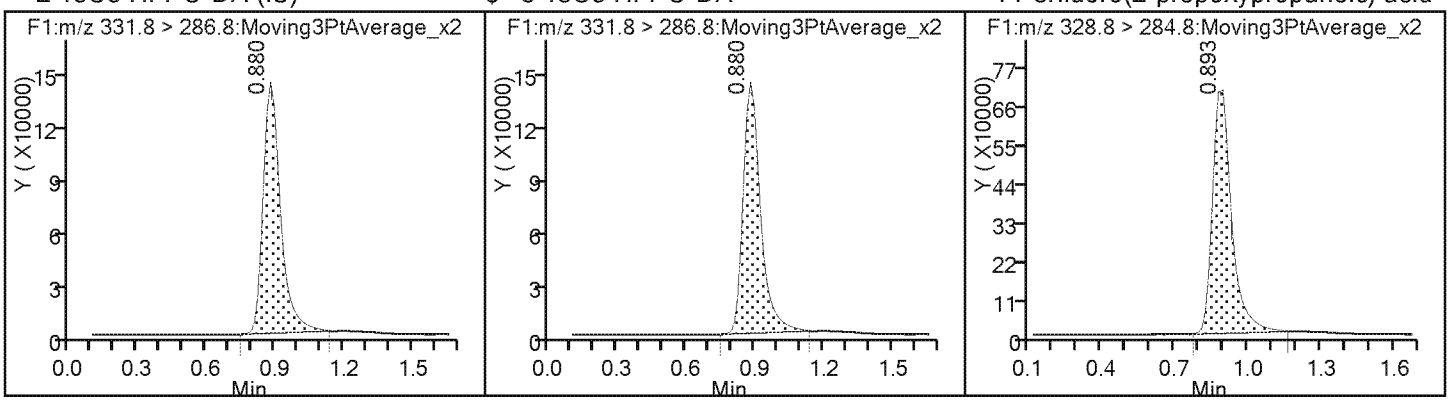
Client ID:

Operator ID: JBH ALS Bottle#: 9 Worklist Smp#: 10

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS) $ 3 13C3 HFPO-DA 1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab Sample ID: ICV 280-387775/13 Calibration Date: 09/14/2017 15:10

Instrument ID: LC_LCMS7 Calib Start Date: 09/14/2017 14:40

GC Column: Synergi Hydro ID: Calib End Date: 09/14/2017 15:01

Lab File ID: hfpo717I14062.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro(2-propoxypropanoic) acid	Lin1		0.9462		1.89	2.00	-5.3	20.0
13C3 HFPO-DA	Ave	192740	197806		10.3	10.0	2.6	

FORM VII 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14062.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 14-Sep-2017 15:10:31 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: HFPO17I14
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist:

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 15-Sep-2017 07:29:44 Calib Date: 14-Sep-2017 15:01:22
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14059.d

Column 1 : Det: F1:MRM
Process Host: XAWRK034

First Level Reviewer: meyera Date: 15-Sep-2017 07:28:43

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.988	0.981	0.007	1.000	1978058	10.3	436	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.988	0.981	0.007		1978058	10.0	436	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.988	0.986	0.002	1.000	374307	1.89	162	

Reagents:

HFPO_ICV_00031 Amount Added: 1.00 Units: mL

Report Date: 15-Sep-2017 07:29:44 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20170915-62647.b\hfpo717I14062.d

Injection Date: 14-Sep-2017 15:10:31 Instrument ID: LC_LCMS7

Lims ID: ICV

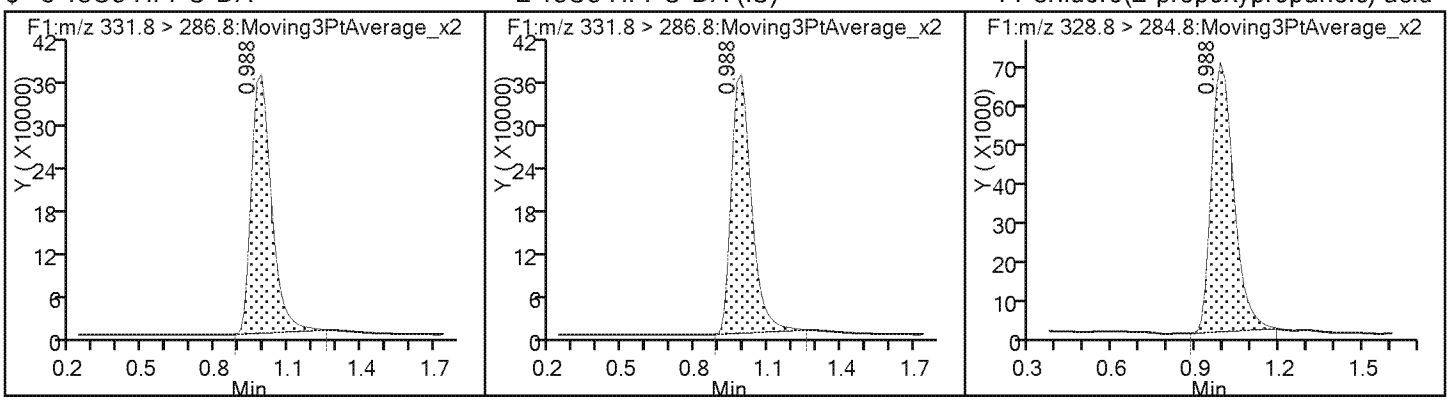
Client ID:

Operator ID: JBH ALS Bottle#: 10 Worklist Smp#: 13

Injection Vol: 10.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab Sample ID: ICV 280-390728/13 Calibration Date: 10/10/2017 10:07

Instrument ID: LC_LCMS7 Calib Start Date: 10/10/2017 09:35

GC Column: Synergi Hydro ID: Calib End Date: 10/10/2017 09:58

Lab File ID: hfpo717J10036.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.154		2.07	2.00	3.3	20.0
13C3 HFPO-DA	Ave	73145	72923		9.97	10.0	-0.3	

FORM VII 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10036.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 10-Oct-2017 10:07:48 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist:

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:53 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	729225	9.97	396	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		729225	10.0	396	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.893	0.885	0.008	1.000	168368	2.07	111	

Reagents:

HFPO_ICV_00032 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:53 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10036.d

Injection Date: 10-Oct-2017 10:07:48 Instrument ID: LC_LCMS7

Lims ID: ICV

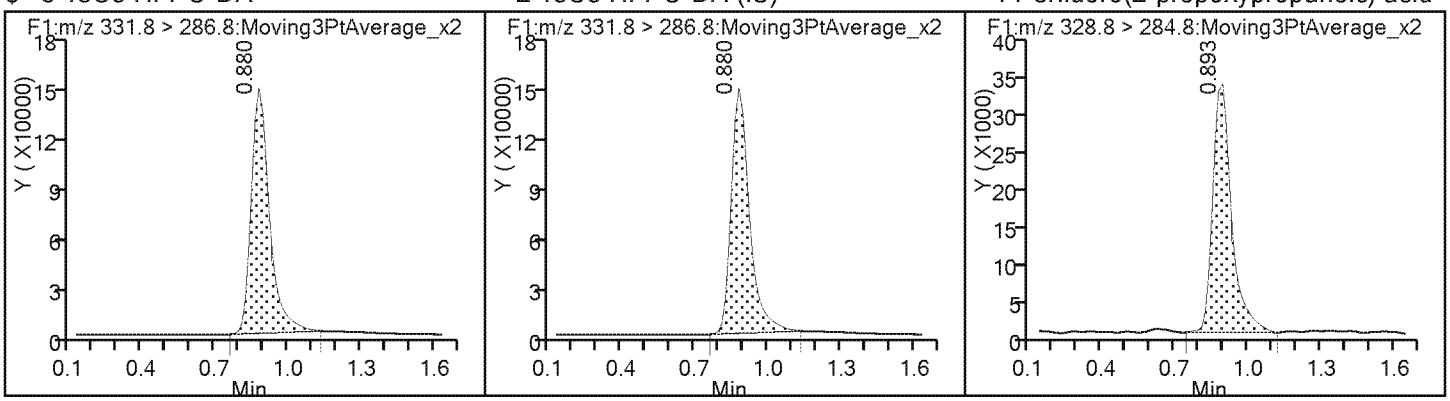
Client ID:

Operator ID: JBH ALS Bottle#: 10 Worklist Smp#: 13

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab Sample ID: CCV 280-390728/24 Calibration Date: 10/10/2017 10:43

Instrument ID: LC_LCMS7 Calib Start Date: 10/10/2017 09:35

GC Column: Synergi Hydro ID: Calib End Date: 10/10/2017 09:58

Lab File ID: hfpo717J10047.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.012		9.78	10.0	-2.2	20.0
13C3 HFPO-DA	Ave	73145	68787		9.40	10.0	-6.0	

FORM VII 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10047.d
Lims ID: CCV L6
Client ID:
Sample Type: CCV
Inject. Date: 10-Oct-2017 10:43:29 ALS Bottle#: 7 Worklist Smp#: 24
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L6
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:52:02 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:52:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.839	0.880	-0.041	1.000	687867	9.40	327	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.839	0.880	-0.041		687867	10.0	327	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.839	0.885	-0.046	1.000	696191	9.78	224	

Reagents:

HFPO_CAL-6_00070 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:52:02 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10047.d

Injection Date: 10-Oct-2017 10:43:29 Instrument ID: LC_LCMS7

Lims ID: CCV L6

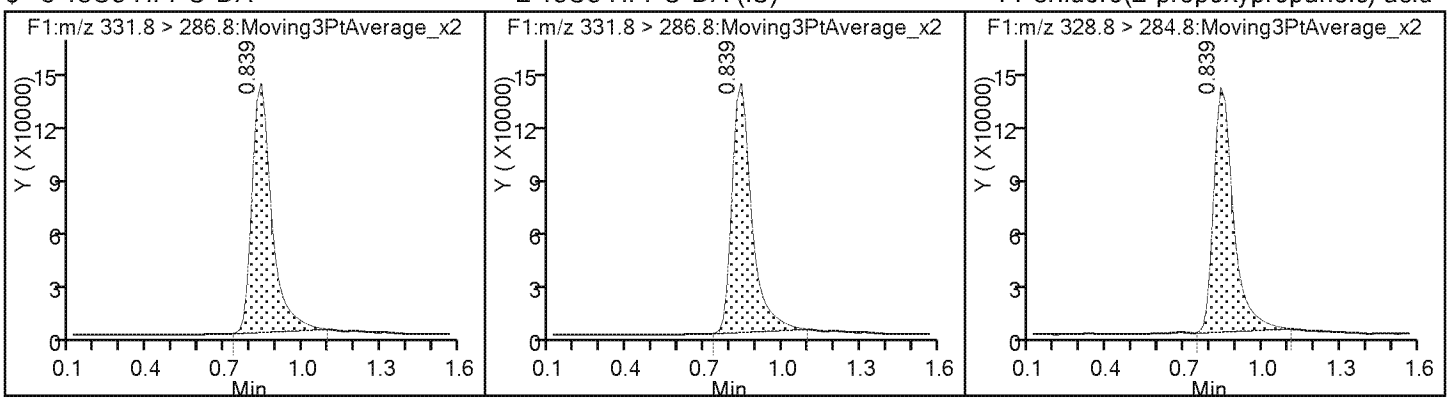
Client ID:

Operator ID: JBH ALS Bottle#: 7 Worklist Smp#: 24

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab Sample ID: CCV 280-402339/29 Calibration Date: 01/22/2018 12:16

Instrument ID: LC_LCMS7 Calib Start Date: 10/10/2017 09:35

GC Column: Synergi Hydro ID: Calib End Date: 10/10/2017 09:58

Lab File ID: hfpo718A22045.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.093		5.19	5.00	3.7	20.0
13C3 HFPO-DA	Ave	73145	82256		11.2	10.0	12.5	

FORM VII 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22045.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 22-Jan-2018 12:16:58 ALS Bottle#: 6 Worklist Smp#: 29
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.961	0.961	0.0	1.000	822563	11.2	1785	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.961	0.961	0.0		822563	10.0	1785	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.961	0.988	-0.027	1.000	449718	5.19	165	

Reagents:

HFPO_CAL-5_00078 Amount Added: 1.00 Units: mL

Report Date: 22-Jan-2018 13:40:50 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22045.d

Injection Date: 22-Jan-2018 12:16:58 Instrument ID: LC_LCMS7

Lims ID: CCV L5

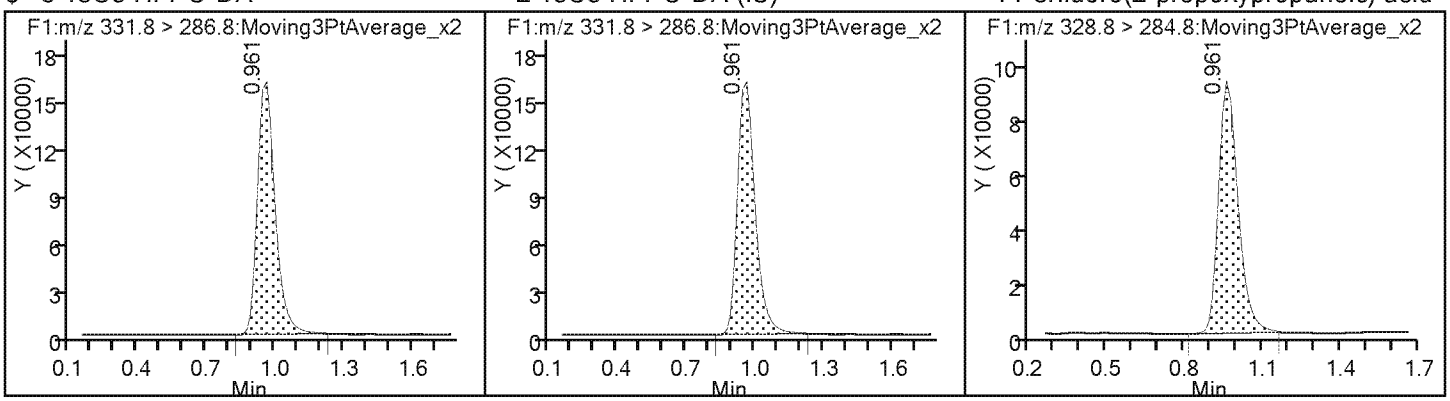
Client ID:

Operator ID: JBH ALS Bottle#: 6 Worklist Smp#: 29

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab Sample ID: CCV 280-402339/38 Calibration Date: 01/22/2018 12:46

Instrument ID: LC_LCMS7 Calib Start Date: 10/10/2017 09:35

GC Column: Synergi Hydro ID: Calib End Date: 10/10/2017 09:58

Lab File ID: hfpo718A22054.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.034		10.0	10.0	0.0	20.0
13C3 HFPO-DA	Ave	73145	75851		10.4	10.0	3.7	

FORM VII 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22054.d
Lims ID: CCV L6
Client ID:
Sample Type: CCV
Inject. Date: 22-Jan-2018 12:46:13 ALS Bottle#: 7 Worklist Smp#: 38
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L6
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:54 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.961	0.961	0.0	1.000	758509	10.4	1538	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.961	0.961	0.0		758509	10.0	1538	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.961	0.988	-0.027	1.000	784464	10.0	204	

Reagents:

HFPO_CAL-6_00078 Amount Added: 1.00 Units: mL

Report Date: 22-Jan-2018 13:40:54 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22054.d

Injection Date: 22-Jan-2018 12:46:13 Instrument ID: LC_LCMS7

Lims ID: CCV L6

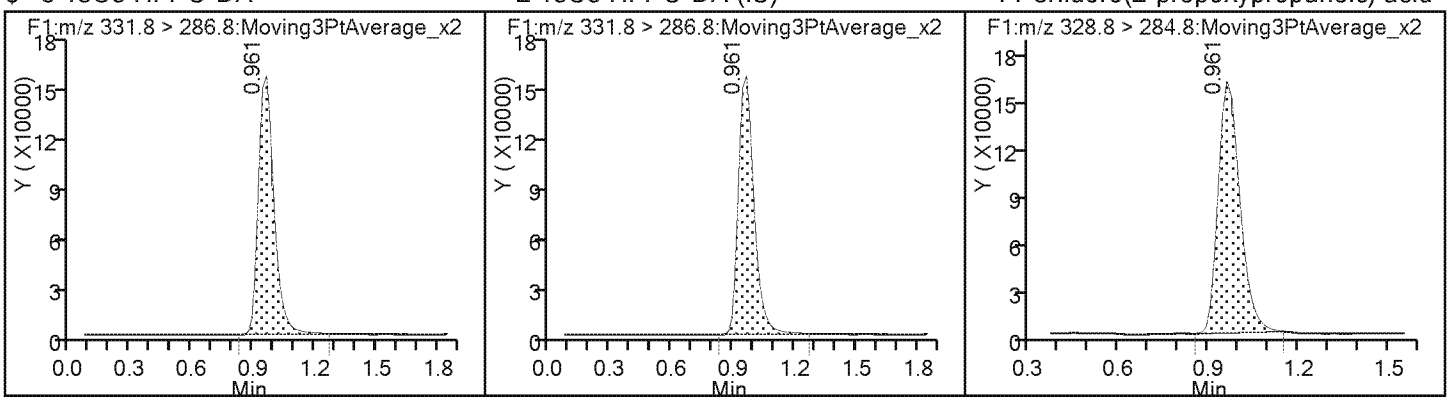
Client ID:

Operator ID: JBH ALS Bottle#: 7 Worklist Smp#: 38

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Lab Sample ID: CCV 280-402339/45 Calibration Date: 01/22/2018 13:09

Instrument ID: LC_LCMS7 Calib Start Date: 10/10/2017 09:35

GC Column: Synergi Hydro ID: Calib End Date: 10/10/2017 09:58

Lab File ID: hfpo718A22061.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.066		5.05	5.00	1.0	20.0
13C3 HFPO-DA	Ave	73145	84375		11.5	10.0	15.4	

FORM VII 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22061.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 22-Jan-2018 13:09:01 ALS Bottle#: 6 Worklist Smp#: 45
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7
Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:57 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:37:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.961	0.961	0.0	1.000	843746	11.5	1444	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.961	0.961	0.0		843746	10.0	1444	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.961	0.988	-0.027	1.000	449575	5.05	233	

Reagents:

HFPO_CAL-5_00078 Amount Added: 1.00 Units: mL

Report Date: 22-Jan-2018 13:40:57 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22061.d

Injection Date: 22-Jan-2018 13:09:01 Instrument ID: LC_LCMS7

Lims ID: CCV L5

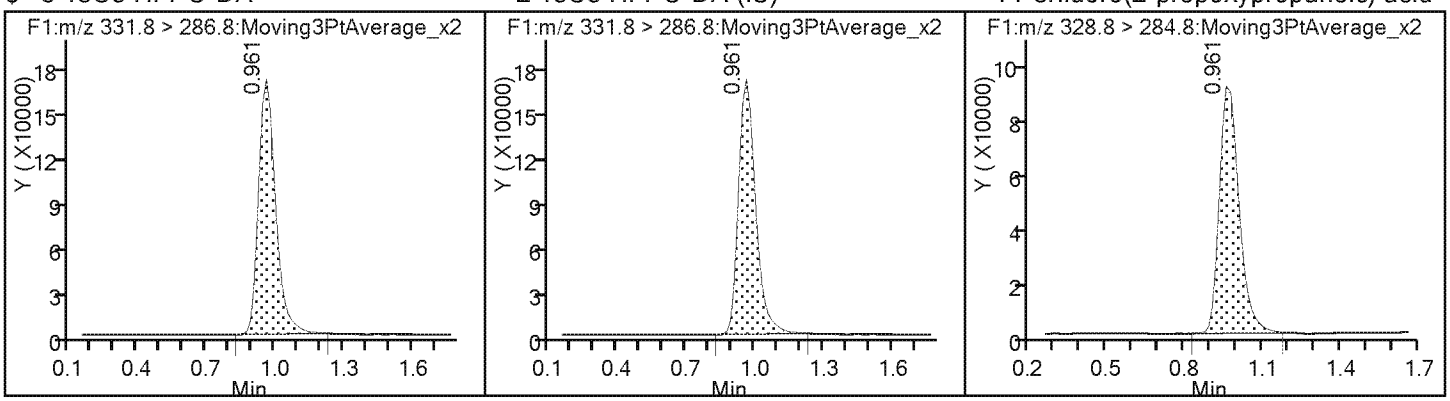
Client ID:

Operator ID: JBH ALS Bottle#: 6 Worklist Smp#: 45

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid

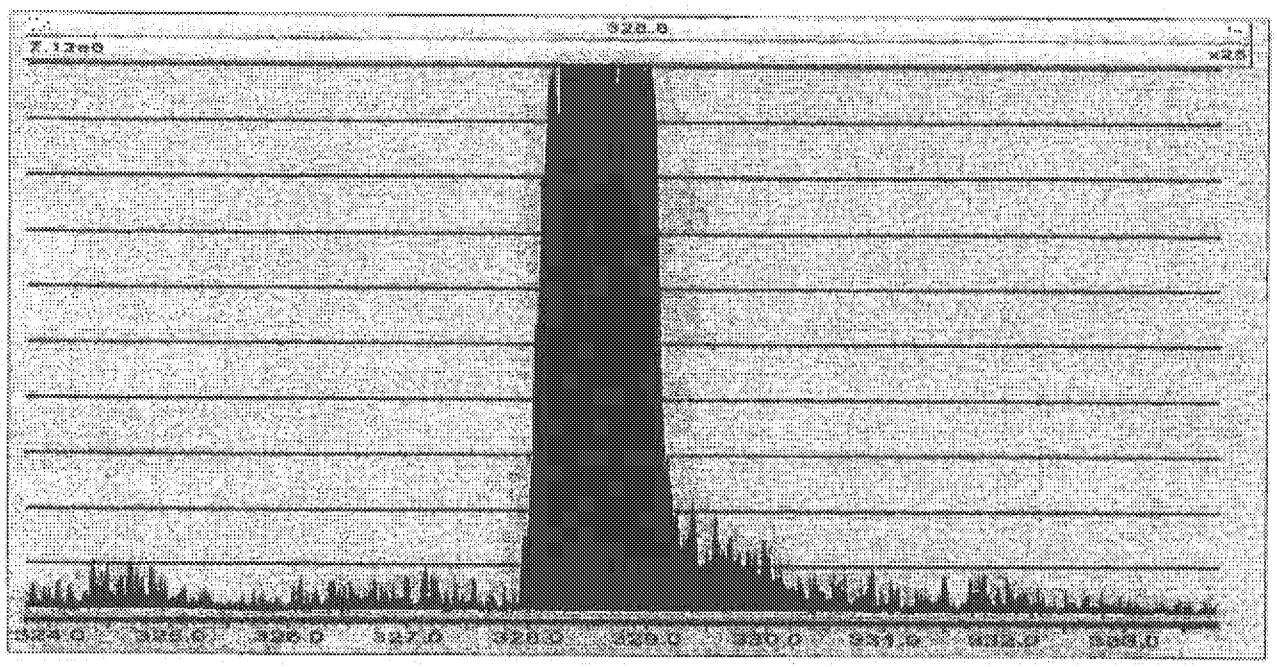


Waters Xevo TQ MS Detector Tune Parameters - MassLynx 4.1 SCN 843

File: C:\MassLynx\8321.PRO\ACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS#VBA453

Printed: Monday, January 22, 2018 08:54:41 Mountain Standard Time



Type	Start Mass	End Mass	Set Mass
MS1 Scan	323.80	333.80	

Source (ES-)	Settings	Readbacks
Capillary (kV)	0.50	0.54
Cone (V)	10.00	-21.06
Extractor (V)	3.00	-10.61
Source Temperature (°C)	120	120
Desolvation Temperature (°C)	200	200
Cone Gas Flow (L/Hr)	50	50
Desolvation Gas Flow (L/Hr)	800	791
Collision Gas Flow (mL/Min)	0.15	0.04

Analyser	Settings	Readbacks
LM 1 Resolution	2.8	
HM 1 Resolution	14.8	
Ion Energy 1	0.7	
MS Mode Collision Energy	7.00	
MSMS Mode Collision Energy	20.00	
MS Mode Entrance	0.50	
MS Mode Exit	0.50	
Gas On MS Mode Entrance	0.50	
Gas On MS Mode Exit	0.50	
Gas On MSMS Mode Entrance	0.50	
Gas On MSMS Mode Exit	0.50	
Gas Off MS Mode Entrance	30.00	
Gas Off MS Mode Exit	30.00	
Gas Off MSMS Mode Entrance	2.00	
Gas Off MSMS Mode Exit	2.00	
ScanWave MS Mode Entrance	0.50	
ScanWave MS Mode Exit	0.50	
ScanWave MSMS Mode Entrance	0.50	
ScanWave MSMS Mode Exit	0.50	
LM 2 Resolution	2.9	
HM 2 Resolution	14.7	
Ion Energy 2	0.3	

[illegible]
7/23/18

File: C:\MassLynx\8321.PRO\ACQUDB\HFPOMRM.ipr

Instrument: XEVO-TQMS\VBA453

Printed: Monday, January 22, 2018 08:54:41 Mountain Standard Time

Multiplier	523.57
Active Reservoir	A

Pressure Gauges

Collision Cell Pressure (mbar)	7.830201e-005

Instrument Configuration

Automatic Mode

MS Inter-scan delay (secs)	0.005
Polarity/Mode switch Inter-scan delay (secs)	0.020
Enhanced Inter-scan delay (secs)	0.020

Inter-channel delay - See Tables

MS 1 Delay Table:

	R	delay
<=	0.500	0.005
<=	2.000	0.008
<=	4.000	0.010
<=	11.000	0.012
>	11.000	0.014

MS 2 Delay Table:

	R	delay
<=	8.000	0.005
<=	25.000	0.005
>	25.000	0.007

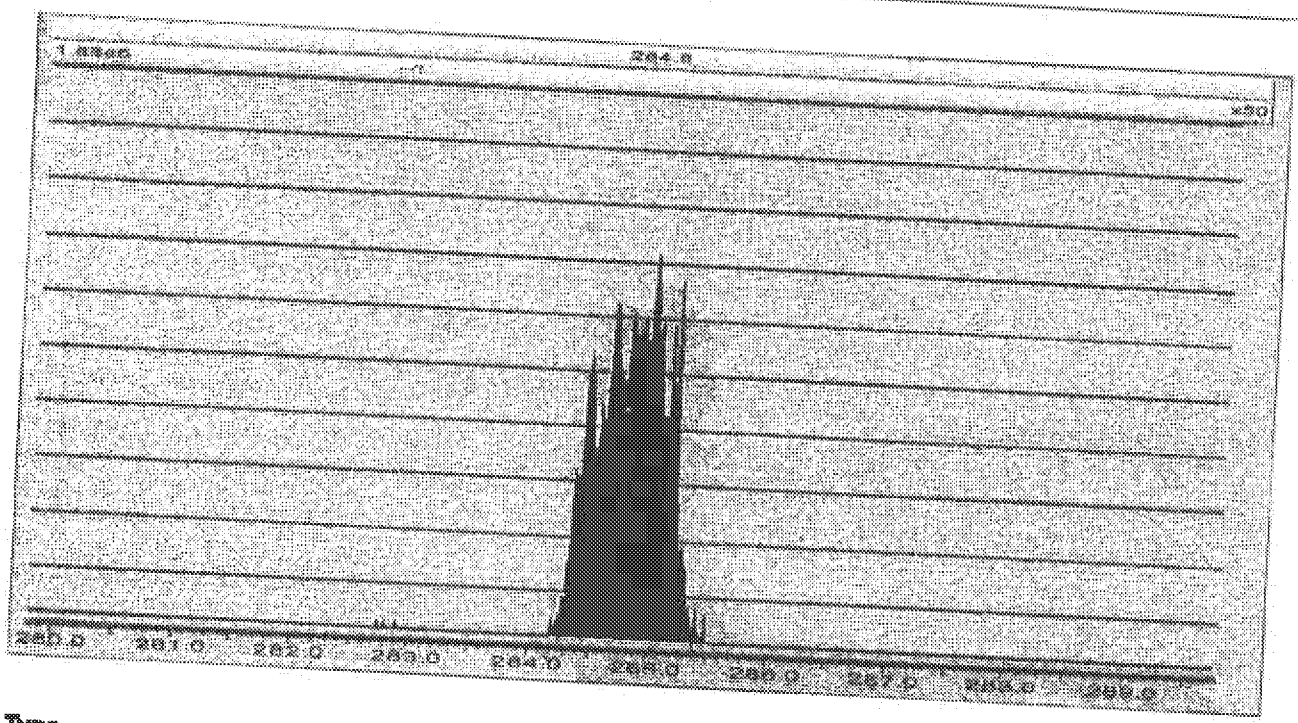
chwapon
1/23/18

Waters Xevo TQ MS Detector Tune Parameters - MassLynx 4.1 SCN 843

File: C:\MassLynx\8321.PRO\ACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS#VBA453

Printed: Monday, January 22, 2018 08:55:05 Mountain Standard Time



Type	Start Mass	End Mass	Set Mass
Daughter Scan	279.80	289.80	328.80

Source (ES-)	Settings	Readbacks
Capillary (kV)	0.50	0.54
Cone (V)	10.00	-21.06
Extractor (V)	3.00	-10.61
Source Temperature (°C)	120	120
Desolvation Temperature (°C)	200	200
Cone Gas Flow (L/Hr)	50	50
Desolvation Gas Flow (L/Hr)	800	792
Collision Gas Flow (mL/Min)	0.15	0.14

Analyser	Settings	Readbacks
LM 1 Resolution	2.8	
HM 1 Resolution	14.8	
Ion Energy 1	0.7	
MS Mode Collision Energy	7.00	
MSMS Mode Collision Energy	20.00	
MS Mode Entrance	0.50	
MS Mode Exit	0.50	
Gas On MS Mode Entrance	0.50	
Gas On MS Mode Exit	0.50	
Gas On MSMS Mode Entrance	0.50	
Gas On MSMS Mode Exit	0.50	
Gas Off MS Mode Entrance	30.00	
Gas Off MS Mode Exit	30.00	
Gas Off MSMS Mode Entrance	2.00	
Gas Off MSMS Mode Exit	2.00	
ScanWave MS Mode Entrance	0.50	
ScanWave MS Mode Exit	0.50	
ScanWave MSMS Mode Entrance	0.50	
ScanWave MSMS Mode Exit	0.50	
LM 2 Resolution	2.9	
HM 2 Resolution	14.7	
Ion Energy 2	0.3	

dwdapom
1/23/18

Multiplier
Active Reservoir 523.57
A

Pressure Gauges
Collision Cell Pressure (mbar) 1.197811e-003

Instrument Configuration
Automatic Mode
MS Inter-scan delay (secs) 0.005
Polarity/Mode switch inter-scan delay (secs) 0.020
Enhanced Inter-scan delay (secs) 0.020
Inter-channel delay - See Tables

MS 1 Delay Table:

	R	delay
<=	0.500	0.005
<=	2.000	0.008
<=	4.000	0.010
<=	11.000	0.012
>	11.000	0.014

MS 2 Delay Table:

	R	delay
<=	8.000	0.005
<=	26.000	0.005
>	26.000	0.007

mulapon
1/23/18

MS Method Report - MassLynx 4.1 SCN 643

File: c:\masslynx\8321.pro\acqudb\hfpo.exp

Printed: Monday, January 22, 2018 13:24:05 Mountain Standard Time

Creation Time	Fri 18 Nov 2016 09:08:40
Instrument Identifier	XEVO-TQMS#VBA453
Version Number	1.0
Duration (min)	2.0
Calibration Filename	C:\MassLynx\IntelliStart\Results\Unit Mass Resolution\Calibration_20100811_2.cal
Solvent Delay Divert Valve Enabled	0
Number Of Functions	1

Function 1 : MRM of 2 mass pairs, Time 0.00 to 2.00, ES-

Type	MRM
Ion Mode	ES-
Inter Channel Delay (sec)	-1.000
InterScan Time (sec)	-1.000
Span (Da)	0.5
Start Time (min)	0.0
End Time (min)	2.0

Ch	Prnt(Da)	Dau(Da)	Dwell(s)	Cone(V)	Coll(eV)	Delay(s)	Compound
1	328.80	284.80	0.400	10.00	7.00	-1.000	HFPO
2	331.80	286.80	0.400	10.00	7.00	-1.000	HFPO IS

Oldham
1/23/18

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-401908/1-A
Matrix: Water
Lab File ID: hfpo718A22046.d
Analysis Method: 8321A
Date Collected:
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 250(mL)
Date Analyzed: 01/22/2018 12:20
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.010		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	91		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22046.d
Lims ID: MB 280-401908/1-A
Client ID:
Sample Type: MB
Inject. Date: 22-Jan-2018 12:20:15 ALS Bottle#: 11 Worklist Smp#: 30
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: MB280-401908/1-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.002	0.961	0.041	1.000	667324	9.12	1709	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.002	0.961	0.041		667324	10.0	1709	

Report Date: 22-Jan-2018 13:40:50 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22046.d

Injection Date: 22-Jan-2018 12:20:15 Instrument ID: LC_LCMS7

Lims ID: MB 280-401908/1-A

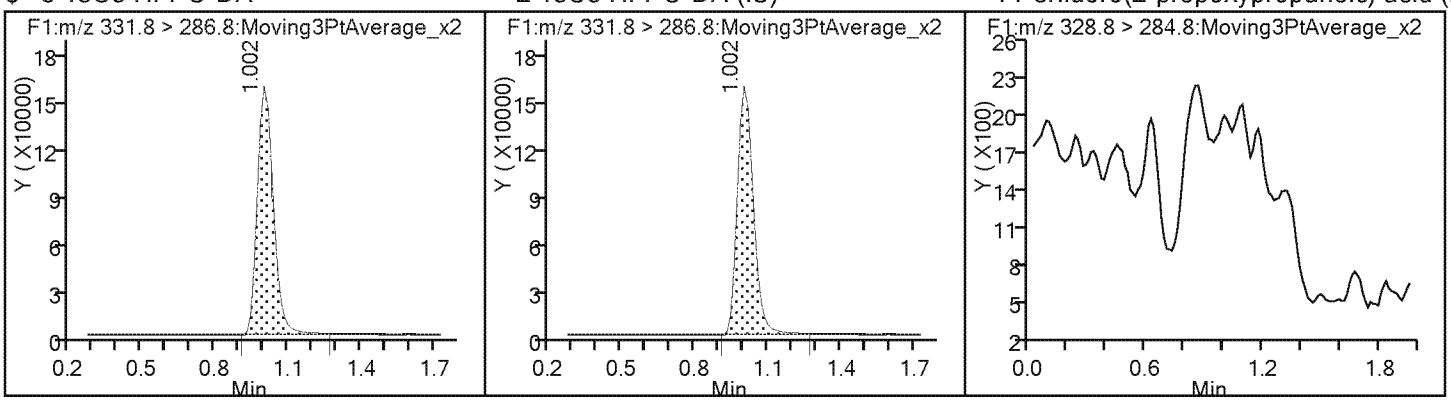
Client ID:

Operator ID: JBH ALS Bottle#: 11 Worklist Smp#: 30

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22046.d
Lims ID: MB 280-401908/1-A
Client ID:
Sample Type: MB
Inject. Date: 22-Jan-2018 12:20:15 ALS Bottle#: 11 Worklist Smp#: 30
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: MB280-401908/1-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:18

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.12	91.23

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID:
Lab Sample ID: ICB 280-390728/11
Matrix: Water
Lab File ID: hfpo717J10034.d
Analysis Method: 8321A
Date Collected:
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 10/10/2017 10:01
Con. Extract Vol.:
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 390728
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.50		0.50	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	100		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10034.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 10-Oct-2017 10:01:21 ALS Bottle#: 1 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICB
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:51 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	732194	10.0	425	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		732194	10.0	425	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.880	0.885	-0.005	1.000	13993	-0.0270	8.1	

Reagents:

HFPO_CAL-0_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:52 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10034.d

Injection Date: 10-Oct-2017 10:01:21 Instrument ID: LC_LCMS7

Lims ID: ICB

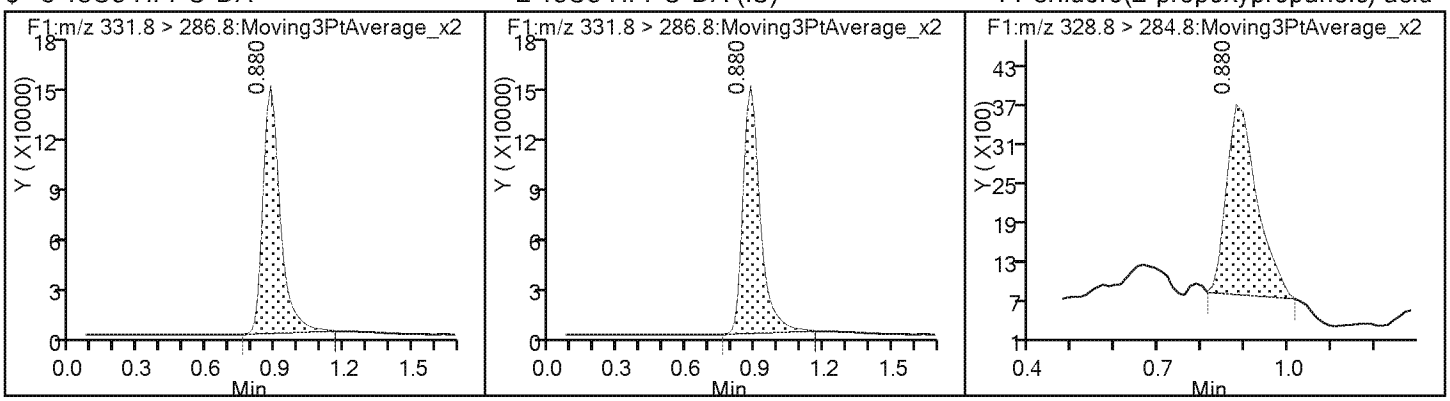
Client ID:

Operator ID: JBH ALS Bottle#: 1 Worklist Smp#: 11

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10034.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 10-Oct-2017 10:01:21 ALS Bottle#: 1 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICB
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:51 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:12

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	10.0	100.10

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-401908/2-A
Matrix: Water
Lab File ID: hfpo718A22047.d
Analysis Method: 8321A
Date Collected:
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 250(mL)
Date Analyzed: 01/22/2018 12:23
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.192		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	97		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22047.d
Lims ID: LCS 280-401908/2-A
Client ID:
Sample Type: LCS
Inject. Date: 22-Jan-2018 12:23:29 ALS Bottle#: 12 Worklist Smp#: 31
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: LCS280-401908/2-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.961	0.961	0.0	1.000	712650	9.74	1810	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.961	0.961	0.0		712650	10.0	1810	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.961	0.988	-0.027	1.000	709189	9.62	403	

Report Date: 22-Jan-2018 13:40:50 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22047.d

Injection Date: 22-Jan-2018 12:23:29 Instrument ID: LC_LCMS7

Lims ID: LCS 280-401908/2-A

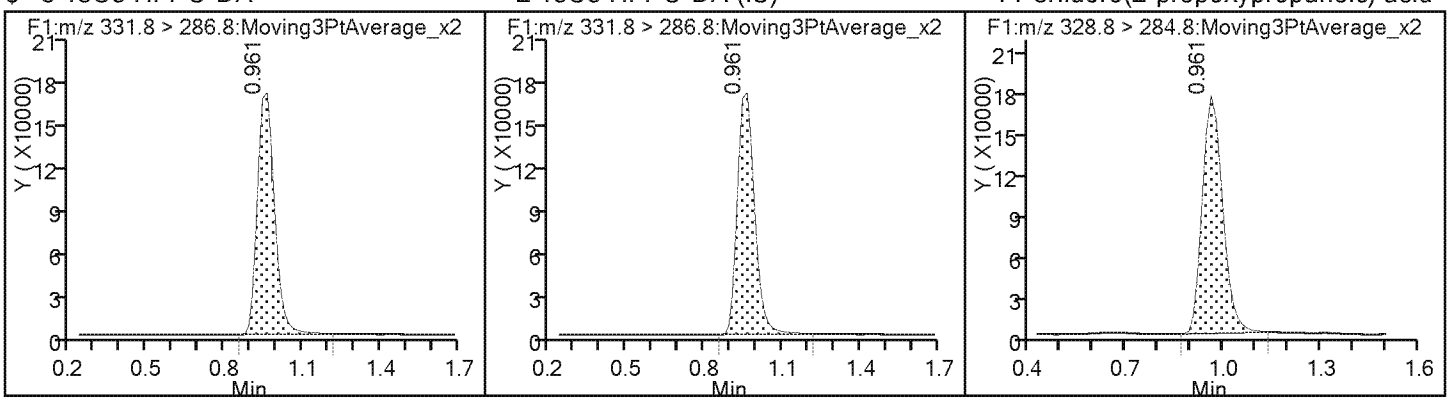
Client ID:

Operator ID: JBH ALS Bottle#: 12 Worklist Smp#: 31

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22047.d
Lims ID: LCS 280-401908/2-A
Client ID:
Sample Type: LCS
Inject. Date: 22-Jan-2018 12:23:29 ALS Bottle#: 12 Worklist Smp#: 31
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: LCS280-401908/2-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:23

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.74	97.43

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSD 280-401908/3-A
Matrix: Water
Lab File ID: hfpo718A22048.d
Analysis Method: 8321A
Date Collected:
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 250(mL)
Date Analyzed: 01/22/2018 12:26
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.190		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	97		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22048.d
Lims ID: LCSD 280-401908/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 22-Jan-2018 12:26:44 ALS Bottle#: 13 Worklist Smp#: 32
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: LCSD280-401908/3-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.961	0.961	0.0	1.000	709903	9.71	1671	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.961	0.961	0.0		709903	10.0	1671	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.961	0.988	-0.027	1.000	699021	9.51	334	

Report Date: 22-Jan-2018 13:40:51 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22048.d

Injection Date: 22-Jan-2018 12:26:44 Instrument ID: LC_LCMS7

Lims ID: LCSD 280-401908/3-A

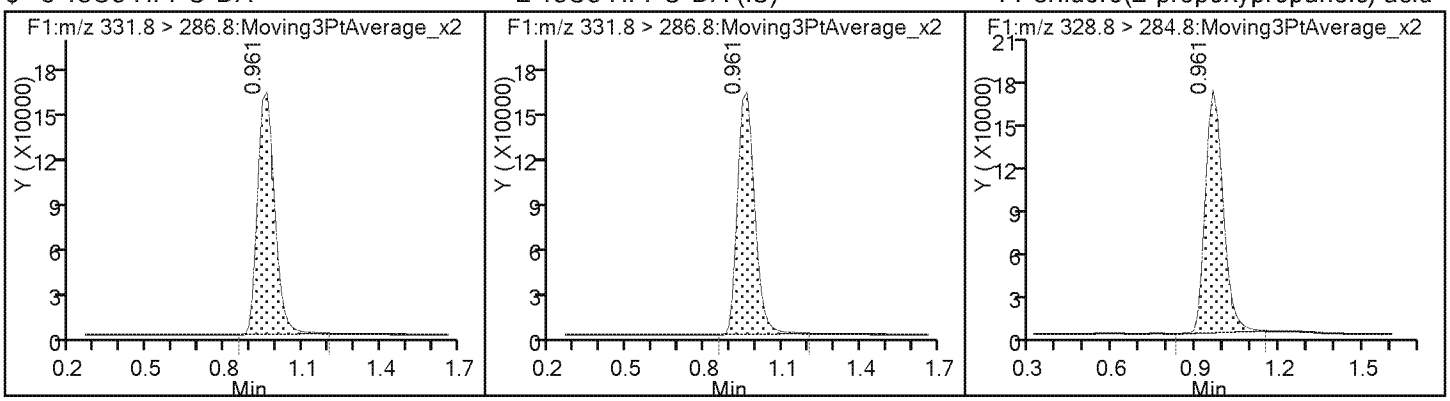
Client ID:

Operator ID: JBH ALS Bottle#: 13 Worklist Smp#: 32

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22048.d
Lims ID: LCSD 280-401908/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 22-Jan-2018 12:26:44 ALS Bottle#: 13 Worklist Smp#: 32
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: LCSD280-401908/3-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:34

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.71	97.05

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID:
Lab Sample ID: LLCS 280-401908/4-A
Matrix: Water
Lab File ID: hfpo718A22049.d
Analysis Method: 8321A
Date Collected:
Extraction Method: 3535
Date Extracted: 01/17/2018 13:34
Sample wt/vol: 250(mL)
Date Analyzed: 01/22/2018 12:29
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 402339
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.0156		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	96		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22049.d
Lims ID: LLCS 280-401908/4-A
Client ID:
Sample Type: LLCS
Inject. Date: 22-Jan-2018 12:29:59 ALS Bottle#: 14 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: LLCS280-401908/4-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.947	0.961	-0.014	1.000	700215	9.57	1509	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.947	0.961	-0.014		700215	10.0	1509	
1 Perfluoro(2-propoxypropanoic) acid								M
328.8 > 284.8	0.961	0.988	-0.027	1.000	70586	0.7801	24.8	M

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 22-Jan-2018 13:40:51 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22049.d

Injection Date: 22-Jan-2018 12:29:59 Instrument ID: LC_LCMS7

Lims ID: LLCS 280-401908/4-A

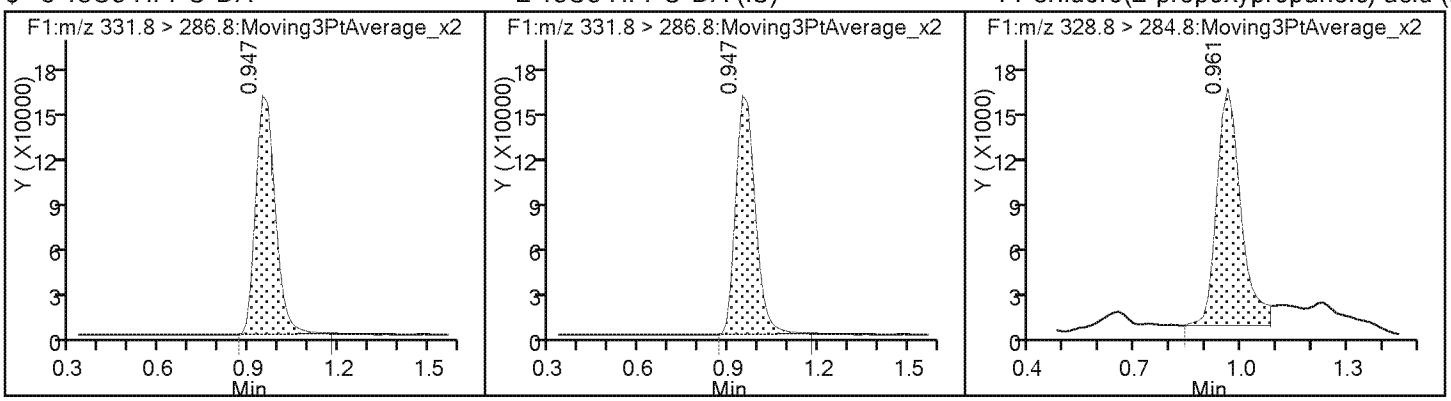
Client ID:

Operator ID: JBH ALS Bottle#: 14 Worklist Smp#: 33

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22049.d
Lims ID: LLCS 280-401908/4-A
Client ID:
Sample Type: LLCS
Inject. Date: 22-Jan-2018 12:29:59 ALS Bottle#: 14 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: LLCS280-401908/4-A
Misc. Info.: HFPO18A22
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 22-Jan-2018 13:40:49 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK031

First Level Reviewer: meyera Date: 22-Jan-2018 13:36:37

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	9.57	95.73

Manual Integration/User Assign Peak Report

TestAmerica Denver

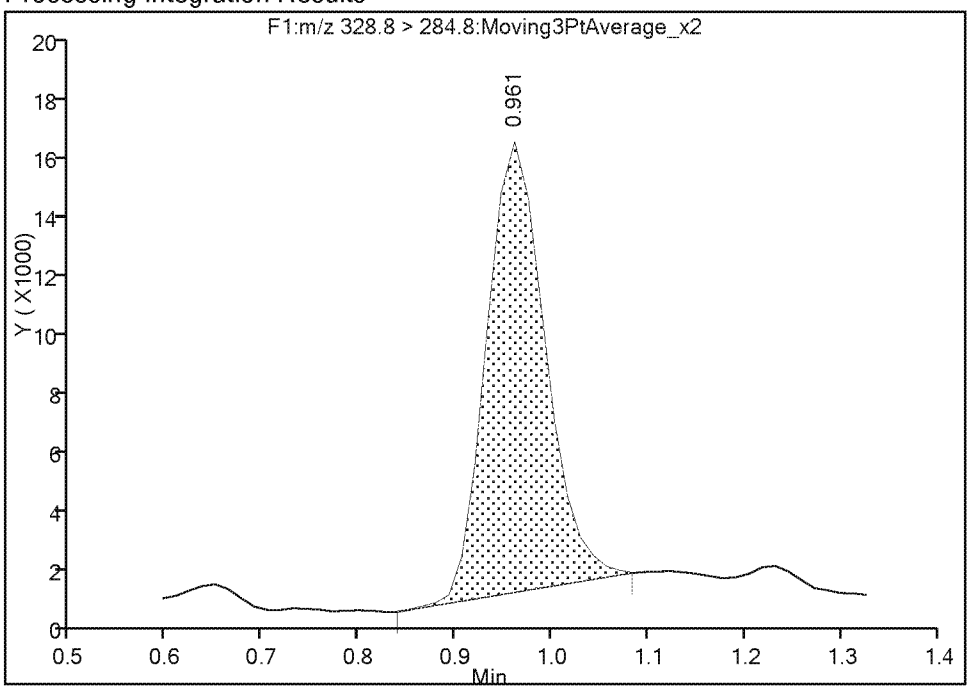
Data File:	\\ChromNA\Denver\ChromData\LC_LCMS7\20180122-66596.b\hfpo718A22049.d				
Injection Date:	22-Jan-2018 12:29:59	Instrument ID:	LC_LCMS7		
Lims ID:	LLCS 280-401908/4-A				
Client ID:					
Operator ID:	JBH	ALS Bottle#:	14	Worklist Smp#:	33
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	HFPO	Limit Group:	LC - 8321A_HFPO_Du		
Column:		Detector	F1:MRM		

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

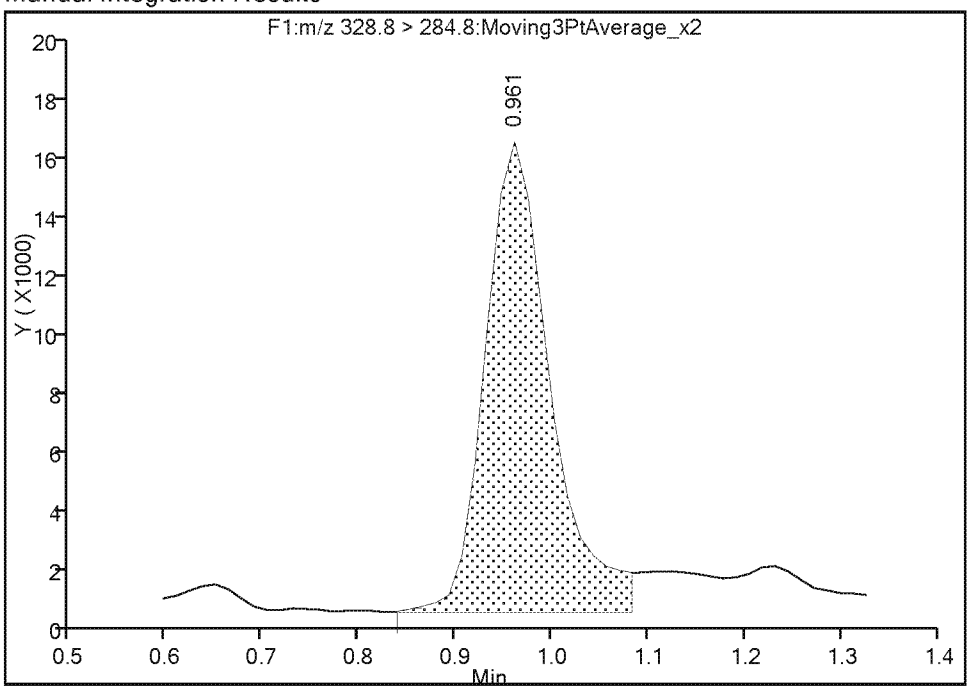
Processing Integration Results

RT: 0.96
Area: 61187
Amount: 0.647519
Amount Units: ug/l



Manual Integration Results

RT: 0.96
Area: 70586
Amount: 0.780145
Amount Units: ug/l



Reviewer: meyera, 22-Jan-2018 13:40:06

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-105496-1
SDG No.:
Client Sample ID:
Lab Sample ID: DLCK 280-390728/12
Matrix: Water
Lab File ID: hfpo717J10035.d
Analysis Method: 8321A
Date Collected:
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 10/10/2017 10:04
Con. Extract Vol.:
Dilution Factor: 1
Injection Volume: 20(uL)
GC Column: Synergi Hydro ID:
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 390728
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.50		0.50	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	102		50-200

FORM I 8321A

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10035.d
Lims ID: DLCK
Client ID:
Sample Type: DLCK
Inject. Date: 10-Oct-2017 10:04:34 ALS Bottle#: 2 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: DLCK
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:51 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
$ 3 13C3 HFPO-DA								
331.8 > 286.8	0.880	0.880	0.0	1.000	749614	10.2	480	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	0.880	0.880	0.0		749614	10.0	480	
1 Perfluoro(2-propoxypropanoic) acid								
328.8 > 284.8	0.893	0.885	0.008	1.000	31104	0.1941	16.6	

Reagents:

HFPO_CAL-1_00031 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2017 12:51:53 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10035.d

Injection Date: 10-Oct-2017 10:04:34 Instrument ID: LC_LCMS7

Lims ID: DLCK

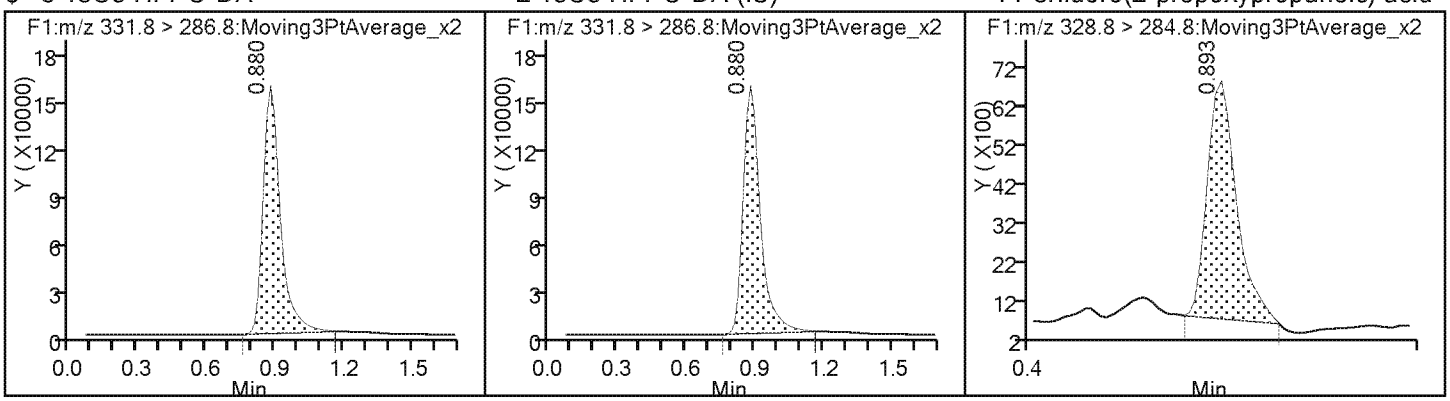
Client ID:

Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 12

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

$ 3 13C3 HFPO-DA * 2 13C3 HFPO-DA (IS) 1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10035.d
Lims ID: DLCK
Client ID:
Sample Type: DLCK
Inject. Date: 10-Oct-2017 10:04:34 ALS Bottle#: 2 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: DLCK
Misc. Info.: HFPO17J10
Operator ID: JBH Instrument ID: LC_LCMS7

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\HFPO.m
Limit Group: LC - 8321A_HFPO_Du
Last Update: 10-Oct-2017 12:51:51 Calib Date: 10-Oct-2017 09:58:07
Integrator: Picker
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20171010-63483.b\hfpo717J10033.d

Column 1 : Det: F1:MRM
Process Host: XAWRK005

First Level Reviewer: meyera Date: 10-Oct-2017 11:51:31

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 13C3 HFPO-DA	10.0	10.2	102.48

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Instrument ID: LC_LCMS7 Start Date: 09/14/2017 14:40

Analysis Batch Number: 387775 End Date: 09/14/2017 16:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD001 280-387775/3 IC		09/14/2017 14:40	1	hfpo717I14052.d	Synergi Hydro
STD002 280-387775/4 IC		09/14/2017 14:43	1	hfpo717I14053.d	Synergi Hydro
STD003 280-387775/5 IC		09/14/2017 14:46	1	hfpo717I14054.d	Synergi Hydro
STD004 280-387775/6 IC		09/14/2017 14:49	1	hfpo717I14055.d	Synergi Hydro
STD005 280-387775/7 IC		09/14/2017 14:52	1	hfpo717I14056.d	Synergi Hydro
STD006 280-387775/8 IC		09/14/2017 14:55	1	hfpo717I14057.d	Synergi Hydro
STD007 280-387775/9 IC		09/14/2017 14:58	1	hfpo717I14058.d	Synergi Hydro
STD008 280-387775/10 IC		09/14/2017 15:01	1	hfpo717I14059.d	Synergi Hydro
ICB 280-387775/11		09/14/2017 15:04	1		Synergi Hydro
ZZZZZ		09/14/2017 15:07	1		Synergi Hydro
ICV 280-387775/13		09/14/2017 15:10	1	hfpo717I14062.d	Synergi Hydro
ZZZZZ		09/14/2017 15:13	1		Synergi Hydro
ZZZZZ		09/14/2017 15:16	1		Synergi Hydro
ZZZZZ		09/14/2017 15:19	1		Synergi Hydro
ZZZZZ		09/14/2017 15:22	1		Synergi Hydro
ZZZZZ		09/14/2017 15:25	2		Synergi Hydro
ZZZZZ		09/14/2017 15:28	1		Synergi Hydro
ZZZZZ		09/14/2017 15:31	1		Synergi Hydro
ZZZZZ		09/14/2017 15:34	1		Synergi Hydro
ZZZZZ		09/14/2017 15:38	1		Synergi Hydro
ZZZZZ		09/14/2017 15:41	1		Synergi Hydro
CCV 280-387775/24		09/14/2017 15:44	1		Synergi Hydro
ZZZZZ		09/14/2017 15:47	2		Synergi Hydro
ZZZZZ		09/14/2017 15:50	1		Synergi Hydro
ZZZZZ		09/14/2017 15:53	1		Synergi Hydro
ZZZZZ		09/14/2017 15:56	1		Synergi Hydro
ZZZZZ		09/14/2017 15:59	1		Synergi Hydro
ZZZZZ		09/14/2017 16:02	1		Synergi Hydro
CCV 280-387775/31		09/14/2017 16:05	1		Synergi Hydro

8321A

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Instrument ID: LC_LCMS7 Start Date: 10/10/2017 09:35

Analysis Batch Number: 390728 End Date: 10/10/2017 11:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD001 280-390728/3 IC		10/10/2017 09:35	1	hfpo717J10026.d	Synergi Hydro
STD002 280-390728/4 IC		10/10/2017 09:38	1	hfpo717J10027.d	Synergi Hydro
STD003 280-390728/5 IC		10/10/2017 09:41	1	hfpo717J10028.d	Synergi Hydro
STD004 280-390728/6 IC		10/10/2017 09:45	1	hfpo717J10029.d	Synergi Hydro
STD005 280-390728/7 IC		10/10/2017 09:48	1	hfpo717J10030.d	Synergi Hydro
STD006 280-390728/8 IC		10/10/2017 09:51	1	hfpo717J10031.d	Synergi Hydro
STD007 280-390728/9 IC		10/10/2017 09:54	1	hfpo717J10032.d	Synergi Hydro
STD008 280-390728/10 IC		10/10/2017 09:58	1	hfpo717J10033.d	Synergi Hydro
ICB 280-390728/11		10/10/2017 10:01	1	hfpo717J10034.d	Synergi Hydro
DLCK 280-390728/12		10/10/2017 10:04	1	hfpo717J10035.d	Synergi Hydro
ICV 280-390728/13		10/10/2017 10:07	1	hfpo717J10036.d	Synergi Hydro
ZZZZZ		10/10/2017 10:11	1		Synergi Hydro
ZZZZZ		10/10/2017 10:14	1		Synergi Hydro
ZZZZZ		10/10/2017 10:17	1		Synergi Hydro
ZZZZZ		10/10/2017 10:20	1		Synergi Hydro
ZZZZZ		10/10/2017 10:23	1		Synergi Hydro
ZZZZZ		10/10/2017 10:27	1		Synergi Hydro
ZZZZZ		10/10/2017 10:30	1		Synergi Hydro
ZZZZZ		10/10/2017 10:33	1		Synergi Hydro
ZZZZZ		10/10/2017 10:36	1		Synergi Hydro
ZZZZZ		10/10/2017 10:40	1		Synergi Hydro
CCV 280-390728/24		10/10/2017 10:43	1	hfpo717J10047.d	Synergi Hydro
ZZZZZ		10/10/2017 10:46	1		Synergi Hydro
ZZZZZ		10/10/2017 10:49	1		Synergi Hydro
ZZZZZ		10/10/2017 10:53	1		Synergi Hydro
ZZZZZ		10/10/2017 10:56	1		Synergi Hydro
ZZZZZ		10/10/2017 10:59	1		Synergi Hydro
ZZZZZ		10/10/2017 11:02	1		Synergi Hydro
ZZZZZ		10/10/2017 11:06	1		Synergi Hydro
ZZZZZ		10/10/2017 11:09	1		Synergi Hydro
ZZZZZ		10/10/2017 11:12	1		Synergi Hydro
ZZZZZ		10/10/2017 11:16	1		Synergi Hydro
CCV 280-390728/35		10/10/2017 11:19	1		Synergi Hydro

8321A

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Instrument ID: LC_LCMS7 Start Date: 01/22/2018 12:16

Analysis Batch Number: 402339 End Date: 01/22/2018 13:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-402339/29		01/22/2018 12:16	1	hfpo718A22045.d	Synergi Hydro
MB 280-401908/1-A		01/22/2018 12:20	1	hfpo718A22046.d	Synergi Hydro
LCS 280-401908/2-A		01/22/2018 12:23	1	hfpo718A22047.d	Synergi Hydro
LCSD 280-401908/3-A		01/22/2018 12:26	1	hfpo718A22048.d	Synergi Hydro
LLCS 280-401908/4-A		01/22/2018 12:29	1	hfpo718A22049.d	Synergi Hydro
280-105496-1		01/22/2018 12:33	1	hfpo718A22050.d	Synergi Hydro
280-105496-2		01/22/2018 12:36	1	hfpo718A22051.d	Synergi Hydro
280-105496-3		01/22/2018 12:39	1	hfpo718A22052.d	Synergi Hydro
280-105496-4		01/22/2018 12:42	1	hfpo718A22053.d	Synergi Hydro
CCV 280-402339/38		01/22/2018 12:46	1	hfpo718A22054.d	Synergi Hydro
ZZZZZ		01/22/2018 12:49	20		Synergi Hydro
ZZZZZ		01/22/2018 12:52	5		Synergi Hydro
ZZZZZ		01/22/2018 12:56	5		Synergi Hydro
ZZZZZ		01/22/2018 12:59	5		Synergi Hydro
ZZZZZ		01/22/2018 13:02	10		Synergi Hydro
ZZZZZ		01/22/2018 13:05	1		Synergi Hydro
CCV 280-402339/45		01/22/2018 13:09	1	hfpo718A22061.d	Synergi Hydro

8321A

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Batch Number: 401908 Batch Start Date: 01/17/18 13:34 Batch Analyst: Mueller, Stacey K

Batch Method: 3535 Batch End Date: 01/17/18 19:06

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	HFPO I.S. 00007	HFPO Spike 00004
MB 280-401908/1		3535, 8321A				250 mL	5 mL	0.1 mL	
LCS 280-401908/2		3535, 8321A				250 mL	5 mL	0.1 mL	0.1 mL
LCSD 280-401908/3		3535, 8321A				250 mL	5 mL	0.1 mL	0.1 mL
LLCS 280-401908/4		3535, 8321A				250 mL	5 mL	0.1 mL	0.01 mL
280-105496-D-1	FAY-D-8141RVRRD-W1-1-010918	3535, 8321A	T	279.2 g	27.6 g	251.6 mL	5 mL	0.1 mL	
280-105496-B-2	FAY-D-FB-010918	3535, 8321A	T	282.4 g	27.4 g	255 mL	5 mL	0.1 mL	
280-105496-A-3	FAY-D-FB-011218	3535, 8321A	T	289.4 g	26.9 g	262.5 mL	5 mL	0.1 mL	
280-105496-A-4	8046NC87H-W1-1-011218	3535, 8321A	T	286.2 g	27.1 g	259.1 mL	5 mL	0.1 mL	

Batch Notes	
Acid ID	2% Formic Aci_00139
Acid Name	2% Formic Acid
Balance ID	24350888
Batch Comment	Reviewer: KI Trainee: SM Trainer: HA
First End time	1707
H2O ID	HPLC_Water_00844
Pipette ID	m2, SPE-1
Reagent ID	10% NH4OH
Reagent Lot Number	10% NH4OH_00116
Solvent Lot #	Methanol_00188
Solvent Name	Methanol
SOP Number	DV-OP-0019
SPE Cartridge Type	STRATA-X-AW (8B S038 FCH)
Solid Phase Extraction Disk ID	S308-0077
First Start time	1550

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

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-105496-1

SDG No.:

Batch Number: 401908 Batch Start Date: 01/17/18 13:34 Batch Analyst: Mueller, Stacey K

Batch Method: 3535 Batch End Date: 01/17/18 19:06

Basis	Basis Description
T	Total/NA

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

HFPO_CAL-6_00078

Reagent ID: HFPO_CAL-6_00078

Description:	level6	Expiration Date:	01/26/2018
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	LCMS	Prepared By:	Meyer, Andrew GC
Reagent Volume:	1.000 mL	Solvent:	80:20 Methanol : H2O
Creation Date:	01/12/2018	Solvent Lot:	00016
Open Date:			
Container(s):	4921808		
Comment:	level-6		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00004	08/28/2018	0.50000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (IS)	HFPO I.S._00004	08/28/2018	0.50000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00004	10/30/2018	0.50000	ug/mL	10.00000	ug/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00004	Internal Standard for HFPO 0.5ug/ml		08/28/18				20.00000	uL
HFPO Spike_00004	HFPO LCS/Calibration Spike 0.5ug/ml		10/30/18				20.00000	uL

Ondepon
1/23/18

01/12/2018 13:10

Page 1 of 1

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

HFPO_CAL-5_00078

Reagent ID: HFPO_CAL-5_00078

Description:	level5	Expiration Date:	01/26/2018
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	LCMS	Prepared By:	Meyer, Andrew GC
Reagent Volume:	1.000 mL	Solvent:	80:20 Methanol : H2O
Creation Date:	01/12/2018	Solvent Lot:	00016
Open Date:			
Container(s):	4921807		
Comment:	level-5		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00004	08/28/2018	0.50000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (IS)	HFPO I.S._00004	08/28/2018	0.50000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00004	10/30/2018	0.50000	ug/mL	5.00000	ug/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00004	Internal Standard for HFPO 0.5ug/ml		08/28/18				20.00000	uL
HFPO Spike_00004	HFPO LCS/Calibration Spike 0.5ug/ml		10/30/18				10.00000	uL

Chuddapoon
1/23/18

01/12/2018 13:09

Page 1 of 1

Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Ken Stuart, AM, TO	Lab PM: Johnston, Michelle	Carrier Tracking No(s):	COC No:
Client Contact: Mr. Michael Aucoin	Phone: 704 - 600 - 5746	E-Mail: michelle.johnston@testamericainc.com		Page: Page 1 of 1
Company: The Chemours Company FC, LLC				Job #:
Address: c/o AECOM 4051 Ogletown Road, Suite 300	Due Date Requested:			
City: Newark	TAT Requested (days): 10 Business Days			
State, Zip: DE, 19713				
Phone: 302.781.5873	PO #: LBIO-67048/84202000-2231QS1000			
Email: michael.aucoin@aecom.com	WO #:			
Project Name: FAY-2017 Residential Sampling	Project #: 26016804			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCl; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Oil/Waste, Air)	Perf Filtered Sample (Yes or No)	HFPO-DA - LC/MS/MS			Total Number of containers	Special Instructions/Note:
Preservation Code:					N	N	X			
FAY-D-XWH RVRBD-001-1-010918	01/01/18	0938	G	W	N	N	X			Hold any
~~FAY-D-010918~~ FAY-D-FB-010918	01/09/18	1030	G	W	N	N	X			remaining
2046N687H-001-1-011218	01/12/18	1128	G	W	N	N	X			Volume
FAY-D-FB-011218	01/12/18	1045	G	W	N	N	X			as requests.

280-105498 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Level IV

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date: 9/22/17	Time: 1100	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	01/12/18 / 1500	Parsons	[signature]	01/12/18 / 1300	Parsons
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			[signature]	01/15/18 0815	TA-Den
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.6, 10.1, 7.0 ; transferred by AG 1/15/18

Page 182 of 183

ED_002011_00000024-00182

Login Sample Receipt Checklist

Client: Chemours Company FC, LLC The

Job Number: 280-105496-1

Login Number: 105496
List Number: 1
Creator: Gomez, Alyssa I

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	