Tetra Tech, Inc. **INTERNAL CORRESPONDENCE**

TO:	**J. ORIENT**	**DATE:**	**OCTOBER 5, 2012**
FROM:	**MICHELLE L. ALLEN**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PFOA & PFOS**
CTO 432, NAS BRUNSWICK
SAMPLE DELIVERY GROUP (SDG) – 280-32218-1

SAMPLES: 14/Aqueous/PFOA & PFOS

NASB-EP-EF-0812	NASB-EP-GW-DUP01-081312
NASB-EP-GW-DUP02-081412	NASB-EP-GW-EW05B-0812
NASB-EP-GW-MGBR-MW04-0812	NASB-EP-GW-MW1104-0812
NASB-EP-GW-MW323-0812	NASB-EP-GW-MW334-0812
NASB-EP-GW-MW335-0812	NASB-EP-GW-MWEP347-0812
NASB-EP-GW-MWEP351-0812	NASB-EP-GW-MWEP352-0812
NASB-EP-GW-RB01-081412	NASB-EP-IN-0812

Overview

The sample set for NAS Brunswick, CTO 432, SDG 280-32218-1 consisted of thirteen (13) aqueous environmental samples and one (1) rinsate blank. All fourteen (14) aqueous samples were analyzed for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Two field duplicate samples pairs were included in this Sample Delivery Group (SDG): NASB-EP-GW-DUP01-081312/NASB-EP-GW-MWEP352-0812 and NASB-EP-GW-DUP02-081412/NASB-EP-GW-MW1104-0812.

The samples were collected by Tetra Tech, Inc. on August 13, 2012 and analyzed by Test America under Naval Facilities Engineering Service Center (NFESC). The PFOA & PFOS analyses were conducted using Test America Standard Operating Procedure (SOP) DV-LC-0012 (Solid Phase Extraction (SPE) was conducted in accordance with SW-846 Method 3535 with liquid chromatography/mass spectroscopy) analytical and reporting protocols. A Tier III data validation was performed based on the following parameters:

* • Data Completeness
• Holding Times
* • Initial and Continuing Calibrations
• Laboratory Method and Field Blank Results
* • Surrogate Spike Recoveries
* • Internal Standard Areas
* • Matrix Spike/Matrix Spike Duplicate Results
* • Laboratory Control Sample Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are

presented in Appendix B. Appendix C contains the documentation to support the findings as discussed in this data validation report.

HOLDING TIMES

Although PFOA and PFOS are very stable compounds, a 7 day collection to extraction holding time was implemented. The 7 day holding time for extractable organic compounds in aqueous matrices was exceeded for the re-extraction and reanalysis of all the samples contained in this SDG. The re-extracted results for PFOS were used in the data validation due to laboratory method blank contamination in the initial analyses. The detected and non-detected results reported for PFOS in all the samples in this SDG were qualified as estimated, (J) and (UJ), due to a holding time noncompliance.

NOTES

PFOS was detected in a laboratory method blank at a concentration of 0.0477 µg/L. No action was taken because the results for PFOS associated with this laboratory method blank were not used in the data validation. The PFOS results from the re-extraction and reanalysis of the samples were used.

The Relative Percent Difference (RPD) for PFOS exceeded the 20% quality control limit for PFOS in the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses. No action was taken because the MS and MSD Percent Recoveries (%Rs) were acceptable and the result for PFOS in the parent sample, NASB-EP-GW-MW335-0812, was not associated with the MS/MSD analytical batch. The MS/MSD samples were not re-extracted and reanalyzed for PFOS.

Positive results reported below the Limit of Quantitation (LOQ) but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results are reported to the Limit of Detection (LOD).

EPA Region 1 worksheets were not available for the Test America SOP DV-LC-0012 methodology, therefore, were not included in this tier III validation.

EXECUTIVE SUMMARY

Laboratory Performance: The 7 day collection to extraction holding times was exceeded for re-extraction and reanalysis of the samples affecting the PFOS results because the initial preparation blank was contaminated with PFOS. PFOS was detected in a laboratory method blank.

Other Factors Affecting Data Quality: A MS/MSD RPD exceed the quality control criteria. Positive results reported below the LOQ but above the MDL were estimated.

The data for these analyses were reviewed with reference to the EPA Region I Validation Functional Guidelines (12/1996) where applicable; laboratory method control criteria and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories",(April 2009).

Tetra Tech, Inc.
Michelle L. Allen
Environmental Chemist

Tetra Tech, Inc.
Joseph A. Samchuck
Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C – Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00958	NSAMPLE	NASB-EP-EF-0812			NASB-EP-EF-0812RE			NASB-EP-GW-DUP01-081312			NASB-EP-GW-DUP01-081312RE		
SDG: 280-32218-1	LAB_ID	280-32218-3			280-32218-3			280-32218-6			280-32218-6		
FRACTION: MISC	SAMP_DATE	8/13/2012			8/13/2012			8/13/2012			8/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF							NASB-EP-GW-MWEP352-0812			NASB-EP-GW-MWEP352-0812		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.14						1.2					
PERFLUOROOCTANE SULFONIC ACID					0.02	UJ	H				0.027	J	HP

PROJ_NO: 00958	NSAMPLE	NASB-EP-GW-DUP02-081412			NASB-EP-GW-DUP02-081412RE			NASB-EP-GW-EW05B-0812DL			NASB-EP-GW-EW05B-0812RE		
SDG: 280-32218-1	LAB_ID	280-32218-12			280-32218-12			280-32218-1			280-32218-1		
FRACTION: MISC	SAMP_DATE	8/14/2012			8/14/2012			8/13/2012			8/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NASB-EP-GW-MW1104-0812			NASB-EP-GW-MW1104-0812								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.071						7.9					
PERFLUOROOCTANE SULFONIC ACID					0.06	J	H				0.59	J	H

PROJ_NO: 00958	NSAMPLE	NASB-EP-GW-MGBR-MW04-0812			NASB-EP-GW-MGBR-MW04-0812R			NASB-EP-GW-MW1104-0812			NASB-EP-GW-MW1104-0812RE		
SDG: 280-32218-1	LAB_ID	280-32218-10			280-32218-10			280-32218-9			280-32218-9		
FRACTION: MISC	SAMP_DATE	8/14/2012			8/14/2012			8/14/2012			8/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.39						0.069					
PERFLUOROOCTANE SULFONIC ACID					0.38	J	H				0.042	J	H

PROJ_NO: 00958	NSAMPLE	NASB-EP-GW-MW323-0812DL			NASB-EP-GW-MW323-0812RE			NASB-EP-GW-MW334-0812			NASB-EP-GW-MW334-0812RE		
SDG: 280-32218-1	LAB_ID	280-32218-14			280-32218-14			280-32218-5			280-32218-5		
FRACTION: MISC	SAMP_DATE	8/15/2012			8/15/2012			8/13/2012			8/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		3.2						0.32					
PERFLUOROOCTANE SULFONIC ACID					1.2	J	H				0.32	J	H

PROJ_NO: 00958	NSAMPLE	NASB-EP-GW-MW335-0812			NASB-EP-GW-MW335-0812RE			NASB-EP-GW-MWEP347-0812DL			NASB-EP-GW-MWEP347-0812RE		
SDG: 280-32218-1	LAB_ID	280-32218-8			280-32218-8			280-32218-11			280-32218-11		
FRACTION: MISC	SAMP_DATE	8/14/2012			8/14/2012			8/15/2012			8/15/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.013	J	P				15					
PERFLUOROOCTANE SULFONIC ACID					0.048	J	H				0.26	J	H

PROJ_NO: 00958	NSAMPLE	NASB-EP-GW-MWEP351-0812			NASB-EP-GW-MWEP351-0812RE			NASB-EP-GW-MWEP352-0812			NASB-EP-GW-MWEP352-0812RE		
SDG: 280-32218-1	LAB_ID	280-32218-7			280-32218-7			280-32218-4			280-32218-4		
FRACTION: MISC	SAMP_DATE	8/14/2012			8/14/2012			8/13/2012			8/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.97						1.2					
PERFLUOROOCTANE SULFONIC ACID					0.029	J	HP				0.015	J	HP

PROJ_NO: 00958	NSAMPLE	NASB-EP-GW-RB01-081412			NASB-EP-GW-RB01-081412RE			NASB-EP-IN-0812			NASB-EP-IN-0812RE		
SDG: 280-32218-1	LAB_ID	280-32218-13			280-32218-13			280-32218-2			280-32218-2		
FRACTION: MISC	SAMP_DATE	8/14/2012			8/14/2012			8/13/2012			8/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID		0.0081	U					1.6					
PERFLUOROOCTANE SULFONIC ACID					0.016	J	HP				0.44	J	H

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-EF-0812 Lab Sample ID: 280-32218-3

Matrix: Water Lab File ID: PC512H18090.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 13:05

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 250.1(mL) Date Analyzed: 08/20/2012 02:48

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.14*		*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.11*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	109		60-155
STL01054	13C8 PFOS	103		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-EF-0812 RE Lab Sample ID: 280-32218-3 RE

Matrix: Water Lab File ID: PC512H24018.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 13:05

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 256.2(mL) Date Analyzed: 08/24/2012 16:00

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.14	H	0.020	0.0078	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.020	U H	0.029	0.020	0.0096

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	104		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-DUP01-081312 Lab Sample ID: 280-32218-6

Matrix: Water Lab File ID: PC512H18093.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 00:00

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 254.3(mL) Date Analyzed: 08/20/2012 03:12

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*1.2*		*0.020*	0.0079	*0.0044*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.052*	*B Q*	*0.029*	0.020	*0.0096*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	101		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-DUP01-081312 | Lab Sample ID: 280-32218-6 RE

Matrix: Water | Lab File ID: PC512H24022.d

Analysis Method: PFOA/PFOS | Date Collected: 08/13/2012 00:00

Extraction Method: 3535 | Date Extracted: 08/22/2012 15:32

Sample wt/vol: 257.8(mL) | Date Analyzed: 08/24/2012 16:30

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.2	H	0.019	0.0078	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.027	J H	0.029	0.019	0.0095

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	109		60-155
STL01054	13C8 PFOS	106		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-DUP02-081412 Lab Sample ID: 280-32218-12

Matrix: Water Lab File ID: PC512H18102.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 00:00

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 250.8(mL) Date Analyzed: 08/20/2012 04:21

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.071*		*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.055*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	99		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-DUP02-081412 | Lab Sample ID: 280-32218-12 RE

Matrix: Water | Lab File ID: PC512H24032.d

Analysis Method: PFOA/PFOS | Date Collected: 08/14/2012 00:00

Extraction Method: 3535 | Date Extracted: 08/22/2012 15:32

Sample wt/vol: 257.6(mL) | Date Analyzed: 08/24/2012 17:48

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.070	H	0.019	0.0078	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.060	H	0.029	0.019	0.0095

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	109		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-EW05B-0812 Lab Sample ID: 280-32218-1

Matrix: Water Lab File ID: PC512H18088.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 12:10

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 252.7(mL) Date Analyzed: 08/20/2012 02:33

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*8.4*	*J*	*0.020*	0.0079	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.57*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	105		60-155
STL01054	13C8 PFOS	100		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-EW05B-0812 DL | Lab Sample ID: 280-32218-1 DL

Matrix: Water | Lab File ID: PC512H24008.d

Analysis Method: PFOA/PFOS | Date Collected: 08/13/2012 12:10

Extraction Method: 3535 | Date Extracted: 08/17/2012 17:28

Sample wt/vol: 252.7(mL) | Date Analyzed: 08/24/2012 14:42

Con. Extract Vol.: 5(mL) | Dilution Factor: ~~1~~ 5 NA

Injection Volume: 20(uL) | GC Column: Gemini-NX ID: 9/26/12

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

Analysis Batch No.: 134649 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*7.9*		*0.020*	0.0079	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.56*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	102	*D*	60-155
STL01054	13C8 PFOS	106	*D*	45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-EW05B-0812 RE Lab Sample ID: 280-32218-1 RE

Matrix: Water Lab File ID: PC512H24015.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 12:10

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 248.2(mL) Date Analyzed: 08/24/2012 15:36

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	8.8	H J	0.020	0.0081	0.0045
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.59	H	0.030	0.020	0.0099

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	111		60-155
STL01054	13C8 PFOS	98		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-EW05B-0812 Lab Sample ID: 280-32218-1 REDL

Matrix: Water Lab File ID: PC512H24016.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 12:10

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 248.2(mL) Date Analyzed: 08/24/2012 15:44

Con. Extract Vol.: 5(mL) Dilution Factor: 1 S MA 9/26/12

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*8.5*	*H*	*0.020*	0.0081	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.66*	*H*	*0.030*	0.020	*0.0099*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	105	*D*	60-155
STL01054	13C8 PFOS	105	*D*	45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MGBR-MW04-0812 Lab Sample ID: 280-32218-10

Matrix: Water Lab File ID: PC512H18100.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 17:30

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 252.8(mL) Date Analyzed: 08/20/2012 04:06

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.39*		*0.020*	0.0079	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.20*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	105		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MGBR-MW04-0812 Lab Sample ID: 280-32218-10 RE

Matrix: Water Lab File ID: PC512H24029.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 17:30

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 253.8(mL) Date Analyzed: 08/24/2012 17:25

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.40	H	0.020	0.0079	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.38	H	0.030	0.020	0.0097

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	110		60-155
STL01054	13C8 PFOS	104		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW1104-0812 Lab Sample ID: 280-32218-9

Matrix: Water Lab File ID: PC512H18099.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 15:55

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 252.4(mL) Date Analyzed: 08/20/2012 03:58

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.069*		*0.020*	0.0079	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.044*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	109		60-155
STL01054	13C8 PFOS	103		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW1104-0812 RE Lab Sample ID: 280-32218-9 RE

Matrix: Water Lab File ID: PC512H24028.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 15:55

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 262.3(mL) Date Analyzed: 08/24/2012 17:17

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.068	H	0.019	0.0076	0.0043
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.042	H	0.029	0.019	0.0093

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	103		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW323-0812 | Lab Sample ID: 280-32218-14

Matrix: Water | Lab File ID: PC512H18104.d

Analysis Method: PFOA/PFOS | Date Collected: 08/15/2012 11:00

Extraction Method: 3535 | Date Extracted: 08/17/2012 17:28

Sample wt/vol: 250.6(mL) | Date Analyzed: 08/20/2012 04:37

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*3.3*	*J*	*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.83*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	109		60-155
STL01054	13C8 PFOS	104		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW323-0812 DL | Lab Sample ID: 280-32218-14 DL

Matrix: Water | Lab File ID: PC512H24010.d

Analysis Method: PFOA/PFOS | Date Collected: 08/15/2012 11:00

Extraction Method: 3535 | Date Extracted: 08/17/2012 17:28

Sample wt/vol: 250.6(mL) | Date Analyzed: 08/24/2012 14:58

Con. Extract Vol.: 5(mL) | Dilution Factor: ~~1~~ 2 MA 9/26/12

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*3.2*		*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.83*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107	*D*	60-155
STL01054	13C8 PFOS	106	*D*	45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW323-0812 RE Lab Sample ID: 280-32218-14 RE

Matrix: Water Lab File ID: PC512H24034.d

Analysis Method: PFOA/PFOS Date Collected: 08/15/2012 11:00

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 258.9(mL) Date Analyzed: 08/24/2012 18:03

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.4	J	0.019	0.0077	0.0043
1763-23-1	Perfluorooctane Sulfonate (PFOS)	1.2		0.029	0.019	0.0095

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	108		60-155
STL01054	13C8 PFOS	104		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW323-0812 | Lab Sample ID: 280-32218-14 REDL

Matrix: Water | Lab File ID: PC512H24035.d

Analysis Method: PFOA/PFOS | Date Collected: 08/15/2012 11:00

Extraction Method: 3535 | Date Extracted: 08/22/2012 15:32

Sample wt/vol: 258.9(mL) | Date Analyzed: 08/24/2012 18:11

Con. Extract Vol.: 5(mL) | Dilution Factor: X 2 MA 9/26/12

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*3.4*		*0.019*	0.0077	*0.0043*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*1.2*		*0.029*	0.019	*0.0095*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107	*D*	60-155
STL01054	13C8 PFOS	106	*D*	45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW334-0812 Lab Sample ID: 280-32218-5

Matrix: Water Lab File ID: PC512H18092.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 16:25

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 251.1(mL) Date Analyzed: 08/20/2012 03:04

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.32*		*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.075*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	100		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW334-0812 RE Lab Sample ID: 280-32218-5 RE

Matrix: Water Lab File ID: PC512H24021.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 16:25

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 249.8(mL) Date Analyzed: 08/24/2012 16:23

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.33	H	0.020	0.0080	0.0045
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.32	H	0.030	0.020	0.0098

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	103		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW335-0812 Lab Sample ID: 280-32218-8

Matrix: Water Lab File ID: PC512H18096.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 14:45

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 255.7(mL) Date Analyzed: 08/20/2012 03:35

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.013*	*J*	*0.020*	0.0078	*0.0044*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.058*	*B Q J*	*0.029*	0.020	*0.0096*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	99		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MW335-0812 RE Lab Sample ID: 280-32218-8 RE

Matrix: Water Lab File ID: PC512H24024.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 14:45

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 253.1(mL) Date Analyzed: 08/24/2012 16:46

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.012	J H	0.020	0.0079	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.048	H	0.030	0.020	0.0097

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	105		60-155
STL01054	13C8 PFOS	108		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP347-0812 Lab Sample ID: 280-32218-11

Matrix: Water Lab File ID: PC512H18101.d

Analysis Method: PFOA/PFOS Date Collected: 08/15/2012 10:25

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 253.3(mL) Date Analyzed: 08/20/2012 04:13

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*15*	*J*	*0.020*	0.0079	*0.0044*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.24*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	103		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP347-0812 | Lab Sample ID: 280-32218-11 DL

Matrix: Water | Lab File ID: PC512H24009.d

Analysis Method: PFOA/PFOS | Date Collected: 08/15/2012 10:25

Extraction Method: 3535 | Date Extracted: 08/17/2012 17:28

Sample wt/vol: 253.3(mL) | Date Analyzed: 08/24/2012 14:50

Con. Extract Vol.: 5(mL) | Dilution Factor: X 10 MA 9/24/12

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*15*		*0.020*	0.0079	*0.0044*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.25*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	108	*D*	60-155
STL01054	13C8 PFOS	103	*D*	45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP347-0812 | Lab Sample ID: 280-32218-11 RE

Matrix: Water | Lab File ID: PC512H24030.d

Analysis Method: PFOA/PFOS | Date Collected: 08/15/2012 10:25

Extraction Method: 3535 | Date Extracted: 08/22/2012 15:32

Sample wt/vol: 254.9(mL) | Date Analyzed: 08/24/2012 17:32

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	16	J	0.020	0.0078	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.26		0.029	0.020	0.0096

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	100		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP347-0812 | Lab Sample ID: 280-32218-11 REDL

Matrix: Water | Lab File ID: PC512H24031.d

Analysis Method: PFOA/PFOS | Date Collected: 08/15/2012 10:25

Extraction Method: 3535 | Date Extracted: 08/22/2012 15:32

Sample wt/vol: 254.9(mL) | Date Analyzed: 08/24/2012 17:40

Con. Extract Vol.: 5(mL) | Dilution Factor: 1/ 10 MA 9/26/12

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*15*		*0.020*	0.0078	*0.0044*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.23*		*0.029*	0.020	*0.0096*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	113	*D*	60-155
STL01054	13C8 PFOS	94	*D*	45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP351-0812 Lab Sample ID: 280-32218-7

Matrix: Water Lab File ID: PC512H18094.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 10:15

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 251.8(mL) Date Analyzed: 08/20/2012 03:19

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.97*		*0.020*	0.0079	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.034*	*B Q*	*0.030*	0.020	*0.0097*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	111		60-155
STL01054	13C8 PFOS	104		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP351-0812 Lab Sample ID: 280-32218-7 RE

Matrix: Water Lab File ID: PC512H24023.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 10:15

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 252.2(mL) Date Analyzed: 08/24/2012 16:38

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.98	H	0.020	0.0079	0.0045
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.029	J H	0.030	0.020	0.0097

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	110		60-155
STL01054	13C8 PFOS	105		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP352-0812 Lab Sample ID: 280-32218-4

Matrix: Water Lab File ID: PC512H18091.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 17:20

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 249.1(mL) Date Analyzed: 08/20/2012 02:56

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*1.2*		*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.043*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	109		60-155
STL01054	13C8 PFOS	101		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-MWEP352-0812 Lab Sample ID: 280-32218-4 RE

Matrix: Water Lab File ID: PC512H24019.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 17:20

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 256.7(mL) Date Analyzed: 08/24/2012 16:07

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.2	H	0.019	0.0078	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.015	J H	0.029	0.019	0.0095

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	98		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-RB01-081412 | Lab Sample ID: 280-32218-13

Matrix: Water | Lab File ID: PC512H18103.d

Analysis Method: PFOA/PFOS | Date Collected: 08/14/2012 15:00

Extraction Method: 3535 | Date Extracted: 08/17/2012 17:28

Sample wt/vol: 247.1(mL) | Date Analyzed: 08/20/2012 04:29

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*0.0081*	*U*	*0.020*	0.0081	*0.0046*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.020*	*U Q*	*0.030*	0.020	*0.0099*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	106		60-155
STL01054	13C8 PFOS	105		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-GW-RB01-081412 RE Lab Sample ID: 280-32218-13 RE

Matrix: Water Lab File ID: PC512H24033.d

Analysis Method: PFOA/PFOS Date Collected: 08/14/2012 15:00

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 250.9(mL) Date Analyzed: 08/24/2012 17:56

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.0080	U H	0.020	0.0080	0.0045
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.016	J H	0.030	0.020	0.0098

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	105		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-IN-0812 Lab Sample ID: 280-32218-2

Matrix: Water Lab File ID: PC512H18089.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 13:04

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 250(mL) Date Analyzed: 08/20/2012 02:41

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	*Perfluorooctanoic acid (PFOA)*	*1.6*		*0.020*	0.0080	*0.0045*
1763-23-1	*Perfluorooctane Sulfonate (PFOS)*	*0.43*	*B Q*	*0.030*	0.020	*0.0098*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	108		60-155
STL01054	13C8 PFOS	102		45-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: NASB-EP-IN-0812 RE Lab Sample ID: 280-32218-2 RE

Matrix: Water Lab File ID: PC512H24017.d

Analysis Method: PFOA/PFOS Date Collected: 08/13/2012 13:04

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 258(mL) Date Analyzed: 08/24/2012 15:52

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.6	H	0.019	0.0078	0.0044
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.44	H	0.029	0.019	0.0095

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	100		45-130

APPENDIX C

SUPPORT DOCUMENTATION

TestAmerica Laboratories
Target Compound Quantitation Report

Data File: \\Denchrom\chromdata\LC_LCMS5\20120815-4341.b\PC512H24016.d
Lims ID: 280-32218-B-1-A Client ID: NASB-EP-GW-EW05B-0812
Inject. Date: 24-Aug-2012 15:44:33 Dil. Factor: 1.0000
Sample Type: Client (S)
Sample ID: 280-32218-b-1-a (5X) Sample
Misc. Info.:
Operator: TW/JB Instrument ID: LC_LCMS5
Vol. Injected: 20.0000 ALS Bottle#: 0
Lims Batch ID: 134398 Lims Sample ID: 65
Raw Data: Smoothed
Detector: MS QQQ

Method: \\Denchrom\chromdata\LC_LCMS5\20120815-4341.b\8321_PFOA_S.m
Last Update: 28-Aug-2012 10:22:57 Calib Date: 14-Aug-2012 16:47:52
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\Denchrom\chromdata\LC_LCMS5\20120815-4341.b\PC512H14038m.d
Limit Group: LC - PFOA
Integrator: Falcon
Process Host: DENPC285

Signal	RT	EXP RT	DLT RT	REL RT	Response	On-Col Amt ug/L	Ratio Range	Ratio	Flags
$ 9 13C8 PFOA									
421.0 > 375.9	4.110	4.128	-0.018	1.000	1468798	10.5			
* 4 13C4 PFOA (IS)									s
417.0 > 371.9	4.111	4.129	-0.018		1735547	10.0			
1 Perfluorooctanoic acid									E
413.0 > 368.9	4.112	4.130	-0.018	1.000	70759187	419.6	0.70- 1.30	1.00	E
413.0 > 169.0	4.112	4.130	-0.018	1.000	14984916		3.79- 7.04	4.72	
$ 6 13C8 PFOS									
506.9 > 80.0	4.275	4.293	-0.018	1.000	316733	10.0			
* 5 13C4 PFOS (IS)									s
502.9 > 80.0	4.276	4.294	-0.018		349185	9.56			
2 Perfluorooctanoic Sulfonate									
498.9 > 79.9	4.259	4.295	-0.036	0.996	1219221	32.6	0.70- 1.30	1.00	4
498.9 > 98.9	4.259	4.295	-0.036	0.996	560174		1.05- 1.96	2.18	

QC Flag Legend

Processing Flags
4 - Failed Signal Ratio Test
E - Exceeded Maximum Amount
s - Failed ISTD Recovery Test

extraction : 252.7 ml / 5ml

NAS BRUNSWICK
SDG 280-32218-1

NASB-EP-GW-EW05B-0812

PFOA

X-VALUE	Y-VALUE
0.02	0.025259848
0.05	0.05455319
0.1	0.107450899
0.2	0.230431842
0.5	0.525659483
1	1.003658017
2	1.934613124
5	4.516210245
10	9.955581044

CORREL	SLOPE
0.999006677	**0.979202292**
Y-INTERC	
-0.013792172	

PFOA (µg/L)	
416.5001708	40.77

EXTRACTION	
252.7	ml
5	ml

Final Concentration PFOA (µg/L)
8.24100061

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 3.2 °C mr 8/16

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
Tetra Tech	Jeff Orient		153354
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 2
250 Andover St, Suite 200	978-474-8400 / 978-474-8499		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Wilmington / MA / 01887 (Brunswick)	J. Traut	Michelle Johnston	
Project Name and Location (State)	**Carrier/Waybill Number**		
Eastern Plume/Site 11-PFCs - Maine			
Contract/Purchase Order/Quote No.			
CTO 432			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): # PFOA/PFOS	Special Instructions/ Conditions of Receipt
NASB-EP-GW-EW05B-0812	8/13/12	1210		X			X						2	
NASB-EP-IN-0812	8/13/12	1304		X			X						2	
NASB-EP-EF-0812	8/13/12	1305		X			X						2	
NASB-EP-GW-MWEP352-0812	8/13/12	1720		X			X						2	
NASB-EP-GW-MW334-0812	8/13/12	1625		X			X						2	
NASB-EP-GW-DUP01-081312	8/13/12	0000		X			X						2	
NASB-EP-GW-MWEP351-0812	8/14/12	1015		X			X						2	
NASB-EP-GW-MW335-0812	8/14/12	1445		X			X						2 (6) JT	Lab QC
NASB-EP-GW-MW1104-0812	8/14/12	1555		X			X						2	
NASB-EP-GW-MSBR-MW04-0812	8/14/12	1730		X			X						2	
NASB-EP-GW-MWEP347-0812	8/15/12	1025		X			X						2	
NASB-EP-GW-DUP02-081412	8/14/12	0000		X			X						2	

8/15/12

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)
NASB-EP-GW-MW335-0812 → Lab QC

1. Relinquished By	Date	Time	1. Received By	Date	Time
Johanna Traut	8/15/12	1700	FedEx		
2. Relinquished By	Date	Time	2. Received By	Date	Time
				8/16/12	0900
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

08/30/2012

Chain of Custody Record

Sampler ID _____

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
Tetra Tech	Jeff Orient	8/15/12	153353
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
250 Andover St, Suite 200	978-474-8400 / 978474-8499		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	**Analysis (Attach list if more space is needed)**
Wilmington / MA / 01810	J. Traut	Michelle Johnston	
Project Name and Location (State)	**Carrier/Waybill Number**		
Eastern Plume/Site 11 - PFCs / Brunswick, ME			
Contract/Purchase Order/Quote No.			
CTO 432			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: PFOA/PFOS	Special Instructions/ Conditions of Receipt
NASB-EP-GW-RB01-081412	8/14/12	1500		X			X						2	
NASB-EP-GW-MW323-0812	8/15/12	1100		X			X						2	
TB	8/15/12													

Page 277 of 278

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Jhenna Shaw	8/15/12	1700	1. Received By: FedEx		
2. Relinquished By			2. Received By	8/16/12	0900
3. Relinquished By			3. Received By		

Comments

08/30/2012

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 280-32218-1

Login Number: 32218
List Number: 1
Creator: Lazarte, Noah M

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

DATA REPORTING QUALIFIERS

Client: Tetra Tech, Inc. Job Number: 280-32218-1

Lab Section	Qualifier	Description
LCMS		
	B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
	Q	One or more quality control criteria failed.
	H	Sample was prepped or analyzed beyond the specified holding time
	D	The reported value is from a dilution.
	U	Undetected at the Limit of Detection.

CASE NARRATIVE
Client: Tetra Tech
Project: NAS Brunswick
Contract Task Order: 432 / N62467-04-D-0055
Project Manager: Jeff Orient
Report Number: 280-32218-1

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.

The PFC method DV-LC-0012 is an isotope dilution method; therefore, the internal standards are added prior to the extraction process. This technique inherently corrects for variability in the extraction efficiency due to sample matrix. Dilution of samples beyond the ability of the instrument to detect the internal standards is not recommended. Analyses performed at a dilution level requiring additional internal standard to be added after the extraction step in order to quantitate results has been shown to yield results with a significant low bias. As a result, data have been reported that exceed the calibration range and are qualified as estimated.

The PFC method is an isotope dilution method where the internal standards are added prior to extraction and used to quantitate results; therefore, the use of dilution factors is inappropriate. Application of dilution factors would yield results that are artificially high. Reporting limits and method detection limits are not adjusted for dilutions unless samples are fortified with additional internal standard, which is not recommended.

Internal standard abundances may vary depending upon both recovery and the dilution at which the analysis is performed. This is an inherent feature of the isotope dilution technique and is not indicative of bias to the reported results.

RECEIPT

The following report contains the analytical results for fourteen samples received at TestAmerica Denver on August 16, 2012, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 3.2°C.

A sample collection time discrepancy was noted between the information listed on the chain-of-custody and the one of the two sample container labels for sample NASB-EP-EF-0812 (280-32218-3). The chain-of-custody lists the sample collection time as 13:05, while one of the two container labels list the sample collection time as 13:55. The sample collection time was logged per the chain-of-custody. The client was notified August 17, 2012.

No other anomalies were encountered during sample receipt.

PFOA & PFOS

Samples NASB-EP-GW-EW05B-0812 (280-32218-1), NASB-EP-IN-0812 (280-32218-2), NASB-EP-EF-0812 (280-32218-3), NASB-EP-GW-MWEP352-0812 (280-32218-4), NASB-EP-GW-MW334-0812 (280-32218-5), NASB-EP-GW-DUP01-081312 (280-32218-6), NASB-EP-GW-MWEP351-0812 (280-32218-7), NASB-EP-GW-MW335-0812 (280-32218-8), NASB-EP-GW-MW1104-0812 (280-32218-9), NASB-EP-GW-MGBR-MW04-0812 (280-32218-10), NASB-EP-GW-MWEP347-0812 (280-32218-11), NASB-EP-GW-DUP02-081412 (280-32218-12), NASB-EP-GW-RB01-081412 (280-32218-13) and NASB-EP-GW-MW323-0812 (280-32218-14) were analyzed for PFC in accordance with SOP DV-LC-0012. The samples were prepared on 08/17/2012 and 08/22/2012 and analyzed on 08/20/2012 and 08/24/2012.

The Method Blank, Laboratory Control Sample, and Matrix Spike/Matrix Spike Duplicate associated with prep batch 280-133164 exhibited percent recoveries outside the QC control limits for Perfluorooctane Sulfonate (PFOS). Upon re-extraction and re-analysis in prep batch 280-133827, percent recoveries were 100% in control. Both sets of data have been provided, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time. Please note there is no prescribed regulatory holding time requirement for PFCs. The scientific literature indicates PFCs are highly persistent compounds in the environment. TestAmerica Denver has conducted stability studies indicating medium- and low-level standard solutions of PFOA are stable for at least three months in glass, polystyrene, and polypropylene plastics at 4 +/- 2°C. The 7-day/40-day holding times are based on the general EPA convention for the holding time of extractable organic compounds in water.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, samples NASB-EP-GW-EW05B-0812 (280-32218-1), NASB-EP-GW-MWEP347-0812 (280-32218-11) and NASB-EP-GW-MW323-0812 (280-32218-14) had to be analyzed at 5X, 10X, and 2X dilutions, respectively. Internal standards (IS) were not fortified, therefore, the IS percent recoveries need to be multiplied by 5, 10, and 2, respectively and the MDLs/RLs were not updated due to limitations in the software.

Internal standard responses were outside the control limits for samples NASB-EP-GW-EW05B-0812 (280-32218-1) and NASB-EP-GW-MWEP347-0812 (280-32218-11) in analytical batch 280-134398. The samples show evidence of matrix interferences. The internal standards were in control for the Method Blank and LCS, indicating that the sample matrix may be causing the internal standard outages.

No other difficulties were encountered during the LCMS analyses.

All quality control parameters were within the acceptance limits.

SAMPLE SUMMARY

Client: Tetra Tech, Inc.

Job Number: 280-32218-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-32218-1	NASB-EP-GW-EW05B-0812	Water	08/13/2012 1210	08/16/2012 0900
280-32218-2	NASB-EP-IN-0812	Water	08/13/2012 1304	08/16/2012 0900
280-32218-3	NASB-EP-EF-0812	Water	08/13/2012 1305	08/16/2012 0900
280-32218-4	NASB-EP-GW-MWEP352-0812	Water	08/13/2012 1720	08/16/2012 0900
280-32218-5	NASB-EP-GW-MW334-0812	Water	08/13/2012 1625	08/16/2012 0900
280-32218-6FD	NASB-EP-GW-DUP01-081312	Water	08/13/2012 0000	08/16/2012 0900
280-32218-7	NASB-EP-GW-MWEP351-0812	Water	08/14/2012 1015	08/16/2012 0900
280-32218-8	NASB-EP-GW-MW335-0812	Water	08/14/2012 1445	08/16/2012 0900
280-32218-8MS	NASB-EP-GW-MW335-0812	Water	08/14/2012 1445	08/16/2012 0900
280-32218-8MSD	NASB-EP-GW-MW335-0812	Water	08/14/2012 1445	08/16/2012 0900
280-32218-9	NASB-EP-GW-MW1104-0812	Water	08/14/2012 1555	08/16/2012 0900
280-32218-10	NASB-EP-GW-MGBR-MW04-0812	Water	08/14/2012 1730	08/16/2012 0900
280-32218-11	NASB-EP-GW-MWEP347-0812	Water	08/15/2012 1025	08/16/2012 0900
280-32218-12FD	NASB-EP-GW-DUP02-081412	Water	08/14/2012 0000	08/16/2012 0900
280-32218-13RB	NASB-EP-GW-RB01-081412	Water	08/14/2012 1500	08/16/2012 0900
280-32218-14	NASB-EP-GW-MW323-0812	Water	08/15/2012 1100	08/16/2012 0900

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini-NX ID:

Client Sample ID	Lab Sample ID	PFOA	#	PFOS	#
NASB-EP-GW-MWEP347-0812 REDL	280-32218-11 REDL	113	D	94	D
NASB-EP-GW-DUP02-081412	280-32218-12	107		99	
NASB-EP-GW-DUP02-081412 RE	280-32218-12 RE	106		109	
NASB-EP-GW-RB01-081412	280-32218-13	106		105	
NASB-EP-GW-RB01-081412 RE	280-32218-13 RE	107		105	
NASB-EP-GW-MW323-0812	280-32218-14	109		104	
NASB-EP-GW-MW323-0812 DL	280-32218-14 DL	107	D	106	D
NASB-EP-GW-MW323-0812 RE	280-32218-14 RE	108		104	
NASB-EP-GW-MW323-0812 REDL	280-32218-14 REDL	107	D	106	D
	MB 280-133164/1-A	107		103	
	MB 280-133827/1-A	108		101	
	LCS 280-133164/2-A	108		100	
	LCS 280-133827/2-A	107		108	
NASB-EP-GW-MW335-0812 MS	280-32218-8 MS	105		102	
NASB-EP-GW-MW335-0812 MS RE	280-32218-8 MS RE	109		99	
NASB-EP-GW-MW335-0812 MSD	280-32218-8 MSD	106		104	
NASB-EP-GW-MW335-0812 MSD RE	280-32218-8 MSD RE	106		100	
	DLCK 280-132643/16	107		100	

	QC LIMITS
PFOA = 13C8 PFOA	60-155
PFOS = 13C8 PFOS	45-130

Column to be used to flag recovery values

FORM II PFOA/PFOS

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Instrument ID: LC_LCMS5 Calibration Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calibration End Date: 08/14/2012 16:47

Calibration ID: 10487

		OA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		12229934	4.18	2626274	4.34		
UPPER LIMIT		18956398	4.68	3414156	4.84		
LOWER LIMIT		7337960	3.68	1181823	3.84		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 280-132643/12		12630719	4.19	2707320	4.35		
ICV 280-132643/14		13109324	4.19	2783163	4.35		
CCV 280-134649/35		9521932	4.13	2031118	4.29		
MB 280-133164/1-A		10020933	4.11	2090567	4.27		
LCS 280-133164/2-A		9332728	4.10	1766447	4.26		
280-32218-1	NASB-EP-GW-EW05B-0812	48906050 not used	4.09	1590380	4.25	used DL for PFOA	
280-32218-2	NASB-EP-IN-0812	9458105	4.09	1926435	4.25		
280-32218-3	NASB-EP-EF-0812	11074643	4.08	2282664	4.25		
280-32218-4	NASB-EP-GW-MWEP352-0812	9657769	4.09	2012381	4.25		
280-32218-5	NASB-EP-GW-MW334-0812	9272787	4.08	1679661	4.24		
280-32218-6	NASB-EP-GW-DUP01-0813 12	10000077	4.08	2050168	4.24		
280-32218-7	NASB-EP-GW-MWEP351-0812	8716988	4.08	1914062	4.24		
CCV 280-134649/45		11791064	4.09	2377535	4.25		
280-32218-8	NASB-EP-GW-MW335-0812	10538649	4.08	2118407	4.24		
280-32218-8 MS	NASB-EP-GW-MW335-0812 MS	10242349	4.08	1861359	4.24		
280-32218-8 MSD	NASB-EP-GW-MW335-0812 MSD	9227488	4.08	1688096	4.24		
280-32218-9	NASB-EP-GW-MW1104-0812	9135772	4.08	1595007	4.24		
280-32218-10	NASB-EP-GW-MGBR-MW04-0812	9508738	4.08 not used	1923815	4.23		
280-32218-11	NASB-EP-GW-MWEP347-0812	43874350	4.08	1796304	4.23		
280-32218-12	NASB-EP-GW-DUP02-0814 12	9633551	4.08	1833938	4.23		
280-32218-13	NASB-EP-GW-RB01-08141 2	11841526	4.08	2321206	4.23		
280-32218-14	NASB-EP-GW-MW323-0812	7734894	4.08	1601916	4.23		
CCV 280-134649/55		10887060	4.08	2414903	4.24		
CCV 280-134649/56		11262650	4.15	2533685	4.30		
280-32218-1 DL	NASB-EP-GW-EW05B-0812 DL	16316020 *	4.14	3338380	4.30		

(6x) (8158010)✓ not used

OA = 13C4 PFOA (IS)
PFOS = 13C4 PFOS (IS)

Area Limit = 60%-155% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII PFOA/PFOS

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Instrument ID: LC_LCMS5 Calibration Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calibration End Date: 08/14/2012 16:47

Calibration ID: 10487

		OA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		12229934	4.18	2626274	4.34		
UPPER LIMIT		18956398	4.68	3414156	4.84		
LOWER LIMIT		7337960	3.68	1181823	3.84		
LAB SAMPLE ID	CLIENT SAMPLE ID				not used		
280-32218-11 DL	NASB-EP-GW-MWEP347-08 12 DL 10x	956876Q	4.14	198468Q	4.30 not used	(OA) 9567860 ✓	
280-32218-14 DL	NASB-EP-GW-MW323-0812 DL 2x	4881524Q	4.13	824936Q	4.29	9763048 ✓	
CCV 280-134649/60		12996757	4.13	2721288	4.29		
CCV 280-134398/60		12996757	4.13	2721288	4.29		
MB 280-133827/1-A		12032486	4.12	2126048	4.28		
LCS 280-133827/2-A		12480430 not used	4.11	2525171	4.28		
280-32218-1 RE	NASB-EP-GW-EW05B-0812 RE	6584743Q	4.10 not used	2217438	4.27		
280-32218-1 REDL	NASB-EP-GW-EW05B-0812 REDL (5x)	1735547Q	4.11	349185Q	4.28 not used		
280-32218-2 RE	NASB-EP-IN-0812 RE	8216941	4.10	1760243	4.27		
280-32218-3 RE	NASB-EP-EF-0812 RE	10161242	4.10	1919034	4.26		
280-32218-4 RE	NASB-EP-GW-MWEP352-08 12 RE	9423378	4.10	1591928	4.26		
CCV 280-134398/69		12962264	4.11	2584814	4.27		
280-32218-5 RE	NASB-EP-GW-MW334-0812 RE	11493462	4.10	1567501	4.26		
280-32218-6 RE	NASB-EP-GW-DUP01-0813 12 RE	12206520	4.09	2220292	4.26		
280-32218-7 RE	NASB-EP-GW-MWEP351-08 12 RE	12043778	4.09	2206167	4.26		
280-32218-8 RE	NASB-EP-GW-MW335-0812 RE	13889922	4.09	1923038	4.25		
280-32218-8 MS RE	NASB-EP-GW-MW335-0812 MS RE	12494784	4.09	1935481	4.25		
280-32218-8 MSD RE	NASB-EP-GW-MW335-0812 MSD RE	12899689	4.09	1885404	4.25		
CCV 280-134398/76		16059731	4.10	3220637	4.26		
280-32218-9 RE	NASB-EP-GW-MW1104-081 2 RE	11621731	4.09	1854007	4.25		
280-32218-10 RE	NASB-EP-GW-MGBR-MW04-0812 RE	11498034	4.09 not used	1972529	4.25		
280-32218-11 RE	NASB-EP-GW-MWEP347-08 12 RE	4964620Q	4.09	1850596 ✓	4.25		
280-32218-11 REDL	NASB-EP-GW-MWEP347-08 12 REDL 10x	1146076Q	4.10	243894Q	4.26	not used	

OA = 13C4 PFOA (IS)
PFOS = 13C4 PFOS (IS)

Area Limit = 60%-155% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII PFOA/PFOS

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Instrument ID: LC_LCMS5 Calibration Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calibration End Date: 08/14/2012 16:47

Calibration ID: 10487

		OA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		12229934	4.18	2626274	4.34		
UPPER LIMIT		18956398	4.68	3414156	4.84		
LOWER LIMIT		7337960	3.68	1181823	3.84		
LAB SAMPLE ID	CLIENT SAMPLE ID						
280-32218-12 RE	NASB-EP-GW-DUP02-0814 12 RE	12706092	4.09	1650557	4.25		
280-32218-13 RE	NASB-EP-GW-RB01-08141 2 RE	14659304	4.09	2789131	4.25		
280-32218-14 RE	NASB-EP-GW-MW323-0812 RE	9293552	4.08	1198890	4.24		
280-32218-14 REDL	NASB-EP-GW-MW323-0812 REDL 2*	5403917Q	4.09	587150Q	4.25		
CCV 280-134398/85		15908248	4.09	3083178	4.26		

OA = 13C4 PFOA (IS)
PFOS = 13C4 PFOS (IS)

Area Limit = 60%-155% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII PFOA/PFOS

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab File ID: PC512H18086.d Lab Sample ID: MB 280-133164/1-A

Matrix: Water Date Extracted: 08/17/2012 17:28

Instrument ID: LC_LCMS5 Date Analyzed: 08/20/2012 02:17

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-133164/2-A	PC512H18087.d	08/20/2012 02:25
NASB-EP-GW-EW05B-0812	280-32218-1	PC512H18088.d	08/20/2012 02:33
NASB-EP-IN-0812	280-32218-2	PC512H18089.d	08/20/2012 02:41
NASB-EP-EF-0812	280-32218-3	PC512H18090.d	08/20/2012 02:48
NASB-EP-GW-MWEP352-0812	280-32218-4	PC512H18091.d	08/20/2012 02:56
NASB-EP-GW-MW334-0812	280-32218-5	PC512H18092.d	08/20/2012 03:04
NASB-EP-GW-DUP01-081312	280-32218-6	PC512H18093.d	08/20/2012 03:12
NASB-EP-GW-MWEP351-0812	280-32218-7	PC512H18094.d	08/20/2012 03:19
NASB-EP-GW-MW335-0812	280-32218-8	PC512H18096.d	08/20/2012 03:35
NASB-EP-GW-MW335-0812 MS	280-32218-8 MS	PC512H18097.d	08/20/2012 03:43
NASB-EP-GW-MW335-0812 MSD	280-32218-8 MSD	PC512H18098.d	08/20/2012 03:50
NASB-EP-GW-MW1104-0812	280-32218-9	PC512H18099.d	08/20/2012 03:58
NASB-EP-GW-MGBR-MW04-0812	280-32218-10	PC512H18100.d	08/20/2012 04:06
NASB-EP-GW-MWEP347-0812	280-32218-11	PC512H18101.d	08/20/2012 04:13
NASB-EP-GW-DUP02-081412	280-32218-12	PC512H18102.d	08/20/2012 04:21
NASB-EP-GW-RB01-081412	280-32218-13	PC512H18103.d	08/20/2012 04:29
NASB-EP-GW-MW323-0812	280-32218-14	PC512H18104.d	08/20/2012 04:37
NASB-EP-GW-EW05B-0812 DL	280-32218-1 DL	PC512H24008.d	08/24/2012 14:42
NASB-EP-GW-MWEP347-0812 DL	280-32218-11 DL	PC512H24009.d	08/24/2012 14:50
NASB-EP-GW-MW323-0812 DL	280-32218-14 DL	PC512H24010.d	08/24/2012 14:58

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Batch Number: 133164 Batch Start Date: 08/17/12 17:28 Batch Analyst: Smiley, Kristy

Batch Method: 3535 Batch End Date: 08/17/12 20:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	PFOA/S_Spike 00005	PFOA/S_Sur/IS 00004
MB 280-133164/1		3535, PFOA/PFOS				250 mL	5 mL		0.1 mL
LCS 280-133164/2		3535, PFOA/PFOS				250 mL	5 mL	0.1 mL	0.1 mL
280-32218-A-1	NASB-EP-GW-EW05B-0812	3535, PFOA/PFOS	T	274.72 g	22.04 g	252.7 mL	5 mL		0.1 mL
280-32218-A-2	NASB-EP-IN-0812	3535, PFOA/PFOS	T	272.77 g	22.76 g	250 mL	5 mL		0.1 mL
280-32218-A-3	NASB-EP-EF-0812	3535, PFOA/PFOS	T	272.28 g	22.23 g	250.1 mL	5 mL		0.1 mL
280-32218-A-4	NASB-EP-GW-MWEP352-0812	3535, PFOA/PFOS	T	271.10 g	22.05 g	249.1 mL	5 mL		0.1 mL
280-32218-A-5	NASB-EP-GW-MW334-0812	3535, PFOA/PFOS	T	273.14 g	22.05 g	251.1 mL	5 mL		0.1 mL
280-32218-A-6	NASB-EP-GW-DUP01-081312	3535, PFOA/PFOS	T	276.41 g	22.13 g	254.3 mL	5 mL		0.1 mL
280-32218-A-7	NASB-EP-GW-MWEP351-0812	3535, PFOA/PFOS	T	273.75 g	22.00 g	251.8 mL	5 mL		0.1 mL
280-32218-A-8	NASB-EP-GW-MW335-0812	3535, PFOA/PFOS	T	277.67 g	21.95 g	255.7 mL	5 mL		0.1 mL
280-32218-B-8 MS	NASB-EP-GW-MW335-0812	3535, PFOA/PFOS	T	275.49 g	22.12 g	253.4 mL	5 mL	0.1 mL	0.1 mL
280-32218-C-8 MSD	NASB-EP-GW-MW335-0812	3535, PFOA/PFOS	T	267.26 g	21.64 g	245.6 mL	5 mL	0.1 mL	0.1 mL
280-32218-A-9	NASB-EP-GW-MW1104-0812	3535, PFOA/PFOS	T	274.96 g	22.53 g	252.4 mL	5 mL		0.1 mL
280-32218-A-10	NASB-EP-GW-MGBR-MW04-0812	3535, PFOA/PFOS	T	274.53 g	21.77 g	252.8 mL	5 mL		0.1 mL
280-32218-A-11	NASB-EP-GW-MWEP347-0812	3535, PFOA/PFOS	T	276.20 g	22.89 g	253.3 mL	5 mL		0.1 mL
280-32218-A-12	NASB-EP-GW-DUP02-081412	3535, PFOA/PFOS	T	273.32 g	22.56 g	250.8 mL	5 mL		0.1 mL
280-32218-A-13	NASB-EP-GW-RB01-081412	3535, PFOA/PFOS	T	269.64 g	22.51 g	247.1 mL	5 mL		0.1 mL
280-32218-A-14	NASB-EP-GW-MW323-0812	3535, PFOA/PFOS	T	272.70 g	22.14 g	250.6 mL	5 mL		0.1 mL

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Batch Number: 133164 Batch Start Date: 08/17/12 17:28 Batch Analyst: Smiley, Kristy

Batch Method: 3535 Batch End Date: 08/17/12 20:55

Batch Notes	
Acid Lot	2%FormicAci_00013
Acid Name	2% Formic Acid
Balance ID	24750836
First End time	8/17/12 @ 2055
H2O Lot used	HPLC_Water_00136
Pipette ID	G, SPE-1
Analyst who added reagent	s/s: Smiley, K
SU Reagent Drop Witness	Reviewer: Moan, M
Reagent ID	10% NH4OH
Reagent Lot Number	10%NH4OH_00008
Solvent Lot #	LCMS_MeOH_00024
Solvent Name	LCMS_MeOH
SOP Number	DV-OP-0019
SPE Cartridge Type	Oasis WAX 6cc (186002493)
Solid Phase Extraction Disk Lot Number	013932114A
First Start time	8/17/12 @ 1728

Basis	Basis Description
T	Total/NA

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 280-133164/1-A

Matrix: Water Lab File ID: PC512H18086.d

Analysis Method: PFOA/PFOS Date Collected:

Extraction Method: 3535 Date Extracted: 08/17/2012 17:28

Sample wt/vol: 250(mL) Date Analyzed: 08/20/2012 02:17

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134649 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.0080	U	0.020	0.0080	0.0045
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.0477		0.030	0.020	0.0098

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		60-155
STL01054	13C8 PFOS	103		45-130

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H18087.d

Lab ID: LCS 280-133164/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.200	0.232	116	70-130	
Perfluorooctane Sulfonate (PFOS)	0.191	0.259	135	60-128	Q

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H18097.d

Lab ID: 280-32218-8 MS Client ID: NASB-EP-GW-MW335-0812 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.197	0.013 J	0.230	110	70-130	
Perfluorooctane Sulfonate (PFOS)	0.189	0.058	0.221	87	60-128	

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H18098.d

Lab ID: 280-32218-8 MSD Client ID: NASB-EP-GW-MW335-0812 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.204	0.236	110	3	20	70-130	
Perfluorooctane Sulfonate (PFOS)	0.195	0.297	123	29	20	60-128	J

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab File ID: PC512H24012.d Lab Sample ID: MB 280-133827/1-A

Matrix: Water Date Extracted: 08/22/2012 15:32

Instrument ID: LC_LCMS5 Date Analyzed: 08/24/2012 15:13

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-133827/2-A	PC512H24013.d	08/24/2012 15:21
NASB-EP-GW-EW05B-0812 RE	280-32218-1 RE	PC512H24015.d	08/24/2012 15:36
NASB-EP-GW-EW05B-0812 REDL	280-32218-1 REDL	PC512H24016.d	08/24/2012 15:44
NASB-EP-IN-0812 RE	280-32218-2 RE	PC512H24017.d	08/24/2012 15:52
NASB-EP-EF-0812 RE	280-32218-3 RE	PC512H24018.d	08/24/2012 16:00
NASB-EP-GW-MWEP352-0812 RE	280-32218-4 RE	PC512H24019.d	08/24/2012 16:07
NASB-EP-GW-MW334-0812 RE	280-32218-5 RE	PC512H24021.d	08/24/2012 16:23
NASB-EP-GW-DUP01-081312 RE	280-32218-6 RE	PC512H24022.d	08/24/2012 16:30
NASB-EP-GW-MWEP351-0812 RE	280-32218-7 RE	PC512H24023.d	08/24/2012 16:38
NASB-EP-GW-MW335-0812 RE	280-32218-8 RE	PC512H24024.d	08/24/2012 16:46
NASB-EP-GW-MW335-0812 MS RE	280-32218-8 MS RE	PC512H24025.d	08/24/2012 16:54
NASB-EP-GW-MW335-0812 MSD RE	280-32218-8 MSD RE	PC512H24026.d	08/24/2012 17:01
NASB-EP-GW-MW1104-0812 RE	280-32218-9 RE	PC512H24028.d	08/24/2012 17:17
NASB-EP-GW-MGBR-MW04-0812 RE	280-32218-10 RE	PC512H24029.d	08/24/2012 17:25
NASB-EP-GW-MWEP347-0812 RE	280-32218-11 RE	PC512H24030.d	08/24/2012 17:32
NASB-EP-GW-MWEP347-0812 REDL	280-32218-11 REDL	PC512H24031.d	08/24/2012 17:40
NASB-EP-GW-DUP02-081412 RE	280-32218-12 RE	PC512H24032.d	08/24/2012 17:48
NASB-EP-GW-RB01-081412 RE	280-32218-13 RE	PC512H24033.d	08/24/2012 17:56
NASB-EP-GW-MW323-0812 RE	280-32218-14 RE	PC512H24034.d	08/24/2012 18:03
NASB-EP-GW-MW323-0812 REDL	280-32218-14 REDL	PC512H24035.d	08/24/2012 18:11

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Batch Number: 133827 Batch Start Date: 08/22/12 15:32 Batch Analyst: Cokley, Cheyana D

Batch Method: 3535 Batch End Date: 08/22/12 17:49

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	PFOA/S_Spike 00005	PFOA/S_Sur/IS 00004
MB 280-133827/1		3535, PFOA/PFOS				250 mL	5 mL		0.1 mL
LCS 280-133827/2		3535, PFOA/PFOS				250 mL	5 mL	0.1 mL	0.1 mL
280-32218-B-1	NASB-EP-GW-EW05B-0812	3535, PFOA/PFOS	T	270.88 g	22.73 g	248.2 mL	5 mL		0.1 mL
280-32218-B-2	NASB-EP-IN-0812	3535, PFOA/PFOS	T	279.63 g	21.63 g	258 mL	5 mL		0.1 mL
280-32218-B-3	NASB-EP-EF-0812	3535, PFOA/PFOS	T	278.22 g	22.04 g	256.2 mL	5 mL		0.1 mL
280-32218-B-4	NASB-EP-GW-MWEP352-0812	3535, PFOA/PFOS	T	278.19 g	21.53 g	256.7 mL	5 mL		0.1 mL
280-32218-B-5	NASB-EP-GW-MW334-0812	3535, PFOA/PFOS	T	271.71 g	21.96 g	249.8 mL	5 mL		0.1 mL
280-32218-B-6	NASB-EP-GW-DUP01-081312	3535, PFOA/PFOS	T	279.51 g	21.71 g	257.8 mL	5 mL		0.1 mL
280-32218-B-7	NASB-EP-GW-MWEP351-0812	3535, PFOA/PFOS	T	274.05 g	21.86 g	252.2 mL	5 mL		0.1 mL
280-32218-F-8	NASB-EP-GW-MW335-0812	3535, PFOA/PFOS	T	275.30 g	22.24 g	253.1 mL	5 mL		0.1 mL
280-32218-E-8 MS	NASB-EP-GW-MW335-0812	3535, PFOA/PFOS	T	274.48 g	22.38 g	252.1 mL	5 mL	0.1 mL	0.1 mL
280-32218-D-8 MSD	NASB-EP-GW-MW335-0812	3535, PFOA/PFOS	T	276.31 g	21.72 g	254.6 mL	5 mL	0.1 mL	0.1 mL
280-32218-B-9	NASB-EP-GW-MW1104-0812	3535, PFOA/PFOS	T	284.41 g	22.13 g	262.3 mL	5 mL		0.1 mL
280-32218-B-10	NASB-EP-GW-MGBR-MW04-0812	3535, PFOA/PFOS	T	275.59 g	21.82 g	253.8 mL	5 mL		0.1 mL
280-32218-B-11	NASB-EP-GW-MWEP347-0812	3535, PFOA/PFOS	T	277.53 g	22.59 g	254.9 mL	5 mL		0.1 mL
280-32218-B-12	NASB-EP-GW-DUP02-081412	3535, PFOA/PFOS	T	279.88 g	22.33 g	257.6 mL	5 mL		0.1 mL
280-32218-B-13	NASB-EP-GW-RB01-081412	3535, PFOA/PFOS	T	273.33 g	22.44 g	250.9 mL	5 mL		0.1 mL
280-32218-B-14	NASB-EP-GW-MW323-0812	3535, PFOA/PFOS	T	280.80 g	21.89 g	258.9 mL	5 mL		0.1 mL

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 280-133827/1-A

Matrix: Water Lab File ID: PC512H24012.d

Analysis Method: PFOA/PFOS Date Collected:

Extraction Method: 3535 Date Extracted: 08/22/2012 15:32

Sample wt/vol: 250(mL) Date Analyzed: 08/24/2012 15:13

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini-NX ID:

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

Analysis Batch No.: 134398 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.0080	U	0.020	0.0080	0.0045
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.020	U	0.030	0.020	0.0098

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	108		60-155
STL01054	13C8 PFOS	101		45-130

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H24013.d

Lab ID: LCS 280-133827/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.200	0.212	106	70-130	
Perfluorooctane Sulfonate (PFOS)	0.191	0.220	115	60-128	

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H24025.d

Lab ID: 280-32218-8 MS RE Client ID: NASB-EP-GW-MW335-0812 MS RE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.198	0.012 J	0.230	110	70-130	H
Perfluorooctane Sulfonate (PFOS)	0.190	0.048	0.228	95	60-128	H

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H24026.d

Lab ID: 280-32218-8 MSD RE Client ID: NASB-EP-GW-MW335-0812 MSD RE

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.196	0.222	107	4	20	70-130	H
Perfluorooctane Sulfonate (PFOS)	0.188	0.215	89	6	20	60-128	H

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini-NX ID:

Client Sample ID	Lab Sample ID	PFOA	#	PFOS	#
NASB-EP-GW-EW05B-0812	280-32218-1	105		100	
NASB-EP-GW-EW05B-0812 DL	280-32218-1 DL	102	D	106	D
NASB-EP-GW-EW05B-0812 RE	280-32218-1 RE	111		98	
NASB-EP-GW-EW05B-0812 REDL	280-32218-1 REDL	105	D	105	D
NASB-EP-IN-0812	280-32218-2	108		102	
NASB-EP-IN-0812 RE	280-32218-2 RE	107		100	
NASB-EP-EF-0812	280-32218-3	109		103	
NASB-EP-EF-0812 RE	280-32218-3 RE	106		104	
NASB-EP-GW-MWEP352-0812	280-32218-4	109		101	
NASB-EP-GW-MWEP352-0812 RE	280-32218-4 RE	106		98	
NASB-EP-GW-MW334-0812	280-32218-5	106		100	
NASB-EP-GW-MW334-0812 RE	280-32218-5 RE	107		103	
NASB-EP-GW-DUP01-081312	280-32218-6	107		101	
NASB-EP-GW-DUP01-081312 RE	280-32218-6 RE	109		106	
NASB-EP-GW-MWEP351-0812	280-32218-7	111		104	
NASB-EP-GW-MWEP351-0812 RE	280-32218-7 RE	110		105	
NASB-EP-GW-MW335-0812	280-32218-8	106		99	
NASB-EP-GW-MW335-0812 RE	280-32218-8 RE	105		108	
NASB-EP-GW-MW1104-0812	280-32218-9	109		103	
NASB-EP-GW-MW1104-0812 RE	280-32218-9 RE	107		103	
NASB-EP-GW-MGBR-MW04-0812	280-32218-10	107		105	
NASB-EP-GW-MGBR-MW04-0812 RE	280-32218-10 RE	110		104	
NASB-EP-GW-MWEP347-0812	280-32218-11	106		103	
NASB-EP-GW-MWEP347-0812 DL	280-32218-11 DL	108	D	103	D
NASB-EP-GW-MWEP347-0812 RE	280-32218-11 RE	106		100	

	QC LIMITS
PFOA = 13C8 PFOA	60-155
PFOS = 13C8 PFOS	45-130

Column to be used to flag recovery values

FORM II PFOA/PFOS

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Instrument ID: LC_LCMS5 Start Date: 08/14/2012 15:38

Analysis Batch Number: 132643 End Date: 08/14/2012 18:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ICB 280-132643/2		08/14/2012 15:38	1		Gemini-NX
Tune CCB		08/14/2012 15:46	1		Gemini-NX
STD0002 280-132643/3 IC		08/14/2012 15:46	1	PC512H14030m.d	Gemini-NX
STD0005 280-132643/4 IC		08/14/2012 15:53	1	PC512H14031m.d	Gemini-NX
STD0010 280-132643/5 IC		08/14/2012 16:01	1	PC512H14032m.d	Gemini-NX
STD0020 280-132643/6 ICISAV		08/14/2012 16:09	1	PC512H14033m.d	Gemini-NX
STD0050 280-132643/7 IC		08/14/2012 16:16	1	PC512H14034m.d	Gemini-NX
STD0100 280-132643/8 IC		08/14/2012 16:24	1	PC512H14035m.d	Gemini-NX
STD0200 280-132643/9 IC		08/14/2012 16:32	1	PC512H14036m.d	Gemini-NX
STD0500 280-132643/10 IC		08/14/2012 16:40	1	PC512H14037m.d	Gemini-NX
STD1250 280-132643/11 IC		08/14/2012 16:47	1	PC512H14038m.d	Gemini-NX
CCB 280-132643/12		08/14/2012 16:55	1	PC512H14039.d	Gemini-NX
ICV 280-132643/14		08/14/2012 17:11	1	PC512H14041.d	Gemini-NX
ZZZZZ		08/14/2012 17:18	1		Gemini-NX
DLCK 280-132643/16		08/14/2012 17:26	1	PC512H14043.d	Gemini-NX
ZZZZZ		08/14/2012 17:34	1		Gemini-NX
ZZZZZ		08/14/2012 17:42	1		Gemini-NX
ZZZZZ		08/14/2012 17:49	1		Gemini-NX
ZZZZZ		08/14/2012 17:57	1		Gemini-NX
ZZZZZ		08/14/2012 18:05	1		Gemini-NX
ZZZZZ		08/14/2012 18:12	1		Gemini-NX
CCV 280-132643/23		08/14/2012 18:20	1		Gemini-NX

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Instrument ID: LC_LCMS5 Start Date: 08/24/2012 14:19

Analysis Batch Number: 134398 End Date: 08/24/2012 18:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		08/24/2012 14:19	1		Gemini-NX
CCV 280-134398/60		08/24/2012 15:05	1	PC512H24011.d	Gemini-NX
MB 280-133827/1-A		08/24/2012 15:13	1	PC512H24012.d	Gemini-NX
LCS 280-133827/2-A		08/24/2012 15:21	1	PC512H24013.d	Gemini-NX
ZZZZZ		08/24/2012 15:29	1		Gemini-NX
280-32218-1 RE	NASB-EP-GW-EW05B-0812 RE	08/24/2012 15:36	1	PC512H24015.d	Gemini-NX
280-32218-1 REDL	NASB-EP-GW-EW05B-0812 REDL	08/24/2012 15:44	1	PC512H24016.d	Gemini-NX
280-32218-2 RE	NASB-EP-IN-0812 RE	08/24/2012 15:52	1	PC512H24017.d	Gemini-NX
280-32218-3 RE	NASB-EP-EF-0812 RE	08/24/2012 16:00	1	PC512H24018.d	Gemini-NX
280-32218-4 RE	NASB-EP-GW-MWEP352-0812 RE	08/24/2012 16:07	1	PC512H24019.d	Gemini-NX
CCV 280-134398/69		08/24/2012 16:15	1	PC512H24020.d	Gemini-NX
280-32218-5 RE	NASB-EP-GW-MW334-0812 RE	08/24/2012 16:23	1	PC512H24021.d	Gemini-NX
280-32218-6 RE	NASB-EP-GW-DUP01-0813 12 RE	08/24/2012 16:30	1	PC512H24022.d	Gemini-NX
280-32218-7 RE	NASB-EP-GW-MWEP351-0812 RE	08/24/2012 16:38	1	PC512H24023.d	Gemini-NX
280-32218-8 RE	NASB-EP-GW-MW335-0812 RE	08/24/2012 16:46	1	PC512H24024.d	Gemini-NX
280-32218-8 MS RE	NASB-EP-GW-MW335-0812 MS RE	08/24/2012 16:54	1	PC512H24025.d	Gemini-NX
280-32218-8 MSD RE	NASB-EP-GW-MW335-0812 MSD RE	08/24/2012 17:01	1	PC512H24026.d	Gemini-NX
CCV 280-134398/76		08/24/2012 17:09	1	PC512H24027.d	Gemini-NX
280-32218-9 RE	NASB-EP-GW-MW1104-0812 RE	08/24/2012 17:17	1	PC512H24028.d	Gemini-NX
280-32218-10 RE	NASB-EP-GW-MGBR-MW04-0812 RE	08/24/2012 17:25	1	PC512H24029.d	Gemini-NX
280-32218-11 RE	NASB-EP-GW-MWEP347-0812 RE	08/24/2012 17:32	1	PC512H24030.d	Gemini-NX
280-32218-11 REDL	NASB-EP-GW-MWEP347-0812 REDL	08/24/2012 17:40	1	PC512H24031.d	Gemini-NX
280-32218-12 RE	NASB-EP-GW-DUP02-0814 12 RE	08/24/2012 17:48	1	PC512H24032.d	Gemini-NX
280-32218-13 RE	NASB-EP-GW-RB01-08141 2 RE	08/24/2012 17:56	1	PC512H24033.d	Gemini-NX
280-32218-14 RE	NASB-EP-GW-MW323-0812 RE	08/24/2012 18:03	1	PC512H24034.d	Gemini-NX
280-32218-14 REDL	NASB-EP-GW-MW323-0812 REDL	08/24/2012 18:11	1	PC512H24035.d	Gemini-NX
CCV 280-134398/85		08/24/2012 18:19	1	PC512H24036.d	Gemini-NX

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Instrument ID: LC_LCMS5 Start Date: 08/20/2012 01:54

Analysis Batch Number: 134649 End Date: 08/24/2012 15:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		08/20/2012 01:54	1		Gemini-NX
CCV 280-134649/35		08/20/2012 02:10	1	PC512H18085.d	Gemini-NX
MB 280-133164/1-A		08/20/2012 02:17	1	PC512H18086.d	Gemini-NX
LCS 280-133164/2-A		08/20/2012 02:25	1	PC512H18087.d	Gemini-NX
280-32218-1	NASB-EP-GW-EW05B-0812	08/20/2012 02:33	1	PC512H18088.d	Gemini-NX
280-32218-2	NASB-EP-IN-0812	08/20/2012 02:41	1	PC512H18089.d	Gemini-NX
280-32218-3	NASB-EP-EF-0812	08/20/2012 02:48	1	PC512H18090.d	Gemini-NX
280-32218-4	NASB-EP-GW-MWEP352-0812	08/20/2012 02:56	1	PC512H18091.d	Gemini-NX
280-32218-5	NASB-EP-GW-MW334-0812	08/20/2012 03:04	1	PC512H18092.d	Gemini-NX
280-32218-6	NASB-EP-GW-DUP01-0813 12	08/20/2012 03:12	1	PC512H18093.d	Gemini-NX
280-32218-7	NASB-EP-GW-MWEP351-0812	08/20/2012 03:19	1	PC512H18094.d	Gemini-NX
CCV 280-134649/45		08/20/2012 03:27	1	PC512H18095.d	Gemini-NX
280-32218-8	NASB-EP-GW-MW335-0812	08/20/2012 03:35	1	PC512H18096.d	Gemini-NX
280-32218-8 MS	NASB-EP-GW-MW335-0812 MS	08/20/2012 03:43	1	PC512H18097.d	Gemini-NX
280-32218-8 MSD	NASB-EP-GW-MW335-0812 MSD	08/20/2012 03:50	1	PC512H18098.d	Gemini-NX
280-32218-9	NASB-EP-GW-MW1104-0812	08/20/2012 03:58	1	PC512H18099.d	Gemini-NX
280-32218-10	NASB-EP-GW-MGBR-MW04-0812	08/20/2012 04:06	1	PC512H18100.d	Gemini-NX
280-32218-11	NASB-EP-GW-MWEP347-0812	08/20/2012 04:13	1	PC512H18101.d	Gemini-NX
280-32218-12	NASB-EP-GW-DUP02-0814 12	08/20/2012 04:21	1	PC512H18102.d	Gemini-NX
280-32218-13	NASB-EP-GW-RB01-081412	08/20/2012 04:29	1	PC512H18103.d	Gemini-NX
280-32218-14	NASB-EP-GW-MW323-0812	08/20/2012 04:37	1	PC512H18104.d	Gemini-NX
CCV 280-134649/55		08/20/2012 04:44	1	PC512H18105.d	Gemini-NX
CCV 280-134649/56		08/24/2012 14:34	1	PC512H24007.d	Gemini-NX
280-32218-1 DL	NASB-EP-GW-EW05B-0812 DL	08/24/2012 14:42	1	PC512H24008.d	Gemini-NX
280-32218-11 DL	NASB-EP-GW-MWEP347-0812 DL	08/24/2012 14:50	1	PC512H24009.d	Gemini-NX
280-32218-14 DL	NASB-EP-GW-MW323-0812 DL	08/24/2012 14:58	1	PC512H24010.d	Gemini-NX
CCV 280-134649/60		08/24/2012 15:05	1	PC512H24011.d	Gemini-NX

FORM VI
LCMS INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-32218-1 Analy Batch No.: 132643

SDG No.:

Instrument ID: LC_LCMS5 GC Column: Gemini-NX ID: Heated Purge: (Y/N) N

Calibration Start Date: 08/14/2012 15:46 Calibration End Date: 08/14/2012 16:47 Calibration ID: 10487

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0002 280-132643/3	PC512H14030m.d
Level 2	STD0005 280-132643/4	PC512H14031m.d
Level 3	STD0010 280-132643/5	PC512H14032m.d
Level 4	STD0020 280-132643/6	PC512H14033m.d
Level 5	STD0050 280-132643/7	PC512H14034m.d
Level 6	STD0100 280-132643/8	PC512H14035m.d
Level 7	STD0200 280-132643/9	PC512H14036m.d
Level 8	STD0500 280-132643/10	PC512H14037m.d
Level 9	STD1250 280-132643/11	PC512H14038m.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Ammonium Perfluorooctanoate (APFO)	1.2137 0.9645	1.0485 0.9296	1.0326 0.8680	1.1072 0.7654	1.0103	Lin2	0.0629	0.9337							0.9890		0.9800
Perfluorooctanoic acid (PFOA)	1.2630 1.0037	1.0911 0.9673	1.0745 0.9032	1.1522 0.7964	1.0513	Lin2	0.0629	0.9716							0.9890		0.9800
Perfluorooctane Sulfonate (PFOS)	1.4327 1.0523	1.1706 1.0648	1.2285 0.9478	1.1126 0.8658	1.0957	Lin2	0.0824	1.0228							0.9920		0.9800
13C8 PFOA	0.8128 0.8147	0.8634 0.8085	0.8423 0.7661	0.9130 0.6749	0.8324	Lin2	0.0079	0.8065							0.9920		0.9800
13C8 PFOS	0.9319 0.8535	0.9481 0.8851	0.9880 0.8118	0.9253 0.7442	0.8771	Lin2	0.0212	0.8632							0.9930		0.9800

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

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: ICV 280-132643/14 Calibration Date: 08/14/2012 17:11

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H14041.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		1.005		2.17	2.08	4.3	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.045		2.09	2.00	4.3	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		0.9699		1.83	2.02	-9.2	30.0
13C8 PFOA	Lin2		0.8359		2.06	2.00	3.2	30.0
13C8 PFOS	Lin2		0.8740		1.91	1.91	-0.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134649/35 Calibration Date: 08/20/2012 02:10

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H18085.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		1.016		5.60	5.20	7.5	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.057		5.38	5.00	7.5	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.155		5.32	4.78	11.2	30.0
13C8 PFOA	Lin2		0.8559		5.30	5.00	5.9	30.0
13C8 PFOS	Lin2		0.8922		4.92	4.78	2.8	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134649/45 Calibration Date: 08/20/2012 03:27

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H18095.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9784		10.8	10.4	4.1	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.018		10.4	10.0	4.1	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.083		10.0	9.56	5.0	30.0
13C8 PFOA	Lin2		0.8355		10.4	10.0	3.5	30.0
13C8 PFOS	Lin2		0.8325		9.20	9.56	-3.8	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134649/55 Calibration Date: 08/20/2012 04:44

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H18105.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.995		5.48	5.20	5.3	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.035		5.26	5.00	5.3	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.171		5.39	4.78	12.8	30.0
13C8 PFOA	Lin2		0.8406		5.20	5.00	4.0	30.0
13C8 PFOS	Lin2		0.8160		4.49	4.78	-6.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134649/56 Calibration Date: 08/24/2012 14:34

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H24007.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9856		10.9	10.4	4.9	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.026		10.5	10.0	4.9	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.106		10.3	9.56	7.3	30.0
13C8 PFOA	Lin2		0.8314		10.3	10.0	3.0	30.0
13C8 PFOS	Lin2		0.8821		9.75	9.56	1.9	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134398/60 Calibration Date: 08/24/2012 15:05

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H24011.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.998		5.49	5.20	5.6	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.039		5.28	5.00	5.6	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.127		5.19	4.78	8.5	30.0
13C8 PFOA	Lin2		0.8736		5.41	5.00	8.1	30.0
13C8 PFOS	Lin2		0.8540		4.70	4.78	-1.6	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134398/69 Calibration Date: 08/24/2012 16:15

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H24020.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9885		10.9	10.4	5.2	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.029		10.5	10.0	5.2	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.120		10.4	9.56	8.6	30.0
13C8 PFOA	Lin2		0.8347		10.3	10.0	3.4	30.0
13C8 PFOS	Lin2		0.8773		9.69	9.56	1.4	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134398/76 Calibration Date: 08/24/2012 17:09

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H24027.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9858		5.43	5.20	4.3	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.026		5.21	5.00	4.3	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.115		5.13	4.78	7.4	30.0
13C8 PFOA	Lin2		0.8527		5.28	5.00	5.5	30.0
13C8 PFOS	Lin2		0.8407		4.63	4.78	-3.1	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Lab Sample ID: CCV 280-134398/85 Calibration Date: 08/24/2012 18:19

Instrument ID: LC_LCMS5 Calib Start Date: 08/14/2012 15:46

GC Column: Gemini-NX ID: Calib End Date: 08/14/2012 16:47

Lab File ID: PC512H24036.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9900		11.0	10.4	5.4	30.0
Perfluorooctanoic acid (PFOA)	Lin2		1.030		10.5	10.0	5.4	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.031		9.55	9.56	-0.0	30.0
13C8 PFOA	Lin2		0.8344		10.3	10.0	3.4	30.0
13C8 PFOS	Lin2		0.8343		9.22	9.56	-3.6	30.0

FORM III
LCMS DETECTION LIMIT CHECK STANDARD RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-32218-1

SDG No.:

Matrix: Water Level: Low Lab File ID: PC512H14043.d

Lab ID: DLCK 280-132643/16 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	DLCK CONCENTRATION (ug/L)	DLCK % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.500	0.504 J	101	70-130	
Perfluorooctane Sulfonate (PFOS)	0.478	0.500	105	70-130	

Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
ACID	UG/L	NASB-EP-GW-MWEP347-	280-32218-11	NM	8/15/2012	8/22/2012	8/24/2012	7	2	9
ACID	UG/L	NASB-EP-IN-0812	280-32218-2	NM	8/13/2012	8/17/2012	8/20/2012	4	3	7
ACID	UG/L	NASB-EP-GW-RB01-0814	280-32218-13	NM	8/14/2012	8/22/2012	8/24/2012	8	2	10
ACID	UG/L	NASB-EP-GW-RB01-0814	280-32218-13	NM	8/14/2012	8/17/2012	8/20/2012	3	3	6
ACID	UG/L	NASB-EP-GW-MWEP352-	280-32218-4	NM	8/13/2012	8/22/2012	8/24/2012	9	2	11
ACID	UG/L	NASB-EP-GW-MWEP352-	280-32218-4	NM	8/13/2012	8/17/2012	8/20/2012	4	3	7
ACID	UG/L	NASB-EP-GW-MW323-08	280-32218-14	NM	8/15/2012	8/17/2012	8/24/2012	2	7	9
ACID	UG/L	NASB-EP-GW-MWEP351-	280-32218-7	NM	8/14/2012	8/17/2012	8/20/2012	3	3	6
ACID	UG/L	NASB-EP-GW-MW323-08	280-32218-14	NM	8/15/2012	8/22/2012	8/24/2012	7	2	9
ACID	UG/L	NASB-EP-GW-MWEP347-	280-32218-11	NM	8/15/2012	8/17/2012	8/24/2012	2	7	9
ACID	UG/L	NASB-EP-GW-MWEP347-	280-32218-11	NM	8/15/2012	8/17/2012	8/20/2012	2	3	5
ACID	UG/L	NASB-EP-GW-MW335-08	280-32218-8	NM	8/14/2012	8/22/2012	8/24/2012	8	2	10
ACID	UG/L	NASB-EP-GW-MW335-08	280-32218-8	NM	8/14/2012	8/17/2012	8/20/2012	3	3	6
ACID	UG/L	NASB-EP-GW-MW334-08	280-32218-5	NM	8/13/2012	8/22/2012	8/24/2012	9	2	11
ACID	UG/L	NASB-EP-IN-0812	280-32218-2	NM	8/13/2012	8/22/2012	8/24/2012	9	2	11
ACID	UG/L	NASB-EP-GW-MWEP351-	280-32218-7	NM	8/14/2012	8/22/2012	8/24/2012	8	2	10

HOLDTIME

SDG 280-32218-1

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
ACID	UG/L	NASB-EP-GW-MW334-08	280-32218-5	NM	8/13/2012	8/17/2012	8/20/2012	4	3	7
ACID	UG/L	NASB-EP-EF-0812	280-32218-3	NM	8/13/2012	8/22/2012	8/24/2012	9	2	11
ACID	UG/L	NASB-EP-GW-DUP01-08	280-32218-6	NM	8/13/2012	8/17/2012	8/20/2012	4	3	7
ACID	UG/L	NASB-EP-GW-DUP01-08	280-32218-6	NM	8/13/2012	8/22/2012	8/24/2012	9	2	11
ACID	UG/L	NASB-EP-GW-DUP02-08	280-32218-12	NM	8/14/2012	8/17/2012	8/20/2012	3	3	6
ACID	UG/L	NASB-EP-GW-DUP02-08	280-32218-12	NM	8/14/2012	8/22/2012	8/24/2012	8	2	10
ACID	UG/L	NASB-EP-GW-EW05B-08	280-32218-1	NM	8/13/2012	8/17/2012	8/20/2012	4	3	7
ACID	UG/L	NASB-EP-GW-EW05B-08	280-32218-1	NM	8/13/2012	8/17/2012	8/24/2012	4	7	11
ACID	UG/L	NASB-EP-GW-EW05B-08	280-32218-1	NM	8/13/2012	8/22/2012	8/24/2012	9	2	11
ACID	UG/L	NASB-EP-GW-MGBR-MW	280-32218-10	NM	8/14/2012	8/17/2012	8/20/2012	3	3	6
ACID	UG/L	NASB-EP-GW-MGBR-MW	280-32218-10	NM	8/14/2012	8/22/2012	8/24/2012	8	2	10
ACID	UG/L	NASB-EP-GW-MW1104-0	280-32218-9	NM	8/14/2012	8/17/2012	8/20/2012	3	3	6
ACID	UG/L	NASB-EP-GW-MW1104-0	280-32218-9	NM	8/14/2012	8/22/2012	8/24/2012	8	2	10
ACID	UG/L	NASB-EP-GW-MW323-08	280-32218-14	NM	8/15/2012	8/17/2012	8/20/2012	2	3	5
ACID	UG/L	NASB-EP-EF-0812	280-32218-3	NM	8/13/2012	8/17/2012	8/20/2012	4	3	7

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-335	Monitoring well	3015644.39	381480.83	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MW335-0812	Ground water	Normal (Regular)	14-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-334	Monitoring well	3016402.86	381461.48	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MW334-0812	Ground water	Normal (Regular)	13-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	NASB-EP-EF	System effluent	3015831.27	384870.5431	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-EF-0812	Ground water	Normal (Regular)	13-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-EP-347	Monitoring well	3016949.187	383436.915	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MWEP347-0812	Ground water	Normal (Regular)	15-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-1104	Monitoring well	3016166.85	384527.13	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MW1104-0812-D	Ground water	Field duplicate	14-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-323	Monitoring well	3016289.9	384615.74	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MW323-0812	Ground water	Normal (Regular)	15-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	MRP MGBR		NASB-MGBR-MW04	Monitoring well	3015769.892	385204.3634	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MGBR-MW04-0812	Ground water	Normal (Regular)	14-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-1104	Monitoring well	3016166.85	384527.13	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MW1104-0812	Ground water	Normal (Regular)	14-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	NASB-EP-IN	System influent	3015855.381	384847.8125	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-IN-0812	Ground water	Normal (Regular)	13-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-EP-352	Monitoring well	3016775.726	381885.5663	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MWEP352-0812-D	Ground water	Field duplicate	13-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	EW-05B	Monitoring well	3017160.96	383821.81	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-EW05B-0812	Ground water	Normal (Regular)	13-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-EP-351	Monitoring well	3016886.588	382199.5741	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MWEP351-0812	Ground water	Normal (Regular)	14-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1	EAST PLUME	SITE 00011	MW-EP-352	Monitoring well	3016775.726	381885.5663	N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-MWEP352-0812	Ground water	Normal (Regular)	13-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	BRUNSWICK_NAS	280-32218-1							N6246704D0055	432	TETRA TECH NUS, INC.	NASB-EP-GW-RB01-081412	Water for QC samples	Equipment blank	14-Aug-12	TA_WS-LC-0025	Perfluoroalkyl Compounds