

ANALYTICAL REPORT

Job Number: 280-106889-1

Job Description: ADEM PFC Sampling - Gadsden

For:

Alabama Dept. Environmental Management
2715 Sandlin Road, SW
Decatur, AL 35603

Attention: Mr. Bruce Freeman



Approved for release.
Stephanie K Rothmeyer
Project Manager I
3/29/2018 10:01 AM

Stephanie K Rothmeyer, Project Manager I
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0182
stephanie.rothmeyer@testamericainc.com
03/29/2018

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The Lab Certification ID# is 4025.

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

TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

Definitions/Glossary

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

TestAmerica Job ID: 280-106889-1

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	RPD of the LCS and LCSD exceeds the control limits
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

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

CASE NARRATIVE

Client: Alabama Dept. Environmental Management

Project: ADEM PFC Sampling - Gadsden

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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.

RECEIPT

The samples were received on 3/1/2018 at 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN-RAW (280-106889-1) and GADSDEN-FINISHED (280-106889-2) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 03/08/2018 and 03/22/2018 and analyzed on 03/20/2018 and 03/26/2018.

Perfluorooctanoic acid (PFOA) exceeded the RPD limit for LCSD 280-407265/3-A. Refer to the QC report for details.

Internal standards could not be detected for the following samples: GADSDEN-RAW (280-106889-1), GADSDEN-FINISHED (280-106889-2). The samples were re-extracted at 1mL initial volume. The reporting limits (RLs) have been adjusted proportionately.

The following samples were re-prepared outside of preparation holding time for PFBA due to dilution needed in response to IS failure: GADSDEN-RAW (280-106889-1), GADSDEN-FINISHED (280-106889-2).

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

Client Sample Results

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

TestAmerica Job ID: 280-106889-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-106889-1

Date Collected: 02/27/18 20:45

Matrix: Water

Date Received: 03/01/18 09:45

Method: DV-LC-0012 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.064		0.020	0.0082	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorodecane sulfonate (PFDS)	0.0092	U	0.020	0.0092	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorodecanoic acid (PFDA)	0.13		0.020	0.0078	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorododecanoic acid (PFDoA)	0.41		0.030	0.015	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluoroheptanoic acid (PFHpA)	0.013	U	0.030	0.013	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorohexane Sulfonate (PFHxS)	0.36		0.030	0.0070	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorohexanoic acid (PFHxA)	1.7		0.020	0.0029	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorononanoic acid (PFNA)	0.23		0.040	0.017	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorooctanoic acid (PFOA)	0.030	*	0.020	0.0098	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorooctane Sulfonate (PFOS)	0.013	U	0.030	0.013	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluoropentanoic acid (PFPA)	0.32		0.030	0.011	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorotetradecanoic acid (PFTeA)	0.065		0.030	0.015	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluorotridecanoic Acid (PFTriA)	0.48		0.040	0.018	ug/L		03/08/18 14:32	03/20/18 01:15	1
Perfluoroundecanoic acid (PFUnA)	0.17		0.020	0.0069	ug/L		03/08/18 14:32	03/20/18 01:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	101		60 - 155				03/08/18 14:32	03/20/18 01:15	1
13C8 PFOS	88		45 - 130				03/08/18 14:32	03/20/18 01:15	1

Method: DV-LC-0012 - Fluorinated Alkyl Substances - REDL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.5	U H	5.0	2.5	ug/L		03/22/18 20:35	03/26/18 19:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	93		60 - 155				03/22/18 20:35	03/26/18 19:56	1
13C8 PFOS	101		45 - 130				03/22/18 20:35	03/26/18 19:56	1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-106889-2

Date Collected: 02/28/18 10:00

Matrix: Water

Date Received: 03/01/18 09:45

Method: DV-LC-0012 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.33		0.020	0.0080	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorodecane sulfonate (PFDS)	0.0089	U	0.020	0.0089	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorodecanoic acid (PFDA)	0.0076	U	0.020	0.0076	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorododecanoic acid (PFDoA)	0.015	U	0.029	0.015	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluoroheptanoic acid (PFHpA)	0.013	U	0.029	0.013	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorohexane Sulfonate (PFHxS)	0.0068	U	0.029	0.0068	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorohexanoic acid (PFHxA)	2.1		0.020	0.0028	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorononanoic acid (PFNA)	0.017	U	0.039	0.017	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorooctanoic acid (PFOA)	0.028	*	0.020	0.0096	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorooctane Sulfonate (PFOS)	0.013	U	0.029	0.013	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluoropentanoic acid (PFPA)	0.011	U	0.029	0.011	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.029	0.014	ug/L		03/08/18 14:32	03/20/18 01:27	1
Perfluorotridecanoic Acid (PFTriA)	0.017	U	0.039	0.017	ug/L		03/08/18 14:32	03/20/18 01:27	1

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Client Sample Results

Client: Alabama Dept. Environmental Management
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TestAmerica Job ID: 280-106889-1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-106889-2

Date Collected: 02/28/18 10:00

Matrix: Water

Date Received: 03/01/18 09:45

Method: DV-LC-0012 - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	0.0067	U	0.020	0.0067	ug/L		03/08/18 14:32	03/20/18 01:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	100		60 - 155				03/08/18 14:32	03/20/18 01:27	1
13C8 PFOS	95		45 - 130				03/08/18 14:32	03/20/18 01:27	1

Method: DV-LC-0012 - Fluorinated Alkyl Substances - REDL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.5	U H	5.0	2.5	ug/L		03/22/18 20:35	03/26/18 20:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	93		60 - 155				03/22/18 20:35	03/26/18 20:08	1
13C8 PFOS	101		45 - 130				03/22/18 20:35	03/26/18 20:08	1