

## ANALYTICAL REPORT

Job Number: 280-85665-1

Job Description: ADEM PFC Sampling

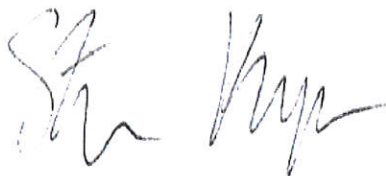
For:

Alabama Dept. Environmental Management

2715 Sandlin Road, SW

Decatur, AL 35603

Attention: Mr. Ed Poolos



Approved for release.  
Stephanie K Kupper  
Project Manager I  
8/3/2016 4:10 PM

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08/03/2016

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

The Lab Certification ID# is 4025.

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

**TestAmerica Laboratories, Inc.**

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## CASE NARRATIVE

**Client: Alabama Dept. Environmental Management**

**Project: ADEM PFC Sampling**

**Report Number: 280-85665-1**

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.

### **RECEIPT**

The samples were received on 7/16/2016 at 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.9° C.

### **PERFLUORINATED HYDROCARBONS (PFC)**

Samples CENTRE-RAW (280-85665-1), CENTRE-FINISHED (280-85665-2), GADSDEN-RAW (280-85665-3) and GADSDEN-FINISHED (280-85665-4) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 07/20/2016 and analyzed on 07/21/2016 and 07/22/2016.

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

### **PERFLUOROCTANE SULFONAMIDE (FOSA)**

Samples CENTRE-RAW (280-85665-1), CENTRE-FINISHED (280-85665-2), GADSDEN-RAW (280-85665-3) and GADSDEN-FINISHED (280-85665-4) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared on 07/22/2016 and analyzed on 07/25/2016.

Internal standard (ISTD) responses for the following samples were outside of acceptance limits: CENTRE-FINISHED (280-85665-2), GADSDEN-FINISHED (280-85665-4), (LCS 280-334656/2-A), (280-85762-A-1-A), (280-85762-B-1-A MS), (280-85762-C-1-A MSD). Sample matrix could not be confirmed because internal standard recoveries were also outside of acceptance limits in the laboratory control sample (LCS), although all spike recoveries were within control limits.

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

Date Collected: 07/13/16 11:20

Matrix: Water

Date Received: 07/16/16 09:25

## Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.055		0.021	0.0086	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorobutanoic acid (PFBA)	0.010	J	0.021	0.010	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorodecane sulfonate (PFDS)	0.0096	U	0.021	0.0096	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorodecanoic acid (PFDA)	0.0082	U	0.021	0.0082	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorododecanoic acid (PFDoA)	0.016	U	0.031	0.016	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluoroheptanoic acid (PFHpA)	0.015	J	0.031	0.014	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorohexane Sulfonate (PFHxS)	0.0073	U	0.031	0.0073	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorohexanoic acid (PFHxA)	0.041		0.021	0.0030	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorononanoic acid (PFNA)	0.018	U	0.042	0.018	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorooctanoic acid (PFOA)	0.027		0.021	0.010	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorooctane Sulfonate (PFOS)	0.038		0.031	0.014	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluoropentanoic acid (PFPA)	0.058		0.031	0.011	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorotetradecanoic acid (PFTeA)	0.015	U	0.031	0.015	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluorotridecanoic Acid (PFTriA)	0.018	U	0.042	0.018	ug/L		07/20/16 12:30	07/21/16 23:59	1
Perfluoroundecanoic acid (PFUnA)	0.0072	U	0.021	0.0072	ug/L		07/20/16 12:30	07/21/16 23:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C8 PFOA	101		60 - 155				07/20/16 12:30	07/21/16 23:59	1
13C8 PFOS	109		45 - 130				07/20/16 12:30	07/21/16 23:59	1

## Method: PFC -FOSA - FOSA in Water (LC/MS/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0053	U	0.047	0.0053	ug/L		07/22/16 12:04	07/25/16 15:38	1

## Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-85665-4

Date Collected: 07/13/16 11:00

Matrix: Water

Date Received: 07/16/16 09:25

## Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.046		0.019	0.0079	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorobutanoic acid (PFBA)	0.013	J	0.019	0.0094	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorodecane sulfonate (PFDS)	0.0087	U	0.019	0.0087	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorodecanoic acid (PFDA)	0.0075	U	0.019	0.0075	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorododecanoic acid (PFDoA)	0.014	U	0.029	0.014	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluoroheptanoic acid (PFHpA)	0.013	U	0.029	0.013	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorohexane Sulfonate (PFHxS)	0.0067	U	0.029	0.0067	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorohexanoic acid (PFHxA)	0.041		0.019	0.0028	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorononanoic acid (PFNA)	0.017	U	0.038	0.017	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorooctanoic acid (PFOA)	0.027		0.019	0.0093	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorooctane Sulfonate (PFOS)	0.039		0.029	0.013	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluoropentanoic acid (PFPA)	0.058		0.029	0.010	ug/L		07/20/16 12:30	07/22/16 00:11	1

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## Client Sample Results

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

TestAmerica Job ID: 280-85665-1

**Client Sample ID: GADSDEN-FINISHED**

**Lab Sample ID: 280-85665-4**

**Date Collected: 07/13/16 11:00**

**Matrix: Water**

**Date Received: 07/16/16 09:25**

**Method: DV-LC-0012 - Perfluorinated Hydrocarbons (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.029	0.014	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluorotridecanoic Acid (PFTriA)	0.017	U	0.038	0.017	ug/L		07/20/16 12:30	07/22/16 00:11	1
Perfluoroundecanoic acid (PFUnA)	0.0066	U	0.019	0.0066	ug/L		07/20/16 12:30	07/22/16 00:11	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C8 PFOA	106		60 - 155				07/20/16 12:30	07/22/16 00:11	1
13C8 PFOS	96		45 - 130				07/20/16 12:30	07/22/16 00:11	1

**Method: PFC -FOSA - FOSA in Water (LC/MS/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0056	U	0.049	0.0056	ug/L		07/22/16 12:04	07/25/16 15:50	1