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Analytical Report

Fluorochemical Characterization of Aqueous and Solid Samples

MPI Report No. L0018099

Testing Laboratory

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1 Introduction

Results are reported for the analysis of water and solid samples received at MPI Research from Dalton Utilities. The MPI Research study number assigned to the project is L0018099. Table I lists the target analytes quantitated for the samples.

Table I. Target Analytes for Quantitation

Compound Name	Acronym
Perfluorobutyric Acid	C4 Acid
Perfluoropentanoic Acid	C5 Acid
Perfluorohexanoic Acid	C6 Acid
Perfluoroheptanoic Acid	C7 Acid
Perfluorooctanoic Acid	C8 Acid
Perfluorononanoic Acid	C9 Acid
Perfluorodecanoic Acid	C10 Acid
Perfluoroundecanoic Acid	C11 Acid
Perfluorododecanoic Acid	C12 Acid
Perfluorotridecanoic Acid	C13 Acid
Perfluorotetradecanoic Acid	C14 Acid
Perfluorobutanesulfonate	C4 Sulfonate or PFBS
Perfluorohexanesulfonate	C6 Sulfonate or PFHS
Perfluorooctanesulfonate	C8 Sulfonate or PFOS
Perfluorooctanesulfonamide	FOSA

2 Sample Receipt

A total of sixty samples were received from David White at Dalton Utilities for this study. The samples were collected between May 26, 2009 and May 28, 2009. The samples arrived on May 29, 2009 via FED Ex and were logged in under MPI Research login number L0018099. The shipment was received cooled with wet ice. The samples were stored refrigerated from receipt until analysis. Chain-of-custody information is presented in Attachment A.

3 Methods - Analytical and Preparatory

3.1 Water Sample Preparation

Ten milliliters of sample was transferred into a 50 mL centrifuge tube. Samples designated as lab spikes were fortified appropriately with analyte and surrogate. All samples were fortified with a 50 µL portion of a 100 ng/mL surrogate spiking solution containing PFOA (m+4). Ten milliliters of acetonitrile was added to the sample. After shaking, the sample was sonicated for approximately 2 hours then centrifuged at 3000 rpm for ~10 minutes. A 1 mL portion of the

supernatant was transferred to an autosampler vial and fortified with 20 µL of a 25 ng/mL internal standard solution. The samples were then analyzed using electrospray LC/MS/MS.

3.2 Solid Sample Preparation

One gram of solid was measured into a 50 mL centrifuge tube. Samples designated as lab spikes were fortified appropriately with analyte and surrogate. All samples were fortified with a 40 µL portion of a 100 ng/mL surrogate spiking solution of PFOA (m+4). Eight milliliters of 80:20 acetonitrile: water was added to the sample. After shaking, the sample was sonicated for approximately 2 hours then centrifuged at 3000 rpm for 10 minutes. A 1 mL portion of the supernatant was transferred to an autosampler vial and fortified with 20 µL of a 25 ng/mL internal standard solution. The samples were then analyzed using electrospray LC/MS/MS.

3.3 Sample Analysis by LC/MS/MS

In High Pressure Liquid Chromatography (HPLC), an aliquot of extract is injected and passed through a liquid-phase chromatographic column. Based on the affinity of the analyte for the stationary phase in the column relative to the liquid mobile phase, the analyte is retained for a characteristic amount of time. Following HPLC separation, mass spectrometry provides a rapid and accurate means for analyzing a wide range of organic compounds. Molecules are ionized, fragmented, and detected. The ions characteristic of the compounds are observed and quantitated against calibration standards.

An HP1100 system interfaced to an Applied Biosystems API 5000 LC/MS/MS was used to analyze the sample extracts for quantitation. A gradient elution through a Phenomenex Luna 3µ C8(2) Mercury, 20 x 4.0 mm column was used for separation.

The following gradient was performed:

Mobile Phase (A): 2mM Ammonium Acetate in Water
Mobile Phase (B): Methanol

Time	%A	%B
0.0	90	10
0.5	90	10
2.0	10	90
5.0	10	90
5.1	0	100
6.0	0	100
6.1	90	10
10.0	90	10

The following parameters were used for operation of the mass spectrometer:

Parameter	Setting
Ionization Mode	Electrospray
Polarity	Negative
Transitions Monitored	213→169 (C4 Acid)
	263→219 (C5 Acid)
	313→269 (C6 Acid)
	363→319 (C7 Acid)
	413→369 (C8 Acid)
	463→419 (C9 Acid)
	513→469 (C10 Acid)
	563→519 (C11 Acid)
	613→569 (C12 Acid)
	663→619 (C13 Acid)
	713→669 (C14 Acid)
	299→80 (PFBS)
	399→80 (PFHS)
	499→80 (PFOS)
	498→78 (FOSA)
	415→370 (Internal Std. ^{13}C PFOA (m+2))
	417→372 (Surrogate ^{13}C PFOA (m+4))
Gas Temperature	450°C

4 *Analysis by LCMSMS*

4.1 Calibration

For the water sample analysis, a 9 -point calibration curve was analyzed throughout the analytical sequence for all compounds of interest. The calibration points were prepared at 0.0125, 0.025, 0.050, 0.100, 0.250, 0.500, 1.0, 2.5 and 5.0 ng/mL (ppb) each containing 0.5 ng/mL ^{13}C-PFOA (m+2). For the solid sample analysis, an 8-point calibration curve was analyzed throughout the analytical sequence for all compounds of interest. The calibration points were prepared at 0.025, 0.050, 0.100, 0.250, 0.500, 1.0, 2.5 and 5.0 ng/mL (ppb) each containing 0.5 ng/mL ^{13}C-PFOA (m+2). Standard preparation details can be found in Attachment D.

The ratio of the analyte concentration to the IS concentration versus the ratio of the analyte instrument response (area) to the IS response (area) was plotted for each point. Using linear regression with 1/x weighting, the slope, y-intercept and coefficient of determination (r^2) were determined. A calibration curve is acceptable if $r^2 \geq 0.985$.

For the results reported here, calibration criteria were met. The calibration curves are included in the raw data in Attachment C.

4.2 Surrogates

^{13}C labeled-perfluorooctanoic acid (^{13}C PFOA (m+4)) is used as a surrogate for the water and solid samples.

^{13}C PFOA (m+4) recoveries can be found in Attachment B.

4.3 Laboratory Control Spikes

Laboratory control spikes in the analytical set were prepared during each extraction set by adding a known concentration of the analyte to laboratory reagents and/or controls. Laboratory control spikes are used to assess method accuracy. The laboratory control spikes must show recoveries between 70-130% or the data is rejected. For the results reported here, the laboratory control spikes were within the acceptable range. Laboratory control spike recoveries are given in Attachment B.

4.4 Matrix Spikes

Seven matrix spikes, five for water and two for solids, were prepared by adding a known concentration of the target analyte to a sample. Matrix spikes are used to assess method accuracy in the matrix. The matrix spikes should show recoveries between 70-130%. For the results reported here, the matrix spikes were within the acceptable range with the exceptions of:

L18099-19 (MW M10) Spk C at 0.5 ng/mL for C5 Acid, C7 Acid, C8 Acid, C10 Acid and C13 Acid, which gave high recoveries after two separate preparations.

L18099-32 (MW D6) Spk D at 0.5 ng/mL for C13 Acid, which gave high recoveries after two separate preparations.

L18099-41 (SP CA15) Spk C at 0.5 ng/mL for C6 Acid, and C8 Acid, which gave high recoveries after two separate preparations.

L18099-57 (River R1) Spk D at 0.5 ng/mL for C9 Acid, C12 Acid, and C13 Acid, which gave high recoveries after two separate preparations.

L18099-2 (AC 6 Soil) Spk C at 5.0 ng/mL for C11 Acid, which gave high recoveries after two separate preparations.

4.5 Laboratory Duplicates

Five water samples and two solid samples were prepared in duplicate and analyzed. Duplicate results are given along with the sample results in Attachment B.

5 Data Summary

Please see Attachment B for a detailed listing of the analytical results. For the water samples the results are reported in parts per billion (ng/mL) on an as-received basis. For the solid samples, the results are reported in parts per billion (ng/g), on a dry-weight basis.

6 Data/Sample Retention

Samples are disposed of 60 days after the report is issued unless otherwise specified by the project manager. All electronic data is archived on retrievable media and hard copy reports are stored in data folders maintained by MPI Research. Hardcopy data is stored for a minimum of five years. The client will be notified 30 days prior to the disposal of hardcopy data.

7 Attachments

7.1 Attachment A: Chain of Custody

7.2 Attachment B: Analytical Results

7.3 Attachment C: Raw Analytical Data for Water

7.4 Attachment D: Raw Analytical Data for Solids

8 Signatures

Mark Neeley, Research Chemist Associate II — Date: 6-26-09

Karen Risha, Manager, Analytical — Date: 06/29/09

Other Lab Members Contributing to Data:
Sarah Coghlan
Sharareh Zolghadr

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Analytical Report

Summary of Fluorochemical Residues in Water Samples

Sample ID	C4 Acid Perfluorobutyric Acid Analyte Found (ng/mL, ppb)	C5 Acid Perfluoropentanoic Acid Analyte Found (ng/mL, ppb)	C6 Acid Perfluorohexanoic Acid Analyte Found (ng/mL, ppb)	C7 Acid Perfluoroheptanoic Acid Analyte Found (ng/mL, ppb)	C8 Acid Perfluorooctanoic Acid Analyte Found (ng/mL, ppb)
MW M10	ND	0.0373	0.0498	ND	ND
MW M10*	ND	0.0586	0.0614	NQ	ND
MW M11	0.173	0.427	0.574	0.154	0.287
MW M9	1.01	4.58	2.44	0.564	0.512
MW D2	0.275	0.909	0.713	0.472	1.10
MW M1	0.0993	0.411	0.426	0.295	0.604
MW U1	ND	0.0278	NQ	ND	ND
MW D3	0.251	0.664	0.380	0.161	0.228
MW D1	0.0950	0.434	0.487	0.387	1.21
MW M5	0.529	1.90	1.98	1.35	2.87
MW M6A	0.0515	0.171	0.148	0.145	0.331
MW M17	1.38	3.10	2.36	2.01	4.40
MW M14	0.681	3.28	3.01	1.50	2.44
MW M13	0.931	3.62	3.42	2.45	4.41
MW D6	0.550	1.92	1.680	1.13	2.73
MW D6*	0.447	1.68	1.640	1.01	2.60
MW D4	0.759	2.49	2.54	1.95	4.16
MW M3	0.0318	0.139	0.0613	ND	ND
MW M7	0.414	1.82	1.69	0.906	1.71
MW M2	0.959	2.13	0.397	NQ	ND
MW M8	0.381	0.885	0.868	0.421	1.08
MW M12	0.749	2.68	2.28	1.51	2.97
SP AC5	0.566	1.26	0.746	0.309	0.479
SP BA2	0.665	1.37	0.811	0.328	0.469
SP BA2*	0.742	1.47	0.963	0.341	0.539
SP CA15	0.684	1.45	0.723	0.261	0.509
SP CA15*	0.805	1.58	1.04	0.306	0.658
SP AC2	0.609	1.40	0.797	0.305	0.591
SP AC15	0.710	1.53	0.964	0.312	0.592
SP AC4	0.646	1.48	0.994	0.331	0.702
SP AC14	0.755	1.67	1.17	0.349	0.754
SP CB14A	0.869	1.77	0.935	0.314	0.692
SP CB12	0.751	1.43	0.749	0.274	0.531
SP BB9	0.785	1.50	0.763	0.260	0.568
SP BB13	0.761	1.52	0.767	0.270	0.565
SP CA2	0.776	1.43	0.709	0.275	0.527
SP CB3	0.903	1.69	0.878	0.316	0.615
SP BB12	0.998	1.80	1.13	0.358	0.755
SP BA4	0.839	1.57	0.824	0.305	0.566
MW D11	ND	ND	ND	ND	ND
MW D9	0.774	2.02	1.79	1.44	3.21
MW M4	0.530	2.50	2.25	1.48	3.89
River R1	ND	ND	ND	ND	ND
River R1*	ND	ND	ND	ND	ND
River R2	0.0494	0.184	0.188	0.112	0.358
River R3	ND	0.0386	ND	ND	0.0310
River R4	0.0468	0.195	0.170	0.0822	0.266

*Laboratory Duplicate
ND = Not detected = Response is below the LOD of 0.0125 ng/mL (ppb).
NQ = Not quantifiable = Response is between the LOD and the LOQ of 0.0250 ng/mL (ppb).

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Analytical Report

Summary of Fluorochemical Residues in Water Samples (continued)

Sample ID	C9 Acid Perfluorononanoic Acid Analyte Found (ng/mL, ppb)	C10 Acid Perfluorodecanoic Acid Analyte Found (ng/mL, ppb)	C11 Acid Perfluoroundecanoic Acid Analyte Found (ng/mL, ppb)	C12 Acid Perfluorododecanoic Acid Analyte Found (ng/mL, ppb)	C13 Acid Perfluorotridecanoic Acid Analyte Found (ng/mL, ppb)
MW M10	ND	ND	ND	ND	ND
MW M10*	ND	ND	ND	ND	ND
MW M11	0.0308	ND	ND	ND	ND
MW M9	ND	ND	ND	ND	ND
MW D2	0.131	0.0825	ND	ND	ND
MW M1	ND	ND	ND	ND	ND
MW U1	ND	ND	ND	ND	ND
MW D3	ND	ND	ND	ND	ND
MW D1	0.104	0.128	ND	ND	ND
MW M5	0.449	0.0578	ND	ND	ND
MW M6A	0.0730	NQ	ND	ND	ND
MW M17	1.17	0.856	0.137	ND	ND
MW M14	0.129	ND	ND	ND	ND
MW M13	0.811	0.120	ND	ND	ND
MW D6	0.575	0.211	ND	ND	ND
MW D6*	0.497	0.190	ND	ND	ND
MW D4	0.543	0.0966	ND	ND	ND
MW M3	ND	ND	ND	ND	ND
MW M7	0.0940	0.0978	ND	ND	ND
MW M2	ND	ND	ND	ND	ND
MW M8	0.108	0.106	ND	ND	ND
MW M12	0.452	0.167	ND	ND	ND
SP AC5	0.104	0.227	0.109	ND	ND
SP BA2	0.0652	0.162	0.107	ND	ND
SP BA2*	0.0764	0.173	0.117	ND	ND
SP CA15	0.113	0.200	0.118	ND	ND
SP CA15*	0.120	0.225	0.141	ND	ND
SP AC2	0.127	0.246	0.164	ND	NQ
SP AC15	0.0832	0.152	0.105	ND	ND
SP AC4	0.126	0.267	0.187	ND	NQ
SP AC14	0.137	0.233	0.172	ND	ND
SP CB14A	0.119	0.218	0.151	ND	ND
SP CB12	0.118	0.192	0.114	ND	ND
SP BB9	0.0984	0.180	0.107	ND	ND
SP BB13	0.103	0.194	0.119	ND	ND
SP CA2	0.107	0.194	0.106	ND	ND
SP CB3	0.108	0.186	0.108	ND	ND
SP BB12	0.132	0.254	0.159	ND	ND
SP BA4	0.108	0.208	0.118	ND	ND
MW D11	ND	ND	ND	ND	ND
MW D9	0.604	0.103	ND	ND	ND
MW M4	0.333	0.217	ND	ND	ND
River R1	ND	ND	ND	ND	ND
River R1*	ND	ND	ND	ND	ND
River R2	0.0646	0.0807	ND	ND	ND
River R3	ND	ND	ND	ND	ND
River R4	0.0504	0.0763	ND	ND	ND

*Laboratory Duplicate
ND = Not detected = Response is below the LOD of 0.0125 ng/mL (ppb).
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Analytical Report

Summary of Fluorochemical Residues in Water Samples (continued)

Sample ID	C14 Acid Perfluorotetradecanoic Acid Analyte Found (ng/mL, ppb)	PFBS Perfluorobutanesulfonate Analyte Found (ng/mL, ppb)	PFHS Perfluorohexanesulfonate Analyte Found (ng/mL, ppb)	PFOS Perfluorooctanesulfonate Analyte Found (ng/mL, ppb)	FOSA Perfluorooctane sulfonamide Analyte Found (ng/mL, ppb)
MW M10	ND	0.145	ND	ND	ND
MW M10*	ND	0.188	ND	ND	ND
MW M11	ND	0.227	0.0362	0.152	ND
MW M9	ND	0.282	0.108	ND	ND
MW D2	ND	0.749	0.155	1.07	0.0429
MW M1	ND	0.180	0.159	0.451	ND
MW U1	ND	ND	ND	ND	ND
MW D3	ND	0.281	0.0381	0.105	ND
MW D1	ND	0.588	0.263	1.98	ND
MW M5	ND	2.19	0.841	2.52	ND
MW M6A	ND	0.454	NQ	0.127	ND
MW M17	ND	19.4	0.219	2.31	0.134
MW M14	ND	0.698	0.719	0.753	ND
MW M13	ND	2.49	1.00	2.18	ND
MW D6	ND	1.57	0.337	1.93	0.0842
MW D6*	ND	1.42	0.279	1.83	0.0742
MW D4	ND	4.36	0.958	3.35	ND
MW M3	ND	ND	ND	ND	ND
MW M7	ND	0.406	0.361	0.986	ND
MW M2	ND	NQ	ND	ND	ND
MW M8	ND	4.79	0.0695	0.479	ND
MW M12	ND	1.62	0.515	2.08	ND
SP AC5	ND	1.24	ND	0.287	0.0265
SP BA2	ND	1.10	NQ	0.236	NQ
SP BA2*	ND	1.23	0.0290	0.259	0.0277
SP CA15	ND	2.23	0.0594	0.289	0.0321
SP CA15*	ND	2.40	0.0682	0.348	0.0395
SP AC2	ND	1.38	0.0301	0.350	0.0487
SP AC15	ND	1.59	0.0390	0.272	0.0259
SP AC4	ND	1.59	0.0336	0.387	0.0565
SP AC14	ND	1.77	0.0430	0.380	0.0513
SP CB14A	ND	3.86	0.0417	0.336	0.0414
SP CB12	ND	3.21	0.0686	0.281	0.0269
SP BB9	ND	3.01	0.0439	0.275	0.0264
SP BB13	ND	2.92	0.0508	0.280	0.0291
SP CA2	ND	3.19	0.0690	0.277	0.0274
SP CB3	ND	3.66	0.0464	0.276	0.0253
SP BB12	ND	3.99	0.0833	0.382	0.0413
SP BA4	ND	3.18	0.0697	0.292	0.0319
MW D11	ND	ND	ND	NQ	ND
MW D9	ND	5.11	0.531	2.94	ND
MW M4	ND	0.641	1.00	5.15	0.0329
River R1	ND	NQ	ND	NQ	ND
River R1*	ND	NQ	ND	NQ	ND
River R2	ND	0.319	0.0484	0.665	0.0575
River R3	ND	NQ	ND	0.0477	ND
River R4	ND	0.295	0.0368	0.601	0.0442

*Laboratory Duplicate
ND = Not detected = Response is below the LOD of 0.0125 ng/mL (ppb).
NQ = Not quantifiable = Response is between the LOD and the LOQ of 0.0250 ng/mL (ppb).

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Recovery Summary of Fluorochemical Residues in Water Samples

Sample Description	Amount Spiked (ng/mL)	C4 Acid Amt Found in Sample (ng/mL)	C4 Acid Amount Recovered (ng/mL)	C4 Acid Recovery (%)	C5 Acid Amt Found in Sample (ng/mL)	C5 Acid Amount Recovered (ng/mL)	C5 Acid Recovery (%)	C6 Acid Amt Found in Sample (ng/mL)	C6 Acid Amount Recovered (ng/mL)	C6 Acid Recovery (%)	C7 Acid Amt Found in Sample (ng/mL)	C7 Acid Amount Recovered (ng/mL)	C7 Acid Recovery (%)
Reagent Spike A (061809A) 0.05 ng/mL	0.05	ND	0.0541	108	ND	0.0581	116	ND	0.0600	120	ND	0.0582	116
Reagent Spike B (061809A) 0.5 ng/mL	0.5	ND	0.408	82	ND	0.410	82	ND	0.393	79	ND	0.469	94
Reagent Spike A (061809B) 0.05 ng/mL	0.05	ND	0.0557	111	ND	0.0480	96	ND	0.0646	129	ND	0.0489	98
Reagent Spike B (061809B) 0.5 ng/mL	0.5	ND	0.395	79	ND	0.398	80	ND	0.363	73	ND	0.463	93
Reagent Spike A (062309A) 0.05 ng/mL	0.05	**	**	**	**	**	**	ND	0.0531	106	**	**	**
Reagent Spike B (062309A) 0.5 ng/mL	0.5	**	**	**	**	**	**	ND	0.496	99	**	**	**
MW M10 Matrix Spike (L18099-19 Spk C, 0.5 ng/mL Lab Spike)	0.5	ND	0.589	118	0.0373	0.733	139^	0.0498	0.694	129	ND	0.780	156^
MW D6 Matrix Spike (L18099-32 Spk D, 0.5 ng/mL Lab Spike)	0.5	0.550	0.923	75	1.92	2.33	82	1.68	2.14	92	1.13	1.65	104
SP BA2 Matrix Spike (L18099-40 Spk E, 0.5 ng/mL Lab Spike)	0.5	0.665	1.03	73	1.37	1.81	88	0.811	1.25	88	0.328	0.899	114
SP CA15 Matrix Spike (L18099-41 Spk C, 0.5 ng/mL Lab Spike)	0.5	0.684	1.16	95	1.45	2.02	114	0.723	1.46	147^	0.261	0.903	128
River R1 Matrix Spike (L18099-57 Spk D, 0.5 ng/mL Lab Spike)	0.5	ND	0.495	99	ND	0.581	116	ND	0.523	105	ND	0.644	129

Sample Description	Amount Spiked (ng/mL)	C8 Acid Amt Found in Sample (ng/mL)	C8 Acid Amount Recovered (ng/mL)	C8 Acid Recovery (%)	C9 Acid Amt Found in Sample (ng/mL)	C9 Acid Amount Recovered (ng/mL)	C9 Acid Recovery (%)	C10 Acid Amt Found in Sample (ng/mL)	C10 Acid Amount Recovered (ng/mL)	C10 Acid Recovery (%)	C11 Acid Amt Found in Sample (ng/mL)	C11 Acid Amount Recovered (ng/mL)	C11 Acid Recovery (%)
Reagent Spike A (061809A) 0.05 ng/mL	0.05	ND	0.0569	114	ND	0.0612	122	ND	0.0486	97	ND	0.0602	120
Reagent Spike B (061809A) 0.5 ng/mL	0.5	ND	0.395	79	ND	0.433	87	ND	0.435	87	ND	0.398	80
Reagent Spike A (061809B) 0.05 ng/mL	0.05	ND	0.0533	107	ND	0.0468	94	ND	0.0581	116	ND	0.0575	115
Reagent Spike B (061809B) 0.5 ng/mL	0.5	ND	0.397	79	ND	0.403	81	ND	0.417	83	ND	0.368	74
Reagent Spike A (062309A) 0.05 ng/mL	0.05	ND	0.0443	89	**	**	**	**	**	**	**	**	**
Reagent Spike B (062309A) 0.5 ng/mL	0.5	ND	0.589	118	**	**	**	**	**	**	**	**	**
MW M10 Matrix Spike (L18099-19 Spk C, 0.5 ng/mL Lab Spike)	0.5	ND	0.654	131^	ND	0.607	121	ND	0.686	137^	ND	0.600	120
MW D6 Matrix Spike (L18099-32 Spk D, 0.5 ng/mL Lab Spike)	0.5	2.73	3.32	118	0.575	1.15	115	0.211	0.830	124	ND	0.505	101
SP BA2 Matrix Spike (L18099-40 Spk E, 0.5 ng/mL Lab Spike)	0.5	0.469	0.94	94	0.0652	0.555	98	0.162	0.744	116	0.107	0.585	96
SP CA15 Matrix Spike (L18099-41 Spk C, 0.5 ng/mL Lab Spike)	0.5	0.509	1.18	134^	0.113	0.671	112	0.200	0.765	113	0.118	0.728	122
River R1 Matrix Spike (L18099-57 Spk D, 0.5 ng/mL Lab Spike)	0.5	ND	0.610	122	ND	0.704	141^	ND	0.627	125	ND	0.620	124

ND = Not detected = Response is below the LOD of 0.0125 ng/mL.
NQ = Not quantifiable = Response is between the LOD and the LOQ of 0.0250 ng/mL.
**Analysis not required.
^ Confirmation analysis was performed for the out of range recovery. The second analysis confirmed the high recovery, a matrix effect is suspected to be the cause.

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Recovery Summary of Fluorochemical Residues in Water Samples (continued)

Sample Description	Amount Spiked (ng/mL)	C12 Acid Amt Found in Sample (ng/mL)	C12 Acid Amount Recovered (ng/mL)	C12 Acid Recovery (%)	C13 Acid Amt Found in Sample (ng/mL)	C13 Acid Amount Recovered (ng/mL)	C13 Acid Recovery (%)	C14 Acid Amt Found in Sample (ng/mL)	C14 Acid Amount Recovered (ng/mL)	C14 Acid Recovery (%)	PFBS Amt Found in Sample (ng/mL)	PFBS Amount Recovered (ng/mL)	PFBS Recovery (%)
Reagent Spike A (061809A) 0.05 ng/mL	0.05	ND	0.0574	115	ND	0.0513	103	ND	0.0647	129	ND	0.0546	109
Reagent Spike B (061809A) 0.5 ng/mL	0.5	ND	0.395	79	ND	0.427	85	ND	0.408	82	ND	0.442	88
Reagent Spike A (061809B) 0.05 ng/mL	0.05	ND	0.0606	121	ND	0.0580	116	ND	0.0518	104	ND	0.0652	130
Reagent Spike B (061809B) 0.5 ng/mL	0.5	ND	0.366	73	ND	0.390	78	ND	0.384	77	ND	0.393	79
Reagent Spike A (062309A) 0.05 ng/mL	0.05	**	**	**	**	**	**	**	**	**	ND	0.041	82
Reagent Spike B (062309A) 0.5 ng/mL	0.5	**	**	**	**	**	**	**	**	**	ND	0.516	103
MW M10 Matrix Spike (L18099-19 Spk C, 0.5 ng/mL Lab Spike)	0.5	ND	0.641	128	ND	0.725	145^	ND	0.603	121	0.145	0.718	115
MW D6 Matrix Spike (L18099-32 Spk D, 0.5 ng/mL Lab Spike)	0.5	ND	0.577	115	ND	0.716	143^	ND	0.597	119	1.57	1.93	72
SP BA2 Matrix Spike (L18099-40 Spk E, 0.5 ng/mL Lab Spike)	0.5	ND	0.484	97	ND	0.607	121	ND	0.477	95	1.10	1.53	86
SP CA15 Matrix Spike (L18099-41 Spk C, 0.5 ng/mL Lab Spike)	0.5	ND	0.566	113	ND	0.572	114	ND	0.515	103	2.23	2.86	126
River R1 Matrix Spike (L18099-57 Spk D, 0.5 ng/mL Lab Spike)	0.5	ND	0.672	134^	ND	0.708	142^	ND	0.622	124	NQ	0.598	120

Sample Description	Amount Spiked (ng/mL)	PFHS Amt Found in Sample (ng/mL)	PFHS Amount Recovered (ng/mL)	PFHS Recovery (%)	PFOS Amt Found in Sample (ng/mL)	PFOS Amount Recovered (ng/mL)	PFOS Recovery (%)	FOSA Amt Found in Sample (ng/mL)	FOSA Amount Recovered (ng/mL)	FOSA Recovery (%)
Reagent Spike A (061809A) 0.05 ng/mL	0.05	ND	0.0568	114	ND	0.0514	103	ND	0.0541	108
Reagent Spike B (061809A) 0.5 ng/mL	0.5	ND	0.416	83	ND	0.407	81	ND	0.440	88
Reagent Spike A (061809B) 0.05 ng/mL	0.05	ND	0.0541	108	ND	0.0584	117	ND	0.0497	99
Reagent Spike B (061809B) 0.5 ng/mL	0.5	ND	0.413	83	ND	0.398	80	ND	0.401	80
Reagent Spike A (062309A) 0.05 ng/mL	0.05	**	**	**	ND	0.0432	86	**	**	**
Reagent Spike B (062309A) 0.5 ng/mL	0.5	**	**	**	ND	0.545	109	**	**	**
MW M10 Matrix Spike (L18099-19 Spk C, 0.5 ng/mL Lab Spike)	0.5	ND	0.575	115	ND	0.585	117	ND	0.609	122
MW D6 Matrix Spike (L18099-32 Spk D, 0.5 ng/mL Lab Spike)	0.5	0.337	0.783	89	1.93	2.47	108	0.0842	0.625	108
SP BA2 Matrix Spike (L18099-40 Spk E, 0.5 ng/mL Lab Spike)	0.5	NQ	0.415	83	0.236	0.632	79	NQ	0.470	94
SP CA15 Matrix Spike (L18099-41 Spk C, 0.5 ng/mL Lab Spike)	0.5	0.0594	0.515	91	0.289	0.779	98	0.0321	0.553	104
River R1 Matrix Spike (L18099-57 Spk D, 0.5 ng/mL Lab Spike)	0.5	ND	0.595	119	NQ	0.561	112	ND	0.650	130

ND = Not detected = Response is below the LOD of 0.0125 ng/mL.
NQ = Not quantifiable = Response is between the LOD and the LOQ of 0.0250 ng/mL.
**Analysis not required.
^ Confirmation analysis was performed for the out of range recovery. The second analysis confirmed the high recovery, a matrix effect is suspected to be the cause.

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Recovery Summary of ^{13}C PFOA (m+4) in Water Samples

Client Sample ID	MPI Sample ID	Amount Spiked (ng/mL, ppb)	Amount Recovered (ng/mL, ppb)	Recovery (%)
NA	Reagent Control (061809A)	0.50	0.616	123
NA	Reagent Spike A (061809A)	0.05	0.0585	117
NA	Reagent Spike B (061809A)	0.50	0.442	88
NA	Reagent Control (061809B)	0.50	0.669	134
NA	Reagent Spike A (061809B)	0.05	0.0497	99
NA	Reagent Spike B (061809B)	0.50	0.452	90
MW M10 Spike C	L18099-19 Spike C	0.50	0.638	128
MW M10	L18099-19	0.50	0.597	119
MW M10*	L18099-19 DUP	0.50	0.595	119
MW M11	L18099-20	0.50	0.693	139
MW M9	L18099-21	0.50	0.613	123
MW D2	L18099-22	0.50	0.640	128
MW M1	L18099-23	0.50	0.595	119
MW U1	L18099-24	0.50	0.602	120
MW D3	L18099-25	0.50	0.562	112
MW D1	L18099-26	0.50	0.630	126
MW M5	L18099-27	0.50	0.636	127
MW M6A	L18099-28	0.50	0.619	124
MW M17	L18099-29	0.50	0.603	121
MW M14	L18099-30	0.50	0.640	128
MW M13	L18099-31	0.50	0.664	133
MW D6 Spike D	L18099-32 Spike D	0.50	0.625	125
MW D6	L18099-32	0.50	0.673	135
MW D6*	L18099-32 DUP	0.50	0.550	110
MW D4	L18099-33	0.50	0.535	107
MW M3	L18099-34	0.50	0.574	115
MW M7	L18099-35	0.50	0.533	107
MW M2	L18099-36	0.50	0.522	104
MW M8	L18099-37	0.50	0.561	112
MW M12	L18099-38	0.50	0.580	116
SP AC5	L18099-39	0.50	0.529	106
SP BA2 Spike E	L18099-40 Spike E	0.50	0.586	117
~~SP BA2~~	~~L18099-40~~	~~0.50~~	~~0.558~~	~~112~~
SP BA2*	L18099-40 DUP	0.50	0.590	118
SP CA15 Spike C	L18099-41 Spike C	0.50	0.619	124
SP CA15	L18099-41	0.50	0.615	123
SP CA15*	L18099-41 DUP	0.50	0.540	108
SP AC2	L18099-42	0.50	0.565	113
~~SP AC15~~	~~L18099-43~~	~~0.50~~	~~0.545~~	~~109~~
SP AC4	L18099-44	0.50	0.564	113
SP AC14	L18099-45	0.50	0.579	116
SP CB14A	L18099-46	0.50	0.586	117
SP CB12	L18099-47	0.50	0.577	115
SP BB9	L18099-48	0.50	0.551	110
SP BB13	L18099-49	0.50	0.517	103
SP CA2	L18099-50	0.50	0.579	116
SP CB3	L18099-51	0.50	0.680	136
SP BB12	L18099-52	0.50	0.647	129
SP BA4	L18099-53	0.50	0.611	122
MW D11	L18099-54	0.50	0.606	121
MW D9	L18099-55	0.50	0.645	129
MW M4	L18099-56	0.50	0.623	125
River R1 Spike D	L18099-57 Spike D	0.50	0.730	146
River R1	L18099-57	0.50	0.604	121
River R1*	L18099-57 DUP	0.50	0.689	138
River R2	L18099-58	0.50	0.595	119
River R3	L18099-59	0.50	0.628	126
River R4	L18099-60	0.50	0.628	126

* Laboratory Duplicate

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Analytical Report

Summary of Fluorochemical Residues in Solid Samples

Sample ID	C4 Acid Perfluorobutyric Acid Analyte Found (µg/kg) Dry Weight	C5 Acid Perfluoropentanoic Acid Analyte Found (µg/kg) Dry Weight	C6 Acid Perfluorohexanoic Acid Analyte Found (µg/kg) Dry Weight	C7 Acid Perfluoroheptanoic Acid Analyte Found (µg/kg) Dry Weight	C8 Acid Perfluorooctanoic Acid Analyte Found (µg/kg) Dry Weight
Compost	712	408	559	499	4420
AC 6 Soil	1.36	4.20	2.88	1.58	6.83
AC 6 Soil*	1.63	4.38	3.42	1.68	7.75
BA 11 Soil	2.44	6.79	4.68	1.59	8.64
BA 12 Soil	6.30	7.97	7.31	2.72	14.3
BB 13 Soil	4.48	15.6	11.0	6.58	21.3
CA 5 Soil	4.60	11.1	6.37	2.89	16.9
CA 12 Soil	3.43	11.6	7.76	3.36	12.2
CB 4 Soil	3.71	10.0	4.89	1.34	5.34
CB 14A Soil	7.37	32.3	21.5	8.75	29.7
BB 9 Soil	1.15	5.48	3.88	1.62	8.46
CA 9B Soil	1.89	3.95	3.77	2.18	16.7
CB 13 Soil	3.27	10.2	9.22	4.46	17.7
AC 13 Soil	1.30	8.94	5.43	2.36	7.36
BA 5 Soil	4.86	13.4	7.96	6.08	37.0
BB 12 Soil	3.90	12.3	7.45	3.27	12.8
STP 2 Sludge	ND	224	157	ND	87.5
STP 2 Sludge*	ND	215	187	ND	81.3
STP 3 Sludge	ND	281	128	ND	68.2
STP 4 Sludge	152	415	190	33.8	134

*Laboratory Duplicate
ND = Not Detected = Response below the LOQ of 0.2 µg/kg (wet weight)

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Analytical Report

Summary of Fluorochemical Residues in Solid Samples (continued)

Sample ID	C9 Acid Perfluorononanoic Acid Analyte Found (µg/kg) Dry Weight	C10 Acid Perfluorodecanoic Acid Analyte Found (µg/kg) Dry Weight	C11 Acid Perfluoroundecanoic Acid Analyte Found (µg/kg) Dry Weight	C12 Acid Perfluorododecanoic Acid Analyte Found (µg/kg) Dry Weight	C13 Acid Perfluorotridecanoic Acid Analyte Found (µg/kg) Dry Weight
Compost	681	3160	1400	654	441
AC 6 Soil	3.89	20.1	60.2	44.2	44.0
AC 6 Soil*	4.36	19.2	53.9	41.9	47.0
BA 11 Soil	5.44	48.6	117	53.2	47.4
BA 12 Soil	9.89	33.8	37.1	10.5	9.99
BB 13 Soil	17.8	93.7	433	109	282
CA 5 Soil	8.54	48.8	52.4	34.6	23.0
CA 12 Soil	7.96	40.4	124	59.7	96.3
CB 4 Soil	3.26	22.3	81.9	18.4	24.9
CB 14A Soil	19.2	70.6	164	105	166
BB 9 Soil	3.90	24.3	43.3	25.2	35.0
CA 9B Soil	9.34	44.0	39.3	26.2	16.9
CB 13 Soil	11.4	46.5	132	52.1	93.3
AC 13 Soil	3.33	16.6	50.5	33.5	37.5
BA 5 Soil	8.06	53.2	14.8	27.6	4.96
BB 12 Soil	12.6	58.9	123	41.0	83.6
STP 2 Sludge	ND	ND	93.2	ND	ND
STP 2 Sludge*	ND	ND	66.7	ND	ND
STP 3 Sludge	ND	92.1	102	ND	49.2
STP 4 Sludge	47.6	208	347	74.0	195

*Laboratory Duplicate
ND = Not Detected = Response below the LOQ of 0.2 µg/kg (wet weight)

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Analytical Report

Summary of Fluorochemical Residues in Solid Samples (continued)

Sample ID	C14 Acid Perfluorotetradecanoic Acid Analyte Found (µg/kg) Dry Weight	PFBS Perfluorobutanesulfonate Analyte Found (µg/kg) Dry Weight	PFHS Perfluorohexanesulfonate Analyte Found (µg/kg) Dry Weight	PFOS Perfluorooctanesulfonate Analyte Found (µg/kg) Dry Weight	FOSA Perfluorooctane sulfonamide Analyte Found (µg/kg) Dry Weight
Compost	129	1370	72.3	2500	108
AC 6 Soil	22.7	4.56	0.589	67.7	188
AC 6 Soil*	25.4	5.06	0.706	64.8	176
BA 11 Soil	19.2	12.8	0.732	135	358
BA 12 Soil	4.29	7.85	1.24	174	12.5
BB 13 Soil	42.8	36.6	1.35	243	349
CA 5 Soil	15.3	15.8	1.98	288	323
CA 12 Soil	23.9	40.3	0.932	78.9	52.2
CB 4 Soil	5.51	9.35	0.509	37.7	242
CB 14A Soil	50.0	84.5	3.01	147	187
BB 9 Soil	13.1	15.9	0.893	85.7	49.3
CA 9B Soil	11.6	7.50	1.58	283	169
CB 13 Soil	37.5	15.3	2.00	144	166
AC 13 Soil	19.0	6.81	0.671	46.6	332
BA 5 Soil	6.83	1.87	1.99	178	32.6
BB 12 Soil	17.5	24.0	0.975	153	66.3
STP 2 Sludge	ND	74.3	ND	171	144
STP 2 Sludge*	ND	82.4	ND	136	94.4
STP 3 Sludge	ND	1290	ND	84.7	27.5
STP 4 Sludge	ND	1940	ND	170	58.0

*Laboratory Duplicate
ND = Not Detected = Response below the LOQ of 0.2 µg/kg (wet weight)

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Recovery Summary of Fluorochemical Residues in Solid Samples

Sample Description	Amount Spiked* (ng/mL)	C4 Acid Amt Found in Sample (ng/mL)	C4 Acid Amount Recovered (ng/mL)	C4 Acid Recovery (%)	C5 Acid Amt Found in Sample (ng/mL)	C5 Acid Amount Recovered (ng/mL)	C5 Acid Recovery (%)	C6 Acid Amt Found in Sample (ng/mL)	C6 Acid Amount Recovered (ng/mL)	C6 Acid Recovery (%)	C7 Acid Amt Found in Sample (ng/mL)	C7 Acid Amount Recovered (ng/mL)	C7 Acid Recovery (%)
Reagent Spike A 0.05 ng/mL	0.05	ND	0.0364	73	ND	0.0454	91	ND	0.0542	108	ND	0.0444	89
Reagent Spike B 0.5 ng/mL	0.5	ND	0.441	88	ND	0.433	87	ND	0.437	87	ND	0.496	99
AC 6 Soil Matrix Spike (L18099-2 Spk C, 0.5 ng/mL Lab Spike)	0.5	0.122	0.611	98	0.377	0.742	73	0.259	0.761	100	0.142	0.598	91
AC 6 Soil Matrix Spike (L18099-2 Spk D, 5 ng/mL Lab Spike)	5.0	**	**	**	**	**	**	**	**	**	**	**	**
STP 2 Sludge Matrix Spike (L18099-16 Spk E, 0.5 ng/mL Lab Spike)	0.5	ND	0.356	71	0.0925	0.569	95	0.0648	0.613	110	ND	0.552	110

Sample Description	Amount Spiked* (ng/mL)	C8 Acid Amt Found in Sample (ng/mL)	C8 Acid Amount Recovered (ng/mL)	C8 Acid Recovery (%)	C9 Acid Amt Found in Sample (ng/mL)	C9 Acid Amount Recovered (ng/mL)	C9 Acid Recovery (%)	C10 Acid Amt Found in Sample (ng/mL)	C10 Acid Amount Recovered (ng/mL)	C10 Acid Recovery (%)	C11 Acid Amt Found in Sample (ng/mL)	C11 Acid Amount Recovered (ng/mL)	C11 Acid Recovery (%)
Reagent Spike A 0.05 ng/mL	0.05	ND	0.0492	98	ND	0.0619	124	ND	0.0541	108	ND	0.0538	108
Reagent Spike B 0.5 ng/mL	0.5	ND	0.466	93	ND	0.517	103	ND	0.461	92	ND	0.502	100
AC 6 Soil Matrix Spike (L18099-2 Spk C, 0.5 ng/mL Lab Spike)	0.5	0.613	1.26	129	0.349	0.916	113	1.81	2.36	110	**	**	**
AC 6 Soil Matrix Spike (L18099-2 Spk D, 5 ng/mL Lab Spike)	5.0	**	**	**	**	**	**	**	**	**	5.41	12.2	136^
STP 2 Sludge Matrix Spike (L18099-16 Spk E, 0.5 ng/mL Lab Spike)	0.5	0.0361	0.634	120	ND	0.504	101	ND	0.527	105	0.0384	0.562	105

Sample Description	Amount Spiked* (ng/mL)	C12 Acid Amt Found in Sample (ng/mL)	C12 Acid Amount Recovered (ng/mL)	C12 Acid Recovery (%)	C13 Acid Amt Found in Sample (ng/mL)	C13 Acid Amount Recovered (ng/mL)	C13 Acid Recovery (%)	C14 Acid Amt Found in Sample (ng/mL)	C14 Acid Amount Recovered (ng/mL)	C14 Acid Recovery (%)	PFBS Amt Found in Sample (ng/mL)	PFBS Amount Recovered (ng/mL)	PFBS Recovery (%)
Reagent Spike A 0.05 ng/mL	0.05	ND	0.0496	99	ND	0.0624	125	ND	0.0539	108	ND	0.0561	112
Reagent Spike B 0.5 ng/mL	0.5	ND	0.457	91	ND	0.470	94	ND	0.472	94	ND	0.408	82
AC 6 Soil Matrix Spike (L18099-2 Spk C, 0.5 ng/mL Lab Spike)	0.5	3.96	4.47	102	**	**	**	**	**	**	0.409	1.04	126
AC 6 Soil Matrix Spike (L18099-2 Spk D, 5 ng/mL Lab Spike)	5.0	**	**	**	3.95	9.50	111	2.04	7.94	118	**	**	**
STP 2 Sludge Matrix Spike (L18099-16 Spk E, 0.5 ng/mL Lab Spike)	0.5	ND	0.408	82	ND	0.541	108	ND	0.595	119	0.0306	0.561	112

Sample Description	Amount Spiked* (ng/mL)	PFHS Amt Found in Sample (ng/mL)	PFHS Amount Recovered (ng/mL)	PFHS Recovery (%)	PFOS Amt Found in Sample (ng/mL)	PFOS Amount Recovered (ng/mL)	PFOS Recovery (%)	FOSA Amt Found in Sample (ng/mL)	FOSA Amount Recovered (ng/mL)	FOSA Recovery (%)
Reagent Spike A 0.05 ng/mL	0.05	ND	0.0564	113	ND	0.0507	101	ND	0.0506	101
Reagent Spike B 0.5 ng/mL	0.5	ND	0.460	92	ND	0.448	90	ND	0.480	96
AC 6 Soil Matrix Spike (L18099-2 Spk C, 0.5 ng/mL Lab Spike)	0.5	0.0529	0.603	110	**	**	**	**	**	**
AC 6 Soil Matrix Spike (L18099-2 Spk D, 5 ng/mL Lab Spike)	5.0	**	**	**	6.08	10.7	92	16.9	20.9	80
STP 2 Sludge Matrix Spike (L18099-16 Spk E, 0.5 ng/mL Lab Spike)	0.5	ND	0.492	98	0.0704	0.580	102	0.0595	0.522	93

ND = Not detected = Response less than 0.025 ng/mL.
*Spiking levels refer to the amount of analyte in the extracts.
**Analysis not required.
^ Confirmation analysis was performed for the out of range recovery. The second analysis confirmed the high recovery, a matrix effect is suspected to be the cause.

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Recovery Summary of ^{13}C PFOA (m+4) in Solid Samples

Client Sample ID	MPI Sample ID	Amount Spiked (ng/mL)	Amount Recovered (ng/mL)	Recovery (%)
NA	Reagent Control	0.50	0.832	166
NA	Reagent Spike A	0.05	0.0565	113
NA	Reagent Spike B	0.50	0.516	103
Compost	L18099-1	0.50	0.589	118
AC 6 Soil Matrix Spike	L18099-2 Spike C	0.50	0.733	147
AC 6 Soil Matrix Spike	L18099-2 Spike D	5.0	6.51	130
AC 6 Soil	L18099-2	0.50	0.650	130
AC 6 Soil*	L18099-2 DUP	0.50	0.670	134
BA 11 Soil	L18099-3	0.50	0.719	144
BA 12 Soil	L18099-4	0.50	0.726	145
BB 13 Soil	L18099-5	0.50	0.592	118
CA 5 Soil	L18099-6	0.50	0.656	131
CA 12 Soil	L18099-7	0.50	0.595	119
CB 4 Soil	L18099-8	0.50	0.634	127
CB 14A Soil	L18099-9	0.50	0.612	122
BB 9 Soil	L18099-10	0.50	0.643	129
CA 9B Soil	L18099-11	0.50	0.609	122
CB 13 Soil	L18099-12	0.50	0.616	123
AC 13 Soil	L18099-13	0.50	0.578	116
BA 5 Soil	L18099-14	0.50	0.612	122
BB 12 Soil	L18099-15	0.50	0.628	126
STP 2 Sludge Matrix Spike	L18099-16 Spike E	0.50	0.586	117
STP 2 Sludge	L18099-16	0.50	0.553	111
STP 2 Sludge*	L18099-16 DUP	0.50	0.568	114
STP 3 Sludge	L18099-17	0.50	0.564	113
STP 4 Sludge	L18099-18	0.50	0.605	121

*Laboratory Duplicate

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July 20, 2009

Michael Hom, Environmental Engineer
Clean Water Enforcement Branch
Water Protection Division
U.S. EPA Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Re: Information Request – Section 308 of the Clean Water Act - Dalton Utilities Land Application System

Dear Mr. Hom:

Enclosed with this letter is the analytical data response of Dalton Utilities to EPA's May 20, 2009, Section 308 of the Clean Water Act request (the "Request") addressed to Mr. Don Cope, President and CEO of Dalton Utilities. The enclosures include a July 20, 2009 letter with a certification signed pursuant to the Request and the information responsive to Paragraph 3 of Enclosure A and to Enclosure C. The list of analytes in Enclosure C was revised pursuant to the June 16, 2009 meeting between representatives of Region 4 and Dalton Utilities and your June 17, 2009 email message to Mr. Cope as described in Mr. Cope's June 29, 2009 letter to you.

Please contact me if have any questions regarding the information supplied pursuant to the Request.

Sincerely,

Lee A. DeHihns, III

LAD:gba
Enclosures

LEGAL01/13110542v4

Dalton
UTILITIES

July 20, 2009

Mr. Michael Hom, Environmental Engineer
Clean Water Enforcement Branch
Water Protection Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: Information Request – Section 308 of the Clean Water Act
Dalton Utilities Land Application System (LAS) Permit No. GA02-056

Dear Mr. Hom,

Per our communication dated June 29, 2009, please find enclosed the Analytical Report for Fluorochemical Characterization of Aqueous and Solid Samples, MPI Report No. L0018099. The enclosed report details the analyses, methods, and results for the samples collected per the aforementioned Information Request.

Dalton Utilities is conducting a drinking water well survey to identify drinking water wells in the immediate vicinity of the Land Application System (LAS) that have the potential to have been impacted by the ground water coming from the LAS. Approximately 86 residents in this area are being contacted and wells used for drinking water are being sampled. Once this analysis has been conducted, we will develop an appropriate plan of action and advise you of it.

Additionally, Dalton Utilities is evaluating its composting operation. Samples have been collected and are currently being analyzed using the Toxicity Characteristic Leaching Potential (TCLP) test to determine the leaching potential, if any, of PFOA/PFOS from the finished compost. This testing is being performed on compost of different ages.

A potential source assessment is also being conducted by Dalton Utilities. As was stated in our correspondence dated July 9, 2009, Dalton Utilities has partnered with the Sustainability Division of the Georgia Department of Natural Resources (DNR) to investigate the current usage and potential levels of perfluoridated chemicals (PFCs) in the carpet manufacturing processes and the industrial discharges into our wastewater collection system. The Sustainability Division is currently preparing a scope of work.

Dalton Utilities is also scheduling a meeting of industrial facilities permitted through our Pretreatment Program to facilitate the gathering and validation of information on local PFC usage.

Further, Dalton Utilities is working with the Georgia Department of Natural Resources (DNR) to gather information on the potential impacts of PFOA/PFOS on the wildlife population, specifically deer and turkey, on the LAS. Dalton Utilities and the DNR are jointly working on a plan to obtain and analyze blood and tissue samples on the deer and turkey to determine if any consumption guidelines are warranted.

Dalton Utilities will update you as these projects proceed.

If you have any questions, please contact me at 706-529-1091 or dcope@dutil.com.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Don Cope
President & CEO

Enclosure

C: ~~Dr. Carol Couch, Georgia Environmental Protection Division (cover letter only)~~
Dr. Bert Langley, Georgia Environmental Protection Division (cover letter only)
Lee A. DeHihns, Esq.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D0A290548

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

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February 18, 2010

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Case Narrative
D0A290548

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Sample Arrival and Receipt
The following report contains the analytical results for six samples received at TestAmerica Denver on January 29, 2010, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.6°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with internal standard and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with a mid level Laboratory Control Sample (LCS). The LCS recoveries were within established control limits, with the exception of the items noted in section Analytical Comments. The low-level LCS requirement changed on January 26, 2010.

Analytical Comments
Due to internal standard failures, samples River Water Finished and Freeman Springs Raw were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 0035178. Both batches have been included in this report. 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 and 14-day/40-day holding times listed above are based on the general EPA convention for the holding time of extractable organic compounds in water and soil. Please note the sample results should be considered estimated.

The internal standard recovery for 13C2 PFDA associated with QC batch 0032159 was recovered below 53% in samples River Water Finished and Freeman Springs Raw. Upon re-extraction and reanalysis in QC batch 0035178, internal standard recovery outliers were still present in sample River Water Finished, demonstrating this anomaly is most likely due to matrix interference. Upon re-extraction and reanalysis in QC batch 0035178, internal standard recoveries were 100% in control for sample Freeman Springs Raw. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the recommended sample holding time.

The LCS/LCSD associated with QC batch 0032159 exhibited relative percent difference (RPD) data outside the QC control limits for Perfluorododecanoic acid (PFDoA). The individual LCS and LCSD recoveries were acceptable; however the LCS was recovered at the high end of the recovery limit range and the LCSD was recovered at the low end of the recovery limit range, causing the RPD to be out of control. The acceptable LCS/LCSD analyte recoveries indicate that the laboratory performed the method within acceptable guidelines; therefore, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 0032159, 0032160, and 0035178, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable mid-level LCS/LCSD analyses data.

The Standard Operating Procedure (SOP) was altered slightly for these samples in the sample prep and LC conditions. The alterations are listed below.

Solvents are now the same as they were in the original SOP and run per the following gradient: From 0 to 11 minutes, the flow rate is 0.4 mL/minute and the MeOH ramps up from 25% to 100%. From 11 to 11.01 minutes, the flow rate increases to 0.7 mL/minute and this flow is diverted from the MS. At 13 minutes the flow rate decreases back down to 0.4 mL/minute and 25% MeOH. The column then equilibrates to 14 minutes.

PFTriA and PFTeA now use 13C2 PFUnA as their internal standard instead of 13C2 PFDoA.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D0A290548

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
RIVER WATER FINISHED 01/26/10 08:37 002				
Perfluorohexanoic acid (PFHxA)	0.0033 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0031 J	0.020	ug/L	DEN -LC-0012
MILL CREEK RAW 01/26/10 10:15 005				
Perfluorohexanoic acid (PFHxA)	0.0062 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.030	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.050	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.028	0.020	ug/L	DEN -LC-0012
MILL CREEK FINISHED 01/26/10 10:18 006				
Perfluorohexanoic acid (PFHxA)	0.0073 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.028	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.024 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.018 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D0A290548

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN TestAmerica Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D0A290548

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Teresa L. Williams	002510

References:

DEN TestAmerica Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D0A290548

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LT06N	001	RIVER WATER RAW	01/26/10	08:35
LT06P	002	RIVER WATER FINISHED	01/26/10	08:37
LT06R	003	FREEMAN SPRINGS RAW	01/26/10	09:18
LT06T	004	FREEMAN SPRINGS FINISHED	01/26/10	09:22
LT06V	005	MILL CREEK RAW	01/26/10	10:15
LT06W	006	MILL CREEK FINISHED	01/26/10	10:18

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: RIVER WATER RAW

HPLC

Lot-Sample #...: D0A290548-001 **Work Order #...:** LT06N1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 08:35 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 01:37
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	106	(60 - 155)
13C4 PFOS	73	(45 - 130)
13C4 PFBA	106	(36 - 130)
13C2 PFHxA	106	(55 - 135)
18O2 PFHxS	102	(61 - 130)
13C5 PFNA	87	(54 - 132)
13C2 PFDA	68	(53 - 130)
13C2 PFUnA	63	(37 - 130)
13C2 PFDoA	57	(26 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER RAW

HPLC

Lot-Sample #...: D0A290548-001 **Work Order #...:** LT06N1AC **Matrix.....:** WATER
Date Sampled...: 01/26/10 08:35 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/04/10
Prep Batch #...: 0032160 **Analysis Time..:** 18:47
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #...: D0A290548-002 **Work Order #...:** LT06P1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 08:37 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 01:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0033 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	87	(60 - 155)
13C4 PFOS	58	(45 - 130)
13C4 PFBA	91	(36 - 130)
13C2 PFHxA	83	(55 - 135)
18O2 PFHxS	85	(61 - 130)
13C5 PFNA	72	(54 - 132)
13C2 PFDA	52 *	(53 - 130)
13C2 PFUnA	47	(37 - 130)
13C2 PFDoA	40	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #...: D0A290548-002
Date Sampled...: 01/26/10 08:37
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06P1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 18:52

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #...: D0A290548-002
Date Sampled...: 01/26/10 08:37
Prep Date.....: 02/04/10
Prep Batch #...: 0035178
Dilution Factor: 1

Work Order #...: LT06P2AA
Date Received..: 01/29/10
Analysis Date..: 02/09/10
Analysis Time..: 19:48

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0031 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	74	(60 - 155)
13C4 PFOS	62	(45 - 130)
13C4 PFBA	76	(36 - 130)
13C2 PFHxA	75	(55 - 135)
18O2 PFHxS	107	(61 - 130)
13C5 PFNA	58	(54 - 132)
13C2 PFDA	41 *	(53 - 130)
13C2 PFUnA	36 *	(37 - 130)
13C2 PFDoA	33	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #...: D0A290548-003
Date Sampled...: 01/26/10 09:18
Prep Date.....: 02/01/10
Prep Batch #...: 0032159
Dilution Factor: 1

Work Order #...: LT06R1AA
Date Received..: 01/29/10
Analysis Date..: 02/03/10
Analysis Time..: 02:07

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	83	(60 - 155)
13C4 PFOS	50	(45 - 130)
13C4 PFBA	87	(36 - 130)
13C2 PFHxA	83	(55 - 135)
18O2 PFHxS	81	(61 - 130)
13C5 PFNA	62	(54 - 132)
13C2 PFDA	47 *	(53 - 130)
13C2 PFUnA	44	(37 - 130)
13C2 PFDoA	39	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #...: D0A290548-003 **Work Order #...:** LT06R1AC **Matrix.....:** WATER
Date Sampled...: 01/26/10 09:18 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/04/10
Prep Batch #...: 0032160 **Analysis Time..:** 18:57
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #...: D0A290548-003
Date Sampled...: 01/26/10 09:18
Prep Date.....: 02/04/10
Prep Batch #...: 0035178
Dilution Factor: 1

Work Order #...: LT06R2AA
Date Received..: 01/29/10
Analysis Date..: 02/09/10
Analysis Time..: 20:03

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	76	(60 - 155)
13C4 PFOS	87	(45 - 130)
13C4 PFBA	75	(36 - 130)
13C2 PFHxA	77	(55 - 135)
18O2 PFHxS	108	(61 - 130)
13C5 PFNA	72	(54 - 132)
13C2 PFDA	58	(53 - 130)
13C2 PFUnA	55	(37 - 130)
13C2 PFDoA	47	(26 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS FINISHED

HPLC

Lot-Sample #...: D0A290548-004
Date Sampled...: 01/26/10 09:22
Prep Date.....: 02/01/10
Prep Batch #...: 0032159
Dilution Factor: 1

Work Order #...: LT06T1AA
Date Received..: 01/29/10
Analysis Date..: 02/03/10
Analysis Time..: 02:22

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	92	(60 - 155)
13C4 PFOS	75	(45 - 130)
13C4 PFBA	92	(36 - 130)
13C2 PFHxA	85	(55 - 135)
18O2 PFHxS	89	(61 - 130)
13C5 PFNA	74	(54 - 132)
13C2 PFDA	74	(53 - 130)
13C2 PFUnA	76	(37 - 130)
13C2 PFDoA	78	(26 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS FINISHED

HPLC

Lot-Sample #...: D0A290548-004
Date Sampled...: 01/26/10 09:22
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06T1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 19:02

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	49	(37 - 130)

Dalton Utilities

Client Sample ID: MILL CREEK RAW

HPLC

Lot-Sample #...: D0A290548-005 **Work Order #...:** LT06V1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 10:15 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 02:37
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0062 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.030**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.050**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.028**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	84	(60 - 155)
13C4 PFOS	61	(45 - 130)
13C4 PFBA	89	(36 - 130)
13C2 PFHxA	85	(55 - 135)
18O2 PFHxS	86	(61 - 130)
13C5 PFNA	69	(54 - 132)
13C2 PFDA	56	(53 - 130)
13C2 PFUnA	49	(37 - 130)
13C2 PFDoA	39	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: MILL CREEK RAW

HPLC

Lot-Sample #...: D0A290548-005
Date Sampled...: 01/26/10 10:15
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06V1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 19:07

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	61	(37 - 130)

Dalton Utilities

Client Sample ID: MILL CREEK FINISHED

HPLC

Lot-Sample #...: D0A290548-006 Work Order #...: LT06W1AA Matrix.....: WATER
Date Sampled...: 01/26/10 10:18 Date Received..: 01/29/10
Prep Date.....: 02/01/10 Analysis Date..: 02/03/10
Prep Batch #...: 0032159 Analysis Time..: 02:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0073 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.028**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.024 J**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.018 J**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	91	(60 - 155)
13C4 PFOS	75	(45 - 130)
13C4 PFBA	92	(36 - 130)
13C2 PFHxA	86	(55 - 135)
18O2 PFHxS	88	(61 - 130)
13C5 PFNA	81	(54 - 132)
13C2 PFDA	72	(53 - 130)
13C2 PFUnA	67	(37 - 130)
13C2 PFDoA	52	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: MILL CREEK FINISHED

HPLC

Lot-Sample #...: D0A290548-006
Date Sampled...: 01/26/10 10:18
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06W1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 19:12

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(37 - 130)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D0A290548

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

Michelle A. Johnston
Project Manager

February 18, 2010

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Case Narrative
D0A290548

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for six samples received at TestAmerica Denver on January 29, 2010, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.6°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with internal standard and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with a mid level Laboratory Control Sample (LCS). The LCS recoveries were within established control limits, with the exception of the items noted in section Analytical Comments. The low-level LCS requirement changed on January 26, 2010.

Analytical Comments
Due to internal standard failures, samples River Water Finished and Freeman Springs Raw were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 0035178. Both batches have been included in this report. 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 and 14-day/40-day holding times listed above are based on the general EPA convention for the holding time of extractable organic compounds in water and soil. Please note the sample results should be considered estimated.

The internal standard recovery for 13C2 PFDA associated with QC batch 0032159 was recovered below 53% in samples River Water Finished and Freeman Springs Raw. Upon re-extraction and reanalysis in QC batch 0035178, internal standard recovery outliers were still present in sample River Water Finished, demonstrating this anomaly is most likely due to matrix interference. Upon re-extraction and reanalysis in QC batch 0035178, internal standard recoveries were 100% in control for sample Freeman Springs Raw. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the recommended sample holding time.

The LCS/LCSD associated with QC batch 0032159 exhibited relative percent difference (RPD) data outside the QC control limits for Perfluorododecanoic acid (PFDoA). The individual LCS and LCSD recoveries were acceptable; however the LCS was recovered at the high end of the recovery limit range and the LCSD was recovered at the low end of the recovery limit range, causing the RPD to be out of control. The acceptable LCS/LCSD analyte recoveries indicate that the laboratory performed the method within acceptable guidelines; therefore, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 0032159, 0032160, and 0035178, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable mid-level LCS/LCSD analyses data.

The Standard Operating Procedure (SOP) was altered slightly for these samples in the sample prep and LC conditions. The alterations are listed below.

Solvents are now the same as they were in the original SOP and run per the following gradient: From 0 to 11 minutes, the flow rate is 0.4 mL/minute and the MeOH ramps up from 25% to 100%. From 11 to 11.01 minutes, the flow rate increases to 0.7 mL/minute and this flow is diverted from the MS. At 13 minutes the flow rate decreases back down to 0.4 mL/minute and 25% MeOH. The column then equilibrates to 14 minutes.

PFTriA and PFTeA now use 13C2 PFUnA as their internal standard instead of 13C2 PFDoA.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D0A290548

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
RIVER WATER FINISHED 01/26/10 08:37 002				
Perfluorohexanoic acid (PFHxA)	0.0033 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0031 J	0.020	ug/L	DEN -LC-0012
MILL CREEK RAW 01/26/10 10:15 005				
Perfluorohexanoic acid (PFHxA)	0.0062 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.030	0.020	ug/L	DEN -LC-0012
Perfluoróoctanesulfonate	0.050	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.028	0.020	ug/L	DEN -LC-0012
MILL CREEK FINISHED 01/26/10 10:18 006				
Perfluorohexanoic acid (PFHxA)	0.0073 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.028	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.024 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.018 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D0A290548

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN TestAmerica Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D0A290548

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Teresa L. Williams	002510

References:

DEN TestAmerica Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D0A290548

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LT06N	001	RIVER WATER RAW	01/26/10	08:35
LT06P	002	RIVER WATER FINISHED	01/26/10	08:37
LT06R	003	FREEMAN SPRINGS RAW	01/26/10	09:18
LT06T	004	FREEMAN SPRINGS FINISHED	01/26/10	09:22
LT06V	005	MILL CREEK RAW	01/26/10	10:15
LT06W	006	MILL CREEK FINISHED	01/26/10	10:18

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: RIVER WATER RAW

HPLC

Lot-Sample #...: D0A290548-001 **Work Order #...:** LT06N1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 08:35 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 01:37
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	106	(60 - 155)
13C4 PFOS	73	(45 - 130)
13C4 PFBA	106	(36 - 130)
13C2 PFHxA	106	(55 - 135)
18O2 PFHxS	102	(61 - 130)
13C5 PFNA	87	(54 - 132)
13C2 PFDA	68	(53 - 130)
13C2 PFUnA	63	(37 - 130)
13C2 PFDoA	57	(26 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER RAW

HPLC

Lot-Sample #...: D0A290548-001
Date Sampled...: 01/26/10 08:35
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06N1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 18:47

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #...: D0A290548-002 **Work Order #...:** LT06P1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 08:37 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 01:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0033 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	87	(60 - 155)
13C4 PFOS	58	(45 - 130)
13C4 PFBA	91	(36 - 130)
13C2 PFHxA	83	(55 - 135)
18O2 PFHxS	85	(61 - 130)
13C5 PFNA	72	(54 - 132)
13C2 PFDA	52 *	(53 - 130)
13C2 PFUnA	47	(37 - 130)
13C2 PFDoA	40	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #...: D0A290548-002
Date Sampled...: 01/26/10 08:37
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06P1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 18:52

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: RIVER WATER FINISHED

HPLC

Lot-Sample #...: D0A290548-002
Date Sampled...: 01/26/10 08:37
Prep Date.....: 02/04/10
Prep Batch #...: 0035178
Dilution Factor: 1

Work Order #...: LT06P2AA
Date Received..: 01/29/10
Analysis Date..: 02/09/10
Analysis Time..: 19:48

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0031 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	74	(60 - 155)
13C4 PFOS	62	(45 - 130)
13C4 PFBA	76	(36 - 130)
13C2 PFHxA	75	(55 - 135)
18O2 PFHxS	107	(61 - 130)
13C5 PFNA	58	(54 - 132)
13C2 PFDA	41 *	(53 - 130)
13C2 PFUnA	36 *	(37 - 130)
13C2 PFDoA	33	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #...: D0A290548-003 **Work Order #...:** LT06R1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 09:18 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 02:07
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	83	(60 - 155)
13C4 PFOS	50	(45 - 130)
13C4 PFBA	87	(36 - 130)
13C2 PFHxA	83	(55 - 135)
18O2 PFHxS	81	(61 - 130)
13C5 PFNA	62	(54 - 132)
13C2 PFDA	47 *	(53 - 130)
13C2 PFUnA	44	(37 - 130)
13C2 PFDoA	39	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #...: D0A290548-003 **Work Order #...:** LT06R1AC **Matrix.....:** WATER
Date Sampled...: 01/26/10 09:18 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/04/10
Prep Batch #...: 0032160 **Analysis Time..:** 18:57
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS RAW

HPLC

Lot-Sample #...: D0A290548-003 **Work Order #...:** LT06R2AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 09:18 **Date Received..:** 01/29/10
Prep Date.....: 02/04/10 **Analysis Date..:** 02/09/10
Prep Batch #...: 0035178 **Analysis Time..:** 20:03
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	76	(60 - 155)
13C4 PFOS	87	(45 - 130)
13C4 PFBA	75	(36 - 130)
13C2 PFHxA	77	(55 - 135)
18O2 PFHxS	108	(61 - 130)
13C5 PFNA	72	(54 - 132)
13C2 PFDA	58	(53 - 130)
13C2 PFUnA	55	(37 - 130)
13C2 PFDoA	47	(26 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS FINISHED

HPLC

Lot-Sample #...: D0A290548-004 **Work Order #...:** LT06T1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 09:22 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 02:22
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorooctanesulfonate	ND	0.030	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	92	(60 - 155)
13C4 PFOS	75	(45 - 130)
13C4 PFBA	92	(36 - 130)
13C2 PFHxA	85	(55 - 135)
18O2 PFHxS	89	(61 - 130)
13C5 PFNA	74	(54 - 132)
13C2 PFDA	74	(53 - 130)
13C2 PFUnA	76	(37 - 130)
13C2 PFDoA	78	(26 - 130)

Dalton Utilities

Client Sample ID: FREEMAN SPRINGS FINISHED

HPLC

Lot-Sample #...: D0A290548-004
Date Sampled...: 01/26/10 09:22
Prep Date.....: 02/01/10
Prep Batch #...: 0032160
Dilution Factor: 1

Work Order #...: LT06T1AC
Date Received..: 01/29/10
Analysis Date..: 02/04/10
Analysis Time..: 19:02

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	49	(37 - 130)

Dalton Utilities

Client Sample ID: MILL CREEK RAW

HPLC

Lot-Sample #...: D0A290548-005
Date Sampled...: 01/26/10 10:15
Prep Date.....: 02/01/10
Prep Batch #...: 0032159
Dilution Factor: 1

Work Order #...: LT06V1AA
Date Received..: 01/29/10
Analysis Date..: 02/03/10
Analysis Time..: 02:37

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0062 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.030**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.050**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.028**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	84	(60 - 155)
13C4 PFOS	61	(45 - 130)
13C4 PFBA	89	(36 - 130)
13C2 PFHxA	85	(55 - 135)
18O2 PFHxS	86	(61 - 130)
13C5 PFNA	69	(54 - 132)
13C2 PFDA	56	(53 - 130)
13C2 PFUnA	49	(37 - 130)
13C2 PFDoA	39	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: MILL CREEK RAW

HPLC

Lot-Sample #...: D0A290548-005 **Work Order #...:** LT06V1AC **Matrix.....:** WATER
Date Sampled...: 01/26/10 10:15 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/04/10
Prep Batch #...: 0032160 **Analysis Time..:** 19:07
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	61	(37 - 130)

Dalton Utilities

Client Sample ID: MILL CREEK FINISHED

HPLC

Lot-Sample #...: D0A290548-006 **Work Order #...:** LT06W1AA **Matrix.....:** WATER
Date Sampled...: 01/26/10 10:18 **Date Received..:** 01/29/10
Prep Date.....: 02/01/10 **Analysis Date..:** 02/03/10
Prep Batch #...: 0032159 **Analysis Time..:** 02:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0073 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.028**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.024 J**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.018 J**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	91	(60 - 155)
13C4 PFOS	75	(45 - 130)
13C4 PFBA	92	(36 - 130)
13C2 PFHxA	86	(55 - 135)
18O2 PFHxS	88	(61 - 130)
13C5 PFNA	81	(54 - 132)
13C2 PFDA	72	(53 - 130)
13C2 PFUnA	67	(37 - 130)
13C2 PFDoA	52	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: MILL CREEK FINISHED

HPLC

Lot-Sample #...:	D0A290548-006	**Work Order #...:**	LT06W1AC	**Matrix.....:**	WATER
Date Sampled...:	01/26/10 10:18	**Date Received..:**	01/29/10		
Prep Date.....:	02/01/10	**Analysis Date..:**	02/04/10		
Prep Batch #...:	0032160	**Analysis Time..:**	19:12		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(37 - 130)

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Dalton 308 Response July 2
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October 16, 2009

BY COURIER

Michael Hom, Environmental Engineer
Clean Water Enforcement Branch
Water Protection Division
U.S. EPA Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

2009 OCT 20 A 10 22

Re: October 6, 2009, Information Request – Section 308 of the Clean Water Act - Dalton Utilities Land Application System

Dear Mr. Hom:

Enclosed with this letter is information from Dalton Utilities in response to EPA's October 6, 2009, Section 308 of the Clean Water Act request (the "Request") addressed to Mr. Don Cope, President and CEO of Dalton Utilities. The enclosures include two October 14, 2009, letters with certifications signed pursuant to the Request and the information separately responsive to Paragraphs 2 and 4 of Enclosure A.

Please contact me if have any questions regarding the information supplied pursuant to the Request.

Sincerely,

Lee A. DeHihns, III

LAD:gba
Enclosures

LEGAL02/31578147v1

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Dalton
UTILITIES

October 14, 2009

2009 OCT 20 A 10 22

Mr. Michael Hom, Environmental Engineer
Clean Water Enforcement Branch
Water Protection Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: Private Drinking Water Well Survey Results

Dear Mr. Hom,

In accordance with the Information Request pursuant to Section 308 of the Clean Water Act dated October 6, 2009, Dalton Utilities is submitting the final analytical results received to date for the Private Drinking Water Well Survey. The results are contained in Attachments A, B, C, D, E, F, G, H, I, J, K, and L which are provided herein as bound reports titled Test America Laboratories, Inc. Analytical Report on Perfluorocarbon (PFC) Analysis Lot # D9H110160 which contains 642 pages, Lot # D9H120160 which contains 230 pages, Lot # D9H150176 which contains 473 pages, Lot # D9H220152 which contains 480 pages, Lot # D9H250123 which contains 326 pages, Lot # D9H260198 which contains 331 pages, Lot # D9I010246 which contains 700 pages, Lot # D9I020235 which contains 387 pages, Lot # D9I040249 which contains 859 pages, Lot # D9I100275 which contains 276 pages, Lot # D9I120206 which contains 503 pages, and Lot # D9I150267 which contains 277 pages, respectively.

As stipulated in the aforementioned 308 letter, Dalton Utilities will provide additional results on the private drinking water well survey within five days of receiving the final analytical reports.

If you have any questions, please contact me at 706-529-1091 or dcope@dutil.com.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate.

1200 V.D. Parrott, Jr. Parkway • P.O. Box 868 • Dalton, GA 30722 • 706.278.1313 • 706.278.7230 Fax • www.cun.com

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Mr. Michael Hom
October 14, 2009

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D0A220629

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

Michelle A. Johnston
Project Manager

February 10, 2010

4955 Yarrow Street Arvada, CO 80002 **tel** 303.736.0100 **fax** 303.431.7171 **www.testamericainc.com**

Case Narrative
D0A220629

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Sample Arrival and Receipt
The following report contains the analytical results for four samples received at TestAmerica Denver on January 22, 2010, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 3.7°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with internal standard and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with mid level Laboratory Control Samples (LCS). The LCS recoveries were within established control limits, with the exception of the items noted in section Analytical Comments. The low-level LCS requirement changed on January 26, 2010.

Analytical Comments
The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all four samples to obtain a pH of >12 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for MeFOSA.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, sample Confluent had to be analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required.

Due to high percent recoveries in the mid-level LCS/LCSD associated with batch 0025466, all four samples were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batches 0032537 and 0034123. All three batches have been included in this report. 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 and 14-day/40-day holding times listed above are based on the general EPA convention for the holding time of extractable organic compounds in water and soil. Please note the sample results should be considered estimated.

The internal standard recovery for 13C2 PFDA associated with QC batch 0032537 was recovered below 50% in sample Fox. This is the second extraction of this sample and the sample was reanalyzed with similar results; therefore, corrective action is deemed unnecessary.

On January 26, 2010, the extraction Standard Operating Procedure (SOP) DV-OP-0019 was revised to remove the requirement for a low-level LCS. This means batches 0025463, 0025466, 0032537, and 0034123 only had a mid-level LCS or mid-level LCS/LCSD.

The mid-level LCS/LCSD associated with QC batch 0025466 exhibited percent recoveries above the QC control limits for several compounds. This is an indicator that data may be biased high. Upon re-extraction and reanalysis in QC batches 0032537 and 0034123, percent recoveries were 100% in control. All three sets of data have been provided, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The method required MS/MSD could not be performed for QC batches 0025463, 0025466, 0032537, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable mid-level LCS/LCSD analyses data.

Percent recoveries and RPD data could not be calculated for the laboratory generated MS/MSD associated with QC batch 0034123, because the sample was diluted beyond the ability to quantitate recoveries. The acceptable mid-level LCS analysis data indicated the analytical system was operating within control.

The Standard Operating Procedure (SOP) was altered slightly for these samples in the sample prep and LC conditions. The alterations are listed below.

Solvents are now the same as they were in the original SOP and run per the following gradient: From 0 to 11 minutes, the flow rate is 0.4 mL/minute and the MeOH ramps up from 25% to 100%. From 11 to 11.01 minutes, the flow rate increases to 0.7 mL/minute and this flow is diverted from the MS. At 13 minutes the flow rate decreases back down to 0.4 mL/minute and 25% MeOH. The column then equilibrates to 14 minutes.

PFTriA and PFTeA now use 13C2 PFUnA as their internal standard instead of 13C2 PFDoA.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D0A220629

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TILTON 01/21/10 09:04 001				
Perfluoroheptanoic acid (PFHpA	0.050	0.030	ug/L	DEN -LC-0012
Perfluorononanoic acid (PFNA)	0.026 J	0.040	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.14	0.030	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.029 J	0.030	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.054	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.090	0.020	ug/L	DEN -LC-0012
Perfluorodecanoic acid (PFDA)	0.036	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.21	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.31	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.16	0.020	ug/L	DEN -LC-0012
Perfluoroheptanoic acid (PFHpA	0.051	0.030	ug/L	DEN -LC-0012
Perfluorononanoic acid (PFNA)	0.029 J	0.040	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.12	0.030	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.029 J	0.030	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.048	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.082	0.020	ug/L	DEN -LC-0012
Perfluorodecanoic acid (PFDA)	0.042	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.21	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.36	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.15	0.020	ug/L	DEN -LC-0012
Perfluorooctane sulfonamide (F	0.040 J	0.050	ug/L	DEN -LC-0012
FOX 01/21/10 09:34 002				
Perfluoropentanoic acid (PFPA)	0.029 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.016 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.0087 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.016 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.019 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.017 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.014 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.0091 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.018 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.018 J	0.020	ug/L	DEN -LC-0012
BROWNS 01/21/10 09:48 003				
Perfluoropentanoic acid (PFPA)	0.012 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0080 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.0093 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.026 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.015 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0065 J	0.020	ug/L	DEN -LC-0012

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D0A220629

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
BROWNS 01/21/10 09:48 003				
Perfluorobutane sulfonate (PFB	0.010 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.019 J	0.030	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.013 J	0.020	ug/L	DEN -LC-0012
CONFLUENT 01/21/10 10:25 004				
Perfluoroheptanoic acid (PFHpA	0.090 J	0.15	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.24	0.15	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.047 J	0.15	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.11	0.10	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.15	0.10	ug/L	DEN -LC-0012
Perfluorodecanoic acid (PFDA)	0.067 J	0.10	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.47	0.10	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.59	0.15	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.26	0.10	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.17 J	0.30	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.11 J	0.20	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.13 J	0.20	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.47	0.20	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.56	0.30	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.25	0.20	ug/L	DEN -LC-0012
Perfluorooctane sulfonamide (F	0.11	0.050	ug/L	DEN -LC-0012

METHODS SUMMARY

D0A220629

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN TestAmerica Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D0A220629

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Teresa L. Williams	002510

References:

DEN TestAmerica Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D0A220629

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LTMRQ	001	TILTON	01/21/10	09:04
LTMRV	002	FOX	01/21/10	09:34
LTMRW	003	BROWNS	01/21/10	09:48
LTMRX	004	CONFLUENT	01/21/10	10:25

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: TILTON

HPLC

Lot-Sample #...: D0A220629-001
Date Sampled...: 01/21/10 09:04
Prep Date.....: 01/25/10
Prep Batch #...: 0025466
Dilution Factor: 1

Work Order #...: LTMRQ1AA
Date Received..: 01/22/10
Analysis Date..: 02/02/10
Analysis Time..: 10:12

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	0.050	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	0.026 J	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	0.14	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	0.029 J	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	0.054	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	0.090	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	0.036	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	0.21	0.020	ug/L	0.0082
Perfluorooctanesulfonate	0.31	0.030	ug/L	0.013
Perfluorooctanoic Acid	0.16	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	122	(60 - 155)
13C4 PFOS	93	(45 - 130)
13C4 PFBA	108	(36 - 130)
13C2 PFHxA	105	(55 - 135)
18O2 PFHxS	113	(61 - 130)
13C5 PFNA	108	(54 - 132)
13C2 PFDA	91	(53 - 130)
13C2 PFUnA	76	(37 - 130)
13C2 PFDoA	70	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: TILTON

HPLC

Lot-Sample #...: D0A220629-001
Date Sampled...: 01/21/10 09:04
Prep Date.....: 01/25/10
Prep Batch #...: 0025463
Dilution Factor: 1

Work Order #...: LTMRQ1AC
Date Received..: 01/22/10
Analysis Date..: 02/04/10
Analysis Time..: 18:07

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	0.040 J	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(37 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: TILTON

HPLC

Lot-Sample #...: D0A220629-001
Date Sampled...: 01/21/10 09:04
Prep Date.....: 02/01/10
Prep Batch #...: 0032537
Dilution Factor: 1

Work Order #...: LTMRQ2AA
Date Received..: 01/22/10
Analysis Date..: 02/02/10
Analysis Time..: 23:52

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	0.051	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	0.029 J	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	0.12	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	0.029 J	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	0.048	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	0.082	0.020	ug/L	0.0029
Perfluorodecanoic acid (PFDA)	0.042	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	0.21	0.020	ug/L	0.0082
Perfluorooctanesulfonate	0.36	0.030	ug/L	0.013
Perfluorooctanoic Acid	0.15	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	94	(60 - 155)
13C4 PFOS	61	(45 - 130)
13C4 PFBA	98	(36 - 130)
13C2 PFHxA	90	(55 - 135)
18O2 PFHxS	90	(61 - 130)
13C5 PFNA	77	(54 - 132)
13C2 PFDA	56	(53 - 130)
13C2 PFUnA	49	(37 - 130)
13C2 PFDoA	49	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: FOX

HPLC

Lot-Sample #...: D0A220629-002
Date Sampled...: 01/21/10 09:34
Prep Date.....: 01/25/10
Prep Batch #...: 0025466
Dilution Factor: 1

Work Order #...: LTMRV1AA
Date Received..: 01/22/10
Analysis Date..: 02/02/10
Analysis Time..: 10:42

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	**0.029 J**	**0.030**	**ug/L**	**0.011**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.016 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.0087 J**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.016 J**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.019 J**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	122	(60 - 155)
13C4 PFOS	84	(45 - 130)
13C4 PFBA	111	(36 - 130)
13C2 PFHxA	104	(55 - 135)
18O2 PFHxS	114	(61 - 130)
13C5 PFNA	105	(54 - 132)
13C2 PFDA	80	(53 - 130)
13C2 PFUnA	71	(37 - 130)
13C2 PFDoA	63	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: FOX

HPLC

Lot-Sample #...: D0A220629-002
Date Sampled...: 01/21/10 09:34
Prep Date.....: 01/25/10
Prep Batch #...: 0025463
Dilution Factor: 1

Work Order #...: LTMRV1AC
Date Received..: 01/22/10
Analysis Date..: 02/04/10
Analysis Time..: 18:12

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(37 - 130)

Dalton Utilities

Client Sample ID: FOX

HPLC

Lot-Sample #...: D0A220629-002
Date Sampled...: 01/21/10 09:34
Prep Date.....: 02/01/10
Prep Batch #...: 0032537
Dilution Factor: 1

Work Order #...: LTMRV2AA
Date Received..: 01/22/10
Analysis Date..: 02/05/10
Analysis Time..: 15:33

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	**0.017 J**	**0.030**	**ug/L**	**0.011**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.014 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.0091 J**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.018 J**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.018 J**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	74	(60 - 155)
13C4 PFOS	46	(45 - 130)
13C4 PFBA	74	(36 - 130)
13C2 PFHxA	69	(55 - 135)
18O2 PFHxS	68	(61 - 130)
13C5 PFNA	64	(54 - 132)
13C2 PFDA	43 *	(53 - 130)
13C2 PFUnA	37	(37 - 130)
13C2 PFDoA	32	(26 - 130)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: BROWNS

HPLC

Lot-Sample #...: D0A220629-003
Date Sampled...: 01/21/10 09:48
Prep Date.....: 01/25/10
Prep Batch #...: 0025466
Dilution Factor: 1

Work Order #...: LTMRW1AA
Date Received..: 01/22/10
Analysis Date..: 02/02/10
Analysis Time..: 10:57

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	**0.012 J**	**0.030**	**ug/L**	**0.011**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0080 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.0093 J**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.026 J**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.015 J**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	116	(60 - 155)
13C4 PFOS	65	(45 - 130)
13C4 PFBA	105	(36 - 130)
13C2 PFHxA	104	(55 - 135)
18O2 PFHxS	109	(61 - 130)
13C5 PFNA	95	(54 - 132)
13C2 PFDA	58	(53 - 130)
13C2 PFUnA	46	(37 - 130)
13C2 PFDoA	41	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: BROWNS

HPLC

Lot-Sample #...: D0A220629-003
Date Sampled...: 01/21/10 09:48
Prep Date.....: 01/25/10
Prep Batch #...: 0025463
Dilution Factor: 1

Work Order #...: LTMRW1AC
Date Received..: 01/22/10
Analysis Date..: 02/04/10
Analysis Time..: 18:17

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	43	(37 - 130)

Dalton Utilities

Client Sample ID: BROWNS

HPLC

Lot-Sample #...: D0A220629-003
Date Sampled...: 01/21/10 09:48
Prep Date.....: 02/01/10
Prep Batch #...: 0032537
Dilution Factor: 1

Work Order #...: LTMRW2AA
Date Received..: 01/22/10
Analysis Date..: 02/03/10
Analysis Time..: 00:22

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.030	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.040	ug/L	0.017
Perfluorododecanoic acid (PFDoA)	ND	0.030	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.040	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.030	ug/L	0.015
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	**0.0065 J**	**0.020**	**ug/L**	**0.0029**
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorobutane sulfonate (PFBS)	**0.010 J**	**0.020**	**ug/L**	**0.0082**
Perfluorooctanesulfonate	**0.019 J**	**0.030**	**ug/L**	**0.013**
Perfluorooctanoic Acid	**0.013 J**	**0.020**	**ug/L**	**0.0098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	103	(60 - 155)
13C4 PFOS	78	(45 - 130)
13C4 PFBA	100	(36 - 130)
13C2 PFHxA	94	(55 - 135)
18O2 PFHxS	96	(61 - 130)
13C5 PFNA	90	(54 - 132)
13C2 PFDA	74	(53 - 130)
13C2 PFUnA	64	(37 - 130)
13C2 PFDoA	59	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: CONFLUENT

HPLC

Lot-Sample #...: D0A220629-004
Date Sampled...: 01/21/10 10:25
Prep Date.....: 01/25/10
Prep Batch #...: 0025466
Dilution Factor: 5

Work Order #...: LTMRX1AA
Date Received..: 01/22/10
Analysis Date..: 02/02/10
Analysis Time..: 11:12

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	0.090 J	0.15	ug/L	0.066
Perfluorononanoic acid (PFNA)	ND	0.20	ug/L	0.087
Perfluorododecanoic acid (PFDoA)	ND	0.15	ug/L	0.075
Perfluorotridecanoic acid (PFTriA)	ND	0.20	ug/L	0.089
Perfluorotetradecanoic acid (PFTeA)	ND	0.15	ug/L	0.073
Perfluoropentanoic acid (PFPA)	0.24	0.15	ug/L	0.055
Perfluorohexane sulfonate (PFHxS)	0.047 J	0.15	ug/L	0.035
Perfluorobutanoic acid (PFBA)	0.11	0.10	ug/L	0.049
Perfluorohexanoic acid (PFHxA)	0.15	0.10	ug/L	0.015
Perfluorodecanoic acid (PFDA)	0.067 J	0.10	ug/L	0.039
Perfluoroundecanoic acid (PFUnA)	ND	0.10	ug/L	0.034
Perfluorobutane sulfonate (PFBS)	0.47	0.10	ug/L	0.041
Perfluorooctanesulfonate	0.59	0.15	ug/L	0.067
Perfluorooctanoic Acid	0.26	0.10	ug/L	0.049

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	127	(60 - 155)
13C4 PFOS	122	(45 - 130)
13C4 PFBA	114	(36 - 130)
13C2 PFHxA	108	(55 - 135)
18O2 PFHxS	123	(61 - 130)
13C5 PFNA	126	(54 - 132)
13C2 PFDA	121	(53 - 130)
13C2 PFUnA	116	(37 - 130)
13C2 PFDoA	116	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: CONFLUENT

HPLC

Lot-Sample #...: D0A220629-004
Date Sampled...: 01/21/10 10:25
Prep Date.....: 01/25/10
Prep Batch #...: 0025463
Dilution Factor: 1

Work Order #...: LTMRX1AC
Date Received..: 01/22/10
Analysis Date..: 02/04/10
Analysis Time..: 18:22

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	0.11	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	50	(37 - 130)

Dalton Utilities

Client Sample ID: CONFLUENT

HPLC

Lot-Sample #...: D0A220629-004 Work Order #...: LTMRX2AA Matrix.....: WATER
Date Sampled...: 01/21/10 10:25 Date Received..: 01/22/10
Prep Date.....: 02/03/10 Analysis Date..: 02/05/10
Prep Batch #...: 0034123 Analysis Time..: 06:18
Dilution Factor: 10

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoroheptanoic acid (PFHpA)	ND	0.30	ug/L	0.13
Perfluorononanoic acid (PFNA)	ND	0.40	ug/L	0.17
Perfluorododecanoic acid (PFDoA)	ND	0.30	ug/L	0.15
Perfluorotridecanoic acid (PFTriA)	ND	0.40	ug/L	0.18
Perfluorotetradecanoic acid (PFTeA)	ND	0.30	ug/L	0.15
Perfluoropentanoic acid (PFPA)	**0.17 J**	**0.30**	**ug/L**	**0.11**
Perfluorohexane sulfonate (PFHxS)	ND	0.30	ug/L	0.070
Perfluorobutanoic acid (PFBA)	**0.11 J**	**0.20**	**ug/L**	**0.098**
Perfluorohexanoic acid (PFHxA)	**0.13 J**	**0.20**	**ug/L**	**0.029**
Perfluorodecanoic acid (PFDA)	ND	0.20	ug/L	0.078
Perfluoroundecanoic acid (PFUnA)	ND	0.20	ug/L	0.069
Perfluorobutane sulfonate (PFBS)	**0.47**	**0.20**	**ug/L**	**0.082**
Perfluorooctanesulfonate	**0.56**	**0.30**	**ug/L**	**0.13**
Perfluorooctanoic Acid	**0.25**	**0.20**	**ug/L**	**0.098**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(60 - 155)
13C4 PFOS	100	(45 - 130)
13C4 PFBA	106	(36 - 130)
13C2 PFHxA	103	(55 - 135)
18O2 PFHxS	97	(61 - 130)
13C5 PFNA	105	(54 - 132)
13C2 PFDA	105	(53 - 130)
13C2 PFUnA	104	(37 - 130)
13C2 PFDoA	105	(26 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

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October 16, 2009

BY COURIER

2009 OCT 20 A 10: 22

Michael Hom, Environmental Engineer
Clean Water Enforcement Branch
Water Protection Division
U.S. EPA Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Re: October 6, 2009, Information Request – Section 308 of the Clean Water Act - Dalton Utilities Land Application System

Dear Mr. Hom:

Enclosed with this letter is information from Dalton Utilities in response to EPA's October 6, 2009, Section 308 of the Clean Water Act request (the "Request") addressed to Mr. Don Cope, President and CEO of Dalton Utilities. The enclosures include two October 14, 2009, letters with certifications signed pursuant to the Request and the information separately responsive to Paragraphs 2 and 4 of Enclosure A.

Please contact me if have any questions regarding the information supplied pursuant to the Request.

Sincerely,

Lee A. DeHihns, III

LAD:gba
Enclosures

LEGAL02/31578197v1

Dalton
UTILITIES

2009 OCT 20 A 10: 22

October 14, 2009

Mr. Michael Hom, Environmental Engineer
Clean Water Enforcement Branch
Water Protection Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: Private Drinking Water Well Survey Results

Dear Mr. Hom,

In accordance with the Information Request pursuant to Section 308 of the Clean Water Act dated October 6, 2009, Dalton Utilities is submitting the final analytical results received to date for the Private Drinking Water Well Survey. The results are contained in Attachments A, B, C, D, E, F, G, H, I, J, K, and L which are provided herein as bound reports titled Test America Laboratories, Inc. Analytical Report on Perfluorocarbon (PFC) Analysis Lot # D9H110160 which contains 642 pages, Lot # D9H120160 which contains 230 pages, Lot # D9H150176 which contains 473 pages, Lot # D9H220152 which contains 480 pages, Lot # D9H250123 which contains 326 pages, Lot # D9H260198 which contains 331 pages, Lot # D9I010246 which contains 700 pages, Lot # D9I020235 which contains 387 pages, Lot # D9I040249 which contains 859 pages, Lot # D9I100275 which contains 276 pages, Lot # D9I120206 which contains 503 pages, and Lot # D9I150267 which contains 277 pages, respectively.

As stipulated in the aforementioned 308 letter, Dalton Utilities will provide additional results on the private drinking water well survey within five days of receiving the final analytical reports.

If you have any questions, please contact me at 706-529-1091 or dcope@dutil.com.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate,

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and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Don Cope
President & CEO

Attachments (12)

C: Dr. Carol Couch, Georgia Environmental Protection Division (cover letter only)
Dr. Marlin Gottschalk, Sustainability Division Georgia Department of Natural Resources (cover letter only)
Dr. Bert Langley, Georgia Environmental Protection Division (cover letter only)
Lee A. DeHihns, Esq.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis
Private Wells

Lot #: D9H110160

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

Michelle A. Johnston
Project Manager

August 28, 2009

4955 Yarrow Street Arvada, CO 80002 **tel** 303.736.0100 **fax** 303.431.7171 **www.testamericainc.com**

Case Narrative
D9H110160

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for ten water samples received at TestAmerica Denver on August 11, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 0.8°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments
Please note during the FOSA extraction process samples #2 798 TARVIN RD, #3 797 TARVIN RD, #4 682 TARVIN RD, #5 479 BRACKETT RIDGE RD, #9 1204 BRACKETT RIDGE RD, and #10 135 ACORN RD clogged the cartridge; therefore, the organic preparation chemist had to

use two cartridges for each of these samples. The two cartridges for each sample were eluted and the extracts were n-evaped down to the correct volume.

The Standard Operating Procedure (SOP) was altered slightly for these ten samples in the sample preparation for FOSA. Sodium hydroxide was added to all ten samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

Due to low internal standard recoveries in the original analyses, samples #1 7995 TARVIN RD, #2 798 TARVIN RD, #4 682 TARVIN RD, #5 479 BRACKETT RIDGE RD, and #7 483 BRACKETT RIDGE RD, were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 9232233, 9231231, or 9231216. Both sets of data are included in this report. Please note the sample results should be considered estimated.

The internal standard recoveries for 13C2 PFDoA were recovered below 50% in samples #1 7995 TARVIN RD and #10 135 ACORN RD in QC batch 9225453. Upon re-extraction past hold time and reanalysis in QC batch 9232233, surrogate recovery outliers were 100% in control in sample #1 7995 TARVIN RD. Upon re-extraction past hold time and reanalysis in QC batch 9231231, surrogate recovery outliers were still present in sample #10 135 ACORN RD, demonstrating this anomaly is most likely due to matrix interference. Both the original and reanalysis data have been provided for sample #1 7995 TARVIN RD, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time. The original analysis data have been reported for sample #10 135 ACORN RD.

The internal standard recoveries for 13C2 PFUnA and 13C2 PFDoA were recovered below 50% in samples #2 798 TARVIN RD, #5 479 BRACKETT RIDGE RD, and #7 483 BRACKETT RIDGE RD in QC batch 9225453. Upon re-extraction past hold time and reanalysis in QC batches 9232233 and 9231231, surrogate recovery outliers were 100% in control for all three samples. Both the original and reanalysis data have been provided for these three samples, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The internal standard recoveries for 13C2 PFDA, 13C2 PFUnA, and 13C2 PFDoA were recovered below 50% in sample #9 1204 BRACKETT RIDGE RD in QC batch 9225453. Upon re-extraction past hold time and reanalysis in QC batch 9231231, surrogate recovery outliers were still present in the sample, demonstrating this anomaly is most likely due to matrix interference. The original analysis data have been reported.

The internal standard recoveries for Me FOSA were recovered below 50% in samples #2 798 TARVIN RD and #4 682 TARVIN RD in QC batch 9225452. Upon re-extraction past hold time and reanalysis in QC batch 9231216, surrogate recovery outliers were still present in sample #2 798 TARVIN RD, demonstrating this anomaly is most likely due to matrix interference. Upon re-extraction and reanalysis in QC batch 9231216, surrogate recoveries were 100% in control in sample #4 682 TARVIN RD. Both the original and reanalysis data have been provided for sample #4 682 TARVIN RD, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time. The original analysis data have been reported for sample #2 798 TARVIN RD.

The internal standard recovery for 13C2 PFDoA was recovered below 50% in the method blank associated with QC batch 9231231. This is an indicator that data may be biased high. As no

detectable concentrations are present in the associated samples, corrective action is deemed unnecessary.

The low-level LCS associated with QC batch 9231231 exhibited a percent recovery above the QC limits for Perfluorodecanoic acid (PFDoA). This is an indicator that data may be biased high. As no detectable concentrations are present in the associated samples, corrective action is deemed unnecessary. Usability of the sample data is not compromised.

The method required MS/MSD could not be performed for QC batches 9225452, 9225453, 9231231, 9232233, and 9231216, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9H110160

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#2 798 TARVIN RD 08/07/09 09:15 002				
Perfluorobutanoic acid (PFBA)	0.0084 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.016 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.013 J	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.0067 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.015 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.011 J	0.020	ug/L	DEN -LC-0012
#3 797 TARVIN RD 08/10/09 09:31 003				
Perfluorooctanoic Acid	0.011 J	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.011 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.020 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.018 J	0.020	ug/L	DEN -LC-0012
#4 682 TARVIN RD 08/10/09 10:15 004				
Perfluorobutane sulfonate (PFB	0.0054 J	0.020	ug/L	DEN -LC-0012
#9 1204 BRACKETT RIDGE RD 08/10/09 14:59 009				
Perfluorooctanoic Acid	0.020	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.019 J	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.0078 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0075 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9H110160

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9H110160

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9H110160

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LHX0D	001	#1 795 TARVIN RD	08/07/09	08:55
LHX0K	002	#2 798 TARVIN RD	08/07/09	09:15
LHX0M	003	#3 797 TARVIN RD	08/10/09	09:31
LHX0N	004	#4 682 TARVIN RD	08/10/09	10:15
LHX0P	005	#5 479 BRACKETT RIDGE RD	08/10/09	10:52
LHX0Q	006	#6 489 BRACKETT RIDGE RD	08/10/09	11:19
LHX0R	007	#7 483 BRACKETT RIDGE RD	08/10/09	11:47
LHX0T	008	#8 615 TARVIN RD	08/10/09	12:12
LHX0V	009	#9 1204 BRACKETT RIDGE RD	08/10/09	14:59
LHX0W	010	#10 135 ACORN RD	08/10/09	15:49

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #1 795 TARVIN RD

HPLC

Lot-Sample #...:	D9H110160-001	**Work Order #...:**	LHX0D1AA	**Matrix.....:**	WATER
Date Sampled...:	08/07/09 08:55	**Date Received..:**	08/11/09		
Prep Date.....:	08/13/09	**Analysis Date..:**	08/16/09		
Prep Batch #...:	9225452	**Analysis Time..:**	17:53		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	78	(50 - 200)

Dalton Utilities

Client Sample ID: #1 795 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-001 **Work Order #...:** LHX0D1AC **Matrix.....:** WATER
Date Sampled...: 08/07/09 08:55 **Date Received..:** 08/11/09
Prep Date.....: 08/13/09 **Analysis Date..:** 08/17/09
Prep Batch #...: 9225453 **Analysis Time..:** 06:33
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	95	(50 - 200)
13C4 PFOS	60	(50 - 200)
13C4 PFBA	76	(50 - 200)
13C2 PFHxA	98	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	57	(50 - 200)
13C2 PFUnA	51	(50 - 200)
13C2 PFDoA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #1 795 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-001 Work Order #...: LHX0D2AC Matrix.....: WATER
Date Sampled...: 08/07/09 08:55 Date Received..: 08/11/09
Prep Date.....: 08/20/09 Analysis Date..: 08/21/09
Prep Batch #...: 9232233 Analysis Time..: 21:46
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	106	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	77	(50 - 200)
13C2 PFHxA	92	(50 - 200)
18O2 PFHxS	82	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	65	(50 - 200)
13C2 PFUnA	58	(50 - 200)
13C2 PFDoA	58	(50 - 200)

Dalton Utilities

Client Sample ID: #2 798 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-002 **Work Order #...:** LHX0K1AA **Matrix.....:** WATER
Date Sampled...: 08/07/09 09:15 **Date Received..:** 08/11/09
Prep Date.....: 08/13/09 **Analysis Date..:** 08/16/09
Prep Batch #...: 9225452 **Analysis Time..:** 18:00
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	43 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #2 798 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-002 **Work Order #...:** LHX0K1AC **Matrix.....:** WATER
Date Sampled...: 08/07/09 09:15 **Date Received..:** 08/11/09
Prep Date.....: 08/13/09 **Analysis Date..:** 08/17/09
Prep Batch #...: 9225453 **Analysis Time..:** 06:49
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	**0.0084 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	**0.016 J**	**0.030**	**ug/L**	**0.0082**
Perfluorohexanoic acid (PFHxA)	**0.013 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	95	(50 - 200)
13C4 PFOS	57	(50 - 200)
13C4 PFBA	91	(50 - 200)
13C2 PFHxA	96	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	81	(50 - 200)
13C2 PFDA	57	(50 - 200)
13C2 PFUnA	48 *	(50 - 200)
13C2 PFDoA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #2 798 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-002 **Work Order #...:** LHX0K2AC **Matrix.....:** WATER
Date Sampled...: 08/07/09 09:15 **Date Received..:** 08/11/09
Prep Date.....: 08/20/09 **Analysis Date..:** 08/21/09
Prep Batch #...: 9232233 **Analysis Time..:** 22:02
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	**0.0067 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	**0.015 J**	**0.030**	**ug/L**	**0.0082**
Perfluorohexanoic acid (PFHxA)	**0.011 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	94	(50 - 200)
13C2 PFHxA	99	(50 - 200)
18O2 PFHxS	86	(50 - 200)
13C5 PFNA	83	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	55	(50 - 200)
13C2 PFDoA	62	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #3 797 TARVIN RD

HPLC

Lot-Sample #...:	D9H110160-003	**Work Order #...:**	LHX0M1AA	**Matrix.....:**	WATER
Date Sampled...:	08/10/09 09:31	**Date Received..:**	08/11/09		
Prep Date.....:	08/13/09	**Analysis Date..:**	08/16/09		
Prep Batch #...:	9225452	**Analysis Time..:**	18:07		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	57	(50 - 200)

Dalton Utilities

Client Sample ID: #3 797 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-003
Date Sampled...: 08/10/09 09:31
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0M1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 07:05

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.011 J**	**0.020**	**ug/L**	**0.0055**
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	**0.011 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	**0.020 J**	**0.030**	**ug/L**	**0.0082**
Perfluorohexanoic acid (PFHxA)	**0.018 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	98	(50 - 200)
13C4 PFOS	58	(50 - 200)
13C4 PFBA	90	(50 - 200)
13C2 PFHxA	94	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	75	(50 - 200)
13C2 PFDA	54	(50 - 200)
13C2 PFUnA	54	(50 - 200)
13C2 PFDoA	55	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #4 682 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-004
Date Sampled...: 08/10/09 10:15
Prep Date.....: 08/13/09
Prep Batch #...: 9225452
Dilution Factor: 1

Work Order #...: LHX0N1AA
Date Received..: 08/11/09
Analysis Date..: 08/16/09
Analysis Time..: 18:14

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #4 682 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-004
Date Sampled...: 08/10/09 10:15
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0N1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 07:21

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	**0.0054 J**	**0.020**	**ug/L**	**0.0045**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	72	(50 - 200)
13C4 PFBA	97	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	87	(50 - 200)
13C2 PFDA	67	(50 - 200)
13C2 PFUnA	66	(50 - 200)
13C2 PFDoA	69	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #4 682 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-004
Date Sampled...: 08/10/09 10:15
Prep Date.....: 08/20/09
Prep Batch #...: 9231216
Dilution Factor: 1

Work Order #...: LHX0N2AA
Date Received..: 08/11/09
Analysis Date..: 08/22/09
Analysis Time..: 00:46

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	50	(50 - 200)

Dalton Utilities

Client Sample ID: #5 479 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-005 **Work Order #...:** LHX0P1AA **Matrix.....:** WATER
Date Sampled...: 08/10/09 10:52 **Date Received..:** 08/11/09
Prep Date.....: 08/13/09 **Analysis Date..:** 08/16/09
Prep Batch #...: 9225452 **Analysis Time..:** 18:31
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	83	(50 - 200)

Dalton Utilities

Client Sample ID: #5 479 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-005
Date Sampled...: 08/10/09 10:52
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0P1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 07:37

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	95	(50 - 200)
13C4 PFOS	52	(50 - 200)
13C4 PFBA	86	(50 - 200)
13C2 PFHxA	88	(50 - 200)
18O2 PFHxS	82	(50 - 200)
13C5 PFNA	71	(50 - 200)
13C2 PFDA	50	(50 - 200)
13C2 PFUnA	45 *	(50 - 200)
13C2 PFDoA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #5 479 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-005
Date Sampled...: 08/10/09 10:52
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LHX0P2AC
Date Received..: 08/11/09
Analysis Date..: 08/21/09
Analysis Time..: 15:35

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	80	(50 - 200)
13C4 PFBA	80	(50 - 200)
13C2 PFHxA	83	(50 - 200)
18O2 PFHxS	90	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	74	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #6 489 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-006
Date Sampled...: 08/10/09 11:19
Prep Date.....: 08/13/09
Prep Batch #...: 9225452
Dilution Factor: 1

Work Order #...: LHX0Q1AA
Date Received..: 08/11/09
Analysis Date..: 08/16/09
Analysis Time..: 18:38

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #6 489 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-006
Date Sampled...: 08/10/09 11:19
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0Q1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 08:10

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	58	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	93	(50 - 200)
18O2 PFHxS	86	(50 - 200)
13C5 PFNA	74	(50 - 200)
13C2 PFDA	54	(50 - 200)
13C2 PFUnA	51	(50 - 200)
13C2 PFDoA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #7 483 BRACKETT RIDGE RD

HPLC

Matrix.....: WATER

Lot-Sample #...: D9H110160-007
Date Sampled...: 08/10/09 11:47
Prep Date.....: 08/13/09
Prep Batch #...: 9225452
Dilution Factor: 1

Work Order #...: LHX0R1AA
Date Received..: 08/11/09
Analysis Date..: 08/16/09
Analysis Time..: 18:45

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #7 483 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-007 Work Order #...: LHX0R1AC Matrix.....: WATER
Date Sampled...: 08/10/09 11:47 Date Received..: 08/11/09
Prep Date.....: 08/13/09 Analysis Date..: 08/17/09
Prep Batch #...: 9225453 Analysis Time..: 08:26
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	96	(50 - 200)
13C4 PFOS	53	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	89	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	71	(50 - 200)
13C2 PFDA	50	(50 - 200)
13C2 PFUnA	47 *	(50 - 200)
13C2 PFDoA	45 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #7 483 BRACKETT RIDGE RD

HPLC

Matrix.....: WATER

Lot-Sample #...: D9H110160-007
Date Sampled...: 08/10/09 11:47
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LHX0R2AC
Date Received..: 08/11/09
Analysis Date..: 08/21/09
Analysis Time..: 15:51

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	117	(50 - 200)
13C4 PFOS	81	(50 - 200)
13C4 PFBA	77	(50 - 200)
13C2 PFHxA	83	(50 - 200)
18O2 PFHxS	92	(50 - 200)
13C5 PFNA	80	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #8 615 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-008
Date Sampled...: 08/10/09 12:12
Prep Date.....: 08/13/09
Prep Batch #...: 9225452
Dilution Factor: 1

Work Order #...: LHX0T1AA
Date Received..: 08/11/09
Analysis Date..: 08/16/09
Analysis Time..: 18:52

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	71	(50 - 200)

Dalton Utilities

Client Sample ID: #8 615 TARVIN RD

HPLC

Lot-Sample #...: D9H110160-008
Date Sampled...: 08/10/09 12:12
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0T1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 08:42

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	103	(50 - 200)
13C4 PFOS	68	(50 - 200)
13C4 PFBA	62	(50 - 200)
13C2 PFHxA	94	(50 - 200)
18O2 PFHxS	89	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #9 1204 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-009
Date Sampled...: 08/10/09 14:59
Prep Date.....: 08/13/09
Prep Batch #...: 9225452
Dilution Factor: 1

Work Order #...: LHX0V1AA
Date Received..: 08/11/09
Analysis Date..: 08/16/09
Analysis Time..: 19:07

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	58	(50 - 200)

Dalton Utilities

Client Sample ID: #9 1204 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H110160-009
Date Sampled...: 08/10/09 14:59
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0V1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 08:58

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.020**	**0.020**	**ug/L**	**0.0055**
Perfluorooctanesulfonate	**0.019 J**	**0.020**	**ug/L**	**0.0068**
Perfluorobutanoic acid (PFBA)	**0.0078 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	**0.0075 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	88	(50 - 200)
13C4 PFOS	56	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	84	(50 - 200)
18O2 PFHxS	78	(50 - 200)
13C5 PFNA	65	(50 - 200)
13C2 PFDA	48 *	(50 - 200)
13C2 PFUnA	48 *	(50 - 200)
13C2 PFDoA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #10 135 ACORN RD

HPLC

Lot-Sample #...: D9H110160-010
Date Sampled...: 08/10/09 15:49
Prep Date.....: 08/13/09
Prep Batch #...: 9225452
Dilution Factor: 1

Work Order #...: LHX0W1AA
Date Received..: 08/11/09
Analysis Date..: 08/16/09
Analysis Time..: 19:14

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #10 135 ACORN RD

HPLC

Matrix.....: WATER

Lot-Sample #...: D9H110160-010
Date Sampled...: 08/10/09 15:49
Prep Date.....: 08/13/09
Prep Batch #...: 9225453
Dilution Factor: 1

Work Order #...: LHX0W1AC
Date Received..: 08/11/09
Analysis Date..: 08/17/09
Analysis Time..: 09:14

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	99	(50 - 200)
13C4 PFOS	60	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	91	(50 - 200)
18O2 PFHxS	89	(50 - 200)
13C5 PFNA	70	(50 - 200)
13C2 PFDA	54	(50 - 200)
13C2 PFUnA	52	(50 - 200)
13C2 PFDoA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

QC DATA ASSOCIATION SUMMARY

D9H110160

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
	WATER	DEN -LC-0012		9232233	
002	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
	WATER	DEN -LC-0012		9232233	
003	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
004	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
	WATER	DEN -LC-0012		9231216	
005	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
	WATER	DEN -LC-0012		9231231	
006	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
007	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
	WATER	DEN -LC-0012		9231231	
008	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
009	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	
010	WATER	DEN -LC-0012		9225452	
	WATER	DEN -LC-0012		9225453	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis
Private Wells

Lot #: D9H120160

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

Michelle A. Johnston
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August 21, 2009

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Table Of Contents

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- **Methods Summary**
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- **Summary Report**
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Case Narrative
D9H120160

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for four water samples received at TestAmerica Denver on August 12, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 1.5°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits.

Analytical Comments
Please note during the extraction process all four samples clogged the cartridge; therefore, the organic preparation chemist vacuum filtered each sample before continuing with the extraction procedure. A second cartridge also had to be used during the extraction process.

The Standard Operating Procedure (SOP) was altered slightly for these samples in the sample preparation for FOSA. Sodium hydroxide was added to all four samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

The MS/MSD analyses performed on a sample from another client and/or lot associated with QC batch 9226398 exhibited an internal standard recovery below 50% for 13C2 PFDoA. The acceptable low-level and mid-level LCS analyses data indicated the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batch 9226397, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

Continuing Calibration Verification (CCV) standards associated with samples in QC batch 9226398 exhibited a %D value out of range, biased high, for Perfluorotridecanoic acid (PFTriA). This is an indicator that data may be biased high. As no detectable concentrations of Perfluorotridecanoic acid (PFTriA) are present in the associated samples, corrective action is deemed unnecessary.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9H120160

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#12 300 ACORN DRIVE 08/11/09 09:56 002				
Perfluorooctanoic Acid	0.060	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.017 J	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.0089 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.015 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.023	0.020	ug/L	DEN -LC-0012
Perfluoroheptanoic acid (PFHpA	0.023	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.0094 J	0.020	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.014 J	0.030	ug/L	DEN -LC-0012

METHODS SUMMARY

D9H120160

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9H120160

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9H120160

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LH100	001	#11 4619 BRACKETT RIDGE RD	08/11/09	09:13
LH104	002	#12 300 ACORN DRIVE	08/11/09	09:56
LH106	003	#13 277 BRACKETT RIDGE LOOP	08/11/09	10:39
LH107	004	#14 1063 BRACKETT RIDGE RD	08/11/09	13:38

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #11 4619 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H120160-001 Work Order #...: LH1001AA Matrix.....: WATER
Date Sampled...: 08/11/09 09:13 Date Received..: 08/12/09
Prep Date.....: 08/14/09 Analysis Date..: 08/19/09
Prep Batch #...: 9226398 Analysis Time..: 03:21
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	98	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	83	(50 - 200)
13C2 PFHxA	93	(50 - 200)
18O2 PFHxS	83	(50 - 200)
~~13C5 PFNA~~	~~81~~	~~(50 - 200)~~
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	69	(50 - 200)
13C2 PFDoA	71	(50 - 200)

Dalton Utilities

Client Sample ID: #11 4619 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H120160-001
Date Sampled...: 08/11/09 09:13
Prep Date.....: 08/14/09
Prep Batch #...: 9226397
Dilution Factor: 1

Work Order #...: LH1001AC
Date Received..: 08/12/09
Analysis Date..: 08/16/09
Analysis Time..: 19:50

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	58	(50 - 200)

Dalton Utilities

Client Sample ID: #12 300 ACORN DRIVE

HPLC

Lot-Sample #...: D9H120160-002 Work Order #...: LH1041AA Matrix.....: WATER
Date Sampled...: 08/11/09 09:56 Date Received..: 08/12/09
Prep Date.....: 08/14/09 Analysis Date..: 08/19/09
Prep Batch #...: 9226398 Analysis Time..: 03:37
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.060**	**0.020**	**ug/L**	**0.0055**
Perfluorooctanesulfonate	**0.017 J**	**0.020**	**ug/L**	**0.0068**
Perfluorobutanoic acid (PFBA)	**0.0089 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	**0.015 J**	**0.030**	**ug/L**	**0.0082**
Perfluorohexanoic acid (PFHxA)	**0.023**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	**0.023**	**0.020**	**ug/L**	**0.0054**
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	**0.0094 J**	**0.020**	**ug/L**	**0.0045**
Perfluorohexane sulfonate (PFHxS)	**0.014 J**	**0.030**	**ug/L**	**0.0084**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	96	(50 - 200)
13C4 PFOS	59	(50 - 200)
13C4 PFBA	82	(50 - 200)
13C2 PFHxA	92	(50 - 200)
18O2 PFHxS	79	(50 - 200)
13C5 PFNA	79	(50 - 200)
13C2 PFDA	63	(50 - 200)
13C2 PFUnA	62	(50 - 200)
13C2 PFDoA	64	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #12 300 ACORN DRIVE

HPLC

Lot-Sample #...: D9H120160-002
Date Sampled...: 08/11/09 09:56
Prep Date.....: 08/14/09
Prep Batch #...: 9226397
Dilution Factor: 1

Work Order #...: LH1041AC
Date Received..: 08/12/09
Analysis Date..: 08/16/09
Analysis Time..: 19:57

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #13 277 BRACKETT RIDGE LOOP

HPLC

Lot-Sample #...: D9H120160-003
Date Sampled...: 08/11/09 10:39
Prep Date.....: 08/14/09
Prep Batch #...: 9226398
Dilution Factor: 1

Work Order #...: LH1061AA
Date Received..: 08/12/09
Analysis Date..: 08/19/09
Analysis Time..: 03:53

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	67	(50 - 200)
13C4 PFBA	84	(50 - 200)
13C2 PFHxA	89	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	85	(50 - 200)
13C2 PFDA	69	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	73	(50 - 200)

Dalton Utilities

Client Sample ID: #13 277 BRACKETT RIDGE LOOP

HPLC

Lot-Sample #...: D9H120160-003
Date Sampled...: 08/11/09 10:39
Prep Date.....: 08/14/09
Prep Batch #...: 9226397
Dilution Factor: 1

Work Order #...: LH1061AC
Date Received..: 08/12/09
Analysis Date..: 08/16/09
Analysis Time..: 20:04

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #14 1063 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H120160-004 **Work Order #...:** LH1071AA **Matrix.....:** WATER
Date Sampled...: 08/11/09 13:38 **Date Received..:** 08/12/09
Prep Date.....: 08/14/09 **Analysis Date..:** 08/19/09
Prep Batch #...: 9226398 **Analysis Time..:** 04:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	100	(50 - 200)
13C4 PFOS	63	(50 - 200)
13C4 PFBA	86	(50 - 200)
13C2 PFHxA	93	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	67	(50 - 200)
13C2 PFUnA	64	(50 - 200)
13C2 PFDoA	64	(50 - 200)

Dalton Utilities

Client Sample ID: #14 1063 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H120160-004
Date Sampled...: 08/11/09 13:38
Prep Date.....: 08/14/09
Prep Batch #...: 9226397
Dilution Factor: 1

Work Order #...: LH1071AC
Date Received..: 08/12/09
Analysis Date..: 08/16/09
Analysis Time..: 20:11

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	61	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9H150176

Dena Haverland

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August 31, 2009

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Case Narrative
D9H150176

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for twelve samples received at TestAmerica Denver on August 15, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.4°C.

Relinquished By information is not present on the chains-of-custody. The client was notified on August 18, 2009.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

Please note during the FOSA extraction process samples #15 719 BRACKETT RIDGE RD, #18 721 BRACKETT RIDGE RD, #19 722 BRACKETT RIDGE RD, #25 8907 HWY 225, and #26 9279 HWY 225 clogged the cartridge; therefore, the organic preparation chemist had to use two cartridges for each of these samples.

Due to low internal standard recoveries in the samples and in the method blank associated with QC batch 9231231, samples #17 231 BRACKETT LOOP, #19 722 BRACKETT RIDGE RD, and #20 600 TARVIN RD were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 9238300. Both batches are included in this report. Please note the sample results should be considered estimated.

The internal standard recoveries for Me FOSA were recovered below 50% in samples #16 24 BRIGHT RD, #22 8165 HWY 225, and #25 8907 HWY 225. This is an indicator the FOSA data may be biased high. Upon re-extraction past hold time and reanalysis in QC batch 9231216, surrogate recovery outliers were still present in samples #22 8165 HWY 225 and #25 8907 HWY 225, demonstrating this anomaly is most likely due to matrix interference. The original analysis data have been provided. Please note insufficient volume remained for sample #16 24 BRIGHT RD to be re-extracted; therefore, the original data have been provided.

The internal standard recoveries for 13C2 PFDA, 13C2 PFUnA, and 13C2 PFDoA were recovered below 50% in sample #17 231 BRACKETT LOOP associated with QC batch 9231231. The internal standard recoveries for 13C2 PFDoA were recovered below 50% in samples #19 722 BRACKETT RIDGE RD and #22 8165 HWY 225 associated with QC batch 9231231. The internal standard recoveries for 13C2 PFUnA and 13C2 PFDoA were recovered below 50% in sample #20 600 TARVIN RD associated with QC batch 9231231. This is an indicator that data may be biased high. Upon re-extraction past hold time and reanalysis in QC batch 9238300, surrogate recovery outliers were still present in samples #17 231 BRACKETT LOOP, #19 722 BRACKETT RIDGE RD, and #20 600 TARVIN RD, demonstrating this anomaly is most likely due to matrix interference. Both the original and reanalysis data have been provided for samples #17 231 BRACKETT LOOP, #19 722 BRACKETT RIDGE RD, and #20 600 TARVIN RD, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time. Please note insufficient volume remained for sample #22 8165 HWY 225 to be re-extracted; therefore, the original data have been provided.

The internal standard recovery for 13C2 PFDoA was recovered below 50% in the method blank associated with QC batch 9231231. This is an indicator that data may be biased high. As the samples do not contain any detectable concentrations for constituents associated with this internal standard, corrective action is deemed unnecessary.

The low-level LCS associated with QC batch 9231231 exhibited a percent recovery above the QC limits for Perfluorodecanoic acid (PFDoA). This is an indicator that data may be biased high. As no detectable concentrations are present in the associated samples, corrective action is deemed unnecessary. Usability of the sample data is not compromised.

The method required MS/MSD analyses could not be performed for QC batch 9231231, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXEC JTIVE SUMMARY - Detection Highlights

D9H150176

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#16 24 BRIGHT RD 08/13/09 14:56 002				
Perfluorooctane sulfonamide (F	0.0096 J	0.050	ug/L	DEN -LC-0012
#22 8165 HWY 225 08/14/09 13:15 008				
Perfluorooctanoic Acid	0.29	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.24	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.071	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.12	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.14	0.020	ug/L	DEN -LC-0012
Perfluoroheptanoic acid (PFHpA	0.092	0.020	ug/L	DEN -LC-0012
Perfluorononanoic acid (PFNA)	0.049	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.38	0.020	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.072	0.030	ug/L	DEN -LC-0012

METHODS SUMMARY

D9H150176

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9H150176

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9H150176

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LH8RF	001	#15 719 BRACKETT RIDGE RD	08/13/09	13:50
LH8RQ	002	#16 24 BRIGHT RD	08/13/09	14:56
LH8RR	003	#17 231 BRACKETT LOOP	08/13/09	16:14
LH8RT	004	#18 721 BRACKETT RIDGE RD	08/13/09	16:40
LH8RV	005	#19 722 BRACKETT RIDGE RD	08/13/09	16:54
LH8RW	006	#20 600 TARVIN RD	08/13/09	17:17
LH8R0	007	#21 6898 HWY 225	08/14/09	12:42
LH8R1	008	#22 8165 HWY 225	08/14/09	13:15
LH8R2	009	#23 8745 HWY 225	08/14/09	13:25
LH8R3	010	#24 8609 HWY 225	08/14/09	13:37
LH8R4	011	#25 8907 HWY 225	08/14/09	13:59
LH8R5	012	#26 9279 HWY 225	08/14/09	14:17

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #15 719 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H150176-001
Date Sampled...: 08/13/09 13:50
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8RF1AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 12:29

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #15 719 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H150176-001
Date Sampled...: 08/13/09 13:50
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8RF1AD
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 16:39

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUn A)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDo A)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFT riA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (P FTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFB S)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFH xS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	68	(50 - 200)
13C4 PFBA	70	(50 - 200)
13C2 PFHxA	71	(50 - 200)
18O2 PFHxS	83	(50 - 200)
13C5 PFNA	68	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #16 24 BRIGHT RD

HPLC

Lot-Sample #...: D9H150176-002 Work Order #...: LH8RQ1AA Matrix.....: WATER
Date Sampled...: 08/13/09 14:56 Date Received..: 08/15/09
Prep Date.....: 08/17/09 Analysis Date..: 08/18/09
Prep Batch #...: 9229100 Analysis Time..: 12:37
Dilution Factor: 1 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	0.0096 J	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	17 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #16 24 BRIGHT RD

HPLC

Lot-Sample #...: D9H150176-002
Date Sampled...: 08/13/09 14:56
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8RQ1AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 16:56

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	74	(50 - 200)
13C4 PFBA	73	(50 - 200)
13C2 PFHxA	76	(50 - 200)
18O2 PFHxS	87	(50 - 200)
~~13C5 PFNA~~	~~68~~	~~(50 - 200)~~
13C2 PFDA	66	(50 - 200)
13C2 PFUnA	65	(50 - 200)
13C2 PFDoA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #17 231 BRACKETT LOOP

HPLC

Lot-Sample #...: D9H150176-003
Date Sampled...: 08/13/09 16:14
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8RR1AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 12:44

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #17 231 BRACKETT LOOP

HPLC

Lot-Sample #...: D9H150176-003
Date Sampled...: 08/13/09 16:14
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8RR1AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 17:28

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	98	(50 - 200)
13C4 PFOS	54	(50 - 200)
13C4 PFBA	74	(50 - 200)
13C2 PFHxA	73	(50 - 200)
18O2 PFHxS	82	(50 - 200)
13C5 PFNA	58	(50 - 200)
13C2 PFDA	48 *	(50 - 200)
13C2 PFUnA	39 *	(50 - 200)
13C2 PFDoA	31 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #17 231 BRACKETT LOOP

HPLC

Lot-Sample #...: D9H150176-003
Date Sampled...: 08/13/09 16:14
Prep Date.....: 08/26/09
Prep Batch #...: 9238300
Dilution Factor: 1

Work Order #...: LH8RR2AC
Date Received..: 08/15/09
Analysis Date..: 08/27/09
Analysis Time..: 09:38

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	96	(50 - 200)
13C4 PFOS	76	(50 - 200)
13C4 PFBA	84	(50 - 200)
13C2 PFHxA	87	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	75	(50 - 200)
13C2 PFDA	75	(50 - 200)
13C2 PFUnA	72	(50 - 200)
13C2 PFDoA	67	(50 - 200)

Dalton Utilities

Client Sample ID: #18 721 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H150176-004
Date Sampled...: 08/13/09 16:40
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8RT1AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 12:51

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	50	(50 - 200)

Dalton Utilities

Client Sample ID: #18 721 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H150176-004
Date Sampled...: 08/13/09 16:40
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8RT1AE
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 17:44

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	105	(50 - 200)
13C4 PFOS	80	(50 - 200)
13C4 PFBA	76	(50 - 200)
13C2 PFHxA	72	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	76	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	61	(50 - 200)
13C2 PFDoA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #19 722 BRACKETT RIDGE RD

HPLC

Lot-Sample #...:	D9H150176-005	**Work Order #...:**	LH8RV1AA	**Matrix.....:**	WATER
Date Sampled...:	08/13/09 16:54	**Date Received..:**	08/15/09		
Prep Date.....:	08/17/09	**Analysis Date..:**	08/18/09		
Prep Batch #...:	9229100	**Analysis Time..:**	13:20		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #19 722 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H150176-005
Date Sampled...: 08/13/09 16:54
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8RV1AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 18:00

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	68	(50 - 200)
13C2 PFHxA	70	(50 - 200)
18O2 PFHxS	81	(50 - 200)
13C5 PFNA	65	(50 - 200)
13C2 PFDA	58	(50 - 200)
13C2 PFUnA	55	(50 - 200)
13C2 PFDoA	44 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #19 722 BRACKETT RIDGE RD

HPLC

Lot-Sample #...: D9H150176-005
Date Sampled...: 08/13/09 16:54
Prep Date.....: 08/26/09
Prep Batch #...: 9238300
Dilution Factor: 1

Work Order #...: LH8RV2AC
Date Received..: 08/15/09
Analysis Date..: 08/27/09
Analysis Time..: 09:54

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	106	(50 - 200)
13C4 PFOS	72	(50 - 200)
13C4 PFBA	86	(50 - 200)
13C2 PFHxA	83	(50 - 200)
18O2 PFHxS	93	(50 - 200)
13C5 PFNA	78	(50 - 200)
13C2 PFDA	69	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	61	(50 - 200)

Dalton Utilities

Client Sample ID: #20 600 TARVIN RD

HPLC

Lot-Sample #...: D9H150176-006
Date Sampled...: 08/13/09 17:17
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8RW1AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 13:27

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	74	(50 - 200)

Dalton Utilities

Client Sample ID: #20 600 TARVIN RD

HPLC

Lot-Sample #...: D9H150176-006
Date Sampled...: 08/13/09 17:17
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8RW1AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 18:16

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	100	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	72	(50 - 200)
13C2 PFHxA	71	(50 - 200)
18O2 PFHxS	80	(50 - 200)
13C5 PFNA	72	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	47 *	(50 - 200)
13C2 PFDoA	43 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #20 600 TARVIN RD

HPLC

Lot-Sample #...: D9H150176-006
Date Sampled...: 08/13/09 17:17
Prep Date.....: 08/26/09
Prep Batch #...: 9238300
Dilution Factor: 1

Work Order #...: LH8RW2AC
Date Received..: 08/15/09
Analysis Date..: 08/27/09
Analysis Time..: 10:10

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	92	(50 - 200)
13C4 PFOS	63	(50 - 200)
13C4 PFBA	74	(50 - 200)
13C2 PFHxA	75	(50 - 200)
18O2 PFHxS	78	(50 - 200)
13C5 PFNA	66	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	61	(50 - 200)
13C2 PFDoA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #21 6898 HWY 225

HPLC

Lot-Sample #...: D9H150176-007
Date Sampled...: 08/14/09 12:42
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8R01AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 13:34

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #21 6898 HWY 225

HPLC

Lot-Sample #...: D9H150176-007
Date Sampled...: 08/14/09 12:42
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8R01AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 18:32

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	114	(50 - 200)
13C4 PFOS	81	(50 - 200)
13C4 PFBA	77	(50 - 200)
13C2 PFHxA	78	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	78	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #22 8165 HWY 225

HPLC

Lot-Sample #...: D9H150176-008
Date Sampled...: 08/14/09 13:15
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8R11AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 13:41

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #22 8165 HWY 225

HPLC

Lot-Sample #...: D9H150176-008
Date Sampled...: 08/14/09 13:15
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8R11AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 18:48

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	0.29	0.020	ug/L	0.0055
Perfluorooctanesulfonate	0.24	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	0.071	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	0.12	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	0.14	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	0.092	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	0.049	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	0.38	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	0.072	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	104	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	77	(50 - 200)
13C2 PFHxA	78	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	63	(50 - 200)
13C2 PFDA	53	(50 - 200)
13C2 PFUnA	51	(50 - 200)
13C2 PFDoA	44 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #23 8745 HWY 225

HPLC

Lot-Sample #...: D9H150176-009
Date Sampled...: 08/14/09 13:25
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8R21AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 13:48

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #23 8745 HWY 225

HPLC

Lot-Sample #...: D9H150176-009
Date Sampled...: 08/14/09 13:25
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8R21AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 19:04

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	116	(50 - 200)
13C4 PFOS	72	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	90	(50 - 200)
18O2 PFHxS	101	(50 - 200)
13C5 PFNA	79	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	61	(50 - 200)
13C2 PFDoA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #24 8609 HWY 225

HPLC

Lot-Sample #...: D9H150176-010
Date Sampled...: 08/14/09 13:37
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8R31AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 13:55

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	69	(50 - 200)

Dalton Utilities

Client Sample ID: #24 8609 HWY 225

HPLC

Lot-Sample #...: D9H150176-010
Date Sampled...: 08/14/09 13:37
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8R31AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 19:20

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	85	(50 - 200)
13C4 PFBA	81	(50 - 200)
13C2 PFHxA	81	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	85	(50 - 200)
13C2 PFDA	75	(50 - 200)
13C2 PFUnA	59	(50 - 200)
13C2 PFDoA	50	(50 - 200)

Dalton Utilities

Client Sample ID: #25 8907 HWY 225

HPLC

Lot-Sample #...: D9H150176-011
Date Sampled...: 08/14/09 13:59
Prep Date.....: 08/17/09
Prep Batch #...: 9229100
Dilution Factor: 1

Work Order #...: LH8R41AA
Date Received..: 08/15/09
Analysis Date..: 08/18/09
Analysis Time..: 14:03

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #25 8907 HWY 225

HPLC

Lot-Sample #...: D9H150176-011
Date Sampled...: 08/14/09 13:59
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8R41AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 19:37

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	67	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	83	(50 - 200)
18O2 PFHxS	89	(50 - 200)
13C5 PFNA	73	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	54	(50 - 200)
13C2 PFDoA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #26 9279 HWY 225

HPLC

Lot-Sample #...:	D9H150176-012	**Work Order #...:**	LH8R51AA	**Matrix.....:**	WATER
Date Sampled...:	08/14/09 14:17	**Date Received..:**	08/15/09		
Prep Date.....:	08/17/09	**Analysis Date..:**	08/18/09		
Prep Batch #...:	9229100	**Analysis Time..:**	14:10		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #26 9279 HWY 225

HPLC

Lot-Sample #...: D9H150176-012
Date Sampled...: 08/14/09 14:17
Prep Date.....: 08/19/09
Prep Batch #...: 9231231
Dilution Factor: 1

Work Order #...: LH8R51AC
Date Received..: 08/15/09
Analysis Date..: 08/21/09
Analysis Time..: 19:53

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	119	(50 - 200)
13C4 PFOS	84	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	88	(50 - 200)
18O2 PFHxS	92	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	64	(50 - 200)
13C2 PFDoA	54	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9H220152

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

Michelle A. Johnston
Project Manager

September 21, 2009

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Case Narrative
D9H220152

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for eight samples received at TestAmerica Denver on August 22, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.8°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments
Please note during the FOSA extraction process all eight samples clogged the cartridge; therefore, the organic preparation chemist had to use two cartridges for each of these samples.

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all eight samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for MeFOSA.

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA for batch 9259162. Strata-XL cartridges were used instead of the SOP required Strata-X. This was done to help minimize the clogging problems in these samples. The Strata-XL has a larger pore size allowing more viscous sample matrix to be extracted.

Due to low internal standard recoveries in the samples, samples #28 189 River View Dr, #29 38 River View Dr, #30 428 Holly Dr, #31 196 River View Dr, #32 382 Holly Dr, #33 273 West Holly Creek Dr, and DUP were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 9259162. All four batches are included in this report. Please note the sample results should be considered estimated.

The internal standard recoveries for 13C2 PFUnA and 13C2 PFDoA associated with QC batch 9238300 were recovered below 50% in samples #27 93 River View Dr, # 32 382 Holly Dr. Sample # 32 382 Holly Dr also exhibited low internal standard recoveries for 13C4 PFOS, 13C2 PFHxA, 13C5 PFNA, and 13C2 PFDA. Upon re-extraction and reanalysis in QC batch 9240442, internal standard recoveries were 100% in control. Both sets of data have been provided.

The internal standard recoveries for MeFOSA associated with QC batch 9239343 were recovered below 50% in samples #28 189 River View Dr, #29 38 River View Dr, #30 428 Holly Dr, #31 196 River View Dr, #32 382 Holly Dr, #33 273 West Holly Creek Dr, and DUP. Upon re-extraction past hold time and reanalysis in QC batch 9259162, internal standard recoveries were 100% in control. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The low-level LCS analyses associated with QC batches 9239343 and 9259162 exhibited percent recoveries above the QC control limits for Perfluorooctane sulfonamide (FOSA). This is an indicator that data may be biased high. As no detectable FOSA concentrations are present in the associated samples, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 9239343 and 9259162, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9H220152

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#29 38 RIVER VIEW DR 08/21/09 10:46 003				
Perfluorohexanoic acid (PFHxA)	0.0048 J	0.020	ug/L	DEN -LC-0012
#32 382 HOLLY DR 08/21/09 11:22 006				
Perfluorohexanoic acid (PFHxA)	0.0031 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0046 J	0.020	ug/L	DEN -LC-0012
#33 273 WEST HOLLY CREEK DR 08/21/09 11:48 007				
Perfluoropentanoic acid (PFPA)	0.012 J	0.030	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.0063 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.012 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.0067 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9H220152

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9H220152

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9H220152

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LJL24	001	#27 93 RIVER VIEW DR	08/21/09	10:19
LJL3C	002	#28 189 RIVER VIEW DR	08/21/09	10:30
LJL3D	003	#29 38 RIVER VIEW DR	08/21/09	10:46
LJL3F	004	#30 428 HOLLY DR	08/21/09	11:05
LJL3G	005	#31 196 RIVER VIEW DR	08/21/09	11:14
LJL3H	006	#32 382 HOLLY DR	08/21/09	11:22
LJL3J	007	#33 273 WEST HOLLY CREEK DR	08/21/09	11:48
LJL3L	008	DUP	08/21/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #27 93 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-001
Date Sampled...: 08/21/09 10:19
Prep Date.....: 08/26/09
Prep Batch #...: 9238300
Dilution Factor: 1

Work Order #...: LJL241AA
Date Received..: 08/22/09
Analysis Date..: 08/27/09
Analysis Time..: 11:47

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	88	(50 - 200)
13C4 PFOS	52	(50 - 200)
13C4 PFBA	71	(50 - 200)
~~13C2 PFHxA~~	~~70~~	~~(50 - 200)~~
18O2 PFHxS	75	(50 - 200)
13C5 PFNA	59	(50 - 200)
13C2 PFDA	50	(50 - 200)
13C2 PFUnA	47 *	(50 - 200)
13C2 PFDoA	45 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #27 93 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-001
Date Sampled...: 08/21/09 10:19
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJL241AC
Date Received..: 08/22/09
Analysis Date..: 08/29/09
Analysis Time..: 16:14

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	50	(50 - 200)

Dalton Utilities

Client Sample ID: #27 93 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-001
Date Sampled...: 08/21/09 10:19
Prep Date.....: 08/28/09
Prep Batch #...: 9240442
Dilution Factor: 1

Work Order #...: LJL242AA
Date Received..: 08/22/09
Analysis Date..: 08/30/09
Analysis Time..: 05:13

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	125	(50 - 200)
13C4 PFOS	88	(50 - 200)
13C4 PFBA	97	(50 - 200)
13C2 PFHxA	113	(50 - 200)
18O2 PFHxS	106	(50 - 200)
13C5 PFNA	99	(50 - 200)
13C2 PFDA	90	(50 - 200)
13C2 PFUnA	87	(50 - 200)
13C2 PFDoA	87	(50 - 200)

Dalton Utilities

Client Sample ID: #28 189 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-002
Date Sampled...: 08/21/09 10:30
Prep Date.....: 08/26/09
Prep Batch #...: 9238300
Dilution Factor: 1

Work Order #...: LJL3C1AA
Date Received..: 08/22/09
Analysis Date..: 08/27/09
Analysis Time..: 12:03

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	87	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	69	(50 - 200)
13C2 PFHxA	66	(50 - 200)
18O2 PFHxS	74	(50 - 200)
13C5 PFNA	64	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	63	(50 - 200)
13C2 PFDoA	57	(50 - 200)

Dalton Utilities

Client Sample ID: #28 189 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-002
Date Sampled...: 08/21/09 10:30
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJL3C1AC
Date Received..: 08/22/09
Analysis Date..: 08/29/09
Analysis Time..: 16:21

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	37 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #28 189 RIVER VIEW DR

HPLC

Lot-Sample #...:	D9H220152-002	**Work Order #...:**	LJL3C2AC	**Matrix.....:**	WATER
Date Sampled...:	08/21/09 10:30	**Date Received..:**	08/22/09		
Prep Date.....:	09/16/09	**Analysis Date..:**	09/18/09		
Prep Batch #...:	9259162	**Analysis Time..:**	22:37		
Dilution Factor:	1	**Method.....:**	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #29 38 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-003 Work Order #...: LJL3D1AA Matrix.....: WATER
Date Sampled...: 08/21/09 10:46 Date Received..: 08/22/09
Prep Date.....: 08/26/09 Analysis Date..: 08/27/09
Prep Batch #...: 9238300 Analysis Time..: 12:19
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	**0.0048 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	91	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	66	(50 - 200)
13C2 PFHxA	66	(50 - 200)
18O2 PFHxS	75	(50 - 200)
13C5 PFNA	63	(50 - 200)
13C2 PFDA	66	(50 - 200)
13C2 PFUnA	69	(50 - 200)
13C2 PFDoA	62	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #29 38 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-003
Date Sampled...: 08/21/09 10:46
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJL3D1AC
Date Received..: 08/22/09
Analysis Date..: 08/29/09
Analysis Time..: 16:28

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	31 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #29 38 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-003 **Work Order #...:** LJL3D2AC **Matrix.....:** WATER
Date Sampled...: 08/21/09 10:46 **Date Received..:** 08/22/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/18/09
Prep Batch #...: 9259162 **Analysis Time..:** 22:44
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	56	(50 - 200)

Dalton Utilities

Client Sample ID: #30 428 HOLLY DR

HPLC

Lot-Sample #...: D9H220152-004 Work Order #...: LJL3F1AA Matrix.....: WATER
Date Sampled...: 08/21/09 11:05 Date Received..: 08/22/09
Prep Date.....: 08/26/09 Analysis Date..: 08/27/09
Prep Batch #...: 9238300 Analysis Time..: 12:35
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	71	(50 - 200)
13C4 PFBA	76	(50 - 200)
~~13C2 PFHxA~~	~~75~~	~~(50 - 200)~~
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	73	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	72	(50 - 200)
13C2 PFDoA	62	(50 - 200)

Dalton Utilities

Client Sample ID: #30 428 HOLLY DR

HPLC

Lot-Sample #...: D9H220152-004
Date Sampled...: 08/21/09 11:05
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJL3F1AC
Date Received..: 08/22/09
Analysis Date..: 08/29/09
Analysis Time..: 16:35

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	39 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #30 428 HOLLY DR

HPLC

Lot-Sample #...: D9H220152-004 **Work Order #...:** LJL3F2AC **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:05 **Date Received..:** 08/22/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/18/09
Prep Batch #...: 9259162 **Analysis Time..:** 22:51
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #31 196 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-005 **Work Order #...:** LJL3G1AA **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:14 **Date Received..:** 08/22/09
Prep Date.....: 08/26/09 **Analysis Date..:** 08/27/09
Prep Batch #...: 9238300 **Analysis Time..:** 12:51
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	75	(50 - 200)
13C4 PFBA	77	(50 - 200)
~~13C2 PFHxA~~	~~74~~	~~(50 - 200)~~
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	74	(50 - 200)
13C2 PFDA	73	(50 - 200)
13C2 PFUnA	77	(50 - 200)
13C2 PFDoA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #31 196 RIVER VIEW DR

HPLC

Lot-Sample #...:	D9H220152-005	**Work Order #...:**	LJL3G1AC	**Matrix.....:**	WATER
Date Sampled...:	08/21/09 11:14	**Date Received..:**	08/22/09		
Prep Date.....:	08/27/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9239343	**Analysis Time..:**	16:43		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	38 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #31 196 RIVER VIEW DR

HPLC

Lot-Sample #...: D9H220152-005 **Work Order #...:** LJL3G2AC **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:14 **Date Received..:** 08/22/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/18/09
Prep Batch #...: 9259162 **Analysis Time..:** 22:59
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	69	(50 - 200)

Dalton Utilities

Client Sample ID: #32 382 HOLLY DR

HPLC

Lot-Sample #...: D9H220152-006 **Work Order #...:** LJL3H1AA **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:22 **Date Received..:** 08/22/09
Prep Date.....: 08/26/09 **Analysis Date..:** 08/27/09
Prep Batch #...: 9238300 **Analysis Time..:** 13:07
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	**0.0046 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	60	(50 - 200)
13C4 PFOS	40 *	(50 - 200)
13C4 PFBA	50	(50 - 200)
13C2 PFHxA	48 *	(50 - 200)
18O2 PFHxS	55	(50 - 200)
13C5 PFNA	41 *	(50 - 200)
13C2 PFDA	41 *	(50 - 200)
13C2 PFUnA	41 *	(50 - 200)
13C2 PFDoA	34 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #32 382 HOLLY DR

HPLC

Lot-Sample #...: D9H220152-006 **Work Order #...:** LJL3H1AC **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:22 **Date Received..:** 08/22/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239343 **Analysis Time..:** 16:50
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	41 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #32 382 HOLLY DR

HPLC

Lot-Sample #...: D9H220152-006 **Work Order #...:** LJL3H2AA **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:22 **Date Received..:** 08/22/09
Prep Date.....: 08/28/09 **Analysis Date..:** 08/30/09
Prep Batch #...: 9240442 **Analysis Time..:** 05:29
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	**0.0031 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	93	(50 - 200)
13C4 PFOS	53	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	91	(50 - 200)
18O2 PFHxS	83	(50 - 200)
13C5 PFNA	67	(50 - 200)
13C2 PFDA	52	(50 - 200)
13C2 PFUnA	54	(50 - 200)
13C2 PFDoA	52	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #32 382 HOLLY DR

HPLC

Lot-Sample #...:	D9H220152-006	**Work Order #...:**	LJL3H2AC	**Matrix.....:**	WATER
Date Sampled...:	08/21/09 11:22	**Date Received..:**	08/22/09		
Prep Date.....:	09/16/09	**Analysis Date..:**	09/18/09		
Prep Batch #...:	9259162	**Analysis Time..:**	23:06		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	67	(50 - 200)

Dalton Utilities

Client Sample ID: #33 273 WEST HOLLY CREEK DR

HPLC

Lot-Sample #...: D9H220152-007 Work Order #...: LJL3J1AA Matrix.....: WATER
Date Sampled...: 08/21/09 11:48 Date Received..: 08/22/09
Prep Date.....: 08/26/09 Analysis Date..: 08/27/09
Prep Batch #...: 9238300 Analysis Time..: 13:23
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	**0.012 J**	**0.030**	**ug/L**	**0.0082**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	**0.0063 J**	**0.020**	**ug/L**	**0.0062**
Perfluorohexanoic acid (PFHxA)	**0.012 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	**0.0067 J**	**0.020**	**ug/L**	**0.0055**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	90	(50 - 200)
13C4 PFOS	67	(50 - 200)
13C4 PFBA	73	(50 - 200)
13C2 PFHxA	74	(50 - 200)
18O2 PFHxS	83	(50 - 200)
13C5 PFNA	64	(50 - 200)
13C2 PFDA	67	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	53	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #33 273 WEST HOLLY CREEK DR

HPLC

Lot-Sample #...: D9H220152-007
Date Sampled...: 08/21/09 11:48
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJL3J1AC
Date Received..: 08/22/09
Analysis Date..: 08/29/09
Analysis Time..: 17:04

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #33 273 WEST HOLLY CREEK DR

HPLC

Lot-Sample #...: D9H220152-007 **Work Order #...:** LJL3J2AC **Matrix.....:** WATER
Date Sampled...: 08/21/09 11:48 **Date Received..:** 08/22/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/18/09
Prep Batch #...: 9259162 **Analysis Time..:** 23:13
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	56	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9H220152-008
Date Sampled...: 08/21/09
Prep Date.....: 08/26/09
Prep Batch #...: 9238300
Dilution Factor: 1

Work Order #...: LJL3L1AA
Date Received..: 08/22/09
Analysis Date..: 08/27/09
Analysis Time..: 13:39

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	85	(50 - 200)
13C4 PFBA	71	(50 - 200)
13C2 PFHxA	72	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	76	(50 - 200)
13C2 PFDA	82	(50 - 200)
13C2 PFUnA	90	(50 - 200)
13C2 PFDoA	68	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9H220152-008
Date Sampled...: 08/21/09
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJL3L1AC
Date Received..: 08/22/09
Analysis Date..: 08/29/09
Analysis Time..: 17:11

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	41 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9H220152-008
Date Sampled...: 08/21/09
Prep Date.....: 09/16/09
Prep Batch #...: 9259162
Dilution Factor: 1

Work Order #...: LJL3L2AC
Date Received..: 08/22/09
Analysis Date..: 09/18/09
Analysis Time..: 23:27

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	69	(50 - 200)

QC DATA ASSOCIATION SUMMARY

D9H220152

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9240442	9240285
002	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9259162	
003	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9259162	
004	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9259162	
005	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9259162	
006	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9240442	9240285
	WATER	DEN -LC-0012		9259162	
007	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9259162	
008	WATER	DEN -LC-0012		9238300	9238190
	WATER	DEN -LC-0012		9239343	
	WATER	DEN -LC-0012		9259162	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9H250123

Dena Haverland

Dalton Utilities
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Dalton, GA 30721

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September 21, 2009

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Case Narrative
D9H250123

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for eight samples received at TestAmerica Denver on August 25, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 1.1°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments
Please note during the FOSA extraction process all eight samples clogged the cartridge; therefore, the organic preparation chemist had to use two cartridges for each of these samples.

Due to low internal standard recoveries in the samples, samples #34 206 MEADOW DR, #35 4279 BROWN'S BRIDGE RD, #36 3950 BROWN'S BRIDGE RD, #37 3799 BROWN'S BRIDGE RD, #38 3677 BROWN'S BRIDGE RD, and #40 3764 BROWN'S BRIDGE RD were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 9259162. Both batches are included in this report. Please note the sample results should be considered estimated.

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all eight samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for MeFOSA.

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA for batch 9259162. Strata-XL cartridges were used instead of the SOP required Strata-X. This was done to help minimize the clogging problems in these samples. The Strata-XL has a larger pore size allowing more viscous sample matrix to be extracted.

The internal standard recoveries for Me FOSA were recovered below 50% in samples #34 206 Meadow Dr, #35 4279 Brown's Bridge Rd, #36 3950 Brown's Bridge Rd, #37 3799 Brown's Bridge Rd, #38 3677 Brown's Bridge Rd, #39 3660 Brown's Bridge Rd, and #40 3764 Brown's Bridge Rd. Upon re-extraction past hold time and reanalysis in QC batch 9259162, surrogate recoveries were 100% in control in samples #34 206 Meadow Dr, #35 4279 Brown's Bridge Rd, #36 3950 Brown's Bridge Rd, #37 3799 Brown's Bridge Rd, #38 3677 Brown's Bridge Rd, and #40 3764 Brown's Bridge Rd. Upon re-extraction past hold time and reanalysis in QC batch 9259162, surrogate recovery outliers were still present in sample #39 3660 Brown's Bridge Rd, demonstrating this anomaly is most likely due to matrix interference. Both the original and reanalysis data have been provided for samples #34 206 Meadow Dr, #35 4279 Brown's Bridge Rd, #36 3950 Brown's Bridge Rd, #37 3799 Brown's Bridge Rd, #38 3677 Brown's Bridge Rd, and #40 3764 Brown's Bridge Rd, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time. The original analysis data has been provided for sample #39 3660 Brown's Bridge Rd.

The low-level LCS analyses associated with QC batches 9239343 and 9259162 exhibited percent recoveries above the QC control limits for Perfluorooctane sulfonamide (FOSA). This is an indicator that data may be biased high. As no detectable FOSA concentrations are present in the associated samples, corrective action is deemed unnecessary.

The method required MS/MSD analyses could not be performed for QC batches 9239343, 9239360, and 9259162, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9H250123

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#36 3950 BROWN'S BRIDGE RD 08/24/09 14:54 003				
Perfluorobutanoic acid (PFBA)	0.0068 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0040 J	0.020	ug/L	DEN -LC-0012
#37 3799 BROWN'S BRIDGE RD 08/24/09 15:13 004				
Perfluorooctanoic Acid	0.011 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.043	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.010 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.013 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0085 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9H250123

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9H250123

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9H250123

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LJN83	001	#34 206 MEADOW DR	08/24/09	13:25
LJN86	002	#35 4279 BROWN'S BRIDGE RD	08/24/09	14:24
LJN88	003	#36 3950 BROWN'S BRIDGE RD	08/24/09	14:54
LJN89	004	#37 3799 BROWN'S BRIDGE RD	08/24/09	15:13
LJN9A	005	#38 3677 BROWN'S BRIDGE RD	08/24/09	15:33
LJN9C	006	#39 3660 BROWN'S BRIDGE RD	08/24/09	15:52
LJN9D	007	#40 3764 BROWN'S BRIDGE RD	08/24/09	16:07
LJN9E	008	TRIP BLANK	08/24/09	16:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #34 206 MEADOW DR

HPLC

Lot-Sample #...: D9H250123-001 **Work Order #...:** LJN831AA **Matrix.....:** WATER
Date Sampled...: 08/24/09 13:25 **Date Received..:** 08/25/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 00:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	94	(50 - 200)
13C2 PFHxA	109	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	87	(50 - 200)
13C2 PFDA	73	(50 - 200)
13C2 PFUnA	75	(50 - 200)
13C2 PFDoA	74	(50 - 200)

Dalton Utilities

Client Sample ID: #34 206 MEADOW DR

HPLC

Lot-Sample #...:	D9H250123-001	**Work Order #...:**	LJN831AC	**Matrix.....:**	WATER
Date Sampled...:	08/24/09 13:25	**Date Received..:**	08/25/09		
Prep Date.....:	08/27/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9239343	**Analysis Time..:**	17:18		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #34 206 MEADOW DR

HPLC

Lot-Sample #...: D9H250123-001
Date Sampled...: 08/24/09 13:25
Prep Date.....: 09/16/09
Prep Batch #...: 9259162
Dilution Factor: 1

Work Order #...: LJN832AC
Date Received..: 08/25/09
Analysis Date..: 09/18/09
Analysis Time..: 23:34

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	77	(50 - 200)

Dalton Utilities

Client Sample ID: #35 4279 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-002
Date Sampled...: 08/24/09 14:24
Prep Date.....: 08/27/09
Prep Batch #...: 9239360
Dilution Factor: 1

Work Order #...: LJN861AA
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 00:25

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	90	(50 - 200)
13C2 PFHxA	110	(50 - 200)
~~18O2 PFHxS~~	~~89~~	~~(50 - 200)~~
13C5 PFNA	87	(50 - 200)
13C2 PFDA	68	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	68	(50 - 200)

Dalton Utilities

Client Sample ID: #35 4279 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-002
Date Sampled...: 08/24/09 14:24
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJN861AC
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 17:25

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	29 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #35 4279 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-002 **Work Order #...:** LJN862AC **Matrix.....:** WATER
Date Sampled...: 08/24/09 14:24 **Date Received..:** 08/25/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/18/09
Prep Batch #...: 9259162 **Analysis Time..:** 23:42
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	61	(50 - 200)

Dalton Utilities

Client Sample ID: #36 3950 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-003 **Work Order #...:** LJN881AA **Matrix.....:** WATER
Date Sampled...: 08/24/09 14:54 **Date Received..:** 08/25/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 00:41
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	**0.0068 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	**0.0040 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	68	(50 - 200)
13C4 PFBA	89	(50 - 200)
13C2 PFHxA	108	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	85	(50 - 200)
13C2 PFDA	67	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	73	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #36 3950 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...:	D9H250123-003	**Work Order #...:**	LJN881AC	**Matrix.....:**	WATER
Date Sampled...:	08/24/09 14:54	**Date Received..:**	08/25/09		
Prep Date.....:	08/27/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9239343	**Analysis Time..:**	17:33		
Dilution Factor:	1	**Method.....:**	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #36 3950 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-003
Date Sampled...: 08/24/09 14:54
Prep Date.....: 09/16/09
Prep Batch #...: 9259162
Dilution Factor: 1

Work Order #...: LJN882AC
Date Received..: 08/25/09
Analysis Date..: 09/18/09
Analysis Time..: 23:49

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #37 3799 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-004
Date Sampled...: 08/24/09 15:13
Prep Date.....: 08/27/09
Prep Batch #...: 9239360
Dilution Factor: 1

Work Order #...: LJN891AA
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 00:57

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.011 J**	**0.020**	**ug/L**	**0.0055**
Perfluorooctanesulfonate	**0.043**	**0.020**	**ug/L**	**0.0068**
Perfluorobutanoic acid (PFBA)	**0.010 J**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	**0.013 J**	**0.030**	**ug/L**	**0.0082**
Perfluorohexanoic acid (PFHxA)	**0.0085 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	101	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	110	(50 - 200)
18O2 PFHxS	89	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	65	(50 - 200)
13C2 PFDoA	65	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #37 3799 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...:	D9H250123-004	**Work Order #...:**	LJN891AC	**Matrix.....:**	WATER
Date Sampled...:	08/24/09 15:13	**Date Received..:**	08/25/09		
Prep Date.....:	08/27/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9239343	**Analysis Time..:**	17:40		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	45 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #37 3799 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-004
Date Sampled...: 08/24/09 15:13
Prep Date.....: 09/16/09
Prep Batch #...: 9259162
Dilution Factor: 1

Work Order #...: LJN892AC
Date Received..: 08/25/09
Analysis Date..: 09/18/09
Analysis Time..: 23:56

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #38 3677 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-005 **Work Order #...:** LJN9A1AA **Matrix.....:** WATER
Date Sampled...: 08/24/09 15:33 **Date Received..:** 08/25/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 01:13
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	103	(50 - 200)
13C4 PFOS	74	(50 - 200)
13C4 PFBA	100	(50 - 200)
13C2 PFHxA	117	(50 - 200)
18O2 PFHxS	98	(50 - 200)
13C5 PFNA	96	(50 - 200)
13C2 PFDA	76	(50 - 200)
13C2 PFUnA	72	(50 - 200)
13C2 PFDoA	80	(50 - 200)

Dalton Utilities

Client Sample ID: #38 3677 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-005
Date Sampled...: 08/24/09 15:33
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJN9A1AC
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 17:47

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	23 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #38 3677 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-005
Date Sampled...: 08/24/09 15:33
Prep Date.....: 09/16/09
Prep Batch #...: 9259162
Dilution Factor: 1

Work Order #...: LJN9A2AC
Date Received..: 08/25/09
Analysis Date..: 09/19/09
Analysis Time..: 00:03

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #39 3660 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-006 Work Order #...: LJN9C1AA Matrix.....: WATER
Date Sampled...: 08/24/09 15:52 Date Received..: 08/25/09
Prep Date.....: 08/27/09 Analysis Date..: 08/29/09
Prep Batch #...: 9239360 Analysis Time..: 01:45
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	103	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	95	(50 - 200)
13C2 PFHxA	110	(50 - 200)
18O2 PFHxS	93	(50 - 200)
13C5 PFNA	92	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	79	(50 - 200)

Dalton Utilities

Client Sample ID: #39 3660 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-006
Date Sampled...: 08/24/09 15:52
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJN9C1AC
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 17:54

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	27 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #40 3764 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-007 Work Order #...: LJN9D1AA Matrix.....: WATER
Date Sampled...: 08/24/09 16:07 Date Received..: 08/25/09
Prep Date.....: 08/27/09 Analysis Date..: 08/29/09
Prep Batch #...: 9239360 Analysis Time..: 02:01
Dilution Factor: 1 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	107	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	112	(50 - 200)
18O2 PFHxS	93	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	68	(50 - 200)
13C2 PFUnA	59	(50 - 200)
13C2 PFDoA	60	(50 - 200)

Dalton Utilities

Client Sample ID: #40 3764 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-007
Date Sampled...: 08/24/09 16:07
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJN9D1AC
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 18:01

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #40 3764 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9H250123-007 Work Order #...: LJN9D2AC Matrix.....: WATER
Date Sampled...: 08/24/09 16:07 Date Received..: 08/25/09
Prep Date.....: 09/16/09 Analysis Date..: 09/19/09
Prep Batch #...: 9259162 Analysis Time..: 00:17
Dilution Factor: 1 Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	64	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLANK

HPLC

Lot-Sample #...: D9H250123-008
Date Sampled...: 08/24/09 16:45
Prep Date.....: 08/27/09
Prep Batch #...: 9239360
Dilution Factor: 1

Work Order #...: LJN9E1AA
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 02:18

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	98	(50 - 200)
13C4 PFOS	71	(50 - 200)
13C4 PFBA	83	(50 - 200)
13C2 PFHxA	98	(50 - 200)
18O2 PFHxS	80	(50 - 200)
13C5 PFNA	93	(50 - 200)
13C2 PFDA	79	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	62	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLANK

HPLC

Lot-Sample #...: D9H250123-008
Date Sampled...: 08/24/09 16:45
Prep Date.....: 08/27/09
Prep Batch #...: 9239343
Dilution Factor: 1

Work Order #...: LJN9E1AC
Date Received..: 08/25/09
Analysis Date..: 08/29/09
Analysis Time..: 18:08

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9H260198

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
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Michelle A. Johnston
Project Manager

September 18, 2009

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Case Narrative
D9H260198

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for seven samples received at TestAmerica Denver on August 26, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 3.3°C.

Chain-of-custody 116937 did not list associated sample collection times. The sample collection times were logged per the information on the sample container labels. The client was notified on August 26, 2009.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

Please note during the FOSA extraction process all seven samples clogged the cartridge; therefore, the organic preparation chemist had to use two cartridges for each of these samples.

Sample #43 3500 BROWN'S BRIDGE RD exhibited an elevated detection limit. The method specified initial extract volume is 250-mLs; however, only 196-mLs passed through the two cartridges used for the extraction. The dilution factor has been adjusted accordingly.

Due to low internal standard recoveries in the samples and in the method blank associated with QC batch 9240149, samples #42 3334 BROWN'S BRIDGE RD, #45 275 ARTIS CHARLES RD, and DUP were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 9251485. Both batches are included in this report. Please note the sample results should be considered estimated.

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all seven samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for MeFOSA.

The internal standard recoveries for MeFOSA associated with QC batch 9240149 were recovered below 50% in samples #42 3334 BROWN'S BRIDGE RD, #43 3500 BROWN'S BRIDGE RD, #44 BROWN'S BRIDGE RD, #45 ARTIS CHARLES RD, #46 310 DAVENPORT RD, and DUP. This is an indicator that data may be biased low. Upon re-extraction past hold time and reanalysis in QC batch 9251485, surrogate recovery outliers were still present in samples #43 3500 BROWN'S BRIDGE RD, #44 BROWN'S BRIDGE RD, and #46 310 DAVENPORT RD, demonstrating that this anomaly is most likely due to matrix interference. Upon re-extraction past hold time and reanalysis in QC batch 9251485, surrogate recoveries were 100% in control in samples #42 3334 BROWN'S BRIDGE RD, #45 275 ARTIS CHARLES RD, and DUP. Both the original and reanalysis data have been provided for samples #42 3334 BROWN'S BRIDGE RD, #45 275 ARTIS CHARLES RD, and DUP, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The Method Blank associated with QC batch 9240149 exhibited an internal standard recovery outside the QC control limits for MeFOSA. Upon re-extraction and reanalysis in QC batch 9251485, 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.

The low-level LCS and mid-level LCSD analyses associated with QC batch 9240149 exhibited percent recoveries outside the QC control limits for Perfluorooctane sulfonamide (FOSA). This is an indicator that data may be biased high. As no detectable concentrations are present in the associated samples, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 9239360, 9240149, and 9251485, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9H260198

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#46 310 DAVENPORT RD 08/25/09 11:31 006				
Perfluorohexanoic acid (PFHxA)	0.0047 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9H260198

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9H260198

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9H260198

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LJRQ0	001	#41 3403 BROWNS'S BRIDGE RD	08/25/09	10:27
LJRRP	002	#42 3334 BROWNS'S BRIDGE RD	08/25/09	10:42
LJRRW	003	#43 3500 BROWNS'S BRIDGE RD	08/25/09	10:53
LJRR2	004	#44 3285 BROWNS'S BRIDGE RD	08/25/09	11:04
LJRTC	005	#45 275 ARTIS CHARLES RD	08/25/09	11:13
LJRTJ	006	#46 310 DAVENPORT RD	08/25/09	11:31
LJRTM	007	DUP	08/25/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #41 3403 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-001 Work Order #...: LJRQ01AA Matrix.....: WATER
Date Sampled...: 08/25/09 10:27 Date Received..: 08/26/09
Prep Date.....: 08/27/09 Analysis Date..: 08/29/09
Prep Batch #...: 9239360 Analysis Time..: 02:34
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	60	(50 - 200)
13C4 PFBA	82	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	78	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #41 3403 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...:	D9H260198-001	**Work Order #...:**	LJRQ01AC	**Matrix.....:**	WATER
Date Sampled...:	08/25/09 10:27	**Date Received..:**	08/26/09		
Prep Date.....:	08/28/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9240149	**Analysis Time..:**	18:51		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #42 3334 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-002 **Work Order #...:** LJRRP1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 10:42 **Date Received..:** 08/26/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 02:50
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	62	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	79	(50 - 200)
13C2 PFDA	65	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	66	(50 - 200)

Dalton Utilities

Client Sample ID: #42 3334 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...:	D9H260198-002	**Work Order #...:**	LJRRP1AC	**Matrix.....:**	WATER
Date Sampled...:	08/25/09 10:42	**Date Received..:**	08/26/09		
Prep Date.....:	08/28/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9240149	**Analysis Time..:**	18:59		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #42 3334 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-002
Date Sampled...: 08/25/09 10:42
Prep Date.....: 09/08/09
Prep Batch #...: 9251485
Dilution Factor: 1

Work Order #...: LJRRP3AC
Date Received..: 08/26/09
Analysis Date..: 09/10/09
Analysis Time..: 18:43

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #43 3500 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-003 **Work Order #...:** LJRRW1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 10:53 **Date Received..:** 08/26/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 03:06
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	94	(50 - 200)
13C4 PFOS	62	(50 - 200)
13C4 PFBA	84	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	80	(50 - 200)
13C2 PFDA	63	(50 - 200)
13C2 PFUnA	61	(50 - 200)
13C2 PFDoA	66	(50 - 200)

Dalton Utilities

Client Sample ID: #43 3500 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-003 Work Order #...: LJRRW1AC Matrix.....: WATER
Date Sampled...: 08/25/09 10:53 Date Received..: 08/26/09
Prep Date.....: 08/28/09 Analysis Date..: 08/29/09
Prep Batch #...: 9240149 Analysis Time..: 19:06
Dilution Factor: 1.28

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.064	ug/L	0.0073

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	39 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #44 3285 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-004 **Work Order #...:** LJRR21AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 11:04 **Date Received..:** 08/26/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 03:22
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	71	(50 - 200)
13C4 PFBA	94	(50 - 200)
13C2 PFHxA	113	(50 - 200)
18O2 PFHxS	96	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	73	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	83	(50 - 200)

Dalton Utilities

Client Sample ID: #44 3285 BROWNS'S BRIDGE RD

HPLC

Lot-Sample #...: D9H260198-004 Work Order #...: LJRR21AC Matrix.....: WATER
Date Sampled...: 08/25/09 11:04 Date Received..: 08/26/09
Prep Date.....: 08/28/09 Analysis Date..: 08/29/09
Prep Batch #...: 9240149 Analysis Time..: 19:13
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	44 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #45 275 ARTIS CHARLES RD

HPLC

Lot-Sample #...: D9H260198-005
Date Sampled...: 08/25/09 11:13
Prep Date.....: 08/27/09
Prep Batch #...: 9239360
Dilution Factor: 1

Work Order #...: LJRTC1AA
Date Received..: 08/26/09
Analysis Date..: 08/29/09
Analysis Time..: 03:38

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	116	(50 - 200)
13C4 PFOS	78	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	115	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	98	(50 - 200)
13C2 PFDA	79	(50 - 200)
13C2 PFUnA	80	(50 - 200)
13C2 PFDoA	86	(50 - 200)

Dalton Utilities

Client Sample ID: #45 275 ARTIS CHARLES RD

HPLC

Lot-Sample #...: D9H260198-005
Date Sampled...: 08/25/09 11:13
Prep Date.....: 08/28/09
Prep Batch #...: 9240149
Dilution Factor: 1

Work Order #...: LJRTC1AC
Date Received..: 08/26/09
Analysis Date..: 08/29/09
Analysis Time..: 19:20

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #45 275 ARTIS CHARLES RD

HPLC

Lot-Sample #...: D9H260198-005 **Work Order #...:** LJRTC3AC **Matrix.....:** WATER
Date Sampled...: 08/25/09 11:13 **Date Received..:** 08/26/09
Prep Date.....: 09/08/09 **Analysis Date..:** 09/10/09
Prep Batch #...: 9251485 **Analysis Time..:** 19:04
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #46 310 DAVENPORT RD

HPLC

Lot-Sample #...: D9H260198-006 **Work Order #...:** LJRTJ1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 11:31 **Date Received..:** 08/26/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 03:54
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	**0.0047 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	98	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	103	(50 - 200)
18O2 PFHxS	86	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	64	(50 - 200)
13C2 PFDoA	72	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #46 310 DAVENPORT RD

HPLC

Lot-Sample #...:	D9H260198-006	**Work Order #...:**	LJRTJ1AC	**Matrix.....:**	WATER
Date Sampled...:	08/25/09 11:31	**Date Received..:**	08/26/09		
Prep Date.....:	08/28/09	**Analysis Date..:**	08/29/09		
Prep Batch #...:	9240149	**Analysis Time..:**	19:27		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	45 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9H260198-007 **Work Order #...:** LJRTM1AA **Matrix.....:** WATER
Date Sampled...: 08/25/09 **Date Received..:** 08/26/09
Prep Date.....: 08/27/09 **Analysis Date..:** 08/29/09
Prep Batch #...: 9239360 **Analysis Time..:** 04:10
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	110	(50 - 200)
18O2 PFHxS	92	(50 - 200)
13C5 PFNA	90	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	73	(50 - 200)
13C2 PFDoA	78	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9H260198-007
Date Sampled...: 08/25/09
Prep Date.....: 08/28/09
Prep Batch #...: 9240149
Dilution Factor: 1

Work Order #...: LJRTM1AC
Date Received..: 08/26/09
Analysis Date..: 08/29/09
Analysis Time..: 19:42

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9H260198-007
Date Sampled...: 08/25/09
Prep Date.....: 09/08/09
Prep Batch #...: 9251485
Dilution Factor: 1

Work Order #...: LJRTM3AC
Date Received..: 08/26/09
Analysis Date..: 09/10/09
Analysis Time..: 19:19

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	65	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I010246

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

for: **Michelle A. Johnston**
Project Manager

September 28, 2009

4955 Yarrow Street Arvada, CO 80002 **tel** 303.736.0100 **fax** 303.431.7171 **www.testamericainc.com**

Case Narrative
D9I010246

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for eighteen samples received at TestAmerica Denver on September 1, 2009, according to documented sample acceptance procedures. The samples were received in good condition at temperatures of 1.9°C and 1.8°C.

Please note no client information was listed on the chains-of-custody. The client was identified by the information listed on the FedEx air bill. The client was notified on September 2, 2009.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all the samples in this lot to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

Please note the organic preparation chemist had to use two cartridges during the FOSA extraction process as the first cartridge clogged during the extraction of the following samples:

#48 132 KIRBY YOUNG RD
#51 916 KIRBY YOUNG RD
#54 234 BUFORD RIDLEY RD
#55 275 BUFORD RIDLEY RD
#56 279 BUFORD RIDLEY RD
#59 100 NGA RACEWAY RD
#60 220 NGA RACEWAY RD
#62 362 ZEKE ALLEN RD
#63 355 ZEKE ALLEN RD
DUP

The internal standard recovery for 13C2 PFUnA associated with QC batch 9246452 were recovered below 50% in sample #55 275 BUFORD RIDLEY RD. Upon re-extraction and reanalysis in QC batch 9257502, internal standard recoveries were 100% in control. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The internal standard recovery for MeFOSA associated with QC batch 9244546 was recovered below 50% in the samples listed below. Upon re-extraction and reanalysis outside of hold, in QC batch 9248096 or 9259175, internal standard recovery outliers were present in some samples, while other samples exhibited recoveries within control, as detailed below:

Sample	MeFOSA Recovery Original (9244546)	MeFOSA Recovery Re-analysis (9248096*)
#48 132 KIRBY YOUNG RD	49.3%	41% (batch 9259175)
#60 220 NGA RACEWAY RD	36.7%	6.3%
#61 463 ZEKE ALLEN RD	42.3%	56%
#62 362 ZEKE ALLEN RD	39.9%	21%
#63 355 ZEKE ALLEN RD	34.6%	53%
DUP	35.7%	47.7%

* Batch 9248096 unless otherwise noted.

Only the original data has been reported for samples demonstrating internal standard recoveries outside QC limits in both the original and re-analysis data, as this indicates that the anomaly is most likely due to matrix interference. Both the original and re-analysis data are reported for the samples demonstrating internal standard recoveries 100% in control in the re-analysis batch, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The method blank associated with QC batch 9244546 exhibited an internal standard recovery below 50% for MeFOSA. This failure indicates a high bias in the quantitation of the FOSA. As no detectable concentrations of FOSA are present in the Method Blank, corrective action is deemed unnecessary.

Due to a limitation in the LIMS system, the low-level LCS associated with QC batch 9257502 reported the percent recovery for Perfluorotridecanoic Acid (PFTriA) as 0.0%. PFTriA was recovered within the control limits (50-150%); however, as this compound was detected below the Method Detection Limit (MDL) of 0.020 ug/L, the system reports the percent recovery as 0.0%.

The low level LCS and mid-level LCSD analyses associated with QC batch 9244546 exhibited percent recoveries outside the QC control limits for FOSA, biased high. This is an indicator that data may be biased high. As no detectable concentrations of FOSA were present in the associated samples, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 9245528, 9246452, 9257502, 9244546 and 9248096, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I010246

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#51 916 KIRBY YOUNG RD 08/31/09 11:09 005				
Perfluorobutane sulfonate (PFB	0.017 J	0.020	ug/L	DEN -LC-0012
#53 160 BUFORD RIDLEY RD 08/31/09 11:44 007				
Perfluorohexanoic acid (PFHxA)	0.0083 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.010 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.0083 J	0.020	ug/L	DEN -LC-0012
#54 234 BUFORD RIDLEY RD 08/31/09 11:53 008				
Perfluorohexanoic acid (PFHxA)	0.0039 J	0.020	ug/L	DEN -LC-0012
DUP 08/31/09 018				
Perfluorobutane sulfonate (PFB	0.016 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I010246

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I010246

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I010246

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LJ50M	001	#47 2558 BROWN'S BRIDGE RD	08/26/09	11:38
LJ50R	002	#48 132 KIRBY YOUNG RD	08/26/09	11:56
LJ50T	003	#49 772 KIRBY YOUNG RD	08/31/09	10:45
LJ501	004	#50 FEILD BLANK	08/31/09	10:45
LJ507	005	#51 916 KIRBY YOUNG RD	08/31/09	11:09
LJ51A	006	#52 134 BUFORD RIDLEY RD	08/31/09	11:32
LJ51E	007	#53 160 BUFORD RIDLEY RD	08/31/09	11:44
LJ51J	008	#54 234 BUFORD RIDLEY RD	08/31/09	11:53
LJ51K	009	#55 275 BUFORD RIDLEY RD	08/31/09	12:07
LJ51L	010	#56 279 BUFORD RIDLEY RD	08/31/09	12:15
LJ51M	011	#57 281 BUFORD RIDLEY RD	08/31/09	12:27
LJ51P	012	#58 267 BUFORD RIDLEY RD	08/31/09	12:40
LJ51R	013	#59 100 NGA RACEWAY RD	08/31/09	12:58
LJ51T	014	#60 220 NGA RACEWAY RD	08/31/09	13:14
LJ51W	015	#61 463 ZEKE ALLEN RD	08/31/09	13:49
LJ510	016	#62 362 ZEKE ALLEN RD	08/31/09	13:56
LJ512	017	#63 355 ZEKE ALLEN RD	08/31/09	14:09
LJ514	018	DUP	08/31/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #47 2558 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9I010246-001 Work Order #...: LJ50M1AA Matrix.....: WATER
Date Sampled...: 08/26/09 11:38 Date Received..: 09/01/09
Prep Date.....: 09/01/09 Analysis Date..: 09/03/09
Prep Batch #...: 9244546 Analysis Time..: 21:26
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #47 2558 BROWN'S BRIDGE RD

HPLC

Lot-Sample #...: D9I010246-001 **Work Order #...:** LJ50M1AC **Matrix.....:** WATER
Date Sampled...: 08/26/09 11:38 **Date Received..:** 09/01/09
Prep Date.....: 09/02/09 **Analysis Date..:** 09/04/09
Prep Batch #...: 9245528 **Analysis Time..:** 04:14
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	115	(50 - 200)
13C4 PFOS	75	(50 - 200)
13C4 PFBA	99	(50 - 200)
13C2 PFHxA	118	(50 - 200)
18O2 PFHxS	105	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	75	(50 - 200)
13C2 PFDoA	73	(50 - 200)

Dalton Utilities

Client Sample ID: #48 132 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I010246-002 **Work Order #...:** LJ50R1AA **Matrix.....:** WATER
Date Sampled...: 08/26/09 11:56 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 21:33
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #48 132 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I010246-002 Work Order #...: LJ50R1AC Matrix.....: WATER
Date Sampled...: 08/26/09 11:56 Date Received..: 09/01/09
Prep Date.....: 09/02/09 Analysis Date..: 09/04/09
Prep Batch #...: 9245528 Analysis Time..: 04:30
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	113	(50 - 200)
13C4 PFOS	73	(50 - 200)
13C4 PFBA	94	(50 - 200)
13C2 PFHxA	111	(50 - 200)
18O2 PFHxS	100	(50 - 200)
13C5 PFNA	90	(50 - 200)
13C2 PFDA	77	(50 - 200)
13C2 PFUnA	74	(50 - 200)
13C2 PFDoA	79	(50 - 200)

Dalton Utilities

Client Sample ID: #49 772 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I010246-003
Date Sampled...: 08/31/09 10:45
Prep Date.....: 09/01/09
Prep Batch #...: 9244546
Dilution Factor: 1

Work Order #...: LJ50T1AA
Date Received..: 09/01/09
Analysis Date..: 09/03/09
Analysis Time..: 21:40

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	60	(50 - 200)

Dalton Utilities

Client Sample ID: #49 772 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I010246-003 Work Order #...: LJ50T1AC Matrix.....: WATER
Date Sampled...: 08/31/09 10:45 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 01:29
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	101	(50 - 200)
13C4 PFOS	62	(50 - 200)
13C4 PFBA	90	(50 - 200)
13C2 PFHxA	93	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	76	(50 - 200)
13C2 PFDA	65	(50 - 200)
13C2 PFUnA	56	(50 - 200)
13C2 PFDoA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #50 FEILD BLANK

HPLC

Lot-Sample #...: D9I010246-004 **Work Order #...:** LJ5011AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 10:45 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 21:54
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	59	(50 - 200)

Dalton Utilities

Client Sample ID: #50 FEILD BLANK

HPLC

Lot-Sample #...: D9I010246-004 Work Order #...: LJ5011AC Matrix.....: WATER
Date Sampled...: 08/31/09 10:45 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 01:45
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	117	(50 - 200)
13C4 PFOS	85	(50 - 200)
13C4 PFBA	93	(50 - 200)
13C2 PFHxA	97	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	101	(50 - 200)
13C2 PFDA	89	(50 - 200)
13C2 PFUnA	83	(50 - 200)
13C2 PFDoA	76	(50 - 200)

Dalton Utilities

Client Sample ID: #51 916 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I010246-005 **Work Order #...:** LJ5071AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 11:09 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 22:02
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #51 916 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I010246-005 Work Order #...: LJ5071AC Matrix.....: WATER
Date Sampled...: 08/31/09 11:09 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 02:01
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	**0.017 J**	**0.020**	**ug/L**	**0.0045**
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	67	(50 - 200)
13C4 PFBA	89	(50 - 200)
13C2 PFHxA	98	(50 - 200)
18O2 PFHxS	86	(50 - 200)
13C5 PFNA	81	(50 - 200)
13C2 PFDA	69	(50 - 200)
13C2 PFUnA	64	(50 - 200)
13C2 PFDoA	66	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #52 134 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-006 **Work Order #...:** LJ51A1AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 11:32 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 22:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	72	(50 - 200)

Dalton Utilities

Client Sample ID: #52 134 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-006
Date Sampled...: 08/31/09 11:32
Prep Date.....: 09/03/09
Prep Batch #...: 9246452
Dilution Factor: 1

Work Order #...: LJ51A1AC
Date Received..: 09/01/09
Analysis Date..: 09/06/09
Analysis Time..: 02:18

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	116	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	95	(50 - 200)
13C2 PFHxA	102	(50 - 200)
18O2 PFHxS	91	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	74	(50 - 200)
13C2 PFUnA	73	(50 - 200)
13C2 PFDoA	77	(50 - 200)

Dalton Utilities

Client Sample ID: #53 160 BUFORD RIDLEY RD

HPLC

Lot-Sample #...:	D9I010246-007	**Work Order #...:**	LJ51E1AA	**Matrix.....:**	WATER
Date Sampled...:	08/31/09 11:44	**Date Received..:**	09/01/09		
Prep Date.....:	09/01/09	**Analysis Date..:**	09/03/09		
Prep Batch #...:	9244546	**Analysis Time..:**	22:16		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	64	(50 - 200)

Dalton Utilities

Client Sample ID: #53 160 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-007 **Work Order #...:** LJ51E1AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 11:44 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 02:50
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	**0.0083 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	**0.010 J**	**0.020**	**ug/L**	**0.0068**
Perfluorooctanoic Acid	**0.0083 J**	**0.020**	**ug/L**	**0.0055**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	93	(50 - 200)
13C4 PFOS	58	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	83	(50 - 200)
18O2 PFHxS	77	(50 - 200)
13C5 PFNA	71	(50 - 200)
13C2 PFDA	60	(50 - 200)
13C2 PFUnA	54	(50 - 200)
13C2 PFDoA	61	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #54 234 BUFORD RIDLEY RD

HPLC

Lot-Sample #...:	D9I010246-008	**Work Order #...:**	LJ51J1AA	**Matrix.....:**	WATER
Date Sampled...:	08/31/09 11:53	**Date Received..:**	09/01/09		
Prep Date.....:	09/01/09	**Analysis Date..:**	09/03/09		
Prep Batch #...:	9244546	**Analysis Time..:**	22:23		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #54 234 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-008 Work Order #...: LJ51J1AC Matrix.....: WATER
Date Sampled...: 08/31/09 11:53 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 03:06
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	**0.0039 J**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	90	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	73	(50 - 200)
13C2 PFUnA	69	(50 - 200)
13C2 PFDoA	70	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #55 275 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-009 **Work Order #...:** LJ51K1AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:07 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 22:30
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	69	(50 - 200)

Dalton Utilities

Client Sample ID: #55 275 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-009 Work Order #...: LJ51K1AC Matrix.....: WATER
Date Sampled...: 08/31/09 12:07 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 03:22
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	88	(50 - 200)
13C4 PFOS	50	(50 - 200)
13C4 PFBA	78	(50 - 200)
13C2 PFHxA	79	(50 - 200)
18O2 PFHxS	72	(50 - 200)
13C5 PFNA	63	(50 - 200)
13C2 PFDA	51	(50 - 200)
13C2 PFUnA	46 *	(50 - 200)
13C2 PFDoA	53	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #55 275 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-009 **Work Order #...:** LJ51K2AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:07 **Date Received..:** 09/01/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9257502 **Analysis Time..:** 15:10
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0092
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	113	(50 - 200)
13C4 PFOS	73	(50 - 200)
13C4 PFBA	83	(50 - 200)
13C2 PFHxA	90	(50 - 200)
18O2 PFHxS	98	(50 - 200)
13C5 PFNA	80	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	65	(50 - 200)
13C2 PFDoA	58	(50 - 200)

Dalton Utilities

Client Sample ID: #56 279 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-010
Date Sampled...: 08/31/09 12:15
Prep Date.....: 09/01/09
Prep Batch #...: 9244546
Dilution Factor: 1

Work Order #...: LJ51L1AA
Date Received..: 09/01/09
Analysis Date..: 09/03/09
Analysis Time..: 22:37

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #56 279 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-010 **Work Order #...:** LJ51L1AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:15 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 03:38
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	60	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	89	(50 - 200)
18O2 PFHxS	79	(50 - 200)
13C5 PFNA	76	(50 - 200)
13C2 PFDA	58	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	60	(50 - 200)

Dalton Utilities

Client Sample ID: #57 281 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-011 **Work Order #...:** LJ51M1AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:27 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 22:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	72	(50 - 200)

Dalton Utilities

Client Sample ID: #57 281 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-011 **Work Order #...:** LJ51M1AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:27 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 03:54
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	74	(50 - 200)
13C4 PFBA	99	(50 - 200)
13C2 PFHxA	109	(50 - 200)
18O2 PFHxS	92	(50 - 200)
13C5 PFNA	95	(50 - 200)
13C2 PFDA	82	(50 - 200)
13C2 PFUnA	73	(50 - 200)
13C2 PFDoA	76	(50 - 200)

Dalton Utilities

Client Sample ID: #58 267 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-012 **Work Order #...:** LJ51P1AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:40 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 22:59
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #58 267 BUFORD RIDLEY RD

HPLC

Lot-Sample #...: D9I010246-012 **Work Order #...:** LJ51P1AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:40 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 04:10
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	107	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	99	(50 - 200)
13C2 PFHxA	108	(50 - 200)
18O2 PFHxS	91	(50 - 200)
13C5 PFNA	90	(50 - 200)
13C2 PFDA	81	(50 - 200)
13C2 PFUnA	76	(50 - 200)
13C2 PFDoA	78	(50 - 200)

Dalton Utilities

Client Sample ID: #59 100 NGA RACEWAY RD

HPLC

Lot-Sample #...: D9I010246-013
Date Sampled...: 08/31/09 12:58
Prep Date.....: 09/01/09
Prep Batch #...: 9244546
Dilution Factor: 1

Work Order #...: LJ51R1AA
Date Received..: 09/01/09
Analysis Date..: 09/03/09
Analysis Time..: 23:06

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	58	(50 - 200)

Dalton Utilities

Client Sample ID: #59 100 NGA RACEWAY RD

HPLC

Lot-Sample #...: D9I010246-013 **Work Order #...:** LJ51R1AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 12:58 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 04:27
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	100	(50 - 200)
13C4 PFOS	62	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	101	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	81	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	60	(50 - 200)

Dalton Utilities

Client Sample ID: #60 220 NGA RACEWAY RD

HPLC

Lot-Sample #...:	D9I010246-014	**Work Order #...:**	LJ51T1AA	**Matrix.....:**	WATER
Date Sampled...:	08/31/09 13:14	**Date Received..:**	09/01/09		
Prep Date.....:	09/01/09	**Analysis Date..:**	09/03/09		
Prep Batch #...:	9244546	**Analysis Time..:**	23:13		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	37 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #60 220 NGA RACEWAY RD

HPLC

Lot-Sample #...: D9I010246-014 Work Order #...: LJ51T1AC Matrix.....: WATER
Date Sampled...: 08/31/09 13:14 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 04:43
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	107	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	99	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	88	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	69	(50 - 200)
13C2 PFDoA	71	(50 - 200)

Dalton Utilities

Client Sample ID: #61 463 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I010246-015 **Work Order #...:** LJ51W1AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 13:49 **Date Received..:** 09/01/09
Prep Date.....: 09/01/09 **Analysis Date..:** 09/03/09
Prep Batch #...: 9244546 **Analysis Time..:** 23:20
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #61 463 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I010246-015 **Work Order #...:** LJ51W1AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 13:49 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 05:15
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	112	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	104	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	85	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	63	(50 - 200)
13C2 PFDoA	68	(50 - 200)

Dalton Utilities

Client Sample ID: #61 463 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I010246-015 **Work Order #...:** LJ51W2AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 13:49 **Date Received..:** 09/01/09
Prep Date.....: 09/05/09 **Analysis Date..:** 09/10/09
Prep Batch #...: 9248096 **Analysis Time..:** 17:38
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	56	(50 - 200)

Dalton Utilities

Client Sample ID: #62 362 ZEKE ALLEN RD

HPLC

Lot-Sample #...:	D9I010246-016	**Work Order #...:**	LJ5101AA	**Matrix.....:**	WATER
Date Sampled...:	08/31/09 13:56	**Date Received..:**	09/01/09		
Prep Date.....:	09/01/09	**Analysis Date..:**	09/03/09		
Prep Batch #...:	9244546	**Analysis Time..:**	23:28		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	40 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #62 362 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I010246-016 Work Order #...: LJ5101AC Matrix.....: WATER
Date Sampled...: 08/31/09 13:56 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 05:31
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	98	(50 - 200)
13C2 PFHxA	101	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	66	(50 - 200)
13C2 PFUnA	61	(50 - 200)
13C2 PFDoA	69	(50 - 200)

Dalton Utilities

Client Sample ID: #63 355 ZEKE ALLEN RD

HPLC

Lot-Sample #...:	D9I010246-017	**Work Order #...:**	LJ5121AA	**Matrix.....:**	WATER
Date Sampled...:	08/31/09 14:09	**Date Received..:**	09/01/09		
Prep Date.....:	09/01/09	**Analysis Date..:**	09/03/09		
Prep Batch #...:	9244546	**Analysis Time..:**	23:35		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	35 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #63 355 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I010246-017 Work Order #...: LJ5121AC Matrix.....: WATER
Date Sampled...: 08/31/09 14:09 Date Received..: 09/01/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 05:47
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	121	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	104	(50 - 200)
13C2 PFHxA	114	(50 - 200)
18O2 PFHxS	93	(50 - 200)
13C5 PFNA	94	(50 - 200)
13C2 PFDA	82	(50 - 200)
13C2 PFUnA	76	(50 - 200)
13C2 PFDoA	79	(50 - 200)

Dalton Utilities

Client Sample ID: #63 355 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I010246-017 **Work Order #...:** LJ5122AA **Matrix.....:** WATER
Date Sampled...: 08/31/09 14:09 **Date Received..:** 09/01/09
Prep Date.....: 09/05/09 **Analysis Date..:** 09/10/09
Prep Batch #...: 9248096 **Analysis Time..:** 17:53
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	53	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I010246-018
Date Sampled...: 08/31/09
Prep Date.....: 09/01/09
Prep Batch #...: 9244546
Dilution Factor: 1

Work Order #...: LJ5141AA
Date Received..: 09/01/09
Analysis Date..: 09/03/09
Analysis Time..: 23:42

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	36 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I010246-018 **Work Order #...:** LJ5141AC **Matrix.....:** WATER
Date Sampled...: 08/31/09 **Date Received..:** 09/01/09
Prep Date.....: 09/03/09 **Analysis Date..:** 09/06/09
Prep Batch #...: 9246452 **Analysis Time..:** 06:03
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	**0.016 J**	**0.020**	**ug/L**	**0.0045**
Perfluorodecane sulfonate (PFDS)	ND	0.020	ug/L	0.0029
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	119	(50 - 200)
13C4 PFOS	71	(50 - 200)
13C4 PFBA	102	(50 - 200)
13C2 PFHxA	107	(50 - 200)
18O2 PFHxS	92	(50 - 200)
13C5 PFNA	92	(50 - 200)
13C2 PFDA	78	(50 - 200)
13C2 PFUnA	68	(50 - 200)
13C2 PFDoA	77	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

QC DATA ASSOCIATION SUMMARY

D9I010246

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9245528	
002	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9245528	
003	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
004	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
005	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
006	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
007	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
008	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
009	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
	WATER	DEN -LC-0012		9257502	
010	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
011	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
012	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
013	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	
014	WATER	DEN -LC-0012		9244546	
	WATER	DEN -LC-0012		9246452	

(Continued on next page)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I020235

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

Michelle A. Johnston
Project Manager

September 18, 2009

Case Narrative
D9I020235

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for two samples received at TestAmerica Denver on September 2, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 1.3°C.

The samples were logged per client instruction on September 2, 2009, as the client indicated the information on the Chains of Custody was incomplete and/or erroneous. The client provided a revised chain of custody on September 4, 2009; however the sample ID information was still incomplete. The samples were logged as #65-290 N GA SPEEDWAY and #66-8165 HIGHWAY 225, per the client's original instructions. Both the original and revised chains of custody are included in the report.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all seven samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

Due to low internal standard recoveries and cartridges clogging during the extraction process, samples and the associated QC in FOSA batch 9247171 were filtered through a PVDF filter after the spike and base were added to the samples. This is a deviation from the SOP.

Please note during the FOSA extraction process samples #65-290 N GA SPEEDWAY and #66-8165 HIGHWAY 225 clogged the cartridge; therefore, the organic preparation chemist had to use two cartridges for each of these samples. The chemist observed no color or sediment in these samples.

The internal standard recoveries for MeFOSA, associated with QC batch 9247171, were recovered below 50% in samples #65-290 N GA SPEEDWAY and #66-8165 HIGHWAY 225. This is an indicator that data may be biased low. Upon re-extraction and reanalysis within hold in QC batch 9251485, surrogate recovery outliers were still present in these samples, demonstrating that this anomaly is most likely due to matrix interference. Both sets of data have been provided.

The low level LCS and mid-level LCS/LCSD analyses associated with QC batch 9247171 exhibited percent recoveries and surrogate recoveries outside the QC control limits. This is an indicator that data may be biased low. Upon re-extraction and reanalysis in QC batch 9251485, all QC recoveries were 100% in control. Both sets of data have been provided.

The method required MS/MSD could not be performed for QC batches 9246452, 9247171 and 9251485, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I020235

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#66-8165 HIGHWAY 225 09/01/09 15:00 002				
Perfluorooctanoic Acid	0.22	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.20	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.064	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.13	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.14	0.020	ug/L	DEN -LC-0012
Perfluoroheptanoic acid (PFHpA	0.11	0.020	ug/L	DEN -LC-0012
Perfluorononanoic acid (PFNA)	0.040	0.020	ug/L	DEN -LC-0012
Perfluorodecanoic acid (PFDA)	0.0099 J	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.36	0.020	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.066	0.030	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I020235

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I020235

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I020235

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LJ7VT	001	#65-290 N GA SPEEDWAY	09/01/09	14:30
LJ7V0	002	#66-8165 HIGHWAY 225	09/01/09	15:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #65-290 N GA SPEEDWAY

HPLC

Lot-Sample #...: D9I020235-001 Work Order #...: LJ7VT1AA Matrix.....: WATER
Date Sampled...: 09/01/09 14:30 Date Received..: 09/02/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 06:19
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	105	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	69	(50 - 200)
13C2 PFUnA	65	(50 - 200)
13C2 PFDoA	72	(50 - 200)

Dalton Utilities

Client Sample ID: #65-290 N GA SPEEDWAY

HPLC

Lot-Sample #...: D9I020235-001 **Work Order #...:** LJ7VT1AC **Matrix.....:** WATER
Date Sampled...: 09/01/09 14:30 **Date Received..:** 09/02/09
Prep Date.....: 09/04/09 **Analysis Date..:** 09/05/09
Prep Batch #...: 9247171 **Analysis Time..:** 08:43
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	1.0 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #65-290 N GA SPEEDWAY

HPLC

Lot-Sample #...:	D9I020235-001	**Work Order #...:**	LJ7VT2AC	**Matrix.....:**	WATER
Date Sampled...:	09/01/09 14:30	**Date Received..:**	09/02/09		
Prep Date.....:	09/08/09	**Analysis Date..:**	09/11/09		
Prep Batch #...:	9251485	**Analysis Time..:**	14:07		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #66-8165 HIGHWAY 225

HPLC

Lot-Sample #...: D9I020235-002 Work Order #...: LJ7V01AA Matrix.....: WATER
Date Sampled...: 09/01/09 15:00 Date Received..: 09/02/09
Prep Date.....: 09/03/09 Analysis Date..: 09/06/09
Prep Batch #...: 9246452 Analysis Time..: 06:36
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.22**	**0.020**	**ug/L**	**0.0055**
Perfluorooctanesulfonate	**0.20**	**0.020**	**ug/L**	**0.0068**
Perfluorobutanoic acid (PFBA)	**0.064**	**0.020**	**ug/L**	**0.0062**
Perfluoropentanoic acid (PFPA)	**0.13**	**0.030**	**ug/L**	**0.0082**
Perfluorohexanoic acid (PFHxA)	**0.14**	**0.020**	**ug/L**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	**0.11**	**0.020**	**ug/L**	**0.0054**
Perfluorononanoic acid (PFNA)	**0.040**	**0.020**	**ug/L**	**0.0065**
Perfluorodecanoic acid (PFDA)	**0.0099 J**	**0.020**	**ug/L**	**0.0026**
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	**0.36**	**0.020**	**ug/L**	**0.0045**
Perfluorohexane sulfonate (PFHxS)	**0.066**	**0.030**	**ug/L**	**0.0084**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	105	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	95	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	86	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	69	(50 - 200)
13C2 PFUnA	65	(50 - 200)
13C2 PFDoA	78	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #66-8165 HIGHWAY 225

HPLC

Lot-Sample #...: D9I020235-002 Work Order #...: LJ7V01AC Matrix.....: WATER
Date Sampled...: 09/01/09 15:00 Date Received..: 09/02/09
Prep Date.....: 09/04/09 Analysis Date..: 09/05/09
Prep Batch #...: 9247171 Analysis Time..: 08:50
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	1.3 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #66-8165 HIGHWAY 225

HPLC

Lot-Sample #...: D9I020235-002 **Work Order #...:** LJ7V02AC **Matrix.....:** WATER
Date Sampled...: 09/01/09 15:00 **Date Received..:** 09/02/09
Prep Date.....: 09/08/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9251485 **Analysis Time..:** 14:14
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

QC DATA ASSOCIATION SUMMARY

D9I020235

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DEN -LC-0012		9246452	
	WATER	DEN -LC-0012		9247171	
	WATER	DEN -LC-0012		9251485	
002	WATER	DEN -LC-0012		9246452	
	WATER	DEN -LC-0012		9247171	
	WATER	DEN -LC-0012		9251485	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I040249

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

for: **Michelle A. Johnston**
Project Manager

September 28, 2009

4955 Yarrow Street Arvada, CO 80002 **tel** 303.736.0100 **fax** 303.431.7171 **www.testamericainc.com**

Case Narrative
D9I040249

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for eleven samples received at TestAmerica Denver on September 4, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.6°C.

Samples I-2 STP2 INF, I-3 STP3 INF and I-4 STP4 INF were initially logged in this lot, as all samples were listed on a single chain of custody. Per client instruction on September 8, 2009, these samples were deleted from D9I040249 and moved to a separate lot. A revised chain of custody was received on September 10, 2009. Both the original and revised chains of custody are included in the report.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to the sample to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

The Standard Operating Procedure (SOP) was altered slightly in the FOSA sample preparation of samples #68 10368 HWY 225, #69 7357 HWY 225, #71 252 CENTER HILL CHURCH RD, #72 346 CENTER HILL CHURCH RD, #73 1121 CENTER HILL CHURCH RD, #74 1143 CENTER HILL CHURCH RD, DUP and DUP#2 in batch 9259175. Strata-XL cartridges were used instead of the SOP required Strata-X. The Strata-XL cartridge was used to minimize clogging during the extraction of these samples, as the larger pore size of the Strata-XL allows more viscous sample matrix to be extracted.

Please note during the FOSA extraction process samples #71 252 CENTER HILL CHURCH RD, #72 346 CENTER HILL CHURCH RD, #68 10368 HWY 225, #69 7357 HWY 225 and DUP clogged the cartridge; therefore, the organic preparation chemist used a second cartridge for each of these samples.

The internal standard recovery for 13C2 PFDoA associated with QC batch 9252175 was recovered below 50% in sample DUP. Upon re-extraction and reanalysis in QC batch 9257502, internal standard recoveries were 100% in control. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

Due to low internal standard recoveries in the method blank, the mid-level LCS and the samples associated with QC batch 9253507, all associated samples were re-extracted outside of the laboratory prescribed holding time and reanalyzed in QC batch 9258499. Both batches are included in this report. Please note the sample results should be considered estimated.

The internal standard recovery for 13C2 PFDoA and/or 13C2 PFUnA associated with QC batch 9253507 were recovered below the lower limit of 50% in four of the samples as detailed below. Upon re-extraction and reanalysis in QC batch 9258499, internal standard recoveries were 100% in control for these four samples. However, two samples with acceptable internal standard recoveries in batch 9253507 exhibited recoveries below the control limits in QC batch 9258499, as detailed below:

Sample	Original Internal Standard Recovery (9253507)	Re-analysis Internal Standard Recovery (9258499)
#70 300 NGA RACEWAY RD	13C2 PFDoA: 49%	13C2 PFDoA: 61%
#71 252 CENTER HILL CHURCH RD	13C2 PFUnA: 48% 13C2 PFDoA: 47%	13C2 PFUnA: 55% 13C2 PFDoA:54%
#72 346 CENTER HILL CHURCH RD	13C2 PFUnA: 49% 13C2 PFDoA:47%	13C2 PFUnA: 72% 13C2 PFDoA:66%
#73 1121 CENTER HILL CHURCH RD	13C2 PFUnA: 47% 13C2 PFDoA:49%	13C2 PFUnA: 69% 13C2 PFDoA:56%
#74 1143 CENTER HILL CHURCH RD	13C2 PFDoA: 62%	13C2 PFDoA: 49%
DUP#2	13C2 PFDoA: 68%	13C2 PFDoA: 49%

Both the original and re-analysis data are reported, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The internal standard recovery for MeFOSA associated with QC batch 9252176 was recovered below 50% in sample DUP. Upon re-extraction and reanalysis in QC batch 9257502, internal standard recoveries were 100% in control. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The internal standard recovery for MeFOSA associated with QC batches 9253504 and 9252176 was recovered below the lower control limit of 50% in the samples listed below. Upon re-extraction and reanalysis outside of hold, in QC batch 9259175, internal standard recovery outliers were still present in some samples, while other samples exhibited recoveries within control, as detailed below:

Sample	MeFOSA Recovery Original (9253504*)	MeFOSA Recovery Re-analysis (9259175)
#68 10368 HWY 225	43.6% (9252176)	55%
#69 7357 HWY 225	28.4% (9252176)	52%
#71 252 CENTER HILL CHURCH RD	45.2%	48%
#72 346 CENTER HILL CHURCH RD	35.7%	46%
#73 1121 CENTER HILL CHURCH RD	33.5%	37%
#74 1143 CENTER HILL CHURCH RD	47%	51%
DUP#2	39%	53%

* Batch 9253504 unless otherwise noted.

Only the original data has been reported for samples demonstrating internal standard recoveries outside QC limits in both the original and re-analysis data, as this indicates that the anomaly is most likely due to matrix interference. Both the original and re-analysis data are reported for the samples demonstrating internal standard recoveries 100% in control in the re-analysis batch, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

The Method Blank associated with QC batch 9253507 exhibited an internal standard recovery outside the QC control limits for 13C2 PFDoA. Upon re-extraction and reanalysis in QC batch 9258499, internal standard 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.

Due to a limitation in the LIMS system, the low-level LCS associated with QC batches 9258499 and 9257502 reported the percent recoveries for Perfluorotridecanoic Acid (PFTriA) as 0.0%. PFTriA was recovered within the control limits (50-150%) in both QC batches, however as the compound was detected below the Method Detection Limit (MDL) of 0.020 ug/L, the system reports the percent recoveries as 0.0%.

The mid-level LCS analyses associated with QC batch 9253507 internal standard recoveries outside the QC control limits for 13C2 PFUnA and 13C2 PFDoA. Upon re-extraction and reanalysis in QC batch 9258499, internal standard 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.

The method required MS/MSD could not be performed for QC batches 9252175, 9253507, 9258499, 9257502, 9252176, 9259175, and 9253504, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I040249

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#69 7357 HWY 225 09/02/09 14:23 006				
Perfluoroundecanoic acid (PFUn	0.0029 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I040249

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I040249

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I040249

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LKDJP	004	#67 737 KIRBY YOUNG RD	09/02/09	10:20
LKDJR	005	#68 10368 HWY 225	09/02/09	13:26
LKDJT	006	#69 7357 HWY 225	09/02/09	14:23
LKDJW	007	#70 300 NGA RACEWAY RD	09/03/09	14:18
LKDJ0	008	#71 252 CENTER HILL CHURCH RD	09/03/09	14:44
LKDJ2	009	#72 346 CENTER HILL CHURCH RD	09/03/09	15:05
LKDJ3	010	#73 1121 CENTER HILL CHURCH RD	09/03/09	15:49
LKDJ5	011	#74 1143 CENTER HILL CHURCH RD	09/03/09	16:00
LKDJ9	012	#75 167 ZEKE ALLEN RD	09/03/09	16:31
LKDKA	013	DUP	09/02/09	
LKDKD	014	DUP#2	09/03/09	
LKDKH	015	TRIP BLK	09/03/09	
LKDKK	016	FIELD BLK	09/03/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #67 737 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I040249-004 **Work Order #...:** LKDJP1AA **Matrix.....:** WATER
Date Sampled...: 09/02/09 10:20 **Date Received..:** 09/04/09
Prep Date.....: 09/09/09 **Analysis Date..:** 09/09/09
Prep Batch #...: 9252175 **Analysis Time..:** 21:08
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	97	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	104	(50 - 200)
18O2 PFHxS	88	(50 - 200)
13C5 PFNA	78	(50 - 200)
13C2 PFDA	66	(50 - 200)
13C2 PFUnA	68	(50 - 200)
13C2 PFDoA	69	(50 - 200)

Dalton Utilities

Client Sample ID: #67 737 KIRBY YOUNG RD

HPLC

Lot-Sample #...: D9I040249-004 **Work Order #...:** LKDJP1AC **Matrix.....:** WATER
Date Sampled...: 09/02/09 10:20 **Date Received..:** 09/04/09
Prep Date.....: 09/09/09 **Analysis Date..:** 09/10/09
Prep Batch #...: 9252176 **Analysis Time..:** 02:24
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #68 10368 HWY 225

HPLC

Lot-Sample #...: D9I040249-005 Work Order #...: LKDJR1AA Matrix.....: WATER
Date Sampled...: 09/02/09 13:26 Date Received..: 09/04/09
Prep Date.....: 09/09/09 Analysis Date..: 09/09/09
Prep Batch #...: 9252175 Analysis Time..: 21:24
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	95	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	96	(50 - 200)
18O2 PFHxS	89	(50 - 200)
13C5 PFNA	73	(50 - 200)
13C2 PFDA	56	(50 - 200)
13C2 PFUnA	54	(50 - 200)
13C2 PFDoA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #68 10368 HWY 225

HPLC

Lot-Sample #...:	D9I040249-005	**Work Order #...:**	LKDJR1AC	**Matrix.....:**	WATER
Date Sampled...:	09/02/09 13:26	**Date Received..:**	09/04/09		
Prep Date.....:	09/09/09	**Analysis Date..:**	09/10/09		
Prep Batch #...:	9252176	**Analysis Time..:**	02:32		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (F OSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	44 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #68 10368 HWY 225

HPLC

Lot-Sample #...: D9I040249-005 **Work Order #...:** LKDJR2AC **Matrix.....:** WATER
Date Sampled...: 09/02/09 13:26 **Date Received..:** 09/04/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9259175 **Analysis Time..:** 18:08
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #69 7357 HWY 225

HPLC

Lot-Sample #...: D9I040249-006 **Work Order #...:** LKDJT1AA **Matrix.....:** WATER
Date Sampled...: 09/02/09 14:23 **Date Received..:** 09/04/09
Prep Date.....: 09/09/09 **Analysis Date..:** 09/09/09
Prep Batch #...: 9252175 **Analysis Time..:** 21:40
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	**0.0029 J**	**0.020**	**ug/L**	**0.0025**
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	99	(50 - 200)
13C4 PFOS	63	(50 - 200)
13C4 PFBA	89	(50 - 200)
13C2 PFHxA	93	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	76	(50 - 200)
13C2 PFDA	59	(50 - 200)
13C2 PFUnA	63	(50 - 200)
13C2 PFDoA	57	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #69 7357 HWY 225

HPLC

Lot-Sample #...:	D9I040249-006	**Work Order #...:**	LKDJT1AC	**Matrix.....:**	WATER
Date Sampled...:	09/02/09 14:23	**Date Received..:**	09/04/09		
Prep Date.....:	09/09/09	**Analysis Date..:**	09/10/09		
Prep Batch #...:	9252176	**Analysis Time..:**	02:39		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	28 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #69 7357 HWY 225

HPLC

Lot-Sample #...:	D9I040249-006	**Work Order #...:**	LKDJT2AC	**Matrix.....:**	WATER
Date Sampled...:	09/02/09 14:23	**Date Received..:**	09/04/09		
Prep Date.....:	09/16/09	**Analysis Date..:**	09/19/09		
Prep Batch #...:	9259175	**Analysis Time..:**	18:16		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	52	(50 - 200)

Dalton Utilities

Client Sample ID: #70 300 NGA RACEWAY RD

HPLC

Lot-Sample #...: D9I040249-007 Work Order #...: LKDJW1AA Matrix.....: WATER
Date Sampled...: 09/03/09 14:18 Date Received..: 09/04/09
Prep Date.....: 09/10/09 Analysis Date..: 09/11/09
Prep Batch #...: 9253507 Analysis Time..: 20:37
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	126	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	90	(50 - 200)
13C2 PFHxA	109	(50 - 200)
18O2 PFHxS	102	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	59	(50 - 200)
13C2 PFUnA	50	(50 - 200)
13C2 PFDoA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #70 300 NGA RACEWAY RD

HPLC

Lot-Sample #...:	D9I040249-007	**Work Order #...:**	LKDJW1AC	**Matrix.....:**	WATER
Date Sampled...:	09/03/09 14:18	**Date Received..:**	09/04/09		
Prep Date.....:	09/10/09	**Analysis Date..:**	09/11/09		
Prep Batch #...:	9253504	**Analysis Time..:**	15:33		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #70 300 NGA RACEWAY RD

HPLC

Lot-Sample #...: D9I040249-007 **Work Order #...:** LKDJW2AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 14:18 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 10:43
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	114	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	88	(50 - 200)
13C2 PFHxA	94	(50 - 200)
18O2 PFHxS	99	(50 - 200)
13C5 PFNA	78	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	62	(50 - 200)
13C2 PFDoA	61	(50 - 200)

Dalton Utilities

Client Sample ID: #71 252 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-008 Work Order #...: LKDJ01AA Matrix.....: WATER
Date Sampled...: 09/03/09 14:44 Date Received..: 09/04/09
Prep Date.....: 09/10/09 Analysis Date..: 09/11/09
Prep Batch #...: 9253507 Analysis Time..: 20:53
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	118	(50 - 200)
13C4 PFOS	63	(50 - 200)
13C4 PFBA	88	(50 - 200)
13C2 PFHxA	109	(50 - 200)
18O2 PFHxS	101	(50 - 200)
13C5 PFNA	80	(50 - 200)
13C2 PFDA	53	(50 - 200)
13C2 PFUnA	48 *	(50 - 200)
13C2 PFDoA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #71 252 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-008 **Work Order #...:** LKDJ01AC **Matrix.....:** WATER
Date Sampled...: 09/03/09 14:44 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253504 **Analysis Time..:** 15:40
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	45 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #71 252 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-008 **Work Order #...:** LKDJ02AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 14:44 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 10:59
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	104	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	76	(50 - 200)
13C2 PFHxA	87	(50 - 200)
18O2 PFHxS	83	(50 - 200)
13C5 PFNA	67	(50 - 200)
13C2 PFDA	58	(50 - 200)
13C2 PFUnA	55	(50 - 200)
13C2 PFDoA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #72 346 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-009 **Work Order #...:** LKDJ21AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 15:05 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253507 **Analysis Time..:** 21:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	128	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	112	(50 - 200)
18O2 PFHxS	98	(50 - 200)
13C5 PFNA	83	(50 - 200)
13C2 PFDA	59	(50 - 200)
13C2 PFUnA	49 *	(50 - 200)
13C2 PFDoA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #72 346 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...:	D9I040249-009	**Work Order #...:**	LKDJ21AC	**Matrix.....:**	WATER
Date Sampled...:	09/03/09 15:05	**Date Received..:**	09/04/09		
Prep Date.....:	09/10/09	**Analysis Date..:**	09/11/09		
Prep Batch #...:	9253504	**Analysis Time..:**	15:47		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	36 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #72 346 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-009 **Work Order #...:** LKDJ22AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 15:05 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 15:59
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	125	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	84	(50 - 200)
13C2 PFHxA	95	(50 - 200)
18O2 PFHxS	107	(50 - 200)
13C5 PFNA	79	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	72	(50 - 200)
13C2 PFDoA	66	(50 - 200)

Dalton Utilities

Client Sample ID: #73 1121 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-010 **Work Order #...:** LKDJ31AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 15:49 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253507 **Analysis Time..:** 21:26
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	127	(50 - 200)
13C4 PFOS	62	(50 - 200)
13C4 PFBA	93	(50 - 200)
13C2 PFHxA	113	(50 - 200)
18O2 PFHxS	97	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	54	(50 - 200)
13C2 PFUnA	47 *	(50 - 200)
13C2 PFDoA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #73 1121 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-010 **Work Order #...:** LKDJ31AC **Matrix.....:** WATER
Date Sampled...: 09/03/09 15:49 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253504 **Analysis Time..:** 16:02
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	34 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #73 1121 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-010 Work Order #...: LKDJ32AA Matrix.....: WATER
Date Sampled...: 09/03/09 15:49 Date Received..: 09/04/09
Prep Date.....: 09/15/09 Analysis Date..: 09/17/09
Prep Batch #...: 9258499 Analysis Time..: 16:15
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	114	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	78	(50 - 200)
13C2 PFHxA	87	(50 - 200)
18O2 PFHxS	99	(50 - 200)
13C5 PFNA	79	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	69	(50 - 200)
13C2 PFDoA	56	(50 - 200)

Dalton Utilities

Client Sample ID: #74 1143 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-011 Work Order #...: LKDJ51AA Matrix.....: WATER
Date Sampled...: 09/03/09 16:00 Date Received..: 09/04/09
Prep Date.....: 09/10/09 Analysis Date..: 09/11/09
Prep Batch #...: 9253507 Analysis Time..: 21:58
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	127	(50 - 200)
13C4 PFOS	72	(50 - 200)
13C4 PFBA	98	(50 - 200)
13C2 PFHxA	120	(50 - 200)
18O2 PFHxS	100	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	62	(50 - 200)
13C2 PFDoA	62	(50 - 200)

Dalton Utilities

Client Sample ID: #74 1143 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-011 **Work Order #...:** LKDJ51AC **Matrix.....:** WATER
Date Sampled...: 09/03/09 16:00 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253504 **Analysis Time..:** 16:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #74 1143 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...: D9I040249-011 **Work Order #...:** LKDJ52AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 16:00 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 16:31
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	100	(50 - 200)
13C4 PFOS	56	(50 - 200)
13C4 PFBA	70	(50 - 200)
13C2 PFHxA	77	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	62	(50 - 200)
13C2 PFDA	63	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #74 1143 CENTER HILL CHURCH RD

HPLC

Lot-Sample #...:	D9I040249-011	**Work Order #...:**	LKDJ52AC	**Matrix.....:**	WATER
Date Sampled...:	09/03/09 16:00	**Date Received..:**	09/04/09		
Prep Date.....:	09/16/09	**Analysis Date..:**	09/19/09		
Prep Batch #...:	9259175	**Analysis Time..:**	18:51		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #75 167 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I040249-012 **Work Order #...:** LKDJ91AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 16:31 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253507 **Analysis Time..:** 22:14
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	131	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	96	(50 - 200)
13C2 PFHxA	117	(50 - 200)
18O2 PFHxS	104	(50 - 200)
13C5 PFNA	88	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	56	(50 - 200)
13C2 PFDoA	61	(50 - 200)

Dalton Utilities

Client Sample ID: #75 167 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I040249-012 **Work Order #...:** LKDJ91AC **Matrix.....:** WATER
Date Sampled...: 09/03/09 16:31 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253504 **Analysis Time..:** 16:16
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #75 167 ZEKE ALLEN RD

HPLC

Lot-Sample #...: D9I040249-012 **Work Order #...:** LKDJ92AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 16:31 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 16:47
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	63	(50 - 200)
13C4 PFBA	74	(50 - 200)
13C2 PFHxA	84	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	72	(50 - 200)
13C2 PFDA	66	(50 - 200)
13C2 PFUnA	58	(50 - 200)
13C2 PFDoA	55	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I040249-013 **Work Order #...:** LKDKA1AA **Matrix.....:** WATER
Date Sampled...: 09/02/09 **Date Received..:** 09/04/09
Prep Date.....: 09/09/09 **Analysis Date..:** 09/09/09
Prep Batch #...: 9252175 **Analysis Time..:** 21:56
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	96	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	88	(50 - 200)
13C2 PFHxA	99	(50 - 200)
18O2 PFHxS	86	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	53	(50 - 200)
13C2 PFUnA	58	(50 - 200)
13C2 PFDoA	48 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...:	D9I040249-013	**Work Order #...:**	LKDKA1AC	**Matrix.....:**	WATER
Date Sampled...:	09/02/09	**Date Received..:**	09/04/09		
Prep Date.....:	09/09/09	**Analysis Date..:**	09/10/09		
Prep Batch #...:	9252176	**Analysis Time..:**	02:46		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	48 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I040249-013
Date Sampled...: 09/02/09
Prep Date.....: 09/14/09
Prep Batch #...: 9257502
Dilution Factor: 1

Work Order #...: LKDKA2AA
Date Received..: 09/04/09
Analysis Date..: 09/17/09
Analysis Time..: 15:26

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	76	(50 - 200)
13C2 PFHxA	87	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	73	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	63	(50 - 200)
13C2 PFDoA	58	(50 - 200)

Dalton Utilities

Client Sample ID: DUP#2

HPLC

Lot-Sample #...: D9I040249-014
Date Sampled...: 09/03/09
Prep Date.....: 09/10/09
Prep Batch #...: 9253507
Dilution Factor: 1

Work Order #...: LKDKD1AA
Date Received..: 09/04/09
Analysis Date..: 09/11/09
Analysis Time..: 22:30

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	128	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	98	(50 - 200)
13C2 PFHxA	123	(50 - 200)
18O2 PFHxS	100	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	65	(50 - 200)
13C2 PFUnA	56	(50 - 200)
13C2 PFDoA	68	(50 - 200)

Dalton Utilities

Client Sample ID: DUP#2

HPLC

Lot-Sample #...: D9I040249-014
Date Sampled...: 09/03/09
Prep Date.....: 09/10/09
Prep Batch #...: 9253504
Dilution Factor: 1

Work Order #...: LKDKD1AC
Date Received..: 09/04/09
Analysis Date..: 09/11/09
Analysis Time..: 16:23

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	39 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP#2

HPLC

Lot-Sample #...: D9I040249-014 **Work Order #...:** LKDKD2AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 17:03
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	98	(50 - 200)
13C4 PFOS	58	(50 - 200)
13C4 PFBA	70	(50 - 200)
13C2 PFHxA	81	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	63	(50 - 200)
13C2 PFDA	53	(50 - 200)
13C2 PFUnA	56	(50 - 200)
13C2 PFDoA	49 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: DUP#2

HPLC

Lot-Sample #...: D9I040249-014	**Work Order #...:** LKDKD2AC	**Matrix.....:** WATER
Date Sampled...: 09/03/09	**Date Received..:** 09/04/09	
Prep Date.....: 09/16/09	**Analysis Date..:** 09/19/09	
Prep Batch #...: 9259175	**Analysis Time..:** 19:06	
Dilution Factor: 1		
	Method.....: DEN -LC-0012	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA) *	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	53	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I040249-015
Date Sampled...: 09/03/09
Prep Date.....: 09/10/09
Prep Batch #...: 9253507
Dilution Factor: 1

Work Order #...: LKDKH1AA
Date Received..: 09/04/09
Analysis Date..: 09/11/09
Analysis Time..: 22:46

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	139	(50 - 200)
13C4 PFOS	90	(50 - 200)
13C4 PFBA	78	(50 - 200)
13C2 PFHxA	118	(50 - 200)
18O2 PFHxS	108	(50 - 200)
13C5 PFNA	113	(50 - 200)
13C2 PFDA	88	(50 - 200)
13C2 PFUnA	69	(50 - 200)
13C2 PFDoA	71	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...:	D9I040249-015	**Work Order #...:**	LKDKH1AC	**Matrix.....:**	WATER
Date Sampled...:	09/03/09	**Date Received..:**	09/04/09		
Prep Date.....:	09/10/09	**Analysis Date..:**	09/11/09		
Prep Batch #...:	9253504	**Analysis Time..:**	16:30		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I040249-015 **Work Order #...:** LKDKH2AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 **Date Received..:** 09/04/09
Prep Date.....: 09/15/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9258499 **Analysis Time..:** 17:19
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	113	(50 - 200)
13C4 PFOS	85	(50 - 200)
13C4 PFBA	78	(50 - 200)
13C2 PFHxA	85	(50 - 200)
18O2 PFHxS	96	(50 - 200)
13C5 PFNA	88	(50 - 200)
13C2 PFDA	83	(50 - 200)
13C2 PFUnA	70	(50 - 200)
13C2 PFDoA	56	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I040249-016 **Work Order #...:** LKDKK1AA **Matrix.....:** WATER
Date Sampled...: 09/03/09 **Date Received..:** 09/04/09
Prep Date.....: 09/10/09 **Analysis Date..:** 09/11/09
Prep Batch #...: 9253507 **Analysis Time..:** 23:02
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0055
Perfluorooctanesulfonate	ND	0.020	ug/L	0.0068
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0062
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.0082
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0030
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.0054
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.0065
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0026
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0025
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.0040
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.0072
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.0087
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0045
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0084

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	136	(50 - 200)
13C4 PFOS	81	(50 - 200)
13C4 PFBA	94	(50 - 200)
13C2 PFHxA	115	(50 - 200)
18O2 PFHxS	99	(50 - 200)
13C5 PFNA	104	(50 - 200)
13C2 PFDA	86	(50 - 200)
13C2 PFUnA	65	(50 - 200)
13C2 PFDoA	53	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...:	D9I040249-016	**Work Order #...:**	LKDKK1AC	**Matrix.....:**	WATER
Date Sampled...:	09/03/09	**Date Received..:**	09/04/09		
Prep Date.....:	09/10/09	**Analysis Date..:**	09/11/09		
Prep Batch #...:	9253504	**Analysis Time..:**	16:38		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	61	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I040249-016
Date Sampled...: 09/03/09
Prep Date.....: 09/15/09
Prep Batch #...: 9258499
Dilution Factor: 1

Work Order #...: LKDKK2AA
Date Received..: 09/04/09
Analysis Date..: 09/17/09
Analysis Time..: 17:35

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	106	(50 - 200)
13C4 PFOS	78	(50 - 200)
13C4 PFBA	74	(50 - 200)
13C2 PFHxA	80	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	80	(50 - 200)
13C2 PFUnA	75	(50 - 200)
13C2 PFDoA	63	(50 - 200)

QC DATA ASSOCIATION SUMMARY

D9I040249

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
004	WATER	DEN -LC-0012		9252175	
	WATER	DEN -LC-0012		9252176	
005	WATER	DEN -LC-0012		9252175	
	WATER	DEN -LC-0012		9252176	
	WATER	DEN -LC-0012		9259175	
006	WATER	DEN -LC-0012		9252175	
	WATER	DEN -LC-0012		9252176	
	WATER	DEN -LC-0012		9259175	
007	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	
008	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	
009	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	
010	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	
011	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	
	WATER	DEN -LC-0012		9259175	
012	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	
013	WATER	DEN -LC-0012		9252175	
	WATER	DEN -LC-0012		9252176	
	WATER	DEN -LC-0012		9257502	
014	WATER	DEN -LC-0012		9253504	
	WATER	DEN -LC-0012		9253507	
	WATER	DEN -LC-0012		9258499	

(Continued on next page)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I100275

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

for: **Michelle A. Johnston**
Project Manager

September 25, 2009

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Table Of Contents

Standard Deliverables

Report Contents	Total Number of Pages
Standard Deliverables *The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.*	

- **Table of Contents**
- **Case Narrative**
- **Executive Summary – Detection Highlights**
- **Methods Summary**
- **Method/Analyst Summary**
- **Lot Sample Summary**
- **Analytical Results**
- **Summary Report**
- **Chain of Custody**

Case Narrative
D9I100275

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for eight samples received at TestAmerica Denver on September 10, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.9°C.

Sample #77 454 JIM PETTY RD was initially logged in this lot, as all samples were listed on a single chain of custody. Per client instruction on September 11, 2009, this sample was deleted from this lot and moved to D9I110126. A revised chain of custody was received on September 12, 2009. Both the original and revised chains of custody are included in the report.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to the sample to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

Please note the organic preparation chemist had to use two cartridges during the FOSA extraction process for sample #76 20304 WATERLOO DR.

Due to a limitation in the LIMS system, the low-level LCS associated with QC batch 9254187 reported the percent recoveries for Perfluorotridecanoic Acid (PFTriA) and Perfluorotetradecanoic Acid (PFTeA) as 0.0%. PFTriA was recovered within the control limits (50-150%) at 53% and PFTeA was recovered within the control limits (50-150%) at 55%. As these compounds were detected below the Method Detection Limit (MDL) of 0.020 ug/L, the system reports the percent recoveries as 0.0%.

The method required MS/MSD could not be performed for QC batches 9254187 and 9254190, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I100275

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#78 814 TILTON BRIDGE RD 09/04/09 15:14 003				
Perfluorooctanoic Acid	0.013 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.019 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0074 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I100275

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I100275

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I100275

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LKKVR	001	#76 20304 WATERLOO DR	09/04/09	11:30
LKKV5	003	#78 814 TILTON BRIDGE RD	09/04/09	15:14
LKKWC	004	#79 260 FOX BRIDGE RD	09/09/09	11:48
LKKWE	005	#80 1138 FOX BRIDGE RD	09/09/09	12:40
LKKWF	006	#81 1293 FOX BRIDGE RD	09/09/09	13:19
LKKWG	007	TRIP BLK	09/09/09	
LKKWH	008	FIELD BLK	09/09/09	
LKKWJ	009	DUP	09/09/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #76 20304 WATERLOO DR

HPLC

Lot-Sample #...: D9I100275-001 **Work Order #...:** LKKVR1AA **Matrix.....:** WATER
Date Sampled...: 09/04/09 11:30 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 05:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	114	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	104	(50 - 200)
18O2 PFHxS	93	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	67	(50 - 200)

Dalton Utilities

Client Sample ID: #76 20304 WATERLOO DR

HPLC

Lot-Sample #...: D9I100275-001 **Work Order #...:** LKKVR1AC **Matrix.....:** WATER
Date Sampled...: 09/04/09 11:30 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:15
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #78 814 TILTON BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-003 **Work Order #...:** LKKV51AA **Matrix.....:** WATER
Date Sampled...: 09/04/09 15:14 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 06:09
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.013 J**	**0.020**	**ug/L**	**0.0098**
Perfluorooctanesulfonate	**0.019 J**	**0.020**	**ug/L**	**0.013**
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	**0.0074 J**	**0.020**	**ug/L**	**0.0029**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	59	(50 - 200)
13C4 PFBA	90	(50 - 200)
13C2 PFHxA	104	(50 - 200)
18O2 PFHxS	90	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	58	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #78 814 TILTON BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-003 **Work Order #...:** LKKV51AC **Matrix.....:** WATER
Date Sampled...: 09/04/09 15:14 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:22
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #79 260 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-004 **Work Order #...:** LKKWC1AA **Matrix.....:** WATER
Date Sampled...: 09/09/09 11:48 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 06:25
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	109	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	88	(50 - 200)
13C2 PFHxA	101	(50 - 200)
18O2 PFHxS	88	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	62	(50 - 200)

Dalton Utilities

Client Sample ID: #79 260 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-004 **Work Order #...:** LKKWC1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 11:48 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:29
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #80 1138 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-005 **Work Order #...:** LKKWE1AA **Matrix.....:** WATER
Date Sampled...: 09/09/09 12:40 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 06:57
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	121	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	107	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	76	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	75	(50 - 200)

Dalton Utilities

Client Sample ID: #80 1138 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-005 **Work Order #...:** LKKWE1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 12:40 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:44
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	76	(50 - 200)

Dalton Utilities

Client Sample ID: #81 1293 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-006 **Work Order #...:** LKKWF1AA **Matrix.....:** WATER
Date Sampled...: 09/09/09 13:19 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 07:13
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	98	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	68	(50 - 200)
13C2 PFUnA	51	(50 - 200)
13C2 PFDoA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #81 1293 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-006 **Work Order #...:** LKKWF1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 13:19 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:51
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	66	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I100275-007
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254187
Dilution Factor: 1

Work Order #...: LKKWG1AA
Date Received..: 09/10/09
Analysis Date..: 09/17/09
Analysis Time..: 07:29

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	119	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	96	(50 - 200)
13C5 PFNA	99	(50 - 200)
13C2 PFDA	88	(50 - 200)
13C2 PFUnA	63	(50 - 200)
13C2 PFDoA	69	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I100275-007 **Work Order #...:** LKKWG1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:58
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	93	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I100275-008
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254187
Dilution Factor: 1

Work Order #...: LKKWH1AA
Date Received..: 09/10/09
Analysis Date..: 09/17/09
Analysis Time..: 07:45

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	74	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	95	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	97	(50 - 200)
13C2 PFDA	83	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	69	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I100275-008 **Work Order #...:** LKKWH1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 16:05
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	75	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I100275-009
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254187
Dilution Factor: 1

Work Order #...: LKKWJ1AA
Date Received..: 09/10/09
Analysis Date..: 09/17/09
Analysis Time..: 08:01

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	104	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	94	(50 - 200)
18O2 PFHxS	88	(50 - 200)
13C5 PFNA	85	(50 - 200)
13C2 PFDA	68	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	63	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I100275-009 **Work Order #...:** LKKWJ1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 16:12
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	81	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I100275

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
Dalton, GA 30721

for: **Michelle A. Johnston**
Project Manager

September 25, 2009

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Standard Deliverables

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Standard Deliverables *The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.*	

- **Table of Contents**
- **Case Narrative**
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- **Methods Summary**
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Case Narrative
D9I100275

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for eight samples received at TestAmerica Denver on September 10, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.9°C.

Sample #77 454 JIM PETTY RD was initially logged in this lot, as all samples were listed on a single chain of custody. Per client instruction on September 11, 2009, this sample was deleted from this lot and moved to D9I110126. A revised chain of custody was received on September 12, 2009. Both the original and revised chains of custody are included in the report.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments

The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to the sample to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

Please note the organic preparation chemist had to use two cartridges during the FOSA extraction process for sample #76 20304 WATERLOO DR.

Due to a limitation in the LIMS system, the low-level LCS associated with QC batch 9254187 reported the percent recoveries for Perfluorotridecanoic Acid (PFTriA) and Perfluorotetradecanoic Acid (PFTeA) as 0.0%. PFTriA was recovered within the control limits (50-150%) at 53% and PFTeA was recovered within the control limits (50-150%) at 55%. As these compounds were detected below the Method Detection Limit (MDL) of 0.020 ug/L, the system reports the percent recoveries as 0.0%.

The method required MS/MSD could not be performed for QC batches 9254187 and 9254190, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I100275

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#78 814 TILTON BRIDGE RD 09/04/09 15:14 003				
Perfluorooctanoic Acid	0.013 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.019 J	0.020	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.0074 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I100275

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I100275

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I100275

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LKKVR	001	#76 20304 WATERLOO DR	09/04/09	11:30
LKKV5	003	#78 814 TILTON BRIDGE RD	09/04/09	15:14
LKKWC	004	#79 260 FOX BRIDGE RD	09/09/09	11:48
LKKWE	005	#80 1138 FOX BRIDGE RD	09/09/09	12:40
LKKWF	006	#81 1293 FOX BRIDGE RD	09/09/09	13:19
LKKWG	007	TRIP BLK	09/09/09	
LKKWH	008	FIELD BLK	09/09/09	
LKKWJ	009	DUP	09/09/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #76 20304 WATERLOO DR

HPLC

Lot-Sample #...: D9I100275-001 **Work Order #...:** LKKVR1AA **Matrix.....:** WATER
Date Sampled...: 09/04/09 11:30 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 05:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	114	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	104	(50 - 200)
18O2 PFHxS	93	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	67	(50 - 200)

Dalton Utilities

Client Sample ID: #76 20304 WATERLOO DR

HPLC

Lot-Sample #...: D9I100275-001 Work Order #...: LKKVR1AC Matrix.....: WATER
Date Sampled...: 09/04/09 11:30 Date Received..: 09/10/09
Prep Date.....: 09/11/09 Analysis Date..: 09/12/09
Prep Batch #...: 9254190 Analysis Time..: 15:15
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #78 814 TILTON BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-003 **Work Order #...:** LKKV51AA **Matrix.....:** WATER
Date Sampled...: 09/04/09 15:14 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 06:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.013 J**	**0.020**	**ug/L**	**0.0098**
Perfluorooctanesulfonate	**0.019 J**	**0.020**	**ug/L**	**0.013**
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	**0.0074 J**	**0.020**	**ug/L**	**0.0029**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	59	(50 - 200)
13C4 PFBA	90	(50 - 200)
13C2 PFHxA	104	(50 - 200)
18O2 PFHxS	90	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	70	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	58	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #78 814 TILTON BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-003 **Work Order #...:** LKKV51AC **Matrix.....:** WATER
Date Sampled...: 09/04/09 15:14 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:22
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #79 260 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-004 **Work Order #...:** LKKWC1AA **Matrix.....:** WATER
Date Sampled...: 09/09/09 11:48 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 06:25
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	109	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	88	(50 - 200)
13C2 PFHxA	101	(50 - 200)
18O2 PFHxS	88	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	57	(50 - 200)
13C2 PFDoA	62	(50 - 200)

Dalton Utilities

Client Sample ID: #79 260 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-004 **Work Order #...:** LKKWC1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 11:48 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:29
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #80 1138 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-005 **Work Order #...:** LKKWE1AA **Matrix.....:** WATER
Date Sampled...: 09/09/09 12:40 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 06:57
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	121	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	92	(50 - 200)
13C2 PFHxA	107	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	76	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	75	(50 - 200)

Dalton Utilities

Client Sample ID: #80 1138 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-005 **Work Order #...:** LKKWE1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 12:40 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:44
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	76	(50 - 200)

Dalton Utilities

Client Sample ID: #81 1293 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-006 Work Order #...: LKKWF1AA Matrix.....: WATER
Date Sampled...: 09/09/09 13:19 Date Received..: 09/10/09
Prep Date.....: 09/11/09 Analysis Date..: 09/17/09
Prep Batch #...: 9254187 Analysis Time..: 07:13
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	98	(50 - 200)
18O2 PFHxS	87	(50 - 200)
13C5 PFNA	84	(50 - 200)
13C2 PFDA	68	(50 - 200)
13C2 PFUnA	51	(50 - 200)
13C2 PFDoA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #81 1293 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I100275-006 **Work Order #...:** LKKWF1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 13:19 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 15:51
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	66	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I100275-007
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254187
Dilution Factor: 1

Work Order #...: LKKWG1AA
Date Received..: 09/10/09
Analysis Date..: 09/17/09
Analysis Time..: 07:29

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	119	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	87	(50 - 200)
13C2 PFHxA	100	(50 - 200)
18O2 PFHxS	96	(50 - 200)
13C5 PFNA	99	(50 - 200)
13C2 PFDA	88	(50 - 200)
13C2 PFUnA	63	(50 - 200)
13C2 PFDoA	69	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I100275-007
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254190
Dilution Factor: 1

Work Order #...: LKKWG1AC
Date Received..: 09/10/09
Analysis Date..: 09/12/09
Analysis Time..: 15:58

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	93	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I100275-008
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254187
Dilution Factor: 1

Work Order #...: LKKWH1AA
Date Received..: 09/10/09
Analysis Date..: 09/17/09
Analysis Time..: 07:45

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	74	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	95	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	97	(50 - 200)
13C2 PFDA	83	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	69	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I100275-008 **Work Order #...:** LKKWH1AC **Matrix.....:** WATER
Date Sampled...: 09/09/09 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/12/09
Prep Batch #...: 9254190 **Analysis Time..:** 16:05
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	75	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I100275-009 **Work Order #...:** LKKWJ1AA **Matrix.....:** WATER
Date Sampled...: 09/09/09 **Date Received..:** 09/10/09
Prep Date.....: 09/11/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9254187 **Analysis Time..:** 08:01
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	104	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	85	(50 - 200)
13C2 PFHxA	94	(50 - 200)
18O2 PFHxS	88	(50 - 200)
13C5 PFNA	85	(50 - 200)
13C2 PFDA	68	(50 - 200)
13C2 PFUnA	60	(50 - 200)
13C2 PFDoA	63	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I100275-009
Date Sampled...: 09/09/09
Prep Date.....: 09/11/09
Prep Batch #...: 9254190
Dilution Factor: 1

Work Order #...: LKKWJ1AC
Date Received..: 09/10/09
Analysis Date..: 09/12/09
Analysis Time..: 16:12

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	81	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I120206

Dena Haverland

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October 1, 2009

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Case Narrative
D9I120206

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

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Sample Arrival and Receipt
The following report contains the analytical results for thirteen samples received at TestAmerica Denver on September 12, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 0.8°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments
The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all thirteen samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA. Also, Strata-XL cartridges were used instead of the SOP required Strata-X. The Strata-XL

cartridge was used to minimize clogging during the extraction of these samples, as the larger pore size of the Strata-XL allows more viscous sample matrix to be extracted.

Due to low internal standard recoveries, samples #85 1111 Maplegrove RD, #86 421 Maplegrove RD, #89 5322 HWY 225, #90 5263 HWY 225, and Field BLK were re-extracted out of the laboratory prescribed hold time and reanalyzed in QC batch 9263043. Both batches are included in this report. Please note the sample results should be considered estimated.

Several samples exhibited internal standard recoveries outside the control limits (50-200%), as detailed below:

Sample	Original Internal Standard Recovery (9257503)	Re-analysis Internal Standard Recovery (9263043)
#85 1111 Maplegrove RD	13C2 PFUnA: 40% 13C2 PFDoA: 42%	13C2 PFUnA: 42% 13C2 PFDoA: 42%
#86 421 Maplegrove RD	13C2 PFUnA: 49%	13C2 PFUnA: 39% 13C2 PFDoA: 42%
#90 5263 HWY 225	13C4 PFOS: 44% 13C2 PFUnA: 39% 13C2 PFDoA: 41%	13C2 PFUnA: 45% 13C2 PFDoA: 43%
Field BLK	13C2 PFDoA: 44%	13C2 PFDoA: 53%

Upon re-extraction and reanalysis in batch 9263043, the internal standard recovery outliers did not confirm. Both the original and reanalysis data have been provided, as re-extraction was unavoidably performed outside the recommended sample holding times.

The internal standard recoveries for MeFOSA associated with QC batch 9260167 were recovered below the lower limit of 50% in samples #86 421 Maplegrove RD, #89 5322 HWY 225, #90 5263 HWY 225, and #91 5183 HWY 225. Upon re-extraction and reanalysis in QC batch 9266147, internal standard recovery outliers were still present in samples #86 421 Maplegrove RD and #91 5183 HWY 225, demonstrating this anomaly is most likely due to matrix interference. Upon re-extraction past hold time and reanalysis in QC batch 9266147, surrogate recoveries were 100% in control in samples #89 5322 HWY 225 and #90 5263 HWY 225. Both the original and reanalysis data have been provided for samples #89 5322 HWY 225 and #90 5263 HWY 225, as re-extraction was unavoidably performed outside the laboratory recommended sample holding time.

Due to a limitation in the LIMS system, the low-level LCS associated with QC batch 9257503 reported the percent recovery for Perfluorotetradecanoic Acid (PFTeA) as 0.0%. PFTeA was recovered within the control limits (50-150%) at 59%. As this compound was detected below the Method Detection Limit (MDL) of 0.020 ug/L, the system reports the percent recovery as 0.0%.

The mid-level LCS/LCSD analyses associated with QC batch 9263043 exhibited an internal standard recovery outside the QC control limits for 13C2 PFDoA. This is the re-extraction batch for batch 9257503. The method blank, low-level LCS, and mid-level LCSD internal standard recoveries were in control; therefore, corrective action is deemed unnecessary.

The mid-level LCS/LCSD analyses associated with QC batch 9266147 exhibited percent recoveries outside the QC control limits for Perfluorooctane sulfonamide (FOSA). This is an

indicator data may be biased high. As no detectable concentrations are present in the associated samples, corrective action is deemed unnecessary.

The method required MS/MSD could not be performed for QC batches 9257503, 9260167, 9263043, and 9266147, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I120206

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#89 5322 HWY 225 09/11/09 14:43 008				
Perfluorooctanesulfonate	0.024	0.020	ug/L	DEN -LC-0012
#90 5263 HWY 225 09/11/09 15:13 009				
Perfluorooctanoic Acid	0.10	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.018 J	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.040	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.080	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.060	0.020	ug/L	DEN -LC-0012
Perfluoroheptanoic acid (PFHpA	0.042	0.020	ug/L	DEN -LC-0012
Perfluorodecanoic acid (PFDA)	0.023	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.019 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanoic Acid	0.092	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.016 J	0.020	ug/L	DEN -LC-0012
Perfluorobutanoic acid (PFBA)	0.041	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.070	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.058	0.020	ug/L	DEN -LC-0012
Perfluoroheptanoic acid (PFHpA	0.043	0.020	ug/L	DEN -LC-0012
Perfluorodecanoic acid (PFDA)	0.021	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.016 J	0.020	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I120206

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I120206

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I120206

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LKP57	001	#82 333 FOX BRIDGE RD	09/11/09	10:20
LKP6A	002	#83 345 FOX BRIDGE RD	09/11/09	10:33
LKP6C	003	#84 1535 FOX BRIDGE RD	09/11/09	11:20
LKP6F	004	#85 1111 MAPLEGROVE CHURCH RD	09/11/09	13:28
LKP6J	005	#86 421 MAPLEGROVE CHURCH RD	09/11/09	13:55
LKP6K	006	#87 5412 HWY 225	09/11/09	14:11
LKP6M	007	#88 5315 HWY 225	09/11/09	14:26
LKP6N	008	#89 5322 HWY 225	09/11/09	14:43
LKP6Q	009	#90 5263 HWY 225	09/11/09	15:13
LKP6T	010	#91 5183 HWY 225	09/11/09	15:25
LKP6V	011	TRIP BLK	09/11/09	
LKP6X	012	FIELD BLK	09/11/09	
LKP60	013	DUP	09/11/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #82 333 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I120206-001 **Work Order #...:** LKP571AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 10:20 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/16/09
Prep Batch #...: 9257503 **Analysis Time..:** 22:05
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	109	(50 - 200)
13C4 PFOS	63	(50 - 200)
13C4 PFBA	76	(50 - 200)
13C2 PFHxA	89	(50 - 200)
18O2 PFHxS	107	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	52	(50 - 200)
13C2 PFDoA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #82 333 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I120206-001 **Work Order #...:** LKP571AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 10:20 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 03:52
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #83 345 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I120206-002 **Work Order #...:** LKP6A1AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 10:33 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/16/09
Prep Batch #...: 9257503 **Analysis Time..:** 22:21
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	103	(50 - 200)
13C4 PFOS	59	(50 - 200)
13C4 PFBA	74	(50 - 200)
13C2 PFHxA	87	(50 - 200)
18O2 PFHxS	101	(50 - 200)
13C5 PFNA	83	(50 - 200)
13C2 PFDA	66	(50 - 200)
13C2 PFUnA	52	(50 - 200)
13C2 PFDoA	56	(50 - 200)

Dalton Utilities

Client Sample ID: #83 345 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I120206-002 Work Order #...: LKP6A1AC Matrix.....: WATER
Date Sampled...: 09/11/09 10:33 Date Received..: 09/12/09
Prep Date.....: 09/17/09 Analysis Date..: 09/19/09
Prep Batch #...: 9260167 Analysis Time..: 04:00
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	64	(50 - 200)

Dalton Utilities

Client Sample ID: #84 1535 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I120206-003 **Work Order #...:** LKP6C1AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 11:20 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/16/09
Prep Batch #...: 9257503 **Analysis Time..:** 22:37
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	111	(50 - 200)
13C4 PFOS	67	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	92	(50 - 200)
18O2 PFHxS	109	(50 - 200)
13C5 PFNA	99	(50 - 200)
13C2 PFDA	76	(50 - 200)
13C2 PFUnA	59	(50 - 200)
13C2 PFDoA	63	(50 - 200)

Dalton Utilities

Client Sample ID: #84 1535 FOX BRIDGE RD

HPLC

Lot-Sample #...: D9I120206-003 Work Order #...: LKP6C1AC Matrix.....: WATER
Date Sampled...: 09/11/09 11:20 Date Received..: 09/12/09
Prep Date.....: 09/17/09 Analysis Date..: 09/19/09
Prep Batch #...: 9260167 Analysis Time..: 04:07
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #85 1111 MAPLEGROVE CHURCH RD

HPLC

Lot-Sample #...: D9I120206-004 **Work Order #...:** LKP6F1AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 13:28 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/16/09
Prep Batch #...: 9257503 **Analysis Time..:** 22:53
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	102	(50 - 200)
13C4 PFOS	55	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	90	(50 - 200)
18O2 PFHxS	107	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	59	(50 - 200)
13C2 PFUnA	40 *	(50 - 200)
13C2 PFDoA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #85 1111 MAPLEGROVE CHURCH RD

HPLC

Lot-Sample #...: D9I120206-004 Work Order #...: LKP6F1AC Matrix.....: WATER
Date Sampled...: 09/11/09 13:28 Date Received..: 09/12/09
Prep Date.....: 09/17/09 Analysis Date..: 09/19/09
Prep Batch #...: 9260167 Analysis Time..: 04:14
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	57	(50 - 200)

Dalton Utilities

Client Sample ID: #85 1111 MAPLEGROVE CHURCH RD

HPLC

Lot-Sample #...: D9I120206-004 **Work Order #...:** LKP6F2AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 13:28 **Date Received..:** 09/12/09
Prep Date.....: 09/20/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9263043 **Analysis Time..:** 08:01
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	107	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	54	(50 - 200)
13C2 PFHxA	90	(50 - 200)
18O2 PFHxS	96	(50 - 200)
13C5 PFNA	73	(50 - 200)
13C2 PFDA	56	(50 - 200)
13C2 PFUnA	42 *	(50 - 200)
13C2 PFDoA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #86 421 MAPLEGROVE CHURCH RD

HPLC

Lot-Sample #...: D9I120206-005 Work Order #...: LKP6J1AA Matrix.....: WATER
Date Sampled...: 09/11/09 13:55 Date Received..: 09/12/09
Prep Date.....: 09/14/09 Analysis Date..: 09/16/09
Prep Batch #...: 9257503 Analysis Time..: 23:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	103	(50 - 200)
13C4 PFOS	56	(50 - 200)
13C4 PFBA	78	(50 - 200)
13C2 PFHxA	86	(50 - 200)
18O2 PFHxS	96	(50 - 200)
13C5 PFNA	82	(50 - 200)
13C2 PFDA	63	(50 - 200)
13C2 PFUnA	49 *	(50 - 200)
13C2 PFDoA	50	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #86 421 MAPLEGROVE CHURCH RD

HPLC

Lot-Sample #...:	D9I120206-005	**Work Order #...:**	LKP6J1AC	**Matrix.....:**	WATER
Date Sampled...:	09/11/09 13:55	**Date Received..:**	09/12/09		
Prep Date.....:	09/17/09	**Analysis Date..:**	09/19/09		
Prep Batch #...:	9260167	**Analysis Time..:**	04:21		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	46 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #86 421 MAPLEGROVE CHURCH RD

HPLC

Lot-Sample #...: D9I120206-005 Work Order #...: LKP6J2AA Matrix.....: WATER
Date Sampled...: 09/11/09 13:55 Date Received..: 09/12/09
Prep Date.....: 09/20/09 Analysis Date..: 09/25/09
Prep Batch #...: 9263043 Analysis Time..: 08:17
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	112	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	52	(50 - 200)
13C2 PFHxA	94	(50 - 200)
18O2 PFHxS	100	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	56	(50 - 200)
13C2 PFUnA	39 *	(50 - 200)
13C2 PFDoA	42 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #87 5412 HWY 225

HPLC

Lot-Sample #...: D9I120206-006 **Work Order #...:** LKP6K1AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 14:11 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/16/09
Prep Batch #...: 9257503 **Analysis Time..:** 23:41
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	104	(50 - 200)
13C4 PFOS	62	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	88	(50 - 200)
18O2 PFHxS	106	(50 - 200)
13C5 PFNA	91	(50 - 200)
13C2 PFDA	72	(50 - 200)
13C2 PFUnA	58	(50 - 200)
13C2 PFDoA	57	(50 - 200)

Dalton Utilities

Client Sample ID: #87 5412 HWY 225

HPLC

Lot-Sample #...: D9I120206-006 **Work Order #...:** LKP6K1AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 14:11 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 04:35
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #88 5315 HWY 225

HPLC

Lot-Sample #...: D9I120206-007 **Work Order #...:** LKP6M1AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 14:26 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/16/09
Prep Batch #...: 9257503 **Analysis Time..:** 23:58
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	105	(50 - 200)
13C4 PFOS	64	(50 - 200)
13C4 PFBA	79	(50 - 200)
13C2 PFHxA	92	(50 - 200)
18O2 PFHxS	108	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	74	(50 - 200)
13C2 PFUnA	61	(50 - 200)
13C2 PFDoA	65	(50 - 200)

Dalton Utilities

Client Sample ID: #88 5315 HWY 225

HPLC

Lot-Sample #...:	D9I120206-007	**Work Order #...:**	LKP6M1AC	**Matrix.....:**	WATER
Date Sampled...:	09/11/09 14:26	**Date Received..:**	09/12/09		
Prep Date.....:	09/17/09	**Analysis Date..:**	09/19/09		
Prep Batch #...:	9260167	**Analysis Time..:**	04:43		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	53	(50 - 200)

Dalton Utilities

Client Sample ID: #89 5322 HWY 225

HPLC

Lot-Sample #...: D9I120206-008 **Work Order #...:** LKP6N1AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 14:43 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9257503 **Analysis Time..:** 00:14
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	**0.024**	**0.020**	**ug/L**	**0.013**
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	95	(50 - 200)
13C4 PFOS	61	(50 - 200)
13C4 PFBA	69	(50 - 200)
13C2 PFHxA	78	(50 - 200)
18O2 PFHxS	85	(50 - 200)
13C5 PFNA	83	(50 - 200)
13C2 PFDA	71	(50 - 200)
13C2 PFUnA	55	(50 - 200)
13C2 PFDoA	54	(50 - 200)

Dalton Utilities

Client Sample ID: #89 5322 HWY 225

HPLC

Lot-Sample #...: D9I120206-008 **Work Order #...:** LKP6N1AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 14:43 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 04:50
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	43 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #89 5322 HWY 225

HPLC

Lot-Sample #...: D9I120206-008 **Work Order #...:** LKP6N2AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 14:43 **Date Received..:** 09/12/09
Prep Date.....: 09/23/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9266147 **Analysis Time..:** 19:02
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	56	(50 - 200)

Dalton Utilities

Client Sample ID: #90 5263 HWY 225

HPLC

Lot-Sample #...: D9I120206-009 Work Order #...: LKP6Q1AA Matrix.....: WATER
Date Sampled...: 09/11/09 15:13 Date Received..: 09/12/09
Prep Date.....: 09/14/09 Analysis Date..: 09/17/09
Prep Batch #...: 9257503 Analysis Time..: 00:30
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.10**	**0.020**	**ug/L**	**0.0098**
Perfluorooctanesulfonate	**0.018 J**	**0.020**	**ug/L**	**0.013**
Perfluorobutanoic acid (PFBA)	**0.040**	**0.020**	**ug/L**	**0.0098**
Perfluoropentanoic acid (PFPA)	**0.080**	**0.030**	**ug/L**	**0.011**
Perfluorohexanoic acid (PFHxA)	**0.060**	**0.020**	**ug/L**	**0.0029**
Perfluoroheptanoic acid (PFHpA)	**0.042**	**0.020**	**ug/L**	**0.013**
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	**0.023**	**0.020**	**ug/L**	**0.0078**
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	**0.019 J**	**0.020**	**ug/L**	**0.0082**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	84	(50 - 200)
13C4 PFOS	44 *	(50 - 200)
13C4 PFBA	69	(50 - 200)
13C2 PFHxA	78	(50 - 200)
18O2 PFHxS	84	(50 - 200)
13C5 PFNA	70	(50 - 200)
13C2 PFDA	50	(50 - 200)
13C2 PFUnA	39 *	(50 - 200)
13C2 PFDoA	41 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #90 5263 HWY 225

HPLC

Lot-Sample #...: D9I120206-009 **Work Order #...:** LKP6Q1AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 15:13 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 04:57
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: #90 5263 HWY 225

HPLC

Lot-Sample #...:	D9I120206-009	**Work Order #...:**	LKP6Q2AA	**Matrix.....:**	WATER
Date Sampled...:	09/11/09 15:13	**Date Received..:**	09/12/09		
Prep Date.....:	09/20/09	**Analysis Date..:**	09/25/09		
Prep Batch #...:	9263043	**Analysis Time..:**	08:34		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.092**	**0.020**	**ug/L**	**0.0098**
Perfluorooctanesulfonate	**0.016 J**	**0.020**	**ug/L**	**0.013**
Perfluorobutanoic acid (PFBA)	**0.041**	**0.020**	**ug/L**	**0.0098**
Perfluoropentanoic acid (PFPA)	**0.070**	**0.030**	**ug/L**	**0.011**
Perfluorohexanoic acid (PFHxA)	**0.058**	**0.020**	**ug/L**	**0.0029**
Perfluoroheptanoic acid (PFHpA)	**0.043**	**0.020**	**ug/L**	**0.013**
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	**0.021**	**0.020**	**ug/L**	**0.0078**
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	**0.016 J**	**0.020**	**ug/L**	**0.0082**
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	70	(50 - 200)
13C4 PFBA	60	(50 - 200)
13C2 PFHxA	97	(50 - 200)
18O2 PFHxS	102	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	62	(50 - 200)
13C2 PFUnA	45 *	(50 - 200)
13C2 PFDoA	43 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #90 5263 HWY 225

HPLC

Lot-Sample #...: D9I120206-009 **Work Order #...:** LKP6Q2AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 15:13 **Date Received..:** 09/12/09
Prep Date.....: 09/23/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9266147 **Analysis Time..:** 19:09
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	51	(50 - 200)

Dalton Utilities

Client Sample ID: #91 5183 HWY 225

HPLC

Lot-Sample #...: D9I120206-010 Work Order #...: LKP6T1AA Matrix.....: WATER
Date Sampled...: 09/11/09 15:25 Date Received..: 09/12/09
Prep Date.....: 09/14/09 Analysis Date..: 09/17/09
Prep Batch #...: 9257503 Analysis Time..: 00:46
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	93	(50 - 200)
13C4 PFOS	55	(50 - 200)
13C4 PFBA	74	(50 - 200)
13C2 PFHxA	79	(50 - 200)
18O2 PFHxS	90	(50 - 200)
13C5 PFNA	78	(50 - 200)
13C2 PFDA	64	(50 - 200)
13C2 PFUnA	51	(50 - 200)
13C2 PFDoA	55	(50 - 200)

Dalton Utilities

Client Sample ID: #91 5183 HWY 225

HPLC

Lot-Sample #...: D9I120206-010 **Work Order #...:** LKP6T1AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 15:25 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 05:04
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	47 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I120206-011
Date Sampled...: 09/11/09
Prep Date.....: 09/14/09
Prep Batch #...: 9257503
Dilution Factor: 1

Work Order #...: LKP6V1AA
Date Received..: 09/12/09
Analysis Date..: 09/17/09
Analysis Time..: 01:02

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	113	(50 - 200)
13C4 PFOS	85	(50 - 200)
13C4 PFBA	80	(50 - 200)
13C2 PFHxA	93	(50 - 200)
18O2 PFHxS	105	(50 - 200)
13C5 PFNA	116	(50 - 200)
13C2 PFDA	96	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	61	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I120206-011 **Work Order #...:** LKP6V1AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 05:11
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	63	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I120206-012
Date Sampled...: 09/11/09
Prep Date.....: 09/14/09
Prep Batch #...: 9257503
Dilution Factor: 1

Work Order #...: LKP6X1AA
Date Received..: 09/12/09
Analysis Date..: 09/17/09
Analysis Time..: 01:18

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	110	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	81	(50 - 200)
13C2 PFHxA	88	(50 - 200)
18O2 PFHxS	98	(50 - 200)
13C5 PFNA	108	(50 - 200)
13C2 PFDA	89	(50 - 200)
13C2 PFUnA	55	(50 - 200)
13C2 PFDoA	44 *	(50 - 200)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I120206-012 **Work Order #...:** LKP6X1AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 05:18
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	67	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I120206-012
Date Sampled...: 09/11/09
Prep Date.....: 09/20/09
Prep Batch #...: 9263043
Dilution Factor: 1

Work Order #...: LKP6X2AA
Date Received..: 09/12/09
Analysis Date..: 09/25/09
Analysis Time..: 08:50

Matrix.....: WATER

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	95	(50 - 200)
13C4 PFOS	79	(50 - 200)
13C4 PFBA	54	(50 - 200)
13C2 PFHxA	78	(50 - 200)
18O2 PFHxS	80	(50 - 200)
13C5 PFNA	77	(50 - 200)
13C2 PFDA	74	(50 - 200)
13C2 PFUnA	59	(50 - 200)
13C2 PFDoA	53	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I120206-013 **Work Order #...:** LKP601AA **Matrix.....:** WATER
Date Sampled...: 09/11/09 **Date Received..:** 09/12/09
Prep Date.....: 09/14/09 **Analysis Date..:** 09/17/09
Prep Batch #...: 9257503 **Analysis Time..:** 01:34
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	112	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	84	(50 - 200)
13C2 PFHxA	98	(50 - 200)
18O2 PFHxS	97	(50 - 200)
13C5 PFNA	100	(50 - 200)
13C2 PFDA	82	(50 - 200)
13C2 PFUnA	56	(50 - 200)
13C2 PFDoA	62	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I120206-013 **Work Order #...:** LKP601AC **Matrix.....:** WATER
Date Sampled...: 09/11/09 **Date Received..:** 09/12/09
Prep Date.....: 09/17/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9260167 **Analysis Time..:** 05:26
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	61	(50 - 200)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Perfluorocarbon (PFC) Analysis

Lot #: D9I150267

Dena Haverland

Dalton Utilities
1200 V.D. Parrot Jr. Parkway
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September 29, 2009

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Case Narrative
D9I150267

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Sample Arrival and Receipt
The following report contains the analytical results for nine samples received at TestAmerica Denver on September 15, 2009, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 4.2°C.

Relinquished By information is not present on the chain-of-custody. The client was notified on September 16, 2009.

No other anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using commercially available certified solutions containing all compounds of interest.

The mass labeled compounds 13C4 PFBA, 13C2 PFHxA, 18O2 PFHxS, 13C4 PFOA, 13C4 PFOS, 13C5 PFNA, 13C2 PFDA, 13C2 PFUnA, 13C2 PFDoA, and D3 MeFOSA were introduced at the extraction step and were used for internal standards for the quantitation of the target compounds.

Sample Extraction and Analysis
The samples presented in this report were extracted for the target analytes by TestAmerica Denver's Standard Operating Procedure (SOP) DV-OP-0019 and analyzed for the target analytes by TestAmerica Denver's SOP DV-LC-0012.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blanks were non-detect at the reporting limits for the target analytes.

Each batch is prepared with low and mid level Laboratory Control Samples (LCS). The LCS recoveries for both levels were within established control limits, with the exception of the items noted in section Analytical Comments.

Analytical Comments
The Standard Operating Procedure (SOP) was altered slightly in the sample preparation for FOSA. Sodium hydroxide was added to all nine samples to obtain a pH of 14 instead of the SOP required <2. The basic pH is generating better internal standard recoveries for Me FOSA.

Due to a limitation in the LIMS system, the low-level LCS associated with QC batch 9259434 reported the percent recoveries for Perfluorotridecanoic Acid (PFTriA) as 0.0%. PFTriA was recovered within the control limits (50-150%) at 64%. As this compound was detected below the Method Detection Limit (MDL) of 0.020 ug/L, the system reports the percent recovery as 0.0%.

The method required MS/MSD could not be performed for QC batches 9264539 and 9259434, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable low-level LCS and mid-level LCS/LCSD analyses data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D9I150267

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
#93 4496 HWY 225 09/14/09 11:33 002				
Perfluorooctanoic Acid	0.010 J	0.020	ug/L	DEN -LC-0012
Perfluorooctanesulfonate	0.062	0.020	ug/L	DEN -LC-0012
#97 175 HARRISON LN 09/14/09 15:06 006				
Perfluorooctanoic Acid	0.018 J	0.020	ug/L	DEN -LC-0012
Perfluoropentanoic acid (PFPA)	0.011 J	0.030	ug/L	DEN -LC-0012
Perfluorohexanoic acid (PFHxA)	0.023	0.020	ug/L	DEN -LC-0012
Perfluorobutane sulfonate (PFB	0.016 J	0.020	ug/L	DEN -LC-0012
Perfluorohexane sulfonate (PFH	0.013 J	0.030	ug/L	DEN -LC-0012

METHODS SUMMARY

D9I150267

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS PFCs	DEN -LC-0012	SW846 FOSA spec

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

D9I150267

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jacqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D9I150267

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LKT5H	001	#92 4202 HWY 225	09/14/09	11:11
LKT5W	002	#93 4496 HWY 225	09/14/09	11:33
LKT52	003	#94 6547 HWY 225	09/14/09	12:00
LKT53	004	#95 6064 HWY 225	09/14/09	12:28
LKT56	005	#96 3361 RIVERBEND RD	09/14/09	14:02
LKT6A	006	#97 175 HARRISON LN	09/14/09	15:06
LKT6D	007	TRIP BLK	09/14/09	
LKT6F	008	FIELD BLK	09/14/09	
LKT6G	009	DUP	09/14/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Dalton Utilities

Client Sample ID: #92 4202 HWY 225

HPLC

Lot-Sample #...: D9I150267-001 **Work Order #...:** LKT5H1AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 11:11 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9259434 **Analysis Time..:** 23:06
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	120	(50 - 200)
13C4 PFOS	68	(50 - 200)
13C4 PFBA	95	(50 - 200)
13C2 PFHxA	108	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	86	(50 - 200)
13C2 PFDA	76	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	72	(50 - 200)

Dalton Utilities

Client Sample ID: #92 4202 HWY 225

HPLC

Lot-Sample #...: D9I150267-001 **Work Order #...:** LKT5H1AC **Matrix.....:** WATER
Date Sampled...: 09/14/09 11:11 **Date Received..:** 09/15/09
Prep Date.....: 09/21/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9264539 **Analysis Time..:** 19:59
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	60	(50 - 200)

Dalton Utilities

Client Sample ID: #93 4496 HWY 225

HPLC

Lot-Sample #...: D9I150267-002 **Work Order #...:** LKT5W1AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 11:33 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9259434 **Analysis Time..:** 23:22
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.010 J**	**0.020**	**ug/L**	**0.0098**
Perfluorooctanesulfonate	**0.062**	**0.020**	**ug/L**	**0.013**
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	119	(50 - 200)
13C4 PFOS	66	(50 - 200)
13C4 PFBA	95	(50 - 200)
13C2 PFHxA	107	(50 - 200)
18O2 PFHxS	91	(50 - 200)
13C5 PFNA	87	(50 - 200)
13C2 PFDA	78	(50 - 200)
13C2 PFUnA	71	(50 - 200)
13C2 PFDoA	75	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #93 4496 HWY 225

HPLC

Lot-Sample #...: D9I150267-002 **Work Order #...:** LKT5W1AC **Matrix.....:** WATER
Date Sampled...: 09/14/09 11:33 **Date Received..:** 09/15/09
Prep Date.....: 09/21/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9264539 **Analysis Time..:** 20:06
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	57	(50 - 200)

Dalton Utilities

Client Sample ID: #94 6547 HWY 225

HPLC

Lot-Sample #...: D9I150267-003 **Work Order #...:** LKT521AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 12:00 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9259434 **Analysis Time..:** 23:38
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	126	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	103	(50 - 200)
13C2 PFHxA	120	(50 - 200)
18O2 PFHxS	99	(50 - 200)
13C5 PFNA	92	(50 - 200)
13C2 PFDA	84	(50 - 200)
13C2 PFUnA	67	(50 - 200)
13C2 PFDoA	74	(50 - 200)

Dalton Utilities

Client Sample ID: #94 6547 HWY 225

HPLC

Lot-Sample #...: D9I150267-003 **Work Order #...:** LKT521AC **Matrix.....:** WATER
Date Sampled...: 09/14/09 12:00 **Date Received..:** 09/15/09
Prep Date.....: 09/21/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9264539 **Analysis Time..:** 20:14
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	69	(50 - 200)

Dalton Utilities

Client Sample ID: #95 6064 HWY 225

HPLC

Lot-Sample #...: D9I150267-004 **Work Order #...:** LKT531AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 12:28 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/19/09
Prep Batch #...: 9259434 **Analysis Time..:** 23:54
Dilution Factor: 1
Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	120	(50 - 200)
13C4 PFOS	67	(50 - 200)
13C4 PFBA	98	(50 - 200)
13C2 PFHxA	110	(50 - 200)
18O2 PFHxS	99	(50 - 200)
13C5 PFNA	89	(50 - 200)
13C2 PFDA	77	(50 - 200)
13C2 PFUnA	71	(50 - 200)
13C2 PFDoA	71	(50 - 200)

Dalton Utilities

Client Sample ID: #95 6064 HWY 225

HPLC

Lot-Sample #...: D9I150267-004 **Work Order #...:** LKT531AC **Matrix.....:** WATER
Date Sampled...: 09/14/09 12:28 **Date Received..:** 09/15/09
Prep Date.....: 09/21/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9264539 **Analysis Time..:** 20:21
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	74	(50 - 200)

Dalton Utilities

Client Sample ID: #96 3361 RIVERBEND RD

HPLC

Lot-Sample #...: D9I150267-005 **Work Order #...:** LKT561AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 14:02 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/20/09
Prep Batch #...: 9259434 **Analysis Time..:** 00:10
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	129	(50 - 200)
13C4 PFOS	69	(50 - 200)
13C4 PFBA	99	(50 - 200)
13C2 PFHxA	113	(50 - 200)
18O2 PFHxS	99	(50 - 200)
13C5 PFNA	94	(50 - 200)
13C2 PFDA	83	(50 - 200)
13C2 PFUnA	68	(50 - 200)
13C2 PFDoA	75	(50 - 200)

Dalton Utilities

Client Sample ID: #96 3361 RIVERBEND RD

HPLC

Lot-Sample #...:	D9I150267-005	**Work Order #...:**	LKT561AC	**Matrix.....:**	WATER
Date Sampled...:	09/14/09 14:02	**Date Received..:**	09/15/09		
Prep Date.....:	09/21/09	**Analysis Date..:**	09/25/09		
Prep Batch #...:	9264539	**Analysis Time..:**	20:28		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	74	(50 - 200)

Dalton Utilities

Client Sample ID: #97 175 HARRISON LN

HPLC

Lot-Sample #...: D9I150267-006 **Work Order #...:** LKT6A1AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 15:06 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/20/09
Prep Batch #...: 9259434 **Analysis Time..:** 00:27
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	**0.018 J**	**0.020**	**ug/L**	**0.0098**
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	**0.011 J**	**0.030**	**ug/L**	**0.011**
Perfluorohexanoic acid (PFHxA)	**0.023**	**0.020**	**ug/L**	**0.0029**
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	**0.016 J**	**0.020**	**ug/L**	**0.0082**
Perfluorohexane sulfonate (PFHxS)	**0.013 J**	**0.030**	**ug/L**	**0.0070**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	125	(50 - 200)
13C4 PFOS	72	(50 - 200)
13C4 PFBA	108	(50 - 200)
13C2 PFHxA	117	(50 - 200)
18O2 PFHxS	94	(50 - 200)
13C5 PFNA	95	(50 - 200)
13C2 PFDA	85	(50 - 200)
13C2 PFUnA	79	(50 - 200)
13C2 PFDoA	78	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

Dalton Utilities

Client Sample ID: #97 175 HARRISON LN

HPLC

Lot-Sample #...: D9I150267-006 **Work Order #...:** LKT6A1AC **Matrix.....:** WATER
Date Sampled...: 09/14/09 15:06 **Date Received..:** 09/15/09
Prep Date.....: 09/21/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9264539 **Analysis Time..:** 20:42
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	62	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I150267-007 **Work Order #...:** LKT6D1AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/20/09
Prep Batch #...: 9259434 **Analysis Time..:** 00:59
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	118	(50 - 200)
13C4 PFOS	77	(50 - 200)
13C4 PFBA	98	(50 - 200)
13C2 PFHxA	110	(50 - 200)
18O2 PFHxS	92	(50 - 200)
13C5 PFNA	104	(50 - 200)
13C2 PFDA	96	(50 - 200)
13C2 PFUnA	76	(50 - 200)
13C2 PFDoA	74	(50 - 200)

Dalton Utilities

Client Sample ID: TRIP BLK

HPLC

Lot-Sample #...: D9I150267-007 **Work Order #...:** LKT6D1AC **Matrix.....:** WATER
Date Sampled...: 09/14/09 **Date Received..:** 09/15/09
Prep Date.....: 09/21/09 **Analysis Date..:** 09/25/09
Prep Batch #...: 9264539 **Analysis Time..:** 20:49
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	75	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...: D9I150267-008 **Work Order #...:** LKT6F1AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/20/09
Prep Batch #...: 9259434 **Analysis Time..:** 01:15
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	129	(50 - 200)
13C4 PFOS	76	(50 - 200)
13C4 PFBA	104	(50 - 200)
13C2 PFHxA	117	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	104	(50 - 200)
13C2 PFDA	90	(50 - 200)
13C2 PFUnA	78	(50 - 200)
13C2 PFDoA	75	(50 - 200)

Dalton Utilities

Client Sample ID: FIELD BLK

HPLC

Lot-Sample #...:	D9I150267-008	**Work Order #...:**	LKT6F1AC	**Matrix.....:**	WATER
Date Sampled...:	09/14/09	**Date Received..:**	09/15/09		
Prep Date.....:	09/21/09	**Analysis Date..:**	09/25/09		
Prep Batch #...:	9264539	**Analysis Time..:**	20:56		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	65	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...: D9I150267-009 **Work Order #...:** LKT6G1AA **Matrix.....:** WATER
Date Sampled...: 09/14/09 **Date Received..:** 09/15/09
Prep Date.....: 09/16/09 **Analysis Date..:** 09/20/09
Prep Batch #...: 9259434 **Analysis Time..:** 01:31
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctanoic Acid	ND	0.020	ug/L	0.0098
Perfluorooctanesulfonate	ND	0.020	ug/L	0.013
Perfluorobutanoic acid (PFBA)	ND	0.020	ug/L	0.0098
Perfluoropentanoic acid (PFPA)	ND	0.030	ug/L	0.011
Perfluorohexanoic acid (PFHxA)	ND	0.020	ug/L	0.0029
Perfluoroheptanoic acid (PFHpA)	ND	0.020	ug/L	0.013
Perfluorononanoic acid (PFNA)	ND	0.020	ug/L	0.017
Perfluorodecanoic acid (PFDA)	ND	0.020	ug/L	0.0078
Perfluoroundecanoic acid (PFUnA)	ND	0.020	ug/L	0.0069
Perfluorododecanoic acid (PFDoA)	ND	0.020	ug/L	0.015
Perfluorotridecanoic acid (PFTriA)	ND	0.020	ug/L	0.018
Perfluorotetradecanoic acid (PFTeA)	ND	0.020	ug/L	0.015
Perfluorobutane sulfonate (PFBS)	ND	0.020	ug/L	0.0082
Perfluorohexane sulfonate (PFHxS)	ND	0.030	ug/L	0.0070

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	123	(50 - 200)
13C4 PFOS	65	(50 - 200)
13C4 PFBA	102	(50 - 200)
13C2 PFHxA	118	(50 - 200)
18O2 PFHxS	95	(50 - 200)
13C5 PFNA	92	(50 - 200)
13C2 PFDA	77	(50 - 200)
13C2 PFUnA	68	(50 - 200)
13C2 PFDoA	75	(50 - 200)

Dalton Utilities

Client Sample ID: DUP

HPLC

Lot-Sample #...:	D9I150267-009	**Work Order #...:**	LKT6G1AC	**Matrix.....:**	WATER
Date Sampled...:	09/14/09	**Date Received..:**	09/15/09		
Prep Date.....:	09/21/09	**Analysis Date..:**	09/25/09		
Prep Batch #...:	9264539	**Analysis Time..:**	21:04		
Dilution Factor:	1				
		Method.....:	DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perfluorooctane sulfonamide (FOSA)	ND	0.050	ug/L	0.0057

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
MeFOSA	54	(50 - 200)

QC DATA ASSOCIATION SUMMARY

D9I150267

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
002	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
003	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
004	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
005	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
006	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
007	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
008	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	
009	WATER	DEN -LC-0012		9259434	
	WATER	DEN -LC-0012		9264539	