

## ANALYTICAL REPORT

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Laboratory Job ID: 280-144551-1  
Client Project/Site: West River WWTP

For:  
Gadsden Water Works  
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Authorized for release by:  
1/21/2021 8:19:17 AM

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Case Narrative

Client: Gadsden Water Works  
Project/Site: West River WWTP

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## Narrative

### CASE NARRATIVE

**Client: Gadsden Water Works**

**Project: West River WWTP**

**Report Number: 280-144551-1**

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

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The samples were received on 1/13/2021 9:55 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.3° C.

The sample IDs were not listed on the container labels. The samples were identified by the sample collection time and logged per the COC. The client was notified.

### PERFLUORINATED HYDROCARBONS (PFC)

Samples RW (280-144551-1), FW (280-144551-2) and BACKWASH (280-144551-3) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 01/14/2021 and analyzed on 01/15/2021.

Method DV-LC-0012: The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: RW (280-144551-1), FW (280-144551-2) and BACKWASH (280-144551-3). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples. Preparation batch 280-523460 and analytical batch 280-523664 PFC.

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

### PERFLUOROCTANE SULFONAMIDE (FOSA)

Samples RW (280-144551-1), FW (280-144551-2) and BACKWASH (280-144551-3) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared and analyzed on 01/18/2021.

Method PFC -FOSA: The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: FW (280-144551-2), (280-144606-C-1-A), (280-144606-A-1-A MS) and (280-144606-D-1-A MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples. Preparation batch 280-523777 and analytical batch 280-523935 FOSA.

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



# Client Sample Results

Client: Gadsden Water Works  
Project/Site: West River WWTP

Job ID: 280-144551-1

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

**Client Sample ID: RW**  
**Date Collected: 01/11/21 20:00**  
**Date Received: 01/13/21 09:55**

**Lab Sample ID: 280-144551-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.019		0.017	0.0084	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorodecanoic acid (PFDA)	0.0067	U	0.017	0.0067	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorododecanoic acid (PFDoA)	0.013	U	0.026	0.013	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluoroheptanoic acid (PFHpA)	0.011	U	0.026	0.011	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorohexanoic acid (PFHxA)	0.037		0.017	0.0067	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorononanoic acid (PFNA)	0.0064	U	0.034	0.0064	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorooctanoic acid (PFOA)	0.028		0.017	0.0084	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorooctane sulfonate (PFOS)	0.041		0.026	0.011	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluoropentanoic acid (PFPA)	0.058		0.026	0.0093	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorotetradecanoic acid (PFTeA)	0.013	U	0.026	0.013	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorotridecanoic acid (PFTriA)	0.015	U	0.034	0.015	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluoroundecanoic acid (PFUnA)	0.0059	U	0.017	0.0059	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorobutanesulfonic acid (PFBS)	0.15		0.017	0.0070	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorodecanesulfonic acid (PFDS)	0.0078	U	0.017	0.0078	ug/L		01/14/21 07:39	01/15/21 11:17	1
Perfluorohexanesulfonic acid (PFHxS)	0.0060	U	0.026	0.0060	ug/L		01/14/21 07:39	01/15/21 11:17	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C8 PFOA	108		60 - 155				01/14/21 07:39	01/15/21 11:17	1
13C8 PFOS	116		45 - 130				01/14/21 07:39	01/15/21 11:17	1

**Client Sample ID: FW**  
**Date Collected: 01/12/21 09:00**  
**Date Received: 01/13/21 09:55**

**Lab Sample ID: 280-144551-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.018		0.017	0.0082	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorodecanoic acid (PFDA)	0.0066	U	0.017	0.0066	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorododecanoic acid (PFDoA)	0.013	U	0.025	0.013	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluoroheptanoic acid (PFHpA)	0.011	J	0.025	0.011	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorohexanoic acid (PFHxA)	0.037		0.017	0.0066	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorononanoic acid (PFNA)	0.0063	U	0.034	0.0063	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorooctanoic acid (PFOA)	0.026		0.017	0.0082	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorooctane sulfonate (PFOS)	0.030		0.025	0.011	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluoropentanoic acid (PFPA)	0.063		0.025	0.0091	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorotetradecanoic acid (PFTeA)	0.012	U	0.025	0.012	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorotridecanoic acid (PFTriA)	0.015	U	0.034	0.015	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluoroundecanoic acid (PFUnA)	0.0058	U	0.017	0.0058	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorobutanesulfonic acid (PFBS)	0.13		0.017	0.0069	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorodecanesulfonic acid (PFDS)	0.0077	U	0.017	0.0077	ug/L		01/14/21 07:39	01/15/21 11:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.0058	U	0.025	0.0058	ug/L		01/14/21 07:39	01/15/21 11:26	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C8 PFOA	107		60 - 155				01/14/21 07:39	01/15/21 11:26	1
13C8 PFOS	117		45 - 130				01/14/21 07:39	01/15/21 11:26	1

**Client Sample ID: BACKWASH**  
**Date Collected: 01/12/21 10:00**  
**Date Received: 01/13/21 09:55**

**Lab Sample ID: 280-144551-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.016	J	0.017	0.0081	ug/L		01/14/21 07:39	01/15/21 11:35	1

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# Client Sample Results

Client: Gadsden Water Works  
Project/Site: West River WWTP

Job ID: 280-144551-1

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

Client Sample ID: BACKWASH						Lab Sample ID: 280-144551-3			
Date Collected: 01/12/21 10:00						Matrix: Water			
Date Received: 01/13/21 09:55									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	0.0065	U	0.017	0.0065	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluorododecanoic acid (PFDoA)	0.012	U	0.025	0.012	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluoroheptanoic acid (PFHpA)	0.011	U	0.025	0.011	ug/L		01/14/21 07:39	01/15/21 11:35	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.038</b>		0.017	0.0065	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluorononanoic acid (PFNA)	0.0062	U	0.033	0.0062	ug/L		01/14/21 07:39	01/15/21 11:35	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.025</b>		0.017	0.0081	ug/L		01/14/21 07:39	01/15/21 11:35	1
<b>Perfluorooctane sulfonate (PFOS)</b>	<b>0.034</b>		0.025	0.011	ug/L		01/14/21 07:39	01/15/21 11:35	1
<b>Perfluoropentanoic acid (PFPA)</b>	<b>0.056</b>		0.025	0.0090	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluorotetradecanoic acid (PFTeA)	0.012	U	0.025	0.012	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluorotridecanoic acid (PFTriA)	0.015	U	0.033	0.015	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluoroundecanoic acid (PFUnA)	0.0057	U	0.017	0.0057	ug/L		01/14/21 07:39	01/15/21 11:35	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.13</b>		0.017	0.0068	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluorodecanesulfonic acid (PFDS)	0.0076	U	0.017	0.0076	ug/L		01/14/21 07:39	01/15/21 11:35	1
Perfluorohexanesulfonic acid (PFHxS)	0.0058	U	0.025	0.0058	ug/L		01/14/21 07:39	01/15/21 11:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	109		60 - 155				01/14/21 07:39	01/15/21 11:35	1
13C8 PFOS	122		45 - 130				01/14/21 07:39	01/15/21 11:35	1

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

Client Sample ID: RW						Lab Sample ID: 280-144551-1			
Date Collected: 01/11/21 20:00						Matrix: Water			
Date Received: 01/13/21 09:55									

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonamide (FOSA)	0.0017	J	0.043	0.00093	ug/L		01/18/21 07:36	01/18/21 15:06	1

Client Sample ID: FW						Lab Sample ID: 280-144551-2			
Date Collected: 01/12/21 09:00						Matrix: Water			
Date Received: 01/13/21 09:55									

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonamide (FOSA)	0.00088	U	0.041	0.00088	ug/L		01/18/21 07:36	01/18/21 15:15	1

Client Sample ID: BACKWASH						Lab Sample ID: 280-144551-3			
Date Collected: 01/12/21 10:00						Matrix: Water			
Date Received: 01/13/21 09:55									

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonamide (FOSA)	0.00090	J	0.040	0.00087	ug/L		01/18/21 07:36	01/18/21 15:24	1