

## ANALYTICAL REPORT

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Laboratory Job ID: 320-53393-1

Client Project/Site: MGE - Burke WWTP - 25218175.00

**For:**

SCS Engineers  
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Madison, Wisconsin 53718

Attn: Mr. Eric Oelkers



*Authorized for release by:  
9/19/2019 9:58:21 AM*

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Client Sample Results . . . . .	8
Isotope Dilution Summary . . . . .	24
QC Sample Results . . . . .	27
QC Association Summary . . . . .	37
Lab Chronicle . . . . .	39
Certification Summary . . . . .	42
Method Summary . . . . .	44
Sample Summary . . . . .	45
Chain of Custody . . . . .	46
Receipt Checklists . . . . .	47

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Case Narrative

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Job ID: 320-53393-1

### Laboratory: Eurofins TestAmerica, Sacramento

#### Narrative

#### Job Narrative 320-53393-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 8/17/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

#### GC/MS Semi VOA

Method(s) 537 (modified): Perfluorobutanesulfonic acid (PFBS) was detected above the reporting limit (RL) in the method blank associated with preparation batch 320-317504 and analytical batch 320-320384 as well as in the following sample: (MB 320-317504/1-A). All affected samples were re-extracted outside of holding time. Both sets of data have been reported.

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

#### LCMS

Method(s) 537 (modified), EPA 537 (Mod), EPA 537(Mod): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-317875/10), (ICV 320-317875/11), (ICV 320-323869/11)and (ICV 320-319927/12)

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Perfluoro-n-octadecanoic acid (PFODA) and Perfluorododecanesulfonic acid (PFDoS) in preparation batch 320-316857 and analytical batch 320-317927 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: (320-53401-A-12-A), (320-53401-A-12-B MS) and (320-53401-A-12-C 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.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS in the following sample: (320-53401-A-12-B MS). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C2 PFHxDA: Equipment Blank (320-53393-9). The sample was re-analyzed with concurring results. 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 sample.

Method(s) 537 (modified): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-322148/11)

Method(s) 537 (modified): The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 320-317504 and 320-317504 and analytical batch 320-320384 recovered outside control limits for the following analytes: Perfluoro-n-hexadecanoic acid (PFHxDA), Perfluoro-n-octadecanoic acid (PFODA) and 10:2 FTS. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 537 (modified): The several Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: GP-101, 10-12' (320-53393-1), GP-102, 7.5'-10' (320-53393-3), GP-103, 8-9' (320-53393-4) and GP-104, 13-15' (320-53393-8). Re-extraction was performed with concurring results. The first set of data have been reported. 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 sample(s).

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes for the

# Case Narrative

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Job ID: 320-53393-1 (Continued)

### Laboratory: Eurofins TestAmerica, Sacramento (Continued)

following samples: GP-101, 10-12' (320-53393-1), GP-102, 7.5'-10' (320-53393-3), GP-103, 8-9' (320-53393-4), GP-103, 20-24' (320-53393-6) and GP-104, 9-10' (320-53393-7). Re-extraction was performed with concurring results. The first set of data have been reported. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The laboratory control sample (LCS) for preparation batch 320-321246 and analytical batch 320-322594 recovered outside control limits for the following analytes: Perfluoro-n-hexadecanoic acid (PFHxDA), Perfluoro-n-octadecanoic acid (PFODA) and Perfluorotridecanoic acid (PFTriA). The associated sample(s) was re-prepared outside holding time. Both sets of data have been reported.

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Perfluoro-n-hexadecanoic acid (PFHxDA) and Perfluoro-n-octadecanoic acid (PFODA) for preparation batch 320-321246 and analytical batch 320-322594 were outside control limits. Sample matrix interference are suspected.

Method(s) 537 (modified): The d7-N-MeFOSE-M and d9-N-EtFOSE-M Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: (LCSD 320-317504/17-A) and (MB 320-317504/1-A). Re-extraction was performed with acceptable results. The first set of data have been reported. 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 sample(s).

Method(s) 537 (modified): Results for samples GP-103, 8-9' (320-53393-4) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery for <sup>13</sup>C<sub>2</sub> PFHxDA associated with the following samples are below the method recommended limit: GP-102, 7.5'-10' (320-53393-3) and GP-103, 8-9' (320-53393-4). 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 sample. The sample was reanalyzed with concurring results; therefore, the data have been reported.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following samples: GP-102, 7.5'-10' (320-53393-3) and GP-103, 8-9' (320-53393-4). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries. The samples were re-analyzed with concurring results.

Method(s) 537 (modified): The concentration of Perfluorooctanesulfonic acid (PFOS) associated with the following sample exceeded the instrument calibration range: GP-103, 8-9' (320-53393-4). The analyte has been qualified; however, the peak did not saturate the instrument detector. The sample was analyzed at a dilution and both sets of data are reported. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

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

### General Chemistry

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

### Organic Prep

Method(s) SHAKE: The following samples GP-101, 10-12' (320-53393-1), GP-102, 7.5'-10' (320-53393-3), GP-103, 8-9' (320-53393-4) and GP-103, 20-24' (320-53393-6) were yellow after the final volume. Method: PFC\_IDA Matrix: Solid Prep Batch: 320-317504

Method(s) SHAKE: The following samples GP-101, 10-12' (320-53393-1), GP-102, 7.5'-10' (320-53393-3), GP-103, 8-9' (320-53393-4), GP-103, 20-24' (320-53393-6), (320-53393-A-1 MS) and (320-53393-A-1 MSD) were yellow after extraction and final volume. Method: PFC\_IDA Matrix: Solid Prep Batch: 320-321246

Method(s) SHAKE: The following samples were re-prepared outside of preparation holding time due to method blank contamination for PFBS. GP-101, 10-12' (320-53393-1), GP-102, 7.5'-10' (320-53393-3), GP-103, 8-9' (320-53393-4), GP-103, 20-24' (320-53393-6), GP-104, 9-10' (320-53393-7), GP-104, 13-15' (320-53393-8), (320-53393-A-1 MS) and (320-53393-A-1 MSD). Method: PFC\_IDA Matrix: Solid Prep Batch: 320-321246

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

# Detection Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Client Sample ID: GP-101, 10-12'

## Lab Sample ID: 320-53393-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.11	J	0.55	0.077	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.35	J	0.55	0.24	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.6	B	0.55	0.069	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.2	J	1.4	0.55	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.36	J	0.58	0.25	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RE	0.20	J H	0.56	0.070	ug/Kg	1	☼	537 (modified)	Total/NA

## Client Sample ID: GP-102, 7.5'-10'

## Lab Sample ID: 320-53393-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.42	J	0.45	0.063	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.61		0.45	0.19	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.7	B	0.45	0.056	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4		0.45	0.070	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	27		1.1	0.45	ug/Kg	1	☼	537 (modified)	Total/NA
NEtFOSE	1.2		0.45	0.081	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.64		0.47	0.20	ug/Kg	1	☼	537 (modified)	Total/NA

## Client Sample ID: GP-103, 8-9'

## Lab Sample ID: 320-53393-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.53		0.46	0.065	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.18	J	0.46	0.18	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.39	J	0.46	0.098	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.23	J	0.46	0.067	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.74		0.46	0.20	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.7	B	0.46	0.058	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.88		0.46	0.072	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.2		0.46	0.081	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	85	E	1.2	0.46	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanesulfonic acid (PFNS)	0.25	J	0.46	0.046	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.92		0.46	0.091	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.79		0.46	0.19	ug/Kg	1	☼	537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	14		4.6	0.86	ug/Kg	1	☼	537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	0.77		0.49	0.21	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA) - DL	0.68	J	2.3	0.33	ug/Kg	5	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	5.0	B	2.3	0.29	ug/Kg	5	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	100		5.8	2.3	ug/Kg	5	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS) - DL	0.70	J	2.3	0.45	ug/Kg	5	☼	537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) - DL	16	J	23	4.3	ug/Kg	5	☼	537 (modified)	Total/NA
NEtFOSE - DL	4.0		2.3	0.42	ug/Kg	5	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RE	0.17	J H	0.47	0.059	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Client Sample ID: GP-103, 20-24'

## Lab Sample ID: 320-53393-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	7.8		1.1	0.15	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.20	J	1.1	0.19	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.3	B	1.1	0.13	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.28	J	1.1	0.17	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.1		2.7	1.1	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RE	0.50	J H	1.1	0.14	ug/Kg	1	☼	537 (modified)	Total/NA

## Client Sample ID: GP-104, 9-10'

## Lab Sample ID: 320-53393-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.14	J	0.25	0.035	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.0	B	0.25	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.1		0.63	0.25	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RE	0.054	J H	0.26	0.032	ug/Kg	1	☼	537 (modified)	Total/NA

## Client Sample ID: GP-104, 13-15'

## Lab Sample ID: 320-53393-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.036	J	0.26	0.036	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2	B	0.26	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - RE	0.054	J H	0.25	0.032	ug/Kg	1	☼	537 (modified)	Total/NA

## Client Sample ID: Equipment Blank

## Lab Sample ID: 320-53393-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.22	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-101, 10-12'**

**Lab Sample ID: 320-53393-1**

**Date Collected: 08/15/19 11:30**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 34.8**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>0.11</b>	<b>J</b>	0.55	0.077	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoropentanoic acid (PFPeA)	<0.21		0.55	0.21	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorohexanoic acid (PFHxA)	<0.12		0.55	0.12	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoroheptanoic acid (PFHpA)	<0.080		0.55	0.080	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.35</b>	<b>J</b>	0.55	0.24	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorononanoic acid (PFNA)	<0.10		0.55	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorodecanoic acid (PFDA)	<0.061		0.55	0.061	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoroundecanoic acid (PFUnA)	<0.10		0.55	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorododecanoic acid (PFDoA)	<0.19		0.55	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorotridecanoic acid (PFTriA)	<0.14		0.55	0.14	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorotetradecanoic acid (PFTeA)	<0.15		0.55	0.15	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.12 *		0.55	0.12	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>3.6</b>	<b>B</b>	0.55	0.069	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.077 *		0.55	0.077	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoropentanesulfonic acid (PFPeS)	<0.055		0.55	0.055	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorohexanesulfonic acid (PFHxS)	<0.086		0.55	0.086	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.097		0.55	0.097	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1.2</b>	<b>J</b>	1.4	0.55	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorononanesulfonic acid (PFNS)	<0.055		0.55	0.055	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorodecanesulfonic acid (PFDS)	<0.11		0.55	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorooctanesulfonamide (FOSA)	<0.23		0.55	0.23	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.1		5.5	1.1	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.0		5.5	1.0	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
4:2 FTS	<1.0		5.5	1.0	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
6:2 FTS	<0.42		5.5	0.42	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
8:2 FTS	<0.69		5.5	0.69	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
10:2 FTS	<0.14 *		0.55	0.14	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
NEtFOSA	<0.066		0.55	0.066	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
NMeFOSA	<0.11		0.55	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
Perfluorododecanesulfonic acid (PFDoS)	<0.17		0.55	0.17	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
NMeFOSE	<0.20		0.55	0.20	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
NEtFOSE	<0.10		0.55	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
ADONA	<0.053		0.58	0.053	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
F-53B Major	<0.075		0.55	0.075	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
HFPO-DA (GenX)	<0.30		0.69	0.30	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
F-53B Minor	<0.061		0.55	0.061	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
NaDONA	<0.053		0.58	0.053	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
DONA	<0.050		0.55	0.050	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1
<b>Ammonium Perfluorooctanoate (APFO)</b>	<b>0.36</b>	<b>J</b>	0.58	0.25	ug/Kg	☼	08/23/19 10:40	08/31/19 15:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	70		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C5 PFPeA	81		25 - 150	08/23/19 10:40	08/31/19 15:30	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-101, 10-12'**

**Lab Sample ID: 320-53393-1**

Date Collected: 08/15/19 11:30

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 34.8

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C4 PFHpA	88		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C4 PFOA	84		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C5 PFNA	87		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C2 PFDA	83		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C2 PFHxDA	46		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C2 PFUnA	74		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C2 PFDoA	65		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C2 PFTeDA	66		25 - 150	08/23/19 10:40	08/31/19 15:30	1
18O2 PFHxS	100		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C4 PFOS	91		25 - 150	08/23/19 10:40	08/31/19 15:30	1
13C8 FOSA	65		25 - 150	08/23/19 10:40	08/31/19 15:30	1
d3-NMeFOSAA	65		25 - 150	08/23/19 10:40	08/31/19 15:30	1
d5-NEtFOSAA	73		25 - 150	08/23/19 10:40	08/31/19 15:30	1
M2-6:2 FTS	169 *		25 - 150	08/23/19 10:40	08/31/19 15:30	1
M2-8:2 FTS	152 *		25 - 150	08/23/19 10:40	08/31/19 15:30	1
M2-4:2 FTS	144		25 - 150	08/23/19 10:40	08/31/19 15:30	1
d-N-MeFOSA-M	23 *		25 - 150	08/23/19 10:40	08/31/19 15:30	1
d-N-EtFOSA-M	16 *		25 - 150	08/23/19 10:40	08/31/19 15:30	1
d7-N-MeFOSE-M	12		10 - 120	08/23/19 10:40	08/31/19 15:30	1
d9-N-EtFOSE-M	12		10 - 120	08/23/19 10:40	08/31/19 15:30	1
13C3 HFPO-DA	53		25 - 150	08/23/19 10:40	08/31/19 15:30	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - RE**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.20	J H	0.56	0.070	ug/Kg	☼	09/06/19 10:36	09/11/19 21:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	99		25 - 150	09/06/19 10:36	09/11/19 21:33	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	65.2		0.1	0.1	%			08/22/19 11:34	1
Percent Solids	34.8		0.1	0.1	%			08/22/19 11:34	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-102, 7.5'-10'**

**Lab Sample ID: 320-53393-3**

**Date Collected: 08/15/19 10:00**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 44.4**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>0.42</b>	<b>J</b>	0.45	0.063	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoropentanoic acid (PFPeA)	<0.17		0.45	0.17	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorohexanoic acid (PFHxA)	<0.094		0.45	0.094	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoroheptanoic acid (PFHpA)	<0.065		0.45	0.065	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>0.61</b>		0.45	0.19	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorononanoic acid (PFNA)	<0.081		0.45	0.081	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorodecanoic acid (PFDA)	<0.049		0.45	0.049	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoroundecanoic acid (PFUnA)	<0.081		0.45	0.081	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorododecanoic acid (PFDoA)	<0.15		0.45	0.15	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorotridecanoic acid (PFTriA)	<0.11		0.45	0.11	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorotetradecanoic acid (PFTeA)	<0.12		0.45	0.12	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.099	*	0.45	0.099	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>1.7</b>	<b>B</b>	0.45	0.056	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.063	*	0.45	0.063	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoropentanesulfonic acid (PFPeS)	<0.045		0.45	0.045	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>1.4</b>		0.45	0.070	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.079		0.45	0.079	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>27</b>		1.1	0.45	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorononanesulfonic acid (PFNS)	<0.045		0.45	0.045	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorodecanesulfonic acid (PFDS)	<0.088		0.45	0.088	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorooctanesulfonamide (FOSA)	<0.18		0.45	0.18	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.88		4.5	0.88	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.83		4.5	0.83	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
4:2 FTS	<0.83		4.5	0.83	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
6:2 FTS	<0.34		4.5	0.34	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
8:2 FTS	<0.56		4.5	0.56	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
10:2 FTS	<0.11	*	0.45	0.11	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
NEtFOSA	<0.054		0.45	0.054	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
NMeFOSA	<0.092		0.45	0.092	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
Perfluorododecanesulfonic acid (PFDoS)	<0.13		0.45	0.13	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
NMeFOSE	<0.16		0.45	0.16	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
<b>NEtFOSE</b>	<b>1.2</b>		0.45	0.081	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
ADONA	<0.043		0.47	0.043	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
F-53B Major	<0.061		0.45	0.061	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
HFPO-DA (GenX)	<0.25		0.56	0.25	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
F-53B Minor	<0.049		0.45	0.049	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
NaDONA	<0.043		0.47	0.043	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
DONA	<0.040		0.45	0.040	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1
<b>Ammonium Perfluorooctanoate (APFO)</b>	<b>0.64</b>		0.47	0.20	ug/Kg	☼	08/23/19 10:40	09/17/19 13:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	74		25 - 150	08/23/19 10:40	09/17/19 13:44	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-102, 7.5'-10'**

**Lab Sample ID: 320-53393-3**

**Date Collected: 08/15/19 10:00**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 44.4**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	89		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C2 PFHxA	87		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C4 PFHpA	97		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C4 PFOA	83		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C5 PFNA	93		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C2 PFDA	93		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C2 PFHxDA	15 *		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C2 PFUnA	86		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C2 PFDaA	77		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C2 PFTeDA	43		25 - 150	08/23/19 10:40	09/17/19 13:44	1
18O2 PFHxS	126		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C4 PFOS	129		25 - 150	08/23/19 10:40	09/17/19 13:44	1
13C8 FOSA	68		25 - 150	08/23/19 10:40	09/17/19 13:44	1
d3-NMeFOSAA	58		25 - 150	08/23/19 10:40	09/17/19 13:44	1
d5-NEtFOSAA	61		25 - 150	08/23/19 10:40	09/17/19 13:44	1
M2-6:2 FTS	253 *		25 - 150	08/23/19 10:40	09/17/19 13:44	1
M2-8:2 FTS	310 *		25 - 150	08/23/19 10:40	09/17/19 13:44	1
M2-4:2 FTS	196 *		25 - 150	08/23/19 10:40	09/17/19 13:44	1
d-N-MeFOSA-M	45		25 - 150	08/23/19 10:40	09/17/19 13:44	1
d-N-EtFOSA-M	39		25 - 150	08/23/19 10:40	09/17/19 13:44	1
d7-N-MeFOSE-M	13		10 - 120	08/23/19 10:40	09/17/19 13:44	1
d9-N-EtFOSE-M	10		10 - 120	08/23/19 10:40	09/17/19 13:44	1
13C3 HFPO-DA	86		25 - 150	08/23/19 10:40	09/17/19 13:44	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - RE**

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Perfluorobutanesulfonic acid (PFBS)	<0.055	H	0.44	0.055	ug/Kg	☼	09/06/19 10:36	09/11/19 22:02	1

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS	140		25 - 150	09/06/19 10:36	09/11/19 22:02	1

**General Chemistry**

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<b>Percent Moisture</b>	<b>55.6</b>		0.1	0.1	%			08/22/19 11:34	1
<b>Percent Solids</b>	<b>44.4</b>		0.1	0.1	%			08/22/19 11:34	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 8-9'**

**Lab Sample ID: 320-53393-4**

Date Collected: 08/15/19 10:15

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 41.7

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.53		0.46	0.065	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoropentanoic acid (PFPeA)	0.18	J	0.46	0.18	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorohexanoic acid (PFHxA)	0.39	J	0.46	0.098	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoroheptanoic acid (PFHpA)	0.23	J	0.46	0.067	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorooctanoic acid (PFOA)	0.74		0.46	0.20	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorononanoic acid (PFNA)	<0.084		0.46	0.084	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorodecanoic acid (PFDA)	<0.051		0.46	0.051	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoroundecanoic acid (PFUnA)	<0.084		0.46	0.084	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorododecanoic acid (PFDoA)	<0.16		0.46	0.16	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorotridecanoic acid (PFTriA)	<0.12		0.46	0.12	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorotetradecanoic acid (PFTeA)	<0.13		0.46	0.13	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.10	*	0.46	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorobutanesulfonic acid (PFBS)	5.7	B	0.46	0.058	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.065	*	0.46	0.065	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoropentanesulfonic acid (PFPeS)	<0.046		0.46	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorohexanesulfonic acid (PFHxS)	0.88		0.46	0.072	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.2		0.46	0.081	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorooctanesulfonic acid (PFOS)	85	E	1.2	0.46	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorononanesulfonic acid (PFNS)	0.25	J	0.46	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorodecanesulfonic acid (PFDS)	0.92		0.46	0.091	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorooctanesulfonamide (FOSA)	0.79		0.46	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.91		4.6	0.91	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	14		4.6	0.86	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
4:2 FTS	<0.86		4.6	0.86	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
6:2 FTS	<0.35		4.6	0.35	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
8:2 FTS	<0.58		4.6	0.58	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
10:2 FTS	<0.12	*	0.46	0.12	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
NEtFOSA	<0.056		0.46	0.056	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
NMeFOSA	<0.095		0.46	0.095	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Perfluorododecanesulfonic acid (PFDoS)	<0.14		0.46	0.14	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
NMeFOSE	<0.16		0.46	0.16	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
NEtFOSE	<0.084		0.46	0.084	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
ADONA	<0.044		0.49	0.044	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
F-53B Major	<0.063		0.46	0.063	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
HFPO-DA (GenX)	<0.26		0.58	0.26	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
F-53B Minor	<0.051		0.46	0.051	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
NaDONA	<0.044		0.49	0.044	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
DONA	<0.042		0.46	0.042	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1
Ammonium Perfluorooctanoate (APFO)	0.77		0.49	0.21	ug/Kg	☼	08/23/19 10:40	08/31/19 15:49	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 8-9'**

**Lab Sample ID: 320-53393-4**

**Date Collected: 08/15/19 10:15**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 41.7**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	51		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C5 PFPeA	81		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C2 PFHxA	82		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C4 PFHpA	85		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C4 PFOA	82		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C5 PFNA	83		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C2 PFDA	75		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C2 PFHxDA	12 *		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C2 PFUnA	63		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C2 PFDoA	56		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C2 PFTeDA	27		25 - 150	08/23/19 10:40	08/31/19 15:49	1
18O2 PFHxS	104		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C4 PFOS	100		25 - 150	08/23/19 10:40	08/31/19 15:49	1
13C8 FOSA	54		25 - 150	08/23/19 10:40	08/31/19 15:49	1
d3-NMeFOSAA	48		25 - 150	08/23/19 10:40	08/31/19 15:49	1
d5-NEtFOSAA	52		25 - 150	08/23/19 10:40	08/31/19 15:49	1
M2-6:2 FTS	178 *		25 - 150	08/23/19 10:40	08/31/19 15:49	1
M2-8:2 FTS	169 *		25 - 150	08/23/19 10:40	08/31/19 15:49	1
M2-4:2 FTS	157 *		25 - 150	08/23/19 10:40	08/31/19 15:49	1
d-N-MeFOSA-M	23 *		25 - 150	08/23/19 10:40	08/31/19 15:49	1
d-N-EtFOSA-M	21 *		25 - 150	08/23/19 10:40	08/31/19 15:49	1
d7-N-MeFOSE-M	12		10 - 120	08/23/19 10:40	08/31/19 15:49	1
d9-N-EtFOSE-M	9 *		10 - 120	08/23/19 10:40	08/31/19 15:49	1
13C3 HFPO-DA	41		25 - 150	08/23/19 10:40	08/31/19 15:49	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>0.68</b>	<b>J</b>	2.3	0.33	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoropentanoic acid (PFPeA)	<0.89		2.3	0.89	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorohexanoic acid (PFHxA)	<0.49		2.3	0.49	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoroheptanoic acid (PFHpA)	<0.34		2.3	0.34	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorooctanoic acid (PFOA)	<1.0		2.3	1.0	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorononanoic acid (PFNA)	<0.42		2.3	0.42	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorodecanoic acid (PFDA)	<0.26		2.3	0.26	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoroundecanoic acid (PFUnA)	<0.42		2.3	0.42	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorododecanoic acid (PFDoA)	<0.78		2.3	0.78	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorotridecanoic acid (PFTriA)	<0.59		2.3	0.59	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorotetradecanoic acid (PFTeA)	<0.63		2.3	0.63	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.51 *		2.3	0.51	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>5.0</b>	<b>B</b>	2.3	0.29	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoro-n-octadecanoic acid (PFODA)	<0.33 *		2.3	0.33	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoropentanesulfonic acid (PFPeS)	<0.23		2.3	0.23	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorohexanesulfonic acid (PFHxS)	<0.36		2.3	0.36	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoroheptanesulfonic Acid (PFHpS)	<0.41		2.3	0.41	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>100</b>		5.8	2.3	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluoronanesulfonic acid (PFNS)	<0.23		2.3	0.23	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 8-9'**

**Lab Sample ID: 320-53393-4**

Date Collected: 08/15/19 10:15

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 41.7

**Method: 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorodecanesulfonic acid (PFDS)</b>	<b>0.70</b>	<b>J</b>	2.3	0.45	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorooctanesulfonamide (FOSA)	<0.95		2.3	0.95	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.5		23	4.5	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
<b>N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)</b>	<b>16</b>	<b>J</b>	23	4.3	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
4:2 FTS	<4.3		23	4.3	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
6:2 FTS	<1.7		23	1.7	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
8:2 FTS	<2.9		23	2.9	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
10:2 FTS	<0.58	*	2.3	0.58	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
NEtFOSA	<0.28		2.3	0.28	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
NMeFOSA	<0.48		2.3	0.48	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Perfluorododecanesulfonic acid (PFDoS)	<0.70		2.3	0.70	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
NMeFOSE	<0.82		2.3	0.82	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
<b>NEtFOSE</b>	<b>4.0</b>		2.3	0.42	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
ADONA	<0.22		2.4	0.22	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
F-53B Major	<0.31		2.3	0.31	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
HFPO-DA (GenX)	<1.3		2.9	1.3	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
F-53B Minor	<0.26		2.3	0.26	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
NaDONA	<0.22		2.4	0.22	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
DONA	<0.21		2.3	0.21	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5
Ammonium Perfluorooctanoate (APFO)	<1.0		2.4	1.0	ug/Kg	☼	08/23/19 10:40	09/17/19 13:54	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	78		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C5 PFPeA	82		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C2 PFHxA	83		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C4 PFHpA	90		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C4 PFOA	84		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C5 PFNA	87		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C2 PFDA	88		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C2 PFHxDA	15	*	25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C2 PFUnA	85		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C2 PFDoA	87		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C2 PFTeDA	45		25 - 150	08/23/19 10:40	09/17/19 13:54	5
18O2 PFHxS	95		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C4 PFOS	92		25 - 150	08/23/19 10:40	09/17/19 13:54	5
13C8 FOSA	68		25 - 150	08/23/19 10:40	09/17/19 13:54	5
d3-NMeFOSAA	74		25 - 150	08/23/19 10:40	09/17/19 13:54	5
d5-NEtFOSAA	74		25 - 150	08/23/19 10:40	09/17/19 13:54	5
M2-6:2 FTS	199	*	25 - 150	08/23/19 10:40	09/17/19 13:54	5
M2-8:2 FTS	221	*	25 - 150	08/23/19 10:40	09/17/19 13:54	5
M2-4:2 FTS	156	*	25 - 150	08/23/19 10:40	09/17/19 13:54	5
d-N-MeFOSA-M	36		25 - 150	08/23/19 10:40	09/17/19 13:54	5
d-N-EtFOSA-M	27		25 - 150	08/23/19 10:40	09/17/19 13:54	5
d7-N-MeFOSE-M	15		10 - 120	08/23/19 10:40	09/17/19 13:54	5
d9-N-EtFOSE-M	12		10 - 120	08/23/19 10:40	09/17/19 13:54	5
13C3 HFPO-DA	83		25 - 150	08/23/19 10:40	09/17/19 13:54	5

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 8-9'**

**Lab Sample ID: 320-53393-4**

Date Collected: 08/15/19 10:15

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 41.7

**Method: 537 (modified) - Fluorinated Alkyl Substances - RE**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.17	J H	0.47	0.059	ug/Kg	☼	09/06/19 10:36	09/11/19 22:11	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS	133		25 - 150				09/06/19 10:36	09/11/19 22:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	58.3		0.1	0.1	%			08/22/19 11:34	1
Percent Solids	41.7		0.1	0.1	%			08/22/19 11:34	1



# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 20-24'**

**Lab Sample ID: 320-53393-6**

Date Collected: 08/15/19 10:45

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 17.9

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>7.8</b>		1.1	0.15	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluoropentanoic acid (PFPeA)	<0.41		1.1	0.41	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorohexanoic acid (PFHxA)	<0.23		1.1	0.23	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluoroheptanoic acid (PFHpA)	<0.16		1.1	0.16	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorooctanoic acid (PFOA)	<0.46		1.1	0.46	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorononanoic acid (PFNA)	<0.19		1.1	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorodecanoic acid (PFDA)	<0.12		1.1	0.12	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
<b>Perfluoroundecanoic acid (PFUnA)</b>	<b>0.20 J</b>		1.1	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorododecanoic acid (PFDoA)	<0.36		1.1	0.36	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorotridecanoic acid (PFTriA)	<0.27		1.1	0.27	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorotetradecanoic acid (PFTeA)	<0.29		1.1	0.29	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.24 *		1.1	0.24	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>5.3 B</b>		1.1	0.13	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.15 *		1.1	0.15	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluoropentanesulfonic acid (PFPeS)	<0.11		1.1	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.28 J</b>		1.1	0.17	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		1.1	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>4.1</b>		2.7	1.1	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorononanesulfonic acid (PFNS)	<0.11		1.1	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		1.1	0.21	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorooctanesulfonamide (FOSA)	<0.44		1.1	0.44	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		11	2.1	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		11	2.0	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
4:2 FTS	<2.0		11	2.0	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
6:2 FTS	<0.80		11	0.80	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
8:2 FTS	<1.3		11	1.3	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
10:2 FTS	<0.27 *		1.1	0.27	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
NEtFOSA	<0.13		1.1	0.13	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
NMeFOSA	<0.22		1.1	0.22	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Perfluorododecanesulfonic acid (PFDoS)	<0.32		1.1	0.32	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
NMeFOSE	<0.38		1.1	0.38	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
NEtFOSE	<0.19		1.1	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
ADONA	<0.10		1.1	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
F-53B Major	<0.14		1.1	0.14	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
HFPO-DA (GenX)	<0.59		1.3	0.59	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
F-53B Minor	<0.12		1.1	0.12	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
NaDONA	<0.10		1.1	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
DONA	<0.097		1.1	0.097	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1
Ammonium Perfluorooctanoate (APFO)	<0.48		1.1	0.48	ug/Kg	☼	08/23/19 10:40	08/31/19 15:59	1

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# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 20-24'**

**Lab Sample ID: 320-53393-6**

Date Collected: 08/15/19 10:45

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 17.9

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	57		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C5 PFPeA	71		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C2 PFHxA	79		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C4 PFHpA	82		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C4 PFOA	82		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C5 PFNA	82		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C2 PFDA	76		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C2 PFHxDA	52		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C2 PFUnA	72		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C2 PFDaA	65		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C2 PFTeDA	62		25 - 150	08/23/19 10:40	08/31/19 15:59	1
18O2 PFHxS	97		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C4 PFOS	94		25 - 150	08/23/19 10:40	08/31/19 15:59	1
13C8 FOSA	67		25 - 150	08/23/19 10:40	08/31/19 15:59	1
d3-NMeFOSAA	70		25 - 150	08/23/19 10:40	08/31/19 15:59	1
d5-NEtFOSAA	73		25 - 150	08/23/19 10:40	08/31/19 15:59	1
M2-6:2 FTS	145		25 - 150	08/23/19 10:40	08/31/19 15:59	1
M2-8:2 FTS	153 *		25 - 150	08/23/19 10:40	08/31/19 15:59	1
M2-4:2 FTS	116		25 - 150	08/23/19 10:40	08/31/19 15:59	1
d-N-MeFOSA-M	39		25 - 150	08/23/19 10:40	08/31/19 15:59	1
d-N-EtFOSA-M	33		25 - 150	08/23/19 10:40	08/31/19 15:59	1
d7-N-MeFOSE-M	21		10 - 120	08/23/19 10:40	08/31/19 15:59	1
d9-N-EtFOSE-M	19		10 - 120	08/23/19 10:40	08/31/19 15:59	1
13C3 HFPO-DA	47		25 - 150	08/23/19 10:40	08/31/19 15:59	1

### Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.50	J H	1.1	0.14	ug/Kg	☼	09/06/19 10:36	09/11/19 22:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	110		25 - 150	09/06/19 10:36	09/11/19 22:21	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	82.1		0.1	0.1	%			08/22/19 11:34	1
Percent Solids	17.9		0.1	0.1	%			08/22/19 11:34	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-104, 9-10'**

**Lab Sample ID: 320-53393-7**

**Date Collected: 08/15/19 09:30**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 76.3**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>0.14</b>	<b>J</b>	0.25	0.035	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoropentanoic acid (PFPeA)	<0.098		0.25	0.098	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorohexanoic acid (PFHxA)	<0.053		0.25	0.053	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoroheptanoic acid (PFHpA)	<0.037		0.25	0.037	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorooctanoic acid (PFOA)	<0.11		0.25	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorononanoic acid (PFNA)	<0.046		0.25	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorodecanoic acid (PFDA)	<0.028		0.25	0.028	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoroundecanoic acid (PFUnA)	<0.046		0.25	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorododecanoic acid (PFDoA)	<0.085		0.25	0.085	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorotridecanoic acid (PFTriA)	<0.065		0.25	0.065	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorotetradecanoic acid (PFTeA)	<0.068		0.25	0.068	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.056	*	0.25	0.056	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>1.0</b>	<b>B</b>	0.25	0.032	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.035	*	0.25	0.035	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoropentanesulfonic acid (PFPeS)	<0.025		0.25	0.025	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorohexanesulfonic acid (PFHxS)	<0.039		0.25	0.039	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.044		0.25	0.044	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1.1</b>		0.63	0.25	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorononanesulfonic acid (PFNS)	<0.025		0.25	0.025	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorodecanesulfonic acid (PFDS)	<0.049		0.25	0.049	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorooctanesulfonamide (FOSA)	<0.10		0.25	0.10	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.49		2.5	0.49	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.47		2.5	0.47	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
4:2 FTS	<0.47		2.5	0.47	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
6:2 FTS	<0.19		2.5	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
8:2 FTS	<0.32		2.5	0.32	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
10:2 FTS	<0.063	*	0.25	0.063	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
NEtFOSA	<0.030		0.25	0.030	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
NMeFOSA	<0.052		0.25	0.052	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Perfluorododecanesulfonic acid (PFDoS)	<0.076		0.25	0.076	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
NMeFOSE	<0.090		0.25	0.090	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
NEtFOSE	<0.046		0.25	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
ADONA	<0.024		0.27	0.024	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
F-53B Major	<0.034		0.25	0.034	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
HFPO-DA (GenX)	<0.14		0.32	0.14	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
F-53B Minor	<0.028		0.25	0.028	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
NaDONA	<0.024		0.27	0.024	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
DONA	<0.023		0.25	0.023	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1
Ammonium Perfluorooctanoate (APFO)	<0.11		0.27	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 16:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	83		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C5 PFPeA	90		25 - 150	08/23/19 10:40	08/31/19 16:08	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-104, 9-10'**

**Lab Sample ID: 320-53393-7**

Date Collected: 08/15/19 09:30

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 76.3

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	91		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C4 PFHpA	91		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C4 PFOA	89		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C5 PFNA	93		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C2 PFDA	86		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C2 PFHxDA	38		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C2 PFUnA	81		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C2 PFDoA	78		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C2 PFTeDA	70		25 - 150	08/23/19 10:40	08/31/19 16:08	1
18O2 PFHxS	92		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C4 PFOS	86		25 - 150	08/23/19 10:40	08/31/19 16:08	1
13C8 FOSA	76		25 - 150	08/23/19 10:40	08/31/19 16:08	1
d3-NMeFOSAA	85		25 - 150	08/23/19 10:40	08/31/19 16:08	1
d5-NEtFOSAA	92		25 - 150	08/23/19 10:40	08/31/19 16:08	1
M2-6:2 FTS	159 *		25 - 150	08/23/19 10:40	08/31/19 16:08	1
M2-8:2 FTS	159 *		25 - 150	08/23/19 10:40	08/31/19 16:08	1
M2-4:2 FTS	130		25 - 150	08/23/19 10:40	08/31/19 16:08	1
d-N-MeFOSA-M	47		25 - 150	08/23/19 10:40	08/31/19 16:08	1
d-N-EtFOSA-M	42		25 - 150	08/23/19 10:40	08/31/19 16:08	1
d7-N-MeFOSE-M	26		10 - 120	08/23/19 10:40	08/31/19 16:08	1
d9-N-EtFOSE-M	23		10 - 120	08/23/19 10:40	08/31/19 16:08	1
13C3 HFPO-DA	55		25 - 150	08/23/19 10:40	08/31/19 16:08	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - RE**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.054	J H	0.26	0.032	ug/Kg	☼	09/06/19 10:36	09/11/19 22:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	90		25 - 150	09/06/19 10:36	09/11/19 22:31	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.7		0.1	0.1	%			08/22/19 11:34	1
Percent Solids	76.3		0.1	0.1	%			08/22/19 11:34	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-104, 13-15'**

**Lab Sample ID: 320-53393-8**

Date Collected: 08/15/19 09:35

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 76.7

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>0.036</b>	<b>J</b>	0.26	0.036	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoropentanoic acid (PFPeA)	<0.099		0.26	0.099	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorohexanoic acid (PFHxA)	<0.054		0.26	0.054	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoroheptanoic acid (PFHpA)	<0.037		0.26	0.037	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorooctanoic acid (PFOA)	<0.11		0.26	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorononanoic acid (PFNA)	<0.046		0.26	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorodecanoic acid (PFDA)	<0.028		0.26	0.028	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoroundecanoic acid (PFUnA)	<0.046		0.26	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorododecanoic acid (PFDoA)	<0.086		0.26	0.086	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorotridecanoic acid (PFTriA)	<0.065		0.26	0.065	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorotetradecanoic acid (PFTeA)	<0.069		0.26	0.069	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.056	*	0.26	0.056	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>1.2</b>	<b>B</b>	0.26	0.032	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.036	*	0.26	0.036	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoropentanesulfonic acid (PFPeS)	<0.026		0.26	0.026	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorohexanesulfonic acid (PFHxS)	<0.040		0.26	0.040	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.045		0.26	0.045	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorooctanesulfonic acid (PFOS)	<0.26		0.64	0.26	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorononanesulfonic acid (PFNS)	<0.026		0.26	0.026	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorodecanesulfonic acid (PFDS)	<0.050		0.26	0.050	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorooctanesulfonamide (FOSA)	<0.11		0.26	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.50		2.6	0.50	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.47		2.6	0.47	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
4:2 FTS	<0.47		2.6	0.47	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
6:2 FTS	<0.19		2.6	0.19	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
8:2 FTS	<0.32		2.6	0.32	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
10:2 FTS	<0.064	*	0.26	0.064	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
NEtFOSA	<0.031		0.26	0.031	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
NMeFOSA	<0.053		0.26	0.053	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Perfluorododecanesulfonic acid (PFDoS)	<0.077		0.26	0.077	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
NMeFOSE	<0.091		0.26	0.091	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
NEtFOSE	<0.046		0.26	0.046	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
ADONA	<0.024		0.27	0.024	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
F-53B Major	<0.035		0.26	0.035	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
HFPO-DA (GenX)	<0.14		0.32	0.14	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
F-53B Minor	<0.028		0.26	0.028	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
NaDONA	<0.024		0.27	0.024	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
DONA	<0.023		0.26	0.023	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1
Ammonium Perfluorooctanoate (APFO)	<0.11		0.27	0.11	ug/Kg	☼	08/23/19 10:40	08/31/19 16:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	73		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C5 PFPeA	74		25 - 150	08/23/19 10:40	08/31/19 16:18	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-104, 13-15'**

**Lab Sample ID: 320-53393-8**

Date Collected: 08/15/19 09:35

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 76.7

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	74		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C4 PFHpA	79		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C4 PFOA	76		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C5 PFNA	77		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C2 PFDA	75		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C2 PFHxDA	52		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C2 PFUnA	75		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C2 PFDoA	70		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C2 PFTeDA	65		25 - 150	08/23/19 10:40	08/31/19 16:18	1
18O2 PFHxS	78		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C4 PFOS	73		25 - 150	08/23/19 10:40	08/31/19 16:18	1
13C8 FOSA	64		25 - 150	08/23/19 10:40	08/31/19 16:18	1
d3-NMeFOSAA	57		25 - 150	08/23/19 10:40	08/31/19 16:18	1
d5-NEtFOSAA	68		25 - 150	08/23/19 10:40	08/31/19 16:18	1
M2-6:2 FTS	82		25 - 150	08/23/19 10:40	08/31/19 16:18	1
M2-8:2 FTS	89		25 - 150	08/23/19 10:40	08/31/19 16:18	1
M2-4:2 FTS	75		25 - 150	08/23/19 10:40	08/31/19 16:18	1
d-N-MeFOSA-M	20 *		25 - 150	08/23/19 10:40	08/31/19 16:18	1
d-N-EtFOSA-M	14 *		25 - 150	08/23/19 10:40	08/31/19 16:18	1
d7-N-MeFOSE-M	8 *		10 - 120	08/23/19 10:40	08/31/19 16:18	1
d9-N-EtFOSE-M	9 *		10 - 120	08/23/19 10:40	08/31/19 16:18	1
13C3 HFPO-DA	71		25 - 150	08/23/19 10:40	08/31/19 16:18	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - RE**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.054	J H	0.25	0.032	ug/Kg	☼	09/06/19 10:36	09/11/19 22:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	80		25 - 150	09/06/19 10:36	09/11/19 22:40	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.3		0.1	0.1	%			08/22/19 11:34	1
Percent Solids	76.7		0.1	0.1	%			08/22/19 11:34	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: Equipment Blank**

**Lab Sample ID: 320-53393-9**

Date Collected: 08/15/19 12:15

Matrix: Water

Date Received: 08/17/19 09:20

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.31		1.8	0.31	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoropentanoic acid (PFPeA)	<0.43		1.8	0.43	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorohexanoic acid (PFHxA)	<0.51		1.8	0.51	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoroheptanoic acid (PFHpA)	<0.22		1.8	0.22	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorooctanoic acid (PFOA)	<0.74		1.8	0.74	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorodecanoic acid (PFDA)	<0.27		1.8	0.27	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoroundecanoic acid (PFUnA)	<0.96		1.8	0.96	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorododecanoic acid (PFDoA)	<0.48		1.8	0.48	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorotridecanoic acid (PFTriA)	<1.1		1.8	1.1	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorotetradecanoic acid (PFTeA)	<0.25		1.8	0.25	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.78		1.8	0.78	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.40		1.8	0.40	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoropentanesulfonic acid (PFPeS)	<0.26		1.8	0.26	ng/L		08/21/19 05:00	08/25/19 10:25	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.22</b>	<b>J B</b>	1.8	0.15	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.47		1.8	0.47	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorodecanesulfonic acid (PFDS)	<0.28		1.8	0.28	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorooctanesulfonamide (FOSA)	<0.31		1.8	0.31	ng/L		08/21/19 05:00	08/25/19 10:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.7		18	2.7	ng/L		08/21/19 05:00	08/25/19 10:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		08/21/19 05:00	08/25/19 10:25	1
4:2 FTS	<4.6		18	4.6	ng/L		08/21/19 05:00	08/25/19 10:25	1
6:2 FTS	<1.8		18	1.8	ng/L		08/21/19 05:00	08/25/19 10:25	1
8:2 FTS	<1.8		18	1.8	ng/L		08/21/19 05:00	08/25/19 10:25	1
10:2 FTS	<0.17		1.8	0.17	ng/L		08/21/19 05:00	08/25/19 10:25	1
NEtFOSA	<0.76		1.8	0.76	ng/L		08/21/19 05:00	08/25/19 10:25	1
NMeFOSA	<0.38		1.8	0.38	ng/L		08/21/19 05:00	08/25/19 10:25	1
Perfluorododecanesulfonic acid (PFDoS)	<0.39		1.8	0.39	ng/L		08/21/19 05:00	08/25/19 10:25	1
NMeFOSE	<1.2		3.5	1.2	ng/L		08/21/19 05:00	08/25/19 10:25	1
NEtFOSE	<0.74		1.8	0.74	ng/L		08/21/19 05:00	08/25/19 10:25	1
ADONA	<0.17		1.8	0.17	ng/L		08/21/19 05:00	08/25/19 10:25	1
F-53B Major	<0.21		1.8	0.21	ng/L		08/21/19 05:00	08/25/19 10:25	1
HFPO-DA (GenX)	<1.3		3.5	1.3	ng/L		08/21/19 05:00	08/25/19 10:25	1
F-53B Minor	<0.28		1.8	0.28	ng/L		08/21/19 05:00	08/25/19 10:25	1
NaDONA	<0.17		1.8	0.17	ng/L		08/21/19 05:00	08/25/19 10:25	1
DONA	<0.16		1.8	0.16	ng/L		08/21/19 05:00	08/25/19 10:25	1
Ammonium Perfluorooctanoate (APFO)	<0.77		1.8	0.77	ng/L		08/21/19 05:00	08/25/19 10:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	101		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C5 PFPeA	99		25 - 150	08/21/19 05:00	08/25/19 10:25	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: Equipment Blank**

**Lab Sample ID: 320-53393-9**

**Date Collected: 08/15/19 12:15**

**Matrix: Water**

**Date Received: 08/17/19 09:20**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	95		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C4 PFHpA	102		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C4 PFOA	94		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C5 PFNA	94		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C2 PFDA	90		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C2 PFHxDA	18 *		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C2 PFUnA	85		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C2 PFDaA	74		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C2 PFTeDA	52		25 - 150	08/21/19 05:00	08/25/19 10:25	1
18O2 PFHxS	116		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C4 PFOS	105		25 - 150	08/21/19 05:00	08/25/19 10:25	1
13C8 FOSA	93		25 - 150	08/21/19 05:00	08/25/19 10:25	1
d3-NMeFOSAA	83		25 - 150	08/21/19 05:00	08/25/19 10:25	1
d5-NEtFOSAA	81		25 - 150	08/21/19 05:00	08/25/19 10:25	1
M2-6:2 FTS	92		25 - 150	08/21/19 05:00	08/25/19 10:25	1
M2-8:2 FTS	85		25 - 150	08/21/19 05:00	08/25/19 10:25	1
M2-4:2 FTS	91		25 - 150	08/21/19 05:00	08/25/19 10:25	1
d-N-MeFOSA-M	72		20 - 150	08/21/19 05:00	08/25/19 10:25	1
d-N-EtFOSA-M	54		20 - 150	08/21/19 05:00	08/25/19 10:25	1
d7-N-MeFOSE-M	31		10 - 120	08/21/19 05:00	08/25/19 10:25	1
d9-N-EtFOSE-M	26		10 - 120	08/21/19 05:00	08/25/19 10:25	1
13C3 HFPO-DA	91		25 - 150	08/21/19 05:00	08/25/19 10:25	1

# Isotope Dilution Summary

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)
320-53393-1	GP-101, 10-12'	70	81	86	88	84	87	83	46
320-53393-1 - RE	GP-101, 10-12'								
320-53393-1 MS - RE	GP-101, 10-12'								
320-53393-1 MSD - RE	GP-101, 10-12'								
320-53393-3 - RE	GP-102, 7.5'-10'								
320-53393-3	GP-102, 7.5'-10'	74	89	87	97	83	93	93	15 *
320-53393-4	GP-103, 8-9'	51	81	82	85	82	83	75	12 *
320-53393-4 - RE	GP-103, 8-9'								
320-53393-4 - DL	GP-103, 8-9'	78	82	83	90	84	87	88	15 *
320-53393-6	GP-103, 20-24'	57	71	79	82	82	82	76	52
320-53393-6 - RE	GP-103, 20-24'								
320-53393-7	GP-104, 9-10'	83	90	91	91	89	93	86	38
320-53393-7 - RE	GP-104, 9-10'								
320-53393-8	GP-104, 13-15'	73	74	74	79	76	77	75	52
320-53393-8 - RE	GP-104, 13-15'								
LCS 320-317504/2-A	Lab Control Sample	97	98	93	98	95	95	94	93
LCS 320-321246/2-A	Lab Control Sample								
LCSD 320-317504/17-A	Lab Control Sample Dup	94	93	92	100	92	94	92	81
MB 320-317504/1-A	Method Blank	96	97	95	100	94	95	93	96
MB 320-321246/1-A	Method Blank								

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	NMeFOS (25-150)	NEtFOS (25-150)
320-53393-1	GP-101, 10-12'	74	65	66	100	91	65	65	73
320-53393-1 - RE	GP-101, 10-12'				99				
320-53393-1 MS - RE	GP-101, 10-12'				103				
320-53393-1 MSD - RE	GP-101, 10-12'				103				
320-53393-3 - RE	GP-102, 7.5'-10'				140				
320-53393-3	GP-102, 7.5'-10'	86	77	43	126	129	68	58	61
320-53393-4	GP-103, 8-9'	63	56	27	104	100	54	48	52
320-53393-4 - RE	GP-103, 8-9'				133				
320-53393-4 - DL	GP-103, 8-9'	85	87	45	95	92	68	74	74
320-53393-6	GP-103, 20-24'	72	65	62	97	94	67	70	73
320-53393-6 - RE	GP-103, 20-24'				110				
320-53393-7	GP-104, 9-10'	81	78	70	92	86	76	85	92
320-53393-7 - RE	GP-104, 9-10'				90				
320-53393-8	GP-104, 13-15'	75	70	65	78	73	64	57	68
320-53393-8 - RE	GP-104, 13-15'				80				
LCS 320-317504/2-A	Lab Control Sample	94	93	97	102	99	85	68	70
LCS 320-321246/2-A	Lab Control Sample				108				
LCSD 320-317504/17-A	Lab Control Sample Dup	96	95	95	104	96	87	81	83
MB 320-317504/1-A	Method Blank	95	100	96	103	94	82	83	92
MB 320-321246/1-A	Method Blank				108				

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOSA (25-150)	∇-EtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)	HFPODA (25-150)
320-53393-1	GP-101, 10-12'	169 *	152 *	144	23 *	16 *	12	12	53
320-53393-1 - RE	GP-101, 10-12'								
320-53393-1 MS - RE	GP-101, 10-12'								

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# Isotope Dilution Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOSA (25-150)	N-EtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)	HFPODA (25-150)
320-53393-1 MSD - RE	GP-101, 10-12'								
320-53393-3 - RE	GP-102, 7.5'-10'								
320-53393-3	GP-102, 7.5'-10'	253 *	310 *	196 *	45	39	13	10	86
320-53393-4	GP-103, 8-9'	178 *	169 *	157 *	23 *	21 *	12	9 *	41
320-53393-4 - RE	GP-103, 8-9'								
320-53393-4 - DL	GP-103, 8-9'	199 *	221 *	156 *	36	27	15	12	83
320-53393-6	GP-103, 20-24'	145	153 *	116	39	33	21	19	47
320-53393-6 - RE	GP-103, 20-24'								
320-53393-7	GP-104, 9-10'	159 *	159 *	130	47	42	26	23	55
320-53393-7 - RE	GP-104, 9-10'								
320-53393-8	GP-104, 13-15'	82	89	75	20 *	14 *	8 *	9 *	71
320-53393-8 - RE	GP-104, 13-15'								
LCS 320-317504/2-A	Lab Control Sample	92	84	92	41	38	10	11	81
LCS 320-321246/2-A	Lab Control Sample								
LCSD 320-317504/17-A	Lab Control Sample Dup	99	91	98	44	38	5 *	5 *	81
MB 320-317504/1-A	Method Blank	97	89	96	44	37	8 *	9 *	88
MB 320-321246/1-A	Method Blank								

### Surrogate Legend

PFBA = 13C4 PFBA  
PFPeA = 13C5 PFPeA  
PFHxA = 13C2 PFHxA  
PFHpA = 13C4 PFHpA  
PFOA = 13C4 PFOA  
PFNA = 13C5 PFNA  
PFDA = 13C2 PFDA  
PFHxDA = 13C2 PFHxDA  
PFUnA = 13C2 PFUnA  
PFDoA = 13C2 PFDoA  
PFTDA = 13C2 PFTeDA  
PFHxS = 18O2 PFHxS  
PFOS = 13C4 PFOS  
PFOSA = 13C8 FOSA  
d3-NMeFOSAA = d3-NMeFOSAA  
d5-NEtFOSAA = d5-NEtFOSAA  
M262FTS = M2-6:2 FTS  
M282FTS = M2-8:2 FTS  
M242FTS = M2-4:2 FTS  
d-N-MeFOSA-M = d-N-MeFOSA-M  
d-N-EtFOSA-M = d-N-EtFOSA-M  
NMFM = d7-N-MeFOSE-M  
NEFM = d9-N-EtFOSE-M  
HFPODA = 13C3 HFPO-DA

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)
320-53393-9	Equipment Blank	101	99	95	102	94	94	90	18 *

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# Isotope Dilution Summary

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)
LCS 320-316857/2-A	Lab Control Sample	89	87	86	93	89	88	88	74
MB 320-316857/1-A	Method Blank	99	97	94	103	98	100	96	78

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	NMeFOSAA (25-150)	NEtFOSAA (25-150)
320-53393-9	Equipment Blank	85	74	52	116	105	93	83	81
LCS 320-316857/2-A	Lab Control Sample	83	90	81	105	97	87	87	85
MB 320-316857/1-A	Method Blank	100	91	80	120	109	98	92	96

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOSA (20-150)	N-EtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	HFPODA (25-150)
320-53393-9	Equipment Blank	92	85	91	72	54	31	26	91
LCS 320-316857/2-A	Lab Control Sample	85	83	86	48	35	22	16	81
MB 320-316857/1-A	Method Blank	93	97	97	56	39	21	16	88

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- PFHpA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFHxDA = 13C2 PFHxDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3-NMeFOSAA = d3-NMeFOSAA
- d5-NEtFOSAA = d5-NEtFOSAA
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS
- M242FTS = M2-4:2 FTS
- d-N-MeFOSA-M = d-N-MeFOSA-M
- d-N-EtFOSA-M = d-N-EtFOSA-M
- NMFM = d7-N-MeFOSE-M
- NEFM = d9-N-EtFOSE-M
- HFPODA = 13C3 HFPO-DA

# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-316857/1-A**  
**Matrix: Water**  
**Analysis Batch: 317927**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316857**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<0.35		2.0	0.35	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorotridecanoic acid (PFTriA)	<1.3		2.0	1.3	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorotetradecanoic acid (PFTeA)	<0.29		2.0	0.29	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.89		2.0	0.89	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.46		2.0	0.46	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorohexanesulfonic acid (PFHxS)	0.269	J	2.0	0.17	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		2.0	0.19	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorononanesulfonic acid (PFNS)	<0.16		2.0	0.16	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorooctanesulfonamide (FOSA)	<0.35		2.0	0.35	ng/L		08/21/19 05:00	08/25/19 07:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.1		20	3.1	ng/L		08/21/19 05:00	08/25/19 07:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		20	1.9	ng/L		08/21/19 05:00	08/25/19 07:53	1
4:2 FTS	<5.2		20	5.2	ng/L		08/21/19 05:00	08/25/19 07:53	1
6:2 FTS	<2.0		20	2.0	ng/L		08/21/19 05:00	08/25/19 07:53	1
8:2 FTS	<2.0		20	2.0	ng/L		08/21/19 05:00	08/25/19 07:53	1
10:2 FTS	<0.19		2.0	0.19	ng/L		08/21/19 05:00	08/25/19 07:53	1
NEtFOSA	<0.87		2.0	0.87	ng/L		08/21/19 05:00	08/25/19 07:53	1
NMeFOSA	<0.43		2.0	0.43	ng/L		08/21/19 05:00	08/25/19 07:53	1
Perfluorododecanesulfonic acid (PFDoS)	<0.45		2.0	0.45	ng/L		08/21/19 05:00	08/25/19 07:53	1
NMeFOSE	<1.4		4.0	1.4	ng/L		08/21/19 05:00	08/25/19 07:53	1
NEtFOSE	<0.85		2.0	0.85	ng/L		08/21/19 05:00	08/25/19 07:53	1
ADONA	<0.19		2.1	0.19	ng/L		08/21/19 05:00	08/25/19 07:53	1
F-53B Major	<0.24		2.0	0.24	ng/L		08/21/19 05:00	08/25/19 07:53	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		08/21/19 05:00	08/25/19 07:53	1
F-53B Minor	<0.32		2.0	0.32	ng/L		08/21/19 05:00	08/25/19 07:53	1
NaDONA	<0.19		2.1	0.19	ng/L		08/21/19 05:00	08/25/19 07:53	1
DONA	<0.18		2.0	0.18	ng/L		08/21/19 05:00	08/25/19 07:53	1
Ammonium Perfluorooctanoate (APFO)	<0.88		2.1	0.88	ng/L		08/21/19 05:00	08/25/19 07:53	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	99		25 - 150	08/21/19 05:00	08/25/19 07:53	1

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-316857/1-A**  
**Matrix: Water**  
**Analysis Batch: 317927**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316857**

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFPeA	97		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C2 PFHxA	94		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C4 PFHpA	103		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C4 PFOA	98		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C5 PFNA	100		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C2 PFDA	96		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C2 PFHxDA	78		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C2 PFUnA	100		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C2 PFDaA	91		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C2 PFTeDA	80		25 - 150	08/21/19 05:00	08/25/19 07:53	1
18O2 PFHxS	120		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C4 PFOS	109		25 - 150	08/21/19 05:00	08/25/19 07:53	1
13C8 FOSA	98		25 - 150	08/21/19 05:00	08/25/19 07:53	1
d3-NMeFOSAA	92		25 - 150	08/21/19 05:00	08/25/19 07:53	1
d5-NEtFOSAA	96		25 - 150	08/21/19 05:00	08/25/19 07:53	1
M2-6:2 FTS	93		25 - 150	08/21/19 05:00	08/25/19 07:53	1
M2-8:2 FTS	97		25 - 150	08/21/19 05:00	08/25/19 07:53	1
M2-4:2 FTS	97		25 - 150	08/21/19 05:00	08/25/19 07:53	1
d-N-MeFOSA-M	56		20 - 150	08/21/19 05:00	08/25/19 07:53	1
d-N-EtFOSA-M	39		20 - 150	08/21/19 05:00	08/25/19 07:53	1
d7-N-MeFOSE-M	21		10 - 120	08/21/19 05:00	08/25/19 07:53	1
d9-N-EtFOSE-M	16		10 - 120	08/21/19 05:00	08/25/19 07:53	1
13C3 HFPO-DA	88		25 - 150	08/21/19 05:00	08/25/19 07:53	1

**Lab Sample ID: LCS 320-316857/2-A**  
**Matrix: Water**  
**Analysis Batch: 317927**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316857**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluoropentanoic acid (PFPeA)	40.0	38.6		ng/L		97	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	40.5		ng/L		101	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	38.3		ng/L		96	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	38.4		ng/L		96	64 - 124
Perfluorononanoic acid (PFNA)	40.0	42.2		ng/L		106	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	40.3		ng/L		101	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.4		ng/L		98	60 - 120
Perfluorododecanoic acid (PFDaA)	40.0	38.4		ng/L		96	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	34.8		ng/L		87	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.7		ng/L		94	68 - 128
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	43.0		ng/L		108	72 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	32.1		ng/L		91	73 - 133
Perfluoro-n-octadecanoic acid (PFODA)	40.0	36.2		ng/L		90	74 - 134

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# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-316857/2-A**

**Matrix: Water**

**Analysis Batch: 317927**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 316857**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanesulfonic acid (PFPeS)	37.5	34.4		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.3		ng/L		89	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.4		ng/L		104	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.1		ng/L		97	67 - 127
Perfluorononanesulfonic acid (PFNS)	38.4	39.2		ng/L		102	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	39.4		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamide (NMeFOSAA)	40.0	42.5		ng/L		106	67 - 127
N-ethylperfluorooctanesulfonamide (NEtFOSAA)	40.0	44.6		ng/L		111	65 - 125
4:2 FTS	37.4	39.8		ng/L		107	70 - 130
6:2 FTS	37.9	40.4		ng/L		107	66 - 126
8:2 FTS	38.3	39.3		ng/L		103	67 - 127
10:2 FTS	38.6	37.1		ng/L		96	70 - 130
NMeFOSA	40.0	41.3		ng/L		103	65 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.7	35.3		ng/L		91	70 - 130
NMeFOSE	40.0	41.3		ng/L		103	65 - 135
NEtFOSE	40.0	43.0		ng/L		107	65 - 135
ADONA	39.5	39.2		ng/L		99	70 - 130
F-53B Major	37.3	36.6		ng/L		98	70 - 130
HFPO-DA (GenX)	40.0	42.3		ng/L		106	70 - 130
F-53B Minor	37.7	35.9		ng/L		95	70 - 130
NaDONA	40.0	39.7		ng/L		99	70 - 130
DONA	37.7	37.4		ng/L		99	70 - 130
Ammonium Perfluorooctanoate (APFO)	41.6	39.9		ng/L		96	64 - 124

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	89		25 - 150
13C5 PFPeA	87		25 - 150
13C2 PFHxA	86		25 - 150
13C4 PFHpA	93		25 - 150
13C4 PFOA	89		25 - 150
13C5 PFNA	88		25 - 150
13C2 PFDA	88		25 - 150
13C2 PFHxDA	74		25 - 150
13C2 PFUnA	83		25 - 150
13C2 PFDoA	90		25 - 150
13C2 PFTeDA	81		25 - 150
18O2 PFHxS	105		25 - 150
13C4 PFOS	97		25 - 150
13C8 FOSA	87		25 - 150

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# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-316857/2-A**  
**Matrix: Water**  
**Analysis Batch: 317927**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316857**

<i>Isotope Dilution</i>	<b>LCS LCS</b>		<i>Limits</i>
	<b>%Recovery</b>	<b>Qualifier</b>	
<i>d3-NMeFOSAA</i>	87		25 - 150
<i>d5-NEtFOSAA</i>	85		25 - 150
<i>M2-6:2 FTS</i>	85		25 - 150
<i>M2-8:2 FTS</i>	83		25 - 150
<i>M2-4:2 FTS</i>	86		25 - 150
<i>d-N-MeFOSA-M</i>	48		20 - 150
<i>d-N-EtFOSA-M</i>	35		20 - 150
<i>d7-N-MeFOSE-M</i>	22		10 - 120
<i>d9-N-EtFOSE-M</i>	16		10 - 120
<i>13C3 HFPO-DA</i>	81		25 - 150

**Lab Sample ID: MB 320-317504/1-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

<b>Analyte</b>	<b>MB MB</b>		<b>RL</b>	<b>MDL</b>	<b>Unit</b>	<b>D</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
	<b>Result</b>	<b>Qualifier</b>							
Perfluorobutanoic acid (PFBA)	<0.028		0.20	0.028	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoropentanoic acid (PFPeA)	<0.077		0.20	0.077	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorohexanoic acid (PFHxA)	<0.042		0.20	0.042	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoroheptanoic acid (PFHpA)	<0.029		0.20	0.029	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorooctanoic acid (PFOA)	<0.086		0.20	0.086	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorononanoic acid (PFNA)	<0.036		0.20	0.036	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorodecanoic acid (PFDA)	<0.022		0.20	0.022	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoroundecanoic acid (PFUnA)	<0.036		0.20	0.036	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorododecanoic acid (PFDoA)	<0.067		0.20	0.067	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorotridecanoic acid (PFTriA)	<0.051		0.20	0.051	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorotetradecanoic acid (PFTeA)	<0.054		0.20	0.054	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.044		0.20	0.044	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorobutanesulfonic acid (PFBS)	0.729		0.20	0.025	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		0.20	0.028	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.031		0.20	0.031	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.035		0.20	0.035	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.50	0.20	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorodecanesulfonic acid (PFDS)	<0.039		0.20	0.039	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorooctanesulfonamide (FOSA)	<0.082		0.20	0.082	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.39		2.0	0.39	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.37		2.0	0.37	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
4:2 FTS	<0.37		2.0	0.37	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
6:2 FTS	<0.15		2.0	0.15	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
8:2 FTS	<0.25		2.0	0.25	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
10:2 FTS	<0.050		0.20	0.050	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
NEtFOSA	<0.024		0.20	0.024	ug/Kg		08/23/19 10:40	08/31/19 15:11	1

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# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-317504/1-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NMeFOSA	<0.041		0.20	0.041	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Perfluorododecanesulfonic acid (PFDoS)	<0.060		0.20	0.060	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
NMeFOSE	<0.071		0.20	0.071	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
NEtFOSE	<0.036		0.20	0.036	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
ADONA	<0.019		0.21	0.019	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
F-53B Major	<0.027		0.20	0.027	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
HFPO-DA (GenX)	<0.11		0.25	0.11	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
F-53B Minor	<0.022		0.20	0.022	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
NaDONA	<0.019		0.21	0.019	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
DONA	<0.018		0.20	0.018	ug/Kg		08/23/19 10:40	08/31/19 15:11	1
Ammonium Perfluorooctanoate (APFO)	<0.089		0.21	0.089	ug/Kg		08/23/19 10:40	08/31/19 15:11	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	96		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C5 PFPeA	97		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C2 PFHxA	95		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C4 PFHpA	100		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C4 PFOA	94		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C5 PFNA	95		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C2 PFDA	93		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C2 PFHxDA	96		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C2 PFUnA	95		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C2 PFDaA	100		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C2 PFTeDA	96		25 - 150	08/23/19 10:40	08/31/19 15:11	1
18O2 PFHxS	103		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C4 PFOS	94		25 - 150	08/23/19 10:40	08/31/19 15:11	1
13C8 FOSA	82		25 - 150	08/23/19 10:40	08/31/19 15:11	1
d3-NMeFOSAA	83		25 - 150	08/23/19 10:40	08/31/19 15:11	1
d5-NEtFOSAA	92		25 - 150	08/23/19 10:40	08/31/19 15:11	1
M2-6:2 FTS	97		25 - 150	08/23/19 10:40	08/31/19 15:11	1
M2-8:2 FTS	89		25 - 150	08/23/19 10:40	08/31/19 15:11	1
M2-4:2 FTS	96		25 - 150	08/23/19 10:40	08/31/19 15:11	1
d-N-MeFOSA-M	44		25 - 150	08/23/19 10:40	08/31/19 15:11	1
d-N-EtFOSA-M	37		25 - 150	08/23/19 10:40	08/31/19 15:11	1
d7-N-MeFOSE-M	8 *		10 - 120	08/23/19 10:40	08/31/19 15:11	1
d9-N-EtFOSE-M	9 *		10 - 120	08/23/19 10:40	08/31/19 15:11	1
13C3 HFPO-DA	88		25 - 150	08/23/19 10:40	08/31/19 15:11	1

**Lab Sample ID: LCS 320-317504/2-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	2.00	2.03		ug/Kg		101	81 - 133
Perfluoropentanoic acid (PFPeA)	2.00	1.87		ug/Kg		94	79 - 120
Perfluorohexanoic acid (PFHxA)	2.00	2.02		ug/Kg		101	75 - 125
Perfluoroheptanoic acid (PFHpA)	2.00	2.02		ug/Kg		101	76 - 124

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-317504/2-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanoic acid (PFOA)	2.00	2.09		ug/Kg		105	76 - 121
Perfluorononanoic acid (PFNA)	2.00	2.04		ug/Kg		102	74 - 126
Perfluorodecanoic acid (PFDA)	2.00	2.05		ug/Kg		103	74 - 124
Perfluoroundecanoic acid (PFUnA)	2.00	1.93		ug/Kg		96	74 - 114
Perfluorododecanoic acid (PFDoA)	2.00	2.07		ug/Kg		104	75 - 123
Perfluorotridecanoic acid (PFTriA)	2.00	2.02		ug/Kg		101	43 - 116
Perfluorotetradecanoic acid (PFTeA)	2.00	1.93		ug/Kg		97	22 - 129
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	1.99		ug/Kg		100	10 - 100
Perfluorobutanesulfonic acid (PFBS)	1.77	2.47		ug/Kg		140	73 - 142
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.02	*	ug/Kg		101	10 - 84
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.83		ug/Kg		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.64		ug/Kg		90	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.89		ug/Kg		99	78 - 146
Perfluorooctanesulfonic acid (PFOS)	1.86	2.27		ug/Kg		122	69 - 131
Perfluorononanesulfonic acid (PFNS)	1.92	1.80		ug/Kg		94	70 - 130
Perfluorodecanesulfonic acid (PFDS)	1.93	1.85		ug/Kg		96	54 - 113
Perfluorooctanesulfonamide (FOSA)	2.00	2.06		ug/Kg		103	62 - 135
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.10		ug/Kg		105	65 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.18		ug/Kg		109	65 - 135
4:2 FTS	1.87	1.82	J	ug/Kg		97	50 - 150
6:2 FTS	1.90	2.04		ug/Kg		108	65 - 135
8:2 FTS	1.92	2.05		ug/Kg		107	65 - 135
10:2 FTS	1.93	2.25		ug/Kg		117	70 - 130
NMeFOSA	2.00	2.22		ug/Kg		111	65 - 135
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.73		ug/Kg		89	70 - 130
NMeFOSE	2.00	2.16		ug/Kg		108	65 - 135
NEtFOSE	2.00	1.91		ug/Kg		95	65 - 135
ADONA	1.97	2.04		ug/Kg		103	70 - 130
F-53B Major	1.86	1.87		ug/Kg		100	70 - 130
HFPO-DA (GenX)	2.00	2.13		ug/Kg		107	70 - 130
F-53B Minor	1.88	1.79		ug/Kg		95	70 - 130
NaDONA	2.00	2.07		ug/Kg		103	70 - 130
DONA	1.88	1.95		ug/Kg		103	70 - 130
Ammonium Perfluorooctanoate (APFO)	2.08	2.18		ug/Kg		105	76 - 121

Eurofins TestAmerica, Sacramento



# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

<i>Isotope Dilution</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
13C4 PFBA	97		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFHxA	93		25 - 150
13C4 PFHpA	98		25 - 150
13C4 PFOA	95		25 - 150
13C5 PFNA	95		25 - 150
13C2 PFDA	94		25 - 150
13C2 PFHxDA	93		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	93		25 - 150
13C2 PFTeDA	97		25 - 150
18O2 PFHxS	102		25 - 150
13C4 PFOS	99		25 - 150
13C8 FOSA	85		25 - 150
d3-NMeFOSAA	68		25 - 150
d5-NEtFOSAA	70		25 - 150
M2-6:2 FTS	92		25 - 150
M2-8:2 FTS	84		25 - 150
M2-4:2 FTS	92		25 - 150
d-N-MeFOSA-M	41		25 - 150
d-N-EtFOSA-M	38		25 - 150
d7-N-MeFOSE-M	10		10 - 120
d9-N-EtFOSE-M	11		10 - 120
13C3 HFPO-DA	81		25 - 150

**Lab Sample ID: LCSD 320-317504/17-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCSD</i> <i>Result</i>	<i>LCSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
Perfluorobutanoic acid (PFBA)	2.00	2.03		ug/Kg		102	81 - 133	0	30
Perfluoropentanoic acid (PFPeA)	2.00	1.97		ug/Kg		98	79 - 120	5	30
Perfluorohexanoic acid (PFHxA)	2.00	2.00		ug/Kg		100	75 - 125	1	30
Perfluoroheptanoic acid (PFHpA)	2.00	1.89		ug/Kg		95	76 - 124	6	30
Perfluorooctanoic acid (PFOA)	2.00	2.05		ug/Kg		103	76 - 121	2	30
Perfluorononanoic acid (PFNA)	2.00	1.99		ug/Kg		99	74 - 126	3	30
Perfluorodecanoic acid (PFDA)	2.00	2.02		ug/Kg		101	74 - 124	2	30
Perfluoroundecanoic acid (PFUnA)	2.00	1.99		ug/Kg		99	74 - 114	3	30
Perfluorododecanoic acid (PFDoA)	2.00	2.01		ug/Kg		100	75 - 123	3	30
Perfluorotridecanoic acid (PFTriA)	2.00	1.85		ug/Kg		92	43 - 116	9	30
Perfluorotetradecanoic acid (PFTeA)	2.00	1.86		ug/Kg		93	22 - 129	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	2.04	*	ug/Kg		102	10 - 100	2	30
Perfluorobutanesulfonic acid (PFBS)	1.77	1.91		ug/Kg		108	73 - 142	25	30
Perfluoro-n-octadecanoic acid (PFODA)	2.00	1.78	*	ug/Kg		89	10 - 84	13	30
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.75		ug/Kg		93	70 - 130	4	30

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCSD 320-317504/17-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.66		ug/Kg		91	75 - 121	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.88		ug/Kg		99	78 - 146	0	30
Perfluorooctanesulfonic acid (PFOS)	1.86	2.05		ug/Kg		110	69 - 131	10	30
Perfluorononanesulfonic acid (PFNS)	1.92	1.94		ug/Kg		101	70 - 130	7	30
Perfluorodecanesulfonic acid (PFDS)	1.93	2.04		ug/Kg		106	54 - 113	10	30
Perfluorooctanesulfonamide (FOSA)	2.00	2.03		ug/Kg		102	62 - 135	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.07		ug/Kg		104	65 - 135	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.05		ug/Kg		103	65 - 135	6	30
4:2 FTS	1.87	1.94	J	ug/Kg		104	50 - 150	6	30
6:2 FTS	1.90	2.18		ug/Kg		115	65 - 135	7	30
8:2 FTS	1.92	2.12		ug/Kg		111	65 - 135	3	30
10:2 FTS	1.93	2.83	*	ug/Kg		147	70 - 130	23	30
NMeFOSA	2.00	2.12		ug/Kg		106	65 - 135	5	30
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.96		ug/Kg		101	70 - 130	12	30
NMeFOSE	2.00	2.15		ug/Kg		107	65 - 135	1	30
NEtFOSE	2.00	2.18		ug/Kg		109	65 - 135	13	30
ADONA	1.97	2.06		ug/Kg		104	70 - 130	1	30
F-53B Major	1.86	1.93		ug/Kg		104	70 - 130	3	30
HFPO-DA (GenX)	2.00	1.98		ug/Kg		99	70 - 130	7	30
F-53B Minor	1.88	1.91		ug/Kg		101	70 - 130	6	30
NaDONA	2.00	2.08		ug/Kg		104	70 - 130	1	30
DONA	1.88	1.96		ug/Kg		104	70 - 130	1	30
Ammonium Perfluorooctanoate (APFO)	2.08	2.14		ug/Kg		103	76 - 121	2	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C4 PFBA	94		25 - 150
13C5 PFPeA	93		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	100		25 - 150
13C4 PFOA	92		25 - 150
13C5 PFNA	94		25 - 150
13C2 PFDA	92		25 - 150
13C2 PFHxDA	81		25 - 150
13C2 PFUnA	96		25 - 150
13C2 PFDoA	95		25 - 150
13C2 PFTeDA	95		25 - 150
18O2 PFHxS	104		25 - 150
13C4 PFOS	96		25 - 150
13C8 FOSA	87		25 - 150
d3-NMeFOSAA	81		25 - 150
d5-NEtFOSAA	83		25 - 150

# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCSD 320-317504/17-A**  
**Matrix: Solid**  
**Analysis Batch: 320384**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 317504**

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	91		25 - 150
M2-4:2 FTS	98		25 - 150
d-N-MeFOSA-M	44		25 - 150
d-N-EtFOSA-M	38		25 - 150
d7-N-MeFOSE-M	5 *		10 - 120
d9-N-EtFOSE-M	5 *		10 - 120
13C3 HFPO-DA	81		25 - 150

**Lab Sample ID: MB 320-321246/1-A**  
**Matrix: Solid**  
**Analysis Batch: 322594**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 321246**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanesulfonic acid (PFBS)	<0.025		0.20	0.025	ug/Kg		09/06/19 10:36	09/11/19 21:14	1
Isotope Dilution	MB		Limits			Prepared	Analyzed	Dil Fac	
	%Recovery	Qualifier							
18O2 PFHxS	108		25 - 150			09/06/19 10:36	09/11/19 21:14	1	

**Lab Sample ID: LCS 320-321246/2-A**  
**Matrix: Solid**  
**Analysis Batch: 322594**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 321246**

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits	
		Result	Qualifier					
Perfluorobutanesulfonic acid (PFBS)	1.77	1.75		ug/Kg		99	73 - 142	
Isotope Dilution	LCS		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
18O2 PFHxS	108		25 - 150			09/06/19 10:36	09/11/19 21:14	1

## Method: 537 (modified) - Fluorinated Alkyl Substances - RE

**Lab Sample ID: 320-53393-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 322594**

**Client Sample ID: GP-101, 10-12'**  
**Prep Type: Total/NA**  
**Prep Batch: 321246**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Perfluorobutanesulfonic acid (PFBS) - RE	0.20	JH	4.99	5.24		ug/Kg	☼	101	73 - 142
Isotope Dilution	MS		Limits			Prepared	Analyzed	Dil Fac	
	%Recovery	Qualifier							
18O2 PFHxS - RE	103		25 - 150			09/06/19 10:36	09/11/19 21:14	1	

**Lab Sample ID: 320-53393-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 322594**

**Client Sample ID: GP-101, 10-12'**  
**Prep Type: Total/NA**  
**Prep Batch: 321246**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	Limits	RPD	
				Result	Qualifier					RPD	Limit
Perfluorobutanesulfonic acid (PFBS) - RE	0.20	JH	5.02	5.19		ug/Kg	☼	99	73 - 142	1	30

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# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Method: 537 (modified) - Fluorinated Alkyl Substances - RE (Continued)

<i>Isotope Dilution</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
18O2 PFHxS - RE	103		25 - 150

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# QC Association Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## LCMS

### Prep Batch: 316857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-9	Equipment Blank	Total/NA	Water	3535	
MB 320-316857/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-316857/2-A	Lab Control Sample	Total/NA	Water	3535	

### Prep Batch: 317504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-1	GP-101, 10-12'	Total/NA	Solid	SHAKE	
320-53393-3	GP-102, 7.5'-10'	Total/NA	Solid	SHAKE	
320-53393-4	GP-103, 8-9'	Total/NA	Solid	SHAKE	
320-53393-4 - DL	GP-103, 8-9'	Total/NA	Solid	SHAKE	
320-53393-6	GP-103, 20-24'	Total/NA	Solid	SHAKE	
320-53393-7	GP-104, 9-10'	Total/NA	Solid	SHAKE	
320-53393-8	GP-104, 13-15'	Total/NA	Solid	SHAKE	
MB 320-317504/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-317504/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
LCSD 320-317504/17-A	Lab Control Sample Dup	Total/NA	Solid	SHAKE	

### Analysis Batch: 317927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-9	Equipment Blank	Total/NA	Water	537 (modified)	316857
MB 320-316857/1-A	Method Blank	Total/NA	Water	537 (modified)	316857
LCS 320-316857/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	316857

### Analysis Batch: 320384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-1	GP-101, 10-12'	Total/NA	Solid	537 (modified)	317504
320-53393-4	GP-103, 8-9'	Total/NA	Solid	537 (modified)	317504
320-53393-6	GP-103, 20-24'	Total/NA	Solid	537 (modified)	317504
320-53393-7	GP-104, 9-10'	Total/NA	Solid	537 (modified)	317504
320-53393-8	GP-104, 13-15'	Total/NA	Solid	537 (modified)	317504
MB 320-317504/1-A	Method Blank	Total/NA	Solid	537 (modified)	317504
LCS 320-317504/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	317504
LCSD 320-317504/17-A	Lab Control Sample Dup	Total/NA	Solid	537 (modified)	317504

### Prep Batch: 321246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-1 - RE	GP-101, 10-12'	Total/NA	Solid	SHAKE	
320-53393-3 - RE	GP-102, 7.5'-10'	Total/NA	Solid	SHAKE	
320-53393-4 - RE	GP-103, 8-9'	Total/NA	Solid	SHAKE	
320-53393-6 - RE	GP-103, 20-24'	Total/NA	Solid	SHAKE	
320-53393-7 - RE	GP-104, 9-10'	Total/NA	Solid	SHAKE	
320-53393-8 - RE	GP-104, 13-15'	Total/NA	Solid	SHAKE	
MB 320-321246/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-321246/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-53393-1 MS - RE	GP-101, 10-12'	Total/NA	Solid	SHAKE	
320-53393-1 MSD - RE	GP-101, 10-12'	Total/NA	Solid	SHAKE	

### Analysis Batch: 322594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-1 - RE	GP-101, 10-12'	Total/NA	Solid	537 (modified)	321246
320-53393-3 - RE	GP-102, 7.5'-10'	Total/NA	Solid	537 (modified)	321246

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# QC Association Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## LCMS (Continued)

### Analysis Batch: 322594 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-4 - RE	GP-103, 8-9'	Total/NA	Solid	537 (modified)	321246
320-53393-6 - RE	GP-103, 20-24'	Total/NA	Solid	537 (modified)	321246
320-53393-7 - RE	GP-104, 9-10'	Total/NA	Solid	537 (modified)	321246
320-53393-8 - RE	GP-104, 13-15'	Total/NA	Solid	537 (modified)	321246
MB 320-321246/1-A	Method Blank	Total/NA	Solid	537 (modified)	321246
LCS 320-321246/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	321246
320-53393-1 MS - RE	GP-101, 10-12'	Total/NA	Solid	537 (modified)	321246
320-53393-1 MSD - RE	GP-101, 10-12'	Total/NA	Solid	537 (modified)	321246

### Analysis Batch: 324119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-3	GP-102, 7.5'-10'	Total/NA	Solid	537 (modified)	317504
320-53393-4 - DL	GP-103, 8-9'	Total/NA	Solid	537 (modified)	317504

## General Chemistry

### Analysis Batch: 317248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-1	GP-101, 10-12'	Total/NA	Solid	D 2216	
320-53393-3	GP-102, 7.5'-10'	Total/NA	Solid	D 2216	
320-53393-4	GP-103, 8-9'	Total/NA	Solid	D 2216	
320-53393-6	GP-103, 20-24'	Total/NA	Solid	D 2216	
320-53393-7	GP-104, 9-10'	Total/NA	Solid	D 2216	
320-53393-8	GP-104, 13-15'	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-101, 10-12'**

**Date Collected: 08/15/19 11:30**

**Date Received: 08/17/19 09:20**

**Lab Sample ID: 320-53393-1**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			317248	08/22/19 11:34	HRB	TAL SAC

**Client Sample ID: GP-101, 10-12'**

**Date Collected: 08/15/19 11:30**

**Date Received: 08/17/19 09:20**

**Lab Sample ID: 320-53393-1**

**Matrix: Solid**

**Percent Solids: 34.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			320384	08/31/19 15:30	D1R	TAL SAC
Total/NA	Prep	SHAKE	RE		5.16 g	10.00 mL	321246	09/06/19 10:36	AEC	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			322594	09/11/19 21:33	D1R	TAL SAC

**Client Sample ID: GP-102, 7.5'-10'**

**Date Collected: 08/15/19 10:00**

**Date Received: 08/17/19 09:20**

**Lab Sample ID: 320-53393-3**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			317248	08/22/19 11:34	HRB	TAL SAC

**Client Sample ID: GP-102, 7.5'-10'**

**Date Collected: 08/15/19 10:00**

**Date Received: 08/17/19 09:20**

**Lab Sample ID: 320-53393-3**

**Matrix: Solid**

**Percent Solids: 44.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RE		5.15 g	10.00 mL	321246	09/06/19 10:36	AEC	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			322594	09/11/19 22:02	D1R	TAL SAC
Total/NA	Prep	SHAKE			5.01 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			324119	09/17/19 13:44	GMK	TAL SAC

**Client Sample ID: GP-103, 8-9'**

**Date Collected: 08/15/19 10:15**

**Date Received: 08/17/19 09:20**

**Lab Sample ID: 320-53393-4**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			317248	08/22/19 11:34	HRB	TAL SAC

**Client Sample ID: GP-103, 8-9'**

**Date Collected: 08/15/19 10:15**

**Date Received: 08/17/19 09:20**

**Lab Sample ID: 320-53393-4**

**Matrix: Solid**

**Percent Solids: 41.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.16 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			320384	08/31/19 15:49	D1R	TAL SAC
Total/NA	Prep	SHAKE	RE		5.09 g	10.00 mL	321246	09/06/19 10:36	AEC	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			322594	09/11/19 22:11	D1R	TAL SAC

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-103, 8-9'**

**Lab Sample ID: 320-53393-4**

Date Collected: 08/15/19 10:15

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 41.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	DL		5.16 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			324119	09/17/19 13:54	GMK	TAL SAC

**Client Sample ID: GP-103, 20-24'**

**Lab Sample ID: 320-53393-6**

Date Collected: 08/15/19 10:45

Matrix: Solid

Date Received: 08/17/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			317248	08/22/19 11:34	HRB	TAL SAC

**Client Sample ID: GP-103, 20-24'**

**Lab Sample ID: 320-53393-6**

Date Collected: 08/15/19 10:45

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 17.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			320384	08/31/19 15:59	D1R	TAL SAC
Total/NA	Prep	SHAKE	RE		5.11 g	10.00 mL	321246	09/06/19 10:36	AEC	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			322594	09/11/19 22:21	D1R	TAL SAC

**Client Sample ID: GP-104, 9-10'**

**Lab Sample ID: 320-53393-7**

Date Collected: 08/15/19 09:30

Matrix: Solid

Date Received: 08/17/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			317248	08/22/19 11:34	HRB	TAL SAC

**Client Sample ID: GP-104, 9-10'**

**Lab Sample ID: 320-53393-7**

Date Collected: 08/15/19 09:30

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 76.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.17 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			320384	08/31/19 16:08	D1R	TAL SAC
Total/NA	Prep	SHAKE	RE		5.09 g	10.00 mL	321246	09/06/19 10:36	AEC	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			322594	09/11/19 22:31	D1R	TAL SAC

**Client Sample ID: GP-104, 13-15'**

**Lab Sample ID: 320-53393-8**

Date Collected: 08/15/19 09:35

Matrix: Solid

Date Received: 08/17/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			317248	08/22/19 11:34	HRB	TAL SAC



# Lab Chronicle

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

**Client Sample ID: GP-104, 13-15'**

**Lab Sample ID: 320-53393-8**

**Date Collected: 08/15/19 09:35**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 76.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.08 g	10.00 mL	317504	08/23/19 10:40	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			320384	08/31/19 16:18	D1R	TAL SAC
Total/NA	Prep	SHAKE	RE		5.12 g	10.00 mL	321246	09/06/19 10:36	AEC	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			322594	09/11/19 22:40	D1R	TAL SAC

**Client Sample ID: Equipment Blank**

**Lab Sample ID: 320-53393-9**

**Date Collected: 08/15/19 12:15**

**Matrix: Water**

**Date Received: 08/17/19 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			285.5 mL	10.00 mL	316857	08/21/19 05:00	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			317927	08/25/19 10:25	GMK	TAL SAC

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State Program	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	DoD	L2468	01-20-21
ANAB	DOE	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	08-09-21
Arizona	State	AZ0708	08-11-20
Arizona	State Program	AZ0708	08-11-20
Arkansas DEQ	State Program	88-0691	06-17-20
California	State	2897	01-31-20
California	State Program	2897	01-31-20
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Connecticut	State Program	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Florida	NELAP	E87570	06-30-20
Hawaii	State	<cert No.>	01-29-20
Hawaii	State Program	N/A	01-29-20
Illinois	NELAP	200060	03-17-20 *
Illinois	NELAP	200060	03-17-20
Kansas	NELAP	E-10375	10-31-19
Louisiana	NELAP	30612	06-30-20
Maine	State Program	CA0004	04-14-20
Michigan	State	9947	01-29-20
Michigan	State Program	9947	01-31-20
New Hampshire	NELAP	2997	04-20-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-20
Oregon	NELAP	4040	01-29-20
Pennsylvania	NELAP	68-01272	03-31-20
Pennsylvania	NELAP	68-01272	03-31-20
Texas	NELAP	T104704399	05-31-20
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	Federal	LE148388-0	07-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	Federal	P330-18-00239	01-17-21
USDA	US Federal Programs	P330-18-00239	07-31-21
USEPA UCMR	Federal	CA00044	12-31-20
Utah	NELAP	CA00044	02-29-20
Vermont	State Program	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-20
Virginia	NELAP	460278	03-14-20
Washington	State	C581	05-05-20
Washington	State Program	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-19
West Virginia (DW)	State Program	9930C	12-31-19
Wyoming	State Program	8TMS-L	01-28-19 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State Program	999580010	08-31-20

- 1
- 2
- 3
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- 5
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- 8
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- 10
- 11
- 12
- 13
- 14
- 15

# Method Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

#### Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-53393-1	GP-101, 10-12'	Solid	08/15/19 11:30	08/17/19 09:20	
320-53393-3	GP-102, 7.5'-10'	Solid	08/15/19 10:00	08/17/19 09:20	
320-53393-4	GP-103, 8-9'	Solid	08/15/19 10:15	08/17/19 09:20	
320-53393-6	GP-103, 20-24'	Solid	08/15/19 10:45	08/17/19 09:20	
320-53393-7	GP-104, 9-10'	Solid	08/15/19 09:30	08/17/19 09:20	
320-53393-8	GP-104, 13-15'	Solid	08/15/19 09:35	08/17/19 09:20	
320-53393-9	Equipment Blank	Water	08/15/19 12:15	08/17/19 09:20	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484  
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)  
Contact: Eric Oellers  
Company: SCS Engineers  
Address: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
E-Mail: eoellers@scsengineers.com

Bill To (optional)  
Contact: Same  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
PO#/Reference# \_\_\_\_\_

## Chain of Custody Record

Lab Job #: \_\_\_\_\_  
Chain of Custody Number: \_\_\_\_\_  
Page \_\_\_\_\_ of \_\_\_\_\_  
Temperature °C of Cooler: 11 corr 1.00

Client <u>SCS Engineers</u>		Client Project # <u>25218175.00</u>		Preservative <u>7</u>								Preservative Key 1. HCL, Cool to 4° 2. H2SO4, Cool to 4° 3. HNO3, Cool to 4° 4. NaOH, Cool to 4° 5. NaOH/Zn, Cool to 4° 6. NaHSO4 7. Cool to 4° 8. None 9. Other	
Project Name <u>MGE - Burke WWTP</u>		Lab Project #		Parameter									
Project Location/State <u>WI</u>		Lab PM											
Sampler <u>MDB; ACW</u>													
Lab ID	MS/MSD	Sample ID	Date	Time	# of Containers	Matrix							Comments
		<u>GP-101, 10-12'</u>	<u>8/15/19</u>	<u>1130</u>									
		<u>GP-102, 5-7.5'</u>		<u>0955</u>									<u>HOLD</u>
		<u>GP-102, 7.5'-10'</u>		<u>1000</u>									
		<u>GP-103, 8-9'</u>		<u>1015</u>									
		<u>GP-103, 10-12.5'</u>		<u>1030</u>									<u>HOLD</u>
		<u>GP-103, 20-24'</u>		<u>1045</u>									
		<u>GP-104, 9-10'</u>		<u>0930</u>	<u>1</u>	<u>S</u>							
		<u>GP-104, 13-15'</u>		<u>0935</u>	<u>1</u>	<u>S</u>							
		<u>Equipment Blank</u>	<u>8/15/19</u>	<u>1215</u>	<u>2</u>	<u>W</u>							



320-53393 Chain of Custody

Page 46 of 47

Turnaround Time Required (Business Days) \_\_\_\_\_  
Requested Due Date \_\_\_\_\_  
Sample Disposal:  Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By <u>[Signature]</u>	Company <u>SCS Engineers</u>	Date <u>8/16/19</u>	Time <u>1300</u>	Received By <u>[Signature]</u>	Company <u>[Signature]</u>	Date <u>8/17/19</u>	Time <u>920</u>
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: \_\_\_\_\_  
Shipped: \_\_\_\_\_  
Hand Delivered: \_\_\_\_\_

- Matrix Key
- WW - Wastewater
  - W - Water
  - S - Soil
  - SL - Sludge
  - MS - Miscellaneous
  - OL - Oil
  - A - Air
  - SE - Sediment
  - SO - Soil
  - L - Leachate
  - WI - Wipe
  - DW - Drinking Water
  - O - Other

Client Comments: \_\_\_\_\_

Lab Comments: \_\_\_\_\_

9/19/2019



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 320-53393-1

**Login Number: 53393**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Thompson, Sarah W**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	137107/137108
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-53393-2

Client Project/Site: MGE - Burke WWTP - 25218175.00

**For:**

SCS Engineers  
2830 Dairy Dr  
Madison, Wisconsin 53718

Attn: Mr. Eric Oelkers



*Authorized for release by:  
10/11/2019 7:38:50 AM*

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandie.fredrick@testamericainc.com](mailto:sandie.fredrick@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

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





# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Client Sample Results . . . . .	7
Isotope Dilution Summary . . . . .	9
QC Sample Results . . . . .	10
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	15
Certification Summary . . . . .	16
Method Summary . . . . .	17
Sample Summary . . . . .	18
Chain of Custody . . . . .	19
Receipt Checklists . . . . .	22

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
*	LCS or LCSD is outside acceptance limits.
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Case Narrative

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Job ID: 320-53393-2

### Laboratory: Eurofins TestAmerica, Sacramento

#### Narrative

#### Job Narrative 320-53393-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 8/17/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

#### LCMS

Method(s) 537 (modified): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-325161/10) (ICV 320-327743/11) (ICV 320-327639/11)

Method(s) 537 (modified): The target analyte 4:2 FTS was not quantitated using the Isotope Dilution Analyte (IDA) M2-4:2FTS as listed in the Standard Operating Procedure (SOP), WS-LC-0025 Rev. 3.8. Instead, 4:2FTS was quantitated using the IDA 18O2-PFHxS. The low level continuing calibration verification (CCVL), calibration verifications (CCV), and associated preparation batch quality controls were within control limits, therefore, there is no impact to data quality. (ICV 320-325161/10)

Method(s) 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgment was used to positively identify the analyte(s). (ICB 320-327743/10) (320-54288-A-2-A), (320-54288-A-2-B MS) and (320-54288-A-2-C MSD)

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS, M2-6:2 FTS and M2-8:2 FTS for the following samples: GP-103, 10-12.5' (320-53393-5), (320-54288-A-2-A), (320-54288-A-2-B MS) and (320-54288-A-2-C MSD). The samples were re-analyzed with concurring results and the first set of data are reported. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The d7-N-MeFOSE-M and d9-N-EtFOSE-M Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: (MB 320-325633/1-A) GP-103, 10-12.5' (320-53393-5). . The sample was re-analyzed with concurring results and the first set of data are reported. 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 sample(s).

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Perfluorohexanoic acid (PFHxA), Perfluoro-n-octadecanoic acid (PFODA) and HFPO-DA (GenX) for preparation batch 320-325633 and analytical batch 320-328233 were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): The laboratory control sample (LCS) for preparation batch 320-325633 and analytical batch 320-328233 recovered outside control limits for the following analyte: Perfluoro-n-octadecanoic acid (PFODA). This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

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

#### General Chemistry

Method(s) Moisture: There is no regulatory holding time for percent moisture analysis. The H flag for the following samples, GP-103, 10-12.5' (320-53393-5) and (320-53393-A-5 DU), has been removed in analytical batch 320-325069. This Non-conformance indicates that the samples were analyzed out of 14 days of collection. GP-103, 10-12.5' (320-53393-5) and (320-53393-A-5 DU)

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

#### Organic Prep

Method(s) SHAKE: The following samples were prepared outside of preparation holding time due to the sample being on hold past hold time. GP-103, 10-12.5' (320-53393-5). PFC\_IDA Solid 320-325633

# Case Narrative

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

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## Job ID: 320-53393-2 (Continued)

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### Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method(s) SHAKE: The following samples: GP-103, 10-12.5' (320-53393-5) after elution, were observed to be a yellow color. Method code: Shake\_Bath\_14D Prep batch: 320-325633

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

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# Detection Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

**Client Sample ID: GP-103, 10-12.5'**

**Lab Sample ID: 320-53393-5**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.30	J H B	0.78	0.11	ug/Kg	1	☼	537 (modified)	Total/NA
HFPO-DA (GenX)	0.54	J H	0.97	0.43	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

**Client Sample ID: GP-103, 10-12.5'**

**Lab Sample ID: 320-53393-5**

Date Collected: 08/15/19 10:30

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 24.9

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>0.30</b>	<b>J H B</b>	0.78	0.11	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoropentanoic acid (PFPeA)	<0.30	H	0.78	0.30	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorohexanoic acid (PFHxA)	<0.16	H	0.78	0.16	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoroheptanoic acid (PFHpA)	<0.11	H	0.78	0.11	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorooctanoic acid (PFOA)	<0.34	H	0.78	0.34	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorononanoic acid (PFNA)	<0.14	H	0.78	0.14	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorodecanoic acid (PFDA)	<0.086	H	0.78	0.086	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoroundecanoic acid (PFUnA)	<0.14	H	0.78	0.14	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorododecanoic acid (PFDoA)	<0.26	H	0.78	0.26	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorotridecanoic acid (PFTriA)	<0.20	H	0.78	0.20	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorotetradecanoic acid (PFTeA)	<0.21	H	0.78	0.21	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.17	H	0.78	0.17	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorobutanesulfonic acid (PFBS)	<0.097	H	0.78	0.097	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.11	H *	0.78	0.11	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoropentanesulfonic acid (PFPeS)	<0.078	H	0.78	0.078	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorohexanesulfonic acid (PFHxS)	<0.12	H	0.78	0.12	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.14	H	0.78	0.14	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorooctanesulfonic acid (PFOS)	<0.78	H	1.9	0.78	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorononanesulfonic acid (PFNS)	<0.078	H	0.78	0.078	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorodecanesulfonic acid (PFDS)	<0.15	H	0.78	0.15	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorooctanesulfonamide (FOSA)	<0.32	H	0.78	0.32	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.5	H	7.8	1.5	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.4	H	7.8	1.4	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
4:2 FTS	<1.4	H	7.8	1.4	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
6:2 FTS	<0.58	H	7.8	0.58	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
8:2 FTS	<0.97	H	7.8	0.97	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
10:2 FTS	<0.19	H	0.78	0.19	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
NEtFOSA	<0.094	H	0.78	0.094	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
NMeFOSA	<0.16	H	0.78	0.16	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Perfluorododecanesulfonic acid (PFDoS)	<0.23	H	0.78	0.23	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
NMeFOSE	<0.28	H	0.78	0.28	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
NEtFOSE	<0.14	H	0.78	0.14	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
ADONA	<0.074	H	0.82	0.074	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
F-53B Major	<0.11	H	0.78	0.11	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
<b>HFPO-DA (GenX)</b>	<b>0.54</b>	<b>J H</b>	0.97	0.43	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
F-53B Minor	<0.086	H	0.78	0.086	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
NaDONA	<0.074	H	0.82	0.074	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
DONA	<0.070	H	0.78	0.070	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
Ammonium Perfluorooctanoate (APFO)	<0.35	H	0.82	0.35	ug/Kg	☼	09/23/19 16:12	10/05/19 03:03	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	64		25 - 150				09/23/19 16:12	10/05/19 03:03	1
13C5 PFPeA	80		25 - 150				09/23/19 16:12	10/05/19 03:03	1
13C2 PFHxA	78		25 - 150				09/23/19 16:12	10/05/19 03:03	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

**Client Sample ID: GP-103, 10-12.5'**

**Lab Sample ID: 320-53393-5**

Date Collected: 08/15/19 10:30

Matrix: Solid

Date Received: 08/17/19 09:20

Percent Solids: 24.9

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	83		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C4 PFOA	85		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C5 PFNA	86		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C2 PFDA	86		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C2 PFHxDA	39		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C2 PFUnA	77		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C2 PFDaA	71		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C2 PFTeDA	66		25 - 150	09/23/19 16:12	10/05/19 03:03	1
18O2 PFHxS	95		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C4 PFOS	90		25 - 150	09/23/19 16:12	10/05/19 03:03	1
13C8 FOSA	67		25 - 150	09/23/19 16:12	10/05/19 03:03	1
d3-NMeFOSAA	84		25 - 150	09/23/19 16:12	10/05/19 03:03	1
d5-NEtFOSAA	82		25 - 150	09/23/19 16:12	10/05/19 03:03	1
M2-6:2 FTS	221 *		25 - 150	09/23/19 16:12	10/05/19 03:03	1
M2-8:2 FTS	208 *		25 - 150	09/23/19 16:12	10/05/19 03:03	1
M2-4:2 FTS	188 *		25 - 150	09/23/19 16:12	10/05/19 03:03	1
d-N-MeFOSA-M	13 *		25 - 150	09/23/19 16:12	10/05/19 03:03	1
d-N-EtFOSA-M	8 *		25 - 150	09/23/19 16:12	10/05/19 03:03	1
d7-N-MeFOSE-M	11		10 - 120	09/23/19 16:12	10/05/19 03:03	1
d9-N-EtFOSE-M	11		10 - 120	09/23/19 16:12	10/05/19 03:03	1
13C3 HFPO-DA	49		25 - 150	09/23/19 16:12	10/05/19 03:03	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	75.1		0.1	0.1	%			09/20/19 16:14	1
Percent Solids	24.9		0.1	0.1	%			09/20/19 16:14	1

# Isotope Dilution Summary

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)
320-53393-5	GP-103, 10-12.5'	64	80	78	83	85	86	86	39
LCS 320-325633/2-A	Lab Control Sample	90	95	90	96	94	93	91	83
MB 320-325633/1-A	Method Blank	95	100	95	103	102	101	100	95

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)	PFUnA (25-150)	PFDaA (25-150)	PFTDA (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS/ (25-150)	-NEtFOS/ (25-150)
320-53393-5	GP-103, 10-12.5'	77	71	66	95	90	67	84	82				
LCS 320-325633/2-A	Lab Control Sample	95	94	91	102	92	83	84	91				
MB 320-325633/1-A	Method Blank	104	102	99	105	99	97	81	81				

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	i-MeFOSA (25-150)	N-EtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)	HFPODA (25-150)
320-53393-5	GP-103, 10-12.5'	221 *	208 *	188 *	13 *	8 *	11	11	49
LCS 320-325633/2-A	Lab Control Sample	97	97	101	42	37	14	12	100
MB 320-325633/1-A	Method Blank	107	104	109	48	41	7 *	6 *	95

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- PFHpA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFHxDA = 13C2 PFHxDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3-NMeFOSAA = d3-NMeFOSAA
- d5-NEtFOSAA = d5-NEtFOSAA
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS
- M242FTS = M2-4:2 FTS
- d-N-MeFOSA-M = d-N-MeFOSA-M
- d-N-EtFOSA-M = d-N-EtFOSA-M
- NMFM = d7-N-MeFOSE-M
- NEFM = d9-N-EtFOSE-M
- HFPODA = 13C3 HFPO-DA



# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-325633/1-A**  
**Matrix: Solid**  
**Analysis Batch: 328233**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 325633**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	0.0325	J	0.20	0.028	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoropentanoic acid (PFPeA)	<0.077		0.20	0.077	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorohexanoic acid (PFHxA)	<0.042		0.20	0.042	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoroheptanoic acid (PFHpA)	<0.029		0.20	0.029	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorooctanoic acid (PFOA)	<0.086		0.20	0.086	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorononanoic acid (PFNA)	<0.036		0.20	0.036	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorodecanoic acid (PFDA)	<0.022		0.20	0.022	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoroundecanoic acid (PFUnA)	<0.036		0.20	0.036	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorododecanoic acid (PFDoA)	<0.067		0.20	0.067	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorotridecanoic acid (PFTriA)	<0.051		0.20	0.051	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorotetradecanoic acid (PFTeA)	<0.054		0.20	0.054	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.044		0.20	0.044	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorobutanesulfonic acid (PFBS)	<0.025		0.20	0.025	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.028		0.20	0.028	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoropentanesulfonic acid (PFPeS)	<0.020		0.20	0.020	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorohexanesulfonic acid (PFHxS)	<0.031		0.20	0.031	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.035		0.20	0.035	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.50	0.20	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorononanesulfonic acid (PFNS)	<0.020		0.20	0.020	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorodecanesulfonic acid (PFDS)	<0.039		0.20	0.039	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorooctanesulfonamide (FOSA)	<0.082		0.20	0.082	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.39		2.0	0.39	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.37		2.0	0.37	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
4:2 FTS	<0.37		2.0	0.37	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
6:2 FTS	<0.15		2.0	0.15	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
8:2 FTS	<0.25		2.0	0.25	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
10:2 FTS	<0.050		0.20	0.050	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
NEtFOSA	<0.024		0.20	0.024	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
NMeFOSA	<0.041		0.20	0.041	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Perfluorododecanesulfonic acid (PFDoS)	<0.060		0.20	0.060	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
NMeFOSE	0.0880	J	0.20	0.071	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
NEtFOSE	0.105	J	0.20	0.036	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
ADONA	<0.019		0.21	0.019	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
F-53B Major	<0.027		0.20	0.027	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
HFPO-DA (GenX)	<0.11		0.25	0.11	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
F-53B Minor	<0.022		0.20	0.022	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
NaDONA	<0.019		0.21	0.019	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
DONA	<0.018		0.20	0.018	ug/Kg		09/23/19 16:12	10/05/19 02:44	1
Ammonium Perfluorooctanoate (APFO)	<0.089		0.21	0.089	ug/Kg		09/23/19 16:12	10/05/19 02:44	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	95		25 - 150	09/23/19 16:12	10/05/19 02:44	1

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-325633/1-A**  
**Matrix: Solid**  
**Analysis Batch: 328233**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 325633**

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFPeA	100		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C2 PFHxA	95		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C4 PFHpA	103		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C4 PFOA	102		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C5 PFNA	101		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C2 PFDA	100		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C2 PFHxDA	95		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C2 PFUnA	104		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C2 PFDoA	102		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C2 PFTeDA	99		25 - 150	09/23/19 16:12	10/05/19 02:44	1
18O2 PFHxS	105		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C4 PFOS	99		25 - 150	09/23/19 16:12	10/05/19 02:44	1
13C8 FOSA	97		25 - 150	09/23/19 16:12	10/05/19 02:44	1
d3-NMeFOSAA	81		25 - 150	09/23/19 16:12	10/05/19 02:44	1
d5-NEtFOSAA	81		25 - 150	09/23/19 16:12	10/05/19 02:44	1
M2-6:2 FTS	107		25 - 150	09/23/19 16:12	10/05/19 02:44	1
M2-8:2 FTS	104		25 - 150	09/23/19 16:12	10/05/19 02:44	1
M2-4:2 FTS	109		25 - 150	09/23/19 16:12	10/05/19 02:44	1
d-N-MeFOSA-M	48		25 - 150	09/23/19 16:12	10/05/19 02:44	1
d-N-EtFOSA-M	41		25 - 150	09/23/19 16:12	10/05/19 02:44	1
d7-N-MeFOSE-M	7	*	10 - 120	09/23/19 16:12	10/05/19 02:44	1
d9-N-EtFOSE-M	6	*	10 - 120	09/23/19 16:12	10/05/19 02:44	1
13C3 HFPO-DA	95		25 - 150	09/23/19 16:12	10/05/19 02:44	1

**Lab Sample ID: LCS 320-325633/2-A**  
**Matrix: Solid**  
**Analysis Batch: 328233**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 325633**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Perfluorobutanoic acid (PFBA)	2.00	2.11		ug/Kg		105	81 - 133
Perfluoropentanoic acid (PFPeA)	2.00	1.93		ug/Kg		97	79 - 120
Perfluorohexanoic acid (PFHxA)	2.00	2.00		ug/Kg		100	75 - 125
Perfluoroheptanoic acid (PFHpA)	2.00	2.02		ug/Kg		101	76 - 124
Perfluorooctanoic acid (PFOA)	2.00	1.93		ug/Kg		97	76 - 121
Perfluorononanoic acid (PFNA)	2.00	2.06		ug/Kg		103	74 - 126
Perfluorodecanoic acid (PFDA)	2.00	2.05		ug/Kg		103	74 - 124
Perfluoroundecanoic acid (PFUnA)	2.00	1.83		ug/Kg		91	74 - 114
Perfluorododecanoic acid (PFDoA)	2.00	1.97		ug/Kg		99	75 - 123
Perfluorotridecanoic acid (PFTriA)	2.00	2.12		ug/Kg		106	43 - 116
Perfluorotetradecanoic acid (PFTeA)	2.00	2.05		ug/Kg		102	22 - 129
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	1.98		ug/Kg		99	10 - 100
Perfluorobutanesulfonic acid (PFBS)	1.77	1.58		ug/Kg		89	73 - 142
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.11	*	ug/Kg		105	10 - 84

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-325633/2-A**  
**Matrix: Solid**  
**Analysis Batch: 328233**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 325633**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.73		ug/Kg		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.57		ug/Kg		86	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.87		ug/Kg		98	78 - 146
Perfluorooctanesulfonic acid (PFOS)	1.86	1.90		ug/Kg		103	69 - 131
Perfluorononanesulfonic acid (PFNS)	1.92	1.87		ug/Kg		97	70 - 130
Perfluorodecanesulfonic acid (PFDS)	1.93	1.91		ug/Kg		99	54 - 113
Perfluorooctanesulfonamide (FOSA)	2.00	1.97		ug/Kg		98	62 - 135
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.15		ug/Kg		107	65 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.94	J	ug/Kg		97	65 - 135
4:2 FTS	1.87	2.09		ug/Kg		112	50 - 150
6:2 FTS	1.90	2.21		ug/Kg		117	65 - 135
8:2 FTS	1.92	1.82	J	ug/Kg		95	65 - 135
10:2 FTS	1.93	1.92		ug/Kg		100	70 - 130
NMeFOSA	2.00	2.05		ug/Kg		102	65 - 135
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.80		ug/Kg		93	70 - 130
NMeFOSE	2.00	2.18		ug/Kg		109	65 - 135
NEtFOSE	2.00	2.09		ug/Kg		104	65 - 135
ADONA	1.97	2.10		ug/Kg		106	70 - 130
F-53B Major	1.86	1.78		ug/Kg		95	70 - 130
HFPO-DA (GenX)	2.00	1.94		ug/Kg		97	70 - 130
F-53B Minor	1.88	1.42		ug/Kg		75	70 - 130
NaDONA	2.00	2.13		ug/Kg		106	70 - 130
DONA	1.88	2.01		ug/Kg		106	70 - 130
Ammonium Perfluorooctanoate (APFO)	2.08	2.01		ug/Kg		97	76 - 121

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	90		25 - 150
13C5 PFPeA	95		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	94		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	91		25 - 150
13C2 PFHxDA	83		25 - 150
13C2 PFUnA	95		25 - 150
13C2 PFDoA	94		25 - 150
13C2 PFTeDA	91		25 - 150
18O2 PFHxS	102		25 - 150
13C4 PFOS	92		25 - 150
13C8 FOSA	83		25 - 150

# QC Sample Results

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-325633/2-A**  
**Matrix: Solid**  
**Analysis Batch: 328233**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 325633**

<i>Isotope Dilution</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
d3-NMeFOSAA	84		25 - 150
d5-NEtFOSAA	91		25 - 150
M2-6:2 FTS	97		25 - 150
M2-8:2 FTS	97		25 - 150
M2-4:2 FTS	101		25 - 150
d-N-MeFOSA-M	42		25 - 150
d-N-EtFOSA-M	37		25 - 150
d7-N-MeFOSE-M	14		10 - 120
d9-N-EtFOSE-M	12		10 - 120
13C3 HFPO-DA	100		25 - 150

## Method: D 2216 - Percent Moisture

**Lab Sample ID: 320-53393-5 DU**  
**Matrix: Solid**  
**Analysis Batch: 325069**

**Client Sample ID: GP-103, 10-12.5'**  
**Prep Type: Total/NA**

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>DU Result</i>	<i>DU Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RPD</i>	<i>Limit</i>
Percent Moisture	75.1		77.1		%		3	20
Percent Solids	24.9		22.9		%		9	20

# QC Association Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## LCMS

### Prep Batch: 325633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-5	GP-103, 10-12.5'	Total/NA	Solid	SHAKE	
MB 320-325633/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-325633/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

### Analysis Batch: 328233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-5	GP-103, 10-12.5'	Total/NA	Solid	537 (modified)	325633
MB 320-325633/1-A	Method Blank	Total/NA	Solid	537 (modified)	325633
LCS 320-325633/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	325633

## General Chemistry

### Analysis Batch: 325069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53393-5	GP-103, 10-12.5'	Total/NA	Solid	D 2216	
320-53393-5 DU	GP-103, 10-12.5'	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

**Client Sample ID: GP-103, 10-12.5'**

**Lab Sample ID: 320-53393-5**

**Date Collected: 08/15/19 10:30**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			325069	09/20/19 16:14	HRB	TAL SAC

**Client Sample ID: GP-103, 10-12.5'**

**Lab Sample ID: 320-53393-5**

**Date Collected: 08/15/19 10:30**

**Matrix: Solid**

**Date Received: 08/17/19 09:20**

**Percent Solids: 24.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.0 mL	325633	09/23/19 16:12	MC	TAL SAC
Total/NA	Analysis	537 (modified)		1			328233	10/05/19 03:03	D1R	TAL SAC

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: SCS Engineers  
 Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

## Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State Program	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	08-09-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
Arkansas DEQ	State Program	88-0691	06-17-20
California	State	2897	01-31-20
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Hawaii	State	<cert No.>	01-29-20
Illinois	NELAP	200060	03-17-20
Kansas	NELAP	E-10375	10-31-19
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-20
Maine	State Program	CA0004	04-14-20
Michigan	State	9947	01-29-20
Michigan	State Program	9947	01-31-20
Nevada	State Program	CA00044	07-31-20
New Hampshire	NELAP	2997	04-20-20
New Jersey	NELAP	CA005	06-30-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-20
Pennsylvania	NELAP	68-01272	03-31-20
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
USEPA UCMR	Federal	CA00044	12-31-20
Utah	NELAP	CA00044	02-29-20
Vermont	State	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-20
Washington	State	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-19
Wyoming	State Program	8TMS-L	01-28-19 *

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State Program	999580010	08-31-20

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

#### Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Sample Summary

Client: SCS Engineers  
Project/Site: MGE - Burke WWTP - 25218175.00

Job ID: 320-53393-2

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-53393-5	GP-103, 10-12.5'	Solid	08/15/19 10:30	08/17/19 09:20	

---

1

2

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5

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12

13

14

15

**Fredrick, Sandie**

---

**From:** Oelkers, Eric <EOelkers@scsengineers.com>  
**Sent:** Thursday, September 19, 2019 1:27 PM  
**To:** Fredrick, Sandie; Valcheff, Jess  
**Cc:** Blodgett, Meghan  
**Subject:** RE: Eurofins TestAmerica report files from 320-53393-1 MGE - Burke WWTP - 25218175.00

**-External Email-**

---

Hi Sandie,  
Please run sample held sample GP-103 10-12.5'.  
Thanks,

**Eric Oelkers, PG\***  
Senior Project Manager / Hydrogeologist

**SCS ENGINEERS**  
2830 Dairy Drive  
Madison, WI 53718  
608.224.2830  
Direct: 608.216.7341 • Cell: 608.444.3934  
[eoelkers@scsengineers.com](mailto:eoelkers@scsengineers.com)  
[www.scsengineers.com](http://www.scsengineers.com)  
\*Licensed in Wisconsin

---

**From:** Sandie Fredrick <[sandie.fredrick@testamericainc.com](mailto:sandie.fredrick@testamericainc.com)>  
**Sent:** Thursday, September 19, 2019 10:00 AM  
**To:** Oelkers, Eric <[EOelkers@scsengineers.com](mailto:EOelkers@scsengineers.com)>; Valcheff, Jess <[JValcheff@scsengineers.com](mailto:JValcheff@scsengineers.com)>  
**Subject:** Eurofins TestAmerica report files from 320-53393-1 MGE - Burke WWTP - 25218175.00

===== This message originated outside of SCS Engineers =====

Hello Eric,

Please let me know if the hold testing is required.  
Thanks so much,  
Sandie

Attached please find the report files for job 320-53393-1; MGE - Burke WWTP - 25218175.00

Please feel free to contact me if you have any questions.

Thank you.

**Sandie Fredrick**  
Project Manager

Eurofins TestAmerica, Chicago  
Phone: 920-261-1660

E-mail: [sandie.fredrick@testamericainc.com](mailto:sandie.fredrick@testamericainc.com)  
[www.eurofinsus.com](http://www.eurofinsus.com) | [www.testamericainc.com](http://www.testamericainc.com)



Reference: [500-492091]  
Attachments: 1

Please let us know if we met your expectations by rating the service you received from Eurofins TestAmerica on this project by visiting our website at: [Project Feedback](#)

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484  
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)  
Contact: Eric Oellers  
Company: SCS Engineers  
Address: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
E-Mail: eoellers@scsengineers.com

Bill To (optional)  
Contact: Same  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
PO#/Reference# \_\_\_\_\_

## Chain of Custody Record

Lab Job #: \_\_\_\_\_  
Chain of Custody Number: \_\_\_\_\_  
Page \_\_\_\_\_ of \_\_\_\_\_  
Temperature °C of Cooler: 11 corr 1.00

Client <u>SCS Engineers</u>		Client Project # <u>25218175.00</u>		Preservative <u>7</u>								Preservative Key 1. HCL, Cool to 4° 2. H2SO4, Cool to 4° 3. HNO3, Cool to 4° 4. NaOH, Cool to 4° 5. NaOH/Zn, Cool to 4° 6. NaHSO4 7. Cool to 4° 8. None 9. Other		
Project Name <u>MGE - Burke WWTP</u>		Lab Project #		Parameter										
Project Location/State <u>WI</u>		Lab PM												
Sampler <u>MDB; ACW</u>														
Lab ID	MS/MSD	Sample ID	Sampling		# of Containers	Matrix							Comments	
			Date	Time										
		<u>GP-101, 10-12'</u>	<u>8/15/19</u>	<u>1130</u>			<u>X</u>							
		<u>GP-102, 5-7.5'</u>		<u>0955</u>										<u>HOLD</u>
		<u>GP-102, 7.5'-10'</u>		<u>1000</u>										
		<u>GP-103, 8-9'</u>		<u>1015</u>										
		<u>GP-103, 10-12.5'</u>		<u>1030</u>										<u>HOLD</u>
		<u>GP-103, 20-24'</u>		<u>1045</u>										
		<u>GP-104, 9-10'</u>		<u>0930</u>	<u>1</u>	<u>S</u>								
		<u>GP-104, 13-15'</u>		<u>0935</u>	<u>1</u>	<u>S</u>								
		<u>Equipment Blank</u>	<u>8/15/19</u>	<u>1215</u>	<u>2</u>	<u>W</u>	<u>X</u>							



320-53393 Chain of Custody

Page 21 of 22

Turnaround Time Required (Business Days)

1 Day  2 Days  5 Days  7 Days  10 Days  15 Days  Other

Requested Due Date \_\_\_\_\_

Sample Disposal

Return to Client

Disposal by Lab

Archive for \_\_\_\_\_ Months

(A fee may be assessed if samples are retained longer than 1 month)

Relinquished By <u>[Signature]</u>	Company <u>SCS Engineers</u>	Date <u>8/16/19</u>	Time <u>1300</u>	Received By <u>[Signature]</u>	Company <u>[Signature]</u>	Date <u>8/16/19</u>	Time <u>920</u>
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: \_\_\_\_\_  
Shipped: \_\_\_\_\_  
Hand Delivered: \_\_\_\_\_

Matrix Key

- |                    |                     |
|--------------------|---------------------|
| WW - Wastewater    | SE - Sediment       |
| W - Water          | SO - Soil           |
| S - Soil           | L - Leachate        |
| SL - Sludge        | WI - Wipe           |
| MS - Miscellaneous | DW - Drinking Water |
| OL - Oil           | O - Other           |
| A - Air            |                     |

Client Comments

Lab Comments:

10/11/2019



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 320-53393-2

**Login Number: 53393**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Thompson, Sarah W**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	137107/137108
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento  
880 Riverside Parkway  
West Sacramento, CA 95605  
Tel: (916)373-5600

Laboratory Job ID: 320-53651-1  
Client Project/Site: Burke Site - 25219029.00

For:  
SCS Engineers  
2830 Dairy Dr  
Madison, Wisconsin 53718

Attn: Mr. Eric Oelkers



Authorized for release by:  
9/20/2019 4:01:39 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandie.fredrick@testamericainc.com](mailto:sandie.fredrick@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	5
Client Sample Results . . . . .	7
Isotope Dilution Summary . . . . .	23
QC Sample Results . . . . .	25
QC Association Summary . . . . .	29
Lab Chronicle . . . . .	30
Certification Summary . . . . .	32
Method Summary . . . . .	34
Sample Summary . . . . .	35
Chain of Custody . . . . .	36
Receipt Checklists . . . . .	37

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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



# Case Narrative

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Job ID: 320-53651-1

### Laboratory: Eurofins TestAmerica, Sacramento

#### Narrative

#### Job Narrative 320-53651-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 8/24/2019 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8° C.

#### LCMS

Method(s) 537 (modified): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-322246/11)

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Perfluorododecanesulfonic acid (PFDoS) and 11-Chloroeicosfluoro-3-oxaundecane-1-sulfonate were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s). TW-1 (320-53651-2), TW-4 (320-53651-5) and TW-4 Duplicate (320-53651-6)

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS in the following sample: TW-3 (320-53651-1). This sample was re-analyzed with concurring results; however, the target analyte results did not differ from the original analysis. Therefore, results were reported from the original analysis. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following sample: TW-1 (320-53651-2). This sample was re-analyzed with concurring results; however, the target analyte results did not differ from the original analysis. Therefore, results were reported from the original analysis. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s). TW-1 (320-53651-2)

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

#### Organic Prep

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

# Detection Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Client Sample ID: TW-3

## Lab Sample ID: 320-53651-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	26		1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.3	J	1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.2		1.8	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.3	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	10	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.59	J B	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	5.4		1.9	0.80	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: TW-1

## Lab Sample ID: 320-53651-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	14		1.9	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	12		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	14		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.4		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	26		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.30	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	7.5		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	2.3		1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	58	B	1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	13	I	1.9	0.51	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	27		2.0	0.83	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: MW-10

## Lab Sample ID: 320-53651-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	20		1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.9		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.2		1.8	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.6		1.8	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.8		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	1.0	J	1.8	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7	B	1.8	0.16	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.3		1.8	0.50	ng/L	1		537 (modified)	Total/NA
6:2 FTS	4.8	J	18	1.8	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	3.8		1.9	0.81	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: TW-2

## Lab Sample ID: 320-53651-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	34		1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.26	J	1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.9		1.8	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.75	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.5	J B	1.8	0.16	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.7		1.8	0.49	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Detection Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Client Sample ID: TW-2 (Continued)

Lab Sample ID: 320-53651-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonamide (FOSA)	0.46	J B	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	3.0		1.9	0.81	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: TW-4

Lab Sample ID: 320-53651-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	29		1.9	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.79	J	1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.3	J	1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	14		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.91	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.3		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.56	J	1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.5	B	1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.81	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.7	I	1.9	0.51	ng/L	1		537 (modified)	Total/NA
6:2 FTS	49		19	1.9	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	15		2.0	0.83	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: TW-4 Duplicate

Lab Sample ID: 320-53651-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	29		1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.75	J	1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.2	J	1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	16		1.8	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.0	J	1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.1		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.75	J	1.8	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.7	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.77	J	1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.8	I	1.8	0.49	ng/L	1		537 (modified)	Total/NA
6:2 FTS	41		18	1.8	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	16		1.9	0.80	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: Field Blank

Lab Sample ID: 320-53651-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.9	0.16	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.41	J B	1.9	0.33	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: Equipment Blank

Lab Sample ID: 320-53651-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	2.0	0.17	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-3**  
**Date Collected: 08/23/19 09:00**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-1**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>26</b>		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.4</b>		1.8	0.44	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>3.3</b>		1.8	0.52	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>1.3</b>	<b>J</b>	1.8	0.23	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>5.2</b>		1.8	0.77	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoroundecanoic acid (PFUnA)	<0.99		1.8	0.99	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.80		1.8	0.80	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>1.3</b>	<b>J</b>	1.8	0.18	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42		1.8	0.42	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>10</b>	<b>B</b>	1.8	0.15	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorooctanesulfonic acid (PFOS)	<0.49		1.8	0.49	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Perfluorooctanesulfonamide (FOSA)</b>	<b>0.59</b>	<b>J B</b>	1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		08/31/19 07:42	09/07/19 03:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		08/31/19 07:42	09/07/19 03:32	1
4:2 FTS	<4.7		18	4.7	ng/L		08/31/19 07:42	09/07/19 03:32	1
6:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/07/19 03:32	1
10:2 FTS	<0.17		1.8	0.17	ng/L		08/31/19 07:42	09/07/19 03:32	1
NEtFOSA	<0.79		1.8	0.79	ng/L		08/31/19 07:42	09/07/19 03:32	1
NMeFOSA	<0.39		1.8	0.39	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		08/31/19 07:42	09/07/19 03:32	1
NMeFOSE	<1.3		3.6	1.3	ng/L		08/31/19 07:42	09/07/19 03:32	1
NEtFOSE	<0.77		1.8	0.77	ng/L		08/31/19 07:42	09/07/19 03:32	1
ADONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 03:32	1
F-53B Major	<0.22		1.8	0.22	ng/L		08/31/19 07:42	09/07/19 03:32	1
HFPO-DA (GenX)	<1.4		3.6	1.4	ng/L		08/31/19 07:42	09/07/19 03:32	1
F-53B Minor	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 03:32	1
NaDONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 03:32	1
DONA	<0.16		1.8	0.16	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Ammonium Perfluorooctanoate (APFO)</b>	<b>5.4</b>		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 03:32	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	45		25 - 150				08/31/19 07:42	09/07/19 03:32	1
13C5 PFPeA	62		25 - 150				08/31/19 07:42	09/07/19 03:32	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-3**  
**Date Collected: 08/23/19 09:00**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-1**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	85		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C4 PFHpA	101		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C4 PFOA	101		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C5 PFNA	115		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C2 PFDA	128		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C2 PFHxDA	131		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C2 PFUnA	127		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C2 PFDoA	128		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C2 PFTeDA	136		25 - 150	08/31/19 07:42	09/07/19 03:32	1
18O2 PFHxS	120		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C4 PFOS	130		25 - 150	08/31/19 07:42	09/07/19 03:32	1
13C8 FOSA	120		25 - 150	08/31/19 07:42	09/07/19 03:32	1
d3-NMeFOSAA	113		25 - 150	08/31/19 07:42	09/07/19 03:32	1
d5-NEtFOSAA	124		25 - 150	08/31/19 07:42	09/07/19 03:32	1
M2-6:2 FTS	175 *		25 - 150	08/31/19 07:42	09/07/19 03:32	1
M2-4:2 FTS	139		25 - 150	08/31/19 07:42	09/07/19 03:32	1
d-N-MeFOSA-M	69		20 - 150	08/31/19 07:42	09/07/19 03:32	1
d-N-EtFOSA-M	51		20 - 150	08/31/19 07:42	09/07/19 03:32	1
d7-N-MeFOSE-M	44		10 - 120	08/31/19 07:42	09/07/19 03:32	1
d9-N-EtFOSE-M	40		10 - 120	08/31/19 07:42	09/07/19 03:32	1
13C3 HFPO-DA	89		25 - 150	08/31/19 07:42	09/07/19 03:32	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - RA**

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
8:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/13/19 23:09	1

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
M2-8:2 FTS	134		25 - 150	08/31/19 07:42	09/13/19 23:09	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-1**  
**Date Collected: 08/23/19 11:15**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-2**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	14		1.9	0.33	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoropentanoic acid (PFPeA)	12		1.9	0.46	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorohexanoic acid (PFHxA)	14		1.9	0.55	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoroheptanoic acid (PFHpA)	4.4		1.9	0.24	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorooctanoic acid (PFOA)	26		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorononanoic acid (PFNA)	0.30	J	1.9	0.25	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.9	1.2	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorotetradecanoic acid (PFTeA)	<0.27		1.9	0.27	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.84		1.9	0.84	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorobutanesulfonic acid (PFBS)	7.5		1.9	0.19	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.43		1.9	0.43	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoropentanesulfonic acid (PFPeS)	2.3		1.9	0.28	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorohexanesulfonic acid (PFHxS)	58	B	1.9	0.16	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorooctanesulfonic acid (PFOS)	13	I	1.9	0.51	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.9	0.15	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorooctanesulfonamide (FOSA)	<0.33		1.9	0.33	ng/L		08/31/19 07:42	09/07/19 03:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.9		19	2.9	ng/L		08/31/19 07:42	09/07/19 03:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		19	1.8	ng/L		08/31/19 07:42	09/07/19 03:40	1
4:2 FTS	<4.9		19	4.9	ng/L		08/31/19 07:42	09/07/19 03:40	1
6:2 FTS	<1.9		19	1.9	ng/L		08/31/19 07:42	09/07/19 03:40	1
8:2 FTS	<1.9		19	1.9	ng/L		08/31/19 07:42	09/07/19 03:40	1
10:2 FTS	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 03:40	1
NEtFOSA	<0.82		1.9	0.82	ng/L		08/31/19 07:42	09/07/19 03:40	1
NMeFOSA	<0.40		1.9	0.40	ng/L		08/31/19 07:42	09/07/19 03:40	1
Perfluorododecanesulfonic acid (PFDoS)	<0.42		1.9	0.42	ng/L		08/31/19 07:42	09/07/19 03:40	1
NMeFOSE	<1.3		3.8	1.3	ng/L		08/31/19 07:42	09/07/19 03:40	1
NEtFOSE	<0.80		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 03:40	1
ADONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 03:40	1
F-53B Major	<0.23		1.9	0.23	ng/L		08/31/19 07:42	09/07/19 03:40	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		08/31/19 07:42	09/07/19 03:40	1
F-53B Minor	<0.30		1.9	0.30	ng/L		08/31/19 07:42	09/07/19 03:40	1
NaDONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 03:40	1
DONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 03:40	1
Ammonium Perfluorooctanoate (APFO)	27		2.0	0.83	ng/L		08/31/19 07:42	09/07/19 03:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	41		25 - 150	08/31/19 07:42	09/07/19 03:40	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-1**  
**Date Collected: 08/23/19 11:15**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-2**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	56		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C2 PFHxA	79		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C4 PFHpA	94		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C4 PFOA	94		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C5 PFNA	111		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C2 PFDA	120		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C2 PFHxDA	105		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C2 PFUnA	129		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C2 PFDoA	119		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C2 PFTeDA	117		25 - 150	08/31/19 07:42	09/07/19 03:40	1
18O2 PFHxS	118		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C4 PFOS	120		25 - 150	08/31/19 07:42	09/07/19 03:40	1
13C8 FOSA	110		25 - 150	08/31/19 07:42	09/07/19 03:40	1
d3-NMeFOSAA	115		25 - 150	08/31/19 07:42	09/07/19 03:40	1
d5-NEtFOSAA	132		25 - 150	08/31/19 07:42	09/07/19 03:40	1
M2-6:2 FTS	178	*	25 - 150	08/31/19 07:42	09/07/19 03:40	1
M2-8:2 FTS	200	*	25 - 150	08/31/19 07:42	09/07/19 03:40	1
M2-4:2 FTS	123		25 - 150	08/31/19 07:42	09/07/19 03:40	1
d-N-MeFOSA-M	73		20 - 150	08/31/19 07:42	09/07/19 03:40	1
d-N-EtFOSA-M	59		20 - 150	08/31/19 07:42	09/07/19 03:40	1
d7-N-MeFOSE-M	60		10 - 120	08/31/19 07:42	09/07/19 03:40	1
d9-N-EtFOSE-M	55		10 - 120	08/31/19 07:42	09/07/19 03:40	1
13C3 HFPO-DA	72		25 - 150	08/31/19 07:42	09/07/19 03:40	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: MW-10**

**Lab Sample ID: 320-53651-3**

**Date Collected: 08/23/19 12:25**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	20		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoropentanoic acid (PFPeA)	3.9		1.8	0.45	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorohexanoic acid (PFHxA)	7.2		1.8	0.54	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoroheptanoic acid (PFHpA)	1.8		1.8	0.23	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorooctanoic acid (PFOA)	3.6		1.8	0.79	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorononanoic acid (PFNA)	<0.25		1.8	0.25	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorodecanoic acid (PFDA)	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.8	0.51	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorotetradecanoic acid (PFTeA)	<0.27		1.8	0.27	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.82		1.8	0.82	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorobutanesulfonic acid (PFBS)	1.8		1.8	0.18	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.43		1.8	0.43	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoropentanesulfonic acid (PFPeS)	1.0	J	1.8	0.28	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorohexanesulfonic acid (PFHxS)	2.7	B	1.8	0.16	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.18		1.8	0.18	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorooctanesulfonic acid (PFOS)	8.3		1.8	0.50	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.8	0.15	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.8	0.30	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorooctanesulfonamide (FOSA)	<0.32		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.9		18	2.9	ng/L		08/31/19 07:42	09/07/19 03:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		18	1.8	ng/L		08/31/19 07:42	09/07/19 03:48	1
4:2 FTS	<4.8		18	4.8	ng/L		08/31/19 07:42	09/07/19 03:48	1
6:2 FTS	4.8	J	18	1.8	ng/L		08/31/19 07:42	09/07/19 03:48	1
8:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/07/19 03:48	1
10:2 FTS	<0.18		1.8	0.18	ng/L		08/31/19 07:42	09/07/19 03:48	1
NEtFOSA	<0.80		1.8	0.80	ng/L		08/31/19 07:42	09/07/19 03:48	1
NMeFOSA	<0.40		1.8	0.40	ng/L		08/31/19 07:42	09/07/19 03:48	1
Perfluorododecanesulfonic acid (PFDoS)	<0.42		1.8	0.42	ng/L		08/31/19 07:42	09/07/19 03:48	1
NMeFOSE	<1.3		3.7	1.3	ng/L		08/31/19 07:42	09/07/19 03:48	1
NEtFOSE	<0.79		1.8	0.79	ng/L		08/31/19 07:42	09/07/19 03:48	1
ADONA	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 03:48	1
F-53B Major	<0.22		1.8	0.22	ng/L		08/31/19 07:42	09/07/19 03:48	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		08/31/19 07:42	09/07/19 03:48	1
F-53B Minor	<0.30		1.8	0.30	ng/L		08/31/19 07:42	09/07/19 03:48	1
NaDONA	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 03:48	1
DONA	<0.17		1.8	0.17	ng/L		08/31/19 07:42	09/07/19 03:48	1
Ammonium Perfluorooctanoate (APFO)	3.8		1.9	0.81	ng/L		08/31/19 07:42	09/07/19 03:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	62		25 - 150	08/31/19 07:42	09/07/19 03:48	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: MW-10**

**Lab Sample ID: 320-53651-3**

**Date Collected: 08/23/19 12:25**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	75		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C2 PFHxA	93		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C4 PFHpA	106		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C4 PFOA	100		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C5 PFNA	106		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C2 PFDA	117		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C2 PFHxDA	102		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C2 PFUnA	114		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C2 PFDaA	109		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C2 PFTeDA	106		25 - 150	08/31/19 07:42	09/07/19 03:48	1
18O2 PFHxS	116		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C4 PFOS	110		25 - 150	08/31/19 07:42	09/07/19 03:48	1
13C8 FOSA	109		25 - 150	08/31/19 07:42	09/07/19 03:48	1
d3-NMeFOSAA	103		25 - 150	08/31/19 07:42	09/07/19 03:48	1
d5-NEtFOSAA	105		25 - 150	08/31/19 07:42	09/07/19 03:48	1
M2-6:2 FTS	145		25 - 150	08/31/19 07:42	09/07/19 03:48	1
M2-8:2 FTS	119		25 - 150	08/31/19 07:42	09/07/19 03:48	1
M2-4:2 FTS	126		25 - 150	08/31/19 07:42	09/07/19 03:48	1
d-N-MeFOSA-M	64		20 - 150	08/31/19 07:42	09/07/19 03:48	1
d-N-EtFOSA-M	51		20 - 150	08/31/19 07:42	09/07/19 03:48	1
d7-N-MeFOSE-M	48		10 - 120	08/31/19 07:42	09/07/19 03:48	1
d9-N-EtFOSE-M	42		10 - 120	08/31/19 07:42	09/07/19 03:48	1
13C3 HFPO-DA	95		25 - 150	08/31/19 07:42	09/07/19 03:48	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-2**  
**Date Collected: 08/23/19 13:25**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-4**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorobutanoic acid (PFBA)</b>	<b>34</b>		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluoropentanoic acid (PFPeA)	<0.45		1.8	0.45	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorohexanoic acid (PFHxA)	<0.53		1.8	0.53	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>0.26</b>	<b>J</b>	1.8	0.23	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.9</b>		1.8	0.78	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorononanoic acid (PFNA)	<0.25		1.8	0.25	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorotetradecanoic acid (PFTeA)	<0.27		1.8	0.27	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.82		1.8	0.82	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.75</b>	<b>J</b>	1.8	0.18	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42		1.8	0.42	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>1.5</b>	<b>J B</b>	1.8	0.16	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>5.7</b>		1.8	0.49	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.8	0.15	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Perfluorooctanesulfonamide (FOSA)</b>	<b>0.46</b>	<b>J B</b>	1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		08/31/19 07:42	09/07/19 03:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		08/31/19 07:42	09/07/19 03:56	1
4:2 FTS	<4.8		18	4.8	ng/L		08/31/19 07:42	09/07/19 03:56	1
8:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/07/19 03:56	1
10:2 FTS	<0.17		1.8	0.17	ng/L		08/31/19 07:42	09/07/19 03:56	1
NEtFOSA	<0.80		1.8	0.80	ng/L		08/31/19 07:42	09/07/19 03:56	1
NMeFOSA	<0.39		1.8	0.39	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		08/31/19 07:42	09/07/19 03:56	1
NMeFOSE	<1.3		3.7	1.3	ng/L		08/31/19 07:42	09/07/19 03:56	1
NEtFOSE	<0.78		1.8	0.78	ng/L		08/31/19 07:42	09/07/19 03:56	1
ADONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 03:56	1
F-53B Major	<0.22		1.8	0.22	ng/L		08/31/19 07:42	09/07/19 03:56	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		08/31/19 07:42	09/07/19 03:56	1
F-53B Minor	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 03:56	1
NaDONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 03:56	1
DONA	<0.16		1.8	0.16	ng/L		08/31/19 07:42	09/07/19 03:56	1
<b>Ammonium Perfluorooctanoate (APFO)</b>	<b>3.0</b>		1.9	0.81	ng/L		08/31/19 07:42	09/07/19 03:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	39		25 - 150	08/31/19 07:42	09/07/19 03:56	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-2**  
Date Collected: 08/23/19 13:25  
Date Received: 08/24/19 09:25

**Lab Sample ID: 320-53651-4**  
Matrix: Water

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	57		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C2 PFHxA	84		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C4 PFHpA	106		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C4 PFOA	98		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C5 PFNA	106		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C2 PFDA	113		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C2 PFHxDA	97		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C2 PFUnA	114		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C2 PFDoA	108		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C2 PFTeDA	105		25 - 150	08/31/19 07:42	09/07/19 03:56	1
18O2 PFHxS	118		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C4 PFOS	111		25 - 150	08/31/19 07:42	09/07/19 03:56	1
13C8 FOSA	110		25 - 150	08/31/19 07:42	09/07/19 03:56	1
d3-NMeFOSAA	99		25 - 150	08/31/19 07:42	09/07/19 03:56	1
d5-NEtFOSAA	103		25 - 150	08/31/19 07:42	09/07/19 03:56	1
M2-8:2 FTS	110		25 - 150	08/31/19 07:42	09/07/19 03:56	1
M2-4:2 FTS	116		25 - 150	08/31/19 07:42	09/07/19 03:56	1
d-N-MeFOSA-M	59		20 - 150	08/31/19 07:42	09/07/19 03:56	1
d-N-EtFOSA-M	43		20 - 150	08/31/19 07:42	09/07/19 03:56	1
d7-N-MeFOSE-M	41		10 - 120	08/31/19 07:42	09/07/19 03:56	1
d9-N-EtFOSE-M	35		10 - 120	08/31/19 07:42	09/07/19 03:56	1
13C3 HFPO-DA	80		25 - 150	08/31/19 07:42	09/07/19 03:56	1

**Method: 537 (modified) - Fluorinated Alkyl Substances - RA**

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
6:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/13/19 23:28	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
M2-6:2 FTS	131		25 - 150				08/31/19 07:42	09/13/19 23:28	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-4**  
**Date Collected: 08/23/19 14:35**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-5**  
**Matrix: Water**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	29		1.9	0.33	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoropentanoic acid (PFPeA)	0.79	J	1.9	0.46	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorohexanoic acid (PFHxA)	1.3	J	1.9	0.55	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.9	0.24	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorooctanoic acid (PFOA)	14		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorononanoic acid (PFNA)	0.91	J	1.9	0.25	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.9	1.2	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorotetradecanoic acid (PFTeA)	<0.27		1.9	0.27	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.84		1.9	0.84	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorobutanesulfonic acid (PFBS)	2.3		1.9	0.19	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.43		1.9	0.43	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoropentanesulfonic acid (PFPeS)	0.56	J	1.9	0.28	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorohexanesulfonic acid (PFHxS)	4.5	B	1.9	0.16	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.81	J	1.9	0.18	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorooctanesulfonic acid (PFOS)	9.7	I	1.9	0.51	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.9	0.15	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorooctanesulfonamide (FOSA)	<0.33		1.9	0.33	ng/L		08/31/19 07:42	09/07/19 04:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.9		19	2.9	ng/L		08/31/19 07:42	09/07/19 04:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		19	1.8	ng/L		08/31/19 07:42	09/07/19 04:04	1
4:2 FTS	<4.9		19	4.9	ng/L		08/31/19 07:42	09/07/19 04:04	1
6:2 FTS	49		19	1.9	ng/L		08/31/19 07:42	09/07/19 04:04	1
8:2 FTS	<1.9		19	1.9	ng/L		08/31/19 07:42	09/07/19 04:04	1
10:2 FTS	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 04:04	1
NEtFOSA	<0.82		1.9	0.82	ng/L		08/31/19 07:42	09/07/19 04:04	1
NMeFOSA	<0.41		1.9	0.41	ng/L		08/31/19 07:42	09/07/19 04:04	1
Perfluorododecanesulfonic acid (PFDoS)	<0.42		1.9	0.42	ng/L		08/31/19 07:42	09/07/19 04:04	1
NMeFOSE	<1.3		3.8	1.3	ng/L		08/31/19 07:42	09/07/19 04:04	1
NEtFOSE	<0.80		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 04:04	1
ADONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 04:04	1
F-53B Major	<0.23		1.9	0.23	ng/L		08/31/19 07:42	09/07/19 04:04	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		08/31/19 07:42	09/07/19 04:04	1
F-53B Minor	<0.30		1.9	0.30	ng/L		08/31/19 07:42	09/07/19 04:04	1
NaDONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 04:04	1
DONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 04:04	1
Ammonium Perfluorooctanoate (APFO)	15		2.0	0.83	ng/L		08/31/19 07:42	09/07/19 04:04	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	62		25 - 150	08/31/19 07:42	09/07/19 04:04	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-4**

**Lab Sample ID: 320-53651-5**

**Date Collected: 08/23/19 14:35**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	74		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C2 PFHxA	99		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C4 PFHpA	108		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C4 PFOA	99		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C5 PFNA	109		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C2 PFDA	109		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C2 PFHxDA	96		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C2 PFUnA	111		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C2 PFDoA	105		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C2 PFTeDA	98		25 - 150	08/31/19 07:42	09/07/19 04:04	1
18O2 PFHxS	111		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C4 PFOS	113		25 - 150	08/31/19 07:42	09/07/19 04:04	1
13C8 FOSA	102		25 - 150	08/31/19 07:42	09/07/19 04:04	1
d3-NMeFOSAA	94		25 - 150	08/31/19 07:42	09/07/19 04:04	1
d5-NEtFOSAA	106		25 - 150	08/31/19 07:42	09/07/19 04:04	1
M2-6:2 FTS	131		25 - 150	08/31/19 07:42	09/07/19 04:04	1
M2-8:2 FTS	123		25 - 150	08/31/19 07:42	09/07/19 04:04	1
M2-4:2 FTS	130		25 - 150	08/31/19 07:42	09/07/19 04:04	1
d-N-MeFOSA-M	60		20 - 150	08/31/19 07:42	09/07/19 04:04	1
d-N-EtFOSA-M	43		20 - 150	08/31/19 07:42	09/07/19 04:04	1
d7-N-MeFOSE-M	37		10 - 120	08/31/19 07:42	09/07/19 04:04	1
d9-N-EtFOSE-M	32		10 - 120	08/31/19 07:42	09/07/19 04:04	1
13C3 HFPO-DA	88		25 - 150	08/31/19 07:42	09/07/19 04:04	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-4 Duplicate**

**Lab Sample ID: 320-53651-6**

Date Collected: 08/23/19 14:35

Matrix: Water

Date Received: 08/24/19 09:25

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	29		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoropentanoic acid (PFPeA)	0.75	J	1.8	0.44	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorohexanoic acid (PFHxA)	1.2	J	1.8	0.53	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorooctanoic acid (PFOA)	16		1.8	0.77	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorononanoic acid (PFNA)	1.0	J	1.8	0.24	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.81		1.8	0.81	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorobutanesulfonic acid (PFBS)	2.1		1.8	0.18	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42		1.8	0.42	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoropentanesulfonic acid (PFPeS)	0.75	J	1.8	0.27	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorohexanesulfonic acid (PFHxS)	4.7	B	1.8	0.15	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.77	J	1.8	0.17	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorooctanesulfonic acid (PFOS)	8.8	I	1.8	0.49	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.8	0.15	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorooctanesulfonamide (FOSA)	<0.32		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 04:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		08/31/19 07:42	09/07/19 04:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		08/31/19 07:42	09/07/19 04:12	1
4:2 FTS	<4.7		18	4.7	ng/L		08/31/19 07:42	09/07/19 04:12	1
6:2 FTS	41		18	1.8	ng/L		08/31/19 07:42	09/07/19 04:12	1
8:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/07/19 04:12	1
10:2 FTS	<0.17		1.8	0.17	ng/L		08/31/19 07:42	09/07/19 04:12	1
NEtFOSA	<0.79		1.8	0.79	ng/L		08/31/19 07:42	09/07/19 04:12	1
NMeFOSA	<0.39		1.8	0.39	ng/L		08/31/19 07:42	09/07/19 04:12	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		08/31/19 07:42	09/07/19 04:12	1
NMeFOSE	<1.3		3.6	1.3	ng/L		08/31/19 07:42	09/07/19 04:12	1
NEtFOSE	<0.77		1.8	0.77	ng/L		08/31/19 07:42	09/07/19 04:12	1
ADONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 04:12	1
F-53B Major	<0.22		1.8	0.22	ng/L		08/31/19 07:42	09/07/19 04:12	1
HFPO-DA (GenX)	<1.4		3.6	1.4	ng/L		08/31/19 07:42	09/07/19 04:12	1
F-53B Minor	<0.29		1.8	0.29	ng/L		08/31/19 07:42	09/07/19 04:12	1
NaDONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 04:12	1
DONA	<0.16		1.8	0.16	ng/L		08/31/19 07:42	09/07/19 04:12	1
Ammonium Perfluorooctanoate (APFO)	16		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 04:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	60		25 - 150	08/31/19 07:42	09/07/19 04:12	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-4 Duplicate**

**Lab Sample ID: 320-53651-6**

**Date Collected: 08/23/19 14:35**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	74		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C2 PFHxA	95		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C4 PFHpA	106		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C4 PFOA	96		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C5 PFNA	108		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C2 PFDA	110		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C2 PFHxDA	95		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C2 PFUnA	107		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C2 PFDoA	102		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C2 PFTeDA	102		25 - 150	08/31/19 07:42	09/07/19 04:12	1
18O2 PFHxS	112		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C4 PFOS	110		25 - 150	08/31/19 07:42	09/07/19 04:12	1
13C8 FOSA	98		25 - 150	08/31/19 07:42	09/07/19 04:12	1
d3-NMeFOSAA	94		25 - 150	08/31/19 07:42	09/07/19 04:12	1
d5-NEtFOSAA	108		25 - 150	08/31/19 07:42	09/07/19 04:12	1
M2-6:2 FTS	133		25 - 150	08/31/19 07:42	09/07/19 04:12	1
M2-8:2 FTS	126		25 - 150	08/31/19 07:42	09/07/19 04:12	1
M2-4:2 FTS	123		25 - 150	08/31/19 07:42	09/07/19 04:12	1
d-N-MeFOSA-M	62		20 - 150	08/31/19 07:42	09/07/19 04:12	1
d-N-EtFOSA-M	38		20 - 150	08/31/19 07:42	09/07/19 04:12	1
d7-N-MeFOSE-M	41		10 - 120	08/31/19 07:42	09/07/19 04:12	1
d9-N-EtFOSE-M	33		10 - 120	08/31/19 07:42	09/07/19 04:12	1
13C3 HFPO-DA	88		25 - 150	08/31/19 07:42	09/07/19 04:12	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 320-53651-7**

**Date Collected: 08/23/19 09:00**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.33		1.9	0.33	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoropentanoic acid (PFPeA)	<0.46		1.9	0.46	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorohexanoic acid (PFHxA)	<0.54		1.9	0.54	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoroheptanoic acid (PFHpA)	<0.23		1.9	0.23	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorooctanoic acid (PFOA)	<0.79		1.9	0.79	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorononanoic acid (PFNA)	<0.25		1.9	0.25	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.9	0.51	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.9	1.2	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorotetradecanoic acid (PFTeA)	<0.27		1.9	0.27	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.83		1.9	0.83	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.43		1.9	0.43	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		08/31/19 07:42	09/07/19 04:36	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.26</b>	<b>J B</b>	1.9	0.16	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorooctanesulfonic acid (PFOS)	<0.50		1.9	0.50	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.9	0.15	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		08/31/19 07:42	09/07/19 04:36	1
<b>Perfluorooctanesulfonamide (FOSA)</b>	<b>0.41</b>	<b>J B</b>	1.9	0.33	ng/L		08/31/19 07:42	09/07/19 04:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.9		19	2.9	ng/L		08/31/19 07:42	09/07/19 04:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		19	1.8	ng/L		08/31/19 07:42	09/07/19 04:36	1
4:2 FTS	<4.8		19	4.8	ng/L		08/31/19 07:42	09/07/19 04:36	1
6:2 FTS	<1.9		19	1.9	ng/L		08/31/19 07:42	09/07/19 04:36	1
8:2 FTS	<1.9		19	1.9	ng/L		08/31/19 07:42	09/07/19 04:36	1
10:2 FTS	<0.18		1.9	0.18	ng/L		08/31/19 07:42	09/07/19 04:36	1
NEtFOSA	<0.81		1.9	0.81	ng/L		08/31/19 07:42	09/07/19 04:36	1
NMeFOSA	<0.40		1.9	0.40	ng/L		08/31/19 07:42	09/07/19 04:36	1
Perfluorododecanesulfonic acid (PFDoS)	<0.42		1.9	0.42	ng/L		08/31/19 07:42	09/07/19 04:36	1
NMeFOSE	<1.3		3.7	1.3	ng/L		08/31/19 07:42	09/07/19 04:36	1
NEtFOSE	<0.79		1.9	0.79	ng/L		08/31/19 07:42	09/07/19 04:36	1
ADONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 04:36	1
F-53B Major	<0.22		1.9	0.22	ng/L		08/31/19 07:42	09/07/19 04:36	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		08/31/19 07:42	09/07/19 04:36	1
F-53B Minor	<0.30		1.9	0.30	ng/L		08/31/19 07:42	09/07/19 04:36	1
NaDONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 04:36	1
DONA	<0.17		1.9	0.17	ng/L		08/31/19 07:42	09/07/19 04:36	1
Ammonium Perfluorooctanoate (APFO)	<0.82		2.0	0.82	ng/L		08/31/19 07:42	09/07/19 04:36	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFBA	99		25 - 150	08/31/19 07:42	09/07/19 04:36	1
<sup>13</sup> C5 PFPeA	101		25 - 150	08/31/19 07:42	09/07/19 04:36	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 320-53651-7**

**Date Collected: 08/23/19 09:00**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	106		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C4 PFHpA	111		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C4 PFOA	97		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C5 PFNA	102		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C2 PFDA	102		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C2 PFHxDA	87		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C2 PFUnA	99		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C2 PFDoA	97		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C2 PFTeDA	95		25 - 150	08/31/19 07:42	09/07/19 04:36	1
18O2 PFHxS	112		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C4 PFOS	101		25 - 150	08/31/19 07:42	09/07/19 04:36	1
13C8 FOSA	100		25 - 150	08/31/19 07:42	09/07/19 04:36	1
d3-NMeFOSAA	95		25 - 150	08/31/19 07:42	09/07/19 04:36	1
d5-NEtFOSAA	89		25 - 150	08/31/19 07:42	09/07/19 04:36	1
M2-6:2 FTS	77		25 - 150	08/31/19 07:42	09/07/19 04:36	1
M2-8:2 FTS	73		25 - 150	08/31/19 07:42	09/07/19 04:36	1
M2-4:2 FTS	82		25 - 150	08/31/19 07:42	09/07/19 04:36	1
d-N-MeFOSA-M	67		20 - 150	08/31/19 07:42	09/07/19 04:36	1
d-N-EtFOSA-M	48		20 - 150	08/31/19 07:42	09/07/19 04:36	1
d7-N-MeFOSE-M	34		10 - 120	08/31/19 07:42	09/07/19 04:36	1
d9-N-EtFOSE-M	28		10 - 120	08/31/19 07:42	09/07/19 04:36	1
13C3 HFPO-DA	96		25 - 150	08/31/19 07:42	09/07/19 04:36	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: Equipment Blank**

**Lab Sample ID: 320-53651-8**

**Date Collected: 08/23/19 09:00**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.36		2.0	0.36	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoropentanoic acid (PFPeA)	<0.50		2.0	0.50	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorohexanoic acid (PFHxA)	<0.59		2.0	0.59	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorooctanoic acid (PFOA)	<0.87		2.0	0.87	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorononanoic acid (PFNA)	<0.28		2.0	0.28	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorodecanoic acid (PFDA)	<0.32		2.0	0.32	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorododecanoic acid (PFDoA)	<0.56		2.0	0.56	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorotridecanoic acid (PFTriA)	<1.3		2.0	1.3	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorotetradecanoic acid (PFTeA)	<0.30		2.0	0.30	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.91		2.0	0.91	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.47		2.0	0.47	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoropentanesulfonic acid (PFPeS)	<0.31		2.0	0.31	ng/L		08/31/19 07:42	09/07/19 04:45	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.27</b>	<b>J B</b>	2.0	0.17	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		2.0	0.19	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorooctanesulfonic acid (PFOS)	<0.55		2.0	0.55	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorononanesulfonic acid (PFNS)	<0.16		2.0	0.16	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorodecanesulfonic acid (PFDS)	<0.33		2.0	0.33	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorooctanesulfonamide (FOSA)	<0.36		2.0	0.36	ng/L		08/31/19 07:42	09/07/19 04:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.2		20	3.2	ng/L		08/31/19 07:42	09/07/19 04:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		20	1.9	ng/L		08/31/19 07:42	09/07/19 04:45	1
4:2 FTS	<5.3		20	5.3	ng/L		08/31/19 07:42	09/07/19 04:45	1
6:2 FTS	<2.0		20	2.0	ng/L		08/31/19 07:42	09/07/19 04:45	1
8:2 FTS	<2.0		20	2.0	ng/L		08/31/19 07:42	09/07/19 04:45	1
10:2 FTS	<0.19		2.0	0.19	ng/L		08/31/19 07:42	09/07/19 04:45	1
NEtFOSA	<0.89		2.0	0.89	ng/L		08/31/19 07:42	09/07/19 04:45	1
NMeFOSA	<0.44		2.0	0.44	ng/L		08/31/19 07:42	09/07/19 04:45	1
Perfluorododecanesulfonic acid (PFDoS)	<0.46		2.0	0.46	ng/L		08/31/19 07:42	09/07/19 04:45	1
NMeFOSE	<1.4		4.1	1.4	ng/L		08/31/19 07:42	09/07/19 04:45	1
NEtFOSE	<0.87		2.0	0.87	ng/L		08/31/19 07:42	09/07/19 04:45	1
ADONA	<0.19		2.1	0.19	ng/L		08/31/19 07:42	09/07/19 04:45	1
F-53B Major	<0.24		2.0	0.24	ng/L		08/31/19 07:42	09/07/19 04:45	1
HFPO-DA (GenX)	<1.5		4.1	1.5	ng/L		08/31/19 07:42	09/07/19 04:45	1
F-53B Minor	<0.33		2.0	0.33	ng/L		08/31/19 07:42	09/07/19 04:45	1
NaDONA	<0.19		2.1	0.19	ng/L		08/31/19 07:42	09/07/19 04:45	1
DONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 04:45	1
Ammonium Perfluorooctanoate (APFO)	<0.90		2.1	0.90	ng/L		08/31/19 07:42	09/07/19 04:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C5 PFPeA	100		25 - 150	08/31/19 07:42	09/07/19 04:45	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: Equipment Blank**

**Lab Sample ID: 320-53651-8**

**Date Collected: 08/23/19 09:00**

**Matrix: Water**

**Date Received: 08/24/19 09:25**

**Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	103		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C4 PFHpA	104		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C4 PFOA	94		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C5 PFNA	97		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C2 PFDA	99		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C2 PFHxDA	87		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C2 PFUnA	103		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C2 PFDaA	101		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C2 PFTeDA	100		25 - 150	08/31/19 07:42	09/07/19 04:45	1
18O2 PFHxS	108		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C4 PFOS	101		25 - 150	08/31/19 07:42	09/07/19 04:45	1
13C8 FOSA	93		25 - 150	08/31/19 07:42	09/07/19 04:45	1
d3-NMeFOSAA	92		25 - 150	08/31/19 07:42	09/07/19 04:45	1
d5-NEtFOSAA	96		25 - 150	08/31/19 07:42	09/07/19 04:45	1
M2-6:2 FTS	75		25 - 150	08/31/19 07:42	09/07/19 04:45	1
M2-8:2 FTS	75		25 - 150	08/31/19 07:42	09/07/19 04:45	1
M2-4:2 FTS	75		25 - 150	08/31/19 07:42	09/07/19 04:45	1
d-N-MeFOSA-M	57		20 - 150	08/31/19 07:42	09/07/19 04:45	1
d-N-EtFOSA-M	40		20 - 150	08/31/19 07:42	09/07/19 04:45	1
d7-N-MeFOSE-M	26		10 - 120	08/31/19 07:42	09/07/19 04:45	1
d9-N-EtFOSE-M	20		10 - 120	08/31/19 07:42	09/07/19 04:45	1
13C3 HFPO-DA	91		25 - 150	08/31/19 07:42	09/07/19 04:45	1

# Isotope Dilution Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFHxDA (25-150)
320-53651-1	TW-3	45	62	85	101	101	115	128	131
320-53651-1 - RA	TW-3								
320-53651-2	TW-1	41	56	79	94	94	111	120	105
320-53651-3	MW-10	62	75	93	106	100	106	117	102
320-53651-4	TW-2	39	57	84	106	98	106	113	97
320-53651-4 - RA	TW-2								
320-53651-5	TW-4	62	74	99	108	99	109	109	96
320-53651-6	TW-4 Duplicate	60	74	95	106	96	108	110	95
320-53651-7	Field Blank	99	101	106	111	97	102	102	87
320-53651-8	Equipment Blank	98	100	103	104	94	97	99	87
LCS 320-319830/2-A	Lab Control Sample	103	107	112	111	103	106	109	96
MB 320-319830/1-A	Method Blank	105	106	115	113	106	105	107	100

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS/ (25-150)	-NEtFOS/ (25-150)
320-53651-1	TW-3	127	128	136	120	130	120	113	124
320-53651-1 - RA	TW-3								
320-53651-2	TW-1	129	119	117	118	120	110	115	132
320-53651-3	MW-10	114	109	106	116	110	109	103	105
320-53651-4	TW-2	114	108	105	118	111	110	99	103
320-53651-4 - RA	TW-2								
320-53651-5	TW-4	111	105	98	111	113	102	94	106
320-53651-6	TW-4 Duplicate	107	102	102	112	110	98	94	108
320-53651-7	Field Blank	99	97	95	112	101	100	95	89
320-53651-8	Equipment Blank	103	101	100	108	101	93	92	96
LCS 320-319830/2-A	Lab Control Sample	106	105	104	116	104	99	98	99
MB 320-319830/1-A	Method Blank	102	98	105	117	111	102	97	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOSA (20-150)	N-EtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	HFPODA (25-150)
320-53651-1	TW-3	175 *		139	69	51	44	40	89
320-53651-1 - RA	TW-3		134						
320-53651-2	TW-1	178 *	200 *	123	73	59	60	55	72
320-53651-3	MW-10	145	119	126	64	51	48	42	95
320-53651-4	TW-2		110	116	59	43	41	35	80
320-53651-4 - RA	TW-2	131							
320-53651-5	TW-4	131	123	130	60	43	37	32	88
320-53651-6	TW-4 Duplicate	133	126	123	62	38	41	33	88
320-53651-7	Field Blank	77	73	82	67	48	34	28	96
320-53651-8	Equipment Blank	75	75	75	57	40	26	20	91
LCS 320-319830/2-A	Lab Control Sample	77	86	80	72	47	30	24	95
MB 320-319830/1-A	Method Blank	81	75	85	71	42	24	20	92

**Surrogate Legend**

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- PFHpA = 13C4 PFHpA
- PFOA = 13C4 PFOA

# Isotope Dilution Summary

Job ID: 320-53651-1

Client: SCS Engineers

Project/Site: Burke Site - 25219029.00

PFNA = 13C5 PFNA  
PFDA = 13C2 PFDA  
PFHxDA = 13C2 PFHxDA  
PFUnA = 13C2 PFUnA  
PFDoA = 13C2 PFDoA  
PFTDA = 13C2 PFTeDA  
PFHxS = 18O2 PFHxS  
PFOS = 13C4 PFOS  
PFOSA = 13C8 FOSA  
d3-NMeFOSAA = d3-NMeFOSAA  
d5-NEtFOSAA = d5-NEtFOSAA  
M262FTS = M2-6:2 FTS  
M282FTS = M2-8:2 FTS  
M242FTS = M2-4:2 FTS  
d-N-MeFOSA-M = d-N-MeFOSA-M  
d-N-EtFOSA-M = d-N-EtFOSA-M  
NMFM = d7-N-MeFOSE-M  
NEFM = d9-N-EtFOSE-M  
HFPODA = 13C3 HFPO-DA

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-319830/1-A**  
**Matrix: Water**  
**Analysis Batch: 321552**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 319830**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.35		2.0	0.35	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorotridecanoic acid (PFTriA)	<1.3		2.0	1.3	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorotetradecanoic acid (PFTeA)	<0.29		2.0	0.29	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.89		2.0	0.89	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.46		2.0	0.46	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorohexanesulfonic acid (PFHxS)	0.220	J	2.0	0.17	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		2.0	0.19	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorononanesulfonic acid (PFNS)	<0.16		2.0	0.16	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorooctanesulfonamide (FOSA)	0.499	J	2.0	0.35	ng/L		08/31/19 07:42	09/07/19 01:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.1		20	3.1	ng/L		08/31/19 07:42	09/07/19 01:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		20	1.9	ng/L		08/31/19 07:42	09/07/19 01:22	1
4:2 FTS	<5.2		20	5.2	ng/L		08/31/19 07:42	09/07/19 01:22	1
6:2 FTS	<2.0		20	2.0	ng/L		08/31/19 07:42	09/07/19 01:22	1
8:2 FTS	<2.0		20	2.0	ng/L		08/31/19 07:42	09/07/19 01:22	1
10:2 FTS	<0.19		2.0	0.19	ng/L		08/31/19 07:42	09/07/19 01:22	1
NEtFOSA	<0.87		2.0	0.87	ng/L		08/31/19 07:42	09/07/19 01:22	1
NMeFOSA	<0.43		2.0	0.43	ng/L		08/31/19 07:42	09/07/19 01:22	1
Perfluorododecanesulfonic acid (PFDoS)	<0.45		2.0	0.45	ng/L		08/31/19 07:42	09/07/19 01:22	1
NMeFOSE	<1.4		4.0	1.4	ng/L		08/31/19 07:42	09/07/19 01:22	1
NEtFOSE	<0.85		2.0	0.85	ng/L		08/31/19 07:42	09/07/19 01:22	1
ADONA	<0.19		2.1	0.19	ng/L		08/31/19 07:42	09/07/19 01:22	1
F-53B Major	<0.24		2.0	0.24	ng/L		08/31/19 07:42	09/07/19 01:22	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		08/31/19 07:42	09/07/19 01:22	1
F-53B Minor	<0.32		2.0	0.32	ng/L		08/31/19 07:42	09/07/19 01:22	1
NaDONA	<0.19		2.1	0.19	ng/L		08/31/19 07:42	09/07/19 01:22	1
DONA	<0.18		2.0	0.18	ng/L		08/31/19 07:42	09/07/19 01:22	1
Ammonium Perfluorooctanoate (APFO)	<0.88		2.1	0.88	ng/L		08/31/19 07:42	09/07/19 01:22	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	105		25 - 150	08/31/19 07:42	09/07/19 01:22	1

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-319830/1-A**  
**Matrix: Water**  
**Analysis Batch: 321552**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 319830**

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFPeA	106		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C2 PFHxA	115		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C4 PFHpA	113		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C4 PFOA	106		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C5 PFNA	105		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C2 PFDA	107		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C2 PFHxDA	100		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C2 PFUnA	102		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C2 PFDaA	98		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C2 PFTeDA	105		25 - 150	08/31/19 07:42	09/07/19 01:22	1
18O2 PFHxS	117		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C4 PFOS	111		25 - 150	08/31/19 07:42	09/07/19 01:22	1
13C8 FOSA	102		25 - 150	08/31/19 07:42	09/07/19 01:22	1
d3-NMeFOSAA	97		25 - 150	08/31/19 07:42	09/07/19 01:22	1
d5-NEtFOSAA	94		25 - 150	08/31/19 07:42	09/07/19 01:22	1
M2-6:2 FTS	81		25 - 150	08/31/19 07:42	09/07/19 01:22	1
M2-8:2 FTS	75		25 - 150	08/31/19 07:42	09/07/19 01:22	1
M2-4:2 FTS	85		25 - 150	08/31/19 07:42	09/07/19 01:22	1
d-N-MeFOSA-M	71		20 - 150	08/31/19 07:42	09/07/19 01:22	1
d-N-EtFOSA-M	42		20 - 150	08/31/19 07:42	09/07/19 01:22	1
d7-N-MeFOSE-M	24		10 - 120	08/31/19 07:42	09/07/19 01:22	1
d9-N-EtFOSE-M	20		10 - 120	08/31/19 07:42	09/07/19 01:22	1
13C3 HFPO-DA	92		25 - 150	08/31/19 07:42	09/07/19 01:22	1

**Lab Sample ID: LCS 320-319830/2-A**  
**Matrix: Water**  
**Analysis Batch: 321552**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 319830**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.0		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	37.9		ng/L		95	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	40.4		ng/L		101	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	41.6		ng/L		104	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.2		ng/L		101	64 - 124
Perfluorononanoic acid (PFNA)	40.0	43.7		ng/L		109	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.2		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.1		ng/L		93	60 - 120
Perfluorododecanoic acid (PFDaA)	40.0	42.1		ng/L		105	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	41.9		ng/L		105	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.8		ng/L		97	68 - 128
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	41.0		ng/L		102	72 - 132
Perfluorobutanesulfonic acid (PFBS)	35.4	29.9		ng/L		84	73 - 133
Perfluoro-n-octadecanoic acid (PFODA)	40.0	47.9		ng/L		120	74 - 134

Eurofins TestAmerica, Sacramento

# QC Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-319830/2-A**  
**Matrix: Water**  
**Analysis Batch: 321552**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 319830**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanesulfonic acid (PFPeS)	37.5	37.1		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	36.4	30.7		ng/L		84	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.3		ng/L		106	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	67 - 127
Perfluorononanesulfonic acid (PFNS)	38.4	43.1		ng/L		112	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	39.2		ng/L		102	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	42.9		ng/L		107	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.2		ng/L		101	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.4		ng/L		106	65 - 125
4:2 FTS	37.4	41.2		ng/L		110	70 - 130
6:2 FTS	37.9	45.3		ng/L		119	66 - 126
8:2 FTS	38.3	41.5		ng/L		108	67 - 127
10:2 FTS	38.6	49.9		ng/L		129	70 - 130
NMeFOSA	40.0	41.0		ng/L		102	65 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.7	34.6		ng/L		89	70 - 130
NMeFOSE	40.0	39.3		ng/L		98	65 - 135
NEtFOSE	40.0	38.9		ng/L		97	65 - 135
ADONA	39.5	44.4		ng/L		112	70 - 130
F-53B Major	37.3	38.5		ng/L		103	70 - 130
HFPO-DA (GenX)	40.0	44.4		ng/L		111	70 - 130
F-53B Minor	37.7	30.3		ng/L		80	70 - 130
NaDONA	40.0	44.9		ng/L		112	70 - 130
DONA	37.7	42.3		ng/L		112	70 - 130
Ammonium Perfluorooctanoate (APFO)	41.6	41.8		ng/L		101	64 - 124

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	103		25 - 150
13C5 PFPeA	107		25 - 150
13C2 PFHxA	112		25 - 150
13C4 PFHpA	111		25 - 150
13C4 PFOA	103		25 - 150
13C5 PFNA	106		25 - 150
13C2 PFDA	109		25 - 150
13C2 PFHxDA	96		25 - 150
13C2 PFUnA	106		25 - 150
13C2 PFDoA	105		25 - 150
13C2 PFTeDA	104		25 - 150
18O2 PFHxS	116		25 - 150
13C4 PFOS	104		25 - 150
13C8 FOSA	99		25 - 150



# QC Sample Results

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-319830/2-A

Matrix: Water

Analysis Batch: 321552

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 319830

<i>Isotope Dilution</i>	LCS		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>d3-NMeFOSAA</i>	98		25 - 150
<i>d5-NEtFOSAA</i>	99		25 - 150
<i>M2-6:2 FTS</i>	77		25 - 150
<i>M2-8:2 FTS</i>	86		25 - 150
<i>M2-4:2 FTS</i>	80		25 - 150
<i>d-N-MeFOSA-M</i>	72		20 - 150
<i>d-N-EtFOSA-M</i>	47		20 - 150
<i>d7-N-MeFOSE-M</i>	30		10 - 120
<i>d9-N-EtFOSE-M</i>	24		10 - 120
<i>13C3 HFPO-DA</i>	95		25 - 150

# QC Association Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## LCMS

### Prep Batch: 319830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53651-1 - RA	TW-3	Total/NA	Water	3535	
320-53651-1	TW-3	Total/NA	Water	3535	
320-53651-2	TW-1	Total/NA	Water	3535	
320-53651-3	MW-10	Total/NA	Water	3535	
320-53651-4 - RA	TW-2	Total/NA	Water	3535	
320-53651-4	TW-2	Total/NA	Water	3535	
320-53651-5	TW-4	Total/NA	Water	3535	
320-53651-6	TW-4 Duplicate	Total/NA	Water	3535	
320-53651-7	Field Blank	Total/NA	Water	3535	
320-53651-8	Equipment Blank	Total/NA	Water	3535	
MB 320-319830/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-319830/2-A	Lab Control Sample	Total/NA	Water	3535	

### Analysis Batch: 321552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53651-1	TW-3	Total/NA	Water	537 (modified)	319830
320-53651-2	TW-1	Total/NA	Water	537 (modified)	319830
320-53651-3	MW-10	Total/NA	Water	537 (modified)	319830
320-53651-4	TW-2	Total/NA	Water	537 (modified)	319830
320-53651-5	TW-4	Total/NA	Water	537 (modified)	319830
320-53651-6	TW-4 Duplicate	Total/NA	Water	537 (modified)	319830
320-53651-7	Field Blank	Total/NA	Water	537 (modified)	319830
320-53651-8	Equipment Blank	Total/NA	Water	537 (modified)	319830
MB 320-319830/1-A	Method Blank	Total/NA	Water	537 (modified)	319830
LCS 320-319830/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	319830

### Analysis Batch: 323214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-53651-1 - RA	TW-3	Total/NA	Water	537 (modified)	319830
320-53651-4 - RA	TW-2	Total/NA	Water	537 (modified)	319830

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

**Client Sample ID: TW-3**  
**Date Collected: 08/23/19 09:00**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			276.7 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 03:32	P1N	TAL SAC
Total/NA	Prep	3535	RA		276.7 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)	RA	1			323214	09/13/19 23:09	P1N	TAL SAC

**Client Sample ID: TW-1**  
**Date Collected: 08/23/19 11:15**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.6 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 03:40	P1N	TAL SAC

**Client Sample ID: MW-10**  
**Date Collected: 08/23/19 12:25**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			270.4 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 03:48	P1N	TAL SAC

**Client Sample ID: TW-2**  
**Date Collected: 08/23/19 13:25**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 03:56	P1N	TAL SAC
Total/NA	Prep	3535	RA		273 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)	RA	1			323214	09/13/19 23:28	P1N	TAL SAC

**Client Sample ID: TW-4**  
**Date Collected: 08/23/19 14:35**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 04:04	P1N	TAL SAC

**Client Sample ID: TW-4 Duplicate**  
**Date Collected: 08/23/19 14:35**  
**Date Received: 08/24/19 09:25**

**Lab Sample ID: 320-53651-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			275.7 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 04:12	P1N	TAL SAC

Eurofins TestAmerica, Sacramento

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Client Sample ID: Field Blank

Date Collected: 08/23/19 09:00

Date Received: 08/24/19 09:25

## Lab Sample ID: 320-53651-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268.1 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 04:36	P1N	TAL SAC

## Client Sample ID: Equipment Blank

Date Collected: 08/23/19 09:00

Date Received: 08/24/19 09:25

## Lab Sample ID: 320-53651-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			245.3 mL	10.00 mL	319830	08/31/19 07:42	RDR	TAL SAC
Total/NA	Analysis	537 (modified)		1			321552	09/07/19 04:45	P1N	TAL SAC

### Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Accreditation/Certification Summary

Client: SCS Engineers  
 Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State Program	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	DoD	L2468	01-20-21
ANAB	DOE	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	08-09-21
Arizona	State	AZ0708	08-11-20
Arizona	State Program	AZ0708	08-11-20
Arkansas DEQ	State Program	88-0691	06-17-20
California	State	2897	01-31-20
California	State Program	2897	01-31-20
Colorado	State	CA0004	08-31-20
Colorado	State Program	CA00044	08-31-20
Connecticut	State	PH-0691	06-30-21
Connecticut	State Program	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Florida	NELAP	E87570	06-30-20
Hawaii	State	<cert No.>	01-29-20
Hawaii	State Program	N/A	01-29-20
Illinois	NELAP	200060	03-17-20 *
Illinois	NELAP	200060	03-17-20
Kansas	NELAP	E-10375	10-31-19
Louisiana	NELAP	30612	06-30-20
Maine	State Program	CA0004	04-14-20
Michigan	State	9947	01-29-20
Michigan	State Program	9947	01-31-20
New Hampshire	NELAP	2997	04-20-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-20
Oregon	NELAP	4040	01-29-20
Pennsylvania	NELAP	68-01272	03-31-20
Pennsylvania	NELAP	68-01272	03-31-20
Texas	NELAP	T104704399	05-31-20
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	Federal	LE148388-0	07-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	Federal	P330-18-00239	01-17-21
USDA	US Federal Programs	P330-18-00239	07-31-21
USEPA UCMR	Federal	CA00044	12-31-20
Utah	NELAP	CA00044	02-29-20
Vermont	State	VT-4040	04-16-20
Vermont	State Program	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-20
Virginia	NELAP	460278	03-14-20
Washington	State	C581	05-05-20
Washington	State Program	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-19
West Virginia (DW)	State Program	9930C	12-31-19
Wyoming	State Program	8TMS-L	01-28-19 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Sacramento

# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State Program	999580010	08-31-20

1

2

3

4

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# Method Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Sample Summary

Client: SCS Engineers  
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-53651-1	TW-3	Water	08/23/19 09:00	08/24/19 09:25	
320-53651-2	TW-1	Water	08/23/19 11:15	08/24/19 09:25	
320-53651-3	MW-10	Water	08/23/19 12:25	08/24/19 09:25	
320-53651-4	TW-2	Water	08/23/19 13:25	08/24/19 09:25	
320-53651-5	TW-4	Water	08/23/19 14:35	08/24/19 09:25	
320-53651-6	TW-4 Duplicate	Water	08/23/19 14:35	08/24/19 09:25	
320-53651-7	Field Blank	Water	08/23/19 09:00	08/24/19 09:25	
320-53651-8	Equipment Blank	Water	08/23/19 09:00	08/24/19 09:25	



Regulatory Program:  DW  NPDES  RCRA  Other:

<b>Client Contact</b>	<b>Project Manager:</b> Eric Oelkers	<b>Site Contact:</b>	<b>Date:</b> 8/23/19	<b>COC No:</b>
<b>Company Name:</b> SCS Engineers	<b>Tel/Fax:</b>	<b>Lab Contact:</b> Kathy Frederick	<b>Carrier:</b>	_____ of _____ COCs
<b>Address:</b> 2830 Dairy Pt.	<b>Analysis Turnaround Time</b>			<b>Sampler:</b>
<b>City/State/Zip:</b> Madison WI	<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS			<b>For Lab Use Only:</b>
<b>Phone:</b> 608-266-7345	TAT if different from Below _____			<b>Walk-in Client:</b>
<b>Fax:</b>	<input type="checkbox"/> 2 weeks			<b>Lab Sampling:</b>
<b>Project Name:</b> 25219029.00	<input type="checkbox"/> 1 week			<b>Job / SDG No.:</b>
<b>Site:</b> Burke site	<input type="checkbox"/> 2 days			
<b>PO#</b>	<input type="checkbox"/> 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	PFAS (3G)	Sample Specific Notes:
TW-3	8/23	900		W	2	N	X		
TW-1		1115		W	2	X	X		
MW-10		1225		W	2	X	X		
TW-2		1325		W	2	X	X		
TW-4		1435		W	2	X	X		
TW-4 Duplicate		1435		W	2	X	X		
Field Blank	↓	900		W	2	X	X		
Equipment Blank	↓	900		W	2	X	X		



320-53651 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other \_\_\_\_\_

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Special Instructions/QC Requirements & Comments:**

Custody Seals Intact:  Yes  No

Custody Seal No.: \_\_\_\_\_ Cooler Temp. (°C): Obs'd: 1.8°C Corr'd: 1.8°C Therm ID No.: 1R150m

Relinquished by:	Company: SCS Engineers	Date/Time: 8/23/19 16:00	Received by:	Company: ECHASAL	Date/Time: 8/24/19 9:25
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Page 36 of 37

9/20/2019

\* 2 1/2 container labels list ID as MW-4  
 \* 2 1/2 container labels list ID as MW-4 Duplicate



## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 320-53651-1

**Login Number: 53651**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Rosas, Jaime**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1091697
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Route To:

- Watershed/Wastewater  
 Remediation/Redev.  
 Waste Management  Other \_\_\_\_\_

**SOIL BORING LOG INFORMATION**

Form 4400-122  
Revised by SCS 1-2016

7-98

Facility/Project Name Former Burke Wastewater Treatment Plant Property			SCS # 25218175.00			License/Permit/Monitoring Number			Boring Number GP-104								
Boring Drilled By (Firm name and name of crew chief) On-Site Environmental Services Inc, Tony Kapugi						Drilling Started			Drilling Completed			Drilling Method Geoprobe					
DNR Facility Well No.			WI Unique Well No.			Common Well Name			Static Water Level			Surface Elevation			Borehole Diam.		
Boring Location State Plane SW 1/4 of NE 1/4 of Section 31, T. 8 N, R. 10E						Lat. Long.			Local Grid Location (If applicable) N., E.								
County United States						DNR County Code			Civil Town/City/or Village Madison								

Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties			RQD/ Comments
									Standard Penetration	Moisture Content	P200	
S1	32"			Silt, brown w/trace organics	ML			2.1			M	
S2				Silty sand, brown to black w/trace cinders and gravel	SM						M	
S3			5	Clayey sand brown w/red mottling fine-medium grain, trace fibers	SC			3.3			M	
S4	26"			Organic silt dark brown-black trace fibers.	OL			1.9			M	
S5			10	<del>Organic silt, black (possible sludge)</del>				2.2			M	
S6	29"			<del>Clayey silt grey</del> Silt w/clay, grey	ML			1.8			U	
S7			15					2.4				
S8	48"			SAND, fine to coarse grain, on gray transitions to light brown	SN			1.5				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS ENGINEERS
-----------	-----------------------

This form is authorized by Chapters 281,283,289,291,292,295,and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture between \$10 and \$25,000, or imprisonment for up to one year, depending on program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information.

Route To:

- Watershed/Wastewater  
 Remediation/Redev.  
 Waste Management  Other \_\_\_\_\_

**SOIL BORING LOG INFORMATION**

Form 4400-122  
Revised by SCS 1-2016

7-98

Facility/Project Name Former Burke Wastewater Treatment Plant Property		SCS # 25218175.00		License/Permit/Monitoring Number		Boring Number GP-301 104	
Boring Drilled By (Firm name and name of crew chief) On-Site Environmental Services Inc, Tony Kapugi				Drilling Started 8/15/19		Drilling Completed 8/15/19	
DNR Facility Well No.		WI Unique Well No.		Common Well Name		Static Water Level	
Boring Location State Plane SW 1/4 of NE 1/4 of Section 31, T. 8 N, R.10E		Lat. Long.		Local Grid Location (If applicable) N., E.			
County United States				DNR County Code		Civil Town/City/or Village Madison	

Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties			RQD/ Comments
									Standard Penetration	Moisture Content	P200	
S1	43"		6"	SILT, dk. brown (topsoil) SAND, brown, F-C, little small gravel SILT, dk. brown, w/gravel	SM			2.2			M	
S2				Silty sand, tan-brown F-C w/gravel trace cylinders (fill)	SM			2.2				
S3	46"		5	Clay w/silt gray w/gravel trace organics wood fibers/parts	CL			1.1			M	
S4				Clay w sand, F grains, tan-brown trace gravel	CL			1.0				
S5	42"		10	Organic silt very dark grey to black trace organic fibers, (potential wastewater sludge) Gravel, fine gravel, light grey-white	OL			1.1				
S6				Clay, brown w trace roots and gravel	CL						M	
S7	35"		15	Clay, black, w/trace fibers. potential wastewater sludge Clay, grey, light grey	CL			0.8				
S8				Clay w trace silt, gray w/BROWN silt.	CL						M	
				Silt w clay, brown-tan, grey clay to 19' and grey to 20'	ML			0.7			W	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS ENGINEERS
-----------	-----------------------

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Route To:

- Watershed/Wastewater  
 Remediation/Redev.  
 Waste Management  Other \_\_\_\_\_

**SOIL BORING LOG INFORMATION**

Form 4400-122

7-98

Revised by SCS 1-2016

Facility/Project Name Former Burke Wastewater Treatment Plant Property		SCS # 25218175.00		License/Permit/Monitoring Number		Boring Number GP-102	
Boring Drilled By (Firm name and name of crew chief) On-Site Environmental Services Inc, Tony Kapugi				Drilling Started 8/15/19		Drilling Completed 8/15/19	
DNR Facility Well No.		WI Unique Well No.		Common Well Name		Static Water Level	
						Surface Elevation	
						Borehole Diam. 2"	
Boring Location State Plane SW 1/4 of NE 1/4 of Section 31, T. 8 N, R. 10E				Lat. Long.		Local Grid Location (If applicable) N., E.	
County United States				DNR County Code		Civil Town/City/or Village Madison	

Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties			RQD/ Comments
									Standard Penetration	Moisture Content	P200	
S1	18"			Silt w/clay brownish gray w fibers & roots				5.5				
S2				clayey sand fine grain, light brown w/trace gravel	SP					M		
S3	20"		5	silt w/trace clay, black w/trace organics	ML			6.1				
S4				Peat, black-dark brown w/ greyish black bits with petroleum smell.	PT			6.0		M		
S5				chunks of wood at bottom								
S6	30"		10	Peat, brown-dark brown w/bits of wood	PT			2.3		M		
S7				Silt w/trace clay, brown, w/trace wood and fiber	ML			1.2				
S8				Silt w/trace clay, gray	ML					W		
S9	28"		15	Poorly graded sand, fine-medium grain, gray.	SM			2.5		U		
S10				Silt w/trace clay, gray	ML			3.1		U		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature \_\_\_\_\_ Firm **SCS ENGINEERS**

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Facility/Project Name Former Burke Wastewater Treatment Plant Property		SCS # 25218175.00		License/Permit/Monitoring Number		Boring Number GP-103					
Boring Drilled By (Firm name and name of crew chief) On-Site Environmental Services Inc, Tony Kapugi				Drilling Started		Drilling Completed		Drilling Method Geoprobe			
DNR Facility Well No.		WI Unique Well No.		Common Well Name		Static Water Level		Surface Elevation		Borehole Diam.	
Boring Location State Plane SW 1/4 of NE 1/4 of Section 31, T. 8 N, R.10E				Lat. Long.		Local Grid Location (If applicable) N., E.					
County United States				DNR County Code				Civil Town/City/or Village Madison			

Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties			RQD/ Comments
									Standard Penetration	Moisture Content	P200	
S1	27"			<del>Silt w/trace gray and gravel</del> Silt, brown w/trace gray and gravel	ML			1.5				
S2				Silty sand, <del>trace</del> fine grain, brown	SM			2.5		M		
S3	34"		5	Clay, brown w/trace fibers and gravel				2.7				
S4				organic silt, dark gray brown (possible waste water sludge)	OL			1.6		M		
S5	22"		10	organic silt, dark brown (possible waste water sludge)	OL			1.9		M		
S6								0.8				
S7			15	Mostly wood fibers w/silt, brown	PT			1.2		M		
S8				Silt, brown transition to gray w/wood fibers.	ML			1.1		W		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS ENGINEERS
-----------	-----------------------

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484  
 Phone: 708.534.5200 Fax: 708.534.5211

Report To: (optional) Eric Cellers  
 Contact: Eric Cellers  
 Company: SCS Engineers  
 Address: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 E-Mail: ecellers@scsengineers.com

Bill To: (optional) Same  
 Contact: Same  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 PO#/Reference#: \_\_\_\_\_

## Chain of Custody Record

Lab Job #: \_\_\_\_\_  
 Chain of Custody Number: \_\_\_\_\_  
 Page \_\_\_\_\_ of \_\_\_\_\_  
 Temperature °C of Cooler: \_\_\_\_\_

Client		Client Project #		Preservative		Parameter		Comments		
SCS Engineers		25218175.00		7		PFAS		Preservative Key 1. HCL, Cool to 4° 2. H2SO4, Cool to 4° 3. HNO3, Cool to 4° 4. NaOH, Cool to 4° 5. NaOH/Zn, Cool to 4° 6. NaHSO4 7. Cool to 4° 8. None 9. Other		
Project Name				Project Location/State				Lab Project #		
MGE - Burke WWTP				WI						
Sampler				Lab PM		Matrix				
MDB: ACW						PFAS				
Lab ID	MS/MSD	Sample ID	Date	Time	# of Containers	Matrix	Comments			
		GP-101, 10-12'	8/15/19	1130			X			
		GP-102, 5-10' 7.5'		0955				HOLD		
		GP-102, 7.5'-10'		1000						
		GP-103, 8-9'		1015						
		GP-103, 10-12.5'		1030				HOLD		
		GP-103, 20-24'		1045						
		GP-104, 9-10'		0930	1	S				
		GP-104, 13-15'		0935	1	S				
		Equipment Blank	8/15/19	1215	2	W	X			

Turnaround Time Required (Business Days)

\_\_\_ 1 Day \_\_\_ 2 Days \_\_\_ 5 Days \_\_\_ 7 Days \_\_\_ 10 Days \_\_\_ 15 Days \_\_\_ Other

Requested Due Date: \_\_\_\_\_

Sample Disposal

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By: [Signature]	Company: SCS Engineers	Date: 8/16/19	Time: 1300	Received By:	Company:	Date:	Time:
Relinquished By:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:
Relinquished By:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:

Lab Courier: \_\_\_\_\_  
 Shipped: \_\_\_\_\_  
 Hand Delivered: \_\_\_\_\_

Matrix Key

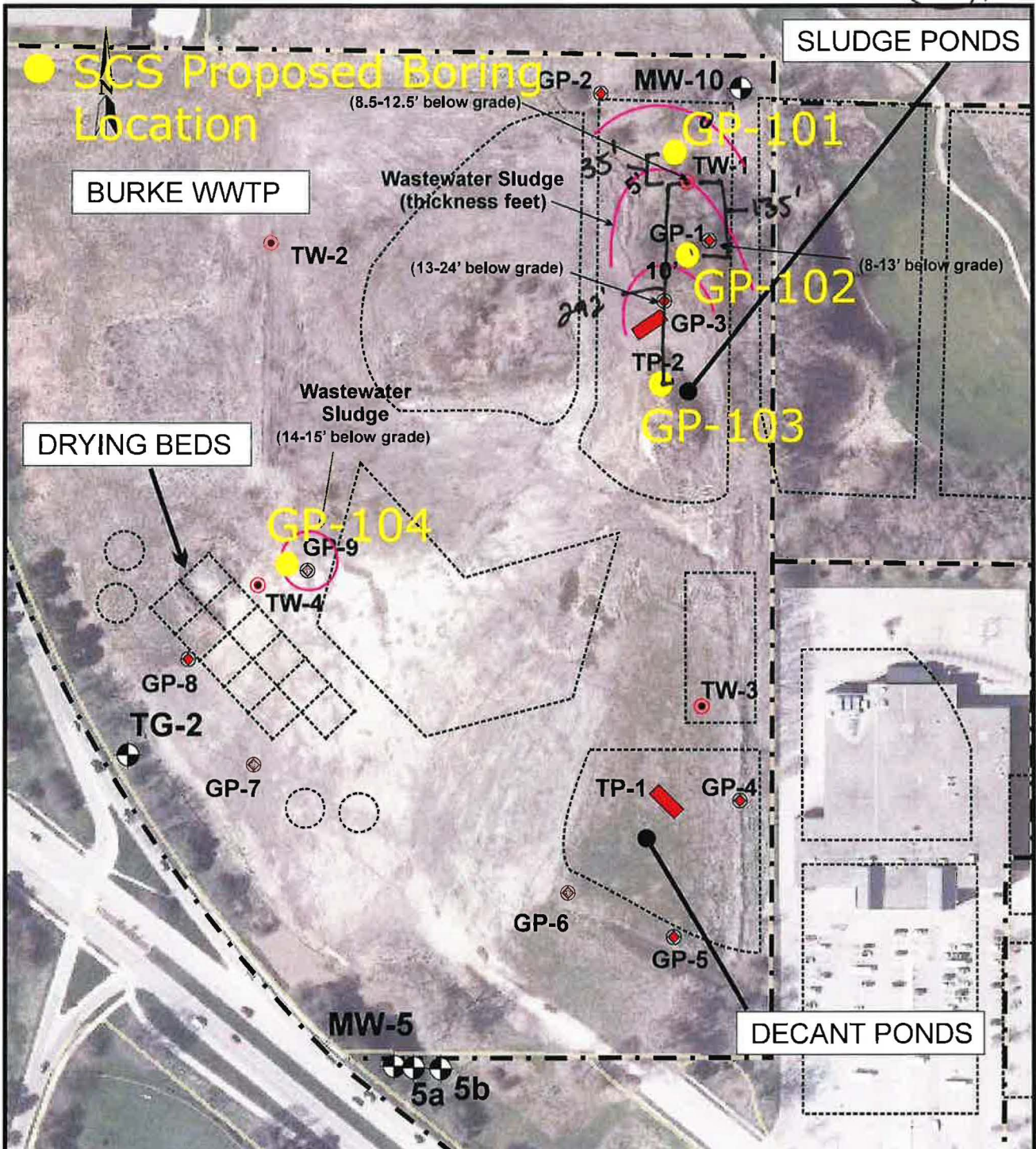
- WW - Wastewater
- W - Water
- S - Soil
- SL - Sludge
- MS - Miscellaneous
- OL - Oil
- A - Air
- SE - Sediment
- SO - Soil
- L - Leachate
- WI - Wipe
- DW - Drinking Water
- O - Other

Client Comments

Lab Comments:

# Figure 2. Site Plan

101 - 10-12  
 102 - 5-7.5  
 2.5-10  
 103 - 2-9, 10-12.5, 20-25



**LEGEND**

TW-1  
 ● - Monitoring Well (Seymour 2018)

MW-6  
 ◆ - Monitoring Well (Former Truax Landfill)

0 200' 400'

1 INCH = 200 FEET  
 SCALE IS APPROXIMATE

FILE/PATH: D:\PROJECTS\RUEDEBUSCH\BurkeWWTP-layout.cdr

DATE: 01/08/2019

PREPARED: MDF APPROVED:

SOURCE: Dane County Public Mapping - 2017 Aerial REA Basemap 2002

**SEYMOUR ENVIRONMENTAL SERVICES, INC.**

LOCATIONS OF WASTEWATER SLUDGE  
 Burke Wastewater Treatment Plant  
 1401 Packers Avenue  
 Madison, Wisconsin

**FIGURE 4**



Table 2. Groundwater Analytical Results Summary - PFAS  
MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175  
(Results are in ng/L)

Free Acid Name			Perfluorobutanoic acid	Perfluoropentanoic acid	Perfluorohexanoic acid	Perfluoroheptanoic acid	Perfluorooctanoic acid	Perfluorononanoic acid	Perfluorodecanoic acid	Perfluoroundecanoic acid	Perfluorododecanoic acid	Perfluorotridecanoic acid	Perfluorotetradecanoic acid	Perfluoro-n-hexadecanoic acid	Perfluorobutanesulfonic acid
Acronym			PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTriA	PFTeA	PFHxDA	PFBS
Sample	Date	CAS #	375-22-4	2706-90-3	307-24-4	375-85-9	335-67-1	375-95-1	335-76-2	2058-94-8	307-55-1	72629-94-8	376-06-7	67905-19-5	375-73-5
TW-1	2/26/2019		15	<17 G	<4.2 G	3.3	<u>25</u>	<0.23	<0.26	<0.93	<0.46	<1.1	<0.24	NA	3.0
	8/23/2019		14	12	14	4.4	<u>26</u>	0.3 J	<0.29	<1.0	<0.52	<1.2	<0.27	<0.84	7.5
TW-2	2/26/2019		33 B	<0.43	<0.51	<0.22	3.1	<0.24	<0.27	<0.97	<0.49	<1.2	<0.26	NA	<0.18
	8/23/2019		34	<0.45	<0.53	0.26 J	2.9	<0.25	<0.28	<1.0	<0.50	<1.2	<0.27	<0.82	0.75 J
TW-3	2/26/2019		31 B	<4.4 G	2.7	1.7 J	3.6	<0.24	<0.28	<0.98	<0.49	<1.2	<0.26	NA	1.9
	8/23/2019		26	2.4	3.3	1.3 J	5.2	<0.24	<0.28	<0.99	<0.50	<1.2	<0.26	<0.80	1.3 J
TW-4	2/26/2019		26	<0.45	2.3	2.0	<u>18</u>	2.4 B	<0.28	<1.0	<0.50	<1.2	<0.26	NA	2.9
	8/23/2019		29	0.79 J	1.3 J	1.6 J	<u>14</u>	0.91 J	<0.29	<1.0	<0.52	<1.2	<0.27	<0.84	2.3
	8/23/2019 (Dup)		29	0.75 J	1.2 J	1.1 J	<u>16</u>	1.0 J	<0.28	<1.0	<0.50	<1.2	<0.26	<0.81	2.1
MW-10	8/23/2019		20	3.9	7.2	1.8	3.6	<0.25	<0.29	<1.0	<0.51	<1.2	<0.27	<0.82	1.8
Field Blank	2/26/2019		<0.32	<0.45	<0.53	<0.23	<0.78	<0.25	<0.29	<1.0	<0.51	<1.2	<0.27	NA	<0.18
	8/23/2019		<0.33	<0.46	<0.54	<0.23	<0.79	<0.25	<0.29	<1.0	<0.51	<1.2	<0.27	<0.83	<0.19
Equipment Blank	2/26/2019		<0.39	<0.54	<0.64	<0.28	<0.94	<0.30	<0.34	<1.2	<0.61	<1.4	0.33 J	NA	<0.22
	8/23/2019		<0.36	<0.50	<0.59	<0.25	<0.87	<0.28	<0.32	<1.1	<0.56	<1.3	<0.30	<0.91	<0.20

Table 2. Groundwater Analytical Results Summary - PFAS  
MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175  
(Results are in ng/L)

Free Acid Name			Perfluoro-n-octadecanoic acid	Perfluoropentanesulfonic acid	Perfluorohexanesulfonic acid	Perfluoroheptanesulfonic acid	Perfluorooctanesulfonic acid	Perfluorononanesulfonic acid	Perfluorodecane sulfonic acid	Perfluorooctanesulfonamide	2-(N-Methylperfluorooctanesulfonamido) acetic acid	2-(N-Ethylperfluorooctanesulfonamido) acetic acid	4:2 Fluorotelomer sulfonic acid	6:2 Fluorotelomer sulfonic acid	8:2 Fluorotelomer sulfonic acid
Acronym			PFODA	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	FOSA	N-MeFOSAA	N-EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS
Sample	Date	CAS #	16517-11-6	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	754-91-6	2355-31-9	2991-50-6	757124-72-4	27619-97-2	39108-34-4
TW-1	2/26/2019		NA	2.5	50 B	<0.16	<u>9.7</u>	<0.13	<0.27	<0.29	<2.6	<1.6	<4.4	3.3 J	<1.7
	8/23/2019		<0.43	2.3	58 B	<0.18	<u>13</u> I	<0.15	<0.30	<0.33	<2.9	<1.8	<4.9	<1.9	<1.9
TW-2	2/26/2019		NA	<0.27	1.8 B	<0.17	5.1	<0.14	<0.28	<0.31	<2.7	<1.7	<4.6	<1.8	<1.8
	8/23/2019		<0.42	<0.27	1.50 JB	<0.17	5.7	<0.15	<0.29	0.46 JB	<2.8	<1.7	<4.8	<1.8	<1.8
TW-3	2/26/2019		NA	<0.27	7.8 B	<0.17	<0.48	<0.14	<0.28	<0.31	<2.8	<1.7	<4.6	6.3 J	<1.8
	8/23/2019		<0.42	<0.27	10 B	<0.17	<0.49	<0.14	<0.29	0.59 JB	<2.8	<1.7	<4.7	<1.8	<1.8
TW-4	2/26/2019		NA	1.3 J	5.4 B	1.9	<u>23</u>	<0.15	<0.29	<0.32	<2.8	<1.7	<4.7	4.2 J	<1.8
	8/23/2019		<0.43	0.56 J	4.5 B	0.81 J	<u>9.7</u> I	<0.15	<0.30	<0.33	<2.9	<1.8	<4.9	49	<1.9
	8/23/2019 (Dup)		<0.42	0.75 J	4.70 B	0.77 J	<u>8.8</u> I	<0.15	<0.29	<0.32	<2.8	<1.7	<4.7	41	<1.8
MW-10	8/23/2019		<0.43	1.0 J	2.7 B	<0.18	8.3	<0.15	<0.30	<0.32	<2.9	<1.8	<4.8	4.8 J	<1.8
Field Blank	2/26/2019		NA	<0.28	0.30 JB	<0.17	<0.50	<0.15	<0.29	<0.32	<2.9	<1.7	<4.8	<1.8	<1.8
	8/23/2019		<0.43	<0.28	0.26 JB	<0.18	<0.50	<0.15	<0.30	0.41 JB	<2.9	<1.8	<4.8	<1.9	<1.9
Equipment Blank	2/26/2019		NA	<0.33	0.33 JB	<0.21	<0.60	<0.18	<0.36	<0.39	<3.4	<2.1	<5.8	<2.2	<2.2
	8/23/2019		<0.47	<0.31	0.27 JB	<0.19	<0.55	<0.16	<0.33	<0.36	<3.2	<1.9	<5.3	<2.0	<2.0

Table 2. Groundwater Analytical Results Summary - PFAS  
MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175  
(Results are in ng/L)

Free Acid Name			10:2 Fluorotelomer sulfonic acid	N-Ethylperfluorooctanesulfonamide	N-Methylperfluorooctanesulfonamide	Perfluorododecanesulfonic acid	N-Methylperfluorooctanesulfonamidoethanol	N-Ethylperfluorooctanesulfonamidoethanol	4,8-Dioxa-3H-perfluorononanoic acid	Perfluoro(2-((6-chlorohexyl)oxy)ethanesulfonic acid)	Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	2-[(8-Chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluorooctyl)oxy]-1,1,2,2-tetrafluoroethanesulfonic acid	NaDONA	DONA	Ammonium Perfluorooctanoate	PFOA + PFOS Combined	
Acronym			10:2 FTS	N-EtFOSA	N-MeFOSA	PFDoS	N-MeFOSE	N-EtFOSE	ADONA	F-53B Major	GenX	F-53B Minor	NaDONA	DONA	APFO		
Sample	Date	CAS #	120226-60-0	4151-50-2	31506-32-8	79780-39-5	24448-09-7	1691-99-2	919005-14-4	756426-58-1	13252-13-6	763051-92-9	NE	919005-14-4	3825-26-1		
TW-1	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<u>34.7</u>
	8/23/2019		<0.18	<0.82	<0.40	<0.42	<1.3	<0.80	<0.18	<0.23	<1.4	<0.30	<0.18	<0.17	27	39.0	
TW-2	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.2
	8/23/2019		<0.17	<0.80	<0.39	<0.41	<1.3	<0.78	<0.17	<0.22	<1.4	<0.29	<0.17	<0.16	3.0	8.6	
TW-3	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.6
	8/23/2019		<0.17	<0.79	<0.39	<0.41	<1.3	<0.77	<0.17	<0.22	<1.4	<0.29	<0.17	<0.16	5.4	5.2	
TW-4	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<u>41.0</u>
	8/23/2019		<0.18	<0.82	<0.41	<0.42	<1.3	<0.80	<0.18	<0.23	<1.4	<0.30	<0.18	<0.17	15	<u>23.7</u>	
	8/23/2019 (Dup)		<0.17	<0.79	<0.39	<0.41	<1.3	<0.77	<0.17	<0.22	<1.4	<0.29	<0.17	<0.16	16	<u>24.8</u>	
MW-10	8/23/2019		<0.18	<0.80	<0.40	<0.42	<1.3	<0.79	<0.18	<0.22	<1.4	<0.30	<0.18	<0.17	3.8	11.9	
Field Blank	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.28
	8/23/2019		<0.18	<0.81	<0.40	<0.42	<1.3	<0.79	<0.18	<0.22	<1.4	<0.30	<0.18	<0.17	<0.82	<1.29	
Equipment Blank	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.54
	8/23/2019		<0.19	<0.89	<0.44	<0.46	<1.4	<0.87	<0.19	<0.24	<1.5	<0.33	<0.19	<0.18	<0.90	<1.42	

Abbreviations:

µg/kg = micrograms per kilogram or parts per billion (ppb)  
CAS No. = Chemical Abstracts Service Number

NE = Not Established  
-- = Not Applicable

NA = Not Analyzed

Notes:

Brown shading indicates compound was also detected in one or more soil samples

Laboratory Notes/Qualifiers:

**Underlined** results exceed the proposed groundwater enforcement standard of 20 ng/L for PFOS+PFOS combined.

\* = LCS or LCSD is outside acceptance limits. Isotope Dilution analyte is outside acceptance limits.

B = Compound was found in the blank and sample.

E = Result exceeded calibration range.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

I = Value is estimated maximum possible concentration.

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Last revision by: EO  
Checked by: AJR  
Proj Mgr QA/QC: EO

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Date: 10/8/2019

**Table 1. Soil Analytical Results Summary - PFAS**  
**MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175**  
 (Results are in µg/kg)

Free Acid Name			Perfluorobutanoic acid	Perfluoropentanoic acid	Perfluorohexanoic acid	Perfluoroheptanoic acid	Perfluorooctanoic acid	Perfluorononanoic acid	Perfluorodecanoic acid	Perfluoroundecanoic acid	Perfluorododecanoic acid	Perfluorotridecanoic acid	Perfluorotetradecanoic acid	Perfluoro-n-hexadecanoic acid	Perfluorobutanesulfonic acid
Acronym			PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTriA	PFTeA	PFHxDA	PFBS
Sample	Date	CAS #	375-22-4	2706-90-3	307-24-4	375-85-9	335-67-1	375-95-1	335-76-2	2058-94-8	307-55-1	72629-94-8	376-06-7	67905-19-5	375-73-5
GP-101 (10-12')	8/15/2019		0.11 J	<0.21	<0.12	<0.080	0.35 J	<0.10	<0.061	<0.10	<0.19	<0.14	<0.15	<0.12 *	3.6 B
GP-102 (7.5-10')	8/15/2019		0.42 J	<0.17	<0.094	<0.065	0.61	<0.081	<0.049	<0.081	<0.15	<0.11	<0.12	<0.099 *	1.7 B
GP-103 (8-9')	8/15/2019		0.53	0.18 J	0.39 J	0.23 J	0.74	<0.084	<0.051	<0.084	<0.16	<0.12	<0.13	<0.10 *	5.7 B
GP-103 (10-12.5') <sup>1</sup>	8/15/2019		0.30 JB	<0.30	<0.16	<0.11	<0.34	<0.14	<0.0086	<0.14	<0.26	<0.20	<0.21	<0.17	<0.097
GP-103 (20-24')	8/15/2019		7.8	<0.41	<0.23	<0.16	<0.46	<0.19	<0.12	0.20 J	<0.36	<0.27	<0.29	<0.24 *	5.3 B
GP-104 (9-10')	8/15/2019		0.14 J	<0.098	<0.053	<0.037	<0.11	<0.046	<0.028	<0.046	<0.085	<0.065	<0.068	<0.056 *	1.0 B
GP-104 (13-15')	8/15/2019		0.036 J	<0.099	<0.054	<0.037	<0.11	<0.046	<0.028	<0.046	<0.086	<0.065	<0.069	<0.056 *	1.2 B
Equipment Blank	8/15/2019		<0.31	<0.43	<0.51	<0.22	<0.74	<0.24	<0.27	<0.96	<0.48	<1.1	<0.25	<0.78	<0.18

**Table 1. Soil Analytical Results Summary - PFAS**  
**MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175**  
 (Results are in µg/kg)

Free Acid Name			Perfluoro-n-octadecanoic acid	Perfluoropentanesulfonic acid	Perfluorohexanesulfonic acid	Perfluoroheptanesulfonic acid	Perfluorooctanesulfonic acid	Perfluorononanesulfonic acid	Perfluorodecane sulfonic acid	Perfluorooctanesulfonamide	2-(N-Methylperfluorooctanesulfonamido) acetic acid	2-(N-Ethylperfluorooctanesulfonamido) acetic acid	4:2 Fluorotelomer sulfonic acid	6:2 Fluorotelomer sulfonic acid	8:2 Fluorotelomer sulfonic acid
Acronym			PFODA	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	FOSA	N-MeFOSAA	N-EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS
Sample	Date	CAS #	16517-11-6	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	754-91-6	2355-31-9	2991-50-6	757124-72-4	27619-97-2	39108-34-4
GP-101 (10-12')	8/15/2019		<0.077 *	<0.055	<0.086	<0.097	1.2 J	<0.055	<0.11	<0.23	<1.1	<1.0	<1.0	<0.42	<0.69
GP-102 (7.5-10')	8/15/2019		<0.063 *	<0.045	1.4	<0.079	27	<0.045	<0.088	<0.18	<0.88	<0.83	<0.83	<0.34	<0.56
GP-103 (8-9')	8/15/2019		<0.065 *	<0.046	0.88	1.2	85 E	0.25 J	0.92	0.79	<0.91	14	<0.86	<0.35	<0.58
GP-103 (10-12.5') <sup>1</sup>	8/15/2019		<0.11 *	<0.078	<0.12	<0.14	<0.78	<0.078	<0.15	<0.32	<1.5	<1.4	<1.4	<0.58	<0.97
GP-103 (20-24')	8/15/2019		<0.15 *	<0.11	0.28 J	<0.19	4.1	<0.11	<0.21	<0.44	<2.1	<2.0	<2.0	<0.80	<1.3
GP-104 (9-10')	8/15/2019		<0.035 *	<0.025	<0.039	<0.044	1.1	<0.025	<0.049	<0.10	<0.49	<0.47	<0.47	<0.19	<0.32
GP-104 (13-15')	8/15/2019		<0.036 *	<0.026	<0.040	<0.045	<0.26	<0.026	<0.050	<0.11	<0.50	<0.47	<0.47	<0.19	<0.32
Equipment Blank	8/15/2019		<0.40	<0.26	0.22 J, B	<0.17	<0.47	<0.14	<0.28	<0.31	<2.7	<1.7	<4.6	<1.8	<1.8

**Table 1. Soil Analytical Results Summary - PFAS**  
**MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175**  
 (Results are in µg/kg)

Free Acid Name			10:2 Fluorotelomer sulfonic acid	N-Ethylperfluorooctanesulfonamide	N-Methylperfluorooctanesulfonamide	Perfluorododecane sulfonic acid	N-Methylperfluorooctanesulfonamidoethanol	N-Ethylperfluorooctanesulfonamidoethanol	4,8-Dioxa-3H-perfluorononanoic acid	Perfluoro(2-((6-chlorohexyloxy)ethanesulfonic acid)	Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	2-[(8-Chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluorooctyloxy]-1,1,2,2-tetrafluoroethanesulfonic acid	NaDONA	DONA	Ammonium Perfluorooctanoate
Acronym			10:2 FTS	N-EtFOSA	N-MeFOSA	PFDoS	N-MeFOSE	N-EtFOSE	ADONA	F-53B Major	GenX	F-53B Minor	NaDONA	DONA	APFO
Sample	Date	CAS #	120226-60-0	4151-50-2	31506-32-8	79780-39-5	24448-09-7	1691-99-2	919005-14-4	756426-58-1	13252-13-6	763051-92-9	NE	919005-14-4	3825-26-1
GP-101 (10-12')	8/15/2019		<0.14 *	<0.066	<0.11	<0.17	<0.20	<0.10	<0.053	<0.075	<0.30	<0.061	<0.053	<0.050	0.36 J
GP-102 (7.5-10')	8/15/2019		<0.11 *	<0.054	<0.092	<0.13	<0.16	1.2	<0.043	<0.061	<0.25	<0.049	<0.043	<0.040	0.64
GP-103 (8-9')	8/15/2019		<0.12 *	<0.056	<0.095	<0.14	<0.16	<0.084	<0.044	<0.063	<0.26	<0.051	<0.044	<0.042	0.77
GP-103 (10-12.5') <sup>1</sup>	8/15/2019		<0.19	<0.094	<0.16	<0.23	<0.28	<0.14	<0.074	<0.11	0.54 J	<0.086	<0.074	<0.070	<0.035
GP-103 (20-24')	8/15/2019		<0.27 *	<0.13	<0.22	<0.32	<0.38	<0.19	<0.10	<0.14	<0.59	<0.12	<0.10	<0.097	<0.48
GP-104 (9-10')	8/15/2019		<0.063 *	<0.030	<0.052	<0.076	<0.090	<0.046	<0.024	<0.034	<0.14	<0.028	<0.024	<0.023	<0.11
GP-104 (13-15')	8/15/2019		<0.064 *	<0.031	<0.053	<0.077	<0.091	<0.046	<0.024	<0.035	<0.14	<0.028	<0.024	<0.023	<0.11
Equipment Blank	8/15/2019		<0.17	<0.76	<0.38	<0.39	<1.2	<0.74	<0.17	<0.21	<1.3	<0.28	<0.17	<0.16	<0.77

Abbreviations:

µg/kg = micrograms per kilogram or parts per billion (ppb)

CAS No. = Chemical Abstracts Service Number

NE = Not Established

-- = Not Applicable

Notes:

Blue shading indicates compound was detected in one or more groundwater samples.

Laboratory Notes/Qualifiers:

\* = LCS or LCSD is outside acceptance limits. Isotope Dilution analyte is outside acceptance limits.

B = Compound was found in the blank and sample.

E = Result exceeded calibration range.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

<sup>1</sup> = Sample was prepped or analyzed beyond the specified holding time.

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