Site Investigation Update

Former Burke Wastewater Treatment Plant Property
1401 Packers Avenue
Madison, Wisconsin

Prepared for:

Wisconsin Department of Natural Resources
Remediation and Redevelopment Program
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711

SCS ENGINEERS

25218175.00 | June 29, 2020

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June 29, 2020
File No. 25218175.00

Mr. Mike Schmoller
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Site Investigation Update
Former Burke Wastewater Treatment Plant Property
1401 Packers Ave., Madison, Wisconsin
BRRTS #02-13-315773

Dear Mr. Schmoller:

SCS Engineers (SCS) has prepared this Site Investigation Update, on behalf of Madison Gas and Electric (MGE), to address the per- and polyfluoroalkyl substances (PFAS) contamination at the former Burke Wastewater Treatment Plant site (**Figure 1**). This Site Investigation Update details SCS's activities at the site since June 2019.

SITE BACKGROUND

The Town of Burke Wastewater Treatment Plant (WWTP) was formerly located and operated on the property from approximately 1914 to 1976. Sludge lagoons associated with the WWTP were installed to the east of the treatment plant between 1955 and 1962. At some point prior to complete demolition of the plant, municipal solid waste was placed in a portion of the facility as part of an academic research study. The treatment plant was demolished in the late 1980s or early 1990s and available records suggest that the plant structures were either buried in place or were demolished and buried on the site. **Figure 2** depicts the historic layout of the site and WWTP. The site is south of Dane County's Truax Landfill and nearby the Truax airport where military training takes place. There is a potential that firefighting-related chemicals (PFAS) associated with the nearby airport and/or military training activities may be present in the landfill.

Phase 1 Environmental Site Assessment

In November 2018, SCS performed a Phase 1 Environmental Site Assessment of the site and identified the following recognized environmental conditions (RECs):

1. *The potential for contamination related to the former use of the Property as a wastewater treatment plant (WWTP), including the presence of sludge lagoons; the previous detection of elevated concentrations of organic compounds in some sludge samples at the Property; and the apparent burial on the Property of the treatment plant structures when the plant was demolished, are recognized environmental conditions.*

2. *The presence of known impacts to soil and groundwater that have not been fully delineated at the site above regulatory standards at the Property is a recognized environmental condition.*

3. *The presence of municipal solid waste on the Property is a recognized environmental condition.*

4. *The presence of multiple feet of fill containing combustion byproducts, demolition debris, and fill of unknown origin on the Property is a recognized environmental condition.*

5. *The proximity of the Truax Field Landfill to the Property, the possibility that the toe of the landfill may be on the Property, and the potential for groundwater or soil vapor impacts from the landfill to migrate onto the Property are recognized environmental conditions.*

Seymour Environmental Services Investigative Activities

Seymour Environmental Services, Inc. (Seymour) performed and provided oversight for the following investigative activities at the site in December 2018:

- Excavated municipal solid waste material from a former treatment area associated with the WWTP.
- Installed nine direct-push soil borings on site in areas where contaminants were historically identified.
- Installed four monitoring wells on site at locations of the former sludge pond, former decant pond, sludge drying area, and near the former headworks structure. Developed and sampled monitoring wells.
- Evaluated the presence of waste water treatment sludge during the drilling of soil borings and monitoring wells.
- Sampled soil for volatile organic compounds (VOCs), metals, polycyclic aromatic hydrocarbons (PAHs), and total polychlorinated biphenyls; and groundwater for metals.

Seymour documented their work in correspondence to the Wisconsin Department of Natural Resources (WDNR) dated January 17, 2019 and February 20, 2019. Seymour's investigative activities identified the presence of wastewater sludge and widespread fill material. The primary contaminants detected included metals and PAHs with isolated occurrences of tetrachloroethylene in soil.

SCS Engineers' Investigative Activities

In February 2019, SCS collected groundwater samples from on-site monitoring wells, TW-1 through TW-4, using low-flow methods for analysis of PFAS. The wells were purged and sampled using a peristaltic pump with dedicated high-density polyethylene (HDPE) downhole tubing and Masterflex® C-Flex® (thermoplastic elastomer) pump tubing to minimize the amount of sampling equipment in contact with the water, and also to minimize the potential for cross contamination of the samples. Sampling materials, techniques, and decontamination procedures were conducted in general conformance with the Michigan Department of Environmental Quality General PFAS Sampling Guidance and Groundwater Sampling Guidance.

Two of the four wells contained concentrations of PFAS that exceeded the proposed groundwater enforcement standard of 20 nanograms per liter (ng/L) for PFOA+PFOS combined. Following the sampling event, SCS submitted a workplan to address the PFAS contamination at the site. The workplan included additional rounds of groundwater sampling, including sampling from Truax landfill

monitoring well MW-10, and collecting dried sludge from soil borings. The additional sampling activities are detailed below.

SITE INVESTIGATION ACTIVITIES

Soil Borings

On August 15, 2019, Mr. Adam Watson of SCS oversaw the drilling of four direct-push soil borings (GP-101 through GP-104) at the site. The borings were located within the dried sludge area. Boring locations are shown on **Figure 3**. Drilling services were provided by On-site Environmental Services, Inc., of Sun Prairie, Wisconsin.

All borings were advanced to 20 feet below ground surface (bgs) using a truck mounted Geoprobe™ drill rig. Boring logs were completed for each boring, site soils were classified following the Unified Soil Classification System (USCS) and screened with a photo-ionization detector (PID). Soils observed in the borings were generally silt, clay, and lesser amounts of silty sands. Cinders and possible wastewater sludge were noted in borings GP-101, GP-103, and GP-104. Boring logs and boring abandonment forms are included as **Appendix A**. Soil cuttings were thin spread on site.

Soils were collected using clear PVC liner tubes. Drilling equipment was decontaminated with Alconox solution and triple-rinsed with PFAS-free water prior to drilling each soil boring. PFAS-free plastic sheeting was used to cover the surface used while logging and sampling of soil, and sheeting was replaced at each sample location. Soil samples were jarred immediately upon collection, and all sample containers were double-bagged in Ziploc® bags prior to shipment, and remain bagged until analysis. One equipment blank was collected through the clear PVC core liner supplied by the driller prior to drilling the first soil boring using laboratory supplied PFAS-free water.

One soil sample was collected from borings GP-101 and GP-102 and two soil samples were collected from borings GP-103 and GP-104 for laboratory analysis, from the sample most likely to show impacts based on field observations. The samples were submitted to TestAmerica of West Sacramento, California. Soil samples and an equipment blank were analyzed for PFAS.

Groundwater Sampling

SCS sampled site monitoring wells on August 23, 2019, and March 25, 2020. SCS sampled two additional wells during the March 25, 2020 event, Truax wells MW-5 and TG-2. Monitoring well locations are provided on **Figure 3**. Groundwater samples were analyzed for PFAS.

Groundwater sampling during both events was conducted in a manner in which to minimize the risk of cross-contamination that could occur from sampling equipment, field clothing and personal protective equipment, personal hygiene and personal care products, food packaging, and the environment itself. Both sampling events were performed following the procedures outlined in **Section 1**.

Depth to water was collected from each well but not total depth as to minimize the amount of equipment in contact with groundwater. The water level indicator was rinsed with an Alconox solution and laboratory provided PFAS-free water immediately before collecting a depth to water measurement. Dedicated bailers were removed after depth to water measurement and set aside on PFAS-free plastic sheeting.

Sampling was performed using a peristaltic pump and low-flow techniques. Specific conductivity, temperature, dissolved oxygen, pH, turbidity, and oxidation-reduction potential were measured until stabilization was achieved. Groundwater sampling forms for the August 2019 and March 2020 sampling events are included in **Appendix B**. During both events, each well was sampled using new high-density polyethylene tubing; tubing remained in its original package until it was lowered into the well. Tube cutters were rinsed with Alconox solution and laboratory provided PFAS-free water immediately before cutting the desired length of tubing. Extra caution was taken when collecting the sample; sample containers were opened immediately before and capped immediately after sample collection, and the sampling tubing did not come into contact with the sample container. All groundwater sample containers were double-bagged in Ziploc® bags and remained bagged upon analysis. Samples were shipped overnight to a WDNR-certified laboratory.

Wells were sampled starting with those expected to be the cleanest (MW-5, TG-2, TW-3, TW-4, TW-2, MW-10, and TW-1). Purge water was discharged to the ground surface. One equipment blank and one field blank were collected prior to sampling the first monitoring well using laboratory supplied PFAS-free water. The equipment blank was collected through a new piece of high-density polyethylene tubing using the peristaltic pump. If an atmospheric source of PFAS is suspected, the field blank was collected downwind of the suspected source.

Site monitoring well top of casing elevations, including Truax wells MW-5, MW-10, and TG-2, were re-surveyed on March 25, 2020.

SITE INVESTIGATION RESULTS

Soil Analytical Results

One or more PFAS were detected in each soil sample. Analytical results are summarized in **Table 1**, and the lab report is provided in **Appendix C**. The blue shading in the soil summary table indicates that the shaded compound was also detected in groundwater. There are no established residual contaminant levels (RCLs) for the groundwater migration pathway. RCLs for direct contact have been developed for a few PFAS compounds; however, these RCLs are orders of magnitude greater than the concentrations of PFAS that have been detected in the soil at the site.

The total concentration of detected PFAS compounds in each of the seven soil samples ranged from 0.22 micrograms per kilogram (µg/kg) to 111.58 µg/kg. The highest total concentrations were detected in samples collected from borings GP-102 and GP-103, and the lowest concentrations were detected in the samples collected from boring GP-104. Only the sample from 8 to 9 feet at GP-103 exceeded 100 µg/kg; all of the other samples were less than 33 µg/kg. As indicated by the three samples collected from sediments identified as potential sludge in boring GP-103, the PFAS concentrations in the sludge are variable.

Groundwater Analytical Results

One or more PFAS compounds were detected in all site monitoring wells. Groundwater analytical results are summarized in **Table 2**, and analytical reports are included in **Appendix C**. The brown shading in the groundwater summary table indicates that the shaded compound was also detected in sludge/soil. Monitoring wells TW-1 and TW-4 consistently showed concentrations of PFAS that exceed the proposed groundwater enforcement standard (ES) of 20 ng/L for PFOA+PFOS combined. None of the samples collected from the other wells exceeded the proposed ES.

A total of four PFAS compounds (Perfluorobutanoic acid (PFBA), Perfluorotetradecanoic acid (PFTeA), Perfluorohexanesulfonic acid (PFHxS), and Perfluorooctanesulfonamide (FOSA)) were detected in one or more of the equipment and field blanks. All of the compounds identified in the blanks were detected at estimated concentrations below the laboratory's limit of quantitation and, with the exception of PFTeA, were also detected in the corresponding lab blanks.

Groundwater Elevations

A summary of groundwater elevations is provided as **Table 3.** A water table map depicting the August 2019 and March 2020 groundwater sampling events are provided as **Figure 4** and **Figure 5**, respectively.

The August 2019 water levels indicate flow toward the southeast, with the highest elevations observed at MW10 and TW-1 at the northeast corner of the site. The March 2020 water levels are more variable; however, the high is also at the northeast corner of the site. The ground was very wet during the March 2020 sampling event, and the measured water levels may reflect the effects of local recharge from ponded water at the surface.

CONCLUSIONS AND RECOMMENDATIONS

- Two of the seven water table monitoring wells sampled at the site contain combined PFOA and Perfluorooctanesulfonic acid (PFOS) concentrations greater than the proposed ES of 20 ng/l.

- The two wells where PFAS exceeds the proposed ES are located in areas where Seymour identified buried wastewater treatment sludge. PFAS concentrations in the sludge are variable.

- Based on the apparent prevailing groundwater flow to the southwest and the relatively low PFAS concentrations detected in TW-2, TG-2, and MW-5, the elevated PFAS concentrations in groundwater associated with the buried sludge are not migrating off site.

- Given the fact that the lagoons were closed approximately 40 years ago, it appears that conditions at the site are stable. Active remediation to address the residual PFAS concentrations in the sludge is not necessary at this time.

- SCS recommends setting up a call with MGE and WDNR to discuss the next steps for this site.

REFERENCES

SCS Engineers, 2018, Phase 1 Environmental Site Assessment Report, Poynette Development LLC Property, 1401 Packers Avenue, Madison, WI 53703, November 2018.

SCS Engineers, 2019, Additional Site Investigation Workplan, Former Burke Wastewater Treatment Plant Property, June 2019.

Seymour Environmental Services, Inc., 2019, Environmental Sampling Update Former Town of Burke WWTP – Madison, Wisconsin, January 2019.

Seymour Environmental Services, Inc., 2019, Memo Former Town of Burke WWTP – Madison, Wisconsin, February 2019.

Please do not hesitate to contact us if you have any questions regarding this report.

Sincerely,

Jackie Rennebohm
Staff Geologist
SCS Engineers

Eric Oelkers, PG
Senior Project Manager
SCS Engineers

JR/jsn_lmh/EO

cc: Jeff Jaeckels, MGE
Kyle Kramer, MGE

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Table 3 – Water Level Summary
Figure 1 – Site Location Map
Figure 2 – Historic Site Layout
Figure 3 – Detailed Site Map
Figure 4 – Water Table Map – August 23, 2019
Figure 5 – Water Table Map – March 25, 2020
Appendix A – Soil Boring Logs and Abandonment Forms
Appendix B – Groundwater Sampling Forms
Appendix C – TestAmerica Analytical Reports

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Tables

Table 1. Soil Analytical Results Summary - PFAS
MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175.00
(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')[1]	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
Direct Contact RCL							16,400								16,400,000

Table 1. Soil Analytical Results Summary - PFAS
MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175.00
(Results are in µg/kg)

Free Acid Name			Perfluoro-n-octadecanoic acid	Perfluoropentanesulfonic acid	Perfluorohexanesulfonic acid	Perfluoroheptanesulfonic acid	Perfluorooctanesulfonic acid	Perfluorononanesulfonic acid	Perfluorodecanesulfonic 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')[1]	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
Direct Contact RCL							16,400								

Table 1. Soil Analytical Results Summary - PFAS
MGE Burke WWTP Site - Madison / SCS Engineers Project #25218175.00
(Results are in µg/kg)

Free Acid Name			10:2 Fluorotelomer sulfonic acid	N-Ethylperfluorooctanesulfonamide	N-Methylperfluorooctanesulfonamide	Perfluorododecanesulfonic acid	N-Methyl perfluorooctanesulfonamidoethanol	N-Ethyl perfluorooctanesulfonamidoethanol	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
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')[1]	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
Direct Contact RCL															

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.
[1] = Sample was prepped or analyzed beyond the specified holding time.

Created by: AJR Date: 9/20/2019
Last revision by: EO Date: 10/11/2019
Checked by: LMH Date: 10/14/2019
Proj Mgr QA/QC: EO Date: 10/21/2019

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
TG-2	3/25/2020		11 B	0.99 J	1.2 J	0.71 J	5.9	<0.24	<0.28	<0.98	<0.49	<1.2	<0.26	<0.80	2.2
TW-1	2/26/2019		15	<17 G	<4.2 G	3.3	**25**	<0.23	<0.26	<0.93	<0.46	<1.1	<0.24	NA	3.0
	8/23/2019		14	12	14	4.4	**26**	0.3 J	<0.29	<1.0	<0.52	<1.2	<0.27	<0.84	7.5
	3/25/2020		6.5 B	1.4 J	2.6	1.5 J	**12**	0.42 J	<0.28	<0.99	<0.50	<1.2	<0.26	<0.80	1.6 J
	3/25/2020 Dup		6.5 B	1.8	2.5	1.4 J	**13**	0.57 J	<0.29	<1.0	<0.51	<1.2	<0.27	<0.82	1.4 J
TW-2	2/26/2019		33 ^	<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
	3/25/2020		36 B	<0.45	<0.53	<0.23	2.2	<0.25	<0.28	<1.0	<0.50	<1.2	<0.26	<0.81	1.8
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
	3/25/2020		21 B	<4.6	<5.4	<2.3	<7.9	<2.5	<2.9	<10	<5.1	<12	<2.7	<8.3	2.0 J
TW-4	2/26/2019		26	<0.45	2.3	2.0	**18**	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	**14**	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	**16**	1.0 J	<0.28	<1.0	<0.50	<1.2	<0.26	<0.81	2.1
	3/25/2020		28 B	1.9	1.7 J	2.1	**19**	2.3	<0.28	<0.99	<0.49	<1.2	<0.26	<0.80	2.9
MW-5	3/25/2020		5.4 B	0.83 J	0.68 J	0.38 J	<0.76	0.25 J	<0.28	<0.98	<0.49	<1.2	<0.26	<0.79	0.67 J
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
	3/25/2020		21 B	2.7	3.3	1.1 J	1.9	<0.24	<0.28	<1.0	<0.50	<1.2	<0.26	<0.81	2.0
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
	3/25/2020		<0.34	<0.47	<0.56	<0.24	<0.82	<0.26	<0.30	<1.1	<0.53	<1.3	<0.28	<0.86	<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
	3/25/2020		1.2 JB	<0.44	<0.52	<0.22	<0.76	<0..24	<0.28	<0.98	<0.49	<1.2	<0.26	<0.79	<0.18

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	Perfluorodecanesulfonic 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
TG-2	3/25/2020		<0.41 *1	1.5 J	5.9 B	0.32 J	4.9 I	<0.14	<0.29	<0.31	<2.8	<1.7	<4.7	<1.8	<1.8
TW-1	2/26/2019		NA	2.5	50 B	<0.16	**9.7**	<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	**13** I	<0.15	<0.30	<0.33	<2.9	<1.8	<4.9	<1.9 ^	<1.9 ^
	3/25/2020		<0.42 *1	0.75 J	31 B	<0.17	**11** I	<0.14	<0.29	0.45 J	<2.8	<1.7	<4.7	<1.8	<1.8
	3/25/2020 Dup		<0.42 *1	1.1 J	32 B	<0.18	**11** I	<0.15	<0.29	0.34 J	<2.9	<1.8	<4.8	<1.8	<1.8
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
	3/25/2020		<0.42 *1	<0.27	1.4 JB	<0.17	4.8	<0.15	<0.29	<0.32	<2.8	<1.7	<4.7	<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
	3/25/2020		<4.3 *1	<2.8	6.2 JB	<1.8	<5.0	<1.5	<3.0	<3.3	<29	<18	<49	<19	<19
TW-4	2/26/2019		NA	1.3 J*	5.4 B	1.9	**23**	<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	**9.7** 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	**8.8** I	<0.15	<0.29	<0.32	<2.8	<1,7	<4.7	41	<1.8
	3/25/2020		<0.41 *1	1.1 J	6.4 B	1.5 J	**15** I	<0.14	<0.29	<0.31	<2.8	<1.7	<4.7	<1.8	<1.8
MW-5	3/25/2020		<0.41 *1	<0.27	1.4 JB	<0.17	1.5 J I	<0.14	<0.29	<0.31	<2.8	<1.7	<4.6	<1.8	<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
	3/25/2020		<0.42 *1	0.56 J	2.6 B	<0.17	6.2	<0.14	<0.29	<0.32	<2.8	<1.7	<4.7	<1.8	<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
	3/25/2020		<0.45 *1	<0.29	0.24 JB	<0.18	<0.52	<0.16	<0.31	<0.34	<3.0	<1.8	<5.0	<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
	3/25/2020		<0.41 *1	<0.27	0.29 JB	<0.17	<0.48	<0.14	<0.29	<0.31	<2.8	<1.7	<4.6	<1.8	<1.8

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-Methyl perfluorooctanesulfonamidoethanol	N-Ethyl perfluorooctanesulfonamidoethanol	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	
TG-2	3/25/2020		<0.17	<0.78	<0.39	<0.40	<1.3	<0.76	<0.17	<0.21	<1.3	<0.29	<0.17	<0.16	6.2	10.8
TW-1	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**34.7**
	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**
	3/25/2020		<0.17	<0.78	<0.39	<0.41	<1.3	<0.77	<0.17	<0.22	<1.4	<0.29	<0.17	<0.16	13	**23.0**
	3/25/2020 Dup		<0.18	<0.80	<0.40	<0.41	<1.3	<0.78	<0.18	<0.22	<1.4	<0.29	<0.18	<0.17	14	**24.0**
TW-2	2/26/2019		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
	3/25/2020		<0.17	<0.79	<0.39	<0.41	<1.3	<0.77	<0.17	<0.22	<1.4	<0.29	<0.17	<0.16	2.3	7.0
TW-3	2/26/2019		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
	3/25/2020		<1.8	<8.1	<4.0	<4.2	<13	<7.9	<1.8	<2.2	<14	<3.0	<1.8	<1.7	<8.2	<12.9
TW-4	2/26/2019		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**41.0**
	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	**23.7**
	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	**24.8**
	3/25/2020		<0.17	<0.78	<0.39	<0.40	<1.3	<0.76	<0.17	<0.22	<1.3	<0.29	<0.17	<0.16	19	**34.0**
MW-5	3/25/2020		<0.17	<0.78	<0.38	<0.40	<1.2	<0.76	<0.17	<0.21	<1.3	<0.29	<0.17	<0.16	<0.78	1.5
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
	3/25/2020		<0.17	<0.79	<0.39	<0.41	<1.3	<0.77	<0.17	<0.22	<1.4	<0.29	<0.17	<0.16	2.0	8.1
Field Blank	2/26/2019		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
	3/25/2020		<0.18	<0.84	<0.42	<0.44	<1.4	<0.82	<0.18	<0.23	<1.5	<0.31	<0.18	<0.17	<0.85	<1.34
Equipment Blank	2/26/2019		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
	3/25/2020		<0.17	<0.78	<0.38	<0.40	<1.2	<0.76	<0.17	<0.21	<1.3	<0.29	<0.17	<0.16	<0.78	<1.24

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

Abbreviations:
ng/L = nanograms per liter or parts per trillion (ppt)
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
Bold+Underlined results exceed the proposed groundwater enforcement standard of 20 ng/L for PFOS+PFOA combined.

Laboratory Notes/Qualifiers:
* = LCS or LCSD is outside acceptance limits.
^ = Isotope Dilution analyte is outside acceptable limits.
*1 = LCS/LCSD RPD exceeds control limits.
B = Compound was found in the blank and sample.
G = The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference.
I = Value is 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.

Created by:	AJR	Date:	9/20/2019
Last revision by:	MDB	Date:	8/3/2020
Checked by:	AJR	Date:	8/5/2020
Proj Mgr QA/QC:	REL	Date:	8/5/2020

Table 3. Water Level Summary
MG&E Burke Site - Madison, WI / SCS Engineers Project #25218175.00

Raw Data	Depth to Water in feet below top of well casing						
	TW1	TG2	TW2	TW3	TW4	MW5	MW10
Measurement Date							
February 26, 2019	9.45	NM	21.36	14.97	18.20	NM	NM
August 23, 2019	10.67	NM	21.24	15.05	18.30	NM	6.40
March 25, 2020	4.8	10.98	20.85	14.03	17.05	5.34	5.70

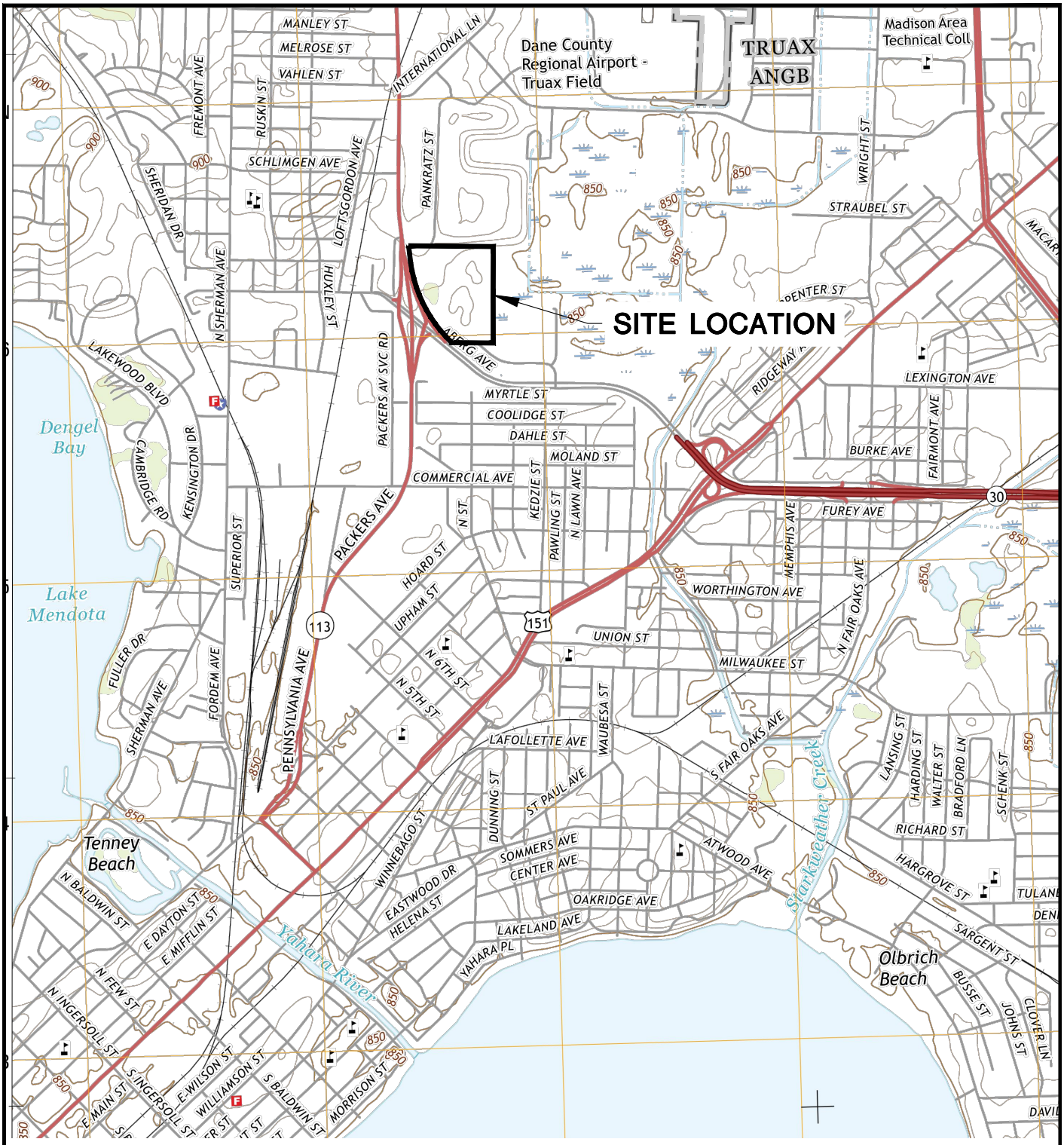
Ground Water Elevation in feet above mean sea level (amsl)							
Well Number	TW1	TG2	TW2	TW3	TW4	MW5	MW10
Top of Casing Elevation (feet amsl)	860.29	860.49	869.67	863.64	866.81	856.17	858.86
Screen Length (ft)	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Total Depth (ft from top of casing)	17.30	20.40	27.10	22.10	24.30	17.70	18.20
Top of Well Screen Elevation (ft)	852.99	850.09	852.57	851.54	852.51	848.47	850.66
Measurement Date							
February 26, 2019	850.84	NM	848.31	848.67	848.61	NM	NM
August 23, 2019	849.62	NM	848.43	848.59	848.51	NM	852.46
March 25, 2020	855.49	849.51	848.82	849.61	849.76	850.83	853.16
Bottom of Well Elevation (ft)	842.99	840.09	842.57	841.54	842.51	838.47	840.66

Notes:
NM = not measured

Created by: JR Date: 4/4/2019
Last revision by: JR Date: 4/13/2020
Checked by: ACW Date: 4/13/2020

I:\25218175.00\Deliverables\Site Update April 2020\Tables\[Table 3. Water Level Summary.xlsx]levels

Figures



N

MADISON EAST QUADRANGLE
WISCONSIN–DANE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2016
SCALE: 1" = 2,000'

CLIENT	MADISON GAS AND ELECTRIC 120 S. BALDWIN ST. MADISON, WI, 53703	SITE	POYNETTE DEVELOPMENT LLC 1401 PACKERS AVENUE MADISON, WISCONSIN

SITE LOCATION MAP

PROJECT NO.	25218175.00	DRAWN BY:	KP
DRAWN:	10/24/18	CHECKED BY:	NK
REVISED:	10/24/18	APPROVED BY:	

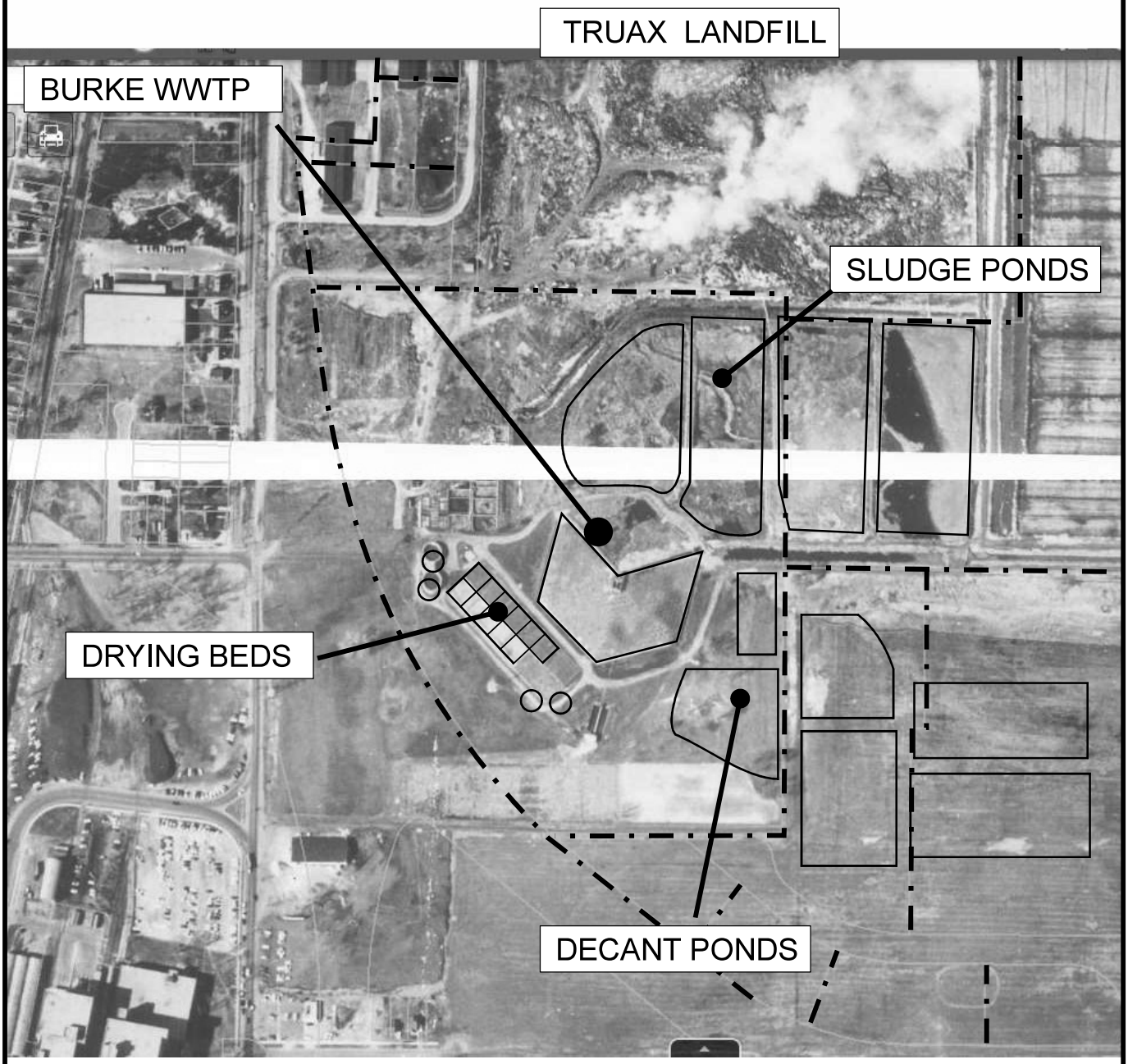
ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE 1

I:\25218175.00\Drawings\Site Location.dwg, 10/24/2018 8:10:11 AM

Figure 2. Historic Site Layout



N

0 400' 800'

1 INCH = 400 FEET
SCALE IS APPROXIMATE

FILE/PATH: D:\ PROJECTS\RUEDEBUSCH\ BurkeWWTP-layout.cdr
DATE: 01/08/2019
PREPARED: MDF APPROVED:
SOURCE:
Dane County Public Mapping
Aerial Photo from 1957

SEYMOUR ENVIRONMENTAL SERVICES, INC.	HISTORIC SITE LAYOUT Burke Wastewater Treatment Plant 1401 Packers Avenue Madison, Wisconsin	FIGURE 2

LEGEND

×	BENCHMARK (SEE NOTE 6)
⊕	MONITORING WELL
⊕	GEOPROBE SOIL BORING

NOTES:

1. MARCH 19, 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY
2. MAP IN NAD83 WISCONSIN STATE PLANE, SOUTH ZONE COORDINATE SYSTEM.
3. MONITORING WELL LOCATIONS SURVEYED BY SCS ENGINEERS ON MARCH 25, 2020.
4. BORINGS GP-1 THROUGH GP-9 WERE INSTALLED BY SEYMOUR ENVIRONMENTAL SERVICES, INC.
5. BORINGS GP-101 THROUGH GP-104 WERE INSTALLED BY SCS ENGINEERS.
6. BENCHMARKS BASED ON TOPOGRAPHIC SURVEY DRAWING BY WILLIAMSON SURVEYING & ASSOCIATES, LLC. DATED OCTOBER 3, 2017. BENCHMARKS ELEVATIONS ADJUSTED FROM NGVD 29 DATUM AS SHOWN IN WILLIAMSON DRAWING TO NAVD 88 DATUM. BENCHMARKS LOCATED BY SCS ENGINEERING DURING MARCH 25, 2020 SURVEY.

N

200 0 200

SCALE: 1" = 200'

PROJECT NO.	25218175.00	DRAWN BY:	BSS
DRAWN:	03/27/2020	CHECKED BY:	JR
REVISED:	04/27/2020	APPROVED BY:	

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

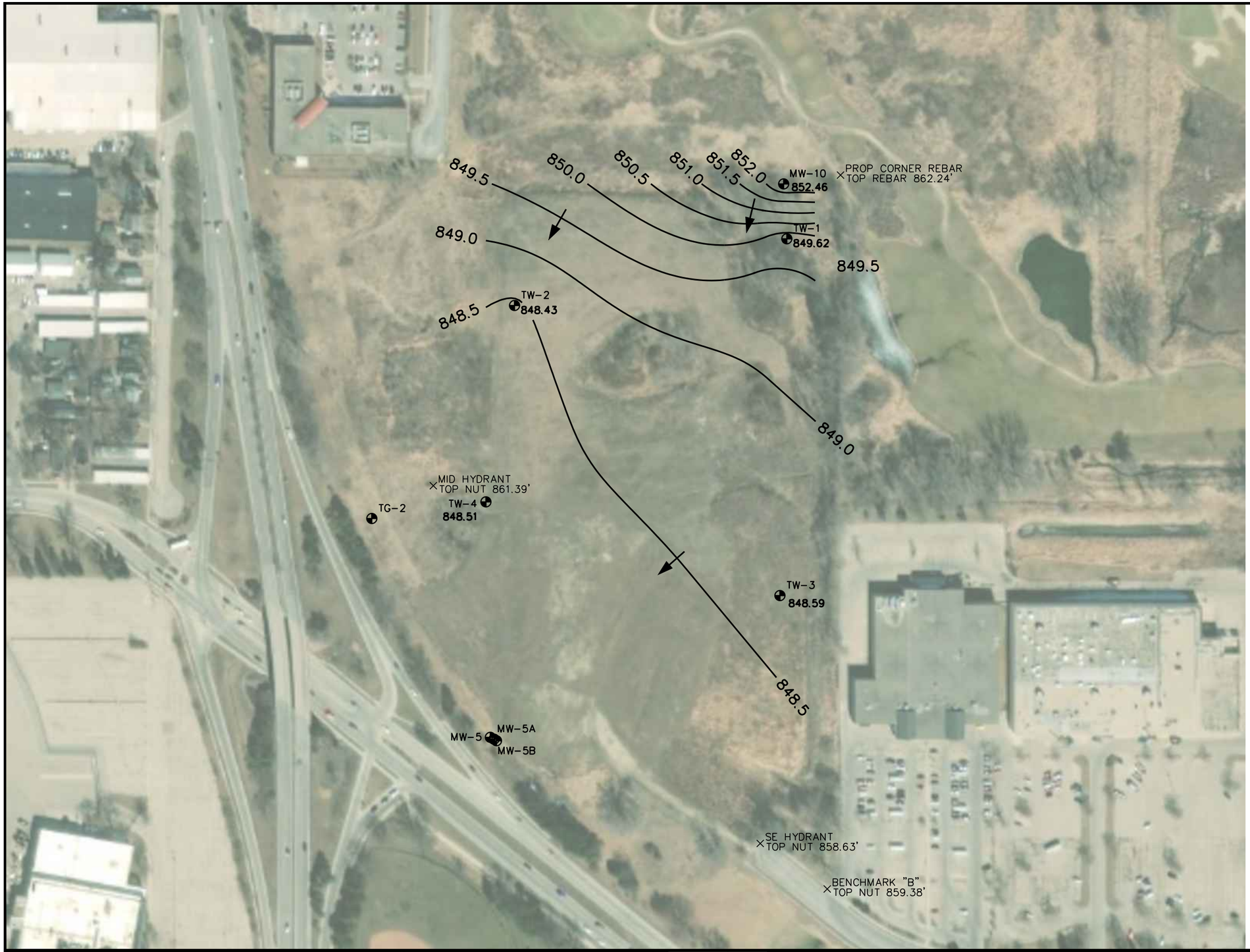
CLIENT: MGE Madison Gas and Electric
MADISON GAS AND ELECTRIC
120 S. BALDWIN ST.
MADISON, WI, 53703

SITE: MG&E BURKE SITE
1401 PACKERS AVENUE
MADISON, WI

DETAILED SITE MAP

FIGURE 3

I:\25218175.00\Drawings\Site an.dwg, 4/27/2020 11:08:54 AM



LEGEND

×	BENCHMARK (SEE NOTE 4)
⊕	MONITORING WELL
862.95	WATER TABLE ELEVATION MEASURED ON 08/23/2019
———	WATER TABLE CONTOUR
→	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MARCH 19, 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY
2. MAP IN NAD83 WISCONSIN STATE PLANE, SOUTH ZONE COORDINATE SYSTEM.
3. MONITORING WELL LOCATIONS SURVEYED BY SCS ENGINEERS ON MARCH 25, 2020.
4. BENCHMARKS BASED ON TOPOGRAPHIC SURVEY DRAWING BY WILLIAMSON SURVEYING & ASSOCIATES, LLC. DATED OCTOBER 3, 2017. BENCHMARKS ELEVATIONS ADJUSTED FROM NGVD 29 DATUM AS SHOWN IN WILLIAMSON DRAWING TO NAVD 88 DATUM. BENCHMARKS LOCATED BY SCS ENGINEERING DURING MARCH 25, 2020 SURVEY.

N

200 0 200

SCALE: 1" = 200'

PROJECT NO.	25218175.00	DRAWN BY:	KP
DRAWN:	04/27/2020	CHECKED BY:	JR
REVISED:	04/27/2020	APPROVED BY:	

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

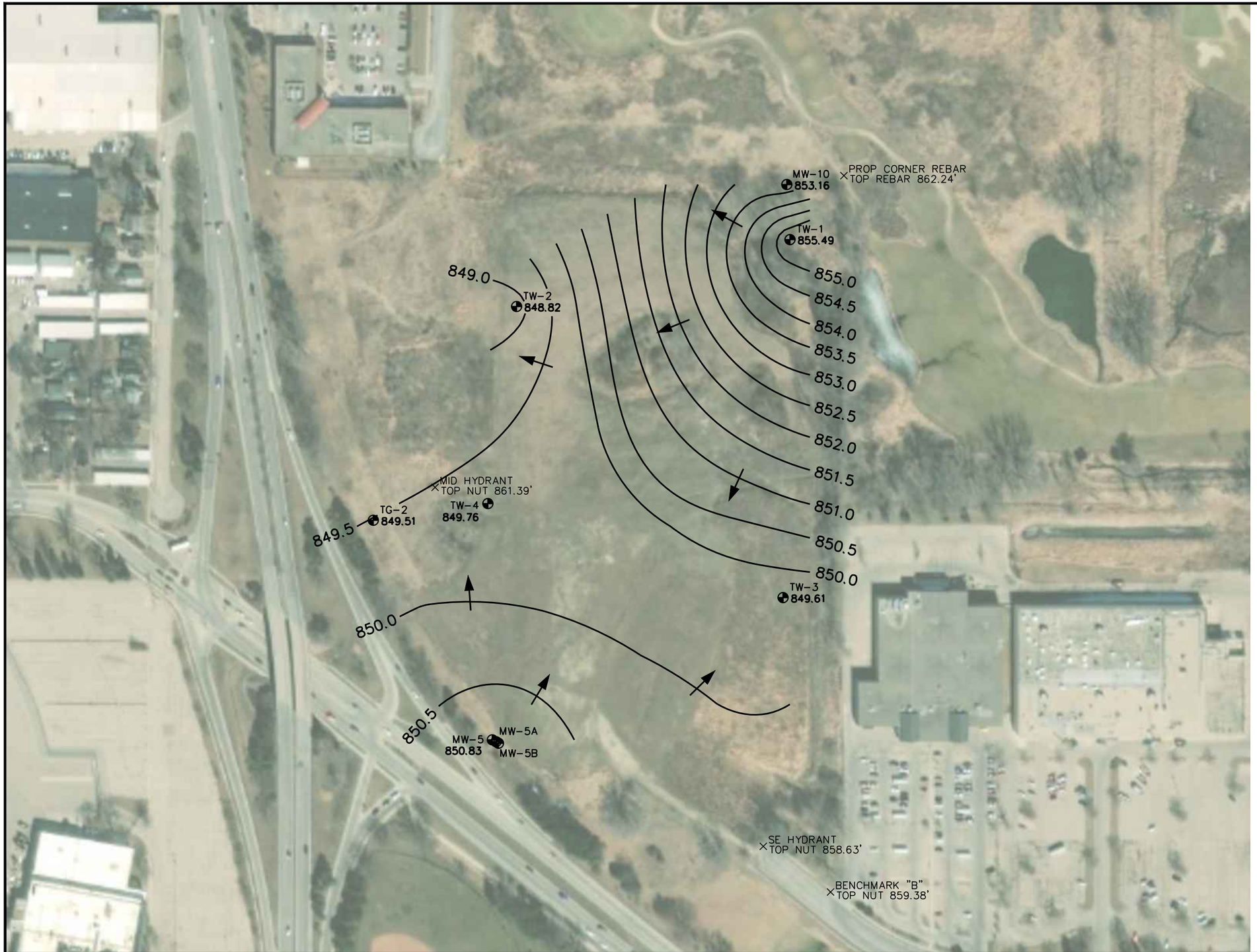
CLIENT: MGE Madison Gas and Electric
MADISON GAS AND ELECTRIC
120 S. BALDWIN ST.
MADISON, WI, 53703

SITE: MG&E BURKE SITE
1401 PACKERS AVENUE
MADISON, WI

WATER TABLE MAP
AUGUST 23, 2019

FIGURE
4

I:\25218175.00\Drawings\□ t□□.dwg, 4/27/2020 11:□7:24 AM



LEGEND

×	BENCHMARK (SEE NOTE 4)
⊕	MONITORING WELL
853.16	WATER TABLE ELEVATION MEASURED ON 03/25/2020
———	WATER TABLE CONTOUR
→	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MARCH 19, 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY
2. MAP IN NAD83 WISCONSIN STATE PLANE, SOUTH ZONE COORDINATE SYSTEM.
3. MONITORING WELL LOCATIONS SURVEYED BY SCS ENGINEERS ON MARCH 25, 2020.
4. BENCHMARKS BASED ON TOPOGRAPHIC SURVEY DRAWING BY WILLIAMSON SURVEYING & ASSOCIATES, LLC. DATED OCTOBER 3, 2017. BENCHMARKS ELEVATIONS ADJUSTED FROM NGVD 29 DATUM AS SHOWN IN WILLIAMSON DRAWING TO NAVD 88 DATUM. BENCHMARKS LOCATED BY SCS ENGINEERING DURING MARCH 25, 2020 SURVEY.

N

200 0 200

SCALE: 1" = 200'

PROJECT NO.	25218175.00	DRAWN BY:	KP
DRAWN:	04/27/2020	CHECKED BY:	JR
REVISED:	05/21/2020	APPROVED BY:	

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: MADISON GAS AND ELECTRIC
120 S. BALDWIN ST.
MADISON, WI, 53703

SITE: MG&E BURKE SITE
1401 PACKERS AVENUE
MADISON, WI

WATER TABLE MAP
MARCH 25, 2020

FIGURE 5

I:\25218175.00\Drawings\...t...dwg, 5/21/2020 ...17:...0 AM

Appendix A

Soil Boring Logs and Abandonment Forms

State of Wisconsin
Department of Natural Resources

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	License/Permit/Monitoring Number	Boring Number
Former Burke Wastewater Treatment Plant Property SCS # 25218175.00		GP-104

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
On-Site Environmental Services Inc, Tony Kapugi	8/15/19	8/15/19	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.

Boring Location	Lat. / Long.	Local Grid Location (If applicable)
State Plane SW 1/4 of NE 1/4 of Section 31, T. 8 N, R. 10E		N., E.

County	DNR County Code	Civil Town/City/or Village
United States		Madison

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	32"			Silt, brown w/trace organics	ML			2.1		m		
				Silty sand, brown to black w/trace cinders and gravel	SM					m		
S2												
			5	Clayey sand brown w/red mottling fine-medium grain, trace fibers	SC			3.3		m		
S3				~~Clayey~~	S			1.9				
	26"			Organic silt dark brown-black trace fibers.	OL			2.2		m		
S4			10									
				Organic silt, black (possible sludge)				1.8		m		
S5	29"			~~Clayey silt, grey~~						w		
S6				Silt w/clay, grey	ML			2.4				
			15					1.5				
S7	46"			Silty Sand, fine to coarse grain, gray transitions to light brown	SM					w		
S8								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.

Department of Natural Resources | Form 4400-122A | 10-92

Boring Number GP-10 | Use only as an attachment to Form 4400-122. | Page 2

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S9	42"			SAA	SM			1.2		W		
S10								1.3				
			25	EOB@25'								
				Abandoned w/ bentonite								
			30									
			35									

State of Wisconsin
Department of Natural Resources

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	License/Permit/Monitoring Number	Boring Number
Former Burke Wastewater Treatment Plant Property SCS # 25218175.00		GP-102

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
On-Site Environmental Services Inc, Tony Kapugi	8/15/19	8/15/19	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.
					2"

Boring Location State Plane	Lat. Long.	Local Grid Location (If applicable)
SW 1/4 of NE 1/4 of Section 31 , T. 8 N, R. 10E		N., E.

County	DNR County Code	Civil Town/City/or Village
United States		Madison

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	18"			Silt w/clay brownish gray w fibers & roots				5.5				
				clayey sand fine grain, light brown w/trace gravel	SP					M		
S2				Silt w/trace clay, black w/trace organics	ML			6.1				
			5									
S3	20"			Peat, black-dark brown w/ greyish black bits with petroleum smell.	PT			6.0		M		
S4				Chunks of wood at bottom								
			10									
S5	30"			Peat, brown-dark brown w/bits of wood	PT			2.3		M		
S6				Silt w/trace clay, brown, w/trace wood and fibers	ML			1.2				
				silt w/trace clay, gray	ML					W		
			15									
S7	26"			Poorly graded sand, fine-medium grain, gray.	SP			2.5		W		
S8				~~clay~~ Silt w/trace clay, gray	ML			3.1		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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Department of Natural Resources | Form 4400-122A | 10-92

Boring Number GP-102 | Use only as an attachment to Form 4400-122. | Page 2

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S9	52"			Silt w/ trace clay, gray	ML			3.5				
				Poorly graded Sand, medium grain, tan w/ trace gray at top	SP			2.5		W		
S10			25	EOB @ 25' bgs								
				Abandoned w/ bentonite								
			30									
			35									

State of Wisconsin
Department of Natural Resources

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	License/Permit/Monitoring Number	Boring Number
Former Burke Wastewater Treatment Plant Property SCS # 25218175.00		GP-103

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
On-Site Environmental Services Inc, Tony Kapugi			Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.

Boring Location State Plane	Lat. Long.	Local Grid Location (If applicable)
SW 1/4 of NE 1/4 of Section 31 , T. 8 N, R. 10E		N., E.

County	DNR County Code	Civil Town/City/or Village
United States		Madison

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	27"			~~Silt, brown w/trace gray and gravel~~ Silt, brown w/trace gray and gravel	ML			1.5				
S2				Silty sand, ~~brown~~ 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 transitioning 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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Department of Natural Resources | Form 4400-122A | 10-92

Boring Number GP-103 | Use only as an attachment to Form 4400-122. | Page 2

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S9	60"			Silt, dark black w/ trace fibers and wood, spongy (possible WWTP sludge)	OL			0.7		D		
S10				Silt w clay gray - dark gray	ML			1.1		W		
			25	EOB @ 25' bgs								
				Abandoned with bentonite								
			30									
			35									

State of Wisconsin
Department of Natural Resources

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	License/Permit/Monitoring Number	Boring Number
Former Burke Wastewater Treatment Plant Property SCS # 25218175.00		GP-~~101~~ 104

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
On-Site Environmental Services Inc, Tony Kapugi	8/15/19	8/15/19	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.
					2"

Boring Location	Lat. / Long.	Local Grid Location (If applicable)
State Plane SW 1/4 of NE 1/4 of Section 31 , T. 8 N, R. 10E		N., E.

County	DNR County Code	Civil Town/City/or Village
United States		Madison

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
			6"	SILT, dk-brown (topsoil)	~~ML~~ SM							
S1	43"			SILTY SAND, brown, f-c, little small gravel	SM			2.2		M		
				SILT, dk brown, w/gravel								
S2								2.2				
			5	Silty sand, tan-brown f-c w/gravel trace cylinders (fill)	SM							
S3	46"			Clay w/silt gray w/gravel trace organics wood fibers/roots	CL			1.1		M		
				clay w sand, F gravel, tan-brown trace gravel	CL							
S4								1.0				
			10	Organic silt very dk grey to black trace organic fibers, (potential waste water sludge)	OL							
S5	42"			Gravel, f-c gravel, light gray-white				1.1				
				clay, brown w trace roots and gravel	CL					M		
S6				clay, black, w/trace fibers. Potential wastewater sludge	CL			0.8				
			15	clay, grey-light grey	CL							
S7	35"			clay w trace silt, gray w/~~Brown~~ silt.	CL					M		
S8				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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Department of Natural Resources | Form 4400-122A | 10-92

Boring Number GP-101 | Use only as an attachment to Form 4400-122. | Page 2

Sample Number	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S9				Sand w/clay, gray, fine grain	SC				W			
	54"			~~Sand, light brown f~~ Poorly graded sand, light brown fine grain	SP			0.6				
S10			25	EOB @ 25'								
				Abandoned w/bentonite								
			30									
			35									

State of Wis., Dept. of Natural Resources SCS No.
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	_ _ _ _ _	GP-101

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ NW	¼ SE	Section	Township	Range
or Gov't Lot #		31	8 N	10 ☒ E ☐ W

Well Street Address: Former Burke Wastewater Treatment Plant Property

Well City, Village or Town	Well ZIP Code
Madison	53704

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
	_ _ _ _ _

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/15/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
25'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2"	NA

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~13'

2. Facility / Owner Information

Facility Name: Former Burke Wastewater Treatment Plant Property
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner:
Present Well Owner: Madison Gas & Electric
Mailing Address of Present Owner: 133 S Blair St.

City of Present Owner	State	ZIP Code
Madison	WI	53704

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite chips	Surface	25	0.25ft^3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
SCS Engineers		

Street or Route	Telephone Number
2830 Dairy Drive	(608)224-2830

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Madison	WI	53718		06/17/2020

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No.
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	_ _ _ _ _	GP-102

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ NW	¼ SE	Section	Township	Range
or Gov't Lot #		31	8 N	10 ☒ E ☐ W

Well Street Address: Former Burke Wastewater Treatment Plant Property

Well City, Village or Town	Well ZIP Code
Madison	53704

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
	_ _ _ _ _

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/15/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
25'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2"	NA

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~14'

2. Facility / Owner Information

Facility Name: Former Burke Wastewater Treatment Plant Property
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner:
Present Well Owner: Madison Gas & Electric
Mailing Address of Present Owner: 133 S Blair St.

City of Present Owner	State	ZIP Code
Madison	WI	53704

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite chips	Surface	25	0.25ft^3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
SCS Engineers		

Street or Route	Telephone Number
2830 Dairy Drive	(608)224-2830

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Madison	WI	53718		06/17/2020

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No.
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

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Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	_ _ _ _ _	GP-103

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ NW	¼ SE	Section	Township	Range
or Gov't Lot #		31	8 N	10 ☒ E ☐ W

Well Street Address: Former Burke Wastewater Treatment Plant Property

Well City, Village or Town	Well ZIP Code
Madison	53704

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
	_ _ _ _ _

2. Facility / Owner Information

Facility Name: Former Burke Wastewater Treatment Plant Property
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner:
Present Well Owner: Madison Gas & Electric
Mailing Address of Present Owner: 133 S Blair St.

City of Present Owner	State	ZIP Code
Madison	WI	53704

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/15/2019
If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
25'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2"	NA

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~17'

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite chips	Surface	25	0.25ft^3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
SCS Engineers		

Street or Route	Telephone Number
2830 Dairy Drive	(608)224-2830

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Madison	WI	53718		06/17/2020

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No.
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	_ _ _ _ _	GP-104

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ NW	¼ SE	Section	Township	Range
or Gov't Lot #		31	8 N	10 ☒ E ☐ W

Well Street Address: Former Burke Wastewater Treatment Plant Property

Well City, Village or Town	Well ZIP Code
Madison	53704

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
	_ _ _ _ _

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 08/15/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
25'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2"	NA

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~18'

2. Facility / Owner Information

Facility Name: Former Burke Wastewater Treatment Plant Property
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner:
Present Well Owner: Madison Gas & Electric
Mailing Address of Present Owner: 133 S Blair St.

City of Present Owner	State	ZIP Code
Madison	WI	53704

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite chips	Surface	25	0.25ft^3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
SCS Engineers		

Street or Route	Telephone Number
2830 Dairy Drive	(608)224-2830

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Madison	WI	53718		06/17/2020

DNR Use Only

Date Received	Noted By

Comments:

Appendix B

Groundwater Sampling Forms

Environmental Consultants
and Contractors

2830 Dairy Drive
Madison, WI 53718-6751

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Groundwater Sampling Log

Project No. 25219029.00 **Site** Burke Wastewater
Well No. TW-1 **Date** 8/23/19
Well Depth _____ **Sampling Device** Peristaltic Pump
Water Level 10.67' **Other Info.** Many Many Mosquitos
Purge Volume _____ **Pumping Rate** 75mL/min
Sampling Personnel AW Start 10:20 End 11:30
Color/Odor Clear/none 67° Partly Cloudy Wind NW

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
10:35	11.13'	16.2	6.65	1.12	1570	-116.5	6.01	
10:40	11.22'	16.4	6.65	1.08	1568	-116.7	4.32	
10:50	11.32'	16.6	6.66	0.80	1548	-113.4	9.80	
10:55	11.33'	16.9	6.66	0.81	1549	-115.0	6.07	
11:00	11.43'	16.7	6.65	0.65	1537	-115.9	5.41	
11:05	11.46'	16.8	6.66	0.56	1527	-116.2	4.49	
11:10	11.49'	16.7	6.64	0.54	1517	-116.1	4.64	
11:15	11.53'	16.4	6.65	0.51	1495	-115.0	4.78	Sampled

Type of Samples Collected: _____

Additional Notes: _____

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25219029.00 **Site** Burke Wastewater

Well No. TW-2 **Date** 8/23/19

Well Depth _____ **Sampling Device** Peristaltic pump

Water Level 21.24' **Other Info.** _____

Purge Volume ~~3~~ **Pumping Rate** 175 mL/min

Sampling Personnel AW Start 12:58 End: 1338

Color/Odor clear/none 20° Partly cloudy Wind: NNW

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1315	21.26'	14.6	6.86	0.28	1382	72.6	3.80	
1320	21.26'	14.8	6.86	0.16	1382	70.7	3.11	
1325	21.26'	15.1	6.86	0.10	1377	68.4	2.93	Sampled

Type of Samples Collected: _____

Additional Notes: _____

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25219029.00 **Site** Burke Wastewater
Well No. TW-3 **Date** 8/23/19
Well Depth ~~15.05~~' **Sampling Device** Peristaltic Pump
Water Level 15.05' **Other Info.** Mosquitos!
Purge Volume **Pumping Rate** ~~250~~ 250 mL/min
Sampling Personnel AW start 7:45 End 9:15
Color/Odor Clear/none 62° partly cloudy Wind: NW

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
825	15.07'	12.9	6.76	0.61	1148	138.3	25.33	
830	15.07'	12.9	6.78	0.67	1148	138.0	18.86	
835	15.07'	12.9	6.78	0.75	1148	139.2	17.12	
840	15.07'	12.9	6.78	0.58	1149	141.0	10.29	
845	15.07'	13.1	6.78	0.65	1149	144.0	8.52	
850	15.07'	13.1	6.78	0.80	1148	146.1	6.83	
855	15.07'	13.0	6.78	0.79	1153	148.2	6.53	
900	15.07'	13.0	6.78	0.76	1151	149.5	6.09	Sampled

Type of Samples Collected: Field blank and equipment blank sampled at TW-3

Additional Notes:

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25219029.00 **Site** Burke Wastewater
Well No. TW-4 **Date** 8/23/19
Well Depth _____ **Sampling Device** Peristaltic pump
Water Level 18.3' **Other Info.** _____
Purge Volume _____ **Pumping Rate** 100 mL/min
Sampling Personnel AW Start: 1400 End
Color/Odor Clear/none 70° Partly cloudy Wind NW

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1415	18.36'	15.4	6.75	7.60	1357	-3.9	5.84	
1420	18.36'	14.6	6.75	7.90	1345	-0.1	5.70	
1425	18.36'	15.0	6.77	8.13	1345	0.6	4.99	
1430	18.36'	15.6	6.77	8.40	1340	0.9	5.28	
1435	18.36	15.9	6.79	8.80	1343	1.2	5.33	Sampled

Type of Samples Collected: Duplicate sampled at ~~TW-4~~ TW-4

Additional Notes: Well took a while (15 mins) to ~~start~~ start purging.

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25219029.00 **Site** Burke wastewater
Well No. MW-10 **Date** 8/23/19
Well Depth _____ **Sampling Device** Peristaltic pump
Water Level 6.40' **Other Info.** _____
Purge Volume 3 **Pumping Rate** 175 mL/min
Sampling Personnel AW **Start:** 11:50 **End:** 12:34
Color/Odor Clear/none 69° Partly Cloudy **Wind:** NNW

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
12:05	6.40'	11.6	7.09	0.09	1665	-130.7	17.78	
12:10	6.40'	11.7	7.13	0.08	1561	-134.7	11.97	
12:15	6.40'	11.6	7.13	0.06	1494	-136.7	5.71	
12:20	6.40'	11.6	7.15	0.05	1478	-140.7	3.64	
12:25	6.40'	11.7	7.14	0.04	1478	-142.0	2.03	Sampled

Type of Samples Collected: _____

Additional Notes: _____

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25218175 **Site** Burke Site
Well No. TW-1 **Date** 3.25.2020
Well Depth 17.30 **Sampling Device** Peristaltic Pump
Water Level 4.40 **Other Info.** Start 1445 Stop 1505
Purge Volume 1.58 gallons **Pumping Rate** 200 s/L
Sampling Personnel Jackie Rennebohm
Color/Odor light gray / none

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1452	—	5.0	8.28	0.81	591.6	147.5	29.73	
1455	—	4.9	8.34	0.75	589.9	143.1	22.59	
1459	—	5.0	8.35	0.71	590.3	140.8	20.89	
15								

Type of Samples Collected: PFAS

Additional Notes: Collect Blup here, pumped slow as I ran w/ H_2O coming from YSI
1L/200s x 60s/min x 20min x 0.2646/1L = 1.58

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25218175 **Site** Burke Site
Well No. TW-2 **Date** 3-25-2020
Well Depth 27.10 **Sampling Device** Peristaltic Pump
Water Level 20.85 **Other Info.** Start 130 Stop 1400
Purge Volume 3.77 Gallons **Pumping Rate** 120s/L
Sampling Personnel Jackie Rennebohm
Color/Odor Clear / none

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1345	—	10.5	7.92	0.88	1127	202.0	3.98	
1350	—	10.5	7.98	0.62	1129	194.4	3.42	
1354	—	10.4	8.01	0.60	1131	195.6	5.53	
1359	—	10.4	8.08	0.58	1132	193.9		

Type of Samples Collected: PFAS

Additional Notes: $\frac{1L}{120s} \times \frac{60s}{1min} \times 30 min \times \frac{0.264g}{1L} = 3.17g$

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25218175 **Site** Burke Site
Well No. TG-2 **Date** 3.25.2026
Well Depth 20.40 **Sampling Device** Peristaltic Pump
Water Level 10.98 **Other Info.** Start 1025 Stop: 1050
Purge Volume 3.22 gallons **Pumping Rate** 123s/1L
Sampling Personnel Jackie Rennebaum & Lindsey Cullen
Color/Odor Clear/none

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1036		9.8	8.19	1.42	1038	208.7	6.69	
1041		9.9	8.26	1.30	1033	213.7	7.31	
1046		9.9	8.30	1.26	1035	220.9	6.37	

Type of Samples Collected: PFAS

Additional Notes: $\frac{1L}{123s} \times \frac{60s}{1min} \times 25min \times \frac{0.264g}{1L} = 3.22g$

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25218~~15~~75 **Site** Burke Site
Well No. TW-3 **Date** 3-25-2020
Well Depth 22.10 **Sampling Device** Peristaltic Pump
Water Level 14.03 **Other Info.** Start 1135 Stop 1200
Purge Volume 3.22 gallons **Pumping Rate** 123s/1L
Sampling Personnel Jackie Rennebohm
Color/Odor Clear / none

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1149	—	8.7	5.31	1.10	910	204.0	59.85	
1154	—	8.9	3.30	1.03	915	206.7	49.33	
1159	—	8.7	5.33	1.07	918	211.9	120.7	

Type of Samples Collected: PFAS

Additional Notes: $\frac{1L}{123s} \times \frac{60s}{1min} \times 25\,min \times \frac{0.264g}{1L} = 3.22\,g$

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25218175 **Site** Burke Site

Well No. TW-4 **Date** 3.25.2020

Well Depth 17.05 **Sampling Device** Peristaltic Pump

Water Level 24.3 **Other Info.** Start 1232 Stop 1305

Purge Volume 4.02g **Pumping Rate** 130s / 1L

Sampling Personnel Jackie Rennebohm

Color/Odor Clear / none

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1244	-	10.0	8.01	0.76	1164	221.1	9.40	
1250	-	10.1	8.24	0.64	1153	212.5	4.80	
1255	-	10.4	8.14	0.63	1152	202.4	4.29	
1259	-	10.3	8.06	0.60	1144	202.3	6.45	

Type of Samples Collected: PFAS

Additional Notes: $\frac{1L}{130s} \times \frac{60s}{1min} \times 33\,min \times \frac{0.204g}{1L} = 4.02g$

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

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Groundwater Sampling Log

Project No. 25218175 **Site** Burke Site
Well No. MW-5 **Date** 3-25-2020
Well Depth 17.70 **Sampling Device** Peristaltic Pump
Water Level 5.34 **Other Info.** Start=925 stop=1010
Purge Volume 3.65 gallons **Pumping Rate** ~~72s/1L~~ 144s/1L
Sampling Personnel Jackie Rennebohm & Lindsey Carlson
Color/Odor clear/none, initial rusty brown color

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
942	—	7.3	8.19	1.70	411.7	204.5	3.15	
947	—	7.0	8.31	1.54	411.6	206.9	4.81	
951	—	7.4	8.28	1.33	416.4	208.9	4.55	
956	—	7.0	8.31	1.41	422.9	211.8	1.77	

Type of Samples Collected: PFAS Sample @ 1000
0.264 g = 1L

Additional Notes: Collect trip/rinsate blank here & field blank here - downward of ~~MW~~ TW-1

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi r^3$

$$\frac{144s}{1L} \times \frac{1min}{60s} \times \frac{1L}{0.264g} \times 35 min$$

$$1L/144s \times \frac{60s}{1min} \times 34 min \times 0.264g/1L = 33.5g$$

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Groundwater Sampling Log

Project No. 25218175 **Site** Burke Site
Well No. MW-10 **Date** 3.25.2020
Well Depth 18.20 **Sampling Device** Peristaltic Pump
Water Level 5.70 **Other Info.** Start 1417 Stop 1440
Purge Volume 2.80 gallons **Pumping Rate** 130s/1L
Sampling Personnel Jackie Renneboahm
Color/Odor gray, light / None

Time	Water Level	Temp.	pH	DO (mg/L)	Conductivity (µs/cm)	ORP	Turbidity	Notes
Stability Requirements:		+/- 3%	+/- 0.1 unit	±/- 10%	+/- 3%	+/- 10mV	+/- 10% or 3 readings <5 NTU	
1429	—	7.8	8.17	0.87	1263	147.7	124.7	
1433	—	7.9	8.18	0.78	1272	137.5	115.2	
1437	—	7.9	8.21	0.74	1278	134.7	104.8	
1440	—	7.9	8.14	0.71	1279	136.1	99.09	

Type of Samples Collected: PFAS

Additional Notes: $\frac{1L}{130s} \times \frac{60s}{1min} \times 23\ min \times \frac{0.264s}{1L} = 2.8s$

Information: 2 in = 617 ml/ft, 4 in = 2,470 ml/ft: $Vol_{cyl} = \pi r^2 h$, $Vol_{sphere} = 4/3\pi\ r^3$

Appendix C

TestAmerica Analytical Reports

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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

Sandie Fredrick

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

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

Table of Contents

Definitions/Glossary

Client: SCS Engineers
Job ID: 320-53393-2
Project/Site: MGE - Burke WWTP - 25218175.00

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.
¤	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)

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 1.6º 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 “l” 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

Job ID: 320-53393-2 (Continued)

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.

Detection Summary

Client: SCS Engineers
Job ID: 320-53393-2
Project/Site: MGE - Burke WWTP - 25218175.00

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.

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

Job ID: 320-53393-2

Client Sample ID: GP-103, 10-12.5'
Date Collected: 08/15/19 10:30
Date Received: 08/17/19 09:20

Lab Sample ID: 320-53393-5
Matrix: Solid
Percent Solids: 24.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.30**	**J H 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
HFPO-DA (GenX)	**0.54**	**J H**	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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
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*

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

Job ID: 320-53393-2

Client Sample ID: GP-103, 10-12.5'
Date Collected: 08/15/19 10:30
Date Received: 08/17/19 09:20

Lab Sample ID: 320-53393-5
Matrix: Solid
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 PFDoA	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	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS/ (25-150)	-NEtFOS/ (25-150)
320-53393-5	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
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

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 Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
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 %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*09/23/19 16:12*	*10/05/19 02:44*	*1*

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 %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
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 Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
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

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

Lab Sample ID: LCS 320-325633/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 328233
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 %Recovery*	*LCS Qualifier*	*Limits*
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*

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

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
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

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

QC Association Summary

Client: SCS Engineers
Job ID: 320-53393-2
Project/Site: MGE - Burke WWTP - 25218175.00

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
Job ID: 320-53393-2
Project/Site: MGE - Burke WWTP - 25218175.00

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
Job ID: 320-53393-2
Project/Site: MGE - Burke WWTP - 25218175.00

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
Job ID: 320-53393-2
Project/Site: MGE - Burke WWTP - 25218175.00

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	

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
www.scsengineers.com
*Licensed in Wisconsin

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

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
www.eurofinsus.com | 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

Chain of Custody Record

Report To (optional)	Bill To (optional)
Contact: Eric Oelkers	Contact: Same
Company: SCS Engineers	Company:
Address:	Address:
Address:	Address:
Phone:	Phone:
Fax:	Fax:
E-Mail: eoelkers@scsengineers.com	PO#/Reference#

Lab Job #:

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 1.1 corr 1.6C

Client	Client Project #	Preservative	7
SCS Engineers	25218175.00		
Project Name: MGE - Burke WWTP		Parameter	
Project Location/State: WI	Lab Project #		
Sampler: MDB; ACW	Lab PM		

320-53393 Chain of Custody

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

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	PFAS	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	Company	Date	Time	Received By	Company	Date	Time
	SCS Engineers	8/16/19	1300		ETA	8/19/19	920

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:

TAL-4124-500 (1209)

10/11/2019

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 320-53393-2

Login Number: 53393
List Number: 1
Creator: Thompson, Sarah W

List Source: Eurofins TestAmerica, Sacramento

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	

eurofins | Environment Testing TestAmerica

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

Sandie Fredrick

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

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

Table of Contents

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.
¤	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 1.8º 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-Chloroeicosafluoro-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

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.

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
Perfluorobutanoic acid (PFBA)	**26**		1.8	0.32	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoropentanoic acid (PFPeA)	**2.4**		1.8	0.44	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorohexanoic acid (PFHxA)	**3.3**		1.8	0.52	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluoroheptanoic acid (PFHpA)	**1.3**	**J**	1.8	0.23	ng/L		08/31/19 07:42	09/07/19 03:32	1
Perfluorooctanoic acid (PFOA)	**5.2**		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
Perfluorobutanesulfonic acid (PFBS)	**1.3**	**J**	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
Perfluorohexanesulfonic acid (PFHxS)	**10**	**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
Perfluorooctanesulfonamide (FOSA)	**0.59**	**J 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
Ammonium Perfluorooctanoate (APFO)	**5.4**		1.9	0.80	ng/L		08/31/19 07:42	09/07/19 03:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
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*

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)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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

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

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

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*
13C4 PFBA	*41*		*25 - 150*	*08/31/19 07:42*	*09/07/19 03:40*	*1*

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)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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: SCS Engineers
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

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

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*
13C4 PFBA	*62*		*25 - 150*	*08/31/19 07:42*	*09/07/19 03:48*	*1*

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

Job ID: 320-53651-1

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

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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 PFDoA	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: 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
Perfluorobutanoic acid (PFBA)	**34**		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
Perfluoroheptanoic acid (PFHpA)	**0.26**	**J**	1.8	0.23	ng/L		08/31/19 07:42	09/07/19 03:56	1
Perfluorooctanoic acid (PFOA)	**2.9**		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
Perfluorobutanesulfonic acid (PFBS)	**0.75**	**J**	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
Perfluorohexanesulfonic acid (PFHxS)	**1.5**	**J 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
Perfluorooctanesulfonic acid (PFOS)	**5.7**		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
Perfluorooctanesulfonamide (FOSA)	**0.46**	**J 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
Ammonium Perfluorooctanoate (APFO)	**3.0**		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*
13C4 PFBA	*39*		*25 - 150*	*08/31/19 07:42*	*09/07/19 03:56*	*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)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	<1.8		18	1.8	ng/L		08/31/19 07:42	09/13/19 23:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	131		25 - 150	08/31/19 07:42	09/13/19 23:28	1

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*
13C4 PFBA	*62*		*25 - 150*	*08/31/19 07:42*	*09/07/19 04:04*	*1*

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 (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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: SCS Engineers
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

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

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*
13C4 PFBA	*60*		*25 - 150*	*08/31/19 07:42*	*09/07/19 04:12*	*1*

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

Job ID: 320-53651-1

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

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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 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

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
Perfluorohexanesulfonic acid (PFHxS)	**0.26**	**J 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
Perfluorooctanesulfonamide (FOSA)	**0.41**	**J 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*
13C4 PFBA	*99*		*25 - 150*	*08/31/19 07:42*	*09/07/19 04:36*	*1*
13C5 PFPeA	*101*		*25 - 150*	*08/31/19 07:42*	*09/07/19 04:36*	*1*

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

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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: SCS Engineers
Project/Site: Burke Site - 25219029.00

Job ID: 320-53651-1

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

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
Perfluorohexanesulfonic acid (PFHxS)	**0.27**	**J 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*

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

Job ID: 320-53651-1

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

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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 PFDoA	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)	-NEtFOSA (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

Client: SCS Engineers
Job ID: 320-53651-1
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

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*

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 %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
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 PFDoA	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	%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 (PFDoA)	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

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 %Recovery*	*LCS Qualifier*	*Limits*
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*

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

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

Lab Chronicle

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

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

Lab Sample ID: 320-53651-8

Date Collected: 08/23/19 09:00
Matrix: Water
Date Received: 08/24/19 09:25

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

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.

Accreditation/Certification Summary

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

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

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

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	

Chain of Custody Record

327840

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact					
Company Name: SCS Engineers	Project Manager: Eric Oelkers	Site Contact:	Date: 8/23/19	COC No:
Address: 2830 Dairy Dr.	Tel/Fax:	Lab Contact: Kathy Friderick	Carrier:	___ of ___ COCs
City/State/Zip: Madison, WI	Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS			Sampler:
Phone: 608-216-7345	TAT if different from Below ___			For Lab Use Only:
Fax:	☐ 2 weeks			Walk-in Client:
Project Name: 25219029.00	☐ 1 week			Lab Sampling:
Site: Burke site	☐ 2 days			Job / SDG No.:
P O #	☐ 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 (36)	Sample Specific Notes:
TW-3	8/23	900		W	2	N	N	X	
TW-1	↓	1115		W	2	↓	↓	X	
MW-10	↓	1225		W	2	↓	↓	X	
TW-2	↓	1325		W	2	↓	↓	X	
* TW-4	↓	1435		W	2	↓	↓	X	
Δ TW-4 Duplicate	↓	1435		W	2	↓	↓	X	
Field Blank	↓	900		W	2	↓	↓	X	
Equipment Blank	↓	900		W	2	↓	↓	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.: IR Stan
Relinquished by: [signature]	Company: SCS Engineers	Date/Time: 8/23 16:00	Received by: Salvador Ocampo	Company: ETASAL	Date/Time: 8/24/19 925
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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

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

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 320-53651-1

Login Number: 53651
List Number: 1
Creator: Rosas, Jaime

List Source: Eurofins TestAmerica, Sacramento

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	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-59819-1
Client Project/Site: Burke WW Treatment PFAS (25218175)

For:
SCS Engineers
2830 Dairy Dr
Madison, Wisconsin 53718

Attn: Mr. Eric Oelkers

Sandie Fredrick

Authorized for release by:
3/30/2020 9:12:23 PM

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

Table of Contents

Definitions/Glossary

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Qualifiers

LCMS

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
*5	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.
¤	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)

Job ID: 320-59819-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-59819-1

Comments
No additional comments.

Receipt
The samples were received on 3/26/2020 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6º C.

LCMS
Method 537 (modified): Results for samples TW-3 (320-59819-5) were reported from the analysis of a diluted extract due to high concentration and interference 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 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS and M2-6:2 FTS for the following samples: MW-5 (320-59819-1). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 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: TW-3 (320-59819-5), TW-2 (320-59819-7), TW-1 (320-59819-9) and TW-1 Dup (320-59819-10). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte.

MW-5 (320-59819-1), TG-2 (320-59819-4), TW-4 (320-59819-6), TW-1 (320-59819-9) and TW-1 Dup (320-59819-10)

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS for the following sample: TW-4 (320-59819-6). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 320-368093 and analytical batch 320-368331 recovered outside control limits for the following analytes: Perfluoro-n-octadecanoic acid (PFODA).

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

Organic Prep
Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-368093. 320-368093 Method: 3535 PFC-W

Method 3535: The following samples are light orange prior to extraction: TW-4 (320-59819-6), TW-1 (320-59819-9) and TW-1 Dup (320-59819-10). 320-368093 Method: 3535 PFC-W

Method 3535: The following samples contains floating particulates at the bottom of the bottle prior to extraction: TW-1 (320-59819-9) and TW-1 Dup (320-59819-10). 320-368093 Method: 3535 PFC-W

Method 3535: The following samples contains a thin layer of sediments at the bottom of the bottle prior to extraction: MW-10 (320-59819-8). 320-368093 Method: 3535 PFC-W

Method 3535: During the extraction process, the following samples have non-settleable particulates which clogged the extraction column: MW-10 (320-59819-8). 320-368093 Method: 3535 PFC-W

Job ID: 320-59819-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method 3535: The following sample is light yellow in color after final voluming: TW-3 (320-59819-5). 320-368093 Method: 3535 PFC-W

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: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: MW-5 — Lab Sample ID: 320-59819-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.4	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.83	J	1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.68	J	1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.38	J	1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.25	J	1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.67	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	J I	1.8	0.48	ng/L	1		537 (modified)	Total/NA

Client Sample ID: Field Blank — Lab Sample ID: 320-59819-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.24	J B	1.9	0.16	ng/L	1		537 (modified)	Total/NA

Client Sample ID: Equipment Blank — Lab Sample ID: 320-59819-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.2	J B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA

Client Sample ID: TG-2 — Lab Sample ID: 320-59819-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	11	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.99	J	1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.2	J	1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.71	J	1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.9		1.8	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.2		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	1.5	J	1.8	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.9	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.32	J	1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.9	I	1.8	0.48	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	6.2		1.9	0.79	ng/L	1		537 (modified)	Total/NA

Client Sample ID: TW-3 — Lab Sample ID: 320-59819-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	21	B	19	3.3	ng/L	10		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0	J	19	1.9	ng/L	10		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.2	J B	19	1.6	ng/L	10		537 (modified)	Total/NA

Client Sample ID: TW-4 — Lab Sample ID: 320-59819-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	28	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.9		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.7	J	1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.1		1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	19		1.8	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.3		1.8	0.24	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: TW-4 (Continued) — Lab Sample ID: 320-59819-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.9		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	1.1	J	1.8	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.4	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.5	J	1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	15	I	1.8	0.48	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	19		1.9	0.79	ng/L	1		537 (modified)	Total/NA

Client Sample ID: TW-2 — Lab Sample ID: 320-59819-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	36	B	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		1.8	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.8		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.8		1.8	0.49	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	2.3		1.9	0.80	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 320-59819-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	21	B	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.7		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		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)	1.9		1.8	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.56	J	1.8	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.2		1.8	0.49	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	2.0		1.9	0.80	ng/L	1		537 (modified)	Total/NA

Client Sample ID: TW-1 — Lab Sample ID: 320-59819-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.5	B	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.4	J	1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.6		1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.5	J	1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.8	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.42	J	1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	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)	31	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11	I	1.8	0.49	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.45	J	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	13		1.9	0.79	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TW-1 Dup
Lab Sample ID: 320-59819-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.5	B	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.8		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.5		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.4	J	1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	13		1.8	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.57	J	1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.4	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	1.1	J	1.8	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	32	B	1.8	0.16	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11	I	1.8	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.34	J	1.8	0.32	ng/L	1		537 (modified)	Total/NA
Ammonium Perfluorooctanoate (APFO)	14		1.9	0.81	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: MW-5
Date Collected: 03/25/20 10:00
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.4**	**B**	1.8	0.31	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoropentanoic acid (PFPeA)	**0.83**	**J**	1.8	0.44	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorohexanoic acid (PFHxA)	**0.68**	**J**	1.8	0.52	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoroheptanoic acid (PFHpA)	**0.38**	**J**	1.8	0.22	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorooctanoic acid (PFOA)	<0.76		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorononanoic acid (PFNA)	**0.25**	**J**	1.8	0.24	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoroundecanoic acid (PFUnA)	<0.98		1.8	0.98	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorododecanoic acid (PFDoA)	<0.49		1.8	0.49	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.79		1.8	0.79	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorobutanesulfonic acid (PFBS)	**0.67**	**J**	1.8	0.18	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.41	*1	1.8	0.41	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**	**J B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorooctanesulfonic acid (PFOS)	**1.5**	**J I**	1.8	0.48	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorooctanesulfonamide (FOSA)	<0.31		1.8	0.31	ng/L		03/27/20 04:39	03/28/20 00:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 00:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 00:13	1
4:2 FTS	<4.6		18	4.6	ng/L		03/27/20 04:39	03/28/20 00:13	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 00:13	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 00:13	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 00:13	1
NEtFOSA	<0.78		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 00:13	1
NMeFOSA	<0.38		1.8	0.38	ng/L		03/27/20 04:39	03/28/20 00:13	1
Perfluorododecanesulfonic acid (PFDoS)	<0.40		1.8	0.40	ng/L		03/27/20 04:39	03/28/20 00:13	1
NMeFOSE	<1.2		3.6	1.2	ng/L		03/27/20 04:39	03/28/20 00:13	1
NEtFOSE	<0.76		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 00:13	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:13	1
F-53B Major	<0.21		1.8	0.21	ng/L		03/27/20 04:39	03/28/20 00:13	1
HFPO-DA (GenX)	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 00:13	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 00:13	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:13	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 00:13	1
Ammonium Perfluorooctanoate (APFO)	<0.78		1.9	0.78	ng/L		03/27/20 04:39	03/28/20 00:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*03/27/20 04:39*	*03/28/20 00:13*	*1*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: MW-5
Lab Sample ID: 320-59819-1
Date Collected: 03/25/20 10:00
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	75		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C2 PFHxA	98		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C4 PFHpA	93		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C4 PFOA	97		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C5 PFNA	105		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C2 PFDA	114		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C2 PFHxDA	88		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C2 PFUnA	113		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C2 PFDoA	110		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C2 PFTeDA	110		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C3 PFBS	102		25 - 150	03/27/20 04:39	03/28/20 00:13	1
18O2 PFHxS	101		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C4 PFOS	104		25 - 150	03/27/20 04:39	03/28/20 00:13	1
13C8 FOSA	105		25 - 150	03/27/20 04:39	03/28/20 00:13	1
d3-NMeFOSAA	96		25 - 150	03/27/20 04:39	03/28/20 00:13	1
d5-NEtFOSAA	103		25 - 150	03/27/20 04:39	03/28/20 00:13	1
M2-6:2 FTS	154	*5	25 - 150	03/27/20 04:39	03/28/20 00:13	1
M2-8:2 FTS	150		25 - 150	03/27/20 04:39	03/28/20 00:13	1
M2-4:2 FTS	155	*5	25 - 150	03/27/20 04:39	03/28/20 00:13	1
d-N-MeFOSA-M	58		20 - 150	03/27/20 04:39	03/28/20 00:13	1
d-N-EtFOSA-M	53		20 - 150	03/27/20 04:39	03/28/20 00:13	1
d7-N-MeFOSE-M	39		10 - 120	03/27/20 04:39	03/28/20 00:13	1
d9-N-EtFOSE-M	38		10 - 120	03/27/20 04:39	03/28/20 00:13	1
13C3 HFPO-DA	89		25 - 150	03/27/20 04:39	03/28/20 00:13	1

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: Field Blank

Date Collected: 03/25/20 09:40
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.34		1.9	0.34	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoropentanoic acid (PFPeA)	<0.47		1.9	0.47	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorohexanoic acid (PFHxA)	<0.56		1.9	0.56	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoroheptanoic acid (PFHpA)	<0.24		1.9	0.24	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorooctanoic acid (PFOA)	<0.82		1.9	0.82	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorodecanoic acid (PFDA)	<0.30		1.9	0.30	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoroundecanoic acid (PFUnA)	<1.1		1.9	1.1	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorododecanoic acid (PFDoA)	<0.53		1.9	0.53	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorotridecanoic acid (PFTriA)	<1.3		1.9	1.3	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorotetradecanoic acid (PFTeA)	<0.28		1.9	0.28	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.86		1.9	0.86	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.45	*1	1.9	0.45	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.29		1.9	0.29	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorohexanesulfonic acid (PFHxS)	**0.24**	**J B**	1.9	0.16	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.18		1.9	0.18	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.52		1.9	0.52	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorononanesulfonic acid (PFNS)	<0.16		1.9	0.16	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorodecanesulfonic acid (PFDS)	<0.31		1.9	0.31	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorooctanesulfonamide (FOSA)	<0.34		1.9	0.34	ng/L		03/27/20 04:39	03/28/20 00:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.0		19	3.0	ng/L		03/27/20 04:39	03/28/20 00:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		19	1.8	ng/L		03/27/20 04:39	03/28/20 00:23	1
4:2 FTS	<5.0		19	5.0	ng/L		03/27/20 04:39	03/28/20 00:23	1
6:2 FTS	<1.9		19	1.9	ng/L		03/27/20 04:39	03/28/20 00:23	1
8:2 FTS	<1.9		19	1.9	ng/L		03/27/20 04:39	03/28/20 00:23	1
10:2 FTS	<0.18		1.9	0.18	ng/L		03/27/20 04:39	03/28/20 00:23	1
NEtFOSA	<0.84		1.9	0.84	ng/L		03/27/20 04:39	03/28/20 00:23	1
NMeFOSA	<0.42		1.9	0.42	ng/L		03/27/20 04:39	03/28/20 00:23	1
Perfluorododecanesulfonic acid (PFDoS)	<0.44		1.9	0.44	ng/L		03/27/20 04:39	03/28/20 00:23	1
NMeFOSE	<1.4		3.9	1.4	ng/L		03/27/20 04:39	03/28/20 00:23	1
NEtFOSE	<0.82		1.9	0.82	ng/L		03/27/20 04:39	03/28/20 00:23	1
ADONA	<0.18		2.0	0.18	ng/L		03/27/20 04:39	03/28/20 00:23	1
F-53B Major	<0.23		1.9	0.23	ng/L		03/27/20 04:39	03/28/20 00:23	1
HFPO-DA (GenX)	<1.5		3.9	1.5	ng/L		03/27/20 04:39	03/28/20 00:23	1
F-53B Minor	<0.31		1.9	0.31	ng/L		03/27/20 04:39	03/28/20 00:23	1
NaDONA	<0.18		2.0	0.18	ng/L		03/27/20 04:39	03/28/20 00:23	1
DONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:23	1
Ammonium Perfluorooctanoate (APFO)	<0.85		2.0	0.85	ng/L		03/27/20 04:39	03/28/20 00:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*85*		*25 - 150*	*03/27/20 04:39*	*03/28/20 00:23*	*1*
13C5 PFPeA	*82*		*25 - 150*	*03/27/20 04:39*	*03/28/20 00:23*	*1*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: Field Blank
Lab Sample ID: 320-59819-2
Date Collected: 03/25/20 09:40
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	86		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C4 PFHpA	85		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C4 PFOA	82		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C5 PFNA	87		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C2 PFDA	94		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C2 PFHxDA	83		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C2 PFUnA	92		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C2 PFDoA	90		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C2 PFTeDA	91		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C3 PFBS	87		25 - 150	03/27/20 04:39	03/28/20 00:23	1
18O2 PFHxS	88		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C4 PFOS	85		25 - 150	03/27/20 04:39	03/28/20 00:23	1
13C8 FOSA	90		25 - 150	03/27/20 04:39	03/28/20 00:23	1
d3-NMeFOSAA	74		25 - 150	03/27/20 04:39	03/28/20 00:23	1
d5-NEtFOSAA	77		25 - 150	03/27/20 04:39	03/28/20 00:23	1
M2-6:2 FTS	82		25 - 150	03/27/20 04:39	03/28/20 00:23	1
M2-8:2 FTS	87		25 - 150	03/27/20 04:39	03/28/20 00:23	1
M2-4:2 FTS	72		25 - 150	03/27/20 04:39	03/28/20 00:23	1
d-N-MeFOSA-M	60		20 - 150	03/27/20 04:39	03/28/20 00:23	1
d-N-EtFOSA-M	42		20 - 150	03/27/20 04:39	03/28/20 00:23	1
d7-N-MeFOSE-M	27		10 - 120	03/27/20 04:39	03/28/20 00:23	1
d9-N-EtFOSE-M	22		10 - 120	03/27/20 04:39	03/28/20 00:23	1
13C3 HFPO-DA	84		25 - 150	03/27/20 04:39	03/28/20 00:23	1

Client Sample ID: Equipment Blank
Lab Sample ID: 320-59819-3

Date Collected: 03/25/20 10:10
Matrix: Water

Date Received: 03/26/20 09:05

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.2**	**J B**	1.8	0.31	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoropentanoic acid (PFPeA)	<0.44		1.8	0.44	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorohexanoic acid (PFHxA)	<0.52		1.8	0.52	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoroheptanoic acid (PFHpA)	<0.22		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorooctanoic acid (PFOA)	<0.76		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoroundecanoic acid (PFUnA)	<0.98		1.8	0.98	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorododecanoic acid (PFDoA)	<0.49		1.8	0.49	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.79		1.8	0.79	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.41	*1	1.8	0.41	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorohexanesulfonic acid (PFHxS)	**0.29**	**J B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorooctanesulfonic acid (PFOS)	<0.48		1.8	0.48	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorooctanesulfonamide (FOSA)	<0.31		1.8	0.31	ng/L		03/27/20 04:39	03/28/20 00:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 00:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 00:33	1
4:2 FTS	<4.6		18	4.6	ng/L		03/27/20 04:39	03/28/20 00:33	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 00:33	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 00:33	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 00:33	1
NEtFOSA	<0.78		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 00:33	1
NMeFOSA	<0.38		1.8	0.38	ng/L		03/27/20 04:39	03/28/20 00:33	1
Perfluorododecanesulfonic acid (PFDoS)	<0.40		1.8	0.40	ng/L		03/27/20 04:39	03/28/20 00:33	1
NMeFOSE	<1.2		3.6	1.2	ng/L		03/27/20 04:39	03/28/20 00:33	1
NEtFOSE	<0.76		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 00:33	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:33	1
F-53B Major	<0.21		1.8	0.21	ng/L		03/27/20 04:39	03/28/20 00:33	1
HFPO-DA (GenX)	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 00:33	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 00:33	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:33	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 00:33	1
Ammonium Perfluorooctanoate (APFO)	<0.78		1.9	0.78	ng/L		03/27/20 04:39	03/28/20 00:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*99*		*25 - 150*	*03/27/20 04:39*	*03/28/20 00:33*	*1*
13C5 PFPeA	*96*		*25 - 150*	*03/27/20 04:39*	*03/28/20 00:33*	*1*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: Equipment Blank
Lab Sample ID: 320-59819-3
Date Collected: 03/25/20 10:10
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	99		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C4 PFHpA	98		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C4 PFOA	95		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C5 PFNA	102		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C2 PFDA	109		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C2 PFHxDA	93		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C2 PFUnA	111		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C2 PFDoA	102		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C2 PFTeDA	111		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C3 PFBS	100		25 - 150	03/27/20 04:39	03/28/20 00:33	1
18O2 PFHxS	99		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C4 PFOS	99		25 - 150	03/27/20 04:39	03/28/20 00:33	1
13C8 FOSA	99		25 - 150	03/27/20 04:39	03/28/20 00:33	1
d3-NMeFOSAA	85		25 - 150	03/27/20 04:39	03/28/20 00:33	1
d5-NEtFOSAA	91		25 - 150	03/27/20 04:39	03/28/20 00:33	1
M2-6:2 FTS	91		25 - 150	03/27/20 04:39	03/28/20 00:33	1
M2-8:2 FTS	113		25 - 150	03/27/20 04:39	03/28/20 00:33	1
M2-4:2 FTS	87		25 - 150	03/27/20 04:39	03/28/20 00:33	1
d-N-MeFOSA-M	87		20 - 150	03/27/20 04:39	03/28/20 00:33	1
d-N-EtFOSA-M	91		20 - 150	03/27/20 04:39	03/28/20 00:33	1
d7-N-MeFOSE-M	71		10 - 120	03/27/20 04:39	03/28/20 00:33	1
d9-N-EtFOSE-M	64		10 - 120	03/27/20 04:39	03/28/20 00:33	1
13C3 HFPO-DA	98		25 - 150	03/27/20 04:39	03/28/20 00:33	1

Client Sample ID: TG-2
Date Collected: 03/25/20 10:50
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**11**	**B**	1.8	0.31	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoropentanoic acid (PFPeA)	**0.99**	**J**	1.8	0.44	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorohexanoic acid (PFHxA)	**1.2**	**J**	1.8	0.52	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoroheptanoic acid (PFHpA)	**0.71**	**J**	1.8	0.22	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorooctanoic acid (PFOA)	**5.9**		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoroundecanoic acid (PFUnA)	<0.98		1.8	0.98	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorododecanoic acid (PFDoA)	<0.49		1.8	0.49	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.80		1.8	0.80	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorobutanesulfonic acid (PFBS)	**2.2**		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.41	*1	1.8	0.41	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoropentanesulfonic acid (PFPeS)	**1.5**	**J**	1.8	0.27	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorohexanesulfonic acid (PFHxS)	**5.9**	**B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.32**	**J**	1.8	0.17	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorooctanesulfonic acid (PFOS)	**4.9**	**I**	1.8	0.48	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorooctanesulfonamide (FOSA)	<0.31		1.8	0.31	ng/L		03/27/20 04:39	03/28/20 00:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 00:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 00:43	1
4:2 FTS	<4.7		18	4.7	ng/L		03/27/20 04:39	03/28/20 00:43	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 00:43	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 00:43	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 00:43	1
NEtFOSA	<0.78		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 00:43	1
NMeFOSA	<0.39		1.8	0.39	ng/L		03/27/20 04:39	03/28/20 00:43	1
Perfluorododecanesulfonic acid (PFDoS)	<0.40		1.8	0.40	ng/L		03/27/20 04:39	03/28/20 00:43	1
NMeFOSE	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 00:43	1
NEtFOSE	<0.76		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 00:43	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:43	1
F-53B Major	<0.21		1.8	0.21	ng/L		03/27/20 04:39	03/28/20 00:43	1
HFPO-DA (GenX)	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 00:43	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 00:43	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 00:43	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 00:43	1
Ammonium Perfluorooctanoate (APFO)	**6.2**		1.9	0.79	ng/L		03/27/20 04:39	03/28/20 00:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*25 - 150*	*03/27/20 04:39*	*03/28/20 00:43*	*1*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TG-2
Lab Sample ID: 320-59819-4
Date Collected: 03/25/20 10:50
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	73		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C2 PFHxA	91		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C4 PFHpA	91		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C4 PFOA	90		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C5 PFNA	96		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C2 PFDA	102		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C2 PFHxDA	90		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C2 PFUnA	104		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C2 PFDoA	98		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C2 PFTeDA	107		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C3 PFBS	96		25 - 150	03/27/20 04:39	03/28/20 00:43	1
18O2 PFHxS	95		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C4 PFOS	98		25 - 150	03/27/20 04:39	03/28/20 00:43	1
13C8 FOSA	95		25 - 150	03/27/20 04:39	03/28/20 00:43	1
d3-NMeFOSAA	80		25 - 150	03/27/20 04:39	03/28/20 00:43	1
d5-NEtFOSAA	86		25 - 150	03/27/20 04:39	03/28/20 00:43	1
M2-6:2 FTS	116		25 - 150	03/27/20 04:39	03/28/20 00:43	1
M2-8:2 FTS	113		25 - 150	03/27/20 04:39	03/28/20 00:43	1
M2-4:2 FTS	126		25 - 150	03/27/20 04:39	03/28/20 00:43	1
d-N-MeFOSA-M	67		20 - 150	03/27/20 04:39	03/28/20 00:43	1
d-N-EtFOSA-M	58		20 - 150	03/27/20 04:39	03/28/20 00:43	1
d7-N-MeFOSE-M	42		10 - 120	03/27/20 04:39	03/28/20 00:43	1
d9-N-EtFOSE-M	37		10 - 120	03/27/20 04:39	03/28/20 00:43	1
13C3 HFPO-DA	84		25 - 150	03/27/20 04:39	03/28/20 00:43	1

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: TW-3

Date Collected: 03/25/20 12:00
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**21**	**B**	19	3.3	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoropentanoic acid (PFPeA)	<4.6		19	4.6	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorohexanoic acid (PFHxA)	<5.4		19	5.4	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoroheptanoic acid (PFHpA)	<2.3		19	2.3	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorooctanoic acid (PFOA)	<7.9		19	7.9	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorononanoic acid (PFNA)	<2.5		19	2.5	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorodecanoic acid (PFDA)	<2.9		19	2.9	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoroundecanoic acid (PFUnA)	<10		19	10	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorododecanoic acid (PFDoA)	<5.1		19	5.1	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorotridecanoic acid (PFTriA)	<12		19	12	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorotetradecanoic acid (PFTeA)	<2.7		19	2.7	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<8.3		19	8.3	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorobutanesulfonic acid (PFBS)	**2.0**	**J**	19	1.9	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoro-n-octadecanoic acid (PFODA)	<4.3	*1	19	4.3	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoropentanesulfonic acid (PFPeS)	<2.8		19	2.8	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorohexanesulfonic acid (PFHxS)	**6.2**	**J B**	19	1.6	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		19	1.8	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorooctanesulfonic acid (PFOS)	<5.0		19	5.0	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorononanesulfonic acid (PFNS)	<1.5		19	1.5	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorodecanesulfonic acid (PFDS)	<3.0		19	3.0	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorooctanesulfonamide (FOSA)	<3.3		19	3.3	ng/L		03/27/20 04:39	03/28/20 17:21	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<29		190	29	ng/L		03/27/20 04:39	03/28/20 17:21	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<18		190	18	ng/L		03/27/20 04:39	03/28/20 17:21	10
4:2 FTS	<49		190	49	ng/L		03/27/20 04:39	03/28/20 17:21	10
6:2 FTS	<19		190	19	ng/L		03/27/20 04:39	03/28/20 17:21	10
8:2 FTS	<19		190	19	ng/L		03/27/20 04:39	03/28/20 17:21	10
10:2 FTS	<1.8		19	1.8	ng/L		03/27/20 04:39	03/28/20 17:21	10
NEtFOSA	<8.1		19	8.1	ng/L		03/27/20 04:39	03/28/20 17:21	10
NMeFOSA	<4.0		19	4.0	ng/L		03/27/20 04:39	03/28/20 17:21	10
Perfluorododecanesulfonic acid (PFDoS)	<4.2		19	4.2	ng/L		03/27/20 04:39	03/28/20 17:21	10
NMeFOSE	<13		37	13	ng/L		03/27/20 04:39	03/28/20 17:21	10
NEtFOSE	<7.9		19	7.9	ng/L		03/27/20 04:39	03/28/20 17:21	10
ADONA	<1.8		20	1.8	ng/L		03/27/20 04:39	03/28/20 17:21	10
F-53B Major	<2.2		19	2.2	ng/L		03/27/20 04:39	03/28/20 17:21	10
HFPO-DA (GenX)	<14		37	14	ng/L		03/27/20 04:39	03/28/20 17:21	10
F-53B Minor	<3.0		19	3.0	ng/L		03/27/20 04:39	03/28/20 17:21	10
NaDONA	<1.8		20	1.8	ng/L		03/27/20 04:39	03/28/20 17:21	10
DONA	<1.7		19	1.7	ng/L		03/27/20 04:39	03/28/20 17:21	10
Ammonium Perfluorooctanoate (APFO)	<8.2		20	8.2	ng/L		03/27/20 04:39	03/28/20 17:21	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*03/27/20 04:39*	*03/28/20 17:21*	*10*
13C5 PFPeA	*76*		*25 - 150*	*03/27/20 04:39*	*03/28/20 17:21*	*10*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TW-3
Lab Sample ID: 320-59819-5
Date Collected: 03/25/20 12:00
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	92		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C4 PFHpA	91		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C4 PFOA	91		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C5 PFNA	97		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C2 PFDA	105		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C2 PFHxDA	93		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C2 PFUnA	101		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C2 PFDoA	97		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C2 PFTeDA	103		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C3 PFBS	95		25 - 150	03/27/20 04:39	03/28/20 17:21	10
18O2 PFHxS	95		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C4 PFOS	93		25 - 150	03/27/20 04:39	03/28/20 17:21	10
13C8 FOSA	92		25 - 150	03/27/20 04:39	03/28/20 17:21	10
d3-NMeFOSAA	81		25 - 150	03/27/20 04:39	03/28/20 17:21	10
d5-NEtFOSAA	95		25 - 150	03/27/20 04:39	03/28/20 17:21	10
M2-6:2 FTS	127		25 - 150	03/27/20 04:39	03/28/20 17:21	10
M2-8:2 FTS	147		25 - 150	03/27/20 04:39	03/28/20 17:21	10
M2-4:2 FTS	122		25 - 150	03/27/20 04:39	03/28/20 17:21	10
d-N-MeFOSA-M	55		20 - 150	03/27/20 04:39	03/28/20 17:21	10
d-N-EtFOSA-M	53		20 - 150	03/27/20 04:39	03/28/20 17:21	10
d7-N-MeFOSE-M	40		10 - 120	03/27/20 04:39	03/28/20 17:21	10
d9-N-EtFOSE-M	40		10 - 120	03/27/20 04:39	03/28/20 17:21	10
13C3 HFPO-DA	91		25 - 150	03/27/20 04:39	03/28/20 17:21	10

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: TW-4
Date Collected: 03/25/20 13:05
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-6
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**28**	**B**	1.8	0.31	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoropentanoic acid (PFPeA)	**1.9**		1.8	0.44	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorohexanoic acid (PFHxA)	**1.7**	**J**	1.8	0.52	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoroheptanoic acid (PFHpA)	**2.1**		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorooctanoic acid (PFOA)	**19**		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorononanoic acid (PFNA)	**2.3**		1.8	0.24	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoroundecanoic acid (PFUnA)	<0.99		1.8	0.99	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorododecanoic acid (PFDoA)	<0.49		1.8	0.49	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.80		1.8	0.80	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorobutanesulfonic acid (PFBS)	**2.9**		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.41	*1	1.8	0.41	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoropentanesulfonic acid (PFPeS)	**1.1**	**J**	1.8	0.27	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorohexanesulfonic acid (PFHxS)	**6.4**	**B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	**1.5**	**J**	1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorooctanesulfonic acid (PFOS)	**15**	**I**	1.8	0.48	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorooctanesulfonamide (FOSA)	<0.31		1.8	0.31	ng/L		03/27/20 04:39	03/28/20 01:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 01:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 01:03	1
4:2 FTS	<4.7		18	4.7	ng/L		03/27/20 04:39	03/28/20 01:03	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:03	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:03	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:03	1
NEtFOSA	<0.78		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 01:03	1
NMeFOSA	<0.39		1.8	0.39	ng/L		03/27/20 04:39	03/28/20 01:03	1
Perfluorododecanesulfonic acid (PFDoS)	<0.40		1.8	0.40	ng/L		03/27/20 04:39	03/28/20 01:03	1
NMeFOSE	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 01:03	1
NEtFOSE	<0.76		1.8	0.76	ng/L		03/27/20 04:39	03/28/20 01:03	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:03	1
F-53B Major	<0.22		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 01:03	1
HFPO-DA (GenX)	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 01:03	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:03	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:03	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 01:03	1
Ammonium Perfluorooctanoate (APFO)	**19**		1.9	0.79	ng/L		03/27/20 04:39	03/28/20 01:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*51*		*25 - 150*	*03/27/20 04:39*	*03/28/20 01:03*	*1*

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: TW-4
Date Collected: 03/25/20 13:05
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-6
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	55		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C2 PFHxA	77		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C4 PFHpA	81		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C4 PFOA	85		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C5 PFNA	100		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C2 PFDA	114		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C2 PFHxDA	78		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C2 PFUnA	111		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C2 PFDoA	111		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C2 PFTeDA	105		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C3 PFBS	85		25 - 150	03/27/20 04:39	03/28/20 01:03	1
18O2 PFHxS	94		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C4 PFOS	103		25 - 150	03/27/20 04:39	03/28/20 01:03	1
13C8 FOSA	98		25 - 150	03/27/20 04:39	03/28/20 01:03	1
d3-NMeFOSAA	89		25 - 150	03/27/20 04:39	03/28/20 01:03	1
d5-NEtFOSAA	96		25 - 150	03/27/20 04:39	03/28/20 01:03	1
M2-6:2 FTS	164	*5	25 - 150	03/27/20 04:39	03/28/20 01:03	1
M2-8:2 FTS	158	*5	25 - 150	03/27/20 04:39	03/28/20 01:03	1
M2-4:2 FTS	149		25 - 150	03/27/20 04:39	03/28/20 01:03	1
d-N-MeFOSA-M	58		20 - 150	03/27/20 04:39	03/28/20 01:03	1
d-N-EtFOSA-M	50		20 - 150	03/27/20 04:39	03/28/20 01:03	1
d7-N-MeFOSE-M	45		10 - 120	03/27/20 04:39	03/28/20 01:03	1
d9-N-EtFOSE-M	42		10 - 120	03/27/20 04:39	03/28/20 01:03	1
13C3 HFPO-DA	76		25 - 150	03/27/20 04:39	03/28/20 01:03	1

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: TW-2
Date Collected: 03/25/20 14:00
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-7
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**36**	**B**	1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoropentanoic acid (PFPeA)	<0.45		1.8	0.45	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorohexanoic acid (PFHxA)	<0.53		1.8	0.53	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoroheptanoic acid (PFHpA)	<0.23		1.8	0.23	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorooctanoic acid (PFOA)	**2.2**		1.8	0.77	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorononanoic acid (PFNA)	<0.25		1.8	0.25	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.81		1.8	0.81	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorobutanesulfonic acid (PFBS)	**1.8**		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42	*1	1.8	0.42	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorohexanesulfonic acid (PFHxS)	**1.4**	**J B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorooctanesulfonic acid (PFOS)	**4.8**		1.8	0.49	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.8	0.15	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorooctanesulfonamide (FOSA)	<0.32		1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 01:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 01:13	1
4:2 FTS	<4.7		18	4.7	ng/L		03/27/20 04:39	03/28/20 01:13	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:13	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:13	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:13	1
NEtFOSA	<0.79		1.8	0.79	ng/L		03/27/20 04:39	03/28/20 01:13	1
NMeFOSA	<0.39		1.8	0.39	ng/L		03/27/20 04:39	03/28/20 01:13	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		03/27/20 04:39	03/28/20 01:13	1
NMeFOSE	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 01:13	1
NEtFOSE	<0.77		1.8	0.77	ng/L		03/27/20 04:39	03/28/20 01:13	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:13	1
F-53B Major	<0.22		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 01:13	1
HFPO-DA (GenX)	<1.4		3.6	1.4	ng/L		03/27/20 04:39	03/28/20 01:13	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:13	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:13	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 01:13	1
Ammonium Perfluorooctanoate (APFO)	**2.3**		1.9	0.80	ng/L		03/27/20 04:39	03/28/20 01:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*38*		*25 - 150*	*03/27/20 04:39*	*03/28/20 01:13*	*1*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TW-2
Lab Sample ID: 320-59819-7
Date Collected: 03/25/20 14:00
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	46		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C2 PFHxA	83		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C4 PFHpA	82		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C4 PFOA	91		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C5 PFNA	110		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C2 PFDA	123		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C2 PFHxDA	121		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C2 PFUnA	121		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C2 PFDoA	121		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C2 PFTeDA	123		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C3 PFBS	85		25 - 150	03/27/20 04:39	03/28/20 01:13	1
18O2 PFHxS	101		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C4 PFOS	113		25 - 150	03/27/20 04:39	03/28/20 01:13	1
13C8 FOSA	112		25 - 150	03/27/20 04:39	03/28/20 01:13	1
d3-NMeFOSAA	95		25 - 150	03/27/20 04:39	03/28/20 01:13	1
d5-NEtFOSAA	102		25 - 150	03/27/20 04:39	03/28/20 01:13	1
M2-6:2 FTS	194	*5	25 - 150	03/27/20 04:39	03/28/20 01:13	1
M2-8:2 FTS	156	*5	25 - 150	03/27/20 04:39	03/28/20 01:13	1
M2-4:2 FTS	167	*5	25 - 150	03/27/20 04:39	03/28/20 01:13	1
d-N-MeFOSA-M	70		20 - 150	03/27/20 04:39	03/28/20 01:13	1
d-N-EtFOSA-M	61		20 - 150	03/27/20 04:39	03/28/20 01:13	1
d7-N-MeFOSE-M	52		10 - 120	03/27/20 04:39	03/28/20 01:13	1
d9-N-EtFOSE-M	44		10 - 120	03/27/20 04:39	03/28/20 01:13	1
13C3 HFPO-DA	76		25 - 150	03/27/20 04:39	03/28/20 01:13	1

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: MW-10
Date Collected: 03/25/20 14:40
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-8
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**21**	**B**	1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoropentanoic acid (PFPeA)	**2.7**		1.8	0.44	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorohexanoic acid (PFHxA)	**3.3**		1.8	0.53	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoroheptanoic acid (PFHpA)	**1.1**	**J**	1.8	0.23	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorooctanoic acid (PFOA)	**1.9**		1.8	0.77	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.81		1.8	0.81	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorobutanesulfonic acid (PFBS)	**2.0**		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42	*1	1.8	0.42	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoropentanesulfonic acid (PFPeS)	**0.56**	**J**	1.8	0.27	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorohexanesulfonic acid (PFHxS)	**2.6**	**B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorooctanesulfonic acid (PFOS)	**6.2**		1.8	0.49	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorooctanesulfonamide (FOSA)	<0.32		1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 01:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 01:23	1
4:2 FTS	<4.7		18	4.7	ng/L		03/27/20 04:39	03/28/20 01:23	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:23	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:23	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:23	1
NEtFOSA	<0.79		1.8	0.79	ng/L		03/27/20 04:39	03/28/20 01:23	1
NMeFOSA	<0.39		1.8	0.39	ng/L		03/27/20 04:39	03/28/20 01:23	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		03/27/20 04:39	03/28/20 01:23	1
NMeFOSE	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 01:23	1
NEtFOSE	<0.77		1.8	0.77	ng/L		03/27/20 04:39	03/28/20 01:23	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:23	1
F-53B Major	<0.22		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 01:23	1
HFPO-DA (GenX)	<1.4		3.6	1.4	ng/L		03/27/20 04:39	03/28/20 01:23	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:23	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:23	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 01:23	1
Ammonium Perfluorooctanoate (APFO)	**2.0**		1.9	0.80	ng/L		03/27/20 04:39	03/28/20 01:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*45*		*25 - 150*	*03/27/20 04:39*	*03/28/20 01:23*	*1*

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: MW-10
Lab Sample ID: 320-59819-8
Date Collected: 03/25/20 14:40
Matrix: Water
Date Received: 03/26/20 09:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	48		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C2 PFHxA	70		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C4 PFHpA	69		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C4 PFOA	69		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C5 PFNA	76		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C2 PFDA	83		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C2 PFHxDA	64		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C2 PFUnA	75		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C2 PFDoA	70		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C2 PFTeDA	68		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C3 PFBS	72		25 - 150	03/27/20 04:39	03/28/20 01:23	1
18O2 PFHxS	75		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C4 PFOS	74		25 - 150	03/27/20 04:39	03/28/20 01:23	1
13C8 FOSA	73		25 - 150	03/27/20 04:39	03/28/20 01:23	1
d3-NMeFOSAA	59		25 - 150	03/27/20 04:39	03/28/20 01:23	1
d5-NEtFOSAA	60		25 - 150	03/27/20 04:39	03/28/20 01:23	1
M2-6:2 FTS	96		25 - 150	03/27/20 04:39	03/28/20 01:23	1
M2-8:2 FTS	84		25 - 150	03/27/20 04:39	03/28/20 01:23	1
M2-4:2 FTS	100		25 - 150	03/27/20 04:39	03/28/20 01:23	1
d-N-MeFOSA-M	30		20 - 150	03/27/20 04:39	03/28/20 01:23	1
d-N-EtFOSA-M	27		20 - 150	03/27/20 04:39	03/28/20 01:23	1
d7-N-MeFOSE-M	26		10 - 120	03/27/20 04:39	03/28/20 01:23	1
d9-N-EtFOSE-M	23		10 - 120	03/27/20 04:39	03/28/20 01:23	1
13C3 HFPO-DA	64		25 - 150	03/27/20 04:39	03/28/20 01:23	1

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

Client Sample ID: TW-1
Date Collected: 03/25/20 15:00
Date Received: 03/26/20 09:05

Lab Sample ID: 320-59819-9
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.5**	**B**	1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoropentanoic acid (PFPeA)	**1.4**	**J**	1.8	0.44	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorohexanoic acid (PFHxA)	**2.6**		1.8	0.52	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoroheptanoic acid (PFHpA)	**1.5**	**J**	1.8	0.23	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorooctanoic acid (PFOA)	**12**		1.8	0.77	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorononanoic acid (PFNA)	**0.42**	**J**	1.8	0.24	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoroundecanoic acid (PFUnA)	<0.99		1.8	0.99	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorotetradecanoic acid (PFTeA)	<0.26		1.8	0.26	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.80		1.8	0.80	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorobutanesulfonic acid (PFBS)	**1.6**	**J**	1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42	*1	1.8	0.42	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoropentanesulfonic acid (PFPeS)	**0.75**	**J**	1.8	0.27	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorohexanesulfonic acid (PFHxS)	**31**	**B**	1.8	0.15	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorooctanesulfonic acid (PFOS)	**11**	**I**	1.8	0.49	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorononanesulfonic acid (PFNS)	<0.14		1.8	0.14	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorooctanesulfonamide (FOSA)	**0.45**	**J**	1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.8		18	2.8	ng/L		03/27/20 04:39	03/28/20 01:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.7		18	1.7	ng/L		03/27/20 04:39	03/28/20 01:33	1
4:2 FTS	<4.7		18	4.7	ng/L		03/27/20 04:39	03/28/20 01:33	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:33	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:33	1
10:2 FTS	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:33	1
NEtFOSA	<0.78		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 01:33	1
NMeFOSA	<0.39		1.8	0.39	ng/L		03/27/20 04:39	03/28/20 01:33	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		03/27/20 04:39	03/28/20 01:33	1
NMeFOSE	<1.3		3.6	1.3	ng/L		03/27/20 04:39	03/28/20 01:33	1
NEtFOSE	<0.77		1.8	0.77	ng/L		03/27/20 04:39	03/28/20 01:33	1
ADONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:33	1
F-53B Major	<0.22		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 01:33	1
HFPO-DA (GenX)	<1.4		3.6	1.4	ng/L		03/27/20 04:39	03/28/20 01:33	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:33	1
NaDONA	<0.17		1.9	0.17	ng/L		03/27/20 04:39	03/28/20 01:33	1
DONA	<0.16		1.8	0.16	ng/L		03/27/20 04:39	03/28/20 01:33	1
Ammonium Perfluorooctanoate (APFO)	**13**		1.9	0.79	ng/L		03/27/20 04:39	03/28/20 01:33	1

Client Sample ID: TW-1
Lab Sample ID: 320-59819-9

Date Collected: 03/25/20 15:00
Matrix: Water

Date Received: 03/26/20 09:05

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	72		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C5 PFPeA	72		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C2 PFHxA	94		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C4 PFHpA	89		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C4 PFOA	91		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C5 PFNA	102		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C2 PFDA	118		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C2 PFHxDA	97		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C2 PFUnA	115		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C2 PFDoA	115		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C2 PFTeDA	119		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C3 PFBS	101		25 - 150	03/27/20 04:39	03/28/20 01:33	1
18O2 PFHxS	101		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C4 PFOS	103		25 - 150	03/27/20 04:39	03/28/20 01:33	1
13C8 FOSA	103		25 - 150	03/27/20 04:39	03/28/20 01:33	1
d3-NMeFOSAA	98		25 - 150	03/27/20 04:39	03/28/20 01:33	1
d5-NEtFOSAA	110		25 - 150	03/27/20 04:39	03/28/20 01:33	1
M2-6:2 FTS	209	*5	25 - 150	03/27/20 04:39	03/28/20 01:33	1
M2-8:2 FTS	244	*5	25 - 150	03/27/20 04:39	03/28/20 01:33	1
M2-4:2 FTS	182	*5	25 - 150	03/27/20 04:39	03/28/20 01:33	1
d-N-MeFOSA-M	65		20 - 150	03/27/20 04:39	03/28/20 01:33	1
d-N-EtFOSA-M	61		20 - 150	03/27/20 04:39	03/28/20 01:33	1
d7-N-MeFOSE-M	46		10 - 120	03/27/20 04:39	03/28/20 01:33	1
d9-N-EtFOSE-M	42		10 - 120	03/27/20 04:39	03/28/20 01:33	1
13C3 HFPO-DA	89		25 - 150	03/27/20 04:39	03/28/20 01:33	1

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TW-1 Dup
Lab Sample ID: 320-59819-10
Date Collected: 03/25/20 15:00
Matrix: Water
Date Received: 03/26/20 09:05

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.5**	**B**	1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoropentanoic acid (PFPeA)	**1.8**		1.8	0.45	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorohexanoic acid (PFHxA)	**2.5**		1.8	0.53	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoroheptanoic acid (PFHpA)	**1.4**	**J**	1.8	0.23	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorooctanoic acid (PFOA)	**13**		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorononanoic acid (PFNA)	**0.57**	**J**	1.8	0.25	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorodecanoic acid (PFDA)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.8	0.51	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorotridecanoic acid (PFTriA)	<1.2		1.8	1.2	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorotetradecanoic acid (PFTeA)	<0.27		1.8	0.27	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.82		1.8	0.82	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorobutanesulfonic acid (PFBS)	**1.4**	**J**	1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.42	*1	1.8	0.42	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoropentanesulfonic acid (PFPeS)	**1.1**	**J**	1.8	0.28	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorohexanesulfonic acid (PFHxS)	**32**	**B**	1.8	0.16	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.18		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorooctanesulfonic acid (PFOS)	**11**	**I**	1.8	0.50	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorononanesulfonic acid (PFNS)	<0.15		1.8	0.15	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorooctanesulfonamide (FOSA)	**0.34**	**J**	1.8	0.32	ng/L		03/27/20 04:39	03/28/20 01:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.9		18	2.9	ng/L		03/27/20 04:39	03/28/20 01:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:43	1
4:2 FTS	<4.8		18	4.8	ng/L		03/27/20 04:39	03/28/20 01:43	1
6:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:43	1
8:2 FTS	<1.8		18	1.8	ng/L		03/27/20 04:39	03/28/20 01:43	1
10:2 FTS	<0.18		1.8	0.18	ng/L		03/27/20 04:39	03/28/20 01:43	1
NEtFOSA	<0.80		1.8	0.80	ng/L		03/27/20 04:39	03/28/20 01:43	1
NMeFOSA	<0.40		1.8	0.40	ng/L		03/27/20 04:39	03/28/20 01:43	1
Perfluorododecanesulfonic acid (PFDoS)	<0.41		1.8	0.41	ng/L		03/27/20 04:39	03/28/20 01:43	1
NMeFOSE	<1.3		3.7	1.3	ng/L		03/27/20 04:39	03/28/20 01:43	1
NEtFOSE	<0.78		1.8	0.78	ng/L		03/27/20 04:39	03/28/20 01:43	1
ADONA	<0.18		1.9	0.18	ng/L		03/27/20 04:39	03/28/20 01:43	1
F-53B Major	<0.22		1.8	0.22	ng/L		03/27/20 04:39	03/28/20 01:43	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		03/27/20 04:39	03/28/20 01:43	1
F-53B Minor	<0.29		1.8	0.29	ng/L		03/27/20 04:39	03/28/20 01:43	1
NaDONA	<0.18		1.9	0.18	ng/L		03/27/20 04:39	03/28/20 01:43	1
DONA	<0.17		1.8	0.17	ng/L		03/27/20 04:39	03/28/20 01:43	1
Ammonium Perfluorooctanoate (APFO)	**14**		1.9	0.81	ng/L		03/27/20 04:39	03/28/20 01:43	1

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TW-1 Dup
Lab Sample ID: 320-59819-10
Date Collected: 03/25/20 15:00
Matrix: Water
Date Received: 03/26/20 09:05

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	77		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C5 PFPeA	75		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C2 PFHxA	101		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C4 PFHpA	93		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C4 PFOA	95		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C5 PFNA	108		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C2 PFDA	120		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C2 PFHxDA	99		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C2 PFUnA	124		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C2 PFDoA	121		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C2 PFTeDA	120		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C3 PFBS	105		25 - 150	03/27/20 04:39	03/28/20 01:43	1
18O2 PFHxS	104		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C4 PFOS	112		25 - 150	03/27/20 04:39	03/28/20 01:43	1
13C8 FOSA	106		25 - 150	03/27/20 04:39	03/28/20 01:43	1
d3-NMeFOSAA	102		25 - 150	03/27/20 04:39	03/28/20 01:43	1
d5-NEtFOSAA	121		25 - 150	03/27/20 04:39	03/28/20 01:43	1
M2-6:2 FTS	216	*5	25 - 150	03/27/20 04:39	03/28/20 01:43	1
M2-8:2 FTS	266	*5	25 - 150	03/27/20 04:39	03/28/20 01:43	1
M2-4:2 FTS	187	*5	25 - 150	03/27/20 04:39	03/28/20 01:43	1
d-N-MeFOSA-M	68		20 - 150	03/27/20 04:39	03/28/20 01:43	1
d-N-EtFOSA-M	61		20 - 150	03/27/20 04:39	03/28/20 01:43	1
d7-N-MeFOSE-M	54		10 - 120	03/27/20 04:39	03/28/20 01:43	1
d9-N-EtFOSE-M	50		10 - 120	03/27/20 04:39	03/28/20 01:43	1
13C3 HFPO-DA	90		25 - 150	03/27/20 04:39	03/28/20 01:43	1

Isotope Dilution Summary

Client: SCS Engineers
Project/Site: Burke WW Treatment PFAS (25218175)

Job ID: 320-59819-1

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)
320-59819-1	MW-5	69	75	98	93	97	105	114	88
320-59819-2	Field Blank	85	82	86	85	82	87	94	83
320-59819-3	Equipment Blank	99	96	99	98	95	102	109	93
320-59819-4	TG-2	73	73	91	91	90	96	102	90
320-59819-5	TW-3	79	76	92	91	91	97	105	93
320-59819-6	TW-4	51	55	77	81	85	100	114	78
320-59819-7	TW-2	38	46	83	82	91	110	123	121
320-59819-8	MW-10	45	48	70	69	69	76	83	64
320-59819-9	TW-1	72	72	94	89	91	102	118	97
320-59819-10	TW-1 Dup	77	75	101	93	95	108	120	99
LCS 320-368093/2-A	Lab Control Sample	109	108	115	108	106	113	121	107
LCSD 320-368093/3-A	Lab Control Sample Dup	95	93	96	94	92	94	106	93
MB 320-368093/1-A	Method Blank	92	93	98	96	93	96	104	92

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)
320-59819-1	MW-5	113	110	110	102	101	104	105	96
320-59819-2	Field Blank	92	90	91	87	88	85	90	74
320-59819-3	Equipment Blank	111	102	111	100	99	99	99	85
320-59819-4	TG-2	104	98	107	96	95	98	95	80
320-59819-5	TW-3	101	97	103	95	95	93	92	81
320-59819-6	TW-4	111	111	105	85	94	103	98	89
320-59819-7	TW-2	121	121	123	85	101	113	112	95
320-59819-8	MW-10	75	70	68	72	75	74	73	59
320-59819-9	TW-1	115	115	119	101	101	103	103	98
320-59819-10	TW-1 Dup	124	121	120	105	104	112	106	102
LCS 320-368093/2-A	Lab Control Sample	123	117	122	117	112	113	108	99
LCSD 320-368093/3-A	Lab Control Sample Dup	108	101	101	99	95	100	95	87
MB 320-368093/1-A	Method Blank	109	103	110	98	97	97	94	87

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	-NEtFOSA (25-150)	M262FTS (25-150)	M282FTS (25-150)	M242FTS (25-150)	I-MeFOSA (20-150)	N-EtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)
320-59819-1	MW-5	103	154 *5	150	155 *5	58	53	39	38
320-59819-2	Field Blank	77	82	87	72	60	42	27	22
320-59819-3	Equipment Blank	91	91	113	87	87	91	71	64
320-59819-4	TG-2	86	116	113	126	67	58	42	37
320-59819-5	TW-3	95	127	147	122	55	53	40	40
320-59819-6	TW-4	96	164 *5	158 *5	149	58	50	45	42
320-59819-7	TW-2	102	194 *5	156 *5	167 *5	70	61	52	44
320-59819-8	MW-10	60	96	84	100	30	27	26	23
320-59819-9	TW-1	110	209 *5	244 *5	182 *5	65	61	46	42
320-59819-10	TW-1 Dup	121	216 *5	266 *5	187 *5	68	61	54	50
LCS 320-368093/2-A	Lab Control Sample	101	110	116	96	96	101	77	69
LCSD 320-368093/3-A	Lab Control Sample Dup	94	91	108	84	85	82	54	44
MB 320-368093/1-A	Method Blank	91	90	111	84	67	48	29	25

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-59819-1	MW-5	89

Isotope Dilution Summary

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

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**	**HFPODA (25-150)**
320-59819-2	Field Blank	84
320-59819-3	Equipment Blank	98
320-59819-4	TG-2	84
320-59819-5	TW-3	91
320-59819-6	TW-4	76
320-59819-7	TW-2	76
320-59819-8	MW-10	64
320-59819-9	TW-1	89
320-59819-10	TW-1 Dup	90
LCS 320-368093/2-A	Lab Control Sample	112
LCSD 320-368093/3-A	Lab Control Sample Dup	95
MB 320-368093/1-A	Method Blank	98

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
13C3-PFBS = 13C3 PFBS
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

Lab Sample ID: MB 320-368093/1-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 368093

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.897	J	2.0	0.35	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorotridecanoic acid (PFTriA)	<1.3		2.0	1.3	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorotetradecanoic acid (PFTeA)	<0.29		2.0	0.29	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.89		2.0	0.89	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.46		2.0	0.46	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorohexanesulfonic acid (PFHxS)	0.360	J	2.0	0.17	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		2.0	0.19	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorononanesulfonic acid (PFNS)	<0.16		2.0	0.16	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorooctanesulfonamide (FOSA)	<0.35		2.0	0.35	ng/L		03/27/20 04:39	03/27/20 22:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.1		20	3.1	ng/L		03/27/20 04:39	03/27/20 22:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		20	1.9	ng/L		03/27/20 04:39	03/27/20 22:13	1
4:2 FTS	<5.2		20	5.2	ng/L		03/27/20 04:39	03/27/20 22:13	1
6:2 FTS	<2.0		20	2.0	ng/L		03/27/20 04:39	03/27/20 22:13	1
8:2 FTS	<2.0		20	2.0	ng/L		03/27/20 04:39	03/27/20 22:13	1
10:2 FTS	<0.19		2.0	0.19	ng/L		03/27/20 04:39	03/27/20 22:13	1
NEtFOSA	<0.87		2.0	0.87	ng/L		03/27/20 04:39	03/27/20 22:13	1
NMeFOSA	<0.43		2.0	0.43	ng/L		03/27/20 04:39	03/27/20 22:13	1
Perfluorododecanesulfonic acid (PFDoS)	<0.45		2.0	0.45	ng/L		03/27/20 04:39	03/27/20 22:13	1
NMeFOSE	<1.4		4.0	1.4	ng/L		03/27/20 04:39	03/27/20 22:13	1
NEtFOSE	<0.85		2.0	0.85	ng/L		03/27/20 04:39	03/27/20 22:13	1
ADONA	<0.19		2.1	0.19	ng/L		03/27/20 04:39	03/27/20 22:13	1
F-53B Major	<0.24		2.0	0.24	ng/L		03/27/20 04:39	03/27/20 22:13	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		03/27/20 04:39	03/27/20 22:13	1
F-53B Minor	<0.32		2.0	0.32	ng/L		03/27/20 04:39	03/27/20 22:13	1
NaDONA	<0.19		2.1	0.19	ng/L		03/27/20 04:39	03/27/20 22:13	1
DONA	<0.18		2.0	0.18	ng/L		03/27/20 04:39	03/27/20 22:13	1
Ammonium Perfluorooctanoate (APFO)	<0.88		2.1	0.88	ng/L		03/27/20 04:39	03/27/20 22:13	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*03/27/20 04:39*	*03/27/20 22:13*	*1*

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

Lab Sample ID: MB 320-368093/1-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 368093

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	93		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C2 PFHxA	98		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C4 PFHpA	96		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C4 PFOA	93		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C5 PFNA	96		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C2 PFDA	104		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C2 PFHxDA	92		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C2 PFUnA	109		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C2 PFDoA	103		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C2 PFTeDA	110		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C3 PFBS	98		25 - 150	03/27/20 04:39	03/27/20 22:13	1
18O2 PFHxS	97		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C4 PFOS	97		25 - 150	03/27/20 04:39	03/27/20 22:13	1
13C8 FOSA	94		25 - 150	03/27/20 04:39	03/27/20 22:13	1
d3-NMeFOSAA	87		25 - 150	03/27/20 04:39	03/27/20 22:13	1
d5-NEtFOSAA	91		25 - 150	03/27/20 04:39	03/27/20 22:13	1
M2-6:2 FTS	90		25 - 150	03/27/20 04:39	03/27/20 22:13	1
M2-8:2 FTS	111		25 - 150	03/27/20 04:39	03/27/20 22:13	1
M2-4:2 FTS	84		25 - 150	03/27/20 04:39	03/27/20 22:13	1
d-N-MeFOSA-M	67		20 - 150	03/27/20 04:39	03/27/20 22:13	1
d-N-EtFOSA-M	48		20 - 150	03/27/20 04:39	03/27/20 22:13	1
d7-N-MeFOSE-M	29		10 - 120	03/27/20 04:39	03/27/20 22:13	1
d9-N-EtFOSE-M	25		10 - 120	03/27/20 04:39	03/27/20 22:13	1
13C3 HFPO-DA	98		25 - 150	03/27/20 04:39	03/27/20 22:13	1

Lab Sample ID: LCS 320-368093/2-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 368093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	41.8		ng/L		105	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	39.3		ng/L		98	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	42.6		ng/L		107	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	39.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	40.0	40.9		ng/L		102	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	40.2		ng/L		101	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	37.7		ng/L		94	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	41.5		ng/L		104	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	42.9		ng/L		107	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	38.0		ng/L		95	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	42.8		ng/L		107	76 - 136
Perfluorobutanesulfonic acid (PFBS)	35.4	35.8		ng/L		101	67 - 127
Perfluoro-n-octadecanoic acid (PFODA)	40.0	37.1		ng/L		93	58 - 145

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

Lab Sample ID: LCS 320-368093/2-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 368093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanesulfonic acid (PFPeS)	37.5	36.8		ng/L		98	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.1		ng/L		96	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.6		ng/L		107	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	34.8		ng/L		94	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	41.1		ng/L		107	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	42.1		ng/L		109	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	42.4		ng/L		106	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	45.5		ng/L		114	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	43.4		ng/L		108	76 - 136
4:2 FTS	37.4	33.8		ng/L		91	79 - 139
6:2 FTS	37.9	33.9		ng/L		89	59 - 175
8:2 FTS	38.3	40.1		ng/L		105	75 - 135
10:2 FTS	38.6	44.4		ng/L		115	64 - 142
NMeFOSA	40.0	45.9		ng/L		115	67 - 154
Perfluorododecanesulfonic acid (PFDoS)	38.7	40.2		ng/L		104	67 - 127
NMeFOSE	40.0	42.7		ng/L		107	70 - 130
NEtFOSE	40.0	38.7		ng/L		97	71 - 131
ADONA	39.5	41.0		ng/L		104	79 - 139
F-53B Major	37.3	39.4		ng/L		106	75 - 135
HFPO-DA (GenX)	40.0	39.0		ng/L		98	51 - 173
F-53B Minor	37.7	39.2		ng/L		104	54 - 114
NaDONA	40.0	41.5		ng/L		104	79 - 139
DONA	37.7	39.1		ng/L		104	79 - 139
Ammonium Perfluorooctanoate (APFO)	41.6	40.8		ng/L		98	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*109*		*25 - 150*
13C5 PFPeA	*108*		*25 - 150*
13C2 PFHxA	*115*		*25 - 150*
13C4 PFHpA	*108*		*25 - 150*
13C4 PFOA	*106*		*25 - 150*
13C5 PFNA	*113*		*25 - 150*
13C2 PFDA	*121*		*25 - 150*
13C2 PFHxDA	*107*		*25 - 150*
13C2 PFUnA	*123*		*25 - 150*
13C2 PFDoA	*117*		*25 - 150*
13C2 PFTeDA	*122*		*25 - 150*
13C3 PFBS	*117*		*25 - 150*
18O2 PFHxS	*112*		*25 - 150*
13C4 PFOS	*113*		*25 - 150*

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

Lab Sample ID: LCS 320-368093/2-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 368093

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	108		25 - 150
d3-NMeFOSAA	99		25 - 150
d5-NEtFOSAA	101		25 - 150
M2-6:2 FTS	110		25 - 150
M2-8:2 FTS	116		25 - 150
M2-4:2 FTS	96		25 - 150
d-N-MeFOSA-M	96		20 - 150
d-N-EtFOSA-M	101		20 - 150
d7-N-MeFOSE-M	77		10 - 120
d9-N-EtFOSE-M	69		10 - 120
13C3 HFPO-DA	112		25 - 150

Lab Sample ID: LCSD 320-368093/3-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 368093

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	39.7		ng/L		99	76 - 136	4	30
Perfluoropentanoic acid (PFPeA)			40.0	40.5		ng/L		101	71 - 131	3	30
Perfluorohexanoic acid (PFHxA)			40.0	39.5		ng/L		99	73 - 133	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.6		ng/L		101	72 - 132	5	30
Perfluorooctanoic acid (PFOA)			40.0	39.7		ng/L		99	70 - 130	1	30
Perfluorononanoic acid (PFNA)			40.0	41.5		ng/L		104	75 - 135	1	30
Perfluorodecanoic acid (PFDA)			40.0	38.3		ng/L		96	76 - 136	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	34.6		ng/L		86	68 - 128	9	30
Perfluorododecanoic acid (PFDoA)			40.0	41.9		ng/L		105	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)			40.0	43.2		ng/L		108	71 - 131	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	38.9		ng/L		97	70 - 130	2	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.5		ng/L		104	76 - 136	3	30
Perfluorobutanesulfonic acid (PFBS)			35.4	35.9		ng/L		101	67 - 127	0	30
Perfluoro-n-octadecanoic acid (PFODA)			40.0	23.5	*1	ng/L		59	58 - 145	45	30
Perfluoropentanesulfonic acid (PFPeS)			37.5	37.1		ng/L		99	66 - 126	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.6		ng/L		95	59 - 119	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.9		ng/L		102	76 - 136	4	30
Perfluorooctanesulfonic acid (PFOS)			37.1	35.8		ng/L		97	70 - 130	3	30
Perfluorononanesulfonic acid (PFNS)			38.4	39.3		ng/L		102	75 - 135	4	30
Perfluorodecanesulfonic acid (PFDS)			38.6	39.4		ng/L		102	71 - 131	7	30
Perfluorooctanesulfonamide (FOSA)			40.0	40.5		ng/L		101	73 - 133	4	30

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

Lab Sample ID: LCSD 320-368093/3-A
Matrix: Water
Analysis Batch: 368331

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 368093

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	42.2		ng/L		105	76 - 136	8	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	39.6		ng/L		99	76 - 136	9	30
4:2 FTS			37.4	33.9		ng/L		91	79 - 139	0	30
6:2 FTS			37.9	34.0		ng/L		90	59 - 175	0	30
8:2 FTS			38.3	35.8		ng/L		93	75 - 135	11	30
10:2 FTS			38.6	35.8		ng/L		93	64 - 142	21	30
NMeFOSA			40.0	42.7		ng/L		107	67 - 154	7	30
Perfluorododecanesulfonic acid (PFDoS)			38.7	38.3		ng/L		99	67 - 127	5	30
NMeFOSE			40.0	39.7		ng/L		99	70 - 130	7	30
NEtFOSE			40.0	40.6		ng/L		102	71 - 131	5	30
ADONA			39.5	38.7		ng/L		98	79 - 139	6	30
F-53B Major			37.3	37.5		ng/L		100	75 - 135	5	30
HFPO-DA (GenX)			40.0	39.5		ng/L		99	51 - 173	1	30
F-53B Minor			37.7	38.3		ng/L		102	54 - 114	2	30
NaDONA			40.0	39.1		ng/L		98	79 - 139	6	30
DONA			37.7	36.9		ng/L		98	79 - 139	6	30
Ammonium Perfluorooctanoate (APFO)			41.6	41.3		ng/L		99	70 - 130	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*95*		*25 - 150*
13C5 PFPeA	*93*		*25 - 150*
13C2 PFHxA	*96*		*25 - 150*
13C4 PFHpA	*94*		*25 - 150*
13C4 PFOA	*92*		*25 - 150*
13C5 PFNA	*94*		*25 - 150*
13C2 PFDA	*106*		*25 - 150*
13C2 PFHxDA	*93*		*25 - 150*
13C2 PFUnA	*108*		*25 - 150*
13C2 PFDoA	*101*		*25 - 150*
13C2 PFTeDA	*101*		*25 - 150*
13C3 PFBS	*99*		*25 - 150*
18O2 PFHxS	*95*		*25 - 150*
13C4 PFOS	*100*		*25 - 150*
13C8 FOSA	*95*		*25 - 150*
d3-NMeFOSAA	*87*		*25 - 150*
d5-NEtFOSAA	*94*		*25 - 150*
M2-6:2 FTS	*91*		*25 - 150*
M2-8:2 FTS	*108*		*25 - 150*
M2-4:2 FTS	*84*		*25 - 150*
d-N-MeFOSA-M	*85*		*20 - 150*
d-N-EtFOSA-M	*82*		*20 - 150*
d7-N-MeFOSE-M	*54*		*10 - 120*
d9-N-EtFOSE-M	*44*		*10 - 120*
13C3 HFPO-DA	*95*		*25 - 150*

QC Association Summary

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

LCMS

Prep Batch: 368093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-59819-1	MW-5	Total/NA	Water	3535	
320-59819-2	Field Blank	Total/NA	Water	3535	
320-59819-3	Equipment Blank	Total/NA	Water	3535	
320-59819-4	TG-2	Total/NA	Water	3535	
320-59819-5	TW-3	Total/NA	Water	3535	
320-59819-6	TW-4	Total/NA	Water	3535	
320-59819-7	TW-2	Total/NA	Water	3535	
320-59819-8	MW-10	Total/NA	Water	3535	
320-59819-9	TW-1	Total/NA	Water	3535	
320-59819-10	TW-1 Dup	Total/NA	Water	3535	
MB 320-368093/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-368093/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-368093/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 368331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-59819-1	MW-5	Total/NA	Water	537 (modified)	368093
320-59819-2	Field Blank	Total/NA	Water	537 (modified)	368093
320-59819-3	Equipment Blank	Total/NA	Water	537 (modified)	368093
320-59819-4	TG-2	Total/NA	Water	537 (modified)	368093
320-59819-6	TW-4	Total/NA	Water	537 (modified)	368093
320-59819-7	TW-2	Total/NA	Water	537 (modified)	368093
320-59819-8	MW-10	Total/NA	Water	537 (modified)	368093
320-59819-9	TW-1	Total/NA	Water	537 (modified)	368093
320-59819-10	TW-1 Dup	Total/NA	Water	537 (modified)	368093
MB 320-368093/1-A	Method Blank	Total/NA	Water	537 (modified)	368093
LCS 320-368093/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	368093
LCSD 320-368093/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	368093

Analysis Batch: 368478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-59819-5	TW-3	Total/NA	Water	537 (modified)	368093

Lab Chronicle

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: MW-5
Lab Sample ID: 320-59819-1
Date Collected: 03/25/20 10:00
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.3 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 00:13	S1M	TAL SAC

Client Sample ID: Field Blank
Lab Sample ID: 320-59819-2
Date Collected: 03/25/20 09:40
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.9 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 00:23	S1M	TAL SAC

Client Sample ID: Equipment Blank
Lab Sample ID: 320-59819-3
Date Collected: 03/25/20 10:10
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.4 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 00:33	S1M	TAL SAC

Client Sample ID: TG-2
Lab Sample ID: 320-59819-4
Date Collected: 03/25/20 10:50
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			279.2 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 00:43	S1M	TAL SAC

Client Sample ID: TW-3
Lab Sample ID: 320-59819-5
Date Collected: 03/25/20 12:00
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			267.8 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		10			368478	03/28/20 17:21	S1M	TAL SAC

Client Sample ID: TW-4
Lab Sample ID: 320-59819-6
Date Collected: 03/25/20 13:05
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			278.6 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 01:03	S1M	TAL SAC

Lab Chronicle

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Client Sample ID: TW-2
Lab Sample ID: 320-59819-7
Date Collected: 03/25/20 14:00
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.2 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 01:13	S1M	TAL SAC

Client Sample ID: MW-10
Lab Sample ID: 320-59819-8
Date Collected: 03/25/20 14:40
Matrix: Water
Date Received: 03/26/20 09:05

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 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 01:23	S1M	TAL SAC

Client Sample ID: TW-1
Lab Sample ID: 320-59819-9
Date Collected: 03/25/20 15:00
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			277.1 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 01:33	S1M	TAL SAC

Client Sample ID: TW-1 Dup
Lab Sample ID: 320-59819-10
Date Collected: 03/25/20 15:00
Matrix: Water
Date Received: 03/26/20 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			271.3 mL	10.0 mL	368093	03/27/20 04:39	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			368331	03/28/20 01:43	S1M	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
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

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	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	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-20
Michigan	State	9947	01-29-20 *
Nevada	State	CA000442020-1	07-31-20
New Hampshire	NELAP	2997	04-18-20
New Jersey	NELAP	CA005	06-30-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-21
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
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-20
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	999580010	08-31-20

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

Method Summary

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

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

Sample Summary

Client: SCS Engineers
Job ID: 320-59819-1
Project/Site: Burke WW Treatment PFAS (25218175)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-59819-1	MW-5	Water	03/25/20 10:00	03/26/20 09:05	
320-59819-2	Field Blank	Water	03/25/20 09:40	03/26/20 09:05	
320-59819-3	Equipment Blank	Water	03/25/20 10:10	03/26/20 09:05	
320-59819-4	TG-2	Water	03/25/20 10:50	03/26/20 09:05	
320-59819-5	TW-3	Water	03/25/20 12:00	03/26/20 09:05	
320-59819-6	TW-4	Water	03/25/20 13:05	03/26/20 09:05	
320-59819-7	TW-2	Water	03/25/20 14:00	03/26/20 09:05	
320-59819-8	MW-10	Water	03/25/20 14:40	03/26/20 09:05	
320-59819-9	TW-1	Water	03/25/20 15:00	03/26/20 09:05	
320-59819-10	TW-1 Dup	Water	03/25/20 15:00	03/26/20 09:05	

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-79904-36741.1
Client Contact: Mr. Eric Oelkers	Phone:	E-Mail: sandie.fredrick@testamericainc.com		Page: Page 1 of 1
Company: SCS Engineers				Job #:
Address: 2830 Dairy Dr	Due Date Requested:			
City: Madison	TAT Requested (days):			
State, Zip: WI, 53718				
Phone:	PO #: Add Project number here			
Email: eoelkers@scsengineers.com	WO #:			
Project Name: Burke WW Treatment PFAS(25218175)	Project #: 50006561			
Site:	SSOW#:			

Analysis Requested

320-59819 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS (36 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-5	3/25/2020	1000	G	Water	N	N	X		
Field Blank		940	G	Water	N	N	X		
Equipment blank		1010	G	Water	N	N	X		
TG-2		1020		Water					
TW-3		1200		Water					
TW-4		1305		Water					
TW-2		1400		Water					
MW-10		1440		Water					
TW-1		1500		Water					
TW-1 Dup		1500		Water					
				Water					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 3/25/2020 1700	Company	Received by:	Date/Time: 3/26/20 905	Company ETA-SAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ▲ Yes △ No | Custody Seal No.: 1023246 | Cooler Temperature(s) °C and Other Remarks: 0.6°C

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 320-59819-1

Login Number: 59819
List Number: 1
Creator: Kintaudi, Pauline W

List Source: Eurofins TestAmerica, Sacramento

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	1023246
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	