

# PFAS Monitoring Report Rocky Flats Site, Colorado

## Second Quarter Calendar Year 2024

October 2024



U.S. DEPARTMENT OF  
**ENERGY**

Legacy  
Management

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## Abbreviations

CY	calendar year
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ng/L	nanograms per liter
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PLFTS	Present Landfill Treatment System
SAP	Sampling and Analysis Plan
WQCC	Water Quality Control Commission

## 1.0 Introduction

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of human-made chemicals that have been in use since the 1930s and are found in a variety of industrial and commercial products. Common applications include cosmetics, food packaging, stain-resistant and water-resistant articles and treatments, nonstick coatings such as Teflon, and many others. In addition, PFAS have been used in metallurgy and have been an important ingredient in aqueous film-forming foam, also called AFFF, used in firefighting. Some PFAS have been identified as potentially harmful to human health and are being investigated at facilities across the nation.

In consultation with the Colorado Department of Public Health and Environment and the U.S. Environmental Protection Agency (EPA), the U.S. Department of Energy (DOE) developed a Sampling and Analysis Plan (SAP), *Sampling Plan for PFOA/PFOS at the Rocky Flats Site, Colorado* (DOE 2019), that described a limited sampling program at the Rocky Flats Site, Colorado (the Site). Eight locations were sampled to screen groundwater and surface water for the presence of two of the PFAS that have received the greatest scrutiny, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). These compounds were detected in samples collected in 2019 from the Site (DOE 2020). Two of the locations produced samples with concentrations exceeding EPA's 2016 nonenforceable drinking water health advisory limit of 70 nanograms per liter (ng/L) (or parts per trillion) for the sum of the concentrations of PFOA + PFOS. These two locations are a monitoring well near the former Rocky Flats Fire Department and associated training area and the influent to the Present Landfill Treatment System (PLFTS) that treats seepage from the former landfill.

Based on the 2019 screening results, DOE developed a new SAP in 2021, the *Sampling and Analysis Plan for PFAS at the Rocky Flats Site, Colorado* (DOE 2021), that specifies additional sampling to further assess the presence of PFAS at the Site. The 2021 SAP describes the special clothing, sampling preparations, sampling staff preparations, and other special requirements that are specific to collecting samples for the analysis of PFAS. The 2021 SAP increases the number of sample locations from 8 to 12 (Figure 1). The additional monitoring locations are near the former fire department and the PLFTS—the two locations that presented the highest concentrations of PFOA + PFOS in 2019. The target analytes were increased to 28 PFAS, including PFOA, PFOS, and other PFAS listed in Colorado Water Quality Control Commission (WQCC) Policy 20-1 (WQCC 2020), hereafter called the Colorado WQCC Policy, as well as three PFAS that are not listed in that policy.<sup>1</sup> This sampling was to be conducted quarterly for a total of eight quarters (2 years, that is, through the second quarter of 2023), but continued beyond that duration.

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<sup>1</sup> One of the 28 PFAS is not analyzed by the laboratory. Therefore, a total of 27 PFAS are analyzed, including all those presented by Chemical Abstracts Service number in the Colorado WQCC Policy (WQCC 2020).

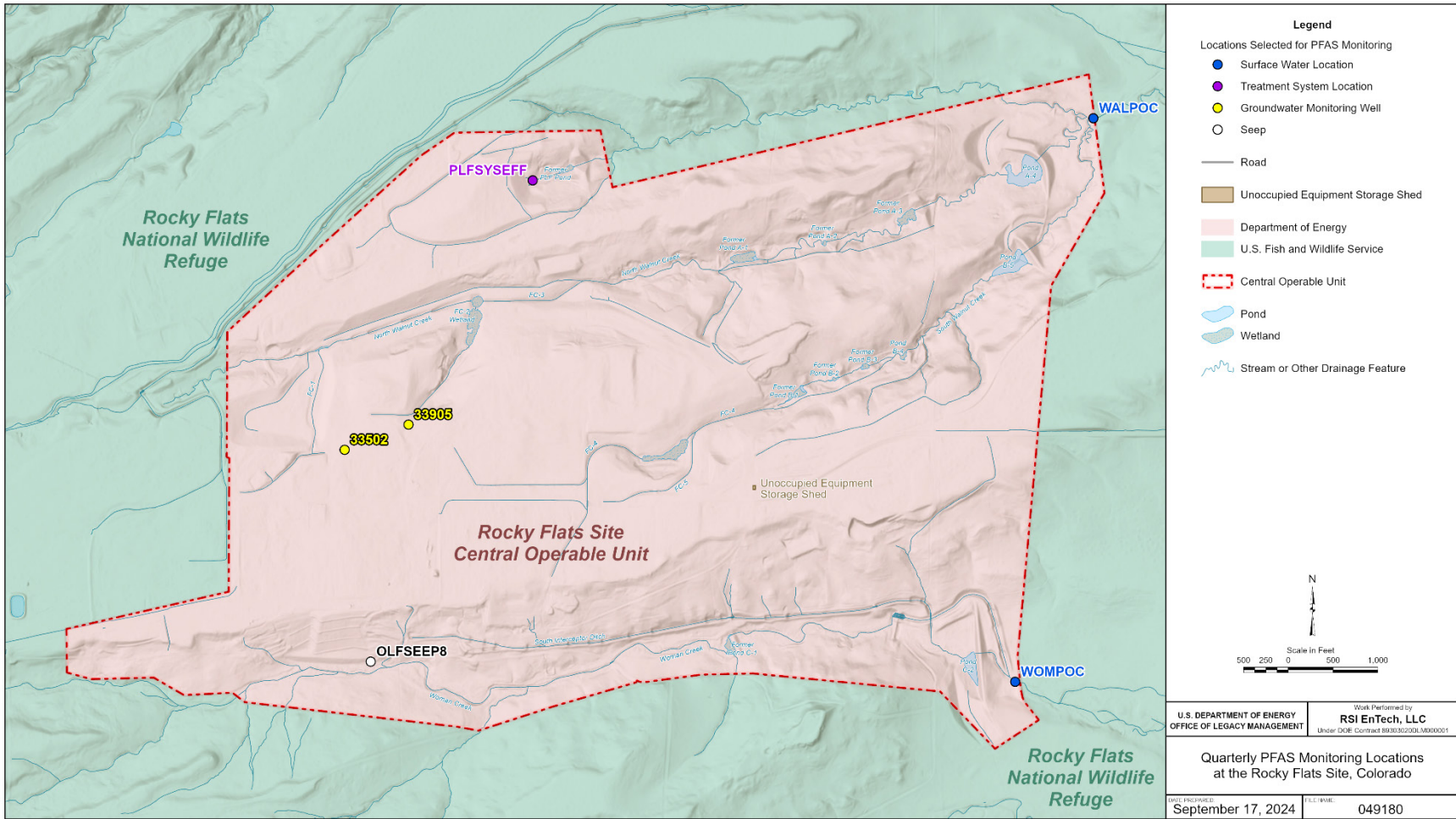


Figure 1. Central Operable Unit with PFAS Sampling Locations

The 2021 SAP was revised in the fourth quarter of calendar year (CY) 2023 to reduce the number of sample locations from 12 to 6 and include the collection of split samples to allow a statistical comparison of results obtained through two different analytical methods. Split samples were first collected from the six selected locations in the second quarter of CY 2023 at DOE’s initiative. In that and the following (third) quarter of CY 2023, the other six locations were still sampled, but those samples were analyzed only using the original analytical method. Only the selected six locations were sampled in the fourth quarter of CY 2023 and first quarter of CY 2024 using the split sampling approach. This split sampling supported a statistical comparison of analytical data generated through the two analytical methods, modified EPA Method 537.1 and EPA Method 1633 (DOE 2023). The former method was used starting in 2019 and is a modification of a drinking water method that has not been formally approved for use with environmental matrices such as groundwater and surface water. The latter method was finalized and approved for use with environmental aqueous matrices in 2023 and with solid matrices as well in early 2024.

This report focuses on the same six locations as the previous two quarterly reports, but only the new, approved EPA Method 1633 is used in analyzing the samples for PFAS.

Results of PFAS-focused monitoring are provided in quarterly reports; the report for the fourth quarter of each calendar year is combined with an annual report. The quarterly reports are brief data summaries, and the annual reports include additional information. Sampling as described in the 2021 SAP began in the third quarter of CY 2021; the second quarter of CY 2024 represents the 12th consecutive quarter of sampling. Refer to the 2023 annual PFAS report (DOE 2024) for additional information on PFAS sampling conducted at the Rocky Flats Site to date.

## 2.0 Monitoring Highlights: Second Quarter CY 2024

All locations were successfully sampled during the second-quarter sampling event. Sampling events are summarized in Table 1.

Table 1. Sampling Events in Second Quarter CY 2024

Location ID		Sample ID	Sample Date and Time	Sample Type
Actual	Dummy <sup>a</sup>			
33502		RFS01-18.2405007-006	6/10/2024 10:55	F
33905		RFS01-18.2405007-007	6/10/2024 9:15	F
OLFSEEP8		RFS01-19.2405001-026	5/23/2024 14:30	F
PLFSYSEFF		RFS01-18.2405007-149	6/7/2024 9:05	F
WALPOC		RFS01-19.2405001-040	5/15/2024 13:45	F
WOMPOC		RFS01-19.2405001-041	5/15/2024 14:15	F
33905	2783	RFS01-18.2405007-141	6/10/2024 8:35	FB
33905	2784	RFS01-18.2405007-124	6/10/2024 8:45	E

**Note:**

<sup>a</sup> “Dummy” location codes are assigned to quality assurance/quality control samples (sample types E, FB) that are physically collected at the actual locations indicated. Refer to the *Sampling and Analysis Plan for PFAS at the Rocky Flats Site, Colorado* (DOE 2021) for additional information on sample types.

**Abbreviations:**

E = equipment rinse, F = field, FB = field blank

### 3.0 Analytical Data: Second Quarter CY 2024

Analytical data for the second quarter of CY 2024 are provided in Table 2, and field parameter data are provided in Table 3. Both tables are attached at the end of this report.

### 4.0 References

DOE (U.S. Department of Energy), 2019. *Sampling Plan for PFOA/PFOS at the Rocky Flats Site, Colorado*, LMS/RFS/S22080, Office of Legacy Management, April.

DOE (U.S. Department of Energy), 2020. *Summary Report: Results of Assessment for PFOA/PFOS at the Rocky Flats Site, Colorado*, LMS/RFS/S29191, Office of Legacy Management, April.

DOE (U.S. Department of Energy), 2021. *Sampling and Analysis Plan for PFAS at the Rocky Flats Site, Colorado*, LMS/RFS/S33207-0.0, Office of Legacy Management, July.

DOE (U.S. Department of Energy), 2023. Interim Directive ID-23-08 to *Sampling and Analysis Plan for PFAS at the Rocky Flats Site, Colorado*, LMS/RFS/S33207-0.0, Office of Legacy Management, October 11, 2023.

DOE (U.S. Department of Energy), 2024. *Annual PFAS Monitoring Report, Rocky Flats Site, Colorado, Calendar Year 2023*, LMS/RFS/47262, Office of Legacy Management, April.

WQCC (Water Quality Control Commission), 2020. *Policy for Interpreting the Narrative Water Quality Standards for Per- and Polyfluoroalkyl Substances (PFAS)*, Policy 20-1, 5 CCR 1002-31 Section 31.11(1)(a)(iv) and 5 CCR 1002-41 Section 41.5(A)(1), Colorado Department of Public Health and Environment, approved July 14, expires July 31, 2025.

Table 2. Analytical Results for Water Samples

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
33502	WL	6/10/2024	RFS01-18.2405007-006	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	F	0.32	U	F	0.32	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	13252-13-6	Perfluoro-2-propoxypropionic acid	F	0.45	U	F	0.45	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	F	0.36	U	F	0.36	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	F	2.3	U	F	2.3	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	F	250		F	0.31	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	2058-94-8	Perfluoroundecanoic acid (PFUnA)	F	0.27	U	F	0.27	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	F	0.40	U	F	0.40	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	F	1.0	U	R	1.0	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	2706-90-3	Perfluoropentanoic acid (PFPeA)	F	220		R	0.36	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	F	17		F	0.15	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	27619-97-2	6:2 fluorotelomersulfonic acid	F	43		F	0.56	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	F	0.34	U	F	0.34	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	307-24-4	Perfluorohexanoic acid (PFHxA)	F	130		F	0.11	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	307-55-1	Perfluorododecanoic acid (PFDoA)	F	0.34	U	F	0.34	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	31506-32-8	N-methyl perfluorooctanesulfonamide	F	0.30	U	F	0.30	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	335-67-1	Perfluorooctanoic acid (PFOA)	F	110		F	0.62	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	335-76-2	Perfluorodecanoic acid (PFDA)	F	3.9		F	0.083	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	335-77-3	Perfluorodecanesulfonic acid (PFDS)	F	0.23	U	F	0.23	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	F	170		F	0.23	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	356-02-5	3-Perfluoropropyl propanoic acid	F	1.7	U	F	1.7	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	375-22-4	Perfluorobutanoic acid (PFBA)	F	83		R	1.2	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	375-73-5	Perfluorobutanesulfonic acid (PFBS)	F	14		F	0.16	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	375-85-9	Perfluoroheptanoic acid (PFHpA)	F	120		F	0.19	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	F	5.4		F	0.38	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	375-95-1	Perfluorononanoic acid (PFNA)	F	12		F	0.17	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	376-06-7	Perfluorotetradecanoic acid (PFTeA)	F	0.20	U	F	0.20	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	377-73-1	Perfluoro-3-methoxypropanoic acid	F	0.48	U	F	0.48	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	39108-34-4	8:2 fluorotelomersulfonic acid	F	17		F	0.74	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	4151-50-2	N-ethyl perfluorooctanesulfonamide	F	0.19	U	F	0.19	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	F	0.15	U	F	0.15	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	F	0.16	U	F	0.16	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	754-91-6	Perfluorooctane Sulfonamide (FOSA)	F	0.71	J	FJ	0.10	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	F	1.0	U	F	1.0	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	F	0.65	U	F	0.65	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	F	1.2	U	F	1.2	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	79780-39-5	Perfluorododecanesulfonic acid	F	0.21	U	F	0.21	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	812-70-4	3-Perfluoroheptyl propanoic acid	F	5.3	U	F	5.3	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	863090-89-5	Perfluoro-4-methoxybutanoic acid	F	0.46	U	F	0.46	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	F	13	J	FJ	4.9	EPA 1633
33502	WL	6/10/2024	RFS01-18.2405007-006	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	F	0.42	U	F	0.42	EPA 1633



Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
33905	WL	6/10/2024	RFS01-18.2405007-007	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	F	0.31	U	FQ	0.31	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	13252-13-6	Perfluoro-2-propoxypropionic acid	F	0.44	U	FQ	0.44	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	F	0.35	U	FQ	0.35	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	F	1.1	U	FQ	1.1	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	F	120		FQ	0.30	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	2058-94-8	Perfluoroundecanoic acid (PFUnA)	F	0.26	U	FQ	0.26	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	F	0.39	U	FQ	0.39	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	F	0.98	U	FQ	0.98	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	2706-90-3	Perfluoropentanoic acid (PFPeA)	F	63		FQ	0.35	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	F	11		FQ	0.14	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	27619-97-2	6:2 fluorotelomersulfonic acid	F	0.54	U	FQ	0.54	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	F	0.33	U	FQ	0.33	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	307-24-4	Perfluorohexanoic acid (PFHxA)	F	47		FQ	0.11	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	307-55-1	Perfluorododecanoic acid (PFDoA)	F	0.33	U	FQ	0.33	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	31506-32-8	N-methyl perfluorooctanesulfonamide	F	0.29	U	FQ	0.29	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	335-67-1	Perfluorooctanoic acid (PFOA)	F	27		FQ	0.60	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	335-76-2	Perfluorodecanoic acid (PFDA)	F	0.40	J	FQ	0.081	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	335-77-3	Perfluorodecanesulfonic acid (PFDS)	F	0.22	U	FQ	0.22	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	F	100		FQ	0.22	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	356-02-5	3-Perfluoropropyl propanoic acid	F	1.6	U	FQ	1.6	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	375-22-4	Perfluorobutanoic acid (PFBA)	F	32		FQ	0.55	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	375-73-5	Perfluorobutanesulfonic acid (PFBS)	F	13		FQ	0.15	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	375-85-9	Perfluoroheptanoic acid (PFHpA)	F	30		FQ	0.18	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	F	2.6		FQ	0.37	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	375-95-1	Perfluorononanoic acid (PFNA)	F	2.9		FQ	0.17	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	376-06-7	Perfluorotetradecanoic acid (PFTeA)	F	0.19	U	FQ	0.19	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	377-73-1	Perfluoro-3-methoxypropanoic acid	F	0.46	U	FQ	0.46	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	39108-34-4	8:2 fluorotelomersulfonic acid	F	0.71	U	FQ	0.71	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	4151-50-2	N-ethyl perfluorooctanesulfonamide	F	0.18	U	FQ	0.18	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	F	0.14	U	FQ	0.14	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	F	0.15	U	FQ	0.15	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	754-91-6	Perfluorooctane Sulfonamide (FOSA)	F	0.15	J	FJQ	0.097	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	F	1.0	U	FQ	1.0	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	F	0.63	U	FQ	0.63	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	F	1.1	U	FQ	1.1	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	79780-39-5	Perfluorododecanesulfonic acid	F	0.20	U	FQ	0.20	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	812-70-4	3-Perfluoroheptyl propanoic acid	F	5.1	U	FQ	5.1	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	863090-89-5	Perfluoro-4-methoxybutanoic acid	F	0.44	U	FQ	0.44	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	F	4.8	U	FQ	4.8	EPA 1633
33905	WL	6/10/2024	RFS01-18.2405007-007	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	F	0.40	U	FQ	0.40	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	F	0.32	U	J	0.32	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	13252-13-6	Perfluoro-2-propoxypropionic acid	F	0.45	U	J	0.45	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	F	0.37	U	J	0.37	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	F	1.1	U	J	1.1	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	F	3.0		J	0.31	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	2058-94-8	Perfluoroundecanoic acid (PFUnA)	F	0.27	U	J	0.27	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	F	0.40	U	J	0.40	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	F	1.0	U	J	1.0	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	2706-90-3	Perfluoropentanoic acid (PFPeA)	F	23		J	0.36	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	F	6.0		J	0.15	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	27619-97-2	6:2 fluorotelomersulfonic acid	F	0.56	U	J	0.56	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	F	0.34	U	J	0.34	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	307-24-4	Perfluorohexanoic acid (PFHxA)	F	16		J	0.11	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	307-55-1	Perfluorododecanoic acid (PFDoA)	F	0.34	U	J	0.34	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	31506-32-8	N-methyl perfluorooctanesulfonamide	F	0.30	U	J	0.30	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	335-67-1	Perfluorooctanoic acid (PFOA)	F	18		J	0.62	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	335-76-2	Perfluorodecanoic acid (PFDA)	F	0.084	U	J	0.084	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	335-77-3	Perfluorodecanesulfonic acid (PFDS)	F	0.23	U	J	0.23	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	F	16		J	0.23	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	356-02-5	3-Perfluoropropyl propanoic acid	F	1.7	U	J	1.7	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	375-22-4	Perfluorobutanoic acid (PFBA)	F	33		J	0.56	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	375-73-5	Perfluorobutanesulfonic acid (PFBS)	F	12		J	0.16	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	375-85-9	Perfluoroheptanoic acid (PFHpA)	F	6.7		J	0.19	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	F	0.38	U	J	0.38	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	375-95-1	Perfluorononanoic acid (PFNA)	F	0.71	J	J	0.17	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	376-06-7	Perfluorotetradecanoic acid (PFTeA)	F	0.20	U	J	0.20	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	377-73-1	Perfluoro-3-methoxypropanoic acid	F	0.48	U	J	0.48	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	39108-34-4	8:2 fluorotelomersulfonic acid	F	0.74	U	J	0.74	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	4151-50-2	N-ethyl perfluorooctanesulfonamide	F	0.19	U	J	0.19	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	F	0.15	U	J	0.15	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	F	0.16	U	J	0.16	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	754-91-6	Perfluorooctane Sulfonamide (FOSA)	F	0.89	J	J	0.10	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	F	1.0	U	J	1.0	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	F	0.65	U	J	0.65	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	F	1.2	U	J	1.2	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	79780-39-5	Perfluorododecanesulfonic acid	F	0.21	U	J	0.21	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	812-70-4	3-Perfluoroheptyl propanoic acid	F	5.3	U	J	5.3	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	863090-89-5	Perfluoro-4-methoxybutanoic acid	F	0.46	U	J	0.46	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	F	4.9	U	J	4.9	EPA 1633
OLFSEEP8	SL	5/23/2024	RFS01-19.2405001-026	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	F	0.42	U	J	0.42	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	F	0.67	U		0.67	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	13252-13-6	Perfluoro-2-propoxypropionic acid	F	0.94	U		0.94	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	F	0.76	U		0.76	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	F	2.3	U		2.3	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	F	21			0.64	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	2058-94-8	Perfluoroundecanoic acid (PFUnA)	F	0.55	U		0.55	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	F	1.2	J		0.83	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	F	2.1	U		2.1	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	2706-90-3	Perfluoropentanoic acid (PFPeA)	F	12		J	0.75	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	F	1.1	J	J	0.31	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	27619-97-2	6:2 fluorotelomersulfonic acid	F	1.3	J	J	1.2	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	F	27			0.71	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	307-24-4	Perfluorohexanoic acid (PFHxA)	F	27			0.23	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	307-55-1	Perfluorododecanoic acid (PFDoA)	F	0.72	U		0.72	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	31506-32-8	N-methyl perfluorooctanesulfonamide	F	0.61	U		0.61	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	335-67-1	Perfluorooctanoic acid (PFOA)	F	56			1.3	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	335-76-2	Perfluorodecanoic acid (PFDA)	F	0.72	J		0.17	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	335-77-3	Perfluorodecanesulfonic acid (PFDS)	F	0.84	J		0.48	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	F	15			0.48	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	356-02-5	3-Perfluoropropyl propanoic acid	F	3.5	U		3.5	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	375-22-4	Perfluorobutanoic acid (PFBA)	F	62			1.2	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	375-73-5	Perfluorobutanesulfonic acid (PFBS)	F	1.4	J		0.33	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	375-85-9	Perfluoroheptanoic acid (PFHpA)	F	9.8			0.40	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	F	0.79	U		0.79	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	375-95-1	Perfluorononanoic acid (PFNA)	F	0.86	J		0.36	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	376-06-7	Perfluorotetradecanoic acid (PFTeA)	F	0.41	U		0.41	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	377-73-1	Perfluoro-3-methoxypropanoic acid	F	0.99	U		0.99	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	39108-34-4	8:2 fluorotelomersulfonic acid	F	1.5	U		1.5	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	4151-50-2	N-ethyl perfluorooctanesulfonamide	F	0.39	U		0.39	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	F	0.30	U		0.30	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	F	0.32	U		0.32	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	754-91-6	Perfluorooctane Sulfonamide (FOSA)	F	0.88	J		0.21	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	F	2.2	U		2.2	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	F	1.4	U		1.4	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	F	2.4	U		2.4	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	79780-39-5	Perfluorododecanesulfonic acid	F	0.44	U		0.44	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	812-70-4	3-Perfluoroheptyl propanoic acid	F	11	U		11	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	863090-89-5	Perfluoro-4-methoxybutanoic acid	F	0.95	U		0.95	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	F	21	J		10	EPA 1633
PLFSYSEFF	TS	6/7/2024	RFS01-18.2405007-149	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	F	0.86	U		0.86	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	F	0.28	U	J	0.28	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	13252-13-6	Perfluoro-2-propoxypropionic acid	F	0.40	U	J	0.40	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	F	0.32	U	J	0.32	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	F	2.3	U	J	2.3	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	F	22		J	0.27	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	2058-94-8	Perfluoroundecanoic acid (PFUnA)	F	0.24	U	J	0.24	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	F	0.35	U	J	0.35	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	F	2.1	U	J	2.1	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	2706-90-3	Perfluoropentanoic acid (PFPeA)	F	6.9		J	0.32	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	F	0.66	J	J	0.13	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	27619-97-2	6:2 fluorotelomersulfonic acid	F	0.50	U	J	0.50	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	F	0.94	J	J	0.30	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	307-24-4	Perfluorohexanoic acid (PFHxA)	F	5.3		J	0.097	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	307-55-1	Perfluorododecanoic acid (PFDoA)	F	0.30	U	J	0.30	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	31506-32-8	N-methyl perfluorooctanesulfonamide	F	0.26	U	J	0.26	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	335-67-1	Perfluorooctanoic acid (PFOA)	F	15		J	0.55	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	335-76-2	Perfluorodecanoic acid (PFDA)	F	0.074	U	J	0.074	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	335-77-3	Perfluorodecanesulfonic acid (PFDS)	F	0.20	U	J	0.20	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	F	5.5		J	0.20	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	356-02-5	3-Perfluoropropyl propanoic acid	F	1.5	U	J	1.5	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	375-22-4	Perfluorobutanoic acid (PFBA)	F	32		J	0.50	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	375-73-5	Perfluorobutanesulfonic acid (PFBS)	F	3.7		J	0.14	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	375-85-9	Perfluoroheptanoic acid (PFHpA)	F	3.9		J	0.17	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	F	0.34	U	J	0.34	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	375-95-1	Perfluorononanoic acid (PFNA)	F	1.2	J	J	0.15	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	376-06-7	Perfluorotetradecanoic acid (PFTeA)	F	0.18	U	J	0.18	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	377-73-1	Perfluoro-3-methoxypropanoic acid	F	0.42	U	J	0.42	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	39108-34-4	8:2 fluorotelomersulfonic acid	F	0.65	U	J	0.65	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	4151-50-2	N-ethyl perfluorooctanesulfonamide	F	0.17	U	J	0.17	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	F	0.13	U	J	0.13	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	F	0.14	U	J	0.14	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	754-91-6	Perfluorooctane Sulfonamide (FOSA)	F	0.45	J	J	0.089	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	F	0.92	U	J	0.92	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	F	0.57	U	J	0.57	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	F	1.0	U	J	1.0	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	79780-39-5	Perfluorododecanesulfonic acid	F	0.19	U	J	0.19	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	812-70-4	3-Perfluoroheptyl propanoic acid	F	4.7	U	J	4.7	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	863090-89-5	Perfluoro-4-methoxybutanoic acid	F	0.40	U	J	0.40	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	F	4.4	U	J	4.4	EPA 1633
WALPOC	SL	5/15/2024	RFS01-19.2405001-040	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	F	0.37	U	J	0.37	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	F	0.29	U	J	0.29	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	13252-13-6	Perfluoro-2-propoxypropionic acid	F	0.40	U	J	0.40	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	F	0.33	U	J	0.33	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	F	2.2	U	J	2.2	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	F	0.28	U	J	0.28	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	2058-94-8	Perfluoroundecanoic acid (PFUnA)	F	0.24	U	J	0.24	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	F	0.36	U	J	0.36	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	F	2.1	U	J	2.1	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	2706-90-3	Perfluoropentanoic acid (PFPeA)	F	1.4	J	J	0.32	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	F	0.31	J	J	0.13	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	27619-97-2	6:2 fluorotelomersulfonic acid	F	0.50	U	J	0.50	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	F	0.31	U	J	0.31	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	307-24-4	Perfluorohexanoic acid (PFHxA)	F	1.3	J	J	0.099	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	307-55-1	Perfluorododecanoic acid (PFDoA)	F	0.31	U	J	0.31	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	31506-32-8	N-methyl perfluorooctanesulfonamide	F	0.26	U	J	0.26	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	335-67-1	Perfluorooctanoic acid (PFOA)	F	1.5		J	0.56	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	335-76-2	Perfluorodecanoic acid (PFDA)	F	0.075	U	J	0.075	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	335-77-3	Perfluorodecanesulfonic acid (PFDS)	F	0.21	U	J	0.21	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	F	1.1	J	J	0.21	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	356-02-5	3-Perfluoropropyl propanoic acid	F	1.5	U	J	1.5	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	375-22-4	Perfluorobutanoic acid (PFBA)	F	6.1		J	0.50	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	375-73-5	Perfluorobutanesulfonic acid (PFBS)	F	2.0		J	0.14	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	375-85-9	Perfluoroheptanoic acid (PFHpA)	F	0.54	J	J	0.17	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	F	0.34	U	J	0.34	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	375-95-1	Perfluorononanoic acid (PFNA)	F	0.16	U	J	0.16	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	376-06-7	Perfluorotetradecanoic acid (PFTeA)	F	0.18	U	J	0.18	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	377-73-1	Perfluoro-3-methoxypropanoic acid	F	0.43	U	J	0.43	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	39108-34-4	8:2 fluorotelomersulfonic acid	F	0.66	U	J	0.66	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	4151-50-2	N-ethyl perfluorooctanesulfonamide	F	0.17	U	J	0.17	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	F	0.13	U	J	0.13	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	F	0.14	U	J	0.14	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	754-91-6	Perfluorooctane Sulfonamide (FOSA)	F	0.090	U	J	0.090	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	F	0.93	U	J	0.93	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	F	0.58	U	J	0.58	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	F	1.0	U	J	1.0	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	79780-39-5	Perfluorododecanesulfonic acid	F	0.19	U	J	0.19	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	812-70-4	3-Perfluoroheptyl propanoic acid	F	4.8	U	J	4.8	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	863090-89-5	Perfluoro-4-methoxybutanoic acid	F	0.41	U	J	0.41	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	F	4.4	U	J	4.4	EPA 1633
WOMPOC	SL	5/15/2024	RFS01-19.2405001-041	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	F	0.37	U	J	0.37	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
2783	QC	6/10/2024	RFS01-18.2405007-141	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	FB	0.33	U		0.33	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	13252-13-6	Perfluoro-2-propoxypropionic acid	FB	0.46	U		0.46	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	FB	0.37	U		0.37	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	FB	1.1	U		1.1	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	FB	0.32	U		0.32	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	2058-94-8	Perfluoroundecanoic acid (PFUnA)	FB	0.27	U		0.27	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	FB	0.41	U		0.41	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	FB	1.0	U		1.0	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	2706-90-3	Perfluoropentanoic acid (PFPeA)	FB	0.37	U		0.37	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	FB	0.15	U		0.15	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	27619-97-2	6:2 fluorotelomersulfonic acid	FB	0.57	U		0.57	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	FB	0.35	U		0.35	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	307-24-4	Perfluorohexanoic acid (PFHxA)	FB	0.11	U		0.11	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	307-55-1	Perfluorododecanoic acid (PFDoA)	FB	0.35	U		0.35	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	31506-32-8	N-methyl perfluorooctanesulfonamide	FB	0.30	U		0.30	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	335-67-1	Perfluorooctanoic acid (PFOA)	FB	0.64	U		0.64	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	335-76-2	Perfluorodecanoic acid (PFDA)	FB	0.085	U		0.085	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	335-77-3	Perfluorodecanesulfonic acid (PFDS)	FB	0.24	U		0.24	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	FB	0.24	U		0.24	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	356-02-5	3-Perfluoropropyl propanoic acid	FB	1.7	U		1.7	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	375-22-4	Perfluorobutanoic acid (PFBA)	FB	0.58	U		0.58	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	375-73-5	Perfluorobutanesulfonic acid (PFBS)	FB	0.16	U		0.16	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	375-85-9	Perfluoroheptanoic acid (PFHpA)	FB	0.19	U		0.19	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	FB	0.39	U		0.39	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	375-95-1	Perfluorononanoic acid (PFNA)	FB	0.18	U		0.18	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	376-06-7	Perfluorotetradecanoic acid (PFTeA)	FB	0.20	U		0.20	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	377-73-1	Perfluoro-3-methoxypropanoic acid	FB	0.49	U		0.49	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	39108-34-4	8:2 fluorotelomersulfonic acid	FB	0.75	U		0.75	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	4151-50-2	N-ethyl perfluorooctanesulfonamide	FB	0.19	U		0.19	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	FB	0.15	U		0.15	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	FB	0.16	U		0.16	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	754-91-6	Perfluorooctane Sulfonamide (FOSA)	FB	0.10	U		0.10	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	FB	1.1	U		1.1	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	FB	0.66	U		0.66	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	FB	1.2	U		1.2	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	79780-39-5	Perfluorododecanesulfonic acid	FB	0.22	U		0.22	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	812-70-4	3-Perfluoroheptyl propanoic acid	FB	5.4	U		5.4	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	863090-89-5	Perfluoro-4-methoxybutanoic acid	FB	0.47	U		0.47	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	FB	5.0	U		5.0	EPA 1633
2783	QC	6/10/2024	RFS01-18.2405007-141	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	FB	0.42	U		0.42	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
2784	QC	6/10/2024	RFS01-18.2405007-124	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid	E	0.30	U		0.30	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	13252-13-6	Perfluoro-2-propoxypropionic acid	E	0.42	U		0.42	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid	E	0.34	U		0.34	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	1691-99-2	N-ethyl perfluorooctanesulfonamidoethanol	E	1.0	U		1.0	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	E	0.29	U		0.29	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	2058-94-8	Perfluoroundecanoic acid (PFUnA)	E	0.25	U		0.25	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid	E	0.37	U		0.37	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	24448-09-7	N-methyl perfluorooctanesulfonamidoethanol	E	0.94	U		0.94	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	2706-90-3	Perfluoropentanoic acid (PFPeA)	E	0.34	U		0.34	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	2706-91-4	Perfluoropentane Sulfonic acid (PFPS)	E	0.14	U		0.14	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	27619-97-2	6:2 fluorotelomersulfonic acid	E	0.52	U		0.52	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid	E	0.32	U		0.32	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	307-24-4	Perfluorohexanoic acid (PFHxA)	E	0.10	U		0.10	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	307-55-1	Perfluorododecanoic acid (PFDoA)	E	0.32	U		0.32	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	31506-32-8	N-methyl perfluorooctanesulfonamide	E	0.27	U		0.27	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	335-67-1	Perfluorooctanoic acid (PFOA)	E	0.58	U		0.58	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	335-76-2	Perfluorodecanoic acid (PFDA)	E	0.077	U		0.077	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	335-77-3	Perfluorodecanesulfonic acid (PFDS)	E	0.21	U		0.21	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	355-46-4	Perfluorohexanesulfonic acid (PFHxS)	E	0.21	U		0.21	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	356-02-5	3-Perfluoropropyl propanoic acid	E	1.6	U		1.6	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	375-22-4	Perfluorobutanoic acid (PFBA)	E	0.52	U		0.52	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	375-73-5	Perfluorobutanesulfonic acid (PFBS)	E	0.15	U		0.15	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	375-85-9	Perfluoroheptanoic acid (PFHpA)	E	0.18	U		0.18	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	E	0.35	U		0.35	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	375-95-1	Perfluorononanoic acid (PFNA)	E	0.16	U		0.16	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	376-06-7	Perfluorotetradecanoic acid (PFTeA)	E	0.18	U		0.18	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	377-73-1	Perfluoro-3-methoxypropanoic acid	E	0.44	U		0.44	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	39108-34-4	8:2 fluorotelomersulfonic acid	E	0.68	U		0.68	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	4151-50-2	N-ethyl perfluorooctanesulfonamide	E	0.17	U		0.17	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	68259-12-1	Perfluorononane Sulfonic acid (PFNS)	E	0.14	U		0.14	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	72629-94-8	Perfluorotridecanoic Acid (PFTriA)	E	0.14	U		0.14	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	754-91-6	Perfluorooctane Sulfonamide (FOSA)	E	0.093	U		0.093	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	E	0.97	U		0.97	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	757124-72-4	4:2 Fluorotelomer sulfonate (4:2 FTS)	E	0.60	U		0.60	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	763051-92-9	11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid	E	1.1	U		1.1	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	79780-39-5	Perfluorododecanesulfonic acid	E	0.20	U		0.20	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	812-70-4	3-Perfluoroheptyl propanoic acid	E	4.9	U		4.9	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	863090-89-5	Perfluoro-4-methoxybutanoic acid	E	0.42	U		0.42	EPA 1633

Table 2. Analytical Results for Water Samples (continued)

Location Code	Location Type	Date Sampled	Sample Code	CAS No.	Analyte	Sample Type	Result (ng/L)	Lab Qualifier	Data Validation Qualifier	Detection Limit (ng/L)	Analytical Method
2784	QC	6/10/2024	RFS01-18.2405007-124	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid	E	4.6	U		4.6	EPA 1633
2784	QC	6/10/2024	RFS01-18.2405007-124	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	E	0.38	U		0.38	EPA 1633

**Notes:**

All samples were analyzed by TestAmerica Laboratories, Inc.  
 All samples were unfiltered.

**Abbreviations:**

CAS No. = Chemical Abstracts Service registry number  
 E = equipment rinse  
 F (Data Validation Qualifier) = low flow technique was used  
 F (Sample Type) = field  
 FB = field blank  
 J = estimated  
 Q = qualitative  
 QC = quality control (dummy location code)  
 R = rejected  
 SL = surface location  
 TS = treatment system location  
 U = analytical result below detection limit  
 WL = well



Table 3. Field Parameter Results for Water Samples

Location Code	Date Sampled	Parameter	Result	Unit
33502	6/10/2024	Turbidity	14.2	NTU
33502	6/10/2024	Alkalinity, total (as CaCO <sub>3</sub> )	846	mg/L
33502	6/10/2024	Specific conductance	2323	µmho/cm
33502	6/10/2024	pH	7.21	s.u.
33502	6/10/2024	Temperature	14.82	°C
33905	6/10/2024	Turbidity	21.0	NTU
33905	6/10/2024	Alkalinity, total (as CaCO <sub>3</sub> )	239	mg/L
33905	6/10/2024	Specific conductance	792	µmho/cm
33905	6/10/2024	pH	6.73	s.u.
33905	6/10/2024	Temperature	13.08	°C
OLFSEEP8	5/23/2024	Turbidity	28.9	NTU
OLFSEEP8	5/23/2024	Alkalinity, total (as CaCO <sub>3</sub> )	304.8	mg/L
OLFSEEP8	5/23/2024	Specific conductance	1073	µmho/cm
OLFSEEP8	5/23/2024	pH	8.33	s.u.
OLFSEEP8	5/23/2024	Temperature	20.58	°C
PLFSYSEFF	6/7/2024	Turbidity	11.9	NTU
PLFSYSEFF	6/7/2024	Alkalinity, total (as CaCO <sub>3</sub> )	748	mg/L
PLFSYSEFF	6/7/2024	Specific conductance	1228	µmho/cm
PLFSYSEFF	6/7/2024	pH	6.81	s.u.
PLFSYSEFF	6/7/2024	Temperature	19.47	°C
WALPOC	5/15/2024	Turbidity	7.25	NTU
WALPOC	5/15/2024	Alkalinity, total (as CaCO <sub>3</sub> )	195	mg/L
WALPOC	5/15/2024	Specific conductance	1011	µmho/cm
WALPOC	5/15/2024	pH	9.08	s.u.
WALPOC	5/15/2024	Temperature	19.79	°C
WOMPOC	5/15/2024	Turbidity	3.96	NTU
WOMPOC	5/15/2024	Alkalinity, total (as CaCO <sub>3</sub> )	190	mg/L
WOMPOC	5/15/2024	Specific conductance	644	µmho/cm
WOMPOC	5/15/2024	pH	9.08	s.u.
WOMPOC	5/15/2024	Temperature	20.73	C

**Abbreviations:**

CaCO<sub>3</sub> = calcium carbonate  
mg/L = milligrams per liter  
µmho/cm = micromhos per centimeter  
NTU = nephelometric turbidity units  
s.u. = standard unit