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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-131004-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

myEOL

Eurofins Eaton Analytical Pomona

Job Notes

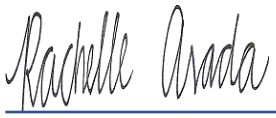
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW,Water matrices)

Authorization



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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Job ID: 380-131004-1 — Eurofins Eaton Analytical Pomona

Job Narrative
380-131004-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/17/2025 10:28 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0°C and 3.1°C.

PFAS
Method 537.1: The method blank associated with preparation batch 380-128779 and analytical batch 380-129104 contained Perfluorooctanoic acid (PFOA) greater than one-third the reporting limit (RL) due to contamination of internal standard. This has also caused MRL check to fail biased high. In addition, surrogate recoveries in MBLK and LCS failed high. The samples FB: Halawa Shaft Viewing Pool (380-131004-2) could not be re-analyzed because there is insufficient volume for re-extraction. Field blanks and associated field samples with detections excluded due to this QC failure.

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

Detection Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool — Lab Sample ID: 380-131004-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0		ng/L	1		533	Total/NA

Client Sample ID: FB: Halawa Shaft Viewing Pool — Lab Sample ID: 380-131004-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample ID: Halawa Shaft Viewing Pool

Date Collected: 01/14/25 10:00
Date Received: 01/17/25 10:28

Lab Sample ID: 380-131004-1

Matrix: Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorohexanesulfonic acid (PFHxS)	**3.4**		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorooctanesulfonic acid (PFOS)	**3.6**		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		01/21/25 13:35	01/22/25 16:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*104*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C6 PFDA	*113*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C5 PFHxA	*108*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C4 PFHpA	*108*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C8 PFOA	*112*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C9 PFNA	*115*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C7 PFUnA	*107*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C2 PFDoA	*110*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C4 PFBA	*111*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C5 PFPeA	*113*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C3 PFBS	*110*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*
13C3 PFHxS	*113*		*50 - 200*	*01/21/25 13:35*	*01/22/25 16:29*	*1*

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-131004-1
Matrix: Water
Date Collected: 01/14/25 10:00
Date Received: 01/17/25 10:28

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	115		50 - 200	01/21/25 13:35	01/22/25 16:29	1
13C2-4:2-FTS	116		50 - 200	01/21/25 13:35	01/22/25 16:29	1
13C2-6:2-FTS	123		50 - 200	01/21/25 13:35	01/22/25 16:29	1
13C2-8:2-FTS	113		50 - 200	01/21/25 13:35	01/22/25 16:29	1

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-131004-2
Matrix: Water
Date Collected: 01/14/25 10:00
Date Received: 01/17/25 10:28

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		01/19/25 07:15	01/20/25 04:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C6 PFDA	98		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C5 PFHxA	103		50 - 200	01/19/25 07:15	01/20/25 04:06	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Client Sample ID: FB: Halawa Shaft Viewing Pool
Date Collected: 01/14/25 10:00
Date Received: 01/17/25 10:28

Lab Sample ID: 380-131004-2
Matrix: Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	109		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C8 PFOA	109		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C9 PFNA	101		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C7 PFUnA	93		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C2 PFDoA	86		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C4 PFBA	107		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C5 PFPeA	106		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C3 PFBS	106		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C3 PFHxS	111		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C8 PFOS	108		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C2-4:2-FTS	90		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C2-6:2-FTS	124		50 - 200	01/19/25 07:15	01/20/25 04:06	1
13C2-8:2-FTS	92		50 - 200	01/19/25 07:15	01/20/25 04:06	1

Action Limit Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool — Lab Sample ID: 380-131004-1

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

Client Sample ID: FB: Halawa Shaft Viewing Pool — Lab Sample ID: 380-131004-2

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-130670-AK-1-A MS	Matrix Spike	103	105	98	103	107	107	106	107
380-130670-AL-1-A MSD	Matrix Spike Duplicate	103	105	98	102	110	105	105	104
380-130943-B-5-A LMS	Matrix Spike	93	94	97	108	106	96	88	83
380-130943-C-5-A LMSD	Matrix Spike Duplicate	93	93	93	107	99	95	89	81
380-131004-1	Halawa Shaft Viewing Pool	104	113	108	108	112	115	107	110
380-131004-2	FB: Halawa Shaft Viewing Pool	94	98	103	109	109	101	93	86
LCS 380-128822/23-A	Lab Control Sample	98	100	102	112	108	99	94	86
LCS 380-129384/21-A	Lab Control Sample	105	111	100	106	110	110	107	108
MBL 380-128822/21-A	Method Blank	92	99	101	112	105	100	95	88
MBL 380-129384/19-A	Method Blank	96	107	100	103	108	107	103	101
MRL 380-128822/22-A	Lab Control Sample	95	95	97	108	106	98	89	83
MRL 380-129384/20-A	Lab Control Sample	101	107	99	104	113	108	101	106

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-130670-AK-1-A MS	Matrix Spike	112	112	109	110	110	105	119	110
380-130670-AL-1-A MSD	Matrix Spike Duplicate	111	111	106	108	110	101	116	106
380-130943-B-5-A LMS	Matrix Spike	110	118	101	115	105	92	116	87
380-130943-C-5-A LMSD	Matrix Spike Duplicate	104	115	102	108	107	93	109	87
380-131004-1	Halawa Shaft Viewing Pool	111	113	110	113	115	116	123	113
380-131004-2	FB: Halawa Shaft Viewing Pool	107	106	106	111	108	90	124	92
LCS 380-128822/23-A	Lab Control Sample	111	108	105	118	111	93	121	93
LCS 380-129384/21-A	Lab Control Sample	112	109	106	109	109	97	106	105
MBL 380-128822/21-A	Method Blank	110	110	105	114	109	92	125	92
MBL 380-129384/19-A	Method Blank	105	100	105	106	108	98	107	107
MRL 380-128822/22-A	Lab Control Sample	107	106	103	112	108	92	115	88
MRL 380-129384/20-A	Lab Control Sample	112	110	107	101	110	93	114	100

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 380-128822/21-A
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 128822

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		01/19/25 07:15	01/20/25 01:28	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*92*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C6 PFDA	*99*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C5 PFHxA	*101*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C4 PFHpA	*112*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C8 PFOA	*105*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C9 PFNA	*100*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C7 PFUnA	*95*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C2 PFDoA	*88*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C4 PFBA	*110*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C5 PFPeA	*110*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C3 PFBS	*105*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*
13C3 PFHxS	*114*		*50 - 200*	*01/19/25 07:15*	*01/20/25 01:28*	*1*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 380-128822/21-A
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 128822

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	109		50 - 200	01/19/25 07:15	01/20/25 01:28	1
13C2-4:2-FTS	92		50 - 200	01/19/25 07:15	01/20/25 01:28	1
13C2-6:2-FTS	125		50 - 200	01/19/25 07:15	01/20/25 01:28	1
13C2-8:2-FTS	92		50 - 200	01/19/25 07:15	01/20/25 01:28	1

Lab Sample ID: LCS 380-128822/23-A
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 128822

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	51.2		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	56.5		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	57.2		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	60.1		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	61.7		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	58.4		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	60.4		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	60.5		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	57.0		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	59.1		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	60.1	61.5		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	56.9		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	60.0		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	61.5		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	59.8		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	60.3		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	60.7		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	61.9		ng/L		103	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	67.0		ng/L		111	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	61.3		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	59.9		ng/L		100	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	60.0		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	61.7		ng/L		103	70 - 130

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LCS 380-128822/23-A
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 128822

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			60.1	52.1		ng/L		87	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*98*		*50 - 200*
13C6 PFDA	*100*		*50 - 200*
13C5 PFHxA	*102*		*50 - 200*
13C4 PFHpA	*112*		*50 - 200*
13C8 PFOA	*108*		*50 - 200*
13C9 PFNA	*99*		*50 - 200*
13C7 PFUnA	*94*		*50 - 200*
13C2 PFDoA	*86*		*50 - 200*
13C4 PFBA	*111*		*50 - 200*
13C5 PFPeA	*108*		*50 - 200*
13C3 PFBS	*105*		*50 - 200*
13C3 PFHxS	*118*		*50 - 200*
13C8 PFOS	*111*		*50 - 200*
13C2-4:2-FTS	*93*		*50 - 200*
13C2-6:2-FTS	*121*		*50 - 200*
13C2-8:2-FTS	*93*		*50 - 200*

Lab Sample ID: MRL 380-128822/22-A
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 128822

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.00	1.97	J	ng/L		98	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.00	2.07	J	ng/L		103	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.00	2.06	J	ng/L		103	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.00	2.32	J	ng/L		116	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.00	2.29	J	ng/L		114	50 - 150		
Perfluorodecanoic acid (PFDA)			2.00	2.26	J	ng/L		113	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.00	2.38	J	ng/L		119	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.00	2.26	J	ng/L		113	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.00	2.08	J	ng/L		104	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.00	2.35	J	ng/L		117	50 - 150		
Perfluorononanoic acid (PFNA)			2.00	2.30	J	ng/L		115	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.00	2.16	J	ng/L		108	50 - 150		
Perfluorooctanoic acid (PFOA)			2.00	2.25	J	ng/L		112	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.00	2.29	J	ng/L		114	50 - 150		
Perfluorobutanoic acid (PFBA)			2.00	2.24	J	ng/L		112	50 - 150		

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MRL 380-128822/22-A
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 128822

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)			2.00	2.39	J	ng/L		119	50 - 150		
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)			2.00	2.33	J	ng/L		116	50 - 150		
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)			2.00	2.52	J	ng/L		126	50 - 150		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)			2.00	1.93	J	ng/L		96	50 - 150		
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)			2.00	2.50	J	ng/L		125	50 - 150		
Perfluoro-3-methoxypropanoic acid (PFMPA)			2.00	2.26	J	ng/L		113	50 - 150		
Perfluoro-4-methoxybutanoic acid (PFMBA)			2.00	2.18	J	ng/L		109	50 - 150		
Perfluoropentanoic acid (PFPeA)			2.00	2.39	J	ng/L		119	50 - 150		
Perfluoroheptanesulfonic acid (PFHpS)			2.00	2.30	J	ng/L		115	50 - 150		
Perfluoropentanesulfonic acid (PFPeS)			2.00	1.95	J	ng/L		97	50 - 150		

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*95*		*50 - 200*
13C6 PFDA	*95*		*50 - 200*
13C5 PFHxA	*97*		*50 - 200*
13C4 PFHpA	*108*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*89*		*50 - 200*
13C2 PFDoA	*83*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*106*		*50 - 200*
13C3 PFBS	*103*		*50 - 200*
13C3 PFHxS	*112*		*50 - 200*
13C8 PFOS	*108*		*50 - 200*
13C2-4:2-FTS	*92*		*50 - 200*
13C2-6:2-FTS	*115*		*50 - 200*
13C2-8:2-FTS	*88*		*50 - 200*

Lab Sample ID: 380-130943-B-5-A LMS
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 128822

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.00	1.82	J	ng/L		91	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.00	2.00		ng/L		100	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.00	2.09		ng/L		105	50 - 150		

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-130943-B-5-A LMS
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 128822

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.00	2.28		ng/L		114	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.4		2.00	9.50		ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.00	2.20		ng/L		110	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.00	2.25		ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.00	3.43		ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	7.9		2.00	9.96		ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.1		2.00	4.23		ng/L		108	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.00	2.32		ng/L		116	50 - 150
Perfluorooctanesulfonic acid (PFOS)	5.8		2.00	7.88		ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	4.6		2.00	6.72		ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.00	2.22		ng/L		111	50 - 150
Perfluorobutanoic acid (PFBA)	6.8		2.00	8.49		ng/L		87	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.00	2.36		ng/L		118	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.00	2.40		ng/L		120	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.00	2.43		ng/L		122	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.00	1.91	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.00	2.44		ng/L		122	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.00	2.40		ng/L		120	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.00	2.08		ng/L		104	50 - 150
Perfluoropentanoic acid (PFPeA)	2.5		2.00	4.40		ng/L		95	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.00	2.61		ng/L		131	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.00	3.18		ng/L		82	50 - 150

Isotope Dilution	*LMS %Recovery*	*LMS Qualifier*	*Limits*
13C3 HFPO-DA	*93*		*50 - 200*
13C6 PFDA	*94*		*50 - 200*
13C5 PFHxA	*97*		*50 - 200*
13C4 PFHpA	*108*		*50 - 200*
13C8 PFOA	*106*		*50 - 200*
13C9 PFNA	*96*		*50 - 200*
13C7 PFUnA	*88*		*50 - 200*
13C2 PFDoA	*83*		*50 - 200*
13C4 PFBA	*110*		*50 - 200*
13C5 PFPeA	*118*		*50 - 200*
13C3 PFBS	*101*		*50 - 200*
13C3 PFHxS	*115*		*50 - 200*
13C8 PFOS	*105*		*50 - 200*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-130943-B-5-A LMS
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 128822

Isotope Dilution	LMS %Recovery	LMS Qualifier	Limits
13C2-4:2-FTS	92		50 - 200
13C2-6:2-FTS	116		50 - 200
13C2-8:2-FTS	87		50 - 200

Lab Sample ID: 380-130943-C-5-A LMSD
Matrix: Water
Analysis Batch: 128889

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 128822

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.00	1.76	J	ng/L		88	50 - 150	3	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.00	2.07		ng/L		104	50 - 150	4	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.00	2.03		ng/L		101	50 - 150	3	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.00	2.29		ng/L		115	50 - 150	0	50
Perfluorobutanesulfonic acid (PFBS)	7.4		2.00	9.98		ng/L		129	50 - 150	5	50
Perfluorodecanoic acid (PFDA)	<2.0		2.00	2.21		ng/L		111	50 - 150	1	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.00	2.29		ng/L		115	50 - 150	2	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.00	3.26		ng/L		106	50 - 150	5	50
Perfluorohexanesulfonic acid (PFHxS)	7.9		2.00	10.3		ng/L		123	50 - 150	4	50
Perfluorohexanoic acid (PFHxA)	2.1		2.00	4.53		ng/L		123	50 - 150	7	50
Perfluorononanoic acid (PFNA)	<2.0		2.00	2.22		ng/L		111	50 - 150	5	50
Perfluorooctanesulfonic acid (PFOS)	5.8		2.00	7.76		ng/L		100	50 - 150	2	50
Perfluorooctanoic acid (PFOA)	4.6		2.00	7.01		ng/L		119	50 - 150	4	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.00	2.20		ng/L		110	50 - 150	1	50
Perfluorobutanoic acid (PFBA)	6.8		2.00	8.83		ng/L		104	50 - 150	4	50
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.00	2.30		ng/L		115	50 - 150	2	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.00	2.43		ng/L		122	50 - 150	1	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.00	2.40		ng/L		120	50 - 150	1	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.00	2.23		ng/L		112	50 - 150	15	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.00	2.40		ng/L		120	50 - 150	2	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.00	2.44		ng/L		122	50 - 150	2	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.00	2.11		ng/L		106	50 - 150	2	50
Perfluoropentanoic acid (PFPeA)	2.5		2.00	4.65		ng/L		108	50 - 150	5	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.00	2.50		ng/L		125	50 - 150	5	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.00	3.63		ng/L		105	50 - 150	13	50

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	LMSD %Recovery	LMSD Qualifier	Limits
13C3 HFPO-DA	93		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	89		50 - 200
13C2 PFDoA	81		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	93		50 - 200
13C2-6:2-FTS	109		50 - 200
13C2-8:2-FTS	87		50 - 200

Lab Sample ID: MBL 380-129384/19-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 129384

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 380-129384/19-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 129384

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		01/21/25 13:35	01/22/25 14:42	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C6 PFDA	*107*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C5 PFHxA	*100*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C4 PFHpA	*103*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C8 PFOA	*108*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C9 PFNA	*107*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C7 PFUnA	*103*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C2 PFDoA	*101*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C4 PFBA	*105*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C5 PFPeA	*100*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C3 PFBS	*105*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C3 PFHxS	*106*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C8 PFOS	*108*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C2-4:2-FTS	*98*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C2-6:2-FTS	*107*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*
13C2-8:2-FTS	*107*		*50 - 200*	*01/21/25 13:35*	*01/22/25 14:42*	*1*

Lab Sample ID: LCS 380-129384/21-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129384

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			120	117		ng/L		97	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			120	113		ng/L		93	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			120	115		ng/L		96	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			120	114		ng/L		95	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			120	114		ng/L		95	70 - 130		
Perfluorodecanoic acid (PFDA)			120	115		ng/L		96	70 - 130		
Perfluorododecanoic acid (PFDoA)			120	119		ng/L		99	70 - 130		
Perfluoroheptanoic acid (PFHpA)			120	119		ng/L		99	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)			120	114		ng/L		94	70 - 130		
Perfluorohexanoic acid (PFHxA)			120	122		ng/L		101	70 - 130		
Perfluorononanoic acid (PFNA)			120	113		ng/L		94	70 - 130		
Perfluorooctanesulfonic acid (PFOS)			120	117		ng/L		97	70 - 130		
Perfluorooctanoic acid (PFOA)			120	112		ng/L		93	70 - 130		

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LCS 380-129384/21-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	120	116		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	121		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	125		ng/L		104	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	129		ng/L		107	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	116		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	109		ng/L		91	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	122		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	120	121		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	116		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	110		ng/L		91	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*105*		*50 - 200*
13C6 PFDA	*111*		*50 - 200*
13C5 PFHxA	*100*		*50 - 200*
13C4 PFHpA	*106*		*50 - 200*
13C8 PFOA	*110*		*50 - 200*
13C9 PFNA	*110*		*50 - 200*
13C7 PFUnA	*107*		*50 - 200*
13C2 PFDoA	*108*		*50 - 200*
13C4 PFBA	*112*		*50 - 200*
13C5 PFPeA	*109*		*50 - 200*
13C3 PFBS	*106*		*50 - 200*
13C3 PFHxS	*109*		*50 - 200*
13C8 PFOS	*109*		*50 - 200*
13C2-4:2-FTS	*97*		*50 - 200*
13C2-6:2-FTS	*106*		*50 - 200*
13C2-8:2-FTS	*105*		*50 - 200*

Lab Sample ID: MRL 380-129384/20-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.95	J	ng/L		97	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.90	J	ng/L		94	50 - 150

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MRL 380-129384/20-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.91	J	ng/L		95	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.91	J	ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.04	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.01	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.05	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.11	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.16	J	ng/L		107	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.34	J	ng/L		116	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.92	J	ng/L		96	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.94	J	ng/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.04	J	ng/L		102	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.02	J	ng/L		101	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*101*		*50 - 200*
13C6 PFDA	*107*		*50 - 200*
13C5 PFHxA	*99*		*50 - 200*
13C4 PFHpA	*104*		*50 - 200*
13C8 PFOA	*113*		*50 - 200*
13C9 PFNA	*108*		*50 - 200*
13C7 PFUnA	*101*		*50 - 200*
13C2 PFDoA	*106*		*50 - 200*
13C4 PFBA	*112*		*50 - 200*
13C5 PFPeA	*110*		*50 - 200*
13C3 PFBS	*107*		*50 - 200*
13C3 PFHxS	*101*		*50 - 200*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MRL 380-129384/20-A
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 129384

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	93		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-130670-AK-1-A MS
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	119		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	113		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	120		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	112		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	111		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	117		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	126		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	117		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	118		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	117		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	118		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	118		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	118		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	107		ng/L		89	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	128		ng/L		106	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	114		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	110		ng/L		91	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	116		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	119		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	118		ng/L		98	70 - 130

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-130670-AK-1-A MS
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	113		ng/L		93	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*103*		*50 - 200*
13C6 PFDA	*105*		*50 - 200*
13C5 PFHxA	*98*		*50 - 200*
13C4 PFHpA	*103*		*50 - 200*
13C8 PFOA	*107*		*50 - 200*
13C9 PFNA	*107*		*50 - 200*
13C7 PFUnA	*106*		*50 - 200*
13C2 PFDoA	*107*		*50 - 200*
13C4 PFBA	*112*		*50 - 200*
13C5 PFPeA	*112*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*110*		*50 - 200*
13C8 PFOS	*110*		*50 - 200*
13C2-4:2-FTS	*105*		*50 - 200*
13C2-6:2-FTS	*119*		*50 - 200*
13C2-8:2-FTS	*110*		*50 - 200*

Lab Sample ID: 380-130670-AL-1-A MSD
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	118		ng/L		98	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	113		ng/L		94	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	119		ng/L		98	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	118		ng/L		97	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		96	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		121	120		ng/L		99	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	120		ng/L		99	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	117		ng/L		96	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	120		ng/L		99	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		121	117		ng/L		96	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	117		ng/L		96	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		121	109		ng/L		90	70 - 130	7	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	115		ng/L		95	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		121	116		ng/L		96	70 - 130	1	30

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-130670-AL-1-A MSD
Matrix: Water
Analysis Batch: 129643

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 129384

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	118		ng/L		97	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	120		ng/L		99	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	119		ng/L		98	70 - 130	10	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	126		ng/L		104	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	116		ng/L		96	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	114		ng/L		94	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	123		ng/L		101	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	119		ng/L		98	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	117		ng/L		97	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	115		ng/L		95	70 - 130	2	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*103*		*50 - 200*
13C6 PFDA	*105*		*50 - 200*
13C5 PFHxA	*98*		*50 - 200*
13C4 PFHpA	*102*		*50 - 200*
13C8 PFOA	*110*		*50 - 200*
13C9 PFNA	*105*		*50 - 200*
13C7 PFUnA	*105*		*50 - 200*
13C2 PFDoA	*104*		*50 - 200*
13C4 PFBA	*111*		*50 - 200*
13C5 PFPeA	*111*		*50 - 200*
13C3 PFBS	*106*		*50 - 200*
13C3 PFHxS	*108*		*50 - 200*
13C8 PFOS	*110*		*50 - 200*
13C2-4:2-FTS	*101*		*50 - 200*
13C2-6:2-FTS	*116*		*50 - 200*
13C2-8:2-FTS	*106*		*50 - 200*

QC Association Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

LCMS

Prep Batch: 128822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-131004-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	
MBL 380-128822/21-A	Method Blank	Total/NA	Water	533	
LCS 380-128822/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-128822/22-A	Lab Control Sample	Total/NA	Water	533	
380-130943-B-5-A LMS	Matrix Spike	Total/NA	Water	533	
380-130943-C-5-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 128889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-131004-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	128822
MBL 380-128822/21-A	Method Blank	Total/NA	Water	533	128822
LCS 380-128822/23-A	Lab Control Sample	Total/NA	Water	533	128822
MRL 380-128822/22-A	Lab Control Sample	Total/NA	Water	533	128822
380-130943-B-5-A LMS	Matrix Spike	Total/NA	Water	533	128822
380-130943-C-5-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	128822

Prep Batch: 129384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-131004-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	
MBL 380-129384/19-A	Method Blank	Total/NA	Water	533	
LCS 380-129384/21-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-129384/20-A	Lab Control Sample	Total/NA	Water	533	
380-130670-AK-1-A MS	Matrix Spike	Total/NA	Water	533	
380-130670-AL-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 129643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-131004-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	129384
MBL 380-129384/19-A	Method Blank	Total/NA	Water	533	129384
LCS 380-129384/21-A	Lab Control Sample	Total/NA	Water	533	129384
MRL 380-129384/20-A	Lab Control Sample	Total/NA	Water	533	129384
380-130670-AK-1-A MS	Matrix Spike	Total/NA	Water	533	129384
380-130670-AL-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	129384

Lab Chronicle

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-131004-1

Date Collected: 01/14/25 10:00
Matrix: Water
Date Received: 01/17/25 10:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			129384	HM3M	EA POM	01/21/25 13:35
Total/NA	Analysis	533		1	129643	Y5FM	EA POM	01/22/25 16:29

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-131004-2

Date Collected: 01/14/25 10:00
Matrix: Water
Date Received: 01/17/25 10:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			128822	E9PK	EA POM	01/19/25 07:15
Total/NA	Analysis	533		1	128889	SZ9R	EA POM	01/20/25 04:06

Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25

Method Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Sample Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-131004-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-131004-1	Halawa Shaft Viewing Pool	Water	01/14/25 10:00	01/17/25 10:28
380-131004-2	FB: Halawa Shaft Viewing Pool	Water	01/14/25 10:00	01/17/25 10:28

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Ryan Greer	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-28005-2757 1
Client Contact: Dr Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: HI	Page: Page 1 of 1
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street Chemistry Lab	Due Date Requested			
City: Honolulu	TAT Requested (days):			
State, Zip: HI 96843	Compliance Project: Δ Yes Δ No			
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws org	WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site: Hawaii	SSOW#:			

Analysis Requested

Preservation Codes.
R - NaThioSO4
RA - NaThio/HCl
Q - Na2SO3
QA - Na2SO3/HCl
Y - Trizma
I - NH4 Acetate
Other:

380-131004 COC

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)	626.1, 626.1_SIM	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18	625.2_PREC - (MOD) 625plus Plus TICs	537 1_DW_PREC - 537 1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	RA	Q	QA	Y	I		
Halawa Shaft Viewing Pool	1/14/25	1000		Water							3	3		
FB Halawa Shaft Viewing Pool	1/14/25	1000		Water							1	1		

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.

FED Ex ① 7714 5427 6676
Method of Shipment: ② 7714 5427 6687

Empty Kit Relinquished by: | Date: | Time:

Relinquished [redacted]	Date/Time: 1/15/25 1300	Company HBWS	Received by:	Date/Time: 01/17/25 10:28	Company EEAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.

Cooler Temperature(s) °C and Other Remarks: 751Δ ① 3.1°-0.0°=3.1° ② 2.0°-0.0°=2.0° GEL FROZEN

Ver 04/02/2024

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-131004-1
SDG Number: Weekly PFAS

Login Number: 131004
List Number: 1
Creator: Hernandez, Orlando

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	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	
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	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	