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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

Generated 12/18/2024 10:58:32 AM

JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-126208-1

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

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

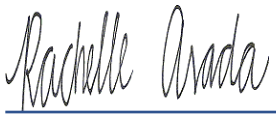
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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: 380-126208-1
SDG: Weekly PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Narrative
380-126208-1

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 12/12/2024 10:01 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C.

PFAS
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: 380-126208-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-1

PWSID Number: HI0000331

No Detections.

Client Sample ID: FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-2

PWSID Number: HI0000331

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-1

Date Collected: 12/11/24 09:27
Date Received: 12/12/24 10:01

Matrix: Drinking Water
PWSID Number: HI0000331

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		12/15/24 16:31	12/17/24 06:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*106*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C6 PFDA	*103*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C5 PFHxA	*106*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C4 PFHpA	*107*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C8 PFOA	*107*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C9 PFNA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C7 PFUnA	*100*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C2 PFDoA	*90*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C4 PFBA	*106*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C5 PFPeA	*104*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C3 PFBS	*102*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C3 PFHxS	*103*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-1

Date Collected: 12/11/24 09:27
Date Received: 12/12/24 10:01

Matrix: Drinking Water
PWSID Number: HI0000331

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 PFOS	*101*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C2-4:2-FTS	*118*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C2-6:2-FTS	*122*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*
13C2-8:2-FTS	*115*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:48*	*1*

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/13/24 14:45	12/15/24 07:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*100*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:48*	*1*
13C2 PFHxA	*106*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:48*	*1*
13C2 PFDA	*102*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:48*	*1*
13C3-GenX	*102*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:48*	*1*

Client Sample ID: FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-2

Date Collected: 12/11/24 09:27
Date Received: 12/12/24 10:01

Matrix: Water
PWSID Number: HI0000331

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		12/15/24 16:31	12/17/24 06:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/15/24 16:31	12/17/24 06:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/15/24 16:31	12/17/24 06:58	1

Client Sample ID: FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Lab Sample ID: 380-126208-2

Date Collected: 12/11/24 09:27
Matrix: Water

Date Received: 12/12/24 10:01
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		12/15/24 16:31	12/17/24 06:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C6 PFDA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C5 PFHxA	*94*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C4 PFHpA	*104*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C8 PFOA	*101*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C9 PFNA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C7 PFUnA	*108*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C2 PFDoA	*101*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C4 PFBA	*103*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C5 PFPeA	*99*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C3 PFBS	*100*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C3 PFHxS	*106*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C8 PFOS	*104*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C2-4:2-FTS	*113*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C2-6:2-FTS	*123*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*
13C2-8:2-FTS	*113*		*50 - 200*	*12/15/24 16:31*	*12/17/24 06:58*	*1*

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

Job ID: 380-126208-1
SDG: Weekly PFAS

Client Sample ID: FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)
Date Collected: 12/11/24 09:27
Date Received: 12/12/24 10:01

Lab Sample ID: 380-126208-2
Matrix: Water
PWSID Number: HI0000331

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		12/13/24 14:45	12/15/24 07:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*102*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:58*	*1*
13C2 PFHxA	*105*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:58*	*1*
13C2 PFDA	*101*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:58*	*1*
13C3-GenX	*103*		*70 - 130*	*12/13/24 14:45*	*12/15/24 07:58*	*1*

Action Limit Summary

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

Job ID: 380-126208-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-1

PWSID Number: HI0000331

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
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-2

PWSID Number: HI0000331

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
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Surrogate Summary

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

Job ID: 380-126208-1
SDG: Weekly PFAS

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-126208-1	AIEA GULCH WELLS PUMP 1 (	100	106	102	102

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-126019-B-1-A MS	Matrix Spike	96	103	99	98
380-126019-C-1-A MSD	Matrix Spike Duplicate	97	104	97	95
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)	102	105	101	103
LCS 380-123690/22-A	Lab Control Sample	97	104	99	98
MBL 380-123690/20-A	Method Blank	104	108	104	99
MRL 380-123690/21-A	Lab Control Sample	101	106	99	98

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Isotope Dilution Summary

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

Job ID: 380-126208-1
SDG: Weekly PFAS

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

Matrix: Drinking 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)
380-126208-1	AIEA GULCH WELLS PUMP 1 (	106	103	106	107	107	105	100	90

		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)
380-126208-1	AIEA GULCH WELLS PUMP 1 (	106	104	102	103	101	118	122	115

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

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)
380-125857-B-13-A MS	Matrix Spike	78	89	69	76	82	88	89	80
380-125857-C-13-A MSD	Matrix Spike Duplicate	104	109	100	106	109	109	116	110
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)	96	105	94	104	101	105	108	101
LCS 380-123809/20-A	Lab Control Sample	103	111	107	108	111	109	118	110
MBL 380-123809/18-A	Method Blank	96	103	102	105	109	105	110	103
MRL 380-123809/19-A	Lab Control Sample	105	112	102	107	111	104	116	107

		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)
380-125857-B-13-A MS	Matrix Spike	72	70	105	105	104	107	128	116
380-125857-C-13-A MSD	Matrix Spike Duplicate	106	109	102	104	103	105	122	109
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)	103	99	100	106	104	113	123	113
LCS 380-123809/20-A	Lab Control Sample	112	114	102	107	106	110	127	114
MBL 380-123809/18-A	Method Blank	105	105	103	108	108	124	134	123
MRL 380-123809/19-A	Lab Control Sample	107	109	103	106	106	114	126	114

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA

Isotope Dilution Summary

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

Job ID: 380-126208-1
SDG: Weekly PFAS

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 380-123809/18-A
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 123809

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		12/15/24 16:31	12/17/24 04:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		12/15/24 16:31	12/17/24 04:05	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*96*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C6 PFDA	*103*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C5 PFHxA	*102*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C4 PFHpA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C8 PFOA	*109*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C9 PFNA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C7 PFUnA	*110*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C2 PFDoA	*103*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C4 PFBA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C5 PFPeA	*105*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C3 PFBS	*103*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*
13C3 PFHxS	*108*		*50 - 200*	*12/15/24 16:31*	*12/17/24 04:05*	*1*

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

Lab Sample ID: MBL 380-123809/18-A
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 123809

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	108		50 - 200	12/15/24 16:31	12/17/24 04:05	1
13C2-4:2-FTS	124		50 - 200	12/15/24 16:31	12/17/24 04:05	1
13C2-6:2-FTS	134		50 - 200	12/15/24 16:31	12/17/24 04:05	1
13C2-8:2-FTS	123		50 - 200	12/15/24 16:31	12/17/24 04:05	1

Lab Sample ID: LCS 380-123809/20-A
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 123809

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	59.2		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	57.4		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	63.0		ng/L		105	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	59.4		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	61.2		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	63.0		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	64.8		ng/L		108	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	61.1		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	60.2		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	61.3		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	60.1	60.9		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	59.8		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	59.5		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	61.7		ng/L		103	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	60.4		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	65.6		ng/L		109	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	65.9		ng/L		110	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	61.9		ng/L		103	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	59.4		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	58.2		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	60.5		ng/L		101	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	60.7		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	61.8		ng/L		103	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 380-123809/20-A
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 123809

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			60.1	57.5		ng/L		96	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*103*		*50 - 200*
13C6 PFDA	*111*		*50 - 200*
13C5 PFHxA	*107*		*50 - 200*
13C4 PFHpA	*108*		*50 - 200*
13C8 PFOA	*111*		*50 - 200*
13C9 PFNA	*109*		*50 - 200*
13C7 PFUnA	*118*		*50 - 200*
13C2 PFDoA	*110*		*50 - 200*
13C4 PFBA	*112*		*50 - 200*
13C5 PFPeA	*114*		*50 - 200*
13C3 PFBS	*102*		*50 - 200*
13C3 PFHxS	*107*		*50 - 200*
13C8 PFOS	*106*		*50 - 200*
13C2-4:2-FTS	*110*		*50 - 200*
13C2-6:2-FTS	*127*		*50 - 200*
13C2-8:2-FTS	*114*		*50 - 200*

Lab Sample ID: MRL 380-123809/19-A
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 123809

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.00	2.10	J	ng/L		105	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.00	1.93	J	ng/L		96	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.00	2.26	J	ng/L		113	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.00	2.20	J	ng/L		110	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.00	2.16	J	ng/L		108	50 - 150		
Perfluorodecanoic acid (PFDA)			2.00	2.28	J	ng/L		114	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.00	2.44	J	ng/L		122	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.00	2.25	J	ng/L		112	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.00	2.15	J	ng/L		107	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.00	2.10	J	ng/L		105	50 - 150		
Perfluorononanoic acid (PFNA)			2.00	2.26	J	ng/L		113	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.00	2.30	J	ng/L		115	50 - 150		
Perfluorooctanoic acid (PFOA)			2.00	2.20	J	ng/L		110	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.00	2.11	J	ng/L		105	50 - 150		
Perfluorobutanoic acid (PFBA)			2.00	2.14	J	ng/L		107	50 - 150		

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

Lab Sample ID: MRL 380-123809/19-A
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 123809

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.30	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.39	J	ng/L		119	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.35	J	ng/L		117	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.17	J	ng/L		108	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.07	J	ng/L		104	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*105*		*50 - 200*
13C6 PFDA	*112*		*50 - 200*
13C5 PFHxA	*102*		*50 - 200*
13C4 PFHpA	*107*		*50 - 200*
13C8 PFOA	*111*		*50 - 200*
13C9 PFNA	*104*		*50 - 200*
13C7 PFUnA	*116*		*50 - 200*
13C2 PFDoA	*107*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*109*		*50 - 200*
13C3 PFBS	*103*		*50 - 200*
13C3 PFHxS	*106*		*50 - 200*
13C8 PFOS	*106*		*50 - 200*
13C2-4:2-FTS	*114*		*50 - 200*
13C2-6:2-FTS	*126*		*50 - 200*
13C2-8:2-FTS	*114*		*50 - 200*

Lab Sample ID: 380-125857-B-13-A MS
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 123809

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		120	112		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	114		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	116		ng/L		96	70 - 130

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

Lab Sample ID: 380-125857-B-13-A MS
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 123809

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	112		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	3.2		120	121		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	124		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	121		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	120		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	119		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	23		120	149		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	116		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	122		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	125		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	124		ng/L		103	70 - 130
Perfluorobutanoic acid (PFBA)	32		120	151		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	120		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	128		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	120		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	128		ng/L		106	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	120		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	126		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	99		120	231	E	ng/L		110	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	120		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	120		ng/L		100	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*78*		*50 - 200*
13C6 PFDA	*89*		*50 - 200*
13C5 PFHxA	*69*		*50 - 200*
13C4 PFHpA	*76*		*50 - 200*
13C8 PFOA	*82*		*50 - 200*
13C9 PFNA	*88*		*50 - 200*
13C7 PFUnA	*89*		*50 - 200*
13C2 PFDoA	*80*		*50 - 200*
13C4 PFBA	*72*		*50 - 200*
13C5 PFPeA	*70*		*50 - 200*
13C3 PFBS	*105*		*50 - 200*
13C3 PFHxS	*105*		*50 - 200*
13C8 PFOS	*104*		*50 - 200*

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

Lab Sample ID: 380-125857-B-13-A MS
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 123809

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	128		50 - 200
13C2-8:2-FTS	116		50 - 200

Lab Sample ID: 380-125857-C-13-A MSD
Matrix: Water
Analysis Batch: 123915

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 123809

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	114		ng/L		94	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	116		ng/L		96	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	120		ng/L		100	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	127		ng/L		105	70 - 130	13	30
Perfluorobutanesulfonic acid (PFBS)	3.2		121	124		ng/L		100	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		121	120		ng/L		99	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	123		ng/L		102	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	119		ng/L		99	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	118		ng/L		97	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	23		121	148		ng/L		103	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		121	118		ng/L		98	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	121		ng/L		100	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		121	119		ng/L		99	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	119		ng/L		98	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	32		121	147		ng/L		95	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	124		ng/L		102	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	121		ng/L		100	70 - 130	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	124		ng/L		103	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	134		ng/L		111	70 - 130	5	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	111		ng/L		92	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	123		ng/L		102	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	127		ng/L		105	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	99		121	212	E	ng/L		94	70 - 130	8	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	120		ng/L		100	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	118		ng/L		98	70 - 130	2	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	109		50 - 200
13C7 PFUnA	116		50 - 200
13C2 PFDoA	110		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	122		50 - 200
13C2-8:2-FTS	109		50 - 200

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MBL 380-123690/20-A
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 123690

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		12/13/24 14:45	12/15/24 04:20	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130	12/13/24 14:45	12/15/24 04:20	1
13C2 PFHxA	108		70 - 130	12/13/24 14:45	12/15/24 04:20	1
13C2 PFDA	104		70 - 130	12/13/24 14:45	12/15/24 04:20	1

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: MBL 380-123690/20-A
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 123690

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	99		70 - 130	12/13/24 14:45	12/15/24 04:20	1

Lab Sample ID: LCS 380-123690/22-A
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 123690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.2	51.8		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.2	53.6		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.2	53.3		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.2	53.5		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.2	51.9		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	50.2	53.8		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	50.2	49.4		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	50.2	54.9		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	50.2	51.9		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.2	54.6		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.2	54.0		ng/L		108	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.2	56.3		ng/L		112	70 - 130
Perfluorononanoic acid (PFNA)	50.2	52.7		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.2	48.2		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.2	48.5		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.2	54.4		ng/L		108	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.2	52.2		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.2	54.0		ng/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	99		70 - 130
13C3-GenX	98		70 - 130

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: MRL 380-123690/21-A
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 123690

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.22	J	ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.22	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.22	J	ng/L		111	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.20	J	ng/L		110	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.34	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.20	J	ng/L		110	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.48	J	ng/L		123	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	1.97	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.17	J	ng/L		108	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.08	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.28	J	ng/L		113	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*101*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*99*		*70 - 130*
13C3-GenX	*98*		*70 - 130*

Lab Sample ID: 380-126019-B-1-A MS
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 123690

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.4	52.0		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.4	55.5		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.4	52.5		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.4	53.8		ng/L		107	70 - 130

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 380-126019-B-1-A MS
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 123690

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.4	51.6		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.4	54.4		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.4	50.0		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.4	54.9		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.4	52.4		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.4	56.9		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.4	56.1		ng/L		111	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.4	56.6		ng/L		112	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.4	51.3		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.4	47.8		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.4	48.8		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.4	53.9		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.4	52.5		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.4	52.3		ng/L		104	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*96*		*70 - 130*
13C2 PFHxA	*103*		*70 - 130*
13C2 PFDA	*99*		*70 - 130*
13C3-GenX	*98*		*70 - 130*

Lab Sample ID: 380-126019-C-1-A MSD
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 123690

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.4	53.2		ng/L		106	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.4	55.1		ng/L		109	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.4	53.6		ng/L		106	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.4	54.9		ng/L		109	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.4	51.8		ng/L		103	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.4	55.2		ng/L		109	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.4	50.1		ng/L		99	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		50.4	55.4		ng/L		110	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		50.4	53.4		ng/L		106	70 - 130	2	30

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 380-126019-C-1-A MSD
Matrix: Water
Analysis Batch: 123786

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 123690

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.4	56.8		ng/L		113	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.4	54.3		ng/L		108	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.4	57.9		ng/L		115	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		50.4	53.1		ng/L		105	70 - 130	4	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.4	47.6		ng/L		94	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.4	49.4		ng/L		98	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.4	55.3		ng/L		110	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.4	53.5		ng/L		106	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.4	53.4		ng/L		106	70 - 130	2	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*97*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C2 PFDA	*97*		*70 - 130*
13C3-GenX	*95*		*70 - 130*

LCMS

Prep Batch: 123690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-126208-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	537.1 DW	
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP0	Total/NA	Water	537.1 DW	
MBL 380-123690/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-123690/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-123690/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-126019-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-126019-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 123786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-126208-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	537.1	123690
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP0	Total/NA	Water	537.1	123690
MBL 380-123690/20-A	Method Blank	Total/NA	Water	537.1	123690
LCS 380-123690/22-A	Lab Control Sample	Total/NA	Water	537.1	123690
MRL 380-123690/21-A	Lab Control Sample	Total/NA	Water	537.1	123690
380-126019-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	123690
380-126019-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	123690

Prep Batch: 123809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-126208-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	533	
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP0	Total/NA	Water	533	
MBL 380-123809/18-A	Method Blank	Total/NA	Water	533	
LCS 380-123809/20-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-123809/19-A	Lab Control Sample	Total/NA	Water	533	
380-125857-B-13-A MS	Matrix Spike	Total/NA	Water	533	
380-125857-C-13-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 123915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-126208-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Total/NA	Drinking Water	533	123809
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP0	Total/NA	Water	533	123809
MBL 380-123809/18-A	Method Blank	Total/NA	Water	533	123809
LCS 380-123809/20-A	Lab Control Sample	Total/NA	Water	533	123809
MRL 380-123809/19-A	Lab Control Sample	Total/NA	Water	533	123809
380-125857-B-13-A MS	Matrix Spike	Total/NA	Water	533	123809
380-125857-C-13-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	123809

Lab Chronicle

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

Job ID: 380-126208-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-1

Date Collected: 12/11/24 09:27
Date Received: 12/12/24 10:01

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			123809	E9PK	EA POM	12/15/24 16:31
Total/NA	Analysis	533		1	123915	SZ9R	EA POM	12/17/24 06:48
Total/NA	Prep	537.1 DW			123690	HM3M	EA POM	12/13/24 14:45
Total/NA	Analysis	537.1		1	123786	M7ML	EA POM	12/15/24 07:48

Client Sample ID: FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)

Lab Sample ID: 380-126208-2

Date Collected: 12/11/24 09:27
Date Received: 12/12/24 10:01

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			123809	E9PK	EA POM	12/15/24 16:31
Total/NA	Analysis	533		1	123915	SZ9R	EA POM	12/17/24 06:58
Total/NA	Prep	537.1 DW			123690	HM3M	EA POM	12/13/24 14:45
Total/NA	Analysis	537.1		1	123786	M7ML	EA POM	12/15/24 07:58

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: 380-126208-1
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: 380-126208-1
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated 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: 380-126208-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-126208-1	AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Drinking Water	12/11/24 09:27	12/12/24 10:01	HI0000331
380-126208-2	FB:AIEA GULCH WELLS PUMP 1 (331-201-TP071)	Water	12/11/24 09:27	12/12/24 10:01	HI0000331

Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia CA 91016
Phone (626) 386-1100

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: bailey	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: Dr Ron Fenstermacher	Phone: +1 808 748 5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
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 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:	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18	525.2_PREC (MOD) 525plus PLUS TICs	537 1_DW_PREC 537 1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	A	Q	QA	Y	I		
AIEA GULCH WELLS PUMP 1	11-Dec-2024	0927	G	Water							3	3		
														chlorinated
														chlorinated
FB: AIEA GULCH WELLS PUMP 1	11-Dec-2024	0927									1	1		
														380-126208 COC

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

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

Deliverable Requested I II III IV, Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment: Fedex 7706 8651 3260
[redacted]	Date/Time: 11 December 2024 1400	Company: HBWS	Received by: [signature] Date/Time: 12/12/24 1001 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: (603A) 1.2+0.3=1.5 Gel Frozen

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-126208-1
SDG Number: Weekly PFAS

Login Number: 126208
List Number: 1
Creator: Ngo, Theodore

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	