

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

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 9/27/2024 5:08:17 PM

JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-113634-1

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



Generated
9/27/2024 5:08:17 PM

Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	21
Surrogate Summary	24
Isotope Dilution Summary	25
QC Sample Results	27
QC Association Summary	49
Lab Chronicle	51
Certification Summary	53
Method Summary	54
Sample Summary	55
Chain of Custody	56
Receipt Checklists	57

Definitions/Glossary

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

Job ID: 380-113634-1
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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

Case Narrative

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

Job ID: 380-113634-1

Job ID: 380-113634-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-113634-1

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 9/18/2024 10:20 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 3.7°C.

PFAS

The following QC issues in preparation batch 380-109570 and analytical batch 380-109695 were observed: Surrogate d5-NEtFOSAA, 13C2 PFHxA, 13C2 PFDA and 13C3-GenX recoveries were above QC acceptable criteria (high bias) for FB sample FB AIEA WELLS PUMPS 1 & 2 (260) (380-113634-7). Surrogate was double spiked. Results not acceptable per method. Insufficient volume for re-extraction / re-analysis. Associated native samples is ND for d5-NEtFOSAA, 13C2 PFHxA, 13C2 PFDA and 13C3-GenX. Analysis of the FRB is required only if a field sample contains a method analyte or analytes at, or above, the MRL. Sample results showed ND thus field blank analysis is not needed. Data excluded from this report.

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: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-113634-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-113634-3

No Detections.

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-113634-4

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-113634-5

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-6

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-113634-7

No Detections.

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-113634-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-113634-1

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/24/24 07:16	09/25/24 02:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C6 PFDA	88		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C5 PFHxA	95		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C4 PFHpA	95		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C8 PFOA	92		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C9 PFNA	90		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C7 PFUnA	87		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C2 PFDoA	88		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C4 PFBA	98		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C5 PFPeA	105		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C3 PFBS	113		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C3 PFHxS	117		50 - 200	09/24/24 07:16	09/25/24 02:01	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-113634-1

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	113		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C2-4:2-FTS	128		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C2-6:2-FTS	119		50 - 200	09/24/24 07:16	09/25/24 02:01	1
13C2-8:2-FTS	112		50 - 200	09/24/24 07:16	09/25/24 02:01	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		09/20/24 15:03	09/21/24 18:14	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:14	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	117		70 - 130	09/20/24 15:03	09/21/24 18:14	1		
13C2 PFHxA	112		70 - 130	09/20/24 15:03	09/21/24 18:14	1		
13C2 PFDA	106		70 - 130	09/20/24 15:03	09/21/24 18:14	1		
13C3-GenX	101		70 - 130	09/20/24 15:03	09/21/24 18:14	1		

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-2

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-2

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

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		09/25/24 16:42	09/27/24 07:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:44	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	71		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C6 PFDA	62		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C5 PFHxA	77		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C4 PFHpA	73		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C8 PFOA	67		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C9 PFNA	61		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C7 PFUnA	72		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C2 PFDoA	76		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C4 PFBA	83		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C5 PFPeA	82		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C3 PFBS	105		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C3 PFHxS	112		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C8 PFOS	113		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C2-4:2-FTS	134		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C2-6:2-FTS	140		50 - 200			09/25/24 16:42	09/27/24 07:44	1
13C2-8:2-FTS	121		50 - 200			09/25/24 16:42	09/27/24 07:44	1

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-2

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

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		09/20/24 15:03	09/21/24 18:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	115		70 - 130			09/20/24 15:03	09/21/24 18:25	1
13C2 PFHxA	117		70 - 130			09/20/24 15:03	09/21/24 18:25	1
13C2 PFDA	109		70 - 130			09/20/24 15:03	09/21/24 18:25	1
13C3-GenX	108		70 - 130			09/20/24 15:03	09/21/24 18:25	1

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-113634-3

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

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		09/25/24 16:42	09/27/24 08:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-113634-3

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C6 PFDA	77		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C5 PFHxA	89		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C4 PFHpA	88		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C8 PFOA	83		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C9 PFNA	75		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C7 PFUnA	82		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C2 PFDoA	87		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C4 PFBA	92		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C5 PFPeA	99		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C3 PFBS	102		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C3 PFHxS	111		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C8 PFOS	109		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C2-4:2-FTS	134		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C2-6:2-FTS	143		50 - 200	09/25/24 16:42	09/27/24 08:41	1
13C2-8:2-FTS	125		50 - 200	09/25/24 16:42	09/27/24 08:41	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		09/20/24 15:03	09/21/24 18:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-113634-3

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	117		70 - 130	09/20/24 15:03	09/21/24 18:35	1
13C2 PFHxA	113		70 - 130	09/20/24 15:03	09/21/24 18:35	1
13C2 PFDA	104		70 - 130	09/20/24 15:03	09/21/24 18:35	1
13C3-GenX	102		70 - 130	09/20/24 15:03	09/21/24 18:35	1

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-113634-4

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-113634-4

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 08:50	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	73		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C6 PFDA	73		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C5 PFHxA	82		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C4 PFHpA	78		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C8 PFOA	75		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C9 PFNA	70		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C7 PFUnA	81		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C2 PFDoA	84		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C4 PFBA	88		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C5 PFPeA	93		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C3 PFBS	103		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C3 PFHxS	106		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C8 PFOS	109		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C2-4:2-FTS	137		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C2-6:2-FTS	136		50 - 200			09/25/24 16:42	09/27/24 08:50	1
13C2-8:2-FTS	117		50 - 200			09/25/24 16:42	09/27/24 08:50	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		09/20/24 15:03	09/21/24 15:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-113634-4

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 15:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	123		70 - 130			09/20/24 15:03	09/21/24 15:33	1
13C2 PFHxA	119		70 - 130			09/20/24 15:03	09/21/24 15:33	1
13C2 PFDA	112		70 - 130			09/20/24 15:03	09/21/24 15:33	1
13C3-GenX	110		70 - 130			09/20/24 15:03	09/21/24 15:33	1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-113634-5

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-113634-5

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:00	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C6 PFDA	100		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C5 PFHxA	105		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C4 PFHpA	107		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C8 PFOA	109		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C9 PFNA	102		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C7 PFUnA	99		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C2 PFDoA	95		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C4 PFBA	108		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C5 PFPeA	112		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C3 PFBS	101		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C3 PFHxS	112		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C8 PFOS	108		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C2-4:2-FTS	124		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C2-6:2-FTS	124		50 - 200			09/25/24 16:42	09/27/24 09:00	1
13C2-8:2-FTS	104		50 - 200			09/25/24 16:42	09/27/24 09:00	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		09/20/24 15:03	09/21/24 18:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	121		70 - 130			09/20/24 15:03	09/21/24 18:46	1
13C2 PFHxA	116		70 - 130			09/20/24 15:03	09/21/24 18:46	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-113634-5

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	110		70 - 130	09/20/24 15:03	09/21/24 18:46	1
13C3-GenX	103		70 - 130	09/20/24 15:03	09/21/24 18:46	1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-6

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C6 PFDA	106		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C5 PFHxA	112		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C4 PFHpA	112		50 - 200	09/25/24 16:42	09/27/24 09:10	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-6

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	113		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C9 PFNA	105		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C7 PFUnA	102		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C2 PFDoA	98		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C4 PFBA	109		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C5 PFPeA	117		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C3 PFBS	100		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C3 PFHxS	108		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C8 PFOS	106		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C2-4:2-FTS	120		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C2-6:2-FTS	127		50 - 200	09/25/24 16:42	09/27/24 09:10	1
13C2-8:2-FTS	116		50 - 200	09/25/24 16:42	09/27/24 09:10	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		09/20/24 15:03	09/21/24 18:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/20/24 15:03	09/21/24 18:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	127		70 - 130	09/20/24 15:03	09/21/24 18:57	1
13C2 PFHxA	114		70 - 130	09/20/24 15:03	09/21/24 18:57	1
13C2 PFDA	108		70 - 130	09/20/24 15:03	09/21/24 18:57	1
13C3-GenX	100		70 - 130	09/20/24 15:03	09/21/24 18:57	1

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-113634-7

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C6 PFDA	108		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C5 PFHxA	108		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C4 PFHpA	111		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C8 PFOA	113		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C9 PFNA	104		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C7 PFUnA	107		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C2 PFDoA	100		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C4 PFBA	110		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C5 PFPeA	115		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C3 PFBS	106		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C3 PFHxS	112		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C8 PFOS	110		50 - 200	09/25/24 16:42	09/27/24 09:19	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-113634-7

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	129		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C2-6:2-FTS	130		50 - 200	09/25/24 16:42	09/27/24 09:19	1
13C2-8:2-FTS	115		50 - 200	09/25/24 16:42	09/27/24 09:19	1

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-113634-8

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/24 16:42	09/27/24 09:29	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C6 PFDA	106		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C5 PFHxA	109		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C4 PFHpA	115		50 - 200	09/25/24 16:42	09/27/24 09:29	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-113634-8

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	116		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C9 PFNA	108		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C7 PFUnA	108		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C2 PFDoA	101		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C4 PFBA	110		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C5 PFPeA	120		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C3 PFBS	109		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C3 PFHxS	117		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C8 PFOS	114		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C2-4:2-FTS	132		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C2-6:2-FTS	134		50 - 200	09/25/24 16:42	09/27/24 09:29	1
13C2-8:2-FTS	124		50 - 200	09/25/24 16:42	09/27/24 09:29	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		09/21/24 12:21	09/23/24 20:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/21/24 12:21	09/23/24 20:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	117		70 - 130	09/21/24 12:21	09/23/24 20:20	1
13C2 PFHxA	110		70 - 130	09/21/24 12:21	09/23/24 20:20	1
13C2 PFDA	107		70 - 130	09/21/24 12:21	09/23/24 20:20	1
13C3-GenX	109		70 - 130	09/21/24 12:21	09/23/24 20:20	1

Action Limit Summary

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-113634-1

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	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		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)	2.4		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)	2.6		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: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-2

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	RL	Method	Prep Type
				Limit			
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: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-113634-3

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	RL	Method	Prep Type
				Limit			
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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2 (Continued)

Lab Sample ID: 380-113634-3

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		RL	Method	Prep Type
				Limit				
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: KA'AMILO WELLS

Lab Sample ID: 380-113634-4

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		RL	Method	Prep Type
				Limit				
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 HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-113634-5

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		RL	Method	Prep Type
				Limit				
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

Action Limit Summary

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-6

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	RL	Method	Prep Type
				Limit			
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 WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-113634-7

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	RL	Method	Prep Type
				Limit			
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

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-113634-8

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	RL	Method	Prep Type
				Limit			
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: 380-113634-1
 SDG: Weekly PFAS

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	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-113634-1	HALAWA WELLS UNITS 1 & 2 F	117	112	106	101
380-113634-2	AIEA GULCH WELLS PUMP 2	115	117	109	108
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	117	113	104	102
380-113634-4	KA'AMILO WELLS	123	119	112	110
380-113634-4 MS	KA'AMILO WELLS	114	109	110	102
380-113634-4 MSD	KA'AMILO WELLS	110	109	105	100
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	121	116	110	103
380-113634-6	FB AIEA GULCH WELLS PUMP 2	127	114	108	100
380-113634-8	FB KA'AMILO WELLS	117	110	107	109
380-113650-K-1-A MS	Matrix Spike	115	110	112	105
380-113650-L-1-A MSD	Matrix Spike Duplicate	113	114	111	108
LCS 380-109435/24-A	Lab Control Sample	112	115	104	105
LCS 380-109570/23-A	Lab Control Sample	116	113	111	114
MBL 380-109435/22-A	Method Blank	116	112	107	100
MBL 380-109570/21-A	Method Blank	113	110	115	113
MRL 380-109435/23-A	Lab Control Sample	121	120	112	108
MRL 380-109570/22-A	Lab Control Sample	114	109	108	103

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: 380-113634-1
SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-113585-B-1-A MS	Matrix Spike	96	99	102	103	103	98	97	100
380-113585-C-1-A MSD	Matrix Spike Duplicate	90	101	100	99	100	99	98	100
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	89	88	95	95	92	90	87	88
380-113634-2	AIEA GULCH WELLS PUMP 2	71	62	77	73	67	61	72	76
380-113634-2 MS	AIEA GULCH WELLS PUMP 2	82	97	88	90	93	93	101	101
380-113634-2 MSD	AIEA GULCH WELLS PUMP 2	71	92	84	85	89	88	92	92
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	78	77	89	88	83	75	82	87
380-113634-4	KA'AMILO WELLS	73	73	82	78	75	70	81	84
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	97	100	105	107	109	102	99	95
380-113634-6	FB AIEA GULCH WELLS PUMP 2	103	106	112	112	113	105	102	98
380-113634-7	FB AIEA WELLS PUMPS 1 & 2 (260)	95	108	108	111	113	104	107	100
380-113634-8	FB KA'AMILO WELLS	99	106	109	115	116	108	108	101
LCS 380-109922/22-A	Lab Control Sample	99	109	113	116	114	110	107	108
LCS 380-110255/22-A	Lab Control Sample	101	105	102	106	107	102	105	103
MBL 380-109922/20-A	Method Blank	101	109	116	120	117	112	105	111
MBL 380-110255/20-A	Method Blank	103	107	112	113	112	108	107	106
MRL 380-109922/21-A	Lab Control Sample	91	106	110	115	109	107	100	101
MRL 380-110255/21-A	Lab Control Sample	99	108	112	111	111	107	106	108

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-113585-B-1-A MS	Matrix Spike	105	122	115	115	113	123	127	113
380-113585-C-1-A MSD	Matrix Spike Duplicate	103	114	116	114	111	126	118	110
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	98	105	113	117	113	128	119	112
380-113634-2	AIEA GULCH WELLS PUMP 2	83	82	105	112	113	134	140	121
380-113634-2 MS	AIEA GULCH WELLS PUMP 2	91	97	99	107	109	124	139	118
380-113634-2 MSD	AIEA GULCH WELLS PUMP 2	88	95	102	111	108	130	131	114
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	92	99	102	111	109	134	143	125
380-113634-4	KA'AMILO WELLS	88	93	103	106	109	137	136	117
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	108	112	101	112	108	124	124	104
380-113634-6	FB AIEA GULCH WELLS PUMP 2	109	117	100	108	106	120	127	116
380-113634-7	FB AIEA WELLS PUMPS 1 & 2 (260)	110	115	106	112	110	129	130	115
380-113634-8	FB KA'AMILO WELLS	110	120	109	117	114	132	134	124
LCS 380-109922/22-A	Lab Control Sample	114	121	115	118	111	130	125	115
LCS 380-110255/22-A	Lab Control Sample	105	113	105	109	111	133	140	122
MBL 380-109922/20-A	Method Blank	113	121	114	118	115	129	123	120
MBL 380-110255/20-A	Method Blank	111	113	102	111	111	135	142	123
MRL 380-109922/21-A	Lab Control Sample	113	111	114	117	110	128	126	115
MRL 380-110255/21-A	Lab Control Sample	112	117	104	110	111	138	146	126

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

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

Job ID: 380-113634-1
SDG: Weekly PFAS

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-109922/20-A
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109922

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/24/24 07:16	09/25/24 01:03	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	101		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C6 PFDA	109		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C5 PFHxA	116		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C4 PFHpA	120		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C8 PFOA	117		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C9 PFNA	112		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C7 PFUnA	105		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C2 PFDoA	111		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C4 PFBA	113		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C5 PFPeA	121		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C3 PFBS	114		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C3 PFHxS	118		50 - 200	09/24/24 07:16	09/25/24 01:03	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-109922/20-A
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109922

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	115		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C2-4:2-FTS	129		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C2-6:2-FTS	123		50 - 200	09/24/24 07:16	09/25/24 01:03	1
13C2-8:2-FTS	120		50 - 200	09/24/24 07:16	09/25/24 01:03	1

Lab Sample ID: LCS 380-109922/22-A
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	56.4		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	57.3		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	53.7		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	57.1		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	57.3		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	56.0		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	55.0		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	56.5		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	55.9		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	55.8		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	60.1	53.4		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	57.3		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	54.5		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	55.5		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	55.4		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	58.5		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	59.9		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	57.1		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	54.8		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	56.1		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	59.3		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	53.9		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	54.7		ng/L		91	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	60.2		ng/L		100	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-109922/22-A
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.1	56.2		ng/L		93	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	99		50 - 200				
13C6 PFDA	109		50 - 200				
13C5 PFHxA	113		50 - 200				
13C4 PFHpA	116		50 - 200				
13C8 PFOA	114		50 - 200				
13C9 PFNA	110		50 - 200				
13C7 PFUnA	107		50 - 200				
13C2 PFDoA	108		50 - 200				
13C4 PFBA	114		50 - 200				
13C5 PFPeA	121		50 - 200				
13C3 PFBS	115		50 - 200				
13C3 PFHxS	118		50 - 200				
13C8 PFOS	111		50 - 200				
13C2-4:2-FTS	130		50 - 200				
13C2-6:2-FTS	125		50 - 200				
13C2-8:2-FTS	115		50 - 200				

Lab Sample ID: MRL 380-109922/21-A
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109922

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.89	J	ng/L		94	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.91	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.77	J	ng/L		88	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.82	J	ng/L		91	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.87	J	ng/L		93	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.90	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.90	J	ng/L		94	50 - 150
Perfluorononanoic acid (PFNA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.94	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.87	J	ng/L		93	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-109922/21-A
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109922

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.01	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.17	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.07	J	ng/L		103	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.81	J	ng/L		90	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.96	J	ng/L		98	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	115		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	113		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	114		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	128		50 - 200
13C2-6:2-FTS	126		50 - 200
13C2-8:2-FTS	115		50 - 200

Lab Sample ID: 380-113585-B-1-A MS
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 109922

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		60.4	52.9		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	54.7		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	52.6		ng/L		87	70 - 130

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113585-B-1-A MS
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 109922

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	56.1		ng/L		93	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	2.8		60.4	59.8		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	55.3		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	54.9		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	55.9		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	57.5		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	55.6		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	54.2		ng/L		90	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	53.8		ng/L		89	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	53.4		ng/L		89	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	56.7		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	57.1		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	57.5		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	58.2		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	54.3		ng/L		90	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	58.2		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	51.9		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	60.1		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	53.6		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	55.8		ng/L		90	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	56.8		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	56.1		ng/L		93	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	99		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	98		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	122		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	115		50 - 200
13C8 PFOS	113		50 - 200

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113585-B-1-A MS
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 109922

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	127		50 - 200
13C2-8:2-FTS	113		50 - 200

Lab Sample ID: 380-113585-C-1-A MSD
Matrix: Water
Analysis Batch: 110067

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 109922

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	54.8		ng/L		91	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	55.8		ng/L		92	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	53.1		ng/L		88	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	58.9		ng/L		98	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	2.8		60.4	59.5		ng/L		94	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	54.9		ng/L		91	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	57.3		ng/L		95	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	55.5		ng/L		92	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	57.7		ng/L		95	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	55.3		ng/L		90	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	54.7		ng/L		91	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	56.2		ng/L		93	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		60.4	53.4		ng/L		89	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	54.7		ng/L		91	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	57.1		ng/L		95	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	61.2		ng/L		101	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	58.4		ng/L		97	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	55.0		ng/L		91	70 - 130	1	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	62.4		ng/L		103	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	54.7		ng/L		91	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	56.9		ng/L		94	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	53.8		ng/L		89	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	55.0		ng/L		89	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	57.2		ng/L		95	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	56.8		ng/L		94	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	114		50 - 200
13C3 PFBS	116		50 - 200
13C3 PFHxS	114		50 - 200
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	126		50 - 200
13C2-6:2-FTS	118		50 - 200
13C2-8:2-FTS	110		50 - 200

Lab Sample ID: MBL 380-110255/20-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110255

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-110255/20-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110255

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/25/24 16:42	09/27/24 07:15	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C6 PFDA	107		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C5 PFHxA	112		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C4 PFHpA	113		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C8 PFOA	112		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C9 PFNA	108		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C7 PFUnA	107		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C2 PFDoA	106		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C4 PFBA	111		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C5 PFPeA	113		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C3 PFBS	102		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C3 PFHxS	111		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C8 PFOS	111		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C2-4:2-FTS	135		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C2-6:2-FTS	142		50 - 200	09/25/24 16:42	09/27/24 07:15	1
13C2-8:2-FTS	123		50 - 200	09/25/24 16:42	09/27/24 07:15	1

Lab Sample ID: LCS 380-110255/22-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	106		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	106		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	104		ng/L		86	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	106		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	115		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	120	110		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	120	112		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	108		ng/L		90	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	112		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	120	114		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	120	115		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	111		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	120	109		ng/L		91	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-110255/22-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	120	112		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	112		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	127		ng/L		105	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	113		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	112		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	103		ng/L		85	70 - 130
Perfluoropentanoic acid (PFPeA)	120	107		ng/L		89	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	112		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	113		ng/L		94	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	103		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	133		50 - 200
13C2-6:2-FTS	140		50 - 200
13C2-8:2-FTS	122		50 - 200

Lab Sample ID: MRL 380-110255/21-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110255

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.92	J	ng/L		96	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.93	J	ng/L		96	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-110255/21-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110255

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.90	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.87	J	ng/L		93	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.90	J	ng/L		95	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.26	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.35	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.42	J	ng/L		120	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.45	J	ng/L		122	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.88	J	ng/L		93	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.97	J	ng/L		98	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.99	J	ng/L		99	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	112		50 - 200
13C4 PFHpA	111		50 - 200
13C8 PFOA	111		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	112		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	110		50 - 200

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-110255/21-A
Matrix: Water
Analysis Batch: 110562

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110255

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	138		50 - 200
13C2-6:2-FTS	146		50 - 200
13C2-8:2-FTS	126		50 - 200

Lab Sample ID: 380-113634-2 MS
Matrix: Water
Analysis Batch: 110562

Client Sample ID: AIEA GULCH WELLS PUMP 2
Prep Type: Total/NA
Prep Batch: 110255

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	54.9		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	54.5		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	53.4		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	57.7		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	62.0		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	57.2		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	56.9		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	59.6		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	58.8		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	58.5		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	60.0		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	55.5		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	58.0		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	56.2		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	58.1		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	63.1		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.6		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	55.8		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	55.4		ng/L		92	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	59.4		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	57.0		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	53.5		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	56.2		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	56.9		ng/L		94	70 - 130

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113634-2 MS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 110562

Prep Batch: 110255

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	57.3		ng/L		95	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	82		50 - 200						
13C6 PFDA	97		50 - 200						
13C5 PFHxA	88		50 - 200						
13C4 PFHpA	90		50 - 200						
13C8 PFOA	93		50 - 200						
13C9 PFNA	93		50 - 200						
13C7 PFUnA	101		50 - 200						
13C2 PFDoA	101		50 - 200						
13C4 PFBA	91		50 - 200						
13C5 PFPeA	97		50 - 200						
13C3 PFBS	99		50 - 200						
13C3 PFHxS	107		50 - 200						
13C8 PFOS	109		50 - 200						
13C2-4:2-FTS	124		50 - 200						
13C2-6:2-FTS	139		50 - 200						
13C2-8:2-FTS	118		50 - 200						

Lab Sample ID: 380-113634-2 MSD

Client Sample ID: AIEA GULCH WELLS PUMP 2

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 110562

Prep Batch: 110255

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	55.3		ng/L		92	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	55.9		ng/L		93	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	52.8		ng/L		88	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	64.1		ng/L		106	70 - 130	10	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	61.4		ng/L		102	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	57.1		ng/L		95	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	58.4		ng/L		97	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	58.0		ng/L		96	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	58.8		ng/L		97	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	57.1		ng/L		95	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	59.5		ng/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	58.9		ng/L		98	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	56.5		ng/L		93	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	59.0		ng/L		98	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	58.4		ng/L		97	70 - 130	0	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113634-2 MSD

Client Sample ID: AIEA GULCH WELLS PUMP 2

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 110562

Prep Batch: 110255

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		60.2	60.3		ng/L		100	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	60.6		ng/L		101	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	61.2		ng/L		102	70 - 130	9	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	51.9		ng/L		86	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	59.3		ng/L		98	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	59.3		ng/L		98	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	53.8		ng/L		89	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	55.3		ng/L		91	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	60.4		ng/L		100	70 - 130	6	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	57.3		ng/L		95	70 - 130	0	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	71		50 - 200
13C6 PFDA	92		50 - 200
13C5 PFHxA	84		50 - 200
13C4 PFHpA	85		50 - 200
13C8 PFOA	89		50 - 200
13C9 PFNA	88		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	88		50 - 200
13C5 PFPeA	95		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	111		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	130		50 - 200
13C2-6:2-FTS	131		50 - 200
13C2-8:2-FTS	114		50 - 200

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

Lab Sample ID: MBL 380-109435/22-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 109579

Prep Batch: 109435

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		09/20/24 15:03	09/21/24 15:01	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-109435/22-A
Matrix: Water
Analysis Batch: 109579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109435

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/20/24 15:03	09/21/24 15:01	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130			09/20/24 15:03	09/21/24 15:01	1
13C2 PFHxA	112		70 - 130			09/20/24 15:03	09/21/24 15:01	1
13C2 PFDA	107		70 - 130			09/20/24 15:03	09/21/24 15:01	1
13C3-GenX	100		70 - 130			09/20/24 15:03	09/21/24 15:01	1

Lab Sample ID: LCS 380-109435/24-A
Matrix: Water
Analysis Batch: 109579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109435

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	24.4		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	27.7		ng/L		111	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	25.0		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	24.9		ng/L		100	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	26.8		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	24.8		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	23.8		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	26.7		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	24.1		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	27.0		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	26.8		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	25.9		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	25.0	26.1		ng/L		104	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-109435/24-A
Matrix: Water
Analysis Batch: 109579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109435

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	25.0	24.3		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	24.8		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.0	26.2		ng/L		105	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	29.7		ng/L		119	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	26.6		ng/L		106	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	112		70 - 130				
13C2 PFHxA	115		70 - 130				
13C2 PFDA	104		70 - 130				
13C3-GenX	105		70 - 130				

Lab Sample ID: MRL 380-109435/23-A
Matrix: Water
Analysis Batch: 109579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109435

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.03	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.30	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.06	J	ng/L		103	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.34	J	ng/L		117	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.95	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.11	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.13	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.95	J	ng/L		98	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	1.93	J	ng/L		97	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.28	J	ng/L		114	50 - 150

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-109435/23-A
Matrix: Water
Analysis Batch: 109579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109435

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.41	J	ng/L		121	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.18	J	ng/L		109	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	121		70 - 130				
13C2 PFHxA	120		70 - 130				
13C2 PFDA	112		70 - 130				
13C3-GenX	108		70 - 130				

Lab Sample ID: 380-113634-4 MS
Matrix: Water
Analysis Batch: 109579

Client Sample ID: KA'AMILO WELLS
Prep Type: Total/NA
Prep Batch: 109435

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		25.1	24.7		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	29.1		ng/L		111	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.3		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	27.7		ng/L		110	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.9		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.4		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	24.2		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.4		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	24.7		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	28.8		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	27.0		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.0		25.1	27.0		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.0		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.4		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	24.7		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	26.7		ng/L		106	70 - 130
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	31.0		ng/L		124	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	28.2		ng/L		112	70 - 130

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113634-4 MS
Matrix: Water
Analysis Batch: 109579

Client Sample ID: KA'AMILO WELLS
Prep Type: Total/NA
Prep Batch: 109435

<i>Surrogate</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	114		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	102		70 - 130

Lab Sample ID: 380-113634-4 MSD
Matrix: Water
Analysis Batch: 109579

Client Sample ID: KA'AMILO WELLS
Prep Type: Total/NA
Prep Batch: 109435

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	23.8		ng/L		95	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	28.7		ng/L		110	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	24.2		ng/L		96	70 - 130	4	30
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		25.1	26.9		ng/L		107	70 - 130	3	30
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		25.1	27.7		ng/L		110	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	27.4		ng/L		106	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	23.5		ng/L		94	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	29.0		ng/L		112	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.4		ng/L		101	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	29.5		ng/L		112	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	27.5		ng/L		107	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	26.9		ng/L		105	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.9		ng/L		107	70 - 130	0	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.4		ng/L		97	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	24.9		ng/L		99	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	27.7		ng/L		111	70 - 130	4	30
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	30.6		ng/L		122	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	27.4		ng/L		109	70 - 130	3	30

<i>Surrogate</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	110		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	100		70 - 130

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-109570/21-A
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109570

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		09/21/24 12:21	09/23/24 18:44	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/21/24 12:21	09/23/24 18:44	1
Surrogate	%Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130			09/21/24 12:21	09/23/24 18:44	1
13C2 PFHxA	110		70 - 130			09/21/24 12:21	09/23/24 18:44	1
13C2 PFDA	115		70 - 130			09/21/24 12:21	09/23/24 18:44	1
13C3-GenX	113		70 - 130			09/21/24 12:21	09/23/24 18:44	1

Lab Sample ID: LCS 380-109570/23-A
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109570

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	51.6		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	53.0		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	47.5		ng/L		95	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	52.5		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	51.0		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	50.8		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	48.1		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	51.9		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	51.0		ng/L		102	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-109570/23-A
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109570

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	50.1	54.2		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	53.1		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	50.2		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	50.1	49.0		ng/L		98	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	48.1		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	50.1	46.9		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.1	53.8		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	52.9		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	48.3		ng/L		96	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	116		70 - 130
13C2 PFHxA	113		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	114		70 - 130

Lab Sample ID: MRL 380-109570/22-A
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109570

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.32	J	ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.19	J	ng/L		110	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.30	J	ng/L		115	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.13	J	ng/L		107	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.47	J	ng/L		124	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.37	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.14	J	ng/L		107	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-109570/22-A
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109570

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.99	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.28	J	ng/L		114	50 - 150
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.19	J	ng/L		110	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.11	J	ng/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	114		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	103		70 - 130

Lab Sample ID: 380-113650-K-1-A MS
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 109570

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		25.1	26.1		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	27.8		ng/L		111	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.1		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	27.6		ng/L		110	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.9		ng/L		111	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	28.8		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.1		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.8		ng/L		111	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.0		ng/L		108	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.0		25.1	30.4		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	28.0		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	27.1		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.6		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	23.7		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	25.6		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	28.3		ng/L		113	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	27.0		ng/L		108	70 - 130

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113650-K-1-A MS
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 109570

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.9		ng/L		108	70 - 130
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
d5-NEtFOSAA	115		70 - 130						
13C2 PFHxA	110		70 - 130						
13C2 PFDA	112		70 - 130						
13C3-GenX	105		70 - 130						

Lab Sample ID: 380-113650-L-1-A MSD
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 109570

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		25.0	27.8		ng/L		111	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.0	27.4		ng/L		109	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.0	26.3		ng/L		105	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.0	27.0		ng/L		108	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.0	28.1		ng/L		112	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.0	27.8		ng/L		106	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.0	25.3		ng/L		101	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		25.0	28.9		ng/L		111	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		25.0	26.6		ng/L		106	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	2.0		25.0	31.0		ng/L		116	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.0	28.2		ng/L		110	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.0	27.5		ng/L		110	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		25.0	25.7		ng/L		103	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.0	24.1		ng/L		96	70 - 130	1	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.0	25.6		ng/L		102	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.0	27.5		ng/L		110	70 - 130	3	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.0	26.6		ng/L		106	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.0	25.9		ng/L		104	70 - 130	4	30
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
d5-NEtFOSAA	113		70 - 130								
13C2 PFHxA	114		70 - 130								
13C2 PFDA	111		70 - 130								

QC Sample Results

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

Job ID: 380-113634-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-113650-L-1-A MSD
Matrix: Water
Analysis Batch: 109695

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 109570

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C3-GenX	108		70 - 130

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

QC Association Summary

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

Job ID: 380-113634-1
SDG: Weekly PFAS

LCMS

Prep Batch: 109435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-113634-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Total/NA	Water	537.1 DW	
380-113634-4	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1 DW	
380-113634-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
MBL 380-109435/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-109435/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-109435/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-113634-4 MS	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-113634-4 MSD	KA'AMILO WELLS	Total/NA	Water	537.1 DW	

Prep Batch: 109570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-8	FB KA'AMILO WELLS	Total/NA	Water	537.1 DW	
MBL 380-109570/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-109570/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-109570/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-113650-K-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-113650-L-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 109579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	109435
380-113634-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	109435
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Total/NA	Water	537.1	109435
380-113634-4	KA'AMILO WELLS	Total/NA	Water	537.1	109435
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1	109435
380-113634-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	109435
MBL 380-109435/22-A	Method Blank	Total/NA	Water	537.1	109435
LCS 380-109435/24-A	Lab Control Sample	Total/NA	Water	537.1	109435
MRL 380-109435/23-A	Lab Control Sample	Total/NA	Water	537.1	109435
380-113634-4 MS	KA'AMILO WELLS	Total/NA	Water	537.1	109435
380-113634-4 MSD	KA'AMILO WELLS	Total/NA	Water	537.1	109435

Analysis Batch: 109695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-8	FB KA'AMILO WELLS	Total/NA	Water	537.1	109570
MBL 380-109570/21-A	Method Blank	Total/NA	Water	537.1	109570
LCS 380-109570/23-A	Lab Control Sample	Total/NA	Water	537.1	109570
MRL 380-109570/22-A	Lab Control Sample	Total/NA	Water	537.1	109570
380-113650-K-1-A MS	Matrix Spike	Total/NA	Water	537.1	109570
380-113650-L-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	109570

Prep Batch: 109922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-109922/20-A	Method Blank	Total/NA	Water	533	
LCS 380-109922/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-109922/21-A	Lab Control Sample	Total/NA	Water	533	
380-113585-B-1-A MS	Matrix Spike	Total/NA	Water	533	

QC Association Summary

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

Job ID: 380-113634-1
SDG: Weekly PFAS

LCMS (Continued)

Prep Batch: 109922 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113585-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 110067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	109922
MBL 380-109922/20-A	Method Blank	Total/NA	Water	533	109922
LCS 380-109922/22-A	Lab Control Sample	Total/NA	Water	533	109922
MRL 380-109922/21-A	Lab Control Sample	Total/NA	Water	533	109922
380-113585-B-1-A MS	Matrix Spike	Total/NA	Water	533	109922
380-113585-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	109922

Prep Batch: 110255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Total/NA	Water	533	
380-113634-4	KA'AMILO WELLS	Total/NA	Water	533	
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	
380-113634-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-113634-7	FB AIEA WELLS PUMPS 1 & 2 (260)	Total/NA	Water	533	
380-113634-8	FB KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-110255/20-A	Method Blank	Total/NA	Water	533	
LCS 380-110255/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-110255/21-A	Lab Control Sample	Total/NA	Water	533	
380-113634-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-113634-2 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	

Analysis Batch: 110562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-113634-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	110255
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Total/NA	Water	533	110255
380-113634-4	KA'AMILO WELLS	Total/NA	Water	533	110255
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	110255
380-113634-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	110255
380-113634-7	FB AIEA WELLS PUMPS 1 & 2 (260)	Total/NA	Water	533	110255
380-113634-8	FB KA'AMILO WELLS	Total/NA	Water	533	110255
MBL 380-110255/20-A	Method Blank	Total/NA	Water	533	110255
LCS 380-110255/22-A	Lab Control Sample	Total/NA	Water	533	110255
MRL 380-110255/21-A	Lab Control Sample	Total/NA	Water	533	110255
380-113634-2 MS	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	110255
380-113634-2 MSD	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	110255

Lab Chronicle

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-113634-1

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			109922	XTD8	EA POM	09/24/24 07:16
Total/NA	Analysis	533		1	110067	SZ9R	EA POM	09/25/24 02:01
Total/NA	Prep	537.1 DW			109435	E9PK	EA POM	09/20/24 15:03
Total/NA	Analysis	537.1		1	109579	M7ML	EA POM	09/21/24 18:14

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-2

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 07:44
Total/NA	Prep	537.1 DW			109435	E9PK	EA POM	09/20/24 15:03
Total/NA	Analysis	537.1		1	109579	M7ML	EA POM	09/21/24 18:25

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-113634-3

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 08:41
Total/NA	Prep	537.1 DW			109435	E9PK	EA POM	09/20/24 15:03
Total/NA	Analysis	537.1		1	109579	M7ML	EA POM	09/21/24 18:35

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-113634-4

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 08:50
Total/NA	Prep	537.1 DW			109435	E9PK	EA POM	09/20/24 15:03
Total/NA	Analysis	537.1		1	109579	M7ML	EA POM	09/21/24 15:33

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-113634-5

Date Collected: 09/16/24 10:08

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 09:00
Total/NA	Prep	537.1 DW			109435	E9PK	EA POM	09/20/24 15:03
Total/NA	Analysis	537.1		1	109579	M7ML	EA POM	09/21/24 18:46

Lab Chronicle

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

Job ID: 380-113634-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-113634-6

Date Collected: 09/16/24 10:36

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 09:10
Total/NA	Prep	537.1 DW			109435	E9PK	EA POM	09/20/24 15:03
Total/NA	Analysis	537.1		1	109579	M7ML	EA POM	09/21/24 18:57

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-113634-7

Date Collected: 09/16/24 10:59

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 09:19

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-113634-8

Date Collected: 09/16/24 11:27

Matrix: Water

Date Received: 09/18/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110255	N8NE	EA POM	09/25/24 16:42
Total/NA	Analysis	533		1	110562	SZ9R	EA POM	09/27/24 09:29
Total/NA	Prep	537.1 DW			109570	E9PK	EA POM	09/21/24 12:21
Total/NA	Analysis	537.1		1	109695	SZ9R	EA POM	09/23/24 20:20

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: 380-113634-1
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Method Summary

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

Job ID: 380-113634-1
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: 380-113634-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-113634-1	HALAWA WELLS UNITS 1 & 2 P1	Water	09/16/24 10:08	09/18/24 10:20
380-113634-2	AIEA GULCH WELLS PUMP 2	Water	09/16/24 10:36	09/18/24 10:20
380-113634-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Water	09/16/24 10:59	09/18/24 10:20
380-113634-4	KA'AMILO WELLS	Water	09/16/24 11:27	09/18/24 10:20
380-113634-5	FB HALAWA WELLS UNITS 1 & 2	Water	09/16/24 10:08	09/18/24 10:20
380-113634-6	FB AIEA GULCH WELLS PUMP 2	Water	09/16/24 10:36	09/18/24 10:20
380-113634-7	FB AIEA WELLS PUMPS 1 & 2 (260)	Water	09/16/24 10:59	09/18/24 10:20
380-113634-8	FB KA'AMILO WELLS	Water	09/16/24 11:27	09/18/24 10:20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

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

Chain of Custody Record



Client Information Client Contact: Dr Ron Fenstermacher Phone: +1 808 748 5840 E-Mail: rachelle.arada@st.euronisus.com		Lab PM: Arada Rachelle State of Origin:		Camer Tracking Net(s): 380-27941-2757 2 Page: Page 2 of 2 Job #:	
Company: City & County of Honolulu Address: 630 South Beretania Street: Chemistry Lab City: Honolulu State: Zin: HI 96843 Phone: 808-748 5091 (tel) Email: rfenstermacher@bbws.org		PWSID: Due Date Requested: TAT Requested (days): Compliance Project: Δ No PO #: C20525101 exp 05312023 WG #:		Analysis Requested: SUBCONTRACT 625 PAH Physis LL (EAL) + TICs 8015B_GRO_LL (MOD) GRO 8015B_DRO_LL_CS HNL Ranges C19-C24/C24-C36/C8 C18 525 2_PREC (MOD) 525plus PLUS TICs 537 1_DW_PREC 537 1 Full List 533 All Analytes	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Project #: 38001111 S50W#:		Preservation Codes: A HCL M Hexane N None O AsNaO2 P Na2OAS Q Na2SO3 R Na2SO3 S H2SO4 T TSP Dodecahydrate U Acetone V MCAA W pH 4-5 Y Trizma Z other (specify)	
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=Air)		Field Filled Sample (Yes or No) Perform MS/MSD (Yes or No) R A Q SUBCONTRACT 625 PAH Physis LL (EAL) + TICs 8015B_GRO_LL (MOD) GRO 8015B_DRO_LL_CS HNL Ranges C19-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 chlorinated chlorinated	
HALAWA WELLS UNITS 1&2 P1 AIEA GULCH WELLS PUMP 2 AIEA WELLS PUMPS 1&2 (260) P2 KA'AMILO WELLS		Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=Air)		Field Filled Sample (Yes or No) Perform MS/MSD (Yes or No) R A Q SUBCONTRACT 625 PAH Physis LL (EAL) + TICs 8015B_GRO_LL (MOD) GRO 8015B_DRO_LL_CS HNL Ranges C19-C24/C24-C36/C8 C18 525 2_PREC (MOD) 525plus PLUS TICs 537 1_DW_PREC 537 1 Full List 533 All Analytes	
FB HALAWA WELLS UNITS 1&2 FB AIEA GULCH WELLS PUMP 2 FB AIEA WELLS PUMPS 1&2 (260) FB KA'AMILO WELLS		Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=Air)		Field Filled Sample (Yes or No) Perform MS/MSD (Yes or No) R A Q SUBCONTRACT 625 PAH Physis LL (EAL) + TICs 8015B_GRO_LL (MOD) GRO 8015B_DRO_LL_CS HNL Ranges C19-C24/C24-C36/C8 C18 525 2_PREC (MOD) 525plus PLUS TICs 537 1_DW_PREC 537 1 Full List 533 All Analytes	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					
Deliverable Requested I II III IV Other (specify)					
Empty Kit Relinquished by:					
Received by: [Signature] Date/Time: 18-Sep-2024 1400 Company: HBWS		Received by: [Signature] Date/Time: 9/18/24 10:20 Company: [Signature]		Method of Shipment: FT Archive For: Months	
Relinquished by:		Relinquished by:		Relinquished by:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks: 6 PA / 3-9-24 = 3.7 GC	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-113634-1
SDG Number: Weekly PFAS

Login Number: 113634
List Number: 1
Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

